
Chapter 3: Affected Environment

INTRODUCTION

This chapter summarizes the existing conditions in the project area including transportation, land use, socioeconomics, cultural resources, air quality, noise, visual environment, water resources, biological resources, geological hazards, and hazardous materials. Chapter 4 assesses the potential impacts on each of these resource groups for the No Build and Build Alternatives.

TRANSPORTATION

A Transportation Technical Memorandum prepared for this LFEIS documents the affected environment, environmental consequences, and potential mitigation as related to transportation. The technical memo is summarized here and incorporated in total by reference.

Existing Road Network

The project area encompasses a section of Oregon 99W that extends northeast across Yamhill County from the Oregon 99W/Oregon 18 intersection to Rex Hill east of Newberg. Newberg and Dundee share Oregon 99W as their main street. For over a century, businesses and civic buildings have been located along this roadway.

Oregon 99W serves as a route of statewide importance for linking the Portland metropolitan area to the Oregon coast via Oregon 18. Oregon 99W also links McMinnville to Dundee, Newberg, the Portland metropolitan area and communities farther south in the Willamette Valley.

Between Dayton and Dundee, Oregon 99W varies from two to four lanes (see Figure 3-1). In Dundee, the highway is two lanes wide with a continuous left turn lane. Between Dundee and Newberg, Oregon 99W widens to four lanes, and in downtown Newberg, a one-way couplet provides six lanes for traffic. Oregon 99W has four lanes extending from east Newberg to the east.

There are eleven signalized intersections along Oregon 99W in the City of Newberg and one signalized intersection within the City of Dundee. Oregon 99W serves many purposes in the project area, including:

- *Through traffic*, where both the trip origin and destination are outside the project area, as when tourists travel from the Willamette Valley to the coast.
- *Regional traffic*, where the trip origin is inside the project area and the destination is outside, or vice versa (as when locals commute between Dundee and Portland).
- *Local traffic*, where both the trip origin and destination are in the project area.

For through and regional trips, travelers have limited options to Oregon 99W.

Oregon 219 and Oregon 240 connect with Oregon 99W in Newberg. Oregon 219 crosses the Willamette River south of Newberg and provides a connection to I-5 near Donald via a county road. For the relationship of these and other important roads relative to the project area, see Figure 1-1, Project Location Map.

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Existing average daily traffic (ADT) on Oregon 99W is shown in Table 3-1 by segment.

Table 3-1 Existing Average Daily Traffic (2002) Along Oregon 99W

Segment	Existing ADT
South of Dundee	25,000
Dundee at 15 th Street	32,000
Between Dundee and Newberg	34,000
Newberg Couplet	40,000
East Newberg	36,000
East of Rex Hill	32,000

Oregon 99W is currently over capacity during peak periods. Travelers experience congestion and delay, especially when tourist traffic combines with commuter traffic. Peak period vehicular back-ups often exceed one mile in length, in both directions. At unsignalized intersections and private driveways, motorists have difficulty turning left from or onto the highway because of long vehicle queues and heavy through traffic. This affects access to many businesses. The traffic congestion creates an unfriendly environment for pedestrians and bicyclists.

Vehicle accident rates are about 15 percent higher than for similar facilities through the state. The Newberg and Dundee Transportation System Plans (TSPs) identify segments of OR 99W with crash rates above the statewide average for similar facilities, specifically the Hancock Street segment of OR 99W between Meridian and Main streets in Newberg, and OR 99W between Fox Farm Road and Parks Road-Niederberger Road in Dundee.

Rail

Freight rail connects McMinnville, Dundee, and Newberg to the Portland metropolitan area through the project area. The Willamette & Pacific Railroad (WPRR), owned by the Connecticut-based Genesee & Wyoming Railroad, operates one line through Dundee parallel to Oregon 99W. The WPRR, along with the Portland & Western Railroad (also owned by Genesee & Wyoming Railroad), operates approximately 447 miles of track in the Willamette Valley, with branches serving the coastal communities of Toledo and Astoria. Rail freight originating in the western Willamette Valley is carried on WPRR tracks as far as Newberg and on Portland & Western tracks the rest of the way into Portland, where it may be switched to a larger railroad or to another mode. The rail line crosses Oregon 99W at-grade west of Newberg's downtown couplet. The condition and alignment of the railway between Newberg and the Portland metropolitan area make the existing facility unsuitable for moderate or high-speed commuter rail.

The Federal Railroad Administration has established six track classes, which set maximum speeds for freight and passenger trains, based on the track condition. The track is classified as Class 1, which limits freight trains to 10 mph and passenger trains to 15 mph. The line is currently used for freight movement. Currently the line has one train operating daily in each direction, with up to two additional smaller trains operating periodically. The daily train has an average of 25 to 35 cars that are each approximately 65 to 70 feet long.

Transit Service

The most prominent local transit service in the study area is provided through the Chehalem Valley Senior Citizens Council. The Senior Citizens Council operates the following four services:

- LINKS, a commuter service that connects McMinnville with Meridian Park Hospital in Tualatin and makes scheduled stops in Newberg. This service makes morning, afternoon, and evening round trips every weekday with transfer connection in Sherwood to the TRI-MET system serving the Portland/Vancouver urban area.

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- Link Express, a commuter service that provides service twice a day from Newberg (Nap’s) to Hillsboro through Gaston, connecting to the Hillsboro Max Rail Line.
 - Dial-a-ride service is offered to the transportation impaired between 8:00 a.m. and 5:00 p.m., Monday through Friday.
 - The Town Flyer, an intra-city fixed-route bus service operates approximately 6 hours a day (9:15 a.m.-3:12 p.m.), Monday through Friday.

According to the Yamhill County Public Transportation Needs Assessment (Mid-Willamette Valley Council of Governments, June 2000), annual ridership on the Town Flyer and Dial-A-Ride services is approximately 23,000, an average of almost 100 riders a day during operation of the services.

In addition, Greyhound Bus Lines makes limited daily stops in Newberg, providing intercity service throughout the country. Greyhound designates Newberg as a “limited service bus stop,” which means that no ticketing, baggage or other special services are available in Newberg.

The Newberg School District operates school buses within Newberg and nearby areas, taking children to and from Newberg’s four elementary schools and two middle schools, the Newberg High School, and the Dundee Elementary School.

The Yamhill County Public Transportation Needs Assessment also identifies the following public transportation services available in the study area:

- Gray Line of Portland (a sightseeing service)
- Amtrak passenger rail
- Luxury TownVan Corporation (specialized towing services)
- Oregon Coachways (bus charter services)
- Shamrock Taxi (taxi service operating primarily out of McMinnville and Newberg but serving the entire county)
- Way-to-Go Shuttle (provides one round trip to Portland International Airport daily, with a stop in Newberg)
- Several specialized transport services associated with medical and institutional purposes

In addition, Newberg and Dundee residents can take advantage of carpooling resources provided by Mid-Valley Rideshare.

Bicycle Facilities

Bicycle facilities throughout the project area are predominately located along non-state highways within the city limits of Newberg and Dundee. Along Oregon 99W, bicyclists primarily travel on paved shoulders through Newberg and Dundee. Striped bicycle lanes are not provided along the highway.

Newberg

According to the Newberg TSP, the City has a network of striped and unmarked bicycle lanes along the existing street network. A description of the various facility types identified in the TSP is provided below.

- Shared Roadway – designated shared roadway to accommodate joint use by vehicles and bicycles
- Shoulder Bikeway – wide roadway shoulder available for bicycle use
- Wide Lane – wide travel lanes to accommodate shared use between vehicles and bicycles
- Striped Lane 1 Side – dedicated striped bicycle lane along one side of roadway section

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- Striped lane on about 75 percent of Section – dedicated striped bicycle lane along approximately 75 percent of roadway section
 - Striped Lane – dedicated striped bicycle lane

Within the City, bicycle travel is primarily supported through the shared use of the existing roadway network with vehicles. For all roadways within Newberg that carry less than 3,000 ADT, bike lanes are not required according to the criteria set forth in the *Oregon Bicycle and Pedestrian Plan*.

The TSP also identifies future bicycle and sidewalk improvements intended to provide bicyclists and pedestrians a full accessibility on the City of Newberg's collector/arterial street system, and to provide for optimal circulation for the destination-oriented bicyclist, especially for travel between residential areas and schools. The future projects also provide unique routes with local environmental, social, and cultural/historical features for the recreational bicyclist.

Dundee

According to the City of Dundee TSP (2003), bike lanes are provided along both sides of Oregon 99W throughout Dundee. These lanes are not specifically striped as bike lanes; they are striped as a shoulder on the highway, but no pavement markings delineate this shoulder specifically for bicycle travel. The only other place where bike lanes are provided is along the north side of 5th Street from City Hall to the Dogwood Drive-Upland Drive intersection. Apart from Oregon 99W, all roadways within Dundee carry less than 3,000 ADT and therefore do not require bike lanes according to the criteria set forth in the *Oregon Bicycle and Pedestrian Plan*.

Pedestrian Facilities

Pedestrian facilities are found mostly within the city limits of Newberg and Dundee and are sparse in the rural regions of the study.

Newberg

The Newberg TSP indicates that a comprehensive network of sidewalks is provided in the downtown, including on Oregon 99W. Newer residential and commercial areas also have good pedestrian facilities, reflecting city policies that require new development to provide adequate sidewalks. Toward the outer areas of Newberg, sidewalks are less continuous or non-existent.

Dundee

Downtown Dundee has a number of potential pedestrian generators, including the Dundee Elementary School and Park, post office, and wineries along Oregon 99W. According to the Dundee TSP, Oregon 99W through central Dundee has an adequate sidewalk network, although north of 5th Street sidewalks are only present along the west side of the highway. The Dundee Elementary School also has good sidewalk coverage in the immediate vicinity, but no sidewalk connectivity with neighborhoods to the west. Newer residential and commercial areas also have good pedestrian facilities, reflecting city policies that require new development to provide adequate sidewalks. Crosswalks across Oregon 99W are provided north of 7th, 8th and 10th Streets, as well as at the signalized 5th Street intersection. Significant gaps in the sidewalk network occur along the east side of Oregon 99W, north of 5th Street; along segments of undeveloped frontages of 1st Street, 3rd Street, 5th Street, 7th Street, the 9th Street-Worden Hill Road alignment, and 11th Street; along Parks Road-Niederberger Road; and along Edwards Road.

Freight

ODOT classifies Oregon 99W as a freight route through the project area. This section of Oregon 99W has statewide economic importance for the movement of freight. Truck freight movements in the project area involve shipments both to and from locations in the project area and shipments that pass through the area,

particularly along Oregon 99W. Most trucks with origins or destinations within the area have destinations in the commercial and industrial areas located along Oregon 99W. Freight movements rely in large part on Oregon 99W, since it is also a primary freight route through Yamhill County. Approximately 8 percent of traffic on Oregon 99W consists of heavy vehicles. Heavy vehicles are commonly defined as any vehicle with more than three axles.

LAND USE

A Land Use and Planning Technical Memorandum and a Supplemental Land Use Technical Memorandum document the affected environment, environmental consequences, and potential mitigation. The technical memo is summarized here and incorporated in total by reference.

Geographic features, proximity to the Portland metropolitan area, and existing highway facilities shape Newberg-Dundee's land use environment. Chehalem Mountain and the Red Hills to the north of Newberg and Dundee, Parrett Mountain to the east, and the Willamette River and the South Yamhill River to the south and west frame the area. Because the area lies about 25 miles southwest of downtown Portland, the four-county metropolitan region (Multnomah, Washington, Clackamas, and Clark counties) exerts strong influences on land use patterns in northeast Yamhill County. The metropolitan region had a population of 1.7 million people and 1.1 million jobs in 2000. An estimated one-third of Newberg-Dundee area residents commute to jobs in the larger metropolitan area. However, Newberg, in particular, is a growing employment center in its own right.

The dominant feature of the road network in Yamhill County is the Oregon 99W/Oregon 18 corridor. It serves local and intercity traffic, commuter traffic to and from the Portland metropolitan area, and tourist/recreational traffic between Portland and the coast, as well as providing direct access to abutting properties throughout much of its length. Oregon 99W also functions as "Main Street" in the downtown areas of Newberg and Dundee. Oregon 219 provides an important link from Newberg to Marion County and I-5.

Goal Exceptions

As part of the Bypass project, in September 2004 Yamhill County approved exceptions to three Statewide Planning Goals. Yamhill County required findings of fact and reasons to support exceptions to Statewide Planning Goals 3 (Agricultural Lands), 11 (Public Facilities and Services), and 14 (Urbanization) for two sections of the project. The first section requiring exceptions is the Bypass, including its terminal connections to Oregon 99W east of Newberg and to Oregon 99W and Oregon 18 near Dayton. The second section requiring an exception is the East Dundee Interchange, including its road connecting the Bypass to Oregon 99W. The Goal Exception document "Findings of Fact and Reasons to Support Exceptions to Statewide Planning Goals 3, 11 and 14" and supporting documents are referenced in Appendix B.

The segments of the Bypass located inside the UGB do not require goal exceptions. These segments are recognized and provided for in the TSPs of the cities of Newberg and Dundee. However, those roadway segments located outside the UGB on rural lands do require goal exceptions. These include the segments located east of Newberg, between Newberg and Dundee, and west of Dundee. Exceptions for the terminal interchanges at East Newberg and Dayton are part of the Bypass exceptions. The Oregon 219 Interchange does not require goal exceptions because it will be located entirely within the City of Newberg UGB. The East Dundee Interchange, located between Newberg and Dundee, and the roadway connecting the interchange and Bypass to Oregon 99W require separate exceptions under the Transportation Planning Rule (TPR). See Figure 4-2 for the areas of the Bypass requiring a goal exception.

Besides the corridor and interchanges, Modified 3J also includes modifications or improvements to portions of the local street system where it is affected directly by the Bypass or where modifications or improvements to the local street system are required to support the Bypass function. These improvements would be complementary to the Bypass and will be addressed in the Tier 2 analysis.

As part of the goal exception process, the Transportation Policies of the Yamhill County Comprehensive Plan were amended to eliminate the possibility of routing Oregon 99W traffic through Newberg and Dundee. In addition, provisions in support of the Newberg-Dundee Bypass were adopted and incorporated into the Yamhill County Comprehensive Plan and Zoning Ordinance. These provisions included facility design and land use measures to minimize accessibility of rural lands from the proposed transportation facility and to support continued rural use of surrounding lands for portions of the Newberg-Dundee Bypass located in unincorporated Yamhill County, including its terminal connections.

The amendment to the Yamhill County Zoning Ordinance includes addition of an Interchange Overlay District. This district applies to unincorporated lands within approximately ¼ mile (inside UGBs) to ½ mile (outside UGBs) of ramp termini of the four Bypass interchanges. The cities of Newberg, Dundee, and Dayton adopted similar provisions in their plans and ordinances. Copies of these approved amendments to the plans and the ordinances are included in Appendix D.

Consistent with OHP requirements, Interchange Area Management Plans (IAMPs) will be completed for Bypass interchanges. ODOT will develop these plans during Tier 2 the preliminary engineering. As needed, the IAMPs will address access management, road connections, local circulation, design and capacity controls, land uses near interchanges, and agency coordination. In order to fully address these issues within the context of the surrounding transportation systems and land uses, the IAMP study areas may be larger than the adopted overlay zone areas. Primarily, the IAMPs will protect the function of the Bypass and its associated interchanges to accommodate long-distance through traffic and regional trips with either an origin or destination outside of the project area. The IAMPs also are intended to minimize accessibility from the Bypass to surrounding rural lands and to support the continued rural use of those lands.

Local jurisdictions will adopt the IAMPs following review and approval by the OTC. The IAMPs will likely require amendments to the local comprehensive plans or TSPs. The nature of these amendments, as well as the other components of the IAMPs, is identified in the IGAs discussed above. The adopted IAMPs will be included in Tier 2.

Population and Employment

In 2000, Newberg had a population of 18,064 and Dundee had a population of 2,598. The combined population of the two cities was about one-quarter of the total Yamhill County population of 84,992.

The Newberg area had an employment base of close to 8,000 jobs in 2000, about one-third of the total Yamhill County employment of 28,640. Major employers in Newberg include manufacturers of dental equipment, newsprint and circuit boards, as well as the education and health care sectors. The employment base in Dundee is more limited, with fewer than 500 local jobs. The major manufacturing employer is Westnut (nut processing). Other local employment is associated with the commercial service and public sector categories.

For 2020, the Oregon Department of Administrative Services projects that Yamhill County will have a population of about 120,000 and about 40,000 jobs.

Existing and Planned Land Use

Figure 3-2 highlights generalized comprehensive plan designations for Newberg, Dundee and the unincorporated area of Yamhill County adjacent to the two cities. A brief description of existing and planned land uses for the project area follows.

Newberg

Land use adjacent to Oregon 99W through Newberg is largely planned for commercial development. The traditional downtown area is located at the west end of Newberg in an area with older buildings, smaller lots and blocks, and primarily on-street parking. A commercial area with a stronger highway orientation

extends along Oregon 99W in the easterly half of the city. This area includes newer and larger commercial buildings, fewer local street connections and large off-street parking areas. Providence Health System is building the Providence Newberg Medical Center adjacent to the south side of Oregon 99W near the eastern terminus of the project. The medical center is scheduled to open in the fall of 2005.

Residential neighborhoods cover areas north and south of Oregon 99W. Most of the vacant land for future residential development is located in northern Newberg. Industrial uses are generally located in southern and eastern Newberg, in the Willamette riverfront area and along Oregon 219. Several public and institutional facilities are located in Newberg, including a public airport (Sportsman Airpark), a university, schools and parks, numerous churches and a hospital. A mixed-use land use development, including a public golf course, is planned for the Springbrook Oaks area in eastern Newberg.

The area within the Newberg UGB is just over 3,560 acres. About 2,760 acres were either developed or otherwise unbuildable as of 2004, with about 801 acres, excluding the right of way for city streets, available for future urban development. The UGB includes sufficient land to accommodate a population of 27,000. The majority of the vacant land, 387 acres, is designated for housing. Close to 143 acres of vacant land are designated for industrial use, and about 73 acres of vacant land are designated for commercial or mixed-use development.

Dundee

In Dundee, the Oregon 99W corridor is mostly planned for commercial development. Existing commercial uses include restaurants, small stores and wine-related businesses. The Westnut processing and packing plant is located between Oregon 99W and the railroad tracks. Most existing residential development is located north of Oregon 99W and extends up into the hills. While a large area southeast of Oregon 99W and the railroad tracks is included in the Dundee UGB and planned for future residential development, it is currently in farm use. The Dundee UGB includes about 300 acres available for future urban development. The majority of this land (about 260 acres) is planned for single-family residential development.

Dayton

Land use adjacent to Oregon 99W near the junction of Oregon 99W and Oregon 18 (McDougal Corner) is largely farmland. Adjacent to Oregon 99W and southeast of the proposed Dayton Interchange is the Dayton Industrial Park which is largely undeveloped and currently used for farming. Industrial and commercial land uses are planned for this area under the City of Dayton Comprehensive Plan. Future land use plans include the adoption of an IAMP to protect the function of the interchange. A fertilizer plant and an RV park are located nearby, within Yamhill County's jurisdiction.

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Yamhill County

Agriculture and forestry dominate land uses in Yamhill County outside of the urban growth boundaries of the cities. Yamhill County has a rich and varied agricultural economy, producing 167 varieties of crops. Yamhill County is one of the nation's major producers of hazelnuts. Other principal agricultural products include tree and plant nursery stock, wheat, wine grapes, a variety of fruits and vegetables, and legume and grass seed. Yamhill County ranks seventh out of the 36 Oregon counties in annual market value of agricultural production.

Yamhill County is Oregon's leading wine region. Many of the more than 100 vineyards and 40 wineries in the county are concentrated in the Newberg-Dundee area. The vineyards are a growing industry in Yamhill County, and local and international vintners have made a large financial investment around Newberg and Dundee.

South of Newberg and the Willamette River lies some of the best agricultural land in Marion County, most of which is zoned for exclusive farm use. Small farming-related communities in this portion of Marion County include St. Paul and Donald.

The Newberg-Dundee area, particularly between the two cities, has a substantial amount of land zoned for rural residential development. Almost 500 homes were located in the rural residential area between Newberg and Dundee in 1999, with the potential for about 330 additional homes, based on existing zoning.

SOCIOECONOMICS

A Socioeconomic Technical Memorandum documents the affected environment, environmental consequences, and potential mitigation. The technical memo is summarized here and incorporated in total by reference.

Study Area Overview

The cities of Newberg, Dundee, and Dayton, and the surrounding unincorporated areas of Yamhill County are in the study area. Yamhill County, including the portion where the project is located, is well known for its agricultural industry, particularly its vineyards/wineries and orchards. Nearly half (19) of the wineries in Yamhill County are in the Newberg-Dundee-Dayton area, which is the largest concentration of wineries in any Oregon county. Manufacturing jobs comprise about 18 percent of the labor force, and services make up the largest labor share at 28 percent.

Demographic and Economic Trends

A review of demographic trends and projections is useful to understand the communities traversed by the project area. This review includes trends in population growth, age of population, race and ethnic origin, housing, employment, household income and low-income households.

Population

In 2000, Newberg had a population of 18,064. Dundee's population in 2000 was 2,598. The combined population of the two cities was about one-quarter of the total Yamhill County population of 84,992. (See Table 3-2.)

Table 3-2 Population and Households (1980–2000)

Population	1980	1990	2000	Change 1980-1990		Change 1990-2000	
				Net	Compound Annual Growth Rate	Net	Compound Annual Growth Rate
Dayton	1,409	1,526	2,119	117	0.8%	593	3.3%
Dundee	1,223	1,663	2,598	440	3.1%	935	4.6%
Newberg	10,394	13,086	18,064	2,692	2.3%	4,978	3.3%
McMinnville	14,080	17,894	26,499	3,814	2.4%	8,605	4.0%
Yamhill Co.	55,332	65,551	84,992	10,219	1.7%	19,441	2.6%
Oregon State	2,633,105	2,842,321	3,421,399	209,216	0.8%	579,078	1.9%
Households							
Dayton	439	481	641	42	0.9%	160	2.9%
Dundee	396	533	921	137	3.1%	388	5.6%
Newberg	3,672	4,542	6,099	870	2.1%	1,557	3.0%
McMinnville	5,293	6,632	9,367	1,339	2.3%	2,735	3.5%
Yamhill Co.	19,191	22,424	28,732	3,233	1.6%	6,308	2.5%
Oregon State	991,593	1,103,313	1,374,061	111,720	1.1%	270,748	2.2%

State of Oregon population projections for Yamhill County estimate an annual growth rate of 2.6 percent from 2000–2010, declining to 2 percent between 2010 and 2020. Growth in Newberg during the next decade is expected at an annual rate of 3 percent. Projections for 2010 to 2020 show growth decreasing to an annual rate of 2 percent. Dundee’s population is projected to increase to 5,744 in 2020. This assumes an annual growth rate of 4 percent over the next 20 years.

The three cities in the study area also have smaller percentages of persons between the ages of 45 and 64. These are 17 percent in Newberg, 18 percent in Dayton and 21 percent in Dundee, compared with the state average of 25 percent and the county average of 21 percent. Seniors show lower representation in all three cities when compared to their statewide representation. While the state has an average of 13 percent of its residents in the 65 and over category, Newberg has 11 percent, Dayton 8 percent and Dundee 9 percent.

Age of Population

Age distributions for the year 2000 show the cities roughly in line with the county. Over half of the population in Dayton, Dundee and Newberg shows higher than average percentages in two age categories: under 17 and 25 to 44. This suggests a prevalence of young families.

Race and Ethnic Origin

The 2000 census shows that Dayton is substantially more diverse than the other study-area cities, Yamhill County, or the state as a whole (see Table 3-3). Minorities account for 19 percent of Dayton’s population, versus 7 percent of Dundee’s residents, 11 percent of Yamhill County’s, and 10 percent of both Newberg’s and Oregon’s. Yamhill County, Dundee, and Newberg had lower percentages of African American and Asian residents than the statewide average. Residents of Hispanic origin have a much stronger presence in Dayton (more than 26 percent of population), as compared to Dundee (8 percent), Newberg (11 percent), Yamhill County (11 percent), and Oregon (7 percent).

Table 3-3 Race and Ethnicity (2000)

Race and Ethnicity	Dayton	Dundee	Newberg	Yamhill Co.	Oregon
White	80.7%	92.7%	90.5%	89.0%	90.0%
African American	1.6%	0.0%	0.4%	0.8%	1.5%
Native American	1.2%	0.9%	0.6%	1.5%	1.0%
Asian and Pacific Islander	0.5%	1.0%	1.2%	1.2%	2.9%
Other	11.8%	3.3%	5.1%	5.1%	1.9%
Two or more races	4.2%	2.1%	2.2%	2.4%	2.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Hispanic Origin	26.2%	7.5%	10.5%	10.6%	6.9%

Employment

As of 2000, Yamhill County had 2,120 employers with 28,640 employees. Services make up the single largest employment sector (with over 6,200 jobs), followed closely by manufacturing (with more than 6,170 jobs), retail (5,320 jobs) and government (4,030 jobs). See Figure 3-3 for the locations of businesses and/or commercial areas within the project vicinity.

Newberg and the surrounding rural area have more than 7,950 jobs or nearly 28 percent of the county's employment. McMinnville and vicinity have nearly 11,900 jobs, almost 42 percent of the county's employment. The Dayton area has more than 1,500 jobs, with 5 percent of the county's employment. The Dundee area has just over 430 jobs.

Median Household Income

As shown on Table 3-4, the 1999 median household income for Yamhill County was \$44,111, with about 62 percent of households earning \$35,000. The median income of Newberg residents generally matched that of Yamhill County residents. Dundee households had a median income of \$50,284, with 69 percent of its households earning above \$35,000 annually. Dayton households had a median income of \$40,556. McMinnville had the lowest median household income at \$38,953.

Table 3-4 Household Incomes (1999)

Income Category	Dayton	Dundee	McMinnville	Newberg	Yamhill Co.
<\$15,000	13%	11%	17%	11%	13%
\$15,000 - \$24,999	12%	7%	12%	14%	12%
\$25,000 - \$34,999	19%	12%	14%	15%	14%
\$35,000 - \$49,999	21%	18%	23%	16%	19%
\$50,000 - \$74,999	23%	26%	20%	29%	24%
\$75,000 or More	12%	25%	14%	14%	19%
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Median Household Income	\$40,556	\$50,284	\$38,953	\$44,206	\$44,111

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Low-income Households

Government agencies vary in how they define low-income households and persons. For purposes of this report, low-income household concentrations are identified using methods consistent with Federal Highway Administration (FHWA) guidelines. Under these guidelines, a low-income household is based on Department of Health and Human Services poverty thresholds for size of family unit and income. The U.S. Census Bureau reports poverty levels based on these guidelines. In 1999 federal poverty guidelines were \$8,240 for a one-person household, \$19,520 for a five-person household, and increased by \$2,820 for each additional household member. 2000 Census data reports that in 1999, 9.0 percent of Yamhill County households were below the poverty level. The City of Dayton had the area's highest percentage of households below poverty level, at 13.5 percent. In contrast, the proportion of households below poverty level in Dundee and Newberg were lower than the county average, at 7.5 percent and 6.3 percent respectively.

CULTURAL RESOURCES

A Cultural Resources Technical Memorandum documents the affected environment, environmental consequences, and potential mitigation. The technical memorandum is summarized below.

Archaeological Resources

An archaeologist reviewed the Oregon State Historic Preservation Office (SHPO) archaeological files and literature and conducted a field survey to find archaeological sites in the project area. The files include information on earlier surveys and recorded sites in the Newberg-Dundee area. The archaeologist also consulted General Land Office (GLO) maps of survey and land claims at the University of Oregon library.

The archaeologist visited portions of the project area to informally inspect the terrain and environmental settings, looking for possible archaeological sites. The archaeologist observed areas in and adjacent to the project area by driving and stopping on existing public roads.

The file search found no recorded archaeological sites in the project area or elsewhere in the Newberg-Dundee-Dayton vicinity. An informal field survey of 16 existing road margins crossing parts of the corridors did not identify any archaeological sites. Nor did the archaeologist find any prehistoric or historic archaeological materials.

Most land in the alternative corridors is built upon or cultivated. All alternative corridors cross a high terrace above the Willamette River. Archaeological sites are most often found on flat ground near water, with some Willamette Valley sites located on low mounds that rise slightly above the surrounding level terrain.

The Southern Build Alternative corridors rest on part of the main valley floor. This valley plain forms a high, gently sloping terrace above the Willamette River. Numerous streams have incised steep draws or small canyons as they cross the valley floor to the Willamette River from hills to the west and north. All of the Southern Build Alternatives share the same basic terrain and environmental attributes, thus cannot be differentiated in terms of the probability for the presence of prehistoric archaeological sites. The setting of the Northern Build Alternative passes along the lower slopes of the foothills bounding the main valley floor. While it is further from major waterways than the Southern Build Alternatives, this route is near several creeks. There may be the presence of prehistoric archaeological sites in the Northern Build Alternative, although potential sites in this area may be somewhat smaller in size than those typically found on river terraces closer to the main channel of the river.

All of the project area lies within Donation Land Claim properties. Euro-American emigrants settled these properties by the 1850s. Foundations or other remains of early buildings may be present on these properties within the project area. Therefore, there is a potential for discovering historic foundations or

sites during future archaeological surveys. Any sites found in future stages of the project will be avoided or mitigated and will be in accordance with all federal and state regulations regarding historic resources.

Historical Resources

A historic resources specialist conducted a survey to identify and document historic cultural resources potentially affected by the project alternatives. This survey complies with the Section 106 process of the National Historic Preservation Act, an ongoing process that will continue through project construction. Projects with a federal involvement (funding, permitting or licensing) must comply with Section 106 of the National Historic Preservation Act (in accordance with 36 CFR 800). These regulations protect prehistoric and historic archaeological resources, traditional cultural properties, historic structures, buildings, and objects that are important to cultural identity. The survey for the LDEIS identified resources within the project's Area of Potential Effect (APE)¹⁸. The specialist conducted a windshield survey and used aerial photos with the project area drawn on the photograph. Information recorded includes the following data categories:

- Alternate route(s) affecting the property
- Building integrity
- Current use of the building
- Photo number
- Building style
- Estimated date of construction
- Preliminary National Register status

The specialist based the National Register of Historic Places (NRHP) status of the properties primarily on Criterion C (an important example of period architecture, landscape or engineering) and Criterion A (an association with important events or patterns of history). A limited number of properties have potential Criterion A importance. Background research for the properties identified in the survey included investigation of the Yamhill County Cultural Resources Survey and Inventory, Phase II, completed by the Yamhill County Planning Department in May 1985. The specialist also consulted the NRHP database on the SHPO Web site to locate and identify registered historic properties within the area that could be affected by the project. The specialist divided the data category for historic registry eligibility into the following three categories:

- Properties listed on the NRHP.
- Properties that are potentially eligible for inclusion in the NRHP.
- Properties that are not eligible for inclusion in the NRHP.

The potential NRHP eligibility for each property is based solely on field observation. Two concentrations of historic properties are present within the project area. One concentration is along Chehalem Drive in Newberg, and the other includes properties located on East 11th, East 12th, South Chehalem and South River streets in Newberg. The first group appears to lack the cohesiveness required for a National Register District. The second group also does not appear to be eligible as a separate district because it lacks cohesiveness. However, a large concentration of historical properties just north of this area could become a historic district. The second group of homes could then be considered tertiary resources within the larger district.

Table 3-5 summarizes the preliminary assessment of NRHP eligibility for the properties identified in the survey. The listed and potentially eligible sites are shown on Figure 3-4, Historic Sites.

¹⁸ According to 36 CFR 800.16(d), the Area of Potential Effect is the geographic area or areas within which a federal undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The area of potential effects is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking. For the purposes of this project the APE is defined as the Bypass Alternative corridor footprints.

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Table 3-5 Summary of NRHP Eligibility

Type of Property	Number of Properties
NRHP listed	2
Potentially eligible for inclusion in the NRHP	47
Properties not eligible for inclusion in the NRHP	71

Development of Tier 2 analysis will follow Section 106 of the National Historic Preservation Act guidelines for protecting historic and archaeological resources. A “Determination of Eligibility” will be prepared for the properties that could be affected by the project and are potentially eligible for inclusion in the NRHP. For properties that are listed on the NRHP and those determined eligible for listing, a comprehensive effort will be made to avoid or minimize direct and indirect adverse impacts to the properties. A “Finding of Effect” will be prepared for properties that are listed or eligible for listing on the NRHP that are potentially impacted by the project. If adverse effects to eligible or listed properties are not avoidable, a Memorandum of Agreement will be prepared and submitted to the SHPO that documents the mitigation requirements.

AIR QUALITY

An Air Quality Technical Memorandum documents the affected environment, environmental consequences, and potential mitigation. The technical memo is summarized here and incorporated in total by reference.

The Oregon Department of Environmental Quality (DEQ) implements federal and state air quality legislation and develops state standards. The project is located within an Oregon designated air quality attainment area for both carbon monoxide and ozone. Therefore the project study area generally meets the clean air levels set by the U.S. Environmental Protection Agency in the National Ambient Air Quality Standards.

NOISE

A Noise Technical Memorandum documents the affected environment, environmental consequences, and potential mitigation. The technical memorandum is summarized here and incorporated in total by reference.

Noise is defined as unwanted sound. The sounds of traffic, yard maintenance equipment (e.g., leaf blowers) and aircraft are generally considered obtrusive and are classified as noise. Sound levels fluctuate over time. The degree of annoyance associated with noise can vary depending on what the receiver is doing and how close the source of the noise is to that activity. To help understand how decibels help measure noise, consider that it generally takes three decibels for most people to hear a change in sound, and about ten decibels to perceive a doubling in volume.

The project area contains noise-sensitive sites. These sites include residences, parks, schools and other places where people spend time. Parks dedicated to passive recreation are generally more sensitive to noise than playgrounds and sports fields. The FHWA has categories that apply to noise-sensitive sites, as shown below:

- Category A (57 decibels exterior noise); for example, outdoor amphitheater used for public cultural events.
- Category B (67 decibels exterior noise); for example, residences, churches, schools and outdoor recreation areas.
- Category C (72 decibels exterior noise); for example, commercial and business areas.

Although noise impacts cannot be clearly assessed at the location phase, a preliminary estimate of potential impacts was based on a decibel level in the middle of the range used by FHWA for their analysis for noise-sensitive sites. For this reason, 65 decibels were used as the noise criteria for initial analysis.

The project area includes urbanized areas where traffic and other activities already affect ambient noise, as well as agricultural and rural land where ambient noise would currently measure very low, below 60 decibels.

VISUAL ENVIRONMENT

A Visual Environment Technical Memorandum documents the affected environment, environmental consequences, and potential mitigation. The technical memo is summarized here and incorporated in total by reference.

A visual resource specialist followed the FHWA's method summarized in Environmental Impact Statement Visual Impact Discussion (undated) to assess the visual character of the project study area. Using data collected during a field study, the specialist described the study area and evaluated potential impacts. The specialist also reviewed topographic and land use maps, as well as photographs. The visual analysis included the following steps:

- Described the visual environment and visual resources in the study area.
- Described the quality of the existing visual resources.
- Identified viewer groups affected by those visual resources.
- Assessed the degree of change in the visual character created by each Build Alternative of the proposed project, including the No Build.
- Identified mitigation measures for impacts to the visual quality for each alternative.

As shown in Figure 3-5, nine types of landscape areas are found in the project area. These areas differ in terms of landform, water, vegetation and human-created development. Appendix C in the LDEIS contains photographs of several of these landscape areas. Table 3-6 describes in general the views from each area.

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Table 3-6 Visual Character and Description of Views

Urban Center – Historic Downtown Areas of Newberg and Dundee

Along First Street in Newberg, views of mostly two-story brick commercial buildings, sidewalks with street trees, three lanes of traffic and two lanes of parallel parking. Along Hancock, businesses are in brick or wood buildings and in historical two-story houses.

Dundee commercial buildings are mostly one- or two-story wooden structures, wineries and tasting rooms, with some larger farm supply stores. Oregon 99W is three lanes wide, and buildings are close to the road, creating an intimate, small-town scale.

Highway Commercial – Urban

Views of strip commercial development, five lanes of pavement, and vehicles. Development consists of large, simply shaped buildings, fast-food restaurants, car dealers, etc., with large expanses of parking. Drivers traveling northeast see distant views of hills as they head out of town. Cluttered visual environment with vehicles turning, signs and buildings of different styles, tall light poles, power poles and overhead lines.

Highway Commercial – Rural

Pavement, generally three to four traffic lanes, traffic and buildings of various styles alternating with wooded or grassy areas. Area is visually diverse with many driveway cuts, overhead lines, power poles and varying styles of building. Buildings tend to be separate, small commercial businesses.

Single-Family Residential

Variety of residences with scattered mature trees and some commercial and industrial uses. Homes are smaller and closer together than rural areas, creating a more complex visual texture. Generally older established neighborhoods with sidewalks. Area of Oregon 219, Terrace Drive and Foothills Drive has limited distant views to the north.

Rural Residential

Foreground views to single-family homes and open fields, mid-ground views to orchards or woods, and long-distance views to hills beyond. Homes include rural residences and new subdivisions. Views are to Chehalem Mountain to the north and Parrett Mountain to the east. Southern portion of this zone has views of vineyards, farm fields with animals, farm produce stores and distant views to the Red Hills of Dundee to the west. In forested areas: rural residences, orchards, horses and barns. Similar character as Rural Residential, but no distant views past the trees.

Agriculture

Views of fields of crops, farm fields with animals, farm produce stores, orchards with rural homes interspersed. Along highway in southern portion of project area: Mature forest at Hess Creek, orchards, vineyards, farm fields with animals, farm produce stores. Distant views to the Red Hills of Dundee to the west.

Institutional

Large individual buildings mostly within residential or commercial urban or suburban areas. Includes schools, a hospital, a senior center and a cemetery.

Industrial

Views of office buildings, parking lots and warehouse buildings with mature trees scattered throughout providing visual buffers.

Mature Forest

Areas of mature, mixed coniferous-deciduous forest with homes interspersed. Closed canopy except for occasional developed areas. No views past the trees.

Developed Areas

For this project area, human-created development is an important factor in characterizing landscape areas. Important human-created visual features within the project area include two-story brick buildings in the historic downtown areas and the older, landscaped residential areas.

Human-created development includes commercial areas in addition to the downtown businesses of Newberg and Dundee. Commercial development in the form of large stores with large parking lots is present along the Oregon 99W in Newberg. Less dense commercial development exists along the highway between Newberg and Dundee.

Institutional areas shown on Figure 3-5 include schools, a hospital, a senior center and a cemetery. Industrial areas include a large newsprint plant, a wastewater treatment plant and an industrial park (called A-dec Technical Park, located within an area of residences).

Several residential areas are present, including medium- and low-density single-family homes, multi-family complexes, rural residential development with agricultural fields surrounding the homes, and mobile home developments.

Highways also represent an important human-created element throughout the project area, including Oregon 99W, Oregon 219 and Oregon 240.

Landform

The topography in the study area is primarily level, with some rolling hills and small, steep ravines. The developed portions of Newberg, the eastern portion of Dundee, and the agricultural land south of Dundee are level. Rolling hills surround the built-up areas of Newberg and Dundee, in the western portion of Dundee, and west of Oregon 99W south of Dundee. In addition, there are many long-distance views from within the Newberg area to steeper hills to the north and east and from the Dundee area to the Red Hills of Dundee to the west. Large streams cross the alternative alignments in several places; some of these creeks have steep banks and can be characterized as ravines.

Water

The major water feature in the study area is the Willamette River; however, it is not visible from the project area. Several large streams are also present in the area, but because their banks are vegetated, they also are not particularly noticeable.

Vegetation

Types of vegetation in the study area include mature forest, agriculture/croplands, agriculture/orchards and urban street trees. Patches of mature forest remain in the most steeply sloped areas, along stream banks and on the rolling hills in the distance. A larger patch of mature forest is present in the southern part of Newberg, in a newly developed area of single family homes. Agriculture/croplands surround the developed portions of Newberg and Dundee. Agriculture/orchards are interspersed occasionally within the agricultural areas. Urban street trees are located within the developed areas of Newberg and Dundee, especially in the older, established residential neighborhoods.

Important Visual Features

In addition to the general landscape areas shown on Figure 3-5, there are individual features that are important visually within the project area. Unique and important visual features are shown on Figure 3-6.

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They are:

- Rolling hills
- Regional views
- Mature forests
- Wooded streams/steep ravines
- Scenic resources: Areas of rural residential development, croplands and orchards
- Specific visual resources:
 - A-dec Technical Park
 - Shopping centers
 - Downtown Newberg
 - Downtown Dundee
 - Neighborhood park
 - Established older residential neighborhood
 - SP Newsprint Co.
 - Wastewater treatment plant
 - Hazelnut orchard
 - Scenic farm with horses
 - Hazelnut factory
 - Argyle Winery
 - Rolling Acres subdivision

Viewers

Two kinds of viewers, stationary and mobile, are likely to view the project area. Stationary viewers, such as residents inside or outside their homes, see the same view for the longest time. Mobile viewers are those viewing the study area while passing by or through it in vehicles. Mobile viewers travel at speeds from less than 25 miles per hour in residential areas to 55 miles per hour on Oregon 99W or rural roads. Table 3-7 shows an assessment of the characteristics and sensitivity of viewers from each landscape area.

Table 3-7 Viewer Characteristics

Landscape Area	Stationary Viewer Characteristics (worker, resident, etc.)	Mobile Viewer Characteristics	Viewer Sensitivity
Urban Center – Downtown Areas of Newberg and Dundee	Workers at downtown Newberg and downtown Dundee businesses	Drivers, walkers and bicyclists along Oregon 99W and downtown roads	Medium, due to downtown character
Highway Commercial - Urban	Workers at commercial businesses	Drivers along Oregon 99W between downtown Newberg and northeastern city limits	Low, due to extensive development and existing confusing visual character
Highway Commercial – Rural	Workers (commercial businesses)	Drivers along Oregon 99W between Newberg and Dundee	Low, due to extensive development and existing confusing visual character
Single Family Residential	Residents, workers, school occupants	Drivers on residential and main roads	High, due to high number of homes and older, established neighborhood
Rural Residential	Residents, occasional workers	Drivers, walkers and bicyclists on rural and residential roads	High, due to undeveloped, scenic character and distant views to hills. Medium in forested areas due to rural character of homes, agricultural and forested scenery

Landscape Area	Stationary Viewer Characteristics (worker, resident, etc.)	Mobile Viewer Characteristics	Viewer Sensitivity
Agricultural	Residents, occasional workers	Drivers, walkers and bicyclists on rural and residential roads, drivers along Oregon 99W south of Dundee	Medium, due to few homes but some long-distance views
Institutional	Students, employees, the public	Drivers on residential and main roads	Medium, due to public use
Industrial	Workers (newsprint plant, waste water treatment plant, recycling center, and A-dec Technical Park)	Drivers on Wynoski Street and local roads near A-dec Technical Park	Low, due to low number of residential users
Mature Forest	Residents	Drivers along residential roads	Low, due to vegetation blocking views

Existing Visual Quality

While many factors contribute to a landscape's visual quality, they can be consolidated under three headings: vividness, intactness and unity. Vividness is the memorability of the landscape components as they combine in striking visual patterns. Intactness is the visual integrity of a landscape and its freedom from encroaching elements. Unity is the visual coherence and compositional harmony of the landscape as a whole. Table 3-8 assesses the visual quality of the nine landscape areas.

The single-family residential, rural residential and agricultural landscape areas were selected for particular evaluation because of their high visual quality and viewer sensitivity.

Table 3-8 Existing Visual Quality

Urban Center – Downtown Areas of Newberg and Dundee

Medium due to unique architectural design and styles that define the geographic region; highway signs and utility lines encroach on the landscape.

Highway Commercial – Urban

Low due to cluttered visual environment and confusing visual character.

Highway Commercial – Rural

Low due to cluttered visual environment and confusing visual character.

Single-family Residential

Medium due to unified appearance of homes within many neighborhoods and little encroachment by incompatible elements.

Rural Residential

High due to striking scenery that defines the geographic area and harmony of composition with open fields in the foreground and hills behind. Very few incompatible elements encroach upon views. Forested areas: Medium to high for the same reasons as above; but trees block long-distance views.

Agricultural

Medium to high due to striking rural scenery and harmonious composition of long distance views with farmstands and agriculture in the foreground. Relatively intact landscapes.

Institutional

Medium due to unified appearance of buildings fitting into urban and residential neighborhoods.

Industrial

Low due to incompatibility between industrial development and rural scenery; visual elements are not striking.

Mature Forest

Medium due to striking scenery but trees block long-distance views.

WATER RESOURCES

A Water Resources Technical Memorandum documents the affected environment, environmental consequences, and potential mitigation. The technical memo is summarized here and incorporated in total by reference.

The entire project study area drains toward the Willamette River, located south of Newberg and Dundee, approximately 0.5 mile from the project area. The Yamhill River, a major tributary, flows into the Willamette near the project (see Figure 3-7). Chehalem Creek, Springbrook Creek, and Hess Creek cross the Build Alternative corridors on their path to connect with the Willamette River.

The only streams in the project area included on the DEQ list of water quality-limited streams (303d) are the Willamette River main stem and the Yamhill River. The Yamhill is listed for violations of bacteria and temperature standards. In the project area, the Willamette River is listed for bacteria, biological criteria (fish skeletal deformities), temperature and toxics (mercury). Neither river will be crossed or impacted by the Preferred Alternative.

Stormwater

Roads and other development can affect water quality and quantity. As a result, the potential for increasing the amount of paved surfaces is considered. A water resources specialist calculated paved surface quantities for each alternative by multiplying the length of the alternative by the pavement width and adding it to the quantities of the pavement at the interchanges specific to that alternative. Each type of interchange was calculated by multiplying typical lengths of ramps (and any additional roadway needed to connect the interchange with Oregon 99W) by the pavement width. The existing roadway surface of Oregon 99W, between the Build Alternatives, was calculated by dividing the alternatives into two-, three- and four-lane sections and multiplying the length of each section by the pavement width.

Floodplains

A mapping specialist obtained electronic Federal Emergency Management Act (FEMA) data for Yamhill County on 100- and 500-year flood events. There are two small areas that are unmapped by FEMA within the Newberg city limits, one in the north and one in the south. The unmapped area in south Newberg is next to the Southern Build Alternatives (see Figure 3-7).

The area of Dundee within its UGB is considered Zone C on the FEMA maps, which means no flooding. The Dundee and Newberg city limits contain areas within 100-year floodplains of the Willamette River. The Southern Build Alternatives cross the 100-year floodplain three times. The Northern Build Alternative crosses the 100-year floodplain two times.

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BIOLOGICAL RESOURCES

The Biological Resources Technical Memoranda document the affected environment, environmental consequences, and potential mitigation. The technical memoranda are summarized here and incorporated in total by reference. See Appendix B for a list of all Biological Resource technical memoranda.

Wildlife Ecology

The assessment of terrestrial wildlife habitat focused on four areas: vegetation cover types, wildlife habitat, wildlife movement corridors and riparian buffers. Each of these focus areas is discussed below. Additional detail on wildlife habitat in the project area can be found in the Terrestrial Habitat and Wildlife Resources Technical Memoranda.

Vegetation Cover Types

A biologist identified vegetation cover types within an approximate 656-foot (200 meter) wide buffer on either side of each alternative in the study area, using aerial photographs. The cover types mapped include: mixed forest (upland mixed forest and riparian forest), oak forest, scrub shrub, agricultural and herbaceous, orchards and nurseries. In addition, open water and developed areas were mapped because these non-vegetated areas may provide important wildlife habitat. Sites requiring further study were identified on the field maps. These sites included areas providing habitat for special status species; large, contiguous blocks of habitat; and potential wildlife corridors.

The field maps were used to verify cover types and boundaries during a field reconnaissance of the project area. Habitat quality classifications also were assigned at this time.

Historically, much of the project study area consisted of oak woodland, oak savanna, prairie and upland mixed forest. Today, these habitats occur as remnants, while much of the landscape has been converted to agricultural and urban areas. Extant vegetation is dominated by non-native species, including Himalayan blackberry (*Rubus procerus*), reed canary grass (*Phalaris arundinacea*), and a variety of agricultural species. Forested and other less disturbed cover types generally support the life functions of a larger variety of native wildlife than developed and agricultural habitats.

Upland mixed forest occurs as patches generally measuring less than 5 acres throughout the study area and within all of the alternatives. Upland mixed forest vegetation is generally characterized by a combination of coniferous and deciduous trees such as Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), big-leaf maple (*Acer macrophyllum*), black cottonwood (*Populus balsamifera*), and red alder (*Alnus rubra*). Within the project area, these forested areas are primarily made up of second- and third-growth trees. This cover type is most abundant in the corridors of Southern Build Alternatives 3H and 3D. Wildlife species that may occur in this habitat type include: black-capped chickadee (*Parus atricapillus*), hairy woodpecker (*Picoides villosus*), and Douglas squirrel (*Tamiasciurus douglasii*).

Riparian forest occurs as mixed forest cover along streams and other waterbodies. Riparian forest vegetation may include black cottonwood, red alder, willow (*Salix spp.*), red-osier dogwood (*Cornus sericea*), salmonberry (*Rubus spectabilis*), Douglas spiraea (*Spiraea douglasii*), lady fern (*Athyrium filix-femina*), and candy flower (*Claytonia sibirica*). The northern red-legged frog (*Rana aurora aurora*), a federal species of concern and state sensitive species, lives in riparian forests composed mostly of conifers. These areas may also provide important habitat for neotropical migrants, birds of the Western Hemisphere that migrate long distances from wintering grounds in the New World Tropics (or “Neotropics”) to breeding grounds in North America. Riparian forests also provide important habitat for many other species of wildlife, including water-associated birds, several amphibians, beaver, raccoon, and deer. All of the alternatives cross Hess Creek, South Hess Creek, Chehalem Creek, and Springbrook Creek. The Northern Build Alternative 4C also crosses Harvey Creek.

Oak forests dominated by Oregon white oak (*Quercus garryana*) were found by project biologists in several parts of the project area. This cover type is fragmented within the general vicinity. Oak-pine savanna, which historically occurred near Newberg, is absent today. Large tracts of oak forest have been converted to agricultural or residential uses within the Willamette Valley ecoregion. This increasingly scarce forest type is associated with several special status species, including the acorn woodpecker (*Melanerpes formicivorus*) state species of concern, Nelson's checker-mallow (*Sidalcea nelsoniana*) state and federal threatened, and pale larkspur (*Delphinium leucophaeum*) state endangered.

Scrub-shrub vegetation is common within the project area. It makes up approximately 5 to 6 percent of the total vegetative cover. This cover type is characterized by a lack of trees. Dominant plant species include: Nootka rose (*Rosa nutkana*), non-native Himalayan blackberry, and Scot's broom. Common wildlife species that may use this cover type include dark-eyed junco (*Pipilo erythrophthalmus*), song sparrow (*Melospiza melodia*), and Virginia opossum (*Didelphis virginianus*).

Agricultural and herbaceous areas are the most common cover type within the project area. These areas are dominated by low-growing herbaceous groundcovers, which are often non-native. Much of this habitat occurs on farmland, which is prone to regular disturbance from agricultural practices. Generally, these areas are of relatively low quality to wildlife. Common wildlife species that may occur in this habitat include: Canada goose (*Branta canadensis*), American robin (*Turdus migratorius*), and raccoon (*Procyon lotor*).

Open water is limited within the project area. Generally, the open water occurs as artificially excavated farm ponds characterized by steep, exposed banks. The biologist identified one naturally occurring pond near the northeastern end of the project. This pond is associated with Hess Creek near the junction with Oregon 99W. The surrounding deciduous vegetation is mostly native and covers the banks. The pond appears to hold water throughout the year. This pond may provide habitat for beaver and a variety of waterfowl.

Developed cover types consist of roads, buildings, and other disturbed environments. Vegetation is often lacking, though some weedy, non-native species may occur. These low quality cover types may provide habitat for a variety of adaptable species, such as European starling (*Sturnis vulgaris*), English house sparrow (*Passer domesticus*), and Norway rat (*Rattus norvegicus*).

Wildlife Habitat

The biologist developed a system of habitat quality classifications to be applied to the mapped vegetation cover types. These classifications are described as:

High quality:

- Predominately native vegetation
- No historical evidence of disturbance
- Known habitat for listed or other special status species
- Presence of dead and downed wood, snags, cavities and nests

Moderate quality:

- Mix of native/non-native vegetation
- Some evidence of disturbance
- Possible habitat for threatened and endangered species
- Limited habitat complexity

Low quality:

- Predominately non-native/invasive vegetation
- Disturbance evident, i.e., logged, farmed, grazed or developed
- Near busy road(s) and foot paths
- Possible habitat for threatened and endangered species

The biologist assigned habitat quality classifications during the field survey of the project area.

Wildlife Corridors

Wildlife species use wildlife corridors to move within and through a habitat. Corridors provide important connectivity between significant habitats, such as streams and patches of forest. Wildlife use these areas to find breeding partners, for seasonal migration, and to find habitat requisites such as food and cover. The wildlife corridors in this evaluation are mapped to include streams, and riparian and upland corridors utilized by large mammals. Riparian areas support water-associated birds, beaver (*Castor canadensis*), raccoon (*Procyon lotor*), and black-tailed deer (*Odocoileus hemionus*). Other wildlife supported in the area include big game, songbirds, and waterfowl. A more detailed analysis of wildlife corridors will occur during Tier 2.

As shown in Figure 3-8, six important wildlife corridors were identified:

- *Wildlife Corridor 1:* The Willamette River and its associated riparian buffer. This corridor is important to a variety of wildlife including fish, waterfowl, songbirds, and aquatic and terrestrial mammals.
- *Wildlife Corridor 2:* The northwestern wildlife corridor provides nearly contiguous forested habitat from Oregon 99W northwest to designated big game peripheral winter range (ODFW). A narrow corridor continues toward the Willamette River. Roadways (particularly Oregon 99W) and agricultural land fragment it. Big game and a variety of other wildlife could utilize this corridor.
- *Wildlife Corridor 3:* The northern wildlife corridor is a large, moderately fragmented, forested habitat area. This corridor may provide some forested connectivity, although widespread agricultural and scattered urban areas fragment the southern boundary of this corridor.
- *Wildlife Corridor 4:* The northeastern wildlife corridor provides potential connectivity to the northern Willamette River and eastern wildlife corridors. This corridor is fairly isolated from other large contiguous forested habitat patches, but it may have some fragmented connectivity.
- *Wildlife Corridor 5:* The eastern wildlife corridor is a narrow, crescent-shaped, forested area with some connectivity to the northeast and Willamette River wildlife corridors. This corridor is moderately isolated from the other wildlife corridors and patches of contiguous forested habitat.
- *Wildlife Corridor 6:* The central wildlife corridor is a relatively small (1-mile long) and isolated, although contiguous, patch of forested habitat.

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Riparian Buffers

Riparian buffers are vegetated corridors along streams. High-quality riparian buffers have dense vegetation that shades the associated waterway, stabilizes the banks, and reduces soil erosion and sedimentation. The ultimate value of a riparian area depends on several factors: fish presence, connectivity to other riparian and wildlife corridors as well as other bodies of water, and potential wildlife use. All of these factors should be taken into consideration when assessing riparian area quality.

Project biologists used aerial photography to identify four types of riparian buffer around streams and other waterways. These include riparian forested, upland forested, agricultural, and urban. Forested areas within a 600-foot buffer were classified as riparian forested. Those outside the buffer were classified as upland forested. Each area was then assigned a unique riparian value based on quality/value of the land cover to riparian areas. Riparian and upland forested areas both received high quality ratings due to their important functions. Agricultural land was assigned a moderate quality rating due to its habitat value, and urban areas were assigned a low quality rating due to their limited habitat value.

The project area intersects several high-quality forested riparian corridors, including large contiguous patches of forested upland. These provide connectivity to the Willamette River as well as the headwaters of the northeastern wildlife corridor.

Fish Ecology

Stream Crossings

Researchers used maps, aerial photographs, and field visits to evaluate fish distribution and fish habitat in the project area. At each of 26 identified aquatic habitat crossings (wetlands and streams; see Figure 3-9), fisheries scientists did a habitat assessment using methods developed by the U.S. Department of Agriculture Natural Resources Conservation Service in 1998 (USDA 1998). This method, the Stream Visual Assessment Protocol (SVAP), provides a framework to evaluate fifteen habitat elements within a section of stream. A three-step rating system was assigned to each potential stream crossing using the following system:

- Low Quality – SVAP score of < 6.0
- Medium Quality – SVAP score of 6.1–8.9
- High Quality – SVAP score of > 9.0

Researchers did not find visual evidence of any minor streams not depicted on U.S. Geological Survey maps during this stage of surveys.

Fish Distribution

Scientists know little about actual anadromous species distribution in the project area. Coho salmon (*Oncorhynchus kisutch*), fall and spring Chinook salmon (*Oncorhynchus tshawytscha*), and winter and summer steelhead (anadromous *Oncorhynchus mykiss*) are all known to occupy the Willamette River main stem in the project area (see Figure 3-9). Additionally, listed spring Chinook occupy Chehalem Creek within the project boundary and portions of Hess and Springbrook creeks outside of the project boundary. For the purpose of this analysis all accessible reaches of tributary streams that provide suitable habitat for any life stage will be considered occupied by steelhead, rainbow trout (nonanadromous *Oncorhynchus mykiss*), cutthroat trout (*Oncorhynchus clarki*), coho or other native fishes. This assumption is intended to conserve those habitats that may be occupied by native fish at some point in their life history, but are not documented as such.

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Researchers contacted the Oregon Department of Forestry (ODF) to obtain current maps of fish presence or absence in the project area. The maps depict fish presence and absence in streams, without specific information on species. The state maps show fish in most of the project area streams. Fish are considered present where individuals of any species are found during surveys or are believed by Oregon Department of Fish and Wildlife (ODFW) staff to be in a stream. These surveys generally depict the distribution of cutthroat trout, sculpin (*Cottus spp.*), dace (*Rhinichthys spp.*), and redband shiners (*Richardsonius balteatus*).

This information, obtained through joint ODFW and ODF surveys, was supplemented by the professional knowledge of local ODFW biologists. Additionally, researchers contacted the U.S. Fish and Wildlife Service (USFWS) to obtain current fish distribution maps. The maps primarily show known ranges of salmon and steelhead.

Threatened and Endangered Species

Threatened and endangered species are those plants, animals, and fish listed as threatened or endangered under the federal or state Endangered Species Act. For the purpose of this investigation, candidate species and those proposed for state or federal listing are included with listed species. Information on threatened and endangered species in the project area is based on data from the U.S. Fish and Wildlife Service, the Oregon Natural Heritage Program, and Isaacs and Anthony's "Bald eagle nest locations and history of use in Oregon and the Washington portion of the Columbia River Recovery Zone 1971 to 2000" (2000).

The National Marine Fisheries Service (NMFS, previously NOAA Fisheries) provided information about designated critical habitat. NMFS has since withdrawn critical habitat designations pending additional economic analysis, so all further references to these critical habitat designations have been removed from this study. Information about habitat that is important to the survival and recovery of listed salmonids is still addressed. The ODFW provided maps of fish distribution.

Listed Fish

The USFWS fish distribution maps identified two federally listed fish that potentially occur in the project area: the Upper Willamette steelhead (winter run) and the Upper Willamette Chinook (spring run), as defined by NMFS in a consultation letter received for a nearby project.

Habitat elements important to the survival and recovery of listed salmonids extend beyond river reaches that are currently known to be occupied by them. These additional areas can include, but are not limited to, nearby riparian zones, estuarine areas, seasonal side channels and refuge habitats, upstream upland areas that feed the streams with snowmelt, and currently inaccessible reaches that could provide habitat if access were restored. Details of project impacts on these elements will be more fully addressed in Tier 2.

Scientists know little about actual fish species distribution in the project area. Spring Chinook and winter steelhead are known to occupy the Willamette River mainstem in the project area. Spring Chinook occupy Chehalem Creek and portions of Hess and Springbrook creeks. As referenced above in the Fish Distribution section, because of gaps in existing data, all accessible reaches that provide suitable habitat for any life stage of Chinook salmon or steelhead trout are assumed to be occupied. Tributary streams in the project area that meet these criteria could provide spawning, rearing, foraging and/or refuge habitat for wide-ranging species such as steelhead.

Listed Wildlife

The Oregon Natural Heritage Program database provided a record for one state and federal threatened bird, the bald eagle (*Haliaeetus leucocephalus*), within the 5-mile search area. The USFWS register of species that may occur in the project area includes: the bald eagle, Fender's blue butterfly (*Icaricia icarioides fenderi*) (federal endangered) and the Oregon spotted frog (*Rana pretiosa*) (federal candidate).

Researchers identified an active bald eagle nest site approximately 0.6–1.1 miles southeast of the project area. Potentially suitable habitat for this species is limited within the project area and nearby vicinity. No other threatened or endangered wildlife species were documented, and no potentially suitable habitat was identified for any of the other species investigated during the information review.

Listed Plants

The Oregon Natural Heritage Program database provided records of two state endangered plants, white rock larkspur (*Delphinium leucophaeum*) and peacock larkspur (*Delphinium pavonaceum*), within a 5 mile radius of the project. The USFWS provided a register of four federal threatened plants—golden Indian paintbrush (*Castilleja levisecta*), howellia (*Howellia aquatilis*), Kincaid’s lupine (*Lupinus sulphureus* var. *kincaidii*), and Nelson’s checker-mallow (*Sidalcea nelsoniana*)—and two federal endangered plants—Willamette daisy (*Erigeron decumbens* var. *decumbens*) and Bradshaw’s lomatium (*Lomatium bradshawii*)—that may occur within the area of the project.

No threatened or endangered plants were identified during the reconnaissance. However, some flowering plants may have been missed because of the timing of the site visit. During Tier 2, site visits will be conducted during the flowering season for endangered and threatened species that potentially occur in the project area.

Noxious Weeds

Noxious weeds are non-native plants that spread and compete with native plants. A federally designated noxious weed is any living plant, in any stage of development (including seeds), whose presence is detrimental to crops, livestock, land or other property or is injurious to public health. These plants are new to the United States or have limited distribution in a particular state. State designated noxious weeds are plants that are not native to the state and are harmful to native ecosystems, agriculture, or human health.

A biologist contacted the Yamhill County Extension Service to obtain information about noxious weeds found in the project study area. The biologist reviewed the Yamhill County Soil and Conservation District list of federal noxious weeds and the U.S. Department of Agriculture Animal and Plant Health Information Service Web site for a list of federal noxious weeds.

The biologist did not find any federally-designated noxious weeds within the project area. However, eight state-designated weeds were identified in the project area: Scot’s broom, Himalayan blackberry, meadow knapweed (*Centaurea pratensis*), purple loosestrife (*Lythrum salicaria*), Dalmatian toadflax (*Linaria vulgaris*), gorse (*Ulex europaeus*), Italian thistle (*Carduus pycnocephalus*), and yellow starthistle (*Centaurea solstitialis*). Of these, Scot’s broom and Himalayan blackberry are most common within the project area.

Another weed noted by the biologist is English ivy. This plant is on the Portland (Oregon) Prohibited Plant List and the state-designated noxious weed list, and is under quarantine status. Reed canarygrass is also on the Portland Prohibited Plant list, but has no other status in Oregon. Other common noxious weeds likely to be in the project area are field bindweed (*Convolvulus arvensis*), tansy ragwort (*Senecio jacobaea*) and knapweeds (*Centaurea spp.*).

Wetlands

State and federal regulations provide specific procedures for identifying and protecting waters that fall under the jurisdictions of the State of Oregon and of the United States. These jurisdictional waters include wetlands. Wetland specialists identified potential wetlands within the project area and assessed their functions. The methods for identifying potential wetlands and determining their boundaries are provided in the methods section of the Wetlands Technical Memorandum. Specialists conducted a functional assessment of each potential wetland and assigned a high, medium or low rating by averaging scores under the following categories:

-
- Dominant plant communities
 - Human disturbance
 - Rare plant communities as classified by the Oregon Natural Heritage Program
 - Listed species

A brief description of the functional ratings follows.

Dominant Plant Communities

Wetlands received high functional scores for “dominant plant communities” if non-native species covered less than 5 percent of the ground. Wetlands received medium functional scores with coverage of non-native species between 5 and 50 percent. Wetlands received low scores with greater than 50 percent coverage of non-native species.

Human Disturbance

For consideration of human disturbance, wetlands were given a high functional score when land cover was mostly a mix of natural grassland, native shrub land, woodland, wetlands, or waters with little evidence of people or development nearby. Medium scores were assigned when land cover showed a mix of natural and human influences. Wetlands were given low functional scores when human disturbance levels resulted in land cover that was predominantly impervious surface, bare ground, lawns, row crops, grazed, logged, or frequented by people.

Rare Plant Communities

Using the Oregon Natural Heritage Program classification system, analysts ranked wetlands with high scores when the rare plant community occurs within the habitat. Analysts assigned medium scores when a designated rare plant habitat was observed in an area. Low scores were assigned when a designated rare plant community or its habitat was not known to occur nor observed in an area.

Listed Species

Wetlands received high functional scores for rare, threatened and endangered species when listed, proposed, or candidate species were known to be present. Sites received medium scores when species of concern were sighted or potentially suitable habitat for more than one of these species was present. Low scores were assigned when potentially suitable habitat for one or none of these species was present. (See the Threatened and Endangered Species section of this chapter for more information on rare, threatened and endangered species that may occur in the project area.)

Wetlands and Streams Identified in the Project Area

The potential streams within the project study area include Harvey Creek, Chehalem Creek, Springbrook, two streams both referred to as Hess Creek, and several unnamed tributaries. Potential wetlands classified as riverine are located within low topographic areas and in swales on the floodplains of the streams. Other potential wetland areas classified as flats are located on broad, flat terraces. The main source of water for the riverine areas appeared to be from streams. Direct precipitation appeared to serve as the main source of water for the flats, with a secondary source being subsurface flow or surface runoff.

The analysis identified few high value wetlands in the project area. Figure 3-10 shows the location of the wetland functional areas.

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GEOLOGICAL HAZARDS

A Geological Hazards Technical Memorandum and a Slope Stability Memorandum document the affected environment, environmental consequences, and potential mitigation. The memoranda are summarized here and incorporated in total by reference.

A geologist evaluated potential geologic hazards in the project study area using the following criteria:

- Earthquake hazards
- Existence of known faults
- Proximity to landslide-prone areas

The map entitled “Relative Earthquake Hazard Maps for Selected Urban Areas in Western Oregon” (published by the Oregon Department of Geology and Mineral Industries) served as a key resource.

Earthquake Hazards

Four earthquake hazard zones are in the project study area. Each zone is based on the combined effects of ground shaking amplification (how powerful the wave pattern is), liquefaction (to cause soil to behave as a liquid), and earthquake-induced landslides. The four zones are Zone A, highest hazard; Zone B, intermediate to high hazard; Zone C, low to intermediate hazard; and Zone D, low hazard.

Existence of Known Faults

Two faults run through the project area. The Newberg Fault is a northwest/southeast-oriented fault that passes through downtown Newberg. All of the Build Alternative corridors cross the Newberg Fault one time. The Sherwood Fault is a southwest-northeast-oriented fault that begins in Newberg and runs northeast, parallel to, and just south of Oregon 99W.

Landslide-prone Areas

The potential for earthquake-induced landslides is generally greatest in areas where there are hills. Hilly locations in the project area include the bluff next to and overlooking the Willamette River and the slopes of the banks of Chehalem Creek, Hess Creek, and other tributaries in southwest Newberg.

Slope Stability Assessment

A geologist completed a survey along either side of Chehalem Creek in March 2003. The survey consisted of a site walk along the identified portion of the proposed corridor. Based on soil exposures in road cuts and stream banks, the soils beneath this segment of the corridor consist of fine-grained silty sands and silts. Slopes along Chehalem Creek and its tributaries exhibit low to medium stability. Where unstable slopes lie near or within the corridor, they may need to be regraded to a stable configuration. Identification of segments that need to be regraded should be based on final alignment of the roadway and a detailed geotechnical investigation during the design phase of the project. The detailed geotechnical investigation should include a characterization of subsurface conditions and development of appropriate mitigation measures.

HAZARDOUS MATERIALS

A Hazardous Materials Technical Memorandum documents the affected environment, environmental consequences, and potential mitigation. The memorandum is summarized here and incorporated in total by reference.

The hazardous materials evaluation identifies sites within the project area that could be a risk to the public and workers. Exposure to hazardous materials could occur during construction of a roadway or during

operation as a result of site disturbance. A hazardous materials site, for the LFEIS, is defined as having either a suspected or confirmed release of hazardous materials that causes human exposure through contaminated soil or groundwater. For the evaluation, a hazardous materials specialist reviewed four internet-accessible databases maintained by the DEQ. These databases are:

- Environmental Cleanup Site Information (ECSI)
- Confirmed Release List (CRL)
- Inventory of Hazardous Substance Sites (IHSS)
- Leaking Underground Storage Tank (LUST)

The ECSI list is maintained by DEQ to track sites in Oregon with known or potential contamination from hazardous substances. The CRL is a subset of the ECSI list, and includes those sites with known releases of hazardous substances. The IHSS, a subset of the CRL, is a list of sites with confirmed releases that DEQ has determined to require further investigation. The LUST database includes sites that have reported releases from petroleum-containing underground storage tanks.

Each database provides street addresses for listed sites. The hazardous materials specialist also used MapQuest (TM), to determine if a site's address is located within the project area and the Newberg, Oregon, U.S. Geological Survey topographic map to determine topographic gradients.

Six hazardous materials sites appear to be within or close to the project area (see Figure 3-11). Four sites were identified in the Environmental Cleanup Site Information database, and three sites were identified in the LUST database. The SP Newsprint Co. was cited on both lists. The CRL and the IHSS did not identify any sites near or within the project area.

To confirm if these sites are in a corridor, the hazardous materials specialist performed a more in-depth review of DEQ files. After the review process, the sites were correlated with each project alternative and then given a rating based on the status of soil or groundwater contamination and positioning of the site in relation to project alternative. No rating could be given to the South River Road Sludge site, as the DEQ does not have a file for review. Therefore, the site is not included on Figure 3-11. Of the remaining six sites, five were rated as having a low potential and one as moderate. No site was rated as having a high potential for contamination within the project area.

23400 South Oregon 99W

Bargelt Refinishing, listed on the ECSI database, is located at 23400 South Oregon 99W. Bargelt's operations include furniture stripping and refinishing. The site is located adjacent to the Southern Pacific railroad tracks. According to the topographic map, groundwater appears to flow southeast toward a tributary of Chehalem Creek.

According to DEQ, the Bargelt site consisted of a single-story building with a covered stripping and washing area. On August 2, 1995, DEQ employees visited the site and documented the ongoing release of waste methylene chloride solution and sludge into a small pond. Other observations by DEQ indicated that several drums of stripping wastewater and sludge were uncovered and allowed to evaporate.

DEQ issued a "Notice of Noncompliance" to Bargelt Refinishing. The pond was then removed and soil excavated. According to DEQ, there is the potential for affected groundwater because of the continued release of solvent-contaminated wastewater on the site. DEQ recommended that a preliminary assessment be performed at the site.

Old Newberg Landfill

The Old Newberg Landfill, listed on the ECSI database, is located at the south end of South Blaine Street approximately 300 feet north of all the Southern Alternative corridors. An unnamed tributary of Chehalem Creek separates this site from the corridors.

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DEQ has discovered an old dump encroaching on an unnamed tributary of Chehalem Creek. The dump is located at Chehalem Park and Recreation District Ewing Young Park. The exposed dump area appeared to cover only a portion of the existing park along the southern end. DEQ reviewed the site and recommended a preliminary assessment with additional sampling. No additional work has been conducted since the site was listed in 1994. Because the unnamed tributary of Chehalem Creek separates this site from the Southern Alternative corridors, which are located approximately 300 feet south of the site and the tributary, there is a low potential for possibly contaminated groundwater to have migrated beneath the corridors.

1301 Wynooski Street

The SP Newsprint Co. is located at 1301 Wynooski Street and is listed on the ECSI and LUST databases. Portions of the northern end of the facility are located adjacent to the corridors for Southern Alternatives. Groundwater would be assumed to be flowing south toward the Willamette River. However, according to groundwater levels obtained from the on-site monitoring wells, the groundwater gradient is toward the north.

As shown on available site maps, multiple petroleum aboveground storage tanks are located on the site. According to DEQ, several spills or releases have been reported on the site since SP Newsprint Co. acquired the mill in 1986.

DEQ considers the site a medium priority for further action because of fuel and kerosene releases. The DEQ recommends further remedial or investigative action. If a Southern Build Alternative is selected, additional study of this site is recommended.

South River Road Sludge Site

The South River Road Sludge Site, listed on the ECSI database, is located in the vicinity of the intersection of South River Road and East 14th Street, near the Newberg Sewage Treatment Plant and the Old Newberg Landfill. Because the exact location of this site is unknown, its relationship to the project area cannot be determined at this time and therefore is not on Figure 3-11. Depending on the specific location, the site could lie within the corridors of the Southern Alternatives. Frontier Corporation applied tannery wastes to cropland at this site beginning in 1981. The wastes are believed to be alkaline sludge, with low concentrations of chromium, lead, copper, nickel, cadmium and cobalt. DEQ required the Frontier Corporation to maintain logs of sludge applications, but these logs have not been provided to DEQ. Further assessment of the site will be completed in Tier 2. Depending on the results of that analysis, avoidance or mitigation measures will be pursued as appropriate.

Western Helicopter

Western Helicopter is located at the southeastern end of the Newberg Airport Runway. It is located approximately 150 feet north and uphill of the corridors of the Southern Alternatives. Groundwater appears to flow toward the south to Hess Creek.

In August 1991, a petroleum release was discovered at the site. Cleanup measures involving soil excavation and aeration were performed. After the cleanup, groundwater sampling detected no contamination. However, DEQ has not issued a “No Further Action” status to the site.

Because no groundwater contamination has been reported, there is a low potential for the release to have affected the project area.

3800 N. College Avenue

The residence at 3800 N. College Avenue is located approximately 200 feet south of the corridor for Northern Alternative 4C. A pocket of contamination related to a decommissioned oil tank exists on this property. Refer to the LDEIS for more information concerning this site.

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