

Environmental Background Report - US101/OR6 Transportation Alternatives Study

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1. Purpose

The purpose of this report is to summarize the inventory of environmental resources within the project study area and recommend appropriate actions. This summary report identifies the significant environmental features that should be considered or avoided, or that present opportunities during the development of project alternatives. The report is based upon existing information and previous reports gathered for each environmental resource by project consultant CH2M HILL for the Oregon Department of Transportation (ODOT). The detailed reports for several of the environmental resources are on file and available upon request (list in Section 7.2).

2. Project Description

ODOT, in cooperation with the City of Tillamook and Tillamook County, is undertaking a study to identify better ways to move through-traffic between US 101 and OR 6. OR 6 follows the 1st and 3rd Street couplet and US 101 follows Main and Pacific avenues in downtown Tillamook. These narrow streets were not designed to safely carry the large volume of traffic – particularly truck traffic – that is using these streets today.

The US 101/OR 6 Transportation Alternatives Study is a refinement plan, including a baseline environmental review, with the goal to identify a narrow range of feasible alternatives to make traveling through downtown Tillamook more efficient and safe for everyone, including cars, trucks, buses, bicyclists and pedestrians. Building on previous

work, the US 101/OR 6 Transportation Alternatives Study will consider the recommendations from the 2006 Tillamook Transportation Refinement Plan (TTRP) as well as new ideas.

3. Project Location and Area of Potential Effect

Figure 1 (attached at the end of this report) depicts the project location in the City of Tillamook and Tillamook County, Oregon, and the approximate area of potential effect (APE) from construction of project alternatives – “the project study area.” US 101 (Oregon Coast Highway) bounds the project area to the north at milepost (MP) 65.36 and to the south at MP 65.87; OR 131 (Netarts Highway) bounds the project area to the west at MP 9.03, and OR 6 (Wilson River Highway) bounds the project area to the west at MP 0.38.

4. Regulatory Context

Existing plans and policies provide the basis to evaluate proposed improvement alternatives for the intersection of US 101 and OR 6. Recommended alternatives should meet standards for mobility and spacing and be consistent with the relevant federal, state, and local plans and policies. Federal, state, and local plans and policies will thus shape the development of alternatives for the project. Regulatory requirements of broad applicability to transportation improvement projects include those summarized below.

4.1 National Environmental Policy Act (NEPA)

NEPA sets national environmental policy and establishes a process for developing federally funded projects and evaluating the environmental impacts of such projects. NEPA requires that, projects be evaluated in the light of policies, regulations, and laws of the federal government that relate to the protection of the environment. It requires federal agencies to use an interdisciplinary approach in planning and decision-making for actions that impact the environment, and that the public be given an opportunity for meaningful input during the development period of such projects. NEPA requires the preparation of an environmental impact statement (EIS) for project determined to be major federal actions significantly affecting the human environment. There are lesser analyses required for projects not having a significant affect (Environmental Assessment (EA)), and some small projects are categorically excluded from the documentation requirements, but not the permit requirements.

The US 101/OR 6 Transportation Alternatives Study will assess traffic and safety problems within the study area and identify potential solutions to these problems. The refinement plan will not require a NEPA-level analysis or document. However, a project purpose and need statement will be developed, and alternatives identified and evaluated, that are consistent with NEPA development processes. After selection of a preferred alternative or alternatives identified by this process, the ODOT Environmental Section may determine that a NEPA environmental document would be needed to advance this project. If the project is determined to be categorically excluded, certain permits or approvals (as determined during project development) may still be necessary prior to construction.

4.2 Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

This Act, as it applies to this project, streamlines the environmental review and project delivery process for the National Highway System (NHS). US 101 is an NHS facility and OR 6 is not. The Act establishes requirements for the planning process used to identify needed improvements. Section 6002 requires the identification of cooperating and participating agencies, the development of a Coordination Plan, and the collaboration by these agencies on determining the methodologies for evaluating environmental impacts. Such coordination will be part of NEPA steps in the project still to come.

4.3 State Agency Coordination Rule and Agreement (SAC 1990 – OAR 731-015)

The purpose of this rule is to define which ODOT actions are land use actions and how ODOT will meet its responsibilities for coordinating these activities with the statewide land use planning program. The SAC identifies coordination and timing requirements relative to other state and local agencies and governments.

4.4 Statewide Planning Goals (OAR 660-015)

In accordance with state law (ORS 197.225), the Oregon Department of Land Conservation and Development (DLCD) has prepared and the Oregon Land Conservation and Development Commission (LCDC) has adopted goals and guidelines for use by state agencies, local governments and special districts in preparing, adopting, amending and implementing existing and future comprehensive plans. Since 1973, Oregon has maintained a statewide program for land use planning. The foundation of that program is a set of 19 Statewide Planning Goals. The goals express the state's policies on land use and on related topics, such as citizen involvement, housing, and natural resources. Most of the goals are accompanied by guidelines, which are suggestions (not mandatory) about how a goal may be applied. Oregon's statewide goals are achieved through local comprehensive planning. State law requires each city and county to adopt a comprehensive plan and the zoning and land-division ordinances needed to put the plan into effect. The local comprehensive plans must be consistent with the Statewide Planning Goals. Plans are reviewed for consistency by the DLCD and acknowledged by the LCDC.

4.5 Transportation Planning Rule (OAR 660-012)

This rule interprets the Transportation Goal, and is one of several statewide planning rules that provide protection of long-term livability of Oregon's communities for future generations. The rule requires multi-modal transportation plans to be coordinated with land use plans. In complying with the rule, state and local governments must satisfy requirements that lead to implementation of a transportation system plan (TSP) that is consistent with the planned land uses.

The US 101/OR 6 Transportation Alternatives Study may result in a Refinement Plan, as defined by OAR 660.012.00005(25). The Refinement Plan would be an amendment to the City's TSP. A refinement plan resolves, at a systems level, the determination of the function of a proposed facility, the mode, or the general location of a proposed facility. These are decisions that were deferred during transportation system planning, because detailed

information needed to make those determinations could not be obtained during the initial planning process.

4.6 Access Management Rule (OAR 734-051-000)

This state rule applies to the location, construction, maintenance, and use of approaches onto the state highway rights-of-way and properties under the jurisdiction of ODOT. This rule also governs closure of existing approaches, spacing standards, medians and establishes processes for deviations, appeals, grants of access, and indentures of access. This rule sets access management spacing standards for all new construction or reconstruction projects on state highways and includes provisions for closure of existing approaches. The rule also establishes requirements for interchange access spacing as part of an interchange area management plan and allows for development of access management plans along state highways. This rule would be addressed as part of a preferred alternative.

5. Environmental Conditions, Conclusions, and Recommendations

This section summarizes the results of separate technical memoranda that were prepared for each environmental resource. Portions of these reports, such as tables, figures, and photographs, are attached to this summary report. References from the tech memos are copied into Section 7 of this report. The information provided here provides an inventory of the resource, if it is present, and answers the question, “What needs to be done about it?” relative to recommendations for developing feasible project alternatives. Results are based on review of existing information available through research. No new field investigations, such as for threatened and endangered (T&E) species, were performed. Further investigation is recommended as necessary. Results of this report are summarized below:

<u>Environmental Resource</u>	<u>Results</u>	<u>Subsequent Actions</u>
Air Quality	Attainment area	None
Archaeology	No sites known	Investigate ROW proposed alternative
Wildlife	T&E species in vicinity	Avoid impacts if found
Plants	T&E species in vicinity	Avoid impacts if found
Fisheries & Aquatic	T&E species in vicinity	Maintain/improve water quality
Hazardous Materials	USTs* present	Investigate ROW proposed alternative
Historic	Registered properties	Avoid or minimize impacts
Land Use	Open space and farm	Conditional use permit/goal exception
Noise	Trucks	Measure and mitigate as necessary
Section 4(f)/6(f)	Park and recreation	Avoid or minimize impacts
Socioeconomic/ROW	Displacements likely	Avoid or minimize impacts
Water Quality	TDS* exceed standards	Minimize impacts; add improvements
Hydrology	Floodplain/floodway	Improve channelization; avoid fill
Wetlands	Large presence	Avoid, minimize, mitigate impacts
Visual	Natural areas	Minimize/mitigate vegetative impacts

(*Note: ROW = Right Of Way; UST = Underground Storage Tank; TDS = Total Dissolved Solids)

5.1 Air Quality

Air quality maintenance areas are geographic areas that had a history of nonattainment, but are now consistently meeting the National Air Quality Standard (NAAQS). The Tillamook area does not have a history of nonattainment and is not an air quality maintenance area, according to the Oregon Department of Environmental Quality (DEQ), and as described in OAR 340-204-0010.

Recommendation: The project study area is in an air quality attainment area. The achievement of state greenhouse gas reduction goals could be considered relative to various project alternatives; however, as of this writing, there are no greenhouse gas criteria or standards.

5.2 Archaeology

The study area has not been the subject of archaeological investigations and there are no recorded archaeological sites in the area. The area on each side of US 101 north of OR 6 near Hoquarten Slough has the greatest potential to contain buried archaeological sites.

Recommendation: The project area has not been well surveyed. If an alternative emerges that would change the alignment of US 101 near Hoquarten Slough and involve ground-disturbing actions, an archaeological field investigation should be conducted.

5.3 Wildlife and Botanical

Four federally listed threatened (marbled murrelet, Oregon silverspot butterfly, northern spotted owl, western snowy plover) and two federally listed endangered (brown pelican, short-tailed albatross) terrestrial wildlife species could potentially occur within the study area (Table 1, attached). In February 2008, the United States Fish and Wildlife Service (USFWS) proposed delisting the brown pelican (*Federal Register*, 2008). Eight species are listed as threatened or endangered under Oregon Endangered Species Act (ESA). In addition, many species protected under the Migratory Bird Treaty Act could also potentially occur within the study area. The Migratory Bird Treaty Act requires that clearing and other construction operations avoid the taking of adult birds, their young, and eggs in occupied nests.

It is unlikely that any of the federally listed threatened or endangered bird species listed above would regularly inhabit the study area due to the lack of suitable habitat. Bald eagles (protected under the Bald and Golden Eagle Protection Act (USFWS, 1940) are not likely to be significantly affected by construction noise since known nests are greater than 2 miles from the study area. Bald eagles, brown pelicans, or marbled murrelets could fly over the study area but these species are unlikely to be significantly impacted by construction. It is also likely that several of the state listed and federally listed amphibian, reptile and small mammal species of concern (e.g. bat species and the northern red-legged frog; see Table 1, attached) could potentially occur in the wetland and riparian habitats that exist within the study area as these areas are within their known range, provide suitable habitat and abundant food sources. Protocol-level wildlife surveys may be required by the regulatory agencies to determine the presence or absence of these species.

Three major habitat types were identified within the study area: palustrine forested wetlands, riparian habitat, and mixed commercial habitats. Dominant wetland and riparian vegetation in the study area are characterized by an overstory of Sitka spruce (*Picea sitchensis*), red alder (*Alnus rubra*), and Oregon ash (*Fraxinus latifolia*) and an understory of skunk cabbage (*Lysichiton americanum*), sedges (*Carex sp.*), and willows (*Salix sp.*) intermixed with a variety of non-native species. Much of the historical vegetation in the study area has been lost due to commercial and residential development. According to the Tillamook Riparian Inventory (Brophy, 1999), Hoquarten Slough is the least-disturbed riparian resource in Tillamook on both the east and west sides of Highway 101. However, riparian vegetation along the banks of Hoquarten Slough directly adjacent to the existing Highway 101 bridge is thinly populated and dominated by non-native vegetation. In contrast, riparian vegetation along Hoquarten Slough that is east of Pacific Avenue and west of Ivy Avenue is more mature and likely provides better habitat for terrestrial and aquatic species. Restoration along the Hoquarten Interpretive Trail has included the removal of noxious weeds and planting of native species in riparian areas. The mature forest at the west end of the slough near the western edge of the study area appears to contain areas of Spruce Tidal Swamp, a habitat for rare Oregon plants (Brophy, 1999).

There are 14 plant species listed by federal and state agencies as threatened, endangered, candidate, or species of concern potentially occurring in the vicinity of the project area (Table 2, attached). No federal or state listed threatened or endangered plants species have been documented as occurring within two miles of the proposed project site (ORNHIC, 2008). Two species, *Sidalcea hirtipes* (bristly-stemmed sidalcea) and *Filipendula occidentalis* (Queen-of-the-forest), listed as federal species of concern and state candidate species, respectively, are documented (ORNHIC, 2008) as occurring in the vicinity of the study area (see Figure 2, attached). . Species of concern and candidate species are not protected under federal or state ESAs.

Recommendation: To preserve wildlife habitat, disturbances to undeveloped areas should be minimized or avoided if possible. If development involves bridge construction, the area adjacent to US 101 would provide the best opportunity to minimize impacts to riparian vegetation and restore native vegetation. The project should consider opportunities to restore tidal flows and enhance habitat along the western edge of the urban growth boundary (UGB).

5.4 Fish and Aquatic

Hoquarten Slough is tidally influenced upstream past the US 101 Bridge. Physical aquatic habitat downstream of the US 101 Hoquarten Slough Bridge is considered good with a relatively wide and intact functioning riparian area providing inputs of large woody debris and filtering stormwater runoff (Knutson pers. comm., 2008). Upstream of the US 101 Bridge, physical habitat in the slough deteriorates due to agricultural encroachment as well as recent residential and commercial development, with the riparian area becoming narrower or absent (Knutson pers. Comm., 2008).

Of the five aquatic species listed in Table 1 (attached), two are federally listed as threatened (Oregon Coast coho salmon and green sturgeon). Oregon Coast coho salmon is a state sensitive critical species and Coastal cutthroat trout and Pacific lamprey are state sensitive vulnerable species. Coho salmon are known to utilize the first 0.75 miles of Hoquarten

Slough; the project study area is upstream of the upper limits of documented coho salmon use approximately 0.13 miles (approximately 660 feet). Therefore, it is likely coho salmon do utilize the project area, as there is no physical barrier to impede them. Coho salmon use of the lower portion of Hoquarten Slough is for rearing. There is no documentation of green sturgeon utilizing Hoquarten Slough. Hoquarten Slough supports coastal cutthroat trout seasonally if not year around depending on dissolved oxygen levels and summer water temperatures. There is no documentation of Pacific lamprey utilizing Hoquarten Slough. However, adult Pacific lamprey generally enter the freshwaters of Oregon coastal streams in the spring; spawning begins in April as temperatures rise and continues into early fall when they return to the ocean. There is no documentation of river lamprey utilizing Hoquarten Slough; however, the slough is likely utilized by river lamprey.

Recommendation: The primary limiting factor in Hoquarten Slough for aquatic resources is degraded water quality. Consideration of potential mitigation measures incorporated into project design and construction alternatives could assist in addressing water quality issues in the slough.

5.5 Hazardous Materials

As required by the study contract, this assessment for hazardous materials is based on an investigation in 2006 by the ODOT Region 2 HazMat Group for a signal replacement project. That investigation examined an area located generally 500 feet south of Hoquarten Slough in downtown Tillamook, centered at the intersection of 2nd Street and US 101, in a corridor between MP 65.63 to 65.80. Site reconnaissance and a review of Oregon Department of Environmental Quality (DEQ) and Oregon State Fire Marshall (OSFM) databases for the investigation identified a history in the immediate project vicinity of 12 leaking underground storage tanks (LUSTs), and heating oil tanks, fill and vent pipes, fuel dispensers, potential PCB-containing equipment, and water/monitoring wells as potential sources for hazardous materials that could impact construction of the project (or similar projects) on US 101 and OR 6. The two highways also were found to have mercury vapor lamps, pole-mounted transformers, and treated electrical poles that would require special handling to prevent possible contamination upon removal or replacement. No solid waste landfills were identified in or near the project area. The investigation also showed that the three Resource Conservation and Recovery Act (RCRA) conditionally exempt generators on DEQ's list and the two spill incidents on the OSFM's list adjoining the signal project corridor would be unlikely to impact construction of an ODOT project. The ODOT study (ODOT Region 2 Tech Center Hazardous Materials Group, 2006) concluded that undocumented releases from four USTs at the Tillamook Shell and Grocery at 1st Street and Main Avenue, and a UST at the McDonald's Sunset Service at 4th Street and US 101 (Pacific Avenue), and a former clothes cleaner site with undocumented USTs, could potentially impact the signal project construction or right-of-way acquisitions.

Recommendation: The area beyond the signal study corridor (north of First Street approximately one-quarter mile) and near to the alternatives proposed as part of the US 101/OR6 study should be surveyed for hazardous materials sites within potential ODOT right-of-way prior to selection of a preferred alternative. Signal study corridor sites should be revisited, as appropriate.

5.6 Historic

Preliminary background research indicates that several properties in the project area or in the immediate vicinity of the project area are listed on the National Register. The Oregon Historic Sites database lists six properties in the project area: Second Tillamook County Courthouse (2106 Second Street), Thayer Bank Building (1802 First Street), Third Tillamook County Courthouse (201 Laurel Avenue), Tillamook Hotel (218 Pacific Avenue), United Brethren Church (Fourth Street and Madrona Avenue), and the US Post Office (210 Laurel Avenue). The US Post Office is the only one of the six listed on the National Register. It is not clear whether the other five properties are eligible for listing on the National Register. Status as a Goal 5 resource is unknown. Neither the County nor the City has historic properties registers. The City has a Historic Retail Overlay zone for the downtown area, which requires that ground floor spaces facing the street be limited to commercial retail uses only. Assessor data show a large number of buildings within the project area constructed prior to 1965, and two bridges on US 101 were found to be constructed prior to 1965. The local historical society has installed commemorative plaques on several of these buildings. The historical society also promotes the historical importance of this area of the city through its walking tour of downtown Tillamook. There is a high probability that the project area contains National Register-eligible properties that have not been surveyed or evaluated. North of the project area on US 101 (MP 64.23) is a bridge listed on the National Register, the Wilson River Bridge (No. 01499); the US 101 Hoquarten Slough Bridge is not listed.

Recommendation: Should a proposed project alternative require right-of-way acquisition in the downtown area, a reconnaissance survey, appropriate research, and preparation of a cultural resource baseline report should be conducted to resolve outstanding questions regarding the eligibility of buildings or structures more than 50 years of age in the project area. National Register eligibility should be determined for sites potentially impacted by the proposed alternative.

5.7 Land Use

The project study area is in Oregon's Coastal Zone Management Area. Existing land uses in the study area are generally in concurrence with City zoning designations. On US 101 near the OR 6/US 101 intersection, there is dense commercial development, which is consistent with the town center and central commercial zoning designation; also, an urban renewal district exists. In the area along US 101 located north of the aforementioned intersection, there are predominantly warehouse-style businesses on larger lots than are found in the town center, which is consistent with the Highway Commercial zoning designation. To the east of the US 101/OR 6 intersection along OR 6, there is a mix of single-family residential uses (with predominantly single family homes), multiple-use residential uses (houses and multifamily buildings), and institutional services such as the post office and a variety of churches; these uses are consistent with the city's zoning designations in this area. On 2nd Street between US 101 and Ivy Avenue is a city-owned surface parking lot and former library; located to the east is the Pioneer Museum and associated parking. The City anticipates future development on the east side of the city in the area south of OR 6. North of OR 6, properties on the south bank of Hoquarten Slough have been donated to or acquired by the public for development of the Hoquarten Interpretive Trail System led by the Tillamook Estuaries Partnership. Commercial development is expected along US 101,

both north and south of downtown (outside of the floodway), as well as some new development in the downtown core area. Tillamook has not had industrial growth since the 1970s and 80s, but there are a few vacant industrial properties with potential for development.

Marine Park is a small Open Space area with a boat launch that is located immediately west of US 101 between Front Street and the Hoquarten Slough. The Hoquarten Slough Interpretive Trail follows the Slough from US 101 east along the waterway and extends into an Open Space (O) zone of the City and a Farm Zone of the County (see Figure 1). The County's adopted Farm (F-1), Forest (F), and Small Farm & Woodlot-20 (SFW-20) zones do not conform to current state law. Work is underway to align Tillamook County's ordinances with state law. Unless Tillamook County has allowed transportation projects as conditional uses in an F-1 zone, an exception to Goal 3 (Agricultural Lands) would be required for a new road in county land north of the slough. The City's Open Space zone allows transportation improvements as a conditional use (Section 11, 3E). The federal Coastal Zone Management Act (1972) requires an applicant for a federal permit for a project in the coastal zone to certify compliance and consistency with Oregon's Coast Management Program [Section 307(c)(3)(A)].

Recommendation: A transportation facility through Open Space and Farm zones would require local government approvals and perhaps an exception to Statewide Planning Goals; the likelihood of such should be considered in the development of project alternatives. Avoidance of such impacts to resource lands would be desirable.

5.8 Noise

In determining and abating traffic noise impacts, primary consideration is given to outdoor activity areas. Mitigation will usually be necessary only where frequent human use occurs and a lowered noise level would be of benefit. Traffic noise impacts occur when the predicted traffic noise levels approach or exceed the noise abatement criteria (NAC) or when the predicted traffic noise levels substantially exceed the existing noise levels. Truck traffic can be a major source of noise in the project study area.

Oregon guidelines define "approach the NAC" as noise levels that are 2 dBA less than the NAC. The resulting exterior noise impact criterion for residences, schools, parks, and churches is Leq 65 dBA. The exterior noise abatement criterion for commercial activities is Leq 70 dBA.

Traffic noise impacts can also occur when the future predicted noise levels substantially exceed the existing noise levels. A substantial increase in noise is defined by Oregon guidelines to be an increase of 10 dBA or more.

Properties within the study area that will be subject to the noise impact criteria include:

- Marine Park (located adjacent to US 101)
- Hoquarten Slough (located east of US 101 and north of OR 6)
- Residences (located east of US 101)
- Church of Christ (located northeast of the OR 6 couplet split)
- Mar Clair Inn (located adjacent to US 101)
- Tillamook County Courthouse (located east of US 101)
- Tillamook Bay Community College (located northeast of the OR 6 couplet split)

The Tillamook County General Hospital is not subject to the noise impact criteria as it is located outside the study area to the west.

Recommendation: Any changes proposed to the existing highways should consider noise mitigation to potentially impacted noise-sensitive properties. The time of use and area of use of the property should be considered when determining traffic noise impacts. Truck restrictions can be an effective method to mitigate traffic noise for some locations. However, such restrictions are not recommended by ODOT where they conflict with the designated use of the roadway or create unreasonable delay or hardship on the motoring public.

5.9 Section 4(f)/6(f)

There are two publicly owned recreational resources within the study area: Marine Park and the Hoquarten Interpretive Trail; both are located in the northern part of the study area (Figure 1). Marine Park is owned and operated by the City of Tillamook. The Hoquarten Interpretive Trail is co-administered by the City of Tillamook and the Tillamook Estuaries Partnership. Both of these resources are covered under the Section 4(f) statute. No State parks are located within the study area. Marine Park is covered under the Section 6(f) statute; the park received a Land and Water Conservation Fund (LWCF) grant in 1977 for park development. The Hoquarten Interpretive Trail has not received a monetary grant from LWCF, and is therefore not covered under Section 6(f). The trail was funded jointly by Oregon Parks, DLCD, the City, ODOT and the Tillamook Estuaries Partnership (Chick, 2008). Neither the Hoquarten Slough, nor the Front Street Boat Ramp received either Wallop/Breaux Act Funds (also known as Federal Aid in Sport Fish Restoration Act) or state Marine Board funds (Gervasi, pers. comm., 2008).

Recommendation: Project alternatives development should consider that Section 6(f) of the LCWF Act requires replacement of Marine Park lands be of equal value, location and usefulness, and usually contiguous. The existence or availability of such replacement lands has not been determined. Under Section 4(f), if project alternatives create a “use” of the interpretive trail lands or Marine Park lands the project will need to establish that it is a de minimis impact on the area; or the project will be subject to full 4(f) requirements to demonstrate there is no feasible and prudent alternative to using the property; and the project includes all possible planning to minimize harm to the property resulting from the use. In general, any additional widening or additional structure should accommodate the trail, and occur on the side away from the Marine Park.

5.10 Socioeconomics

The socioeconomics of the project study were assessed using US Census data for 2000 (most recent). The study was conducted within the framework provided by Executive Order 12898 on Environmental Justice and the United States Department of Transportation (USDOT) Order 5610.2. Specifically assessed were minority populations and low-income populations, as well as the community as a whole, including concentrations of children and elderly. Federal Highway Administration (FHWA) guidance calls for all impacts on sectors of the community to be routinely investigated, analyzed, mitigated, and considered during project development. The study area is located within three block groups in Tillamook County: Census Tract and Block Groups 9605001, 9605002, and 9604002. However, Block Groups 9605001-2, which are west of US 101 and divided by Third Street (OR 131), have only small

extent in the project study area, specifically a couple blocks west of US 101 where proposed project improvements are unlikely.

Most relevant is Block Group 9604002, which comprises all of the project study area east of US 101 and where proposed project alternatives are anticipated. Block Group 4002 has a total population of 1,292, almost all within the City of Tillamook south of Hoquarten Slough and east of US 101. Of the three block groups, 4002 had the greatest concentration of vulnerable populations. Block Group 4002 also has the greatest racial diversity (82 percent white, 16 percent Hispanic – see Table 5), lowest median income (\$21,905 – see Table 6) and highest ratio of those below the poverty line (23 percent), and the greatest concentration of children (30 percent), the disabled (58 percent), linguistically isolated households (10 percent), and households with no vehicle access (11 percent, based upon census tract). Elderly population in Block Group 4002 is 12 percent; Block Groups 5001-12 have 16-17 percent, and Tillamook County has 20 percent elderly. Tillamook County as a whole has a population breakdown of 91 percent white, 5 percent Hispanic, \$34,269 median income, 11 percent below the poverty line, 22 percent children, 44 percent disabled, 2 percent linguistically isolated households, and 6 percent households with no access to vehicles (census tract data). The City of Tillamook has a population 4,352, which is 93 percent white, 11 percent Hispanic, 1 percent Native American, 1 percent Asian, and 4 percent other (Table 5).

It is unlikely that adverse impacts or disproportionate impacts would be identified for any of these populations, because most residences of Block Group 4002 are located south of the anticipated area of project effect. Important social elements of the community, such as parks, open space, historic buildings, schools, and other public facilities are present in the project study area, and have potential for socioeconomic impacts from some anticipated project alternatives. The area economy has a large tourism element, and any displacements of motels, restaurants, and parking facilities would potentially have an adverse impact.

Recommendation: During the environmental documentation phase of the project and alternatives refinement, potentially affected populations, businesses, and public facilities should be determined through more thorough site analysis, interviews, and other public outreach efforts, as appropriate. Displacements should be avoided or minimized. Potential business impacts should be quantified in terms of potential property tax loss as a proxy for relative business impacts between alternatives. Potential loss in sales revenue should be calculated for any displaced businesses, if data are available. Also, emergency service providers need to be involved to determine ways to minimize project impacts, both permanent and temporary, to emergency service routes.

5.11 Hydrology/Water Quality

Hoquarten Slough is the primary water resource of interest within the environmental study area. The slough runs along the northern edge of City of Tillamook, beginning at farmlands to the northeast of the City and ending approximately 2 river miles east of the US 101 bridge, at the confluence with the Trask River. The Hoquarten Slough is one of the major contributing tributaries to the sub-basin within the North Coast Basin, Trask River Basin. Spring storms in particular bring not only heavy precipitation to the area, but also warmer temperatures causing extensive snowmelt and high flows in the tributaries. These large flows spread out into the floodplains, causing flood hazards throughout the area.

The City of Tillamook has three wells to supplement, as needed, its normal potable water source from surface waters of Kilam and Fawcett Creeks located southeast of the city. The three groundwater wells are outside the environmental study area. One well, apparently without wellhead protection, is near the US 101 crossing of the Trask River, which is south of the project study area but is in the same large floodplain as the southern half of project study area.

The Hoquarten Slough is on DEQ’s federal Clean Water Act (CWA) Section 303(d) list of impaired waters for dissolved oxygen content, but not for bacteria and temperature. Sampling stations in the project study area indicate that dissolved oxygen, pH, and temperature are barely within standards; while, total dissolved solids (TDS) consistently exceed the acceptable standards by a large amount (upwards of 5 times). Applicable basin specific fresh water quality criteria (OAR 340-041-0235) are:

Parameter	Criteria
pH	6.5-8.5
Total Dissolved Solids	100.0 mg/L
BOD	20 mg/L
Suspended Solids	20 mg/L

The environmental study area is located in an urban setting with mixed commercial, open space, parks, and residential use. Large areas of land adjacent to the Hoquarten Slough, particularly on the north bank, are Federal Emergency Management Agency (FEMA) designated floodplain (see Figure 4, attached), with significant commercial use. The majority of the 100-year floodplain to the north is also regulated floodway. A hydrologic analysis shows that approximately 800 feet, downstream of the US 101 Hoquarten Slough Bridge, the regulated floodway width is 1,160 feet, and if combined with Dougherty Slough (just to the north) the floodway width is 4,300 feet. The 100-year base flood elevation at this point is 11.2 feet (NAVD88). With the constriction of the US 101 Hoquarten Slough Bridge, the base flood elevation jumps just upstream to 13.4 feet.

Recommendation: Comprehensive improvements to flood control and channelization incorporated into alternatives development, as feasible, would be beneficial to the project area. Minimizing the constriction of floodwater flow should be considered in the development of project alternatives. If the project extends into the regulated floodway, the project will have to demonstrate no net rise in the base flood elevation. The project must pay close attention to the floodplain and floodway requirements. Placement of new fill in the regulated floodway may be problematic, and in any event would require an amendment to the FEMA regulated floodway boundaries. The City of Tillamook is responsible for administering the floodway, but an amendment will require review by FEMA. To help enhance the water quality of Hoquarten Slough, provision of shade trees, drainage treatment, and erosion control should be considered in the development of project alternatives.

5.12 Wetlands and Waters of the State/US

The Hoquarten Slough is designated as a riverine, lower perennial, unconsolidated bottom, permanent wetland (R2UBH). A large palustrine forested temporarily flooded (PFOA) wetland complex is located in undeveloped portions of the study area north of Hoquarten Slough. This wetland is a part of a larger, complex system of National Wetlands Inventory (NWI) mapped wetlands that extend outside the study area a significant distance to the east and joins the Tillamook Bay estuary to the west. This wetland complex is potentially jurisdictional under the Oregon Removal-Fill Law (ORS 196.795-990) and under Section 404 of the Clean Water Act." (See Table 4, attached, for potential permits, regulatory requirements, and approvals.) These wetlands are also listed as Significant Natural Resources in the Tillamook Comprehensive Plan Goal 5 Local Wetland Inventory, and Goal 17 (Shorelands) Significant Wildlife Habitats, and zoned as "open space." The Hoquarten Slough riparian area is identified in the City of Tillamook Riparian Inventory. Continuing development of the Hoquarten Interpretive Trail within the study area along the south bank of the Hoquarten Slough has already enhanced riparian areas through the removal of non-native vegetation and replacing it with native plant species.

The National Resource Conservation Service (NRCS) soil survey map indicates three soil types within the study area (Table 3, attached). One soil type within the study area, Coquille silt loam, is considered hydric. Hydric soils are formed under conditions of saturation, flooding, or ponding long enough (~14-30 days) during the growing season to develop anaerobic conditions in the upper part (~10 inches) of the soil. The other two soils, Urban land-Quillamook complex and Urban land-Udortheents complex may contain inclusions of soils listed as hydric (hydric inclusions).

Wetlands and Waters of the State/U.S. within the study area might be indirectly affected by an altered hydrologic regime and increased erosion or runoff entering wetlands as a result of bridge and road construction activities near wetlands and sloughs. Development proposed within a wetland or stream must be approved by Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (USACE). Compensation for unavoidable impacts would be required in accordance with USACE and DSL rules for wetland mitigation. A review of DSL wetland mitigation bank service areas identified no existing mitigation banks that serve the Tillamook study area (Oregon DSL, 2008b).

Recommendation: Wetlands permits will require a demonstration of attempts to avoid impacts, and if not possible, then minimization and mitigation of impacts, in that order. Alternatives development should consider that mitigation may include restoration and enhancement of historically existing wetlands, creation of new wetland, or purchase of credits in an approved mitigation bank. Areas of potential opportunity or mitigation might include the integration of a natural stormwater treatment structure (e.g., bioswale, bioretention basin) into developmental plans to treat increased stormwater runoff entering wetlands, Hoquarten Slough and associated riparian areas. (Such treatment structures could improve water quality but would not count as a wetland credit.) In addition, wetland impacts could be minimized or avoided through adequate erosion control, containment of construction materials, proper handling of hazardous materials, and minimized disturbance of vegetation. Best Management Practices (BMPs)

could be implemented to minimize and alleviate potential impacts during project construction.

5.13 Visual

OR 6 is not a state or federal scenic byway or route, and has no identified visual resources in the US 101/OR 6 project study area. US 101 is a National Scenic Byway, an All American Road, and Oregon Scenic Byway; improvements to the highway right-of-way are guided by a Corridor Management Plan (CMP) adopted by the Oregon Transportation Commission in 1998. The only state/federal regulatory restriction regards billboards, unless local governments enact others. Community and natural features identified in the CMP for planned preservation or enhancement were chosen on the basis of having scenic or other intrinsic values. Features along the byway's corridor and in the US 101/OR 6 project study area include the city of Tillamook, Tillamook County Pioneer Museum, and Tillamook Cheese Factory; however, neither of these three features were identified as having scenic value – only historic and cultural. Visual impacts also would need to consider vegetation management guidelines of the plan. Replacement of existing and new signs associated with implementation of a project alternative would need to consider signage guidelines for the corridor. The Tillamook County Land Use Ordinance (LUO) includes a sign provision (4.020) to promote scenic values. The LUO also includes a scenic water overlay zone provision (3.070) for the Nestucca River; however, the river is not in the project study area. The City of Tillamook has zoning code provisions for signs and landscaping but no specific restrictions regarding identified visual resources. Goal 5 of the City Comprehensive Plan notes that, "Significant open space and scenic areas exist in and surrounding the City of Tillamook." Hoquarten Slough runs through the project study area in an Open Space zone, and although it is not a protected visual resource or scenic waterway, likely has scenic value to occupants of adjacent properties and recreationists. There are two recreational facilities with scenic value in the study area: Marine Park is owned and operated by the City of Tillamook; the Hoquarten Interpretative Trail is co-administered by the City of Tillamook and the Tillamook Estuaries Partnership.

Recommendation: If project alternatives require signage and vegetation management, consider impact on goal to preserve scenic views on US 101. Any proposed new crossing of Hoquarten Slough should consider views from Marine Park, adjacent properties, and the Interpretive Trail, and incorporation of visual mitigation.

6. Environmental Fatal Flaw Analysis

None of the identified potential permits, regulatory requirements, or authorizations represents a fatal flaw to a conceptual project at this stage of alternative development. However, special attention should be given to avoiding 4(f) protected properties, including parks, recreation and historic properties; avoiding or minimizing wetlands impacts; avoiding sites with soils potentially contaminated by hazardous materials; and avoiding impacts to the regulated floodway. Adverse environmental impacts cannot be wholly avoided but can potentially be minimized. Depending on the location of the preferred project and final design and construction details, there will be specific permits, regulatory requirements, or authorizations required prior to construction of the project.

Decisions about alternatives that are not pursued should be well documented, with a full description and reasons for not pursuing the alternative, including environmental reasons. The documentation should include at least cursory quantification. For instance, if an alternative is dropped because of wetland impacts, an order of magnitude estimate of the area avoided should be included. If the documentation is done well, the project may be able to avoid higher levels of NEPA documentation, such as an Environmental Assessment. Even if an EA becomes required, the documentation will serve well in minimizing the cost of doing the EA, and avoid pushing the project back into a redo of the alternative development stage.

Compliance with such regulatory requirements would likely increase the expense of the project, as well as increase the permitting phase, and potentially increase the overall duration of the project. For example, impacts to the regulated floodway will require evaluation and likely changes to the design of the project and modification of the regulated floodway; this may be a lengthy process. Therefore, overall design choices affecting environmental permitting, regulatory requirements, or environmental authorizations should be considered during the planning and design stages of the project. These should be evaluated along with other social, transportation, safety, and expense issues related to the project alternatives to ultimately determine a preferred alternative concept to forward to project development.

7. References

The references listed below were used to develop the separate technical memoranda for analysis of the various environmental resources summarized in this report. These references are required by the Statement of Work to be provided with this report.

[*Note: Various publications use either an “e” or an “o” to spell Hoquarten. Local preference appears to be with an “o”. The Oregon State Geographic Names website, which is a State authority for names, uses an “e”. This report has thus used an “e” throughout.]

7.1 References Cited in the Environmental Background Report

The following references are cited in the summary report and were excerpted from the separate technical memoranda (see Section 7.2).

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7.2 Additional References Cited in Technical Memoranda

Separate technical memoranda for this summary report were prepared for Cultural Resources; Air, Noise, HazMat, and Visual Resources; Socioeconomics; Land Use, 4(f), and 6(f); Natural Resources; Water Resources; and Wetlands. These technical memoranda are not required deliverables but are available upon request.

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8. Attachments

Tables, figures and photographs complementing the information of this report are attached.

TABLE 1
Threatened, Endangered, Proposed, and Special Status Species that may occur within the study area (Tillamook County).

Scientific Name	Common Name	Federal Status*	State Status*
Fish			
<i>Oncorhynchus kisutch</i>	Oregon Coast coho salmon ESU	FT	SC
<i>Acipenser medirostris</i>	Green sturgeon	FT	—
<i>Oncorhynchus clarki clarki</i>	Coastal cutthroat trout	FSC	SV
<i>Lampetra tridentata</i>	Pacific lamprey	FSC	SV
<i>Lampetra ayresi</i>	River lamprey	FSC	—
Invertebrates			
<i>Speyeria zerene hippolyta</i>	Oregon silverspot butterfly	FT	--
Birds			
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	FT	ST
<i>Charadrius alexandrinus nivosus</i>	Western snowy (coastal) plover	FT	ST
<i>Pelecanus occidentalis</i>	Brown pelican	FE	SE
<i>Phoebastria albatrus</i>	Short-tailed albatross	FE	--
<i>Histrionicus histrionicus</i>	Harlequin duck	FSC	SU
<i>Contopus cooperi</i>	Olive-sided flycatcher	FSC	SV
<i>Haematopus bachmani</i>	Black oystercatcher	FSC	--
<i>Oreortyx pictus</i>	Mountain quail	FSC	SU
<i>Melanerpes lewis</i>	Lewis' woodpecker	FSC	SC
<i>Haliaeetus leucocephalus</i>	Bald eagle	Delisted	ST
<i>Strix occidentalis</i>	Northern spotted owl	FT	ST
<i>Patagioenas fasciata</i>	Band-tailed pigeon	FSC	--
<i>Branta hutchinsii leucopareia</i>	Aleutian Canada goose	Delisted	SE
<i>Falco peregrinus anatum</i>	American peregrine falcon	Delisted	SE
<i>Progne subis</i>	Purple martin	FSC	SC
Reptiles and Amphibians			
<i>Rhyacotriton varegatus</i>	Southern torrent (seep) salamander	FSC	SV
<i>Actinemys marmorata marmorata</i>	Northwestern Pacific pond turtle	FSC	SC
<i>Ascaphus truei</i>	Coastal tailed frog	FSC	SV
<i>Rana aurora aurora</i>	Northern red-legged frog	FSC	SU

TABLE 1
Threatened, Endangered, Proposed, and Special Status Species that may occur within the study area (Tillamook County).

Scientific Name	Common Name	Federal Status*	State Status*
Mammals			
<i>Gulo gulo luteus</i>	California wolverine	FSC	ST
<i>Myotis thysanodes</i>	Fringed myotis bat	FSC	--
<i>Myotis volans</i>	Long-legged myotis bat	FSC	SU
<i>Myotis yumanensis</i>	Yuma myotis bat	FSC	--
<i>Lasionycteris noctivagans</i>	Silver-haired bat	FSC	SU
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	FSC	SC
<i>Arborimus longicaudus</i>	Red tree vole	FSC	--
<i>Arborimus albipes</i>	White-footed vole	FSC	SU

*Status Codes:

FE-Federal Endangered Species
FT – Federal Threatened Species
FSC – Federal Species of Concern

Oregon Special-Status Species

SE – State Endangered Species
ST – State Threatened Species
SC – Sensitive Critical
SV – Sensitive Vulnerable
SU – Sensitive Undetermined; status unclear

Sources: USFWS, 2008; ORNHIC, 2008, NMFS, 2008a.

TABLE 2
Rare Plant Species that May Occur within the study area (Tillamook County).

Scientific Name	Common Name	State Status	Federal Status	Phenology	Habitat	Habitat Present Within the Study Area	Sources
<i>Abronia umbellata</i> ssp. <i>breviflora</i>	Pink sand-verbena	LT	SOC	May to September	Coastal dunes and coastal shrub.	No	Oregon flora project (2007).
<i>Anemone oregano</i> var. <i>felix</i>	Bog anemone		SOC	March to June	Spahgnum bogs and marshes.	No	Oregon flora project (2002).
<i>Cardamine pattersonii</i>	Saddle Mt. bittercress	C	SOC	Late April to Late June	Moist cliffs, rock crevices, and streamside gravel beds between 2400 and 2800 meters.	No	Oregon flora project (2005).
<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>	Pt. Reyes bird's-beak	LE	SOC	June to October	Coastal salt marshes	No	Oregon flora project (2007).
<i>Dodecatheon austrofrigidum</i>	Frigid shootingstar		SOC	April to July	Basalt cliffs and crevices near streams and rivers.	No	Oregon flora project (2008).
<i>Erythronium elegans</i>	Coast Range fawn lily	LT	SOC	May to June	Open areas, meadows, bog edges between 2,700 and 3,350 feet in elevation.	No	Oregon flora project (2002).
<i>Filipendula occidentalis</i>	Queen-of-the-forest	C	SOC	May to August	Moist areas with partial shade to full sun.	Yes	Flora project (2006).
<i>Limbella fryei</i>	Frye's swamp moss	C	SOC	-	Shrub swamps, wet pastures and along lakes.	No	USFS (2007).
<i>Poa unilateralis</i>	San Francisco bluegrass		SOC	July to August	Ocean cliffs	No	Hitchcock (1973)
<i>Saxifraga hitchcockiana</i>	Saddle Mt. saxifrage		SOC	May to July	Grassy balds, thin, rocky soils and rock crevices along coast range peaks.	No	Oregon Flora Project (2006)
<i>Sidalcea hendersonii</i>	Henderson's checker-mallow	-	SOC	June to August	Moist to wet open areas and along coast lines from Alaska to central Oregon.	No	USFWS (2006)

TABLE 2
Rare Plant Species that May Occur within the study area (Tillamook County).

Scientific Name	Common Name	State Status	Federal Status	Phenology	Habitat	Habitat Present Within the Study Area	Sources
<i>Sidalcea hirtipes</i>	Bristly-stemmed sidalcea	C	SOC	June to August	Open meadows, grasslands, coastal bluffs, and mountain peaks.	Yes	Oregon Flora Project (2006)
<i>Sidalcea nelsoniana</i>	Nelson's checker-mallow	LT	LT	May to July	Wetland prairies and streamsides. Often in areas where prairie merges with deciduous woodlands. May occur at roadsides and stream crossings.	No	Oregon Flora Project (2008)
<i>Silene douglasii</i> var. <i>oraria</i>	Cascade Head catchfly	LT	SOC	Late April to early May	Meadows, bluffs and slopes within coastal prairie habitats.	No	ORNHIC (2008)

Status:

C = Oregon State Candidate for listing LE = Listed Endangered (Federal or Oregon status)

LT = Listed Threatened (Federal or Oregon status)

SOC = Federal Species of Concern

Sources:

Oregon Flora Project. 2008. *Rare Plant Guide*. Department of Botany and Plant Pathology, Oregon State University, Corvallis, Oregon. <http://www.oregonflora.org/rareplants/index.php>.

Hitchcock, C.L., and A. Cronquist. 1973. *Flora of the Pacific Northwest*. University of Washington Press, Seattle & New York.

U.S. Fish and Wildlife Service (USFWS). 2007. *Endangered Species Fact Sheet*.

<http://www.fws.gov/oregonfwo/Species/Data/BrownPelican/default.asp>.

Oregon Natural Heritage Information Center (ORNHIC). 2008. Database search results for the study area. Portland, Oregon.

TABLE 3
Soils Occurring within the Study Area

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
95B	Urban land-Quillamook complex, 0 to 7 percent slopes		X
101B	Urban land-Udorthents complex, 0 to 7 percent slopes, flooded		X
103A	Coquille silt loam, 0 to 1 percent slopes, diked	X	

Source: NRCS, 2006.

TABLE 4
Potential Permits / Regulatory Requirements / Approvals List

Type	Agency	Permit needed	Regulatory Authority	Studies Required	Permit Approval Time Frame	Comments
Section 404 (Wetlands) Permit	USACE	See Comments	Section 404, Clean Water Act	Wetland delineation Wetlands Functional Assessment Impact assessment Joint Permit Application Mitigation plan Sensitive Species surveys	6 to 12 months	Joint application with Oregon Department of State Lands Removal-Fill permit. Would trigger National Environmental Policy Act (NEPA) review, SHPO clearance, ESA review, USFWS coordination, and 401 certification. Permit not needed if impacts to wetlands and waters of the U.S. are avoided.
NEPA EA or Environmental Impact Statement (EIS)	FHWA	See Comments	NEPA	Anticipated Preparation of an EA or EIS	3 to 12 months	Lead federal agency determines the threshold for EA or EIS requirement as well as breadth of EA or EIS.
Endangered Species Protection	USFWS, NMFS	See Comments	Federal ESA, Public Law 93-205, and Oregon State ESA, ORS 496	Identification of any occurrences of listed or proposed species in project area Biological assessment for any potentially affected species or concurrence with a No Effect determination Possible assessment of sensitive species not yet listed or proposed for listing	6 to 9 months	Lead federal agency must initiate ESA review with appropriate agency(ies); it is expected that the ODOT would need clearance from USFWS and NMFS before authorizing the proposed action. Formal consultation not needed if a “No Effect” determination can be made.

TABLE 4
Potential Permits / Regulatory Requirements / Approvals List

Type	Agency	Permit needed	Regulatory Authority	Studies Required	Permit Approval Time Frame	Comments
Fish and Wildlife Coordination	USFWS, NMFS	Oregon Department of Fish and Wildlife, USACE	Fish and Wildlife Coordination Act of 1934	Consultations with fish and wildlife agencies Project impacts on fish and wildlife resources; mitigation recommendations	3 to 6 months	This coordination occurs through the federal permitting agency; it provides direct input into the decision process by the state and federal fish and wildlife agencies. Coordination not needed if federal permitting is not required.
Water Quality Certification	Oregon Department of Environmental Quality	USACE	Section 401, Clean Water Act	Downstream water quality compliance Flow impacts assessment In-water construction impacts and restrictions	3 to 6 months	Federal permits cannot be issued without 401 certification. Certification not needed if federal permitting is not required.
Cultural Resources Review	SHPO	USACE	Section 106, Historic Preservation Act of 1966; Executive Order 11593	Archaeological and historical resources reconnaissance; state records review	4 months	Work would be coordinated through NEPA processes. Review not needed if federal permitting is not required.
Oregon Removal and Fill Permit	Oregon Division of State Lands	See Comments	ORS 196.800-990	Wetland delineation Impact assessment and wetland mitigation plan Wetlands Functional Assessment	3 to 6 months	Joint application with USACE of Engineers Section 404 permit Permit not needed if impacts to wetlands and waters of the U.S. are avoided.

TABLE 4
Potential Permits / Regulatory Requirements / Approvals List

Type	Agency	Permit needed	Regulatory Authority	Studies Required	Permit Approval Time Frame	Comments
National Pollutant and Discharge Elimination System (NPDES) Discharge Permit (for both construction and stormwater discharge)	Oregon Department of Environmental Quality	See Comments	ORS 468.740	Erosion control plan 30 days prior to start of construction	3 months	Required for construction activities (clearing, grading, and excavating) affecting 5 or more acres.
<p>Notes: The shaded portion of the table outlines different permitting elements that are all part of the USACE 404 permit process. However, the need for a USACE 404 permit and other associated permits/authorizations and regulatory requirements is dependent upon the design of the preferred project footprint (see boldface text).</p> <p>This list may not be inclusive of all permits or reviews that may be required for the Tillamook Intersection Refinement Plan. Final road and bridge design may change permitting requirements slightly.</p>						

Table 5: Racial and Ethnic Demographic Data by Area

Area	Total Population	% White alone (non-Hispanic)	% Hispanic or Latino (any race)	% Black*	% Asian*	% Native Hawaiian or Pacific Islander *	% Native American*	% Other*
Oregon	3,421,399	87%	8%	2%	3%	0%	1%	7%
Tillamook County	24,262	91%	5%	0%	1%	0%	2%	2%
Tillamook City	4,352	93%	11%	0%	1%	0%	1%	4%
Block Group 4002	1,292	82%	16%	0%	0%	1%	1%	5%
Block Group 5001	667	85%	12%	0%	0%	0%	3%	2%
Block Group 5002	811	86%	7%	0%	2%	1%	4%	4%

Source: US Census Bureau, 2000

* In combination with one or more races. Totals for each area, block group or County, are greater than 100% because individuals of multiple races are represented in multiple racial categories.

Table 6. Median Household Income and Percent below Poverty Level by Area

Area	Total Population (2000)	Median Household Income (\$1999)	Percent of Population Below Poverty Level (1999)
Oregon	3,421,399	40,916	12%
Tillamook County	24,262	34,269	11%
Tillamook City	4,352	29,875	15%
Block Group 4002	1,292	21,905	23%
Block Group 5001	667	37,391	16%
Block Group 5002	811	30,250	15%

Source: U.S. Census Bureau 2000.

Attached Figures:

Figure 1 - Project Study Area and Zoning

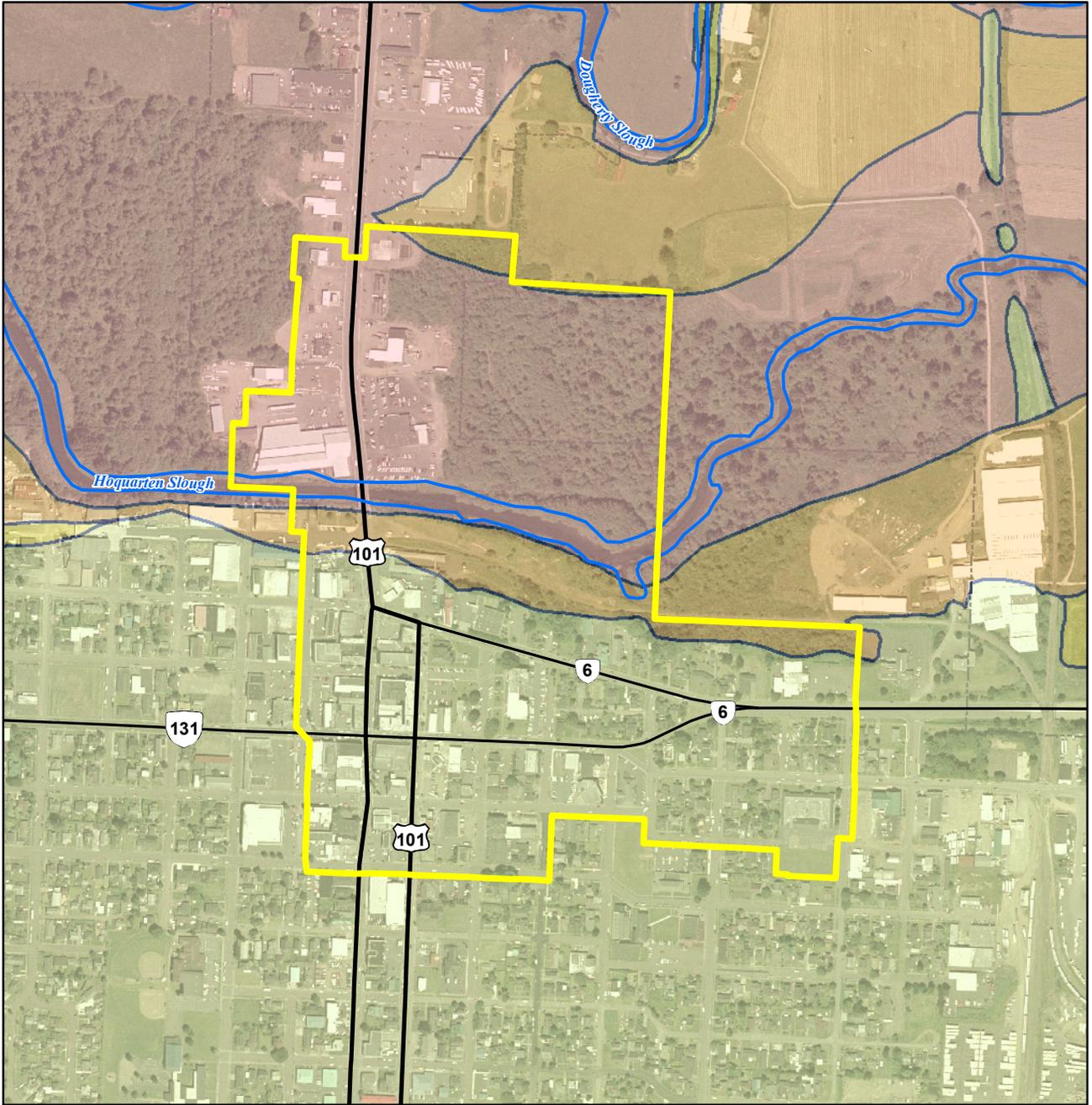
Figure 2 - Threatened and Endangered Species

Figure 3 - Local Wetlands Inventory

Figure 4 - FEMA Flood Zones

Figure 5 - Hoquarten Trail System

Photographs (4) of Hoquarten Slough area



VICINITY MAP

LEGEND

-  Stream Channel
-  Study Area
-  City Limits
- Flood Zones**
-  Floodway (1% Annual Chance of Flood)
-  100 Year Floodplain
-  500 Year Floodplain
-  Outside Chance of 500 Year Flood

Notes:

1. Stream channel from PNW Hydrography Network
2. Flood Zones Developed from FEMA FIRM Maps

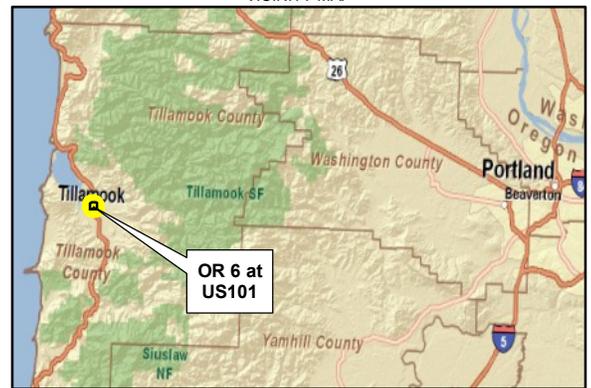
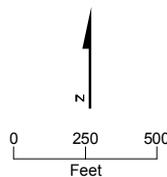


FIGURE 4 - FEMA FLOOD ZONES
Environmental Background Report
US 101/OR 6 Intersection Refinement Plan,
Tillamook-Phase 1



VICINITY MAP

LEGEND

- Study Area
- 1/2 Mile Buffer
- LWI Wetlands

Notes:
 1. LWI Wetlands data digitized from 1996 LWI Wetland map by CH2M Hill

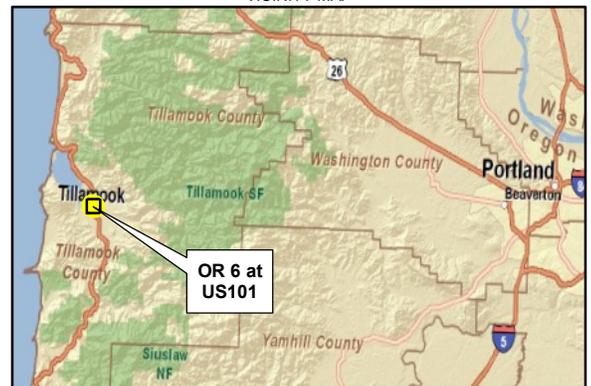
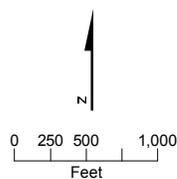
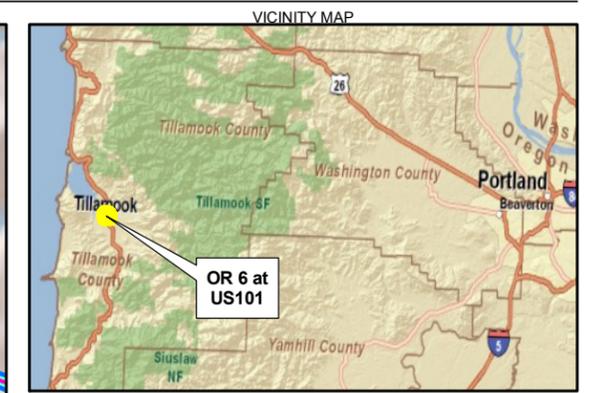
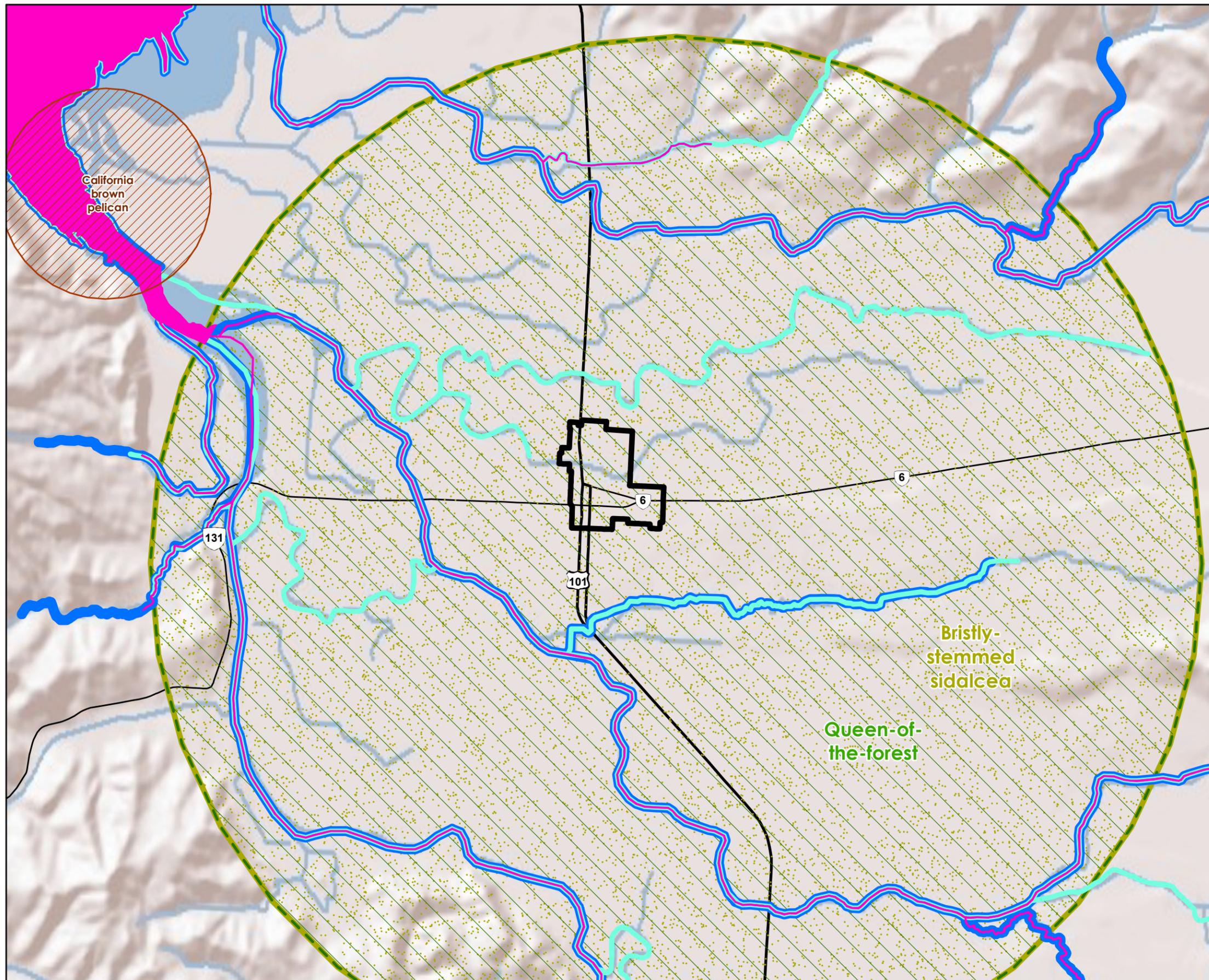


FIGURE 3 - LOCAL WETLAND INVENTORY
 Environmental Background Report
 US 101/OR 6 Intersection Refinement Plan,
 Tillamook-Phase 1





LEGEND

- Study Area
- Vascular Plants**
- Queen-of-the-forest
- Bristly-stemmed Sidalcea
- Vertebrate Animals**
- Bald eagle
- California brown pelican
- Chum salmon (Pacific Coast ESU)
- Coho salmon (Oregon Coast ESU)
- Steelhead (Oregon Coast ESU, winter run)
- Streams

Notes:
 1. Oregon Natural Heritage Information Center (ORNHC) data acquired on 9/19/08, covering 2-mile radius surrounding OR6 and US101 intersection.

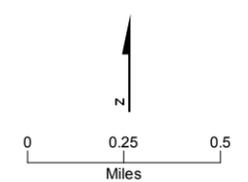
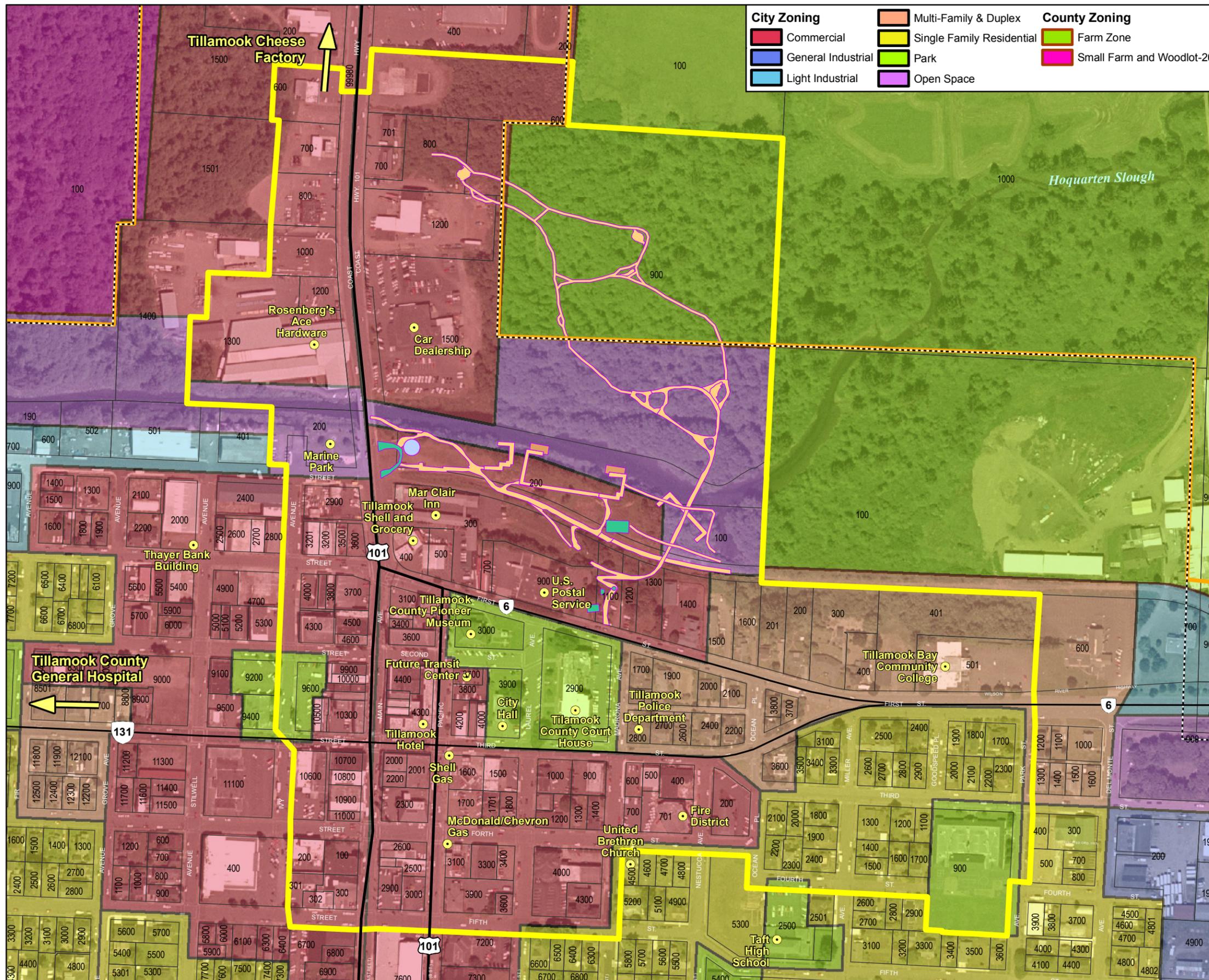
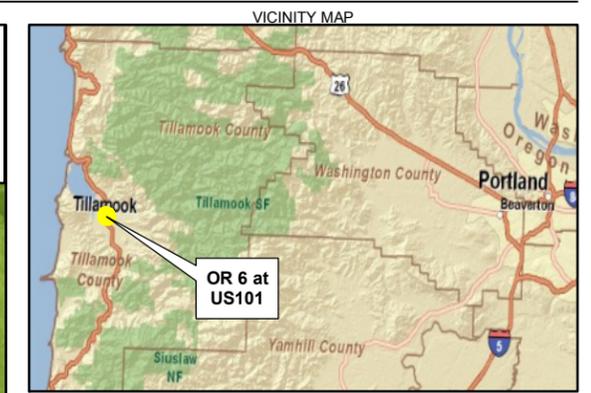


FIGURE 2 - THREATENED AND ENDANGERED PLANTS AND ANIMALS
 Environmental Background Report
 US 101/OR 6 Intersection Refinement Plan,
 Tillamook-Phase 1



City Zoning		County Zoning	
[Red Box] Commercial	[Orange Box] Multi-Family & Duplex	[Green Box] Farm Zone	[Pink Box] Small Farm and Woodlot-20
[Blue Box] General Industrial	[Yellow Box] Single Family Residential	[Light Green Box] Park	[Purple Box] Open Space
[Light Blue Box] Light Industrial			



LEGEND

- [Yellow Outline] Project Study Area
 - [Dashed Line] City Limits
 - [Orange Outline] Urban Growth Boundary (UGB)
 - [Thin Line] Parcels
 - [Yellow Dot] Social Resource
- Hoquarten Trail System**
- [Green Box] Facilities & Parking
 - [Pink Box] Trail; Existing and Planned
 - [Brown Box] Dock
 - [Blue Box] Sculpture

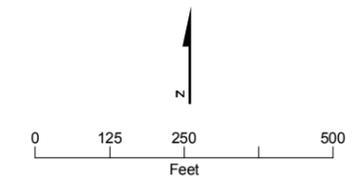
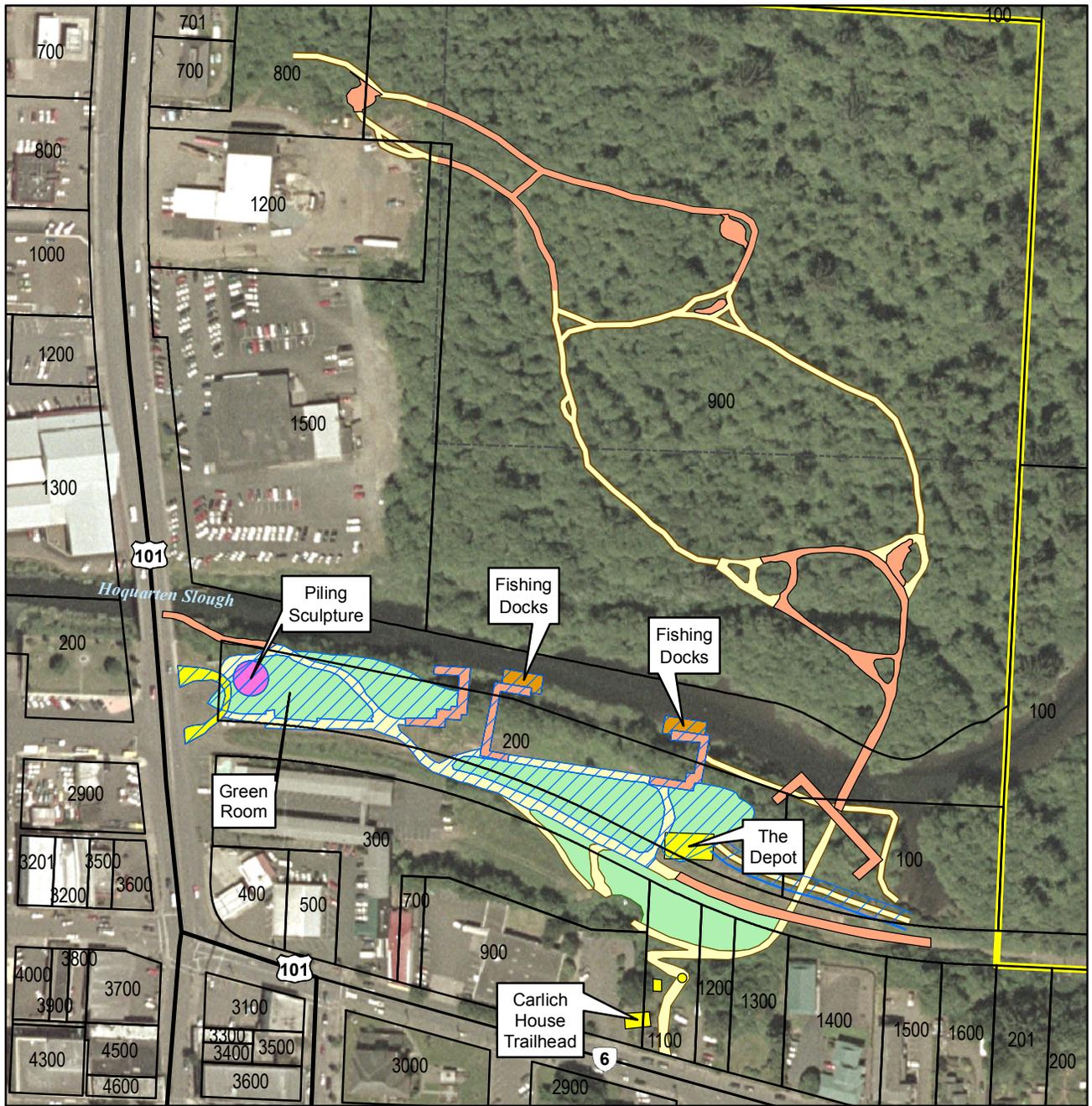


FIGURE 1
Project Study Area and Zoning
 US 101/OR 6 Intersection Refinement Plan



VICINITY MAP

LEGEND

Hoquarten Trail System

- Deck
- Dock
- Facility
- Park Area
- Sculpture
- Trail

- Study Area
- City Limits
- Existing Elements

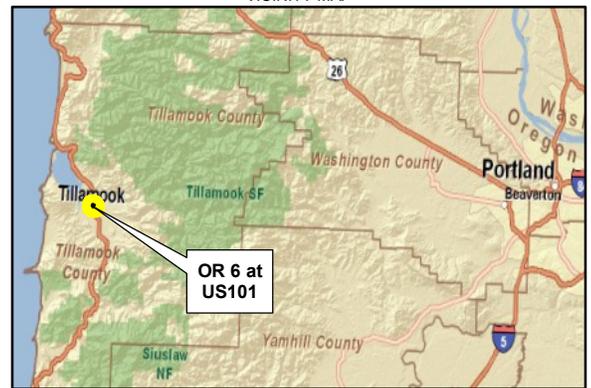
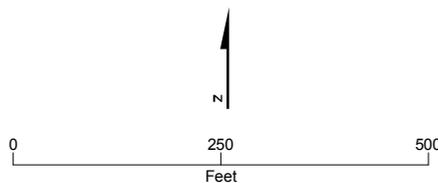


FIGURE 5 - HOQUARTEN TRAIL SYSTEM Environmental Background Report
US 101/OR 6 Intersection Refinement Plan, Tillamook-Phase 1



Hoquarten Slough From US 101 Bridge Looking Downstream-North Bank Primarily Visible



Hoquarten Slough From the North Bank near US 101 Looking at South Bank



Marine Park and Boat Launch Ramp from the South Bank West of US 101 Looking at North Bank



US 101 Bridge from east and North Bank looking toward downtown Tillamook