

US 101 Corridor Plan

(Chetco River Bridge to Oregon/California Border)



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US 101 Corridor Plan

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US 101 Corridor Plan: Chetco River Bridge to Oregon/California Border

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REFERENCE MATERIALS

Appendices (Companion Document)

- Technical Memorandum #1: Review Adopted Plans, Rules, and Regulations
- Technical Memorandum #2: Goals and Objectives
- Technical Memorandum #3: Inventory and Existing Conditions
- Technical Memorandum #4: Future Conditions
- Technical Memorandum #5: Development and Analysis of Improvement Options
- Comment Log – Final Corridor Plan

List Acronyms

AADT	Annual Average Daily Traffic
APM	Analysis Procedure manual
ATR	Automatic Traffic Recorder
CMF	Crash Modification Factors
EFU	Exclusive Farm Use
FHA	Federal Highway Administration
HCM	Highway Capacity Manual
HDM	Highway Design Manual
HSM	Highway Safety Manual
HV	Highest Hour Traffic Volume
ITS	Intelligent Transportation Systems
LOS	Level of Service
MEV	Million Entering Vehicles
MP	Mile Point
MUTCD	Manual on Uniform Traffic Control Devices
MVMT	Million Vehicle Miles Travelled
NHS	National Highway System
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
PDO	Property Damage Only
ROW	Right of Way
SPIS	Safety Priority Index System
STIP	Statewide Transportation Improvement Program
TDM	Transportation Demand Management
TIS	Traffic Impact Study
TSM	Transportation System Management
TSP	Transportation System Plan
UGB	Urban Growth Boundary
V/C	volume-to-capacity
VPD	Vehicles Per Day

1. INTRODUCTION

This *US 101 Corridor Plan* (Corridor Plan) focuses on the segment that extends from the south-end of the Chetco River Bridge in Brookings, Oregon south through unincorporated Brookings-Harbor to the Oregon/California Border. The plan examines how the highway operates both now and in the future, and identifies strategies to preserve and improve highway safety, operations and capacity consistent with a Statewide Highway classification.

1.1. PURPOSE

The purpose of the corridor plan is to assess existing and future roadway conditions, and identify potential solutions for improving roadway deficiencies. A multi-modal approach was taken for the evaluation of corridor needs that included the motor vehicle, transit, bicycle, and pedestrian modes. Bridge conditions are also identified.

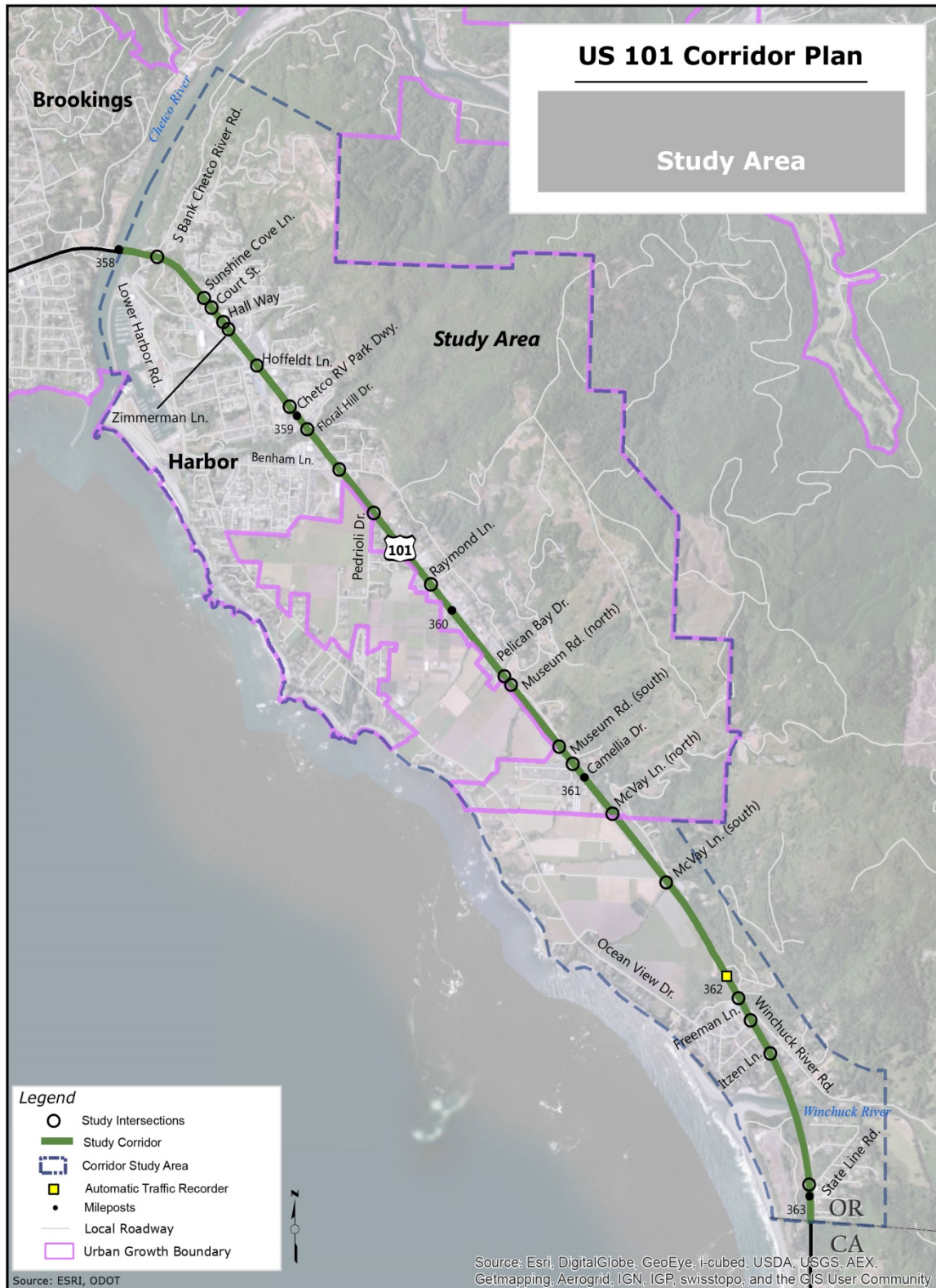
1.2. STUDY AREA

The study area extends along US 101 from the southern end of the Brookings, Oregon City Limits (Mile Point (MP) 357.98) to the Oregon/California Border (MP 363.11) (See Figure 1).

1.3. REGULATORY FRAMEWORK

State and local regulations, policies, land use plans, and transportation plans provide the legal framework for preparing the corridor plan. The language contained within these documents provides guidance to the state and local jurisdictions on how to manage transportation facilities and land uses to protect highway function, provide for safe and efficient operations, and minimize the need and expense for making major improvements to the corridor (See Appendix Technical Memorandum 1).

Figure 1



OPERATIONAL STANDARDS

The Oregon Highway Plan (OHP) has several policies aimed at maintaining highway mobility. The Highway Mobility Policy (1F) establishes mobility targets for peak hour operating conditions of highways in Oregon¹. The OHP policy also specifies that the mobility targets be maintained for the Oregon Department of Transportation (ODOT) facilities through a 20-year planning horizon. The mobility targets that apply along the study area are summarized in Table 1.

Table 1

Maximum V/C Ratio Targets for US 101 Operations		
Mile points	Segment Description	Maximum V/C Ratio
MP 358.02 to 359.32	Chetco River Road to Benham Lane	0.85
MP 359.32 to 361.16	Benham Lane to McVay Lane (North)	0.80
MP 361.16 to 363.11	McVay Lane (North) to Oregon/California border	0.70

1. OHP, Table 6, Volume-to-Capacity Ratio Targets for Peak Hour Operating Conditions

1.4. CORRIDOR GOALS AND OBJECTIVES

A set of goals, objectives, and evaluation criteria is developed to identify actions and achieve desired outcomes.

- The Goals describe the desired outcomes of future improvements in the corridor; and
- The Objectives identify specific actions to be taken to accomplish the goals.

GOAL 1: PROMOTE THE SAFETY OF TRAVEL MODES FOR ALL USERS

Objectives:

- Identify roadway improvements that potentially reduce crash rate/severity.
- Evaluate roadway improvements that improve roadway geometrics.
- Provide adequate bicycle and pedestrian Facilities.

GOAL 2: PROMOTE THE EFFICIENT OPERATIONS OF TRAVEL MODES FOR ALL USERS

Objectives:

- Identify roadway improvements that reduce traffic conflicts.
- Evaluate roadway improvements that maintain mobility and reduce congestion and delay.
- Provide access improvements that reduce the number of access points; and improve access design.

¹ Table 6: Maximum Volume to Capacity Ratio Targets for Peak Hour Operating Conditions, 1999 Oregon Highway Plan, OHP Policy 1F Revisions, Adopted December 21, 2011, Oregon Department of Transportation, website: <http://www.oregon.gov/ODOT/TD/TP/docs/ohp11/policyadopted.pdf>

GOAL 3: MAXIMIZE CONSTRUCTABILITY OF TRANSPORTATION IMPROVEMENTS

Objectives:

- Minimize cost by evaluating construction cost and right-of-way (ROW) requirement.
- Construct improvements in phases by evaluating number and size of project phases.
- Minimize environmental impacts by evaluating impacts by level of significance (low/medium/high) to environmentally sensitive areas, including biological, historic, cultural, and archeological resources.
- Minimize land use impacts by evaluating impacts to Exclusive Farm Use (EFU) zoned parcels (rural areas) and developed parcels (urban areas).
- Recognize related plans and policies by evaluating consistency with ODOT standards (including practical design principles) and local plans and policies.

2. EVALUATION OF BASELINE CONDITIONS

This section inventories and analyzes existing conditions for the study area. The baseline conditions include an overview of land uses, identification of potential environmental constraints, evaluation of current (Year 2012) transportation system and traffic conditions, and assessment of future (Year 2037) traffic operations and safety.

2.1. LAND USE

The study area contains lands abutting US 101 from the southern border of the City of Brookings to the Oregon/California border. While this includes lands inside the Brookings Urban Growth Boundary (UGB), the study area lies entirely outside of the city limits, and is subject to the land use planning regulations of Curry County. The unincorporated area within the UGB represents the community of Harbor (See Figure 2).

The Corridor Plan was developed consistent with existing land use conditions from the City of Brookings' and Curry County's Comprehensive Plan and Land Development Ordinance. The existing and planned land uses affect traffic patterns and the operations of highway facilities.

- The City of Brookings Comprehensive Plan Map allocates land uses to resource, residential, commercial and industrial categories. Following the general guidelines of the Comprehensive Plan, the Zoning Map designates more specific uses and densities within the general land use categories.
- The Curry County Comprehensive Plan Map allocates land uses to resource, residential, commercial and industrial categories. Following the general guidelines of the Comprehensive Plan, the Zoning Map designates more specific uses and densities within the general land use categories.

LAND USE CONDITIONS

The study area inventories and analyzes:

- Existing land uses
- Current and planned zoning
- Parks and recreation areas (Federal Section 4(f) and 6(f) resources)
- Community destinations such as schools, community centers, and commercial centers

Existing Land Uses

Existing land uses are surveyed on a field visit in September 2012. While not every existing land use was identified, those that may have a significant impact on US 101 are included here. To help identify the location of these uses, the descriptions are organized under three subareas: northern, central, and southern. These sections are generally divided by the UGB just south of the Chetco River Bridge, UGB just south of Benham Lane and the UGB that coincides with McVay Lane.

Northern Subarea - the densest, most populated, and most developed part of the study area. It lies directly south of Brookings and includes the community of Harbor. There are high concentrations of residential uses as well as clusters of commercial uses. In addition to single-family detached housing, there are two (2) RV parks abutting US 101 – (1) Sea Bird RV Park; and (2) Chetco RV Park – as well as Seaview Assisted Living to the east of US 101. Commercial uses include the Brookings Harbor Shopping Center, with a Shop Smart and Sears, and the South Coast Center, with Rite Aid, Grocery Outlet, and Dollar Tree stores. A vacant large-format retail space is located directly south of the South Coast Center. Commercial uses at the south-end of this subarea include two (2) gas stations, Gold Beach Lumber, and the Harbor Inn Hotel.

Central Subarea - split between land inside the UGB on the east-side of US 101 and land mostly outside the UGB on the west-side. Development in this subarea is characterized by a few commercial uses directly adjacent to US 101 – framing, marine supply, veterinary services, and vehicle supplies and services – and residential uses, mostly to the east-side of US 101 with some on the west-side of US 101 inside the UGB at the south-end of this subarea. Land uses west of US 101 are predominantly large-lot rural and agricultural uses, and uses on the east-side of US 101 become limited due to forest and hillsides. Of note in this subarea are institutional and social service oriented uses such as churches, the Outreach Gospel Mission, and the Advance Sleep Disorders Clinic.

Southern Subarea - all outside the UGB. Therefore, development is sparse, with the exception of the subdivisions and low-density housing at the south-end of the study area near the Pacific Ocean, Winchuck River, and Oregon/California border. Development along US 101 is minimal. Public uses include the ODOT weigh station directly adjacent to US 101 and McVay State Wayside, Crissey Field State Park, and Winchuck State Recreation Area, which are all located just off of US 101. There are a few commercial uses near the Oregon/California border, including a market and a home/farm/garden supplies store.

Current and Planned Zoning

The community of Harbor is made up of unincorporated county land inside the Brookings UGB, directly south of the Brookings city limits. Both the land inside and outside of the UGB is subject to the land use planning regulations of Curry County (See Table 2 and Figure 2).

- For the northern and central subareas of the study area, there is a general pattern of commercial land use designations along US 101 (e.g., C-1, C-2, and RC zoning), with residential land use designations (e.g., R-1, R-2, R-3, and RR zoning) behind those zones.
- To the west of US 101 in the central and southern subareas – the parts of the study area outside the UGB – there is a mixture of resource and rural residential designations.

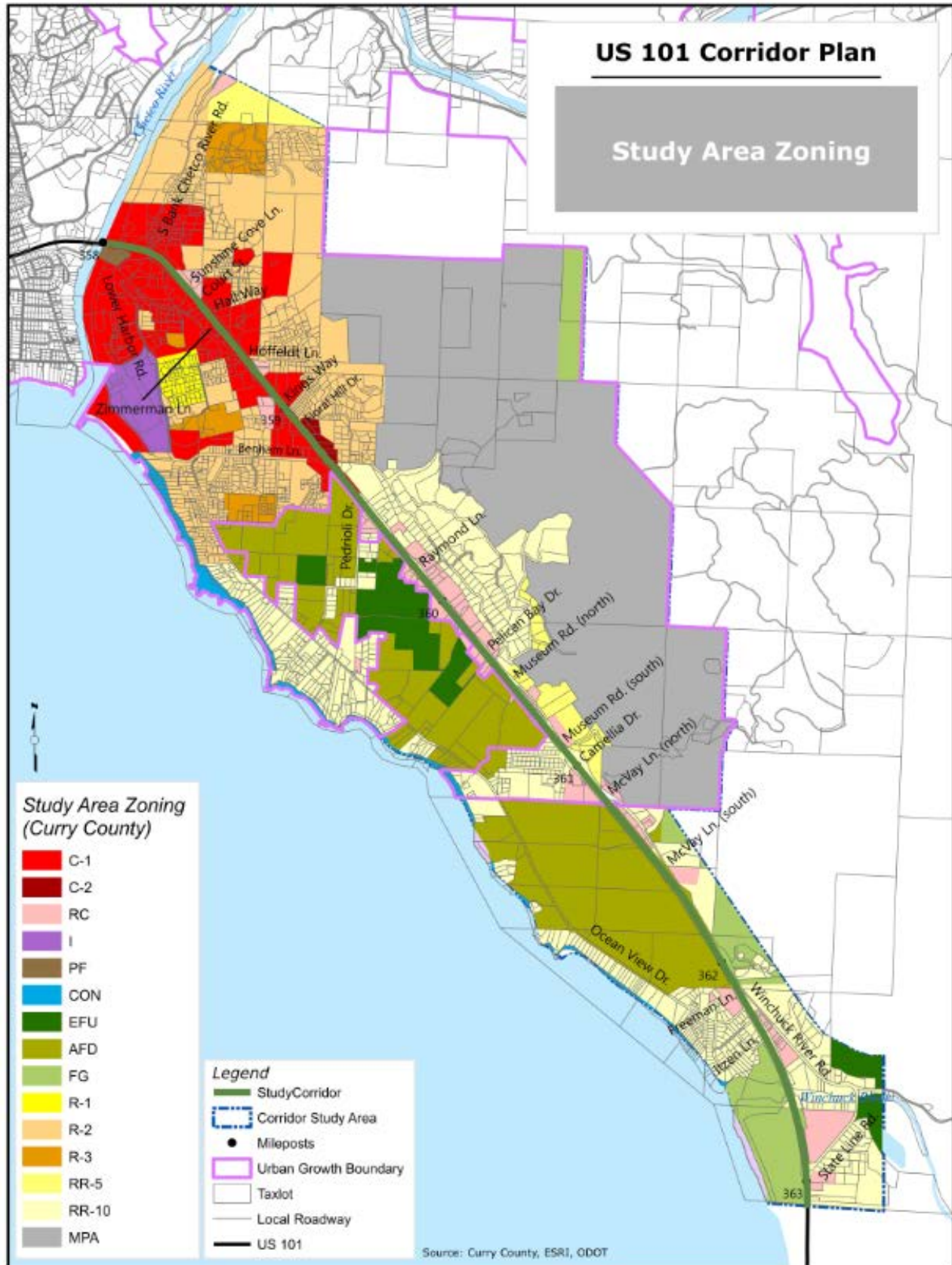
Table 2

**Overview of County Zoning
Year 2012**

Curry County Zoning Designation	Permitted Uses	Curry County Zoning Designation	Permitted Uses
Light Commercial (C-1)	• Retail & services • Multi-family housing • Church, school or community building	Residential One (R-1)	Single-family dwelling
Heavy Commercial (C-2)	• Retail & services • Industrial shops & services • Church, school or community building	Residential Two (R-2)	• Single-family dwelling • Mobile or manufactured home
Rural Commercial (RC)	• Existing single-family dwelling • Existing retail, professional or service establishments, & expansions up to 2,500 total square feet	Residential Three (R-3)	• Single-family dwelling • Mobile or manufactured home • Multiple-family dwelling
Industrial (I)	• Retail & services • Vehicle services, repair, and storage • Manufacturing & industrial shops	Rural Residential, 5-acre Lot (RR-5) Rural Residential, 10-acre Lot (RR-10)	• Single-family dwelling or mobile home • Farm or forestry use
Exclusive Farm Use (EFU)	• Farm and related uses • Rural & natural resource uses • Climbing & passing lanes • Reconstruction or modification of public roads & highways • Temporary public road & highway detours • Minor improvement of existing public road & highway related facilities	Forestry Grazing (FG)	• Forest, farm and related uses • Rural uses • Widening of roads • Climbing & passing lanes • Reconstruction or modification of public roads and highways • Temporary public road & highway detours • Minor improvements of existing public roads & highway related facilities
Agricultural Zone (AFD)	• (Same farm, rural and transportation uses as permitted outright in the EFU zone)	Public Facility (PF)	• Public uses, services, and parks • Transportation improvements and maintenance storage

Master Plan Area (MPA)	City of Brookings (Brookings Municipal Code, Chapter 17.70, Master Plan Development (MPD) District): All uses allowed outright and conditionally in the underlying R-1, R-2, R-3, C-1, C-2, C-3, C-4, I-P, and M-2 zones. Site plan must show any interior lots/parcels related to proposed development phases or land divisions, and residential uses shall be identified indicating the type of residential use, the number of units and resulting density Curry County (Curry County Zoning Ordinance, Article VI, Planned Unit Development): Applicants propose land uses, building locations and housing unit densities that are consistent with the objectives of the comprehensive plan or zoning provisions of the area and are substantially compatible with the land use of the surrounding area.		
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Figure 2



Section 4(f) and Section 6(f) Land Uses (Year 2012)

Section 4(f) of the Department of Transportation Act of 1966 prohibits the Federal Highway Administration and other transportation agencies from removing land from its protected use approving the use in publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless there is “no feasible and prudent alternative to the use of land” and the proposed use incorporates “all possible planning to minimize harm to the property resulting from use.”

Section 6(f) of the Land and Water Conservation Fund Act of 1965 created a fund to assist local, state, and federal agencies in meeting the demand for outdoor recreation sites. This is done through grants for land acquisition, site amenities, and other site development costs. Once an agency has used these funds, the land or access to it can be acquired or its use changed only in coordination with the National Park Service and with mitigation.

- Potential Section 4(f) resources relevant to the study area are publicly owned parks, recreational areas, and historical sites; and
- Potential Section 6(f) resources relevant to the study area are public recreation **sites** (See Figure 3).

Northern Subarea

The following is a list of the potential Section 4(f) and 6(f) resources in the study area:

- **Sporthaven Beach** – Regional Park owned by Curry County.
- **Port of Brookings-Harbor** – recreational boating, fishing, camping, RV park, and visitor facilities; owned by the Port of Brookings-Harbor.
- **Van Pelt Indian Cemetery**

Central Subarea

- **Ocean View Pioneer Cemetery** – maintained by Southern Curry Cemetery Maintenance District.

Southern Subarea

- **McVay Rock State Recreation Site.**
- **Winchuck State Recreation Site.**
- **Crissey Field State Recreation Site.**

Figure 3



Source: City of Brookings Parks Master Plan, State of Oregon, ESRI, ODOT

2.2. ENVIRONMENTAL, COMMUNITY, AND CULTURAL RESOURCES (YEAR 2012)

Environmental features in the corridor include:

- Goal 5 - Natural Resources
- Threatened and Endangered Species
- Wildlife Crossings
- Floodplains and Floodways

Community and Cultural Resources identified in the corridor include:

- Parks and Recreation Areas
- Historic and Archaeological Resources

ENVIRONMENTAL CONDITIONS (YEAR 2012)

Information on existing environmental conditions was inventoried and mapped for use in the development and analysis of improvement alternatives to be done later in the study. The environmental data was obtained primarily through publically available publications and on-line databases.

Goal 5 Resources

Statewide Planning Goal 5 requires local jurisdictions to inventory natural resources, such as riparian corridors, wetlands, wildlife habitat, and wilderness areas, and determine whether measures need to be taken to protect them from conflicting land uses.

The Curry County Comprehensive Plan identifies the following Goal 5 resource categories within the county:

- Open space lands
- Mineral and aggregate resources
- Energy recovery sites
- Fish and wildlife resource
- Ecologically and scientifically significant natural areas
- Scenic views
- Water resources
- Wilderness
- Cultural resources

There is one (1) natural area and three (3) cultural resources within the study area (See Table 3 and Figure 4).

These resources are:

Hastings Rock - located approximately one-half mile west of US 101 in the vicinity of McVay Rock State Recreation Site. It is described in the Curry County Comprehensive Plan Natural Resources Inventory as a “Pleistocene-age sea stack on elevated marine terrace” and is identified as a significant geological feature.

Chetco Indian Village – located in the area around the mouth of the Chetco River and identified by the Curry County Comprehensive Plan Natural Resources Inventory as an area of archaeological significance. This area is near the northern boundary of the study area and is not adjacent to US 101.

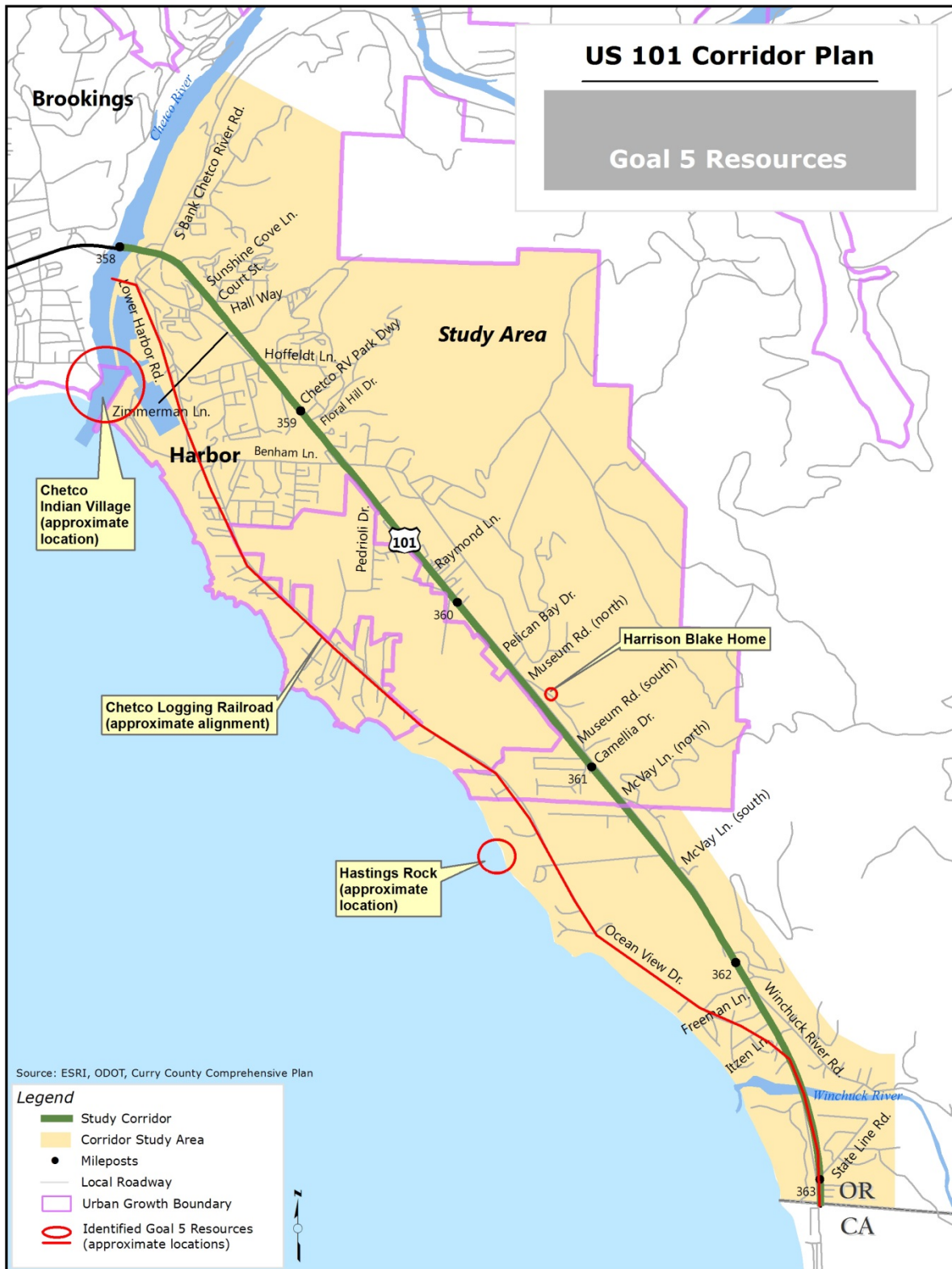
Harrison Blake Home - located approximately 300 feet east of US 101 at 15461 Museum Road, near Emigrant Hill Road. It is identified in the Curry County Comprehensive Plan Natural Resources Inventory as a cultural resource. It is also defined as historically significant in the Oregon State Historic Preservation Office’s Historic Sites database. Built in 1890, the Harrison Blake Home is the oldest surviving structure between the Chetco River and the California border. It is currently in use as the Chetco Valley Historical Society Museum.

Chetco Logging Railroad - identified in the Curry County Comprehensive Plan Natural Resources Inventory as a cultural resource. No longer extant, the railroad once ran between the Brookings lumber mill and Del Norte, California. It appears that it ran along an alignment in the approximate vicinity of Oceanview Drive.

Table 3

Potential Environmental Constraints Year 2012			
Resource/ Category	Key Points of Potential Conflict	Potential Further Work Required	Regulation and/or Permitting
Harrison Blake Home	Between Pelican Bay Dr. and Camelia Dr., approximately M.P. 360.5 to M.P. 361	Potential to alter the setting of a historic resource.	• Section 106 consultation • Section 4(f)
Chetco Logging Railroad	From just north of the Winchuck River to the California state line, approximately M.P. 362.5 to M.P. 363	Need further exploration of the exact location of the historic railroad alignment and the implications of any highway improvements.	• Section 106 consultation • Section 4(f)
Floodplains	Near the banks of the Chetco and Winchuck Rivers, approximately M.P. 358 and M.P. 362.5 to M.P. 363	• Minimize encroachment • Finding of no net rise	• U.S. Army Corps of Engineers (USACE) • Oregon Division of State Lands (ODSL) • Federal Emergency Management Agency (FEMA) • Curry County
Wetlands	Identified wetlands near the banks of the Chetco and Winchuck Rivers, approximately M.P. 358 and M.P. 362.5 to M.P. 363. Identified wetlands near M.P. 362. Because a local wetland inventory has not been conducted, there is a high likelihood of additional wetlands in the study area that have not yet been identified.	Need to demonstrate avoidance, minimization, and mitigation.	• Section 404 Permit (USACE) • ODSL • Oregon Department of Fish and Wildlife (ODFW) • US Fish and Wildlife Service (USFWS)
Potential HazMat Sites	Potential HazMat sites identified between M.P. 358.5 and 359.5. Potential for other sites that have not yet been identified.	Due diligence is required if any of the potential HazMat sites could be disturbed as part of any highway improvements to ensure that the site is properly cleaned up.	• Resource Conservation and Recovery Act of 1976 (RCRA) • Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)

Figure 4



Floodplains and Floodways

The study area is intersected by 100-year floodplains at the Chetco River (MP 358) and at the Winchuck River (MP 362.5 to MP 363) (See Figure 5). There are also small strips of 500 year floodplain along the western edge of the Chetco River and at MP 363, south of the Winchuck River. The 500 year floodplain on the west-side of the Chetco River is outside the study area.

Tsunami Inundations Zones

The study area crosses the Tsunami Inundation Zone at the Chetco River and the Winchuck River. At the Chetco River, it narrows and encompasses only a short segment of the study corridor. At the south-end of the study area, US 101 lies within the Tsunami Inundation Zone from north of the Winchuck River to just north of the Oregon/California border. North of this area, the corridor is also close to the Tsunami Inundation Zone between approximately MP 362 and 362.5.

Historic and Archaeological Resources

There is a high probability of archaeological resources at the mouths of the Chetco and Winchuck Rivers. These would be located near the Pacific Ocean beach and so would not be in close proximity to US 101.

Threatened and Endangered Species

The study area was evaluated for the potential presence of species designated under the Endangered Species Act (ESA) as Threatened, Endangered, or proposed for such designation. Additionally, locations are evaluated for the presence of designated critical habitat for ESA-listed species which might be present.

As shown in Table 4, only the Southern Oregon/Northern California Coast Evolutionarily Significant Unit (ESU) Coho Salmon (*Oncorhynchus Kitsuch*) is documented as occurring in the study area. Coho salmon are known to use both the Chetco and Winchuck Rivers for migration and rearing life stages. Both rivers are designated as critical habitat for this species. It is possible that Coho salmon also use one or more of the creeks in the study area, though no record of this is documented.

Steller sea lions (*Eumetopias Jubatus*) and any of the four (4) identified sea turtles may occur in the estuaries of the Chetco and Winchuck Rivers or along the beaches within the study area. However, there are no documented haul-outs, rookeries, or areas of special use.

Table 4

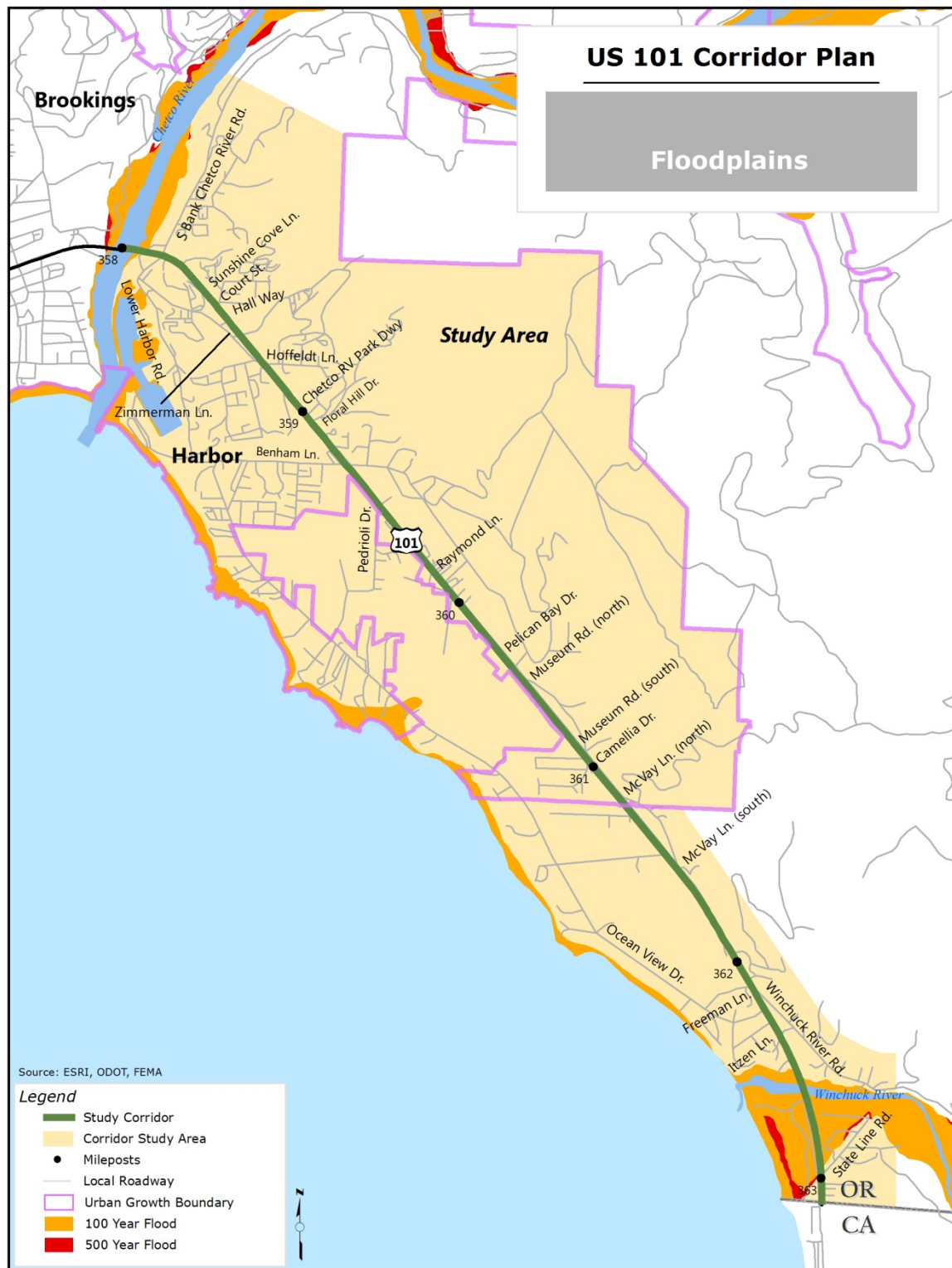
**Potential Threatened, Endangered, and Proposed Species
Year 2012**

Species Common Name (Scientific Name) ESU*/DPS**	Status	Listing Agency	Designated Critical Habitat within Study Area?	Documented Occurrence within Study Area?
Mammals				
Steller Sea Lion (<i>Eumetopias jubatus</i>) Eastern DPS	Threatened	NMFS	No	Yes
Fish				
Coho Salmon (<i>Oncorhynchus kitsuch</i>) S. Oregon/N. California Coast ESU	Threatened	NMFS	Yes	Yes
Reptiles/Amphibians				
Loggerhead Sea Turtle (<i>Caretta caretta</i>)	Endangered	NMFS, USFWS	No	Yes
Green sea turtle (<i>Chelonia mydas</i>)	Threatened	NMFS, USFWS	No	Yes
Leatherback Sea Turtle (<i>Dermochelys coriacea</i>)	Endangered	NMFS, USFWS	No	Yes
Olive (Pacific) Ridley Sea Turtle (<i>Lepidochelys olivacea</i>)	Threatened	NMFS, USFWS	No	Yes
Birds				
Marbled Murrelet (<i>Brachyramphus marmoratus</i> <i>marmoratus</i>)	Threatened	USFWS	No	No
Northern Spotted Owl (<i>Strix occidentalis caurina</i>)	Threatened	USFWS	No	No
Short-Tailed Albatross (<i>Phoebastria albatrus</i>)	Endangered	USFWS	No	No
Western Snowy Plover (<i>Charadrius alexandrinus</i> <i>nivosus</i>)	Threatened	USFWS	No	
Plants				
McDonald's Rockcress (<i>Arabis macdonaldiana</i>)	Endangered	USFWS	No	No
Western Lily (<i>Lilium occidentale</i>)	Endangered	USFWS	No	No

* ESU = Evolutionarily Significant Unit is a distinct local population within a species that has very different behavioral and phenological traits and thus harbors enough genetic uniqueness to warrant its own management and conservation agenda. NMFS uses the ESU as the smallest management unit warranting listing under the ESA for anadromous salmonids, excluding steelhead, which employs the DPS terminology.

** DPS = Distinct Population Segment is the smallest management unit warranting listing under the ESA. Species, as defined in the ESA for listing purposes, is a taxonomic species or subspecies of plant or animal, or in the case of vertebrate species, a distinct population segment (DPS).

Figure 5



Wetlands

The most extensive area of wetlands is south of the Winchuck River, extending for approximately one-half mile between the river and MP 363 (See Figure 6). Other large wetland areas exist at MP 362 and west of US 101. It appears that this wetland is far enough from US 101 that it is not likely to be a concern.

There are smaller wetland areas close to the corridor near Museum Road (on the west-side of US 101), between Hoffeldt Lane and Kings Way (west of US 101), and stream crossings near South Bank Chetco River Road.

Hazardous Materials Sites

The research revealed seven sites with recorded incidents of hazardous material spills (Table 5 and Figure 7). Soils contaminated by hazardous materials would need to be cleaned-up if construction occurs on contaminated sites. Therefore, it is important to identify any potentially contaminated sites in the study area. Records of hazardous material contamination are available from several databases.

Table 5

Potential Hazardous Materials Sites Year 2012			
Site Name	Location	Data Source	Status
Port of Brookings Harbor Boat Yard	16060 Lower Harbor Road	Oregon DEQ ECSI	Contamination suspected
Tidewater Contractors, Inc.	16156 Hwy 101 S.	Oregon DEQ LUST	Diesel release from underground tank in 1992.
		EPA RCRA	Conditionally exempt small quantity generator.
Port of Brookings	Lower Harbor Road	Oregon DEQ LUST	Waste oil release from 2 underground tanks in 1999.
US Coast Guard Station – Chetco River	Boat Basin Road	Oregon DEQ LUST	Diesel release from underground tank in 1996.
Harbor Shell	16021 Hwy 101 S.	Oregon DEQ LUST	Miscellaneous gas release from underground tank in 2002.
Harbor BP & Mini Mart	16258 Hwy 101 S.	Oregon DEQ LUST	Miscellaneous gas release from underground tank in 1996.

Figure 6

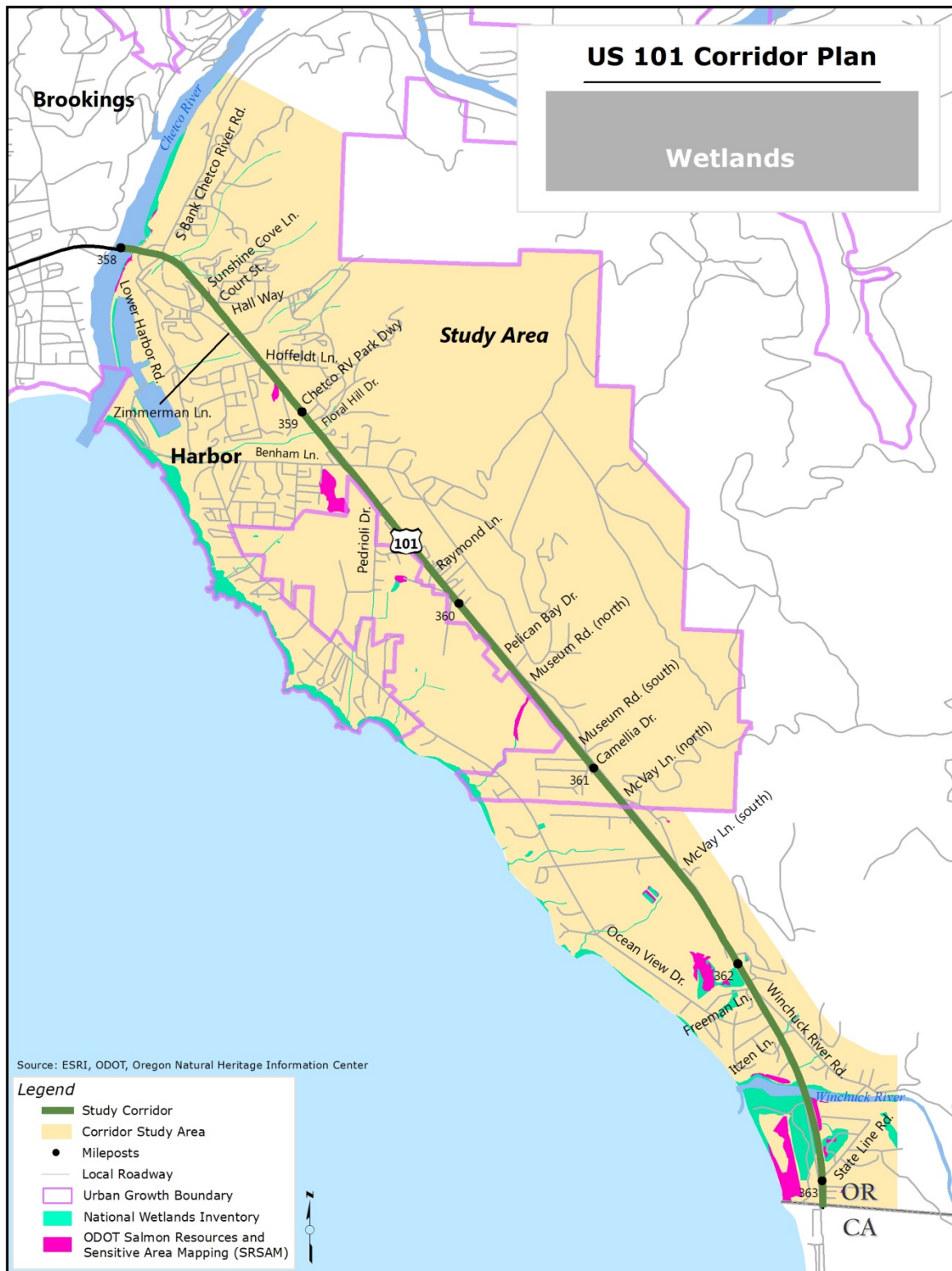


Figure 7



POTENTIAL DESIGN CONSTRAINTS (YEAR 2012)

Depending on the location of the preferred project, final design and construction details, there will be specific permits, regulatory requirements, or authorizations required prior to construction of the project. Additional design constraints not covered in this corridor plan could include the location of Hazardous Material sites, fish passage requirements at stream crossings, and storm water treatment requirements.

2.3 TITLE VI AND ENVIRONMENTAL JUSTICE POPULATIONS (YEAR 2012)

Economically challenged groups and protected classes are the focus of federal and state Environmental Justice and Title VI regulations and, as such, are a special focus within ODOT long-range transportation planning processes. The study area contains two (2) entire census block groups and two (2) partial groups. Title VI of the Civil Rights Act of 1964 and associated policies and regulations prohibit discrimination on the basis of race, color, national origin, gender, age, and disability. Because ODOT receives federal funding for its projects and programs, it established a Title VI program to address nondiscrimination regulations related to decisions about transportation investments. ODOT's 2002 Title VI Plan commits the agency to:

- Make special efforts to contact and involve minority and low income groups in conducting planning studies and formal hearings held on transportation improvement plans and programs.
- Collect and analyze data on the impact of plans on minority and low income populations.

These kinds of efforts and analysis are also related to the federal Executive Order on Environmental Justice. The three guiding principles for environmental justice are as follows:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

Title VI Populations

Information related to Title VI and Environmental Justice is presented on concentrations of federally recognized populations in the study area, including minorities, low-income, and elderly people. It incorporates observations from representatives of the Curry County Public Health Department interviewed in September 2012.

In order to involve and equitably serve these target populations in the study area, they first must be identified. The mapping of 2010 Census data by census block group and input from Curry County Public Health Department staff helped identify these populations. The study area contains two entire census block groups and two partial groups. For the partial groups, the data was mapped for only those areas within the study area.

Minority Population

The highest concentration of minority populations – just over 20% of the total population – is in the northeast portion of the study area. The remainder of the study area has between 7% and 12% minority populations. Overall, roughly 87% of the study area population is non-Hispanic white. The largest minority groups are Hispanic and American Indian/Alaska Native (See Figure 8).

Representatives from the Curry County Health Department reported that trailer parks located between South Bank Chetco River Road and Hall Way have concentrations of low-income Native American, Latino, and elderly populations, as do apartment complexes and trailer parks along Benham Lane west of US 101. There is also a significant seasonal migrant population associated with the local lily industry.

Low Income Population

Concentrations of low-income residents are spread relatively evenly throughout the study area; however, slightly higher concentrations are found in the northern portion. For the census tract that encompasses the entire study area plus areas further east, more recent data indicates that the poverty rate is 15.3%, based on a five (5) year average from Years 2007-2011. This data also shows that many of those in poverty are families with young children (See Figure 9).

Most low-income residents live in the Harbor area. Concentrations of people that fall within the low-income category, as well as the minority and elderly categories, are located in the manufactured home parks between South Bank Chetco River Road and Hall Way and the apartments and manufactured home parks along Benham Lane west of US 101. It was also reported that people live in storage units at various locations in the study area, such as along Seashore Lane. Another location of low-income residents is the Union Gospel Outreach Mission along US 101 near Robin Lane, just south of Raymond Lane on US 101.

Senior Population

The highest concentrations of senior residents are found in the northwest portion of the study area. Overall, just over a third of the study area population is 65 or older. The high concentration of senior population in the northwest portion of the study area corresponds with the location of the Seaview Assisted Living facility west of US 101 near Benham Lane (See Figure 10).

Figure 8

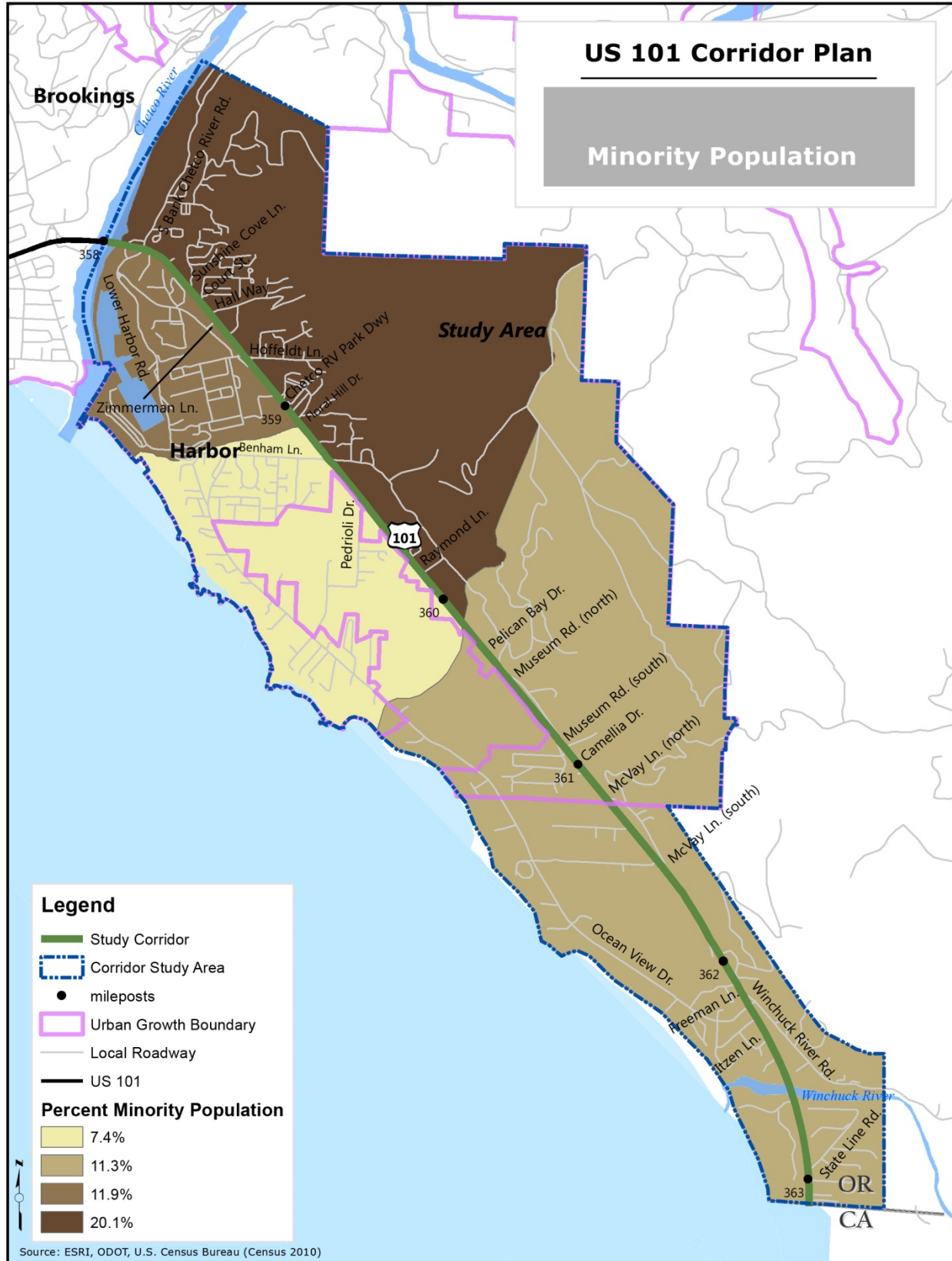


Figure 9

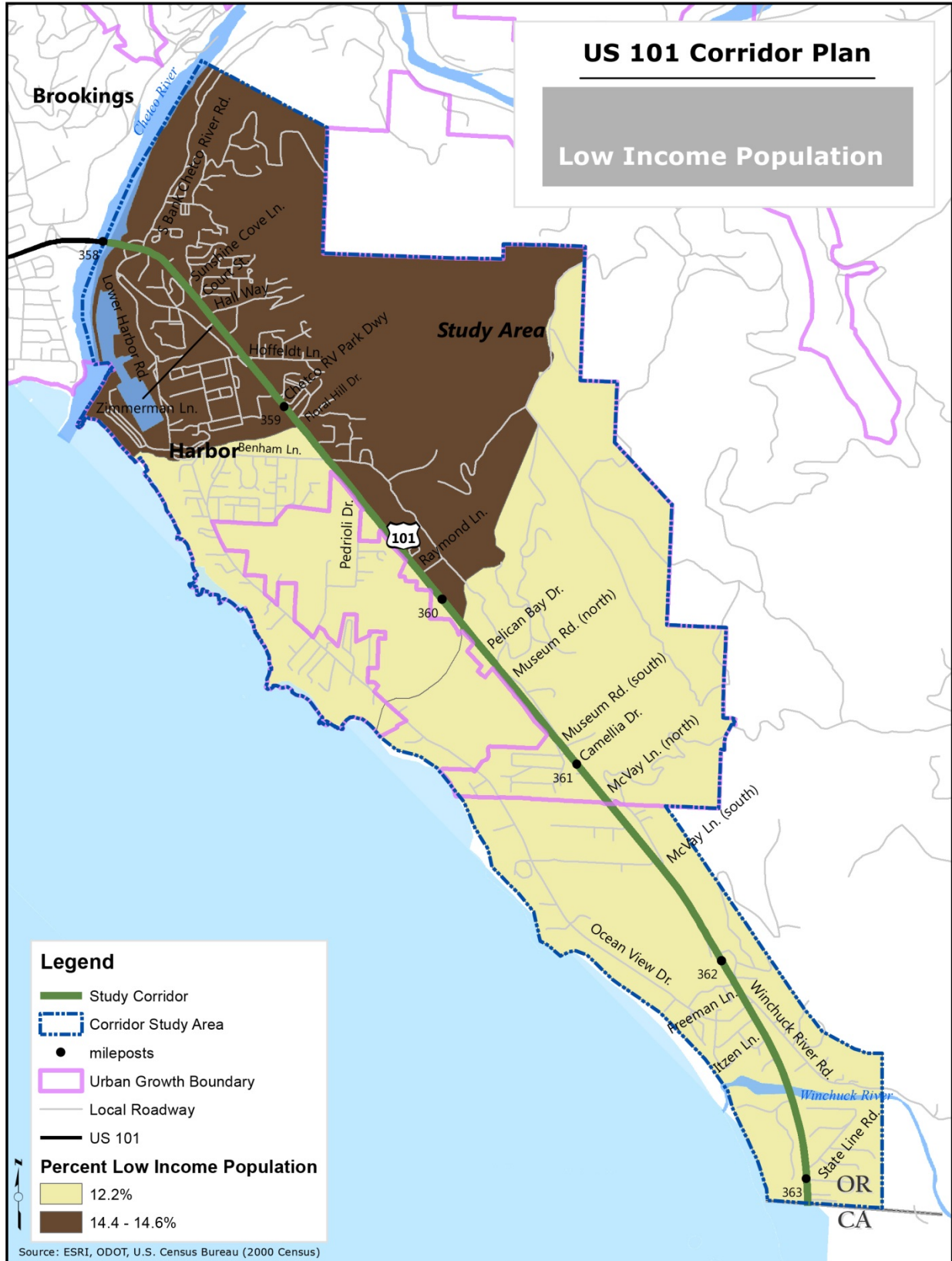
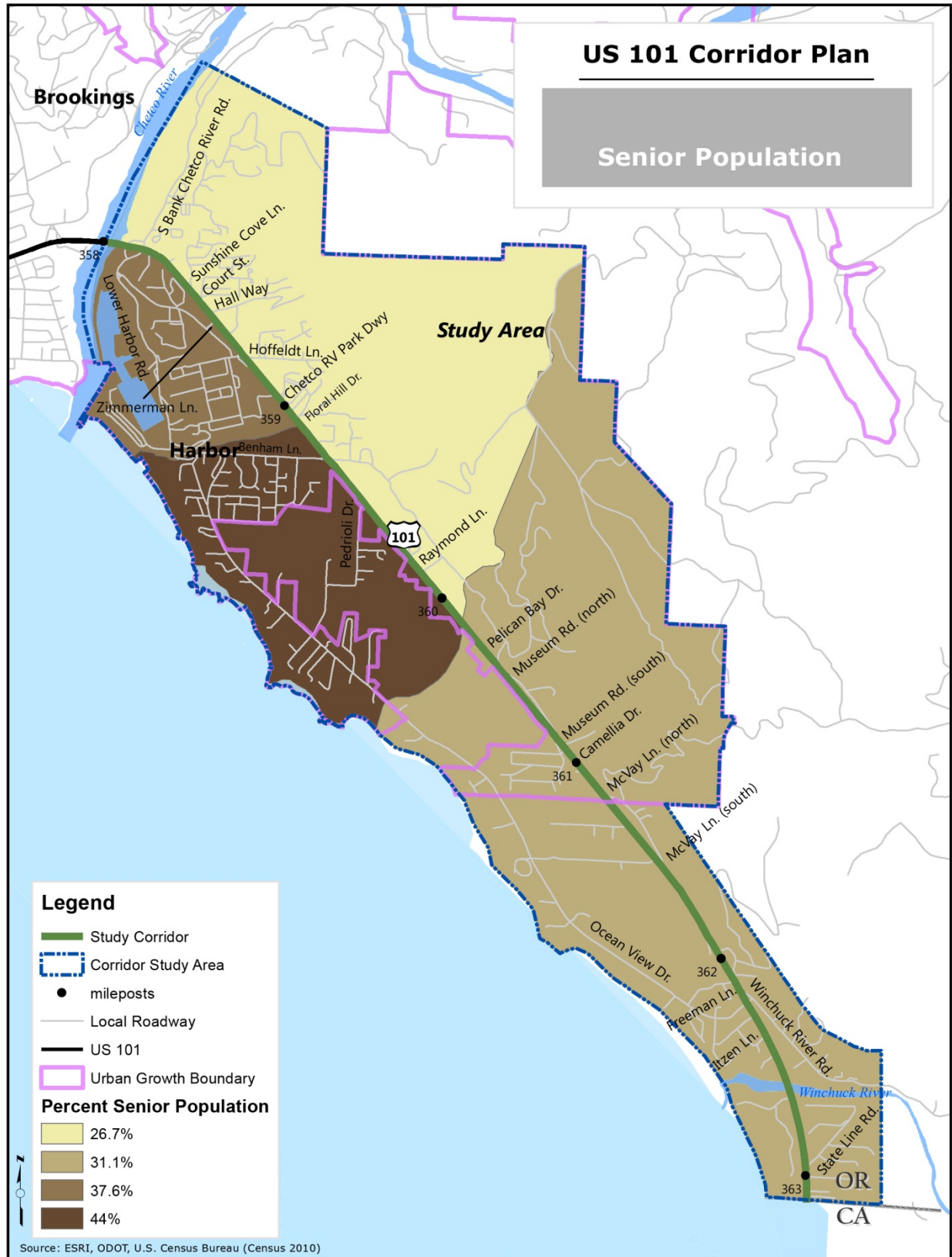


Figure 10



Transportation Barriers to Title VI Populations

Curry County Health Department staff provided feedback on the transportation needs for federally recognized populations within the study area. Many of these are also needs of the general population, but have greater significance for these groups because of their special circumstances, such as the lack of an automobile. This includes the need for safe and adequate pedestrian, bicycle and transit facilities.

Specific examples of these needs are:

- The Brookings-Harbor Shopping Center and the South Coast Center are popular destinations within the study area, particularly for Title VI populations because they are close by and feature discount retailers. Non-auto access to these shopping centers is difficult, however, because of the lack of sidewalks and lighting, traffic conflicts at the driveways, and the need for improved transit service.
- For residents of the Men's Union Gospel Mission near Robin Lane, there is a lack of sidewalks and lighting in the vicinity, as well as no crosswalk to reach the new women's mission to be opened on the west-side of US 101. There are also limited transportation options for the residents to travel from the mission to the addiction treatment center in Brookings.
- There are no medical facilities in Harbor and the county health department is located in Gold Beach. Limited transportation options make it difficult for Title VI populations to access medical services at the health department, such as immunizations.
- Lack of lighting and difficult pedestrian access for the large transient population near the Chetco River Bridge.
- Poor access to the Seaview Senior Living Community to the west of US 101.

Title VI Transportation Needs

Non-auto access to the shopping centers would be improved with the addition of continuous sidewalks and street lighting within the northern subarea. Improving pedestrian crossings in multi-lane high speeds areas would also increase access to the shopping centers. Near Robin Lane, roadway lighting could be installed to serve potential future pedestrian demand between the men's mission on the east-side of the US 101 and the proposed women's mission on the west-side of the highway. Implementation of this improvement would be contingent on the opening of the women's mission. There is also a general lack of pedestrian access for the residents of the mission, particularly within the northern sub-area. This access could be significantly improved with the addition of continuous sidewalks and lighting. The poor access to the Seaview Senior Living Community to the west of US 101 could also be improved with the addition of continuous sidewalks and lighting. For the large transient population near the Chetco River Bridge, there is a lack of lighting and difficult pedestrian access at the US 101/South Bank Chetco River Road/Lower Harbor Road intersection.

2.4 TRANSPORTATION SYSTEM (YEAR 2012)

The transportation system inventory examines the highway, intersecting roadways, bridges, pavement conditions, bicycle and pedestrian facilities, transit facilities, Intelligent Transportation Systems, and rail facilities.

To serve as the basis for the existing conditions analysis, an inventory of the transportation infrastructure was conducted for Base Year (2012) conditions. The inventory included the twenty-one (21) study intersections. Transportation data including traffic volumes and roadway characteristics was collected and analyzed. The results of the analysis is compared to standards, and for locations that did not meet the standards, a need was identified.

A multi-modal approach was taken for the evaluation of corridor needs that included motor vehicle, transit, bicycle, and pedestrian modes. Bridge conditions are also identified.

US 101 (YEAR 2012)

The OHP classifies US 101 as a Statewide Highway. It is part of the National Highway System (NHS). The Curry County Transportation System Plan (TSP) defines US 101 as a Principal Arterial. It is the main transportation facility in the study area and also functions as the primary transportation facility along the entire Oregon coast. US 101 is also defined as a Scenic Byway and Priority 1 Seismic Lifeline Route by ODOT. The Scenic Byway designation recognizes the need to preserve and enhance the scenic value while accommodating critical safety and performance needs. The Priority 1 Seismic Lifeline designation means that US 101 is essential for emergency responses in the first 72 hours after incidences.

- US 101 has four (4) through lanes in the north section of the study area that transition to two (2) through lanes at the north access of McVay Lane. There is a two-way center turn lane with a standard width of 14 feet between Lower Harbor Drive-South Bank Chetco River Road and Raymond Lane, except for a short 12-foot wide section near South Bank Chetco River Road. Parking is allowed on shoulders but is not allowed on bike lanes along US 101.
- US 101 is located on a relatively straight and level alignment within the study area, with one (1) large- radius curve on the north-end of the corridor. The ROW width generally ranges between 90 and 120 feet on each side of the roadway centerline. There are a few short sections where it narrows to as little as 60 feet or widens to 300 feet (See Table 6 & Figure 11). Operationally, the speed limit changes from 45 mph on the north-end of the corridor to 55 mph just south of Benham Lane. There is no continuous roadway lighting along the corridor.
- An ODOT fixed scale weigh station is located between the north and south access points to McVay Lane on US 101.

Table 6

Existing Right-of-Way Year 2012				
From/To	Milepost	Right-of-Way (feet)		
		Minimum	Maximum	Average
Chetco River Br. -Zimmerman Ln.	358.02 – 358.57	60	300	140
Zimmerman Ln. - Hoffeldt Ln.	358.57 – 358.76	75	200	90
Hoffeldt Ln. – Benham Ln.	358.76 – 359.32	40	200	70
Benham Ln. – Raymond Ln.	359.32 – 359.94	75	115	100
Raymond Ln. – McVay Ln. (north)	359.94 – 361.16	60	250	100
McVay Ln. (north) – OR/CA Border	361.16 – 363.11	60	250	125

Other Roads

The other roads in the study area are under Curry County jurisdiction, because they are outside of the City of Brookings's city limits and are not ODOT facilities. The main county facilities include Lower Harbor Drive, South Bank Chetco River Road, Benham Lane, and Winchuck River Road, which are designated as major collectors, and Oceanview Drive, which is designated as a minor collector. The other roads within the study area are classified as local roadways. All of the county roads are two-lane facilities, providing a majority of the local access to residents living in the study area (See Figure 12).

Figure 11

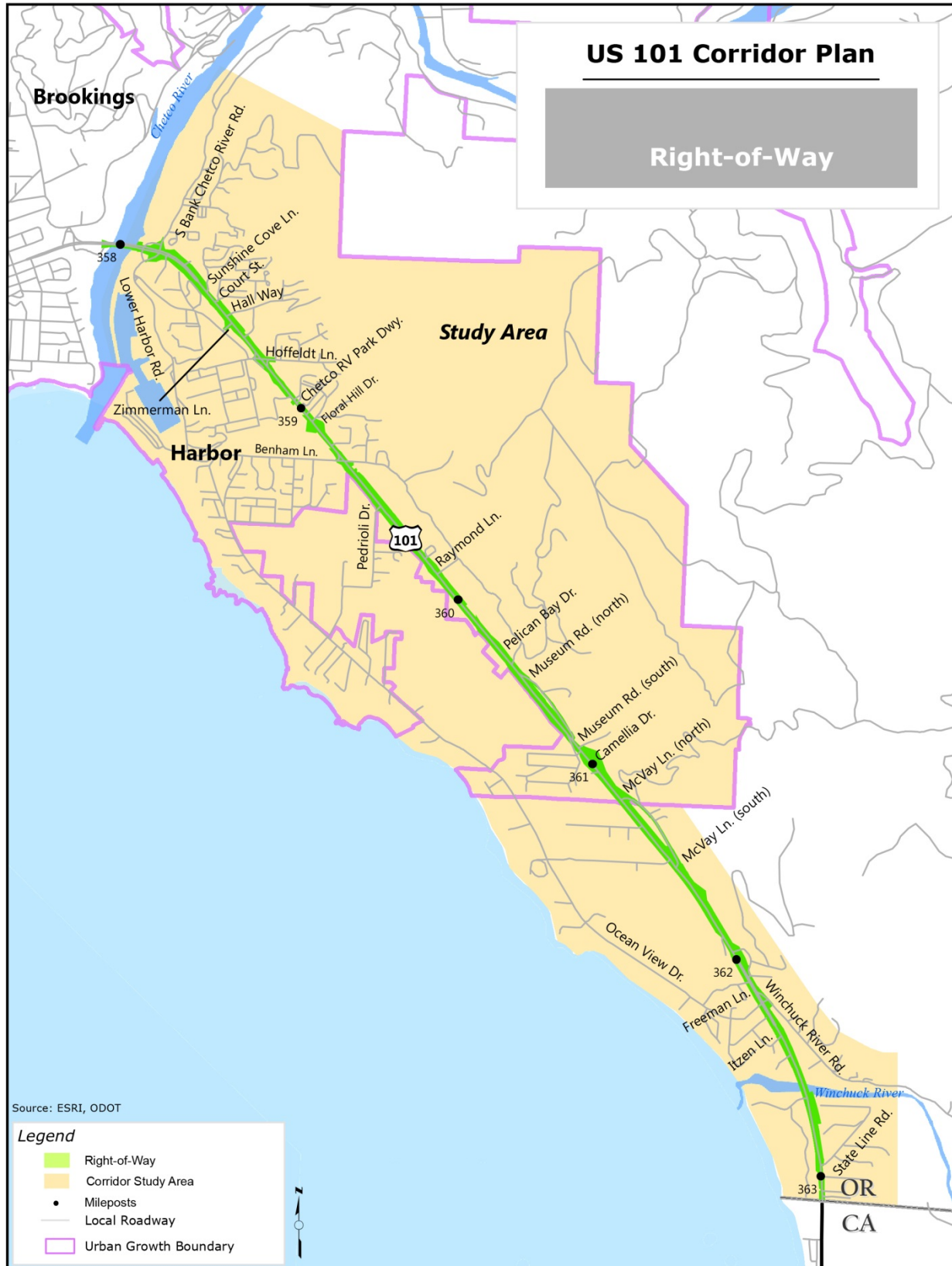


Figure 12



Intersections

Twenty-one (21) intersections are analyzed within the study area. Right-turn and/or left-turn lanes exist at the following intersections (See Figure 13):

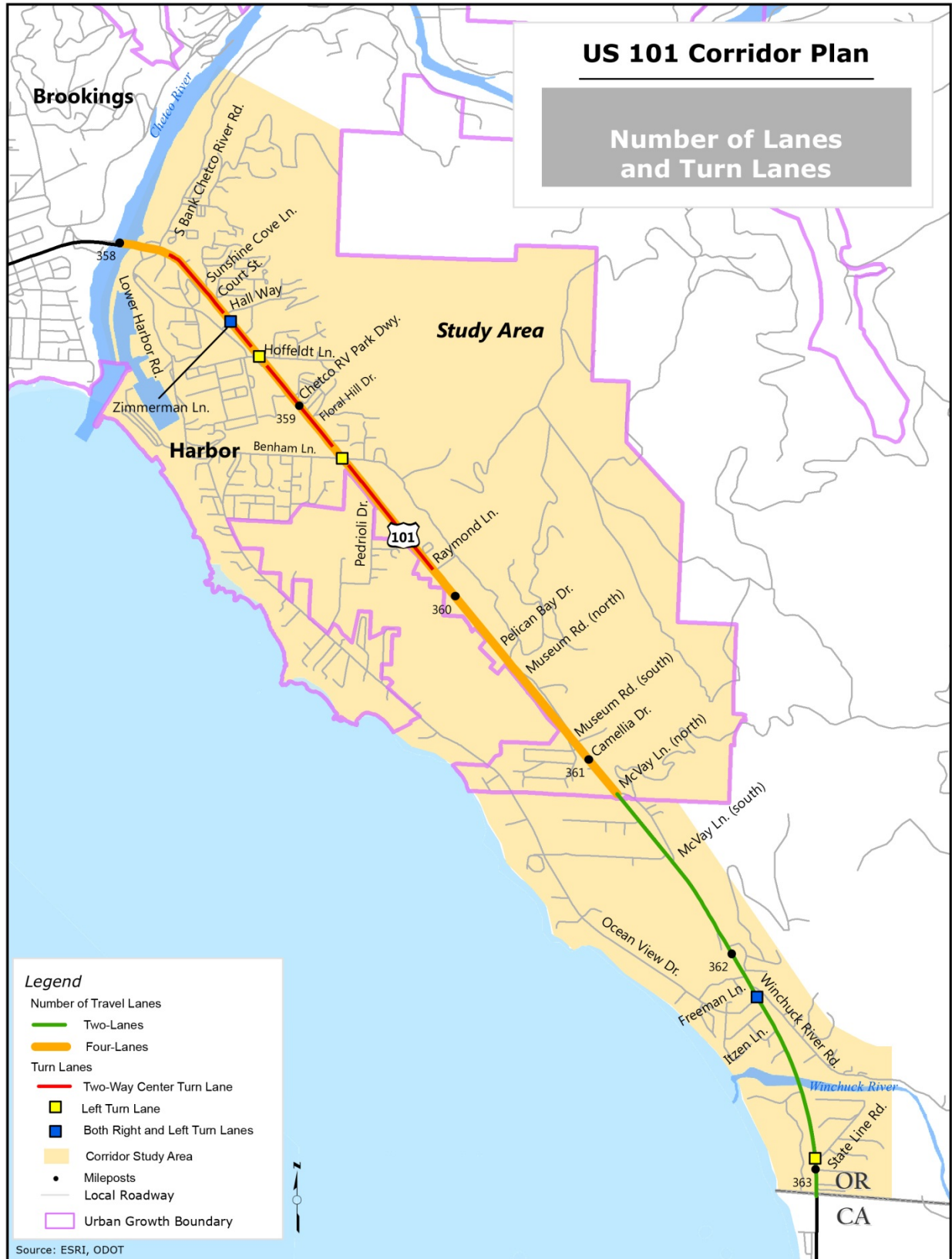
- US 101/Zimmerman Lane
- US 101/Hoffeldt Lane
- US 101/Benham Lane
- US 101/Oceanview Drive/Winchuck River Road
- US 101/State Line Road

Crosswalks

Marked crosswalks are available only at signalized intersections. Roadway lighting is limited to the following intersections:

- US 101/ Lower Harbor Drive-South Bank Chetco River Road
- US 101/Floral Hill Drive
- US 101/Pelican Bay Drive

Figure 13



2.5 BRIDGES (YEAR 2012)

There are two (2) bridges in the study area, one at the Chetco River on the north-end of the study area (M.P. 357.98) and the other on south-end at the Winchuck River (M.P. 362.61). The Chetco River Bridge (#01143D) was built in Year 1972, while the Winchuck River Bridge (#09091A) was built in Year 1965.

BRIDGE SUFFICIENCY RATING (YEAR 2012)

The sufficiency rating for bridges is determined by periodic inspections performed by ODOT. The rating is a numeric value indicative of the sufficiency of a bridge to remain in service. The Federal Highway Administration (FHA) uses this index in evaluating the nation's bridges for funding distribution and eligibility.

Those bridges with a sufficiency rating of 80 or less are eligible for rehabilitation. Bridges with a rating of 50 or less are eligible for replacement.

- The Chetco River Bridge has a sufficiency rating of 71.2 making it is eligible for rehabilitation.
- The Winchuck River Bridge received a score of 41.8 making it eligible for replacement.

Note: Sufficiency Ratings shown are valid at the time of writing but will change over time.

BRIDGE FEATURE RATINGS AND RESTRICTIONS (YEAR 2012)

The ratings for both bridges range from fair to good. There are no weight or height restrictions on either bridge. The Winchuck River Bridge width is 32 feet and has a narrow horizontal clearance, which is one of the reasons for its lower sufficiency rating (See Table 7).

Table 7

Bridge Feature Ratings and Restrictions Year 2012		
Chetco River Bridge		Winchuck River Bridge
Bridge Feature		
Bridge deck	6	7
Superstructure	6	5
Substructure	7	7
Bridge Restrictions		
Weight	None	None
Height	None	None

2.6 OPERATIONS AND SAFETY (YEAR 2012)

To serve as the basis for the existing conditions analysis, an inventory of the transportation infrastructure was conducted for base year (2012) conditions. The inventory included the 21 study intersections.

Transportation data including traffic volumes and roadway characteristics was collected and analyzed. The results of the analysis are compared to standards, and for locations that did not meet the standards, a need was identified.

TRAFFIC VOLUMES (YEAR 2012)

Traffic volumes are obtained from ODOT's databases and intersection turning movement counts conducted in March 2008 and June 2012. The volume data was used to identify annual average daily traffic volumes (AADTs) along US 101, as well as seasonal and hourly traffic variation. The design hour volumes used in the existing conditions analysis are also estimated based on the volume data.

Annual Average Daily Traffic

The Year 2011 AADT along US 101 ranges from more than 15,000 vehicles per day between the Chetco River Bridge and Zimmerman Lane to roughly half this volume near the Oregon/California border. The volumes are closely correlated with local development, with the highest volumes in the urbanized Harbor area to the north and the lowest volumes in the largely rural area to the south (See Figure 14).

Seasonal Volumes

The volume data was obtained from the Winchuck River Road Automatic Traffic Recorder (ATR) located on the south end of the corridor. The highest volumes occurred during the months of July and August, with traffic approaching 10,000 vehicles per day. The lowest volumes occurred in November, December, and January, with traffic dropping about 25% from the summer peak to roughly 7,500 vehicles per day. This seasonal variation is typical for a coastal route with tourist traffic in the summer months; however, it is less than at locations further north on US 101, where the difference ranges from 35-40%.

Hourly Volumes

The volumes are obtained from 16-hour traffic counts. By direction, the southbound volumes are slightly higher at all of the locations between 6:00 AM and 9:00 AM, suggesting a somewhat stronger commute travel pattern in this direction. US 101 is typical of corridors in low-density or rural areas, in which traffic is characterized by little or no morning or afternoon peaking and relatively balanced directional splits. This reflects the higher proportion of non-work trips compared to urban areas, which have pronounced work trip peak periods.

US 101/Hoffeldt Lane intersection - the highest volumes occurred between noon and 6:00 PM. The distribution is bell-shaped, with no significant peaking in the AM and PM periods. Instead, traffic tends to build consistently throughout the AM period, and then levels-off during the mid-day period before decreasing in the late afternoon.

US 101/Pedrioli Drive intersection - has a similar hourly distribution to US 101/Hoffeldt Lane, but with lower overall volumes. Also, traffic begins to decrease earlier in the afternoon, at about 4:00 PM, compared to 6:00 PM for Hoffeldt Lane.

US 101/Winchuck River Road intersection - generally has the lowest volumes. The hourly distribution of traffic is also somewhat flatter than those for the other locations.

Figure 14



Design Hour Volumes

Design hour traffic volumes are used to measure system performance and are the basis for determining improvement needs. Annual 30th highest hour traffic volumes (30 HVs) are developed for the corridor analysis because it is a commonly used design period for transportation improvements and is also the basis for ODOT's mobility targets. The 30 HVs are developed for the 2012 base year using the count data and following the procedures contained in the ODOT's Analysis Procedures Manual (APM) (See Figure 15).

Because some of the counts are from Year 2008, growth factors are applied to estimate equivalent Year 2012 counts. The growth rates are developed using data from ODOT's traffic volume tables for Years 2008 and 2011. A system peak hour was then selected, representing the single hour in which the highest volumes of the day occur. Along the US 101 within the study area, this was determined to be from 3:00 PM to 4:00 PM.

The counts for the system peak hour are converted to 30 HVs by applying a seasonal factor. The seasonal factors are identified using three different methods described in the APM. For the intersections south of Raymond Lane, the On-Site ATR Method was applied using data from the Winchuck ATR, since the volumes in this area fall within 10% of the ATR volume. For the US 101/Hoffeldt Lane intersection only, a seasonal factor was developed using the ATR Characteristic Table Method. Traffic volumes at this location have characteristics similar to those at the ATR near Gearhart and are within 10% of the Gearhart volumes. For the remainder of the intersections, the Seasonal Trend Table Method was used in which the Coastal Destination Trend was selected. ATRs within this trend group are located on state highways to/within larger coastal city destinations having summer peaks, as well as routes that are favorable for travel between the Willamette Valley and the Coast.

The estimated 30 HVs are balanced and then rounded to the nearest five vehicles. The balancing process considered adjacent land uses and accesses between the intersections. When balancing between intersections with different count years, priority was given to the volumes derived from the Year 2012 counts.

Figure 15



ROADWAY NEEDS (YEAR 2012)

Existing roadway needs are analyzed in the areas of mobility, traffic operations, safety, and geometrics.

SEGMENT MOBILITY NEEDS (YEAR 2012)

The segment capacity analysis was performed according to the methodologies for multi-lane and two-lane highways outlined in the 2000 Highway Capacity Manual (HCM2000) and the APM. Existing mobility needs are identified by comparing volume-to-capacity (v/c) ratio estimates for roadway segments and intersections to the applicable v/c ratio performance targets (See Figure 16). As shown in Table 8, all of the US 101 roadway segments are currently operating well within the OHP mobility performance targets of 0.85, 0.80 and 0.70 v/c.

Table 8

Mainline Analysis Year 2012							
From/To	Milepost	AADT	Traffic Control	Speed Limit	# of Lanes	V/C Ratio	V/C Target
Chetco River Br. - Zimmerman Ln.	358.02 – 358.57	17,600	Signal	45	4	0.28	0.85
Zimmerman Ln. - Hoffeldt Ln.	358.57 – 358.76	13,700	Signal	45	4	0.27	0.85
Hoffeldt Ln. – Benham Ln.	358.76 – 359.32	14,100	Signal	45	4	0.22	0.85
Benham Ln. – Raymond Ln.	359.32 – 359.94	10,400	--	55	4	0.15	0.80
Raymond Ln. – McVay Ln.(north)	359.94 – 361.16	10,100	--	55	4	0.12	0.80
McVay Ln. (north) – OR/CA Border	361.16 – 363.11	8,300	--	55	2	0.27	0.70

INTERSECTION MOBILITY NEEDS (YEAR 2012)

The HCM2000 methodology was applied for signalized intersections because the 2010 Highway Capacity Analysis Manual (HCM2010) procedure does not produce estimates of the v/c ratio, which is the basis of the OHP mobility targets. Mobility targets identify state highway mobility performance expectations and provide a measure by which the existing and future performance of the highway system can be evaluated. The Level of Service (LOS) for signalized intersections is based on the amount of average delay per vehicle for the intersection. A LOS of C was used as an acceptable LOS to identify state highway performance expectations. For unsignalized intersections, the HCM2010 procedure was used to calculate the v/c ratio and LOS for the worst movements on the minor road and US 101 approaches. Typically, left turn movements incur the most delay.

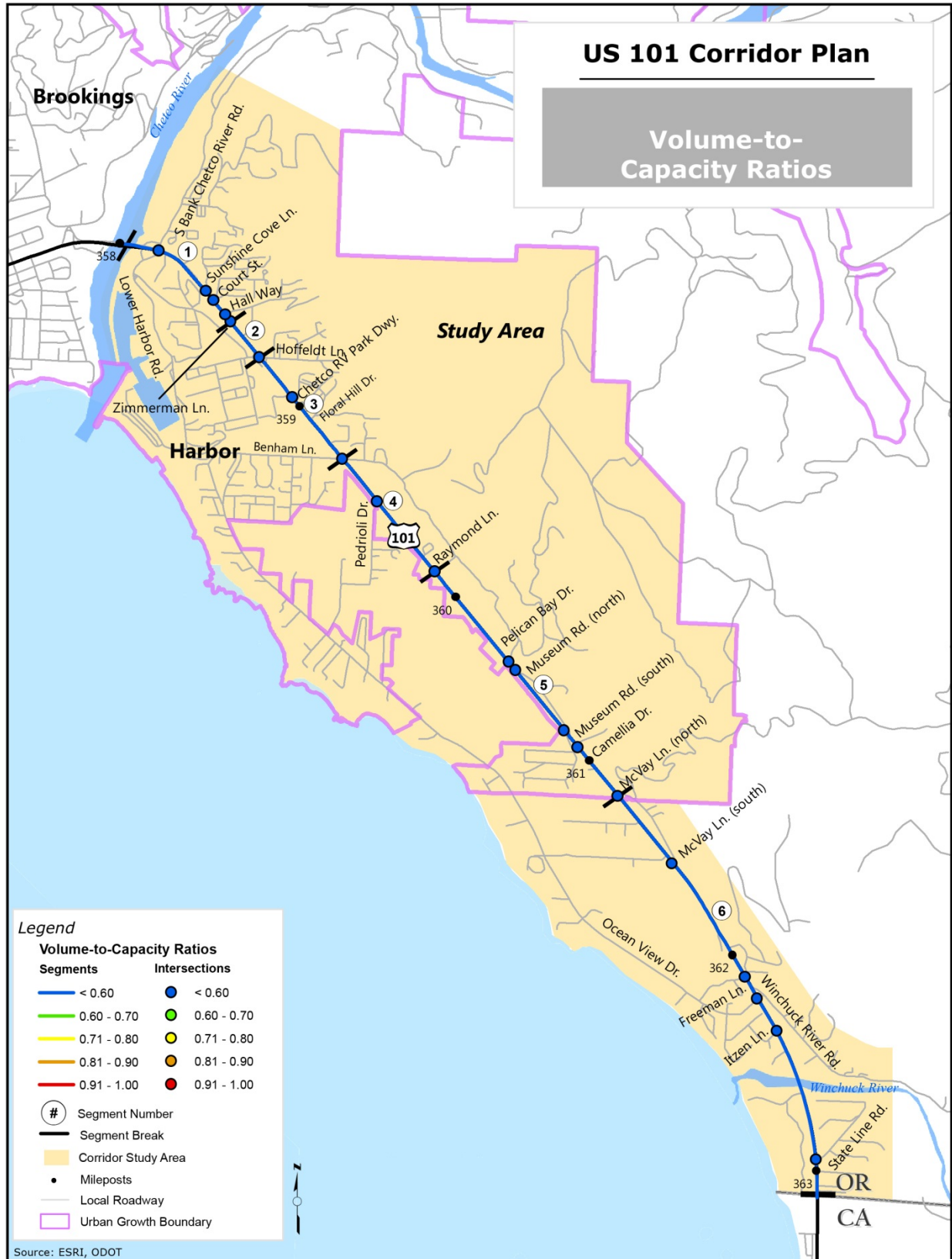
As shown in Table 9, current v/c ratios are less than the OHP mobility targets for all of the US 101 intersections and the current LOS is less than LOS C performance target, indicating that there are no existing mobility needs at these locations. Additionally, traffic queues do not exceed the available storage on any the US 101 or minor road approaches, indicating that there is not a queuing problem. Most of the queues are 50 feet or less.

Table 9

Intersection Analysis Year 2012					
Intersection	V/C Targets	US 101		Minor Road	
		V/C Ratio	LOS	V/C Ratio	LOS
US101/Lower Harbor Dr.-S Bank Chetco River Rd.	0.85	--*	--	0.63	C
US101/Sunshine Cove Ln.	0.85	0.05	B	0.15	D
US101/Court St.	0.85	0.05	B	0.33	D
US 101/Hall Way	0.85	0.02	B	0.10	C
US101/Zimmerman Ln.	0.85	0.64	B	--**	--
US101/Hoffeldt Ln.	0.85	0.53	B	--**	--
US101/Kings Way	0.85	0.01	A	0.04	C
US101/Benham Ln	0.85	0.50	B	--**	--
US101/Pedrioli Dr.	0.80	0.01	A	0.17	C
US101/Raymond Ln.	0.80	0.01	A	0.03	B
US101/Pelican Bay Dr.	0.80	0.01	A	0.02	B
US101/Museum Rd. (North)	0.80	0.01	A	0.01	A
US101/Museum Rd. (South)	0.80	0.01	A	0.02	B
US101/Camellia Dr.	0.80	0.01	A	0.06	B
US101/McVay Ln (North)	0.80	--*	--	0.01	B
US101/McVay Ln (South)	0.70	0.01	A	0.00***	A
US101/Freeman Ln	0.70	0.01	A	0.02	C
US101/Ocean View Dr.- Winchuck River Rd	0.70	0.03	A	0.09	C
US101/Itzen Dr.	0.70	--*	--	0.02	C
US101/State Line Rd	0.70	0.01	A	0.06	B
Unsignalized intersection with no left-turn movement available on US 101 approaches.					
** For signalized intersections, the V/C ratio and LOS are reported for the entire intersection.					
*** Zero volume on the minor road approach.					

(Note: The OHP mobility target for signalized and unsignalized intersections use the v/c ratios in OHP Table 6. The mobility target for minor approaches to unsignalized intersections located inside the City of Brookings UGB and within the Unincorporated Community of Brookings Harbor is the District/Local Interest Road mobility target of 0.90 v/c. The mobility target for minor approaches to unsignalized intersections located outside the Brookings UGB and within rural lands uses the District/Local Interest Road mobility target of 0.75 v/c (OHP Action 1F.1))

Figure 16



PRELIMINARY TRAFFIC SIGNAL WARRANTS (YEAR 2012)

Preliminary traffic signal warrant analysis was conducted for all unsignalized intersections following the procedures in the APM and Manual on Uniform Traffic Control Devices (MUTCD). The results of the analysis indicated that none of the intersections currently meet the traffic signal warrant requirements. This is consistent with the results of the intersection capacity analysis, which showed low v/c ratios for all of the intersections.

TRAFFIC OPERATIONS (YEAR 2012)

Traffic operations needs are analyzed for unsignalized intersections where left-turn lanes or right-turn lanes may be needed. Left-turn lanes may be needed to reduce the possibility of rear-end collisions or improve traffic flow by preventing left-turning vehicles from blocking the flow of through traffic. Right-turn lanes may be needed to reduce the delay of through vehicles behind right-turning traffic and to ease right-turns for drivers from the higher-speed through traffic stream.

TURN LANE NEEDS (YEAR 2012)

Turn lane needs are determined using Criterion 1 – Vehicular Volume contained in the APM (See Figure 17). **(Note:** Refer to Chapter 4 Project Sheets for planned projects addressing the turn lane needs.) As shown in Table 10, turn lane criteria are met for a:

- Northbound right-turn lane at Court Street.
- Southbound right-turn lane at Pedrioli Drive.
- Southbound left-turn lane at Sunshine Cove Lane, Court Street, Hall Way and Kings Way.
- Consider southbound approach of US 101/McVay Lane (south) intersection.
- Consider northbound approach of US 101/Freeman Lane intersection.

(Note: A two (2) way center turn lane exists at these intersections for left-turning vehicles. Left-turn lanes are still needed because the operational characteristics of a left-turn lane are different than those of a two (2) way center turn lane. Although the criteria is not met at the McVay Lane and Freeman Lane locations, consideration should be given to left-turn lanes because of the high advancing and opposing volumes.)

Table 10

**Turn Lane Analysis
Year 2012**

Intersection	Northbound		Southbound	
	Left Turn	Right Turn	Left Turn	Right Turn
Sunshine Cove Ln.	*	No	Yes	*
Court St.	*	Yes	Yes	*
Hall Way Kings Way	*	No	Yes	*
Pedrioli Dr.	*	No	Yes	*
Raymond Ln.	No	No	No	Yes
Pelican Bay Dr.	*	No	No	*
Museum Rd. (north)	*	No	No	*
Museum Rd. (south)	*	No	No	*
Camellia Dr.	*	No	No	*
McVay Ln. (north)	No	No	No	No
McVay Ln. (south)	*	No	No	*
Freeman Ln.	*	No	Consider	*No
Oceanview Dr. / Winchuck River Rd.	Consider	No	No	No
Itzen Dr.	N/A**	No	N/A	No
State Line Rd.	No	*	*	No
	N/A	No	N/A	No
* These are three-legged intersections where not all turning movements are possible. ** Turn lane already exists.				

Figure 17



CRASH HISTORY ANALYSIS (YEAR 2012)

Crash data for the five (5) year period between Years 2007 and 2011 was obtained from ODOT's Crash Analysis and Reporting Unit for use in analyzing existing safety conditions (See Figure 18). The crash database comprises crash reports filed by drivers involved in crashes that result in death, bodily injury, or vehicle damage over \$1,500. **Detailed crash analysis was conducted for the following locations:**

- Intersections identified in the critical crash rate analysis.
- High-frequency crash locations within segments exceeding the statewide crash rate.
- Safety Priority Index System (SPIS) sites.

CRASH RATES (YEAR 2012)

To provide an indication of safety conditions along the corridor, crash rates are calculated as the number of crashes per million vehicle miles traveled (MVMt). The rates are compared to the statewide average crash rate for other principal arterials in rural areas. (**Note:** See Chapter 4 Project Sheets for planned projects to improve highway safety.)

SEGMENT CRASHES (YEAR 2012)

Over the five-year period, there are a total of 77 crashes along the corridor (See Figure 19). These are split almost evenly between fatal/injury-type crashes and property damage only (PDO) crashes. Turning and rear-end crashes accounted for roughly 35% each of the total number of collisions. There are no more than 10% of the crashes in any of the other categories. There are a total of five (5) pedestrian collisions occurring in the northern-end of the corridor. As shown in Table 11, US 101 segments from the Chetco River Bridge to Zimmerman Lane; from Zimmerman Lane to Hoffeldt Lane; from Hoffeldt Lane to Benham Lane; and from Raymond Lane to McVay Lane (North) exceed the Statewide Crash Rate Average of 0.69 MVMt.

Table 11

Crash Analysis Year 2012				
From/To	Milepost	Crash Frequency	Crash Rate (MVMt)*	Statewide Avg. Rate
Chetco River Bridge – Zimmerman Ln.	358.02 – 358.57	17	0.75	0.69
Zimmerman Ln - Hoffeldt Ln.	358.57 – 358.76	19	3.17	0.69
Hoffeldt Ln – Benham Ln.	358.76 – 359.32	18	1.34	0.69
Benham Ln – Raymond Ln.	359.32 – 359.94	3	0.27	0.69
Raymond Ln – McVay Ln. (North)	359.94 – 361.16	14	0.80	0.69
McVay Ln (North) – OR/Calif. Border	361.16 – 363.11	6	0.24	0.69
* Values in bold exceed statewide average crash rate.				

Figure 18

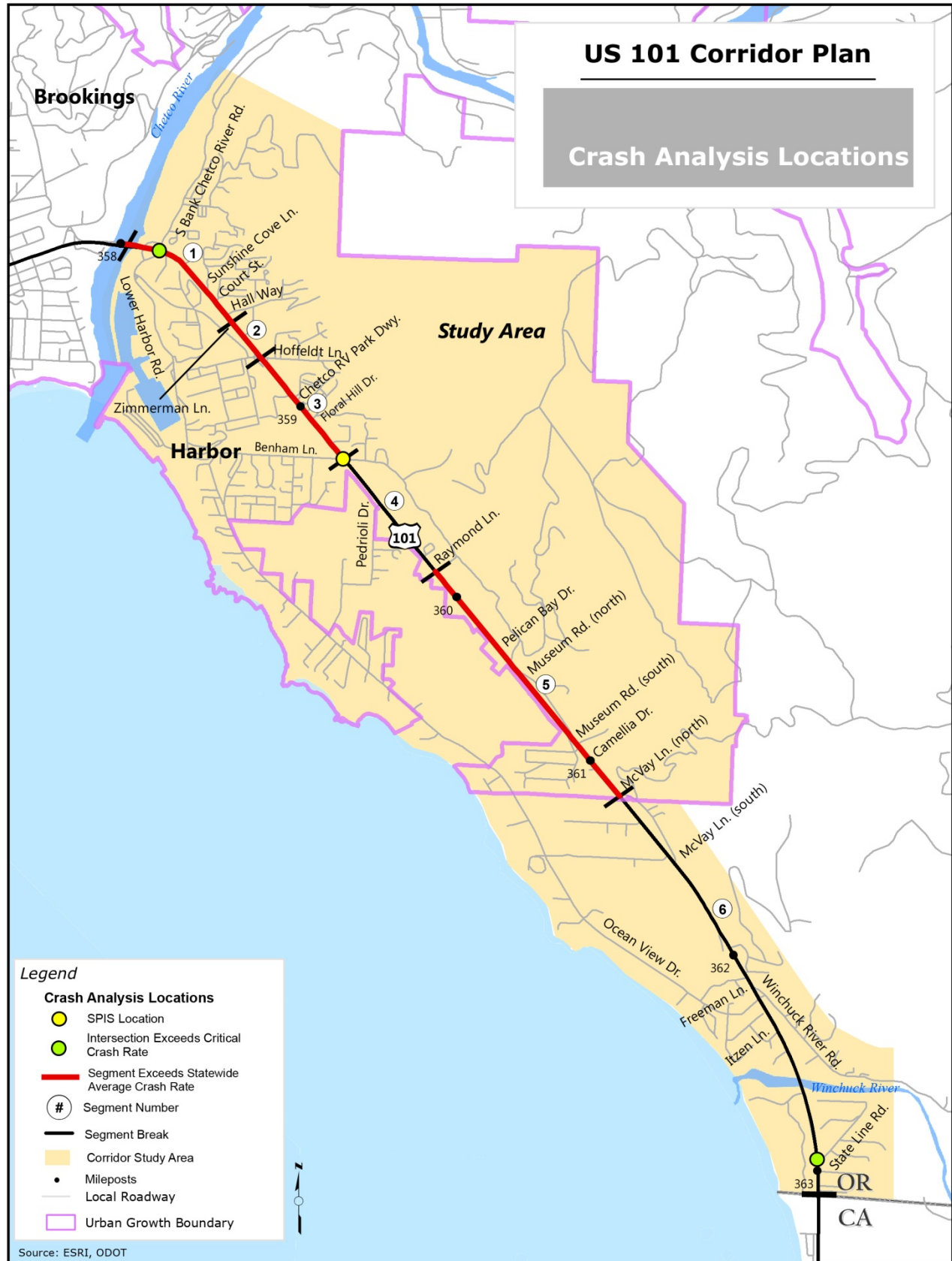
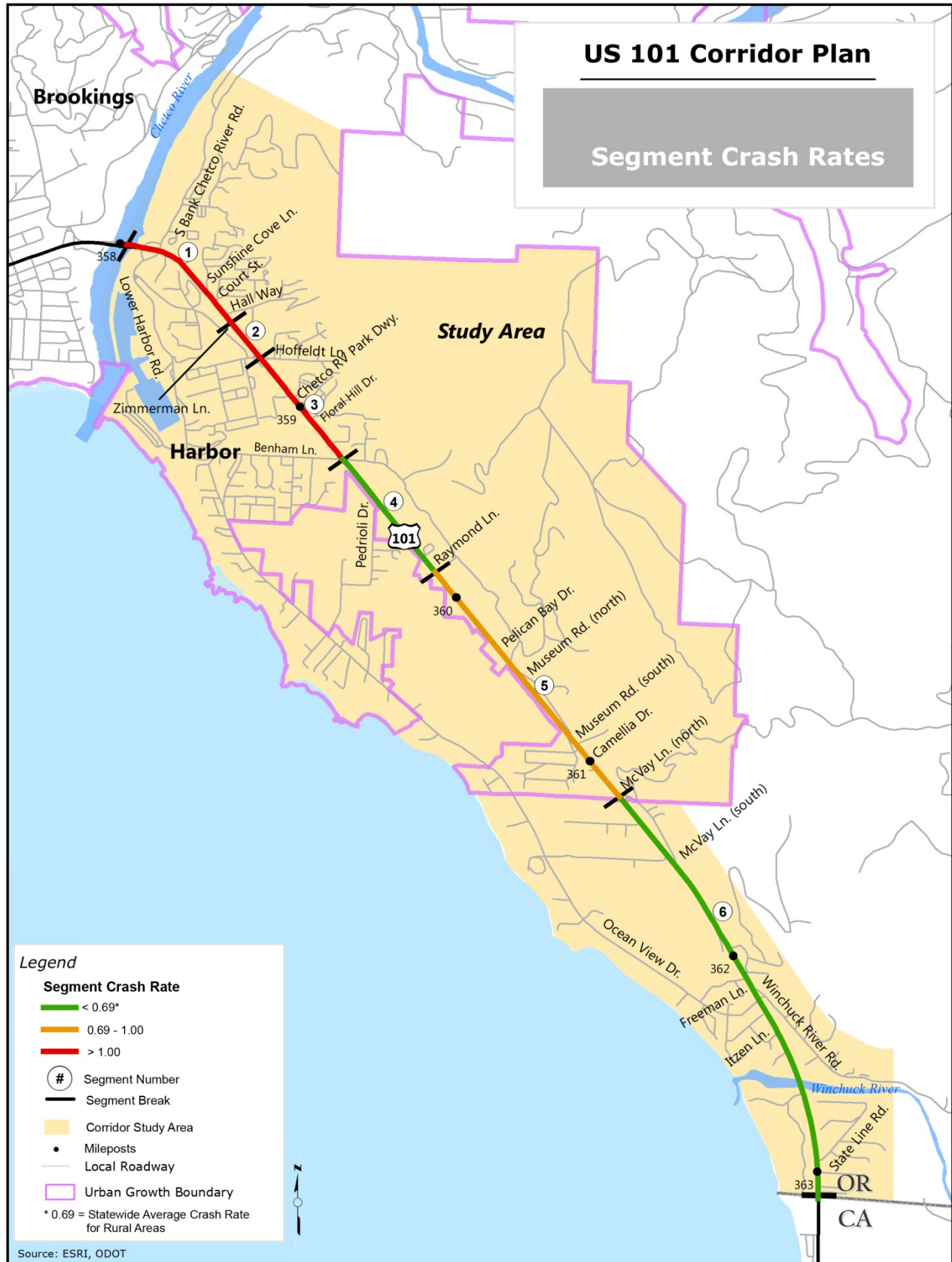


Figure 19



INTERSECTION CRASHES (YEAR 2012)

The critical crash rate described in the Highway Safety Manual (HSM) was used as a performance measure for screening the study intersections to determine where existing safety conditions need to be investigated. Traffic volumes are calculated in terms of Million Entering Vehicles (MEV) at each intersection. Using this method, the observed crash rate at each intersection is compared to a calculated critical crash rate that is unique to each intersection. As shown in Table 12, the intersections of US 101/Lower Harbor Drive/South Bank Chetco River Road, US 101/Benham Lane and US 101/State Line Road are identified for further review.

Table 12

Intersection Crash Analysis Year 2012				
Intersection	Crashes	MEV	Crashes/ MEV	Critical Crash Rate
Lower Harbor Dr./ S. Bank Chetco River Rd*	5	43.72	0.11	0.10
Sunshine Cove Ln	0	33.26	0.00	0.11
Court St	1	34.26	0.03	0.11
Hall Way	1	33.26	0.03	0.11
Zimmerman Ln	9	35.26	0.26	0.58
Hoffeldt Ln	11	28.79	0.38	0.58
Kings Way	0	24.06	0.00	0.13
Benham Ln	12	24.14	0.50	0.58
Pedrioli Dr.	0	18.91	0.00	0.13
Raymond Ln	0	16.09	0.00	0.15
Pelican Bay Dr.	0	14.09	0.00	0.16
Museum Rd (north)	0	13.61	0.00	0.16
Museum Rd (south)	1	13.44	0.07	0.16
Camellia Dr.	1	13.44	0.07	0.16
McVay Ln (north)	1	12.79	0.08	0.16
McVay Ln (south)	0	12.79	0.00	0.16
Freeman Ln	0	12.79	0.00	0.16
Ocean View Dr./Winchuck River Rd	1	13.69	0.07	0.16
Itzen Dr.	0	12.06	0.00	0.17
Stateline Rd	2	11.98	0.17	0.17

* Identified for further review.

SPIS LOCATIONS (YEAR 2012)

ODOT maintains the SPIS for the identification and analysis of locations on the state highway system with potential safety needs. Between Years 2010 and 2012, there was one SPIS site (top 5%) located on US 101 between Sherwood Lane (M.P. 359.21) and Benham Lane (M.P. 359.32). (**Note:** SPIS locations are identified based on the three (3) previous year data and could change during the 20-year planning horizon).

In 2010, the segment between Robin Lane (M.P. 359.99) and the Stateline (M.P. 363.11) was also designated as a Safety Investment Program Category 3 segment. This designation is based on the criterion of three to five fatal or Injury A crashes occurring within the previous three years. There was also one top 10% SPIS location at the intersection of US 101/Benham Lane (M.P. 359.23 – M.P. 359.40). Eight (8) crashes occurred at this location, with two (2) fatalities in Year 2010.

The benefits of roadway lighting could be increased to reduce potential conflicts between traffic and pedestrians. The specific locations where lighting is needed are:

- Chetco River Bridge to Benham Lane Segment (both sides of highway).
- US 101/Zimmerman Lane Intersection.
- US 101/Hoffeldt Lane Intersection.
- US 101/Benham Lane intersection.
- US 101/State Line Road Intersection.

GEOMETRICS (YEAR 2012)

Geometric needs are identified for roadway segments and intersections by comparing existing geometric features to roadway standards. The standards contained in ODOT's Highway Design Manual (HDM) for the rural principal arterial – other classification are used for the comparison. The segment features analyzed are lane width and left and right shoulder widths. The intersection features included intersection angle and the approach width, approach grade, and intersection sight distance on the minor road approaches.

Segment Geometrics (Year 2012)

According to the standards for Resurfacing, Restoration, Rehabilitation (3R) rural roadway projects, the minimum travel lane width for US 101 should be 11 feet and the minimum shoulder width should be 4 feet. Existing lane widths vary between 12 feet and 20 feet, and shoulder widths vary from 5 to 15 feet. As shown in Table 13, all of the lane and shoulder widths meet the standards.

Table 13

Lane and Shoulder Widths Year 2012				
From/To	Milepost	Lane Width (ft.)	Left Shoulder Width (ft.)	Right Shoulder Width (ft.)
Standard		11	4	4
Chetco River Bridge - Zimmerman Ln	358.02 – 358.57	12	10	9
Zimmerman Ln - Hoffeldt Ln	358.57 – 358.76	12	10	9
Hoffeldt Ln – Benham Ln	358.76 – 359.32	12	10	9 – 10
Benham Ln – Raymond Ln	359.32 – 359.94	12	5 – 10	6 – 11
Raymond Ln – McVay Ln (north)	359.94 – 361.16	12	11	11
McVay Ln (north) – OR/CA Border	361.16 – 363.11	12 - 20	8 – 13	5 – 15

Intersection Geometrics

At the US 101/Hoffeldt Lane and US 101/Benham Lane intersections, the pork chop islands are difficult to see. Also, the scale of the islands is reduced by the pedestrian cut-through. The visibility could possibly be improved by repainting.

As shown in Table 14, substandard geometrics exist at the intersections of US 101/Hoffeldt Lane (M.P. 357.98) and US 101/Benham Lane (M.P. 359.32) due to a roughly 45-degree skew angle at both locations.

Barriers exist at two (2) of the intersections to limit traffic movements. At the US 101/Lower Harbor Drive/South Bank Chetco River Road intersection, a median traffic separator restricts through movements on Lower Harbor Drive/South Bank Chetco River Road. A concrete barrier at the north intersection of US 101/McVay Lane (north) prohibits left-turns out of McVay Lane, so that the only permitted movement is right-turns onto northbound US 101.

Table 14

Intersection Geometrics Year 2012				
Intersection	Approach Width (ft.)	Approach Grade Sufficient?	Intersection Angle ≥ 60 Degrees?	Intersection Sight Distance Sufficient?
Standard	22	$\leq 3\%$	≥ 60 Degrees	500 ft. (45 mph) 610 ft. (55 mph)
Lower Harbor Dr/S Bank Chetco River Rd	28/25*	No/Yes*	No/Yes*	Yes
Sunshine Cove Ln	43	Yes	No	Yes
Court St	60	Yes	No	Yes
Hall Way	24	No	Yes	Yes
Zimmerman Ln**	--	Yes	Yes	--
Hoffeldt Ln**	--	Yes	No	--
Chetco RV Park Dwy	30	Yes	Yes	Yes
Floral Hill Dr	35	Yes	Yes	Yes
Benham Ln**	--	Yes	No	--
Pedrioli Dr	40	Yes	Yes	Yes
Raymond Ln	18	Yes	Yes	Yes
Pelican Bay Dr	28	Yes	Yes	Yes
Museum Rd (North)	67	Yes	No	Yes
Museum Rd (South)	48	Yes	No	Yes
Camellia Dr	52/22	Yes	Yes	Yes
McVay Ln (North)	60	Yes	No	Yes
McVay Ln (south)	50	Yes	Yes	Yes
Freeman Ln	50/20	Yes	Yes	Yes
Oceanview Dr/Winchuck River Rd	42/47	Yes	No	Yes
Itzen Dr	26	Yes	Yes	Yes
Stateline Rd	76/32	Yes	Yes	No
* Westbound/eastbound.				
** Approach width and intersection sight distance standards are not applicable for signalized intersections.				

3. FUTURE BASELINE CONDITIONS (YEAR 2037)

The analysis of future baseline conditions (Year 2037) examines long-term highway operational and safety concerns. The Year 2037 traffic forecast estimates future traffic volumes for the portion of US 101 within the modeling area, bounded by the Chetco River Bridge and McVay Lane (north). To the south of the modeling area, future volumes are estimated using the historical traffic growth data from ODOT's future volume tables.

3.1. TRAFFIC FORECAST (YEAR 2037)

The Year 2037 traffic forecasts are developed based on a combination of historical traffic growth trend data and output from the Brookings travel demand forecasting model, developed and maintained by ODOT's Transportation Planning and Analysis Unit (TPAU). The forecast traffic volumes reflect two assumptions:

1. The Harbor Hills development includes a 700-acre master planned community to the east of US 101 above Harbor. It is bounded roughly by the area designated as Master Plan Area (MPA) in the Curry County zoning map.
2. The decrease in traffic growth between Years 2008 and 2012 is reflected by extrapolating the Year 2027 model volumes by only two (2) years rather than five (5) years to estimate the Year 2037 volumes. This was necessary because the decrease was not represented in the Year 2027 model forecast.

(**Note:** The reduction of the Year 2037 volumes using this method was recommended by ODOT TPAU staff.)

FUTURE TRAFFIC VOLUMES (YEAR 2037)

The Year 2037 Annual Average Daily Trips (AADT) volumes are expected to transition from greater than 25,000 vehicles per day (vpd) on the north-end of the corridor to less than 15,000 vpd on the south end (See Figure 20). For the southern portion of the corridor outside of the modeling area, an annual growth rate of 1.2% are calculated based on the Years 2009 and 2012 traffic volumes at the Automatic Traffic Recorder (ATR) near Winchuck River Rd. (M.P. 362.00). The volumes to the south of Benham Lane are expected to be less than 2,000 vpd.

Figure 20



FUTURE TRAFFIC NEEDS (YEAR 2037)

Future traffic needs are analyzed in the areas of mobility, traffic operations, safety, and geometrics. Future mobility needs are identified by comparing volume-to-capacity (v/c) ratio estimates for roadway segments and intersections to the appropriate v/c ratio standards. The future year analysis is conducted for the No-Build scenario, which is defined as the existing transportation system, plus any programmed transportation improvements.

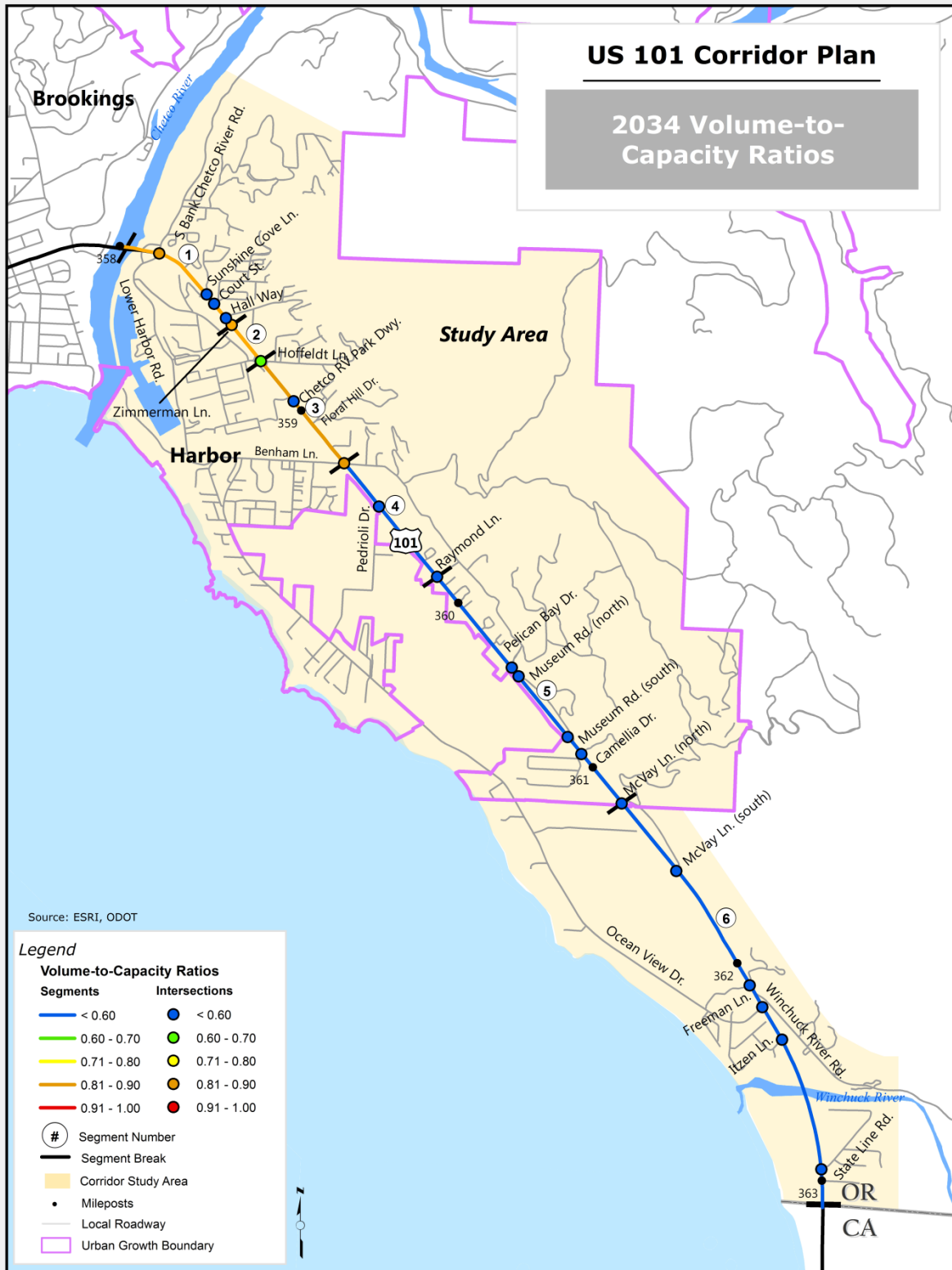
Segment Mobility (Year 2037)

As shown in Table 15, the US 101 segments between the Hoffeldt Lane and the Benham Lane intersection exceeds the OHP mobility performance target of 0.85, with v/c ratios of 0.84 or 0.89. The US 101 segments south of the Benham Lane intersection to the Oregon/California border have low v/c ratios and operate well within the OHP mobility targets (See Figure 21).

Table 15

Mobility Summary – Roadway Segments Year 2037		
From/To	Mobility Target (V/C Ratio)	V/C Ratio
Chetco River Bridge - Zimmerman Ln	0.85	0.84
Zimmerman Ln - Hoffeldt Ln	0.85	0.84
Hoffeldt Ln – Benham Ln	0.85	0.89
Benham Ln – Raymond Ln	0.80	0.22
Raymond Ln – McVay Ln (north)	0.80	0.18
McVay Ln (north) – OR/CA Border	0.70	0.34

Figure 21



INTERSECTION MOBILITY (YEAR 2037)

As shown in Table 16, in Year 2037 the signalized intersection at US 101/Benham Lane is expected to be above the OHP mobility target of 0.85 v/c. The US 101/Benham Lane intersection is not expected to meet the LOS C performance target. The signalized intersection at W. Benham Lane/US 101/E. Benham Lane is not expected to meet the both the OHP mobility target of 0.85 v/c or the LOS C performance target.

Additionally, there are several locations with traffic queues that are expected to exceed the available storage on US 101 or minor road approaches. These locations include the following:

1. Southbound right turn from South Bank Chetco River Road onto US 101.
2. Westbound approach to Court Street.
3. Eastbound left turn from Zimmerman onto northbound US 101.
4. Southbound left and right turn from US 101 to Benham Lane.
5. Northbound left turn from US 101 to Benham Lane.

Table 16

Mobility Summary – Intersections Year 2037

Intersection	Mobility Standard	US 101		Minor Road	
		V/C Ratio	LOS	V/C Ratio	LOS
Lower Harbor Dr./US 101/S Bank Chetco River Rd	0.85	_*	-	0.90	F
US 101/Sunshine Cove Ln	0.85	0.08	B	0.14	C
US 101/Court St	0.85	0.09	B	0.34	D
US 101/Hall Way	0.85	0.04	B	0.12	C
US 101/Zimmerman Ln	0.85	0.84	C	_**	-
US 101/Hoffeldt Ln	0.85	0.70	B	_**	-
US 101/Chetco RV Park Dwy.	0.85	0.02	B	0.06	C
US 101/Benham Ln	0.85	0.89	D	_**	-
US 101/Pedrioli Dr.	0.80	0.01	A	0.37	E
US 101/Raymond Ln	0.80	0.12	A	0.28	C
US 101/Pelican Bay Dr.	0.80	0.11	A	0.30	C
US 101/Museum Rd (North)	0.80	0.01	A	0.01	B
US 101/Museum Rd (South)	0.80	0.01	A	0.03	C
US 101/Camellia Dr.	0.80	0.02	A	0.20	C
US 101/McVay Ln (North)	0.80	0.02	A	0.07	B
US 101/McVay Ln (South)	0.70	0.01	A	0.03	C
US 101/Freeman Ln	0.70	0.01	A	0.02	C

US 101/Ocean View Dr.-Winchuck River Rd	0.70	0.04	A	0.14	C
US 101/Itzen Dr.	0.70	-*	-	0.02	C
US 101/State Line Rd	0.70	0.01	A	0.10	C
* Unsignalized intersection with no left-turn movement available on US 101 approaches.					
** For signalized intersections, the V/C ratio and LOS are reported for the entire intersection.					

(**Note:** The OHP mobility targets for signalized and unsignalized intersections use the v/c ratios in OHP Table 6. The mobility target for minor approaches to unsignalized intersections located inside the City of Brookings UGB and within the Unincorporated Community of Brookings Harbor is the District/Local Interest Road mobility target of 0.90 v/c. The mobility target for minor approaches to unsignalized intersections located outside the Brookings UGB and within rural lands uses the District/Local Interest Road mobility target of 0.75 v/c (OHP Action 1F.1))

PRELIMINARY TRAFFIC SIGNAL WARRANTS (YEAR 2037)

Preliminary traffic signal warrant analysis are conducted for all unsignalized intersections following the procedures in the APM and MUTCD. The results of the analysis indicated that none of the unsignalized intersections are expected to meet the traffic signal warrant requirements. This is consistent with the results of the intersection capacity analysis, which showed that all of the unsignalized intersections are not expected to exceed the OHP mobility targets.

3.2. FUTURE TRAFFIC OPERATIONS (YEAR 2037)

Traffic operations needs are analyzed for unsignalized intersections where left-turn lanes or right-turn lanes may be needed (See Figure 22). Turn lane needs are determined using Criterion 1 – Vehicular Volume contained in ODOT’s APM.

1. Left-turn lanes may be needed to reduce the possibility of rear-end collisions or improve traffic flow by preventing left-turning vehicles from blocking the flow of through traffic.
2. Right-turn lanes may be needed to reduce the delay of through vehicles behind right-turning traffic and to ease right-turns for drivers from the higher-speed through traffic stream.

TURN LANE CRITERIA (YEAR 2037)

As shown in Table 17, the turn lanes needs are consistent with the existing conditions turn lane needs. The only difference is that the southbound left turn at McVay Lane (South) and the northbound left turn at Freeman Lane are expected to meet turn lane warrants in the future.

Table 17

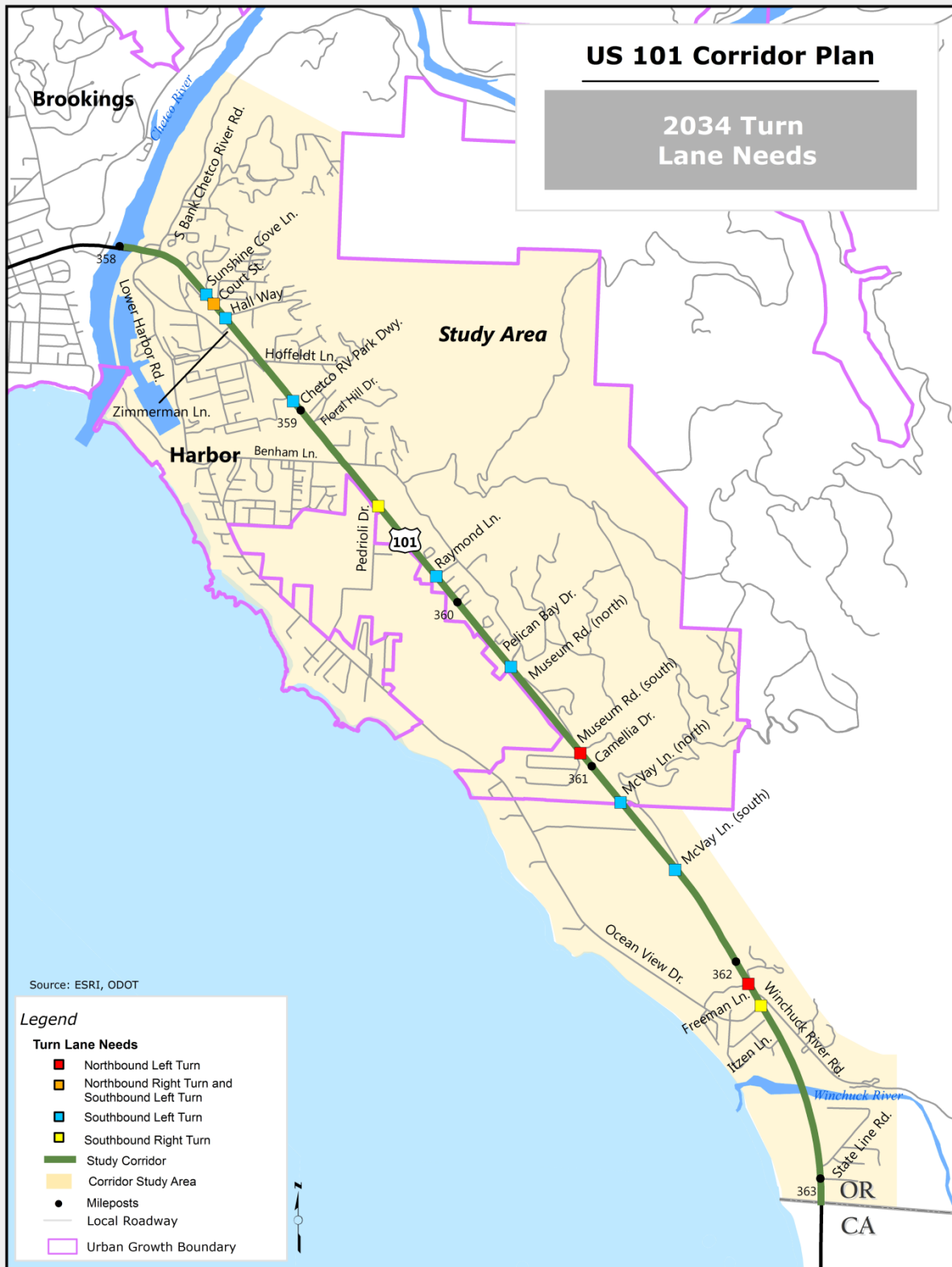
**Turn Lane Needs
Year 2037**

Intersection	Northbound		Southbound	
	Left Turn	Right Turn	Left Turn	Right Turn
Sunshine Cove Ln.	*	No	Yes	*
Court St.	*	Yes	Yes	*
Hall Way	*	No	Yes	*
King Way	*	No	Yes	*
Pedrioli Dr.	No	No	No	Yes
Raymond Ln.	*	No	No	*
Pelican Bay Dr.	*	No	No	*
Museum Rd. (North)	*	No	No	*
Museum Rd. (South)	*	No	No	*
Camellia Dr.	No	No	No	No
McVay Ln. (North)	*	No	No	*
McVay Ln. (South)	*	No	Consider	*No
Freeman Ln.	Consider	No	No	No
Oceanview Dr. / Winchuck River Rd.	N/A**	No	N/A	No
Itzen Dr.	No	*	*	No
Stateline Rd.	N/A	No	N/A	No

* These are three-legged intersections where not all turning movements are possible.

** Turn lane already exists.

Figure 22



3.1 FUTURE SAFETY NEEDS (YEAR 2037)

The HSM contains Crash Modification Factors (CMFs) which can be used to estimate future crash rates. The CMFs are used to adjust estimates of average crash frequency for the effects of specific geometric design and traffic control features for local sites. Some of the CMFs are based on traffic volume.

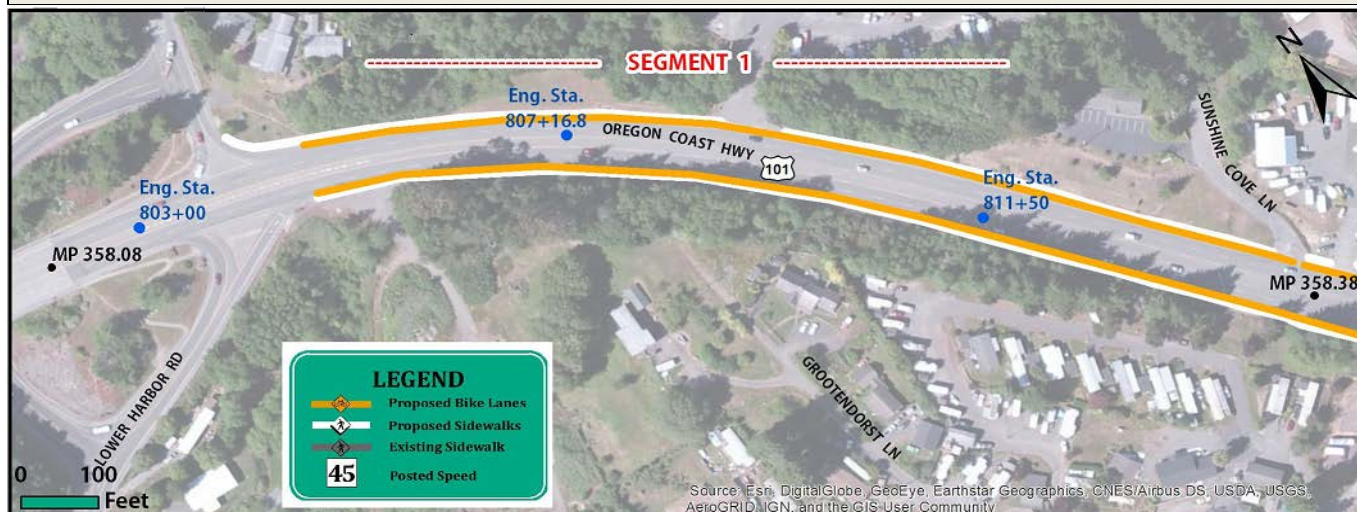
Roadway Segments - the volume-based CMFs for which data is available is the lane width CMF and shoulder width CMF. The CMF values for both of these geometric features do not vary above the 2,000 vpd level. Because the existing and future volumes for all segments are above this level, there is no difference between the base year and future year composite CMFs.

4. PROJECT SHEETS

Thirteen (13) project sheets have been prepared for each corridor plan improvement identifying:

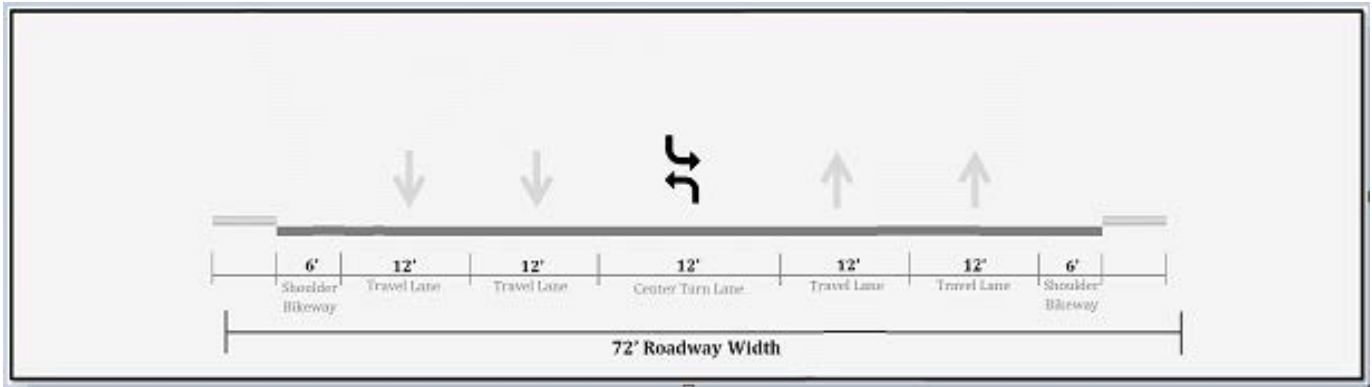
- Name
- Location
- Recommended Improvement
- Project Purpose
- Result of Improvements (i.e., how it addresses deficiencies)
- Considerations/Potential Impacts
- Cost Estimate – Does not include:
 - o PE – Cost to design the project;
 - o Inflation – Cost to build the project in a future year;
 - o CE – Cost to oversee construction of the project;
 - o R/W – Cost to acquire right of way; and
 - o Utilities – Cost to install utilities.
- Implementation (priority, phasing, triggers)
- Illustration

PROJECT 1: US 101 - CHETCO RIVER BRIDGE TO SUNSHINE COVE LANE - BROOKINGS HARBOR (TRANSITION & DESIGN CONSTRAINT SEGMENT)

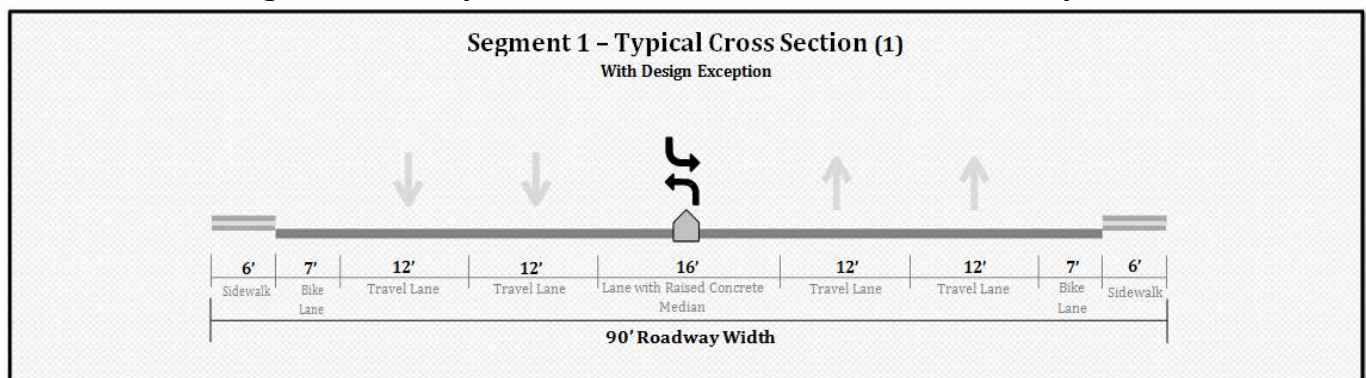


Purpose	Provide connectivity of bicycle facilities to support all transportation modes and make the highway safer.
Description	Add 7' wide bike lanes between the Chetco River Bridge and Sunshine Cove Lane.
Mile Point	358.08 to 358.38
Roadway Characteristics	- US 101 is 4-lanes on the Chetco River Bridge and transitions to 5-lanes just south of the Lower Harbor Road/US 101/South Bank Chetco River Road intersection. - US 101 speed is 45 MPH. - US 101 transition segment has an existing raised concrete barrier between the Chetco River Bridge and just south of the Lower Harbor Road/US 101/South Bank Chetco River Road intersection. - US 101 design constraint segment has steep slopes on both sides of the highway between the end of the raised concrete median and end of the guardrail just south of the Seabird RV Park road approach.
Proposed Improvement Addresses Deficiencies	- Installing stripes and markings for designated 7' wide bike lanes provides connectivity by filling the gaps within the existing bicycle network. - Sidewalks were added along the segment in Year 2015 and 2016.
Additional Considerations	- Upgrade ramps to ADA-compliant ramps. - A design exception is required for a 16' wide center lane within the design constraint segment. - Remove existing on-street parking within designated bike lanes. - Coordinate Project 1 with Project 7.
Cost Option	\$20,000
Implementation	Medium Term (5 to 10 years)

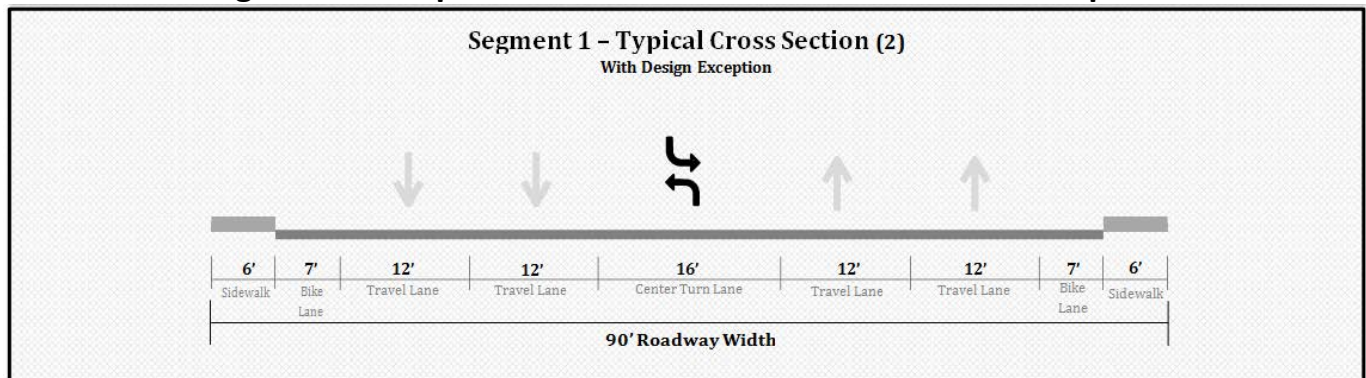
Segment 1 - Existing Cross Section



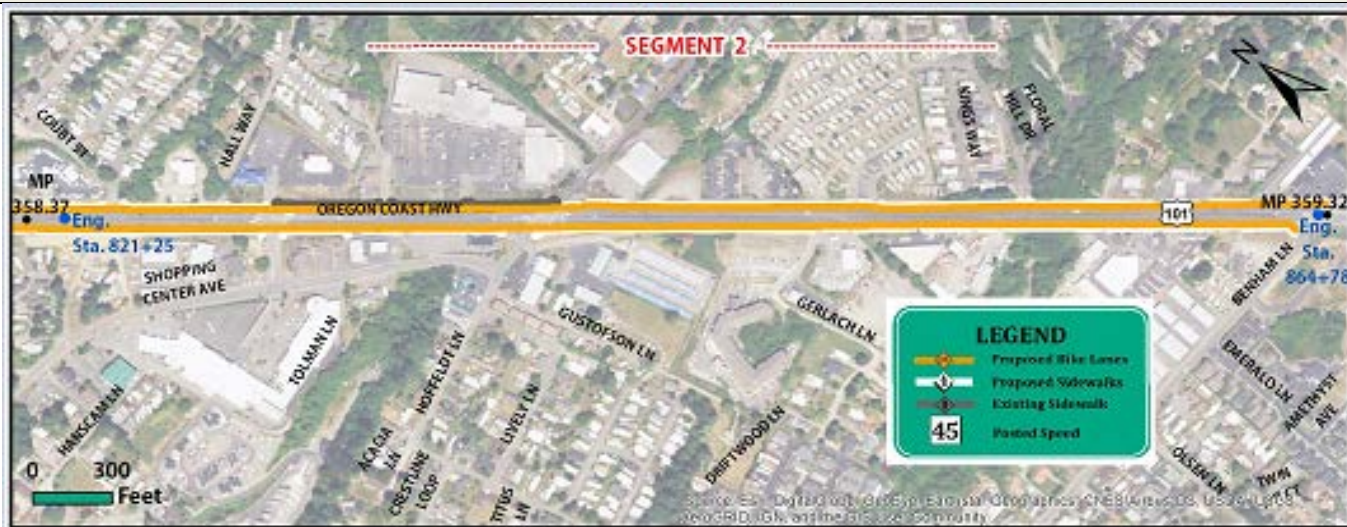
Segment 1- Proposed Cross Section - Raised Median Option



Segment 1- Proposed Cross Section - No Raised Median Option

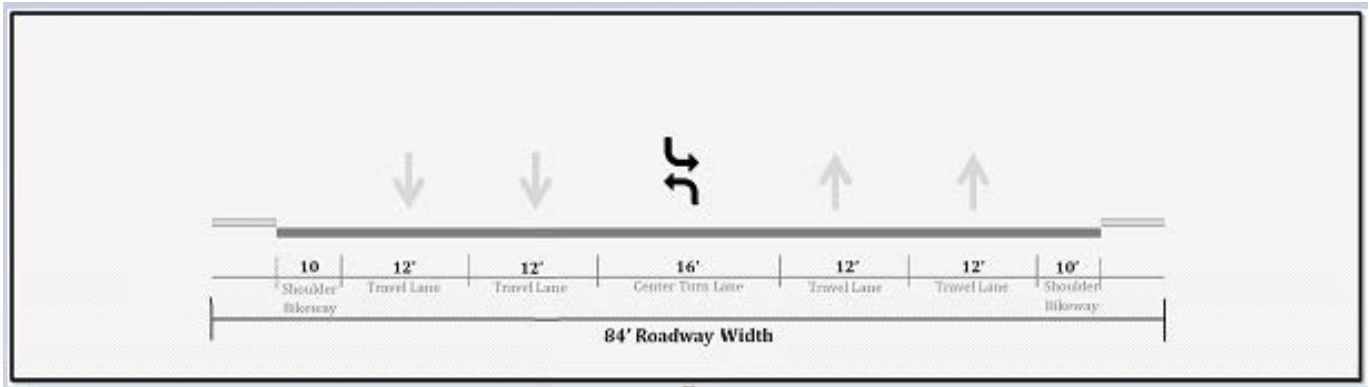


PROJECT 2: US 101 - SUNSHINE COVE LANE TO BENHAM LANE (BROOKINGS-HARBOR) BIKE LANE AND SIDEWALK IMPROVEMENTS

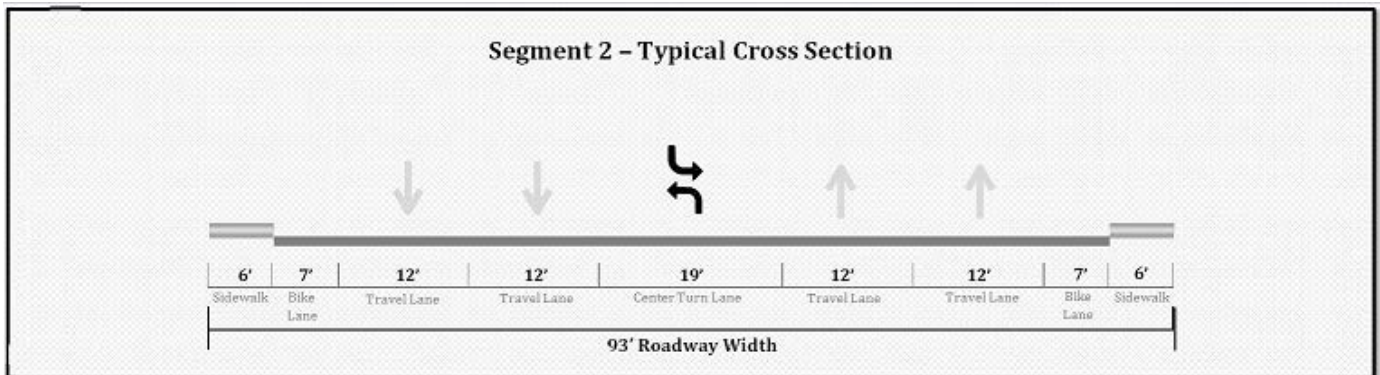


Purpose	Provide connectivity of bicycle and pedestrian facilities to support all transportation modes and make the highway safer.
Description	Add 6' wide sidewalks and add 7' wide bike lanes to improve bike and pedestrian connectivity between Sunshine Cove Lane and Benham Lane.
Mile Point	358.38 to 359.32
Roadway Characteristics	- US 101 is 5-lanes within the Brookings-Harbor area. - US 101 speed is 45 MPH. - Roadway widths range from 92' to 124' along this segment.
Proposed Improvement Addresses Deficiencies	- Installing 6' wide sidewalks with ADA-compliant ramps provides connectivity by filling in sidewalk gaps within the existing pedestrian network. - Installing stripes and markings for designated 7' wide bike lanes and ADA-complaint curb ramps provides connectivity by filling in bike lane gaps within in the existing bicycle network.
Additional Considerations	- Access management should be considered to modify, consolidate, close and/or relocate existing approaches as part of delivery of a project. - Landscape buffers can be provided through an IGA between ODOT and City/County for landscape maintenance. - Street lighting must comply with ODOT lighting policy and be provided through an IGA between ODOT and City/County. - Remove existing vehicular parking within designated bike lanes. - Coordinate Project 2 with Projects 8, 9 and 10.
Cost Option	\$385,000 for sidewalk and driveway improvements (excludes lighting and/or landscape maintenance)
Implementation	Medium Term (5 to 10 years)

Segment 2 - Existing Cross Section



Segment 2 - Proposed Cross Section

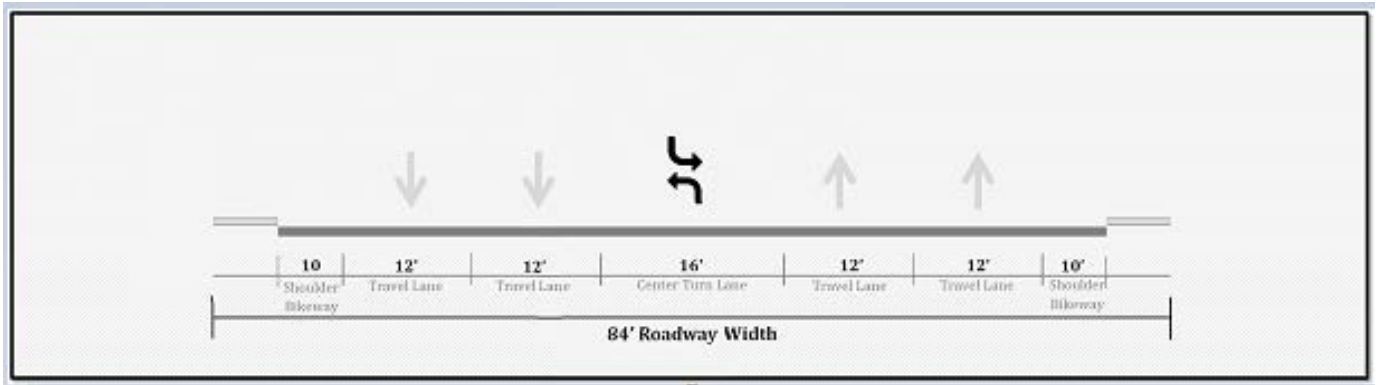


PROJECT 3: US 101 - BENHAM LANE TO NORTH MCVAY LANE (BROOKINGS UGB) CENTER TURN LANE AND SHOULDER IMPROVEMENTS

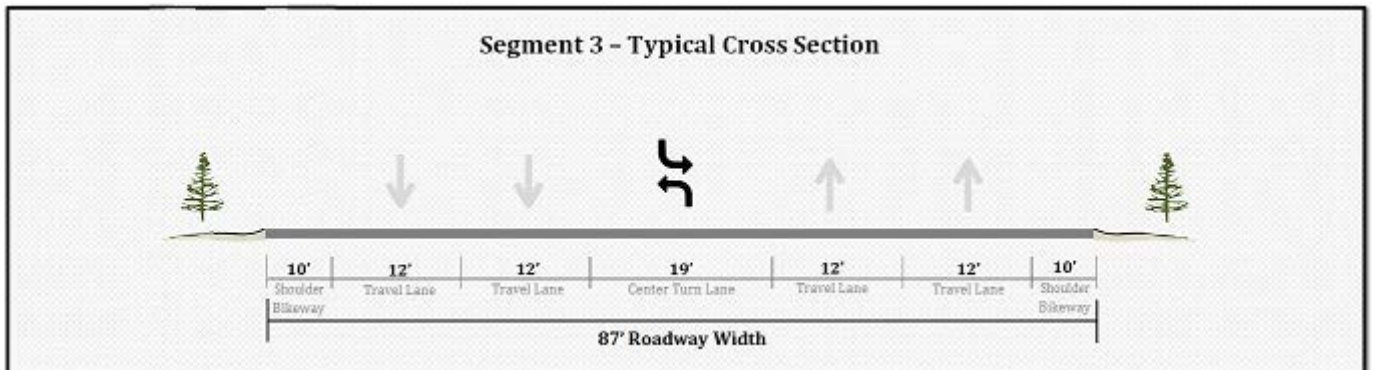


Purpose	Provide safe and accessible travel options for bicyclists, pedestrians, and vehicles to make the highway safer.
Description	Add a 19' wide center lane between Raymond Lane and McVay Lane (North); and Upgrade and rebuild deficient shoulders to 10' wide paved shoulder bikeway between Benham Lane and McVay Lane (North).
Mile Point	359.32 to 361.16
Roadway Characteristics	- US 101 is 5-lanes with paved shoulders. - US 101 speed is 55 MPH. - Roadway widths range from 74' to 85' along this segment.
Proposed Improvement Addresses Deficiencies	- Installing a 19' wide center lane between Raymond Lane and McVay Lane (North) provides greater separation between the opposing traffic flows than the existing 16' center turn lane with 4-foot wide painted median. - Upgrading and rebuilding deficient shoulders to 10' wide paved shoulder bikeway provides adequate separation for pedestrian and bicycle facilities from travel lanes within a high speed rural area.
Additional Considerations	- Consider restriping US 101 to two (2) southbound lanes and one (1) northbound lane with a center lane as an interim fix; or - Consider restriping US 101 to five (5) lanes with shoulder rebuilds as an interim fix. - Access management should be considered to modify, consolidate, close and/or relocate existing approaches as part of delivery of a project. - Driver feedback signs could be placed in the northbound direction to reduce speeds and improve safety. - Coordinate Project 3 with Projects 10 and 11.
Cost Option	\$3,800,000
Implementation	Long Term (10 to 20 years)

Segment 3 - Existing Cross Section



Segment 3 - Proposed Cross Section

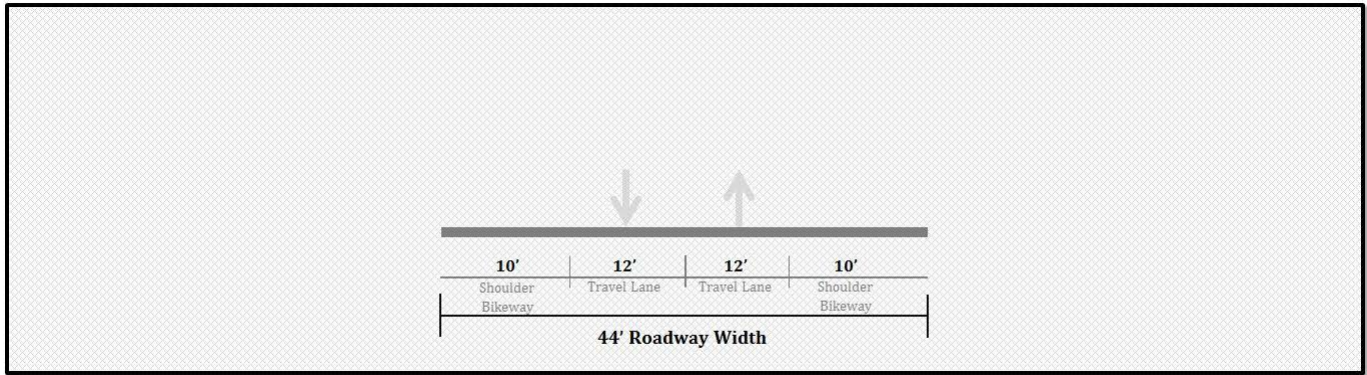


PROJECT 4: US 101 – NORTH MCVAY LANE TO APPLE HILL RV PARK (RURAL) CENTER TURN LANE AND SHOULDER IMPROVEMENTS

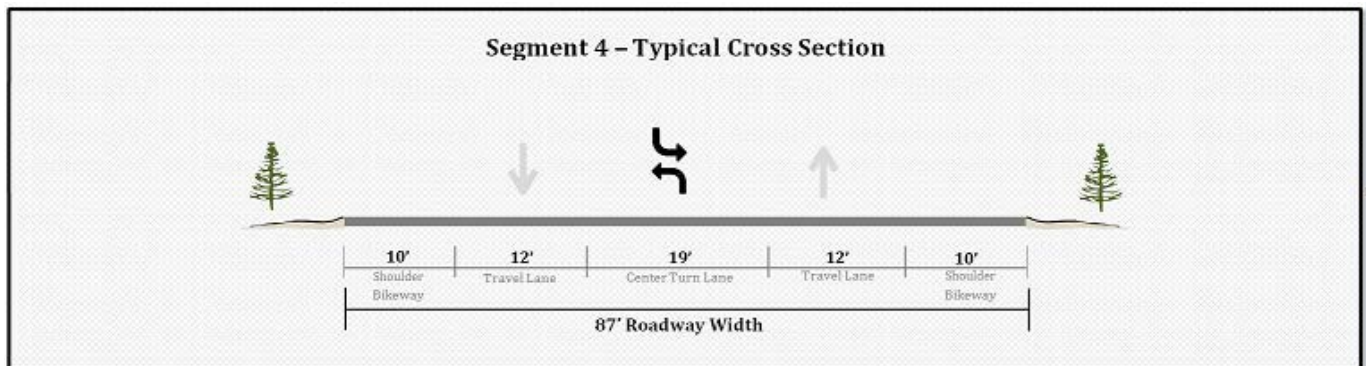


Purpose	Provide safe and accessible transportation facilities for vehicular, bicycle and pedestrian travel modes within a transition area to make the highway safer.
Description	Add a 19' wide center lane; upgrade and rebuild deficient shoulders to 10' wide paved shoulder bikeway; and add lane reduction pavement arrows to facilitate a transition area from 4-lanes to 2-lanes between McVay Lane (North) and the Apple Hill RV Park.
Mile Point	361.16 to 361.58
Roadway Characteristics	• US 101 transitions from 4-lanes to 2-lanes within this segment. • Southbound US 101 is 4-lanes, approximately 1,000 feet north of McVay Lane (North) intersection. • Southbound US 101 is 2-lanes at the Apple RV Park, just south of McVay Lane (South) intersection. • US 101 speed is 55 MPH. • Roadway widths range from 45' to 54' along this segment.
Proposed Improvement Addresses Deficiencies	• Installing a 19' wide center lane provides greater separation from opposing traffic travel lane and provides a refuge for vehicles turning onto McVay Lane (South). • Upgrading and rebuilding deficient shoulders to 10' wide paved shoulder bikeway provides adequate separation for pedestrian and bicycle facilities from travel lanes within a high speed rural area. • Installing lane reduction pavement arrows before left lane end signs warn drivers of narrowing roadway.
Additional Considerations	Evaluate effects on weigh station operations, and identify appropriate tapers for the transition area.
Cost Option	\$1,500,000
Implementation	Long Term (15 to 20 years)

Segment 4 - Existing Cross Section



Segment 4 - Proposed Cross Section

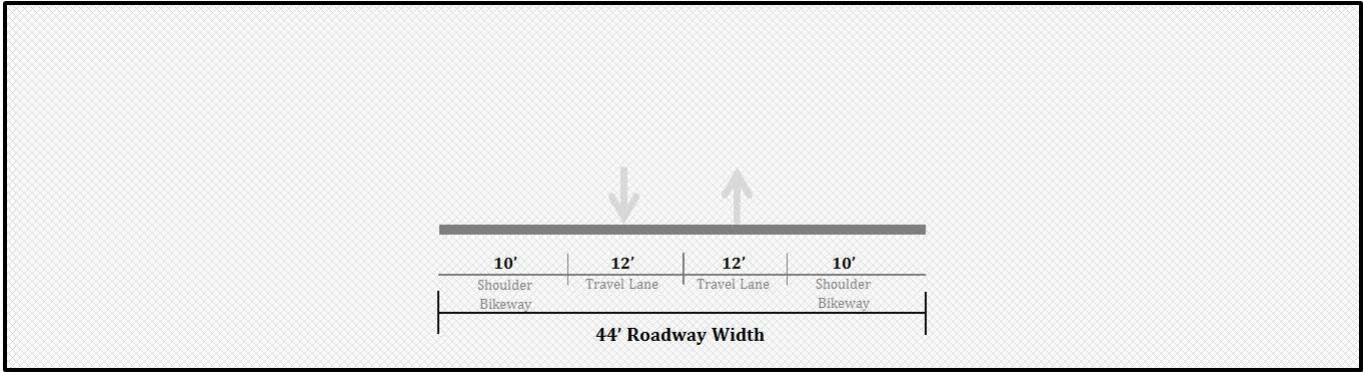


PROJECT 5: US 101 - APPLE HILL RV PARK TO STATELINE ROAD (RURAL) NO IMPROVEMENTS



Purpose	Provide safe and accessible bicycle and pedestrian facilities within a high speed rural area to make the highway safer.
Description	Maintain the existing 2-lane rural cross section with 12' wide travel lanes and 10' wide paved shoulder bikeway between the Apple Hill RV Park and Stateline Road.
Mile Point	361.58 to 362.95
Roadway Characteristics	- US 101 is 2-lanes with paved shoulders. - US 101 speed is 55 MPH - Roadway widths range from 45' to 64' along this segment.
Proposed Improvement Addresses Deficiencies	Maintain safe and accessible bicycle and pedestrian facilities within a high speed rural area.
Additional Considerations	- Need to address the bicycle and pedestrian facilities on the Winchuck Bridge. The existing bridge surface does not have 10' wide paved shoulders bikeways. - Future bridge work will need to match the corridor plan's 2-lane rural cross section for this segment. - Coordinate Project 5 with Project 12.
Cost Option	\$2,800,000
Implementation	Long Term (10 to 20 years)

Segment 5 - Existing Cross Section

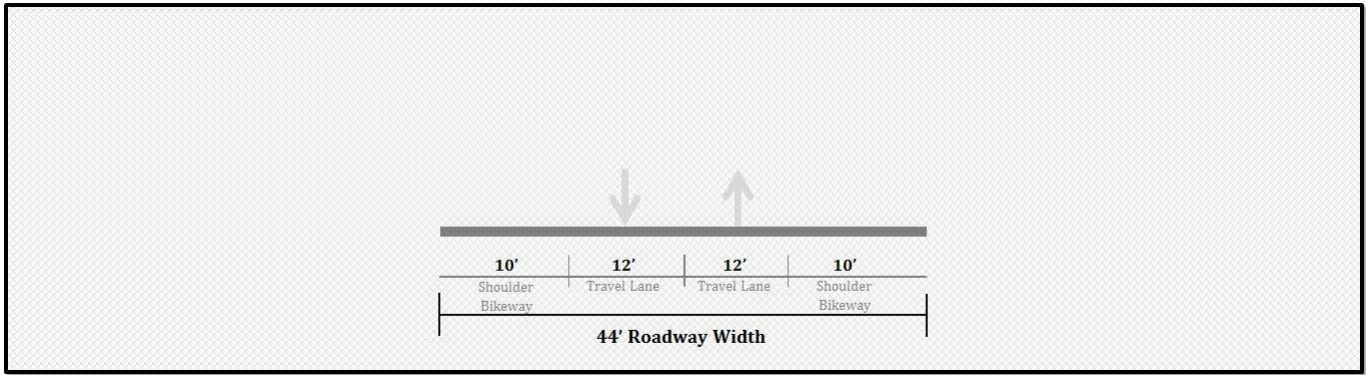


PROJECT 6: US 101 - STATELINE ROAD TO OREGON-CALIFORNIA BORDER – RURAL CENTER TURN LANE AND SHOULDER IMPROVEMENTS

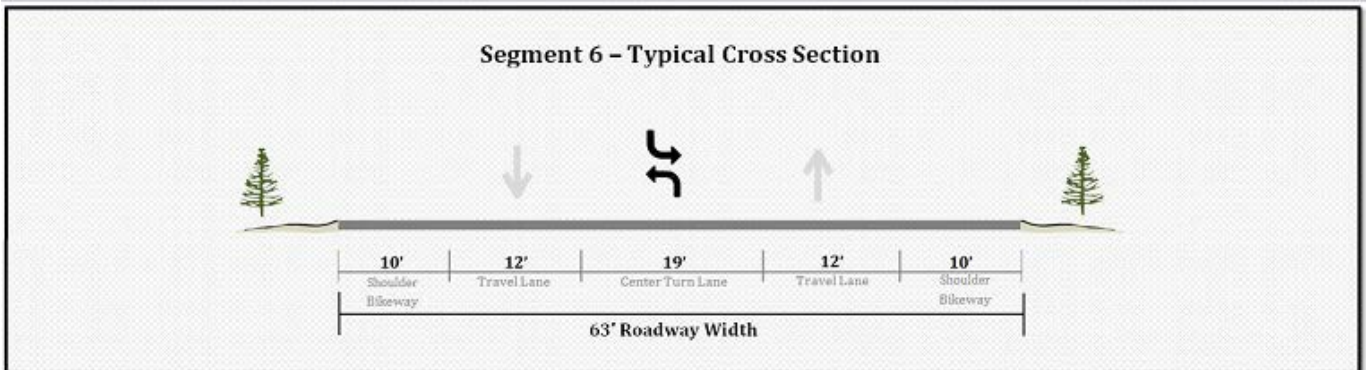


Purpose	Provide safe and accessible transportation facilities for vehicular, bicycle and pedestrian travel modes within a highway speed rural area to make the highway safer.
Description	Add a 19' wide center lane; and upgrade and rebuild deficient shoulders to 10' wide paved shoulder bikeway between Stateline Road and the Oregon/California border.
Mile Point	362.95 to 363.11
Roadway Characteristics	• US 101 is 2-Lanes with paved shoulders. • US 101 speed is 55 MPH. • Roadway width ranges from 52' to 61' along this segment.
Proposed Improvement Addresses Deficiencies	• Installing 19' wide center lane provides greater separation from opposing traffic travel lane. Matches future 3-lane cross section for US 101 in California. • Upgrading and rebuilding deficient shoulders to 10' wide paved shoulder bikeway provides adequate separation of pedestrian and bicycle facilities from travel lanes in high speed rural areas.
Additional Considerations	• Access management improvements for the Del Cur Supply store. • Sight distance restriction caused by guardrail limits vehicles on the Crissey Field State Park access road to see approaching traffic on northbound US 101. • Coordinate Project 6 with Project 13 and Caltrans.
Cost Option	\$650,000
Implementation	Long Term (10 to 20 years)

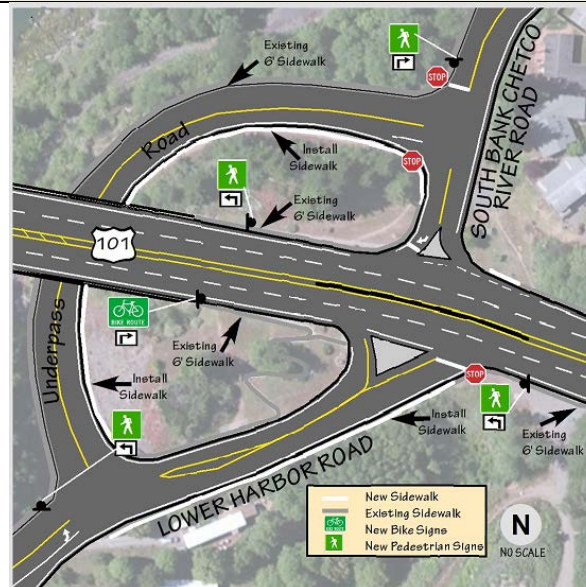
Segment 6 - Existing Cross Section



Segment 6 - Proposed Cross Section

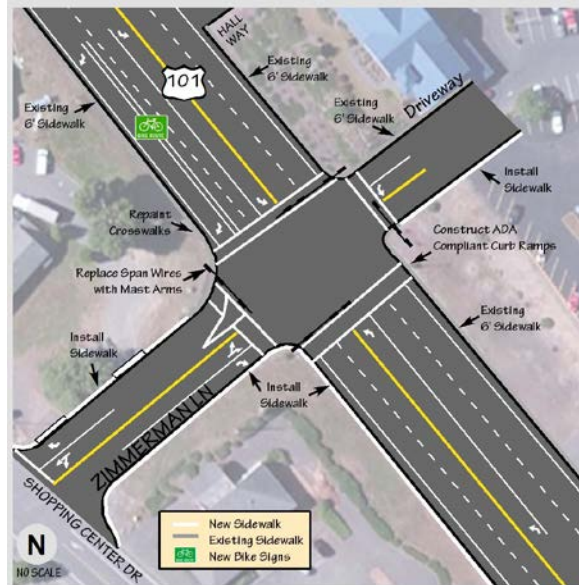


PROJECT 7: LOWER HARBOR RD/US 101/S. BANK CHETCO RIVER RD INTERSECTION SIDEWALK IMPROVEMENTS



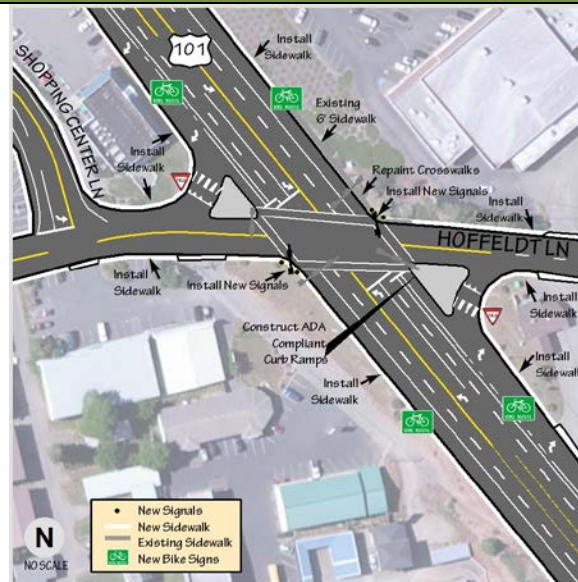
Purpose	Provide safe and accessible bicycle and pedestrian facilities crossing US 101 to make the highway safer.
Description	Add 6' wide sidewalks on the southside of Underpass Road and Lower Harbor Road to provide connectivity to existing sidewalks on US 101.
Mile Point	358.14
Proposed Improvement Addresses Deficiencies	Installing 6' wide sidewalks on the southside of Underpass Road and Lower Harbor Road to fill in sidewalk gaps and connect to existing sidewalks on US 101.
Additional Considerations	- There are two (2) driveways near this intersection. One driveway is just south of the Lower Harbor Road intersection, and the other is at Seabird RV Park. - Landscape buffers can be provided through an IGA between ODOT and City/County for landscape maintenance. Street lighting must comply with ODOT lighting policy and be provided through an IGA between ODOT and City/County. - Coordinate Project 7 with Project 1.
Cost Option	\$25,000
Implementation	Long Term (10 to 20 years)

PROJECT 8: US 101/ZIMMERMAN LANE INTERSECTION TURN LANE, BIKE LANE AND SIDEWALK IMPROVEMENTS



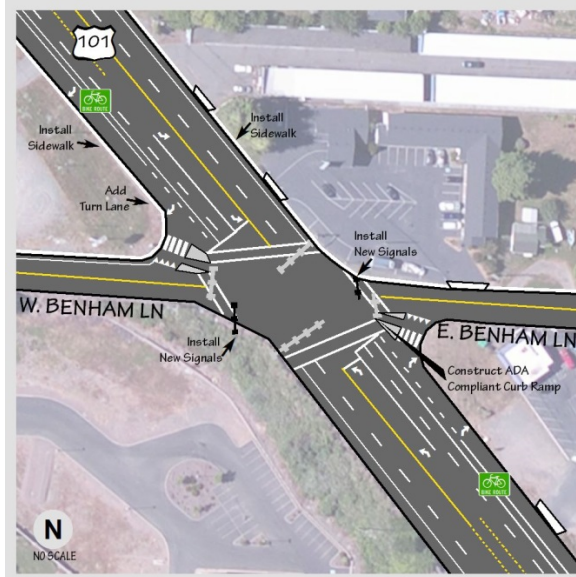
Purpose	Provide safe and accessible transportation facilities for vehicular, bicycle and pedestrian travel modes.
Description	• Install southbound right turn lane on US 101. • Install additional sidewalk on Zimmerman Lane and US 101. • Install ADA-compliant curb ramps on all intersection approaches and pedestrian facilities. • Continue US 101 bike lanes through the intersection
Mile Point	358.57
Proposed Improvement Addresses Deficiencies	• Right turn vehicles use existing shoulder on US 101 to turn onto Zimmerman Lane.
Additional Considerations	• Consider installing LED signal heads, placing reflective tape around the border of the signal back-plates and replacing signal head span wires with mast arms. • Consider signal modification to advance pedestrian interval, and installing a left turn lane on Zimmerman Lane with protected phasing to protect pedestrians crossing the intersection. • Consider shortening the NB left turn lane and extending the center turn lane at the north entrance to the South Coast Center to reduce turning conflicts and improve safety. • Consider making the north entrance to the South Coast Center a Right In/Right Out to reduce turning conflicts and improve safety. • Landscape buffers can be provided through an IGA between ODOT and City/County for landscape maintenance. Street lighting must comply with ODOT lighting policy and be provided through an IGA between ODOT and City/County. • Coordinate Project 8 with Project 2.
Cost Option	\$650,000
Implementation	Short Term (1-5 years)

PROJECT 9: US 101/HOFFELDT LANE INTERSECTION SIGNAL, BIKE LANE AND SIDEWALK IMPROVEMENTS



Purpose	Offer safe and accessible travel options for bicyclists, vehicles and pedestrians near intersection.
Description	• Make improvements to Hoffeldt Lane to signal drivers of upcoming intersection including a new signal on mast arms with heads closer to the stop bar • Install new sidewalk south of the intersection on both sides of US 101. • Install ADA-compliant curb ramps on all approaches to the intersection. • Continue US 101 bike lanes through the intersection. • Update right turn channelization to current design standard and ADA standard.
Mile Point	358.76
Proposed Improvement Addresses Deficiencies	Improve entrances to intersection to help drivers identify crossings sooner.
Additional Considerations	• Consider installing LED signal heads and placing reflective tape around the border of the signal back-plates. • Landscape buffers can be provided through an IGA between ODOT and City/County for landscape maintenance. Street lighting must comply with ODOT lighting policy and be provided through an IGA between ODOT and City/County. • Coordinate Project 9 with Project 2.
Cost Option	\$750,000
Implementation	Medium Term (5-10 years)

PROJECT 10: W. BENHAM LANE/US 101/E. BENHAM LANE INTERSECTION SIGNAL, TURN LANE, BIKE LANE AND SIDEWALK IMPROVEMENTS



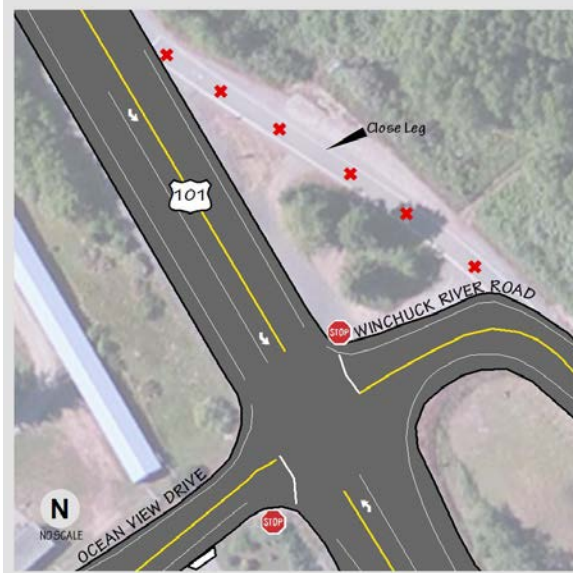
Purpose	Provide safe and accessible transportation facilities for vehicular, bicycle and pedestrian travel modes.
Description	• Make improvements to Benham Lane to signal drivers of upcoming intersection including a new signal on mast arms with heads closer to the stop bar. • Install new sidewalk on US 101 and Benham Lane. • Install ADA-compliant ramps on all approaches to the intersection. • Install southbound right-turn lane on US 101 at intersection. • Update right turn channelization to current design standard and ADA standard. • Continue US 101 bike lanes through the intersection.
Mile Point	359.32
Proposed Improvement Addresses Deficiencies	• Helps driver identify “pork chop” islands on NW and SW corners of intersection. • The skew angle problem would be partially addressed with the installation of a new signal closer to the stop bar. • The southbound right-turn lane at the intersection improves mobility. • Sidewalks and bike lanes improve bicycle and pedestrian accessibility. • Landscape buffers can be provided through an IGA between ODOT and City/County for landscape maintenance. Street lighting must comply with ODOT lighting policy and be provided through an IGA between ODOT and City/County.
Additional Considerations	• Coordinate Project 10 with Project 3. • Coordinate Project 10 with Development Review mitigation.
Cost Option	\$700,000
Implementation	Long Term (10 to 20 years)

PROJECT 11: US 101/PEDRIOLI DRIVE INTERSECTION ACCESS AND TURN LANE IMPROVEMENTS



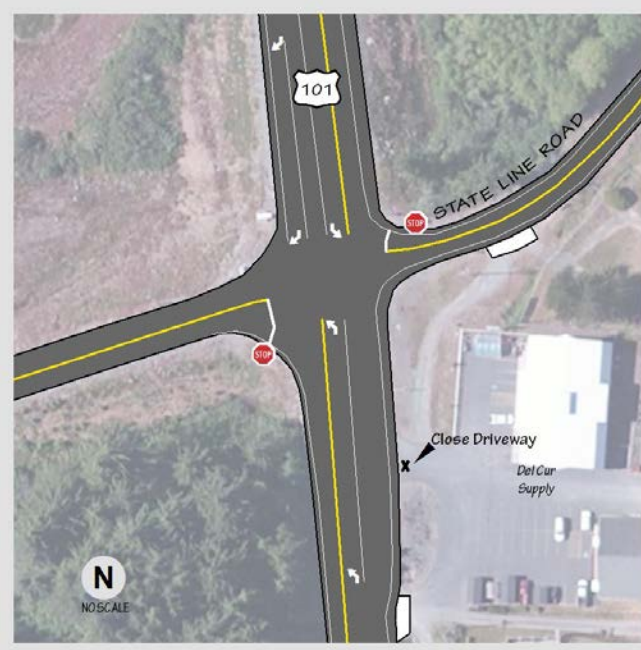
Purpose	Provide safe and accessible transportation operations.
Description	- Relocate the north driveway on the eastside of US 101 further north to serve future commercial development. - Install a southbound right turn lane to improve traffic operations and safety.
Mile Point	359.57
Proposed Improvement Addresses Deficiencies	- Relocating the north access improves traffic safety to better serve future commercial development on the property. - The turn lane provides storage for vehicles turning right onto Pedrioli Drive.
Additional Considerations	- Access management considerations to close, consolidate and/or relocate existing driveways within the turn lane design standard. - Coordinate Project 11 with Project 3.
Cost Option	\$235,000
Implementation	Long Term (10 to 20 years)

PROJECT 12: OCEANVIEW DR./US 101/WINCHUCK RIVER RD. INTERSECTION ACCESS IMPROVEMENTS



Purpose	Provide safe and accessible transportation facilities.
Description	Close the northbound leg of Winchuck River Road.
Mile Point	362.22
Proposed Improvement Addresses Deficiencies	• Close the northbound leg of the US 101/Winchuck River Road intersection because all traffic movements to/from Winchuck River Road can be served via the Oceanview Drive/Winchuck River Road intersection. • Existing right turns from Winchuck River Road onto US 101 would be routed through the Oceanview Drive/Winchuck River Road intersection, improving traffic operations and the safety of right-turn movements.
Additional Considerations	• Coordinate Project 12 with Project 5.
Cost Option	\$25,000
Implementation	Long Term (15 to 20 years)

PROJECT 13: US 101/STATELINE ROAD INTERSECTION ACCESS AND GUARDRAIL IMPROVEMENTS



Purpose	Provide safe and accessible transportation facilities for vehicular and bicycle travel modes.
Description	• Make the north access on the Del-Cur Supply property Right In/Right Out and improve site access to Stateline Road. • Relocate guardrail on the southwest corner of intersection further away from the highway.
Mile Point	362.95
Proposed Improvement Addresses Deficiencies	• Restricting the driveway closest to the intersection to Right In/Right Out reduces turning conflicts and improves safety at the intersection. • Relocating the guardrail improves sight distance for vehicles on Crissey Field State Park access road to see approaching traffic on northbound US 101.
Additional Considerations	• Consider turning impacts at northbound left turn lane and 2nd driveway to Del Cur Supply • Coordinate Project 13 with Project 6.
Cost Option	\$250,000
Implementation	Short Term (1 to 5 years)

5. ACCESS MANAGEMENT

The US 101 Access Management Strategy governs ODOT's decisions of all future road approaches connecting to US 101 from the Chetco River Bridge (MP 358.02) to the Oregon/California border (MP 363.11). The standards applicable to the US 101 Corridor Plan are based on roadway OHP standards, statewide highway classification, Oregon Administrative Rule (OAR) 734-051 and long-range estimates of traffic demand. The Access Management Strategy represents actions that may be triggered as land use changes occur (new development or redevelopment), as future highway improvements are implemented, or as highway safety and operational issues arise.

5.1 ACCESS MANAGEMENT STANDARDS

The standards applicable to the US 101 corridor from the Chetco River Bridge to the Oregon/California Border are summarized in Table 18. Ideally, a highway improvement project includes provisions by which access can be made fully compliant with the access spacing standards. In many instances, access needed for existing development will not allow these standards to be met. When the requirements and standards cannot be met, progress toward meeting the applicable access standards must be demonstrated or a deviation must be justified and approved by the ODOT Region Access Management Engineer.

Table 18

Minimum Access Spacing Standards for US 101¹

Mile points	Segment Description	Posted Speed	Minimum Spacing ¹
Within Brookings UGB (Urban and Urbanizable Lands)			
MP 358.02 to 361.16	Chetco River Bridge to McVay Lane (North)	45 mph 55 mph	800 ft. 1,320 ft.
Outside Brookings UGB (Rural Lands)²			
MP 361.16 to 363.11	McVay Lane (North) to Oregon/California Border	55 mph	1,320 ft.

Notes:

1. Future modifications of the adopted access standards will require OTC's amendment of the US 101 Corridor Plan
2. Standards in the OHP are less restrictive inside urban boundaries than in rural area

(Note: The OHP addresses access management with the most recent revisions adopted in June 2014. More detailed requirements, action definitions, and the access management standards for state highways are specified in OAR 734-051 (Division 51): Highway Approaches, Access Control, Spacing Standards, and Medians etc.)

5.2 ACCESS MANAGEMENT KEY PRINCIPLES AND METHODOLOGY

ODOT Facility Plans are required to develop and approve Key Principles and a Methodology for making access related decisions during the planning process. Requirement include notifying adjoining real property owners, and where possible, business owners or lessees of potential access changes, how they can participate in the planning process and opportunities to challenge the Key Principles and Methodology approved during development of the plan.

On November 1, 2017, ODOT Region 3 sent a notification letter to inform all properties abutting US 101 within the study area of the upcoming US 101 Corridor Plan and listing the Key Principles and Methodology that will be used to make access decisions during the planning project, and information regarding an abutting property owner's right to challenge the Key Principles and Methodology through a collaborative discussion or dispute resolution board. On November 21, 2016, we approved the Key Principles and Methodology for use in the US 101 Corridor Plan (See US 101 Corridor Plan Appendices).

On December 1, 2016, ODOT Region 3 sent notification letters to affected properties abutting US 101 within the study area upon determining that certain road approaches will need to be modified or closed, indicating that the plan is calling for a change to their current access configuration, and notify the property owner that they may challenge the Key Principles and Methodology that were used in making the decision through a collaborative process or dispute resolution board. Affected property owners were also invited to discuss proposed projects with ODOT staff and attend a Public Open House on December 14, 2016. (**Note:** The Key Principles and Methodology may be challenged up to the date that the plan is adopted.)

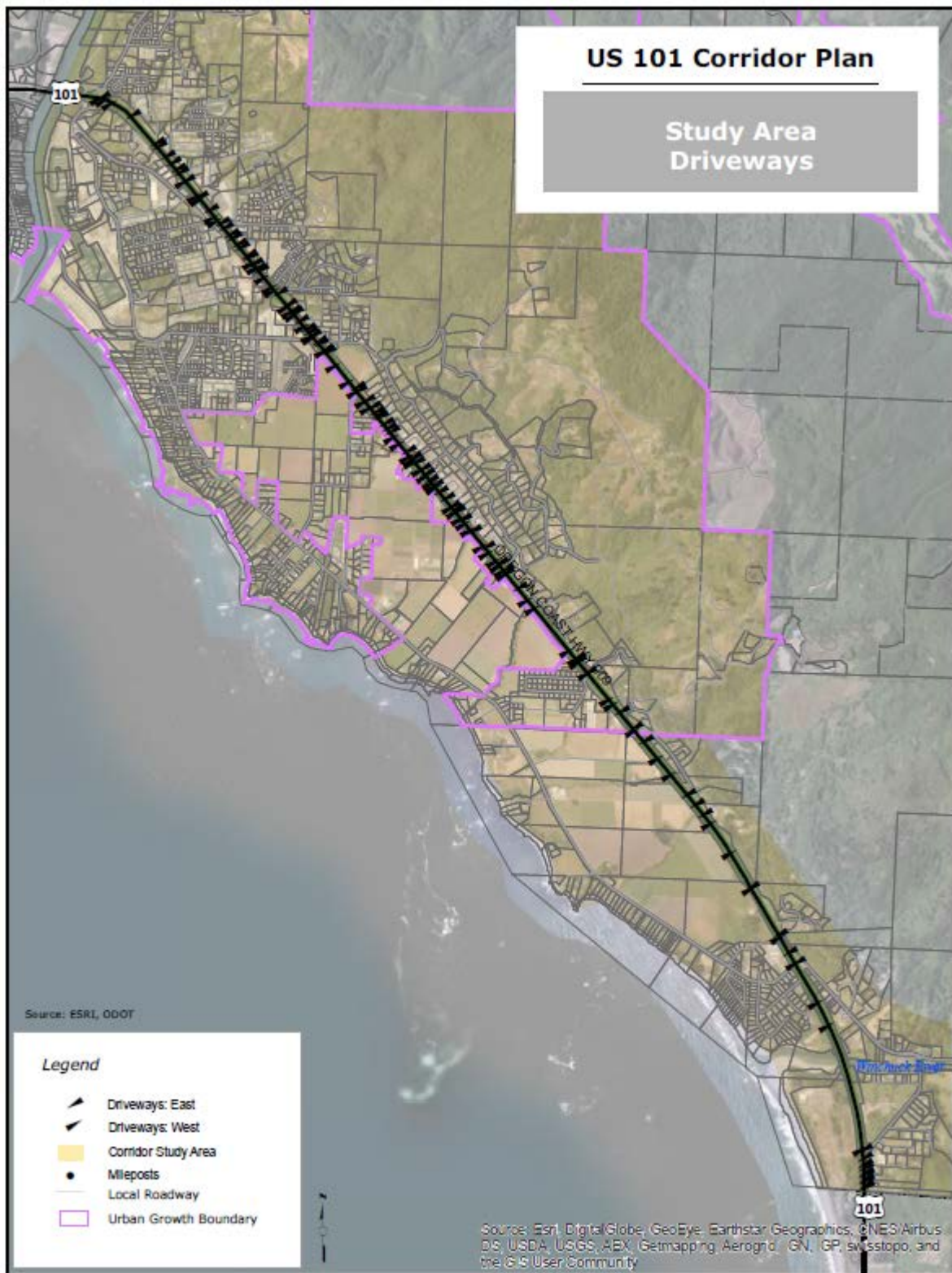
5.3 ACCESS DENSITY (YEAR 2012)

As shown in Table 19, the existing access spacing exceeds the ODOT standard along the entire corridor, with the highest densities (driveways per mile) in the area to the north of the weigh station at M.P. 360.48 (See Figure 23).

Table 19

Access Density Year 2012								
Segment		ADDT	Speed Limit	West Side		East Side		Met ODOT Std.
Beginning	Ending			Dwys.	Density	Dwys.	Density	
Chetco River Bridge MP 358.02	Hoffeldt Ln. MP 358.73	15,850	45	8	14	11	18	5
Hoffeldt Ln. MP 358.73	Benham Ln. MP 359.32	14,200	45	9	18	16	32	5
Benham Ln. MP 359.32	Weigh Station MP 361.20	10,800	45/55	26	32	22	28	4
Weigh Station MP 361.20	Stateline MP 363.11	10,200	55	21	17	8	6	4

Figure 23



5.4 ACCESS MANAGEMENT ACTIONS

The goal of Access Management is to improve the safety for the travelling public, including vehicles, pedestrians, and bicyclists. Balance access with the economic development of the adjoining parcels while ensuring travel on the highway occurs in a safe and efficient manner is our priority.

(Note: Access management techniques shall be applied with the intent of moving in the direction of improving the spacing between driveways.)

DEVELOPMENT REVIEW ACTIONS

ODOT's Development Review Program works with local governments, landowners, and developers through the local land use process by leveraging conditions of approval to mitigate development impacts on state highway facilities. Access management techniques applied to the roadways and adjacent land use characteristics could be implemented through this program. Access management actions could include:

1. Possible consolidate, modify and/or close driveways when properties develop or redevelop and when reasonable access can be provided with a single access point or via a local street.
2. Install left-turn and right-turn lanes when properties develop or redevelop and are expected to generate traffic volumes sufficient to meet the ODOT turn lane guidelines for installation.
3. Possible consolidate or relocated driveways when properties develop or redevelop and when not always able to meet the spacing standard, the goal is to move in the direction of improving the spacing between driveways.
4. Ensure the relocated, reconstructed or consolidated driveways are adequate to serve the existing use(s) on the associated properties.

HIGHWAY IMPROVEMENTS ACTIONS

ODOT's Project Delivery Program shall work with local governments, landowners and business owners to consolidate/close driveways in an effort to move towards achieving applicable access management standards. Access management triggers could include:

1. Consolidate and/or close driveways when the 3-lane improvements are constructed on US 101.
2. Install right-turn deceleration lanes when the 3-lane improvements are constructed at US 101 intersections.
3. Consolidate and/or close driveways when the left-turn and right-turn lanes are constructed at US 101 intersections.

(Note: This access management strategy does not address acquiring access control along US 101. ODOT should consider purchasing access control from properties abutting US 101 when widening US 101 at intersections and/or installing turn lanes at intersections so that driveways do not conflict with turn lane queues and movements. Access control research will need to be completed along with the actual delivery of a highway project.)

SAFETY/OPERATIONAL ACTIONS

ODOT's Safety/Operations Program could work with local governments, landowners and business owners to consolidate/close/modify driveways in an effort to move towards achieving applicable access management standards. Access management triggers could include:

1. Consolidate and/or close driveways when the annual crash rate is twenty (20) percent greater than the statewide rate for similar roadways or a section has an ODOT SPIS rating in the top ten (10) percent.
2. Install left-turn and right-turn deceleration lanes at high-volume intersections and driveways.
3. Install left-turn and right-turn deceleration lanes when the annual crash rate is twenty (20) percent greater than the statewide rate for similar roadways or a section has an ODOT SPIS rating in the top ten (10) percent.

SOUTH COAST CENTER ACCESS

The two (2) South Coast Center driveways are located 300 and 600 feet north of Hoffeldt Lane on the east-side of US 101. There have been nine (9) crashes over the past five (5) years in this vicinity. Six (6) of these occurred at the driveways in the northbound direction, two (2) are pedestrian collisions (one fatal), and the remaining crash was a rear-end crash that may or may not have been related to the driveways.

The safety needs analysis determined the crashes at the driveways could be related, in part, to the proximity of driveways to the US 101/Hoffeldt Lane intersection. Northbound drivers on US 101 may not anticipate vehicles turning into the shopping center immediately north of the intersection and drivers at the driveways may have difficulty judging gaps in the traffic platoons formed by the intersection.

Access management could consider:

1. Driveway Consolidation or Relocation.
2. Restriction of the turning movements to right- in/right out. The south driveway would be converted to right-in/right-out access only, with full access retained at the north driveway.
3. Rerouting of the shopping center traffic to the Hoffeldt Road driveway.

(Note: The driveway modification must be designed to accommodate buses that enter the shopping center to pick up and drop off riders.)

OCEANVIEW DRIVE/WINCHUCK RIVER ROAD INTERSECTIONS

The US 101/Winchuck River Road intersection is skewed and located roughly 300 feet from the Oceanview Drive/Winchuck Road intersection. All traffic movements to/from Winchuck River Road can be served via the Oceanview Drive/Winchuck Rd. intersection. Modifying the intersection could improve traffic operations and the safety of right-turn movements.

Access modifications could include:

1. Closing the US 101/Winchuck River Road intersection.
2. Rerouting existing right turns from Winchuck River Road onto US 101 through the Oceanview Drive/Winchuck Rd. intersection.

DEL-CUR SUPPLY ACCESS

Currently, there are two (2) driveways for the Del-Cur Supply store on the northbound approach located closely to intersection of Stateline Road and US 101. There have been two rear-end crashes at this location that may have been related to drivers slowing to turn into the driveways.

Access modifications could include:

1. Convert the north driveway of the Del-Cur Supply store closest to the intersection to a Right In/Right Out driveway; and improve site access to Stateline Road.
2. Improve full site access through the second driveway to the south.

OREGON ADMINISTRATIVE RULES - CHAPTER 734, DIVISION 51

Oregon Administrative Rule (OAR) Division 51 establishes procedures, standards, and approval criteria used by the department to govern highway approach permitting and access management consistent with Oregon Revised Statutes (ORS), Oregon Administrative Rules (OAR), statewide planning goals, acknowledged comprehensive plans, and the Oregon Highway Plan (OHP). The intent of Division 51 is to provide a highway access management system based on objective standards that balances the economic development objectives of properties abutting state highways with the transportation safety and access management objectives of state highways in a manner consistent with local transportation system plans and the land uses permitted in applicable local comprehensive plan(s) acknowledged under ORS Chapter 197.

Section 7010 - Access Management in Highway Facility Plans

The passage of SB408 changed the way in which facility plans document highway access decisions and sets requirements for notification to adjoining real property owners abutting the highway. As a result of the legislation, ODOT Facility Plans are required to develop and approve Key Principles and a Methodology for making access related decisions during the planning process. Requirement include notifying adjoining real property owners, and where possible, business owners or lessees of potential access changes, how they can participate in the planning process and opportunities to challenge the Key Principles and Methodology approved during the development of the plan.

To comply with both the spirit and letter of the law, ODOT Region 3 uses a two-stage notification process. The first stage occurs at the beginning of the project and includes information that a planning effort is underway, a listing of the Key Principles and Methodology that will be used to make access decisions during the planning project, and information regarding an abutting property owner right to challenge the Key Principles and Methodology through a collaborative discussion or dispute resolution board. It also informs people of how they may become involved in the project and provide comment.

Upon determining that certain road approaches will need to be modified or closed, a second notice is sent to the affected property owner and where possible, business owner/lessee, indicating that the plan is calling for a change to their current access configuration. The notice includes an invitation to meet with ODOT and a copy of the approved Key Principles and Methodology that were used in making that determination. The notice also informs the property owner that they may challenge the Key Principles and Methodology that were used in making the decision through a collaborative process or dispute resolution board.

6 BICYCLE/PEDESTRIAN (YEAR 2012)

The Bicycle and Pedestrian System in the study area consists of shoulder bikeways, sidewalks, and crosswalks (See Figure 24). The existing facilities and volumes are inventoried. Bicycle and pedestrian needs are analyzed based on a comparison of the facility characteristics to the standards. The addition of improved bicycle and pedestrian facilities improves connectivity for these travel modes and can reduce traffic demand on the highway.

Bicycle and Pedestrian Facilities (Year 2012)

The shoulders on US 101 are used by bicyclists as shoulder bikeways. The existing shoulder widths in this study corridor range from five (5) to fifteen (15) feet. There are six (6) foot wide sidewalks within certain areas of the northern part of the corridor, but none available to the south of Benham Lane. All of the striped crosswalks of this segment of US 101 are located at the signalized intersections at Zimmerman Lane, Hoffeldt Lane, and Benham Lane (See Figure 25).

Bicycle and Pedestrian Volumes (Year 2012)

As shown in Table 20, current pedestrian and bicycle volumes are highest near Lower Harbor Drive and South Bank Chetco River Road, just south of the Chetco River Bridge. This area is nearest to the Brookings City Limit and has bicyclist/pedestrian characteristics more similar to those of an urban area than the rest of the study area, which is more rural.

Table 20

16-Hour Bicycle and Pedestrian Volumes Year 2012		
Intersection	Pedestrians	Bicyclists
Lower Harbor Dr./Underpass Rd.	42	21
South Bank Chetco River Rd/Underpass Rd.	34	2
Hoffeldt Ln./US 101	25	4
Benham Ln./US 101*	--	19
Pedrioli Dr./US 101	7	11
* Pedestrians are not counted at this location. Note: Bicycle/pedestrian counts are not conducted at the other 16-hour count locations.		

Figure 24



Figure 25

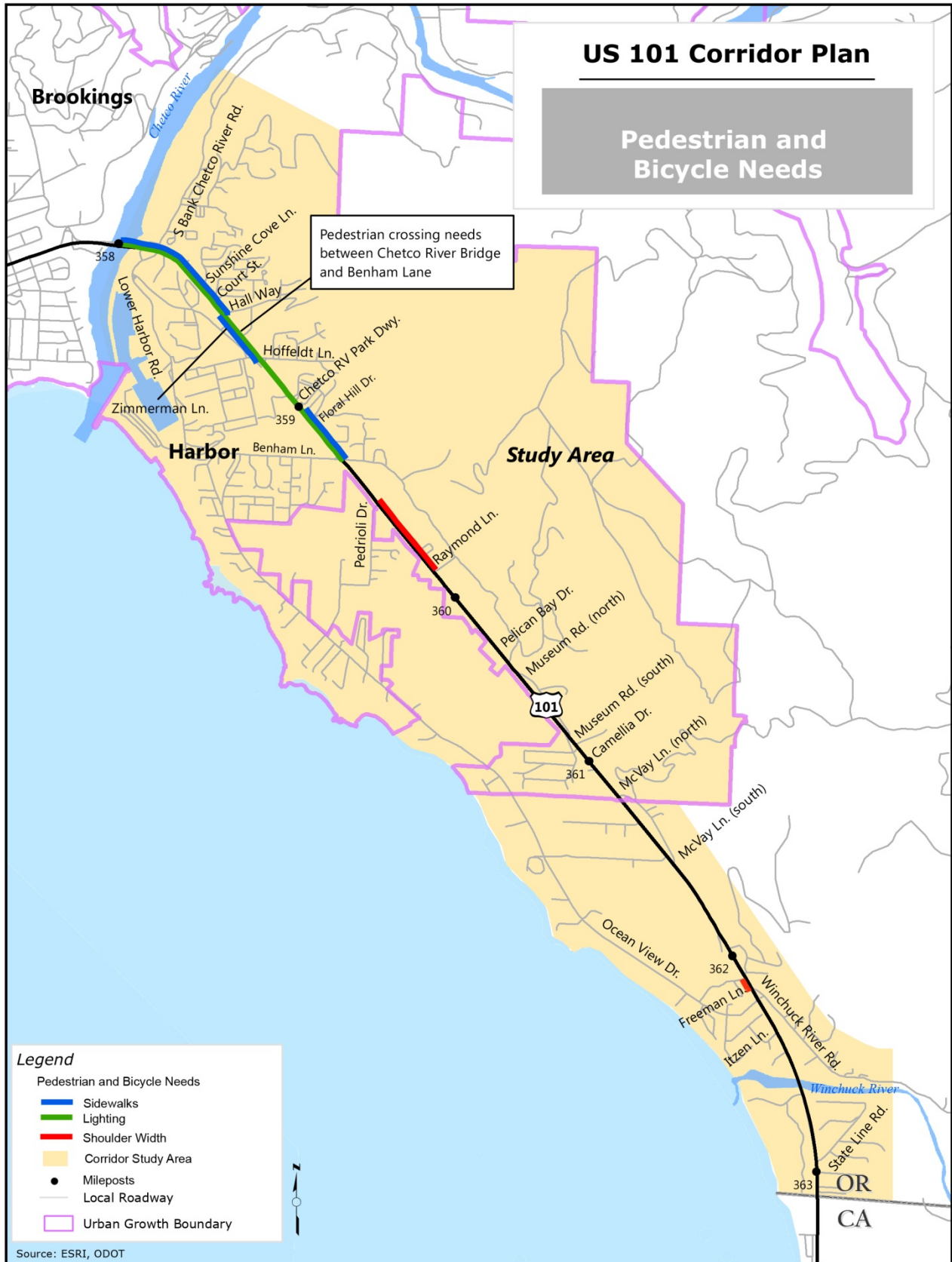


Bicycle and Pedestrian Needs

The Oregon Bicycle and Pedestrian Design Guide indicate that for rural facilities, shoulders should be provided that are wide enough (minimum six (8) feet) to accommodate pedestrian and bicycle traffic. According to this guideline, the only portion of the corridor that is not adequate for bicycle and pedestrian travel is the section of US 101 between Pedrioli Lane and Raymond Lane, where shoulder widths are five (5) feet.

The bicycle and pedestrian facilities along US 101 are limited throughout the study area. Corridor-long deficiencies are the lack of sidewalks and ADA-compliant curb ramps (See Figure 26). The southern portion of the Corridor is rural in nature and sidewalks are not appropriate or necessary.

Figure 26



Oregon Coast Bike Route

For the most part, the Oregon Coast Bike Route follows US 101 as a shoulder bikeway. In several areas, the route departs from the main highway and follows county roads and/or city streets. In Brookings-Harbor, the bike route diverts off US 101 to Lower Harbor Road then connects to Oceanview Drive south of Benham Lane, then connects back to US 101 just north of the Winchuck River.

1. **Lower Harbor Road** has a bike lane on both sides of the road beginning at US 101 near the Chetco River Bridge and continuing to Boat Basin Road at which point the road turns into W. Benham Lane. The bike lane continues on both sides of W. Benham Lane connecting back to US 101.
2. **Oceanview Drive** from MP 0.00 to MP 1.497 does not have bike lanes on either side of the road. This segment would be very difficult to obtain additional right of way to add bike lanes through the agricultural/private lands. There is minimal shoulder throughout this segment and would not be economically feasible to construct bike lanes.

ODOT Region 3 recommends - the Oregon Coast Bike Plan consider removing the Oregon Coast Bike Route from Oceanview Drive and rerouting it to Benham Lane east from the Oceanview Drive/Lower Harbor Road intersection to US 101; and then south from the US 101/Benham Lane intersection to the Oregon/California border for the following reasons:

1. Most bicyclist use US 101 as the main travel-way to the Oregon/California border.
2. US 101 bikeway shoulders are adequate to support bicyclist and pedestrians.
3. This corridor plan proposes to improve US 101 bicycle and pedestrian facilities to current design standards to improve bicycle safety.
4. The Pacific Ocean is more visible from US 101's higher elevation than from the south-end of Oceanview Drive. New home development along Oceanview Drive blocks ocean scenery. The County zoning code does not have view-shed protection requirements to limit building heights along Oceanview Drive.
5. Oceanview Drive does not meet County collector street standards for 2' wide shoulders. There are bike lanes only at the south-end of Oceanview Drive (MP 1.5-3.5).
6. Roadway conditions at the north-end of Oceanview Drive (MP 0-1.5) do not have shoulders to separate bicyclist from motor vehicles in the travel lanes. The fog line abuts the County storm drain system on both sides of the road.
7. Oceanview Drive traverses existing residential neighborhoods and agricultural/private lands. There is not adequate right of way to widen shoulders to accommodate bicyclist. Widening of Oceanview Drive would require taking agricultural lands, impacting residences, relocating utilities and relocating the County storm drain system.

(Note: Oregon Coast Bike Route signage will need to be updated for the new bike route.)

Bicycle and Pedestrian Improvements

On US 101 within the study area, there are sidewalks intermittently between the Chetco River Bridge and Benham Lane. Within this area, there are three (3) intersections with marked crosswalks at Zimmerman Lane, Hoffeldt Lane, and Benham Lane.

The following additional ADA needs are also identified:

Along the sections of US 101 that have sidewalk, ADA deficiencies exist at two (2) locations where there are no ramps to allow for access from the sidewalk to the street:

1. North driveway of the South Coast Center.
2. End of sidewalk north of Hall Way on the east-side of US 101.

Curb ramps at the signalized intersections (Zimmerman Lane, Hoffeldt Lane, and Benham Lane) are not compliant with the latest design standard, which requires curb ramps on both sides of the corner instead of just one in the center.

Bicycle and Pedestrian Improvements include:

The proposed bicycle lanes and sidewalks along US 101 between the Chetco River Bridge and Benham Lane would fit well into the existing bicycle and pedestrian network **(See Projects 1 and 2)**.

1. Between the Chetco River Bridge and Zimmerman Lane, new bike lanes would connect to existing bike lanes on Lower Harbor Road and Shopping Center Drive. New sidewalks would connect to the existing sidewalks on Lower Harbor Road, Shopping Center Drive, South Bank Chetco River Road, and Zimmerman Lane **(See Projects 1 and 2)**.
2. Between Zimmerman Lane and Hoffeldt Lane, new sidewalks would join existing sidewalks on Zimmerman Lane, Hoffeldt Lane, and Shopping Center Avenue **(See Project 2)**.
3. Between Hoffeldt Lane and Benham Lane, new bike lanes would go through the intersection to provide a connection to existing bike lanes on Benham Lane, which connect to bike lanes on Lower Harbor Road **(See Project 2)**.

7 PLAN MONITORING

The US 101 Corridor Plan relies on monitoring traffic volumes, congestion, and crash history to identify when projects should be considered for implementation or modification. When conditions are approaching an identified threshold, opportunities for funding projects should be pursued.

7.1 TRAFFIC CONDITIONS MONITORING

A project's priority in the US 101 Corridor Plan is based on when a project may be warranted. Although some priority has been assigned to the projects, periodic monitoring should occur to identify when projects may be needed. In some cases, priority may be elevated based on traffic volume trends or crash history, while others may be delayed.

Periodic Corridor Monitoring

Periodic corridor monitoring of traffic and crash data can be used to identify the need for capacity and safety improvements within the US 101 corridor.

Data collection should include:

- *Intersection traffic volumes should be collected and analyzed every three (3) to five (5) years to identify the need for traffic signals, left-turn lanes, right-turn lanes, and other capacity and safety improvements identified in the Corridor Plan.*
- *Crash rates should be reviewed every two (2) to three (3) years and SPIS rankings should be reviewed annually to identify when safety improvements such as left-turn lanes, right-turn lanes, and access management measures may be necessary.*

Traffic Impact Studies

Work with City of Brookings and Curry County land use processes to require traffic impact studies (TIS) for proposed developments impacting US 101 to monitor when projects are warranted. Proposed developments that generate a sufficient number of trips to impact US 101 or other public intersections along US 101 should be required to prepare a TIS. Actions related to TIS preparation include:

- *Minimum trip thresholds for when a TIS is required should be reviewed for consistency with monitoring needs of the US 101 Corridor Plan.*
- *Improvements that are triggered by development should be incorporated into the conditions of approval for the proposal.*

Recommended Policy Language:

"Traffic Study Requirements. The city or county with land use, development or access jurisdiction may require a traffic study prepared by a traffic engineer to determine access, circulation and other transportation requirements including identification of projects needed to implement the Transportation System Plan or other projects needed to mitigate for traffic impacts resulting from development that exceeds assumptions from the Transportation System Plan."

8 FUNDING

None of the projects listed in the US 101 Corridor Plan currently have identified funding sources. Funding is anticipated to come from a variety of public and private sources as projects develop over time.

8.1 STATE FUNDING SOURCES

Funding in the State Transportation Improvement Program (STIP) is divided into two (2) categories:

1. **Enhance:** Activities that enhance, expand, or improve the transportation system.
2. **Fix-It:** Activities that fix or preserve the transportation system.

Projects that may be eligible for the Enhance category of funds include:

- Bicycle and/or pedestrian facilities on or off the highway ROW.
- Development STIP projects (projects not ready for construction with 4-year cycle).
- Modernization projects that add capacity to the system (per ORS 366.507).
- Most projects previously eligible for Transportation Enhancement (TE) funds.
- Projects previously eligible for Flex Funds (Bicycle and Pedestrian, Transit, and TDM projects, plans, programs, and services).
- Protective ROW purchases.
- Public transportation (capital projects only, not operations).
- Safe Routes to School (infrastructure projects).
- Scenic Byways (construction projects).
- Transportation Alternatives (the federal transportation authorization, MAP-21).
- Transportation Demand Management.

Project activities eligible for the Fix-It category of funds include:

- Bicycle and pedestrian facilities on state routes only.
- Bridges (state owned).
- Culverts.
- High risk rural roads.
- Illumination signs and signals.
- Landslides and rock falls.
- Operations (includes ITS).
- Pavement preservation.
- Rail-highway crossings.
- Safety.
- Salmon (fish passage).
- Site mitigation and repair.
- Storm water retrofit.
- Transportation Demand Management (part of operations).
- Work zone safety (project specific).

8.2 OTHER FUNDING SOURCES

Other funding may come from public or private sources. Public funding opportunities could include local government Capital Improvement Programs and possible partnerships with local agencies to combine resources for related projects. Private development could be another source for funding through required mitigation or a developer contribution to a larger improvement activity.

8.3 FUNDING DISCLOSURE

Private development cannot rely upon the highway improvement projects included in the US 101 Corridor Plan as mitigation, unless a project has been programmed for funding in the STIP, programmed for funding in a local Capital Improvement Program (CIP), funded in an Intergovernmental Agreement (IGA) with ODOT, or funded in a Cooperative Improvement Agreement (CIA) with ODOT.