Chapter 2. Alternatives

This chapter describes the No Build Alternative and Tier 2 FEIS Preferred Alternative for the Newberg Dundee Bypass (Bypass) project, including Phase 1 of the Preferred Alternative (Phase 1). This chapter also describes how the Preferred Alternative was identified and how cost estimates were prepared. For context, this chapter also includes the description of the Build Alternative from the Tier 2 DEIS. There are slight differences between the Build Alternative in the Tier 2 DEIS and the Preferred Alternative in this FEIS that are also described in this chapter.

2.1 INTRODUCTION

Developing a solution that meets the Purpose and Need for the project and benefits the public and stakeholders requires several choices. The Tier 2 Draft Environmental Impact Statement (Tier 2 DEIS) considered two alternatives: a No Build Alternative that would not construct the project and a Build Alternative to construct the project. Considering a No Build Alternative provided a method for comparing the benefits and consequences of constructing the project.

As the Build Alternative was developed and refined early in the Tier 2 process, various design and local circulation options were defined to present choices in certain locations of the proposed project. In these locations, the best solution for the project design was not yet identified. Section 2.1.2 describes in detail how the Build Alternative was developed. Section 2.2.3 describes the Build Alternative as it was evaluated within the Tier 2 DEIS, which includes various design options for several segments of the project. Section 2.2.2 describes the Preferred Alternative, which is based on the preferred option for each set of options presented in the Tier 2 DEIS.

2.1.1 Context Sensitive and Sustainable Solutions Workshops

The Oregon Department of Transportation (ODOT), the Federal Highway Administration (FHWA), stakeholders, regulatory agencies, and the public worked together to develop a Bypass concept that would meet the project Purpose and Need and reflect the interests and concerns of the surrounding communities. To achieve these goals, ODOT used a workshop process called Context Sensitive and Sustainable Solutions (CS³). For the first workshop, ODOT designers developed a preliminary Bypass concept that served as a starting point for discussion. This concept was mostly located within the
Bypass Approved Corridor (see Figure PA 2.2-1 through Figure PA 2.2-5), met safety and operational standards, and met the project Purpose and Need. For easier review and to allow participants to focus their concerns and input on specific areas, the designers divided the Bypass into segments.

Workshop participants reviewed the Bypass concept and gave additional ideas and information about problems and opportunities in the project area. Based on this input, ODOT designers modified and refined the concept and repeated this process in each of three workshops.

Throughout all of the CS³ workshops, revisions to the Bypass concept continued to emphasize avoiding or minimizing impacts and enhancing community livability. For example, bridges were used instead of culverts at stream crossings to minimize wetlands impacts, provide better wildlife crossings, and help fish passage. Whenever appropriate, as requested by Collaborative Environmental and Transportation Agreement for Streamlining (CETAS) members, the Bypass was located away from natural resources.

Based on comments received at the workshops, ODOT designers added a number of design options and local circulation options that provided choices for those segments of the proposed project where the best solution was still uncertain. Design options were for the Bypass and interchanges, while local circulation options were for changes in local roads disrupted by the Bypass.

2.1.2 Screening Process

The CS³ workshops produced 35 design options for the Bypass and interchanges, and 70 local circulation options. ODOT had to decide which of these options best met the project Purpose and Need and should be carried forward into the Tier 2 process. To make this decision, ODOT used a two-step screening process. In the first step, an option was eliminated from further study if it had any of the following:

- Did not meet Purpose and Need
- Operational or safety flaws
- Objectionable adverse environmental impacts identified by resource agencies
- Regulatory fatal flaws (i.e., would not likely be able to obtain the needed permits or approvals)
- Undesirable community impacts
- Other unacceptable impacts that could not be avoided or minimized

In the second screening step, design options and local circulation options in the same segment were compared using the following factors:

- Amount of resource and sensitive land impacted
- Number of businesses/residences displaced

CETAS: An agreement signed by Oregon’s state and federal transportation and environmental agencies in 2001 to support environmental stewardship and advance procedural improvements to streamline the environmental review process for ODOT’s major transportation projects. CETAS members’ goal is to identify and implement collaborative opportunities to help each participating agency realize its mission through sound environmental stewardship and provide for a safe and efficient transportation system.

CETAS MEMBER AGENCIES ARE:


Oregon: Oregon Department of Transportation, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, State Historic Preservation Office, Oregon Department of State Lands, Department of Land Conservation and Development.
Relative cost of construction

Additional information on the screening of design and local circulation options is available in the Newberg Dundee Bypass Alternatives Screening Report, September 19, 2006. Copies of this report can be obtained at the ODOT Region 2 office located at 885 Airport Road SE, Bldg. P, Salem, OR 97301-4788.

2.1.3 Summary of Bypass Tolling Consideration

Funding a project that is as large as the Newberg Dundee Bypass project is a financial challenge. ODOT considered tolling the Bypass as one possible way to pay for at least a portion of the project cost. However, tolling is a controversial issue and has a number of tolling options. Any tolling decision must be based on a careful analysis of tolling’s ability to fund the construction and operation of the Bypass.

In February 2006, ODOT entered a public-private partnership Pre-Development Agreement (PDA) with the Oregon Transportation Improvement Group (OTIG), led by Macquarie North America Ltd., to study tolling of the Bypass. In December 2006, OTIG released the Milestone 1 report, which evaluated tolling as the main source of funding for the Bypass project and discussed tolling options. Their analysis found that tolling just the Bypass alone would not generate enough revenue to build, operate, and maintain the Bypass. The only tolling option that would provide enough funding was to toll both the Bypass and existing Oregon 99W.

ODOT hired Bear Stearns, Inc., to evaluate the Milestone 1 report. Bear Stearns agreed that tolling only the Bypass would not produce enough revenue to fund the proposed project.

ODOT, along with the local stakeholders, decided that tolling both the Bypass and existing Oregon 99W was not an acceptable funding source at that time. Tolling the Bypass is no longer under consideration.

2.2 ALTERNATIVES

This section provides a description of the No Build and Preferred Alternatives, evaluated within this Tier 2 FEIS, which is followed by a copy of the description of the Build Alternative and its options taken from the Tier 2 DEIS. The same organization used to describe the alternatives and options in this section is also used in each discipline section of Chapter 3.

2.2.1 No Build Alternative

This section describes the No Build Alternative evaluated in the Tier 2 DEIS. The No Build Alternative was not identified as the Preferred Alternative.

The No Build Alternative does not mean nothing would have been built. Under this alternative, various state, county, or city transportation projects that are already planned, approved, and funded would have been completed as scheduled. Oregon 99W and Oregon 219 would have remained in place (unchanged), and ODOT would have continued to perform regular roadway maintenance such as resurfacing and safety/operation improvement projects, including:

The No Build Alternative was not identified as the Preferred Alternative, because it would not meet the project Purpose and Need. Specifically, the No Build Alternative would not improve interregional highway traffic mobility or safety by reducing congestion on Oregon 99W through Newberg and Dundee. Nor would the No Build Alternative improve overall livability in the downtown areas of Newberg and Dundee. As reported in Section 3.1.3.1 of this FEIS, average daily traffic (ADT) on Oregon 99W between Newberg and Dundee would increase from 23,100 in 2011 to 37,600 in 2035 under the No Build Alternative. Similarly, ADT on Oregon 99W would increase from 45,600 and 26,200 vehicles in the downtowns of Newberg and Dundee, respectively, to 57,300 and 45,600 vehicles, respectively (see Table PA 3.1-5). Existing truck traffic that detracts from livability would have remained in place under the No Build Alternative. Travel times in the project area would also continue to deteriorate under the No Build Alternative. For example, existing p.m. peak period travel times from Rex Hill on Oregon 99W to Oregon 18 at Dayton would increase from 31 minutes to 54 minutes (see Table PA 3.1-8).

2.2.2 Preferred Alternative

This section provides the following information:

- A description of the Preferred Alternative identification process
- A general description of the Preferred Alternative
- A detailed segment-by-segment description of the Preferred Alternative, including a summary of the rationale for the identification of specific design and local circulation options

The Preferred Alternative includes a specific Phase 1 for the project. The Phase 1 information discussion follows the rationale for identification of the Preferred Alternative options.

Section 3.1, Transportation, includes a summary of the design standards and forecast travel demand that affected the design of the Preferred Alternative and Phase 1.

2.2.2.1 Preferred Alternative Identification Process

After reviewing the Tier 2 DEIS and the public and agency comments (see Appendix N for the substantive comments and responses), the process for identifying the Preferred Alternative considered the following criteria:

- The Purpose and Need
- Community and local government preferences
- Built and natural environmental impacts, avoiding and/or minimizing adverse impacts
- Impacts to sensitive and/or resource land that could result in a goal exception, required by Oregon state land use planning regulations
- ODOT standard design practices
- Operational safety
- Engineering requirements that would increase costs
- Current regulatory requirements
Cost (right-of-way acquisition and construction)

The identified Tier 2 Preferred Alternative is the Build Alternative, with specific design and/or local circulation options in Segments 1, 3, 4, 5, and 7 (preferred options are 1B, 3.B2, 8th Street Overcrossing, 4.1, 5.2D and 7.5C).

2.2.2.2 General Description of the Preferred Alternative

The general description for the Preferred Alternative is the same as that for the Tier 2 DEIS Build Alternative (see Section 2.2.3). The Preferred Alternative will include the Bypass. The Bypass will be an 11-mile, access-controlled expressway, located in Yamhill County, Oregon, that will run along the south sides of Newberg and Dundee and that will extend from the Oregon 99W/Oregon 18 junction near Dayton (Oregon 18 approximately mile point 51.6) to just past the top of Rex Hill, east of Newberg (Oregon 99W approximately mile point 19.6). Figure PA 2.2-1 through Figure PA 2.2-5 provide a general illustration of the Bypass and local roadway improvements that will be constructed under the Preferred Alternative.

In general, the Preferred Alternative will include the Bypass, four Bypass interchanges, modifications to local streets needed to accommodate the Bypass and phased construction.

The Bypass will include the following characteristics:

- Approximately 11 miles long
- Operating speeds of 55 miles per hour (mph)
- Four mainline travel lanes (two in each direction), each 12 feet wide
- Paved shoulders (4 feet wide inside and 10 to 12 feet wide outside)
- Full access control along the Bypass
- An average median width of approximately 42 feet
- Stormwater treatment facilities

The interchanges will provide access to and from the Bypass. Four new interchanges will be located one at each end of the Bypass and at two intermediate locations in Newberg and Dundee (see Figure PA 2.2-1, Figure PA 2.2-3, Figure PA 2.2-4, and Figure PA 2.2-5). The interchanges will be:

- **Dayton Interchange**: Located at the Oregon 99W/Oregon 18 junction, just north of Dayton.
- **East Dundee Interchange** (and connector road): Located between Dundee and Newberg.
- **Oregon 219 Interchange**: Located at the south edge of the Newberg urban growth boundary (UGB) on Oregon 219.
- **East Newberg Interchange**: Located on the east side of Newberg at Rex Hill.

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1 About 1,000 feet of the Bypass will be located east of Newberg along Oregon 99W into Washington County.
2 Oregon 99W will remain the designated bicycle route through the Newberg and Dundee areas after the Preferred Alternative is constructed. Bicycles will be allowed to use the Bypass’s outside shoulders.
Existing local roads in the vicinity of where the Bypass will be located will typically require changes to their design. Local roads include both those owned by local jurisdictions on public right-of-way and local circulation roads on private property, which provide internal access for one or more parcels. For example, because the Bypass will be access controlled, existing local streets will not be allowed to intersect with the Bypass. Instead, existing local roads that currently cross where the Bypass will be located will generally need to either cross over or under the Bypass (with either the Bypass or the local road to be placed on a new structure, respectively), be rerouted to connect to another road, or truncated as a dead end or cul-de-sac. Changes to local roads to accommodate the Bypass will be constructed to applicable city or county design standards, which will include bicycle and pedestrian facilities where required.

Phased construction will be used by ODOT to implement the Preferred Alternative, starting with completion of Phase 1 by approximately 2016 and subsequent completion of the full Preferred Alternative by approximately 2035.

2.2.2.3 Segment Descriptions of the Preferred Alternative

This section provides segment-by-segment description of the Preferred Alternative (it does not address construction phasing).

Segment 1: Dayton Interchange

The Dayton Interchange will provide connections between Oregon 99W and the Bypass (Oregon 18). See Figure PA 2.2-1. This interchange will be a partial cloverleaf interchange that will serve all vehicle movements to and from the Bypass (Oregon 18) and Oregon 99W. The interchange will have a single loop on-ramp in the southwestern quadrant for traffic entering the Bypass eastbound. The other three ramps will provide access for all other traffic movements to and from the Bypass (Oregon 18), and Oregon 99W.

Local circulation changes will reconnect local roads disrupted by the Bypass. Kreder Road across Oregon 18 will be closed and a new connection of Kreder Road will be built under Oregon 18. The new section of Kreder Road will be constructed and repaved. In addition, Ferry Street will be extended and a new bridge will be built across the Yamhill River.

Segment 2: Dayton Interchange to Dundee Urban Growth Boundary

The Bypass will be at grade with a landscaped (grass and shrubs) median about 42 feet wide. See Figure PA 2.2-2.

The local circulation changes will realign local roads where the Bypass will eliminate connections to Oregon 99W. Frontage roads will provide driveways to properties where the Bypass or realignment of local roads changes existing property access.

Riverwood Road, Fulquartz Landing Road (west), and Fulquartz Landing Road (east) will reconnect on structures over the Bypass. Crawford Lane will be realigned to reconnect with Fulquartz Landing Road (west). Fulquartz Landing Road (west) will be realigned to connect directly to Oregon 99W at a new intersection south of the existing intersection with Oregon 99W. Fulquartz Landing Road (east) will be realigned to cross over the Bypass outside of the Dundee city limits and UGB and connect with Parks Drive.
Figure PA 2.2-2 Preferred Alternative Segment 2: Dayton Interchange to Dundee UGB

- Bypass Approved Corridor
- Segment 1 Right-of-Way
- Urban Growth Boundary (UGB)
- Segment 2 Right-of-Way
- City Limits
- Roadway
- Railroad
- Bridges or Overcrossings
Segment 3: Dundee UGB to East Dundee Interchange
In this segment the Bypass will be at grade and with 6- to 8-foot-tall berms on each side, and with a landscaped, 42-foot-wide median. A new roadway bridge will cross over Unnamed Stream 2. See Figure PA 2.2-3.

Because the Bypass will divide properties between Dundee and the Willamette River, a Bypass overcrossing at 8th Street will reestablish a road connection between Dundee and properties between the Bypass and the Willamette River.

Segment 4: East Dundee Interchange
The East Dundee Interchange will be a diamond interchange with ramps serving the overpass in all directions. See Figure PA 2.2-3. The acceleration lane for eastbound traffic entering the Bypass will extend across Chehalem Creek. The eastern portion of the interchange will be at grade.

Local circulation changes will include construction of the East Dundee Connector Road, that will connect the Bypass to Oregon 99W, and the relocation of Fox Farm Road, Dayton Avenue, and Hagey Road. Dayton Avenue will connect to Oregon 99W at the new Fox Farm Road intersection. The Dayton Avenue railroad crossing will be relocated and a signalized intersection installed. A private road (under the Bypass) reconnecting an existing internal roadway will provide farm equipment access to the portion of the Columbia Empire Farms that will be separated by the Bypass.

Segment 5: West Newberg to Oregon 219 Interchange
After crossing over Chehalem Creek, the Bypass will be at grade. See Figure PA 2.2-4. It then will cross over College Street, the railroad spur and River Street above grade on fill. Between River Street and relocated Wynooski Road, the Bypass will be located close to SP Newprint, allowing 11th Street to remain open.

Local circulation improvements will include connections across the Bypass for River and College Streets, the railroad spur (owned by SP Newprint), and Wynooski Road. On the north side of the Bypass, west of College Street, a new frontage road will provide driveways to three properties. On the south side of the Bypass, Waterfront and 14th Streets will be relocated and reconnected to College Street. The north road entrance to SP Newprint will be reconfigured.

Segment 6: Oregon 219 Interchange
The Oregon 219 Interchange will be a partial cloverleaf interchange that will serve all vehicle movements to and from the Bypass and Oregon 219. See Figure PA 2.2-4. Loop ramps will be located in the northwest and southeast quadrants of the interchange. Signalized ramp connections will provide access to and from the Bypass and Oregon 219. The Bypass will be semi-depressed under Oregon 219. Oregon 219 will remain in the same location as it is today, but it will be elevated on a structure to cross over the Bypass.

Local circulation changes will require realignment of Wynooski and Wilsonville Roads to the south to connect with Oregon 219 at a new signalized intersection. Oregon 219 will be widened north and south of the interchange with two travel lanes in each direction and turn lanes at intersections. Cul-de-sacs will be constructed on Sandoz Road and Industrial Parkway, and Adolf Road will be closed.
Figure PA 2.2-4 Preferred Alternative
Segments 5 and 6: West Newberg to Oregon 219 Interchange

- **Bypass Approved Corridor**
- **Urban Growth Boundary (UGB)**
- **City Limits**
- **Roadway**
- **Railroad**
- **Segment 4 Right-of-Way**
- **Segment 5 Right-of-Way**
- **Segment 6 Right-of-Way**
- **Segment 7 Right-of-Way**
- **Bridges or Overcrossings**

**Legend:**

- Bypass Approved Corridor
- Urban Growth Boundary (UGB)
- City Limits
- Roadway
- Railroad
- Segment 4 Right-of-Way
- Segment 5 Right-of-Way
- Segment 6 Right-of-Way
- Segment 7 Right-of-Way
- Bridges or Overcrossings

**Inset:**

- Newberg
- Mill Creek
- Spruce Brook
- Spring Brook
- Greenholme
- Willamette River

**Locator:**

- Newberg
- Wilsonville Rd Cul-de-sac
- Sandoz Rd Cul-de-sac
- Willamette & Pacific Railroad
- Columbia Empire Farms
- Sportsman Airpark
- SP Newsprint

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Segment 7: East Newberg to East Newberg Interchange

From east of the Oregon 219 Interchange to the East Newberg Interchange, the Bypass will be at grade. It will cross Spring Brook Tributary A, pass under Fernwood Road, crossing Spring Brook, and connect to the East Newberg Interchange. See Figure PA 2.2-5. Fernwood Road will remain in the same location, but it will be elevated on a structure over the Bypass. Between Fernwood Road and the East Newberg Interchange, the proposed alignment of the Bypass was shifted east to minimize impacts to the Providence Newberg Medical Center. East of the medical center, the Bypass will cross an edge of the Chehalem Glenn Golf Course.

Local circulation changes will include raising the intersection of Fernwood Road and Brutscher Street to accommodate the Fernwood Road structure over the Bypass.

Segment 8.1: East Newberg Interchange

The East Newberg Interchange will be a directional system interchange that will provide free-flow movement between the Bypass and Oregon 99W. See Figure PA 2.2-5. This section of the Bypass will be fully access controlled with a raised median barrier, compared to the adjacent section of Oregon 99W that does not have access control or a median barrier.

Westbound traffic heading toward Newberg on Oregon 99W (north of the Bypass) will stay in the left lanes and will continue onto the Bypass or exit in the right lanes via a new ramp to Oregon 99W.

Eastbound traffic on Oregon 99W leaving Newberg will be rerouted south of existing Oregon 99W to an entrance ramp that will cross under the Bypass and reconnect to Oregon 99W. Traffic traveling on the Bypass will continue through the interchange and will enter Oregon 99W in the left lanes. A separate eastbound truck lane will be provided going up Rex Hill for slow-moving trucks. The truck lane will merge with eastbound Oregon 99W traffic entering Oregon 99W and continue up Rex Hill.

Local circulation changes will resolve several eliminated driveway and local road connections. A frontage road will connect Rex Hill Winery and other properties east of the Newberg UGB to Crestview Drive and Oregon 99W. Existing road connections from Corral Creek and Veritas Lane to Oregon 99W will be routed under the Oregon 99W ramps and the Bypass to connect with the frontage road. Harmony and Klimek Lanes will be realigned to connect to Providence Drive, instead of Oregon 99W.

Segment 8.1A: Rex Hill

East of the East Newberg Interchange, the Bypass will connect with Oregon 99W on Rex Hill. This section of Oregon 99W is access controlled with a raised median barrier, compared to the adjacent section of Oregon 99W that does not have access control or a median barrier. See Figure PA 2.2-5.

Lanes added to Oregon 99W in both directions will provide safe merging and separation of traffic movements at the interchange. The two lanes on Oregon 99W westbound will widen to three lanes after Quarry Road. Continuing down Rex Hill on Oregon 99W, three lanes will increase to four before the East Newberg Interchange. The two right lanes will exit onto Oregon 99W; the other two lanes will continue onto the Bypass.

Eastbound, the truck lane will merge into the second of the two lanes from eastbound Oregon 99W. These two lanes will reconnect to the Bypass, forming four lanes. Continuing eastbound, the two right lanes will merge, creating a three-lane section that will continue over Rex Hill. Then the resulting two right lanes will merge again into a two-lane section just west of the new location of Old Parrett Mountain and Haugen Roads.
Figure PA 2.2-5 Preferred Alternative
Segment 7: East Newberg to East Newberg Interchange
Segment 8.1: East Newberg Interchange
Segment 8.1A: Rex Hill

- Bypass Approved Corridor
- Urban Growth Boundary (UGB)
- City Limits
- Roadway
- Railroad
- Segment 6 Right-of-Way
- Segment 7 Right-of-Way
- Segment 8.1 Right-of-Way
- Segment 8.1A Right-of-Way
- Future City of Newberg Road
- Bridges or Overcrossings
Local circulation changes will include connecting Old Parrett Mountain and Quarry Roads on a bridge over Oregon 99W. A frontage road south of and parallel to Oregon 99W will connect Old Parrett Mountain and Haugen Roads. The frontage road will connect to Oregon 99W east of the existing Haugen Road intersection. This new intersection will provide safer access for the increased traffic volume on Oregon 99W and will be limited to right-in/right-out movements for eastbound traffic on Oregon 99W. The Quarry Road intersection will also be limited to right-in/right-out movements for westbound traffic on Oregon 99W. These two intersections, Quarry Road and the new frontage road, along with the bridge over Oregon 99W, will provide a new local road system for properties on both sides of Oregon 99W on Rex Hill.

2.2.2.4 Rationale for Identification of Options in the Preferred Alternative

The Preferred Alternative described in this Tier 2 FEIS is largely similar to the recommended alternative outlined in the Tier 2 DEIS. However, there are instances where the design options included in the Preferred Alternative for this Tier 2 FEIS differ from those identified in the recommended alternative in the Tier 2 DEIS. In large part, these changes in preferred options were the result of comments ODOT received during the Tier 2 DEIS public comment period.

Key issues from the Tier 2 DEIS comments, that influenced the identification of design and local circulation options included in the Preferred Alternative in this FEIS, include the following:

- Access in the cities of Dayton and Dundee
- Noise and visual impacts in southern Newberg and in Segment 7
- The City of Dayton requested Local Circulation Option B in Segment 1
- The City of Dundee requested Design Option 3.A2 depressed with berms in Segment 3
- The City of Dundee requested an additional overcrossing in Segment 3

Following is a segment-by-segment description of ODOT’s rationale in identifying options for the Preferred Alternative.

**Segment 1**

**Rationale for Identification of Local Circulation Option B**

Local Circulation Option A was recommended in the Tier 2 DEIS because it would not require an additional crossing of the Yamhill River. As discussed in Section 3.14, Biological Resources, ODOT worked to minimize the number of stream crossings included in the project to avoid permanent impacts, such as obstructing fish and wildlife passage, and construction impacts, such as soil erosion into waterways. However, Local Circulation Option B is identified in the Preferred Alternative because it will:

- Better serve the citizens of Dayton than Option A by providing better access to Dayton, require less out-of-direction travel, and is preferred by the City of Dayton.
- Use less Exclusive Farm Use (EFU) land than Option A and not require a goal exception (as Option A would require).
- Limit access to EFU land south of the interchange, as Option A would. (The Oregon Department of Land Conservation and Development expressed concerns about the potential increase in property access to EFU land with Local Circulation Option A.)
- Provide faster response time and less travel distance for emergency responders, compared to Option A.
- Use a full-span bridge to cross the Yamhill River and avoid any in-water work for the permanent structure. The temporary work bridge will require in-water work. The crossing of the Yamhill River is not considered a substantial impact because the project will only impact 0.20 acre of riparian habitat. The project is mitigating for that impact on a 2 to 1 ratio in the Yamhill Basin, immediately adjacent to the impact area. ODOT consulted with NMFS and NMFS concurred with the finding and mitigation strategy. The impacts that will occur at this location are similar to impacts that will be experienced at other full-span stream crossings and are described in Section 3.14, Biological Resources.

**Segment 2**

**Rationale for Changes to Local Circulation**

The local circulation for Fulquartz Landing Road was redesigned during the Yamhill County land use approval process in February 2011, due to impacts of the original local circulation design on EFU land and farm practices. The new design for Fulquartz Landing Road will achieve the following:

- Connect Fulquartz Landing Road to Oregon 99W about 400 feet south of its current Oregon 99W intersection.
- Use less than half the amount of EFU land, as compared to the original local circulation option.
- Avoid adverse impacts west of Oregon 99W that would have occurred under the original local circulation option.
- Have less impact to farm practices, as compared to the original local circulation option.

A frontage road west of Riverwood Road is not included in the Preferred Alternative. The cost to build the frontage road would be greater than the value of the properties. As a result, ODOT will purchase up to four properties west of Riverwood Road that will be landlocked by the Bypass. This approach is more cost effective than building a frontage road as was envisioned in the recommended alternative.

**Segment 3**


Design Option 3.B2 (at grade with berms) is the preferred option in the Preferred Alternative for the following reasons:

- The berms on each side of the Bypass will provide a visual barrier/screening, minimizing visual impacts for those viewing the Bypass.
- The berms will provide on-site locations for disposal of excess soil material.
- The berms are a local government and citizen preference.
- Design Option 3.B2 will cost approximately $12 million less to construct than the below-grade options.

The City of Dundee stated a preference for Design Option 3.A2, 8 to 12 feet below grade with 6- to 8-foot berms, and two Bypass local road overcrossings at 6th and 10th Streets. Option 3.A2 was not included in the Preferred Alternative because that option would:
- Require greater subsurface excavation and installation of much more complex subdrainage systems.
- Require long-term maintenance and expense of subdrainage systems.
- Require 2 acres of additional right-of-way purchase.
- Cost approximately $12 million more to construct than the at-grade option.

**Rationale for Identification of the Local Circulation Option – 8th Street Overcrossing**

The 8th Street overcrossing is the identified local circulation option in Segment 3 for the Preferred Alternative. The 8th Street overcrossing is also the local emergency responders’ preferred option. The 8th Street overcrossing is preferential to the 6th Street or 10th Street locations because there is currently a local road that extends from 8th Street to serve all properties down to the Willamette River. The 8th Street overcrossing will be carried directly over the Bypass and will serve all properties between the Bypass and the Willamette River, including both of the large developable parcels on each side of 8th Street. To provide property access, additional local road construction would have been required to connect the 6th and 10th Streets’ overcrossing location options to the existing local street network.

Only one Bypass local road overcrossing to reconnect Dundee to the properties between the Bypass and the Willamette River will be included as part of the Newberg Dundee Bypass project. Based on current residential development and the location of existing local roads, 8th Street is the preferred location for the local circulation option overcrossing. ODOT will continue to coordinate with the City of Dundee on the location of the local overcrossing. The local overcrossing at 8th Street may be reconsidered if a new local road is in place at another location that would serve all properties between the Bypass and the Willamette River.

**Segment 4**

**Rationale for Identification of Design Option 4.1**

Design Option 4.1 is the preferred design option in the Preferred Alternative for Segment 4 because it will require two fewer acres of EFU land than the other design options, and there will be no significant difference in operational characteristics from other options.

**Segment 5**

**Rationale for Identification of Design Option 5.2D**

Design Option 5.2D is the preferred design option in the Preferred Alternative because it will:

- Acquire about 46 acres of property (1 acre less than the other design options in this segment).
- Relocate 29 owner-occupied residences, 19 renter-occupied residences, and 7 businesses (6 fewer owner-occupied residences and 2 fewer renter-occupied residences relocated than for the other design options).
- Allow 11th Street to remain open and retain 8 housing units on the north side of 11th Street.
- Minimize impacts to the South Newberg neighborhood, which contains low-income and minority populations.
- Preserve local connectivity to the neighborhood to the greatest extent feasible.
- Locate the Bypass farther away from Scott Leavitt Park, than it would have been with the other two design options, which will lessen the amount of noise experienced by park users.
- Result in 2.5 fewer acres of impact to wildlife habitat than that required for the other design options.

**Segment 6**

There were no design or local circulation options in Segment 6. The Preferred Alternative identified in this Tier 2 FEIS is the same as the recommended alternative in the Tier 2 DEIS.

**Segment 7**

**Rationale for Identification of Design Option 7.5C**

Design Option 7.5C is the preferred design option in the Preferred Alternative for the following reasons:

- Future development of the Chehalem Glenn Golf Course and the Providence Newberg Medical Center will be feasible. This is consistent with their master plans approved by the City of Newberg.
- Both the Providence Newberg Medical Center and Chehalem Parks and Recreation District support this option.
- There will be fewer noise impacts and potential vibration impacts to the Providence Newberg Medical Center, because the Bypass will be located about 200 feet farther away than under the other design option.

**Segment 8.1**

There were no design or local circulation options in Segment 8.1. The Preferred Alternative identified in this Tier 2 FEIS is the same as the recommended alternative in the Tier 2 DEIS.

**Segment 8.1A**

There were no design or local circulation options in Segment 8.1A. The Preferred Alternative identified in this Tier 2 FEIS is the same as the recommended alternative in the Tier 2 DEIS.

**2.2.2.5 Phase 1**

The Preferred Alternative will be constructed in multiple phases. This section provides a description of the first construction segment (i.e., Phase 1). All improvements included in Phase 1 are also included in the Preferred Alternative. Following the completion of Phase 1, ODOT and FHWA intend to pursue implementing the remainder of the project in as few phases as possible. The number of subsequent phases will be dependent upon available financing.

**Oregon Jobs and Transportation Act**

The Tier 2 DEIS stated that the Newberg Dundee Bypass project would likely be phased. The Oregon Jobs and Transportation Act (JTA), passed by the 2009 Oregon Legislature, authorized bonds to be issued as early as 2011 to finance all or any portion of a number of projects, including the Newberg Dundee Bypass. In situations where the entire project could not be funded, the legislative committee requested cost estimates for a smaller
portion or logical phases of projects. The JTA includes $192 million for construction of the initial phase of the Newberg Dundee Bypass. The funding is not enough to build the entire Preferred Alternative, but it is adequate to construct the first phase of the project, Phase 1.

In 2009, the Oregon Transportation Commission (OTC) adopted the JTA project list into the State Transportation Improvement Program. There is broad support by project stakeholders, including local jurisdictions in the project area, for construction of Phase 1.

**Phase 1 Location and Improvements**

Phase 1 will include construction of one lane of the Bypass in each direction, between Oregon 219 and Oregon 99W south of Dundee (about 4 miles in length; see Figure PA 2.2-6). Phase 1 will also include required local circulation changes needed to accommodate construction of Phase 1 of the Bypass. Phase 1 of the Bypass will only have access points at the two ends: Oregon 219 in the north and Oregon 99W in the south. Phase 1 will build the westbound travel lanes of the Bypass within a portion of Segment 2; within all of Segments 3, 4 and 5; and within a portion Segment 6. Phase 1 will not include construction of the East Dundee Connector or the associated local circulation improvements in Segment 4.

Phase 1 will have the following characteristics:

- Operating speed of 55 mph
- Two 12-foot travel lanes (one in each direction)
- Paved shoulders\(^3\) (approximately 7 feet wide)
- Full access control between Oregon 219 and Oregon 99W
- Stormwater treatment facilities

The Bypass portion of Phase 1 will begin at a new signalized intersection on Oregon 219,\(^4\) extending south through Newberg into Dundee. South of Dundee, the Bypass, will leave the eventual full Bypass alignment, proceed west (generally parallel to the Dundee city limits), and cross over the Willamette and Pacific Railroad (WPRR) and Oregon 99W. After crossing over Oregon 99W, the Bypass will loop around and connect to Oregon 99W at a new signalized intersection. ODOT will remove the Phase 1 connection between the Bypass and Oregon 99W when the Bypass is extended to Oregon 18 in

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\(^3\) Oregon 99W will remain the designated bicycle route through the Newberg and Dundee areas after Phase 1 is constructed. Bicycles will be allowed to use the Bypass’s outside shoulders.

\(^4\) Some of the improvements made in the vicinity of Oregon 219 and Phase 1 of the Bypass will be removed and reconstructed when the Bypass is extended north to Oregon 99W (e.g., Oregon 219 at the Bypass will be reconstructed to an elevated structure to accommodate extension of the Bypass over Oregon 219).
Dayton. For a complete description of the design concepts examined and the review process for the Phase 1 connection to Oregon 99W, see the Newberg Dundee Bypass – Phase 1 South Oregon 99W Connection Report (ODOT, December 2011). Phase 1 will not include construction of the East Dundee Connector Road or the East Dundee Interchange.

**Local Road Improvements**

Phase 1 will include two new project areas that were not previously included in the Tier 2 DEIS Build Alternative (see Figure PA 2.2-6). These new areas are located in East Newberg and south of Dundee. With Phase 1, roadway improvements are needed in these new areas to provide vehicular access between the Bypass and Oregon 99W. These areas include improvements to Springbrook Road in East Newberg (see Figure PA 2.2-7) and an interim connection between the Bypass and Oregon 99W south of the Dundee city limits and UGB, next to Parks Drive and Niederberger Road (see Figure PA 2.2-8).

Phase 1 improvements in the new area in East Newberg will include:

- An additional southbound left turn lane on Oregon 99W at Springbrook Road
- Widening Springbrook Road to three lanes (one northbound lane, one southbound lane, and a center dual left turn lane) generally between Oregon 99W and Oregon 219
- Constructing a traffic signal at the intersection of Springbrook and Fernwood Roads
- Adding a second southbound left turn lane on Springbrook Road at Oregon 219
- Widening Oregon 219 to five lanes between Springbrook Road and the new Bypass signalized intersection on Oregon 219 (Similar to full Bypass improvements on Oregon 219)
- Connecting Wilsonville Road to the new Bypass signalized intersection on Oregon 219
- Restricting Oregon 219 at 2nd Street to right-in/right-out
- Adding a right turn lane on Wynooski Road at Oregon 219
- Stormwater treatment facilities

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5 See Section 3.1 for a summary of the opening year (2016) traffic analysis that ODOT used to identify these needed roadway improvements for Phase 1.
Phase 1 improvements in the new area south of Dundee include:

- Construction of an interim section of the Bypass to connect to Oregon 99W, via a new structure over the WPRR and Oregon 99W, connecting to Oregon 99W at an interim signalized intersection
- Widening westbound Oregon 99W west of the new intersection to two travel lanes
- Widening eastbound Oregon 99W west of the new intersection to include two left turn lanes onto the Bypass
- Access changes for several properties fronting Oregon 99W south of Dundee, including the construction of a cul-de-sac
- Stormwater treatment facilities

Chapter 3 includes information on the new areas included in Phase 1 that were not discussed in the Tier 2 DEIS, including affected environment, environmental consequences and mitigation.
Figure PA 2.2-6. Phase 1 Location and Segments

- Phase 1 Segments 2, 4, and 6
- Phase 1 Segments 3 and 5
- New Areas not Previously Analyzed in Tier 2 DEIS

Legend:
- Roadway Improvements in East Newberg
- Willamette & Pacific Railroad
- Willamette River
- City Limits
- Urban Growth Boundary (UGB)

Figure file: File Path: N:\B_TaskProcessing\Revised_DEIS_08\MXD\EIS_07\Chapter2_Alternatives\DEIS_Segments Index.mxd, Date: April 11, 2008 11:09:43 AM
Figure PA 2.2-7 Phase 1 New Areas in East Newberg

- Restricted right in/right out.
- Additional southbound left turn lane.
- Add right turn lane.
- Widen Springbrook Road to three lanes.
- Widen Oregon 219 to five lanes. Add traffic signal. Connect Wilsonville Road to new Bypass.
- Add traffic signal.

Map ID: Fig2.2-7 Ph1NewAreaENewberg.indd
Print Date: December 2011
Construct new signalized intersection.

Widen westbound Oregon 99W to two travel lanes.

Widen eastbound Oregon 99W. Include two left turn lanes.

Interim structure connects Phase 1 to Oregon 99W.

Figure PA 2.2-8 Phase 1 New Areas South of Dundee

- Phase 1
- Roadway Improvements
- Right-of-Way
- Bridge

Map ID: Fig2.2-8 Ph1NewAreasSDundee.indd
Print Date: December 2011
2.2.2.6 Funding and Cost Estimates

Funding

Based on the approval of the Tier 1 EIS Corridor, limited federal funding was obtained to purchase some right-of-way for hardship and protective actions for some properties. As of January 2012, over 40 properties have been acquired from willing sellers. See Section 3.3, Right-of-Way, for additional information on property acquisition.

The JTA (HB 2001), passed by the 2009 Oregon Legislature, authorizes bonds to be issued to finance all or any portion of a number of projects. This act includes $192 million for the Newberg Dundee Bypass. The earliest that overall right-of-way acquisition for Phase 1 could begin is in 2013. Construction would follow in 2014 and is anticipated to be complete in 2016. Therefore, the cost estimates for Phase 1 have been inflated to reflect 2013 right-of-way and 2015 construction costs (the midyear of Phase 1 construction). An annual factor of 4.3 percent was used through 2010, then 4.0 percent after 2010.

Funding sources for the remainder of the Preferred Alternative have not been identified.

Preferred Alternative and Phase 1 Cost Estimate

ODOT developed preliminary cost estimates for each segment of the Bypass, and every design option and local circulation option during the project development process in 2007. These cost estimates were updated in 2011 for the Preferred Alternative and Phase 1 for inclusion in this Tier 2 FEIS. These estimates provide a range of the overall project cost and a general understanding of how the costs of a segment compare to each other. The estimates follow ODOT’s standard procedures for cost estimating. However, at this time there is not enough engineering design information to prepare detailed cost estimates for the entire project. Most construction items and quantities of materials used in the project cost estimate are calculated and applied in a per-unit cost. For example, the tons of asphalt and base aggregate and the square footage of a bridge deck were computed, and an appropriate unit cost was applied. Some factors, such as traffic control and surveying, were assumed to cost a percentage of other items.

Since design details are not sufficiently defined to estimate all project costs, a contingency of about 20 percent of the total estimated construction costs is added. The contingency includes likely additional costs that will become known as the design becomes more detailed. The project design is approximately 15 percent complete. After the Tier 2 ROD is issued, ODOT will complete detailed engineering designs and cost estimates, focusing on Phase 1. The cost estimate for Phase 1 was inflated to reflect ODOT’s earliest estimate of when implementation funding could occur, 2013 for right-of-way acquisition and 2015 for construction to begin.

Table PA 2.2-1 summarizes the costs of right-of-way acquisition and construction, by segment, for the Preferred Alternative and Phase 1.

Table PA 2.2-1. Preferred Alternative and Phase 1 Cost Estimates

<table>
<thead>
<tr>
<th>Build Alternative Segments</th>
<th>Preferred Alternative Cost Estimate in Millions</th>
<th>Phase 1 Cost Estimate in Millions</th>
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<tr>
<td></td>
<td>Construction Cost</td>
<td>Right-of-Way Cost</td>
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<td>$21.6</td>
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<tr>
<td>3</td>
<td>$26.2</td>
<td>$11.9</td>
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## Table PA 2.2-1. Preferred Alternative and Phase 1 Cost Estimates

<table>
<thead>
<tr>
<th>Build Alternative Segments</th>
<th>Preferred Alternative Cost Estimate in Millions</th>
<th>Phase 1 Cost Estimate in Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Construction Cost&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Right-of-Way Cost&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>4</td>
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<tr>
<td>Total</td>
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<td>$187.1</td>
</tr>
</tbody>
</table>

Source: ODOT, October 2011.

a Costs for the Preferred Alternative are provided in 2013 and 2015 dollars for comparison to the Phase 1 cost estimates. Construction of the remainder of the Preferred Alternative after construction of Phase 1 will occur in dollars later than 2013 for right-of-way costs and later than 2015 for construction costs.

b Construction costs include local circulation costs for the segment, an estimate of relocation costs for utilities and are in 2015 dollars.

c Right-of-way costs are in 2013 dollars.

### 2.3 DESIGN OPTIONS CONSIDERED BUT WITHDRAWN

The Tier 2 DEIS included discussion of design options that were considered, but withdrawn. This Tier 2 FEIS has retained that discussion, but has placed the discussion in Appendix O.
2.4 TIER 2 DEIS BUILD ALTERNATIVE

The following is an exact copy of the Tier 2 DEIS Build Alternative section for Chapter 2. In-text references cite information in the Tier 2 DEIS.

The Tier 2 DEIS Build Alternative, which includes all of the design and local circulation options no longer under consideration, is included here as a comparison to the Tier 2 FEIS Preferred Alternative and for informational purposes only.

Copies of the complete Tier 2 DEIS are available from:

Kelly Amador, Senior Project Leader, Region 2
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Mid-Willamette Valley Area
885 Airport Road SE, Building P
Salem, OR 97301-4788
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2.2.2 Build Alternative

The Build Alternative is an 11-mile, access-controlled expressway around the cities of Newberg and Dundee in Yamhill County, Oregon (see Figure 2.2-1). This new expressway has the following characteristics:

- Operating speeds of 55 mph.
- Four mainline travel lanes (two in each direction), each 12 feet wide.
- Paved shoulders (4 feet wide inside and 10- to 12 feet wide outside).
- Full access control along the Bypass.
- An average median width of 42 feet.
- Stormwater quality control features.

In addition, Oregon 99W will remain the designated bicycle route through the Newberg and Dundee area after the Build Alternative is constructed. Bicycles are allowed on almost all Interstate and State Highways in Oregon. The 10- to 12-foot-wide outside shoulders planned for the Bypass will also accommodate bicycles safely. Local circulation changes to roads disrupted by the Bypass will be reconstructed to city or county design standards, which include bicycle and pedestrian facilities.

As stated above, the Build Alternative is divided into segments for analysis and easier identification of specific locations in the project area. In some segments only one design is proposed because decisions about the best roadway design or how to handle local roads disrupted by the Bypass project are clear. In other segments, there are choices still under consideration that are evaluated in this document.

This review process gives stakeholders an opportunity to provide feedback on the options they think will work best.

Design options are choices for the Bypass design, and include:

- Variations in interchange design.
- Whether to use berms for visual screening on sections of the Bypass roadway.
- Whether to align sections of the Bypass roadway at-grade, depressed below-grade, or above-grade.
Local circulation options are choices about changes to local roads that are disrupted by the Bypass. Some of these options are independent of the design options, while others are associated with specific design options. Local circulation options include:

- Different ways to reconnect a local road that has been disrupted by the Bypass.
- Different locations for local roads crossing over the Bypass.

Not every segment includes design and/or local circulation options. However, even if there are no options, the Bypass design and local circulation are described. Where options exist, the impact analysis for the Build Alternative (see Chapter 3) describes and compares the impacts of the options available.

The following sections describe the Build Alternative by segment and the design and local circulation options within each segment in detail. Where there are options, the features common to the options and differences between the options are noted. The following roadway and interchange illustrations show some of the design option characteristics.