

Case Study

# OREGON I-5/BELTLINE INTERCHANGE

Structured Decision Making  
Using Community Values as  
Performance Measures

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The Transportation for Communities website provides a systematic approach for reaching collaborative decisions about adding highway capacity that enhance the environment, the economy, and the community and improve transportation. It identifies key decision points in four phases of transportation decision making: long-range transportation planning, corridor planning, programming, and environmental review and permitting.

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# **OREGON I-5/BELTLINE INTERCHANGE**



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# EXECUTIVE SUMMARY

Interstate-5 (I-5) divides the cities of Eugene and Springfield in west-central Oregon. Linked by Beltline Highway/Road (specifically, Beltline Highway west of I-5 and Beltline Road east of I-5) that runs east-west under I-5, the two cities make up Oregon's second largest urban area. Despite their proximity, Eugene and Springfield have different philosophies on land use and growth, as well as on appropriate transportation infrastructure. Eugene wants to control induced growth, desires more emphasis on pedestrian/bikeway facilities, and often views I-5 as a barrier to alternative modes of transportation. In contrast, the I-5/Beltline interchange in Springfield provides access to a major employment center and numerous traveler-related businesses such as hotels and gas stations, economic opportunities that the city wants to expand. Although they had different perspectives on the causes and desired outcomes, increasing congestion and safety problems at the I-5/Beltline interchange concerned both cities.

In 1996, the Oregon Department of Transportation (ODOT) initiated a planning study called the Interstate-5/Beltline Interchange Facility Plan to analyze the operational and safety deficiencies of the interchange. Working with a steering committee of citizens and local officials, ODOT evaluated 20 alternatives for the interchange and the closely related Gateway/Beltline intersection in Springfield. Ultimately, ODOT recommended five alternatives for further evaluation. However, despite ODOT's coordination with local stakeholders, considerable disagreement remained with regard to the best solution, particularly for the Gateway/Beltline intersection. One thing was clear: ODOT would need a new approach to get the buy-in from the diverse stakeholders in order to complete the next step in the process, an environmental assessment (EA).

With the help of CH2M HILL, Inc., an environmental and engineering consulting company, ODOT embarked on a new, community-based decision-making process, unprecedented at ODOT. The highly structured eight-step decision-making process maximized community input through the development of three committees that provided technical support, policy direction, and input on neighborhood concerns. In the first step, the Beltline Decision Team (BDT), the Stakeholder Working Group (SWG), and the Beltline Management Team (BMT) identified a broad spectrum of local issues and transportation problems. The decision-making groups, the BDT and the SWG, made process decisions and recommendations about project elements for Federal Highway Administration (FHWA) approval. All committee members had an equal opportunity to express their views. What began as a technical transportation issue in the facility plan became a more comprehensive community vision for the EA (1).

Next, the SWG identified five broad categories of evaluation criteria, including cost, the natural and human environment, safety, engineering design standards, and transportation needs. Within these five categories, the SWG reached consensus on 26 specific criteria, including performance measures for each. ODOT then developed a full range of alternatives for the SWG's consideration and evaluation based on the criteria and performance measures. The SWG used Criterium DecisionPlus, an interactive decision-making software tool developed by InfoHarvest, Inc., to incorporate the performance criteria and evaluate the trade-offs between the various alternatives and rank the results. Using the results, the committees recommended four alternatives for evaluation in the EA.

Key to this project was the shared decision-making process. From the outset, the committees agreed to make a reasonable effort to reach consensus at key decision points, and once decisions were made, they became "frozen." When they could not reach consensus, the dissenters prepared a minority report for consideration by the BDT. Thus, disagreements did not delay the process. However, a major controversy developed when ODOT and FHWA were "outvoted" by the local jurisdictions on the design of the Gateway/Beltline intersection. To resolve the issue, ODOT and FHWA used an innovative intergovernmental agreement to shift project design responsibilities to Springfield.

Neighborhood concerns about increasing traffic noise were another factor that threatened to disrupt the project. A noise analysis showed that noise levels did not meet the federal criteria for abatement, but for the neighborhoods, doing nothing was unacceptable. To resolve the issue, ODOT agreed to conduct a postconstruction noise analysis and, if warranted, provide mitigation. Collaboration with the stakeholders to reach this middle-ground solution likely prevented a legal challenge, saving time and money in the long term.

Most stakeholders agreed that the new decision-making process allowed everyone a voice in the process, even if they did not necessarily agree with the decisions.

## BACKGROUND

The I-5/Beltline interchange is located at milepost 195 on I-5, near the northern limits of the Eugene-Springfield metropolitan area in Lane County, Oregon (Figure 1). The I-5/Beltline interchange project is one component of a broader transportation system described in the Eugene-Springfield Transportation System Plan (TransPlan). TransPlan is the functional plan of the Eugene-Springfield metropolitan area general plan (Metro Plan). Metro Plan establishes the broad framework on which Eugene, Springfield, and Lane County make coordinated land use decisions. TransPlan guides transportation policy and investment decision making in the Eugene-Springfield area.

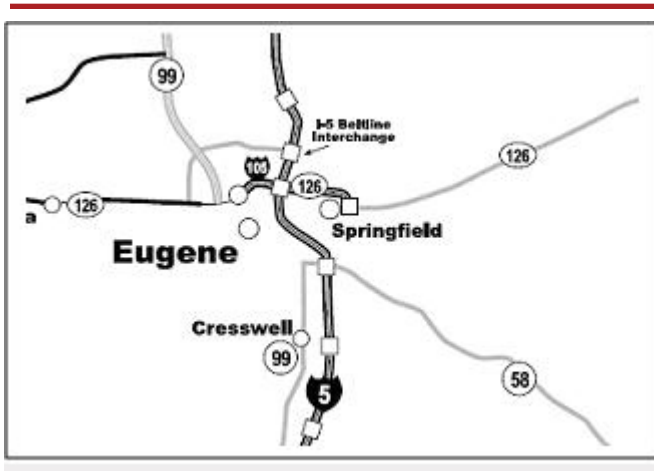


Figure 1. I-5/Beltline interchange study area (2).

TransPlan and previous planning efforts identified the I-5/Beltline interchange improvement project as one of several key efforts required to create a fully integrated, multimodal transportation network in the area. This network would support planned growth within the communities of Eugene and Springfield while encouraging a reduction of total vehicle miles traveled in the metropolitan area.

Since construction of the original interchange in 1968, the Eugene-Springfield metropolitan area has changed substantially. Originally an agricultural access point to the interstate, the area around the interchange is now more residential and commercial (Figure 2). I-5 is a major western U.S. north-south

route spanning California, Oregon, and Washington, and connects the United States with Mexico and Canada, making it an international trade corridor and freight route.

Locally planned land use recognized the existing and future economic importance of the area served by the I-5/Beltline interchange. The interchange provides access to travel-related services such as restaurants, lodging, and gas stations, as well as residential neighborhoods and the Gateway Mall. The nearby Gateway area has a high concentration of hotels and motels, making it a convenient travel layover destination. As a result, the operation of the Gateway/Beltline intersection materially affects the performance of the I-5/Beltline interchange. ODOT and Springfield monitored the operation problems at the interchange over many years and noted the mismatch between the existing transportation infrastructure and planned land use. They predicted that traffic and safety conditions would worsen without improvements to the interchange.

The I-5/Beltline interchange falls under the purview of 17 federal, state, and local land use plans and policies. The policy and administrative rules of the Oregon Highway Plan (OHP) are the most significant in terms of shaping specific project alternatives. The OHP supports ODOT's and local jurisdictions' collaboration to address land use and transportation issues, especially near interchanges.

### Project Overview

I-5 runs north-south through the Eugene-Springfield area, with Beltline intersecting it east-west. Eugene lies to the west of I-5, with Springfield to the east. The I-5/Beltline interchange was originally a cloverleaf with circular loop ramps (Figure 3). In 1970, traffic demand was approximately 20,000 vehicles per day, compared with 93,000 vehicles per day in 2000, and a projected 120,000 vehicles per day in 2015. The interchange serves large, regionally significant commercial and manufacturing centers that, in 2005, provided jobs for an estimated 5,000 people and will provide an estimated 15,000 jobs by 2015. In addition to improvements at the I-5/Beltway interchange, the project includes reconstruction of

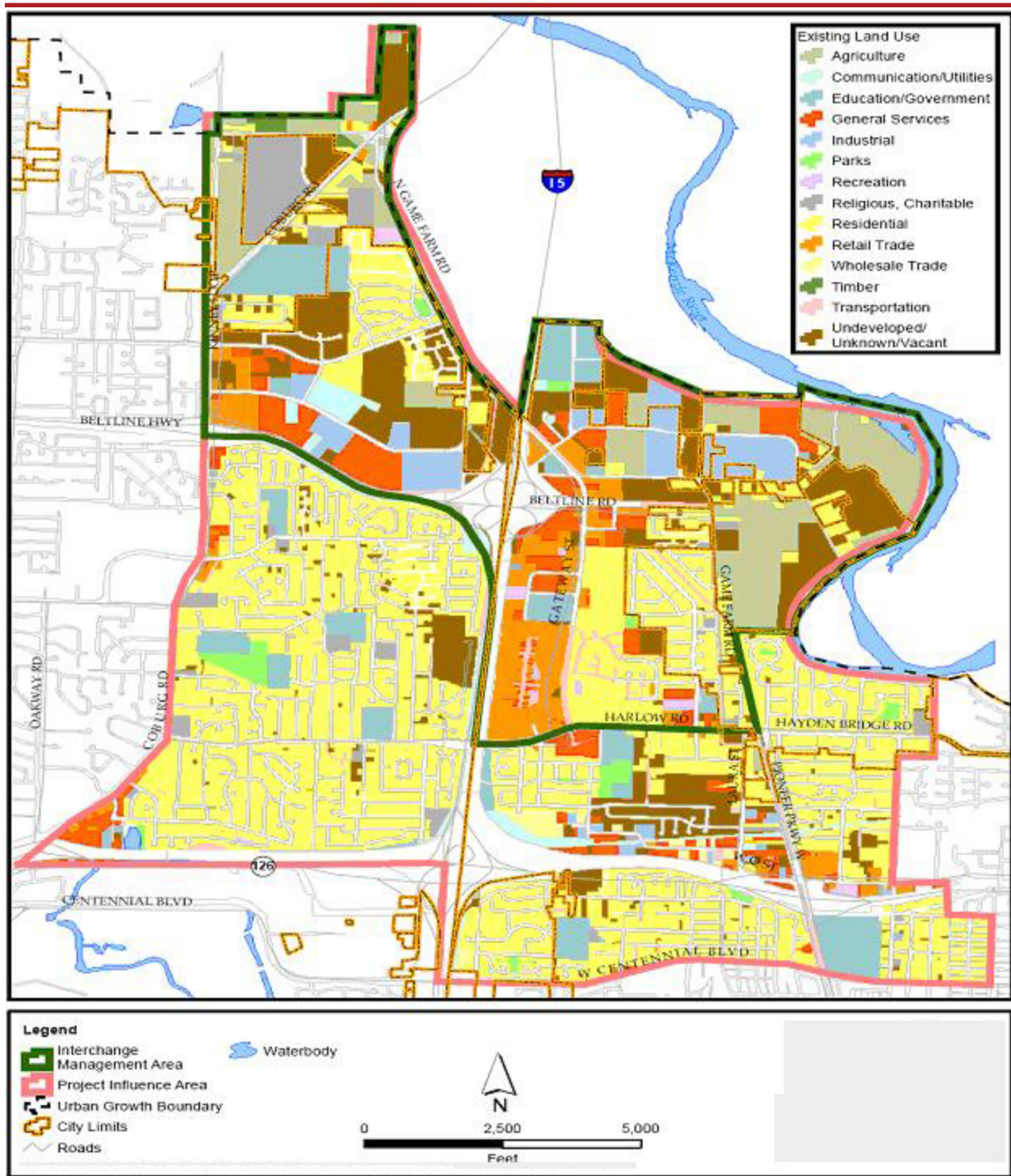


Figure 2. Project study area and land uses (3).



Figure 3. Aerial view of the I-5/Beltline interchange area (5).

the Gateway/Beltline intersection (4). The intersection is one-quarter mile east of the I-5/Beltline interchange in Springfield.

ODOT has studied and evaluated the I-5/Beltline interchange since spring 1996, when ODOT initiated a facility plan (also called a refinement plan) with local agency and stakeholder involvement.

ODOT carried forward the results of the facility plan process in 2000, when the department initiated a structured project-development and decision-making process to formally evaluate project alternatives and impacts. Because of existing geometric deficiencies, especially insufficient spacing between intersections, ODOT also evaluated operational and safety issues



at other nearby intersections (such as the Gateway/Beltline intersection) as part of the I-5/Beltline interchange project improvements.

The structured decision-making process that followed the facility plan included an EA (1). This led to approval of the following major project improvement elements: a new “flyover” bridge from I-5 northbound to Beltline Highway; a new ramp from I-5 southbound to westbound Beltline Highway; new auxiliary lanes to the Beltline Highway–Coburg Road interchange; Gateway/Beltline intersection improvements; sound walls along the west side of I-5; bridge replacements and widening; and new bicycle and pedestrian facilities including a new bicycle and pedestrian crossing over I-5.

As part of the project, ODOT had to acquire appropriate right-of-way, requiring relocation of several utilities. The total estimated project cost is \$113 million. ODOT partitioned the I-5/Beltline interchange project into three phases to occur over the period of approximately 2006 to 2022. The \$72.5 million Phase 1 construction started in May 2006, partially funded with federal, state, and local funds and partially funded with the Oregon Transportation Investment Act funds; it was completed in December 2008. An intergovernmental agreement executed between ODOT and Springfield includes traffic monitoring requirements, the results of which would trigger the start of Phase 2. Increased traffic volumes necessitated Phase 2 negotiations between ODOT and Springfield earlier than the previously estimated 2010 date.

## Project Drivers

As land use and other conditions in the I-5/Beltline area changed over time, communities and local governments became increasingly concerned about functional deficiencies of the interchange. These functional deficiencies included geometric, operational, and safety aspects.

Geometric aspects include weaving and spacing issues, which inhibit automobile movement. In the I-5/Beltline area, the short distance between loop ramps, where traffic changes lanes, was increasing the magnitude of conflicts. Operational problems included the geometric deficiencies exacerbated by

the relationship of the interchange with the nearby Gateway/Beltline intersection. This relationship caused intermittent congestion and subsequent delays during peak commuter periods. These geometric and operational deficiencies resulted in safety deficiencies. From January 1994 to December 1998, more than 175 collisions occurred in this area, 67% of which involved injuries. Despite a 1999 safety improvement, the crash rate at this site was in the state’s highest 10% of all crash locations.

Nearby communities identified other concerns: increased traffic levels diminished livability nearby and led to impacts such as additional noise, degraded air quality, and other associated issues. Springfield also identified the Beltline area as an employment and residential nodal area for future development in its economic development and land use plans, and noted that future development on vacant land in the vicinity would worsen existing conditions. Some community members also believed that the interchange served as a major barrier to nonautomobile modes of transportation (e.g., pedestrian and bicycle). The interstate and Beltline divide several residential neighborhoods from commercial and governmental facilities, as well as employment opportunities. Given these issues, ODOT had clear objectives to resolve operational, safety, and community issues with the I-5/Beltline improvement project.

Figure 4 shows the major deficiencies associated with the interchange and surrounding area as identified by the SWG in the I-5/Beltline Interchange Revised Final Decision Document (an internal document used to help decision makers review the analysis and conclusions before recommending the preferred alternative):

1. Weave section on I-5 and Beltline between exit and entrance ramps: Increased potential for collision because of limited driver reaction time (and limited distance between exit and entrance ramps) when merging to and from I-5 and Beltline.
2. Intersection spacing between interchange ramps and Gateway/Beltline: Distances between northbound interchange ramps and the signalized intersection at Gateway/Beltline are insufficient to allow drivers to make lane changes safely for all movements.



Figure 4. I-5/Beltline interchange deficiencies (2).

3. Lack of accommodation of multimodal facilities: Insufficient facilities to accommodate bicycles, pedestrians, and transit and to satisfy compliance with the Americans with Disabilities Act.
4. Gateway/Beltline intersection operations: Increased potential for accidents due to traffic volumes and proximity to capacity during peak periods at the Gateway/Beltline intersection.
5. Substandard horizontal geometry on loop ramps: Increased potential for accidents due to curvature, slope, and grade of ramps, particularly for trucks.
6. Storage distance on Gateway: Increased potential for collision as cars block cross-street intersections and access to businesses because

of Gateway traffic waiting to pass through the Gateway/Beltline intersection during peak periods.

A local community group, United Front, was another important project driver. The group lobbied for this project, ensuring funding for the study and design in the Transportation Equity Act for the 21st Century (TEA-21). Furthermore, Congressman Peter DiFazio (D-Ore.), as a ranking member of the Highways, Transit, and Pipelines Subcommittee, supported the inclusion of \$20 million for the construction of the interchange in Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005.

## Initial Concept and Planning

As noted previously, ODOT began initial planning and evaluation of I-5/Beltline interchange improvements with a facility plan in 1996. The intent of a facility plan is to conduct public participation early in the project planning process and define problems and solutions. The I-5/Beltline Interchange Facility Plan included analysis of transportation issues, traffic forecasting, concept designs and locations, and refined solution costs. ODOT completed creation and analysis of the design concepts by late 1999. The department brainstormed 20 design concepts for the interchange and recommended eight to the Facility Plan Steering Committee for further review. After further analysis, ODOT recommended three of the design concepts for the project development phase. The department also developed six design concepts for the Gateway/Beltline intersection. The steering committee advanced two of the intersection concepts, which were included with the interchange design concepts for further analysis in the EA beginning in early 2000. However, the steering committee strongly disagreed with the original traffic projections as predicted in the facility plan. The facility plan estimated 80,000 total trips in 1995 for this study area, with a 2015 projection of 139,000 to 145,000 total trips. In contrast, the reformulated transportation problem statement estimated average daily traffic volumes of 93,000 in 2002 with a projected average of 120,000 by 2017. Given these discrepancies, the SWG questioned the necessity for immediate improvements to the Gateway/Beltline intersection, preferring to postpone the related community impacts as long as possible.

## Major Project Issues

Stakeholders identified the following key issues in interviews conducted by CH2M HILL in February 2000:

- Interruption to commercial activities during construction;
- Reduced access to particular adjacent businesses;
- Need to support future economic development in the area;
- Need to maintain characteristics of the freeway-oriented commercial area that is appealing to inter-regional freight movers and other travelers;

- Need to balance needs of future facility users and businesses against impacts on current adjacent land uses;
- Need for realistic assessment of the role transit can play in meeting transportation needs in the Gateway area;
- Need to consider nonconstruction costs that differentiate alternatives such as right-of-way costs, and nonmonetary social and environmental costs;
- Need for minimal profiles that reduce impacts to existing businesses;
- Need to improve pedestrian and bicycle features;
- Need to improve safety for vehicles, pedestrians, and bicyclists;
- Need to integrate future transit station and pedestrian access to buses;
- Potential relocation, noise, and community disruption impacts to residents of the Patrician Mobile Home Park;
- Traffic congestion that limits access of adjacent neighborhood people to the local street system; and
- Noise and air quality impacts to adjacent neighborhood residents.

Environmental issues included wetlands, noise, air quality, visual impacts, land use, community impacts, and the potential for induced growth. Other than the traffic-related deficiencies linked to the environment and natural resources, environmental issues did not drive the process. Mitigation measures to avoid or reduce potential impacts are in the EA where appropriate.

## INSTITUTIONAL FRAMEWORK FOR DECISION MAKING

Although the Facility Plan Steering Committee had made substantial progress in reaching an agreement on conceptual alternatives for the interchange and the Gateway/Beltline intersection, ODOT recognized that an improved public involvement process was necessary to further develop the alternatives in the EA and gain the support of all stakeholders, both public and private. Therefore, in 2000, ODOT began the highly structured public and agency project development process (described herein) leading to the

selection of interchange alternatives analyzed in the EA. The entire decision-making process took approximately 3.5 years to complete from the beginning step of the formulation of the decision-making process to the Record of Decision by FHWA in 2003.

ODOT’s consultant, CH2M HILL, conducted stakeholder interviews to capture key public perceptions. Interviewees included some steering committee members who had previously participated in the development of the facility plan. The interviews revealed that livability and community interests were just as important to stakeholders as transportation performance. To many in the community, the facility plan concepts only met the basic design and regulatory requirements for this type of project and thus fell short of what they wanted.

### Project Management Structure

The new decision-making process involved three key committees: the BDT, the SWG, and the BMT, with CH2M HILL serving as facilitator. Figure 5

represents the structure of the decision-making framework and the roles of the three committees. As discussed in the next section, the first key decision point included formulation of this management structure and the decision-making structure.

### Beltline Decision Team

The BDT set the policy framework for the project and made final decisions at key milestones in the project. The five-member team consisted of three elected officials and two representatives from each of the major jurisdictions and agencies with regulatory authority for project implementation:

- A Springfield city council member;
- A Eugene city council member;
- A Lane County commissioner;
- An FHWA field operations engineer; and
- The ODOT area manager.

The title “decision team” was a misnomer that was a point of confusion for some stakeholders. The

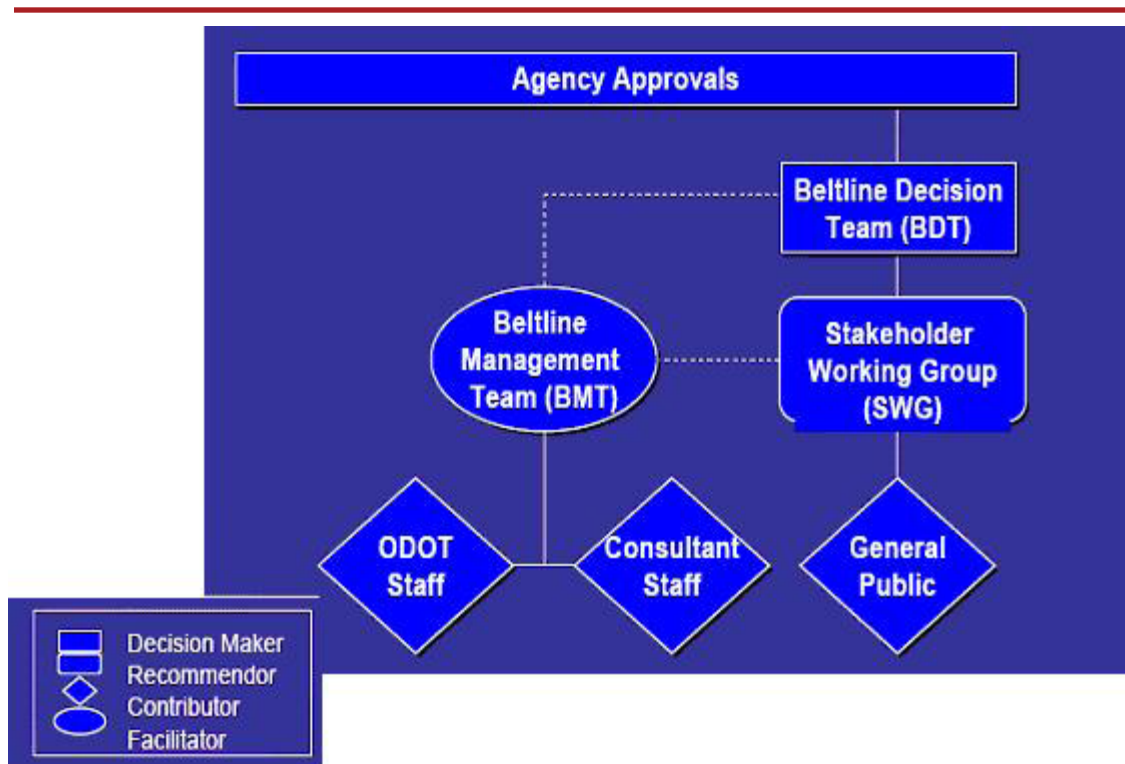


Figure 5. Decision-making framework and role flowchart.

Courtesy of CH2M HILL, Inc.

BDT made nonbinding recommendations, but FHWA had the final authority for decisions on project selection, design, and construction. As a result, ODOT no longer uses the term “decision team” to identify similar advisory committees in order to avoid confusion and distinguish FHWA’s statutory responsibility for making the National Environmental Policy Act (NEPA) decisions and the BDT’s responsibility for making recommendations at the various key decision points.

### ***Stakeholder Working Group***

The SWG represented a wide range of stakeholder interests including affected property owners, neighborhoods, interest groups, and local jurisdictions. SWG members acted as a communication link between their constituencies and agency decision makers and elected officials. The following agencies’ and organizations’ representatives made up the SWG:

- Gateway Owners for Positive Change;
- Gateway Mall;
- Eugene and Springfield chambers of commerce;
- Patrician Mobile Home Park;
- Harlow neighborhood;
- Game Farm Neighbors;
- Friends of Eugene;
- Oregon Truckers;
- Lane Council of Governments;
- Lane Transit District;
- City of Springfield Engineering;
- City of Springfield Planning;
- City of Springfield Planning Commission;
- City of Eugene Planning;
- City of Eugene Engineering;
- Lane County Engineering;
- City of Eugene Planning Commission;
- FHWA;
- ODOT Engineering;
- ODOT Planning; and
- ODOT Environmental Section.

### ***Beltline Management Team***

Technical experts from ODOT and CH2M HILL composed the BMT. ODOT staff included the project

leader, and planning, environmental, and engineering staff. CH2M HILL provided support with comparable counterparts. The BMT served as staff to the BDT and the SWG and provided information and analysis to support project decision making.

## **TRANSPORTATION DECISION-MAKING PROCESS AND KEY DECISIONS**

ODOT structured the decision-making process to engage public and private stakeholders at key decision points in the project development process. To initiate the development of the decision-making process, CH2M HILL conducted stakeholder interviews to gather input on project issues, scope of work, decision making, and public and agency outreach. Interviewees included some members who had previously served on the Facility Plan Steering Committee and had historical knowledge of the controversy surrounding the community impacts associated with the recommended alternatives. Stakeholder interviewees included a cross section of jurisdictions, elected officials, special interests, agency staff, and citizens with varied perspectives on the project. These interviewees then became part of the SWG for the I-5/Beltline EA. Hour-long interviews with each stakeholder revealed three major topics of concern: community impacts, the need for an integrated citizen working group, and the need for a clear decision-making process that ensured local representatives would make the final decision on project elements that would have community impacts.

After consideration of the stakeholders’ input, ODOT developed the eight-step decision-making process for the I-5/Beltline interchange project. The new structured community-based decision-making process attempted to engage affected community and local and state representatives to reach consensus on a preferred alternative. The following sections describe the roles of each committee, decisions made, information used, and results of specific key decision points in the eight-step process.

## **Step 1: Formulation of Management Structure and Decision-Making Process**

For the first step, ODOT assembled the SWG, the BMT, and the BDT. At the kickoff meeting, each team developed a chartering agreement that described the respective team's roles and responsibilities, the process for how decisions within the group would be made, communication protocols, and a process for resolving differences of opinion. Each committee formally adopted its respective operating protocols and each member signed the agreement to show his or her commitment to the process and the project.

### ***Beltline Decision Team***

The BDT protocols included regular meeting times and an understanding that the meetings would be open to nonmembers. The BDT reserved 5 minutes at the beginning of each agenda for public comment. The team also developed a process for communicating with the other committees, federal and state representatives and their constituents, and the media. The major element of the BDT protocols was a decision-making process that would keep the project moving forward and minimize delays. When it came to making decisions, the group agreed to respect and consider each member's point of view and attempt to reach consensus. As a group, the BDT would first identify points of agreement to reach incremental decisions. The team documented minority opinions in a minority report when members could not reach consensus. To reduce delays, the BDT agreed that the team would not revisit decisions unless significant new information was introduced.

The BDT made the following recommendations at key decision points on the basis of the recommendations of the SWG and technical assistance from the BMT:

- Adopt the final transportation problem statement;
- Adopt the evaluation framework;
- Select alternatives for evaluation;
- Select alternatives for detailed evaluation in the EA; and
- Select a preferred alternative.

### ***Stakeholder Working Group***

Though more detailed, the SWG protocols were similar to those adopted by the BDT. SWG members committed to participating in the process with an open mind to provide a fair analysis of the alternatives and produce viable recommendations to the BDT. Once a member agreed to participate, he or she was to attend all meetings or send an alternate. Members who missed more than three meetings could be removed from membership. Otherwise, all members of the SWG and the BDT remained the same through this process. SWG protocols provided guidance for internal and external communications to integrate different backgrounds and expertise with an open and honest dialogue.

The SWG's goal was to reach decisions by consensus. When the SWG could not reach full agreement but dissenters could tolerate the decision, the record reflected the decision as a consensus. When dissenters could not tolerate the decision, the predominant perspective was a nonconsensus decision and the minority perspective was reflected in the meeting notes. Those advocating the position drafted minority positions in a minority report to the BDT. For the most part, issues were resolved during the meeting in which the issue was raised, and at least two-thirds of the members were required to be present to make decisions at key decision points. These decisions became frozen unless two-thirds of the membership agreed to revisit the decision.

### ***Beltline Management Team***

The responsibilities of the BMT were described in the EA Management Team Charter. The goals for the BMT were to deliver the EA on schedule and within budget, in compliance with technical requirements and methods, and with internal and external stakeholder satisfaction, understanding, and a positive experience.

The BMT managed the day-to-day activities of the project, provided project direction, served as the key points of contact for external partners and the public, and worked with ODOT management to determine the proper course of action at all stages of

project development. The charter included a communications plan and meeting procedures and clarified the responsibilities of ODOT and the consultant in the review and approval process to ensure the development of a high-quality EA. The charter also included the responsibilities of managers for tracking and monitoring changes in the scope of work, schedule, and budget.

### ***Public Involvement Plan***

In addition to the BDT's and the SWG's responsibilities, to keep their constituents informed on the progress of the project, planned outreach activities scheduled throughout the project provided the public with opportunities to affect the project outcomes. Although it was not a formal public involvement plan per se, the BMT outlined the decision-making structure and its public involvement components in a memo dated February 2000. As part of the planned outreach, ODOT developed a mailing list of more than 500 property owners in the study area and updated the list before each mailing. The list included all those who participated in ODOT's facility plan activities as well as those who indicated an interest in the EA. Several newsletters published during the course of the project provided updates on project progress to those on the mailing list. ODOT held four public open house/workshop meetings (including an open house/public hearing during the comment period on the EA) and additional meetings with landowners, elected officials, and neighborhood representatives of the Patrician Mobile Home Park. Frequently, ODOT held the meetings in workshop format, going beyond the traditional open house-type meetings. At these meetings, small groups worked together to discuss issues using maps and Post-it notes for the public to work through the issues collaboratively and record their ideas at different points in the process. Additionally, for the first time, ODOT used an interactive project-specific web page to provide opportunities for information exchange among stakeholders. Specifically, ODOT asked interested persons to provide input on the problem statement, alternative evaluation criteria, the range of alternatives to be considered, the alternatives to be forwarded for detailed analysis in the EA,

and the preliminary analysis of environmental effects of project alternatives.

## **Step 2: Definition of the Transportation Problem**

ODOT presented the SWG a summary of the existing conditions that identified three types of deficiencies: geometric, operational, and safety. The initial information came from the facility plan, but, as mentioned earlier, the SWG questioned the validity of the traffic projections. In response, the traffic engineers from ODOT, CH2M HILL, Springfield, Eugene, and Lane County consulted and collaborated to reformulate the traffic assumptions to estimates that the engineers and community thought were more reasonable. The traffic modeling process itself did not change from the facility plan to this process, only the underlying assumptions. The SWG requested clarification or modifications to address their concerns about air quality, traffic operations, system connectivity, and safety.

After a presentation and discussion about the traffic and community issues, the group took a bus tour of the project area to help the members reach a common understanding of the problems. After the tour, group members raised a number of additional concerns. These included a need for additional information on the traffic modeling, clarification of traffic data, and the SWG's concern that the definition of the transportation problem not rule out the no-build alternative. Other members requested that ODOT not limit the problem definition to transportation issues and that ODOT integrate community issues into the problem definition. The final transportation problem statement incorporated these issues, which ODOT later used as the basis for the "purpose and need" statement in the EA. The SWG discussed a list of more than 50 transportation and community issues. In the course of the discussion, the SWG noted two competing themes. Some members believed that the area was not sufficiently dense, whereas others were concerned about the impacts of higher-density development. The group did agree that there was a mismatch between planned land use and the existing infrastructure.

At the first public scoping meeting, held in an open house format, citizens provided input on the problem definition, to identify project issues, and to brainstorm ideas about additional alternatives. Following this public input, the SWG made a consensus decision to recommend the problem definition to the BDT for their approval and the BDT concurred. The problem definition became the foundation of the purpose and need statement for the EA.

### Step 3: Development of Alternative Evaluation Framework

#### *Threshold Criteria*

Once the SWG defined the transportation problem, the group created an evaluation framework as a tool to support the decision-making process. The SWG established pass-fail thresholds to screen out technically infeasible alternatives. The criteria consisted of federal, state, and local requirements in four major categories:

- Consistency of interchange and intersection form with American Association of State Highway and Transportation Officials (AASHTO) geometric design forms;
- Consistency with applicable federal regulations and OHP policies;
- Ability to implement the alternative in phases and improve safety; and
- Compliance with FHWA interstate access policy.

The threshold criteria represented the minimum conditions of acceptance, and alternatives that could not meet the criteria were eliminated from further consideration.

#### *Evaluation Criteria*

The SWG established criteria to evaluate the performance of feasible alternatives against the full range of stakeholder values, and then used the criteria to rank the alternatives. Using input from the first public open house, the group brainstormed a list of about 40 criteria in five broad categories, including cost, implementation, transportation, safety, and the natural environment and human environment. After further consideration, the group suggested six additional criteria to qualitatively evaluate the impacts: the alternatives had to be able to be phased; improve safety for all modes; accommodate the commercial district and provide access to businesses; accommodate alternative modes such as pedestrian, bicycle, and transit; and minimize property displacement. The phasing and safety criteria were both thresholds and evaluative criteria. All alternatives had to improve safety and be implementable in phases.

The SWG finally reached consensus on a list of 26 evaluation criteria, including performance measures for each one (see Table 1). Where feasible, measurements were quantitative, such as acres of wetland impacts or number of business displacements. Other measurements were qualitative, such as establishing a high, medium, or low scoring scale

**Table 1. Consensus List of Evaluation Criteria**

<b>Evaluation Criteria</b>	<b>Measure</b>
<b>A. Cost</b>	
A1. Total project cost	Total construction cost in dollars (includes order-of-magnitude estimates for allowable right-of-way property acquisition, engineering, construction, and mitigation costs)
<b>B. Transportation and Safety</b>	
B1. Bicycle, pedestrian, wheelchair facility connectivity	High, medium, or low based on improved mode links and desirable characteristics of system
B2. Bicycle, pedestrian, wheelchair facility safety	High, medium, or low based on reduction of conflicts and separation of modes
B3. Accommodation of transit	High, medium, or low based on provision of safe multimodal facilities and relative preference over autos

*continued*



**Table 1. Consensus List of Evaluation Criteria (continued)**

<b>Evaluation Criteria</b>	<b>Measure</b>
B4. Motorized vehicle safety	High, medium, or low based on meeting appropriate design standards, reducing the number of or separation of conflicting movements, improvement in transportation operations of transitions, etc.
B5. Mobility at intersections and ramps	Number of locations exceeding Oregon Highway Plan volume-to-capacity standards and local level-of-service standards
B6. System delay	Cumulative system delay in total vehicle hours
<b>C. Natural Environment</b>	
C1. Air quality	Number of intersections within study area exceeding volume-to-capacity ratio of 0.9
C2. Water quality	Square feet of impervious surface added
C3. State and federal threatened and endangered species and high-quality wetlands	Acres of affected critical habitat
C4. Other wetlands	Acres of affected wetland area
<b>D. Implementation</b>	
D1. Construction phasing costs	Net present value in dollars of construction and maintenance and operations
D2. Safety improvement from B2 and B4 in the first phase	High, medium, or low based on percentage of total conflicting movements eliminated in first phase
D3. Ability to defer residential and business property impacts as determined in E1, E3, E7 to later phases	Percentage of displacement and nondisplacement impacts in the first phase
<b>E. Human Environment</b>	
E1. Business displacements	Sum of the products of the number of employees and market value (from the county assessor's files) of displaced businesses
E2. Access change to existing business	Linear feet of change in travel distance to and from the freeway to existing, remaining businesses in the Gateway/Beltline intersection vicinity
E3. Business property impact, nondisplacement	Mean percentage of acres lost by nondisplaced business properties influenced (The total number of existing nondisplaced business properties impacted will also be provided as additional information.)
E4. Historic property impacts	Number of identified "potential" National Historic Eligible Properties weighted by the extent of impact—loss, relocation, neither
E5. Loss of potential future industrial development	Vacant industrial acres removed from inventory for right-of-way
E6. Loss of potential future commercial development	Vacant commercial acres removed from inventory for right-of-way
E7. Residential property displacements	Number of residents displaced for right-of-way
E8. Residential property impacts, nondisplacements	Total acres of acquired nondisplaced existing residential properties removed for right-of-way (e.g., strip taken of a portion of front- or backyard)
E9. Loss of potential future residential development	Acres of vacant property zoned residential removed from land inventory for right-of-way
E10. Residential noise	High, medium, or low based on volume, speed, distance, elevation, length of frontage, distance roadway moved closer/farther away, etc., in relation to 20-year "no-build"
E11. Neighborhood cohesion	Number of residential areas split/bisected
E12. Light/glare impact to neighborhoods	Linear feet of changed roadway adjacent to residential-zoned properties and motels/hotels

based on relative desirable characteristics such as the connectivity of bicycle/pedestrian/wheelchair facilities and accommodation of transit. The BDT approved the evaluation framework as recommended by the SWG.

#### Step 4: Formulation of Alternatives

The I-5/Beltline Interchange Facility Plan examined a broad range of alternatives and the steering committee suggested additional alternatives at the end of the process. At the initiation of the I-5/Beltline EA, engineering and planning representatives from ODOT, Eugene, Springfield, Lane County, Lane Transit District, and the Lane Council of Governments held a functional planning workshop to validate the results of the facility plan. The results of this analysis identified a family of potential alternatives for the interchange, but the intersection treatments were less conclusive. Using AASHTO's functional planning methodology for geometric design and ODOT's standard traffic modeling processes, the group developed three categories of interchange forms and 11 interchange concepts. These results became the starting point for the SWG's formulation of alternatives.

Before the SWG began reviewing alternatives, ODOT provided the group with training on the basic principles of interchange design. Using single-line drawings superimposed on aerial photos, ODOT provided the SWG with 10 alternatives for their initial consideration, and the group suggested additional alternatives. This process uses a sketch planning method that starts with pictures on maps. Hand drawings increase the accuracy of the sketches, and the drawings are then transferred to a computer. It is a valuable process with rigorous curvature and geometric standards, but strong visualization. At this stage, the SWG considered these conceptual plans an appropriate level of detail for comparing the alternatives against the threshold criteria. The interchange alternatives were grouped into three categories relative to form and function. The categories included the following:

- Free-flow alternatives: Free flow of traffic in all directions at higher speeds.
- System/service alternatives: Would treat Beltline west of I-5 as a freeway and Beltline east of I-5 as an arterial street.

- Split-form alternatives: Tailored to meet the system requirements of Beltline west of I-5. I-5 access to the east would occur through signalized intersections.

The SWG identified two options for the Gateway/Beltline intersection: grade separated or at grade. The grade-separated option had five possible alignments to physically separate Gateway Street and Beltline Road. The at-grade option had three alternatives for keeping Gateway Street and Beltline Road physically connected. The group then considered the travel characteristics and benefits of each option. SWG members requested that ODOT formulate the geometric design of alternatives to consider the unique standards for truck traffic in Oregon, which allow longer and heavier vehicles than other states. Before the public presentation, ODOT technical staff refined the alternatives, giving SWG members the option of participating in the effort.

At the second public meeting, conducted in a workshop format, citizens provided input on the proposed alternatives and suggested additional alternatives. SWG members actively participated in facilitation of the discussions and answered questions.

Major issues identified from the public meeting included the following:

- Patrician Mobile Home Park residents were very concerned about losing their homes. Those attempting to sell their homes were having difficulty because of uncertainties about the impacts of the project.
- The public had difficulty understanding the written materials and line drawings.
- Participants did not have enough time to absorb the information.
- Participants had difficulty connecting alternatives with specific impacts.
- Participants wanted the opportunity to mail back comments.
- Participants supported the need to fix problems identified on the maps.
- Impacts to businesses from a grade separation of Gateway and Beltline were more of an issue than the grade separation itself.

## Step 5: Threshold Screening of Alternatives

The BMT applied the threshold criteria to the interchange alternatives and presented the results to the SWG for review. The SWG reviewed the information and discussed each category. One alternative was dismissed and six were determined infeasible. In addition, the BDT eliminated one other alternative because of concerns about the impacts to the Patrician Mobile Home community.

The decision to eliminate one alternative followed a 9-to-5 vote by the SWG that, according to the protocols, was a consensus decision because the dissenting members indicated that they could tolerate the majority opinion. However, at least one member felt pressured by the group to reach consensus.

For the threshold screening of the intersection options, the SWG preferred to evaluate at-grade intersection combinations first. If they failed to meet the threshold criteria, then the grade-separated options would be evaluated. Otherwise, the at-grade options would automatically be forwarded to the evaluation phase. Because of extensive commercial and residential impacts, the minority report in this step favored elimination of all grade-separated options and consideration of only one at-grade option for the Gateway/Beltline intersection. The Gateway Owners for Positive Change (GOPC), a group composed of Gateway-area business and residential property owners, expressed their concerns throughout the project about potential economic impacts and disruptions to traffic movements in the Gateway area. GOPC stated that it would endorse only one at-grade intersection option.

Following determination of feasible interchange alternatives, the BMT used a quantitative approach to pair interchange/intersection combinations for evaluation. The quantitative method considered the operations of the Gateway/Beltline intersection with and without other local roadway improvements to determine if the 20-year design-life threshold could be met. The intersection option, favored by GOPC, did not meet the 20-year design-life threshold and was eliminated.

After elimination of the GOPC alternative, the BMT worked in collaboration with an engineer

hired by GOPC to identify options for a conventional intersection that would avoid displacement of businesses and meet the threshold criteria. The resulting alternative complied with GOPC's view that right-of-way acquisition would be acceptable if it did not cause a business or residential displacement; access consolidation would be acceptable; and circulation and travel patterns would be well signed to accommodate the movement of truck traffic to access industrial properties. This new intersection alternative was included in the range of alternatives recommended to the BDT.

The BDT concurred with recommended interchange alternatives, but it eliminated intersection options that would result in the displacement of residents in the Patrician Mobile Home Park. The justification was to provide residents in the mobile home park a measure of certainty during their retirement years. The final range of alternatives approved by the BDT included 20 combinations of five interchange forms and six intersection forms.

## Step 6: Selection of Alternatives for the EA

Following approval of the range of alternatives in Step 5, ODOT began the process of narrowing the list of alternatives by applying the evaluation criteria.

### *Data Collection*

First, technical staff conducted data collection to serve two purposes: for screening alternatives against the evaluation criteria and later for the EA analysis. Literature reviews and field reconnaissance surveys assisted in the quantification of impacts to the natural and social environments. Local land use plans and statewide planning goals were also reviewed to understand existing and planned land use. Census data were used for the socioeconomic analysis. ODOT used the Statewide Implementation Plan, which is approved by the Oregon Environmental Quality Commission, the U.S. Environmental Protection Agency, and the Lane Regional Air Pollution Authority to document air quality conformity. ODOT technical experts also took noise measurements at 28 residential and business locations near the I-5 interchange and Gateway/Beltline intersection.

### Performance Rating

These data were used to analyze the 20 alternatives against the 26 evaluation criteria. A performance rating was developed for each alternative against each criterion. Because they provided no differentiation among alternatives, two of the 26 criteria, historic resources and neighborhood cohesion, were eliminated from the analysis after the data collection. A third criterion, impacts to critical habitat, was also eliminated because of the time and level of effort required to collect the necessary data. However, based on a windshield survey and review of listed species, no fatal flaws for critical habitat were identified for any of the alternatives.

Ratings for each criterion were normalized on a scale of 1.00 (best) to 0.00 (worst) to create comparable data for use in the ranking calculation. The BMT and other technical staff provided the SWG with the methods used to rank the alternatives. The technical staff created the rankings through a variety of mathematical quantitative analyses using the extensive data collected. ODOT held an open house for SWG members where technical staff members were available to answer questions regarding the ratings and explain the differences among alternatives.

### Criteria Weighting

The SWG established a weight for each criterion to determine its relative importance. A nominal group technique was used in a workshop setting for this exercise. First, weights were set for the broad criteria categories (Figure 6), and then for each criterion within each category.

### Alternative Ranking

Following the SWG's weighting workshop, the performance ratings and the relative weights were entered into an interactive decision-making support tool, Criterium DecisionPlus. The software displays the calculated ranking of the alternatives. On the basis of an analysis of the contribution of each performance measure to the ranking outcome, six criteria were shown to be the most significant in affecting the ranking of alternatives: total project cost, business displacements, motorized vehicle safety, construction phasing costs, safety improvements, and mobility at intersections.

### Sensitivity Analysis

Using the decision software, the SWG performed a sensitivity analysis. The group used test scenarios to

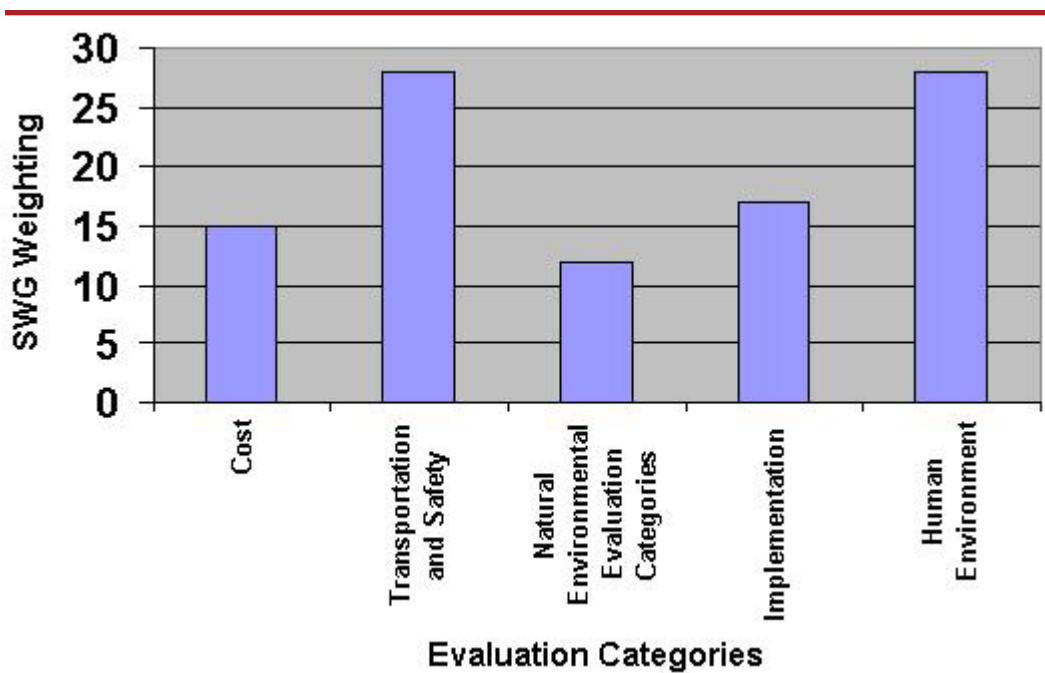


Figure 6. Relative weights.

determine potential effects on the alternative rankings. Sensitivity testing focused on three of the SWG's main concerns: cost, mobility, and safety. What-if scenarios were used to examine combinations of the six criteria related to these topics. For example, "What if cost were not a factor, where would the alternatives rank?" This process verified that there were no data outliers disproportionately affecting any of the performance ratings.

After reviewing the ranking results, the SWG decided to seek public opinion on the top-ranked alternatives before making a recommendation to the BDT on the alternatives for the EA. ODOT held a public open house to present the SWG's eight highest-ranked alternatives. Afterward, the SWG evaluated the public comments and recommended one interchange alternative and three Gateway/Beltline intersection options for analysis in the EA. The BDT approved this recommendation.

## Step 7: Environmental Assessment

### *Alternative Refinement*

Following the public open house, the SWG and the BDT provided ideas for the refinement of the build alternative and intersection options for evaluation in the EA. Recommended refinements included the following:

- Definition of right-of-way requirements and property impacts, and access management;
- Development of a bicycle and pedestrian structure crossing I-5 to provide a safe, nonmotorized connection between the Willakenzie neighborhood and the commercial district;
- Development of a mitigation strategy to minimize light and glare impacts on neighborhoods adjacent to the highway;
- Determination of the locations for sound walls and retaining walls; and
- Formulation of a "best case" conventional intersection with all movements at the Gateway/Beltline intersection.

### *Alternatives Analysis*

The no-build alternative provided a benchmark against the build alternatives. In addition to the build alternative discussed above, the EA analysis also included transportation system management measures, such as ramp metering, high-occupancy vehicle lanes, and optimization of traffic signal timing. ODOT also considered transportation demand measures, ride-sharing, bus rapid transit, and mass transit, and found that these did not meet the purpose and need or were already available through the Lane Transit District.

The EA showed that impacts to the natural environment were not a major factor because the land surrounding the interchange was already built. Impacts to low-quality wetlands and to water quality from storm-water runoff were the key issues, and the EA included conceptual mitigation plans for them.

Expected impacts from the project were primarily to the human environment. Major issues included noise impacts to residences and several nearby hotels, induced development, and business and residential relocations. ODOT recommended noise mitigation in the form of sound walls for several locations, with the final decision on the installation of sound walls to be made on completion of project design and the public involvement process. Concerns about induced land use changes were addressed in the EA by matching transportation modeling with adopted land use plans and the Lane Council of Governments TransPlan model. Acquisition of property needed for right-of-way had to comply with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act, but displacements remained a concern.

With the input of the SWG, ODOT reduced or eliminated some of the issues that were initially controversial, such as impacts to the Patrician Mobile Home Park and nearby businesses, through examination of a range of alternatives and design refinements. Benefits of the project as identified in the EA included reduced congestion and improved mobility and safety of the I-5/Beltline interchange.

FHWA and ODOT approved the EA in spring 2002, and the public provided comments during

a 45-day public comment period that included a combined open house and public hearing. ODOT received 306 written and oral comments. Of the comments that indicated a preference, nearly all preferred the no-build alternative as their first choice. Most of the comments generally supported the I-5/Beltline interchange improvements but continued to express concerns that impacts from all of the Gateway/Beltline intersection options were too great. Additionally, public comments included substantial concern about noise levels in two neighborhoods where sound walls were not proposed. Others indicated that the EA did not adequately address other projects and growth in the study area.

The SWG reviewed a draft compilation of the public comments and ODOT's responses. ODOT included the public's suggestions and comments in the final version of the Response to Comments and incorporated appropriate changes into the revised environmental assessment (REA) (5).

## Step 8: Selection of Alternative and Revised Environmental Assessment

In November 2002, ODOT produced an internal recommendation report, the *I-5/Beltline Interchange Project Final Decision Document*. The report provided FHWA and ODOT decision makers with a comprehensive summary of the project history including an overview of accomplishments in Steps 1 through 7 and an analysis of the public comments on the EA with ODOT's responses. ODOT identified its preferred alternative and provided the decision document to FHWA for the final decision.

After evaluation of public comments on the EA, ODOT and the SWG identified five major remaining community issues. Evaluation of these issues by the stakeholders and related decisions by the project decision team were incorporated into the REA. The five issues included both procedural and substantive elements:

- **Noise:** Several community/neighborhood groups were concerned about traffic noise levels at their homes and nearby neighborhoods. Harlow neighborhood representatives requested either a sound wall or a peer review to verify that ODOT's noise

measurements and application of the noise criteria as represented in the EA were technically correct. ODOT recommended a sound wall for the Patrician Mobile Home Park in the Game Farm neighborhood. However, members of the public remained concerned that the reflected noise rebounding from the wall would increase noise levels for other Game Farm residents. As part of the REA process, ODOT stated its intention to build the sound wall and perform additional field noise measurements after completion of construction to determine additional mitigation.

- **PeaceHealth:** Early in the EA process, a new PeaceHealth hospital, originally planned for Eugene, moved to a Springfield location just east of the I-5/Beltline interchange. The Springfield site was to be a "node" or mixed-use village with limited emphasis on automobiles. Comments on the EA included concerns about impacts from increased traffic and development, and other impacts of the proposed PeaceHealth development in the Springfield location on the operation of the interchange and the adequacy of the technical work related to the land use application by PeaceHealth. ODOT's response to these concerns was perceived by some SWG members as dismissing the potential development based on process rather than dealing with the content and substance of the matter. However, ODOT did not have substantial information about the proposed PeaceHealth project and therefore deemed the department's response to community concerns to be appropriate and valid for the specific point in time during the I-5/Beltline interchange decision-making process. ODOT was obligated and stated its intention to respond to PeaceHealth issues, and specifically to the developer's application, through the land use process. The hospital was constructed in Springfield and is now open.
- **Phase 2 Implementation:** ODOT and FHWA opposed the SWG recommendation on the preferred alternative because of particular language concerning Phase 2 implementation. After negotiation and clarification, ODOT was able to shift its project design responsibilities from the state to the City of Springfield, which would then take primary responsibility for implementation regarding the

- Gateway/Beltline intersection as a city street.
- **Intergovernmental Agreement (IGA) Process:** Modified Phase 2 implementation language proposed by ODOT introduced the need for an IGA. The purpose of the IGA was to specify performance criteria (triggers) for the implementation of Phase 2 improvements acceptable to FHWA, ODOT, and Springfield. FHWA stated that it could not approve an REA without this IGA to ensure safety and operational effectiveness of the improvements. All parties signed the IGA before FHWA approval of the REA.
  - **Transportation Improvement Costs:** FHWA could not take action on the I-5/Beltline interchange until the REA and local plans were consistent with either a “build” or “no-build” decision. Although TransPlan incorporated the interchange project, the plan allocated fewer dollars to it than needed to construct all three phases of the preferred alternative. However, only project Phases 1 and 2 were needed to meet safety and operations goals during TransPlan’s 20-year planning period. The estimated project construction costs of Phases 1 and 2 were within the construction amount allocated in TransPlan. Therefore, FHWA was able to conclude that the project was consistent with TransPlan policies as well as with land use and transportation modeling assumptions. ODOT will add Phase 3 of the project to TransPlan during future periodic reviews and updates.

The REA provided responses to public comments and related revisions to the EA, and documented consistency with state and local land use plans. The REA also described the impacts of the preferred alternative and conceptual mitigation measures, including wetland mitigation plans. The U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers reviewed the conceptual wetland mitigation plan proposed in the REA. ODOT completed final wetland mitigation plans during the final design process and submitted the application for the permit required by Section 404 of the U.S. Clean Water Act and the Oregon Revised Statutes before starting construction of Phase 1.

With the SWG’s input and the BDT’s approval, the REA identified the interchange build alternative

and Option 3 for reconstruction of the Gateway/Beltline intersection as ODOT’s preferred alternative. The REA and the finding of no significant impact (FONSI) were submitted together to FHWA, which approved them on July 2, 2003, thus completing the eight-step decision-making process.

## LESSONS LEARNED

Oregon law requires public participation in land use planning. Oregon Administrative Rule 660-015-0000 (6) requires the governing body, in this case ODOT, “to develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process,” including outreach, communications, financial resources, and substantive citizen influence. Between 1996 and 2000, ODOT developed a facility plan that met the basic statutory requirements, but the recommended alternative resulted in strong opposition from local governments and citizen stakeholders. Jurisdictional issues, as well as philosophical ones, made the project particularly complex. Governmental responsibility was split among the federal government, state government, one county government, and two local cities. ODOT recognized that a new approach would be needed to complete the EA successfully. The I-5/Beltline decision process and development of performance measures based on stakeholder values were successful in achieving consensus and identifying a solution.

### **Stakeholders: Perspectives and Influence**

However, as is common with complex projects such as the I-5/Beltline interchange EA, stakeholders had conflicting perspectives about whether particular factors were considered a success or a barrier, which often depended on the agency’s or organization’s mission. The stakeholders’ disparate goals made it difficult for everyone to come away from the table feeling their interests had been fully addressed.

### ***Strategic Plan to Move Past Ardent Disagreements***

The structured approach to identifying stakeholder issues, developing performance measures, and

sharing decision-making responsibility with local and county governments allowed ODOT to move past the ardent disagreements on the alternatives recommended in the facility plan and to reach consensus on a solution that met the needs of most stakeholders. In the beginning, few thought this would be possible. Fundamentally, the SWG gave this project its context sensitive solutions (CSS) component; the locals were able to provide the local context for this project through the development of evaluation criteria and performance measures based on community values.

### ***Opponent Involvement and Other Early, Creative Stakeholder Involvement***

ODOT recognized the importance of early involvement of all affected parties, including opponents, and made them stakeholders in the project. To initiate the process, ODOT and CH2M HILL conducted a survey of known stakeholder representatives to gather input on project issues, scope of work, decision making, and public and agency outreach. These representatives then became a part of the SWG, ensuring that the final decision included input and consideration of their issues and ultimately reducing public opposition to the I-5 Beltline interchange project.

### ***Formal Agreement on Decision-Making Process***

The BDT members signed an agreement that established protocols for communications and decision making. The BDT also made decisions by a majority vote with written documentation of minority opinions. Limiting the size of the BDT to five members made it easier to reach consensus, but it would have been more efficient if all members had been given the authority to make final decisions without having to go back to their respective agencies for final approval.

Similarly, each member of the SWG agreed in writing to a set of protocols for communication and decision making, which created an atmosphere of inclusion and, eventually, trust. The protocols formalized the process for decision-making authority and ground rules for meetings, including turning off cell phones during meetings, meeting attendance requirements, defining roles and responsibilities in

the process, agreeing to keep an open mind and be respectful of others' points of view, and agreeing on how to include minority opinions when the committee could not reach consensus.

From the group's inception, the SWG understood that it was an advisory committee. Everyone in the SWG had the opportunity to voice his or her concerns even when he or she did not necessarily agree with a particular decision. The BDT assured the SWG that BDT would listen to SWG's concerns and recommendations before making a decision. As the SWG undertook various tasks, members became integrated into the group setting of respectful discourse and deliberation.

All SWG members participated and contributed to the meetings, and the CH2M HILL facilitator kept any one person from dominating the discussions. At each decision point, decisions were majority vote with dissenting opinions documented in a minority report, which was provided to the BDT before making a final decision. This not only allowed everyone to have his or her issues considered but it also kept the process from getting stuck on any particular issue.

Nevertheless, there were considerable questions about the fairness of the composition of the SWG, with some group members stating that their issues were not equally addressed. The SWG's membership heavily favored transportation planning and engineering professionals and included very few volunteer community members. The group included one representative from each affected neighborhood and no representatives from environmental resource agencies. Some members felt that the majority was predisposed to an outcome primarily driven by economic development or AASHTO engineering design standards. An additional barrier to greater community involvement was the meeting day and time on Tuesday afternoons, which is an inaccessible time for many citizens.

### ***Shared Decision Making***

The I-5/Beltline interchange project was ODOT's first experience with this type of shared decision-making process, although CH2M HILL had previously used similar processes. The process was unique for this



project, and it brought together people who held very polarized positions when the process began. One of the most unusual aspects of this project was the shared power on the BDT. Membership was majority ruled by the local governments. Collectively, Lane County, Springfield, and Eugene's views outweighed those of the state and federal governments. It is unusual for local governments to have this much influence when they are not funding the project. From the local perspective, it was critical to have elected officials make decisions affecting the community; from ODOT's and FHWA's perspective, they held responsibility for addressing the transportation needs of nonlocal motorists as well as local stakeholders.

Nevertheless, when FHWA and ODOT disagreed with the local stakeholders on the design of the Gateway/Beltline intersection, ODOT followed the BDT protocols, and submitted a minority report in support of a grade separation at the Gateway/Beltline intersection. Statutorily, FHWA and ODOT held responsibility and authority for making final decisions on the preferred alternative and could have required a grade-separated intersection, but without local support, the project would have ended in a stalemate. Local officials held accountable by their constituencies felt responsible for making decisions in the best interest of their citizenry. When it came to selecting a preferred solution for the Gateway/Beltline intersection, decision-making authority became a point of contention between FHWA/ODOT and the local governments. Since the I-5/Beltline interchange project, ODOT no longer uses the title "decision team" for similar advisory committees, to eliminate confusion as to who is responsible for making decisions and who is responsible for providing input and making recommendations.

Although not all parties were happy with the final decision, nearly all participants in both the BDT and the SWG agreed that the process worked well and felt that it resulted in a more transparent decision-making process. Stakeholders remarked that if ODOT had started this structured decision-making process during development of the facility plan, the EA would have been completed much sooner, thereby reducing the opportunity for the buildup of distrust and confusion. ODOT has since replicated the

structured decision-making process on other projects, most notably the Willamette Bridge renovation north of Eugene.

### *Establishing Threshold Criteria*

The existence of criteria to determine if an alternative was feasible, developed through a public process before alternatives were developed, proved to be important. Local business interests favored an intersection alternative that had no impacts on existing businesses. Analysis of this alternative showed that it would not meet the threshold criterion relating to FHWA's policy requiring that projects meet needs for a 20-year planning period. The favored alternative would meet needs for part of the period, but not all of it. Only after the alternative was eliminated did that stakeholder group give up its positional bargaining and engage in active problem solving to develop an alternative that could be forwarded for further analysis.

### *Decision Support Software*

A key element of the decision-making process was the decision support software, Criterium DecisionPlus, which used a multicriteria utility analysis to evaluate and compare alternatives on the basis of community values as represented by the SWG. The decision support software helped keep the focus on the objectives of the project and incorporated stakeholders' values into the decisions. The SWG developed criteria driven by its interests, and the weighting process helped the group focus on the issues of importance to the community. As a result, the SWG did not waste time on issues that were unimportant or that would not change the performance of the alternatives. Ultimately, this approach to decision making enabled sharply divided jurisdictions to develop shared ownership in the process and the outcome.

Conversely, some SWG members felt strongly that the weighting process did not represent a fair balance of community values and engineering criteria. According to these members, the weighting process put more emphasis on the technical and engineering aspects and therefore, they believed, predetermined the outcome. Additionally, some also thought the selection of the SWG members was

a kind of weighting in itself because the number of transportation professionals outnumbered non-transportation representatives. Those members who were in the minority were also in the minority when the group voted on the relative weight of the criteria. Thus, those members believed that their input was less influential.

The SWG used information from the decision software to aid its discussion about which alternatives should be forwarded for evaluation in the EA. Specifically, the tool was helpful in identifying those alternatives that least met community values (the lowest scores) and those few that merited more consideration (the highest scores). The tool supported discussion, but the evaluation results were not viewed as “the answer.” The SWG’s recommendations resulted from creating hybrids of several options that scored well in the evaluation.

## Success Factors

### *Early and Continued Involvement of Stakeholders and a Transparent Decision-Making Process Resulted in Community Acceptance of the Project*

ODOT and CH2M HILL took several steps to overcome public opposition by bringing together a diverse group of local officials, neighborhood and business representatives, and technical experts that collectively represented federal, state, and local interests, including supporters and opponents of the project:

- To eliminate surprises at the end of the process, CH2M HILL conducted stakeholder interviews to identify all the community issues before beginning the NEPA analysis.
- SWG members participated in public meetings, presented the outcome of the SWG decisions at key decision points, and answered questions from the public. As members of the community involved in the details of the decision-making process, their active participation increased public trust.
- Using the structured decision-making process, stakeholders developed evaluation criteria and performance measurements based on community values. This process exceeded minimum NEPA requirements for public involvement and resulted

in communitywide acceptance of the project even though not everyone agreed with the solution.

- ODOT formalized a hierarchical public involvement process with defined roles and responsibilities for each project committee, with ground rules governing conduct for each. The committee groups developed these protocols in their initial chartering sessions, and all members signed them as the first step in their involvement in the project development process.
- The I-5/Beltline interchange was one of the first EAs to be uploaded for comment and viewing on the ODOT website, which increased opportunity for public participation.

### *Site Visits to Reach Common Understanding of Engineering and Community Issues*

The second key decision point for the SWG was development of the transportation problem that would later become the basis for the purpose-and-need statement in the EA. SWG members disagreed about how well traffic model results represented actual site conditions. To help reach a common understanding of both the traffic problems and community concerns, the SWG embarked on a field trip to the intersection to understand the interplay between actual traffic volumes, signal timing, left-hand turn opportunities, signage, pedestrian access, and the impacts of different alignments on private and commercial properties.

### *Use of Aerial Photos*

Another tool involved switching from engineering line sketches to full aerial pictures with markers. Overlaying the alternatives on the aerial photos helped all of the SWG participants visualize the community impacts of the project. For example, it was easy to see how a turn radius that met design standards also had important impacts on a local hotel.

### *Training in Transportation Terminology to Facilitate Maximum Participation by Laypersons*

Before technical discussions to develop the definition of the problem, the range of alternatives, and screening of the alternatives, ODOT and CH2M HILL provided the SWG with training and information

in lay terms so that everyone could participate in the discussions.

### ***Adding to Resource Agency Capacity to Streamline the Clearance Process***

For more than 5 years, ODOT has funded positions at a number of the resource agencies; this staff has become an extension of the ODOT team. The staff functions as a liaison to prioritize ODOT projects, review the accuracy of ODOT's work, and ensure that the resource agencies have staff capacity to provide consistent and timely clearances. These staff work only on ODOT projects; thus, their focus is on providing the opportunity to build good working relationships, increasing understanding of transportation and resource agency processes, and raising trust between ODOT and the agencies.

### ***Seasoned Consultant Staff and the Beltline Management Team***

Interviewees consistently praised CH2M HILL for keeping the SWG on task and moving through the decision-making process. CH2M HILL conducted well-organized meetings, provided review materials on time, and translated technical information into understandable terminology for committee members who were unfamiliar with the transportation project development process. The CH2M HILL facilitator did not allow anyone to dominate conversations—everyone was encouraged to participate. CH2M HILL clearly laid out the decision points and did not allow the process to proceed until the SWG reached consensus. Because the process focused on stakeholder needs and not solutions, members were able to give up positions or stances and focus on development of an inclusive list of evaluation criteria that was agreed on by all committee members. Stakeholders noted that the process took a lot of time up front, but the time was well spent to reach consensus and likely prevented a legal challenge in the long term.

## **Barriers and Solutions**

### ***Neighborhood Noise Impacts***

Traffic noise impact to adjacent neighborhoods was a defining issue. The EA analysis showed that

the neighborhood areas did not meet the threshold criteria for mitigation, specifically sound walls. The Harlow neighborhood questioned the adequacy of ODOT's analysis, requested an independent analysis, and threatened to sue ODOT to obtain sound walls. At public meetings, the neighborhoods overwhelmingly favored the no-build alternative. In fact, of the 306 public comments on the EA, 252 indicated that the no-build alternative was their preferred alternative. (However, not all no-build preferences were related to noise impacts.) Nonetheless, ODOT could not set a precedent for constructing sound walls that did not meet the federal abatement criteria. However, further analysis of construction impacts showed that noise mitigation was warranted for one of the neighborhoods. For the remaining areas, ODOT agreed to perform postconstruction noise-level measurements. If the area met the federal criteria for noise mitigation, ODOT either included the mitigation in a subsequent phase of the I-5/Beltline interchange project or constructed sound walls as a separate project, depending on timing and funding. ODOT's agreement to conduct a postconstruction noise analysis and commitment to mitigation, if warranted, was a uniquely creative solution to overcome significant public opposition.

### ***Gateway/Beltline Intersection***

ODOT and FHWA could not reach consensus with the SWG on the preferred alternative for the Gateway/Beltline intersection. For ODOT to meet AASHTO design standards for the intersection, a number of businesses would have to be displaced—an impact strongly opposed by the community. The challenge was to balance the competing priorities of businesses and residents with FHWA and ODOT's responsibility to ensure safety and operational effectiveness of the I-5/Beltline interchange for the traveling public. Indeed, the issue required resolution before FHWA could approve the REA and the FONSI. Through an innovative IGA, ODOT and FHWA shifted the project design responsibilities to the City of Springfield. The IGA specified performance criteria (triggers) to determine when improvements of the Gateway/Beltline intersection would be required. Under the IGA, ODOT and Springfield

agreed to monitor traffic conditions. When the conditions meet the performance criteria, the city is obligated to begin design and construction of the intersection improvements. The city is responsible for all construction costs and compliance with all applicable regulations. FHWA could not approve the FONSI without this agreement.

### ***Conflicting Local Land Use Planning Objectives***

The I-5/Beltline interchange project is located within the Eugene/Springfield urban growth boundary (UGB). The cities of Springfield and Eugene have philosophical and political differences about land use planning objectives. Eugene is concerned about induced growth and sprawl and does not want to press the urban growth boundaries. The primary issues for Eugene are noise in the neighborhoods, a strong desire to reduce reliance on the automobile for local trips with improved connectivity of off-roadway bicycle and pedestrian facilities, and preservation of open space. In Springfield, however, the interchange is an important commercial area and employment center designated for future growth. These differences led Springfield to petition the state legislature for control of its own UGB independent of Eugene.

Through the collaborative decision-making process, the SWG and the BDT developed good working relationships, and once into the details of the project, they discovered common ground between the two communities to reach consensus on the preferred alternative. Common concerns about noise impacts and the relocation of businesses and residences brought the communities together in support of a solution that reduced community impacts.

### ***Lack of Understanding of Federal Requirements for NEPA and Right-of-Way Design Standards Versus Community Impacts***

A major obstacle was whether to use state or local standards for design of roadways at the junction of interstate and local roads, specifically the Gateway/Beltline intersection. Use of state standards would have increased the footprint and required acquisition of large amounts of right-of-way and removal of residential and commercial access points. Springfield has different acceptable levels of performance than

ODOT and FHWA standards, and the city was willing to accept higher levels of congestion to avoid additional impacts to businesses and residents. Local stakeholders became frustrated with what they perceived as ODOT's and FHWA's rigid right-of-way requirements, design standards, and the extent to which these could preclude community concerns. One stakeholder stated that early and better education with regard to federal and state requirements and procedures might have helped avoid some of the conflicts.

## **Innovative Solutions**

### ***Documented Concurrence of Consistency with Federal, State, and Local Land Use Plans and Policies***

Initially, the PeaceHealth hospital was to be located in Eugene near available transit facilities. However, early in the EA process, PeaceHealth changed plans, intending to locate the hospital in an area without access to transit. PeaceHealth had not completed development plans, including a traffic analysis, at the time the REA was being completed. This was problematic because Oregon law requires that land use planning and transportation planning be integrated, and FHWA required the REA to confirm that the preferred alternative was consistent with regional and local land use plans before the FONSI could be approved. The EA had identified impacts to land use, but for the first time in this format, the REA included a detailed analysis and documented consistency with the 17 applicable land use plans. ODOT then obtained concurrence letters from all three jurisdictions and FHWA to document the coordination agreement. This was the first time ODOT obtained written concurrence on a project's consistency with local and state land use plans. Now, as a matter of practice, ODOT collaborates with local planning agencies during the NEPA process and requires the agencies' written concurrence with land use plans.

### ***Final Decision Document***

CH2M HILL prepared the Decision Document (2), a concise but comprehensive internal document that summarized the project history, decision-making

process, public comments and responses, and all changes to the EA resulting from public comments. The Decision Document also presented the major outstanding issues and recommended resolutions used to prepare the REA. Now called a “recommendation document,” the report described the BDT’s selection of a preferred alternative and its submission to FHWA before issuance of the REA and finalization of the NEPA process. This comprehensive summary of development of the EA streamlined internal review and approval of the REA.

## SUMMARY

ODOT’s 4-year facility plan process for the I-5/Beltline interchange project concluded with strong community opposition in spite of the rapidly increasing congestion and safety issues. Related improvements needed at the nearby Gateway/Beltline intersection would require the relocation of several businesses, and neighborhoods in the vicinity had significant concerns about increasing traffic noise levels. ODOT recognized that for the project development process to be successful, the agency would need community support. CH2M HILL developed a structured decision-making process that brought an array of community stakeholders together to eventually reach consensus on a solution. Through a collaborative process, stakeholders developed a set of evaluation criteria and performance measures that included both roadway design standards and community values in the preferred alternative. Although not everyone agreed with the outcome, most stakeholders agreed that the process was successful in bringing all interests to the table and having their voices heard.

The I-5/Beltline interchange EA project is an early example of ODOT’s efforts to engage stakeholders. Partially because of this project, ODOT now has an advisory committee for all major projects. ODOT is also training project managers in a “Development of Informed Consent” process to increase public trust and reduce negative press.

Another measure ODOT has taken to improve communications with the public is the requirement for a communication plan for each project. When there are potential right-of-way impacts, ODOT sends the property owners green, yellow, and red letters. The green letter notifies the owner about the project. The yellow letter states that the property may be affected and recommends that the owner attend a public meeting. The red letter informs the property owner that the property will definitely be affected. These efforts take more time for project development staff up front but improve the efficiency of overall project schedules and reduce public controversy. ODOT believes that the department is likely to receive more funding for projects if it can complete the project development process faster.

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