

## ***Chapter 4. Navigation***

The basic aids to navigation in any published document are a table of contents and an index. These tools, while useful, can be enhanced through techniques that make it easier for readers to move quickly and efficiently through the document. These techniques are especially valuable in a NEPA document, because most readers will be looking for specific information rather than reading the document from beginning to end.

Including useful navigational aids can be done relatively easily, without greatly adding to the work involved in preparing the NEPA document. Some examples of useful aids include:

- *“How to Use This Document (or Chapter).”* A brief guide for readers – as short as a single paragraph - can be included at the very beginning of the document, or at the beginning of a chapter. This guide is especially useful if the structure or layout of the document includes any unusual features. In one example shown in this chapter, colored text was used to identify new or modified text that was not included in the DEIS; the guide explained how the colors were used. The guide for readers also can be used to explain where additional information can be found – for example, on an enclosed DVD or on a project website.
- *Roadmaps.* A roadmap is an overview of the content of a document. The overview serves a similar purpose to a table of contents, but can be more effective because it includes some explanation of the content rather than simply listing chapter or section titles. The roadmap is often presented in bullet-point form; each bullet describes a chapter or section. Text boxes or side-bars also are effective at making the roadmaps readily visible to the reader.
- *Table of contents in each chapter.* It is standard practice to include a table of contents at the beginning of an EIS; it is less common to include one at the beginning of each chapter. Yet readers often engage with a document by going directly to a specific chapter, and then looking for information within that chapter. In addition, because NEPA documents

are now made available electronically, some readers will only download individual chapters. For those readers, it is useful to find a chapter-specific table of contents, which leads the reader directly to the relevant information within that chapter.

- *Sections names/numbers in headers or footers.* Including section names and numbers in the header or footer of an EIS helps to orient the reader. For example, a reader may know that wetlands are covered in Section 4.14, and then turn to Chapter 4 and begin looking for that section. If the headers and footers contain the section names and numbers, the reader can easily locate Section 4.14 without needing to remember the exact page on which that section begins.
- *Contents of DVD listed in main document.* It is increasingly common for some of the contents of an EIS – typically, appendices – to be included on a DVD rather than being included in the printed copy of the document. Where this is done, it is a good practice to list the contents of the DVD in the table of contents of the printed copy of the NEPA document. This practice alerts the reader to the type of information that is included on the DVD, which is especially beneficial for readers who do not have a copy of the DVD.
- *Searchability of PDFs.* Most NEPA documents are now published in electronic form (e.g., as PDFs). One of the most efficient ways to find information is by searching within the electronic version of the document, but this can be done only if the document is text-searchable. The usability of the document is enhanced if the main body and appendices are fully text-searchable.

# How to Use This Document

- OR: OR 62 FEIS

Techniques to note:  
- including a "how to use this document" page

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## HOW TO USE THIS DOCUMENT

In this FEIS:

- Text from the DEIS that remains substantially unchanged from the DEIS, including minor edits, such as corrections of typos and numerical errors and rewording to clarify meaning, is printed in black.
- New text is printed in burnt orange, which is the color of this text.
- Figures from the DEIS are reprinted. Where the content of a DEIS figure has changed, such as to show a change in design or impacts, the DEIS figure is immediately followed by a new figure with the same figure number, but with "FEIS" added.
- Where impact numbers or text in a table have changed because of a change in design or impacts, the numbers or text from the DEIS remain in the table and the new numbers or text are added in burnt orange immediately below the original numbers or text in the DEIS.
- The DEIS text on mitigation measures is retained, followed by the mitigation measure commitments that are incorporated into the action.

The FEIS contains new numbers and text because of changes from the DEIS in the roadway projects expected to be built under the No Build Alternative, in the design and impacts of the Preferred Alternative, and in information and circumstances. The design of the alternative and the design options that were not identified as the Preferred Alternative have not been changed and the FEIS does not contain changes to those impacts.



## Executive Summary

### How To Use This Executive Summary

In the FEIS and this Executive Summary:

- Text from the DEIS that remains substantially unchanged from the DEIS, including minor edits, such as corrections of typos and numerical errors and rewording to clarify meaning, is printed in black.
- New text is printed in burnt orange, which is the color of this text.
- Figures from the DEIS are reprinted. Where the content of a DEIS figure has changed, such as to show a change in design or impacts, the DEIS figure is immediately followed by a new figure with the same figure number, but with "FEIS" added.
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This Executive Summary provides an overview of the project and its potential impacts. The OR 62: I-5 to Dutton Road Project Environmental Impact Statement (EIS) provides the information in greater detail.

### Introduction

The Oregon Department of Transportation (ODOT) and the Federal Highway Administration (FHWA) propose building the Oregon Highway 62 (OR 62): I-5 to Dutton Road Project, a 7.5-mile, four-lane, access-controlled expressway to serve as a bypass of existing OR 62 from Medford to north of White City in Jackson County, Oregon. The project includes the bypass, four interchanges, and changes to local streets and roads to accommodate the bypass. The project would reduce congestion and improve safety on existing OR 62 in Medford and north through White City by redirecting traffic to the bypass. The Bypass would provide faster travel and improved safety for vehicles traveling within and through the region. Figure ES-1 shows the general location of the project.

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# Roadmaps to EIS and to Chapters

- CO: I-70 PEIS
- MD: Baltimore Red Line FEIS
- NC: Mid-Currituck FEIS

## ES.2 Organization of the FEIS

The FEIS is divided into two volumes: **Volume 1** presents the analysis of the No-Build Alternative and the Preferred Alternative, and **Volume 2** includes mapping of transportation and environmental features in the project study corridor and the Plans and Profile Drawings of the Preferred Alternative. **Volume 1** of the FEIS contains nine chapters and appendices A through K:

- **Chapter 1** presents the project study corridor and the purpose and need for the project.
- **Chapter 2** presents a chronology of the alternatives development and analysis for the project. It includes a description of the alternatives considered in the FEIS: the No-Build and Preferred Alternative. The alignment, stations, and project components of the Preferred Alternative are described.
- **Chapter 3** discusses the probable construction methods and activities for the Preferred Alternative.
- **Chapter 4** presents the existing and future transportation conditions in the project study corridor under the No-Build and Preferred Alternative, and discusses commitments and mitigation measures for potential transportation effects.
- **Chapter 5** presents the existing and future environmental conditions in the project study corridor under the No-Build and Preferred Alternative, and discusses commitments and mitigation measures for potential environmental effects.
- **Chapter 6** presents the Draft Section 4(f) evaluation, which discusses the effects of the Preferred Alternative on public parks, recreational areas, and historic properties in compliance with Section 4(f) of the US Department of Transportation Act of 1966.
- **Chapter 7** presents an evaluation of the No-Build Alternative and Preferred Alternative in meeting the project's purpose and need.
- **Chapter 8** presents a summary of the public outreach and agency coordination for the Red Line project that has occurred since the publication of the AA/DEIS in September 2008.
- **Chapter 9** presents a summary of the comments received on the AA/DEIS and responses to those comments, as presented in **Appendix A**.

The appendices are included after **Chapter 9** with the exception of **Appendix A** and **I**, which are included on the DVD.

## ES.3 Project Study Corridor

The Red Line project study corridor extends approximately 14 miles from the Centers for Medicare & Medicaid Services (CMS) in the west, in Woodlawn (Baltimore County), to the Johns Hopkins Bayview Medical Center campus in the east (Baltimore City). Eleven miles of the project study corridor are in Baltimore City. The proposed Red Line light rail alignment would utilize a combination of existing transportation rights-of-way for at-grade and aerial segments and underground tunnels as identified in **Figure ES-1**.

**Techniques to note:**  
- including a roadmap to a lengthy chapter at the beginning of that chapter

## Chapter 2. Summary and Comparison of Alternatives

### 2.1 What's in Chapter 2?

**Chapter 2** describes how the problems within the Interstate 70 (I-70) Mountain Corridor (the Corridor) are used to develop a wide range of alternatives for transportation improvements, how those alternatives are evaluated, and how that evaluation leads to a Preferred Alternative. **Chapter 1, Purpose and Need** documents the existing and future transportation problems in the Corridor, while this chapter describes and analyzes alternatives to address the problems and identifies the Preferred Alternative. As described in **Chapter 1, Purpose and Need**, the transportation problems result in project needs, and the project purpose and need is expressed as a long-term 2050 purpose and need, supported by data from the 2035 and the 2050 planning horizons. The 2050 planning horizon is used as the target for meeting the project needs and was developed based on public input and interest in a long-range vision for transportation solutions in the Corridor. The year 2035 projections are based on available projections from a variety of sources, provide the foundation for developing and evaluating alternatives, and provide a milestone allowing projections to 2050. In addition to the needs, criteria are identified to define what is important to project stakeholders and to help in comparing the attributes and impacts of the alternatives.

As described in this chapter, the evaluation process resulted in 22 alternatives, including the No Action Alternative and 21 Action Alternatives, including the Preferred Alternative. **Section 2.5** discusses the more than 200 alternative elements evaluated and explains which were eliminated and why. **Section 2.6** discusses the alternatives that were advanced and describes the components of the Action Alternatives and the No Action Alternative. **Section 2.7** describes the Preferred Alternative, how it was developed, and the process that will be used to implement improvements. The 22 alternatives analyzed (shown at the right) represent the reasonable range of alternatives for analysis in this Tier 1 document. Not all of these alternatives fully meet the purpose and need for this project but are all evaluated at the Tier 1 level to present a full comparison of the transportation tradeoffs and environmental impacts for decision makers and the public. **Section 2.8** summarizes a comparison of the 22 alternatives that are fully evaluated. **Section 2.8** also compares the subset of these alternatives that fully meet the project's purpose and need.

The purpose and need requires enough capacity to meet the 2050 demand. Today, the I-70 highway does not

#### Project Purpose and Need

The purpose for transportation improvements is to increase capacity, improve accessibility and mobility, and decrease congestion for 2050 to destinations along the I-70 Mountain Corridor as well as for interstate travel, while providing for and accommodating environmental sensitivity, community values, transportation safety, and ability to implement the proposed solutions for the Corridor.

#### Project Alternatives Analyzed

- No Action Alternative
- Minimal Action Alternative
- Rail with Intermountain Connection
- Advanced Guideway System
- Dual-mode Bus in Guideway
- Diesel Bus in Guideway
- Six-Lane Highway 55 miles per hour
- Six-Lane Highway 65 miles per hour
- Reversible/high occupancy vehicle/high occupancy toll Lanes
- Combination Six-Lane Highway with Rail and Intermountain Connection
  - Build Transit with Highway Preservation
  - Build Highway with Transit Preservation
- Combination Six-Lane Highway with Advanced Guideway System
  - Build Transit with Highway Preservation
  - Build Highway with Transit Preservation
- Combination Six-Lane Highway with Dual-mode Bus in Guideway
  - Build Transit with Highway Preservation
  - Build Highway with Transit Preservation
- Combination Six-Lane Highway with Diesel Bus in Guideway
  - Build Transit with Highway Preservation
  - Build Highway with Transit Preservation
- Preferred Alternative

Techniques to note:

- including a roadmap to a lengthy chapter at the beginning of that chapter

## **3.0 Affected Environment and Environmental Consequences**

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This chapter describes the findings of the impact assessment conducted for the detailed study alternatives, including the Preferred Alternative. Key characteristics of the affected environment also are described. Additional information on the affected environment and the impacts of the detailed study alternatives, including the Preferred Alternative, is presented in a series of technical reports contained on the compact disc (CD) that accompanies this FEIS, at public review locations listed in Appendix C, and on the North Carolina Turnpike Authority (NCTA) web site at <http://www.ncdot.gov/projects/midcurrituckbridge/>. Those technical reports and their tables of contents are presented in Appendix D of this FEIS.

This chapter is divided into the following sections:

- Community Characteristics and Impacts, beginning on page 3-1;
- Cultural Resources Characteristics and Impacts, beginning on page 3-24;
- Natural Resource Characteristics and Impacts, beginning on page 3-31;
- Other Physical Characteristics and Impacts, beginning on page 3-71;
- Construction Impacts, beginning on page 3-95; and
- Indirect and Cumulative Effects, beginning on page 3-101.

The text in italics answers the question posed by the subheading under which it appears, summarizing for the reader the findings of the longer discussion that follows.

### **3.1 Community Characteristics and Impacts**

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This section presents the key findings of the community impact assessment conducted for this FEIS. Additional detail is presented in the revised *Community Impact Assessment Technical Report* (Parsons Brinckerhoff, 2011), which is contained on the CD that accompanies this FEIS, at public review locations listed in Appendix C, and on the NCTA web site at <http://www.ncdot.gov/projects/midcurrituckbridge/>. This section discusses the following:

- What is the general land use, and what community features are in the project area?
- How would neighborhood or community cohesion be affected?
- How would quality of life be affected?

# Table of Contents at Beginning of Each Chapter

- OR: OR 62 FEIS
- UT: West Davis Corridor DEIS

# CHAPTER

# 3

## 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, Recreational Facilities, and Wildlife 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
- 3.18 Energy
- 3.19 Geology
- 3.20 Hazardous Materials

**Techniques to note:**  
- including a table of contents at the beginning of a chapter (can be used in lieu of a roadmap in the text)

## Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter addresses the impacts of the alternatives described in Chapter 2. Each section of this chapter, as listed in the sidebar, describes relevant laws and regulations, existing conditions, the impacts of the No Build Alternative, the impacts of the build alternatives and JTA phase, and measures to avoid, minimize, and/or mitigate adverse impacts. The impacts of the build alternatives and JTA phase fall into three categories:

- **Direct Impacts.** As defined in 40 CFR 1508.8, direct impacts are impacts “caused by the action and occur at the same time and place.” Examples of direct impacts are changes in travel time, the displacement of businesses, and increases in water pollution. Direct impacts can be permanent or temporary.
- **Indirect Impacts.** As defined in 40 CFR 1508.8, indirect impacts are defined as impacts “caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” Indirect impacts include induced growth and effects resulting from the induced growth, including changes in the pattern of land use, and “related impacts on air and water and other natural systems, including ecosystems.”
- **Construction Impacts.** Construction impacts are the temporary impacts of construction activities.



**Techniques to note:**  
 - including a table of contents at the beginning of a chapter (can be used in lieu of a roadmap in the text)

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# Header/Footer with Chapter, Section, and Subsection

- CO: US 36 FEIS

## 3.1 INTRODUCTION

This chapter presents transportation performance, impacts, and mitigation measures for the packages listed below. For a detailed description of the packages, see Chapter 2, Alternatives Considered.

- **Package 1:** No Action
- **Package 2:** Managed Lanes/Bus Rapid Transit
- **Package 4:** General-purpose Lanes, High-occupancy Vehicle, and Bus Rapid Transit
- **Combined Alternative Package (Preferred Alternative):** Managed Lanes, Auxiliary Lanes, and Bus Rapid Transit

Between the publication of the Draft Environmental Impact Statement (DEIS) and this Final Environmental Impact Statement (FEIS), a new regional transportation plan, the *2035 Metro Vision Regional Transportation Plan (2035 MVRTP)*, as amended (DRCOG 2009), was adopted. This plan uses 2035 as the planning horizon (the year by which all planned projects are expected to be completed), and federal requirements necessitate the use of this year in the FEIS. The work in the DEIS was based on analysis of year 2030 travel demand data. During the DEIS process two build packages were fully evaluated, and based on this evaluation it was determined to move forward in the FEIS by combining elements from both build packages to create a package of improvements called the Combined Alternative Package (Preferred Alternative). The Combined Alternative Package (Preferred Alternative) was analyzed with year 2035 travel demand data.

The project team used the Denver Regional Council of Governments (DRCOG) regional travel demand model to estimate future travel demand in the corridor. The main components of the model include the model program and supporting files, future socioeconomic assumptions, and future roadway and transit network assumptions. DRCOG is continually updating the model to reflect the best understanding of travel behavior and to apply the latest projections for socioeconomic growth and transportation system assumptions so that the model can meet all regulatory requirements.

Between the DEIS and FEIS, some of the program changes that occurred included:

- Refined the transportation analysis zones (TAZ) structure (from 2,600 to 2,800 TAZs)
- Increased the size of the region coded in the model
- Mode choice changes based on updated ridership surveys
- Other transit-related processing changes

The socioeconomic data were updated to reflect five years of growth (2030 to 2035) and were also affected by the change in the definition of the region; the region increased in size with the 2035 model assumptions, so the overall population and employment reflected in the model includes a greater area. When comparing the population and employment for 2030 and 2035 in the original model area, the population increases from 3.97 million in 2030 to 4.34 million in 2035 (a 9 percent increase), and employment increases 2.08 million to 2.20 million (a 6 percent increase).

Within the United States Highway 36 (US 36) study area the population and employment forecasts for 2035 were only 5 percent higher than 2030, less than the change region wide. The distribution of population and employment growth within the study area, however, changed compared to 2030 socioeconomic forecasts. Development forecasts in the Boulder Valley changed between the 2030 and 2035 forecast years. In 2030, the Boulder Valley was forecast to have a population of 119,700 and 103,600 jobs. The 2035 forecasts assume a population of 119,400 (no growth) and 87,600 jobs (a decrease of 15 percent). As a result, the remainder of the study area is forecast to have an increase in employment of 10 percent.

# Table of Contents Describes Contents of DVD

- MD: Baltimore Red Line FEIS
- WA: I-90 Snoqualmie FEIS

**Techniques to note:**  
- including a description of the contents of any non-printed materials as part of the table of contents in the printed document

## Table of Contents

Statement (FEIS) is divided into two volumes: Volume 1 presents the analysis of the NO-Build Alternative and the Preferred Alternative, and contains nine chapters and appendices A through K. Volume 2 includes mapping of transportation and environmental features in the project study corridor, including a set of six Environmental Plate Series, and the Preferred Alternative Plans and Profiles.

The DVD contains all content of Volumes 1 and 2, including all appendices. Appendix A and Appendix I are only included on the enclosed DVD.

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- including a description of the contents of any non-printed materials as part of the table of contents in the printed document

**DISC ONE**

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- Appendix C – Project Design
- Appendix D – MDT Recommendation Package
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- Appendix F – Avalanche Technical Reports
- Appendix G – Unstable Slopes on I-90 Snoqualmie Pass
- Appendix H – Water Resources Addendum to the EIS
- Appendix I – Stormwater Treatment and BMP Report
- Appendix J – Conceptual Wetland & Aquatic Resources Mitigation Plan
- Appendix K – Wetland/Biology Discipline Report (2008)
- Appendix L – Section 404(b)(1) Alternatives Analysis
- Appendix M – Biological Assessment
- Appendix N – Keechelus Lake Reservoir Storage Technical Memo
- Appendix O – Wildlife Monitoring Plan
- Appendix P – Transportation Discipline Report
- Appendix Q – Bicycle Route Recommendations
- Appendix R – Noise Discipline Report Supplement
- Appendix S – Recreation Impacts/Preliminary Mitigation Site Analysis
- Appendix T – Section 6(f) Recreation Lands Technical Memorandum
- Appendix U – Land Use Technical Memorandum
- Appendix V – Visual Discipline Report Supplement
- Appendix W – US Forest Service Consistency Determination Support Information
- Appendix X – Architectural Design Guidelines
- Appendix Y – Construction Water Needs Technical Memorandum
- Appendix Z – Archaeological, Cultural and Historic Resources

**DISC TWO**

- Draft EIS and Appendices

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