



# National Environmental Policy Act

# Environmental Impact Statement Template

*May 2010*



U.S. Department of Transportation  
**Federal Highway Administration**



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## Orientation to this EIS Template

### Purpose of This EIS Template

The purpose of this document is to provide the framework for discussion expected to be contained within EIS documents produced in Oregon. **EIS authors should be fully familiar with the documents listed in each appropriate References section prior to beginning the NEPA process and the preparation of any EIS documentation.** First time users of this template should first become familiar with how the document is organized as a whole before writing specific sections of the document in isolation.

Each EIS presents a unique set of conditions and considerations for decision-making. Questions about use of this template on a specific project should be directed to your ODOT and FHWA environmental contact for the project. General questions about the use of this template should be directed to ODOT's Geo-Environmental staff and FHWA environmental staff. Current environmental contact information can be found on ODOT's e-Guide website.

### What This EIS Template Is Not

This template is not intended to be a "quick reference" guide and is not intended to be the complete, singular authoritative reference for all of the disciplines. This template is not a substitute for high quality NEPA experience.

### How This EIS Template Was Developed

In 2009, environmental staff from ODOT Geo-Environmental and the FHWA Oregon Division Office worked to develop this annotated outline. Their work was primarily based on an EIS annotated template that had previously been developed by Caltrans and the California Division of FHWA. Authors of this template also relied on the cumulative impact guidance that Washington DOT had developed.

Comments on a draft version of this document were solicited from: ODOT Region Environmental Program Managers, ODOT Region Environmental Managers, FHWA Oregon Division office staff, FHWA Headquarters environmental staff, FHWA Western Legal Services staff, FHWA Resource Center and the American Council of Engineering Companies. Many changes to the template resulted from the thoughtful comments of reviewers.

## 42 **Template Standards**

43 This template has been written in a variety of different colors to provide different alerts to  
44 the EIS document writers. Colors are used in the text as follows:

- 45
- 46 Black text = required headings that generally should be included in the EIS
- 47 document and text that should be included in document, as appropriate.
- 48 Blue text = instructions and guidance to be reviewed and considered, then
- 49 deleted from the final document. Blue **bold** text indicates special attention or
- 50 expectations of the draft and final EIS documents.
- 51 Purple text = sample text that can be used in document, as appropriate.
- 52

## 53 **How to Use This Template**

54 This template will be used to produce both the draft EIS and the final EIS. Final EIS  
55 documents will use a traditional format. The final EIS will include additional text focused  
56 on the preferred alternative and associated mitigation with that alternative. Portions of  
57 this template include **bold text** to distinguish expectations of the draft and final EIS  
58 documents.

59

60 It is important when preparing NEPA documents to be clear on what information was  
61 available and analyzed. The NEPA document should be viewed as a disclosure  
62 document. NEPA is an open process. NEPA does not require an answer that will satisfy  
63 everyone; rather, NEPA requires a well-researched and reasoned analysis based on a  
64 hard look at the best available information.

65

66 Be sure to document the assumptions and methods used to identify actions included in  
67 the analysis, the agencies and experts consulted, and any other research. It is important  
68 to identify our sources and maintain a record of methods, assumptions, and analyses.  
69 This is especially important when data are scarce.

## 70

## 71 **How is this Template Updated?**

72 Updates to this template will be considered no less frequently than semi-annually,  
73 through joint ODOT and FHWA meetings. Updates can be expected following changes  
74 to implementing statute, regulations or guidance that would affect the template. Updates  
75 may also occur as the template is used and recommendations from users are received.  
76 Recommendations for changes to the template are welcome at any time. Comments  
77 can be submitted via the EIS Template comment link on ODOT's e-Guide.

## 78

## 79 How Updates Are Conveyed

80

81 As the template is updated an errata sheet at the beginning of the document will track  
82 the date and the type of changes that were made. Additionally, the date on the bottom  
83 of pages that have updates will change to reflect the date of the change. Whenever  
84 updates are made, a notice will be provided on the e-Guide, as well as an e-mail  
85 distribution to those with NEPA responsibilities.

86

87

88 **Caltrans and WSDOT Acknowledgement**

89 The authors of this template thank Caltrans for their work developing an EIS annotated  
90 outline for use in California. Their early work provided an excellent starting point and  
91 foundation for the development of this Oregon-specific outline.

92  
93 Our thanks also extend to WSDOT for their work developing concise guidance regarding  
94 the consideration of cumulative impacts. The subject can be complex WSDOT's efforts  
95 to provide right-size guidance provide the backbone of our cumulative impacts section.

96

Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined: Web links

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100 -----THE EIS TEMPLATE BEGINS HERE-----

101 The cover to the EIS document should include the following information:

- 102 1. Complete project title, Federal-Aid number, ODOT Key number, FHWA EIS  
103 Identification Number
- 104 2. Indicate whether the document is the Draft Environmental Impact Statement or  
105 Final Environmental Impact Statement. If the Environmental Impact Statement is a  
106 supplemental, it should be stated. Indicate if the EIS version is Preliminary Draft or  
107 Administrative Draft as outlined in ODOT's quality control review procedures (this  
108 guidance is available on the Geo Environmental website).
- 109 3. Date (Month, Year)
- 110 4. Logos of ODOT, FHWA and Local Agency (if applicable)

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Alternative format availability: In compliance with the Americans with Disabilities Act, alternative forms of this document will be made available on request. Contact [\[Insert ODOT EPM Name\] at ODOT \(xxx-xxx-xxxx\)](#).



162

## Cover Sheet/Abstract Page

163 Each EIS should have a cover sheet containing the following information as directed by  
164 FHWA [Technical Advisory T6640.8A](#).

165

166 [EIS Identification Number (obtained through coordination with FHWA division office)]

167

168 [Project Name]

169 [County, and State]

170 ODOT Key Number [#####]

171 Federal-Aid Number(s) [X###(###)]

172 [Draft, Final, or Supplement] Environmental Impact Statement

173 and Section 4(f) Evaluation (when appropriate)

174

175 Submitted Pursuant to 42 U.S.C. 4332 (2) (c) and where applicable, 49 U.S.C. 303

176 by U.S. Department of Transportation, Federal Highway Administration (FHWA)

177 Oregon Department of Transportation (ODOT)

178

179

\_\_\_\_\_  
[(Name), ODOT Region (#) Manager]

\_\_\_\_\_  
[(Name) Division Administrator, FHWA]

\_\_\_\_\_  
[Date of Approval]

\_\_\_\_\_  
[Date of Approval]

180

The following persons may be contacted for additional information concerning this  
181 document:

[ODOT EPM Contact]

ODOT Region [x]

[Address]

[xxx-xxx-xxxx]

[FHWA Division Office Contact]

Federal Highway Administration

530 Center Street NE, Suite 100

Salem, OR 97301

[503-xxx-xxxx]

182

183 An abstract for the project is included here. The abstract should be not extend beyond  
184 this page. The abstract should include a high-level description of the project, summary of  
185 major beneficial and detrimental environmental impacts, estimated total project costs  
186 and estimated construction timeline. If a Section 4(f) *de minimis* is proposed in a draft  
187 document, that proposal should be enumerated in the abstract. An example cover sheet  
188 is provided on the following page.

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191

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193 FHWA-OR-EIS-08-01-DS

194

195

**Sunrise Project: I-205 to Rock Creek Junction**

196

**Clackamas County, Oregon**

197

**ODOT Key Number 12454**

198

**Federal-Aid Number STP-C005(046)**

199

**Supplemental Draft Environmental Impact Statement**

200

**and Section 4(f) Evaluation**

201

202

Submitted Pursuant to 42 U.S.C. 4332 (2) (c) and where applicable, 49 U.S.C. 303

203

by U.S. Department of Transportation, Federal Highway Administration (FHWA)

204

Oregon Department of Transportation (ODOT)

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\_\_\_\_\_  
Jason Tell, ODOT Region 1 Manager

\_\_\_\_\_  
Phillip A. Ditzler, Division Administrator, FHWA

\_\_\_\_\_  
Date of Approval

\_\_\_\_\_  
Date of Approval

206

The following persons may be contacted for additional information concerning this document:

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Portland, OR 97209-4012  
503-731-8535

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Federal Highway Administration  
530 Center Street NE, Suite 100  
Salem, OR 97301  
503-587-4716

207

The Oregon Department of Transportation (ODOT) and Clackamas County propose to build a new, east-west oriented, limited-access highway—called the Sunrise Project—from Interstate 205 (I-205) to the Rock Creek Junction in Clackamas County. The proposed Sunrise Project would be part of the state highway network (as defined in the Oregon Highway Plan), connecting I-205, the Milwaukie Expressway, and OR 212/224. The proposed highway would have six through-lanes plus two auxiliary lanes. The proposed Sunrise Project would become the designated OR 212/224, with the existing OR 212/224 potentially becoming a county arterial. The estimated costs depend on the alternative and design option chosen. Total costs consist of right-of-way acquisition and actual construction costs. Total project costs are estimated to range from \$1,306 to \$1,605 million (in 2013 dollars). Construction is planned to begin in 2013. The project may be phased, but no plans for phasing are proposed at this time. Key issues in building the project are protecting a significant wildlife corridor and addressing noise impacts to a large residential area to the north.

219

The major beneficial impacts from the project would be significantly slowing the growth of congestion and improving safety on I-205 and OR 212/224. Building the project would support planned growth in this area of Clackamas County. Major expected impacts on the environment include the conversion of approximately 500 acres of land to highway use; the relocation of about 60 to 70 businesses and 70 residences; the creation of 175 noise-impacted residential properties; the decline of the rural visual quality around Rock Creek; the removal of about 100 acres of wildlife habitat, 32 acres of wetland, and up to three historic resources; and the creation of over 100 acres of new impervious surface.

226

Minor impacts would involve the risk of encountering hazardous materials during construction, difficulties in managing soil and embankments due to nearby landslides and wet and loose soils, the costs and disruption from moving utility facilities, a decline in visual quality around I-205 to SE 142<sup>nd</sup> Avenue, and the acquisition of 0.18 acre of the recreation field at Clackamas Elementary School.

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230

231 TO THOSE WHO HAVE EXPRESSED INTEREST IN THE  
232 [Project Name]  
233 [Draft, Final] Environmental Impact Statement  
234 [Name] County, Oregon  
235 Federal-Aid #: [X###(###)]  
236 Key No. [#####]

237

238 Thank you for your interest in the proposed [insert name] project.

239

240 The Federal Highway Administration and Oregon Department of Transportation have  
241 completed the **[Draft, Final] Environmental Impact Statement (EIS)** for the proposed  
242 project, which is attached for your review and comment.

243

244 In accordance with 23 CFR 771.123(i), comments shall be submitted in writing to the  
245 applicant or the Administration within 45 days of the availability of the DEIS unless the  
246 Administration determines, for good cause, that a different period is warranted. Thus we  
247 request your reply **within 45 days** of the date at the top of this letter. If no comments are  
248 received, it will be assumed that you do not wish to comment on this EIS.

249

250 Please mail or email your comments to:

251

252 [Name], Environmental Project Manager  
253 Oregon Department of Transportation  
254 ODOT Region [X]  
255 [Address]

256

257 [EPM Email]

258

259 A public hearing in accordance with 23 CFR 771.111(h) will be held for this project. The  
260 location, date, and time for the public hearing are shown on the cover of this document.  
261 An Open House, displaying maps and pertinent information to answer your questions  
262 about the EIS, will accompany the public hearing. Opportunities for formal testimony  
263 (oral and/or written) will be provided. Although you are encouraged to attend the public  
264 hearing, it is not required. You may submit your comments directly to ODOT as indicated  
265 above.

266

267 If you have questions or need additional information concerning the proposed project,  
268 please contact [Name] (ODOT Environmental Project Manager) at: (xxx) xxx-xxxx.

269

270 Thank you for your participation,

271

272

273 [Name]

274 ODOT Region [X] Manager

# 1 NOTICE OF DOCUMENT AVAILABILITY

2 This is a sample notice of document availability. This is **not** the notice of availability that  
3 FHWA will have EPA publish in the Federal Register to establish the public comment  
4 period. Addresses in black should be included in all notices. Addresses shown in blue  
5 are the addresses that were included for the Sunrise project. Each project should tailor  
6 the availability locations that fit the project's needs.

7 This [Draft, Final] EIS and supporting technical documents are available for review at the  
8 following locations:

9 City of Damascus  
10 19920 SE OR 212  
11 Damascus, OR 97015

12  
13 Clackamas Corner Library  
14 (near Clackamas Town Center)  
15 11750 SE 82nd Avenue, Suite D  
16 Portland, OR 97266

17  
18 ODOT Maintenance Building  
19 9200 SE Lawnfield Road  
20 Clackamas, OR 97015  
21 Camp Withycombe  
22 10101 SE Clackamas Road  
23 Clackamas, OR 97015

24  
25 Federal Highway Administration (FHWA) Oregon Division  
26 530 Center Street, NE, Suite 100  
27 Salem, OR 97301

28  
29 Oregon Department of Transportation (ODOT) Region 1  
30 123 NW Flanders Street  
31 Portland, OR 97209

32  
33 Oregon State Library  
34 250 Winter St. NE  
35 Salem, Oregon 97301-3950

36  
37 ODOT Geo-Environmental Section  
38 355 Capitol Street NE  
39 Salem, OR 97301

40  
41 These documents are also available on the project website: [Insert website]

**[Draft, Final] Environmental Impact Statement  
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191 **Executive Summary**

192 As directed in FHWA [Technical Advisory T6640.8A](#), The summary should include:

- 193 1. A brief description of the proposed FHWA action indicating route, termini, type of  
194 improvement, number of lanes, length, county, city, State, and other information,  
195 as appropriate.
- 196 2. A description of any major actions proposed by other governmental agencies in the  
197 same geographic area as the proposed FHWA action.
- 198 3. A summary of all reasonable alternatives considered. (The draft EIS must identify  
199 the preferred alternative or alternatives officially identified by the HA (40 CFR  
200 1502.14(e)). The final EIS must identify the preferred alternative and should  
201 discuss the basis for its selection (23 CFR 771.125(a)(1)).
- 202 4. A summary of major environmental impacts, both beneficial and adverse.
- 203 5. Any areas of controversy (including issues raised by agencies and the public).
- 204 6. Any major unresolved issues with other agencies.
- 205 7. A list of other Federal actions required for the proposed action (i.e., permit  
206 approvals, land transfer, Section 106 agreements, etc.).

207 At the discretion of the NEPA project development team and FHWA, the Executive  
208 Summary may also include:

- 209 1. A summary of the Purpose and Need for the proposed action and the relevant  
210 history leading up to the EIS
- 211 2. The project website address.

212 **The Executive Summary cannot be used as a substitute for the EIS itself.**  
213 **Therefore, project development teams are discouraged from distributing “stand-**  
214 **alone” copies of the Executive Summary for distribution to the public. If the NEPA**  
215 **project development team chooses to distribute “stand-alone” copies of the**  
216 **Executive Summary, they must first obtain approval from the FHWA**  
217 **Environmental point-of-contact and must include a disclaimer that the Executive**  
218 **Summary is not equivalent to the EIS.**

# 1 Chapter 1 - Purpose of and Need for Proposed Action

## 2 1.1 Introduction (Description of Proposed Action)

3 Begin the Purpose and Need section with a brief  
4 introduction that describes:

5 1. The existing facility,

6 2. The background and history of the proposed action,  
7 including:

8 a. Summarize previous relevant refinement,  
9 corridor or traffic studies

10 b. Funding and programming; specifically state that the project is included in the  
11 [agency and date] Regional Transportation Plan (RTP) and a fiscally  
12 constrained Transportation Improvement Program (TIP) if that is the case,  
13 and very generally describe the proposed action.

14 3. Describe the geographical setting of the proposal.

15 The Oregon Department of Transportation (ODOT) and Federal Highway  
16 Administration (FHWA) propose to improve the uphill segment of Highway ## in  
17 ABC County from west of Highway ## south to east of the River Causeway near  
18 Interstate ##. The total length of the proposed action is 2.1 miles. The alignment  
19 of the existing roadway imposes driving restrictions such as limited sight distance  
20 and difficulties in negotiating sharp curves. Figures 1 and 2 show project location  
21 and vicinity maps.

22 This proposed action is included in the FY 2010/2013 Statewide Transportation  
23 Improvement Program (STIP). It is also included in the (identify appropriate MPO)  
24 2010 Regional Transportation Plan (RTP) and the 2010 fiscally-constrained  
25 Transportation Improvement Program (TIP).

26 4. Include a proposed action location map (state of Oregon with location inset) and  
27 vicinity map which shows project features and clearly identifies the limits of the  
28 proposed action. The vicinity map should identify major street names and  
29 prominent landmarks (i.e., community center, museum, library, natural features),  
30 especially those mentioned in the text.

## 31 Purpose and Need Statement

32 The Purpose and Need is focused on the core transportation problems to be addressed,  
33 while the Goals and Objectives consider non-transportation factors (e.g., quality of life,  
34 local land use plans, aesthetics, etc.) important to the local community and other  
35 stakeholders.

36 It is critical that the Purpose and Need statement is written so that the proposed action  
37 and its alternatives have logical termini and independent utility. CEQ NEPA

### Chapter 1 Content:

- 1.1 Introduction (Description of Proposed Action)
- 1.2 Purpose of the Proposed Action
- 1.3 Need for the Proposed Action
- 1.4 Goals and Objectives

38 implementing regulations prohibit “segmentation” of a proposed Federal action into  
39 smaller components for simplicity of analysis (and other reasons). FHWA/FTA NEPA  
40 implementing regulations (23 CFR 771.111 [f]) require that the action evaluated:

- 41 1. Connect logical termini and be of sufficient length to address environmental  
42 matters on a broad scope
- 43 2. Have independent utility or independent significance (be usable and be a  
44 reasonable expenditure even if no additional transportation improvements in the  
45 area are made)
- 46 3. Not restrict consideration of alternatives for other reasonably foreseeable  
47 transportation improvements.

48 The Purpose and Need statement sets the stage for development and consideration of  
49 reasonable alternatives and is a refinement of the initial Problem Statement (sometimes  
50 developed during the Planning phases). It will be used to guide the development of  
51 alternatives and it will be a fundamental element when developing criteria for selection  
52 among alternatives. The Purpose defines the transportation problem to be solved. The  
53 Need discussion provides data to support the Purpose.

54 The Purpose statement is *function*-based versus *solution*-based meaning—make sure  
55 that the Purpose and Need is broad enough and addresses the transportation function  
56 needs to allow for consideration of more than one solution but specific enough so that  
57 the range of alternatives can be focused. This will allow consideration of alternate  
58 alignments, design variations and other modes. This is a key concern of resource  
59 agencies reviewing the Purpose and Need statement; developing an appropriate  
60 Purpose and Need will avoid delays and help streamline final design and permitting  
61 later.

62 Other ODOT documents such as the Prospectus Part 3 and Part 5, planning studies,  
63 inspection reports, scoping reports, interagency agreements, and public outreach  
64 documentation can be useful sources of information for adequately describing the Need.  
65 Because the NEPA process, and project development in general, is *iterative* in nature, a  
66 project’s Purpose and Need should be thought of as ‘living’ because it may broaden or  
67 become more focused as more information and input are gathered through the NEPA  
68 process. The Purpose and Need statement may need to be refined as a deeper  
69 understanding of the transportation need is reached. Bear this in mind when circulating  
70 Purpose and Need statements.

## 71 **1.2 Purpose of the Proposed Action**

72 The Purpose is analogous to the problem. It is the “what” of the proposal. The Purpose  
73 should focus on the transportation system. The Purpose should be stated in a single  
74 sentence, whenever possible.

- 75 ■ The Purpose should be stated as the positive outcome that is expected. For  
76 example, *the Purpose is to reduce congestion in the interstate corridor.*

- 77           ▪ The Purpose should avoid stating a solution which prematurely dismisses  
78 alternatives (e.g. the Purpose of the proposed action is to build a bypass).
- 79           ▪ Ensure the Purpose is broad enough to allow for a reasonable range of  
80 alternatives (i.e. more than one alternative can be considered).
- 81           ▪ Where appropriate, it should be stated broadly enough so that more than one  
82 transportation mode can be considered and multi-modal solutions are not  
83 dismissed prematurely.
- 84           ▪ Ensure that the Purpose is achievable and unbiased.

85 Specific “elements” of the Purpose could also include (please note that these bullets do  
86 not constitute a complete Purpose statement):

- 87           ▪ Reducing reliance on the state system for non-through trip travelers.
- 88           ▪ Reducing congestion in the [interchange area, highway, corridor, downtown  
89 street system, bridge, etc.].
- 90           ▪ Improving traffic flow in the [interchange area, highway, corridor, downtown  
91 street system, bridge, etc.].
- 92           ▪ Improving access or access control.
- 93           ▪ Providing a balanced circulation system and reducing out of direction travel.
- 94           ▪ Improving the safety and operation of the [highway, corridor, downtown street  
95 system, bridge, etc.].
- 96           ▪ Improving travel times between x and y cities/locations.
- 97           ▪ Reduction of maintenance actions (i.e., rockfall areas).

98 Examples of Purpose statements:

99           The purpose of the proposed action is to improve mobility and safety for people  
100 and freight for local, regional, and through travel across the Willamette River in  
101 the Salem-Keizer metropolitan area while alleviating congestion on the Marion  
102 and Center Street bridges and on the connecting highway and arterial street  
103 systems.

104           The purpose of the proposed action is to improve regional and local  
105 transportation along the Oregon 99W corridor in the Newberg-Dundee area by  
106 reducing existing and future traffic congestion.

107           The purpose of the proposed action is to improve the safe and efficient  
108 movement of goods, people, and services at and within the I-5 / Barnett Road  
109 interchange area. The long-term improvements are intended to reduce

110 congestion and improve the operation of the interchange in a manner that would  
111 minimize adverse impacts to neighborhoods, businesses, and the environment.

### 112 **1.3 Need for the Proposed Action**

113 The Need refers to the transportation problem(s) or deficiency(ies) to which ODOT and  
114 FHWA are responding. It should be quantified to the extent possible. The discussion of  
115 the Need for, together with the Purpose of, the proposed action allows the agency to  
116 establish the scope of the proposal and focus the range of alternatives. In the  
117 development of the statement of Need, consider that alternatives can be thought of as  
118 different ways to meet the underlying Need. Often the Need is already known through  
119 many different avenues (i.e., bridge and other facility inspections, traffic and corridor  
120 studies, local planning efforts, crash data, etc.) and therefore writing the Need  
121 discussion may include compiling and restating or clarifying existing information.

122 The Need should establish the evidence that the problem exists, or will exist if projected  
123 population and planned land use growth are realized. It should be factually and  
124 numerically based and should support each assertion made in the Purpose statement.  
125 For example, if the Purpose statement is based on safety improvements, the Need  
126 statement should support the assertion that there is or will be a safety problem to be  
127 corrected.

128 The Need statement may need to be updated, prior to publishing the DEIS, depending  
129 upon the length of time between the first draft of the Purpose and Need statement and  
130 when the DEIS is actually published.

131 As appropriate for the proposed action, discuss the following categories of needs:

#### 132 1. Capacity and Transportation Demand

133 a. Describe existing capacity and performance. ODOT typically uses volume to  
134 capacity (v/c) ratios, but other measures such as Level of Service may be  
135 appropriate as well.

136 b. Describe regional population/traffic forecasts

137 c. Identify projected capacity needs, queue and delay, and/or LOS

138 Coordinate with the Transportation Planning and Analysis Unit (TPAU). They  
139 coordinate with the local Metropolitan Planning Organization (MPO), as applicable,  
140 on traffic modeling. The transportation element of city and county comprehensive  
141 plans should also contain traffic data. Regional population forecasts are usually  
142 done by the MPO as well. The U.S. Census Bureau also has some information on  
143 population projections; however, these projections do not take the place of traffic  
144 forecasts.

#### 145 2. Identify system safety needs

146 a. Describe existing crash rate (including high fatality and injury sites, or  
147 identified Safety Priority Index System (SPIS) sites) and/or frequency.

148 Sometimes the crash rate shows relatively low crashes compared to similar  
149 roadways in the state, but there is still a safety problem that needs to be  
150 addressed.

151 b. Describe the likely conditions related to crashes/safety without the project.

152 c. Compare the existing and projected accident rates without the project to the  
153 statewide average

154 d. Explain what is needed to improve safety

155 Crash data is available on the TransView website. Contact the relevant ODOT  
156 Region Traffic Division for more information related to traffic studies, modeling, and  
157 general traffic information. Be sure to use the most current data in the Need  
158 statement. For more information, see the TPAU website.

### 159 3. Transportation Facility Deficiencies

160 a. Describe operational (e.g. queue lengths, delay) and functional deficiencies  
161 (e.g. substandard geometrics, inadequate cross sections). Operational data  
162 should be obtained from TPAU or Region Traffic.

163 b. Identify structural limitations (load limits)

164 c. Discuss maintenance problems

165 d. Explain what is needed to correct deficiencies

166 The information for this section is primarily the responsibility of the assigned Project  
167 Leader (PL) or Planner. The PL or Planner, in coordination with the Region Tech  
168 Centers and Headquarters Roadway and Bridge Design Units, will have information  
169 regarding roadway and structure deficiencies and proposed corrections. Information  
170 on maintenance problems can be obtained by contacting the District Manager in  
171 each Region relevant to the project area.

### 172 4. Social Demands and Economic Development

173 a. Discuss existing land use plans

174 b. Identify projected land use plan changes

175 c. Identify growth management/control ordinances

176 Contact the appropriate Region Planner and/or ODOT Transportation Development  
177 Division (i.e., Planning Division) for the above information. Other sources include city  
178 and county planning offices, Metropolitan Planning Organizations (MPO) and the  
179 Department of Land and Conservation Development (DLCD).

### 180 5. Legislation



181 Describe any federal, state or local government mandates (e.g., High priority projects  
182 or Congressional funding earmarks).

## 183 6. Modal Interrelationships and System Linkages

184 a. Discuss project interface with airport, rail, port and mass transit facilities

185 b. Indicate whether the project is a connecting link

186 c. Describe how the project fits into the transportation system

187 Coordinate with Region Planning staff to review refinement, corridor, and/or  
188 Transportation System Plans (TSP). Contact local agencies for transit information  
189 and the comprehensive plan (transportation element). Regional Transportation Plans  
190 are available from the relevant MPO and often available on-line.

## 191 7. Air Quality Improvements

192 a. Identify transportation control measures (e.g., HOV lanes, ramp metering,  
193 bike lanes, park and ride facilities) from the Statewide Implementation Plan.  
194 In Oregon only the Portland metropolitan area has identified transportation  
195 control measures.

196 b. Identify transportation demand management (e.g., Rideshare programs,  
197 mass transit subsidies)

198 Information on bike lane systems, park and ride facilities, ridesharing and mass  
199 transit can be obtained from the, MPO, Region Planning Department, the ODOT  
200 Bicycle & Pedestrian Program, or local government planning departments.  
201 Information on HOV lanes and ramp metering can be obtained from Region Traffic  
202 Operations staff.

203 NOTE: The following list of potential Need “elements” would each need to be  
204 corroborated by real data. It is not sufficient to simply provide a list of unquantified  
205 Needs. Therefore, these Need elements are not “sample text” unless the Need  
206 element is also supported with direct evidence.

207 Specific “elements” of the Need could include:

208 ■ A growing use of the local street circulation system for regional trips, leading  
209 to congestion of many streets and out of direction travel (increased travel  
210 distance).

211 ■ Increasing congestion on the regional transportation system, including  
212 Interstate ##.

213 ■ Extensive existing and approved planned development that will generate  
214 additional trips.

215 ■ Inadequate regional access to the [\_\_\_\_] area.

- 216       ▪ Increased traffic accidents associated with congestion and use of local  
217 streets for regional trips.
- 218       ▪ Functional and/or structural obsolescence of roadway and/or bridge facilities
- 219       ▪ Reduction of crash rates that are higher than the statewide average
- 220       ▪ Need for improved connectivity for bicycle and pedestrian facilities
- 221       ▪ Need for improved existing and future mobility and safety of passenger  
222 vehicles
- 223       ▪ Need for improved existing and future mobility and safety of freight vehicles
- 224       ▪ Need for improved existing and future reliability of public transportation
- 225       ▪ Need for improved safety of pedestrians and bicyclists
- 226       ▪ Minimize traffic disruptions and enable emergency vehicle response in the  
227 event of restricted access to and/or closure of the existing bridges due to an  
228 emergency or other incident
- 229       ▪ Support future traffic that would be generated by projected growth and land  
230 use changes described in City of [\_\_\_\_\_]’s Comprehensive Plan

#### 231   **1.4   Goals and Objectives**

232 Issues that will be addressed by the proposed action beyond the transportation issue  
233 identified in the Purpose and Need should be included after the Purpose and Need  
234 Statement as Goals and Objectives. The Goals and Objectives should balance  
235 community, environmental, and transportation values. They should support early and  
236 effective interagency involvement in environmental issues to improve the outcome of  
237 each natural and historic resource agency's mission while minimizing costs and delays.  
238 In addition, the Goals and Objectives should consider the proposed action's schedule,  
239 cost, community impacts, historic resource impacts, impacts to fish and wildlife and their  
240 habitat, public input, and regulatory input.

241 The Goals and Objectives will be different for each proposed project and may include  
242 the following:

243       1. Broad community goals could include, for example, - improving air quality,  
244       economic development, minimizing construction impacts, facility aesthetics,  
245       avoiding/minimizing land use actions, and/or creating an uncongested, pedestrian-  
246       friendly downtown business district.

247       2. Environmental goals could include - avoidance and minimization of impacts and  
248       enhancement opportunities, For example, avoiding impacts to nesting migratory  
249       birds or improving riparian habitat beyond what is required for mitigation.  
250       Environmental goals need to use the standard mitigation sequencing language:  
251       avoid, minimize (and then) mitigate.

252 3. All FHWA/ODOT projects will meet all regulatory requirements. It is not appropriate  
253 to include Goals or Objectives that reference regulatory compliance.

## 254 **References and Additional Guidance**

255 [FHWA NEPA and Transportation Decision-making: The Importance of Purpose and](#)  
256 [Need in Environmental Documents, Sept. 18, 1990](#)

257 [FHWA Technical Advisory T6640.8A, Oct. 30, 1987](#)

258 [Guidance on Purpose and Need, July 23, 2003, Memo from FHWA.](#)

259 [FHWA/FTA Interim Guidance on Purpose and Need, August 21, 2003](#)

260 [U.S. DOT Executive Order 13274 Purpose and Need Work Group Baseline Report](#)  
261 [Revised Draft, March 15, 2005](#)

262 [MTPA \(CETAS\) Purpose and Need Guidance, January, 2002](#)

263 [FHWA NEPA and Transportation Decision-making: The Development of Logical Project](#)  
264 [Termini, November 5, 1993](#)

265 [SAFETEA-LU Guidance on Purpose and Need, November 15, 2006](#)

266 [AASHTO Practitioner's Handbook 07 - Defining the Purpose and Need and Determining](#)  
267 [the Range of Alternatives for Transportation Projects, August, 2007](#)

268 [ODOT Traffic-Roadway website](#)

269 [Transportation Planning Analysis Unit \(TPAU\) website](#)

270 [ODOT Transportation Development Division](#)

271 [ODOT Bicycle & Pedestrian Program](#)

272 [TransView website – Crash data](#)

## 1 Chapter 2 - Alternatives

2 1. CEQ's regulations for implementing NEPA specify  
3 requirements for treatment of alternatives in  
4 Environmental Impact Statements. Each alternative  
5 analyzed in the document should be rigorously  
6 explored and objectively evaluated. For alternatives  
7 that were eliminated from detailed study, discuss  
8 reasons for their elimination. All reasonable  
9 alternatives under consideration, including the no  
10 build, need to be developed to a comparable level  
11 of detail in the DEIS, so that their comparative  
12 merits may be evaluated 40 CFR 1502.14(b) & (d).  
13 Include reasonable alternatives not within the  
14 jurisdiction of the lead agency, if such alternatives  
15 exist, and include the alternative of no action.

### Chapter 2 Content:

- 2.1 Description of Alternatives
- 2.2 Screening Criteria and Evaluation Measures
- 2.3 Alternatives Considered but Eliminated from Further Consideration
- 2.4 Comparison of Alternatives
- 2.5 Identification of a Preferred Alternative
- 2.6 Permits and Approvals Needed

16 2. In the DEIS, SAFETEA-LU Section 6002 allows the Preferred Alternative to be  
17 developed to a greater level of detail to assist in the development of mitigation  
18 measures and compliance with other federal environmental laws provided that all  
19 the requirements in the 6002 final guidance are met. Developing the Preferred  
20 Alternative to a higher level of detail in the draft would only be pursued following  
21 consultation with and approval from FHWA. The Preferred Alternative must be  
22 identified in the FEIS; identification of a Preferred Alternative in DEIS may be  
23 warranted under certain circumstances.

24 3. FHWA Technical Advisory T6640.8A requires a discussion of a reasonable range  
25 of alternatives. Under NEPA, alternatives must be discussed in equal detail. Also  
26 under NEPA, consideration should be given to transportation system management  
27 (TSM), transportation demand management (TDM) and multi-modal alternatives.  
28 For additional information, see CEQ 40 Most-Asked Questions, 1a, Range of  
29 Alternatives.

30 4. The Oregon Major Transportation Projects Agreement (MTPA) is an interagency  
31 agreement related to EIS project development. The MTPA provides guidance for  
32 key milestones in the NEPA process. The "Criteria for Selection and Evaluation  
33 Measures Guidance" and "Range of Alternatives Guidance" are relevant to DEIS  
34 Chapter 2 in that these documents provide guidance regarding alternative  
35 development and elimination of alternatives.

36 5. Additional alternatives may be required on projects where a law, Executive Order,  
37 or regulation (e.g., Section 4(f), Executive Order 11990, or Executive Order 11988)  
38 mandates an evaluation of avoidance alternatives.

### 39 2.1 Description of Alternatives

40 An EIS will include a reasonable range of alternatives. [See CEQ's 40 Most-Asked  
41 Questions and FHWA TA T6640.8A]. Alternatives should be developed to respond to  
42 identified transportation needs, to avoid sensitive resources, and to be consistent with

43 federal, state, and departmental directives. (CETAS Guidance on Development of  
44 Range of Alternatives).

45 For proposed actions that may require a land use goal exception or impact Section 4(f)  
46 properties or wetlands, development of an “avoidance” alternative may be necessary.  
47 The purpose of the “avoidance” alternative would be to support the following analyses:  
48 (1) Least Environmentally Damaging Practicable Alternative (LEDPA), (2) Support 4(f)  
49 least harm analysis, (3) goal exception. The “avoidance” alternative may or may not  
50 meet Purpose and Need.

### 51 **2.1.1 No-Build Alternative**

52 Environmental review must consider the effects of not implementing the proposed  
53 action. The No-Build alternative provides a baseline for comparing the impacts with the  
54 other alternatives. Explain the impacts of the no-build alternative. Transportation  
55 impacts should be tied to the purpose and need for the proposed action and might  
56 included deteriorating performance (v/c ratios or LOS), impacts to air quality, and  
57 ongoing maintenance costs. Indirect impacts might include economic impacts to an  
58 adjacent community.

59 The "No-Build" analysis must discuss the existing conditions as well as what would be  
60 reasonably expected to occur in the foreseeable future if the proposed action was not  
61 constructed. The No-Build alternative includes other transportation projects and land use  
62 that will be in place by the design year of the traffic analysis. These projects come from  
63 the fiscally constrained list of projects in the Metropolitan Planning Organization (MPO)  
64 long-range plan and transportation improvement program, the State Transportation  
65 Improvement Program (STIP). For non-MPO areas, include the fiscally constrained  
66 transportation projects in city or county funded Transportation System Plans (TSPs),  
67 Capital Improvement Programs (CIPs), or other programming type documents from  
68 municipalities.

### 69 **2.1.2 Build Alternatives**

70 Build Alternatives. This would include a range of reasonable alternatives (see heading  
71 below) that meet the purpose and need of the project. When a Preferred Alternative has  
72 been identified it should be discussed before the other alternatives are described.

73 For each alternative:

- 74 1. Describe the rationale for inclusion of the alternative in the document. Discuss how  
75 the proposed alternative meets the requirement 23 CFR 771.111(f) for logical  
76 termini and independent utility.
- 77 2. Make sure the names of the various alternatives are distinct and will not be easily  
78 confused with each other by the public or decision makers. Keep the names of the  
79 alternatives consistent throughout the document.
- 80 3. Make sure the description of the proposed action and description of alternatives in  
81 the environmental document and technical studies are consistent throughout the  
82 environmental process.

- 83 4. Include a maps showing the details of the build alternative(s). The lane  
84 configuration, bike and pedestrian facilities should be clearly depicted. Other  
85 graphics such as typical cross sections and typical profiles should be included,  
86 especially when needed to illustrate variations in the alternatives. If geographical  
87 references are provided in the text, they should be labeled on the associated  
88 maps.
- 89 5. Include a cost estimate for each alternative. The estimate should be based on year  
90 of expenditure dollars. The cost estimate should include all elements needed to  
91 complete the project, including right-of-way and all mitigation. Include basic  
92 assumptions on how the cost estimates were derived, including inflation  
93 assumptions. If innovative financing methods are proposed describe those here. If  
94 your project is considered a major project, you will need to comply with FHWA's  
95 guidance for major projects.
- 96 6. Each build alternative should represent a distinct design concept and scope and  
97 project location, not minor design variations or slight location shifts (see 23 CFR  
98 771.113(b)).

### 99 2.1.3 Common Design Features of the Build Alternatives

- 100 1. This heading should be used when the build alternatives share many common  
101 features. Shared design features (i.e., park-and-ride facilities, ramp metering,  
102 interchanges, etc.) discussed here do not have to be repeated under each  
103 alternative description.
- 104 2. Include design exceptions, new or revised access, and status of their approval in  
105 this discussion.

### 106 2.1.4 Transportation System Management (TSM), Transportation Demand 107 Management (TDM) Alternatives and Mass Transit Alternatives

108 Include a discussion of a Transportation System Management (TSM) and Transportation  
109 Demand Management (TDM) alternative. In some cases a pure TSM or TDM alternative  
110 may be feasible; in other cases these elements will not solve the Purpose and Need in  
111 and of themselves, but should be incorporated into other alternatives that are advanced.

- 112 1. TSM strategies (usually only relevant in urban areas over 200,000 population)  
113 consist of actions that increase the efficiency of existing facilities; they are actions  
114 that increase the number of vehicle trips a facility can carry without increasing the  
115 number of through lanes. Examples of TSM strategies include: ramp metering,  
116 auxiliary lanes, turning lanes, reversible lanes, traffic signal timing optimization,  
117 high occupancy vehicle (HOV) lanes on existing roadways, and fringe parking.
- 118 2. TDM focuses on strategies for reducing the number of vehicle trips and vehicle  
119 miles traveled as well as increasing vehicle occupancy. It facilitates higher vehicle  
120 occupancy or reduces traffic congestion by expanding the traveler's transportation  
121 choice in terms of travel method, travel time, travel route, travel costs, and the  
122 quality and convenience of the travel experience. Some examples of TDM efforts  
123 include: establishing or maintaining Transportation Management Agencies (TMA),

124 establishing employee trip reduction programs, employer provided bus passes or  
125 similar subsidies for alternative modes, providing contract funds to regional  
126 agencies that are actively promoting ridesharing, maintaining rideshare databases  
127 and providing limited rideshare services to employers and individuals.

128 3. Mass Transit alternatives include those reasonable and feasible transit options  
129 (bus systems, rail, etc.) even through they may not be within the existing FHWA  
130 funding authority. It should be considered on all proposed major highway projects  
131 in urbanized areas over 200,000 in population. Consideration of this alternative  
132 may be accomplished by reference to the regional or area transportation plan  
133 where that plan considers mass transit or by an independent analysis during early  
134 project development.

135 4. When applicable, in Alternatives Considered but Eliminated from Further  
136 Consideration Section use this boilerplate language:

137  
138 Although TSM and TDM elements alone could not satisfy the purpose and need of  
139 the project, the following TSM and TDM elements have been incorporated into the  
140 Build Alternatives for this project: [\[list items here\]](#).

## 141 2.2 Screening Criteria and Evaluation Measures

142 This section should describe the screening criteria and evaluation measures used in  
143 project development. There should also be a reference to Section 2.3, Alternatives  
144 Considered but Eliminated from Further Consideration and Section 2.4, Comparison of  
145 Alternatives so that the reader understands those discussions immediately follow this  
146 section.

147  
148 Describe that alternatives were winnowed through the use of screening criteria and/or  
149 evaluation measures. Development of EIS alternatives often results in a greater number  
150 of alternatives than a “reasonable range.” In Oregon, “screening criteria” are developed  
151 and applied to eliminate EIS alternatives that do not meet the proposed action’s Purpose  
152 and Need or have fatal flaws (e.g., a major land use goal exception, substantial Section  
153 4(f) impacts, etc.). Therefore, screening criteria are usually described as pass/fail  
154 measures rather than quantitative measures. Application of screening criteria is  
155 intended to be a first step in reducing all possible project alternatives to a “reasonable  
156 range.” See MTPA [Range of Alternatives Concurrence Point instructions](#).

157  
158 After evaluating all possible project alternatives with the screening criteria, a project  
159 team may still have multiple alternatives that are beyond what is needed for a range of  
160 reasonable alternatives. In these cases, project “evaluation measures” should be  
161 applied to aid in reduction of alternatives to a “reasonable range” for the DEIS.  
162 Evaluation measures are also rooted in the project Purpose and Need and Goals and  
163 Objectives, but are more precise and quantitative than screening criteria. Evaluation  
164 measures offer concrete, usually numerical, means to compare alternatives and help to  
165 identify a reasonable range for analysis in the DEIS. The evaluation measures should  
166 be limited in number and should reflect the broader health of or impact to the  
167 environment, as opposed to measures focused on small or isolated issues.

168

169 “Evaluation measures” are also used to compare and contrast the range of alternatives  
170 that are included in the DEIS. It is very important that the logic of the Purpose and Need  
171 and the Goals and Objectives are transparently carried through to the screening criteria,  
172 evaluation measures and ranking of alternatives to arrive at a Preferred Alternative. For  
173 further information on screening criteria and evaluation measures, see the See MTPA  
174 [Criteria for Selection and Evaluation Measures instructions](#).

175  
176 **One project management shortfall has been to develop the Purpose and Need**  
177 **statement and Goals and Objectives; but then to screen or evaluate alternatives**  
178 **based upon criteria or measures not transparently tied to the Purpose and Need**  
179 **or to the Goals and Objectives. This is faulty logic and will cause delays in getting**  
180 **NEPA documents approved. Another shortfall to avoid is dismissal of an**  
181 **alternative for not meeting a screening criterion or evaluation measure; but then**  
182 **forwarding other alternatives that also do not meet that same criterion/measure,**  
183 **without providing the context of why such decisions are logical. Draft documents**  
184 **that cannot adequately describe the alternative winnowing process in a logical,**  
185 **transparent process will be delayed as these sections are re-written.**

### 186 187 **2.2.1 Screening Criteria**

188 Provide a complete description of the screening criteria that were used to winnow  
189 alternatives considered.

### 190 191 **2.2.2 Evaluation Measures**

192 Provide a complete description of the evaluation measures that were developed.  
193 Describe if the evaluation measures were used to further winnow the range of  
194 alternatives after the screening criteria were applied and/or how the evaluation  
195 measures were used to compare or rank alternatives considered. If particular evaluation  
196 measures are given higher weight than others, be sure to describe so here.

## 197 **2.3 Alternatives Considered but Eliminated from Further** 198 **Consideration**

199 This section should include a summary of all alternatives that were considered during  
200 the project development process but were eliminated from detailed study in the DEIS.  
201 Alternatives that are considered in the DEIS are placed in the “Comparison of  
202 Alternatives” section, not this section. FHWA and ODOT may have identified some of  
203 these alternatives, while other alternatives may have been identified by other public  
204 agencies or members of the public.

205 Information on alternatives considered but eliminated from further consideration should  
206 be available in the environmental and design project files, as well as other planning  
207 documents. This section explains why alternatives were not considered further. In  
208 addition, the section provides documented reasoning based on the screening criteria  
209 and evaluation measures, why alternatives identified in early planning documents are  
210 not to be carried for future consideration. Keep in mind the following when writing this  
211 section.



212 1. Describe the other alternatives that were considered, and within the framework of  
213 the screening criteria and the evaluation measures explain why each was  
214 eliminated from further discussion. Valid reasons for eliminating an alternative  
215 include, but are not limited to: not meeting Purpose and Need, a major land use  
216 goal exception that cannot be achieved, and/or having insurmountable impacts that  
217 can not be mitigated.

218 2. It is important to enumerate to the extent possible, all the reasons for dismissing  
219 alternatives within the framework of the screening criteria and evaluation  
220 measures. For each alternative dismissed, the discussion should capture **all**  
221 reasons for dismissing the alternative. For example instead of saying Section 4(f)  
222 properties will be impacted, describe the extent of impacts to each specific 4(f)  
223 property.

224 This section should not be a history or chronology, but rather should focus on explaining,  
225 in an equivalent fashion, the rationale for dismissal. An alternative developed “late” in  
226 the process, must go through the same evaluation as those alternatives developed  
227 “early” in the process. The timing of when an alternative was developed is irrelevant to  
228 the elimination of the alternative.

229  
230 Provide as much supportive information as possible regarding why an alternative was  
231 dismissed. Whenever possible, describe the degree to which an alternative did not meet  
232 screening criteria or evaluation measures. For example, instead of simply saying that an  
233 alternative did not meet design standards, state what the standard is, how far from the  
234 standard the alternative would have been, and the process and likelihood of getting a  
235 goal exception.

### 236 237 **2.3.1 [Alternative Name]**

238 Provide a brief description of the alternative and a map. Using the guidance above  
239 describe here why the alternative was dismissed.

### 240 241 **2.3.2 [Alternative Name]**

242 Repeat this outline until you have accounted for all alternatives that have been  
243 dismissed.

## 244 **2.4 Comparison of Alternatives**

245 This section provides a description of the alternatives that were carried forward for  
246 further study in the DEIS. This section includes the no-build alternative. This section  
247 should be organized primarily by alternative considered. Alternatives should be named  
248 so that they are readily distinguishable from one another.

249 1. Although evaluation measures can be good indicators of alternatives’ relative  
250 performance, these measures alone may not necessarily determine alternative  
251 ranking or identification of the Preferred Alternative. Evaluation measures must be  
252 balanced with other relevant factors (such as stakeholder comments on the DEIS,  
253 Agency professional judgment, balance of impacts, alternative constructability,  
254 maintenance requirements, etc.) in order for a balanced decision to be reached.

255 2. A summary table comparing the alternatives within the evaluation measures will be  
256 included.

257 3. When a Preferred Alternative has been identified at the Draft EIS stage, it must be  
258 disclosed (see suggested wording below). Explain in some detail why that  
259 alternative is identified as the Preferred Alternative. Suggested introductory  
260 language for the Preferred Alternative discussion in a draft EIS follows:

261 After comparing and weighing the benefits and impacts of all of the reasonable  
262 alternatives, [Include as appropriate: some of which are summarized in the  
263 summary table], Alternative [X] has been identified as the Preferred Alternative,  
264 subject to public review. Selection of a Preferred Alternative will occur subsequent  
265 to the public review and comment period. The Record of Decision is the decision  
266 document that announces the selected alternative.

267 Note: For larger or more complex actions, the Preferred Alternative is not typically  
268 identified until after the circulation of the DEIS.

269 4. If there is opposition to any alternative, include that information here.

270 5. Briefly explain the final decision-making process. See sample text below:

271 After the DEIS public comment period, all comments will be considered, and  
272 FHWA will identify a Preferred Alternative and make a determination of the  
273 project's impact on the human and natural environment. ODOT and FHWA will  
274 document and explain the decision regarding the selected alternative, project  
275 impacts, and mitigation measures in a Record of Decision.

276 **The above text should be eliminated or revised to past tense for the final**  
277 **document.**

## 278 **2.5 Identification of a Preferred Alternative** 279 **[This section may be in the DEIS; must be in the FEIS]**

280 1. Explain the rationale for identifying the Preferred Alternative. The identification  
281 decision must be structured, analytical, and clearly address the specific evaluation  
282 criteria developed for the project. If the alternative is not anticipated to be fully  
283 funded, describe how the project will be funded or financed. Ensure compliance  
284 with FHWA major projects guidance as applicable.

285 2. The developed criteria and measures may not be the sole determinants of  
286 alternative elimination or ranking – these decisions must be balanced with other  
287 factors (such as stakeholder comments on the DEIS, Agency professional  
288 judgment, balance of impacts, alternative constructability, maintenance  
289 requirements, etc.).

290 3. Describe mitigation measures incorporated into the Preferred Alternative.

291 4. It would be unusual to designate **mandatory** borrow/fill sites in a NEPA document.  
292 However, if the project team believes this is necessary you need to ensure that

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293 those areas have received all needed environmental considerations. This may  
294 mean that you need to update analysis between the draft and final EIS. If the  
295 borrow/fill sites are not mandatory, then it is the contractor's responsibility to locate  
296 these sites and ensure environmental compliance. **Designation of mandatory**  
297 **removal and fill sites and staging areas must be coordinated with FHWA in**  
298 **advance.**

## 299 **2.6 Permits and Approvals Needed**

300 List all permits and approvals that will be needed, including waters and wetland permits,  
301 threatened and endangered species approvals (biological opinions, determinations),  
302 interstate access approvals, etc. The following table is a list of permits and approvals  
303 that may be needed for your project. Only include those permits and approvals that will  
304 be needed for the proposed action.

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305 The following permits, approvals, and licenses would be required for project  
 306 construction:

Agency	Permit/Approval/License
Bureau of Land Management	Right-of-Way Grant
Federal Emergency Management Agency	Executive Order 11988: Floodplain Management
Federal Highway Administration	Section 106 determination with Memorandum of Agreement
Federal Highway Administration	Section 4(f) Evaluation Approval
National Marine Fisheries Service	Section 7 Consultation for Threatened and Endangered Species Review and Comment on 404 Permit
National Marine Fisheries Service	Magnuson-Stevens Fishery Conservation and Management Act
United States Army Corps of Engineers	Section 404 Permit for filling or dredging waters of the United States
United States Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species Review and Comment on 404 Permit
United States Fish and Wildlife Service	Migratory Bird Treaty Act
U.S. Fish and Wildlife Service	Fish and Wildlife Coordination Act
U.S. Forest Service	Special Use Permit
Oregon Building Codes Division or local jurisdiction	Building Permit
Oregon Department of Environmental Quality	Section 402 National Pollutant Discharge Elimination System (NPDES) Water Discharge Permit
Oregon Department of Environmental Quality	Section 404 Permit review
Oregon Department of Environmental Quality	Section 401 Water Quality Certification
Oregon Department of Environmental Quality	Underground Injection Control (UIC) Permit
Oregon Department of Environmental Quality	Septic System Permit
Oregon Department of Environmental Quality	Oversight of hazardous materials issues
Oregon Department of Environmental Quality	Site preparation permits for grading, erosion, blasting, and air and noise emissions
Oregon Department of Fish and Wildlife	Oregon Fish Passage Rule
Oregon Department of Fish and Wildlife	Fish and Wildlife Habitat Mitigation Policy
Oregon Department of Fish and Wildlife	Oregon Endangered Species Act
Oregon Department of State Lands	Removal-Fill Permit or General Authorization
Oregon Department of State Lands	Pre-Construction Assessment Permit for in-water work (with U.S. Army Corps of Engineers)
Oregon Department of State Lands	Wetland Delineation Concurrence
Oregon Department of Transportation	Permit for relocation of utility lines in a state road right-of-way
Oregon Department of Water Resources	Water Right
State Historic Preservation Office	Section 106 Historic Resource Protection
County	Floodplain
County	Access Permit

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Agency	Permit/Approval/License
County	Noise variance
County	Conditional Use Permit
Local Agency	Land Use Permit or compliance
Utility	Easement
Railroad	Encroachment/Crossing Permit

307

308 **References and Additional Guidance**

309 MTPA guidance on [Screening / Evaluation Criteria](#) and [Range of Alternatives](#)

310 [Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act](#)

311 FHWA [Technical Advisory T6640.8A](#), Oct. 30, 1987

312 [SAFETEA-LU, Developing Preferred Alternative to higher level of detail](#) questions 39-46

313 [Efficient Environmental Reviews for Project Decision Making 23 USC 139\(f\)\(4\)\(D\)](#)

314 [FHWA Major Projects Guidance](#)

315 [2008 Transportation System Planning \(TSP\) Guidelines](#)

## 1 Chapter 3 - Affected Environment, Environmental Consequences, and 2 Avoidance, Minimization, and/or Mitigation Measures

3 **Following is a list of potential topic areas for the EIS.**  
4 **The EIS only needs a full text discussion of those**  
5 **topics that are relevant to the project.**

6 **The Discussion of each topic should be equivalent to**  
7 **the potential to impact that resource, both adversely**  
8 **as well as beneficially. Resources which have low to**  
9 **zero potential for impact should only be briefly**  
10 **discussed, explaining why there is little to no**  
11 **potential for impact.**

12 The following language may be helpful in summarizing those  
13 resources with little potential for impact:

14 As part of the scoping and environmental analysis conducted  
15 for the project, the following environmental issues were  
16 considered but no adverse or beneficial impacts were  
17 identified. Consequently, there is no further discussion  
18 regarding these issues in this document.

19 List topics and briefly (in one or two sentences) describe why  
20 there is no potential for adverse impacts or why they are not  
21 considered key issues. Cite scoping reports and/or technical  
22 studies as appropriate.

23 **If a given resource has the potential for beneficial or**  
24 **adverse impacts**, the discussion of that topic should include  
25 the following subheadings:

### 26 1. Regulatory Setting (if applicable)

27 The regulatory setting language was developed to communicate to the public why  
28 we analyze issues the way we do in an environmental document. Generally, the  
29 **full** regulatory setting language is not included in the EIS (or is much abbreviated)  
30 unless stakeholder concerns regarding the resource are critical to NEPA decision-  
31 making. When the potential resource impacts are negligible, then the regulatory  
32 setting language may be modified, including elimination of the regulatory setting  
33 language when appropriate.

### 34 2. Affected Environment

35 Describe the setting and existing conditions for the proposed action. The Area of  
36 Potential Impact (API) or study area will vary, depending on the resource being  
37 discussed. Where a resource is not present within the API for that resource, little  
38 additional discussion needs to follow.

#### Chapter 3 Content:

- 3.1 Transportation Facilities
- 3.2 Land Use
- 3.3 Right-of-Way and Utilities
- 3.4 Environmental Justice
- 3.5 Socioeconomic Analysis
- 3.6 Parks and Recreational  
Facilities, Wildlife or  
Waterfowl Refuges
- 3.7 Cultural Resources
- 3.8 Visual Resources
- 3.9 Hydrology, Floodplain, and  
Floodway
- 3.10 Water Quality and Storm  
Water Runoff
- 3.11 Natural Systems and  
Communities
- 3.12 Wetlands and Other Waters
- 3.13 Threatened and  
Endangered Species
- 3.14 Non-Threatened and  
Endangered Species
- 3.15 Invasive Species
- 3.16 Air Quality
- 3.17 Noise (and Vibration, if  
applicable)
- 3.18 Energy
- 3.19 Geology
- 3.20 Hazardous Materials

39 **For resources identified as having direct or indirect impacts be sure that**  
40 **Chapter 4 (Cumulative Impacts) describes the historical context (i.e., past**  
41 **actions) that has contributed to the existing conditions.**

### 42 3. Environmental Consequences

43 Generally methodologies will be described in technical reports. SAFETEA-LU 6002  
44 requires coordination on methodologies. Within Chapter 3, you need only to  
45 describe those methodologies that are not generally accepted as state of the art,  
46 consistent with FHWA Technical Advisory T6640.8A.

47 The Environmental Consequences discussion should include all: (1) direct impacts  
48 and (2) indirect impacts and (3) construction impacts. Generally direct impacts are  
49 discussed first, followed by discussion of indirect and construction impacts. It is  
50 more important that all impacts are disclosed rather than categorized as direct or  
51 indirect. The discussion of impacts should be commensurate with the potential for  
52 impacts to each specific resource.

53 *Direct impacts.* Discuss the likely adverse and beneficial impacts associated with  
54 each Build Alternative and the No-Build Alternative. Environmental Consequences  
55 should address direct impacts, meaning those impacts that are “caused by the  
56 action and occur at the same time and place” (40 CFR 1508.8). Direct impacts are  
57 typically action-focused, well-understood, and predictable. Direct impacts can be  
58 permanent or temporary (usually related to construction).

59 *Indirect impacts.* Indirect impacts “are caused by the action and are later in time or  
60 farther removed in distance, but are still reasonably foreseeable. Indirect impacts  
61 may include growth inducing impacts and other impacts related to induced  
62 changes in the pattern of land use, population density or growth rate, and related  
63 impacts on air and water and other natural systems, including ecosystems.”

64 *Construction Impacts.* Construction impacts are temporary impacts, meaning that  
65 these impacts occur only during construction. Once all work is complete the  
66 temporary impacts will cease. Construction work for large projects may be phased  
67 over several years and may or may not be continuous during those periods of time.  
68 During preparation of an EIS the phasing sequence for the work is not usually  
69 known. Therefore, the construction impacts need to be described and disclosed for  
70 the entire project rather than for discrete phases of work. However, if you are  
71 working on a project that intends to identify a phased approach to construction,  
72 work closely with FHWA to determine how to disclose these impacts. There may  
73 be instances where more detailed disclosure of phasing segments and impacts is  
74 appropriate.

75 It is important to discuss any permitted seasonal work periods and restrictions, and  
76 impacts related to seasonal work and when those would occur. In addition to  
77 seasonal work restrictions there may be time of day work restrictions due to traffic  
78 control requirements or noise ordinances. If a noise variance will be required for  
79 night work describe how and when this will be sought.

80 Potential construction activities may cause short-term impacts. Please consider the  
81 following and document, as appropriate:

- 82 • only mandatory disposal and storage sites
- 83 • only mandatory material source sites
- 84 • demolition of structures
- 85 • blasting
- 86 • pile driving
- 87 • drilling (e.g., drilled shafts requiring barges)
- 88 • clearing and grubbing
- 89 • earthwork
- 90 • in-water work
- 91 • pavement removal

92  
93 Within each resource section, describe the construction impacts that would be  
94 caused by the proposed alternatives. Potential short-term impacts from  
95 construction activities could include, but are not limited to:

- 96 • dust
- 97 • noise
- 98 • illumination for night work
- 99 • erosion and sedimentation
- 100 • vibration
- 101 • lane closures
- 102 • travel detours (for all modes of travel)
- 103 • closed or revised public or private approach roads (both business and  
104 residential)
- 105 • economic impacts to businesses (both adverse and beneficial)
- 106 • visual impacts
- 107 • spreading (and new establishment) of noxious weeds
- 108 • delays in public service calls (including emergency and police response)
- 109 • changes in transit service
- 110 • parking

111  
112 Cumulative impacts are typically discussed in Chapter 4. However, if you would  
113 like to include cumulative impacts in Chapter 3 please check with the ODOT EPM,  
114 ODOT NEPA Program Coordinator, and your FHWA contact.



115 4. Avoidance, Minimization, and/or Mitigation Measures

116 Mitigation for impacts should follow standard mitigation sequencing: First,  
117 avoidance of the resource; next, minimization of the impact; and finally, measures  
118 to mitigate the impact. As this section is addressed for each resource, be sure to  
119 capture avoidance and minimization measures that have been incorporated into  
120 project alternatives for the resource. For resources with no adverse impacts,  
121 ODOT and FHWA would not expect mitigation.

122 Where a mitigation need has been identified be sure other resource analyses  
123 capture the environmental consequences associated with the mitigation measure.

124 If ODOT and FHWA are proposing to include measures that are above-and-beyond  
125 the mitigation required, refer to these as enhancement activities. Be sure to  
126 coordinate with FHWA for any proposed enhancement activities to ensure federal  
127 aid eligibility.

128 The draft document will refer to all mitigation as “proposed”. Comments received  
129 on the draft could change the mitigation being considered. The final document will  
130 include all mitigation measures that will be incorporated into the project. If  
131 measures vary for each alternative, discuss what measures are proposed for each  
132 alternative. **The final EIS should identify all mitigation that will be**  
133 **incorporated into the action/preferred alternative.**

134 *Construction Impacts.* Although considered temporary, these impacts can cause  
135 concern for residents, business owners, and the general public in the communities  
136 where these large projects are being constructed. Every measure that can be  
137 discussed in the EIS to offset these impacts should be disclosed.

138 **Guidance on Mitigation**

139 For impacts that could not be completely avoided, ODOT and FHWA require the project  
140 applicant to incorporate mitigation measures to offset adverse impacts caused by the  
141 action and require the project applicant to be responsible for the implementation of the  
142 mitigation measures. (23 CFR 771). The five categories of mitigation are: avoid,  
143 minimize, rectify, reduce or eliminate, and compensate. (40 CFR 1508.20)

144 Formulation of mitigation measures should not be deferred until some future time.  
145 However, the precise details of how the mitigation will be performed do not need to be  
146 specified in the draft EIS. The draft EIS should include proposed mitigation measures or  
147 performance standards which would mitigate the significant impact and which may be  
148 accomplished in more than one way. Completion of mitigation measures should be  
149 readily discernable. Example: Mitigation measures for revegetation can include  
150 replanting ratios, types of vegetation and contingency plans if the replanting is not  
151 successful, but need not specify exact details of the revegetation plan.

152 **The final EIS should describe the mitigation measures that are to be incorporated**  
153 **into the Preferred Alternative. Mitigation measures presented as commitments in**  
154 **the final EIS will be incorporated into the project as specified in 23 CFR**  
155 **771.109(b). While it is recognized that the details of mitigation may change, the**

156 **FEIS should present at least one method of mitigation to fully comply with all laws**  
157 **and regulations. For example, the ABC project will fill [xxx] acres of wetlands. The**  
158 **Oregon Department of State Lands and the U.S. Army Corps of Engineers (Corps)**  
159 **have preliminarily accepted a proposal to purchase credits from the DEF Wetland**  
160 **Bank.**

161 When formulating mitigation, consider the following:

162

163 1. The mitigation proposed for a project must have a “nexus” and “rough  
164 proportionality” to the impact.

165 a. Nexus: a connection between the impact and the mitigation measure.

166 b. Rough proportionality: the amount of mitigation should roughly correspond in  
167 size, degree or intensity to the project impact.

168 2. Mitigation measures must be fully enforceable through permit conditions,  
169 agreements, the Record of Decision or other measures (special provisions).

170 3. Before the draft EIS it is important to discuss the proposed mitigation measures  
171 with the PDT members, Construction, and Maintenance to determine whether or  
172 not all measures are feasible. Some proposed mitigation measures may not be  
173 constructible.

174 4. Inclusion of ODOT Standard Specifications as mitigation is not standardized as of  
175 this date. The Environmental Commitment Tracking System Implementation will  
176 help clarify these expectations. In the interim, it may be practicable to include a  
177 generic mitigation measure that states “The project will comply with ODOT  
178 Standard Specifications.”

179 5. When the ROD is signed, commitments in the ROD will be entered into  
180 Environmental Commitments Tracking System.

181 Mitigation discussion should include the following:

182 1. Whether the mitigation measure will avoid or substantially reduce adverse  
183 environmental impact.

184 2. If particular mitigation measures have been suggested in the development process  
185 that the applicant will not pursue, discuss why the chosen measure was selected  
186 and why the suggested measure will not be pursued.

187 3. If an entity other than ODOT and/or FHWA proposed the mitigation measure,  
188 discuss who proposed the mitigation. If ODOT and/or FHWA are not the agency  
189 implementing, monitoring and/or reporting mitigation, then that agency should be  
190 specifically identified.

191 4. If the implementation of a mitigation measure results in environmental impacts,  
192 those impacts must be discussed in the EIS.

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193 **References and Additional Guidance**

194 FHWA [Technical Advisory T6640.8A](#), Oct. 30, 1987

195 [23 CFR 771](#)

196 [40 CFR 1508](#)

197

## 1 **3.1 Transportation Facilities**

2 This section describes existing transportation facilities, including existing and planned  
3 roadway network, existing and planned transit service, existing and planned bicycle  
4 facilities; and pedestrian facilities, as warranted. This section discusses the proposed  
5 project's impacts on vehicular traffic safety and operations, including access  
6 management strategies, existing and planned transit facilities, as well as impacts to  
7 bicycle and pedestrian facilities, both during construction and after completion of the  
8 project. Note: Recreational trails are also considered in the Parks and Recreation  
9 section of this document.

10 A cornerstone of federal highway legislation has been a continued and broad emphasis  
11 on safety. A successful safety strategy needs to consider the user behavior, the  
12 transportation environment, and vehicle characteristics. It is critical that the  
13 transportation facility be planned, designed, operated, and maintained for all users.

### 14 **3.1.1 Regulatory Setting**

15 The primary missions of ODOT and FHWA are related to transportation facilities and  
16 safety; therefore, this proposed action is transportation oriented and the NEPA analysis  
17 focuses on transportation-related impacts. Compliance with NEPA is required because  
18 the proposed action intends to satisfy a transportation need and is funded or partially  
19 funded with FHWA funds. NEPA provides the overall regulatory setting for this section.  
20 With regard to traffic forecasts, in general, the design year traffic should accommodate a  
21 20-year forecast from the expected date of completion of the facility [Title 23, United  
22 States Code – Highways Section 109 Standards].

23 FHWA regulations provide policies and procedures relating to the provision of pedestrian  
24 and bicycle accommodations, and Federal participation in the cost of these  
25 accommodations. FHWA directs that full consideration should be given to the safe  
26 accommodation of pedestrians and bicyclists. FHWA further directs that the special  
27 needs of the elderly and the disabled must be considered in all federal-aid projects that  
28 include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic  
29 presents a potential conflict with motor vehicle traffic, every effort must be made to  
30 avoid, minimize, and mitigate the detrimental effects on all highway users who share the  
31 facility (23 CFR 652).

32 ORS 366.514, AKA the "Bike Bill," was passed by the Oregon Legislature in 1971.  
33 Footpaths and bicycle trails, including curb cuts or ramps as part of the project, shall be  
34 provided wherever a highway, road or street is being constructed, reconstructed or  
35 relocated. It applies to ODOT, cities and counties. It also allows ODOT, cities and  
36 counties to spend reasonable amounts of their share of the state highway fund on  
37 facilities for pedestrians and bicyclists.

38 The 1990 Americans with Disabilities Act (ADA) extends to individuals with disabilities  
39 and provides civil rights protection similar to those provided to persons on the basis of  
40 race, sex, national origin, and religion under the Civil Rights Act of 1964. Federal-aid  
41 highway projects must comply with the ADA and do so by building transportation  
42 facilities that provide equal access for all persons. All projects shall comply with the  
43 most current ADA guidelines. The same degree of convenience, accessibility, and safety

44 available to the general public will be provided to persons with disabilities. Design,  
45 signing, and marking of pedestrian and bicycle facilities shall be in conformance with the  
46 Oregon Bicycle and Pedestrian Plan.

47 Note that forecast traffic data can take 1-2 years or more to obtain and be agreed to by  
48 FHWA, ODOT, and MPOs. Therefore, working on traffic data should occur early in the  
49 NEPA process.

50 Discuss impacts to Traffic and Transportation Facilities including pedestrian and bicycle  
51 for both existing and design year traffic. Forecasting future demands may be more  
52 difficult for certain modes or for certain situations, in these cases alternative methods  
53 may need to be employed to assess likely future demands and needs. For example,  
54 land use and development patterns may indicate a need for higher use pedestrian or  
55 bicycling facilities.

56 In general, the design year traffic should accommodate a 20-year forecast from the  
57 expected date of project opening. The analyst needs to determine design year traffic  
58 data using travel demand models, when available, or by processes given in the ODOT  
59 Analysis Procedures Manual. This work should be accomplished working with the local  
60 jurisdiction, MPOs, and the ODOT Transportation Planning and Analysis Unit (TPAU).  
61 The traffic information that is published in the DEIS and FEIS is expected to be fairly  
62 recent and may need to be updated if the project has experienced significant delay.  
63 Other sources of information include:

- 64 1. Highway Capacity Manual (Special Report 209 from the Transportation Research  
65 Board, Washington D.C.). This is where the concept of Level of Service (LOS)  
66 comes from. While most of it is geared to engineers, it can help clarify how the  
67 data are derived, particularly regarding LOS. Oregon uses the volume to capacity  
68 ratio (v/c ratio) as its performance measure. The v/c ratio is a measure that  
69 represents the ability of an intersection or road segment to be able to  
70 accommodate the vehicular demand or how saturated the intersection is by  
71 demand. A v/c over 1.0 is stating that there is no remaining capacity given the  
72 volume of traffic using it.
- 73 2. The Transportation System Plan of the local Comprehensive Plan of the  
74 jurisdiction(s) in which the proposed action is located. As with other local planning  
75 documents, the proposed action must be consistent with these Plan(s).
- 76 3. Crash Analysis: Assessing both crash history and likely future safety performance  
77 of a facility or project are both important. The use of general transportation safety  
78 principles can serve as a valuable guide: considering the needs of and  
79 accommodating all users, separation of potential conflicts and reducing the space  
80 and time for which there are potential conflicts, controlling relative speeds of users,  
81 providing adequate information for proper decisions, and providing a roadside area  
82 that allows vehicles to safely stop or recover.

83 The Oregon Department of Transportation's Analysis Procedures Manual's Section  
84 5.2 on crash analysis should be consulted to understand the process for crash  
85 analysis. See the ODOT Analysis Procedures Manual (APM) for analysis  
86 procedures.

87 The technical report will summarize the crash information from the Crash Analysis  
88 and Reporting (CARS) Unit for all roadways as well as the SPIS (Safety Priority  
89 Indexing System) and SIP (Safety Investment Program) for sections of the state  
90 highway system. The crash analysis should contain crash rates, conditions, causes  
91 and trends.

92 4. The most recent version of the State's Strategic Highway Safety Plan (Oregon's  
93 Transportation Safety Action Plan).

94 5. Input from any road safety studies or road safety audits.

95 6. Various Transportation Demand Management (TDM) guidance materials. These  
96 materials are useful for considering uses of buses, carpools, rail, bicycles. These  
97 documents can help support projects involving HOV lanes, transit ways (barricade-  
98 separated HOV lanes), bicycle lanes and other work on conventional highways,  
99 and even some Transportation System Management tools such as closed circuit  
100 TV.

101 7. Travel demand models, as appropriate. Note that key issues and the Purpose and  
102 Need may drive the need to look at split modes in a fairly quantitative way.

103 8. Pavement management systems

104 9. Oregon Highway Plan and ODOT Highway Design Manual

105 10. Oregon Bicycle and Pedestrian Plan

### 106 3.1.2 Affected Environment

107 1. In the references section of the EIS, list applicable technical report(s) along with  
108 completion date(s). Include a text box in this section that names the technical  
109 report, date and that it is available upon request, should the reader want more  
110 information.

111 2. Provide a map and discussion of the existing and planned roadway, transit, bicycle,  
112 and pedestrian facilities. Refer to local jurisdictions for appropriate planning  
113 documents. Include the study area boundary on the map.

114 3. Describe existing conditions in the study area, including any substandard design  
115 features on the existing system.

116 4. All data should be shown for the appropriate peak hour periods. Include the levels  
117 of service, v/c ratios, road types and lanes, and alternative mode facilities. Include  
118 tables and figures to aid the reader in understanding concepts such as v/c ratios  
119 and LOS. Discuss applicable mobility standards. Identify areas within the study  
120 area that do not currently meet mobility standards.

121 **3.1.3 Environmental Consequences**

122 1. Summarize forecast year design traffic. The description of traffic should include  
123 the following items as appropriate, comparing all build alternatives to the baseline  
124 (No-Build) alternative. Show modeled data for at least 20 years beyond the  
125 completion of construction.

126 a. **Volume/capacity (v/c) ratio** and **Level of Service** shows density of traffic on  
127 the roadway. This is an item in which laypeople typically have an interest.  
128 Compare the forecast operational performance for each alternative to the  
129 mobility standard.

130 Summarize by alternative changes in performance such as queue length,  
131 blocked intersections or ramps, length of delay, average speed, and hours of  
132 congestion.

133 b. **Travel time and Delay:** Compare existing and forecast conditions by  
134 alternative using performance measures such as travel times or lengths of  
135 delay. Travel time is usually expressed as time a vehicle uses to travel over a  
136 specific route such as 6 minutes 52 second to travel from Point A to Point  
137 B. The travel times may also be expressed as time saved in vehicle miles  
138 traveled (vtm); vehicle hours traveled (vht) or total time saved per year. Delay  
139 is typically expressed as seconds of delay per car or seconds/minutes of  
140 delay on the mainline or the system.

141 c. Describe the benefits provided by each project alternative for the roadway,  
142 transit, bicycle, and pedestrian systems, as well as any negative impacts (i.e.,  
143 making pedestrian crossings more difficult).

144 d. Describe if implementation of any of the alternatives would adversely affect  
145 the adjoining transportation system.

146 e. As needed, describe deficiencies that are adjacent to the proposed  
147 improvement that will exist regardless of whether or not the project is built.

148 2. **IAMPs.** Ensure adequate coordination with relevant Interchange Access  
149 Management Plan (IAMP) work has occurred. Depending upon the complexity of  
150 the project access management and the IAMPs may be separate subsections in  
151 the Transportation Facilities Section. Not all projects will include IAMPs.

152  
153 Note: It is important for the project team to closely coordinate the IAMP & Access  
154 Management Strategy with their ODOT Planning Representative to determine the  
155 degree to which relevant information from these documents should be incorporated  
156 in the EIS document. ODOT expects to issue updated IAMP guidelines in Spring  
157 2011.

158 3. Safety may not be improved for all users and it is important that the trade-offs be  
159 recognized and discussed. In this regard it is important that efforts made to use  
160 predictive modeling tools and techniques to forecast likely safety performance of a

- 161 facility or project. The traffic analysis should provide the analysis and discussion  
162 given the available and appropriate tools.
- 163 Describe how each alternative would improve safety. Examples may include  
164 installing loop sensors and signals at intersections or at on-ramps, adding turning  
165 lanes, adding an auxiliary lane, adding passing and climbing lanes, reducing the  
166 number of weave maneuvers required, improving merge distance, providing  
167 braided ramps, building a barrier to impede unsafe turning, access management  
168 strategies, removal of nonstandard design features, and design that meets driver  
169 expectations.
- 170 4. Describe how the project will change traffic patterns for residents, transit service,  
171 businesses, and emergency responders. The change in circulation or movement  
172 may be particularly important for transit, bicyclists, and pedestrians due to higher  
173 time costs of re-routing. For example, any impediments to street crossings may  
174 need to be considered.
- 175 5. Discuss compliance with the ADA. Discuss how the project will be accessible by  
176 persons with disabilities. If ADA is a key issue be sure that you adequately address  
177 Sections 201-222 of the Public Rights-of-Way Access Advisory Committee  
178 (PROWAC).
- 179 <https://www.access-board.gov/>
- 180 6. Discuss how construction will impact traffic movement and operation during  
181 construction (e.g., accessibility for vehicles, bicycles and pedestrians; business  
182 access; detours, emergency response, accommodations made for bicycling,  
183 walking, and the ADA community). Quantify impacts, if possible (for example,  
184 estimate time delays, queuing, volume/capacity ratios).
- 185 **3.1.4 Avoidance, Minimization, and/or Mitigation Measures**
- 186 1. Describe avoidance measures that were considered and those which were  
187 incorporated into the proposed project.
- 188 2. Describe minimization measures that were considered and those which were  
189 incorporated into the proposed project.
- 190 3. Discuss any traffic or transportation mitigation proposed to address impacts  
191 caused by the project. Mitigation may also be identified for transportation system  
192 deficiencies analyzed in the no-build. In some cases, this mitigation will not be part  
193 of the proposed action. In these cases clarify deficiencies that will be pursued as  
194 other independent projects.
- 195 4. ODOT will prepare a traffic control plan to be used during construction, which  
196 would consider: detours, flaggers, time of day lane closure restrictions, weekend  
197 closure restrictions, staging plans, identifying detours, ADA considerations and  
198 local access considerations. Only known components of the traffic control plan  
199 need to be identified in the EIS. It is understood that all details of the traffic control  
200 plan may not be available at the EIS stage.



Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links

- 201 5. ODOT will prepare a public involvement plan for project construction outreach to  
202 engage those affected during project construction. ODOT will keep the project  
203 website up to date to reflect current information including construction activities.
- 204 6. Preparation of a Traffic Management Plan (TMP) is a common mitigation measure  
205 to include in this section. However, the plan itself will not be prepared until just prior  
206 to construction. Describe to the extent feasible what measures may be included in  
207 the Traffic Management Plan (TMP).
- 208 7. Traffic Management Plans may also include agreements with local agencies to  
209 provide enhanced infrastructure on arterial roads or intersections, to deal with  
210 detoured traffic. The enhancements MUST be temporary if federal funds are used.

211 **References and Additional Guidance**

212 [ODOT Analysis Procedures Manual](#)

213 [Oregon's Transportation Safety Action Plan](#)

214 [Oregon Highway Plan](#)

215 [ODOT Highway Design Manual](#)

216 [Oregon Bicycle and Pedestrian Plan](#)

217 [Public Rights-of-Way Access Advisory Committee \(PROWAC\)](#)

218

## 1 3.2 Land Use

2 This section addresses land uses and the potential  
3 impacts of the proposed action to identified land uses.  
4 Land use is often a broad topic as compared to most other  
5 disciplines addressed in an EIS. Each proposed action is  
6 unique, thus some subcategories of land use may not be  
7 applicable. The mandatory subcategories of land use  
8 include the following subcategories:

- 9 • Federal, State, Regional, and Local Plans
- 10 • Existing and Planned Land Uses

11  
12 As appropriate to each proposed action, additional  
13 subcategories of land use may include:

- 14 • Coastal Zone
- 15 • Farmlands
- 16 • Wild and Scenic Rivers

17  
18 The Land Use section heading should be followed by a  
19 brief introduction (no more than a paragraph) to the  
20 section, such as:

21  
22 The Land Use section provides background information  
23 on existing and planned land uses, discusses possible  
24 impacts to land use by project alternatives, and includes  
25 potential mitigation actions that would prevent, diminish,  
26 or offset adverse land use impacts. This section also  
27 addresses project alternatives' compatibility and  
28 consistency with applicable land use plans and  
29 compliance with Oregon Statewide Planning Goals.

30  
31 Most of the *specific* guidance relevant to land use  
32 subcategories is included in subsections further below. The following guidance  
33 addresses *broad* land use considerations, early coordination, and inter-related studies:

- 34  
35 1. Under the Oregon SAC Rule ([OAR 731-015-0075](#)), where a proposed Class I (EIS)  
36 or Class III (EA) action would not be compatible with city and/or county  
37 comprehensive plans and/or not be compliant with Statewide Planning Goals,  
38 ODOT shall rely on the city and/or county to take the necessary land use actions  
39 (such as plan amendments or zone changes) between the Draft and Final EIS.
- 40  
41 2. When a Goal Exception would be required in order for a proposed action to be  
42 compliant with Statewide Planning Goals, early development and narrowing of  
43 project alternatives must be cognizant of the rationale and process for obtaining a  
44 Goal Exception. In other words, the proper approach to a potential Goal Exception  
45 requires forethought, early coordination with the local jurisdiction(s), and the  
appropriate alternative narrowing protocol.
- 46  
47 3. There are evident inter-relationships between the Land Use, Socioeconomics, and  
48 Transportation sections of Chapter 3. During NEPA technical studies, the  
specialists representing Land Use, Socioeconomics, and Transportation are

3.2	Land Use
3.2.1	Regulatory Setting
3.2.1.1	Federal, State, Regional, and Local Plans
3.2.1.2	Existing and Planned Land Use
3.2.1.3	Coastal Zone
3.2.1.4	Farmlands
3.2.1.5	Wild and Scenic Rivers
3.2.2	Affected Environment
3.2.2.1	Federal, State, Regional, and Local Plans
3.2.2.2	Existing Land Use
3.2.2.3	Planned Land Use
3.2.2.4	Coastal Zone
3.2.2.5	Farmlands / EFU Lands
3.2.2.6	Wild and Scenic Rivers
3.2.3	Environmental Consequences
3.2.3.1	Federal, State, Regional, and Local Plans
3.2.3.2	Existing Land Use
3.2.3.3	Planned Land Use
3.2.3.4	Coastal Zone
3.2.3.5	Farmlands / EFU Lands
3.2.3.6	Wild and Scenic Rivers
3.2.4	Avoidance, Minimization, and Mitigation Measures
3.2.4.1	Federal, State, Regional, and Local Plans
3.2.4.2	Existing and Planned Land Use
3.2.4.3	Coastal Zone
3.2.4.4	Farmlands / EFU Lands
3.2.4.5	Wild and Scenic Rivers

49 strongly advised to share information and work collaboratively in preparing their  
50 individual analyses. Use your best judgment in cross-referencing these inter-  
51 related sections to minimize duplicative text and to aid in readers' understanding of  
52 the related subject matter.

53 4. **The direct, indirect (in particular), and temporary land use impacts are**  
54 **important to share with other discipline analysts, as such land impacts**  
55 **should be used to inform potential indirect and cumulative impacts to built**  
56 **and natural resources.**

57 5. As further described in Chapter 4, Cumulative Impacts, a proposed project's  
58 indirect impacts on land use are an integral component of the cumulative impacts  
59 analysis.

### 60 **3.2.1 Regulatory Setting**

61 Including regulatory setting language can help communicate to the public why we  
62 analyze issues the way we do in an EIS. The regulatory settings for each land use  
63 subcategory are provided below. For subcategories Coastal Zone, Farmlands, and Wild  
64 and Scenic Rivers, the regulatory setting language may be shortened or omitted if the  
65 potential impacts to these land uses are absent or relatively minor.

#### 66 **3.2.1.1 Federal, State, Regional, and Local Plans**

67 Since 1973, Oregon has maintained a strong statewide program for land use planning.  
68 The foundation of that program is a set of 19 Statewide Planning Goals. The goals  
69 express the state's policies on land use and on related topics, such as citizen  
70 involvement, housing, and natural resources. Oregon's planning laws strongly  
71 emphasize coordination -- keeping plans and programs consistent with each other,  
72 with the goals, and with acknowledged local plans. OAR 731 Division 15 establishes  
73 the procedures used by the Department of Transportation to implement the provisions  
74 of its State Agency Coordination Program which assure that Department land use  
75 programs are carried out in compliance with the statewide planning goals and in a  
76 manner compatible with acknowledged comprehensive plans, as required by ORS  
77 197.180 and OAR 660, Divisions 30 and 31.

#### 78 **3.2.1.2 Existing and Planned Land Use**

79 The National Environmental Policy Act (NEPA), 42 USC 4321 et seq., requires that all  
80 actions sponsored, funded, permitted, or approved by federal agencies be reviewed to  
81 ensure that environmental considerations such as impacts on land use are given due  
82 weight in project decision-making. Federal implementing regulations are at 40 CFR  
83 1500-1508 (CEQ) and 23 CFR 771 (FHWA and FTA). CEQ regulations and FHWA  
84 Technical Advisory T6640.8A require that an EIS include discussion of possible conflicts  
85 between the proposed action and the objectives of Federal, Tribal, regional, state, and  
86 local land use plans, policies, and controls for the area concerned, and the extent to  
87 which the agency would reconcile its proposed action with the plan or law.

#### 88 **3.2.1.3 Coastal Zone**

89 The Coastal Zone Management Act of 1972 (CZMA) is the primary federal law enacted  
90 to preserve and protect coastal resources. The CZMA sets up a program under which  
91 coastal states are encouraged to develop coastal management programs. States with an

92 approved coastal management plan are able to review federal permits and activities to  
93 determine if they are consistent with the state's management plan.

94  
95 The Oregon Coastal Management Program (OCMP) was enacted in 1977. The mission  
96 of the OCMP is to provide the public with sustainable coastal natural resources. This  
97 means Oregon's resources will be vital, accessible, plentiful, free of pollution, and where  
98 appropriate developable. To accomplish the mission, the OCMP knits together various  
99 state statutes for managing Oregon's coastal lands and waters into a single, coordinated  
100 package. The OCMP is administered by the Department of Land Conservation and  
101 Development (DLCDD). All consistency determinations, consistency certifications and  
102 proposals for federal assistance are reviewed by the DLCDD for consistency with the  
103 OCMP. Oregon Statewide Planning Goals 16, 17, and/or 18 may also apply to coastal  
104 lands.

#### 105 **3.2.1.4 Farmlands / EFU Lands**

106 The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act  
107 (FPPA, 7 USC 4201-4209; and its regulations, 7 CFR Part 658) require federal agencies  
108 to coordinate with the Natural Resources Conservation Service (NRCS) if their activities  
109 may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For  
110 purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of  
111 statewide or local importance.

112  
113 Oregon Statewide Planning Goal 3 defines "agricultural lands" and requires counties to  
114 inventory such lands and to "preserve and maintain" them through farm zoning as  
115 documented in the jurisdiction's comprehensive plan. Details on the uses allowed in farm  
116 zones are found in ORS Chapter 215 and in Oregon Administrative Rules, Chapter 660,  
117 Division 12 and Division 33.

#### 118 **3.2.1.5 Wild and Scenic Rivers**

119 The National Wild and Scenic Rivers System was created by Congress in 1968 (Public  
120 Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural,  
121 cultural, and recreational values in a free-flowing condition for the enjoyment of present  
122 and future generations. The Act is notable for safeguarding the special character of  
123 these rivers, while also recognizing the potential for their appropriate use and  
124 development. It encourages river management that crosses political boundaries and  
125 promotes public participation in developing goals for river protection.

126 The Oregon Scenic Waterways Act was passed in 1970, recognizing that wise individual  
127 and public use of these special rivers and adjacent lands is necessary. The Oregon  
128 Scenic Waterways Program was designed to protect and enhance the natural, esthetic,  
129 scenic, fish and wildlife, scientific, and recreational values of segments of designated  
130 rivers and ensure that they remain free-flowing without dams or other impoundments.  
131 The Oregon Administrative Rules for scenic waterways are at OAR 736 Division 40.

#### 132 133 **3.2.2 Affected Environment**

134 This subsection describes relevant land use policies and plans, existing and proposed  
135 land use, and other special land use designations [specify which ones apply] that could  
136 be affected by the proposed action.

137

- 138 1. In the references section, list applicable technical report(s) along with completion  
139 date(s). Include a text box in this section that names the technical report, date and  
140 that it is available upon request, should the reader want more information.
- 141 2. Include a description of the Area of Potential Impact (API). This should include  
142 areas directly affected by the project and nearby communities that could be  
143 indirectly affected by the project.
- 144 3. The API for land use includes [specify project site and other areas directly affected  
145 by the project] that could be directly affected by the project. It also includes  
146 [specify areas indirectly affected by the project] that could be indirectly affected by  
147 the project. [provide a short explanation that explains why the API was chosen].
- 148 4. Potential sources for land use information include, but are not limited to:
  - 149 a. Land Use Technical Report
  - 150 b. Socioeconomic Technical Report
  - 151 c. Transportation Technical Report
  - 152 d. Right-of-Way Technical Report
  - 153 e. City and/or county comprehensive plan and local special area plans and/or  
154 overlays. Keep in mind that comprehensive plans may be out-of-date and  
155 planned developments may not have happened.
  - 156 f. Local population and employment forecasts
  - 157 g. ODOT Region and/or local jurisdiction agency planning staff members
  - 158 h. Land use maps and aerial maps
  - 159 i. Environmental documents for other types of projects
  - 160 j. Federal land management agencies
  - 161 k. Area Chamber of Commerce
  - 162 l. Tribal authorities
  - 163 m. Newspaper articles on growth, housing, etc.
- 164 5. For detailed guidance on assessing and reporting indirect land use impacts, see “A  
165 Guidebook for Evaluating the Indirect Land Use and Growth Impacts of Highway  
166 Improvements” (2001).  
167
- 168 6. Describe the Affected Environment for each of the following land use  
169 subcategories, as appropriate.

#### 170 **3.2.2.1 Federal, State, Regional, and Local Plans**

- 171 1. Briefly summarize the plans and policies that guide land use in the project area.  
172 This should include plans and policies for the immediate project area as well as  
173 surrounding communities where future land use could be indirectly affected by the  
174 project. The discussion should identify when the relevant plans were adopted and

- 175 the periodicity of each plan. The following types of plans need to be briefly  
176 discussed as they pertain to the project, providing a subheading for each plan:
- 177 a. Regional Transportation Plans and Transportation Improvement Programs (RTPs and TIPs)  
178 in Metropolitan Planning Organization (MPO) areas  
179 (Portland, Salem/Keizer, Corvallis, Bend, Eugene/Springfield, and Rogue Valley).  
180
    - 181 i. Portland: <https://www.oregonmetro.gov/index.cfm/go/by.web/id=118>
    - 182 ii. Salem/Keizer: <https://www.mwvcog.org/transportation>
    - 183 iii. Corvallis: <http://www.corvallisareampo.org/>
    - 184 iv. Bend:
    - 185 v. Eugene/Springfield: <https://www.lcog.org/542/Central-Lane-MPO>
    - 186 vi. Rogue Valley: <https://rvmpo.org/>
  - 187 b. Comprehensive Plans (both City and County), including:  
188
    - 189 i. Transportation System Plans (TSPs)
  - 190 c. Oregon Highway Plan: [https://www.oregon.gov/ODOT/TD/TP/](https://www.oregon.gov/ODOT/TD/TP/orhwyplan.shtml)  
191 [orhwyplan.shtml](https://www.oregon.gov/ODOT/TD/TP/orhwyplan.shtml)
  - 192 d. Habitat Conservation Plans or similar regional conservation plans
  - 193 e. Statewide Planning Goals: <https://www.oregon.gov/lcd/OP/Pages/index.aspx>
  - 194 f. Federal Land Management Plans
  - 195 g. Tribal Land Management Plans

### 195 **3.2.2.2 Existing Land Use**

- 196 1. Describe Existing Land Uses and/or zoning within and adjacent to the project API.  
197 For developed lands, it is more important to describe existing land uses; for  
198 undeveloped lands, it is more important to describe land use zoning. Land use and  
199 zoning categories could include, but are not limited to: housing / residential, retail /  
200 commercial, industrial, parks / recreation, government / institutional, community  
201 services, agricultural, utilities, emergency services, transportation, undeveloped  
202 land, Federal / Tribal land, etc.
- 203 2. Discuss where existing land use differs from zoning. Discuss local and regional  
204 commute patterns and major employers, as appropriate.
- 205 3. Provide a map depicting existing / zoned land uses within and adjacent to the  
206 project API.

### 207 **3.2.2.3 Planned Land Use**

- 208 1. Describe growth and development trends (i.e., over the last 5 to 10 years) in the  
209 vicinity of the project API and regionally, as appropriate. Discuss buildable land  
210 inventories within the relevant Urban Growth Boundary(ies) (UGB), including maps  
211 as appropriate.

212 2. Identify any and all proposed development plans (including UGB expansion), the  
 213 relevant jurisdiction, the size and proposed uses, and the status of the proposal.  
 214 For example:

215 a. Are there constraints to the proposed development (such as topography,  
 216 floodplains, soil, finances, etc.)?

217 b. Is the proposed development “reasonably foreseeable”? Under NEPA,  
 218 indirect impacts need only be evaluated if they are “reasonably foreseeable”  
 219 as opposed to remote and speculative. Some indicators of “reasonably  
 220 foreseeable could include, but are not limited to:

- 221 i. The proposal is recognized by the local jurisdiction.
- 222 ii. There is a master plan for the proposal.
- 223 iii. A building permit been applied for or received.

224 c. If a development proposal has been shelved for some time, what have been  
 225 the impediments?

226 d. Use a table, as appropriate, to present the proposed development  
 227 information. For example:

Name	Jurisdiction	Proposed Uses	Status
Jet Air	City of ...	24 industrial lots on 19 hectares (48 acres)	Final map currently being developed. No construction.
Telegraph Canyon Estates (St. Claire)	County of ...	345 single family dwellings, 12 hectares (30 acres) open space, and 2 park sites	Master Plan complete.
East Lake Greens SPA		Mixed residential, commercial, schools, park, golf course, open space	Under construction.
Salt Creek 1		219 single family and 331 multiple units and 6 hectares (15 acres) open space on 50 hectares (124 acres)	Would require UGB expansion, which is proposed but has not occurred.

228 e. As appropriate, provide a map depicting proposed development(s).  
 229

230 **3.2.2.4 Coastal Zone**

231 If the proposed project is located within the coastal zone, discuss the location of the  
 232 project (include map) with respect to the coastal zone, regulatory jurisdiction (Statewide  
 233 and/or Local), and Statewide Planning Goals.

234 **3.2.2.5 Farmlands / EFU Lands**

235 1. Under the FPPA, when a project would result in a substantial amount of farmland  
 236 conversion, provide a general discussion of the agricultural resources and  
 237 character of agriculture in the project area. Such a discussion might include the  
 238 amount of land under cultivation, important crops, the value of agricultural  
 239 production, a description of trends in farmland conversion in the particular county,  
 240 and a description of applicable comprehensive plan elements, ordinances, and  
 241 other policies related to agriculture in the project area.

242 2. Describe any Exclusive Farm Use (EFU) lands or other farm uses protected in  
 243 local comprehensive plan(s) and/or under Oregon’s Statewide Planning Goals.

244 3. Provide a map or maps showing the location of all farmlands, including EFU lands,  
245 in the project area.

246 4. Identify soil types and whether the soil is considered prime or not. Identify whether  
247 or not the land needs to be irrigated and if adequate water rights are present for  
248 irrigation.

### 249 **3.2.2.6 Wild and Scenic Rivers**

250 1. If the proposed project could affect a Wild and Scenic River, an Oregon Scenic  
251 Waterway, or a river under study for either designation, describe the river, its  
252 designation in the project area, and list the agency(ies) with jurisdictional authority.

253 2. For designated Oregon Scenic Waterways, the Oregon Parks and Recreation  
254 Department must be notified of certain activities proposed within ¼ mile of the bank  
255 of Oregon's designated scenic waterways. Such activities include cutting of trees,  
256 mining, construction of roads, railroads, utilities, buildings, or other structures. The  
257 proposed uses or activities may not be started until the written notification is  
258 approved, or until one year after the notice is accepted.

### 259 **3.2.3 Environmental Consequences**

260 This subsection addresses the direct, indirect, and temporary impacts of the proposed  
261 project on land use.

262  
263 **For detailed guidance on assessing and reporting indirect land use impacts, see**  
264 **“A Guidebook for Evaluating the Indirect Land Use and Growth Impacts of**  
265 **Highway Improvements” (2001).**

266  
267 **The direct, indirect (in particular), and temporary impacts to land use are**  
268 **important to share with other discipline analysts, as such land impacts should be**  
269 **used to inform potential indirect and cumulative impacts to built and natural**  
270 **resources.**

#### 271 **3.2.3.1 Federal, State, Regional, and Local Plans**

272 This subsection should review the project's consistency with each Federal, State,  
273 Regional and Local Plan identified above in Affected Environment (3.2.2.1). A summary  
274 table may be used, as appropriate. A more specific discussion of compatibility with  
275 city/county comprehensive plans and compliance with Statewide Planning Goals should  
276 be deferred to the below subsections.

277

#### 278 Compatibility with Local Comprehensive Plans

279 1. If the proposed project is compatible with applicable city and/or county  
280 comprehensive plans, provide a finding statement that clarifies that no local land  
281 use actions would be needed in support of the proposed project.

282 2. If the proposed project would require local jurisdictional land use actions (e.g.,  
283 zone changes or overlays, plan amendment, new or revised ordinances, etc.) in  
284 order for the project to proceed, describe the local land use changes that would be  
285 necessary and indicate the appropriate jurisdictional authority(ies). Local land use



286 actions in support of associated Interchange Area Management Plan(s) should  
287 also be discussed.

288 3. If required land use actions differ between project alternatives, describe or indicate  
289 these differences.

290 4. **Under the SAC Rule (OAR 731-015-0075), any land use actions required in**  
291 **order for the project to be compatible with the local comprehensive plan(s)**  
292 **must be taken between the DEIS and FEIS. Therefore, the FEIS should not**  
293 **reference local jurisdiction land use actions needed to support the project**  
294 **that have not yet been taken. Exceptions may apply to projects that will be**  
295 **constructed in phases – see the SAC Rule for further explanation.**

#### 296 Compliance with Statewide Planning Goals

297 1. If the proposed project would be in compliance with Statewide Planning Goals,  
298 provide a finding statement that clarifies that no Goal Exception would be needed  
299 in support of the proposed project.

300 2. If a Goal Exception would be required for the proposed project, describe the nature  
301 of the Goal Exception, indicate the jurisdictional authority, and differentiate  
302 between project alternative requirements. The Goal Exception process involves a  
303 process that requires avoidance unless no reasonable alternative exists.  
304 Therefore, it is likely that the Goal Exception process will play a key role in  
305 determining the Preferred Alternative.

306 3. **If a Goal Exception or conditional use permit pursuant to OAR 660-012-0065**  
307 **is required to support the Preferred Alternative, it must be taken between the**  
308 **DEIS and FEIS.**

#### 309 **3.2.3.2 Existing Land Use**

310 1. Discuss potential direct, indirect, and temporary impacts to existing land uses in  
311 and adjacent to the project API. Impacts to existing land use could include, but are  
312 not limited to:

313 a. Changing the ability of property owners to use their land for an existing land  
314 use;

315 b. Converting lands from their existing land use to a transportation land use;

316 c. Requiring changes to land use zoning

317 d. Full or partial property acquisitions (cross-reference with the Right-of-Way  
318 section, as appropriate);

319 e. Land use disturbances during construction;

320 f. Causing changes to existing accesses;

321 g. Causing changes to existing business(es) visibility.

322 **3.2.3.3 Planned Land Use**

- 323 1. Discuss potential direct, indirect, and temporary impacts to planned land uses in  
324 and adjacent to the project API. Impacts to planned land use could include, but are  
325 not limited to:
- 326 a. Requiring changes to land use zoning; affects on building land inventories
  - 327 b. Changing the ability of property owners to use their land for a planned /  
328 allowed land use;
  - 329 c. Speeding or impeding planned development and/or redevelopment in the  
330 immediate project area;
  - 331 d. Influencing development in the immediate project area where no  
332 development currently exists;
  - 333 e. Facilitating particular types of land use in an area where such land use is not  
334 planned, or preventing particular land uses in an area where such land use is  
335 planned.
- 336 2. Discuss how, if at all, the proposed project could influence (primarily through  
337 indirect impacts) planned land use and development beyond the immediate project  
338 area. Some transportation projects will have no influence on local / regional growth  
339 and development, others will have a moderate influence, and on rare occasions  
340 others will greatly influence development. In assessing potential indirect land use  
341 impacts from the proposed project and how they could moderately or greatly  
342 influence city-wide or regional development patterns or rates:
- 343 a. Consider potential changes in accessibility to possible or existing destination  
344 areas based on travel time (for local and through traffic as appropriate);
  - 345 b. Consider potential changes exposure and visibility for possible or existing  
346 destination areas based on changes in traffic volume or speed;
  - 347 c. Consider whether the proposed project would facilitate particular types of  
348 land use in areas where such land use is not planned, or would impede  
349 particular land uses in an area where such land use is planned;
  - 350 d. Where substantial changes in travel times, accessibility, exposure, and  
351 visibility of possible or existing destination areas does not occur, a  
352 determination that the area of development influence is likely to be limited to  
353 properties directly impacted by the proposed action may be made. In this  
354 case indicate that no further indirect development and growth influence  
355 analysis is warranted.
- 356 3. If there are indications that the proposed project would influence development  
357 patterns or rates beyond the immediate project area (i.e., city-wide or regional  
358 effects):

- 359 a. Describe how the “development influence area” for the analysis was  
 360 determined and what the “development influence area” is (provide maps, as  
 361 appropriate).
- 362 b. Identify potential for development and growth-related influence for each  
 363 alternative and describe the rationale for these indirect impacts as derived  
 364 from traffic, land use, and socio-economic information.
- 365 c. Assess the development-related impacts of each alternative to resources of  
 366 concern (such as farm or forest lands, historic resources, water quality,  
 367 wetlands, etc.). Identify if and to what extent the development influence  
 368 would affect resources of concern.
- 369 4. If it is determined that development and growth-related influences would not affect  
 370 resources of concern, these findings should also be documented in the EIS.

371 **3.2.3.4 Coastal Zone**

372 Discuss anticipated impacts within the coastal zone (summarize and cross-reference  
 373 other sections as appropriate); consistency of the project with the Oregon Coastal  
 374 Management Program, and any needed permits and approvals.

375 **3.2.3.5 Farmlands / EFU Lands**

- 376 1. Compare farmland conversion from the project to farmland conversion locally, in the  
 377 county, or in the region, and the state. Discuss impacts to agricultural land in  
 378 general, impacts to farmland by category (prime, unique, etc.), and impacts to EFU  
 379 land. This information can be shown in a comparison table, which should also  
 380 include the percentage of the county’s total agricultural land and prime farmland that  
 381 would be converted or affected by the project (i.e., the number of acres of EFU that  
 382 would be converted to a transportation use). See sample table below.  
 383

Farmland Conversion by Alternative					
Alternatives	Land Converted (acres)	Prime and Unique Farmland (acres)	Percent of Farmland in County	Percent of Farmland in State	Farmland Conversion Impact Rating
A	242	131.4	0.47	0.25	153.2
B	713	139.1	0.15	0.05	188.0
C	226	59.0	0.20	0.05	136.4

Source: Form NRCS-CPA-106 (Farmland Conversion Impact Rating for Corridor-Type Projects).

- 384
- 385 2. Discuss any conflicts with existing zoning for agricultural use. Under Oregon’s  
 386 Statewide Planning Goals, if the proposed project would require a Goal Exception  
 387 for impacts to protected farmlands (i.e., zoned EFU or other protected farm uses),  
 388 the applicant must demonstrate that no other reasonable alternative exists that  
 389 avoids the farmland.  
 390
- 391 3. The following information should be included in the discussion:  
 392 a. Identification of impacts on agricultural lands and on prime or unique  
 393 farmland in the project area, mentioned above.

- 394 b. Identification of agricultural parcel(s) that would be bisected or parcelized,  
395 rendering the parcel(s) no longer viable for agricultural uses. Consider  
396 difficulties introduced by the proposed improvement – such as moving  
397 equipment, spray practices etc).  
398 c. Completion of a “Farmland Conversion Impact Rating” (Form AD-1006), if  
399 appropriate. A score of 160 on this form is typically used as the point in  
400 which mitigation and significance are given closer looks. Include completed  
401 AD-1006 form in the Land Use Technical Report.  
402 d. Evidence of coordination with local agriculture commissioner, USDA and/or  
403 the Natural Resource Conservation Services (NRCS), as appropriate.

#### 404 **3.2.3.6 Wild and Scenic Rivers**

- 405 1. Describe anticipated impacts to national and/or state scenic rivers:
- 406 a. Would the proposed project have an adverse impact on free-flowing  
407 characteristics of the river?  
408 b. Would the proposed project alter the river segment’s criteria of wild, scenic,  
409 or recreational?  
410 c. Is there a feasible avoidance alternative?
- 411 2. Cross-reference other sections of the document as appropriate such as Section  
412 4(f), Section 6(f), and ESA.
- 413 3. Summarize the coordination efforts to date with jurisdictional agencies. Federal  
414 agencies responsible for managing listed or studied rivers include the National  
415 Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management and  
416 U.S. Forest Service. Oregon Parks and Recreation Department is the jurisdictional  
417 authority for Oregon Scenic Waterways. Document coordination with the river’s  
418 responsible managing agency(ies) and the results of the consultation in the  
419 environmental document.

#### 420 **3.2.4 Avoidance, Minimization, and Mitigation Measures**

421 This subsection addresses avoidance, minimization, and mitigation measures proposed  
422 to address the direct, indirect, and temporary impacts of the proposed project on land  
423 use.

##### 424 **3.2.4.1 Federal, State, Regional, and Local Plans**

- 425 1. If not already described in section 3.2.3.1 above, describe any potential or  
426 recommended mitigation measures for addressing impacts to Federal, State,  
427 Regional, and Local Plans.
- 428 2. Refer the reader to “Compatibility with Local Jurisdictional Plans” and/or  
429 “Compliance with Statewide Planning Goals” in section 3.2.3.1, as appropriate,  
430 where measures required for such compatibility or compliance have already been  
431 discussed.

##### 432 **3.2.4.2 Existing and Planned Land Use**

- 433 1. Describe avoidance measures that were considered and those which were  
434 incorporated into the proposed project.

435 2. Describe minimization measures that were considered and those which were  
436 incorporated into the proposed project.

437 3. Describe potential mitigation measures, which may be incorporated into the  
438 proposed project. Examples include, but are not limited to:

- 439 • Access control
- 440 • Overlay zones

#### 441 **3.2.4.3 Coastal Zone**

442 1. Describe avoidance measures that were considered and those which were  
443 incorporated into the proposed project.

444 2. Describe minimization measures that were considered and those which were  
445 incorporated into the proposed project.

446 3. Describe potential mitigation measures, which may be incorporated into the  
447 proposed project.

#### 448 **3.2.4.4 Farmlands / EFU Lands**

449 1. Describe avoidance measures that were considered and those which were  
450 incorporated into the proposed project.

451 2. Describe minimization measures that were considered and those which were  
452 incorporated into the proposed project.

453 3. Describe potential mitigation measures, which may be incorporated into the  
454 proposed project.

#### 455 **3.2.4.5 Wild and Scenic Rivers**

456 1. Describe avoidance measures that were considered and those which were  
457 incorporated into the proposed project.

458 2. Describe minimization measures that were considered and those which were  
459 incorporated into the proposed project.

460 3. Describe potential mitigation measures, which may be incorporated into the  
461 proposed project.

### 462 **References and Additional Guidance**

463 "A Guidebook for Evaluating the Indirect Land Use and Growth Impacts of Highway  
464 Improvements," Final Report, prepared by ECONorthwest for ODOT and FHWA, April  
465 2001. ([Appendices A-C](#)) ([Appendices D-F](#))

466 [A Review and Synthesis of the Requirements for Indirect and Cumulative Impact](#)  
467 [Analysis and mitigation under Major Environmental Laws and Regulations](#) (2006).  
468 Prepared for: American Association of State Highway and Transportation Officials  
469 (AASHTO) by: Transportation Research Board under the National Cooperative Highway  
470 Research Program (NCHRP).

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Purple = sample text Underlined text: Web links

471

472 [NCHRP Report 466—Desk Reference for Estimating the Indirect Effects of](#)  
473 [Proposed Transportation Projects \(2002\). Prepared for the National Cooperative](#)  
474 [Highway Research Program by The Louis Berger Group.](#)

475 [Farmland Protection Policy Act Program \(Natural Resources Conservation Service\)](#)

476 [OAR 731-015-0075, Coordination Procedures for Adopting Plans for Class 1 and 3](#)  
477 [Projects \(OAR 731 Division 15\)](#)

478 [Oregon Coastal Management Program](#)

479 [Oregon Statewide Planning Goals](#)

480 [Oregon Scenic Waterways Program](#)

481 [Oregon Scenic Waterways](#)

482 [ODOT e-Guide Transportation Planning/Land Use](#)

## 1 **3.3 Right-of-Way and Utilities**

### 2 **3.3.1 Regulatory Setting**

3 In cooperation with the Federal Highway Administration (FHWA), the ODOT Right of  
4 Way Section implements Public Law 91-646, the Uniform Relocation Assistance and  
5 Real Properties Acquisition Policies Act of 1970, as amended (Uniform Act). The  
6 Uniform Act ensures the fair and equitable relocation and reestablishment of persons,  
7 businesses, farms and nonprofit organizations displaced as a result of federal or  
8 federally assisted programs. The objective of the Uniform Act is to ensure that persons  
9 displaced as a direct result of Federal or federally-assisted projects are treated fairly and  
10 consistently, and equitably so that such displaced persons will not suffer  
11 disproportionate injuries as a result of projects designed for the benefit of the public as a  
12 whole. The ODOT Right of Way Section and its Region Right of Way offices through its  
13 Relocation Assistance Program assures compliance with the Uniform Act and Federal  
14 rules and regulations. Please see Appendix [X] for a summary of ODOT's relocation  
15 process.

16  
17 Relocation policies and procedures under the administration of the Oregon Department  
18 of Transportation shall be non-discriminatory in accordance with Title VI of the Civil  
19 Rights Act of 1964, which states: "Section 601: No person in the United States shall, on  
20 the grounds of race, color, or national origin, be excluded from participation in, be denied  
21 the benefits of, or be subjected to discrimination under any program or activity receiving  
22 Federal Financial Assistance." Please see Appendix [X] for a copy of ODOT's Title VI  
23 Policy Statement.

### 24 **3.3.2 Affected Environment**

- 26 1. In the references section, list applicable technical report(s) along with completion  
27 date(s). Include a text box in this section that names the technical report, date and  
28 that it is available upon request, should the reader want more information.
- 29 2. Describe the study area, focusing on any residential areas where right of way will  
30 need to be acquired for the project. If a Draft Right of Way Technical Report is  
31 prepared for the project, summarize those findings and then incorporate the report  
32 by reference.
- 33 3. Describe the study area, focusing on any business areas (including farms and non-  
34 profits) where right of way will need to be acquired for the project. If a Draft Right of  
35 Way Technical Report is prepared for the project, summarize those findings and  
36 then incorporate the report by reference.
- 37 4. Clearly state if utility relocation is part of the proposed federal action. If the utility  
38 relocation is part of the federal action, then all of the impacts associated with those  
39 relocations must be accounted for in the environmental document. If the utility  
40 relocation is a separate action that must be taken by the utility companies those  
41 companies are responsible for environmental compliance. Generally if utilities are  
42 in the right of way by permit, the relocation is the responsibility of the utility  
43 companies. However, it may be determined that it is in the public interest to include  
44 utility relocation as part of the federal action.

- 45 a. Include a brief description of all utility systems that could be affected by the  
46 proposed action, including water, sewer, electric power, natural gas, street  
47 lighting, and telecommunication systems.
- 48 b. Describe and include a map of any transmission lines, pump stations, or  
49 other infrastructure that could be affected. Include the study area boundary  
50 on the map.

### 51 **3.3.3 Environmental Consequences**

52  
53 **Separate tables and maps are not required to disclose residential and**  
54 **business relocations.**

#### 55 1. Residential Relocations and Right-of-Way Impacts

- 56 a. It is preferable to provide a table that lists all of the proposed residential  
57 acquisitions by street address (as they are easier for the reader to absorb)  
58 and a parcel level map that clearly depicts the proposed alternative footprints  
59 overlaid (so that property owners can “see” the estimated impact to their  
60 property). However, if there are local sensitivities to providing addresses in  
61 table format, then the map should be of the highest quality so that local  
62 features are clearly identifiable and labeled and land owners can easily and  
63 readily identify their property, and potential Right-of-Way (ROW) impacts from  
64 the proposed alternatives. Include an estimate of total amount of ROW, to the  
65 nearest acre, that would be acquired for the proposed action.
- 66 b. Identify the number of households that would be displaced, including the  
67 known family characteristics (e.g., minority, ethnic, handicapped, elderly,  
68 large family, income level, and owner/tenant status). This information may be  
69 derived from the Socioeconomics Technical Report which includes  
70 Environmental Justice impacts. However, where there are very few proposed  
71 displacements, information on race, ethnicity and income levels should not be  
72 included in the EIS to protect the privacy of those affected.
- 73  
74 **ROW impacts to Environmental Justice populations should also be**  
75 **enumerated in the Environmental Justice subsection of this chapter.**
- 76 c. Include a discussion comparing available (decent, safe, and sanitary) housing  
77 in the area with the housing needs of those displaced. The comparison  
78 should include (1) price ranges, (2) sizes (number of bedrooms), and (3)  
79 occupancy status (owner/tenant).
- 80 d. Include discussion of any factors which may require special relocation  
81 considerations. For example, impacts to mobile home parks that have older  
82 homes. Do other mobile home parks in the area have vacancies? Do older  
83 housing units meet the criteria of the facilities with vacancies?
- 84 e. Right-of-Way impacts are based on information that is available at this time  
85 and may change as the project further develops and when the project  
86 completes final design.



87 2. Business Relocations and Right-of-Way Impacts

88 a. Provide an estimate of the numbers, descriptions, types of occupancy  
89 (owner/tenant), and sizes (number of employees) of businesses (including  
90 farms and non-profits) to be displaced. Describe any other estimated impacts  
91 such as private approach road relocations or impacts associated with partial  
92 acquisition of properties (such as parking). For relocations the discussion  
93 should identify (1) sites available in the area to which the affected businesses  
94 may relocate (including vacancy rates), (2) likelihood of such relocation, and  
95 (3) potential impacts on individual businesses (including farms and non-  
96 profits) caused by displacement. If a Draft Right of Way Technical Report is  
97 prepared for the project, summarize those findings and then incorporate the  
98 report by reference.

99 b. It is preferable to provide a table that lists all of the proposed business  
100 acquisitions by street address (as they are easier for the reader to absorb)  
101 and a parcel level map that clearly depicts the proposed alternative footprints  
102 overlaid (so that property owners can “see” the estimated impact to their  
103 property). However, if there are local sensitivities to providing addresses in  
104 table format, then the map should be of the highest quality so that local  
105 features are clearly identifiable and labeled and land owners can readily  
106 identify their property and potential ROW impacts from the proposed  
107 alternatives. Include an estimate of total amount of ROW, to the nearest acre,  
108 that would be acquired for the proposed action.

109 c. Right-of-Way impacts are based on information that is available at this time  
110 and may change as the project further develops and when the project  
111 completes final design.

112 3. Utility Impacts

113 a. The Region Utility Specialist can help identify potential utility impacts.  
114 Describe all temporary and long-term impacts to utilities. If utility relocations  
115 are considered part of the proposed action, then describe impacts in this  
116 section. Include cost estimates for utility relocations by alternative. A table  
117 may be used to display this information.

118 b. If the relocation of utilities causes any other resource impacts (i.e., wetlands)  
119 then those impacts should be included in the appropriate resource sections.

120 3.3.4 Avoidance, Minimization, and/or Mitigation Measures

121 1. Residential Relocations and Right-of-Way

122 a. Describe avoidance measures that were considered and those which were  
123 incorporated into the proposed project.

124 b. Include a summary of minimization measures that have been incorporated  
125 into the project alternatives. Provide a discussion of the results of contacts  
126 with local governments, organizations, groups, and individuals regarding

- 127 residential relocation impacts, including any measures or coordination  
128 needed to reduce general and/or specific impacts. These contacts are  
129 encouraged for projects with large numbers of relocatees or complex  
130 relocation requirements.
- 131  
132 If the project is considering mitigation that is beyond what the Uniform  
133 Relocation Act may provide, coordinate with ODOT Region Right of Way  
134 Office to identify any financial or incentive programs that may be available  
135 through other agencies or organizations.
- 136 c. In developing mitigation measures, give consideration to the availability of  
137 replacement housing, which must be decent, safe, and sanitary.
- 138 d. A discussion of the measures to be taken where the existing housing  
139 inventory is insufficient, does not meet relocation standards, or is not within  
140 the financial capability of those displaced should be provided. A commitment  
141 to last resort housing should be included when sufficient comparable  
142 replacement housing may not be available.
- 143 2. Business Relocations & Right-of-Way
- 144 a. Describe avoidance measures that were considered and those which were  
145 incorporated into the proposed project.
- 146 b. Include a summary of minimization measures that have been incorporated  
147 into the project alternatives. Provide a discussion of the results of contacts  
148 with local governments, organizations, groups, and individuals regarding  
149 business relocation impacts, including any measures or coordination needed  
150 to reduce general and/or specific impacts. These contacts are encouraged for  
151 projects with large numbers of relocatees or complex relocation  
152 requirements.
- 153  
154 Specific financial and incentive programs or opportunities (beyond those  
155 provided by the Uniform Relocation Act) to business relocates to minimize  
156 impacts may be identified, if available through other agencies or  
157 organizations. Coordination with the ODOT is essential in determining  
158 incentive programs that may be available. Contact the appropriate ODOT  
159 Region Right of Way Office for clearance before identifying any incentive  
160 programs.
- 161 c. Describe potential mitigation measures, which may be incorporated into the  
162 proposed project.
- 163 3. Utilities
- 164 a. Describe avoidance measures that were considered and those which were  
165 incorporated into the proposed project.
- 166 b. Describe minimization measures that were considered and those which were  
167 incorporated into the proposed project.

*Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links*

168  
169

- c. Describe potential mitigation measures, which may be incorporated into the proposed project.

## 1 **3.4 Environmental Justice**

2 This section should summarize all resource impacts specific to EJ populations including  
3 but not limited to:

4 Air, noise, water quality, hazmat, aesthetics, community cohesion, employment,  
5 accessibility, relocation, construction, farmland, traffic congestion, and safety.

### 6 **3.4.1 Regulatory Setting**

7 All projects involving a federal action (funding, permit, or land) must comply with Title VI  
8 of the Civil Rights Act and Executive Order (EO) 12898, Federal Actions to Address  
9 Environmental Justice in Minority Populations and Low-Income Populations. Title IV  
10 prohibits discrimination on the basis of race, color, or national origin. EO 12898 directs  
11 each federal agency, “[t]o the greatest extent practicable and permitted by law, and  
12 consistent with the principles set forth in the report on the National Performance Review,  
13 each agency shall make achieving environmental justice part of its mission by identifying  
14 and addressing, as appropriate, disproportionately high and adverse human health or  
15 environmental effects of its programs, policies, and activities on minority populations and  
16 low-income populations. . .” (EO 12898 Section 1-1.)

17 The following are the FHWA definitions for EJ populations:

18 Low-income Population means any readily identifiable group of low-income persons who  
19 live in geographic proximity, and, if circumstances warrant, geographically  
20 dispersed/transient persons (such as migrant workers or Native Americans) who would  
21 be similarly affected by a proposed FHWA program, policy, or activity.

22 Minority Population means any readily identifiable groups of minority persons who live in  
23 geographic proximity, and if circumstances warrant, geographically dispersed/transient  
24 person (such as migrant workers or Native Americans) who will be similarly affected by a  
25 proposed FHWA program, policy, activity.

26 If your analysis does not identify any EJ populations as defined above, your EJ analysis  
27 is complete and you should disclose that finding. It is not adequate to simply rely on the  
28 census data. You may need local information to verify EJ groups are not in the project  
29 area. The level of effort required to obtain local information is not expected to be  
30 extraordinary.

31 A relatively small minority or low-income population in the project, study, or planning  
32 area does not eliminate the possibility of a disproportionately high and adverse impact  
33 on these populations. Analysts should neither overemphasize the integrity of “small”  
34 populations, nor dismiss them out of hand. Context, circumstances, and comparative  
35 impacts should drive the analysis. The analysis should demonstrate comparative  
36 impacts on EJ populations in relation to non-minority and/or higher income populations.

37 Additional EJ guidance is available at the [U.S. Department of Transportation/FHWA](#)  
38 [Environmental Justice website](#).

39 **3.4.2 Affected Environment**

40 *Population and Households*

- 41 1. In the references section, list applicable technical report(s) along with completion  
42 date(s). Include a text box in this section that names the technical report, date and  
43 that it is available upon request, should the reader want more information.
- 44 2. Describe local and regional populations and households including historic trends,  
45 current conditions, and forecast growth. Average household size should also be  
46 described in this section. Demographic data may come from:
- 47 a. The US Census Bureau's American FactFinder
- 48 b. Portland State University Population Research Center
- 49 c. Local sources, such as a city's or county's comprehensive plan and  
50 development plans, metropolitan planning organization, council of  
51 governments' forecasts, proportion of students participating in free and  
52 reduced cost food programs, etc. should also be consulted.
- 53 d. Most cities have a web page that can provide helpful information.
- 54 e. Interviews with ODOT Public Involvement and ROW staff familiar with the  
55 area.

56 *Low Income*

- 57 1. Low income households (for the purposes of EJ assessments) are defined as  
58 those whose household income is at or below the U.S. Department of Health and  
59 Human Services (HHS) poverty guidelines. The current version of the HHS Poverty  
60 Guideline table should be provided in EIS documents where detailed  
61 environmental justice assessments are included.
- 62 2. Readily identifiable groups of low income populations as identified by Executive  
63 Order 12898 may also be discussed in the Socioeconomic Household Income  
64 Section.

65 *Race and Ethnicity*

- 66 1. Identifying both race and ethnicity of project area populations are important to  
67 development of the community profile and to contribute to the environmental justice  
68 assessment.
- 69 2. Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or  
70 national origin. The Office of Management and Budget (OMB) issued Policy  
71 Directive 15, Revisions to the Standards for the Classification of Federal Data on  
72 Race and Ethnicity, in 1997, establishing five minimum categories for data.  
73 Executive Order 12898 and the DOT and FHWA Orders on Environmental Justice  
74 address persons belonging to any of the following groups:

- 75 a. **Black** - a person having origins in any of the black racial groups of Africa.
- 76 b. **Asian** - a person having origins in any of the original peoples of the Far East,  
77 Southeast Asia, or the Indian subcontinent.
- 78 c. **American Indian and Alaskan Native** - a person having origins in any of the  
79 original people of North America and who maintains cultural identification  
80 through tribal affiliation or community recognition.
- 81 d. **Native Hawaiian or Other Pacific Islander** - a person having origins in any  
82 of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
- 83 e. **Hispanic** - a person of Mexican, Puerto Rican, Cuban, Central or South  
84 American, or other Spanish culture or origin, regardless of race.
- 85 1. Hispanic origin is an ethnicity reflecting shared culture and language, so persons of  
86 Hispanic origin can be of any race. For instance, someone who or whose family  
87 originated in Cuba or Puerto Rico may be both black and Hispanic. Someone with  
88 Mexican origins could be both American Indian and Hispanic.
- 89 2. As a result, grouping minorities into one category must be done carefully to ensure  
90 accurate analysis and avoid double-counting. Special attention must be paid to  
91 which Hispanic population racial subgroups should be added to the racial  
92 minorities identified above. In 2000, nearly half (48 percent) of Hispanics when  
93 responding to the question on race reported only "White", while approximately 42  
94 percent reported only "Some other race". A total of less than 4 percent of Latinos  
95 reported "Black or African American" alone, "American Indian and Alaska Native"  
96 alone, "Asian" alone, or "Native Hawaiian and Other Pacific Islander" alone. Over  
97 six percent reported "Two or more races".
- 98 3. Data to describe race and ethnicity of project area populations may come from:
- 99 a. The US Census Bureau's American FactFinder
- 100 b. School districts maintain records on racial and ethnic minority students. This  
101 information can suggest more current trends or conditions when census data  
102 have not been recently updated.
- 103 c. Local specialty newspapers or community groups can help identify activity  
104 centers, community values, and concerns of the populations they serve.  
105 ODOT ROW, city planners, and/or Public Involvement staff may have good  
106 contacts and local information.

107 *Outreach to Environmental Justice Populations*

108 Describe all activities that were used to specifically outreach to EJ populations. In this  
109 section, do not list general project public involvement activities except in the elements  
110 that are specifically tailored for EJ outreach. Examples include translators available at  
111 public meetings and materials in non-English languages.

112 **3.4.3 Environmental Consequences**

113 1. If no low-income or minority populations have been identified, summarize in the  
114 environmental document all the efforts undertaken to identify such populations and  
115 conclude the section with the following language:

116 In compliance with EO 12898, no minority or low-income populations have been  
117 identified and therefore this project would not cause disproportionately high and  
118 adverse impacts.

119 If this finding is appropriate, then your EJ analysis is complete. Further discussion  
120 will not be included in the Socioeconomics Analysis (Section 3.5).

121 2. If there are low-income or minority populations in the project area, are there  
122 disproportionately high and adverse impacts to those populations relative to either  
123 non-minority or higher impact populations? Consider and discuss the following in  
124 the environmental document:

125 a. The beneficial and adverse impacts on the overall population and on minority  
126 and low-income populations or communities, in particular.

127 b. Summarize impacts that affect EJ groups. Examples of potential topics: air,  
128 noise, water pollution, hazardous waste, aesthetic values, community  
129 cohesion, economic vitality, employment impacts, displacements/relocations,  
130 farmland impacts, accessibility, traffic congestion, safety and construction  
131 impacts. Provide a complete description of all impacts that would be borne by  
132 the EJ group(s). Do not simply refer the reader to the other resource sections.  
133 This information should be synthesized from the various resource technical  
134 reports.

135 c. Avoidance, minimization, and mitigation measures and all offsetting benefits  
136 to affected populations may be taken into account in determining whether  
137 impacts are disproportionately high and adverse.

138 d. Remember, you are looking for project level disproportionately high and  
139 adverse impacts on low-income and minority populations not zero impacts.  
140 What is needed is to show the comparative impacts on these populations in  
141 relation to either non-minority or higher income populations. The evaluation  
142 should reflect the whole project area and should not be conducted separately  
143 for segments.

144 e. As appropriate, include the following concluding statement: Based on the  
145 above discussion and analysis, the [XYZ] alternative(s) will not cause

146 disproportionately high and adverse effects on any minority or low-income  
147 populations as per E.O. 12898 regarding environmental justice.

148 3. **If it appears your project's analysis indicates the EJ finding could be a**  
149 **disproportionately high and adverse impact to EJ populations, coordinate a**  
150 **meeting with ODOT Geo-Environmental and FHWA to review the analysis and**  
151 **determine next steps for the proposed action.**

152 If the Preferred Alternative **will** cause disproportionately high and adverse impacts  
153 to the protected populations, the project is not doomed. Follow the steps in the  
154 [FHWA Guidance on Environmental Justice \(12/2/1998\)](#). Item #5d(d) in the  
155 Guidance describes under what conditions a project may go forward despite its  
156 disproportionate impact on protected populations. These conditions include:

157 (1) a substantial need for the program, policy or activity exists, based on  
158 the overall public interest; and

159 (2) alternatives that would have less adverse effects on protected  
160 populations have either:

161 i. adverse social, economic, environmental, or human health  
162 impacts that are more severe; or

163 ii. would involve increased costs of an extraordinary magnitude.

164 If you do find that you have a disproportionately high and adverse impact on low-  
165 income and minority populations use the following language: Alternative [x, y, z]  
166 will cause a disproportionately high and adverse effect on EJ populations.

#### 167 **3.4.4 Avoidance, Minimization, and/or Mitigation Measures**

168 1. Describe avoidance measures that were considered and those which were  
169 incorporated into the proposed project.

170 2. Describe minimization measures that were considered and those which were  
171 incorporated into the proposed project.

172 3. Describe potential mitigation measures, which may be incorporated into the  
173 proposed project.

174 4. Include a discussion of any proposed measures to minimize or mitigate high and  
175 adverse, disproportionate impacts to minority or low-income populations. Refer to  
176 the [FHWA EJ website](#) for case studies/examples.

177 All considerations under Title VI of the Civil Rights Act of 1964 and related statutes  
178 have also been included in this project. ODOT's commitment to uphold the mandates  
179 of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which  
180 can be found in Appendix [X] of this document.



181 **References and Additional Guidance**

182 [Executive Order \(EO\) 12898](#)

183 [U.S. Department of Health and Human Services \(HHS\) poverty guidelines](#)

184 [Title VI of the Civil Rights Act](#)

185 [Policy Directive 15, Revisions to the Standards for the Classification of Federal Data](#)  
186 [on Race and Ethnicity](#)

187 [DOT and FHWA Orders on Environmental Justice](#)

188 [FHWA Guidance on Environmental Justice \(12/2/1998\)](#)

189 [FHWA EJ website](#)

## 1 3.5 Socioeconomic Analysis

2 This section is organized differently than other sections in this chapter (i.e., the  
3 subsection headings of the Affected Environment do not directly match the subsection  
4 headings of Environmental Consequences.)

### 5 3.5.1 Regulatory Setting

6 The National Environmental Policy Act of 1969 as  
7 amended (NEPA), established that the federal  
8 government use all practicable means to ensure for all  
9 Americans safe, healthful, productive, and aesthetically  
10 and culturally pleasing surroundings (42 U.S.C.  
11 4331[b][2]). The Federal Highway Administration in its  
12 implementation of NEPA (23 U.S.C. 109[h]) directs that  
13 final decisions regarding projects are to be made in the  
14 best overall public interest. This requires taking into  
15 account adverse environmental impacts, such as,  
16 destruction or disruption of human-made resources,  
17 community cohesion and the availability of public  
18 facilities and services.

19 The framework provided by Executive Order 12898 on  
20 Environmental Justice and the U.S. DOT Order (5610.2)  
21 addresses only minority populations and low-income  
22 populations. However, concentrations of the elderly,  
23 children, disabled, and other populations protected by  
24 Title VI of the Civil Rights Act of 1964 and related  
25 nondiscrimination statutes will also be discussed.

26 This EIS addresses all impacts (to the human and  
27 natural environments), and describes any mitigating  
28 protections or benefits that would be provided by Federal  
29 or State law, or as part of the action. In particular, the  
30 Age Discrimination Act of 1975, as amended (42 U.S.C.  
31 6101 et seq.), prohibits discrimination on the basis of  
32 age in programs receiving Federal financial assistance,  
33 and Section 504 of the Rehabilitation Act of 1973 (29  
34 U.S.C. 794 and 49 C.F.R. Part 27.7) protects handicapped persons.

35 Resources for conducting socioeconomic assessments include:

- 36 • [FHWA sponsored Community Impact Assessment website.](#)
- 37 • [NCHRP 456 Guidebook for Assessing the Social and Economic Effects of](#)  
38 [Transportation Projects.](#)

39 Additional community impacts legislation and regulations are listed on the FHWA  
40 Environmental Guidebook website. Regulatory elements specific to sub areas within  
41 the socioeconomic analysis are addressed within those sub sections; these include

3.5	Socioeconomic Analysis
3.5.1	Regulatory Setting
3.5.2	Affected Environment
3.5.3	Environmental Consequences: Community Character and Cohesion
3.5.4	Avoidance, Minimization, and/or Mitigation Measures: Community Character and Cohesion
3.5.5	Environmental Consequences: Community Facilities
3.5.6	Avoidance, Minimization, and/or Mitigation Measures: Community Facilities
3.5.7	Environmental Consequences: Businesses and Established Business Districts
3.5.8	Avoidance, Minimization, and Mitigation: Businesses and Established Business Districts
3.5.9	Environmental Consequences: Local, Regional, and State Economy
3.5.10	Avoidance, Minimization, and Mitigation: Local, Regional, and State Economy
3.5.11	Environmental Consequences: General and Particular Social Groups
3.5.12	Avoidance, Minimization, and Mitigation: General and Particular Social Groups

42 residential and business relocations, environmental justice, and general and particular  
43 social groups.

#### 44 **3.5.2 Affected Environment**

45 1. In the references section, list applicable technical report(s) along with completion  
46 date(s). Include a text box in this section that names the technical report, date and  
47 that it is available upon request, should the reader want more information.

48 2. Community and economic impact assessment require familiarity with the  
49 community. First develop a community profile, a summary of the social and  
50 economic characteristics of the area where the project will be built (the “affected  
51 area”). Information sources may be primary (interviews, field work, and public  
52 meetings) or secondary (census data, comprehensive plans, etc.). Field work for  
53 the community profile should include walking surveys and/or windshield surveys,  
54 as appropriate. Authors may need to refine the profile during the assessment  
55 process to reflect change that occurs during the project development process and  
56 as identified impacts bring new information needs to light.

##### 57 **3.5.2.1 Study Area Description**

58 Provide a map that defines the study area boundaries and relationship to project area  
59 definitions. Aerial and road maps from local jurisdictions as well as from ODOT are good  
60 sources.

#### 61 **Community Features**

62 1. Describe community cohesion. The following are indicators that the community has  
63 a high degree of cohesion.

64 a. Long, average residency tenures: long-term residents are likely to feel more  
65 connected. Right-of-way can probably provide this information from their  
66 database. The US Census also collects this information.

67 b. Households of two or more people; a high percentage of single-person  
68 households tends to correlate with lower cohesion.

69 c. Frequent personal contact within the community: this would be observed in  
70 field reviews or in interviews with residents.

71 d. Level of community activity determined primarily through field visits and/or  
72 interviews with residents. If a park is in the neighborhood, field visits after  
73 regular work hours might be helpful. Look for notices and handbills  
74 describing activities (neighborhood yard sale, ice cream social, etc.).

75 e. Religious and/or ethnic homogeneity

76 2. Describe community facilities (e.g., recreation and activity centers and public  
77 services including: parks, schools, community centers, churches, medical  
78 facilities). Include maps, as appropriate.

79  
80 For emergency services include a brief description of all law enforcement, fire,

81 medical, and any other emergency services that could be affected by the proposed  
82 action. Include a map that depicts the location of emergency service providers in  
83 relation to the proposed alternatives.

84 3. Describe community, neighborhood, and/or subdivision boundaries. Identify  
85 residences and residential clustering in project area, especially those bordering the  
86 alternatives and near interchanges. Include maps, as appropriate.

87 4. Identify businesses, business districts or clusters of businesses, especially those  
88 bordering the alternatives and near interchanges. Include maps, as appropriate.

89 5. Key resources for community profile information include:

90 a. Walking and windshield surveys

91 b. Oregon Business Development Department (OBDD) through its Infrastructure  
92 Finance Authority website provides links to community development partners  
93 and community profiles that include information about school districts, fire  
94 and police, medical facilities, local transportation agencies, as well as other  
95 information.

96 c. Local phonebooks often include both maps and listings of key community  
97 facilities and service providers.

98 d. Most cities have a web page that can provide helpful information.

### 99 **Demographic and Economic Trends**

100 Identify and discuss demographic characteristics, economic base, and other relevant  
101 community characteristics. Information provided should describe the following topics  
102 within the project area and city, compared to the region and state as appropriate.

#### 103 *Other Population Subgroups*

104 1. A number of other population subgroups may be considered initially, in the  
105 development of general information, or if an analyst determines those groups need  
106 to be added later. Age distribution identifies potential student and elderly  
107 population concentrations. Additional data on group housing quarters, the disabled,  
108 and transit dependent populations may also prove helpful. Potential data sources  
109 include:

110 a. The US Census Bureau's American FactFinder

111 b. Local specialty newspapers or community groups can help identify activity  
112 centers, community values, and concerns of the populations they serve.  
113 ODOT ROW, city planners, and/or Public Involvement staff may have good  
114 contacts and local information.

115 c. Proprietary demographic company reports may be used subject to project  
116 management approval.

117 *Household Income*

118 1. Identifying household incomes within the project area is important to development  
119 of the community profile and contributes to the environmental justice (EJ)  
120 assessment. Low income populations (for the purposes of EJ assessments) are  
121 defined as those whose household income is at or below the U.S. Department of  
122 Health and Human Services poverty guidelines. The current version of the HHS  
123 Poverty Guideline table should be provided in EIS documents where detailed  
124 environmental justice assessments are included. Data to describe income ranges  
125 of project area households may come from:

- 126 a. The US Census Bureau's American [FactFinder](#)
- 127 b. U.S. Department of Health and Human Services poverty guidelines
- 128 c. School districts track the proportion of students participating in free and  
129 reduced cost food programs. This information can provide a more recent  
130 indicator of potential low income populations when Census data have not  
131 been updated in some time.
- 132 d. Proprietary demographic company reports may be used subject to project  
133 management approval.

134 *Housing*

135 1. Describe housing in the project vicinity and the surrounding area including number  
136 of housing units, housing types, tenure (renter vs. owner occupied), and availability  
137 of affordable housing. This information contributes to relocation and environmental  
138 justice assessments. If mobile home parks and/or senior housing (which can be  
139 indicators of lower median or fixed incomes) exist within the project area, this type  
140 of housing should be discussed in this section. Housing data may come from:

- 141 a. The US Census Bureau's American [FactFinder](#)
- 142 b. Local housing authorities, newspapers, and real estate multiple listing  
143 services can give you a feel for current housing costs.
- 144 c. City planning documents (such as housing and land need analyses)
- 145 d. Walking and/or windshield surveys of the project area

146 *Property Values and Tax Base*

147 1. Describe project area property values and the local tax base structure and trends.  
148 Property values should be statistical only. For example, it would be acceptable to  
149 state the median sale price for single family residential property in a given area.  
150 However, any statements about specific property values should not be included as  
151 it could lead a reader to expectations about value for impacted properties.  
152 Coordinate this information with the Region Right of Way Office.

153 2. This information will be used in the Environmental Consequences section (Local  
154 Regional and State Economy Subsection) to assess impacts to the tax base from  
155 taxable property removed from the base (through right-of-way purchases), changes  
156 in property values, or changes in business activity.

157 3. A good starting point to collect data is the Oregon Department of Revenue “Oregon  
158 County Webpages and Phone Numbers” website which provides links to county  
159 assessors’ pages (for those counties that have them) as well as contact phone  
160 numbers and email addresses.

### 161 *Employment and Industry*

162 1. The description of current project area employment and industry trends sets the  
163 foundation for assessment of economic impacts. The economic profile should  
164 include major industries in the project vicinity and region, identification of the  
165 largest employers, unemployment rate, occupations of project area residents, and  
166 commute information. Descriptions of employment and industry need to recognize  
167 the differences between data based on place of residence and data based on  
168 place of work or location of business.

169 2. Employment and industry data may come from:

170 a. Profiles of communities (including principal industries, largest employers,  
171 payroll employment by industry) are available through Oregon Business  
172 Development Department (OBDD) Infrastructure Finance Authority. A listing  
173 of cities and their websites can also be found there.

174 b. Oregon Employment Department's Local Labor Trends publications identify  
175 recent employment trends, unemployment rates, and business news by  
176 region and metropolitan statistical area.

177 c. The US Census Bureau's American FactFinder can provide data on type of  
178 occupations held by residents and commuting length. It is important to  
179 understand that these data are collected by location of residence. These jobs  
180 may or may not be located in the immediate community. This is why  
181 identifying typical commutes are important.

182 d. The Chamber of Commerce

183 e. City planning documents may also be of assistance in determining land  
184 availability for different uses which may be displaced.

### 185 **3.5.3 Environmental Consequences: Community Character and Cohesion**

186 1. The discussion in the environmental consequences portion of this section should  
187 focus on the impacts of each alternative on the community's character (“setting”)  
188 and on the cohesiveness of the community. Discuss both beneficial and adverse  
189 impacts.

190 2. Give consideration to:

- 191 a. Proposed alternatives increasing or decreasing access to public transit and/or  
192 transportation systems.
- 193 b. Dividing or reconnecting of neighborhoods (residential areas to each other  
194 and residential areas to neighboring community facilities, public services  
195 facilities, and business districts).
- 196 c. Growth or decline impacts on the community's character (including increasing  
197 urbanization or isolation).
- 198 d. Changes in quality of life (e.g., noise, air quality, aesthetics).

199 **3.5.4 Avoidance, Minimization, and/or Mitigation Measures: Community**  
200 **Character and Cohesion**

- 201 1. Describe avoidance measures that were considered and those which were  
202 incorporated into the proposed project.
- 203 2. Describe minimization measures that were considered and those which were  
204 incorporated into the proposed project.
- 205 3. Describe potential mitigation measures, which may be incorporated into the  
206 proposed project.

207 **3.5.5 Environmental Consequences: Community Facilities**

208 Community facilities are those places and agencies which provide community activities  
209 and services. The evaluation of impacts on community facilities identifies the relationship  
210 between the proposed transportation action(s) and community activities and services  
211 provided (for instance fire, police, and emergency medical, community centers, and  
212 places of worship).

- 213 1. The discussion in the environmental consequences portion of this section should  
214 focus on the impacts of each alternative on community facilities within the project  
215 area and the provision of public services to the project area.
- 216 2. Describe:
- 217 a. Proposed alternatives increasing or decreasing access to public transit and/or  
218 transportation systems
- 219 b. Proposed change in right-of-way impacts on community facilities and/or  
220 public services
- 221 c. Impediment or enhancement of private or public approach roads between  
222 residences and community facilities and/or public services
- 223 d. Impact of proposed action on the use of public facilities

- 224 e. Impacts to law enforcement, fire, medical and any other emergency service  
225 providers caused by detours and roadway closures, including changes in  
226 emergency response time. Also, be sure to include any positive impacts,  
227 such as improvements for emergency services that would improve response  
228 times. Scoping the project with the locals can be very helpful in this regard.  
229 Describe all temporary and long-term impacts to the emergency services.
- 230 f. Coordination that has occurred with emergency service providers.
- 231 g. Short- and long-term changes in private or public approach roads to parking,  
232 and entry to public services and other facilities.

233 **3.5.6 Avoidance, Minimization, and/or Mitigation Measures: Community**  
234 **Facilities**

- 235 1. Describe avoidance measures that were considered and those which were  
236 incorporated into the proposed project.
- 237 2. Describe minimization measures that were considered and those which were  
238 incorporated into the proposed project.
- 239 3. Describe potential mitigation measures, which may be incorporated into the  
240 proposed project. Include any measures proposed to alleviate or offset an adverse  
241 impact or to replace a resource (such as a set aside for recreation facilities or  
242 sound barriers).

243 **3.5.7 Environmental Consequences: Businesses and Established Business**  
244 **Districts**

- 245 1. The discussion in the environmental consequences portion of this section should  
246 focus on the non-right-of-way impacts (beneficial and adverse) of each alternative  
247 on businesses and business districts within the project vicinity and study area.
- 248 2. Give consideration to:
- 249 a. Business impacts based on changes in traffic patterns and volumes.  
250 Substantial changes between current and projected traffic volumes and  
251 designs that require out of direction travel are most likely to affect businesses  
252 that are reliant on drive-by traffic. Destination businesses and/or those  
253 businesses that serve both as a destination and attract drive-by customers  
254 tend to be less impacted by reductions in traffic volume and out of direction  
255 travel.
- 256 b. Changes in public or private approach roads at the business and business  
257 district level. For businesses and business districts, the focus on ease of use  
258 revolves around customers and visitors. How will entry to the businesses or  
259 the business district be changed? How will parking availability change?
- 260 c. Changes in business clustering or isolation due to proposed transportation  
261 action(s). Businesses benefit from clustering in both complimentary and



262 competing business groups. To the degree that proposed actions enhance or  
263 reduce clustering activity, business viability could be impacted.

264 **3.5.8 Avoidance, Minimization, and/or Mitigation: Businesses and Established**  
265 **Business Districts**

266 1. Describe avoidance measures that were considered and those which were  
267 incorporated into the proposed project.

268 2. Describe minimization measures that were considered and those which were  
269 incorporated into the proposed project.

270 3. Describe potential mitigation measures, which may be incorporated into the  
271 proposed project.

272 **3.5.9 Environmental Consequences: General and Particular Social Groups**

273 1. Concentrations of the elderly, children, and the disabled or similar population  
274 groups could also experience adverse impacts as the result of an action. All  
275 impacts on sectors of the community (including the community as a whole) should  
276 be investigated, analyzed, and considered during decision making. The discussion  
277 in the environmental consequences portion of this section should focus on the  
278 impacts of each alternative on social segments within the community. Pay  
279 particular attention to areas of the community that have elderly persons, disabled  
280 persons, children, and transit-dependent individuals.

281 2. Give consideration to:

282 a. Proposed alternatives increasing or decreasing access to public transit and/or  
283 transportation systems.

284 b. Dividing these populations from or reconnecting them to other residential  
285 areas, to each other, and to neighboring community facilities, public services  
286 facilities, and business districts.

287 c. Growth or decline impacts on elderly persons, disabled persons, children,  
288 and transit-dependent individuals that differ from those to the population in  
289 general.

290 d. Changes in quality of life (e.g., noise, air quality, aesthetics) for elderly  
291 persons, disabled persons, children, and transit-dependent individuals that  
292 differ from those impacts to the population in general.

293 **3.5.10 Avoidance, Minimization, and Mitigation: General and Particular Social**  
294 **Groups**

295 1. Describe avoidance measures that were considered and those which were  
296 incorporated into the proposed project.

297 2. Describe minimization measures that were considered and those which were  
298 incorporated into the proposed project.

299 3. Describe potential mitigation measures, which may be incorporated into the  
300 proposed project.

### 301 **3.5.11 Environmental Consequences: Local, Regional, and State Economy**

302 Where there are foreseeable economic impacts, discuss by alternative, the impacts of  
303 the proposed action on development, tax revenues, public expenditures, employment  
304 opportunities, retail sales and changes to public or private approach roads.

305 1. The discussion in the environmental consequences portion of this section should  
306 focus on the positive and negative impacts of each alternative on the local,  
307 regional, and state economies, as appropriate. It is important to distinguish and  
308 address the way economic impacts vary when different geographic areas (and  
309 scales) are analyzed. Additionally, the magnitude and character of impacts can be  
310 very different over alternate analysis time periods (such during construction, vs.  
311 immediately following project completion, or over a long-term horizon).

312 2. Give consideration to:

313 a. Short-term job impacts should be assessed based on project construction  
314 spending. Transportation construction expenditures support jobs in the  
315 construction industry (direct impacts), in supplying industries (indirect  
316 impacts), and in many other businesses such as retailers, restaurants, and  
317 grocers where the workers spending their income (induced impacts). These  
318 impacts have a limited duration. ODOT's Long Range Planning Unit provides  
319 job impacts multipliers for each region and a construction dollar conversion  
320 table (as well as instructions on how to use them) in a biennial report "Short-  
321 Run Job Impacts from Transportation Construction Expenditures in Oregon"  
322 for the Geo-Environmental Section. This resource must be used by  
323 consultants to produce their job impacts estimated.

324 b. Relocation to, or new development in, the vicinity of new roadways,  
325 intersections, and interchanges (unless redirected or precluded by land use  
326 policy). A transportation project may improve public or private approach roads  
327 to some sites relative to others within the same community or city. So,  
328 businesses seeking a comparative advantage may relocate. Pay special  
329 attention to determination of whether the impact is likely to be relocations or  
330 net increases in economic activity (based on conditions of the local and  
331 regional economies).

332 c. Economic development impacts at the broader community or regional level,  
333 both positive and negative should be assessed. Will the proposed  
334 transportation action(s) create opportunities for businesses to move to the  
335 area, relocate to other locations within the area, close, or move outside the  
336 area? Again, pay special attention to determination of whether the impact is  
337 likely to be relocations or net increases (or decreases) in economic activity  
338 (based on conditions of the local and regional economies).

339 d. Impacts to the tax base and/or tax revenues should be analyzed. These may  
340 include any of the following: impacts on the tax base from taxable property  
341 removed from base (through right-of-way purchases), or changes in business  
342 activity.

343 **3.5.12 Avoidance, Minimization, and Mitigation: Local, Regional, and State**  
344 **Economy**

- 345 1. Describe avoidance measures that were considered and those which were  
346 incorporated into the proposed project.
- 347 2. Describe minimization measures that were considered and those which were  
348 incorporated into the proposed project.
- 349 3. Describe potential mitigation measures, which may be incorporated into the  
350 proposed project.

351 **References and Additional Guidance**

352 [FHWA sponsored Community Impact Assessment website](#)

353 [NCHRP 456 Guidebook for Assessing the Social and Economic Effects of](#)  
354 [Transportation Projects](#)

355 FHWA Environmental Guidebook website

356 [Oregon Department of Revenue "Oregon County Webpages and Phone Numbers"](#)

357

1 **3.6 Parks and Recreational Facilities, (Wildlife or Waterfowl Refuges,**  
2 **if applicable)**

3 **3.6.1 Regulatory Setting**

4 **Section 4(f)**

5 Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49  
6 U.S.C. 303, declares that “it is the policy of the United States Government that special  
7 effort should be made to preserve the natural beauty of the countryside and public park  
8 and recreation lands, wildlife and waterfowl refuges, and historic sites.”

9 Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation  
10 program or project requiring the use of publicly owned land of a public park, recreation  
11 area, or wildlife or waterfowl refuge of national, State, or local significance, or land of an  
12 historic site of national, State, or local significance (as determined by the federal, state,  
13 or local officials having jurisdiction over the park, area, refuge, or site) only if:

- 14 • there is no prudent and feasible alternative to using that land; and
- 15 • the program or project includes all possible planning to minimize harm to the  
16 park, recreation area, wildlife and waterfowl refuge, or historic site resulting from  
17 the use.

18 Section 4(f) further requires consultation with the Department of the Interior and, as  
19 appropriate, the involved offices of the Departments of Agriculture and Housing and  
20 Urban Development in developing transportation projects and programs that use lands  
21 protected by Section 4(f). If historic sites are involved, then coordination with the State  
22 Historic Preservation Officer or Tribal Historic Preservation Officer is also needed.

23 **Section 6(f)**

24 The Land and Water Conservation Fund Act (LWCF) State Assistance Program was  
25 established by the LWCF Act of 1965 (Section 6, Land and Water Conservation Fund  
26 Act of 1965, as amended; Public Law 88-578; 16 U.S.C. 4601-4 et seq.) to stimulate a  
27 nationwide action program to assist in preserving, developing, and assuring to all  
28 citizens of the United States of present and future generations such quality and quantity  
29 of outdoor recreation resources as may be available and are necessary and desirable for  
30 individual active participation. The program provides matching grants to States and  
31 through States to local units of government, for the acquisition and development of  
32 public outdoor recreation sites and facilities.

33  
34 Property acquired or developed with LWCF assistance shall be retained and used for  
35 public outdoor recreation. Any property so acquired and/or developed shall not be wholly  
36 or partly converted to other than public outdoor recreation uses without the approval of  
37 NPS pursuant to Section 6(f)(3) of the LWCF Act and these regulations. The conversion  
38 provisions of Section 6(f)(3), 36 CFR Part 59, and these guidelines apply to each area or  
39 facility for which LWCF assistance is obtained, regardless of the extent of participation of  
40 the program in the assisted area or facility and consistent with the contractual agreement  
41 between NPS and the State.

42 **3.6.2 Affected Environment**

- 43 1. In the references section, list applicable technical report(s) along with completion  
44 date(s). Include a text box in this section that names the technical report, date  
45 and that it is available upon request, should the reader want more information.
- 46 2. Describe and provide a map of existing and planned parks and recreational  
47 facilities and wildlife and waterfowl refuges within the project vicinity, include the  
48 study area boundary on the map.
- 49 3. Identify properties to which Section 4(f) applies.

50 **3.6.3 Environmental Consequences**

51 Provide a map which depicts project alternatives and the park and recreational  
52 facilities and/or wildlife and waterfowl refuge. Discuss how each alternative would  
53 impact the facilities. Describe impacts in terms of land that would be  
54 incorporated into the transportation facility, as well as impacts to the attributes,  
55 qualities and features of each facility. What is the facility used for and how would  
56 the alternative impact those uses?

57 **3.6.3.1 Resources Evaluated Relative to the Requirements of Section 4(f)**

58 1. No Use of Section 4(f) Resources

59 Briefly state whether each proposed alternative would “use” a Section 4(f) park or  
60 recreational resource, wildlife or waterfowl refuge. If properties were evaluated  
61 for Section 4(f) and a determination of no use was made, document those  
62 discussions here, relative to the Section 4(f) law, regulation and policy paper.  
63 Provide maps depicting the alternatives and Section 4(f) properties that allow the  
64 reader to readily identify the relationship between the property and the proposed  
65 action.

66 a. **[No Section 4(f) resources.]** The project alternatives have been  
67 evaluated to determine if any use of Section 4(f) park or recreational  
68 facilities, wildlife or waterfowl refuges will occur. This evaluation has  
69 determined that no Section 4(f) park or recreational facilities, wildlife or  
70 waterfowl refuges are in the project study area and therefore no Section  
71 4(f) park or recreational facilities, wildlife or waterfowl refuges will be used  
72 by the project alternatives.

73 b. **[Section 4(f) resources present, but no use will occur.]** The project  
74 alternatives have been evaluated to determine if any use of Section 4(f)  
75 park or recreational facilities, wildlife or waterfowl refuges will occur. This  
76 evaluation has determined that the following are Section 4(f) properties:  
77 [list]. However, because [state reason, such as no land will be  
78 incorporated] no Section 4(f) park or recreational facilities, wildlife or  
79 waterfowl refuges will be used by the project alternatives.

80 2. Temporary Occupancy

81 If proposed alternatives will result in a temporary occupancy of a Section 4(f)  
82 park or recreational resource, wildlife or waterfowl refuge document this  
83 determination in accordance with 23 CFR 774 and ODOT/FHWA temporary  
84 occupancy procedures.

85  
86 3. *De Minimis* Section 4(f)

87 If the proposed project would result in a *de minimis* use of a park or recreational  
88 property, wildlife or waterfowl refuge pursuant to SAFETEA-LU Section 6009,  
89 describe and document that proposed *de minimis* finding here, consistent with  
90 ODOT/FHWA *de minimis* procedures. Parks, recreational, wildlife or waterfowl  
91 refuge *de minimis* findings can only be made by FHWA following an opportunity  
92 for the public to comment (which is usually the comment period for the DEIS).  
93 Additionally, agreement from the official with jurisdiction regarding the *de minimis*  
94 nature should be sought after the close of the comment period, so that the  
95 official can consider the comments submitted by the public.

96 4. Net Benefit Programmatic Section 4(f)

97 If the proposed project would result in a programmatic Section 4(f) net benefit,  
98 describe and document that *proposed* net benefit here. Coordinate with ODOT  
99 Geo-Environmental Section and FHWA if you are considering using the Net  
100 Benefit Programmatic.

101 5. Individual Section 4(f) Evaluation

102 If project alternatives would use a Section 4(f) resource resulting in an individual  
103 Section 4(f) evaluation, refer the reader to the "Draft Section 4(f) Evaluation."

104 **3.6.3.2 Resources Evaluated Relative to the Requirements of Section 6(f)**

105 1. No Section 6(f) resources

106  
107 The project alternatives have been evaluated to determine if any conversion of  
108 Section 6(f) encumbered properties will occur. This evaluation has determined  
109 that no Section 6(f) encumbered properties are in the project study area and  
110 therefore no Section 6(f) encumbered properties will be converted by the project  
111 alternatives.

112 2. Section 6(f) resources present, but no conversion will occur

113  
114 The project alternatives have been evaluated to determine if any conversion of  
115 Section 6(f) encumbered properties will occur. This evaluation has determined  
116 that the following are Section 6(f) encumbered properties: [list]. However,  
117 because [state reason, such as no land will be incorporated] no Section 6(f)  
118 encumbered properties will be converted by the project.

119 3. Section 6(f) encumbered properties that will require conversion

120  
121 Provide a map which depicts project alternatives and the encumbered properties  
122 that will require conversion. List each Section 6(f) encumbered property. Discuss

123 how each alternative would impact the encumbered properties. Describe  
124 impacts in terms of land that would be incorporated into the transportation facility,  
125 as well as impacts to the attributes, qualities and features of each encumbered  
126 property. Refer the reader to the mitigation section for a description of proposed  
127 replacement properties.

128 3.6.4 **Avoidance, Minimization and/or Mitigation**  
129 **Any measures included in the individual Section 4(f) evaluation that**  
130 **pertain to parks and recreational resources should also be included here.**

- 131 1. Describe avoidance measures that were considered and those which were  
132 incorporated into the proposed project.
- 133 2. Describe minimization measures that were considered and those which were  
134 incorporated into the proposed project.
- 135 3. Describe potential mitigation measures, which may be incorporated into the  
136 proposed project. Describe how the proposed measure would offset the impact  
137 and why it is proposed. Describe proposed 6(f) replacement properties.

138 **References and Additional Guidance**

139 [49 USC 303](#)

140 [23 CFR 774, Section 4\(f\) Regulation](#)

141 [Section 4\(f\) Policy Paper, March 1, 2005](#)

142 [FHWA Guidance on \*De Minimis\* Impacts to Section 4\(f\) Resources](#)

143 [FHWA Section 4\(f\) Programmatic Net Benefit Guidance](#)

144 [Section 4\(f\) Temporary Occupancy Documentation](#)

145 [Section 4\(f\) \*de minimis\* Template for Parks and Recreational Resources](#)

146 [Section 4\(f\) \*de minimis\* Template for Section 106 Resources](#)

147 [National Trails Systems Act](#)

148 [AASHTO Practitioners Handbook #11: Complying with Section 4\(f\)](#)

149 [Section 6\(f\) Land and Water Conservation Fund Act Handbook](#)

## 1 3.7 Historic Resources

2 If a proposed project involves numerous different types of historic resources, the clarity  
3 of the discussion may be improved if it is divided by resource type: historical or  
4 archaeological.

### 5 3.7.1 Regulatory Setting

6 The National Historic Preservation Act of 1966 (NHPA), as amended, sets forth national  
7 policy and procedures regarding historic properties, defined as districts, sites, buildings,  
8 structures, and objects included in, or eligible for, the National Register of Historic  
9 Places (NRHP). Section 106 of NHPA requires federal agencies to take into account the  
10 effects of their undertakings on such properties and to allow the Advisory Council on  
11 Historic Preservation (ACHP) the opportunity to comment on those undertakings,  
12 following regulations issued by the Advisory Council on Historic Preservation (36 CFR  
13 800).

14 In 2001, a Section 106 Programmatic Agreement (PA) between the ACHP, FHWA, the  
15 Oregon State Historic Preservation Officer (SHPO), and ODOT went into effect for minor  
16 transportation projects, with FHWA involvement. The PA defines the 106 process that  
17 ODOT uses and delegates some review responsibilities from SHPO to ODOT.

18 **If ARPA applies to your project include the following language, otherwise do not**  
19 **insert.** The Archaeological Resources Protection Act (ARPA) applies when a project  
20 may involve archaeological resources located on federal or tribal land. ARPA requires  
21 that a permit be obtained before excavation of an archaeological resource on such land  
22 can take place, however, many Oregon BLM and USFS districts require ARPA permits  
23 for pedestrian surveys as well.

24 Archaeological resources are also protected under Oregon Revised Statutes 390.235  
25 which requires a permit for excavation and/or exploration of archaeological resources on  
26 public lands and Oregon Administrative Rule 736-051-0080 & 0090 for protection of  
27 archaeological resources on public and private lands. In addition to the archaeological  
28 protections, Oregon Revised Statute 97.740 was established to protect Indian graves  
29 and sacred objects.

30 Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49  
31 U.S.C. 303, declares that "it is the policy of the United States Government that special  
32 effort should be made to preserve the natural beauty of the countryside and public park  
33 and recreation lands, wildlife and waterfowl refuges, and historic sites."

34 Section 4(f) specifies that the Secretary of Transportation may approve a transportation  
35 program or project requiring the use of publicly owned land of a public park, recreation  
36 area, or wildlife and waterfowl refuge of national, State, or local significance, or land of  
37 an historic site of national, State, or local significance (as determined by the federal,  
38 state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

39 (1) there is no prudent and feasible alternative to using that land; and



40 (2) the program or project includes all possible planning to minimize harm to the park,  
41 recreation area, wildlife and waterfowl refuge, or historic site resulting from the use;  
42 or

43 (3) the Administration determines that the use of the property, including any measures to  
44 minimize harm committed to by the application will have a *de minimis* impact as  
45 defined in 23 CFR 774.117.

46 Section 4(f) further requires consultation with the Department of the Interior and, as  
47 appropriate, the involved offices of the Departments of Agriculture and Housing and  
48 Urban Development in developing transportation projects and programs that use lands  
49 protected by Section 4(f). If NRHP-listed or eligible sites are involved, then coordination  
50 with the State Historic Preservation Officer or Tribal Historic Preservation Officer is also  
51 needed.

### 52 3.7.2 Affected Environment

53 Not all information about historic resources can be fully disclosed to the public. The  
54 location of an archaeological site is exempt from disclosure to the public by law, to  
55 protect sites from looters. Site locations can be disclosed to archaeologists who meet  
56 SHPO standards for archaeologists.

- 57 1. Include a text box in this subsection that names the technical report, date, and that  
58 it is available upon request, should the reader want more information.
- 59 2. Provide map of the Area of Potential Effect (APE) and briefly discuss methodology  
60 used to support studies—records searches, field surveys, etc.
- 61 3. Using the relevant technical report(s), identify any NRHP-listed and/or eligible  
62 historic resources within the APE. These resources could include Traditional  
63 Cultural Properties (TCPs). Remember, no location specific information should be  
64 used when discussing archaeological resources as this is sensitive information.
- 65 4. Discuss the significance of each evaluated historic resource within the APE, in  
66 terms of the significance criteria A, B, C, or D and relevant elements of integrity  
67 (location, design, setting, materials, workmanship, feeling, and association) and  
68 whether it is listed in or eligible for listing in the National Register of Historic Places.  
69 Summary paragraphs that explain why the resources that are eligible or listed  
70 should be found in the relevant technical report(s) and may be copied directly into  
71 the EIS.

72 Note that a historic resource determined *eligible* for listing in the National Register  
73 is considered to have the same status as a listed property for purposes of the  
74 project or undertaking.

- 75 5. Identify properties to which Section 4(f) applies. Reference law, regulation and  
76 guidance as applicable as a basis for determining Section 4(f) does not apply.

### 77 3.7.3 Environmental Consequences

78 Section 106 of the NHPA uses “effects” terminology when discussing impacts to historic  
79 resources. Therefore, this section discloses the project’s effects on historic resources,  
80 how those effects were determined, and whether and how effects can be avoided or  
81 minimized.

- 82 1. In Section 106 language § 800.4(d)(1), if there are no historic properties present or  
83 there are historic properties present but the undertaking will have no effect upon  
84 them as defined in § 800.16(i), include a Section 106 finding of “No Historic  
85 Properties Affected.”
- 86 2. When historic resources are present and could be affected, using information taken  
87 from the relevant technical report(s), Determinations of Eligibility, Findings of  
88 Effect, etc., discuss the potential effects of each alternative on each identified  
89 NRHP-listed or eligible historic resource. For resources listed in or eligible for the  
90 NRHP, discuss whether each alternative would alter the characteristics that make  
91 the resource eligible (location, design, setting, materials, workmanship, feeling, and  
92 association), and specifically state for each resource the appropriate Section 106  
93 determination of effect: No Historic Properties Affected, No Adverse Effect, or  
94 Adverse Effect. Specifically state whether any TCPs would be impacted by the  
95 alternatives.
- 96 3. Discuss the results of consultation with SHPO, or if applicable, the Tribal Historic  
97 Preservation Officer (THPO), as well as the Advisory Council on Historic  
98 Preservation (ACHP), and any other consulting parties (e.g., Indian tribes, local  
99 governments, others with a demonstrated legal or economic interest or concern  
100 with the effects on historic properties). Discuss the status of SHPO or THPO  
101 concurrence with the findings under Section 106. Include signed concurrence  
102 documentation in either a separate appendix or the Comments and Coordination  
103 section of the document.

104 There may be additional coordination completed with the tribes beyond Section  
105 106 that will be documented in the Appendix.

#### 106 3.7.3.1 Resources Evaluated Relative to the Requirements of Section 4(f)

107 This section documents the following Section 4(f) considerations: (1) no use of Section  
108 4(f) resources; (2) temporary occupancy of a Section 4(f) property; and (3) Section 4(f)  
109 *de minimis*, (4) and programmatic 4(f). See the Section 4(f) evaluation following the  
110 DEIS document, for an individual Section 4(f) evaluation.

##### 111 1. No Use of Section 4(f) Resources

112 Briefly state whether each alternative would “use” a Section 4(f) historic resource. If  
113 properties were evaluated for Section 4(f) and a determination of no use was  
114 made, then document those considerations here, relative to the Section 4(f) law,  
115 regulation and policy paper. Only archaeological sites that have been identified as  
116 having value for preservation in place are afforded Section 4(f) status. Project  
117 maps that depict the alternatives and Section 4(f) properties should allow the

118 reader to readily identify the relationship between the property and the proposed  
119 action.

120 a. **[No Section 4(f) resources.]** The project alternatives have been  
121 evaluated to determine if any use of Section 4(f) historic resources will  
122 occur. This evaluation has determined that no Section 4(f) historic  
123 resources are in the project study area and therefore no Section 4(f)  
124 historic resources will be used by the project alternatives proposed in this  
125 document.

126 b. **[Section 4(f) resources present, but no use will occur.]** The project  
127 alternatives have been evaluated to determine if any use of Section 4(f)  
128 historic resources will occur. This evaluation has determined that the  
129 following are Section 4(f) properties: [list]. However, because [state  
130 reason, such as no land will be incorporated] no Section 4(f) historic  
131 resources will be used by the project alternatives proposed in this  
132 document.

## 133 2. Temporary Occupancy

134  
135 If the proposed project would result in a temporary occupancy of a historic  
136 property, describe that determination here, consistent with ODOT/FHWA  
137 temporary occupancy procedures.

## 138 3. *De Minimis*

139 If the proposed project would result in a de minimis use of a historic property  
140 pursuant to SAFETEA-LU Section 6009, describe that proposed de minimis finding  
141 here, consistent with ODOT/FHWA de minimis procedures.

## 142 4. Programmatic Section 4(f) [Net Benefit or Historic Bridge]

143 If the proposed project meets the criteria for a programmatic Section 4(f)  
144 evaluation, include that analysis here. If you intend to use a programmatic,  
145 coordinate with ODOT Geo-Environmental and FHWA.

## 146 5. Individual Section 4(f) Evaluation

147 If alternatives would use a Section 4(f) resource resulting in an individual Section  
148 4(f) evaluation, refer the reader to the "Section 4(f) Evaluation."

### 149 **3.7.4 Avoidance, Minimization, and/or Mitigation Measures**

150 4. Describe avoidance measures that were considered and those which were  
151 incorporated into the proposed project.

152 5. Describe minimization measures that were considered and those which were  
153 incorporated into the proposed project.

- 154 6. Describe potential mitigation measures, which may be incorporated into the  
155 proposed project. If a data recovery plan is proposed, summarize the details.
- 156 7. If the project would result in a finding of "Historic Properties Adversely Affected,"  
157 then a fully executed Memorandum of Agreement (MOA) is required before  
158 circulation of the final environmental document. An MOA stipulates the  
159 responsibilities of FHWA, SHPO, and ODOT and if participating, ACHP, THPO, or  
160 other consulting parties, on measures that will be taken to avoid, minimize, or  
161 mitigate the effects of the undertaking on historic properties. The MOA must be  
162 included in Section 106 appendix of the final environmental document.  
163 The MOA process is shown in a flow chart at [ACHP's website](#). The ACHP's main  
164 website is located at <https://www.achp.gov/>.
- 165 8. Regardless of whether NRHP-listed or eligible historical or archaeological  
166 properties were identified, the following provisions addressing the discovery of  
167 historic materials or human remains must be included:
- 168 If unevaluated historic materials are discovered during construction, all earth-  
169 moving activity within and around the immediate discovery area will cease and will  
170 be protected until a qualified archaeologist can assess the nature and significance  
171 of the find.
- 172 If human remains are discovered, all earth moving activity related to the project  
173 must cease immediately. The immediate area surrounding the find must be  
174 protected and the state police and Regional Archaeologist must be contacted.

## 175 **References and Additional Guidance**

176 [49 USC 303](#)

177 [23 CFR 774, Section 4\(f\) Regulation](#)

178 [Section 4\(f\) Policy Paper, March 1, 2005](#)

179 [FHWA Guidance on \*De Minimis\* Impacts to Section 4\(f\) Resources](#)

180 [FHWA Section 4\(f\) Programmatic Net Benefit Guidance](#)

181 [Section 4\(f\) Temporary Occupancy Documentation](#)

182 [Section 4\(f\) \*de minimis\* Template for Section 106 Resources](#)

183 [National Trails Systems Act](#)

184 [AASHTO Practitioners Handbook #11: Complying with Section 4\(f\)](#)

185 [Historic Bridge Programmatic Agreement - 2001 Programmatic Agreement between](#)  
186 [FHWA, ODOT, and SHPO concerning Section 106 and "minor transportation projects".](#)

Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links

- 187 [Advisory Council on Historic Preservation \(ACHP\) Regulations - 36 CFR 800](#)
- 188 [ACHP's website](#)

## 1 **3.8 Visual Resources**

### 2 **3.8.1 Regulatory Setting**

3 The National Environmental Policy Act of 1969 (NEPA) establishes that the federal  
4 government use all practicable means to ensure all Americans safe, healthful,  
5 productive, *aesthetically* (emphasis added) and culturally pleasing surroundings (42  
6 U.S.C. 4331[b][2]). To further emphasize this point, the FHWA in its implementation of  
7 NEPA (23 U.S.C. 109[h]) directs that final decisions regarding projects are to be made in  
8 the best overall public interest taking into account adverse environmental impacts,  
9 including among others, the destruction or disruption of aesthetic values.

10 Ensure all applicable statutes, regulations, and guidance have been addressed, these  
11 include, but are not limited to: [Scenic Byway designations](#), [Wild and Scenic River Act](#),  
12 [Columbia River Gorge National Scenic Area Act](#), National Forest Management Plans,  
13 and Goal 5 resources from comprehensive plans. Coordination with the agency(ies) of  
14 jurisdiction may be necessary to demonstrate compliance.

15 If the project has the potential to affect visual resources, then a Visual Impact  
16 Assessment is needed. Some examples of activities that may adversely affect visual  
17 resources include: introduction of a transportation facility into a rural and/or forested  
18 area, removal of vegetation, or addition of structures including bridges, walls, poles or  
19 cameras. The level of analysis can range from no formal analysis to a complex analysis  
20 depending on the project features, the setting and the viewers. The analysis may  
21 require assessment of impacts of view from users of the transportation facility, as well as  
22 assessment of impacts the transportation facility may have on the viewshed.

23 The FHWA [Visual Impact Assessment for Highway Projects](#) provides guidance on how  
24 to conduct a visual assessment for federal or federal-aid highway projects. The basic  
25 steps in the process are:

- 26 1. Define the project setting and viewshed.
- 27 2. Identify key views for visual assessment.
- 28 3. Analyze existing visual resources and viewer response.
- 29 4. Visual resources/character analyzes attributes such as line, form, color, texture,  
30 dominance, scale, diversity and continuity. Visual quality is measured by  
31 vividness, intactness and unity.
- 32 5. Depict the visual appearance of project alternatives.
- 33 6. Assess the visual impacts of project alternatives. This is often done using either a  
34 numeric or qualitative rating system, e.g. "The existing visual quality is high; with  
35 the project it would be medium."
- 36 7. Propose methods to avoid, minimize and/or mitigate adverse visual impacts.  
37 These measures can include enhanced plantings, texture or color coating for  
38 structures, contour grading, etc.

39 **3.8.2 Affected Environment**

- 40 1. In the references section, list applicable technical report(s) along with completion  
41 date(s). Include a text box in this section that names the technical report, date and  
42 that it is available upon request, should the reader want more information.
- 43 2. Define the study area for visual resources. Describe the visual setting, viewshed,  
44 protected visual resources, and sensitive viewers in the study area. Identify key  
45 views and resources. This section reflects steps 1 - 4 of the FHWA Visual Impact  
46 Assessment (provided in the guidance section above).

47 **3.8.3 Environmental Consequences**

- 48 1. Describe the visual appearance of each build alternative and how the project  
49 components would affect the visual setting and viewshed for each sensitive viewer  
50 group in the context of the resource for this location. Simulations, which show the  
51 before and after condition, are often beneficial for displaying the differences  
52 between the alternatives and their potential impacts.
- 53 2. Discuss whether the project has the potential to affect an officially designated  
54 scenic highway. The scenic highway program protects and enhances Oregon's  
55 natural scenic beauty by allowing county and city governments to apply to ODOT  
56 to establish a scenic corridor protection program.
- 57 3. If the project is within the boundaries of a scenic corridor protection program  
58 (Scenic Byway designations, Wild and Scenic River Act, Columbia River Gorge  
59 National Scenic Area Act, National Forest Management Plans, and Goal 5  
60 resources from comprehensive plans), discuss whether the project is consistent  
61 with that program.

62 The above section reflects steps 5 - 7 of the FHWA Visual Impact Assessment.

63 **3.8.4 Avoidance, Minimization, and/or Mitigation Measures**

- 64 1. Describe avoidance measures that were considered and those which were  
65 incorporated into the proposed project.
- 66 2. Describe minimization measures that were considered and those which were  
67 incorporated into the proposed project.
- 68 3. Describe potential mitigation measures, which may be incorporated into the  
69 proposed project.
- 70 4. Consistent with the FHWA guidance, the above proposed measures could include  
71 enhanced plantings, texture or color coating for structures, contour grading, etc.  
72 State what each proposed measure would do and why it is being considered.
- 73 5. Address the incorporation of context-sensitive solutions in the proposed project.  
74 For information on context-sensitive solutions, please see FHWA's context-  
75 sensitive website.

Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links

76 The above section reflects step 8 of the FHWA Visual Impact Assessment.

77 **References and Additional Guidance**

78 [Wild and Scenic River Act](#)

79 [Columbia River Gorge National Scenic Area Act](#)

80 [Scenic Byway designations](#)

81 FHWA [Visual Impact Assessment for Highway Projects](#)

82 [List of officially designated scenic highways in Oregon](#)

83 [Oregon Scenic Highway Program](#)

84 [FHWA's context-sensitive website](#)



## 1 **3.9 Hydrology, Floodplain and Floodway**

### 2 **3.9.1 Regulatory Setting**

3 Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain  
4 from conducting, supporting, or allowing actions in floodplains unless it is the only  
5 practicable alternative. The Federal Emergency Management Agency (FEMA) is the  
6 primary jurisdictional agency regarding potential impacts to floodplains and floodways.  
7 The Federal Highway Administration requirements for compliance with Executive Order  
8 11988 are outlined in 23 CFR 650 Subpart A.

9 Proposed federal actions must consider:

- 10 • The practicability of alternatives to any longitudinal encroachments
- 11 • Risks the proposed action poses to the floodplains and floodways
- 12 • Impacts on natural and beneficial floodplain values
- 13 • Support of incompatible floodplain development
- 14 • Measures to minimize floodplain impacts and to preserve/restore any beneficial  
15 floodplain values impacted by the proposed action.

16 The base floodplain is defined as “the area subject to flooding by the flood or tide having  
17 a one percent chance of being exceeded in any given year,” which is also referred to as  
18 the 100-year flood. An encroachment is defined as “an action within the limits of the  
19 base floodplain.”

20 The Water Resources Technical Report provides information on hydrologic issues and  
21 floodplain/floodway identification. The Hydraulics Report covers flood elevations and  
22 discharges, primarily for sizing culverts and bridge openings, but also for floodplain  
23 issues.

24 Floodplain and floodway considerations are not applicable to all projects, but should be  
25 addressed and project applicability stated even if it is not an issue on the project. The  
26 primary concern with a floodplain and floodway impacts evaluation is if there is a  
27 “significant encroachment” on the floodplain. Alternatives that encroach on the base  
28 floodplain or regulatory floodway must be studied via a Location Hydraulics Study (LHS)  
29 in order to assess potential impacts and risks. If the Preferred Alternative has a  
30 floodplain encroachment, then the FEIS must include a Floodplain Finding.

### 31 **3.9.2 Affected Environment**

- 32 1. In the references section, list applicable technical report(s) along with completion  
33 date(s). Include a text box in this section that names the technical report, date and  
34 that it is available upon request, should the reader want more information.

- 35 2. Where applicable, the affected environment section should include a description of  
36 the existing floodplain and floodway; its natural and beneficial values and policies;  
37 procedures and orders relating to hydraulics.
- 38 3. The base 100-year floodplain and regulatory floodway must be shown using  
39 (FEMA) maps, National Flood Insurance Program (NFIP) maps or other maps  
40 developed by ODOT. If the FEMA and/or NFIP maps do not exist, then location  
41 hydraulics studies may be required to determine floodplain/floodway impacts.
- 42 4. Groundwater: Describe any regional or local aquifers, wells or drinking water  
43 sources in the vicinity of the project area. Specify if any of the aquifers are Sole  
44 Source Aquifers, Critical Aquifer Recharge Areas, or contain Wellhead Protection  
45 Areas or Sanitary Control Areas that may be impacted by the proposed project.

### 46 3.9.3 Environmental Consequences

- 47 1. The DEIS should include figures that display the alternatives, the base floodplains,  
48 and, where applicable, the regulatory floodways. It should also summarize the  
49 results of the location hydraulic studies. The summary should:
- 50 a. Identify the number of encroachments and any support of incompatible  
51 floodplain developments and their potential impacts; and
- 52 b. If the encroachment results in substantial impacts, include more detailed  
53 information on location and impacts.
- 54 2. For each alternative encroaching on a designated regulatory floodway, the DEIS  
55 should provide a preliminary indication of whether the encroachment would be  
56 consistent with or require a revision to the regulatory floodway. Engineering and  
57 environmental analysis should be conducted commensurate with the level of  
58 encroachment, to permit the consistency evaluation and identify impacts.  
59 Coordination with FEMA and appropriate state and local agencies (often the county  
60 in which the project is located) should be discussed for each floodway  
61 encroachment.
- 62 3. If the proposed action would encroach on a base floodplain, FHWA requires ODOT  
63 to perform a Location Hydraulic Study (LHS) and assess the risk involved. If the  
64 LHS indicates significant encroachment within the base floodplain would result  
65 from constructing the Preferred Alternative, then a finding must be included in the  
66 FEIS that states that the project is the “only practicable alternative.” This statement  
67 must also include why the other alternatives considered were not practicable, the  
68 reason why the highway must be in the floodplain and that all state and local  
69 floodplain laws are complied with.
- 70 “Significant encroachment” as defined at 23 CFR 650.105 is a highway  
71 encroachment and any direct support of likely base floodplain development that  
72 would involve one or more of the following construction or flood related impacts:

73 a. a significant potential for interruption or termination of a transportation facility  
74 that is needed for emergency vehicles or provides a community's only  
75 evacuation route

76 b. a significant risk (to life or property), or

77 c. a significant adverse impact on natural and beneficial floodplain values

78 In addition, this section should include a summary of any coordination with local  
79 jurisdictions, state and federal water resources and floodplain management  
80 agencies (especially the Federal Emergency Management Agency) because of  
81 encroachment on a regulatory floodway, increase in the base flood elevation and  
82 any subsequent actions such as the need for a floodplain map revision.

83 5. Groundwater: If the proposed action would impact any regional or local aquifers,  
84 wells or drinking water sources describe the impacts here.

#### 85 **3.9.4 Avoidance, Minimization, and/or Mitigation Measures**

86 1. Describe avoidance measures that were considered and those which were  
87 incorporated into the proposed project. Measures to avoid the floodplain/floodway  
88 (selection of alternate sites for improvements, elevated structures, etc.) may be  
89 discussed in the Alternatives section. Reference to the Water Quality section may  
90 provide measures to lessen some impacts on natural and beneficial floodplain  
91 values. These efforts are to be captured in this section, as well.

92 2. Describe minimization measures that were considered and those which were  
93 incorporated into the proposed project. Measures to minimize and mitigate  
94 floodplain/floodway impacts (basins, changes to the number of drainage inlets,  
95 etc.) may be considered as part of the design of the project and included in the  
96 project description (you may refer to Section 2.0 of the environmental document),  
97 however the information will also be disclosed here.

98 3. Describe potential mitigation measures, which may be incorporated into the  
99 proposed project.

#### 100 **3.9.5 Only Practicable Finding**

101 This section is only required in the final environmental document when there is a  
102 significant encroachment into the floodplain.

103 If the Preferred Alternative includes a floodplain encroachment having significant  
104 impacts, then the FEIS must include a finding that it is the only practicable alternative as  
105 required by 23 CFR 650.111(c), (d), and (e) Subpart A (also see FHWA Technical  
106 Advisory T6640.8A).

107 The finding should be included in a separate subsection entitled "Only Practicable  
108 Alternative Finding" and must be supported by the following information:

109 1. Reference to Executive Order 11988 and 23 CFR 650, subpart A;

- 110 2. The reasons why the proposed action must be located in the floodplain;  
111 3. The alternatives considered and why they were not practicable; and  
112 4. If the Preferred Alternative encroaches on a regulatory floodway, the FEIS should  
113 discuss the consistency of the action with the regulatory floodway. If the floodway  
114 revision is necessary, the FEIS should include evidence from FEMA and local or  
115 state agencies indicating that such revision would be acceptable.

116 Include a statement indicating where the action conforms to applicable state or local  
117 floodplain protection standards.

118 Based on studies carried out by the Oregon Department of Transportation, as assigned  
119 by the Federal Highway Administration, no practicable alternative to the proposed  
120 alternative exists (23 CFR 650, Subpart A). All other potential alternatives are not  
121 possible within reasonable natural, social, and economic constraints. In addition, all  
122 measures to minimize potential harm within the floodplain/floodway, consistent with  
123 regulations issued in accord with Section 2(d) of Executive Order 11988 have been  
124 taken. Further, a public notice, as required by Executive Order 11988, has been  
125 circulated containing an explanation of why the action is proposed to be located in the  
126 floodplain.

## 127 **References and Additional Guidance**

128 [Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental](#)  
129 [and Section 4\(f\) Documents, October 30, 1987 \(FHWA\)](#)

130  
131 [National Flood Insurance Act of 1968 \(42 U.S.C. §§ 4001 et seq.\)](#)

132 FHWA Environmental Guidebook Chapter 6

133 [ODOT Hydraulics Manual](#)

134 SAFETEA-LU 6002 Guidance

135 [23 CFR 650.111](#)

136 [23 CFR 650.105](#)

137 [Executive Order 11988 \(Floodplain Management\)](#)

## 1 **3.10 Water Quality and Storm Water Runoff**

### 2 **3.10.1 Regulatory Setting**

3 The Federal Water Pollution Control Act commonly referred to as the Clean Water Act  
4 (CWA) is the primary law covering water quality. The intent of the CWA is to restore and  
5 maintain the chemical, physical, and biological integrity of the nation's waters by  
6 preventing point and nonpoint pollution sources, providing assistance to publicly owned  
7 treatment works for the improvement of wastewater treatment, and maintaining the  
8 integrity of wetlands. If an ODOT project requires a CWA Section 404 permit from the  
9 U.S. Army Corps of Engineers (Corps), then ODOT must also receive a CWA Section  
10 401 water quality certification from the Oregon Department of Environmental Quality  
11 (DEQ).

12 In addition to a CWA Section 401 water quality certification, projects exposing one acre  
13 of more of dirt needs to comply with CWA Section 402. CWA Sections 401 and 402  
14 establish the National Pollutant Discharge Elimination System (NPDES) permit for the  
15 discharge of any pollutant into waters of the United States. ODOT construction projects  
16 that disturb more than 1 acre are regulated under the NPDES 1200-CA permit and are  
17 required to develop and implement an erosion control plan prior to ground-breaking.

18 Discharges to groundwater through Underground Injection Control Systems (UICs) are  
19 regulated as Class V injection wells under the Federal Safe Drinking Water Act. If a  
20 project needs to construct a UIC, then a permit from DEQ is required. These permits  
21 typically have conditions for treatment prior to discharge and monitoring of the quality of  
22 stormwater. The Safe Drinking Water Act also governs the protection of sole-source  
23 aquifers, critical aquifer protection areas and wellhead protection areas.

24 The Oregon water quality laws and regulations are found in ORS Chapter 468B and  
25 OAR Chapter 340 Division 041, which cover surface water and groundwater.

26 ODOT has a set of goals and objectives for projects that, when achieved, will contribute  
27 to the protection and improvement of the waters of the state. These goals and objectives  
28 are described in Highway Division Project Delivery Leadership Team Operational Notice  
29 PD-05: Water Quality Mitigation and in ODOT Stormwater Management Program  
30 Technical Bulletin GE08-02(B).

31 **If the proposed project would require a consultation pursuant to the federal Endangered**  
32 **Species Act (ESA) because of stormwater impacts, include the following language:**

33 Projects that impact water bodies that contain Endangered Species Act (ESA) listed  
34 Threatened or Endangered (T&E) species must also satisfy ESA requirements. For  
35 anadromous fish, the National Marine Fisheries Service (NMFS) is the regulatory  
36 agency. For non-anadromous fish, the U.S. Fish and Wildlife Service (USFWS) has  
37 jurisdiction. Biological Assessments must include stormwater impacts and describe the  
38 steps taken to avoid or minimize "take."

39 **At the project initiation stage, an assessment will be made as to whether a project has**  
40 **potential for impacts on water quality, and whether a detailed technical study of water**

41 quality impacts is necessary. If a detailed study of water quality is not required, then  
42 include the following language:

43 Based on [include facts] little to no impact to water quality will occur if this project is  
44 constructed.

### 45 **3.10.2 Affected Environment**

46 1. In the references section, list applicable technical report(s) along with completion  
47 date(s). Include a text box in this section that names the technical report, date and  
48 that it is available upon request, should the reader want more information.

49 2. The affected environment section discusses the project setting as it pertains to  
50 water quality. The section will include a discussion of watersheds and receiving  
51 waters that are potentially affected by the project. The following elements should  
52 be included in the discussion:

53 a. Receiving waters' character (stream, lake, wetland, etc.)

54 b. Receiving waters' hydrology, including the flow control range of flows and  
55 anthropogenic modifications (dams, irrigation withdrawals/return flow,  
56 urbanization impacts, etc.).

57 c. Receiving waters' water quality status, including Total Maximum Daily Loads  
58 (TMDLs), 303(d) status, observed condition, including physical conditions.

59 d. Riparian condition as it pertains to water quality, such as shading or filtration  
60 of highway runoff

61 e. Soils' erodibility and hydrologic class

62 f. Describe how water quality has changed over time to have reached current  
63 conditions, including current watershed health trends

64 3. Describe the existing storm drainage system of existing highway facilities that will  
65 be affected by the project, and assess the impact of the existing highway facilities  
66 on the water quality of the receiving waters.

### 67 **3.10.3 Environmental Consequences**

68 1. Potential water quality impacts include increased, or changed, concentrations and  
69 loads of the types of pollutants commonly found in highway runoff, such as total  
70 suspended solids, nutrients (nitrogen/phosphorous), pesticides, metals (total and  
71 dissolved), pathogens, litter, biochemical oxygen demand, pH, temperature, and  
72 total dissolved solids. In addition, increases in runoff volume and duration may  
73 have impacts. Include information on riparian and wetland impacts that could  
74 affect water quality or hydrology.

75 2. The following specific elements should be included in any discussion of the  
76 impacts a project will have on water resources. Present the following information in

- 77 tabular format so that build alternatives, No-Build, and existing conditions can be  
78 compared.
- 79 a. Change in the impervious surface area (i.e., estimated net new and estimated  
80 total area for which treatment would be provided). Level of specificity should  
81 be around 1/10 of an acre.
- 82 b. Type and/or change in the character of the stormwater drainage system  
83 (ditch to curb and gutter, etc) and how the change would affect pollutant load  
84 and concentration, and hydrologic impacts.
- 85 c. Estimated pollutant load and concentration of stormwater discharged to  
86 receiving waters, based on the best available information, and taking the  
87 proposed treatment into account.
- 88 d. Estimated impact of the project on the water quality of the receiving waters.
- 89 3. Discuss the project's contribution of TMDLs and 303(d) listed pollutants, as  
90 applicable.
- 91 4. If stormwater is a contributing factor or the only driver for impacts to T&E species,  
92 then mention those impacts here. The primary discussion will be contained within  
93 the Threatened and Endangered section of the document. Refer the reader to that  
94 section.
- 95 5. *Construction Impacts*. Describe anticipated and potential impacts to water quality  
96 during construction, Include in-water work that will or could cause temporary  
97 turbidity increases. Identify locations that present erosion and sediment control  
98 challenges due to topography, soils, or proximity to water bodies. Describe the  
99 magnitude and duration of anticipated or potential construction impacts to water  
100 quality.
- 101 **3.10.4 Avoidance, Minimization, and/or Mitigation Measures**
- 102 1. Describe avoidance measures that were considered and those which were  
103 incorporated into the proposed project.
- 104 2. Describe minimization measures that were considered and those which were  
105 incorporated into the proposed project.
- 106 3. Describe potential mitigation measures, which may be incorporated into the  
107 proposed project.
- 108 4. For projects where stormwater impacts cannot be avoided and use of the ODOT  
109 Stormwater Management Program Technical Bulletin GE08-02(B) was triggered,  
110 include the following language:
- 111 ODOT's stormwater management program is presented in the ODOT Stormwater  
112 Management Program Technical Bulletin GE09-02(B). This bulletin presents the  
113 triggers for the requirement of stormwater treatment on a project, ODOT's water

- 114 quality goals and objectives, water quality and flow control design storm criteria,  
115 “preferred” stormwater treatment Best Management Practices (BMPs) and  
116 integration of stormwater management into the project development process.
- 117 a. Describe the “preferred” or other BMPs that are proposed to be incorporated  
118 into the proposed project.
- 119 b. Describe how and to what extent the alternatives will be able to meet the  
120 contributing impervious area (CIA) objective, which is to “treat the runoff  
121 generated from the project’s CIA by the appropriate water quality design  
122 storm for the project’s climate zone, using “preferred BMPs” as described in  
123 GE09-02(B).
- 124 c. Describe how and to what extent the alternatives will be able to meet the  
125 frequency and duration of the range of flows that are most important for  
126 channel processes and form, as presented in GE09-02(B).
- 127 5. Describe basic erosion and sediment control measures proposed. Specifically  
128 discuss measures that will be taken to minimize turbidity or other water quality  
129 impacts during in-water work.

### 130 **References and Additional Guidance**

- 131 FHWA Guidebook: [Water Quality and the Clean Water Act and Safe Drinking Water Act](#)
- 132 [FHWA Technical Advisory TA 6640 Section 10 Water Quality](#)
- 133 [ODOT NPDES 1200-CA Permit](#) (issued to each Region, but identical except for  
134 geographic coverage)
- 135 [ODOT Stormwater Management Program Technical Bulletin GE09-02 \(B\)](#)
- 136 [Highway Division Project Delivery Leadership Team Operational Notice PD-05: Water](#)  
137 [Quality Mitigation](#)
- 138 [ODOT Hydraulics Manual](#)
- 139 [ODOT Erosion Control Manual](#)
- 140 [The ODOT Geo/Environmental Section Stormwater Management Program web page](#)
- 141 [The ODOT Geo/Environmental Section Water Resources web page](#)
- 142 [The ODOT Geo/Environmental Section Erosion Control web page](#)
- 143 [Sole Source Aquifer Protection Program](#)
- 144 Oregon has one Sole Source Aquifer, the [North Florence Dunal Aquifer](#), in Lane County.  
145 A map of the aquifer may be found:



Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links

146 [https://www.ci.florence.or.us/sites/default/files/fileattachments/planning/page/333/  
147 north\\_florence\\_dunal\\_aquifer\\_study.pdf](https://www.ci.florence.or.us/sites/default/files/fileattachments/planning/page/333/north_florence_dunal_aquifer_study.pdf)

## 1 3.11 Natural Systems and Communities

2 This subsection of the document provides an overview of the natural systems in the  
3 study area. Oregon's Department of Fish and Wildlife has developed a statewide  
4 Conservation Strategy that charts a course for the long-term conservation of our state's  
5 fish and wildlife. It takes a non-regulatory, proactive approach to conservation. This  
6 subsection highlights natural communities of concern such as Strategy Habitats and  
7 Conservation Opportunity Areas as described in the Oregon Conservation Strategy.  
8 Information about individual plant and animal species is not included in this subsection.

9 The Conservation Strategy identified barriers to fish and wildlife movement as a top  
10 conservation priority. ODFW has mapped wildlife linkages along the state highway  
11 system, which are areas of habitat used by wildlife for seasonal or daily movement or  
12 migration; they connect core habitats that support necessary life history functions.  
13 ODOT has also mapped wildlife collision hot spots, which are locations with high  
14 concentrations of deer and elk carcass reports.

15 In addition to a description of natural communities in the study area, this subsection  
16 includes information on fish passage, wildlife linkages, wildlife collision hot spots, and  
17 habitat loss and fragmentation.

18 Although both terrestrial and aquatic communities are included in this subsection, the  
19 regulatory framework of designated critical habitat (Federal Endangered Species Act) is  
20 presented in the Threatened and Endangered Species subsection. The regulatory  
21 aspects of wetlands and aquatic habitats are discussed in the Wetlands and Other  
22 Waters subsection.

### 23 3.11.1 Affected Environment

24 1. In the references section, list applicable technical report(s) along with completion  
25 date(s). Include a text box in this section that names the technical report, date and  
26 that it is available upon request, should the reader want more information.

27 2. Describe and provide a map of the study area (showing the study area boundary  
28 on the map), stepping down from the ecoregion and watershed scales to habitat  
29 types present. Habitat types should be described using the Oregon Conservation  
30 Strategy classifications.

31 3. Cross-reference the study area with Strategy Habitats presented in the Oregon  
32 Conservation Strategy, as well as Conservation Opportunity Areas, management  
33 considerations, and voluntary actions.

34 4. Describe wildlife linkages, including focal species, priority status, value and threats.  
35 Also describe wildlife collision hot spots, and any existing passage barriers or  
36 opportunities in the study area.

37 5. Reference any watershed plans, regional conservation plans, such as Habitat  
38 Conservation Plans (HCP) or Multiple Species Conservation Plans (MSCP). Such  
39 plans are usually developed to lessen habitat loss and fragmentation and to  
40 maintain wildlife corridors.

41 6. Describe any local riparian protections and/or Goal 5 natural resources.

42 **3.11.2 Environmental Consequences**

43 1. For each habitat type, discuss the potential direct and indirect impacts. Direct  
44 impacts include habitat loss and fragmentation and management activities (e.g.,  
45 clearing and grubbing, weed control). Indirect impacts may include operational  
46 impacts of the completed project, including noise and traffic impacts on wildlife in  
47 adjacent habitats, animal-vehicle collisions, potential impacts to wildlife movement  
48 and fish passage, potential impacts of highway runoff on adjacent habitats, and  
49 other management concerns.

50 2. Review proposed alternatives for consistency with any regional conservation plans,  
51 such as HCP or MSCP, or watershed plans.

52 **3.11.3 Avoidance, Minimization, and/or Mitigation Measures**

53 1. Describe avoidance measures that were considered and those which were  
54 incorporated into the proposed project (e.g., design modification to avoid a rare  
55 habitat type).

56 2. Describe minimization measures that were considered and those which were  
57 incorporated into the proposed project. Discuss the measures in terms of reducing  
58 direct and indirect impacts.

59 3. Describe potential mitigation measures, which may be incorporated into the  
60 proposed project. Mitigation should be proposed for unavoidable impacts to  
61 regulated or protected resources; in most cases, mitigation measures will be  
62 described under the Threatened and Endangered Species or Wetlands/Other  
63 Waters subsections. Describe what the mitigation measures would do as they are  
64 proposed.

65 4. As a cooperator on the Oregon Conservation Strategy, ODOT is committed to  
66 minimizing impacts to sensitive natural communities, particularly Strategy Habitats.  
67 To that end, reasonable enhancement measures may be recommended as  
68 optional opportunities that could avoid and minimize direct or indirect impacts to  
69 non-regulated Strategy Habitats and Conservation Opportunity Areas. **Coordinate**  
70 **with FHWA if use of federal funds is being considered for enhancement**  
71 **measures.** Describe what the enhancement measures would do as they are  
72 proposed.

73 5. Wildlife-vehicle collisions are a safety risk for drivers as well as the animals. If hot  
74 spots are present in the study area, and if suitable habitat exists to provide suitable  
75 long-term connectivity, describe feasible opportunities to remove barriers and  
76 minimize risk of wildlife-vehicle collisions.

77 **References and Additional Guidance**

78 [ORNHIC](#)

*Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links*

- 79 [Oregon Conservation Strategy](#)
- 80 [ODFW Wildlife Linkages Dataset](#)

## 1 **3.12 Wetlands and Other Waters**

### 2 **3.12.1 Regulatory Setting**

3 Wetlands and other waters are protected under a number of laws and regulations. These  
4 resources may be protected by local comprehensive plans. At the federal level, the  
5 Federal Water Pollution Control Act commonly referred to as the Clean Water Act (CWA)  
6 (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The Clean Water  
7 Act regulates the discharge of dredged or fill material into waters of the United States,  
8 including wetlands. Waters of the United States include navigable waters, interstate  
9 waters, territorial seas and other waters that may be used in interstate or foreign  
10 commerce.

11 The Section 404 regulatory program is administered by the U.S. Army Corps of  
12 Engineers (Corps) with oversight by the Environmental Protection Agency (EPA). The  
13 Corps has the authority under Section 404 of the Clean Water Act to deny a request to  
14 discharge dredged or fill material if a practicable alternative exists that is less damaging  
15 to the aquatic environment or if the nation's waters would be significantly degraded.

16 Section 10 of the Rivers and Harbors Act (33 U.S.C. 403), covers construction,  
17 excavation, or deposition of materials in, over, or under such waters, or any work which  
18 would affect the course, location, condition or capacity of those waters. Actions requiring  
19 Section 10 permits include structures (e.g., piers, wharfs, breakwaters, bulkheads,  
20 jetties, weirs, transmission lines) and work such as dredging or disposal of dredged  
21 material, or excavation, filling or other modifications to the navigable waters of the United  
22 States. The Coast Guard also has responsibility for permitting the erection or  
23 modification of bridges over navigable waters of the U.S.

24 At the state level, wetlands and waters are regulated primarily by the Department of  
25 State Lands (DSL) under the Removal-Fill Law (ORS 196.800-196.990). DSL  
26 jurisdictional limits are to the ordinary high water line or the edge of the wetland/upland  
27 boundary, whichever is higher, on non-tidal streams. Wetlands are jurisdictional to the  
28 wetland/upland boundary. The extent of Corps and DSL jurisdiction on certain features  
29 may be different.

30 In addition to the Clean Water Act, 23 CFR 777.3 also regulates the activities of federal  
31 agencies with regard to wetlands. This executive order essentially states that a federal  
32 agency, such as the Federal Highway Administration, cannot undertake or provide  
33 assistance for new construction located in wetlands unless that agency finds: 1) that  
34 there is no practicable alternative to the construction and 2) the proposed project  
35 includes all practicable measures to minimize harm.

36 The Department of Environmental Quality (DEQ) issues water quality certifications in  
37 compliance with Section 401 of the Clean Water Act when a Corps permit is issued  
38 under Section 404, or when a project involves federal lands (e.g., US Forest Service or  
39 Bureau of Land Management). The Water Quality subsection provides additional  
40 details.

41 The information needed to write this portion of the environmental document can be  
42 found in the technical reports prepared for the EIS and other technical documents, such  
43 as the Biological Assessment (BA) and the Wetland Delineation (if one is prepared).

#### 44 **3.12.2 Affected Environment**

- 45 1. In the references section, list applicable technical report(s) along with completion  
46 date(s). Include a text box in this section that names the technical report, date and  
47 that it is available upon request, should the reader want more information.
- 48 2. Provide a map that shows the watershed boundary, with an inset that includes the  
49 State of Oregon boundary with the watershed as a pop out.
- 50 3. If there are wetlands and waters present in the study area that are determined to  
51 be non- jurisdictional waters of the state/U.S., provide the basis for the non-  
52 jurisdictional determination and conclude that there are no waters of the state/U.S.  
53 in the study area. FHWA's wetland determination (23 CFR 777.3) applies to all  
54 wetlands, not just jurisdictional wetlands.
- 55 4. If there are jurisdictional waters of the state/U.S. in the study area, the discussion  
56 should provide the following information:
  - 57 a. Provide a map with the depiction of the wetlands and waters with each  
58 alternative overlain.
  - 59 b. Describe the wetlands assessment method, the primary functions of the  
60 wetland(s); the relative importance of these functions to the total wetland  
61 resource of the area; and other factors, such as uniqueness or  
62 ubiquitousness that may contribute to the wetland(s) importance.
  - 63 c. A concise description that includes acreage and exhibits depicting the waters  
64 of the state/U.S. in the project area relative to the alternatives under  
65 consideration, and the occurrence of any associated sensitive species habitat  
66 or wetlands that are special areas of concern (SACs) (such as, bogs, fens,  
67 vernal pools, Willamette Valley wet prairie, old growth Sitka spruce).

#### 68 **3.12.3 Environmental Consequences**

- 69 1. For alternatives that would affect waters and wetlands:
  - 70 a. Include maps or other drawings that show the waters/wetlands and how the  
71 proposed alternatives would affect the waters/wetlands.
  - 72 b. Include a quantitative assessment of the impacts and discuss how the  
73 proposed alternatives would affect the quality, functions, and value of the  
74 waters/wetlands, including short and long-term impacts. Address the  
75 importance of the impacted wetland(s) and the severity of the impact.
- 76 2. Include a table summarizing the impacts on wetlands and other waters of the  
77 state/U.S. by alternative, drainage location, and impact type (permanent,

78 temporary, direct, indirect). Distinguish Corps jurisdictional waters from  
79 Department of State Lands jurisdictional waters, if different. This information will  
80 be provided for each alternative discussed in the document so that comparisons  
81 can be readily made. A text discussion should also be provided.

82 3. Document agency coordination. Briefly list all waters and wetlands permits needed  
83 for the proposed project and describe coordination that has already occurred with  
84 the relevant resource agencies. Refer the reader to Chapter 6 for a more detailed  
85 discussion of coordination and copies of correspondence with the agencies.

86 4. State whether or not the impacts might be permitted under an existing Nationwide  
87 permit or if an individual permit is anticipated. Specify which Nationwide permit is  
88 likely applicable. State whether or not the impacts might be permitted under the  
89 Removal-Fill Law via a General Authorization or an individual permit.

#### 90 3.12.4 Avoidance, Minimization, and/or Mitigation Measures

91 1. Describe avoidance measures that were considered and those which were  
92 incorporated into the proposed project. Provide documentation describing  
93 alternatives that completely avoid wetlands and waters. If the avoidance  
94 alternatives are not practicable, justify in detail how the cost, performance,  
95 socioeconomic impacts or other factors would make the alternative impracticable.  
96 If applicable, refer reader to Chapter 2: Alternatives Considered but Eliminated  
97 from further Consideration.

98 2. Describe minimization measures that were considered and those which were  
99 incorporated into the proposed project. Discuss how all practicable measures to  
100 minimize harm to the affected wetland/waters have been included in the  
101 proposed alternative(s). If a given minimization measure is not practicable,  
102 justify in detail how the cost, performance, socioeconomic impacts or other  
103 factors would make the measure impracticable.

104 3. Describe potential mitigation measures, which may be incorporated into the  
105 proposed project. Discuss the mitigation measures associated with each  
106 alternative. Discuss proposed compensatory measures, including location,  
107 functions, mitigation type (create/restore/enhance), cost estimates and  
108 goals/objectives. Remember to state what the measure would do and why it is  
109 proposed. At the DEIS stage identify available mitigation opportunities that  
110 would mitigate for all of the estimated wetland impacts. **Coordinate with FHWA  
111 if use of federal funds is being considered for enhancement measures.**

#### 112 3.12.5 Wetlands Only Practicable Alternative Finding [Include in FEIS if the 113 Preferred Alternative will impact wetlands]

114 1. FHWAs wetland determination (23 CFR 777.3) applies to all wetlands, not just  
115 jurisdictional wetlands. For the Final environmental document, include the  
116 following information under a separate "Only Practicable Alternative Finding"  
117 subheading if the Preferred Alternative will impact wetlands:

118 a. A reference to E.O. 11990 and 23 CFR 777.3.

- 119            b. An explanation of why there are no practicable alternatives to the proposed  
120            action.
- 121            c. An explanation about the inclusion of all practicable measures to minimize  
122            harm to wetlands.
- 123            d. A concluding statement:
- 124            2. Based on the above considerations, it is determined that there is no practicable  
125            alternative to the proposed construction in wetlands and that the proposed action  
126            includes all practicable measures to minimize harm to wetlands that may result  
127            from such use.

128            **References and Additional Guidance**

129            [ODOT's Wetlands Program website](#)

130            [FHWA's Wetlands website](#)

131            Clean Water Act [23 CFR 777.3](#)

132            [Corps of Engineers Wetland Delineation Manual \(1987 Manual\)](#)

133            [Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West  
134            Region \(Version 2.0\)](#)

135            [Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual:  
136            Western Mountains, Valleys, and Coast Region](#)



## 1 **3.13 Threatened and Endangered Species**

### 2 **3.13.1 Regulatory Setting**

#### 3 *Federal*

4 The primary Federal law protecting threatened and endangered species is the Federal  
5 Endangered Species Act (ESA): 16 United States Code (USC), Section 1531-1544, et  
6 seq. and FHWA and ODOT's responsibilities under the act are regulated at 50 CFR Part  
7 402. This Act and subsequent amendments provide for the conservation of threatened  
8 and endangered species and the ecosystems upon which they depend. Under Section 7  
9 of this Act, Federal agencies, such as the Federal Highway Administration, are required  
10 to consult with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine  
11 Fisheries Service (NMFS), jointly referred to as the Services, to ensure that FHWA is not  
12 undertaking, funding, permitting or authorizing actions likely to jeopardize the continued  
13 existence of listed species or destroy or adversely modify designated critical habitat.  
14 Critical habitat is defined as geographic locations critical to the existence of a threatened  
15 or endangered species.

16 Compliance with ESA can be demonstrated through “No-Effect” documentation, which is  
17 generally provided by the applicant (ODOT). For actions which are “Not Likely to  
18 Adversely Affect” species or their habitat, informal consultation is conducted and results  
19 in a concurrence letter from the Services. For actions which are “Likely to Adversely  
20 Affect” species or their habitat, formal consultation is conducted. The outcome of formal  
21 consultation is a Biological Opinion which may include an incidental take permit. Section  
22 3 of ESA defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or  
23 collect or any attempt at such conduct.”

24 Threatened or endangered species are species of plants and animals that are formally  
25 listed as threatened or endangered under the State or Federal ESA. FHWA is required  
26 to determine if proposed actions will involve—and possibly affect—proposed or listed  
27 species or their designated critical habitat.

28 This subsection on threatened and endangered species only focuses on ESA issues. A  
29 more general discussion of special-status species is included in the Non-Threatened and  
30 Endangered Species subsections.

31 The biologist will prepare a Biological Assessment (BA) for the federally listed species  
32 that may be affected. In general the BA(s) would not be completed until the Preferred  
33 Alternative has been preliminarily identified, after the DEIS has been published, the  
34 comment period has closed, but before the FEIS is issued.

35 Use the Biological Technical Report to help draft the DEIS. The Biological Opinion (BO)  
36 should be completed by the FEIS and should be used in conjunction with the BA to draft  
37 the FEIS.

#### 38 *State*

39 Consultation with ODFW and/or ODA is required when species are State-listed as  
40 threatened or endangered. State-listed fish and wildlife species are regulated by the  
41 Oregon Department of Fish and Wildlife (ODFW) in ORS 496.171 to 496.192. State-  
42 listed plants are regulated by the Oregon Department of Agriculture (ODA) in ORS

43 564.100 to 564.135. Wildlife “take” is defined under state law as to kill or obtain  
44 possession or control of. Plant “take” is defined under state law as to collect, cut,  
45 damage, destroy, dig, kill, pick, remove or otherwise disturb.

46 **The writer should be aware of the basic compliance expectations at the State and**  
47 **Federal levels. The writer should be consulting with the project biologist**  
48 **throughout the documentation and consultation processes. Together, they**  
49 **should develop and outline a tentative schedule of the processes. This is**  
50 **especially important as threatened and endangered consultation is often a critical**  
51 **path item for the project approval.**

52 **If your project occurs on federally owned land, the Biological Evaluation that can**  
53 **be required by federal land management agencies does not fulfill ESA Subsection**  
54 **7 consultation requirements.**

### 55 **3.13.2 Affected Environment**

- 56 1. In the references section, list applicable technical report(s) along with completion  
57 date(s). Include a text box in this section that names the technical report, date  
58 and that it is available upon request, should the reader want more information.
- 59 2. Include maps that show the range and designated critical habitat and the  
60 proposed project alternative footprint(s). Include a description of the species use  
61 within the action area. Include cross-references to the Natural Systems and  
62 Communities subsection, as appropriate. Include the study area boundary on the  
63 map.
- 64 3. Include a copy of a recent (not older than 2 years) species list(s) for the proposed  
65 project. If the species list(s) are older than 2 years, then the list(s) must be  
66 verified in writing as valid from the USFWS and/or NMFS.

### 67 **3.13.3 Environmental Consequences**

#### 68 *Federal ESA*

- 69 1. Drawing from the Biological Technical Report, BA, BO (once available), or No  
70 Effect document, discuss the potential direct, indirect, and construction impacts  
71 on each species and its designated critical habitat, if appropriate.
- 72 2. State the type of documentation that has been or will be used to demonstrate  
73 compliance with Federal ESA for listed-species in the project area (e.g., No  
74 Effect Document or Concurrence Letter or BO from the Services).
- 75 3. Include a summary of the Federal consultation process (Section 7 consultation).  
76  
77 Reference correspondence with the resource agencies and include the  
78 correspondence in Chapter 5 or as a separate appendix.

#### 79 *State ESA*

80 4. State the type of documentation that has been or will be used to demonstrate  
81 compliance with State ESA for listed-species in the project area.

82 5. Provide information on any Oregon State required consultation, such as fish  
83 passage. Include a summary of the status of consultation to date.

84 Reference correspondence with the resource agencies and include the  
85 correspondence in Chapter 5 or as a separate appendix.

#### 86 **3.13.4 Avoidance, Minimization, and/or Mitigation Measures**

87 1. Describe avoidance measures that were considered and those which were  
88 incorporated into the proposed project.

89 2. Describe minimization measures that were considered and those which were  
90 incorporated into the proposed project.

91 3. Describe potential conservation/mitigation measures, which may be incorporated  
92 into the proposed project. Describe the proposed conservation/mitigation  
93 measures for each impact. Remember to state what the measure would do and  
94 why it is being proposed. At the DEIS stage, the project team is likely to have a  
95 good idea of the terms and conditions that will be included in the BO.

96 Potential measures could include:

97 a. Establishing Special Management Areas (SMAs)

98 b. Purchasing credits from established mitigation/conservation banks

99 c. Mitigating directly on-site

100 d. Relocating fish prior to in-water work

101 e. Netting to prevent bird nesting

102 f. Improving or creating fish passage

103 g. Purchasing conservation easements

104 h. Coordinating with local watershed councils and jurisdictional agencies that  
105 have relevant HCPs and/or multiple species conservation plans. Mitigation  
106 measures proposed in other subsections of this subsection may also provide  
107 benefits for federally listed species.

108 4. **In the FEIS, be sure to reference or include the terms and conditions and**  
109 **conservation measures from the BO and/or Magnuson-Stevens Act (MSA)**  
110 **consultation.**

Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links

111 **References and Additional Guidance**

112 [NMFS ESA-listed species](#)

113 [USFWS ESA-listed species](#)

114 [ODFW State-listed species](#)

115 [ODA State-listed species](#)

116 [Endangered Species Act \(ESA\): 16 United States Code \(USC\), Section 1531-1544, et](#)  
117 [seq.](#)

118 [50 CFR Part 402](#)

119 [State -listed fish and wildlife species regulated by the Oregon Department of Fish and](#)  
120 [Wildlife ORS 496.171 to 496.192](#)

121 [State-listed plants regulated by the Oregon Department of Agriculture ORS 564.100 to](#)  
122 [564.135](#)

## 1 **3.14 Non-Threatened and Endangered Species**

### 2 **3.14.1 Regulatory Setting**

#### 3 Fish and Wildlife

4 This subsection discusses potential impacts and permit requirements associated with  
5 wildlife that are not listed under the State or Federal ESA.

6 Federal laws and regulations beyond the ESA that pertain to fish and wildlife include, but  
7 are not limited to, the following:

- 8 • **Migratory Bird Treaty Act**  
9 The Migratory Bird Treaty Act (MBTA) makes it unlawful to take, import, export,  
10 possess, sell, purchase, or barter any migratory bird, with the exception of the  
11 taking of game birds during established hunting seasons. The law also applies to  
12 feathers, eggs, nests, and products made from migratory birds. This law is of  
13 particular concern when birds nest on bridges, buildings, signs, illumination, and  
14 ferry dock structures.
- 15 • **Bald and Golden Eagle Protection Act**  
16 The Bald and Golden Eagle Protection Act, makes it unlawful to take, import,  
17 export, sell, purchase, or barter any bald or golden eagle, their parts, products,  
18 nests, or eggs. "Take" includes pursuing, shooting, poisoning, wounding, killing,  
19 capturing, trapping, collecting, molesting, or disturbing the eagles.
- 20 • **Marine Mammal Protection Act**  
21 The Marine Mammal Protection Act (MMPA) establishes federal responsibility for  
22 conservation and management to protect marine mammals. It establishes a  
23 moratorium on the taking and importation of marine mammals and marine  
24 mammal products. The MMPA defines "take" to mean "to hunt harass, capture, or  
25 kill" any marine mammal or attempt to do so.
- 26 • **Magnuson-Stevens Act (Fishery Conservation and Management Act)**  
27 The Fishery Conservation and Management Act of 1976, was amended in 1996  
28 and became known as the Magnuson-Stevens Act (MSA). The MSA emphasizes  
29 the sustainability of the nation's fisheries and created a new habitat conservation  
30 approach. This habitat is called Essential Fish Habitat (EFH).

31 State laws and regulations beyond the ESA that pertain to fish and wildlife include, but  
32 are not limited to, the following:

#### 33 ORS Chapter 496 of the Oregon Wildlife Code

- 34 • **Fish Passage**  
35 The owner or operator of an artificial obstruction located in waters in which native  
36 migratory fish are currently or were historically present must address fish passage  
37 requirements prior to certain trigger events (installation, major replacement, a  
38 fundamental change in permit status [e.g., new water right, renewed hydroelectric  
39 license], or abandonment of the artificial obstruction). Laws regarding fish

40 passage may be found in ORS 509.580 through 910 and in OAR 635, Division  
41 412.

42 Include and discuss as applicable. In addition to State and Federal laws regulating  
43 impacts to wildlife, local regulations (e.g., county or city) may need to be considered  
44 when developing projects. If work is occurring on Federal land (e.g., BLM or USFS),  
45 then the regulations and policies of those agencies must be considered. This includes  
46 Sensitive Species, and National Scenic Area endemics.

47 When writing the Non-T&E Species subsection of the environmental document, you will  
48 primarily use the Biology Tech Report as your information source.

49 This subsection presents a broader view of sensitive animal species than the focused  
50 discussion of listed species found in the Threatened and Endangered Species  
51 subsection. As noted above, non-T&E are afforded varying levels of regulatory  
52 protection.

### 53 Plants

54 This subsection discusses all the other special-status plant species, including Oregon  
55 Department of Agriculture (ODA) species and species of special concern, and candidate  
56 species. ODA has responsibility for the conservation of non- threatened and endangered  
57 plant species through the Native Plant Conservation Program. “Special-status” species  
58 are identified because they are rare and/or subject to population and habitat declines.  
59 Special status plants are afforded no regulatory protection, except Sensitive species on  
60 federal lands, described below. In particular, candidate species should be described, as  
61 those could become regulated if proposed or listed during project development or  
62 construction. Please see the Threatened and Endangered Species Subsection above  
63 for detailed information regarding listed and proposed species.

64 In addition to State and Federal special status plant species, local regulations (e.g.,  
65 county or city) may need to be considered when developing projects. If work is  
66 occurring on Federal land (e.g., BLM or USFS), then the regulations and policies of  
67 those agencies must be considered. This includes Sensitive Species, and National  
68 Scenic Area endemics.

69 The Biology Technical Report should provide all of the necessary information on plant  
70 species for the preparation of the EIS, including affected environment, environmental  
71 consequences, and avoidance, minimization, and/or mitigation measures.

72 This subsection presents a broader view of plant species than the more focused  
73 discussion found in the Threatened and Endangered Species subsection. For this  
74 subsection, describe the dominant plant species in the biological study area and rare  
75 plant species that are not listed under either the State or Federal ESA.

76 Keep in mind that some local governments, special districts, and other land-  
77 management agencies may identify certain species of plants as important even though  
78 the plants may not be protected by State or Federal laws. These plants should be  
79 discussed in this subsection along with avoidance, minimization, or mitigation measures  
80 proposed for impacts to these species.

81 **3.14.2 Affected Environment**

- 82 1. In the references section, list applicable technical report(s) along with completion  
83 date(s). Include a text box in this section that names the technical report, date  
84 and that it is available upon request, should the reader want more information.
- 85 2. For each species included in this subsection, discuss any unique designations or  
86 considerations, including maps of the species habitat and the proposed project  
87 alternatives.
- 88 3. Remember to discuss/describe the rare, non-T&E plant species that occur or  
89 have the potential to occur in the study area and the surveys conducted to  
90 determine their presence or absence.

91 **3.14.3 Environmental Consequences**

- 92 1. Discuss the potential direct, indirect, and construction impacts on each species  
93 included in this subsection for each alternative.
- 94 2. Include a summary of coordination that has been conducted with the resource  
95 agency with jurisdiction.
- 96 3. Discuss and quantify the potential direct, indirect, and construction impacts of  
97 each of the project alternatives on the plants identified in the project area using  
98 the environmental consequences documented in the Biology Technical Report.  
99 These should be discussed in detail here as they pertain to federally protected  
100 plant species other than those listed under ESA.

101 **3.14.4 Avoidance, Minimization, and/or Mitigation Measures**

- 102 1. Describe avoidance measures that were considered and those which were  
103 incorporated into the proposed project.
- 104 2. Describe minimization measures that were considered and those which were  
105 incorporated into the proposed project.
- 106 3. Discuss any proposed mitigation, and/or enhancement measures. **Coordinate**  
107 **with FHWA if use of federal funds is being considered for enhancement**  
108 **measures.** Mitigation should be proposed only to compensate for unavoidable  
109 impacts to regulated or protected non- threatened and endangered species.  
110 Describe the proposed mitigation measures for each impact. Remember to state  
111 what the measure would do and why it is being proposed. Mitigation must lessen  
112 the impact of the project. Providing habitat needs to be linked to a reduction of  
113 impact to the resource. This list is by no means comprehensive.
- 114 a. Relocating fish prior to in-water work
- 115 b. Netting to prevent bird nesting
- 116 c. Improving or creating fish passage

117 d. Removal of invasive species

118 e. Reestablish plant communities

119 4. As a cooperator on the Oregon Conservation Strategy, ODOT is committed to  
120 minimizing impacts to sensitive species, particularly Strategy Species. To that  
121 end, reasonable enhancement measures may be recommended as optional  
122 opportunities that could avoid and minimize direct or indirect impacts to non-  
123 regulated species. Describe what the enhancement measures would do as they  
124 are proposed.

## 125 **References and Additional Guidance**

126 [Oregon Department of Transportation PD-04: Environmental Guidance](#)

127 [Oregon Conservation Strategy](#)

128 [ORS Chapter 496 of the Oregon Wildlife Code](#)

129 [OAR 635, Division 412 – Fish Passage](#)

130 [Oregon Fish Passage requirements](#)

131 [Native Plant Conservation Program](#)

132 [Migratory Bird Treaty Act of 1918 - https://www.fws.gov/laws/lawsdigest/MIGTREA.HTML](https://www.fws.gov/laws/lawsdigest/MIGTREA.HTML)

133

134 [Bald and Golden Eagle Protection Act of 1940](#)

135

136 [USFWS Step-by-Step Guidance to Avoid Disturbing Bald Eagles specific to bald eagles in the Pacific Northwest \(Idaho, Oregon, and Washington\)](#)

137

138 [Marine Mammal Protection Act - https://www.fisheries.noaa.gov/topic/laws-policies#marine-mammal-protection-act](https://www.fisheries.noaa.gov/topic/laws-policies#marine-mammal-protection-act)

139

140 [Essential Fish Habitat - https://www.fisheries.noaa.gov/national/habitat-conservation/essential-fish-habitat](https://www.fisheries.noaa.gov/national/habitat-conservation/essential-fish-habitat)

141 [Oregon Fish Passage Requirements](#)

142

[Oregon Administrative Rules Oregon Department of Fish and Wildlife - https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=2988](https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=2988)



## 1 **3.15 Invasive Species**

### 2 **3.15.1 Regulatory Setting**

3 Executive Order 13112 requires Federal agencies to combat the introduction or spread  
4 of invasive species in the United States. The order defines invasive species as “any  
5 species, including its seeds, eggs, spores, or other biological material capable of  
6 propagating that species, that is not native to that ecosystem whose introduction does or  
7 is likely to cause economic or environmental harm or harm to human health.” Federal  
8 Highway Administration guidance issued August 10, 1999 directs the use of the state’s  
9 noxious weed list to define the invasive plants that must be considered as part of the  
10 NEPA analysis for a proposed project. However, invasive species include wildlife as well  
11 as plants.

### 12 **3.15.2 Affected Environment**

- 13 1. In the references section, list applicable technical report(s) along with completion  
14 date(s). Include a text box in this section that names the technical report, date  
15 and that it is available upon request, should the reader want more information.
- 16 2. Identify and quantify invasive species within the study area.
- 17 3. Provide a map of invasive species in relationship to the proposed alternatives.  
18 Include the study area boundary on the map.

### 19 **3.15.3 Environmental Consequences**

20 Discuss the potential of alternatives to promote or inhibit the spread of invasive  
21 species.

### 22 **3.15.4 Avoidance, Minimization, and/or Mitigation Measures**

23 Discuss measures that will be used to combat invasive species. For example:

24 In compliance with the Executive Order on Invasive Species, E.O. 13112, and  
25 subsequent guidance from the Federal Highway Administration, landscaping and  
26 the erosion control plan included in the project will not use species listed as  
27 noxious weeds. In areas of particular sensitivity, extra precautions will be taken if  
28 invasive species are found in or adjacent to the construction areas. The  
29 measures include the inspection and cleaning of construction equipment and  
30 eradication strategies to be implemented should an invasion occur.

## 31 **References and Additional Guidance**

32 [FHWA Website for Invasive Species](#) (includes a link to EO 13112).

33 [Non-indigenous aquatic species in Oregon](#)

34 [Oregon State Noxious Weeds List](#)

## 1 **3.16 Air Quality**

### 2 **3.16.1 Regulatory Setting**

#### 3 Criteria Pollutants

4 The Clean Air Act as amended in 1990 is the federal law that governs air quality. This  
5 law sets standards for the quantity of pollutants that can be in the air. These standards  
6 are called National Ambient Air Quality Standards (NAAQS). Standards have been  
7 established for six criteria pollutants that have been linked to potential health concerns;  
8 the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>),  
9 particulate matter (PM), lead (Pb), and sulfur dioxide (SO<sub>2</sub>). A region is a nonattainment  
10 area when designated by the US EPA when one or more monitoring stations in the  
11 region fail to attain the relevant standard. Areas that were previously designated as  
12 nonattainment areas but have met the standard are called maintenance areas.

13 Under the 1990 Clean Air Act Amendments, the U.S. Department of Transportation  
14 cannot fund, authorize, or approve Federal actions to support programs or projects that  
15 are not first found to conform to the State Implementation Plan (SIP). Conformity with the  
16 Clean Air Act takes place at the regional level and at the project level. Any build  
17 alternative must conform at both levels to be approved.

#### 18 *Regional Conformity*

19 Regional level conformity in Oregon is concerned with how well the region meets the  
20 standards set for carbon monoxide (CO), ozone (O<sub>3</sub>), and particulate matter (PM).  
21 Oregon is not designated non-attainment for the other criteria pollutants. At the regional  
22 level, Metropolitan Planning Organizations (MPOs) develop Regional Transportation  
23 Plans (RTP) that include all of the transportation projects planned for that region over at  
24 least the next 20 years. Based on the projects included in the fiscally constrained RTP,  
25 an EPA air quality model is used to determine whether or not the implementation of  
26 those projects meets the emission budgets or other tests showing that attainment  
27 requirements of the Clean Air Act are met. If all requirements for regional conformity are  
28 met, the Federal Highway Administration and the Federal Transit Administration jointly  
29 make a conformity determination that the RTP conforms to the SIP for achieving the  
30 goals of the Clean Air Act. MPOs are also required to develop a Transportation  
31 Improvement Program (TIP), which includes projects that will be funded and  
32 implemented in the near term. Both RTPs and TIPs are required to meet regional  
33 conformity requirements.

#### 34 *Project-Level Conformity*

35 In addition to meeting regional-scale conformity requirements, individual Federal projects  
36 must meet certain project-level conformity requirements. Federal projects are required  
37 to be in a conforming RTP and TIP, and the design concept and scope of the project  
38 need to be consistent with those analyzed in the RTP and Tip. Conformity at the project-  
39 level also requires consideration of “hot spot” analysis, which is an analysis of localized  
40 pollutant concentrations, when an area is classified as nonattainment or maintenance for  
41 carbon monoxide (CO) and/or particulate matter (PM). In general, pollutant

42 concentrations due to building the project either need to be below the NAAQS, or lower  
43 than the concentrations associated with not building the project (the no-build alternative).

#### 44 Mobile Source Air Toxics

45 In addition to the criteria air pollutants for which there are National Ambient Air Quality  
46 Standards (NAAQS), EPA also regulates air toxics. Most air toxics originate from human-  
47 made sources, including on-road mobile sources, non-road mobile sources (e.g.,  
48 airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or  
49 refineries).

50 Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean  
51 Air Act. The MSATs are compounds emitted from highway vehicles and non-road  
52 equipment. Some toxic compounds are present in fuel and are emitted to the air when the  
53 fuel evaporates or passes through the engine unburned. Other toxics are emitted from the  
54 incomplete combustion of fuels or as secondary combustion products. Metal air toxics also  
55 result from engine wear or from impurities in oil or gasoline.

56 The EPA is the lead Federal Agency for administering the Clean Air Act and has certain  
57 responsibilities regarding the health effects of MSATs. Controlling air toxic emissions  
58 became a national priority with the passage of the Clean Air Act Amendments (CAAA) of  
59 1990, whereby Congress mandated that the U.S. Environmental Protection Agency  
60 (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has  
61 assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants  
62 from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007)  
63 and identified a group of 93 compounds emitted from mobile sources that are listed in  
64 their Integrated Risk Information System (IRIS) (<https://www.epa.gov/iris>). In addition, EPA  
65 identified seven compounds with significant contributions from mobile sources that are  
66 among the national and regional-scale cancer risk drivers from their 1999 National Air  
67 Toxics Assessment (NATA) (<https://www.epa.gov/national-air-toxics-assessment/>). These  
68 are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic  
69 gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA  
70 considers these the priority mobile source air toxics, the list is subject to change and may  
71 be adjusted in consideration of future EPA rules.

72 The 2007 EPA rule mentioned above requires controls that will dramatically decrease  
73 MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA  
74 analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled,  
75 VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the  
76 total annual emission rate for the priority MSAT is projected from 1999 to 2050.

#### 77 **3.16.2 Affected Environment**

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79 1. In the references section, list applicable technical report(s) along with completion  
80 date(s). Include a text box in this section that names the technical report, date and  
81 that it is available upon request, should the reader want more information.

82 2. Insert the following table in the document.

83 The following table provides a summary of the State of Oregon and Federal standards  
84 for the criteria pollutants.

85

Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
 Purple = sample text Underlined text: Web links

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**Table [x] Summary of National Ambient Air Quality Standards and Oregon Air Quality Standards**

Pollutant	Averaging Time	State Standard	Federal Standard	Health and Atmospheric Effects	Typical Sources
Ozone (O <sub>3</sub> )	8 hours	0.075 ppm	0.075 ppm	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include a number of known toxic air contaminants.	Low-altitude ozone is almost entirely formed from reactive organic gases (ROG) and nitrogen oxides (NO <sub>x</sub> ) in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes. Biologically-produced ROG may also contribute.
Carbon Monoxide (CO)	1 hour 8 hours	35 ppm 9 ppm	35 ppm 9 ppm	Asphyxiant. CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Respirable Particulate Matter (PM <sub>10</sub> )	24 hours Annual	150 µg/m <sup>3</sup> 50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup> –	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many aerosol and solid compounds are part of PM <sub>10</sub> .	Dust- and fume-producing industrial and agricultural operations; combustion smoke; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources (wind-blown dust, ocean spray).
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>a</sup>	24 hours Annual	–	35 µg/m <sup>3</sup> 15 µg/m <sup>3</sup>	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – considered a toxic air contaminant – is in the PM <sub>2.5</sub> size range. Many aerosol and solid compounds are part of PM <sub>2.5</sub> .	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO <sub>x</sub> , sulfur oxides (SO <sub>x</sub> ), ammonia and ROG.

Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
 Purple = sample text Underlined text: Web links

Pollutant	Averaging Time	State Standard	Federal Standard	Health and Atmospheric Effects	Typical Sources
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Hourly	0.053 <u>ppm</u>	0.053 <u>ppm</u>  0.10 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain.	Motor vehicles and other mobile sources; refineries; industrial operations.
Sulfur Dioxide (SO <sub>2</sub> )	3 hours 24 hours Annual	0.50 <u>ppm</u> 0.10 <u>ppm</u> 0.02 <u>ppm</u>	N/A 0.14 <u>ppm</u> 0.03 <u>ppm</u>	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing.
Lead (Pb) <sup>a</sup>	Rolling 3-month average	0.15 <u>µg/m<sup>3</sup></u>	0.15 <u>µg/m<sup>3</sup></u>	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also considered a toxic air contaminant.	Primary: lead-based industrial process like battery production and smelters. Previously: lead paint, leaded gasoline. Moderate to high levels of aerially deposited lead from gasoline may still be present in soils along major roads, and can be a problem if large amounts of soil are disturbed.

Notes: ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter

<sup>a</sup> Diesel exhaust particulate matter is part of PM<sub>10</sub> and, in larger proportion, PM<sub>2.5</sub>. The U.S. EPA has identified various organic compounds that are precursors to ozone and PM<sub>2.5</sub> as toxic air contaminants. There is no threshold level of exposure for adverse health effect determined for toxic air contaminants, and control measures may apply at ambient concentrations below any criteria levels specified for these pollutants or the general categories of pollutants to which they belong.

- 88 3. Discuss the general climatic and meteorological conditions in the study area.  
 89 Include prevailing winds, valley effects, inland/coastal influences, etc. In most  
 90 cases, this discussion should be no longer than 1-2 short paragraphs.
- 91 4. Describe the air quality characteristics of the local airshed and project area,  
 92 including:
- 93 a. A written summary of the NAAQS status of area (non-attainment,  
 94 maintenance or not designated) for each criteria pollutant.
- 95 b. Monitoring data (when available) and air quality trends. Include the last time  
 96 a standard was violated in the project area.
- 97 5. In a text box, reference the Air Quality Technical Report, date completed and how  
 98 a copy can be obtained.

### 99 3.16.3 Environmental Consequences

100 Provide a regional conformity statement and a project level air conformity statement;  
 101 unless the project is exempt (see [40 CFR 93.126 - 93.128](#)). It is unusual for an EIS  
 102 project to be exempt.

103 1. Regional Air Quality Conformity

104 The flow chart on the following page assists in determining the appropriate regional  
105 conformity language to include in this section.

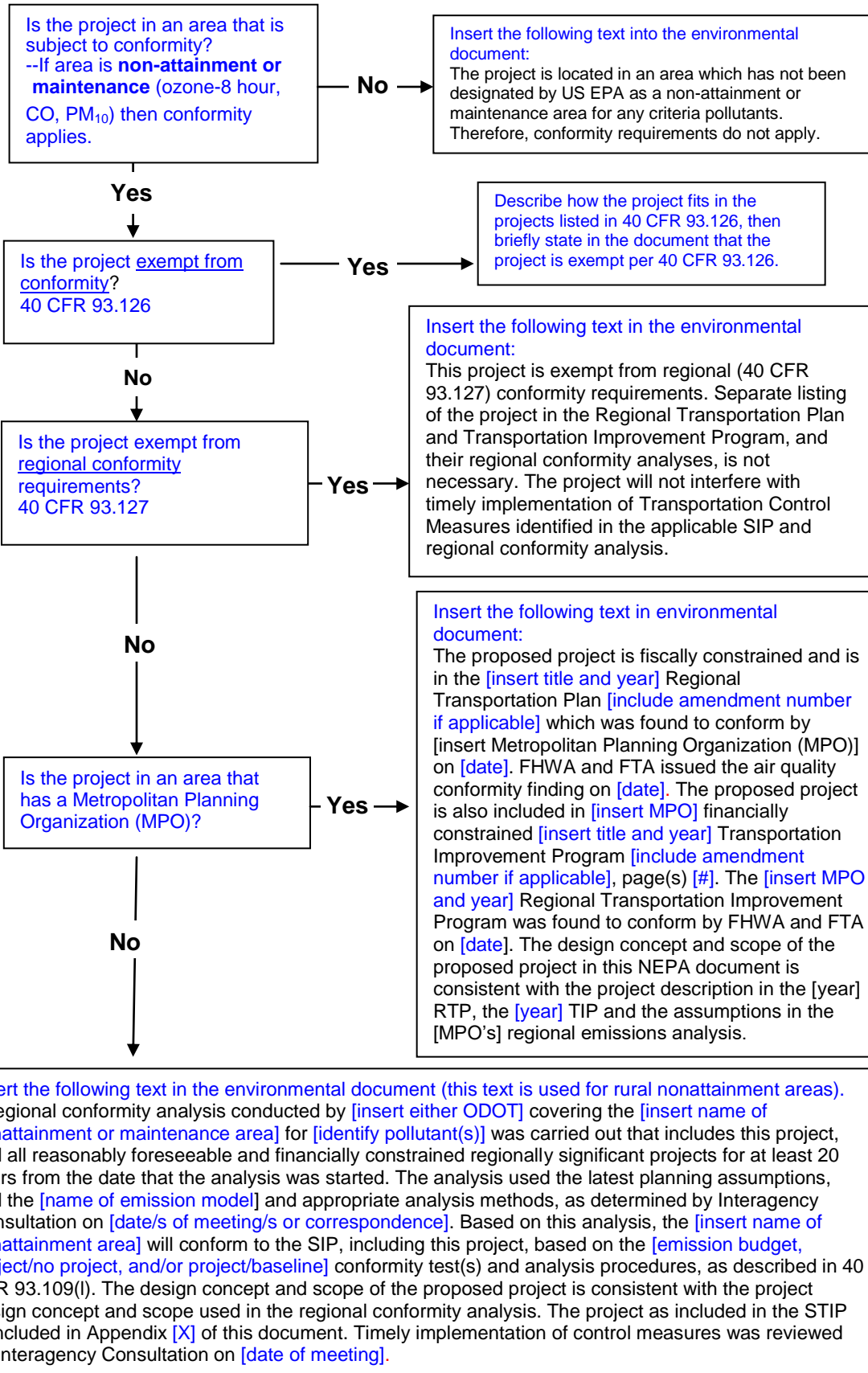
106 **On March 2, 2010, EPA announced the availability of the MOVES2010 air**  
107 **quality emissions model. The grace period for using MOVES2010 for regional**  
108 **conformity purposes expires on March 2, 2012. All regional conformity**  
109 **determinations made by USDOT (FHWA and FTA) on or after March 2, 2012,**  
110 **must use the MOVES2010 model. Up until that time the use of MOBILE6.2**  
111 **model is acceptable.**

112 The proposed project **must** match the design concept and scope of the project as  
113 described in the most recent Regional Transportation Plan (RTP) by the time the  
114 Record of Decision is signed. In the Air Quality Conformity Supporting  
115 Documentation appendix, include a copy of the page from the RTP project listing  
116 which includes this project.

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## Regional Air Quality Conformity Statement Determination Flowchart

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152 2. Project Level Conformity

153 Hot spot analysis is only required when the project is in a CO or PM non-  
154 attainment or maintenance area. CO hot spot analysis is conducting quantitatively,  
155 while PM hot spot analysis is conducted qualitatively. See 40 CFR 93.123.  
156 Oregon's air quality status is summarized here. State whether a CO or PM "hot  
157 spot" analysis is required for the project. If neither CO nor PM hot-spot analysis is  
158 required, proceed to the next section regarding Mobile Source Air Toxics.

159 **On March 2, 2010, EPA announced the availability of the MOVES2010 air**  
160 **quality emissions model. EPA did not approve MOVES2010 for project-level**  
161 **conformity purposes, but is expected to make such approval in the near**  
162 **future. At this time (March 25, 2010), MOBILE6.2 should be used for project-**  
163 **level conformity analysis.**

164 *Carbon Monoxide Analysis*

165 • Include a map showing the project alternatives, receptor sites and intersections  
166 analyzed for any CO or PM hotspot analysis conducted. Include the location of  
167 any monitoring stations used to establish background concentrations.

168 • Provide a brief statement of the quantitative CO analysis methods used,  
169 including the emission and dispersion model and assumptions.

170 • Use tables to summarize the results of the hot spot analysis relative to the  
171 impacts of each build alternative and the No-Build alternative. Include a  
172 footnote in the table regarding the background CO concentrations used in the  
173 analysis.

174 Background concentrations representing the cumulative emissions of other  
175 sources in the area are added into the predicted local concentrations for CO at  
176 intersections. Because of these inclusive analysis methodologies, the forecast  
177 impacts represent cumulative air quality impacts.

178 • Provide a project-level conformity statement which provides conclusions  
179 regarding the project not:

180 i. Causing or contributing to any new violations of any standard;

181 ii. Increasing the frequency or severity of any existing violation or  
182 any standard; and

183 iii. Delaying timely attainment of standard.

184 *Particulate Matter Analysis*

185 • If a project is in a PM non-attainment or maintenance area, PM hot spot  
186 analysis is required as outlined in the 1995 conformity rule for the following  
187 types of projects:



- 188           • Projects which are located at sites at which violations have been verified by  
189           monitoring;
- 190           • Projects which are located at sites which have vehicle and roadway emission  
191           and dispersion characteristics that are essentially identical to those of sites with  
192           verified violations (including sites near one at which a violation has been  
193           monitored); and,
- 194           • New or expanded bus and rail terminals and transfer points which increase the  
195           number of diesel vehicles congregating at a single location.
- 196           **EPA expects to release, sometime in 2010, new guidance for PM analysis  
197           that will require quantitative hot spot analysis. A two-year grace period  
198           will begin upon release of this guidance, during which time qualitative  
199           analysis may still be conducted.**
- 200           • If a PM hot-spot analysis is conducted, describe the analysis methods and  
201           results.
- 202           • Document project-level findings, using the guidelines in the March 2006  
203           EPA/FHWA PM hotspot guidance.
- 204        3. MSAT Impacts
- 205           a. Refer to the following flow chart to determine the appropriate analysis and  
206           language to include in the document.
- 207           b. The EIS must also contain language from Appendix C of FHWA’s September  
208           30, 2009, Interim Guidance on Air Toxic Analysis in NEPA documents, which  
209           refers to 40 CFR 1502.22(b) regarding incomplete information and analysis  
210           methodology.
- 211           c. In addition to FHWA’s interim guidance language include the following:
- 212                       “Significant scientific uncertainties remain in our understanding of the  
213                       relationship between adverse health effects and near-road exposure,  
214                       including the exposures of greatest concern, the importance of chronic  
215                       versus acute exposures, the role of fuel type (e.g., diesel or gasoline) and  
216                       composition (e.g., % aromatics), relevant traffic patterns, the role of co-  
217                       stressors including noise and socioeconomic status, and the role of  
218                       differential susceptibility within the “exposed” populations.”  
219                       (Citation: Volume 73 Federal Register Page 8441 (February 26, 2007)  
220                       Control of Hazardous Air Pollutants from Mobile Sources)
- 221
- 222                       Chapter 3 of the EPA Regulatory Impact Analysis for the 2007 MSAT  
223                       rules states that there are a number of additional significant uncertainties  
224                       associated with the air quality, exposure and risk modeling. The modeling  
225                       also has certain key limitations such as the results are most accurate for  
226                       large geographic areas, exposure modeling does not fully reflect variation

Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links

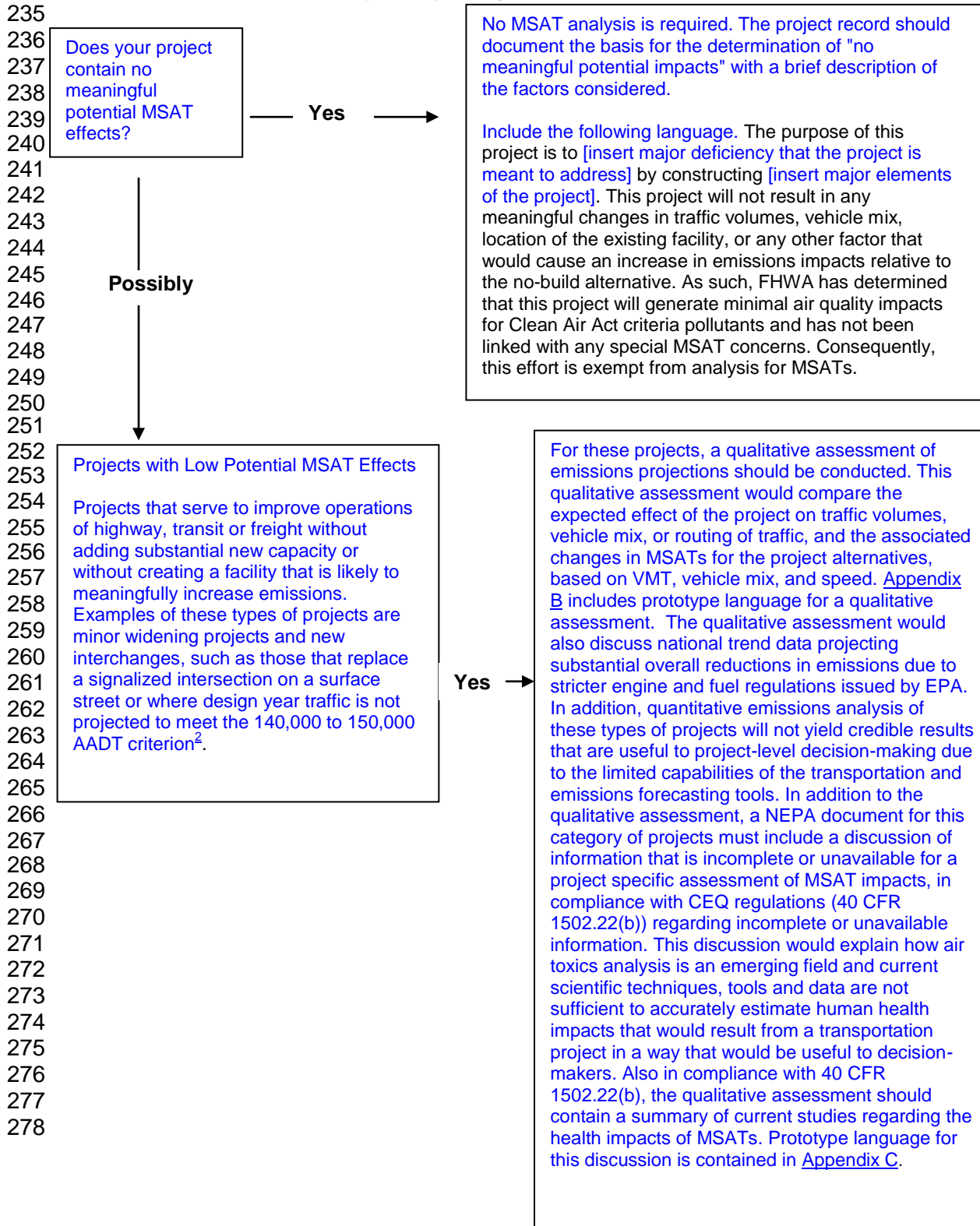
227 among individuals, and non-inhalation exposure pathways and indoor  
228 sources are not taken into account.

229 d. If a quantitative MSAT analysis is required, use tables and summarize the  
230 results of the analysis relative to the impacts of each Build alternative and the  
231 No-Build alternative.

232

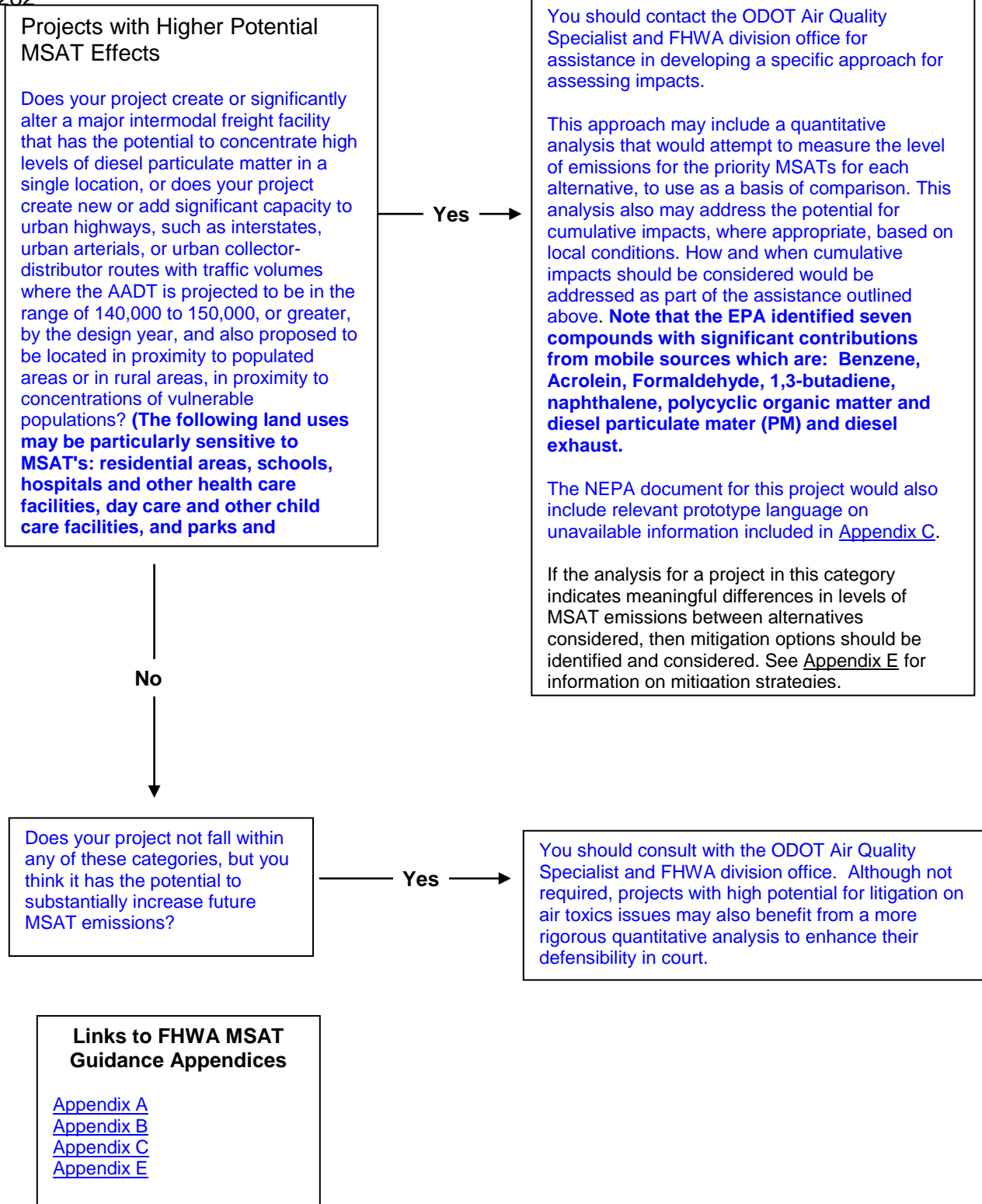
233

## 234 Mobile Source Air Toxics (MSAT) Analysis and Documentation Flowchart



279 **Mobile Source Air Toxics (MSAT) Analysis and Documentation Flowchart**  
 280 **(continued)**

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#### 4. Construction Impacts

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If construction impacts are being discussed under each resource heading instead of in a separate section, then temporary air quality impacts from construction activities need to be discussed here.

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The primary construction emission impacts will usually be associated with dust. Oregon Standards Specifications incorporate all applicable regulations and include a fugitive dust control specification. Normally, watering and general dust control efforts will be adequate to meet the rule.

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If a project is located in a nonattainment or maintenance area and construction will last more than five years at one site and/or will substantially affect traffic due to detours, road closures, and temporary terminations, then a hot spot analysis for the pertinent pollutant may be needed. **The need for a hot spot analysis is determined and carried out if necessary during the FEIS phase when more specific construction staging information is available. As part of conformity requirements, the analysis must be conducted and conformity met, prior to issuance of the ROD.** The hot spot analysis methodology should be established through interagency consultation.

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If an Indirect Source Construction permit will be required for this project it should be documented.

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*Short-Term Construction Impacts.* The following sample text reflects a qualitative assessment of construction emissions. The language should be modified to fit the project, considering the magnitude of the project and expected construction activities.

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During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling and various other activities. Emissions from construction equipment also are anticipated and would include CO, nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOCs), directly-emitted particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from NO<sub>x</sub> and VOCs in the presence of sunlight and heat.

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Site preparation and roadway construction would involve clearing, cut-and-fill activities, grading, removing or improving existing roadways, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling and transport of soils to and from the site. If not properly controlled, these activities would temporarily generate PM<sub>10</sub>, PM<sub>2.5</sub> and small amounts of CO, SO<sub>2</sub>, NO<sub>x</sub> and VOCs.

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Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional

327 source of airborne dust after it dries. PM<sub>10</sub> emissions would vary from day to day,  
328 depending on the nature and magnitude of construction activity and local weather  
329 conditions. PM<sub>10</sub> emissions would depend on soil moisture, silt content of soil,  
330 wind speed and the amount of equipment operating. Larger dust particles would  
331 settle near the source, while fine particles would be dispersed over greater  
332 distances from the construction site.

333  
334 In addition to dust-related PM<sub>10</sub> emissions, heavy trucks and construction  
335 equipment powered by gasoline and diesel engines would generate CO, SO<sub>2</sub>,  
336 NO<sub>x</sub>, VOCs and some soot particulate (PM<sub>10</sub> and PM<sub>2.5</sub>) in exhaust emissions. If  
337 construction activities were to increase traffic congestion in the area, CO and  
338 other emissions from traffic would increase slightly while those vehicles are  
339 delayed. These emissions would be temporary and limited to the immediate area  
340 surrounding the construction site.

341  
342 Construction of concrete structures may have associated dust-emitting sources,  
343 such as concrete mixing operations. Asphalt mix plants could have particulate,  
344 hazardous air pollutant and combustion source emissions. Stationary sources  
345 such as concrete and asphalt mix plants are generally required to obtain air  
346 permits from Oregon Department of Environmental Quality or the Lane Regional  
347 Air Pollution Authority.

348  
349 Most of the construction impacts to air quality are short-term in duration and,  
350 therefore, will not result in adverse or long-term conditions.

#### 351 5. Indirect Impacts.

352  
353 Indirect impacts are caused by the project but can be later in time or farther  
354 removed in distance from the project. The travel demand model used for the air  
355 quality analysis reflects future land use, employment and growth and therefore  
356 includes forecast indirect impacts.

#### 357 6. Cumulative Impacts.

358 The forecast traffic volumes used to analyze the air quality impacts of the project  
359 alternatives include traffic from all sources.

### 360 3.16.4 Avoidance, Minimization, and/or Mitigation Measures

- 362 1. Discuss any avoidance and minimization efforts that have already been  
363 incorporated into the proposed alternatives.
- 364 2. Discuss potential mitigation measures to lessen the impact to air quality as a result  
365 of the proposed project. Most of the construction impacts to air quality are short-  
366 term in duration and, therefore, will not result in adverse or long-term conditions.  
367 Consider the following sample text for inclusion in your document.

368 Construction contractors are required to comply with Division 208 of OAR 340  
369 which addresses visible emissions and nuisance requirements. Subsection 210 of

370 OAR 340-208 places limits on fugitive dust that causes a nuisance or violates other  
371 regulations. Modify the references to DEQ regulations appropriately if project is in  
372 Lane County and under the jurisdiction of LRAPA. Violations of the regulations can  
373 result in enforcement action and fines. The regulation provides a list of reasonable  
374 precautions be taken to avoid dust emissions:

- 375
- 376 • Use of water or chemicals, where possible, for the control of dust in the  
377 demolition of existing buildings or structures, construction operations, the  
378 grading of roads or the clearing of land;
- 379 • Application of asphalt, oil, water, or other suitable chemicals on unpaved  
380 roads, materials stockpiles, and other surfaces which can create airborne  
381 dusts;
- 382 • Full or partial enclosure of materials stockpiles in cases where application of  
383 oil, water, or chemicals are not sufficient to prevent particulate matter from  
384 becoming airborne;
- 385 • Installation and use of hoods, fans, and fabric filters to enclose and vent the  
386 handling of dusty materials;
- 387 • Adequate containment during sandblasting or other similar operations;
- 388 • When in motion, always covering open-bodied trucks transporting materials  
389 likely to become airborne;
- 390 • The prompt removal from paved streets of earth or other material that does or  
391 may become airborne.

392 In addition, contractors are required to comply with ODOT standard specifications.  
393 Section 290 of the specifications has requirements for environmental protection,  
394 which include air pollution control measures. These control measures include  
395 vehicle and equipment idling limitations and are designed to minimize vehicle  
396 track-out and fugitive dust. These measures would be documented in the pollution  
397 control plan that the contractor is required to submit prior to the pre-construction  
398 conference. To reduce the impact of construction delays on traffic flow and  
399 resultant emissions, road or lane closures should be restricted to non-peak traffic  
400 periods when possible.

## 402 **References and Additional Guidance**

403 [FHWA Transportation Conformity Reference Guide](#)

404 [Federal Transportation Conformity Rule](#)

405 [Exempt project listing \(40 CFR 93.126\)](#)

406 [MOVES2010 Model Guidance](#)

407 [Hot Spot Analysis References](#)

408 [EPA has released guidance on PM<sub>2.5</sub> and PM<sub>10</sub> analysis.](#)

- 409 [EPA Final Rule defining projects for which PM<sub>2.5</sub> and PM<sub>10</sub> Hot Spot Analysis is needed](#)  
410 [for Conformity](#)
- 411 [March 2006 EPA/USDOT Guidance Document for performing qualitative PM<sub>2.5</sub> and PM<sub>10</sub>](#)  
412 [Hot Spot Analysis](#)
- 413 [FHWA Examples of PM Hot Spot Analyses](#)
- 414 *Mobile Source Air Toxics References*
- 415 [FHWA September 30, 2009, Guidance for MSATs in NEPA](#)
- 416 [Volume 73 Federal Register Page 8441 \(February 26, 2007\) Control of Hazardous Air](#)  
417 [Pollutants from Mobile Sources\)](#)
- 418 [Regulatory Impact Analysis for Final Rule: Control of Hazardous Air Pollutants from](#)  
419 [Mobile Sources](#)
- 420 [Integrated Risk Information System \(IRIS\)](#)
- 421 [1999 National Air Toxics Assessment \(NATA\)](#)
- 422 *Oregon References*
- 423 [Air Quality Status for Oregon \(updated by ODOT\)](#)
- 424 [Air Quality Statement of Work Matrix for EIS or EA \(assists in the identification air quality](#)  
425 [tasks needed for a project\)](#)
- 426 [Air Quality for EA or EIS Project Standardized Statement of Work \(used after the matrix](#)  
427 [has been completed to write a SOW\)](#)
- 428 [ODOT Air Quality Technical Manual](#)  
429  
430 [ODOT Air Quality, Acoustics, and Energy Program website](#)  
431  
432



## 1 **3.17 Noise (and Vibration, if applicable)**

2 Vibration impacts are generally only analyzed for transit projects when light rail, or bus  
3 lanes would be located close to vibration-sensitive buildings. For proposed actions  
4 which include a transit component, Federal Transit Administration (FTA) will likely be a  
5 co-lead agency. Document authors should understand that the FTA's noise policy varies  
6 from the FHWA's noise policy and substantial coordination will be required with the co-  
7 lead agencies to determine how each agency's policies will apply to the proposed action.

8 If a project includes transit vibration analysis, it could be prepared as a separate section  
9 from the noise section. There are no Federal requirements that specifically address  
10 traffic-induced vibration but FTA's Noise and Vibration Manual should be used when  
11 FTA is involved with a proposed action.

### 12 **3.17.1 Regulatory Setting**

13 The National Environmental Policy Act (NEPA) of 1969 provides a regulatory framework  
14 that promotes the general welfare and fosters a healthy environment for noise  
15 considerations. 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and  
16 Construction Noise and ODOT Noise Manual provide the basis for analyzing and abating  
17 highway traffic noise impacts in Oregon.

#### 18 **3.17.1.1 National Environmental Policy Act and 23 CFR 772**

19 For highway transportation projects with FHWA involvement, the Federal-Aid Highway  
20 Act of 1970 and the associated implementing regulations (23 CFR 772) govern the  
21 analysis and abatement of traffic noise impacts. The regulations require that potential  
22 noise impacts in areas of frequent human use be identified during the planning and  
23 design of a highway project.

24 The noise regulations govern noise prediction requirements, noise analyses, noise  
25 abatement criteria and requirements for informing local officials. The noise abatement  
26 criteria (NAC) are used to determine when a noise impact would occur. The NAC differ  
27 depending on the type of land use under analysis. For example, the NAC for residences  
28 (67 dBA) is lower than the NAC for commercial areas (72 dBA). Table (insert table #)  
29 lists the noise abatement criteria for use in the FHWA noise analysis.

30

Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
 Purple = sample text Underlined text: Web links

31 Table [X]

Activity Category	NAC, Hourly A- Weighted Noise Level, dBA L <sub>eq</sub> (h)	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals.
C	72 Exterior	Developed lands, properties or activities not included in Categories A or B above.
D	–	Undeveloped lands.
E	52 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

32

33 A noise impact occurs if predicted noise levels approach the levels listed in the table  
 34 above or substantially exceed existing noise levels. Each state defines quantitative  
 35 levels considered to approach the NAC or substantially exceed existing noise levels.  
 36 Projects that include construction of new highway or reconstruction of existing highways  
 37 by significantly changing either the horizontal or vertical alignment or by increasing the  
 38 number of through traffic lanes require analysis and consideration of abatement. A  
 39 significant change in the horizontal or vertical alignment occurs when the change is likely  
 40 to result in increased noise levels to developed lands.

41 [Insert table number] lists the noise levels of common activities so that readers can  
 42 compare the actual and predicted highway noise-levels discussed in this section with  
 43 common activities they may be familiar.

Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
 Purple = sample text Underlined text: Web links

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft) Commercial Area	70	Vacuum Cleaner at 3 m (10 ft) Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

44

45 **3.17.1.2 ODOT Noise Policy**

46 ODOT is responsible for implementing the FHWA regulations in the State of Oregon. In  
 47 accordance with the ODOT Noise Manual, which explains the ODOT noise policy, [date  
 48 to be inserted once approved], a noise impact occurs when the future noise level for one  
 49 or more build alternatives results in a substantial increase in noise level (defined as a 10  
 50 dBA or more increase over the existing noise levels) or when the future noise level for  
 51 one or more build alternatives approaches or exceeds the NAC. ODOT noise policy  
 52 defines approaching the NAC as 2 dBA less than the NAC. Table [insert table #]  
 53 summarizes the approach criteria used for highway projects in Oregon.

54

55 Table [X]

Activity Category	Oregon Approach Criteria Hourly A- Weighted Noise Level, dBA L <sub>eq</sub> (h)	Description of Activities
A	55 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	65 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	70 Exterior	Developed lands, properties, or activities not included in Categories A or B above.
D	–	Undeveloped lands.
E	50 Interior	Residence, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

56

57 **3.17.1.3 Oregon Department of Environmental Quality Noise Policy**

58 The Oregon Department of Environmental Quality (DEQ) Chapter 340 Division 35 sets  
 59 allowable noise levels for individual vehicles and for industrial and commercial uses.  
 60 Maximum allowable noise levels for in-use vehicles in Oregon are determined by vehicle  
 61 type, operating conditions, and model year.

62 **3.17.1.4 Local Noise Policy**

63 [County or City ] of [ \_\_\_\_\_ ] [do/do not] have noise ordinances for nuisance noise or  
 64 limits on construction noise times or sound levels. **Include a summary of applicable**  
 65 **local noise ordinances. The Noise Technical Report should have language that**  
 66 **describes the local noise requirements that would apply to the project.**

67 **3.17.1.5 Project Noise Abatement Requirements**

68 If the project will have noise impacts, then potential abatement measures must be  
 69 considered. Noise abatement measures that are determined to be reasonable and  
 70 feasible at the time of final design are incorporated into the project plans and  
 71 specifications. This document discusses noise abatement measures that would be  
 72 considered in final design of the project.

73 ODOT's Noise Manual sets forth the criteria for determining when an abatement  
 74 measure is reasonable and feasible. Abatement must meet ODOT's reasonable and  
 75 feasible criteria to be considered. Feasibility of noise abatement is primarily an  
 76 engineering concern. A minimum 5 dBA reduction in the future noise level must be  
 77 achieved for an abatement measure to be considered feasible. Other feasibility  
 78 considerations include topography, access requirements, other noise sources and safety  
 79 considerations. The reasonableness determination is basically a cost-benefit analysis,  
 80 but also considers the input from those property owners which could receive abatement  
 81 features. Factors used in determining whether a proposed noise abatement measure is  
 82 reasonable include: residents acceptance, absolute noise levels, the change in the  
 83 existing noise levels, environmental impacts of abatement, public and local agencies  
 84 input, newly constructed development versus development pre-dating 1996 and the cost

85 per benefited residence. ODOT's reasonable cost criterion is \$25,000/benefitted  
86 residence.

87 This (insert *draft* if appropriate) EIS provides information on the potential locations of  
88 noise abatement measures, that currently meet the reasonable and feasible criteria.  
89 This document also provides information on which areas are forecast to be noise  
90 impacted, but do not meet the reasonable and feasible criteria and therefore, will not be  
91 considered for noise abatement. The final decision on provision for noise abatement is  
92 not made until final design, when the exact number of noise impacts are known so that  
93 the final assessment of reasonable and feasible criteria can be measured. ODOT  
94 strongly considers the desires of residents when considering providing abatement. In  
95 some cases, residents may choose not to have reasonable and feasible abatement built.  
96 In these cases, those areas would not be able to access Federal-aid funding in the  
97 future for noise abatement.

### 98 3.17.2 Affected Environment

- 99 1. In the references section, list applicable technical report(s) along with completion  
100 date(s). Include a text box in this section that names the technical report, date and  
101 that it is available upon request, should the reader want more information.
- 102 2. Summarize this information provided in the technical study: land uses and sensitive  
103 noise receptors, existing measured noise levels, existing modeled noise levels,  
104 particularly areas of frequent human use that would benefit from reduced noise  
105 levels. Incorporate any maps and graphics from the noise technical report showing  
106 noise measurement sites, sensitive noise receptors, and land use.
- 107 3. Write a brief description of noise sensitive areas (residences, businesses, schools,  
108 parks, etc.), including information on the number and types of activities that may be  
109 affected. This should include developed lands and undeveloped lands for which  
110 development is planned, designed and programmed.

### 111 3.17.3 Environmental Consequences

- 112 1. The noise technical report identifies whether the proposed build alternatives would  
113 result in noise impact(s). Pull information from the technical report for the following  
114 discussion points. These discussion points are needed in order to satisfy the  
115 requirements of 23 CFR 772. If the proposed build alternatives would not result in  
116 noise impacts, the environmental consequences section is complete. Mitigation, in  
117 terms of noise abatement, beyond best management practices, standard  
118 specifications and special provisions is not expected when there are no noise  
119 impacts.
  - 120 a. Discuss modeling assumptions and input data used. Identify the traffic noise  
121 model and version used. Identify the worst noise hour and how it was  
122 selected. Discuss project-specific methodology, lack of information, or data  
123 limitations that need explanation. If a detailed account of methodology is  
124 required in order for the reader/public to understand the quality or limitations  
125 of the analysis, summarize briefly in the text and place details in an appendix.

126 b. Discuss the modeling results of future noise levels for each build alternative  
 127 and the No-Build (identify the design year traffic that is at least 20 years from  
 128 the end construction). Provide a table summary of existing, No-Build and  
 129 future-build modeling results by associated receptors. **There is often a need**  
 130 **to review impact analysis results many years after the environmental**  
 131 **document has been completed. It is extremely important that the**  
 132 **quantitative impacts and locations are included in the EIS either in the**  
 133 **text or in the appendix material.**

134 c. Discuss these types of noise impacts:

135 i. substantial increase impacts (project will result in 10 dBA increase  
 136 over existing conditions)

137 ii. and/or whether the noise approaches (within 2 dBA) or exceeds the  
 138 NAC.

139 2. Traffic noise impacts require the consideration of abatement.

140 a. A table summarizing the results of the noise impact analysis for the build and  
 141 No-Build alternatives should be included in the document. Depending upon  
 142 the complexity of the noise analysis you may choose to either provide a table  
 143 for each build alternative or include the right-hand column of the sample table  
 144 that follows.

Receptor # and Location	Existing Noise Level (dBA)	Predicted Noise Level without Project (dBA)	Predicted Noise Level with Project (dBA)	Noise Impact Requiring Abatement Consideration	Predicted Noise Level with Abatement (dBA)			Is Abatement Reasonable and Feasible?	Build Alternative(s)
					6-foot Wall	9-foot Wall	12-foot Wall		
1—A Street	62	64	79	Yes	74	64	66	Yes	A, B

145 b. Discuss noise impacts for which no prudent solution is reasonably available  
 146 and why.  
 147

148 3. Summarize noise impacts from construction from the noise technical report.

149 Example language: Construction of the Build Alternative may cause localized,  
 150 short-duration noise impacts. (name of city or county) does/does not have specific  
 151 regulations governing construction noise. (name of city or county) allows/forbids  
 152 construction between the hours of 7 a.m. and 7 p.m. Mondays through Saturdays.  
 153 Using standard ODOT specifications for control of noise sources during  
 154 construction can minimize construction impacts. The ODOT specifications are  
 155 described in the Construction Noise Abatement section.  
 156

157 **3.17.4 Avoidance, Minimization, and/or Abatement Measures**

158 1. Abatement measures are not relevant for the No-Build Alternative.

- 159 2. Describe avoidance measures that were considered and those which were  
160 incorporated into the proposed project.
- 161 3. Describe minimization measures that were considered and those which were  
162 incorporated into the proposed project.
- 163 4. Describe noise abatement (include barriers of different heights and types) which  
164 meets ODOT's reasonable and feasible criteria. Do not use "mitigate" or  
165 "mitigation." FHWA prefers the terms "abate" or "abatement" or "attenuate" or  
166 "attenuation" to be used in the noise section of environmental documents.

167 **Sample text:** Receptor 1 represents 10 homes located on A Street in the City of  
168 Alpharet. Measurements taken at Receptor 1 indicate that the existing noise level  
169 at that location is 62 dBA. The future noise level at Receptor 1 with the project is  
170 predicted to be 80 dBA. Because the predicted future noise level approaches or  
171 exceeds the NAC for residential uses (67dBA), the 10 homes represented by  
172 Receptor 1 would be adversely affected by noise. To achieve a 5 dBA reduction, a  
173 6-foot noise wall would be needed. If the total cost of the wall at this location is  
174 less than the total cost allowance, then the wall would likely be incorporated into  
175 the project. The total cost allowance, calculated in accordance with the ODOT's  
176 Noise Manual, is \$175,000. The current estimated cost of the wall is \$[\_\_\_\_\_].

- 177 a. Include a map showing receptors and proposed wall/berm locations.  
178 Describe what abatement will do for existing and future noise levels. If there  
179 are existing noise impacted properties that will now be provided abatement,  
180 be sure to describe this beneficial affect.

181 **When analyzing abatement, we must consider abatement for not only**  
182 **the impacts caused by the project (required by NEPA), but also**  
183 **abatement for existing noise levels that approach or exceed the NACs.**  
184 **Under 23 CFR 772, if the predicted noise level approaches or exceeds**  
185 **the NACs, there is a traffic noise impact regardless of whether or not**  
186 **the proposed project causes it. Consideration of abatement for these**  
187 **impacts is required, as well. The noise technical report should have a**  
188 **discussion that can be summarized for the EIS.**

- 189 b. Include ODOT Noise Manual Appendix I worksheets in an appendix. This  
190 worksheet is used to determine whether abatement is reasonable and  
191 feasible.
- 192 c. Include a cost estimate for all noise abatement that is considered reasonable  
193 and feasible.

- 194 5. When noise abatement consideration is included in the Preferred Alternative  
195 include the following statement:

196 Based on the studies completed to date, ODOT intends to incorporate noise  
197 abatement in the form of (a) barrier(s) [or berm(s)] at: [\_\_\_\_\_], with  
198 respective lengths and average heights of [\_\_\_\_\_]. Calculations based on  
199 preliminary design data indicate that the barrier(s) or berm(s) will reduce noise

200 levels by 5 to [ ] dBA for [ ] residences at a cost of [ ]. If during final  
201 design conditions have substantially changed, noise abatement may not be  
202 necessary. The final decision of the noise abatement will be made upon: (1)  
203 completion of the project design, which occurs following the ROD and (2) the  
204 completion of the public involvement processes as outlined in ODOT's Noise  
205 Manual.

206 6. Describe abatement measures for impacts from construction noise. Summarize  
207 the section from the noise technical report.

208 Construction noise levels for the project would result from normal construction  
209 activities. These noise levels, although temporary in nature, can be annoying. The  
210 following construction noise abatement measures will be included in the project  
211 specifications.

- 212
- 213 • No construction shall be performed within 1,000 feet of an occupied dwelling  
214 unit on Sundays, legal holidays, or between the hours of 10 p.m. and 6 a.m.  
215 on other days, without the approval of the ODOT Project Engineer.
- 216
- 217 • All equipment used shall have sound-control devices no less effective than  
218 those provided on the original equipment. No equipment shall have unmuffled  
219 exhaust.
- 220
- 221 • All equipment shall comply with pertinent equipment noise standards of the  
222 U.S. Environmental Protection Agency.
- 223
- 224 • No pile driving or blasting operations shall be performed within 3,000 feet of  
225 an occupied dwelling unit on Sundays, legal holidays, or between the hours  
226 of 8 p.m. and 8 a.m. on other days, without the approval of the ODOT Project  
227 Engineer.
- 228
- 229 • The noise from rock crushing or screening operations performed within 3,000  
230 feet of any occupied dwelling shall be mitigated by strategic placement of  
231 material stockpiles between the operation and the affected dwelling or by  
232 other means approved by the ODOT Project Engineer. Should a specific  
233 noise impact complaint occur during the construction of the project, one or  
234 more of the following noise mitigations may be required at the Contractor's  
235 expense, as directed by the ODOT Project Engineer.
- 236
- 237 • Locate stationary construction equipment as far from nearby noise-  
238 sensitive properties as feasible.
- 239
- 240 • Shut off idling equipment.
- 241
- 242 • Reschedule construction operations to avoid periods of noise  
243 annoyance identified in the complaint.
- 244
- 245 • Notify nearby residents whenever extremely noisy work will be  
246 occurring.
- 247



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- Install temporary or portable acoustic barriers around stationary construction noise sources.
  - Operate electrically powered equipment using line voltage power or solar power.
7. Include a summary of how the noise analysis information has been shared with local officials, consistent with 23 CFR 772.15. Particularly document information shared about noise levels and any planned development on currently undeveloped lands.

## 258 **References and Additional Guidance**

259 ODOT Noise Manual: [ftp://ftp.odot.state.or.us/techserv/Geo-](ftp://ftp.odot.state.or.us/techserv/Geo-Environmental/Environmental/Procedural%20Manuals/Air%20and%20Noise/ODOT%20Noise%20Manual.pdf)  
260 [Environmental/Environmental/Procedural%20Manuals/Air%20and%20Noise/ODOT%20](ftp://ftp.odot.state.or.us/techserv/Geo-Environmental/Environmental/Procedural%20Manuals/Air%20and%20Noise/ODOT%20Noise%20Manual.pdf)  
261 [Noise%20Manual.pdf](ftp://ftp.odot.state.or.us/techserv/Geo-Environmental/Environmental/Procedural%20Manuals/Air%20and%20Noise/ODOT%20Noise%20Manual.pdf)

262 FHWA Noise Information:

263 Guidance Document: [https://www.fhwa.dot.gov/environMent/noise/](https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide04.cfm)  
264 [regulations\\_and\\_guidance/polguide/polguide04.cfm](https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide04.cfm)

265 Regulations: [CFR Title 23, Part 772](https://www.fhwa.dot.gov/legsregs/directives/fapg/cfr0772.htm)  
266 (<https://www.fhwa.dot.gov/legsregs/directives/fapg/cfr0772.htm>)

267 FTA Noise and Vibration Guidance

268

269 Oregon Administrative Rule (OAR) 340 Division 35. Oregon Department of  
270 Environmental Quality. "Noise Control Regulations." Oregon Administrative Rules.  
[Dept. of Environmental Quality 340 Division 035](#)

271

1 **3.18 Energy**

2 **3.18.1 Regulatory Setting**

3 NEPA (42 USC Part 4332) requires the identification of all potentially significant impacts  
4 to the environment, including energy impacts. In order to comply with NEPA, an energy  
5 analysis is appropriate for some proposed transportation projects.

6 Energy impacts are also considered in the following sections: Relationship between  
7 Short-Term Uses of the Human Environment and the Maintenance and Enhancement of  
8 Long-Term Productivity, Irreversible and Irrecoverable Commitments of Resources That  
9 Would Be Involved in the Proposed Project, and Appendix [X] FHWA National and  
10 ODOT Statewide Efforts Related to Climate Change.

11 ODOT recommends that a quantitative energy analysis be conducted for EIS projects.  
12 In some cases, analysis results indicate that construction energy requirements are  
13 greater than benefits that may be obtained from operations energy savings. In these  
14 cases, there may not be a net long-term energy savings. The quantitative analysis  
15 allows for the best comparison of alternatives. In some cases a qualitative analysis is  
16 appropriate, but this should be determined in consultation with ODOT Geo-  
17 Environmental Section and FHWA.

18 **3.18.2 Affected Environment**

- 19 1. In the references section, list applicable technical report(s) along with completion  
20 date(s). Include a text box in this section that names the technical report, date and  
21 that it is available upon request, should the reader want more information.
- 22 2. Provide a quantitative description of the estimated operations energy for the  
23 current year. MOVES2010 can be used for operational energy calculations.  
24 Operations energy is calculated separately for automobiles and trucks due to  
25 different fuel consumption rates at a given speed for these two types of vehicles,  
26 and because of the different energy conversion factors for gasoline and diesel  
27 fuels. Report in terms of gallons of gasoline since the public can conceptualize this  
28 easier than just British Thermal Units (BTUs). Example Table below:

29

30

**Table [X] Daily Estimated Energy Consumption, Existing Year 2007**

Roadway Section Vehicle Type	Daily			Annual <sup>2</sup>		
	Vehicle Miles Traveled (Daily VMT)	Energy Consumption <sup>1</sup> Millions of Btu/day	Fuel Consumption gal/day	Vehicle Miles Traveled (Annual VMT)	Energy Consumption <sup>1</sup> Millions of Btu/year	Fuel Consumption gal/year
<b>Existing Street Network</b>						
<b>Auto</b>	<b>400,398</b>	<b>1,752</b>	<b>14,015</b>	<b>146,145,071</b>	<b>639,385</b>	<b>5,115,078</b>
<b>Trucks</b>	<b>12,601</b>	<b>207</b>	<b>1,487</b>	<b>4,599,526</b>	<b>75,441</b>	<b>542,744</b>
<b>Total</b>	<b>412,999</b>	<b>1,959</b>	<b>15,502</b>	<b>150,744,597</b>	<b>714,826</b>	<b>5,657,822</b>

Source: Highway 62 Corridor Solutions Project Traffic Technical Report (Southern Oregon Transportation Engineering, LLC: February 2009)

Btu = British Thermal Unit

VMT = Vehicle Miles Traveled

<sup>1</sup> Energy Consumption, Auto: Btu/gallon of gasoline = 125,000, Trucks: Btu/gallon of diesel = 139,000

<sup>2</sup> Annual energy consumptions are estimates only and do not accurately account for variations in seasonal energy use

31

### 3.18.3 Environmental Consequences

33 Transportation-related energy is usually separated into construction and operations.  
 34 Operations energy is defined as the energy consumed from vehicles operating within the  
 35 transportation facility. Construction energy consists of the energy use that occurs in  
 36 building a transportation system.

- 37 1. The DEIS should discuss estimated energy consumption and conservation  
 38 potential (beneficial effects) of each alternative. This would include presenting  
 39 quantitative data for operations energy and construction energy.

40 Operations energy is typically calculated for the existing year, year of project  
 41 completion and for the design year, generally a 20-year projection from the  
 42 year of project opening. Operations energy is calculated separately for  
 43 automobiles and trucks due to different fuel consumption rates at a given  
 44 speed for these two types of vehicles, and because of the different energy  
 45 conversion factors for gasoline and diesel fuels. Calculations are typically  
 46 expressed in terms of gallons of gasoline or BTUs. MOVES2010 can be used  
 47 to calculate operational energy. **Include a table summarizing operations  
 48 energy requirements for each of the no-build and build alternatives for  
 49 the appropriate study years (year of project completion and design  
 50 year). Example table below:**

51 In the summary table autos/truck quantities are not listed separately;  
 52 however, the totals shown reflect automobiles plus truck operation energy.  
 53 The detailed information is provided in the Energy Technical Report/ Memo.

54

Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
 Purple = sample text Underlined text: Web links

55

**Table [X] Summary of Operations Energy Consumption**

Conditions	Daily			Annual <sup>4</sup>		
	Vehicle Miles Traveled (Daily VMT)	Energy Consumption <sup>1</sup> Millions of Btu/day	Fuel Consumption gal/day	Vehicle Miles Traveled (Annual VMT)	Energy Consumption <sup>1</sup> Millions of Btu/year	Fuel Consumption gal/year
Existing Year 2007	412,999	1,959	15,502	150,744,597	714,826	5,657,822
Design Year 2015						
2015 No-Build Alternative	430,861	2,003	15,846	157,264,761	731,404	5,783,461
2015 Bypass w/ Option 1A <sup>2</sup>	524,628	2,427	19,205	191,489,022	885,898	7,009,697
2015 Bypass w/ Option 1B <sup>3</sup>	521,130	2,405	19,031	190,212,702	877,545	6,946,030
Future Year 2030						
2030 No-Build Alternative	497,439	2,111	16,695	181,565,236	770,694	6,093,544
2030 Bypass w/ Option 1A <sup>2</sup>	635,121	2,681	21,221	231,819,035	979,062	7,745,859
2030 Bypass w/ Option 1B <sup>3</sup>	624,154	2,627	20,790	227,816,352	958,783	7,588,747

Source: Highway 62 Corridor Solutions Project Traffic Technical Report (Southern Oregon Transportation Engineering, LLC: February 2009)

Btu = British Thermal Unit

VMT = Vehicle Miles Traveled

<sup>1</sup> Energy Consumption, Auto: Btu/gallon of gasoline = 125,000, Trucks: Btu/gallon of diesel = 139,000

<sup>2</sup> Full Split Diamond Interchange using I-5 Connection using Segment One, Option 1A

<sup>3</sup> Full Highway 62 Connection using Segment One, Option 1B

Segment Two, Option 2A and Option 2B are identical in energy consumption

Segment Three, Option 3A and Option 3B are identical in energy consumption

<sup>4</sup> Annual energy consumptions are estimates only and do not accurately account for variations in seasonal energy use

56 Construction energy includes an evaluation of the estimated amount of energy  
 57 required to construct the proposed build alternatives. This includes an analysis of the  
 58 quantities involved in the physical construction of the roadway for all build  
 59 alternatives. Energy would be used in the construction of the build alternatives. The  
 60 construction machinery uses fuel in hauling materials and building the roadway and  
 61 bridges. The total amount of construction energy for a build alternative is a  
 62 summation of the energy used for each type of construction activity. Construction  
 63 activities to be considered typically include excavation, embankment, structural  
 64 materials, base and surfacing, and guardrail. Construction energy is typically  
 65 calculated and expressed in BTUs and then converted to gallons of gasoline for ease  
 66 of comparison. Example Table below:

67

**Table [X] Construction Energy Consumption for the Bypass Alternative**

	Bypass with Option 1A1		Bypass with Option 1B2	
<b>Preliminary Construction Cost (2007\$)<sup>3</sup></b>	<b>\$185,000,0004</b>		<b>\$220,000,0005</b>	
<b>Construction Measurements</b>	<b>Energy Consumption Millions of Btu</b>	<b>Fuel Consumption Millions of Gallons of Gasoline<sup>7</sup></b>	<b>Energy Consumption Millions of Btu</b>	<b>Fuel Consumption Millions of Gallons of Gasoline<sup>7</sup></b>
<b>Urban Freeway (Pavement)</b>	151,567	1.21	180,242	1.44
<b>Site Work (Earthwork)</b>	134,999	1.08	160,540	1.28
<b>Bridge Concrete Box Girder (Bridge)</b>	154,872	1.24	184,172	1.47
<b>Structures (Walls)</b>	80,216	0.64	95,392	0.76
<b>Others<sup>6</sup></b>	33,750	0.27	40,135	0.32
<b>Total</b>	555,404	4.44	660,481	5.28

Source: Highway 62 Corridor Solutions Project Traffic Technical Report (Southern Oregon Transportation Engineering, LLC: February 2009)

Btu = British Thermal Unit

<sup>1</sup> Full Split Diamond Interchange using I-5 Connection using Segment One, Option 1A

<sup>2</sup> Full Highway 62 Connection using Segment One, Option 1B

Segment Two, Option 2A and Option 2B are identical in energy consumption

Segment Three, Option 3A and Option 3B are identical in energy consumption

<sup>3</sup> Costs do not include Right-of-Way

<sup>4</sup> Range of Cost for Bypass Option 1A: \$170,000,000 - \$200,000,000, the median cost is \$185,000,000

<sup>5</sup> Range of Cost for Bypass Option 1B: \$200,000,000 - \$240,000,000, the median cost is \$220,000,000

<sup>6</sup> Others include signals, landscaping, signs, storm drainage, etc.

<sup>7</sup> Fuel Conversion Factor: Btu/Gallons of Gasoline = 125,000

68 Include comparison statements of no-build and build options with respect to energy  
 69 consumption.

70 2. Most proposed EIS transportation projects would affect energy use as a result of  
 71 changes to traffic patterns or volumes, or involve speed zone changes. Include  
 72 comparison statements based on the analysis of no-build and build options with  
 73 respect to energy consumption.

74 3. Discuss each alternative's relationship to and consistency with departmental  
 75 policies concerning encouragement of energy conservation, the Oregon Energy  
 76 Plan and Statewide Planning Goal 13 (Energy).

77 **3.18.4 Avoidance, Minimization, and/or Conservation Measures**

78 1. Describe avoidance measures that were considered and those which were  
 79 incorporated into the proposed project.

80 2. Describe minimization measures that were considered and those which were  
 81 incorporated into the proposed project.

82 3. Describe potential mitigation measures, which may be incorporated into the  
 83 proposed project.

84 4. Describe the proposed project's long-term potential for energy savings as well as  
 85 conservation measures to be employed during the construction, operation, and

86 maintenance phases. No energy regulations exist that require some type of  
87 mitigation. However, there are policies that “encourage” energy conservation and  
88 it is appropriate to discuss any energy conservation measures included or  
89 considered in the project, such as:

- |    |                                |    |                                     |
|----|--------------------------------|----|-------------------------------------|
| 90 | Intersection Improvements that | 95 | Pedestrian and bikeway improvements |
| 91 | reduce idle times              | 96 | Signal synchronization              |
| 92 | Bus Turnouts                   | 97 | Ramp metering                       |
| 93 | Rail projects                  | 98 | Recycling                           |
| 94 | Rideshare programs             | 99 | Projects that reduce congestion     |

100 **The final EIS should identify any energy conservation measures that will be**  
101 **implemented as a part of the Preferred Alternative. Measures to conserve energy**  
102 **include the use of high-occupancy vehicle incentives and measures to improve**  
103 **traffic flow.**

#### 104 **References and Additional Guidance**

105 [ODOT NEPA Volume 2 Procedures Manual: Energy Section](#)

106 ODOT Energy Manual (currently under revision)

107 [ftp://ftp.odot.state.or.us/techserv/Geo-](ftp://ftp.odot.state.or.us/techserv/Geo-Environmental/Air_Noise_Energy/EnergyREGANDPolicies1-2009.pdf)  
108 [Environmental/Air\\_Noise\\_Energy/EnergyREGANDPolicies1-2009.pdf](ftp://ftp.odot.state.or.us/techserv/Geo-Environmental/Air_Noise_Energy/EnergyREGANDPolicies1-2009.pdf)

109 [FHWA Technical Advisory T6640.8A](#)

110 [Energy Requirements for Transportation Systems, June 1980 U.S. Department of](#)  
111 [Transportation](#)

112 [Energy and Transportation Systems, July 1983 CALTRANS](#)

113 [Transportation Energy Data Book, US Department of Energy](#)

114 [EPA Motor Vehicle Emission Simulator - MOVES2010](#)

## 1 **3.19 Geology**

2 This section discusses geology, soils, and seismic concerns as they relate to the  
3 environment, public safety, and project design both during construction and after  
4 completion of the project. Landslides, earthquakes, and general soil suitability are prime  
5 considerations in the design and retrofit of structures as well as cut and fill slopes for  
6 roadway designs. The National Natural Landmarks Programs is codified in 36 CFR 62.  
7 This program identifies and preserves natural areas that best illustrate the biological and  
8 geological character of the United States, enhances the scientific and educational values  
9 of preserved areas, strengthens public appreciation of natural history, and fosters a  
10 greater concern for the conservation of the nation's natural heritage.

11 Local regulations may apply as well. The comprehensive plan of the jurisdiction(s)  
12 affected should include references to local standards on this topic area.

13 A technical report is prepared by Geotechnical staff and should be the basis for the EIS  
14 Geology section.

### 15 **3.19.1 Affected Environment**

- 16 1. In the references section, list applicable technical report(s) along with completion  
17 date(s). Include a text box in this section that names the technical report, date and  
18 that it is available upon request, should the reader want more information.
- 19 2. Provide a description of the site geology and subsurface conditions. This Includes:  
20 topography and geology (types of soil/rock, depth to bedrock, groundwater depth,  
21 local groundwater use) and identification of potential geologic hazards (landslides,  
22 weak soils, earthquake hazards, voids and caverns, nonseismic subsidence due to  
23 water/gas/other extraction, etc.).

### 24 **3.19.2 Environmental Consequences**

- 25 1. Discuss the degree of impact related to the proposed action's susceptibility to  
26 erosion and geologic hazards, such as slope stability during project construction.  
27 The evaluation should discuss exposure of workers to these hazards during  
28 construction as well as the traveling public once the project is completed.
- 29 2. As appropriate, discuss long-term geologic hazards such as landslides, volcanic  
30 hazards and earthquake hazards and how they might potentially impact the design  
31 of both structures and their foundations as well as roadway cuts and fills.  
32 Earthquake hazards include, but are not limited to, liquefaction, lateral spread, fault  
33 rupture, seiche, and tsunamis.
- 34 3. Only when mandatory aggregate or disposal sites are identified, discuss resource  
35 quantities and impacts for proposed alternatives.
- 36 4. As appropriate, identify and discuss potential impacts to natural landmarks and  
37 landforms. Refer to the visual resources section as appropriate.

- 38 5. Identify and discuss potential impacts (or benefits) of the project construction on  
39 the local geology that are not already listed: impact on groundwater resources,  
40 water/groundwater impoundment, impacts on existing water bodies, etc.

### 41 **3.19.3 Avoidance, Minimization, and/or Mitigation Measures**

- 42 1. Discuss any avoidance efforts that have already been incorporated into the  
43 proposed alternatives.
- 44 2. Describe minimization measures that were considered and those which were  
45 incorporated into the proposed project.
- 46 3. Describe potential mitigation measures, which may be incorporated into the  
47 proposed project.
- 48 4. Reference BMPs related to both short and long term erosion control identified in  
49 the Water Quality section of the document.
- 50 5. Discuss measures needed to mitigate for geologic or topographic features  
51 identified above as they relate to the structural integrity of the facility. These may  
52 include stabilization of a landslide, deep foundation alternatives or ground  
53 improvements due to soft soil conditions. The structural improvements should also  
54 be presented in the project description section of the document.
- 55 6. Discuss measures to mitigate for earthquake hazards. Appropriate measures for  
56 liquefaction include both soil and structural improvements. Soil improvements may  
57 include mixing soils, stone columns, vibro-compaction and/or drainage. Structural  
58 measures may include driven piles or shafts that extend below liquefiable layers.
- 59 7. Discuss briefly and/or reference measures to reduce visual impacts to geologic or  
60 topographic features. Visual impacts associated with high walls, cuts or fills may  
61 also need to be mitigated.
- 62 8. Consider potential actions to address site specific impacts to local geology such as  
63 groundwater resources.

### 64 **References and Additional Guidance**

- 65 Technical Document Guidance, [Geology/Soils \(pending\)](#)
- 66 U.S. Code Title 42, Chapter 86, [Earthquake Hazard Reduction](#)
- 67 [ODOT Standard Specifications](#)

68



## 1 3.19.4 Paleontology

2 **Only include this paleontology section if your project falls within the designated**  
3 **areas on the map located at the following links:**

4 GIS Shape Files and PDF Maps: [ftp://ftp.odot.state.or.us/techserv/Geo-](ftp://ftp.odot.state.or.us/techserv/Geo-Environmental/Geotech/Geology/Paleontological%20Resources/)  
5 [Environmental/Geotech/Geology/Paleontological%20Resources/](ftp://ftp.odot.state.or.us/techserv/Geo-Environmental/Geotech/Geology/Paleontological%20Resources/)

### 6 3.19.4.1 Regulatory Setting

7 Paleontology involves the study of fossils and their occurrence in fossil-containing  
8 (fossiliferous) rock formations, the study of fossils across geologic time, their formation,  
9 and their evolutionary relationships. Numerous federal statutes specifically address  
10 paleontological resources, their treatment, and funding for mitigation as part of federally  
11 authorized or funded projects (e.g., Antiquities Act of 1906 [16 USC 431-433], Federal  
12 Highway Act of 1935 [20 USC 78]). However, no overarching federal guideline applies  
13 to paleontological resources in general. Each federal land management agency  
14 manages paleontological resources in accordance with their site-specific procedures.  
15 **ODOT projects that receive Federal-aid and are located on federally owned lands, will**  
16 **closely coordinate with those federal land management agencies. This project does not**  
17 **involve any lands under the jurisdiction of any federal land management agency/involves**  
18 **land under the jurisdiction of (list all federal land management agencies).**

19  
20 The State of Oregon does not address the preservation of paleontological resources on  
21 State Lands except where they may occur in an archaeological context [ORS 358.880(4)  
22 and ORS 358.885(1-2)].

### 23 24 **Geologic Setting**

25 Fossils are defined as the preserved remains or traces of organisms from the distant  
26 past. It is generally accepted that fossils are of pre-Holocene age (or greater than  
27 10,000 years). Fossils are preserved only within a narrow range of physical and  
28 chemical conditions, and since the soft tissues of organisms decompose quickly after  
29 death, it is uncommon for any remains other than the hard parts such as shell and bone  
30 to remain. In order for fossilization to occur, an organism usually must be covered by  
31 sediment very soon after (or before) its death. Generally, conditions leading to  
32 fossilization of an organism are most prevalent in sedimentary rocks; however,  
33 fossilization is also common in pyroclastic rock. Thus, fossilization is actually a rare  
34 occurrence as a result of the unusual conditions under which it occurs.

35  
36 Sedimentary and pyroclastic rock formations are widespread in Oregon, and many are  
37 known to contain fossils. Generally, the most significant and scientifically important  
38 specimens may be found in known locations such as the John Day Fossil Beds in central  
39 Oregon. Vertebrate fossils are usually considered to be the most scientifically important  
40 and are typically preserved in the rocks of the John Day and Mascall Formations in the  
41 central portions of the state. The southeastern quadrant of the state is dominated by  
42 volcanoclastic and pyroclastic rocks that are also known to contain vertebrate fossils.

43  
44 Since fossils are limited to certain rock types, their occurrence and significance can be  
45 readily predicted by ODOT Region geology staff. The likelihood of encountering fossils  
46 can be evaluated spatially based on the published and unpublished literature. Projects  
47 that occur entirely within nonpyroclastic igneous, metamorphic, or barren sedimentary  
48 rocks have very low potential for paleontological resources. Likewise, durable rocks that

49 are mined for specific highway construction usages are unlikely to contain fossils. Rock  
50 that is used as stone embankment, sub base, concrete, or wearing course (pavement) is  
51 almost exclusively from cooled lava rocks such as basalts and andesites. The  
52 temperature and density of a lava flow precludes fossil formation with some notable  
53 exceptions such as the Lava Cast Forest near Bend.

54  
55 If a proposed project involves ground disturbance in specific geologic formations, there  
56 may be some chance of encountering paleontological resources. The potential and  
57 consequences for encountering fossil-bearing strata during excavations should be  
58 addressed in this section. For projects on Federal lands where proposed excavations  
59 may encounter scientifically-valuable fossils, the rules and policies of the jurisdictional  
60 agency will dictate what actions are taken. ODOT will coordinate its actions with the  
61 applicable federal agency to assure compliance with that agency's regulations and  
62 procedures. Actions prescribed will vary by agency, and may include preparation of a  
63 separate Paleontological Evaluation Report and Paleontological Mitigation Plan. If such  
64 a document is required, a person or consultant qualified to assess paleontological  
65 resources is needed.

66  
67 Actions to mitigate impacts during construction will also vary by agency and by locality.  
68 Coordination with the appropriate federal land management agency is needed to fit the  
69 requirements of that agency and the site context. In this regard, it may be necessary to  
70 avoid fossiliferous units at some localities, but desirable to expose them for future study  
71 at others. Region Geology sections must address these requirements in their  
72 Engineering Geology reports during project design in addition to preparation of project  
73 special provisions and/or bid items to address paleontological resources during  
74 construction.

75  
76 Projects involving earthwork on non-federal lands should determine the potential of  
77 encountering scientifically important paleontological resources. If the potential is high,  
78 provisions should be considered to either mitigate the impact of the project on the  
79 resource or to preserve important fossil specimens in the event that they are exposed  
80 during construction. Actions to preserve paleontological resources on non-federal lands  
81 are not required by law; however, the potential overall benefit could warrant preservation  
82 of scientifically important or rare specimens.

### 83 **3.19.4.2 Affected Environment**

- 84 1. A GIS layer has been developed to depict scientifically important fossiliferous  
85 formations and their intersection with federal lands in Oregon. This GIS layer  
86 should be used to identify locations where paleontological resources may need to  
87 be addressed.
- 88 2. List the applicable report(s) along with completion date(s) in the references section.  
89 Identify formations within or near the study area that have the potential to yield  
90 scientifically important vertebrate fossils.
- 91 3. Discuss the scientific importance and sensitivity of the resource.

### 92 **3.19.4.3 Environmental Consequences**

93 For each alternative identify and discuss the potential for exposing and/or disturbing  
94 paleontological resources. If there is very little potential of paleontological resources,

95 provide the factual basis and conclusion here and do not include the following section in  
96 the document.

97 **3.19.4.4 Avoidance, Minimization, and/or Mitigation Measures**

- 98 1. Where scientifically important paleontological resources are identified, a  
99 Paleontological Mitigation Plan should be prepared for the project. This document  
100 will outline the measures specified by the applicable federal agency and may  
101 include avoidance, minimization, and/or compensatory measures for the resource.  
102 Additional protocols and documentation may include:
- 103 a. A Principal Paleontologist may be assigned to supervise mitigation or  
104 recovery activities.
  - 105 b. An on-site paleontological inspector under the direction of the Principal  
106 Paleontologist may be tasked with inspection of excavations, examination of  
107 spoils, resource recovery, and direction of activities related to paleontological  
108 resource mitigation and/or recovery.
  - 109 c. Where scientifically important fossils are encountered, the paleontologist or  
110 individual working under the paleontologist's direction will recover those  
111 fossils. A contract bid item should be prepared for stand-by or recovery  
112 operations assisted by the contractor.
  - 113 d. Fossils recovered on federal lands will be curated by the applicable agency.  
114 Copies of all pertinent field documents such as notes, sketches, photographs,  
115 and maps will also be provided to that agency.
  - 116 e. Any fossil recovered on state lands will be placed in the possession of the  
117 Oregon Museum of Natural History.
  - 118 f. A final post-construction report will be completed that details the results of the  
119 mitigation, findings, and scientific significance of the work completed. Copies  
120 of this report will be submitted to the Region Geology office, Project Manager,  
121 relevant federal agency and ODOT Library.
- 122 2. Opportunities for the development of educational access to resources should be  
123 examined. Examples would be interpretive waysides, parks, or recreational fossil  
124 excavation areas in conjunction with other agencies.

125 **References and Additional Guidance**

126 ODOT Standard Specifications (00290.50)

127 GIS Shape Files and PDF Maps: [ftp://ftp.odot.state.or.us/techserv/Geo-  
128 Environmental/Geotech/Geology/Paleontological%20Resources/](ftp://ftp.odot.state.or.us/techserv/Geo-Environmental/Geotech/Geology/Paleontological%20Resources/)

## 1 **3.20 Hazardous Materials**

2 This topic area includes contaminated sites potentially encountered by the project,  
3 hazardous wastes generated from the project, and hazardous materials likely to be used  
4 in construction of the project. The contaminated site context should address both  
5 adverse and beneficial impacts, as transportation projects sometimes result in  
6 remediation activities.

### 7 **3.20.1 Regulatory Setting**

8 Hazardous materials and hazardous wastes are regulated by many state and federal  
9 laws. These include not only specific statutes governing hazardous waste, but also a  
10 variety of laws regulating spill cleanup, air and water quality, human health and land use.

11 The primary federal laws regulating hazardous wastes/materials are the Resource  
12 Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental  
13 Response, Compensation and Liability Act of 1980 (CERCLA). RCRA provides for  
14 “cradle to grave” regulation of wastes as well as regulating underground storage tanks,  
15 which are a common source of contamination. The purpose of CERCLA, often referred  
16 to as Superfund, is to clean up contaminated sites so that public health and welfare are  
17 not compromised. Other relevant federal laws and regulations include:

- 18 • Community Environmental Response Facilitation Act (CERFA) of 1992
- 19 • Clean Water Act (CWA)
- 20 • Clean Air Act (CAA)
- 21 • Safe Drinking Water Act
- 22 • Hazardous Waste Operations and Emergency Response (HazWOPER)  
23 regulations
- 24 • Toxic Substances Control Act (TSCA)
- 25 • Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

26 Waste management, hazardous waste, cleanup and underground storage tanks in  
27 Oregon are regulated under the authority of RCRA and CERCLA, and the Oregon  
28 Revised Statutes, ORS 459, and 459a, ORS 465m and ORS 466, respectively. Other  
29 Oregon laws that affect hazardous materials, waste, and hazardous waste are specific to  
30 water quality, transportation, emergency planning, community right to know, and worker  
31 health and safety requirements.

32 Health and safety for both workers and the public are key issues when dealing with  
33 hazardous materials and hazardous waste. Proper management of hazardous materials  
34 and disposal of hazardous waste are vital if it is disturbed during project construction.

35 The type of hazardous materials/waste assessment required is dependent on existing  
36 site conditions. The Part 3 of the Project Prospectus provides an initial project review to

37 identify preliminary Hazardous Materials concerns. The first type of assessment that  
38 could be required is known as a Level 1 Initial Site Assessment, and is the equivalent of  
39 a Baseline report for other disciplines. A Level 2 Preliminary Site Investigation is a more  
40 in depth look at potential contamination that could impact the project and typically  
41 includes soil and groundwater sampling. Other issue-specific hazardous materials  
42 reports may include an asbestos survey, lead-based paint testing or other hazardous  
43 materials and waste inventories, depending on the findings of the Level 1 Site  
44 Assessment.

45 A Prospectus Part 3 is prepared for each proposed ODOT project and provides an initial  
46 Hazardous Materials review that highlights preliminary Hazardous Materials concerns.  
47 This includes known sites that use hazardous materials, generate hazardous waste or  
48 have become contaminated. It is only a cursory look at such evidence and should never  
49 be relied upon as the sole source of information.

50 Although the Part 3 for the project should identify the major concerns, A Level 1 Site  
51 Assessment includes more in-depth research and is required for any project which  
52 includes potential excavation, structure demolition or renovation, or property purchase.  
53 The Level 1 Site Assessment is intended to identify known and potential Hazardous  
54 Materials issues within the Area of Potential Impact, such as contamination, abandoned  
55 waste and other hazardous materials. To that end, a Hazardous Materials Specialist will  
56 review existing databases for contaminated sites, hazardous waste generators, and  
57 spills; will review historic maps and aerial photographs to determine past land use; and  
58 will conduct a site visit to confirm current land use. The Level 1 Site Assessment  
59 documents information that will serve as the basis for the "Affected Environment"  
60 section.

61 The Level 1 Site Assessment should be sufficient to determine whether there are any  
62 "red-flag" issues. A key determinant is whether known hazardous waste sites are  
63 significant enough to be a major deciding impact on alternative selection. Such  
64 determination should be based on the Region Hazardous Materials Coordinator's input.  
65 At this point risk management enters the decision process.

66 If the Level 1 Site Assessment identifies potential sources of contamination that could  
67 impact the proposed action, a Level 2 Preliminary Site Investigation will be conducted to  
68 confirm and delineate the contamination within the proposed project boundaries. In  
69 most cases; however, the Level 1 Site Assessment will contain sufficient information to  
70 inform the alternative selection and the Level 2 Preliminary Site Investigation will not be  
71 conducted until the Preferred Alternative has been identified, Right of Way has  
72 determined which properties will be acquired, and the design is sufficient to identify the  
73 approximate project boundaries and likely depth of excavation.

74 In addition, the Level 1 Site Assessment should identify the potential presence of  
75 hazardous materials associated with structures, such as lead-based paint, mercury  
76 lamps, asbestos containing materials, treated timbers, PCB containing equipment, and  
77 abandoned containers. Such potential issues should be investigated further and  
78 documented in issue specific hazardous materials reports. Note that asbestos surveys  
79 in Oregon can only be conducted by Asbestos Hazard Emergency Response Act  
80 (AHERA) certified inspectors.

81 When preparing this section, the Level 1 Site Assessment will provide the information  
82 needed for the affected environment section. In some cases, as noted above, the Level  
83 2 Preliminary Site Investigation may also be available to provide supplementary  
84 information. The key is to have sufficient information to describe potential adverse  
85 and/or beneficial impacts as well as avoidance, minimization, and/or mitigation  
86 measures.

### 87 **3.20.2 Affected Environment**

- 88 1. In the references section, list applicable technical report(s) along with completion  
89 date(s). Include a text box in this section that names the technical report, date and  
90 that it is available upon request, should the reader want more information.
- 91 2. Describe the type and scope of site assessments and investigations conducted.
- 92 3. Summarize the findings of the site assessments or investigations for the study area  
93 considered—type of contaminant, level of contamination and extent in relationship  
94 to the project.
- 95 4. Disclose any limitations with the site assessments or investigations.

### 96 **3.20.3 Environmental Consequences**

- 97 1. Describe how each proposed alternative could adversely or beneficially affect  
98 known hazardous materials/wastes in the project area.
- 99 2. Disclose known or suspected contaminants that could be encountered during  
100 construction, including potential worker/public exposure and/or health impacts.
- 101 3. Disclose any hazardous wastes that could be generated by the proposed action.
- 102 4. Provide a map that depicts the location of hazardous waste contamination relative  
103 to the currently estimated footprint of the alternatives. Include the study area  
104 boundary on the map.
- 105 5. As appropriate, discuss coordination or consultation with regulatory agencies, local  
106 entities or property owners. Agencies may include U.S. EPA and/or state agencies  
107 such as the Department of Environmental Quality (DEQ) and Water Resources  
108 Department, or local agencies such as Lane County Regional Air Pollution  
109 Authority.
- 110 6. Discuss justification for avoiding or not avoiding known or suspected hazardous  
111 material contamination for each alternative, as appropriate. Remember that not  
112 avoiding a site may increase costs, but may also provide positive environmental  
113 benefit in that a portion of the contamination or hazardous waste may be removed  
114 from the environment as a consequence of project construction.
- 115 7. State whether further investigation/monitoring is needed.
- 116 8. Provide justification for any postponement or dispensing of further investigations.

117 **3.20.4 Avoidance, Minimization, and/or Mitigation Measures**

118 For each Build alternative:

- 119 1. Describe avoidance measures that were considered and those which were  
120 incorporated into the proposed project.
- 121 2. Describe minimization measures that were considered and those which were  
122 incorporated into the proposed project.
- 123 3. Describe potential mitigation measures, which may be incorporated into the  
124 proposed project.
- 125 4. Include a rough estimate of the cost of avoiding, reducing, or mitigating hazardous  
126 waste impacts (both in dollars and time).
- 127 5. Summarize efforts to avoid or minimize involvement with known or suspected  
128 hazardous material contamination sites during construction.
- 129 6. State any required special considerations, contingencies or provisions to handle  
130 known or suspected hazardous material contamination during right-of-way  
131 negotiation and acquisition, property management, design, and/or construction.
- 132 7. State any required further coordination, approvals, permits, and site closure with  
133 regulatory agencies.
- 134 8. Provide justification for any postponement of coordination with regulatory agencies.

135 **References and Additional Guidance**

136 [ODOT Policy ENV 16-02: Contaminated Site management](#)

137 [ODOT Policy ENV 16-01: Hazardous Materials and Wastes](#)

138 [ODOT HazMat Program Procedures Guidebook](#)

139 [FHWA Interim Guidance – Hazardous Waste Sites Affecting Highway Project  
140 Development, 1998](#)

141 [FHWA Supplemental Hazardous Waste Guidance \(1997\)](#)

142 [FHWA Policy Revision to Support the Brownfield Economic Redevelopment Initiative  
143 \(1998\)](#)

144 [FHWA HazMat Documentation Requirements](#)

145 [AASHTO Hazardous Waste Guide for Project Development \(1990\)](#)

## 1 Chapter 4 - CUMULATIVE IMPACTS

2 Cumulative impacts are typically discussed in Chapter 4. However, if you would like to  
3 include cumulative impacts in Chapter 3 please check with the ODOT EPM, ODOT  
4 NEPA Program Coordinator, and your FHWA contact.

5  
6 Cumulative impacts are those that result from past, present, and reasonably foreseeable  
7 future actions, combined with the potential impacts of this project. A cumulative impact  
8 assessment looks at the collective impacts posed by individual land use plans and  
9 projects. Cumulative impacts can result from individually minor, but collectively  
10 substantial impacts taking place over a period of time.

11 Cumulative impacts to resources in the project area may result from residential,  
12 commercial, industrial, and highway development, as well as from agricultural  
13 development and the conversion to more intensive types of agricultural cultivation.  
14 These land use activities can degrade habitat and species diversity through  
15 consequences such as displacement and fragmentation of habitats and populations,  
16 alteration of hydrology, contamination, erosion, sedimentation, disruption of migration  
17 corridors, changes in water quality, and introduction or promotion of predators. They  
18 can also contribute to potential community impacts identified for the project, such as  
19 changes in community character, traffic patterns, housing availability, and employment.

### 20 Regulatory Setting

21 Cumulative impact is defined in 40 CFR, Section 1508.7 of the CEQ Regulations as:  
22 The impact on the environment which results from the incremental impact of the action  
23 when added to other past, present, and reasonably foreseeable future actions  
24 regardless of what agency (federal or non-federal) or person undertakes such other  
25 actions. Cumulative impacts can result from individually minor but collectively significant  
26 actions taking place over a period of time.

27 A cumulative impact analysis, while complex, can be broken down into several steps that  
28 will facilitate the overall analysis. Gathering the necessary information about each  
29 resource, pulling the needed specifics from the whole, and organizing this into a usable  
30 format for the analysis are generally the most time consuming parts of a cumulative  
31 impacts analysis.

32 It is helpful to keep in mind that an analysis of cumulative impacts looks at the impacts  
33 on a resource by multiple actions, including the proposed project. This means that a  
34 cumulative impact analysis focuses on the resource. The analysis will be easier if you  
35 keep asking, "What will happen to the resource?"

36 Potential cumulative impacts should be considered as early as possible, as you are  
37 identifying direct and indirect impacts. A cumulative impact analysis builds upon  
38 information derived from direct and indirect impacts. This makes it tempting to postpone  
39 the identification of cumulative impacts until the direct and indirect impact analyses are  
40 well under way. However, such early consideration of cumulative impacts may facilitate  
41 the design of alternatives to avoid or minimize impacts. Therefore, do not defer the  
42 consideration of cumulative impacts. Instead, as you begin to consider a project's  
43 potential direct and indirect impacts, start outlining the potential cumulative impacts as  
44 well. Once more information about direct and indirect impacts becomes available, use it



45 to further refine the cumulative impact analysis. If you determine that cumulative  
46 impacts are not an issue, document that decision along with the reasons for the  
47 decision.

48 Unlike direct impacts, quantifying cumulative impacts may be difficult, since a large part  
49 of the analysis requires projections about what may happen in a project area. Actions  
50 taken by governmental and private entities other than and including ODOT need to be  
51 considered for a cumulative impact analysis. Partnering with other agencies will make it  
52 easier to identify additional information that might be needed.

53 For the analysis use information from any environmental documents such as discipline  
54 reports, as well as other relevant information, such as local comprehensive plans,  
55 existing zoning, recent building permits and interviews with local government. These  
56 may also be good sources for information on past actions.

57 A partnership approach for transportation projects can be of great benefit throughout the  
58 life of the project, presenting opportunities for gathering valuable information and for  
59 partnering on mutually beneficial mitigation. These will benefit your cumulative impact  
60 analysis as well. Forging early, cooperative working relationships can result in:

- 61 • Collaborative planning among federal, state, and local agencies (see [FHWA's](#)  
62 [web site on scenario planning](#), an approach that integrates land use and  
63 transportation).
- 64 • Incorporating reasonable avoidance and minimization opportunities for identified  
65 resource impacts.
- 66 • Thoroughly documenting your analysis (including assumptions and sources of  
67 information), conclusions, and rationale.
- 68 • Assuring consistency with regional habitat/restoration planning efforts.
- 69 • Identifying opportunities for project stakeholders to become involved in regional  
70 planning efforts.

71 Early collaboration and integrated planning is supported in Section 6001 of [SAFETEA-](#)  
72 [LU](#). It requires Metropolitan Planning Organizations to discuss potential mitigation  
73 activities and locations in the Regional Transportation Plan. Also, FHWA's linking of  
74 planning and NEPA provides tools for interagency collaborative transportation, land  
75 use, and environmental planning.

## 76 **Writing the Document**

77 The following eight steps serve as guidelines for identifying and assessing cumulative  
78 impacts: Document and discuss each step.

- 79 1. **Identify the resources to consider in the analysis** - Identify each resource  
80 area for which the project could cause direct or indirect impacts. The cumulative  
81 impact analysis should focus on: 1) those resources that could be substantially  
82 affected by the project in combination with other past, present, and reasonably

83 foreseeable future actions: and 2) resources currently in poor or declining health  
84 or at risk even if project impacts are relatively small.

85 There is a caveat - if the impacts caused by the ODOT project are minor, but  
86 actions by other agencies/developers cause substantial impacts, this should be  
87 included. The key factor is whether there are substantial impacts on the  
88 resource under consideration, not whose actions are causing the impacts. In  
89 other words, the impacts can be substantial even if the impact of ODOT's  
90 proposed action is minimal. Regardless of the cause, the health of the resource  
91 should be discussed. Because the focus is resource by resource, it may be  
92 necessary to conduct separate cumulative impacts analyses.

93 If a project will not cause direct or indirect impacts on a resource, it will not  
94 contribute to a cumulative impact on that resource, and need not be further  
95 evaluated. This conclusion must be explained in the environmental document.

96 2. **Define the study area for each resource** - Cumulative impacts are considered  
97 within spatial (geographic) and temporal boundaries. By defining a Geographic  
98 Resource Study Area for each resource, you will identify the geographic  
99 boundaries for each resource to be included in the cumulative impact analysis.  
100 You will also identify a temporal boundary (past and future).

101 Environmental specialists (biologists, archaeologists, historians, land use  
102 planners, water quality specialists and others) can help to identify appropriate  
103 Geographic Resource Study Area boundaries for each resource in the  
104 cumulative impact analysis based on their knowledge of the resources and  
105 regulatory mandates. Agency representatives, tribes and interested citizens may  
106 also offer input during the scoping process.

## 107 **Geographic Resource Study Area**

108 Many approaches are available to define a geographic resource study area for a  
109 cumulative impact analysis. Start with the direct and indirect impacts study area  
110 already defined for each resource. The following examples describe ways to  
111 identify the Geographic Resource Study Area for a few specific resources:

- 112 • **Wetlands and water quality.** Identify the drainage basin (watershed) or  
113 sub-basins in which the project would be located. If necessary, consult with  
114 environmental specialists to discuss potential Resource Study Areas.
- 115 • **Archaeological resources.** Identify prehistoric and/or historic  
116 archaeological sites in the project vicinity. Determine the geographic context  
117 for the type of archaeological resources being affected. Examine the  
118 project's historic property survey report. A context will be described in this  
119 document, typically including a discussion of geographic range or distribution  
120 of sites. Refer to the Area of Potential Effects (APE) if already set.
- 121 • **Historic architectural resources.** Identify historic districts and  
122 neighborhoods containing affected buildings or structures. Project-specific  
123 historical resource analyses typically define the geographic context needed to

124 understand the historic significance of a structure (e.g., period of significance  
125 and neighborhood, community, or resource type).

126 • **Threatened and endangered species.** Determine the local population of  
127 individual species and a general study area by considering the range, sub-  
128 range, or population distribution for the species. Consult biologists  
129 specializing in particular species for assistance in defining reasonable  
130 Resource Study Areas. Remember that this guidance is for NEPA  
131 compliance only. ESA has different requirements for cumulative effects  
132 analyses. This guidance is not intended for cumulative impact analyses for  
133 biological assessments prepared to comply with Section 7 of the federal  
134 Endangered Species Act (ESA). For ESA cumulative effects, only non-federal  
135 actions are included in the specific consultation analysis. Effects of these  
136 actions on species are analyzed within the action area; the area subject to  
137 consultation.

138 • **Community disruption/division/displacement.** Identify neighborhood or  
139 community boundaries using census and other data such as public school  
140 data. Local comprehensive plans can be a data source as well as public  
141 involvement and interviews with local service agencies.

#### 142 **Temporal Resource Study Area**

143 Cumulative impact analyses should include a time frame as well as a geographic  
144 study area. There is no predetermined time frame. The time frames chosen  
145 should reflect the resource concerns, geographic resource study areas, the  
146 project, and how other important resources fit in. Choose past and future time  
147 frames based on what has happened and is proposed to happen in the area. For  
148 instance, when did past actions decrease the quality and health of a particular  
149 resource? The idea is to use a timeframe that goes back far enough to provide a  
150 reasonable historical context to tell the story about important trends and the  
151 current state of the resource.

152 A "future" year should also be selected. As with historical timeframe, the  
153 projected year should be based on providing a reasonable context to estimate  
154 the future state of the resource. This may be when a proposed development  
155 (subdivision or regional shopping mall as examples) is complete. Another  
156 example is using the long range transportation plan horizon year or project  
157 design year. Some impacts or trends may require an even longer future horizon  
158 to be meaningfully examined.

159 After describing why the temporal study years were selected, you should also  
160 describe the characteristics of the study years. Describing the rationale for why  
161 the temporal study years were selected allows decision makers and interested  
162 readers to know the reasons behind your decision.

163 3. **Describe the current status/viability and historical context for each**  
164 **resource** - The purpose of Step 3 is to begin to "tell the story of the resource" by:  
165 A) describing the current health, condition, or status of the resource within the  
166 Resource Study Area and B) providing historical context for understanding how

167 the resource got to its current state. Historical context includes historical uses of  
168 a resource or an area or past practices and behaviors. The information in the  
169 "Affected Environment" section can provide one useful reference keeping in mind  
170 it may only give current conditions. Once the health and historical context of  
171 these resources is described, the impacts of future actions on these resources  
172 will be assessed (Steps 4 and 5).

### 173 **Current Health of the Resource**

174 "Health," as it is used here, refers very broadly to the overall conditions, stability,  
175 or vitality of a resource, regardless of whether it is natural (e.g., a wetland) or  
176 social (e.g., a community). There are a variety of ways to determine the current  
177 health or status of the resource within the Resource Study Area. The practitioner  
178 may rely on their own professional expertise; consult other technical specialists  
179 on the project team; access resource inventories, assessments, or other data  
180 sources; and review environmental documents for other nearby projects. When  
181 determining the health of the resource use the Resource Study Area you defined  
182 in Step 2.

183 The health or status of the resource should include a description of trends  
184 affecting it. These recent trends are meant to help provide an historic context of  
185 the current condition of the resource. (Recent trends are distinct from the more  
186 long-range historical context that will be considered below). Many circumstances  
187 might indicate a trend that could affect the resource. Examples include:  
188 government decisions (e.g., a recent zoning change or preparation of a habitat  
189 conservation plan), community preferences (e.g., passage of a measure to  
190 protect a historical downtown neighborhood), demographic changes (e.g., a shift  
191 in population growth rate), or natural phenomena (e.g., changes resulting from an  
192 earthquake, flood, or fire). Examine the circumstances to determine if there is a  
193 pattern indicating a trend or if it is a single event without a discernable pattern.

194 These trends may indicate whether the health of the resource is improving,  
195 stable, or in decline. This is valuable to the analysis in two ways: first, it will help  
196 the practitioner to focus the cumulative impact analysis more closely on the  
197 resources that are in decline and second, it may help the practitioner to propose  
198 more effective mitigation in Step 8 of the analysis.

199 In some cases it is clear that a resource is in good health. For example, if a  
200 historic district consists of multiple buildings that have retained their original  
201 character, are occupied and the economic forecast is good, this may indicate that  
202 the health of the historic district is good or excellent. In some cases it is also  
203 clear the resource is in poor health, such as when a species is listed as  
204 Threatened or Endangered, or when major streams within the proposed project's  
205 Resource Study Area are listed on the federal Clean Water Act Section 303(d)  
206 list of impaired waters.

207 Similarly, in some cases it will be easy to determine the impact of recent trends  
208 on the health of a resource. If a historic district includes many abandoned  
209 historic buildings, and the local agency has recently approved building permits  
210 that could demolish some of the historic buildings and construct new high-rise

211 buildings in their place, these trends could indicate that the condition of the  
212 historic district is declining. If an organization funded and implemented a plan to  
213 clean up a polluted stream, including protecting riparian habitat, providing an  
214 appropriate buffer, and committing to long-term monitoring and adaptive  
215 management, this might lead to an improvement in the stream's water quality.

## 216 **Historical Context of the Resource**

217 The goal of identifying the historical context is to give the reader (decision maker)  
218 a reasonable explanation of how the resource got to its current state. Providing  
219 historical context is not the same as providing a list of every project or action that  
220 has affected the resource over time. It is not realistic or necessary to provide an  
221 exhaustive "laundry list" of projects throughout the years. Rather, the historical  
222 context should identify key historical patterns or activities that have contributed to  
223 the current condition of the resource.

224 To describe the historical context of a resource, begin by identifying key patterns  
225 or activities in the past that have influenced it. These may be related to notable  
226 changes to the region's land use or demographic patterns. Then characterize the  
227 nature of the influence that these patterns or activities have had on the resource,  
228 such as destruction or degradation of habitat. To describe the historical context,  
229 use historical information. This information may be quantitative, qualitative, or  
230 both. Quantitative information is useful for determining trends over time, but it is  
231 not always available. A qualitative description can also be useful in providing  
232 historical context. The goal is to tell the story about the resource. If there are not  
233 enough quantitative data, then use qualitative information. Conversely, even if a  
234 lot of quantitative information is available, it may not all be relevant to the  
235 analysis. Unless it is useful to the analysis, do not include it.

236 These examples show that the historical context, current health and trends of a  
237 resource can be described with a few sentences. You only need to use enough  
238 data or words to tell the story about each resource.

## 239 **Four Examples of Historical Context**

### 240 **Example 1: Farmland**

241 The project is located in a rural area that is now transitioning and being rezoned  
242 into suburban and industrial land uses. Since approximately 1980, more than  
243 400 acres of land used to produce hops and daffodils have been converted to  
244 residential and industrial land uses. The study area encompasses half of that  
245 area.

### 246 **Example 2: Wetlands**

247 The project crosses a stream. While the stream is not navigable, it is subject to  
248 the jurisdiction of the U.S. Army Corp of Engineers under Section 404 of the  
249 Clean Water Act. Past land development has been minimal, but approximately  
250 .25 acres of the stream have been disturbed by another infrastructure project.

251 **Example 3: Community Cohesion**

252 The project is located in an area where there is large Hispanic population. A  
253 previous project bisected the community. Development has occurred along the  
254 existing roadway. Current development plans within the resource study area  
255 indicate the development of a single family subdivision of 127 units, and a  
256 commercial strip mall. The total impact of these third party actions is the  
257 development of 222 acres. These developments are occurring regardless of the  
258 ODOT project.

259 **Example 4: Peregrine Falcons**

260 Peregrine falcons began to experience a substantial decline in the 1940s as a  
261 result of the use of the pesticide DDT. By the 1970s populations in the west were  
262 reduced by 80 to 90 percent. In 1970 they were listed as an endangered species  
263 by the U.S. Fish and Wildlife Service. A survey in 1980 identified only five  
264 nesting pairs in Oregon. They were listed as a state endangered species that  
265 year. DDT was banned in 1972. Since then, the peregrine falcons' numbers have  
266 increased. In 1999 they were removed from the federal threatened and  
267 endangered species list. In 2002 they were down-listed at the state level from  
268 endangered to sensitive in Oregon.

269 4. **Identify direct and indirect impacts of the project that might contribute to a**  
270 **cumulative impact** - A cumulative impact analysis must look at the impacts of a  
271 proposed project in combination with the impacts of other past, present and  
272 reasonably foreseeable projects identified within a Resource Study Area.

273 If your project does not have a direct or an indirect impact on a resource it cannot  
274 have a cumulative impact on that resource.

275 Step 4 helps to identify the direct and indirect impacts for each of the proposed  
276 project alternatives on the resources identified in Step 1. It is important to  
277 differentiate each alternative's potential to contribute incrementally to cumulative  
278 impacts.

279 **Direct Impacts**

280 The cumulative impacts analysis should summarize the direct impacts of the  
281 project. The information may be presented in a table, referring back to the text of  
282 the environmental document for more information on the direct impacts.

283 **Indirect Impacts**

284 These are impacts that often relate to changes in land use, such as addition of  
285 new impervious surface, filling of wetlands, modification of habitat. While land  
286 use changes are the direct result of local planning decisions (and FHWA and  
287 ODOT have no control over local land use decisions), there may be indirect  
288 impacts associated with transportation projects that affect the rate and pattern of  
289 development that should be analyzed. For example, if ODOT constructs a  
290 bypass route around a town, restaurants, gas stations and other forms of

291 development may relocate to the bypass in order to get more business from  
292 intercity traffic, while development and economic vitality along the original route  
293 may decline.

294 In general, projects in a new location or projects in which there is a dramatic  
295 change in travel lanes (e.g., from two to six lanes with grade separations) are  
296 more likely to contribute to indirect impacts than projects in areas which are  
297 already developed, or involve a smaller increase in capacity.

298 To evaluate the potential for indirect impacts, you should evaluate the likelihood  
299 of development in the project area following project construction. To do this, use  
300 the following:

- 301 • Look at population and land use trends in the project area and region or  
302 subarea. How has the area developed? How fast is it planned to develop?  
303 Will the project affect the rate of development? Are people building in the  
304 area? Look at the pattern of zoning. Has it recently changed or is it about to  
305 change?
- 306 • Review the local comprehensive plans. Are there plans/plats in the project  
307 area approved or currently under review? Is the area within the urban growth  
308 boundary or outside it? Is the city planning on moving the urban growth  
309 boundary to allow for growth or are they concentrating on infill? Does the  
310 transportation element of the plan include the transportation project? Would  
311 the transportation project support the local decisions contained within  
312 adopted plans? Do the city planners expect the project to support or  
313 encourage development?

314 Use your professional judgment, as well as discussions with the city or county in  
315 the project area, as well as any other experts in the area to determine what  
316 development is probable. For instance, if a developer has a good track record in  
317 completing platted developments, the proposed development is likely to be  
318 developed.

### 319 **Examples**

320 Example 1: Project Z is proposed to bypass the City of Whoville. According to  
321 the city, there are plans for several local businesses to relocate to the western  
322 terminus of the proposed bypass, to maximize intercity travel stops. The  
323 developments will not occur in this location if the bypass is not constructed nor  
324 will they be constructed if not granted rezoning and building permits by local  
325 agencies. The local businesses planning to relocate from the downtown area  
326 include a gas station and a restaurant. In addition, the city planners indicate that  
327 two fast food restaurants are planning to locate new franchises in Whoville and  
328 plan to locate at the western terminus of the proposed bypass. If the bypass is  
329 not built, these developments will not be located there.

330 Given that there are no frontage roads along the bypass and limited access, it is  
331 likely that only the termini and interchanges will experience land changes. At this  
332 time, only the western terminus has development proposed. Beyond the land

333 use changes discussed, there are no other developments planned with one  
334 exception. A “big box” store is going to be built in the area of the bypass. This  
335 development will happen regardless of whether the bypass is built or not. These  
336 third party actions would total 50 acres.

337 In addition to the 20 acres of land rezoned and converted from agricultural to  
338 retail/commercial as a result of business relocating along the new corridor,  
339 another indirect impact of the bypass could be some deterioration of the  
340 downtown as a result of the new corridor. The bypass could be particularly  
341 difficult for city center businesses that rely on pass through traffic. Some of these  
342 impacts could be beneficial. If the project improves access to the city, it could  
343 lead to an increase in density which is supportive of improved transit services.  
344 Additionally, the concentration of growth within the urban growth boundary can  
345 slow down sprawl.

346 Use the information in Step 4 to combine it with the impacts of other reasonably  
347 foreseeable actions (Step 5) to perform the cumulative impact analysis (Step 6).

348 5. **Identify other current and reasonably foreseeable actions** - Step 1 and 2 of  
349 this guidance identified the resources to consider in the cumulative impact  
350 analysis and the geographic area to be considered for each resource (Resource  
351 Study Area). The procedures set forth in Step 3 help with describing the health  
352 of the resource by discussing the historic context and current trends affecting the  
353 sustainability of each resource. Step 4 identifies direct and indirect actions or  
354 project impacts that could contribute to a cumulative impact. The purpose of  
355 Step 5 is to identify other current and reasonably foreseeable projects to be  
356 considered in the cumulative impact analysis. Ask yourself what else might affect  
357 these resources.

358 The following list suggests some examples of current and reasonably  
359 foreseeable trends, events, actions or projects that may be included in a  
360 cumulative impacts analysis:

- 361 • Projected land use and other information in local or regional comprehensive  
362 plans
- 363 • A development proposal, which has been filed with the local government,  
364 county or other plat-approving agency and has permit applications complete.
- 365 • Population/ employment trends which are identified in local or regional  
366 comprehensive land use plans
- 367 • Planned and funded transportation improvements by city or county  
368 governments
- 369 • Building permits issued by the local agency with jurisdiction, but that are not  
370 built yet.
- 371 • Local or regional infrastructure projects that could impact resources (schools,  
372 hospitals, manufacturing, shipping etc.)



373

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- Trends related to global climate change, as we currently understand them and related to the project, should be discussed to the extent possible.

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- Trends in land development patterns, such as, growth/expansion around interchanges; zoning changes to accommodate development pressures once transportation improvements occur.

Alternative	Direct + Indirect Acres	Third Party Actions Acres	Cumulative Acreage
No-Build	100+20	50	170
Alternative 1	0+0	50	50
Alternative 2			

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Keep in mind that CEQ regulations, as reflected in FHWA's *Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process* (Interim Guidance, January 2003), require cumulative and indirect impact analyses to focus on actions "that are likely or probable, rather than those that are merely possible." It can be challenging to discern "probable" from "possible." There are tools and processes that can be used to help make the distinction. You can begin by asking some basic questions.

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The cumulative impact analysis should only include those proposed actions or projects with a reasonable expectation of happening. When identifying reasonably foreseeable actions begin with asking questions like the following:

390

- Is the proposed project included in a financially constrained plan?

391

- Is it permitted or in the permit process?

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- How reasonable is it to assume that the proposed project will be constructed?

393

- Is the action identified as high priority?

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An affirmative answer to any of these questions may indicate the action is reasonably foreseeable.

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Count what counts. According to CEQ, "a cumulative impacts analysis should 'count what counts', not produce superficial analyses or a long laundry list of issues that have little relevance to the impact of the proposed action or the eventual decisions."

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CEQ advises practitioners to consult with the staff of an appropriate agency to identify reasonably foreseeable future actions based on that agency's planning

402 process. Project scoping can provide an opportunity for these agency  
403 discussions. For further information, refer to Chapter 2 of CEQ's guidance  
404 document, *Considering Cumulative Effects under the National Environmental*  
405 *Policy Act* (1997).

406 Both quantitative and qualitative data are appropriate to use in evaluating  
407 cumulative impacts. Quantitative data are preferable, and should be used  
408 whenever relevant data are available. However, qualitative data are also  
409 important, particularly to those analyses more dependent on human perception,  
410 such as aesthetics or community disruption.

411 Use the best data you have available. In cases where data are incomplete or  
412 unavailable, communicate with experts, individuals and cooperating agencies as  
413 soon as possible, because such communication can lead to additional  
414 opportunities for data collection and help all participants reach an understanding  
415 concerning the availability and acceptability of relevant information. When there  
416 is incomplete or unavailable information for a reasonable foreseeable significant  
417 adverse impact, refer to CEQ's guidance at 40 CFR 1502.22. It lays out  
418 principles regarding what to say about the incomplete or unavailable information,  
419 and when to obtain additional information. In some cases, it may be helpful to  
420 obtain objective professional judgment through a structured and efficient process  
421 such as a Delphi Panel. Keep in mind that a cumulative impacts analysis could  
422 likely change over a 24-60 month period, so the analysis and data may need to  
423 be revisited during the life of an EIS.

424 It is important when preparing NEPA documents to be clear on what information  
425 was available and analyzed. The NEPA document should be viewed as a  
426 disclosure document. NEPA is an open process. NEPA does not require an  
427 answer that will satisfy everyone; rather, NEPA requires a well-researched and  
428 reasoned analysis based on a hard look at the best available information.

429 Be sure to document the assumptions and methods used to identify actions  
430 included in the analysis, the agencies and experts consulted, and any other  
431 research. It is important to identify our sources and maintain a record of  
432 methods, assumptions, and analyses. This is especially important when data are  
433 scarce.

434 6. **Identify and assess cumulative impacts** - After the Resource Study Areas  
435 have been identified for each affected resource (Step 2), the health of the  
436 resources has been assessed and put into historical context (Step 3), the direct  
437 and indirect impacts of the proposed project have been identified (Step 4), and  
438 the direct and indirect impacts of other reasonably foreseeable actions have  
439 been assessed (Step 5), the information is ready for analysis. In Step 6, the  
440 information is reviewed and analyzed.

#### 441 **Review the Information Gathered**

442 The information gathered to define the Resource Study Area and to define the  
443 context for the resource should provide a sense of the health of the resource.  
444 Developing the "reasonably foreseeable" list of actions to include in the

445 cumulative impact analysis will also provide insight into the prospective changes  
446 within the Resource Study Area, and how those changes will affect resources.  
447 This review will also provide a sense of the amount and quality of data that will  
448 be available to conduct the cumulative impact analysis.

#### 449 **Assess the Cumulative Impacts**

450 The proposed project's cumulative impacts can be assessed using a variety of  
451 methods and tools that are suited to different levels of analysis. The practitioner,  
452 with appropriate input as needed, selects the method(s) and tool (s) on a case-  
453 by-case basis for each resource being analyzed. Chapter 5 of CEQ's  
454 *Considering Cumulative Effects* describes a variety of methods or tools - both  
455 qualitative and quantitative for evaluating cumulative impacts. These range from  
456 simpler methods that may require less time and financial resources, such as  
457 matrices or mapping overlays, to data-intensive methods such as modeling or  
458 trends analysis. Table 5-3 on pages 56-57 of the CEQ document describes  
459 these methods, as well as their strengths and weaknesses.

460 The method(s) used may vary depending on the resource considered, the type of  
461 available information, and the scale of the proposed project. More than one  
462 method can be used to assess cumulative impacts on a single resource. For  
463 example, the cumulative impact analysis of a species could combine Geographic  
464 Information Systems (GIS) mapping and consultation with species experts. GIS  
465 would show historical and anticipated changes in the size and location of species  
466 habitat, and the consultation would provide information on the condition of the  
467 species and the species' ability to adapt to anticipated biological stressors.

#### 468 **Drawing Conclusions**

469 In previous steps, the practitioner collected data and information and applied a  
470 method(s) to analyze this information. Based on that analysis, the practitioner  
471 now draws conclusions about the cumulative impacts to resources by applying  
472 professional judgment to the results, and by coordinating with technical experts  
473 as warranted.

474 First, the practitioner answers the question, "Is there a cumulative impact?" If the  
475 results of the analysis indicate that the proposed project, in combination with  
476 other actions, would affect the health of the resource or a trend associated with a  
477 resource, the practitioner can conclude that the proposed project will contribute  
478 to a cumulative impact (either beneficial or adverse).

479 Next, the practitioner uses the results of the analysis to characterize the severity  
480 or magnitude of the cumulative impact. Consider the following question: "What  
481 do decision-makers need to know about the status of this resource within the  
482 Resource Study Area?" The practitioner should document the following for each  
483 resource:

- 484 • The health, status or condition of the resource as a result of past, present and  
485 reasonably foreseeable impacts.

- 486 • Avoidance and Minimization. Any project design changes that were made or  
487 additional opportunities that could be taken, to avoid and minimize potential  
488 impacts in light of cumulative impact concerns.

489 The CEQ guidance discusses using the concepts of context and intensity in  
490 making impact conclusions. We recommend considering the context and  
491 intensity of the proposed project's cumulative impacts. This will help the  
492 practitioner to make conclusions about the severity of these impacts. Chapter 4  
493 of CEQ's *Considering Cumulative Effects* provides additional information on  
494 assessing the magnitude and significance of cumulative impacts. For most  
495 resources, the NEPA cumulative impact analysis conclusion will not require a  
496 description of the severity of impact (e.g., substantial, moderate, minor,  
497 significant) unless the method specifically reports results in such terms.

498 Once the cumulative impact analysis is complete, review the conclusions of the  
499 cumulative impact analysis with the conclusions from the direct and indirect  
500 impact analyses of the proposed project. This comparison can test the  
501 soundness of the conclusions about each resource. For example, if the direct  
502 and indirect project impacts would result in a 0.2-acre loss of wetland habitat in a  
503 Resource Study Area that contains more than 100 acres of similar habitat, a  
504 substantial contribution to cumulative impacts might not be anticipated. However,  
505 recognize that if this same 0.2- acre impact affects an extremely rare or  
506 threatened resource, the cumulative impact may be considered substantial. You  
507 will need to know what is happening and anticipated for the other 99.8 acres to  
508 draw your conclusions.

509 7. **Document the results** - The purpose of Step 7 is to document the results of the  
510 step-wise cumulative impact analysis process. The product of Step 7 will be  
511 included in the NEPA document. It is a summary of the analysis approach and  
512 conclusions. This summary should include the identification of resources  
513 considered in the analysis, the Resource Study Area for each resource, and the  
514 conclusions concerning the health and historical context of the resource (Steps 1  
515 through 3). Step 7 also presents project impacts that might contribute to a  
516 cumulative impact (Step 4), other reasonably foreseeable actions considered in  
517 the cumulative impact analysis (Step 5), and the conclusion of the analysis as  
518 outlined in Step 6.

519 The information presented in Step 7 is a summary, consistent with NEPA  
520 disclosure requirements. The audience for the information presented in this step  
521 is decision-makers and interested members of the public, agencies, and affected  
522 tribes. Therefore, it is important for the practitioner to clearly state the  
523 conclusions of the analysis. Include information about the methods and  
524 assumptions underlying the analysis.

## 525 **Describe the Analyses, Methods or Processes Used**

526 Briefly state how the impact analysis was conducted. For example, you may  
527 have plotted GIS overlays of proposed projects (developments) and known  
528 locations of an endangered plant species. Briefly explain this approach and  
529 include any of the figures or data used to draw conclusions if they provide

530 illustration or clarification. Provide references or footnotes as needed to  
531 document sources.

## 532 Explain the Assumptions

533 Explain any limitations that were faced in conducting the analysis. Reviewers will  
534 need to know how conclusions were reached in situations for which there were  
535 data gaps, scarce information, or limitations or obstacles associated with  
536 obtaining the data (e.g., data were cost prohibitive). If models were used, explain  
537 the assumptions on which the models are based.

538 For the purposes of NEPA disclosure, the cumulative impacts discussion should  
539 compare the cumulative impacts of each alternative (including the "No Action"  
540 alternative). A typical statement might say, "Alternative A would adversely affect  
541 0.4 acre of wetlands. Alternative A, in combination with other actions, contributes  
542 to an adverse cumulative impact to wetlands, while Alternative B does not."

## 543 How to Summarize Cumulative Impact Analyses in the Environmental 544 Document

545 The document should include a summary of the results of each analysis, all the  
546 steps in adequate detail to fully disclose the strengths and/or weaknesses of the  
547 analysis as well as the analytical methods and assumptions used. This cannot be  
548 overstated - the decision-maker (as well as any other reader) should be able to  
549 determine not only what you concluded, but how and why you concluded what  
550 you did.

551 It's the project team's decision on where to best place the Cumulative Impacts  
552 Analyses in the environmental documents. In some cases, it should be a  
553 separate section to effectively show all the cumulative impacts and how they  
554 interrelate. In other cases, it can easily be summarized in each technical report.  
555 Which ever approach you use make sure the cumulative impacts analyses  
556 compares the reasonable and feasible alternatives fully considered in the  
557 environmental document and the No Action Alternative.

558 8. **Assess the need for mitigation** - In most cases, a cumulative impact results  
559 from the combined actions of numerous agencies and private entities. In Step 3,  
560 you looked at trends and disclosed those with adverse or negative impacts on a  
561 resource if that resource is also affected by your project. Now, in Step 8, you  
562 need to discuss potential mitigation. Implementing a potential mitigation  
563 measure to address cumulative impacts is often beyond the jurisdiction of FHWA,  
564 ODOT, or other cooperating agencies. By using the steps in this guidance, you  
565 would gather information early in the process, become aware of how the impacts  
566 of the proposed project may combine with other impacts, giving you opportunities  
567 to use elements of mitigation (avoidance and minimization) throughout the  
568 development of the project. If unavoidable, adverse cumulative impacts remain,  
569 you will need to describe or suggest compensatory mitigation that could be  
570 implemented by the appropriate party. Let us explain further.

571 FHWA's NEPA regulations in 23 CFR 771.105(d) and CEQ's CFR 1502.14(f) call  
572 for the consideration of mitigation for adverse impacts. Mitigation should be  
573 identified for adverse impacts disclosed in the environmental document, whether  
574 direct, indirect, or cumulative. FHWA is directed to mitigate for impacts that  
575 "actually result from the Administration action and represent a reasonable public  
576 expenditure after considering the impacts of the action and the benefits of the  
577 proposed mitigation measures. In making this determination, the Administration  
578 will consider, among other factors, the extent to which the proposed measures  
579 would assist in complying with a Federal statute, Executive Order, or  
580 Administration regulation or policy." 23 CFR 771.105(d)

581 For more information about presenting mitigation, see CEQ's discussion of  
582 mitigation in *NEPA's Forty Most Asked Questions* (nos. 19a and 19b) In  
583 summary, 19 (a) discusses consideration of impacts not "significant" in  
584 themselves, but "significant" in combination with other impacts. Question 19 (b)  
585 discusses how mitigation measures outside the jurisdiction of the lead or  
586 cooperating agency or unlikely to be adopted or enforced by the responsible  
587 agency should be dealt with.

588 Although ODOT does not mitigate for cumulative impacts caused by others, and  
589 there exists no regulatory requirement for an agency to do so, we do need to  
590 disclose the impact and describe mitigation that may be planned or suggest  
591 possible mitigation to those agencies responsible. If practical mitigation options  
592 exist, we need to determine whether such options are within the control of ODOT  
593 or FHWA. This is a key point: In cumulative impacts analyses you do not have to  
594 commit to compensatory mitigation for actions that are not part of the proposed  
595 project – but you do have to discuss it.

596 For example, mitigation measures for air quality impacts might require numerous  
597 local communities to modify their comprehensive plans to reduce the amount of  
598 planned development and reduce the number of vehicle miles traveled within the  
599 geographic study area. ODOT and FHWA do not have the authority to  
600 implement the necessary planning decisions, obtain local legislative approvals, or  
601 change the regional distribution of future development. Therefore, disclosure of  
602 mitigation for cumulative impacts is not based on or limited to specific mitigation  
603 measures that can be implemented by the lead agency.

604 In Step 8, you should consider all avoidance and minimization measures that are  
605 planned or in place to benefit the affected resource. Some of these measures  
606 may be part of the proposed project, others may be actions taken by other  
607 entities.

608 Consider the impacts of any statewide initiatives such as the removal of fish  
609 passage barriers. Partnering opportunities, not associated with a project, for  
610 retrofitting or similar regional efforts could also produce some benefits to be  
611 considered. See discussion in "Recommended Approach".

612 If it is not possible to identify a mitigation measure, the discussion may consist of  
613 listing the agencies that have regulatory authority over the resource and  
614 recommending actions those agencies could take to influence the sustainability

615 of the resource. By doing so, the needed mitigation would be disclosed to the  
616 public and reviewing agencies even though it could not be implemented by  
617 FHWA or ODOT. Once disclosed, the information could be used to influence  
618 future decisions or to help identify opportunities for avoidance and minimization  
619 when other projects are proposed.

## 620 **Climate Change**

### 621 Greenhouse Gas Impacts and Global Climate Change

622 The issue of greenhouse gas (GHG) emissions and global climate change is an  
623 important national and global concern that is being addressed by various state and  
624 federal agencies, including ODOT and FHWA.

625 Since the context for GHG emissions is a global scale, it is virtually impossible to  
626 perform a meaningful analysis of most local transportation projects. GHG emissions  
627 analyses are more informative at regional, state, or national levels and should be  
628 accomplished during local and regional land use planning processes when more  
629 capable modeling tools are developed. While it still may be possible to quantify GHG  
630 emissions associated with a proposed transportation project, tools have not been  
631 developed for how to translate those emissions into impacts on climate change on  
632 any scale. ODOT's recent land use and transportation modeling efforts have shown  
633 that land use patterns have a much greater impact on all emissions than do highway  
634 expansions. Further, the needs for most highway projects are typically a result of  
635 land use changes, development, growth, and other local and regional changing  
636 trends. Therefore, to best inform decision making, GHG emissions estimation needs  
637 to be done during the transportation system and land use planning processes.

638 As of the date of publication of this document, no federal laws specifically require  
639 GHG emissions analyses in project-level NEPA documents. NEPA requires federal  
640 agencies to scope and address the significant issues of any proposal and to  
641 concentrate on the analyses of issues that can be truly meaningful to the  
642 consideration of and comparison between project alternatives. In the absence of  
643 federal regulations and a regional or national framework for considering the  
644 implications of project-level GHG analyses, FHWA concludes that GHG emissions  
645 calculated for project alternatives cannot be usefully evaluated in the same way that  
646 vehicle emissions are evaluated within a local project-level context and that such an  
647 attempted analysis would not inform project decision-making in any meaningful way.

### 648 Oregon Strategies

649 Greenhouse gas (GHG) emissions are currently not regulated in the State of Oregon.  
650 However, there are numerous goals for states and the nation to meet, and strategies  
651 to reduce GHG emissions are currently being addressed by ODOT and other state  
652 agencies throughout Oregon. On August 7, 2007 the Climate Change Integration Act  
653 came into effect with the passage of Oregon house bill 3543. Oregon House Bill  
654 3543 creates GHG emissions reduction goals for the State of Oregon, which aim to  
655 reduce emissions 10 percent below 1990 levels by 2020 and achieve a 75 percent  
656 reduction below the 1990 levels by 2050. Oregon House Bill 3543 also created the  
657 Oregon Global Warming Commission (Commission) that is responsible for

658 recommending policies to state and local governments to reduce GHG emissions.  
659 The Commission is expected to promulgate rules to direct agencies on how to  
660 regulate and enforce the legislation.

661 Intelligent transportation systems (ITS) and land use planning policies will be among  
662 several strategies necessary to meet the state's goal of reducing GHG emissions. To  
663 accomplish this, the Commission has formed a Land Use and Transportation  
664 Committee (Committee). The scope and function of the Committee is to work with  
665 state agencies including ODOT and the Oregon Department of Land and  
666 Conservation and Development (DLCD) to integrate GHG reduction goals into state  
667 transportation planning and land use policies currently under development.  
668 Transportation and land use policies will be designated to stop the growth of GHG  
669 emissions, and then reduce over time, according to the specific goals set out the  
670 Oregon Legislature.

671 Research is also underway to develop more capable models for measuring,  
672 analyzing, evaluating, and reporting GHG emissions. ODOT is coordinating with  
673 other state and federal agencies (DOE, DEQ, FHWA, EPA) to determine appropriate  
674 contexts for measuring impacts from transportation and land use changes.

675 ODOT and U.S. DOT specific strategies regarding climate change efforts are  
676 summarized in Appendix [X].

## 677 **References and Additional Guidance**

678 There are many fine publications in print that can help you with a cumulative impact  
679 analysis. The intent of this annotation is to provide a brief, simple explanation of this  
680 type of analysis. For more information please visit and/or obtain any of the following:

681 California Department of Transportation (CALTRANS)  
682 *Guidance for Preparers of Cumulative Impact Analysis Approach and Guidance* (2005)  
683 [http://www.dot.ca.gov/ser/cumulative\\_guidance/purpose.htm](http://www.dot.ca.gov/ser/cumulative_guidance/purpose.htm)

684 Council on Environmental Quality  
685 *Considering Cumulative Effects under the National Environmental Policy Act* (1997)  
686 [https://www.energy.gov/sites/prod/files/nepapub/nepa\\_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf](https://www.energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf)

687 *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis*  
688 (2005) [https://www.energy.gov/sites/prod/files/nepapub/nepa\\_documents/RedDont/G-CEQ-PastActsCumulEffects.pdf](https://www.energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-PastActsCumulEffects.pdf)

689 Environmental Protection Agency  
690 *Consideration of Cumulative Impacts in EPA Review of NEPA Documents* (1999)  
691 <https://www.epa.gov/sites/production/files/2014-08/documents/cumulative.pdf>

692 Federal Highway Administration  
693 Question and Answers Regarding the Consideration of Indirect and Cumulative  
694 Impacts in the NEPA Process. (Interim Guidance, January 2003)  
695 <https://www.environment.fhwa.dot.gov/projdev/qaimpact.asp>  
Standard Environmental Reference, Chs 32 and 36

696



Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links

697 Draft Baseline Report. [Executive Order 13274 Indirect and Cumulative Impacts Work](#)  
698 [Group](#). March 2005.

699 McCold, L.N. and J.W. Saulsbury. [Including Past and Present Impacts in Cumulative](#)  
700 [Impact Assessments](#). Environmental Management. Vol. 20 no.5 pp. 767-776. 1996.

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702

1 **Chapter 5 - RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES**  
2 **OF THE HUMAN ENVIRONMENT AND THE**  
3 **MAINTENANCE AND ENHANCEMENT OF LONG-TERM**  
4 **PRODUCTIVITY**

5 Discuss in general terms the proposed action's relationship of local short-term impacts  
6 and use of resources, and the maintenance and enhancement of long-term productivity.  
7 This general discussion might recognize that the build alternatives would have similar  
8 impacts. Explain how the transportation improvements are based on State and/or local  
9 comprehensive planning. Explain how these plans consider(s) the need for present and  
10 future traffic requirements within the context of present and future land use development.

11 **5.1 Build Alternatives**

12 The build alternatives may have similar impacts. Include brief discussion of the following  
13 in this section:

14 **Short-term impacts and use of resources may include:** construction impacts  
15 such as noise, motorized and non-motorized traffic delays or detours, and  
16 materials and labor to construct the improvement.

17 **Maintenance and enhancement of long-term productivity may include:**  
18 Improvement of the transportation network of the State and/or region, increased  
19 access, reduction of congestion on local streets and highways, or other benefits  
20 identified in the project purpose. Identify in general terms how the project  
21 purpose is consistent with local and regional planning for transportation, land  
22 use, and development.

23 The following sample text may be used as the concluding statement of this section:

24 Project implementation will result in the short-term impacts and use of resources as  
25 described above, while increasing the long-term productivity of transportation, land use  
26 and economic systems.

27 **5.2 No-Build**

28 The No-Build offers none of the gains or losses described above. However, the No-  
29 Build would not meet the proposed project's purpose and need [such as, resolve  
30 worsening congestion on local streets and highways].

1 **Chapter 6 - IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF**  
2 **RESOURCES**

3 The irreversible and Irretrievable Commitment of Resources analysis is required by  
4 NEPA Section 102 (C)(v) and 40 CFR 1502.16.

5 Discuss in general terms the proposed action's irreversible and irretrievable commitment  
6 of resources. This general discussion may recognize that the build alternatives would  
7 require a similar commitment of natural, physical, human and fiscal resources. An  
8 illustrative discussion follows as a guide to writing this section:

9  
10 Implementation of the proposed action involves a commitment of a range of natural,  
11 physical, human and fiscal resources. Land used in the construction of the proposed  
12 facility is considered an irreversible commitment during the time period that the land is  
13 used for a highway facility. However, if a greater need arises for use of the land or if the  
14 highway facility is no longer needed, the land can be converted to another use. At  
15 present, there is no reason to believe such a conversion would ever be necessary or  
16 desirable.

17 Considerable amounts of fossil fuels, labor, and highway construction materials such as  
18 cement, aggregate, and bituminous material are expended. Additionally, large amounts  
19 of labor and natural resources are used in the making of construction materials. These  
20 materials are generally not retrievable. However, they are not in short supply and their  
21 use would not have an adverse impact upon continued availability of these resources.  
22 Any construction would also require a substantial one-time expenditure of both state and  
23 federal funds, which are not retrievable. The commitment of these resources is based on  
24 the concept that residents in the immediate area, region and state would benefit from the  
25 improved quality of the transportation system. These benefits would consist of improved  
26 accessibility and safety, which are expected to outweigh the commitment of these  
27 resources, such as: savings in energy, time, and a reduction in accidents. In addition to  
28 the costs of construction and right-of-way acquisition would be costs for roadway  
29 maintenance, including pavement, roadside, litter/sweeping, signs and markers,  
30 electrical and storm maintenance.

31

# 1 Chapter 7 - COMMENTS AND COORDINATION

## 2 1. Documenting Coordination

### 3 a. Provide a brief introduction to this Chapter (sample text below)

4 Early and continuing coordination with the general public and appropriate  
5 public agencies is an essential part of the environmental process to  
6 determine the scope of environmental documentation, the level of analysis,  
7 potential impacts, proposed mitigation measures and related environmental  
8 requirements. Agency consultation and public participation for this project  
9 have been accomplished through a variety of formal and informal methods,  
10 including: project development team meetings, interagency coordination  
11 meetings, (continue list as appropriate). This chapter summarizes the results  
12 of efforts to fully identify, address and resolve project-related issues through  
13 early and continuing coordination.

### 14 b. Appendix [X] includes all appropriate Section 6002 material for this proposed 15 project. Provide a weblink to the current Section 6002 coordination plan 16 prepared for the project. Summarize these major points of the Section 6002 17 process, include dates where appropriate:

18 i. Notice of initiation, include dates.

19 ii. Summary of invited cooperating agencies and their response, include  
20 dates.

21 iii. Summary of invited participating agencies and their response, include  
22 dates.

23 iv. Describe the process that was used for early identification of issues. This  
24 should include a summary of the scoping process (dates of the Notice of  
25 Intent, dates of meetings, list of participants, issues identified).

26 v. Describe Section 6002 opportunities for cooperating and participating  
27 agency involvement and public involvement and how substantive  
28 comment received was incorporated for:

29 Purpose and Need

30 Range of Alternatives

31 Preferred Alternative

32 Methodology for analyzing alternatives

### 33 c. Describe Consultation and Coordination with Public Agencies

34 i. State which public agencies were contacted during the project's  
35 development.

- 36 Provide a chronology of all meetings, workshops, hearings, etc.
- 37 Describe the results of the coordination to date; in other words, document  
38 critical decisions. If an agency has taken a position on the project or  
39 an issue associated with the project, state the agency's position.
- 40 ii. Summarize MTPA coordination that occurred for the proposed project.
- 41 d. Discuss Public Participation
- 42 i. Describe the public participation methods used for the proposed project.  
43 Methods could include: participation on Project Development Team,  
44 citizen advisory committees, mailing lists, newsletters, newspaper  
45 notices/articles, public meetings/workshops, web-based information, etc.  
46 Include dates when applicable.
- 47 ii. Describe the results of the public participation process—number of  
48 attendees, comments received, issues raised, etc.
- 49 iii. Include the following information about the public hearing:
- 50 Date, time and location of hearing
- 51 Type of hearing
- 52 Number of attendees
- 53 Number of written comments
- 54 Number of comments taken by court reporter
- 55 Summary of meeting outcome, issues raised, etc.
- 56 iv. Outreach to specific groups. If particular groups have been identified with  
57 an interest in the project, describe what specific actions have been taken  
58 to outreach to those groups, what feedback has been received and how  
59 that comment was considered in project development. Groups could  
60 include EJ communities, business districts, limited English proficiency  
61 communities, etc.
- 62 2. Comments and Responding to Comments
- 63 If comments are received on the Draft EIS during the public availability period  
64 and/or at the public hearing, the Final EIS must be modified to reflect all  
65 substantive comments and responses to comments. Substantive comments are  
66 those comments that are related to the facts of the project, environmental  
67 document or studies; comments that are purely just expressing support or  
68 opposition to the project without any factual substantiation may be acknowledged  
69 but do not generally require a response. Comments and responses to comments  
70 should be included in this chapter. **The comment period can only be extended**

- 71 **by joint agreement of the lead federal agencies, including FHWA. Only in**  
72 **unusually circumstances would the comment period be extended.**
- 73 a. A response must be made to all substantive comments received on the Draft  
74 EIS. Options for responding include:
- 75 i. Modifying the design of the proposed project and reflecting the  
76 modifications in the document
- 77 ii. Supplementing, improving or modifying the analysis in the Final EIS.
- 78 iii. Making factual corrections; and/or
- 79 iv. Explaining why the comments do not warrant modification to the  
80 document and/or proposed project
- 81 If a modification to the project is not warranted, the response should cite  
82 sources, authorities or reasons that support that position.
- 83 b. To improve readability, it is recommended that the comment letter and  
84 corresponding response(s) be side by side on the same page. If numerous  
85 comments are received, the comments and responses may be summarized;  
86 however, comment letters from elected officials and federal, state, and local  
87 agencies and planning groups should always be included in their entirety in  
88 the document, along with appropriate responses.
- 89 c. **“Comment noted” is typically not an appropriate response to a**  
90 **substantive issue. Do not use “comment noted” as a way to avoid**  
91 **difficult issues. “Comment noted” is only appropriate when someone**  
92 **has expressed an opinion, such as “I don’t think this project is needed.”**  
93 **or “I support alternative XYZ,” or when there is simply no other**  
94 **response possible. Consider responding with “your support for project**  
95 **‘X’ for alternatives 1, 2, and 3 is acknowledged and included in the**  
96 **project record.”**
- 97 Responses to comments should address the issue or concern of the person  
98 that made the comment and should be based on facts and/or reasoned  
99 judgment. In responding to comments, it is often necessary to engage other  
100 members of the internal project development team.
- 101 d. Be careful not to bundle comment responses for ostensibly similar comments.  
102 Bundle comments with caution because similar sounding comments may  
103 communicate different concerns or have different contexts.
- 104 e. Remember to deal sensitively with public comments. When responding to  
105 comments, keep in mind that the person cared enough about the issue to  
106 make a comment, a good response requires at least as much care.

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107 **References and Additional Guidance**

108 [AASHTO Practitioners Handbook Responding to Comments](#)

109 [FHWA 6002 Guidance](#)

110 Revised Guidance on Co-operating Agencies (March 1992)

111 [A Vision for Joint Environmental and Transportation System Stewardship in Oregon](#)

1 **Chapter 8 - LIST OF PREPARERS**

2 This section should include lists of:

- 3 1. State (and local agency) personnel, including consultants, who were primarily  
4 responsible for preparing the EIS or performing environmental studies, and a  
5 brief summary of their qualifications, including educational background and  
6 experience.
- 7 2. The FHWA personnel primarily responsible for preparation or review of the  
8 EIS and their qualifications.
- 9 3. The areas of EIS responsibility for each preparer.

10 Refer to the table below as an example.

11



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<b>Name</b>	<b>Company/Agency</b>	<b>Role</b>	<b>Education</b>	<b>Experience</b>
Jeff Graham	FHWA	FHWA Operations Engineer	B.S. Civil Engineering	20 Years
Michelle Eraut	FHWA	FHWA Environmental Program Manager	MPA	16 Years
Michael Holthoff	ODOT	Environmental Planner	M.S. Environmental Science	17 Years
	ODOT	ODOT Environmental Project Manager		
Jane Doe	XYZ Associates	Wetland Technical Report	B.S. Environmental Science	10 Years

## 1 Chapter 9 - DISTRIBUTION LIST

2 *Draft EIS:* List the recipient addressee, agency name, and addresses of each entity  
3 from which comments are being requested (40 CFR 1502.10).

4 *Final EIS:* Additionally, identify those entities that submitted comments on the draft EIS  
5 and the recipient addressee, agency name and addresses of each entity receiving a  
6 copy of the final EIS (23 CFR 771.125(a) and (g)).

7 The table below is a master distribution list, only include agencies that have an interest  
8 in the project.

### 9 Distribution of Draft and Final EISs

10 \* There are 2 lists: 1. **Interested Parties List** (list of project Stakeholders, prepared  
11 'new' for each project), 2. **Standard NEPA Document Distribution List** (list of  
12 Agencies that may be interested).

13 ❖ The Region NEPA Lead (EPM, Planner, PL, CPM, etc.) is responsible for making  
14 and/or maintaining an Interested Parties list for each project in a spreadsheet or  
15 database format for ease of sorting addresses/entries as needed. *\*Include email  
16 addresses in the database if you plan to send electronic web links via email to  
17 distribute the document.*

18 ❖ Postcards can be used (during the draft and final document (Quality Control Review  
19 Process) at the NEPA Lead's discretion asking the Interested Parties if they would  
20 like to receive the NEPA document (and what is their preferred format: web link, CD,  
21 hard copy, etc.). A project summary should be included with the letter and sent to the  
22 Interested Parties list. When postcards are returned, the names need to be added to  
23 the distribution lists for the project.

24 ○ *An option to the postcard process is to send a CD (through the USPS mail) or  
25 a web link to the appropriate ODOT Region NEPA document/project website  
26 (via email—so you would have to have a column in the Interested Parties list  
27 for email addresses) to the entire Interested Parties list.*

28 ❖ The Region NEPA Lead also prepares an Agency Distribution List (**include/modify  
29 as needed the Standard NEPA Document Distribution List**; also see **Guidance  
30 from FHWA TA6640.8** for distributing NEPA documents to Agencies, following).

31 *Coordination with the project team and the appropriate FHWA NEPA liaison is normal  
32 practice for achieving a comprehensive project-specific distribution list.*

33 ❖ The Region NEPA Lead ensures that all appropriate interested parties and agencies  
34 are listed.

35 ❖ The Region NEPA Lead ensures the appropriate number of CDs and/or paper copies  
36 are printed and distributed.

### 37 1.2 Standard NEPA Document Distribution List

38 \* Default, if not noted otherwise: send each agency CD(s) with a letter  
39 The NEPA Lead is responsible for coordinating the distribution of NEPA documents to  
40 the following agencies, including the CETAS member list (\*check both lists to eliminate  
41 redundancy deliveries), as well as to the project-specific Interested Parties list created  
42 for the specific NEPA project proposal. A letter should accompany the CD or bound copy  
43 of the NEPA document, or should be included in an email distribution if that method is  
44 used. The letter should note why the agency/group is receiving the document, how long

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45 the review is scheduled and when comments are due, and should also ask the agency  
 46 for verification of their contact information as well as the number of copies they received  
 47 and a preferred copy choice (so you may wish/need to send a different letter to parties  
 48 versus agencies). The letter should be on ODOT Region letterhead (or whoever the  
 49 project sponsor is), and should contain the Region address, NEPA Lead's contact  
 50 information (email address and phone number), and a signature by whichever  
 51 management level of authority is appropriate for the NEPA document (per the discretion  
 52 of the NEPA Lead and/or their Manager).

53  
 54 *\*\*As the Region NEPA Leads, or other project sponsor NEPA Leads, receive updates from the agencies to  
 55 this list (address changes, weblink changes, document request changes, etc.), you (NEPA Lead) are  
 56 responsible to forward copies of those comments to ODOT Geo-Environmental, NEPA Program Coordinator  
 57 or Manager, in order to update, and maintain as current, this standard list. **\*\*It is advisable that the NEPA  
 58 Lead, via Region support staff if available, prepare a label database well in advance of the document's  
 59 readiness for distribution.***

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<b>Department of Energy</b> <a href="http://www.oregon.gov/ENERGY/">www.oregon.gov/ENERGY/</a>  ODOE 625 Marion St. NE Salem, OR 97301-3737  503-378-4040  Email: <a href="mailto:energy.in.internet@state.or.us">energy.in.internet@state.or.us</a>	2
<b>Department of Environmental Quality</b> <a href="https://www.oregon.gov/deq/pages/index.aspx">https://www.oregon.gov/deq/pages/index.aspx</a>  DEQ Headquarters 811 SW 6th Avenue Portland 97204-1390  503-229-5696  Email: <a href="mailto:deq.info@deq.state.or.us">deq.info@deq.state.or.us</a>	1

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<p><b>Department of Forestry</b>  <a href="https://www.oregon.gov/ODF/pages/index.aspx">https://www.oregon.gov/ODF/pages/index.aspx</a></p> <p>ODF            2600 State St.            Salem, Oregon 97310</p> <p>503-945-7200</p> <p>E-mail: <a href="mailto:jeri.chase@odf.state.or.us">jeri.chase@odf.state.or.us</a></p>	<p style="text-align: center;">1</p>
<p><b>Department of Geology and Mineral Industries</b>  <a href="http://www.oregongeology.org/">www.oregongeology.org/</a></p> <p>DOGAMI Administrative Offices            800 NE Oregon Street #28, Suite 965            Portland, Oregon 97232</p> <p>971 673-1555</p>	<p style="text-align: center;">1</p>
<p><b>Department of Land Conservation and Development</b>  <a href="https://www.oregon.gov/lcd/">https://www.oregon.gov/lcd/</a></p> <p>DLCD            635 Capitol St. NE, Suite 150            Salem 97301-2540</p> <p>503-373-0050</p>	<p style="text-align: center;">1</p>
<p><b>Department of State Lands</b>  <a href="https://www.oregon.gov/dsl/Pages/index.aspx">https://www.oregon.gov/dsl/Pages/index.aspx</a></p> <p>DSL            775 Summer St. NE Suite 100            Salem, OR 97301-1279</p> <p>503-986-5200</p>	<p style="text-align: center;">1</p>

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<p><b>Parks and Recreation Department</b>  <a href="https://www.oregon.gov/OPRD/">https://www.oregon.gov/OPRD/</a></p> <p><b>OPRD</b>            Oregon Parks and Recreation Department            725 Summer St. N.E. Suite C            Salem, OR 97301</p> <p>503-986-0707            800-551-6949</p> <p>Email: <a href="mailto:park.info@state.or.us">park.info@state.or.us</a></p>	<p align="center">2</p>
<p><b>Public Utilities Commission</b></p> <p><a href="https://www.oregon.gov/puc/Pages/default.aspx">https://www.oregon.gov/puc/Pages/default.aspx</a></p> <p><b>PUC of Oregon</b>            550 Capitol St NE #215            PO Box 2148            Salem OR 97308-2148</p> <p>503-378-6611            800-522-2404</p>	<p align="center">1</p>
<p><b>State Historic Preservation Office</b>  <a href="https://www.oregon.gov/oprd/OH/Pages/default.aspx">https://www.oregon.gov/oprd/OH/Pages/default.aspx</a></p> <p><b>OPRD</b>            Heritage Programs            725 Summer St NE, Suite C            Salem OR 97301</p> <p>503-986-0671</p> <p>Email: <a href="mailto:Heritage.Programs@state.or.us">Heritage.Programs@state.or.us</a></p>	<p align="center">1</p>

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<p>Water Resources Department  <a href="https://www.oregon.gov/owrd/Pages/index.aspx">https://www.oregon.gov/owrd/Pages/index.aspx</a></p> <p>Water Resources Department            725 Summer Street NE, Suite A            Salem, OR 97301</p> <p>503-986-0900</p> <p>Email: <a href="mailto:webmaster@wrd.state.or.us">webmaster@wrd.state.or.us</a></p>		<p>1</p>

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<p><b>Advisory Council on Historic Preservation</b>  <a href="http://www.achp.gov">www.achp.gov</a></p> <p>ACHP            1100 Pennsylvania Avenue NW, Suite 803            Old Post Office Building            Washington, DC 20004</p> <p>202-606-8503</p> <p>E-mail: <a href="mailto:achp@achp.gov">achp@achp.gov</a></p>	<p>1</p>

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<p><b>U.S. Coast Guard (if Coast Guard permit needed)</b>  <a href="https://www.uscg.mil/">https://www.uscg.mil/</a></p> <p>U.S. Coast Guard Headquarters            Commandant, U.S. Coast Guard,            2100 Second Street, SW,            Washington, DC 20593</p> <p>202-372-4400</p> <p>Email: <a href="https://www.uscg.mil/contact/">https://www.uscg.mil/contact/</a></p>	1
<p><b>U.S. Army Corps of Engineers</b>  <a href="http://www.army.mil/">www.army.mil/</a></p> <p>US Army Engineer District, Portland, CENWP            P.O. Box 2946            Portland, OR 97208-2946</p> <p>503-808-5150</p>	1
<p><b>National Oceanic &amp; Atmospheric Administration National            Marine Fisheries Service</b>  <a href="https://www.nmfs.noaa.gov/">https://www.nmfs.noaa.gov/</a>  <a href="https://www.westcoast.fisheries.noaa.gov/habitat/conservation/oregon_habitat_resources.html">https://www.westcoast.fisheries.noaa.gov/habitat/conservation/            oregon_habitat_resources.html</a></p> <p>Oregon State Habitat Office            1201 NE Lloyd Blvd, Suite 1100            Portland, OR 97232</p> <p>503-231-2202</p>	1



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<p><b>Federal Aviation Administration (as  needed)</b></p> <hr/> <p><b>Federal Aviation Administration</b>  Northwest Mountain Region  1601 Lind Avenue Southwest  Renton, WA 98057</p> <p>(800) 220-5715 or (425) 227-2001</p>	<p>1</p>
<p><b>Federal Railroad Administration (Region 8) (as needed)</b></p> <hr/> <p><b>USDOT, FRA</b>  500 Broadway - Suite 240  Vancouver, WA 98660</p> <p>Phone - (360)696-7536  Fax - (360)696-7548</p>	<p>1</p>

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<p><b>U.S. Bureau of Land Management (Oregon and Washington Region)</b> (If Cooperating agency, or if project is on BLM land)  <a href="https://www.blm.gov/oregon-washington">https://www.blm.gov/oregon-washington</a></p> <p><b>BLM Oregon Office</b>  <b>333 S.W. 1st Avenue</b>  <b>Portland, OR 97204</b></p> <p><b>503-808-6001</b>  <b>202-208-3801 (DC office)</b></p> <p><a href="mailto:woinfo@blm.gov">mailto:woinfo@blm.gov</a> or <a href="mailto:ORwaland@blm.gov">mailto:ORwaland@blm.gov</a></p>	<p>1 (or as requested)</p>

## 1 [DRAFT OR FINAL] SECTION 4(f) EVALUATION

### 2 The Basic Section 4(f) Analysis

3 This Section 4(f) evaluation is used only to document individual Section 4(f) evaluations.  
4 Chapter 3 documents determinations that properties are not subject to Section 4(f),  
5 temporary occupancy determinations, Section 4(f) *de minimis* determinations, and  
6 programmatic.

7 FHWA's Section 4(f) policy paper and Section 4(f) regulations found at 23 CFR 774,  
8 should be consulted throughout the Section 4(f) determination processes. Seek frequent  
9 advice if unsure of applicability or process. A poorly conceived and/or written Section  
10 4(f) evaluation will delay the project schedule. FHWA legal sufficiency review is required  
11 for all individual Section 4(f) evaluations. Be sure to appropriately consider all planned  
12 park and recreational facilities.

- 13 1. For properties that require an individual Section 4(f) evaluation you must identify  
14 alternatives that would avoid the use of a Section 4(f) property, including the No-  
15 Build Alternative.
  - 16 a. Analyze if each of the avoidance alternatives is prudent and feasible (23 CFR  
17 774.17 Feasible and Prudent Avoidance Alternative definition).
    - 18 i. An avoidance alternative is prudent and feasible if it avoids using the Section  
19 4(f) property and does not cause other severe problems of a magnitude that  
20 substantially outweighs the importance of protecting the Section 4(f) property.  
21 In assessing the importance of protecting the Section 4(f) property, it is  
22 appropriate to consider the relative value of the Section 4(f) property to the  
23 preservation purpose of the Section 4(f) statute. An avoidance alternative is  
24 not feasible if it cannot be built as a matter of sound engineering judgment.  
25 23 CFR 774.117 sets forth 6 factors to consider when determining whether  
26 an alternative is prudent. When documenting that an alternative is not  
27 feasible and prudent, clearly document how each of the 6 factors is  
28 considered in the analysis of each alternative.
    - 29 ii. Prudent and feasible refers only to avoidance alternatives and not to  
30 minimization measures.
  - 31 b. Include a description of all possible measures to minimize harm to the resource  
32 (23 CFR 774.117 All Possible Planning definition).

### 33 Writing the Section 4(f) Evaluation

- 34 1. Include a text box in this appendix that names the technical report, date, and that  
35 it is available upon request, should the reader want more information.
- 36 2. The Section 4(f) evaluation should be organized as follows:
  - 37 • Introduction.

- 38
- Description of proposed project alternatives.
- 39
- Description and map of each Section 4(f) property. The description of each
- 40
- 41
- 42
- 43
- 44
- 45
- property should include discussion of the attributes and features that qualify the property for Section 4(f) consideration. The map of each Section 4(f) property should clearly depict the property boundary, major features (footprints of major structures, parking lots, etc.) of the property and especially features and attributes of the property which qualify the property for Section 4(f) consideration.
- 46
- Impacts on Section 4(f) properties [discuss impacts caused by each
- 47
- 48
- 49
- 50
- alternative]. Discuss in terms of the right-of-way required, the impact to the features, activities and attributes which qualify the resource for Section 4(f) consideration. Overlay project alternatives on the Section 4(f) resource map(s) so that the “use” of the property can be readily identified.
- 51
- Avoidance alternatives.
- 52
- Measures to minimize harm.
- 53
- Coordination.
- 54
- Concluding statement.
- 55
- Other park, recreational facilities, wildlife and waterfowl refuges, and historic
- 56
- properties evaluated relative to the requirements of Section 4(f).
- 57
- 58
- 59
- 60
- The following properties [\[list\]](#) were evaluated to determine if they were Section 4(f) properties. Each was determined to not be a Section 4(f) property. Please see the cultural or parks and recreational sections of Chapter 3 for additional information on these determinations.
- 61
- Letters and other correspondence.
- 62
- 63
- 64
- 65
- 66
- 67
- 68
- 69
3. If the proposed project has multiple protected Section 4(f) properties, it may be easier for the reader if the evaluation is organized so that all the discussion of a given property is in one location. In other words, describe the property, then discuss impacts on that property, then alternatives that would avoid that property, measures to minimize harm to that property, then coordination for that property and lastly the concluding statement. Then move on and do the same for each Section 4(f) properties. Using this approach, the overall organization would look as follows (for two properties, in this example):
- 70
- Introduction.
- 71
- Description of Proposed Project [include all alternatives].
- 72
- List and Description of Section 4(f) Properties.

- 73           • Impacts on [Insert name of 1st property] [discuss impacts caused by each  
74           alternative].
- 75           • Avoidance Alternatives for [Insert name of 1st property].
- 76           • Measures to Minimize Harm to [Insert name of 1st property].
- 77           • Coordination for [Insert name of 1st property].
- 78           • Concluding Statement for [Insert name of 1st property].
- 79           • Impacts on [Insert name of 2nd property].
- 80           • Avoidance Alternatives for [Insert name of 2nd property].
- 81           • Measures to Minimize Harm to [Insert name of 2nd property].
- 82           • Coordination for [Insert name of 2nd property].
- 83           • Concluding statement for [Insert name of 2nd property].
- 84           • Other Park, Recreational Facilities, Wildlife or Waterfowl Refuges, and  
85           Historic Properties Evaluated Relative to the Requirements of Section 4(f).
- 86           • Letters and Other Correspondence.

## 87 **Introduction**

88 Include the following boilerplate language in the introduction.

89 Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49  
90 U.S.C. 303, declares that “it is the policy of the United States Government that special  
91 effort should be made to preserve the natural beauty of the countryside and public park  
92 and recreation lands, wildlife and waterfowl refuges, and historic sites.”

93 Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation  
94 program or project requiring the use of publicly owned land of a public park, recreation  
95 area, or wildlife and waterfowl refuge of national, State, or local significance, or land of  
96 an historic site of national, State, or local significance (as determined by the federal,  
97 state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- 98           • there is no prudent and feasible alternative to using that land; and
- 99           • the program or project includes all possible planning to minimize harm to the  
100           park, recreation area, wildlife and waterfowl refuge, or historic site resulting from  
101           the use.

102 Section 4(f) further requires consultation with the Department of the Interior and, as  
103 appropriate, the involved offices of the Departments of Agriculture and Housing and

104 Urban Development in developing transportation projects and programs that use lands  
105 protected by Section 4(f). If historic sites are involved, then coordination with the State  
106 Historic Preservation Officer or Tribal Historic Preservation Officer is also needed.

## 107 **Description of Proposed Project**

108 1. Discuss the proposed project, including each build alternative and the No-Build  
109 alternative.

110 Give enough detail so that the reader can understand the proposed project and  
111 alternatives. Maps of each alternative, including Section 4(f) properties being  
112 analyzed, shall be provided. Refer the reader to Chapter 1, Project Description  
113 and Alternatives for more detailed information.

114 2. Restate the complete purpose and need for the project. Refer the reader to  
115 Chapter 1, Purpose and Need, for additional information.

## 116 **Description of and Impacts on Section 4(f) Properties**

117 1. All archaeological and historic sites within the Section 106 area of potential  
118 effects (APE) and all public and private parks, recreational facilities, and wildlife  
119 or waterfowl refuges within or adjacent to the APE if any of the project  
120 alternatives should be analyzed to determine whether they are protected Section  
121 4(f) resources.

122 2. If protected Section 4(f) resources have been identified in the project vicinity,  
123 then include the following for each property that would be used by any  
124 alternative(s) under consideration.

125 Detailed map(s) showing the relationship of the property and its boundary  
126 (including its attributes, activities and features which qualify it for Section  
127 4(f) consideration) to the alternative(s).

128 Ownership and type of Section 4(f) property.

129 Lease, easements, covenants, restrictions that affect ownership.

130 Function of or available activities on the property.

131 Description and location of all existing and planned facilities (baseball fields,  
132 playgrounds, etc.).

133 Access (pedestrian, bicycle, car) and usage (approx. # of visitors).

134 Relationship to other similarly used lands in the vicinity (what other parks,  
135 recreational facilities or historical structures exist in the area).

136 Unusual characteristics of the property that either enhance or reduce its  
137 value.

- 138 3. Discuss the impacts on the property for each alternative.
- 139 a. Clearly identify (i.e., quantify) and discuss the following impacts on each  
140 property for each alternative:
- 141 Facilities, functions, and/or activities potentially affected.
- 142 Size (in acres or square feet, as appropriate) and location of property, and  
143 size (in acres, or square feet, as appropriate) of the Section 4(f) use.
- 144 Accessibility.
- 145 Visual.
- 146 Noise.
- 147 Vegetation.
- 148 Wildlife.
- 149 Air quality.
- 150 Water quality.
- 151 b. Cross-reference other sections of the EIS as appropriate.
- 152 **Avoidance Alternatives**
- 153 1. Identify and discuss any alternatives that would avoid the use of Section 4(f)  
154 resources, including the No-Build, new alignments, and design variations.
- 155 2. **In the Final Section 4(f) evaluation, discuss whether the avoidance**  
156 **alternatives are prudent and feasible. If they are not prudent and feasible,**  
157 **discuss why they are not. Quantify where possible and be as specific as**  
158 **possible.**
- 159 a. An avoidance alternative is prudent and feasible if it avoids using the Section  
160 4(f) property and does not cause other severe problems of a magnitude that  
161 substantially outweighs the importance of protecting the Section 4(f) property.  
162 In assessing the importance of protecting the Section 4(f) property, it is  
163 appropriate to consider the relative value of the Section 4(f) property to the  
164 preservation purpose of the Section 4(f) statute.
- 165 An avoidance alternative is not feasible if it cannot be built as a matter of  
166 sound engineering judgment. 23 CFR 774.117 sets forth these 6 factors to  
167 consider when determining whether an alternative is prudent:
- 168 • Compromises the project so that it is unreasonable to proceed  
169 with the project in light of its stated purpose and need;
  - 170 • Results in unacceptable safety or operational problems;

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- After reasonable mitigation, it still causes:
    - Severe social, economic, or environmental impacts;
    - Severe disruption to established communities;
    - Severe disproportionate impacts to minority or low income populations; or
    - Severe impacts to environmental resources protected under other Federal statutes;
  - Results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
    - Consider factors such as: the percentage difference in the costs of the alternatives; how the cost difference relates to the total cost of similar transportation projects in the applicant's annual budget; and the extent to which the increased cost for the project would adversely impact that applicants' ability to fund other transportation projects. Review of the section-by-section analysis of the NPRM comments and the Administration's response may be helpful when writing this section.
  - Causes other unique problems or unusual factors; or
  - Involves multiple factors listed above that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.
- Document the consideration of the 6 factors above for each avoidance alternative and remember that this analysis puts a "thumb on the scale" in favor of protecting Section 4(f) properties.

## 197 **Measures to Minimize Harm to the Section 4(f) Property**

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- 200
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1. Discuss all possible planning for measures that are available to minimize the impacts on the property. Document all efforts undertaken even if they seem relatively minor. Summarize and refer readers to other sections of the environmental document as appropriate. All possible planning means all reasonable measures identified in the Section 4(f) evaluation to minimize harm or mitigate for adverse impacts and effects must be included in the project (see 23 CFR 774.17 definition of *All Possible Planning*).
    - a. In evaluating the reasonableness of measures to minimize harm, consider and document the preservation purpose of the statute and:
      - i. The views of the officials with jurisdiction over the Section 4(f) property;
      - ii. Whether the cost of the measures is a reasonable public expenditure in light of the adverse impacts of the project on the Section 4(f) property and the benefits of the measure to the property; and
      - iii. Any impacts or benefits of the measures to communities or environmental resources outside of the Section 4(f) property



- 214 b. Measures should be developed in consultation with the official of the agency  
215 having jurisdiction over the property and may involve replacement land,  
216 replacement facilities or monetary compensation to enhance the remaining  
217 land. **For Final Section 4(f) Evaluation include letters from the officials**  
218 **with jurisdiction concurring with proposed measures.**

## 219 **Coordination**

- 220 1. Document coordination with the agency having jurisdiction over the resource, the  
221 Department of the Interior (NOTE: they have 45 days to respond), and, as  
222 appropriate, the U.S. Department of Agriculture (for National Forest System  
223 Lands) and the Department of Housing and Urban Development (property for  
224 which HUD funding was used). Coordination should center on:
- 225 a. Significance of property;
- 226 b. Primary purpose of the land;
- 227 c. Proposed use and impacts; and,
- 228 d. Proposed measures to avoid and/or minimize harm.

## 229 **Least Harm Analysis**

230 **If a project plans to use a least harm analysis coordinate early and closely with**  
231 **FHWA and ODOT.** If there is no prudent and feasible alternative to avoid harm to  
232 Section 4(f) properties, then only the alternative that causes the least overall harm in  
233 light of the statute's preservation purpose can be chosen. The least overall harm is  
234 determined by balancing the:

- 235 a. Ability to mitigate adverse impacts to each Section 4(f) resource;
- 236 b. Relative severity of the remaining harm, after mitigation, to the protected  
237 activities, attributes and features;
- 238 c. Relative significance of each Section 4(f) property;
- 239 d. Views of the officials with jurisdiction over each Section 4(f) property;
- 240 e. Degree to which each alternative meets the purpose and need;
- 241 f. After reasonable mitigation, the magnitude of any adverse impacts to  
242 resources not protected by Section 4(f); and
- 243 g. Substantial differences in costs among alternatives.
- 244

245 Document the process and the results of the balancing above. Consider using a  
246 summary table to help differentiate the balancing of each factor for the alternatives.

## 247 **Concluding Statement**

248 Include the concluding statement for each resource:

249 Based on the above considerations, there is no feasible and prudent alternative  
250 to the use of land from [name the Section 4(f) property(ies)] and the [proposed  
251 action, specify which alternative] includes all possible planning to minimize harm

252 to [name the Section 4(f) property(ies)] resulting from such use and causes the  
253 least overall harm in light of the statutes preservation purpose.

## 254 **References and Additional Guidance**

255 [49 USC 303](#)

256 [23 CFR 774](#)

257 [FHWA Environmental Impact and Related Procedures; Section 4\(f\)](#)  
258 [Technical Advisory T6640.8A, Guidance for Preparing and Processing](#)

259 [Section 4\(f\) Policy Paper, March 1, 2005](#)

260 [Section 4\(f\) Checklist \(FHWA Western Resource Center\)](#)  
261

262 [FHWA Interim Guidance, August 22, 1994. Applying Section 4\(f\) on Transportation](#)  
263 [Enhancement Projects and National Recreation Trail Projects](#)

264 [FHWA Guidance on Section 4\(f\) \*De Minimis\*](#)

265 Section 4(f) Net Benefit Programmatic.

266 [https://](https://www.environment.fhwa.dot.gov/4f/4fnetbenefits.asp)  
[www.environment.fhwa.dot.gov/4f/4fnetbenefits.asp](https://www.environment.fhwa.dot.gov/4f/4fnetbenefits.asp)

267 4(f) Historic Bridge Programmatic.

268 <https://www.environment.fhwa.dot.gov/legislation/section4f.aspx>

269 4(f) Interstate Exemption Guidance.

270 <https://www.fhwa.dot.gov/hep/guidance/interstate4f.cfm>

271 4(f) Interstate Questions and Answers:

272 [https://www.environment.fhwa.dot.gov/legislation/authorizations/fastact/](https://www.environment.fhwa.dot.gov/legislation/authorizations/fastact/qa_parks_1301.aspx)  
[qa\\_parks\\_1301.aspx](https://www.environment.fhwa.dot.gov/legislation/authorizations/fastact/qa_parks_1301.aspx)

273

[AASHTO Practitioner's Handbook Complying with Section 4\(f\) of the](#)  
274 [USDOT Act](#)

275 [Section 4\(f\) \*de minimis\* Template for Section 106 Resources](#)

276 [Section 4\(f\) Temporary Occupancy Documentation](#)

- 1 **APPENDICES**
- 2 **(This list will be customized to the EIS document, including a letter**
- 3 **for each appendix)**
- 4 **Right-of-Way / Summary of Relocation Benefits (if applicable)**
- 5 **Civil Rights Act: Title VI Policy Statement**
- 6 **National Historic Preservation Act: Section 106 Documentation**
- 7 **FHWA National and ODOT Statewide Efforts Related to Climate**
- 8 **Change**
- 9 **Air Quality Conformity Supporting Documentation**
- 10 **ESA Documentation**
- 11 **SAFETEA-LU Section 6002**
- 12 **ODOT Noise Manual Appendix I Worksheets**
- 13 **List of Acronyms**
- 14 **Glossary of Technical Terms**
- 15 **List of Technical Reports**
- 16

1 **Appendix [X]. Right-of-Way / Summary of Relocation Benefits**  
2 **(if applicable)**

3 If the proposed project involves any relocations, then include the following Relocation  
4 Assistance Program Brochures:

5 1. "Moving Because of the Highway or Public Projects?"  
6 [https://www.oregon.gov/ODOT/HWY/ROW/docs/PDF/  
7 Publications/734-3772\\_brochure.pdf](https://www.oregon.gov/ODOT/HWY/ROW/docs/PDF/Publications/734-3772_brochure.pdf)

8 2. "Acquiring Land for Highways & Public Projects"  
9 [https://www.oregon.gov/ODOT/HWY/ROW/docs/PDF/  
10 Publications/734-3773\\_brochure.pdf](https://www.oregon.gov/ODOT/HWY/ROW/docs/PDF/Publications/734-3773_brochure.pdf)

11 These brochures are also available in Spanish. Brochures in Spanish should also be  
12 included in the appendix when there are Spanish-speaking individuals within the project  
13 area.

14 1. "Moving Because of the Highway or Public Projects?"  
15 [https://www.oregon.gov/ODOT/HWY/ROW/docs/PDF/  
16 Publications/734-3772S.pdf](https://www.oregon.gov/ODOT/HWY/ROW/docs/PDF/Publications/734-3772S.pdf)

17 2. "Acquiring Land for Highways & Public Projects"  
18 [https://www.oregon.gov/ODOT/HWY/ROW/docs/PDF/Publications/734-  
19 3773s\\_brochure.pdf](https://www.oregon.gov/ODOT/HWY/ROW/docs/PDF/Publications/734-3773s_brochure.pdf)

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Purple = sample text Underlined text: Web links

# 1 Appendix [X]. Civil Rights Act: Title VI Policy Statement



**Oregon**  
Theodore R. Kulongoski, Governor

Department of Transportation  
Office of the Director  
Rm 135  
355 Capitol St. NE  
Salem, Oregon 97301-3871

FILE CODE:

## TITLE VI AND RELATED STATUTES NONDISCRIMINATION STATEMENT

November 12, 2008

It is the Oregon State Department of Transportation's (ODOT) policy to assure that no person shall, on the grounds of race, color, national origin, disability, age or sex, as provided by Title VI of the Civil Rights Act of 1964 and related statutes, be excluded from participation in, be denied the benefits of, or be otherwise discriminated against under any of the programs or activities it administers.

  
Matthew L. Garrett, Director

Form 731-0323 (11-06)



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Purple = sample text Underlined text: Web links

1 **Appendix [X] – National Historic Preservation Act: Section 106**  
2 **Documentation**

3 This documentation could include programmatic agreement memos, Determinations of  
4 Eligibility, Findings of Effect, and Memorandum of Agreement.

1 **Appendix [X] – FHWA National and ODOT Statewide Efforts Related**  
2 **to Climate Change**

3 Federal Highway Administration and state DOTs are involved in a wide variety of efforts  
4 related to climate change. This appendix summaries some of the activities that FHWA  
5 and ODOT are pursuing related to climate change.

6 **USDOT and Federal Highway Administration Climate Change Efforts**

7 Insert the information provided at this link:

8 <https://www.fhwa.dot.gov/federalaid/120924.cfm>

9 **Oregon Department of Transportation Climate Change Efforts**

10 Insert the document provided at the following link:

11 [ODOT's Efforts on Climate Change](#)

12

13

*Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links*

- 1 **Appendix [X] – Air Quality Conformity Supporting Documentation**
- 2
- 3 Include a copy of the page of the RTP that includes the project subject to the NEPA
- 4 document.



Text color key: Black = generally required text and headings Blue = instructions/guidance to be deleted  
Purple = sample text Underlined text: Web links

1 **Appendix [X] – ESA Documentation**

- 2 Documentation could include No Effect Memos; May Affect, Not Likely to Adversely  
3 Affect concurrence letter; or the cover letter transmitting a Biological Opinion (need not  
4 include entire BO here).

1 **Appendix [X]. SAFETEA-LU Section 6002**

2 Pursuant to 23 CFR 771.125(b) the following documentation is required for legal  
3 sufficiency review.

4 **1. Is the SDOT and/or Local Government a joint lead agency?**

5

6 **Legal Requirement:** Sec. §139(c): Along with FHWA as the lead federal agency,  
7 any state or local government project sponsor that is the direct recipient of FHWA  
8 funds shall serve as joint lead agency. Joint lead agencies may include other federal  
9 agencies.

10

11 *Multnomah County is a joint lead agency along with the Oregon Department of*  
12 *Transportation (ODOT) and the Federal Highway Administration (FHWA).*

13

14 **2. Has FHWA received a project initiation letter from the SDOT prior to the**  
15 **start of NEPA?**

16

17 **Legal Requirement:** Sec. §139(e) requires the project sponsors to notify FHWA  
18 regarding the type of work, termini, length, general location of the project, and any  
19 federal approvals anticipated to be necessary. The purpose of the letter is to inform  
20 FHWA that the environmental review process should be initiated.

21

22 **Documentation Required:** A copy of the initiation letter or notice that includes the  
23 type of project, termini, length, general location of the project, and anticipated  
24 approvals that will be required.

25

26 *An initiation letter was sent by Jason Tell, Manager, ODOT Region 1 to David Cox*  
27 *with FHWA on August 21, 2006.*

28

29 **3. Have participating agencies been identified?**

30

31 **Legal Requirement:** Sec. §139(d): The lead agency shall identify other federal and  
32 non-federal agencies “that may have an interest in the project and shall invite such  
33 agencies to become participating agencies.” There is little room for discretion here  
34 unless, as guidance suggests, the lead agency believes the entity has no interest.  
35 Any legal commenting or permitting agency is “interested” per se.

36

37 **Documentation Required:** Invitation letters or notices and replies.

38

39 *Invitation letters were mailed out to the appropriate agencies on October 6, 2006.*

40

41 **4. Have Cooperating Agencies been identified as appropriate?**

42

43 **Legal Requirement:** Sec. §139(d)(5): Participating agencies can also be  
44 cooperating agencies.

45

46 **Documentation Required:** List of cooperating agencies, invitation letters, and  
47 replies.

48

49 *Invitation letters were mailed out to the appropriate agencies on October 6, 2006.*

50

48 **5. Has the lead agency provided an opportunity for involvement by**  
49 **Participating Agencies in the development of the project's Purpose and**  
50 **Need?**

51  
52 **Legal Requirement:** Sec. §139(f): Lead Agency shall provide an opportunity for  
53 involvement by the participating agencies in defining the project's Purpose and Need.  
54 **Documentation Required:** Invitation letters or notices, dates of events, and  
55 summary of involvement.

56  
57 *Invitation letters were mailed on November 17, 2006 announcing a Coordination*  
58 *Scoping meeting on December 9, 2006. The letter also included a draft purpose and*  
59 *need for the review of all participating agencies. Comments were collected during*  
60 *the scoping meeting and written comments were received from DSL, ODFW, SHPO,*  
61 *and NMFS.*

62  
63 **6. Has the lead agency provided and opportunity for involvement by the**  
64 **public in the development of the project's Purpose and Need?**

65  
66 **Legal Requirement:** Sec. §139(f): Lead agency shall provide an opportunity for  
67 involvement by the public in defining the project's Purpose and Need.  
68 **Documentation Required:** Invitation letters or notices, dates of events, and  
69 summary of involvement by the public.

70  
71 *A newsletter was mailed to residents and businesses in the project area through*  
72 *general mail routes. Additionally, those who had attended the previous meetings or*  
73 *joined the mailing list on the project website received a newsletter. A public open*  
74 *house was held on October 25, 2006 to receive written comments from the public.*  
75 *An on-line survey also collected public comments on the draft purpose and need*  
76 *statement. This survey was available for public response between September 6 and*  
77 *October 26, 2006 and received over 800 responses.*

78  
79 **7. Has the lead agency provided an opportunity for involvement by the**  
80 **participating agencies in the development of the projects range of**  
81 **alternatives?**

82  
83 **Legal Requirement:** Sec. §139(f)(4): Lead agency shall provide and opportunity  
84 for involvement by participating agencies in defining the project's range of  
85 alternatives  
86 **Documentation Required:** Invitation letters or notices, dates of events, and  
87 summary of involvement by the participating agencies.

88  
89 *A majority of the participating agencies are on the Policy Advisory Group (PAG) or*  
90 *Project Management Team (PMT), and the other agencies are on CETAS. The PAG*  
91 *and PMT have been involved at every key decision-making step and all PAG*  
92 *meeting materials can be found on the project website. The project team met with*  
93 *CETAS at key points in the project.*

94  
95 **8. Has the lead agency provided an opportunity for involvement by the public**  
96 **in the development of the projects range of alternatives?**  
97

98 **Legal Requirement:** Sec. §139(f): Lead agency shall provide and opportunity for  
99 involvement by participating agencies in defining the project's range of alternatives  
100 **Documentation Required:** Invitation letters or notices, dates of events, and  
101 summary of involvement by the participating agencies.

102  
103 *A public workshop was held on April 4, 2007 to begin collecting the public's thoughts*  
104 *on initial concepts. An on-line survey was also conducted at this time(March 8*  
105 *through April 12) covering this same topic. After results of the open house and*  
106 *survey were shared with the Community Task Force, Policy Advisory Group, and*  
107 *technical teams another open house was held on July 25, 2007. The 100 plus*  
108 *alternatives were explained through an on-line tool, called Build-A-Bridge. A survey*  
109 *collected the opinions of the public, based on what they learned from the tool. The*  
110 *survey had over 3,000 responses and the results were shared with the Community*  
111 *Task Force and Policy Advisory Group.*

112  
113 **9. Has the lead agency determined the methodologies to be used and the**  
114 **level of detail required to analyze each alternative? Has this determination**  
115 **been made in collaboration with the participating agencies?**

116  
117 **Legal Requirement:** Sec. §139(f)(4)(C):  
118 **Documentation Required:** List of methodologies and evidence of collaboration as  
119 applicable.

120  
121 *Methodologies were written for each DEIS section and reviewed by the lead*  
122 *agencies. The participating agencies had the opportunity to review the*  
123 *methodologies before completion of the DEIS.*

124  
125 **10. Has a coordination plan been developed by the lead agencies with**  
126 **consultation of the participating agencies?**

127  
128 **Legal Requirement:** Sec. §139(g)(1): The coordination plan is intended to  
129 coordinate public and agency participation in and comment on the environmental  
130 review process.

131 **Documentation Required:** The coordination plan.

132  
133 *The coordination plan was last revised in September 2007.*

134  
135 **11. If a schedule has been established as part of the coordination plan, were**  
136 **the four statutory factors considered?**

137  
138 **Legal Requirement:** Sec. §139(g)(1)(B): If a lead agency develops a project  
139 schedule or modifies it, the lead agency shall consult with the participating agencies,  
140 the state DOT, and project sponsor if not the state DOT, and consider the four  
141 statutory factors.

142 **Documentation Required:** The schedule, any correspondence showing  
143 consultation, and how the four statutory factors were addressed.

144  
145 *A schedule is part of the coordination plan and was reviewed by all agencies prior to*  
146 *adoption. The factors listed for consideration in 139(g)(1)(B) are:*

147

- 148
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- 159
- *Responsibilities of participating agencies – These responsibilities are outlined in the coordination plan.*
  - *Resources available to the cooperating agencies – Cooperating and participating agencies were included existing teams to reduce redundant meeting participation.*
  - *Overall size and complexity of the project and overall schedule for and cost of the project - Due to the complexity of the project, the schedule was extended initially to provide for public outreach.*
  - *Sensitivity of natural and historic resources that could be affected by the project – Since the project includes parks on both sides of the river, these resources were identified and considered early on in the NEPA process.*

160 **12. Has Lead Agency established the comment deadlines to be used during**

161 **Environmental Review process?**

162

163 **Legal Requirement:** §139(g)(2)

164 **Documentation Required:** The letters or notices to agencies and the public of

165 applicable deadlines.

166

167 *Once the draft EIS is completed, it will be sent to the public and agencies via postal*

168 *mailings. A postcard was mailed out to the mailing list members that do not have an*

169 *email address on file (approximately 350 people) on Monday, October 13, 2008*

170 *requesting a response on the mode of the DEIS requested (hard copy or CD). An*

171 *email announcement with the same information was sent sent out to the remaining*

172 *mailing list members on the same day.*

173

174 *The comment period will be 45 days and will be announced in the document and on*

175 *the web site. The comment period is expected to start on November 7, 2008.*

176

177 **13. Has Lead Agency mad Environmental and Socioeconomic information**

178 **available to Participating agencies early during the review process?**

179

180 **Legal Requirement:** §139(h) requires lead agencies to make available to

181 participating agencies as early as practicable information about environmental and

182 socioeconomic resources in the project area and general locations of the alternatives.

183 Based on this information, participating agencies shall identify issues of concern.

184 **Documentation Required:** Notice or letter of the information provided to

185 participating agencies and their responses.

186

187 *Participating agencies will receive environmental and socioeconomic information in*

188 *the form of the DEIS when it is distributed.*

189

190 **14. Optional – Has a higher level of detail for the preferred alternative been**

191 **developed?**

192

193 **Legal Requirement:** §139(f)(4)(D) allows development of the preferred alternative,

194 once identified, to a higher level of detail for the purposes of facilitating development

195 of mitigation measures and/or concurrent compliance with other laws.

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Purple = sample text Underlined text: Web links

196 **Documentation Required:** FHWA's determination that development of a higher  
197 level of detail will not prevent the lead agency from making an impartial decision  
198 whether to accept another alternative under consideration.

199  
200 *All alternatives have been developed to the same level of detail.*

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Purple = sample text Underlined text: Web links*

- 1 **Appendix [X]. ODOT Noise Manual Appendix I Worksheets**
- 2 Include the ODOT Noise Manual Appendix I worksheets here.
- 3

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## 1 Appendix [X] – List of Acronyms

American Association of State Highway and Transportation Officials	AASHTO
Advisory Council on Historic Preservation	ACHP
Americans with Disabilities Act	ADA
Asbestos Hazard Emergency Response Act	AHERA
Area of Potential Effects	APE
Area of Potential Impact	API
Archaeological Resources Protection Act	ARPA
Biological Assessment	BA
Bureau of Land Management	BLM
Best Management Practices	BMPs
British Thermal Units	Btu
Clean Air Act	CAA
Crash Analysis and Reporting System	CARS
Council on Environmental Quality	CEQ
Comprehensive Environmental Response, Compensation and Liability Act of 1980	CERCLA
Comprehensive Environmental Response, Compensation, and Liability Information System	CERCLIS
Community Environmental Response Facilitation Act	CERFA
Collaborative Environmental and Transportation Agreement for Streamlining	CETAS
Contributing Impervious Area	CIA
Capital Improvement Programs	CIP
Carbon Monoxide	CO
U.S. Army Corps of Engineers	Corps
Clean Water Act	CWA
Coastal Zone Management Act	CZMA
Design Acceptance Package	DAP
Decibels Adjusted	dBA
Department of Environmental Quality	DEQ
Department of Land and Conservation Development	DLCD
Department of Transportation Act	DOT Act
Department of State Lands	DSL
Exclusive Farm Use	EFU
Environmental Justice	EJ
Executive Order	EO
Endangered Species Act	ESA
Environmental Cleanup Site Information System	ESCI
Environmental Protection Agency	EPA
Federal Emergency Management Agency	FEMA
Federal Highway Administration	FHWA
Federal Insecticide, Fungicide, and Rodenticide Act	FIFRA
Farmland Protection Policy Act	FPPA
Federal Transit Administration	FTA



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Highway Advisory Radio System	HARS
Habitat Conservation Plans	HCP
High Occupancy Vehicle	HOV
High Capacity Transit	HCT
Land and Water Conservation Fund Act	LWCF
Least Environmentally Damaging Practicable Alternative	LEDPA
Location Hydraulics Study	LHS
Level of Service	LOS
Memorandum of Agreement	MOA
Metropolitan Planning Organization	MPO
Mile Point	MP
Mobile Source Air Toxics	MSAT
Multiple Species Conservation Plans	MSCP
Oregon Major Transportation Projects Agreement	MTPA
National Ambient Air Quality Standards	NAAQS
Noise Abatement Criteria	NAC
National Cooperative Highway Research Program	NCHRP
National Environmental Policy Act	NEPA
No Further Action	NFA
National Flood Insurance Program	NFIP
National Historic Preservation Act	NHPA
National Low Emission Vehicle Standards	NLEV
National Marine Fisheries Service	NMFS
Nitrogen Dioxide	NO2
National Pollutant Discharge Elimination System	NPDES
National Priority List	NPL
National Park Service	NPS
Natural Resources Conservation Service	NRCS
Ozone	O3
Oregon Coastal Management Program	OCMP
Oregon Department of Agriculture	ODA
Oregon Department of Fish and Wildlife	ODFW
The Oregon Department of Transportation	ODOT
Oregon Economic and Community Development Department	OECD
Office of Management and Budget	OMB
United States Environmental Protection Agency	US EPA
Oregon Department of Agriculture	ODA
Oregon Natural Heritage Information Center	ORNHIC
Oregon Administrative Rules	OARs
Oregon Revised Statutes	ORS
Programmatic Agreement	PA
Lead	Pb
Polychlorinated biphenyl	PCB

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Project Leader	PL
Particulate Matter	PM
Resource Conservation and Recovery Act of 1976	RCRA
Reformulated Gasoline	RFG
Record of Decision	ROD
Regional Transportation Improvement Program (delete this and do a find/replace for TIP)	RTIP
Regional Transportation Plan	RTP
Right-of-Way	ROW
Special Areas of Concern	SAC
Safe, Accountable, Flexible, Efficient Transportation Equity Act	SAFETEA-LU
State Historic Preservation Office	SHPO
State Implementation Plan	SIP
Sulfur Dioxide	SO2
Safety Priority Indexing System	SPIS
State Transportation Improvement Program (delete this and replace with statewide)	STIP
Statewide Transportation Improvement Program	STIP
Threatened and Endangered	T&E
Traditional Cultural Properties	TCPs
Transportation Demand Management	TDM
Tribal Historic Preservation Office	THPO
Transportation Improvement Program	TIP
Total Maximum Daily Loads	TMDLs
Transportation Management Agencies	TMA
Transportation Planning and Analysis Unit	TPAU
Toxic Substances Control Act	TSCA
Transportation System Management	TSM
Transportation System Plan	TSP
Underground Injection Control Systems	UIC
United States Department of Agriculture	USDA
United States Forest Service	USFS
United States Fish and Wildlife Service	USFWS
Volume to Capacity	v/c
Vehicle Hours Traveled (double check if should be caps or not)	VHT
Vehicle Miles Traveled	VMT

1 **Appendix [X]. Glossary of Technical Terms (This should be**  
 2 **customized fit)**

303(d), water quality limited waters	This is a Clean Water Act classification for waters where application of best management practices or technology-based controls are not sufficient to achieve designated water quality standards. Under Section 303(d) of the 1972 Clean Water Act, states, territories, and authorized tribes are required to develop a list of water quality limited segments. Waters on the 303(d) list do not meet water quality standards, even after the minimum required levels of pollution control technology have been installed at the point sources of pollution.
Access management	Access management seeks to protect the function of a transportation facility by restricting access to it from driveways and cross-streets.
Affordable housing	Affordable housing generally refers to housing that persons in the “low to moderate” income category can afford, meaning that they earn 80 percent or less of the area’s median family income.
Alluvium	Alluvium is soil or sediments deposited by a river or other running water.
Anadromous	Anadromous refers to fish that hatch in fresh water, spend their adult lives in salt water, and return to fresh water to spawn.
Archaeological site	This term refers to those sites that are eligible for or are listed on the National Register (historic properties), as well as those that do not qualify for the National Register. The commonly used term, cultural resource, does not have a consistent or legal definition. The Oregon State Historic Preservation Office (SHPO) generally defines an archaeological site as: A) Ten or more artifacts likely to have been generated by patterned cultural activity within a surface area reasonable to that activity; or B) The presence of any archaeological feature, with or without associated artifacts. Examples of features include peeled trees, cache pits, hearths, housepits, rock shelters, cairns, historic mining ditches, petroglyphs, or dendroglyphs.
Attainment and Maintenance Areas	Attainment and Maintenance Areas refer to a region’s ability to meet National Ambient Air Quality Standards and to maintain them over time.
Background	Background in the context of visual impact analysis is the area farthest from the viewer where distance effects are primarily explained by aerial perspective (i.e., emphasis is primarily on outlines or edges).
Best Management Practice(s) (BMPs)	BMPs, typically state-of-the-art technology, are designed to prevent or reduce impacts. They represent physical, institutional, or strategic approaches to environmental problems.
British thermal unit (Btu)	To compare energy use from different sources such as diesel, gasoline, and electricity, energy is often expressed in British thermal units (Btu) which assigns a common value to the energy used.
Census block groups	Census block groups are a collection of census blocks within a census tract, sharing the same first digit of their four-digit identification numbers.
Census tracts	Census tracts are small statistical subdivisions of counties, generally having stable boundaries and, when first established, were designed to have relatively homogeneous demographic characteristics.
Colluvium	Colluvium is sediment that has been deposited or built up at the bottom of a low-grade slope or against a barrier on that slope, transported by gravity.
Comprehensive Environmental Response (CERCLIS)	The CERCLIS list is a database of known and potentially hazardous waste facilities reported to the Environmental Protection Agency by state and local agencies and the general public in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). It is one of the databases associated with identifying potential hazardous materials sites or risks.
Cumulative impacts	Cumulative impacts are the result of incremental impacts of an action, when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or nonfederal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

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dBA	The term dBA stands for A-weighted decibels. For comparative purposes, human breathing is approximately 10 dBA, a calm room ranges 40-50 dBA, normal talking ranges 40-60 dBA, typical television setting is about 60 dBA at 10 feet, and a passing car is 60-80 dBA at 50 feet.
Detention	A water detention pond is designed to temporarily detain stormwater runoff from impervious surfaces and to release the runoff at a desired rate.
Direct impacts	Direct impacts are caused by an action and occur at the same time and place as the action.
Endangered Species Act (ESA)	The ESA provides for the protection of animal and plant species currently in danger of extinction (endangered) and those species that may become so in the near future (threatened).
Energy use	Energy use is calculated using the number of average daily vehicles, the average distance those vehicles travel, and fuel consumption rates.
Environmental Cleanup Site Information System (ECSI) & Confirmed Release List	The ECSI system includes facilities entered into the Oregon Department of Environmental Quality database pursuant to the site discovery requirements of Oregon Revised Statutes 466.560. The list includes facilities where there has been a confirmed release of hazardous substances, facilities where investigation or cleanup has been initiated, and facilities suspected of a release of hazardous substances. It is one of the databases associated with identifying potential hazardous materials sites or risks.
Environmental Impact Statement (EIS, DEIS, SDEIS, FEIS, SFEIS)	An EIS is a statement of the potential environmental impacts of a proposed action and alternatives to it. A Draft EIS (DEIS) is released to the public and other agencies for review and comment. A Final EIS (FEIS) is issued after consideration of public comments. Supplemental EISs (SEIS, SDEIS) are EISs issued after a DEIS has been published and address new aspects of a project, new regulations, or new impacts not previously addressed.
Expressway	Expressways are generally high-speed, limited-access facilities whose function is to move inter- and intra-urban traffic. Expressways often serve as major freight corridors and may be located on a designated freight route.
Folded diamond interchange	An interchange is a system of interconnecting roadways in conjunction with one or more grade separations that provides for the movement of traffic between two or more roadways or highways on different levels (grade-separated). Diamond interchanges have numerous possible configurations, a common one has on-ramps and off-ramps angling away from the main highway, forming a diamond shape. A folded diamond has one or more of the ramps looped inside another ramp, so that one side or quadrant has both the on- and off-ramp. A folded diamond can be used to limit the amount of right-of-way needed.
Foreground	Foreground in the context of visual impact analysis is the area closest to the viewer, which can be designated with clarity and simplicity because the observer is a direct participant.
Habitat classes	Metro ranks upland habitat and riparian corridors as low, medium, or high based on their value for protecting fish and wildlife (Class A, B, and C for upland habitats and Class 1, 2, and 3 for riparian habitat). This classification scheme provided the basis for mapping wildlife habitat within the Sunrise Project area.
High capacity transit (HCT)	This term refers to fixed rail light rapid transit or high-speed rapid bus.
Historic resource	A historic property (or historic resource) is defined in the national Historic Preservation Act (NHPA) [16 U.S.C. 470w(5)] as any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register, including artifacts, records, and material remains related to such a property or resource."
Historical significance	The significance of a property refers to its ability to meet one of the four National Register criteria. Integrity is the ability of the property to convey this significance through physical features and context. Historic properties are significant because they do meet these criteria and have integrity.
Impervious surface	Impervious surfaces are mainly constructed surfaces such as rooftops, sidewalks, roads, and parking lots, covered by impenetrable materials such as asphalt or concrete. These materials seal surfaces, repel water, and prevent precipitation from infiltrating soils. Soils compacted by urban development can also be highly impervious.
Indirect impacts	Such impacts are impacts on the environment that are caused by the action and occur later in time or farther removed in distance but are still reasonably foreseeable.

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In-stream flow	In-stream flow is water in its natural setting (as opposed to waters diverted for “off-stream” uses such as industry or agriculture).
Intactness	Intactness in the context of visual impact analysis looks at the integrity of visual order and how much the view is free from encroaching features.
Lead agency	The agency or agencies that have the primary responsibility for preparing the environmental impact statement.
Level of service (LOS)	LOS is a qualitative measure to describe how a road is operating in terms of performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. The levels range from A (least congested) to F (most congested).
Limited access	Limited access generally means that access to, from, and across a highway is limited to intersections or interchanges.
Liquefaction	Liquefaction describes the behavior of loose saturated sands, which go from a solid state to the consistency of a heavy liquid, or reach a liquefied state.
Low-income	Low-income persons are defined as residing in households with an income between the federal poverty guidelines and an amount two times greater than those guidelines.
Microtopography	As it relates to wetlands, microtopography refers to small-scale changes in elevation, typically of a few feet or less.
Middleground	Middleground in the context of visual impact analysis is where parts of the landscape may be seen to join together (e.g., where trees become a forest) or revealed as either comfortable or conflicting with the landscape.
Minorities	Minorities are defined as Black (or African American, having origins in any of the black racial groups of Africa); Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or American Indian and Alaskan Native.
Mitigation	Mitigation measures are designed to counteract environmental impacts or to make such impacts less severe.
Mobile Source Air Toxics	Mobile Source Air Toxics refers to several hazardous air pollutants that cause or may cause cancer or other serious health effects.
National Ambient Air Quality Standards (NAAQS)	These standards are used to measure air quality, expressed as concentrations of pollutants averaged over fixed time periods.
National Environmental Policy Act (NEPA)	This federal legislation establishes environmental policy for the nation. It provides an interdisciplinary framework for federal agencies to prevent environmental damage and contains “action-forcing” procedures to ensure that federal agency decision-makers take environmental factors into account.
National Historic Preservation Act (NHPA)	In 1966, NHPA established a National Register of Historic Places and the Advisory Council on Historic Preservation.
National Priority List (NPL)	The NPL (Superfund) database is a subset of CERCLIS properties and identifies over 1,200 facilities for priority cleanup under the Superfund Program. It is one of the databases associated with identifying potential hazardous materials sites or risks.
National Register of Historic Places	The official list of sites, districts, buildings, structures, and objects significant in the nation’s history or whose artistic or architectural value is unique.
No build alternative	This designation represents the most likely condition expected to exist in the future if current policies, plans, and programs were to continue unchanged.
No Further Action (NFA)	NFA is a term used by the Oregon Department of Environmental Quality (ODEQ) for a cleanup site where sufficient cleanup has been done to reduce the hazard of potential exposure of contamination in soil and/or groundwater to human health and environmental receptors to acceptable standards. NFAs are so worded that the ODEQ has the ability to reclassify a site if changes occur such as a change in land use, buildings are removed that covered the contamination, and/or excavations expose buried contamination.

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Noise impacts	Noise impacts occur when traffic noise levels exceed the Oregon Department of Transportation (ODOT) impact criteria or if levels increase by 10 dBA or more over existing levels.
Palustrine emergent (PEM)	Palustrine emergent wetlands are a subset of palustrine wetlands and are dominated by erect, rooted, herbaceous hydrophytic (i.e., water tolerant) vegetation, excluding mosses and lichens (Cowardin et al. 1979). This vegetation is present for most of the growing season in most years. These wetlands are often dominated by perennial plants.
Palustrine forested (PFO)	Palustrine forested wetlands are a subset of palustrine wetlands and include areas dominated by woody vegetation that is 6 m (20 feet) tall or taller (Cowardin et al. 1979).
Palustrine scrub-shrub (PSS)	Palustrine scrub-shrub wetlands are a subset of palustrine wetlands and include areas dominated by woody vegetation less than 6 m (20 feet) tall (Cowardin et al. 1979).
Palustrine wetlands	Palustrine wetlands consist of vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the United States (Cowardin et al. 1979). The Palustrine wetland type is distinguished from other wetland types where areas of open water are typically greater than the area occupied by vegetation (i.e. riverine [river systems], lacustrine [lakes]).
Record of Decision (ROD)	A public document that reflects the agency's final decision, rationale behind that decision, and commitments to mitigation.
Remedial Investigation (RI)	Remedial Investigation is a term commonly associated with an EPA or ODEQ required site investigation to characterize contamination at a site. The original use of RI came through the EPA Superfund Program, where one was required to do a Remedial Investigation/Feasibility Study (RI/FS) for contaminated property. The ODEQ also uses the term for state regulated cleanup sites that are managed under ODEQ's Voluntary Cleanup Program.
Resource Conservation, and Recovery Act (RCRA)	The RCRA list identifies facilities that have obtained identification numbers from the Environmental Protection Agency (EPA), which designate these businesses as generators, transporters, or storers/disposers of hazardous waste. It is one of the databases associated with identifying potential hazardous materials sites or risks.
Right-of-way	This term applies to land acquired by reservation, dedication, prescription, or condemnation and intended to be occupied by a road, crosswalk, railroad, electric transmission line, oil or gas pipeline, water line, sanitary or storm sewer, or other similar use.
Riparian	Riparian areas have distinctive soil and vegetation between a stream or other body of water and the adjacent upland, including wetlands.
Salmonid	Salmon and trout species that are born in freshwater streams, live in the ocean during maturity, and return to the streams of their birth to spawn and die.
Screenline	Screenlines represent imaginary lines drawn across a series of parallel roadways that are used to evaluate traffic demand changes.
Section 106	Section 106 of the NHPA requires federal agencies to "take into account" the effects of their undertakings on historic properties and to provide the Advisory Council on Historic Preservation a "reasonable" opportunity to comment.
Single-point diamond interchange (SPUI)	A SPUI is a form of a diamond interchange with a single signalized intersection through which all left turns utilizing the interchange must travel. All right turns into and out of ramp approaches are generally free-flowing.
Species of concern	Species of concern are those that might be in need of conservation action, ranging from a need for periodic monitoring of populations and threats to the species and their habitat to the necessity for listing as threatened or endangered.
Subsidized Rental Housing (Section 8)	Section 8, or the Housing Choice Voucher Program, is a federal housing program that provides housing assistance to low-income renters and home owners.
Threatened/endangered species	Endangered – an animal or plant species in danger of extinction throughout all or a significant portion of its range. Threatened – an animal or plant species likely to become endangered within the foreseeable future.
Unity	Unity in the context of visual impact analysis looks at the degree to which the visual resources of the landscape form a coherent, harmonious visual pattern and the compositional harmony or compatibility between landscape elements.

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Upland habitat	Non-riparian areas that provide wildlife with food, shelter, and corridors for moving from one habitat area to another.
Underground storage tank (UST) and leaking underground storage tank (LUST)	An underground storage tank (UST) system is a tank and any underground piping connected to the tank that has at least ten percent of its combined volume underground. Federal UST regulations apply only to underground tanks and piping storing either petroleum or certain hazardous substances. An LUST is a leaking underground storage tank.
Very-Low-income	Very-low-income persons who are defined as people residing in households with income below the federal poverty guidelines. Poverty guidelines are determined for households by household size.
Vividness	Vividness in the context of visual impact analysis is the memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern and looks at: landform, vegetation, water, and man-made development.
Volume/capacity ratio (v/c)	The v/c ratio illustrates how many vehicles are using the roadway compared to the room available for them.
Weaving sections	Weaving sections are highway segments where the pattern of traffic entering and leaving at contiguous points of access results in vehicle paths crossing each other.
Wetland	Wetlands for the purposes of the Clean Water Act, must meet a three-parameter approach that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, and the wetland must be connected to or have a significant nexus with one of the other waters of the US, for an area to be designated as a jurisdictional wetland under the Clean Water Act.
Wildlife corridor	A wildlife corridor provides a link for wildlife to travel between habitats.

## 1 **Appendix [X]. List of Technical Reports**

2 This [Draft/Final] Environmental Impact Statement summarizes the technical  
3 Documentation prepared for the [ ] project. The complete technical  
4 documents are lengthier and more detailed than their representative sections in this  
5 DEIS.

6 These reports are available on request from:

7 Region [x]

8 Oregon Department of Transportation

9 ODOT Environmental Project Manager [name]

10 [Address]

11 (xxx) xxx-xxxx

12 Air Quality Technical Report

13 Archaeological Resources Technical Report

14 Biological Resources Technical Report

15 Cultural Resources Technical Report

16 Energy Technical Report

17 Geology Technical Report

18 Hazardous Substance Technical Report

19 Hydrology Technical Report

20 Land Use Technical Report

21 Noise Study Technical Report

22 Parks and Recreational Resources Technical Report

23 Public and Agency Involvement Technical Report

24 Right-of-Way Technical Report

25 Socioeconomic Technical Report

26 Traffic, Transportation, and Safety Technical Report

27 Visual Resources Technical Report

28 Water Quality Technical Report

29 Wetlands Technical Report





# Highway Division Project Delivery Leadership Team Operational Notice



OPERATIONAL NOTICE NUMBER <b>PD-04</b>	ORIGINAL EFFECTIVE DATE <b>September 1, 2000</b>	REVISED EFFECTIVE DATE <b>June 5, 2018</b>	REVIEW OR RESCIND DATE <b>November 1, 2021</b>	REVIEWING POSITION <b>Project Delivery Leadership Team</b>
OPERATIONAL NOTICE TITLE <b>Environmental Performance Standards</b>			TOPIC / PROGRAM <b>Environmental</b>	

**PURPOSE:**

This Operational Notice (Notice) provides expectations and guidance to the ODOT Project Delivery business line for meeting environmental performance standards (EPS) required by Section 18 of the Oregon Jobs and Transportation Act (JTA) and Oregon Administrative Rule (OAR) 734-024-0005 to 0040.

**BACKGROUND / RATIONALE:**

The JTA, passed by the 2009 Oregon Legislature, supports transportation infrastructure. Section 18 of the JTA required ODOT to adopt an OAR that (a) incorporates EPS into the design and construction of all ODOT highway construction projects, including local agency highway construction projects funded by ODOT, and (b) improves the environmental permitting process for state highway construction projects. The Oregon Transportation Commission adopted these administrative rules in May 2011 (OAR 734-024-0005 to 0040).

The use of EPS is a standard of environmental stewardship and a refinement of environmental regulatory requirements. EPS support efficient project delivery and public safety while providing reasonable and improved protection of the natural environment. The EPS guide both environmental stewardship and ODOT’s responsibility to manage Oregon’s infrastructure investment and public safety.

Outcome-based EPS, such as fluvial design standards, allow for predictability and consistency statewide. ODOT will continue its evaluation and consideration of outcome-based EPS, anticipating further flexibility from regulatory agencies in the form of less prescriptive permit conditions in favor of programmatic permit standards.

**OVERVIEW/DIRECTION:**

This Notice applies to ODOT highway construction projects and local government highway construction projects funded wholly or in part by ODOT. This Notice does not apply to non-STIP related Maintenance actions.



# Highway Division Project Delivery Leadership Team Operational Notice



The EPS are to be considered and incorporated, when triggered, at project milestones in the ODOT Project Delivery System. EPS analysis must be integrated into standard operating procedures for project delivery, including forms and checklists, in order for it to be effective.

EPS are **required** when regulated resources may be impacted above regulatory thresholds. When regulated resources are not impacted, EPS must be **considered** and may be incorporated into the project when practical as enhancements.

## **ACTION REQUIRED/PROCESS:**

### **Definitions**

Enhancement	With respect to the environment, an opportunity to be considered, not a requirement. Enhancement includes activities that go beyond the agreed-upon regulatory requirements whether in planning, design, construction, maintenance, or operations. For purposes of this Notice, enhancements are natural or cultural resource improvements added to or resulting from a highway construction project.
Environmental performance standards	Acceptable levels of environmental performance specified for project activities.
Environmental stewardship	The responsibility for environmental quality while developing and managing the transportation infrastructure. It means actively working to protect and enhance our natural and cultural resources for current and future generations. It is demonstrated through continuous improvement of environmental performance while conducting the scope and purpose of ODOT’s mission.

### **Environmental Performance Standards**

EPS define acceptable levels of avoidance, minimization, and compensation or enhancement.

EPS categories include, but are not limited to:

1. Aquatic Biological Resources
2. Terrestrial Biological Resources
3. Storm water Management
4. Erosion and Sediment Control
5. Pollution Control
6. Cultural Resources
7. Enhancement

. Additional EPS may be developed for other regulated resources.



# Highway Division Project Delivery Leadership Team Operational Notice



## **Direction/Guidelines**

EPS must be considered, implemented, and documented at appropriate project development milestones and construction.

The reference section below provides links to documents with direction and guidelines for considering and incorporating EPS into highway project development and construction activities. The following enhancement section and reference documents provide the enhancement policy and associated EPS.

## **Enhancement**

EPS must be considered and may be incorporated into highway construction projects when practical as enhancements.

Enhancement activities are voluntary actions within the scope of the project that benefit resources and go beyond required mitigation. Characteristics of good enhancement opportunities include actions that are:

- Opportunistic and typically low-cost when compared to project budget and provide a justifiable resource benefit relative to cost;
- An outgrowth or extension of work already planned, constructed, or maintained, or is similar in scope and location to such work.

When deciding whether or not to take advantage of an enhancement opportunity the following factors must be evaluated:

- Right-of-way needs
- Future maintenance requirements
- Project schedules
- Life cycle costs
- ODOT business line interests
- Project budgets
- Increased community and political goodwill

## **ROLES & RESPONSIBILITIES:**

Effective collaboration between stakeholders is key to success when situations require the balancing of competing priorities. Each individual involved is responsible for resolving disagreements around competing priorities directly, at the technical resource level. However, in cases where this is not possible, each individual should consult his or her manager for assistance in achieving an acceptable resolution.



# Highway Division Project Delivery Leadership Team Operational Notice



<b>Positions</b>	<b>Responsibilities</b>
Area Managers Region Tech Center Managers	Provide oversight and guidance as needed to ensure EPS are considered and incorporated into highway projects.
Region Environmental Managers	<ul style="list-style-type: none"> <li>Facilitate compliance of highway projects with EPS requirements.</li> <li>Implement. Notice through coordination with ODOT Region staff and managers.</li> <li>Document and report, as required.</li> </ul>
Geo-Environmental Section Managers	<ul style="list-style-type: none"> <li>Facilitate collaborative relationships between environment regulatory agency representatives and Region managers and staff to meet JTA Section 18 requirements.</li> <li>Ensure environmental standards in ODOT technical guidance are consistent with the EPS.</li> <li>Compile documentation and reporting results, as required.</li> </ul>
Project Managers	Prior to approval by the Project Manger’s office, coordinate construction changes to plans and specifications that may affect natural resources or environmental permit requirements with environmental managers to assess whether the proposed changes meet the EPS.
Project Leaders and Local Area Liaisons	Ensure project teams consider and incorporate EPS into highway projects during the project development phase and that documentation is included in the project file.

**References:**

Project Delivery Notice: [PD-02 Project Development Decision Structure](#)

Technical Guidance: [Jobs and Transportation Act](#)