



## BUILD ALTERNATIVES SUMMARY OF ENVIRONMENTAL CONSEQUENCES

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The intent of this summary is to compare anticipated environmental consequences for the two build alternatives under consideration for the Fern Valley Interchange project. This information is based on draft environmental technical reports. Although some adjustments could be made between the draft and final technical reports, these changes should be minor; the comparative differences between the alternatives should remain about the same. Additional minor changes (e.g., acreages) could continue to occur as the project alternative(s) are refined. A table comparing the two build alternatives is provided at the end of this document.

### AIR QUALITY

The primary impacts<sup>1</sup> to air quality generated by highway projects are due to dispersion of dust particles (PM<sub>10</sub>) during earth-moving and excavation. Other pollutants include fine particulate matter (PM<sub>2.5</sub>), carbon monoxide (CO), oxides of nitrogen, and hydrocarbon and sulfur dioxide emissions from the diesel and gasoline engines of trucks.

Objectionable odors are another form of air pollution and are caused by a variety of compounds emitted by the diesel exhaust of heavy machinery and asphalt paving. In addition, motor vehicles emit a variety of toxic compounds, known as mobile source air toxics from the combustion of diesel and gasoline fuels. Mitigation measures have been undertaken on a regional basis, such as the phase-out of lead in gasoline, the introduction of low-sulfur diesel fuel and the installation of particulate traps on diesel buses.

The project is located in an area designated by the Environmental Protection Agency as being in attainment of the CO National Ambient Air Quality Standard. It is located within the Rogue Valley (PM<sub>10</sub>) Air Quality Maintenance Area and outside of the Medford Urban Growth Boundary (CO maintenance) Area. PM<sub>2.5</sub> levels are slightly below current standards. The project is included in the current conforming Regional Transportation plan (2005-2030) and the Transportation Improvement Plan (2006-2009).

Impacts to air quality from the construction and operation of improvements to the Fern Valley Interchange (with either build alternative) are not expected to cause exceedances of State and Federal air quality standards in the future—either at intersections redesigned by the project or in adjacent neighborhoods. This is primarily due to ongoing improvements in engine technology, emission control and vehicle maintenance.

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<sup>1</sup> Environmental consequences are also referred to as “impacts” or “effects.”

The intersection of OR 99 and Fern Valley Road is the highest volume and most congested intersection within the project study area. Both of the build alternatives would cause traffic volumes to increase at this intersection, but levels of congestion would remain the same or decline due to improved traffic operation. The OR 99/Fern Valley Road intersection was examined to determine if the proposed project changes would create exceedances of State and Federal air quality standards. This intersection was found to have traffic volumes too low to cause air quality exceedances. Since this highest-volume intersection would not create exceedances, no other intersections would be expected to create exceedances.

The greatest chance for air quality impacts is to adjacent land uses during construction, when the demolition, earth-moving and paving tasks would generate dust and particulate matter and other pollutants from the use of heavy machinery. The use of Best Available Construction Practices would greatly minimize air quality impacts and no additional mitigation measures would be recommended except near the interchange, where the spraying of water to control dust during earthmoving and grading is recommended.

## ARCHAEOLOGY

No archaeological resources were identified during the reconnaissance activities described in this report or during previous investigations; however, an archaeological reconnaissance cannot necessarily locate all archaeological resources within a project area. Vegetation, flood events, and existing development within portions of the project API often hinder the reconnaissance effort by covering or obscuring the visible remains of past cultures. While most of the project area does not appear to have high probability to contain buried deposits, based on research and the results of the current investigation, a few areas are considered to potentially contain prehistoric and historic resources.

Neither build alternative is anticipated to result in direct, indirect or cumulative impacts to known archaeological sites. However, there is a potential for as yet unidentified, buried resources to be directly impacted by various construction activities, particularly those that would occur within non-disturbed, native soil. If archaeological resources are discovered during construction of the Project, appropriate mitigation measures would be followed to insure their identification, evaluation, and disposition.

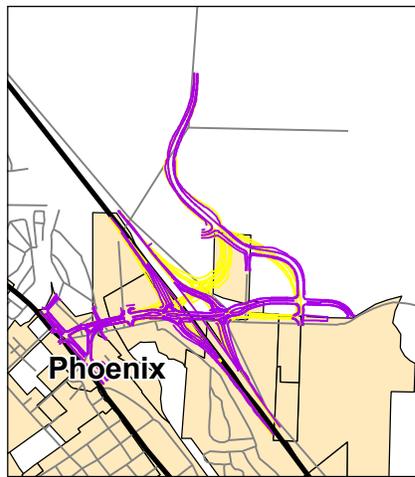
## BIOLOGY, AQUATIC

Water resources in the API include Bear Creek, Coleman Creek, and Payne Creek (see Figure ES-1). Bear Creek and Coleman Creek support several anadromous<sup>2</sup> fish species, including Coho salmon, summer steelhead, and fall Chinook. Neither summer steelhead (Klamath Mountain Province) nor fall Chinook (Southern Oregon Coastal and Northern California Coastal) are listed under the Endangered Species Act. Coho salmon (Southern Oregon/Northern California Coast) are currently listed as Threatened under the Endangered Species Act. Critical habitat for Southern Oregon/Northern California Coast



### Map Features

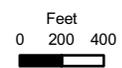
- Waterways
- Fern Valley East Alternative
- North Phoenix Through Alternative
- Approximate Extent of Aquatic API (unquantified)
- Area of Potential Impact (API)



Not to Scale

### Waterways in the API

Figure ES-1  
July 2007



Coho has been designated by the National Marine Fisheries Service (NMFS), and includes Bear Creek, Coleman Creek, and Payne Creek.

Payne Creek has historically supported anadromous salmonids (including cutthroat trout, steelhead, and coho salmon). Today, only the lower reaches of Payne Creek between the I-5 Culvert and the confluence of Bear Creek are known to support salmonids. Payne Creek is designated as Critical habitat by the NMFS.

West of I-5, potential impacts to Bear and Coleman Creeks would be similar for both build alternatives. Direct impacts include removal of riparian vegetation associated with the widening of the Bear Creek Bridge and habitat/substrate modifications from temporary work bridges. Short-term (temporary) impacts would be negligible and include: increased sedimentation and turbidity, and the potential for construction-related debris to enter the waterway. Long-term beneficial effects to Bear Creek, as a result of removing the existing structure, include localized improvement to habitat elements, localized improvement to habitat access, and localized improvements to channel conditions and dynamics.

East of I-5, the Fern Valley Thru Alternative would have a slightly greater potential for impacting fisheries resources and water quality than the N. Phoenix Thru Alternative. The difference results from the Fern Valley Thru Alternative alignment, which includes an additional bridge across Payne Creek. This crossing would result in removal of riparian vegetation, as well as the potential short term (temporary) impacts noted above. However, this alternative would also remove the existing culvert under Fern Valley Road at Payne Creek. If removed, the area would be restored with native riparian vegetation, resulting in an overall benefit to the system.

Both alternatives would add a substantial amount of new impervious surface. Water quality and quantity would be addressed through detention/treatment facilities that would be built as part of the project.

The extent to which the impacts for either build alternative would affect aquatic resources located downstream in Bear Creek is considered to be minor based on the scope and intensity of this project.

Best management practices and standard conservation and mitigation measures would be included in the project specifications to minimize impacts to aquatic resources.

## **BIOLOGY, TERRESTRIAL**

### *Habitat*

The Rogue River Valley is home to many different species of mammals, birds, reptiles, and amphibians. The ability of any specific area within the valley to provide habitat for wildlife is dependent upon many factors, such as available food, cover, and water.

The API includes five distinct habitat types that have developed in response to the local topography, climatic conditions, and past land use practices (Figure ES-2). Agriculture, utility and highway construction, commercial and residential development, and industry have highly fragmented the vegetative patterns across the landscape. What exists today are developed urban areas, agricultural fields/pastures, riparian forests along Bear and Coleman Creeks, woodlands, and wetlands.

### *Wildlife and Plants*

Terrestrial wildlife and plant species that may occur in the vicinity of the FVI Project were identified. This included those that are listed as endangered, threatened, proposed, or candidate under the federal and state Endangered Species Acts (ESAs). No ESA-listed wildlife species or suitable habitats were identified in the API. No rare plants were identified, but some noxious plants were found.

### *Potential Project Impacts*

The No-Build Alternative would result no direct short- or long-term impacts to current biological conditions for terrestrial species or habitat.

The N. Phoenix Thru and Fern Valley Thru Alternatives would result in the potential for similar direct effects to habitat types. Most of the habitat type is developed urban area. However, both build alternatives would impact about 12 acres of agricultural fields/pastures. The Fern Valley Thru Alternative would impact slightly more riparian forest and woodland habitat types than the N. Phoenix Thru Alternative (1.1 acres vs. 0.7 acre). N. Phoenix Thru would impact slightly more wetland habitat type than Fern Valley Thru (4.0 vs. 3.7 acres)<sup>3</sup>. The loss of forested habitats is most harmful to wildlife because forested habitats offer higher habitat value (including cover, food resource, and nesting sites) than non-forested habitats.

Neither build alternative is likely to impact listed terrestrial wildlife or potential unidentified rare plant species due to the amount of existing development, lack of species presence, and minimal and fragmented suitable habitat. The project would have potential to spread noxious weeds, which were observed scattered throughout the API. Fill material has the potential to further introduce weedy species that may displace native vegetation, but the project would be planned with conservation measures to prevent the further spread of noxious weeds.

An increase in the rate of development in the rural area within the API may be considered an indirect effect of the build alternatives. However, this area has experienced and is likely to continue to experience increased development regardless of the construction of one of the build alternatives. Either build alternative would result in indirect biological effects due to the addition of impervious surface and the removal of habitat. Impacts could include displacement of species from their habitats and increased competition

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<sup>3</sup> These acreages vary slightly from the wetland impact acreages below. This is due to calculation and analysis methods, but will be clarified in the final technical reports and EA.



- |                            |                              |
|----------------------------|------------------------------|
|                            | API                          |
| <b>Habitat Communities</b> |                              |
|                            | Agricultural Fields/Pastures |
|                            | Developed Urban Area         |
|                            | Riparian Forest              |
|                            | Wetlands/Other Waters        |
|                            | Woodland Areas               |



## Habitat Communities in the API

Figure ES-2

September 2007

Feet  
0 200 400



between species and among individuals of the same species for limited resources (e.g., nesting and denning sites, food resources, and protective cover). No indirect impacts to ESA listed wildlife or plant species are expected to occur as a result of construction of the N. Phoenix Thru or Fern Valley Thru Alternatives.

Conservation measures would be implemented to minimize or avoid potential temporary and long-term environmental impacts to listed terrestrial species and habitat.

## **GEOLOGY**

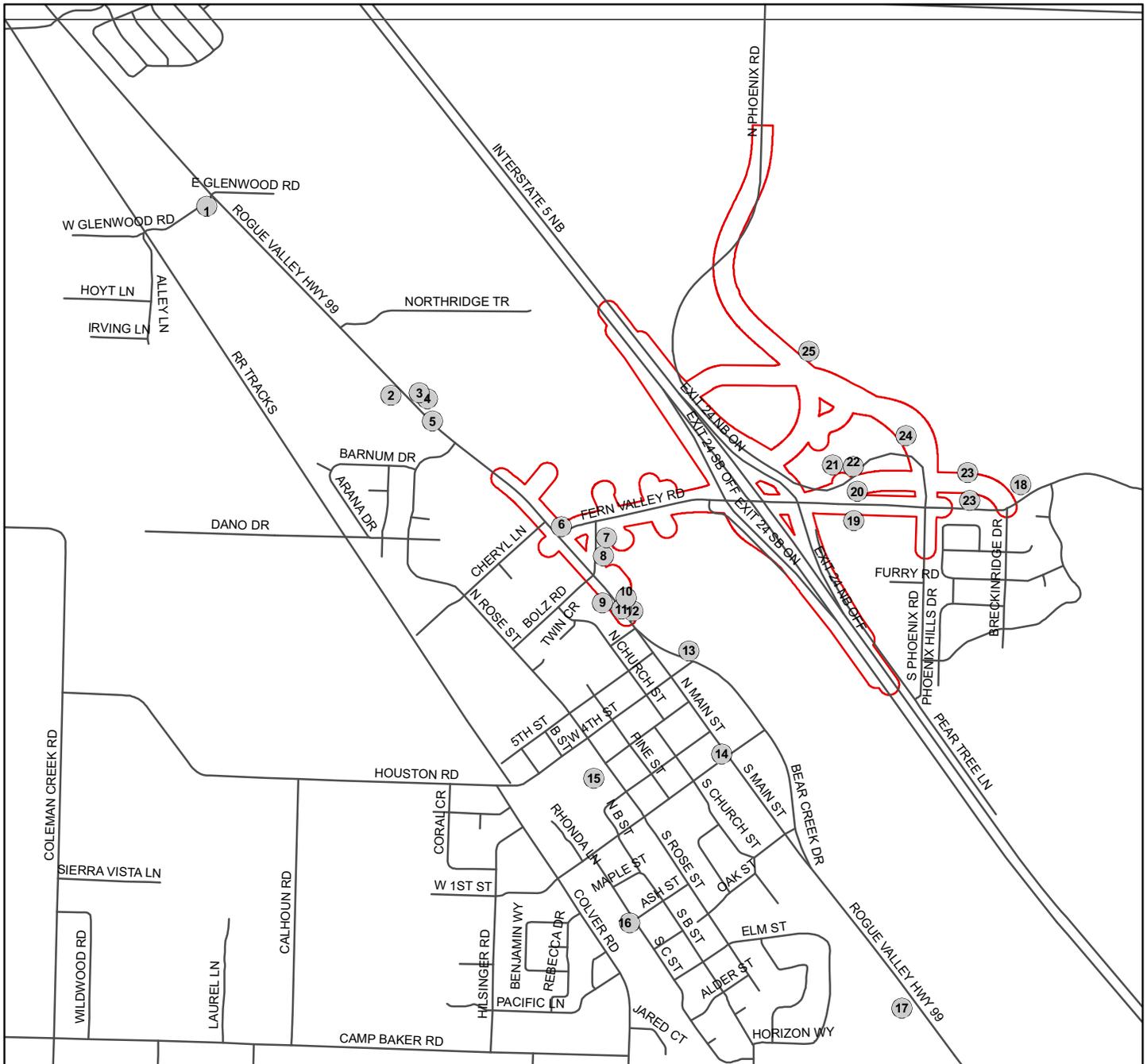
The build alternatives would be exposed to minimal geologic hazards, which include seismic hazards, slope stability (landslide) hazards, and soil erosion hazards.

The Bear Creek Bridge and the existing overpass are not constructed to current seismic standards. The No-Build Alternative would result in these sub-standard structures to remain in place and thus could present a hazard to the public in the event of an earthquake. Geotechnical design of the structures would adhere to the AASHTO Standard Specifications for Highway Bridges, ODOT's Standards Specifications for Construction, and FHWA design guidelines. A formal geotechnical subsurface investigation would be required for final design.

The proposed cuts and fills required for the build alternatives could potentially create temporary slope instability during the construction of road cuts and retaining walls. In addition, permanent cut and fill slopes may be susceptible to erosion. To mitigate these issues, proper erosion control would be in place at the time of construction and slopes would be engineered in accordance with ODOT and FHWA guidelines. Temporary and permanent slopes would be designed to minimize the likelihood of instability or susceptibility to erosion.

## **HAZARDOUS MATERIALS**

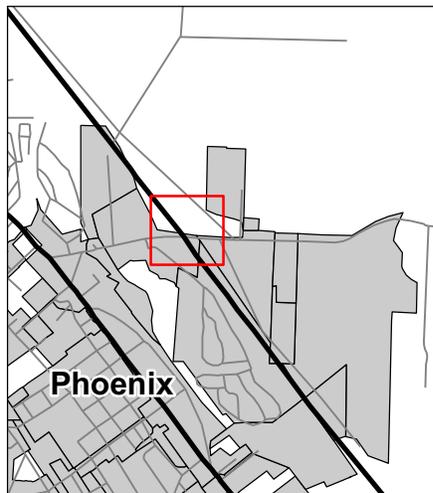
Evaluation of the API indicated that there are 25 Sites of Concern for the Fern Valley Interchange project (Figure ES-3). These sites were identified as having been impacted by releases of hazardous materials and/or hazardous waste that may impact the project. A low concern indicates the potential for hazardous materials to impact the soil and groundwater beneath the alternative is insignificant, and no further action is needed. A moderate concern indicates the potential for hazardous materials to impact the alternative is present, and further action is recommended. A moderate ranking is also assigned to sites that have not been fully investigated, or limited information was available for review. A high concern indicates hazardous materials have a high potential to impact the alternative, and further action is recommended.



### Map Features

- Sites of Concern
- Area of Potential Impact

Source: URS, ODOT



Not to Scale

### Potential Sites of Concern

Figure ES-3  
November 2007



For the Fern Valley Thru Alternative, of the 25 sites, 18 were identified as low concern, three as moderate concern; and four as high concern. For the N. Phoenix Thru Alternative, 18 were identified as low concern, three as moderate concern; and three as high concern. One of the 25 sites poses no concern to the N. Phoenix Thru Alternative (see the following table).

<b>SITES OF MODERATE OR HIGH CONCERN</b>					
Site #	Site Name	Fern Valley Thru		N. Phoenix Thru	
		Distance of the Site from the Alternative	Concern	Distance of the Site from the Alternative	Concern
6	Phoenix Circle K / ConocoPhillips #162 (Former Phoenix Exxon #9290)	Partial acquisition at S and W property boundaries	Moderate	Partial acquisition at S and W property boundaries	Moderate
7	Residences	Full to partial acquisition	High	Full to partial acquisition	High
19	PETRO Truck Stop and Shopping Center	20 feet to E	High	Partial acquisition along N property boundary	High
20	Former Giant Cardlock Station	Acquisition through N half of tax lot	High	Adjacent to NE	Moderate
23	Farm Buildings	Acquisition through the center of the tax lot between the two groups of buildings	Moderate	400 feet to E	None
24	Orchard Field	Acquisition through the center of the tax lot	High	Acquisition through the center of the tax lot	High
25	Farm Buildings	Acquisition through the SW corner of the tax lot	Moderate	Acquisition through the SW corner of the tax lot	Moderate

Project activities could have both beneficial and non-beneficial effects to Sites of Concern in the API. Beneficial effects could include:

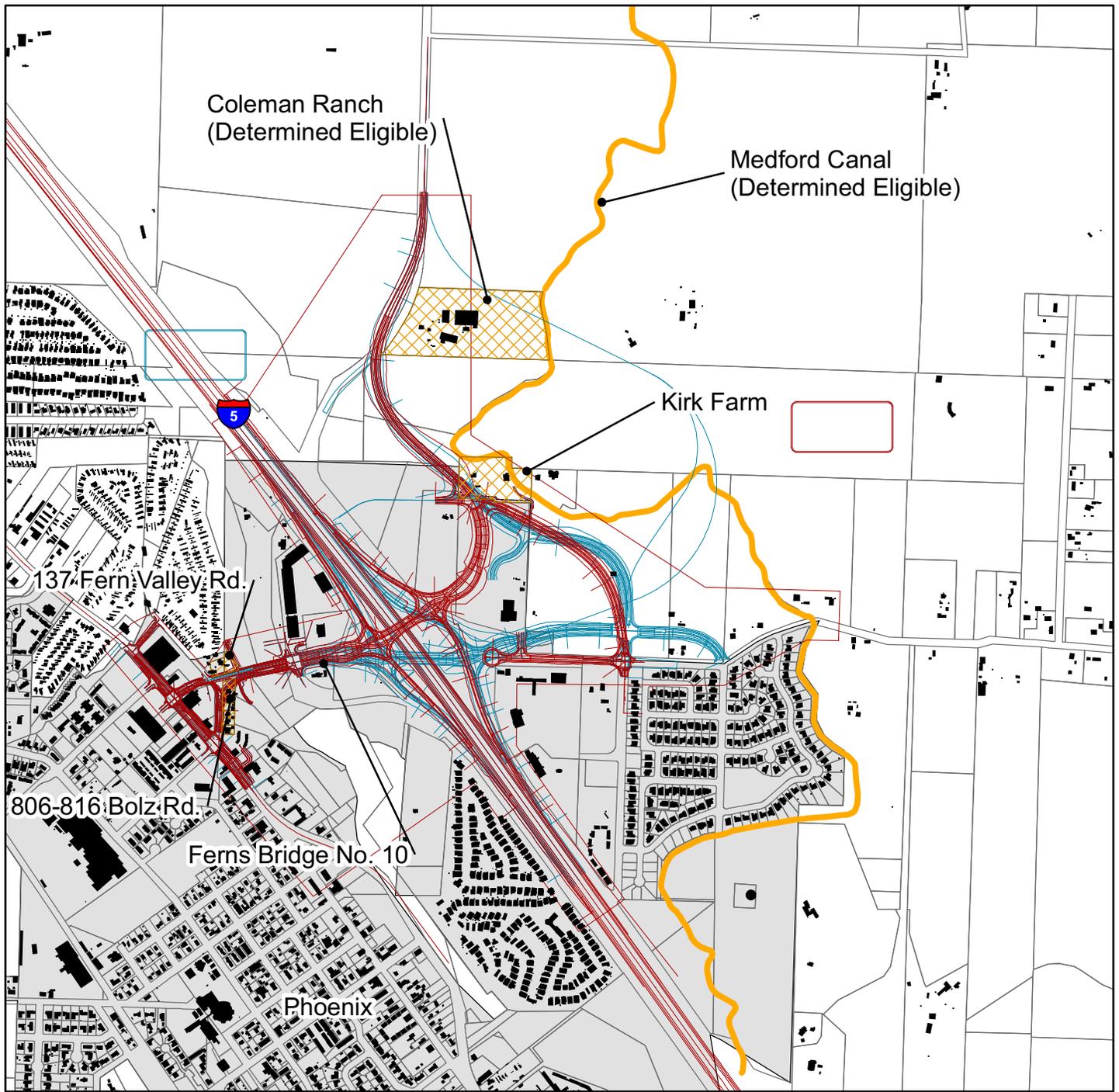
- Increased public safety and positive impacts on the environment associated with contamination removal.
- Improved understanding of existing subsurface conditions from subsurface investigations.
- Enhanced assessment of property values as a result of subsurface investigations.

Non-beneficial effects could include:

- Possible short-term exposure of hazardous materials to the public and environment as a result of construction activities.
- Possible re-mobilization of existing contaminated soil and groundwater due to excavation below sub-grade. Groundwater may preferentially flow within the newly constructed utility corridors.

## HISTORIC RESOURCES

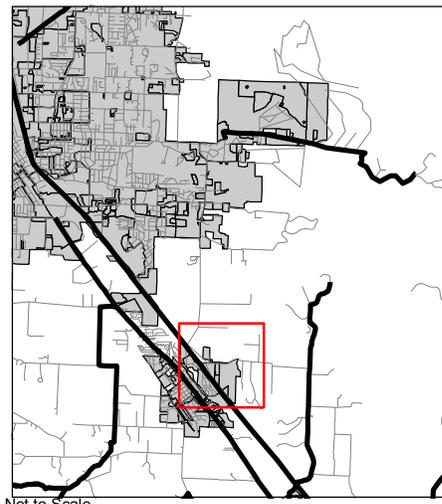
Three potential historic resources were identified in the project API (Figure ES-4): the Medford Canal (an irrigation canal running along the east side of the API); Coleman Ranch (now known as Arrowhead Ranch, located at 3001 N. Phoenix Road); and the James Kirk Farm (located at 3381 N. Phoenix Road). The Medford Canal and Coleman Ranch were both determined to be eligible for listing on the National Register of Historic



**Map Features**

-  N. Phoenix Thru Alternative
-  Fern Valley Thru Alternative
-  Resources Evaluated

Source: ODOT  
URS Corporation



## Potential Historic Resources Evaluated

Figure ES-4  
November 2007



K:\Farm\_Valley\_MXD\Historic Resources Map\Figure\_5\_2.mxd

This figure reflects conceptual design, and is subject to change. As the project is refined, some changes may occur.

Places (NRHP) for their association with the early development patterns of the lower Rogue Valley. The James Kirk Farm was determined to be not eligible for the NRHP due to a loss of architectural and contextual integrity.

In the vicinity of the Coleman Ranch and Medford Canal, the Fern Valley Thru and N. Phoenix Thru Alternatives are the same. Both alternatives would be located close to the historic resources, but would not impact either directly. In the case of the Coleman Ranch, the eastern edge of a fill slope would come very close to the southwestern corner of the property. Both build alternatives would realign N. Phoenix Road to the west; in its new position, the road would be located farther from the ranch. Although this would represent a change, it would not substantially alter the ranch's relationship to the road. In the case of the Medford Canal, both alternatives' cut slopes would be close to the canal and its access road.

## LAND USE AND PLANNING

### *Jurisdiction*

The City of Phoenix and Jackson County have land use jurisdiction within the project area. The Rogue Valley Council of Governments coordinates an ongoing long-range land use planning project (Regional Problem Solving – RPS). The Department of Land Conservation and Development has regulatory authority over statewide land use goals.

### *Existing Land Use*

Land uses surrounding the Fern Valley Interchange include a mixture of commercial and residential uses, with substantial acreage in either vacant or agricultural use. Existing land use in the API include:

- The northwest interchange quadrant is fully developed with an outlet mall (Stores at Exit 24), fast food restaurant, Coleman Creek Estates, and a recreational vehicle park.
- The southwest quadrant is vacant, except for a small single-story office building and a large mobile home park (Bear Lake Estates).
- The northeast quadrant is developed with Home Depot, a furniture store, a semi-truck sales/repair business, and several rural residential uses; the rest of this quadrant contains a pear orchard and undeveloped land.
- The southeast quadrant is largely developed with commercial properties (a truck stop, gas station, restaurant, motel, recreational vehicle park, and mobile home sales lot) and single family residences in the Phoenix Hills neighborhood.
- Both the southwest and northwest quadrants are bounded on the west by Bear Creek and the Bear Creek Greenway, a linear parkway which includes a multi-use, paved bike/pedestrian path. West of Bear Creek, properties along OR 99 are primarily commercial, and are built up to urban densities.

## *Zoning and Comprehensive Plan Designations*

Existing zoning in the vicinity of the project area is shown in Figure ES-5. Comprehensive plan designations are shown in Figure ES-6. Outside of the urban growth boundary (UGB), more than three quarters of the land within the API is zoned Exclusive Farm Use (EFU).

## *Land Use Impacts*

The direct land use impacts<sup>4</sup> associated with the two build alternatives would be similar (about 25.5 acres would be required for the Fern Valley Thru Alternative, and about 25.8 acres would be required for the N. Phoenix Thru Alternative). The differences between the build alternatives occur east of I-5. The Fern Valley Thru Alternative would have less impact on commercial lands, but would have more impact on farmland than the N. Phoenix Thru Alternative.

The project could have three types of indirect land use impacts<sup>5</sup>: impacts on land development resulting from change in access; impacts resulting from highway traffic effects on both developed and undeveloped parcels; and changes in use resulting from the effect of right of way acquisition on property boundaries. The indirect impacts would be very similar for both build alternatives:

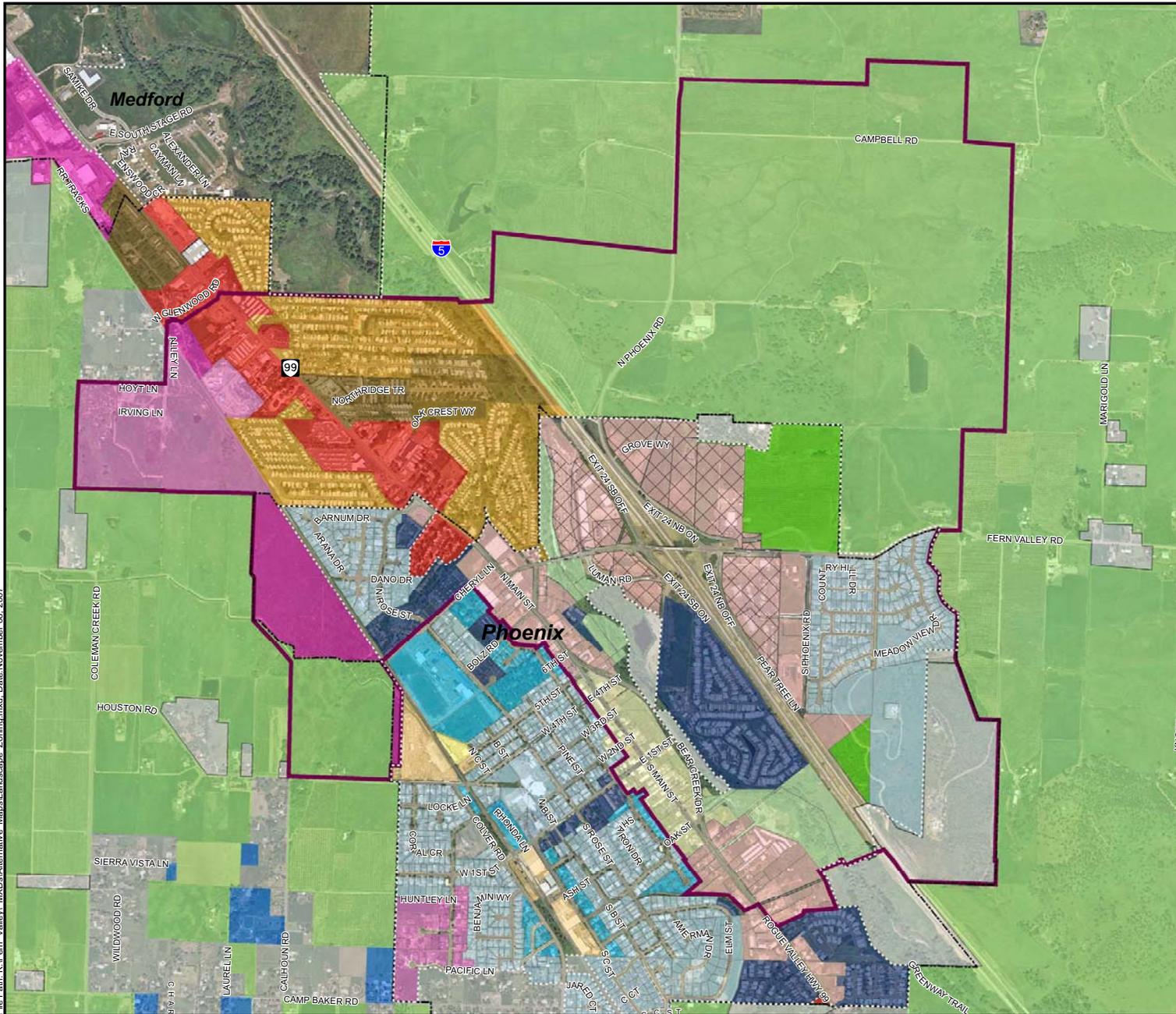
- Both build alternatives would likely result in pressure to increase the rate of development within the interchange area and on rural lands northeast of the interchange. Future development patterns may differ with each build alternative, depending on access, zone changes, and economic conditions.
- Both build alternatives would increase the need for and pressure to fund additional transportation improvements to handle increased development (e.g., South Stage Road overcrossing; access roads to and within developments).
- Both alternatives could impact the design of future development of specific properties (e.g., the orchard in the northeast quadrant) to accommodate the project alternative.
- Vacant commercial buildings and residential uses within commercially zoned areas in the API, especially along OR 99 and Fern Valley Road, may be pressured to redevelop.
- The N. Phoenix Thru Alternative would accommodate higher levels of development due to its greater ability to handle eastside projected traffic volumes.

The Interchange Area Management Plan is considered part of each build alternative. Because it incorporates access management measures and land use actions to ensure interchange performance, it may affect the location, rate and density of development. If development results in substantial increases in population, employment, and associated

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<sup>4</sup> Direct impacts would be caused by the project and occur at the same time and place.

<sup>5</sup> Indirect impacts would be caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Cumulative impacts would result from the incremental impact of the project when added to other past, present, and reasonably foreseeable future actions.



**Figure ES-5  
Existing Zoning**

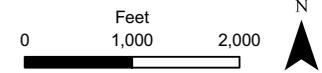
- Urban Growth Boundary UGB
- City Boundary
- Interchange Management Area Boundary

**City Zoning**

- Bear Creek Greenway
- City Center
- Commercial Highway
- Farm Residential
- Hillsifer Overlay
- Light Industrial
- Industrial
- Low Density Residential
- Medium Density Residential
- High Density Residential
- I-5 Overlay

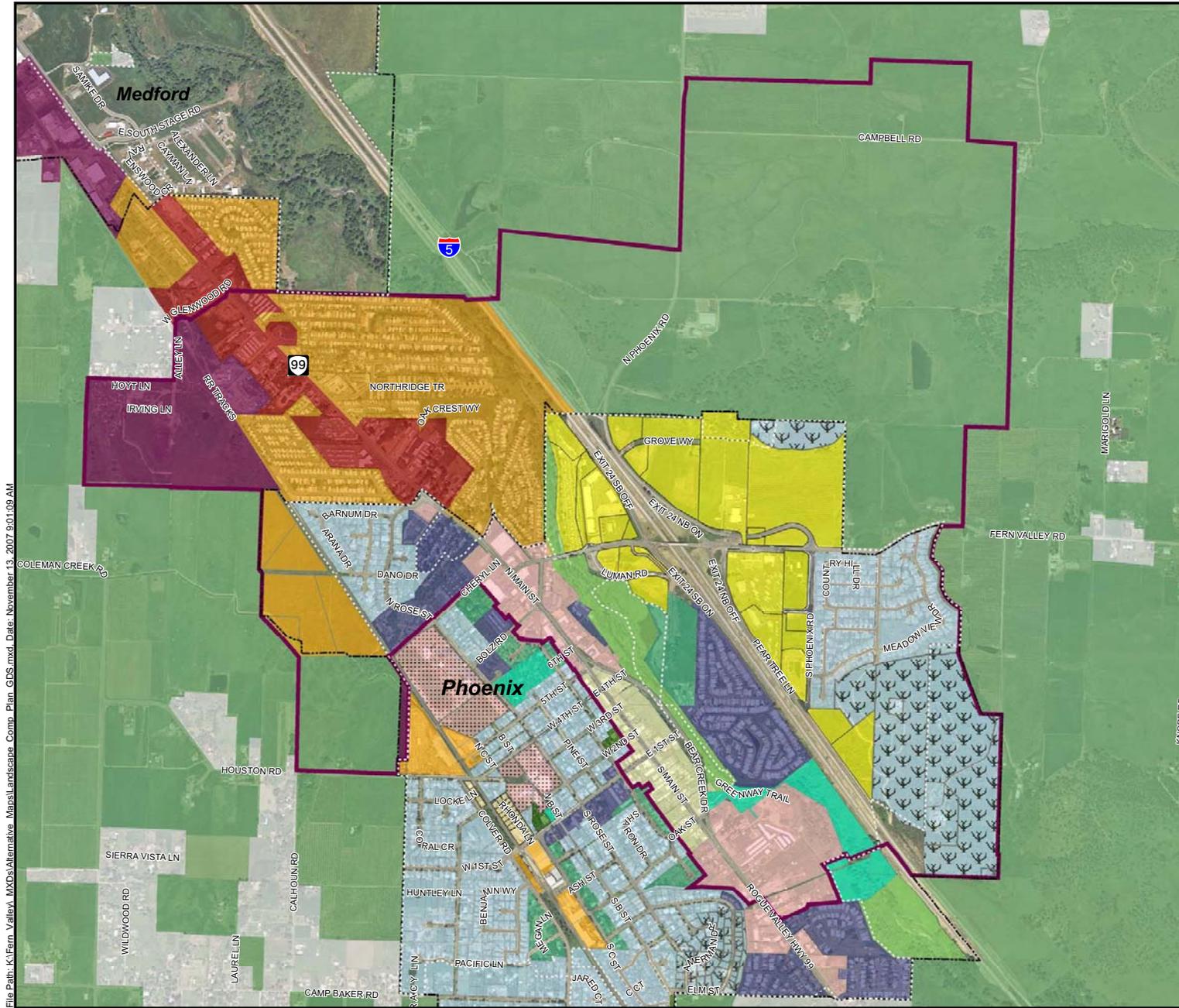
**County Zoning**

- Exclusive Farm Use
- General Commercial
- General Industrial
- Light Industrial
- Rural Residential - 00
- Rural Residential - 2.5
- Rural Residential - 5
- Urban Residential - 1
- Urban Residential - 10
- Urban Residential - 8
- Urban Residential - 30



November 08, 2007

**Figure ES-6  
Comprehensive Plan Designations**



- Urban Growth Boundary (UGB)
- City Boundary
- Interchange Management Area Boundary

- City of Phoenix Designations**
- Bear Creek Greenway
  - City Center District
  - Commercial
  - High Density Residential
  - Industrial
  - Interchange Business
  - Low Density Residential
  - Medium Density Residential
  - Park Open Space
  - Public
  - Residential Employment
  - Residential Hillside
  - Schools
- Jackson County Designations**
- Agricultural Land
  - Commercial Land
  - Industrial Land
  - Rural Residential Land
  - Urban Residential Land



November 13, 2007

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trip generation, it could impact the ability of the interchange to function and thus could result in slowing the rate and density of development, and increasing the possibility of development occurring in other areas where new trip generation could be accommodated.

Planned transportation improvements and anticipated growth in the City of Phoenix and southeast Medford area may be affected by construction of either build alternative. The cumulative effect of increased development and transportation projects in the area is likely to be an increase in the rate and density of development. The differences between the alternatives is how quickly they could respond as development occurs, where development occurs, and what zoning and densities would likely result. As stated above, the N. Phoenix Thru Alternative could better accommodate the anticipated traffic and future development east of I-5; thus, an increase in the rate of development could result from this alternative.

### *Consistency with State, Regional and Local Plans and Policies*

Prior to project design approval, the Oregon Transportation Commission or their designee must secure local governments' approval of required comprehensive plan amendments and land use ordinances, and adopt findings of compatibility with the acknowledged comprehensive plans of affected cities and counties.

Both build alternatives would be consistent with most elements of relevant state, regional and local plans. Key plan issues that need to be addressed are identified below.

### EFU Land

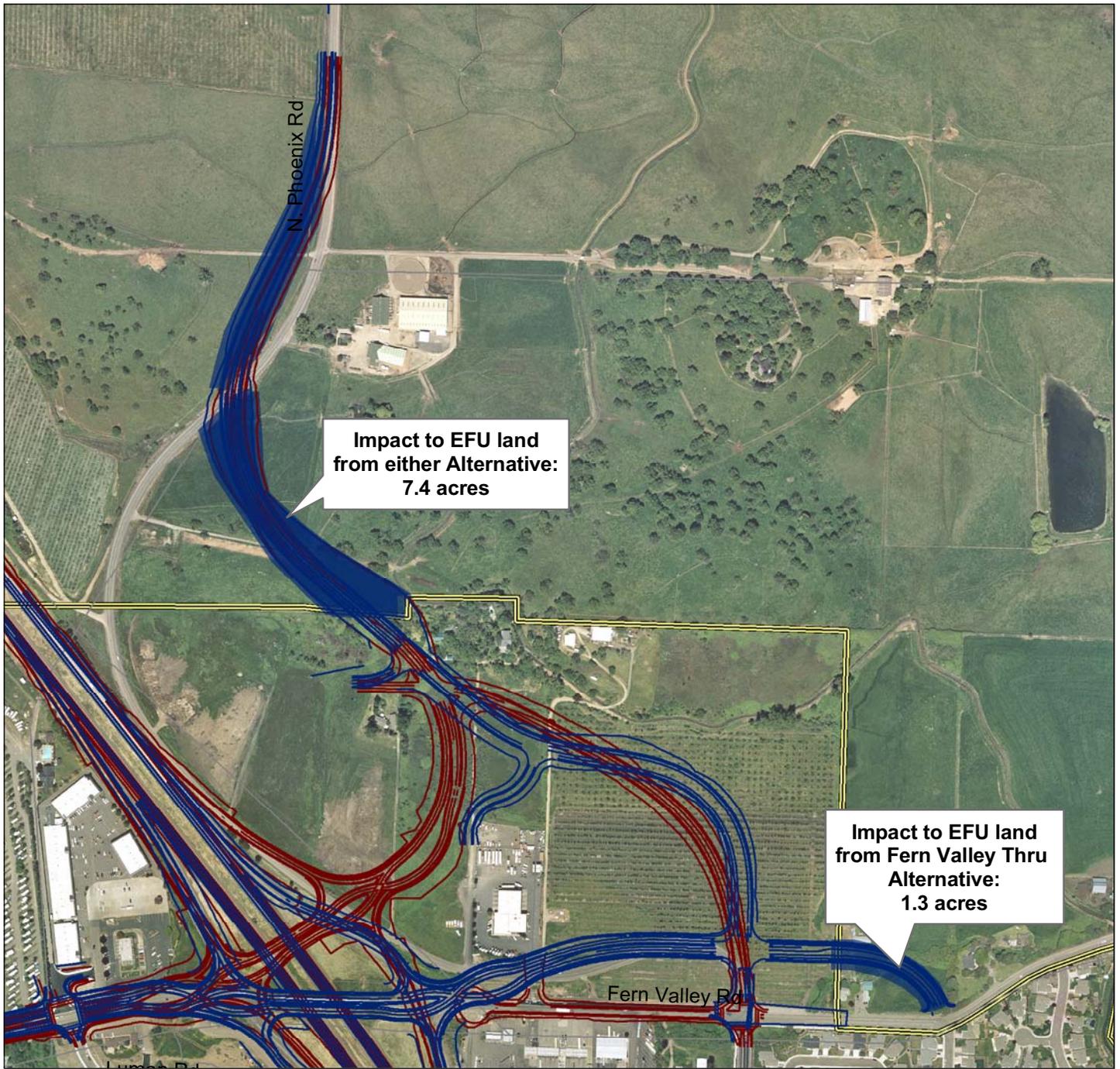
Both build alternatives would impact lands zoned by Jackson County for Exclusive Farm Use (EFU). Oregon land use law explicitly requires that road realignments<sup>6</sup> on land zoned for EFU under Statewide Planning Goal 3 (Agricultural Lands) limit or otherwise minimize their impact on farmland. Comparative impacts to EFU land are:

- The Fern Valley Thru Alternative would directly impact about 8.7 acres of EFU land; the N. Phoenix Thru Alternative would directly impact about 7.4 acres of EFU land (Figure ES-7).
- Both build alternatives would realign N. Phoenix Road outside and north of the UGB on EFU land; this realignment would have the same alignment and function as the current roadway. The impacts to EFU-zoned land north of the UGB would be the same with either build alternative.
- The key difference between the alternatives is the additional impact to EFU land (1.3 acres) associated with the Fern Valley Thru Alternative realignment of Fern Valley Road east of the UGB.<sup>7</sup>

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<sup>6</sup> Both build alternative designs outside the UGB would be considered realignments.

<sup>7</sup> The design of the Fern Valley Thru Alternative east of the UGB was evaluated to see if this impact could be reduced. Due to design requirements, including safely managing anticipated traffic, it was not possible to reduce this impact to EFU land.



**Legend**

-  UGB
-  Impacted ROW
-  Fern Valley Thru Alternative
-  N. Phoenix Thru Alternative

Source: ODOT, URS Corporation

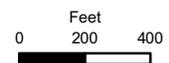
**Fern Valley Interchange**



**Impacts to Land Zoned for EFU**

**Figure ES-7**

December 2007



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This figure reflects conceptual design, and is subject to change. As the project is refined, some changes may occur.

Because both build alternatives would be considered “realignments”, they would be statutorily permitted on farmland. However, OAR 660-012-0065(5) requires, in the case of realignments, that a local government consider reasonable build alternatives and select the one “that has the least impact on lands in the immediate vicinity devoted to” farm use. Selection of the Fern Valley Thru Alternative would be allowable under this rule only through a goal exception (pursuant to OAR 660-012-0070)—because the N. Phoenix Thru Alternative would result in less impact to EFU-zoned land.

## Jackson County

In addition to the goal exception for the Fern Valley Thru Alternative, two other issues of concern would be associated with Jackson County plans.

The improvements to N. Phoenix Road and Fern Valley Road outside the UGB are not listed in the Jackson County Transportation System Plan (TSP). The TSP currently includes only two improvements related to the Fern Valley Interchange: widening Fern Valley [Bear Creek] Bridge and installation of a signal at Fern Valley and N. Phoenix Road. An amendment to the TSP to include the improvements would be required in that they are not considered “minor transportation improvements” per OAR 660-12-0005(15).<sup>8</sup> Fern Valley Road, east of I-5, is classified as a minor collector in the Jackson County Comprehensive Plan. Widening of this roadway may require a comprehensive plan amendment to reclassify it as an arterial.

The TSP’s Transit System includes a Tier 2 route along N. Phoenix Road between Medford and the City of Phoenix. No specific transit amenities are included in the project; however, the interchange and road improvements associated with the build alternatives would provide improved travel speeds for transit, as well as for other vehicular traffic. Transit amenities, such as bus pullouts, may be able to be located along Fern Valley Road and N. Phoenix Road.

## City of Phoenix Comprehensive Plan

Both build alternatives would have similar impacts in terms of consistency with the City of Phoenix Comprehensive Plan. Both would require an amendment to the City of Phoenix Comprehensive Plan because both alternatives would require lands currently designated for “interchange business” to be re-designated “roadways.”

An amendment would also be necessary to identify and designate other substitute lands for commercial purposes to avert a deficit in lands supporting commercial/employment needs.

A comprehensive plan amendment would be required to reclassify E. Bolz Road to a collector.

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<sup>8</sup> “Minor transportation improvements do not include interchanges or new interchange ramps, new collector or arterial streets, road realignments or addition of travel lanes.”

The City's Development Code does not list transportation improvements as a permitted or conditional use in any of its zoning districts. The Code does not include a listing of transportation improvements that are not subject to the Code (as required per OAR 660-12-0045(1)a). It does require a Site Plan Review for all development.<sup>9</sup>

## NOISE

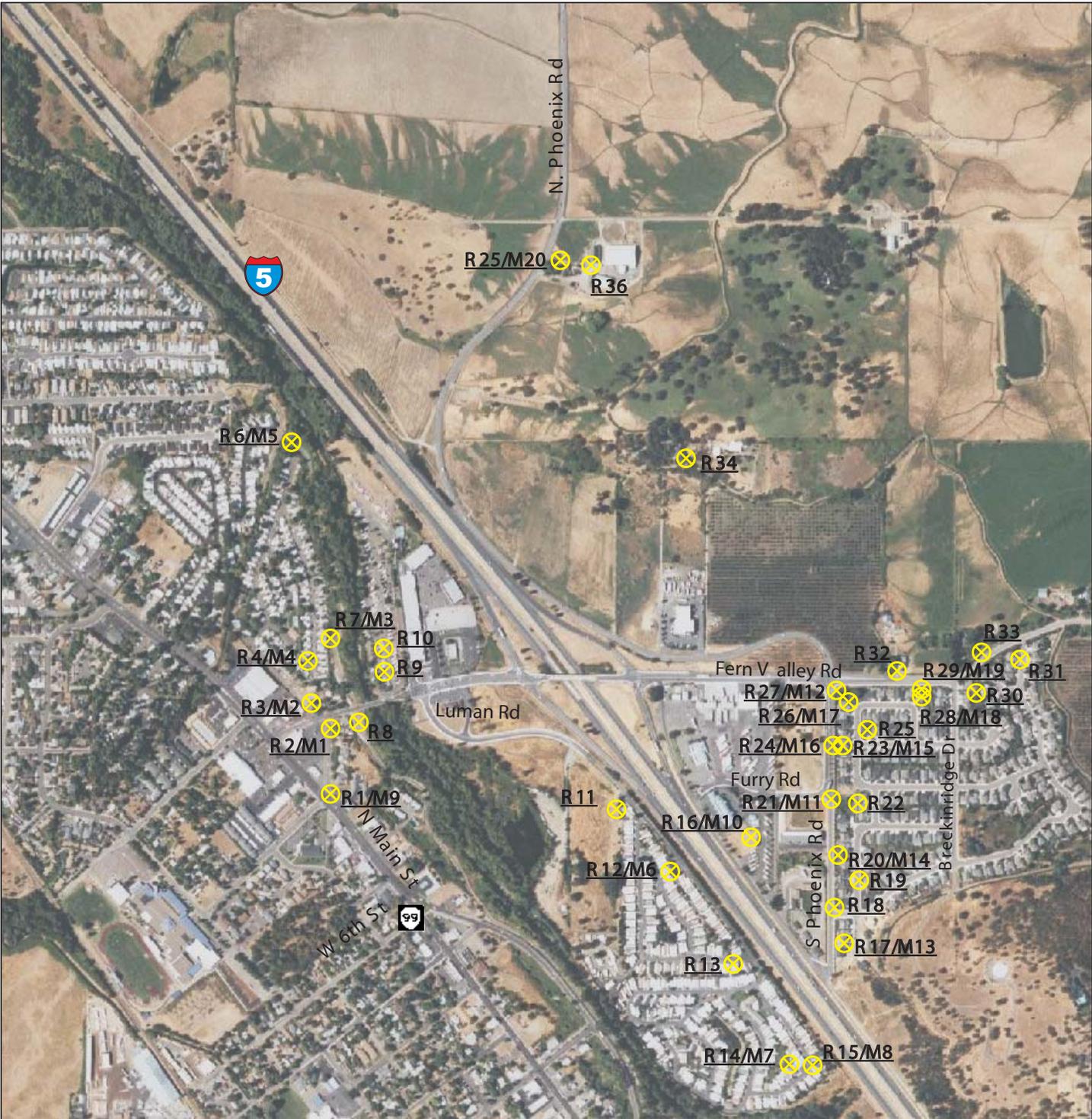
Traffic noise impacts occur in two ways:

1. Substantive Noise Increase Criteria—when the project would result in an increase of 10 dBA over the existing noise level.
2. Noise FHWA Abatement Criteria—when the project would result in traffic noise levels that approach or exceed Leq 67 dBA at residences, recreation areas, hotels, churches and schools or 72 dBA in a commercial area.

Traffic noise impacts were evaluated at 36 different locations within the project area (Figure ES-8). Monitoring locations were representative of potential noise-sensitive residential and commercial properties.

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<sup>9</sup> Development Code – definition: **Development:** All improvements on a site, including buildings, other structures, parking and loading areas, landscaping, paved or graveled areas, grading, and areas devoted to exterior display, storage, or activities.

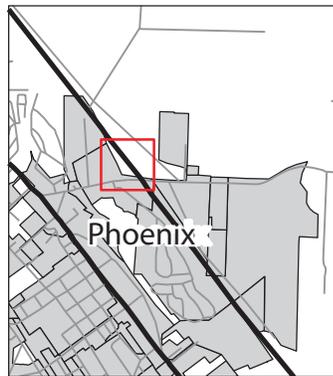


**Map Features**

-  Noise Modeling Locations

**Fern Valley Interchange**

Feet  
0 200 400



Not to Scale

# Fern Valley Interchange Noise Modeling

Figure ES-8  
January 2008



The following table presents the noise modeling results for existing conditions, the No-Build Alternative, and both build alternatives for each monitoring location. Results indicate that the maximum difference between the No-Build and build alternatives is 3 decibels (R1/M9). All other locations show no increase or slight increases of between 1 and 2 decibels. Increases of 1 to 3 decibels are generally not perceptible to the human ear. Therefore, noise impacts associated with either build alternative are expected to be negligible.

<b>Future 2030 versus Existing Modeled Noise Levels</b>							
Rec # <sup>1</sup>	Land Use <sup>2</sup>	Impact Criteria <sup>3</sup>	Existing Levels <sup>4</sup>	No Build Levels <sup>4</sup>	Build Levels <sup>4</sup>		Structures Impacted <sup>5</sup>
					Fern Valley Thru	N. Phoenix Thru	
<i>West of I-5</i>							
R1/M9	Comm	65	<b>69</b>	<b>70</b>	<b>73</b>	<b>73</b>	2 <sup>6</sup>
R2/M1	Res	65	61	63	<b>65</b>	<b>65</b>	2 <sup>7</sup>
R3/M2	Roadway	N/A	68	69	71	71	0
R4	Res	65	60	62	61	61	0
R5/M4	Park	65	53	54	54	54	0
R6/M5	Park	65	62	64	64	64	0
R7/M3	Res	65	53	54	55	55	0
R8	Res	65	57	58	57	57	0
R9	Res	65	57	58	59	60	0
R10	Res	65	56	57	58	58	0
R11	Res	65	<b>66</b>	<b>68</b>	<b>68</b>	<b>68</b>	6
R12/M6	Res	65	<b>70</b>	<b>71</b>	<b>71</b>	<b>71</b>	14
R13	Res	65	<b>66</b>	<b>68</b>	<b>68</b>	<b>68</b>	10
R14/M7	Res	65	59	61	61	61	0
R15/M8	Res	65	<b>72</b>	<b>74</b>	<b>74</b>	<b>74</b>	6
<i>East of I-5</i>							
R16/M10	Comm	65	64	<b>65</b>	<b>65</b>	<b>65</b>	1
R17/M13	Res	65	59	61	61	61	0
R18	Res	65	57	58	58	58	0
R19	Res	65	56	57	57	57	0
R20/M14	Res	65	54	56	56	56	0
R21/M11	Roadway	N/A	69	71	71	71	0
R22	Res	65	55	57	57	57	0
R23/M15	Res	65	54	56	56	56	0
R24/M16	Roadway	65	69	71	71	71	0
R25	Res	65	53	55	55	55	0
R26/M17	Res	65	57	58	58	58	0
R27/M12	Roadway	N/A	61	63	62	62	0
R28/M18	Res	65	53	54	54	55	0
R29/M19	Roadway	N/A	59	60	54	60	0
R30	Res	65	56	57	58	57	0
R31	Res	65	56	57	57	57	0
R32	Res	65	55	56	55	56	0

Future 2030 versus Existing Modeled Noise Levels							
Rec # <sup>1</sup>	Land Use <sup>2</sup>	Impact Criteria <sup>3</sup>	Existing Levels <sup>4</sup>	No Build Levels <sup>4</sup>	Build Levels <sup>4</sup>		Structures Impacted <sup>5</sup>
					Fern Valley Thru	N. Phoenix Thru	
R33	Res	65	53	54	55	53	0
R34	Res	65	54	56	59	63	0
R35/M20	Roadway	N/A	67	69	60	62	0
R36	Res	65	55	57	57	57	0
Notes:							
<ol style="list-style-type: none"> <li>1. Receiver locations shown on Figure 5</li> <li>2. Land Use: Res = residential; Comm = commercial; Roadway = edge of roadway</li> <li>3. ODOT Traffic Noise Criteria from Section 3.3; N/A = criteria not applicable to this location</li> <li>4. Modeled noise levels: <b>Bold-Red</b> typeface meets or exceeds the ODOT criteria.</li> <li>5. Number of structures or locations predicted to exceed the ODOT criteria.</li> <li>6. This represents the two motels near the intersection of Highway 99 and Fern Valley Road.</li> <li>7. Under both build alternatives 2 structures are displaced, leaving 2 structures impacted.</li> </ol>							

Noise mitigation is evaluated for receptor locations that approach or exceed FHWA Noise Abatement Criteria. Sound walls would be considered at residential locations unless there are multiple driveways, requiring gaps in the sound wall, thus making the wall ineffective. Sound walls are not usually considered in commercially zoned areas.

### PARKS AND RECREATION, SECTION 4(f) AND 6(f)

Title 23, U.S.C. Section 138, Section 4(f) requires that if highway projects use public parks, recreation areas, wildlife and waterfowl refuges, or historic sites, efforts must be made to avoid these resources unless there is no feasible and prudent alternative to their use.

The Bear Creek Greenway is the only Section 4(f) resource that would be used by either of the proposed build alternatives (Figure ES-9).



**Map Features**

-  Proposed Project
-  Section 4(f) Impacts
-  Tax Lots

Approximate Impacts to Section 4(f) Tax Lots:

- 1- 2922 sq ft
- 2 - 5324 sq ft

## Bear Creek Greenway Area

Figure ES-9

November 2007

Source: Jackson County  
URS Corporation



Both build alternatives would widen the two-lane Bear Creek Bridge from 36 feet to 100 feet to accommodate four lanes of traffic, two bicycle lanes, and sidewalks. The two bike/pedestrian access ramps from Fern Valley Road to the Greenway would be realigned to accommodate the wider roadway. This would involve removing approximately 2,900 square feet from tax lot (#302) north of the bridge, and 5,300 square feet from the tax lot (#301) south of the bridge.

The location and design of bridge supports has not yet been developed. However, it is anticipated that the multi-use path would be realigned. There is currently a very sharp, blind curve in the path as it goes under the bridge and threads between the bridge supports. The new bridge would be designed to better accommodate the path, and would reduce or eliminate the curve to enhance safety.

The anticipated impacts to the Bear Creek Greenway would be minimal. Direct impacts resulting from the widening of the bridge would only be visible to path users for a very short stretch of the path, and the experience of using the path underneath the bridge would be improved over the existing conditions due to increased path width and cleared sightlines for the portion of the path that is located under the bridge. Upon completion of the project, the path would continue to provide the same recreational opportunities as it currently does.

Impacts to the Bear Creek Greenway are considered to be *de minimis* pursuant to Section 6009 of SAFETEA-LU (Public Law 109-59), as the project would not adversely affect the Greenway features, attributes or qualities which qualify it for protection under Section 4(f). No constructive or temporary impacts are anticipated because the Greenway trail would remain open to the public through construction, with only minor delays.

The Jackson County Parks Department received a Land and Water Conservation Fund grant to partially purchase the two impacted tax lots. As a result of Section 6(f) requirements (Section 6(f) of the Land and Water Conservation Fund Act of 1965), if either build alternative is selected, ODOT would be required to replace the park land with properties of reasonably equivalent usefulness and location.

## RIGHT OF WAY

The Fern Valley Thru Alternative would impact approximately 40 parcels (about 22 acres), and the N. Phoenix Thru Alternative would impact approximately 38 parcels (about 22 acres).<sup>10</sup> The alternatives would primarily affect properties zoned and improved as commercial, residential, and farm use. One vacant commercial parcel would be impacted. Both alternatives would require the same displacements: 2 residential relocations (on E. Bolz Road), 1 business relocation (coffee stand), and 2 potential

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<sup>10</sup> An impacted parcel is defined as the property held under one legal entity. In many cases several taxlots are held under the same ownership and would be treated as one parcel.

business relocations (mobile food vendors). Total right of way cost estimates<sup>11</sup> are about \$11.8 million for the Fern Valley Thru Alternative and \$10.1 for the N. Phoenix Thru Alternative.

A portion of the project involves strip takings along existing street and highway frontages, with impacts to landscaping, fencing, asphalt parking, and signs on improved properties, as well as the relocation of personal property. Any improvements, such as fencing or landscaping that are located on existing right of way, are not eligible for compensation or relocation benefits when those uses are eliminated.

If the project proceeds to the acquisition phase, property owners would be offered Just Compensation for the required rights of way. Pamphlets describing the right of way process are available.

This project would affect access to a number of properties. Reasonable access would be provided to each property or damages, if compensable, would be determined through the appraisal process.

Median barriers would be added to some sections of the highway, thereby changing full ingress/egress to the highway to right-in/right-out movements. This restriction of access is within ODOT's regulatory powers, and no compensable damages can be appraised. Changes in traffic patterns resulting from construction of either build alternative would not be compensable.

## **SOCIOECONOMICS**

Socioeconomic impacts focus on both social and economic impacts to individuals and the community. Social impacts include residential displacements, population redistribution, neighborhood and/or community disruption, quality of life, alternate mode availability, and safety. Economic impacts include business displacements, business distribution/development, business access and visibility, property values, and tax base effects. Socioeconomic effects also include identification of impacts to minority and low income (referred to as environmental justice),<sup>12</sup> the elderly, and the disabled. Specific quantifiable impacts are provided in the summary table below.

### *Right of Way*

Specific right of way impacts to residential and commercial properties are provided in the Right of Way section. The permanent acquisition of property, including full acquisitions (resulting in displacements and relocations) and partial acquisitions, could result in increased challenges for business owners as they either relocate or rearrange business

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<sup>11</sup> Right of way cost estimates are in 2007 dollars and are based on the current design concept. Actual right of way costs would be determined once final design is completed. The costs provided in this summary are for comparative purposes only.

<sup>12</sup> Environmental justice impacts would occur if the project would result in disproportionately high and adverse effects to minority and low-income populations.

personal property to adjust for partly-acquired land. Residents would experience disruption as they relocate.

The only on-street parking in the project area is on E. Bolz Road between OR 99 and Bear Creek. This parking is likely used by residents of the homes along the east side of E. Bolz Road, or by owners, patrons, or employees at the businesses west of E. Bolz. This on-street parking would be removed. To the extent the homes along E. Bolz use the on-street parking, these residents would experience an adverse impact due to loss of parking area. These homes have off-street parking in their driveways.

The Fern Valley Thru Alternative would result in the loss of approximately 75 off-street parking spaces; the N. Phoenix Thru Alternative would result in the loss of approximately 67 off-street parking spaces.

### *Vehicular Traffic and Regional Access*

Travel time savings would be 20 percent greater under the N. Phoenix Thru Alternative when compared to the Fern Valley Thru Alternative. The N. Phoenix Thru Alternative would result in about 30 percent less delay, stopped delay, and number of stops per vehicle than with the Fern Valley Thru Alternative. Overall travel time would be almost 20 percent less than with the Fern Valley Thru Alternative.

The N. Phoenix Thru Alternative would result in almost 50 percent higher eastside speeds compared to the Fern Valley Thru Alternative. Access to the northeast quadrant would be about 25 percent faster and access to the southeast quadrant about 50 percent faster compared to the Fern Valley Thru Alternative, even though the roadway distance would be longer. Therefore, of the three alternatives, transportation and traffic issues for residents, visitors, business patrons, owners, and employees would ease the most with the N. Phoenix Thru Alternative. Distance on the road would be longer for some homes and businesses, but travel time and delays would in general be shorter.

Both build alternatives would result in traffic queues (similar to existing conditions) that would be relatively long at the intersection of OR 99 and Fern Valley Road. These queues could temporarily block minor street intersections and local business accesses. The queues would eventually impact interchange operation, similar to current trends. Additional growth beyond what was forecasted would result in a reduction of benefits of the build alternatives.

The intersection of OR 99 and Fern Valley Road represents a potential impact upon the community in that any additional growth in the study area beyond what was forecasted would result in reducing the benefits of the alternative, potentially resulting in longer delays. The tradeoff is that the current design represents the most that can be done at this intersection without additional impacts to adjacent properties.

## *Local Access and Visibility*

**Northwest Quadrant.** With both build alternatives, queuing would exist along the section of Fern Valley Road between Luman Road and the southbound ramp terminal. These queues would be relatively long and would fill most of the distance between the two intersections. The queues are likely to negatively impact both intersections and the overall interchange operation, potentially making access to the commercial areas in the northwest quadrant difficult. The N. Phoenix Thru Alternative would result in shorter queues than the Fern Valley Thru Alternative.

Median installation on OR 99 would result in elimination of left-turn movements to and from adjacent businesses. This could result in out-of-direction travel for some patrons.

**Southwest Quadrant.** Impacts to the southwest quadrant would be similar to the northwest quadrant.

**Northeast Quadrant.** The existing Home Depot access would be moved from existing N. Phoenix Road (accessing the store from the west) to the realigned N. Phoenix Road (accessing the store from the north). Similarly, vehicles would enter and exit the Peterbilt property from the north, from the realigned N. Phoenix Road. The existing N. Phoenix Road would terminate west of Peterbilt.

The Fern Valley Thru Alternative would require two signalized intersections to access the developed and developable properties in the northeast interchange quadrant. Left turns would be required at the Fern Valley Road/N. Phoenix Road intersection. The N. Phoenix Thru Alternative would result in one signalized intersection to access these properties. Access to developable properties north of Fern Valley Road would be via the realigned N. Phoenix Road.

**Southeast Quadrant.** With the Fern Valley Thru Alternative, drivers would access the commercial area in the southeast interchange quadrant by using the new intersection at Fern Valley Road/S. Phoenix Road, and then either Fern Valley Road or Furry Road. Trucks would exit the commercial area via Furry Lane or Pear Tree Lane to Fern Valley Road. Access to the Phoenix Hills neighborhood would be via S. Phoenix Road or directly to Breckinridge from a new intersection at realigned Fern Valley Road/Breckinridge Drive. The east leg of the existing Fern Valley Road/N. Phoenix Road intersection would be blocked.

With the N. Phoenix Thru Alternative, drivers would access the commercial area in this quadrant by turning right onto the realigned N. Phoenix Road (north of the interchange), then access the commercial area via Fern Valley Road or Furry Road. Under the N. Phoenix Thru Alternative, full access would be provided at the Fern Valley Road/N. Phoenix intersection (compared to access only at the north, west and south legs of the Fern Valley Thru Alternative). The distance to this quadrant would be longer with the N. Phoenix Thru Alternative, but travel times and delays would be shorter. The additional distance could impact ease of truck access, and could eventually affect the type of commercial business at this location over the long term. Access to the Phoenix Hills

neighborhood would be via the realigned N. Phoenix Road to S. Phoenix Road or Fern Valley Road and then Breckinridge Drive.

### *Pedestrian, Bicycle Travel, and Safety*

With both build alternatives, pedestrians would be accommodated on both sides of OR 99, E. Bolz Road, Fern Valley Road west of I-5, realigned Fern Valley Road east of I-5, and realigned N. Phoenix Road. Bicycles on OR 99 would be accommodated on 5-foot shoulders. Bike lanes would be provided throughout the rest of the project, and would be designated by pavement markings. Sidewalks and bike lanes would be of adequate width to provide safe ways for walkers and cyclists to access businesses on all four quadrants of the interchange. Medians placed in six locations with the Fern Valley Thru Alternative and seven locations with the N. Phoenix Thru Alternative would increase safety conditions for pedestrians, vehicles, bicyclists, homes, and businesses around the areas where they are placed.

The improvement of non-motorist access among businesses and residences would result in an improvement in the sense of community in areas near the interchange, the cohesiveness of businesses and homes, general health in the community, and quality-of-life. These improvements could potentially lead to business attraction and retention.

### *Impacts to Public Services and Community Facilities*

In the long run, community facilities such as parks, libraries, schools, and churches would be more easily accessible due to shorter delays and less congestion with either build alternative. Response times for fire and police services could shorten due to better traffic flow. The N. Phoenix Thru Alternative would result in slightly improved travel time for emergency vehicles.

No accesses to or from community facilities or public service locations would change, nor would any parking be removed from any community facility or public service location. The project would enhance non-motorist access to public services and community facilities and access between residences and community facilities due the addition of sidewalks and bike lanes, and due to better traffic flow (shorter delays and shorter travel times) and improved safety conditions.

Public transportation would not change. Rogue Valley Transit District would continue to operation Route No. 10 along OR 99, between Medford and Ashland. A substantial and permanent change in demand for public services (schools and recreational facilities) is not expected, with the exception of any increase in demand associated with current trends. The project alone would not directly result in a substantial increase in population in Phoenix.

### *Community Cohesion*

Neither build alternative would directly result in the separation of a community or disruption to a cohesive neighborhood. Some local access points would change, but the sense of community would not change substantially. The project would not directly result in a redistribution of the population, or an influx or loss in population.

### *Environmental Justice*

An analysis of U.S. Census (*Census 2000*) data indicates that minority populations are present near the Fern Valley Interchange project. These locations of minority populations were evaluated for potential disproportionate project effects. Displacement, noise, and on-street parking impacts would not occur within the census blocks containing minority populations. Some visual impacts could occur in the census blocks containing minority populations, but would not likely be disproportionate when compared to census blocks with non-minority populations. Coleman Creek Estates was identified through scoping activities as a potential low-income population. Impacts to Coleman Creek Estates would not be disproportionate in comparison with other residential locations in the project area.

### *Indirect Socioeconomic Impacts*

In general, either build alternative could result in businesses moving to the area due to the improved traffic conditions. Businesses would not likely close or move outside the area as an indirect result of the project, unless one or more of the business owners whose business would be directly displaced by the proposed project elects to close rather than relocate.

In the long run, direct property tax revenue decreases due to the conversion of private property to public right-of-way would be countered by indirect increases to the extent that the City of Phoenix and Jackson County experience (1) increases in assessed value due to the long-run transportation benefits of the project, and (2) new private development attributable in part to the transportation improvements associated with this project.

Residential property values near the interchange could increase or decrease in the future. Certain impacts from the build alternatives that could affect property values include improved traffic flow, less congestion, fewer delays, changes in views, changes in traffic noise, types of traffic (e.g., cars moving slowly, or trucks moving quickly), and the proximity of new development.

The improved mobility and traffic flows that would be associated with either build alternative would result in better access to public services and community facilities throughout Phoenix.

## UTILITIES

Utilities in the project area include: water/irrigation canals, water, sanitary sewer, storm sewer, storm drains, natural gas, electricity, and phone/communication lines. Utility modifications and relocations would be coordinated with the utility owners: Medford Irrigation District, City of Phoenix, Rogue Valley Sewer Services, Avista Corp., Pacificorp, Quest and Charter Communications.

## VISUAL RESOURCES

West of I-5, both build alternatives would have essentially the same visual impacts:

- Along OR 99, the addition of continuous sidewalks would enhance the visual cohesiveness of the area.
- Coleman Creek Estates would be impacted by the creation of a new access road to OR 99. This would affect both the views from and of some homes in that neighborhood.
- Large shade trees and three houses would be removed on the east side of E. Bolz Road. The removal of trees and houses would create a high degree of visual change to the area.
- The bridge over Bear Creek would be replaced by a new and wider bridge, and the ramps from the road down to the Bear Creek Greenway path would be rebuilt to accommodate the wider bridge. This would represent a high degree of visual change to the immediate area. The existing bridge and ramps are not aesthetically appealing, so the proposed replacement has the potential to be an improvement over existing conditions.
- The widening of Fern Valley Road and the Bear Creek Bridge would remove shrubbery and change the embankment that is visible from the Holiday RV Park, and would bring the roadway closer to the RV park.

East of I-5, the following visual impacts are anticipated:

- The Fern Valley Thru Alternative would have a greater degree of visual change than the N. Phoenix Thru Alternative in the area around Fern Valley Road between S. Phoenix Road and Breckinridge Drive, because it would create a new road and major intersection in an area that is currently rural residential in character. Visual impacts from individual homes in the Phoenix Hill neighborhood would be minimal; the single-story homes, fences along Fern Valley Road and S. Phoenix Road, and the topography minimize the effects of this alternative. However, those traveling to and from the subdivision would experience a substantial visual change from current conditions as a result of a major new intersection at Fern Valley Road/N. Phoenix Road.
- Rural residences along Fern Valley Road in the API would experience substantial changes to the visual environment with the Fern Valley Thru Alternative.
- Both of the build alternatives would result in creating substantial change in the visual environment of the northeast interchange quadrant in the orchard and hill contours near the UGB.

## WATER RESOURCES

### *Water Quality and Quantity*

Bear, Coleman, and Payne Creek are currently on the Oregon Department of Environmental Quality (DEQ) 303(d) List of Water Quality Limited Water Bodies for fecal coliform and temperature.

Water resource impacts of the Fern Valley Interchange alternatives are related to two primary issues:

- Stormwater: Changes in impervious surface area from direct and indirect impacts have the potential to increase both pollutant loading and runoff volumes and peak flows to Bear Creek.
- Floodplain: Floodplain impacts could be associated with construction of a new Bear Creek Bridge.

These impacts would be the same for each of the build alternatives.

For both build alternatives, impervious surface area would increase over existing conditions. For the Fern Valley Thru Alternative, impervious surface area would double (from 15 acres to 30.3 acres). For the N. Phoenix Thru Alternative, impervious surface area would be about 170% of existing conditions (from 16.5 acres to 27.7 acres).

Changes in runoff volumes would increase from 0.3 cfs under current conditions to 0.6 cfs with the Fern Valley Thru Alternative, and 0.5 cfs with the N. Phoenix Thru Alternative.

The pollutants of greatest concern relative to Bear Creek are suspended sediment and copper, particularly dissolved copper. Both of these can impair fish habitat quality at concentrations below state water quality standards. The key conclusions from the water quality analysis are:

- Highway runoff at the point of discharge, without treatment and without dilution from receiving waters, would result in pollutant concentrations that are higher than desired conditions.
- Pollutant concentrations from the project area would be greater with the build alternatives than with the No-Build Alternative (because of more impervious surface area).
- Pollutant concentrations from the project area, before and after treatment, would be similar for both build alternatives.
- Neither build alternative would result in violations of in-stream water quality standards in Bear Creek.

Detention facilities would be included in the project to address water quality issues and manage water flow affected by the project. Wet detention ponds appear to provide better treatment than bioswales; however, that treatment effectiveness does not account for infiltration, which can be greater in bioswales than in wet ponds.

### *Floodplain Impacts*

The Bear Creek Bridge currently results in backwater (upstream rise in water surface elevation) from high flows in Bear Creek (ranging from approximately 0.1 feet in the 2-year flood to approximately 1.2 feet of for the 100-year flood). The replacement bridge, common to both build alternatives, would result in similar or slightly improved hydraulic conveyance. Therefore, there would be no direct floodplain impacts from the project.

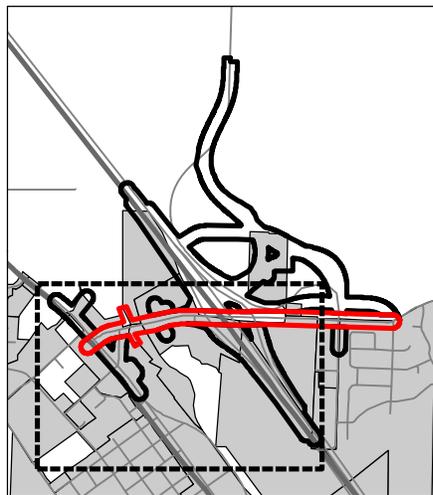
### **WETLANDS**

West of I-5, there are 4 wetlands, 2 ditches, 1 stormwater detention basin, Bear Creek, and Coleman Creek. East of I-5, there are 16 wetlands, 8 ditches, 3 stormwater detention basins, and Payne Creek.

Build alternative impacts to wetlands and other waters in the project area are shown in Figures ES-10 (west of I-5) and ES-11 (east of I-5).



-  Wetland Delineation Study Area
-  Wetland Determination Study Area
-  Wetlands
-  Other Waters
-  Wetland/Other Water Extends Outside API

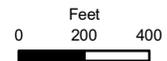


Not to Scale

## Wetlands and Other Waters - West of I-5

Figure ES-10

October 2007

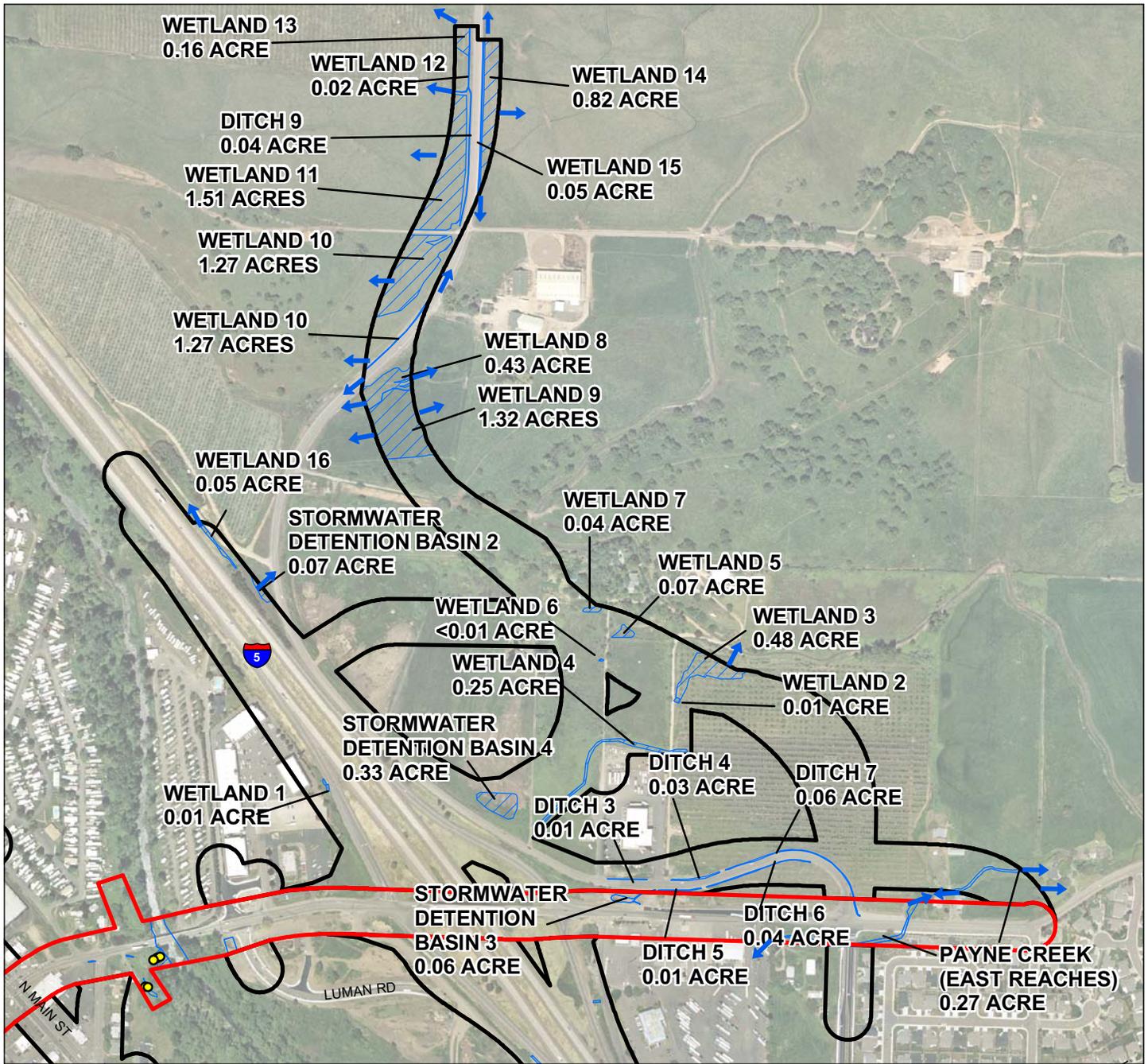


**Fern Valley Interchange**

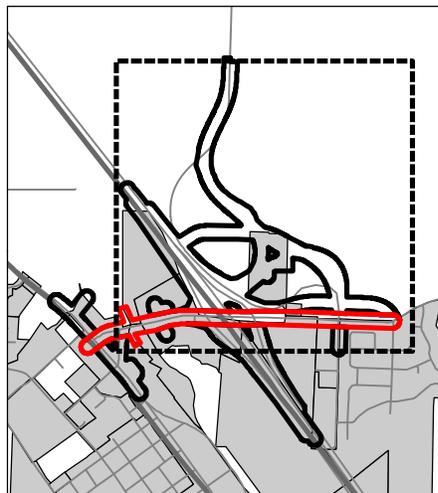


 Oregon Department of Transportation





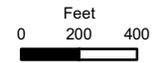
-  Wetland Delineation Study Area
-  Wetland Determination Study Area
-  Wetlands
-  Other Waters
-  Wetland/Other Water Extends Outside API



Not to Scale

## Wetlands and Other Waters - East of I-5

Figure ES-11  
October 2007



The Fern Valley Thru Alternative would result in an estimated 3.14 acres of fill in wetlands and 0.31 acre of fill and removal in other waters. The N. Phoenix Thru Alternative would result in an estimated 3.68 acres of fill in wetlands and 0.11 acre of fill and removal in other waters. Although fewer individual wetlands are impacted by the N. Phoenix Thru Alternative, a greater area of wetland would be permanently filled by this alternative compared to the Fern Valley Thru Alternative. However, less area of other waters would be filled or removed by the N. Phoenix Thru Alternative compared to the Fern Valley Thru Alternative.

Since the difference in design between the two alternatives is minimal west of the interchange, the impacts resulting from the N. Phoenix Thru Alternative would be the same as those for the Fern Valley Thru Alternative. With both build alternatives, the Bear Creek Bridge replacement would remove all existing bridge bents below the Ordinary High Water Mark, resulting in an approximate removal impact of less than 0.01 acre (8 square feet) and a net benefit to the creek.

Anticipated impacts to high quality wetlands (Wetland B) would be negligible. All other impacted wetlands are of low to moderate quality and are potentially non-jurisdictional based on artificial creation associated with irrigation.

## IMPACT COMPARISON TABLE

Category	Criteria	Alternatives	
		Fern Valley Thru	N. Phoenix Thru
<b>Air Quality</b>	Regional increase in ozone or particulate matter	None	None
<b>Archaeology</b>	Resources impacted	0 sites identified	0 sites identified
<b>Aquatic Biology</b>	Impacts to Critical habitat for Southern Oregon/Northern California Coast Coho— includes Bear Creek, Coleman Creek, and Payne Creek	<ul style="list-style-type: none"> <li>◦ Removal of riparian vegetation and habitat modifications from Bear Creek Bridge construction;</li> <li>◦ Remove existing structure that impacts channel;</li> <li>◦ Bridge across Payne Creek removes culvert, restoring native riparian vegetation</li> </ul>	Same as FVT, except no bridge across Payne Creek that improve habitat associated with the creek
<b>Terrestrial Biology</b>	Habitat impacts (acres)	48.1	51.2
	Impacts to individual ESA-listed habitats or species	None	None
<b>Geology</b>	Borrow and fill requirements (cubic yards)	202,000	251,000
	Structures constructed to seismic standards	Yes	Same as FVT
<b>Hazardous Materials</b>	Sites of moderate concern	3	3
	Sites of high concern	4	3
<b>Historic Resources</b>	Resources impacted	0	Same as FVT
<b>Land Use and Planning</b>	Jackson County goal exception for EFU land	Required	Not required
	Jackson County TSP amendment to include project	Required	Required
	Jackson County possible reclassification of Fern Valley Road to an arterial	Possible	Not required
	City of Phoenix comprehensive plan amendment to redesignate land zoned for interchange business to roadway. Also, plan amendment to identify substitute commercial lands.	Required	Required
	City of Phoenix reclassification of E. Bolz Road	Required	Required
<b>Noise</b>	Traffic noise impacts	4 locations: <ul style="list-style-type: none"> <li>◦ Noise-sensitive commercial properties along OR 99 (Bavarian Inn &amp; Phoenix Motel);</li> <li>◦ Bear Lake Estates (36 residences)</li> <li>◦ Pear Tree RV Resort pool area</li> <li>◦ Two residences along E. Bolz Road</li> </ul>	Same as FVT

Category	Criteria	Alternatives	
		Fern Valley Thru	N. Phoenix Thru
<b>ROW</b>	Additional ROW Required	26.1	25.3
	Number of potential relocations (residential)	2	Same as FVT
	Number of potential relocations (businesses)	3	Same as FVT
	Number of parcels impacted	40	38
	Right of way cost	\$11.8 million	\$10.1 million
<b>Section 4(f)</b>	Uses Greenway property (square feet)	8,200	Same as FVT
<b>Section 6(f)</b>	Uses LCWF park land	Yes	Same as FVT
<b>Socioeconomic</b>	Environmental justice (disproportionate impacts)	No	Same as FVT
	Average travel time/distance per vehicle for Fern Valley Road between OR 99 and N. Phoenix Road	4 minutes/0.8 mile	3.5 miles/1.0 mile
	Number of medians (related to safety and traffic control)	6 locations	7 locations
	Pedestrian and bike travel and safety	Benefit	Benefit
	Construction impacts	Temporary benefit of jobs, income, and spending related to construction; disruptions such as noise, dust, & detours.	Same as FVT
<b>Utilities</b>	Modifications or relocations required (comparative information not yet available)	Yes	Yes
<b>Visual Resources</b>	Number of resources/views with high negative visual impact	2	2
	Number of resources/views with medium negative visual impact	2	2
<b>Water Quality</b>	Increase in impervious surface area (acres)	15.3	11.2
	Additional runoff volumes (cubic feet)	0.6	0.5
	Floodplain impacts	No or improved impact	No or improved impact
<b>Wetlands and Other Waters</b>	Total wetland acres impacted	3.14	3.68
	Total other water acres impacted	0.31	0.11
	Total high quality wetland acres impacted	<0.01	<0.01