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DRAFT TECHNICAL MEMORANDUM #2

DATE: September 13, 2017
TO: Todd Tripp, Coquille Indian Tribe (CIT)
FROM: Steve Faust, AICP
COPY: Matt Jensen, CIT; Virginia Elandt, ODOT
RE: Coquille Indian Tribe Comprehensive Plan: DRAFT Technical Memorandum #2: Demographics and Existing and Planned Conditions

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This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development (DLCD). This TGM grant is financed, in part, by deferral Fixing America's Surface Transportation Act (FAST Act), local government and the State of Oregon Funds. The contents of this document do not necessarily reflect views or policies of the State of Oregon.

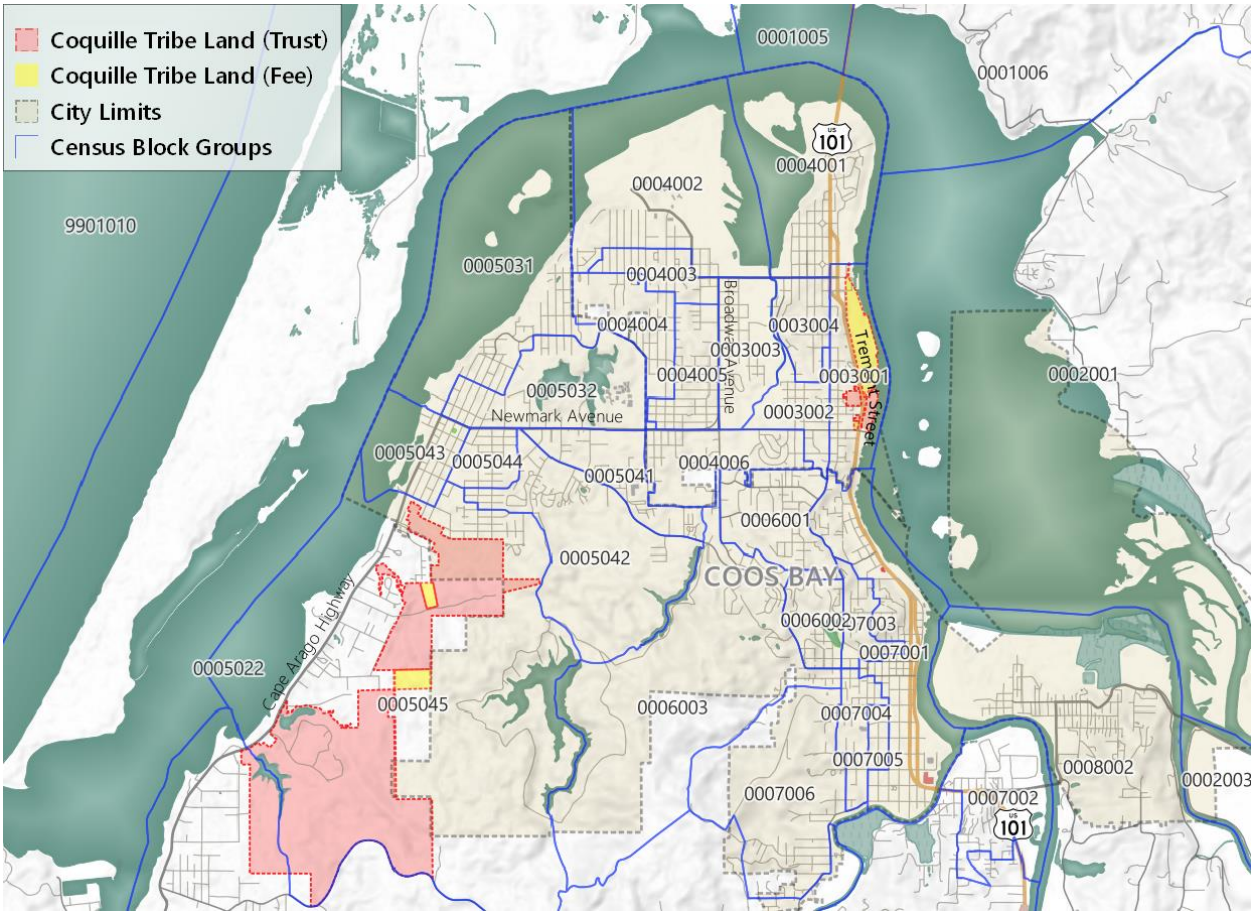
This Technical Memorandum #2 describes key socio-economic and demographic information for the Coquille Indian Tribe (CIT) within the Study Area, and defines existing conditions and factors for the Empire and North Bend properties that may impact or influence the project. The information in this memorandum is organized into the following sections:

Socio-economic and Demographic Information

This section summarizes existing and future demographic and socio-economic conditions for CIT-owned land, U.S. Census block groups, the Cities of Coos Bay, and North Bend, Coos County, and the State of Oregon. The information will provide a broad contextual understanding of the residents and employees in CIT lands and the surrounding areas, with comparisons to the County and the State.

Figure 1 provides a contextual overview of the location of CIT lands, in relation to the boundaries of census block group[1] boundaries and the surrounding cities. Two census block groups approximately contain CIT lands (IDs: 410110003001 for the east, and 410110005045 for the west). The data provided for "CIT Block Groups" in this report refers to the combination of these two block groups. A third block group to the west includes some CIT land, but there are currently no reported residents or workers in this area.

Figure 1. CIT Lands Reference Map



Source: Coos County, US Census Bureau and Leland Consulting Group

[1] Block groups are statistical divisions of census tracts used to present data and are generally defined to contain between 600 and 3,000 people.

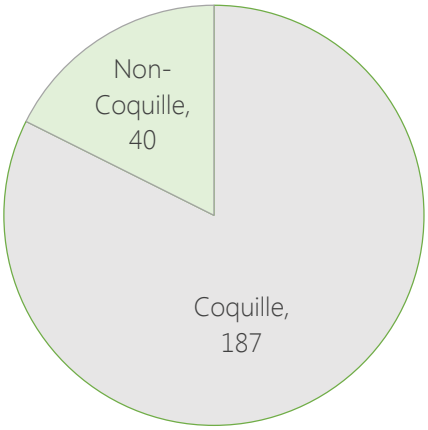
Coquille Indian Tribe
Table 1 shows occupied housing unit and building counts on CIT lands by type. Although about three-quarters (71 units) of CIT housing is single-family, more than half (53 percent) is rental housing, per the Resident Services Report from the CIHA Board.

As shown in the pie graph on the right (Figure 2), a total of about 227 people live on CIT lands; 187 or 82 percent of which are members of the Coquille Tribe.

Table 1. Coquille Indian Tribe Housing Characteristics (*left*) and Figure 2. Population (*right*)

Unit Type	Units	Buildings
Single Family		
Rental	27	27
Homebuyer	14	14
Non-Residential	4	4
Private Purchase	26	26
Multifamily		
Rental - Duplex	10	5
Rental - Fourplex	12	3
Total	**93**	**79**

Source: CIHA Board Report, Resident Services, May 2017



Resident Characteristics
The current population located with the CIT block groups is significantly higher than the population living on actual CIT lands. In fact, only about seven percent of the total block-group population of 3,477 lives on CIT lands. More than 90 percent of individuals in these block groups live near, but not on, CIT lands.[2] As such, the CIT block group data is not necessarily an accurate representation of the tribal population itself. However, these block groups are the smallest demographic dataset available and therefore the most representative of the tribal population and the residents of immediately surrounding areas. These surrounding residents could potentially influence demand for land uses on fee or trust land.

As shown in Table 2, Coos County's growth rate between 2000 and 2016 has been less than half that of the State of Oregon overall (see compound annual growth rates or CAGR). This is notable since population and employment growth are the most fundamental drivers of demand for new land uses.

[2] Figure A-1 in the Appendix shows the 2010 population by census block, which provides a useful graphical reference of this information.

Table 2. Population, 2000 to 2021

	CIT Block Groups	Coos Bay City	North Bend City	Coos County	Oregon State
2000 Total Population	2,926	15,425	9,495	62,779	3,421,399
2010 Total Population	3,218	15,967	9,695	63,043	3,831,074
2016 Total Population	3,382	16,265	9,918	64,544	4,029,968
2021 Total Population	3,477	16,448	10,042	65,364	4,218,101
2000-2010 Growth Rate (CAGR)	1.0%	0.3%	0.2%	0.0%	0.5%
2010-2016 Growth Rate (CAGR)	0.8%	0.3%	0.4%	0.4%	0.8%
2016-2021 Growth Rate (CAGR)	0.6%	0.2%	0.3%	0.3%	0.9%

Source: ESRI and Leland Consulting Group. CAGR is compound annual growth rate.

The growth rates of the Cities of Coos Bay and North Bend have been in keeping with the County, while the block groups on which the CIT lands are situated saw higher population growth than the state from 2000 to 2010, and similar growth from 2010 through 2016. Through 2021, per ESRI estimates, growth rates are projected to slow significantly.[3]

Table 3 shows regional household sizes to be significantly smaller than the state overall. Household sizes on CIT Block Groups are the lowest of all comparison areas, with over one-third of the population living in single-person households.

Further, there is a slightly larger share of nonfamily households in CIT Block Groups than Coos County and the State of Oregon overall. To a certain extent, this is typical of an urbanized area. With that said, of the family households in CIT Block Groups and the Cities of Coos Bay and North Bend, family sizes are slightly larger than those in Coos County overall, but still less than the State of Oregon overall.

[3] ESRI Business Analyst is a third-party data source that provides demographic data from the US Census, other federal and state agencies, and private sources.

Table 3. Household Sizes, 2016

	CIT Block Groups	Coos Bay City	North Bend City	Coos County	Oregon State
Avg. Household Size	2.25	2.29	2.36	2.31	2.48
Avg. Family Size	2.83	2.86	2.91	2.81	3.02
Households by Size					
1 Person Household	34.0%	33.6%	30.8%	29.8%	27.4%
2 Person Household	37.3%	35.3%	35.7%	40.0%	36.1%
3+ Person Household	62.7%	64.7%	64.3%	60.0%	63.9%
2+ Person Households:					
Family Households	87.0%	86.4%	87.7%	88.5%	87.3%
Nonfamily Households	13.0%	13.4%	12.3%	11.5%	12.5%

Source: ESRI and Leland Consulting Group

Table 4 shows selected household characteristics across several comparison areas. Incomes in CIT Block Groups are significantly lower—both for household and per capita income—than any other area.

In part, this may be a reflection of the significantly lower percentage of residents that have a bachelor's degree, as shown in Table 5, but also the high percentage of residents working in service occupations, which typically have lower salaries than both "white collar" and "blue collar" positions. Further, CIT Block Groups have the highest unemployment rate of any comparison area.

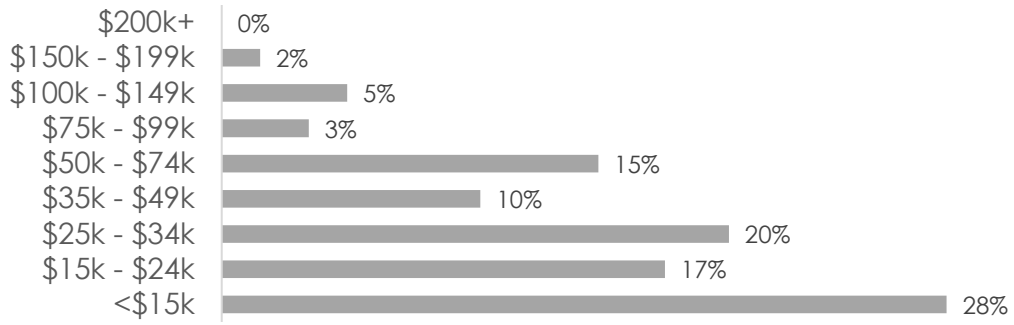
Table 4. Income Characteristics, 2016

	CIT Block Groups	Coos Bay City	North Bend City	Coos County	Oregon State
Median Household Income	$26,631	$36,583	$42,142	$38,746	$52,196
Per Capita Income	$16,396	$22,131	$23,687	$22,928	$28,424

Source: ESRI and Leland Consulting Group

As shown in Figure 3, about 28 percent of households in CIT Block Groups have an income of less than $15,000. This is the highest across any comparison area, with the next highest the City of Coos Bay at 20 percent. The 28 percent is more than twice as much as the State of Oregon overall, which has 13 percent of households earning less than $15,000.

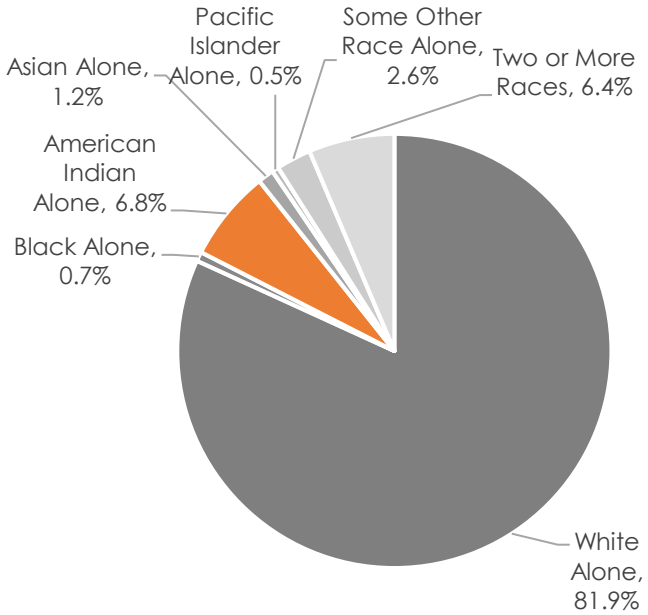
Figure 3. CIT Block Groups Households by Income, 2016



Source: ESRI and Leland Consulting Group

Figure 4 shows CIT Block Group population by race. As already stated, the census blocks groups that were analyzed for this data encompass CIT population, but approximately 93 percent of the block group population do not live on CIT lands. As such, major takeaways from the graph specific to CIT members are limited. However, the graph does indicate that the vast majority of the CIT population live on CIT-owned lands and not in the surrounding areas.

Figure 4. Population by Race, CIT Block Groups, 2016



Source: ESRI and Leland Consulting Group

Tapestry Segments

The ESRI "Tapestry Segmentation" system provides an accurate, detailed description of America's neighborhoods. U.S. residential areas are divided into 67 distinctive tapestry segments based on their socio-economic and demographic composition. The tapestry segments that are most prevalent within the CIT block group area and Coos County are summarized below.

CIT Block Group Top Tapestry Segment

Small Town Simplicity includes young families and senior householders that are bound by community ties. The prevailing lifestyle is down-to-earth and semirural, with television for entertainment and news, and emphasis on convenience for both young parents and senior citizens. Residents enjoy pursuits including online computer games, scrapbooking and rural activities like hunting and fishing. Since almost 1 in 4 households is below poverty level, residents also keep their finances simple—paying bills in person and avoiding debt.

Generally residing in small towns and mostly outside metropolitan areas, it is an older market, with about half of the householders aged 55 years or older, and predominately single-person households. Unemployment is higher and labor force participation is lower—which could result from lack of jobs or retirements. They are price-conscious consumers that shop accordingly, with coupons at discount centers. *Small Town Simplicity* features a semirural lifestyle, complete with trucks, ATVs, and vegetable gardens. Hunting, fishing, and target shooting are favorite pastimes.

Coos County Block Group Top Tapestry Segment

The top Tapestry Segment for Coos County is significantly different from the Tapestry for the CIT Block Groups. *Midlife Constants* residents are seniors, at or approaching retirement, with below average labor force participation and above average net worth. Although located in predominantly metropolitan areas, they live outside central cities in small communities. Their lifestyle is more country than urban. They are generous, but not spendthrifts.

Generally, the neighborhood consists of older homes, primarily married couples (with a growing share of singles), settled neighborhoods with slow rates of change, and predominantly single-family homes.

Midlife Constants generally prefer practical vehicles like SUVs and trucks. They are sociable, church-going residents and contribute to arts/cultural, educational, political, and social services organizations.

Age and Employment

Table 5 shows a number of key takeaways regarding residents of the CIT block groups. Residents:

- Are much less likely to have a bachelor's degree or other college degree than the other areas;
- Have a higher median age than the Cities of Coos Bay and North Bend, and the State, but lower than Coos County;
- Are significantly more likely to work in service industries than residents of other areas, and less likely to work in white collar or blue-collar jobs;
- Are more likely to be unemployed.

Table 5. Education & Employment Characteristics, 2016

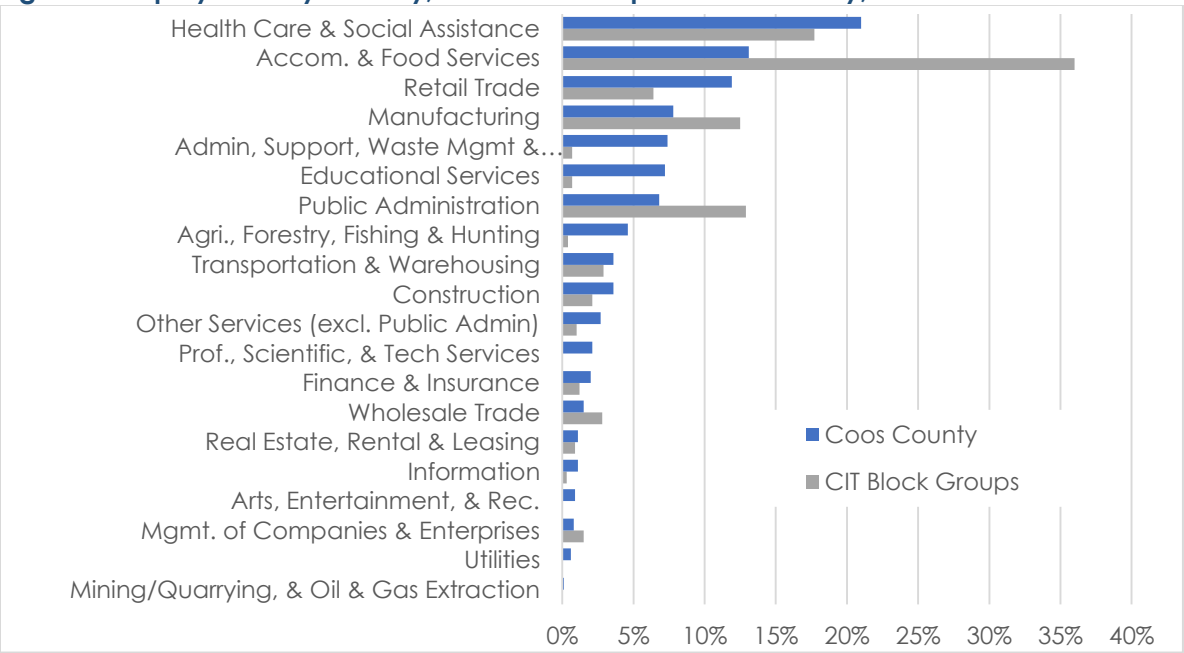
	CIT Block Groups	Coos Bay City	North Bend City	Coos County	Oregon State
Bachelor's Degree or Higher	7.5%	22.3%	24.0%	19.9%	31.3%
Median Age	47.3	43.6	42.2	49.0	39.4
Population by Occupation					
White Collar	48.7%	53.4%	65.1%	53.3%	59.7%
Services	34.2%	25.0%	21.7%	22.5%	19.3%
Blue Collar	17.1%	21.6%	13.1%	24.2%	21.0%
Unemployment Rate	9.0%	7.3%	7.2%	7.0%	5.8%

Source: ESRI and Leland Consulting Group

Figure 5 shows employment by industry for Coos County and CIT Block Groups. Workers in Coos County generally work in the health care and social assistance industry, accommodation and food services, and the retail trade.[4]

There are notable differences between the two areas. Workers in CIT Block Groups are significantly more likely to work in the accommodation and food services industry, public administration, and manufacturing than workers in Coos County overall.

Figure 5. Employment by Industry, CIT Block Groups & Coos County, 2014



Source: LEHD and Leland Consulting Group

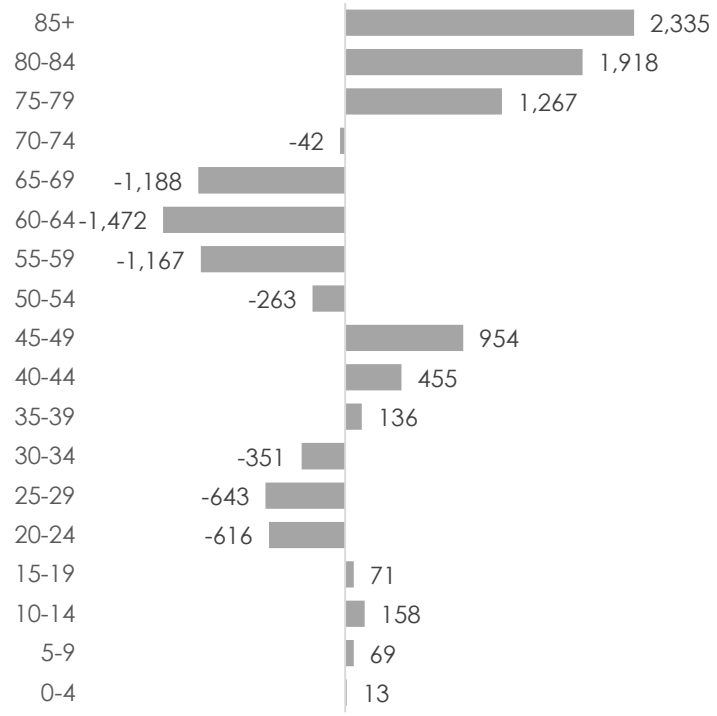
[4] Figure A-2 in the Appendix, provides the location and size of employment clusters in the area, with more information about existing employment conditions.

Future Resident Characteristics

Population

Figure 6 shows the projected change in population per age bracket through 2040 for Coos County, per the State of Oregon's Office of Economic Analysis data. Most population growth will occur in the very elderly age groups (those aged 75+ years old). This is largely due to the substantial baby boomer population (53 to 71 years old) currently in Coos County—see Figures A-3 and A-4 in the Appendix for the 2015 and 2040 Coos County Population Pyramids. This increase will likely result in increased demand for senior housing, health care and social assistance, and walkable and accessible amenities. There will be a significant decrease in those aged 50 to 69 years old, which may reduce the total number of working aged people in the county. Below 50-years-old, Coos County is expected to see moderate reductions in 20-somethings and moderate increases in 35- to 49-year-olds.

Figure 6. Population Change by Age, Coos County, 2015 to 2040



Source: Office of Economic Analysis and Leland Consulting Group

Households

As shown in Table 6, CIT Block Groups can be expected to see relatively little change in income in the next 10 years, but significant increases in median home value as household growth continues faster than the surrounding cities and county and vacancy rates remain low. Also, median age will increase faster than the Cities of Coos Bay and North Bend, but slower than Coos County and the State of Oregon overall.

Table 6. Change in Households by Income, 2016-2021

Households by Income	CIT Block Groups
<$15k	1.7%
$15k - $24k	-0.3%
$25k - $34k	-6.3%
$35k - $49k	1.5%
$50k - $74k	0.8%
$75k - $99k	0.8%
$100k - $149k	1.1%
$150k - $199k	0.7%
$200k+	0.0%

Source: ESRI and Leland Consulting Group

Socio-economic and Demographic Conclusions

The following takeaways can be made about the Coquille Indian Tribe demographics:

- There is relatively slow growth in both households and population in Coos County compared to the State of Oregon. However, the population of the CIT Block Groups has grown quicker than the surrounding areas.
- The CIT population itself is small—about 227 people. However, the surrounding population in the CIT Block Groups, cities, and county is much larger. The CIT may be able to develop some of its land for the existing CIT population, and other parts of its land to capture the residential, commercial, and recreational demand generated by these surrounding populations.
- There is a lower proportion of young people (particularly those in their 20s) than the state.
- Residents in CIT Block Groups have lower median incomes and educational attainment levels than the other comparison areas; and higher ages and unemployment.
- About one-third of workers in the CIT Block Groups work in the accommodation and food services industry, most likely due to the presence of the casino on tribal lands. Most of the other jobs are a mix of health care and social assistance, manufacturing, and public administration.
- The population is ageing more quickly in CIT block groups compared to most other areas, which will potentially affect other socio-economic traits such as labor force participation and income levels, as well as impacting housing needs.

Land Use

The Study Area consists of two contiguous assemblies of Coquille Indian Tribe (CIT) lands in the Coos Bay Area. The primary Empire assembly and secondary North Bend assembly are mostly held by the Tribe in trust, with a few parcels owned in fee. In addition, the CIT owns one small individual parcel on the Coos Bay Peninsula outside of these two "assemblies".

None of the lands in the Study Area were recovered by the Tribe through Federal land restoration processes after tribal sovereignty was restored in 1989. The Tribe purchased the lands in fee and later took most, but not all, of the property in trust. Those CIT lands held in trust are not zoned under city (Coos Bay and North Bend) or Coos County land use regulations. All CIT lands on the Coos Bay Peninsula are illustrated on Figure 7.

Empire

The largest CIT land acquisition in the Study Area was in 1993. At the time, the acquisition consisted of two large non-contiguous but closely adjacent parcels: Empire North and South. These lands are sometimes referred to as the "Empire Reservation", but for the purposes of this Technical Memorandum are termed "Empire", "North Parcel" or "South Parcel". The land was purchased in fee from a private timber company.

Empire is on the west side of the Coos Bay Peninsula. Most of Empire is within unincorporated Coos County, except for around First Creek and Wisconsin Avenue at the north end of the North Parcel. This most northerly sub-area is within the City of Coos Bay. The Empire Parcels have no direct shoreline or estuary frontage.

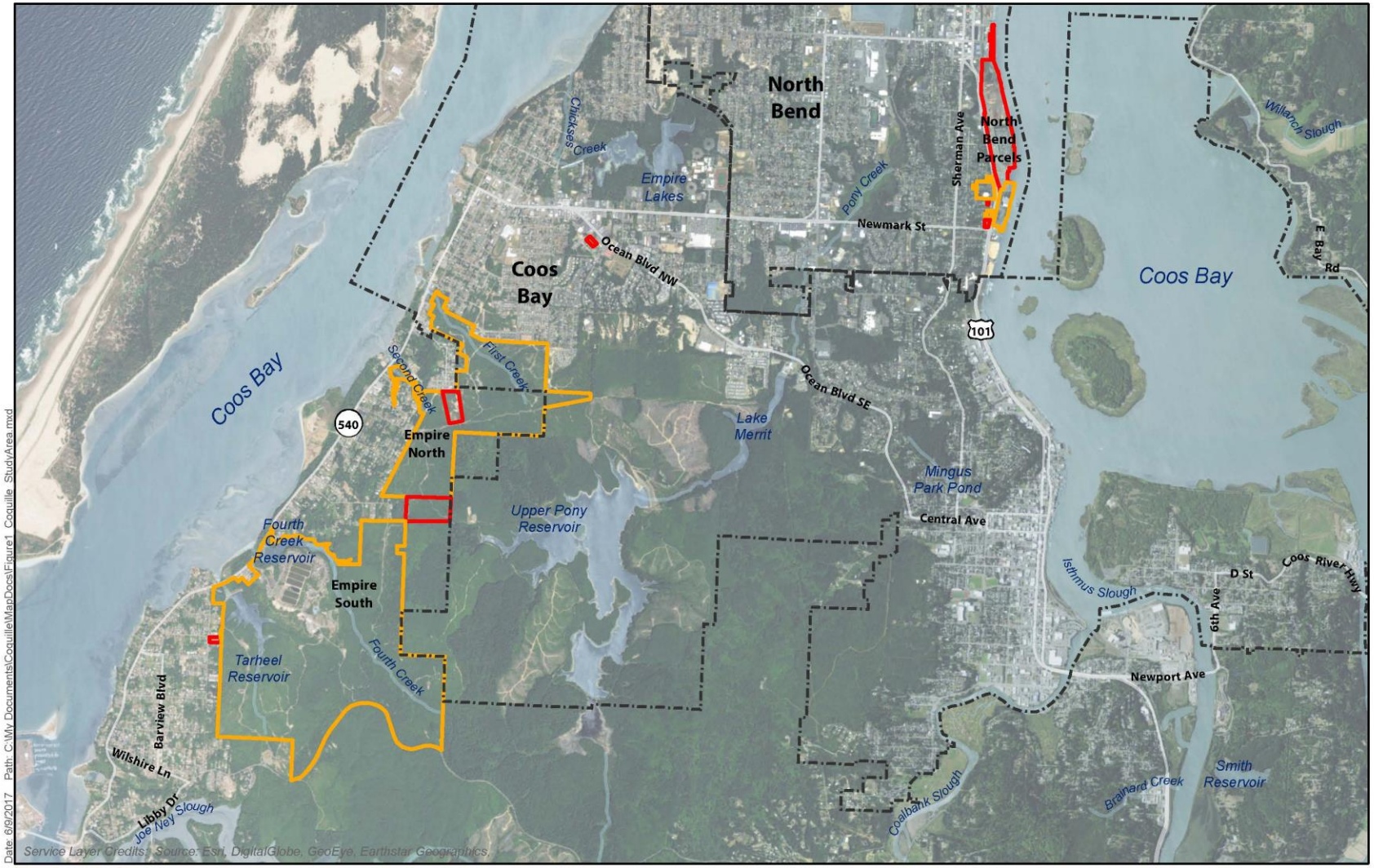
This Empire assembly now totals approximately 1,076 acres. Since 1993, the CIT has made three additional but relatively small acquisitions in fee:

- "Lewis Connector Parcel" which joins the North and South Parcels.
- "CSD Parcel" was added to the North Parcel.
- "Nelson" located at the west edge of the South Parcel.

These three parcels are all within unincorporated Coos County, and currently subject to County land use regulations. The CIT is in the process of bringing the two larger parcels into trust; the CSD parcel is currently zoned for Industrial use and the Lewis Connector Parcel as Forest. The Nelson parcel is designated Urban Residential.

There is an isolated CIT-owned fee parcel (1.0 acre) at Ocean Blvd and Wallace Street in the City of Coos Bay. The site is zoned as Trust Land and is the site of the Three Rivers Hotel & Casino.

Figure 7. CIT Comprehensive Plan Study Area



Parametrix

Data Source: Coquille Indian Tribe, US Bureau of Indian Affairs, Coos County, USGS (NHD)

Miles
0 0.5 1

Tribal Land
- Fee
- Trust

- City Limit
- Water Body
- Stream/River

Study Area
Coquille Indian Tribe
Comprehensive Plan

Most access to Empire is off of Cape Arago Highway via a series of west-east local roadways through these rural residential neighborhoods. Most of these roadways lie outside of Empire. The CIT's Empire land holdings are mostly set well back from Cape Arago Highway. The one exception to the lack of highway frontage is a portion of the South Parcel between Fourth Creek and Tarheel Creek. This also is the site of the Miluk Drive main entry to the CIT's Kilkich Village community. The entry is marked by a landscaped gateway feature and large wooden sign.

Numerous ideas and plans for the development of Empire have been put forward over the years, but at present only the Kilkich Village is developed. As shown in Figure 8, the area includes 93 dwelling units and several Tribal service and office buildings that are situated along Mexeye Loop and around a commercial cranberry growing operation at the loop's center. Tribal services located in the Loop include the Education Department, Library, Community Center, Health Center, Housing Authority and Police Department. Fire service is provided by Charleston Fire District Station #1, located just north of the Kilkich community along Cape Arago Highway.

To the southeast along Miluk Drive are public works buildings (formerly a residential building panel manufacturing facility), and outdoor materials/equipment storage. A community/cultural area is located nearby along Plankhouse Loop Road, featuring a large ceremonial plank house and canoe carving facility. The Tribal cemetery and columbarium lie further east on the property. The balance of the Empire parcels are forested.

North Bend

The smaller of the CIT's two land assemblies, the North Bend properties are situated along US 101 within the City of North Bend and total 70.8 acres. For the purposes of this Technical Memorandum, these properties are referred to as the "North Bend Parcels". The North Bend Parcels are highly urbanized with residential, commercial, and waterfront industrial uses surrounding and including Tribal lands.

The most significant uses within the North Bend Parcels are the CIT's Mill Casino Hotel and RV Park, and a large log storage yard. These uses are on contiguous lots totaling 62.7 acres, and located on the Coos Bay waterfront along the east side of US 101. North of the log yard is a very narrow parcel that is the site of a waterfront boardwalk that is open to the public.

The CIT's tribal administrative offices are located on a 5.9 acre site directly across from the Casino on the west side of US 101. The Tribe owns another five non-contiguous parcels located on or near to the west side of US 101 between Lombard Street and Newmark Avenue. These five lots are clustered around the administrative headquarters and total to 2.2 acres.

The RV Park and log storage yard are on lands held in fee by the CIT, but are not subject to City of North Bend zoning designations. However, the Tribe should coordinate future development with the city to ensure that city and Tribe zoning maps are aligned. The RV Park is zoned 44-UW, which permits commercial uses. The log storage yard is zoned 44-UNW. This zone permits log storage as an allowed use.

Figure 8. Kilkich Area

I. Built Infrastructure

Existing development within the Empire North and South Parcels, that requires community–scale drinking water and sanitary sewer infrastructure, is limited to the Kilkich Village and neighboring Tribal offices and facilities. The entire North Parcel and most of the South Parcel are forested lands going through early and mid-stages of timber succession. Empire was almost totally logged as pre-requisite to the Tribe's 1993 acquisition.

Expanded development within Empire may require water supply, sanitary sewer, and other infrastructure upgrades and/or extensions. The North Bend Parcels are already highly urbanized and existing "main line" infrastructure may be adequate, although transportation entry and egress from US 101 might need improvement. The exception is the log storage yard north of the Mill Casino/Hotel. If this area and/or the abutting RV Park were considered for redevelopment, water, sewer, and/or transportation upgrades would, to some degree, almost certainly be necessary.

<u>Transportation</u>
The following describes the existing transportation facilities and conditions for the vehicular, pedestrian, bicycle, and transit modes within the project study area.

Vehicular Facilities
The Coquille Indian Tribe (CIT) Comprehensive Plan encompasses two study areas: The Empire parcels are located in unincorporated Coos County south of City of Coos Bay city limits and the North Bend parcels located within the City of North Bend. The study area is served by a roadway network with various roadway classifications per the Oregon Department of Transportation (ODOT) 2016 classifications maps and the cities of Coos Bay and North Bend's Transportation System Plan (TSP) shown in Figures 9-12. An inventory of roadway characteristics, including posted speeds, directionality, roadway widths, number of travel lanes, on-street parking, and presence of sidewalks and bicycle accommodations is documented in Table 7.

Rights-of-Way
The CIT's land holding are primarily accessed from two major roadways – US 101 for the North Bend Parcels, and the Cape Arago Highway for the North and South Empire Parcels.

- The right-of-way width for US 101 along the frontage of the CIT's North Bend Parcels ranges from 110 to 190 feet. Wider sections are along the frontage of trust lands (Mill/Casino Hotel) and at the north end where US 101 begins to enter downtown North Bend.
- The Cape Arago Highway right-of-way width for the sections of the highway from which access to the Empire Parcels is achieved is primarily 80 feet. There is one short section of 100 foot width.

In addition, several west to east residential roadways provide access from the Cape Arago Highway to the <u>edge</u> of the CIT's Empire Parcels. These are Wisconsin Avenue, Dolezal Lane, Spaw Lane, Kellogg Lane, Grinnell Lane, and Tarheel Boulevard/Lane.

Wallace Road runs along the south edge of Empire South. The width of these local road rights-of-way range range between 60 and 70 feet. The Tarheel Boulevard/Lane right-of-way is 30 feet wide

Finally, Miluk Drive is the direct point of access from the Cape Arago Highway to the CIT's Kilkich Village. Mexeye Loop provides internal circulation through residential areas, and Plank House Loop provides vehicular circulation through the nearby cultural area. Strictly speaking, as these are CIT roads are within CIT lands held in trust, there is no right-of-way as such.

Table 7 – Existing Study Area Roadway Characteristics by Functional Class

Roadway	Posted Speed (mph)	Directional /Surface Type	Width (feet)	Lanes	On-Street Parking ?	Bicycle Lanes/ Shoulder	Side walk	Function Classification	
								ODOT	City/County
Empire Site									
Cape Arago Highway	40	Two-way	25 - 35'	2	No	No[5]	No	Minor Arterial	Arterial
Wisconsin Avenue	15	Two-way	28 - 32'	2	No	No	No	Local Road	Local Road
Spaw Lane	15	Two-way	22 – 26'	2	No	No	No	Local Road	Local Road
Grinnell Lane	15	Two-way	22 – 30'	2	No	No	No	Local Road	Local Road
Tarheel Lane	15	Two-way	18 – 28'	2	No	No	No	Local Road	Local Road
Miluk Drive	15	Two-way	25 – 35'	2	No	No	Yes[6]	Local Road	Local Road
Pigeon Point Loop	15	Two-way	24'	2	No	No	No	Local Road	Local Road
Libby Lane	30	Two-way	24 – 30'	2	No	No	No	Major Collector	Major Collector
North Bend Site									
US Route 101	45	Two-way	65 – 85'	4-6	No	No[7]	Yes[8]	Principal Arterial	Principal Arterial
Old Weyerhauser Access	15	Two-way	24'	2	No	No	No	N/A	N/A
RV Park Entrance	15	Two-way	24'	2	No	No	No	N/A	N/A
Mill Casino Driveway	15	Two-way	24 – 36'	3	No	No	Yes	N/A	N/A
Newmark Street	25	Two-way	28 – 56'	2-4	No	No	No	Minor Arterial	Arterial

[5] Cape Arago Highway has no sidewalks and narrow shoulders within the study area. However, a shared-use path exists along the east side of Cape Arago Highway. The path is in poor condition and not compliant with ADA standards.
[6] Sidewalks exists along part of Miluk Drive. However, they do not connect to Cape Arago Highway.
[7] Bicycle lanes are present at intersection approaches along US Route 101.
[8] Continuous sidewalks are provided along the west side of the roadway within the project area.

Figure 9: ODOT Functional Classification Coos Bay

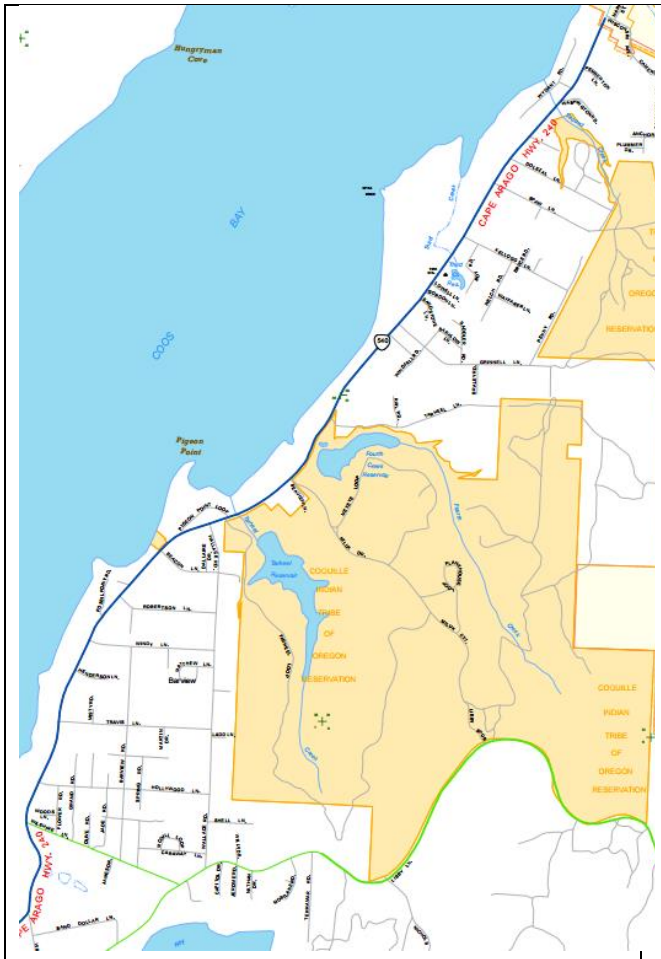
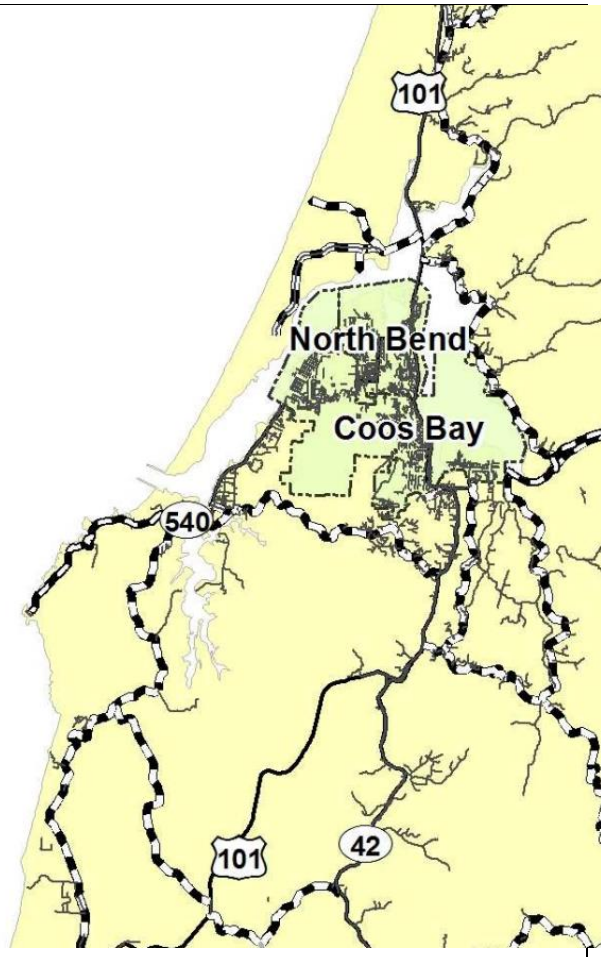


Figure 10: Coos County Functional Classification



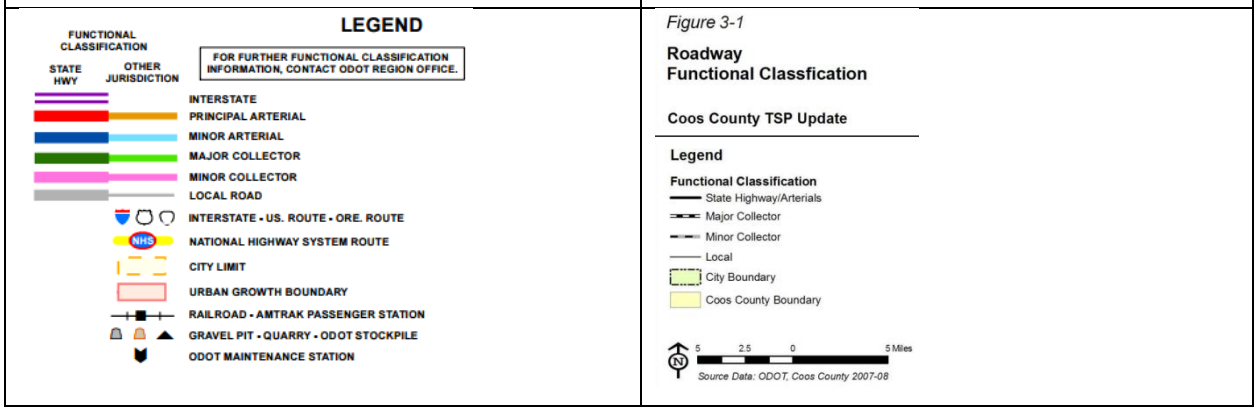


Figure 11: ODOT Functional Classification North Bend

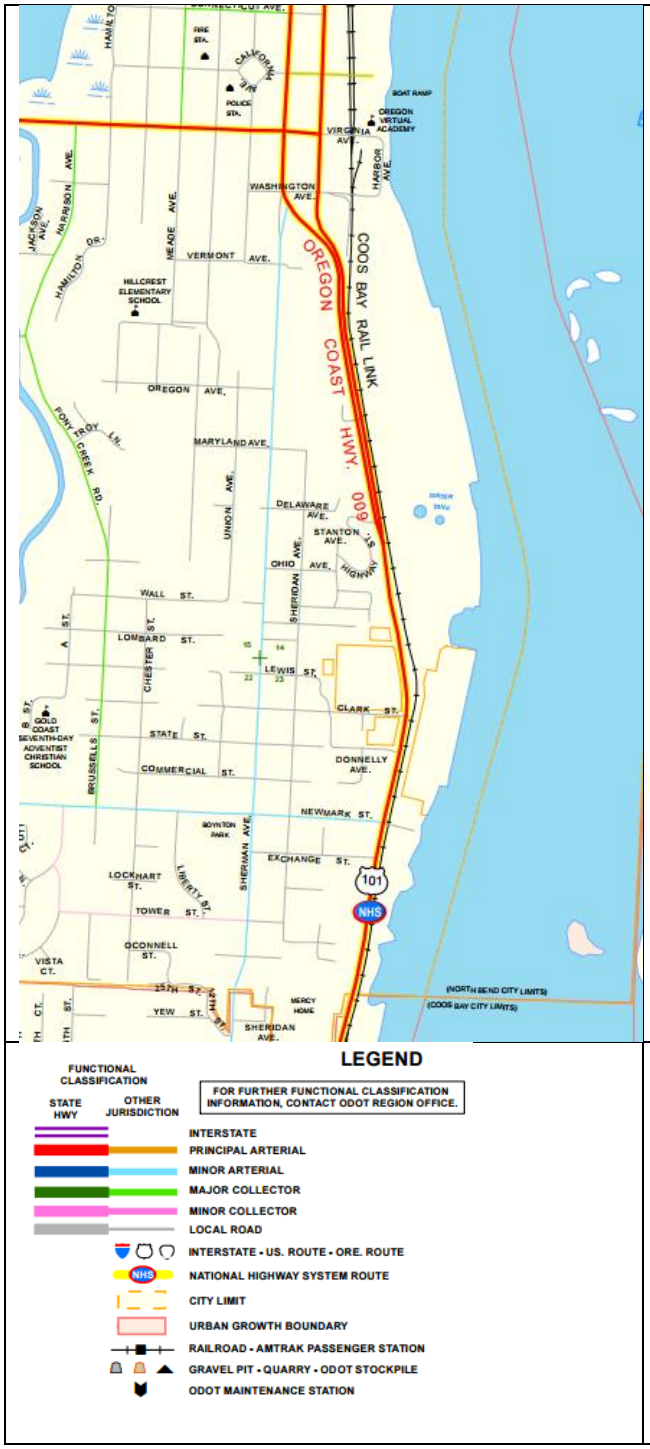
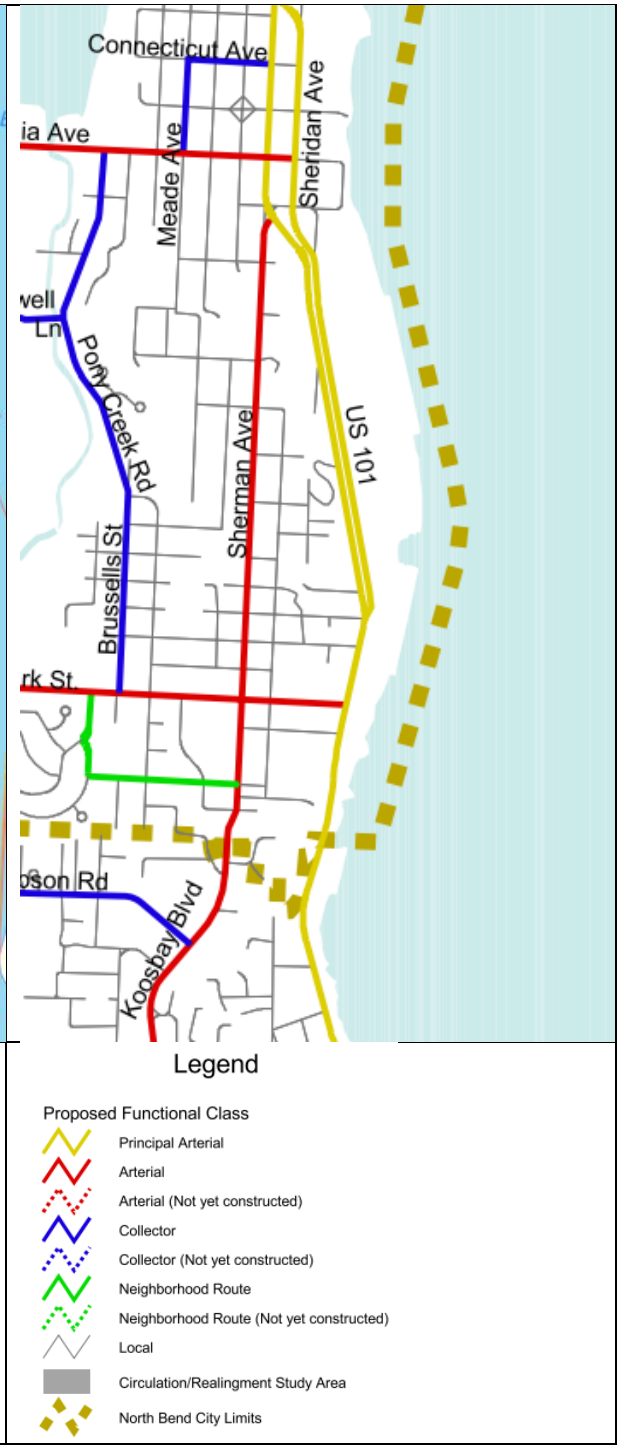


Figure 12: City of North Bend Functional Classification



Pedestrian Facilities

North Bend
As shown in Figure 13, the pedestrian system along US Route 101 only provides sidewalk facilities on the west side of the corridor. Sidewalks are planned as part of the City of North Bend Master Plan along the east side of US Route 101. The overall conditions of the pedestrian facilities along US Route 101 are generally good with regards to spalling/cracking, frequency of pedestrian obstructions, and horizontal/vertical faults. The majority of curb-ramps within the study area meet the needs of the American's with Disability Act (ADA) accessible standards providing tactile warning strips and compliant grades.

Empire
As shown in Figure 14, the pedestrian system along Cape Arago Highway does not provide sidewalk facilities on either side of the corridor. Sidewalks are identified as a planned part of the City of Coos Bay Master Plan. During a site visit to the Coos Bay study area, it was noted that Cape Arago Highway has a multi-use path along the east side of the corridor. However, the quality and consistency of the multi-use path is extremely poor.

Miluk Drive has sidewalks on both sides of the road east of Mexeye Loop and on the north side only west of Mexeye Loop; though it stops approximately 500 feet short of Cape Arago Highway. Mexeye Loop has sidewalks on one side of the road. Libby Lane has no sidewalks. All other roads within the Empire Site study area are unimproved and do not currently have sidewalk facilities.

A pedestrian crossing conflict point has been identified on Mexeye Loop at the CIT Community Center also referred to as the "triangle area." To reduce the potential of pedestrian and motor vehicle conflicts, it is recommended that the pedestrian crossing be enhanced to provide a more defined and visible space for pedestrian to cross Miluk Drive.

A qualitative multimodal assessment of these facilities is provided in Table 8. Cape Arago Highway is considered to be Fair for pedestrians based on the presence of the multi-use path; but the path itself is in poor condition. Miluk Drive and Mexeye Loop are considered to be Good for pedestrians; however, the Miluk Drive sidewalk gap to Cape Arago Highway needs to be completed. Libby Lane is considered Poor for pedestrians based on the lack of shoulder or sidewalks.

Future needs include upgrade of the multi-use path along Cape Arago Highway, extension of the sidewalk on Miluk Drive to Cape Arago Highway, pedestrian facilities along all on-site roadways as they are improved, and a mixed-use path or protected shoulder along Libby Lane to connect the baseball field area to Wallace Avenue or Wilshire Lane.

Figure 13: North Bend Pedestrian Facilities

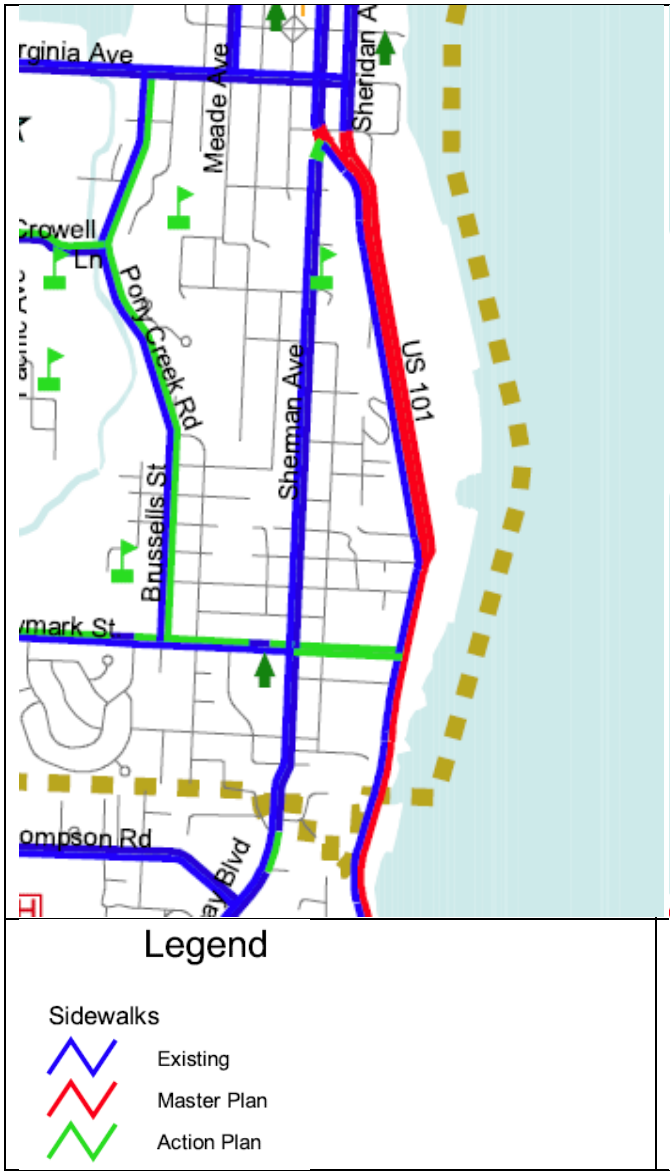
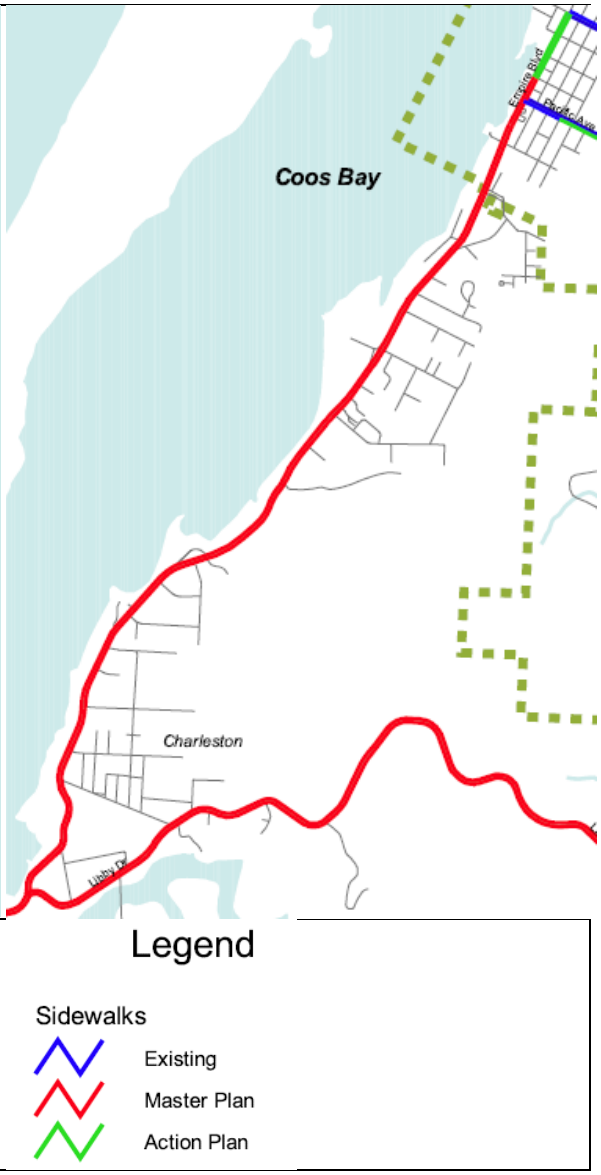


Figure 14: Coos Bay Pedestrian Facilities



Bicycle Facilities

North Bend
The majority of US Route 101 does not provide bicycle accommodations. On-street bicycle lanes are provided at the following intersection approaches where designated right-turning lanes are present.

- US Route 101/Newmark Street southbound (approximately 235')
- US Route 101/Mill Casino Driveway northbound (approximately 170')
- US Route 101/RV Park Access northbound (approximately 330')

The remaining segments of the corridor do not provide dedicated bicycle facilities. Bicyclists are expected to share the roadway with motorists.

Empire
On-street bicycle lanes are not currently provided along Cape Arago Highway within the study area. The Empire Boulevard Construction Project has constructed sidewalks and bicycle lanes along Cape Arago Highway extending to the Coos Bay city limit boundary. The Empire Boulevard Construction Project's extents terminate prior to the northern most study intersection and do not include improvements to Cape Arago Highway within the study area.. As noted under the *Pedestrian Facilities* section, a multi-use path is provided along the east side of Cape Arago Highway but the quality and consistency of the multi-use path is poor.

Neither Miluk Drive nor Mexeye Loop have bicycle facilities. The existing roadway traffic volumes and speeds are conducive to bicycles sharing the roadway with vehicles. Libby Lane has no shoulders for bicycles. All other roads within the Empire Site study area are unimproved and do not currently have bicycle facilities.

A qualitative multimodal assessment of these facilities is provided in Table 8. Cape Arago Highway is considered to be Poor for bicycles based on the lack of shoulders and the poor condition of the multi-use path. Miluk Drive and Mexeye Loop are Fair for bicycles as there is no bicycle facility but shared facilities are appropriate under current conditions. Libby Lane is classified as Poor for bicycles based on the lack of shoulders.

Future needs include upgrade of the multi-use path along Cape Arago Highway, possible sharrows or protected area for bicycles on Miluk Drive to Cape Arago Highway, bicycle facilities as deemed appropriate along all on-site roadways as they are improved, and a mixed-use path or shoulders along Libby Lane to connect the baseball field area to Wallace Avenue or Wilshire Lane.

Public Transportation Facilities

The following describes the range of public transportation facilities operating in the two study areas. A qualitative multimodal assessment of transit to the Empire Site is included in Table 8. Transit service is considered to be Fair based on the availability of transit with transit shelters located on-site; although the bus frequency is poor.

Future needs include adequate pedestrian access to the on-site transit stops and increased frequency of service.

Coquille Tribal Service Area (ISA)
Public transportation service is provided through the multiple Tribal Departments including the Community Health and Community Center. The Coquille Tribal Service Area (ISA) public transportation system which includes a fleet of two buses and two vans paid for by State Special Transportation Funds (STF).

Regional Transportation Service
Public transportation service is provided by Coos County Area Transit (CCAT) which operates two loop services throughout Coos Bay and North Bend – the east and the west loops. Both service loops operate from approximately 8:00am to 4:30pm, Monday through Friday. It should be noted that the CCAT is expecting to receive notification regarding a grant applied for in partnership with the CIT in September 2017. The anticipated grant would allow the CCAT to minimize travel times of the various loops recognized below by reducing headways from approximately 90 minutes to 55 minutes in addition to expanding the operating hours of service. A summary of existing CCAT service is provided below.

CCAT Loop Service:

- The East Loop runs along the eastern side of Coos Bay extending to the neighboring unincorporated communities of Bunker Hill and East Side. A single loop makes 36 stops over a duration of two hours. Service is provided four times per day to most areas.
    - Day and Hours of Operation: Monday – Friday, four runs between 8:20am to 4:30pm.
- The West Loop runs along the western coast of Coos Bay extending to the neighboring unincorporated communities of Charleston and serving the Empire Site. A single loop makes 35 stops over a duration of two hours. Service is provided four times per day to most areas.
    - Days and Hours of Operation: Monday – Friday, four runs between 8:10am to 4:20pm.

CCAT Intercity Connector: Myrtle Point – Coos Bay: CCAT operates an intercity connector route between Myrtle Point, Coquille, and Coos Bay. Two runs are made per day for service Monday through Friday. The CCAT Intercity Connector fleet includes two 12-passenger buses, which are ADA accessible

- Morning – Departs Myrtle Point at 7:30a.m., makes three stops in Coquille, and makes several stops in Coos Bay before returning to Myrtle Point at 10:00a.m.
- Afternoon – Departs Coquille at 2:15p.m., makes several stops in Coos Bay, returns to Coquille, and makes final stop in Myrtle Point at 4:40p.m.

CCAT Intercity Connector: Lakeside – Huaser & Loop Express Connector

CCAT operates a single fixed-route loop between Lakeside, Hauser, North Bend, and Coos Bay along with an express loop between Coos Bay and North Bend. Service is

provided Monday, Wednesday, and Friday. A total of seven runs are made per day, three trips from Lakeside, Hauser, North Bend, and Coos Bay and four trips of the Coos Bay and North Bend express loop.

- Departs Lakeside at 8:30 a.m. with multiple stops in Hauser, proceeds to North Bend, makes several stops throughout Coos Bay, and makes final stop in Coos Bay at 9:46 a.m.
- Service changes to express loop within Coos Bay and North Bend from 9:56 a.m. to 11:08 a.m. before returning to Lakeside to begin the one-way trip from Lakeside, Hauser, North Bend, Coos Bay.

CCAT Dial-A-Ride

Public transportation service is provided by CCAT as an origin-to-destination option for wheelchair accessible transportation within Coos Bay, North Bend, Bandon, Coquille, and Myrtle Point. The CCAT Dial-a-ride service vehicle fleet consists of one vehicle for the Coquille area. Riders must request service between the hours of 8:00 a.m. and 5:00 p.m. Monday – Friday at least one day in advance.

- Coos Bay, North Bend, and Bandon: Monday – Friday 8:15 a.m. to 4:30 p.m.
    - Coquille: Monday – Friday 8:15 a.m. to 12:00 p.m. and 1:00 p.m. to 2:00 p.m.
- Myrtle Point: Monday – Friday 10:00 a.m. to 3:00 p.m.
    - Passengers who live three-quarters of a mile or more of a Loop Bus Stop, are over the age of 60, or are a person with a disability are eligible to use this service.

Curry Public Transit Coastal Express

Public transit is provided by the Curry Public Transit Coastal Express which operates a fixed-route between Smith River, CA and Oregon communities including Coos Bay and North Bend. Riders are able to flag buses at a location other than a designated stop but must call the dispatcher at least an hour in advance.

- Days and hours of operation include Monday – Friday, hours vary in specific communities.

Table 8 – Empire Site Qualitative Multimodal Assessment

	Pedestrian	Bicycle	Transit
Cape Arago Highway	Fair	Poor	Fair
Miluk Drive	Good	Fair	Fair
Mexeye Loop	Good	Fair	Fair
Libby Lane	Poor	Poor	NA

Trucking Routes

The City of North Bend has designated US Route 101 as a primary truck route in the study area, as shown in Figure 15. The City of Coos Bay has designated Cape Arago Highway as a primary truck route and Libby Lane as a secondary truck route in the

study area, as shown in Figure 16. Primary trucking routes are aimed at addressing through movements of trucks rather than local deliveries. The objective of designating a primary trucking route is to allow these routes to focus on design criterion that accommodates trucks by providing 12 foot travel lanes, longer access spacing, and curb returns and pavement design. Secondary trucking routes are planned to provide access for trucks and are primarily attached to county and city owned roadways.

Rail Facilities
The existing rail system within Coos County plays an integral role in the movements of goods. Imported goods are received by shops and unloaded onto trucks and train cars to be distributed domestically. There are no current locations within Coos County served by passenger rail service.

North Bend
The Coos Bay Branch Line is a 136 mile long rail line running between Eugene and Coquille. Within the North Bend Area, an existing rail line runs parallel on the east side of US 101 within the North Bend study area. All four of the westbound approaches to the project area study intersections cross the rail line including the two signalized intersections located at US 101/Mill Casino Driveway and US 101/Newmark Street and the two unsignalized intersections located at US 101/Old Weyerhauser Acess and US 101/RV Park Entrance. Railroad crossings arms are provided at the intersection of US 101/Mill Casino Driveway, all additional study intersections along US 101 are not equipped with crossing arms.

Empire
There are no existing rail facilities within the Empire Site area or along Cape Arago Highway within the project study area.

Figure 15: North Bend Designated Truck Routes

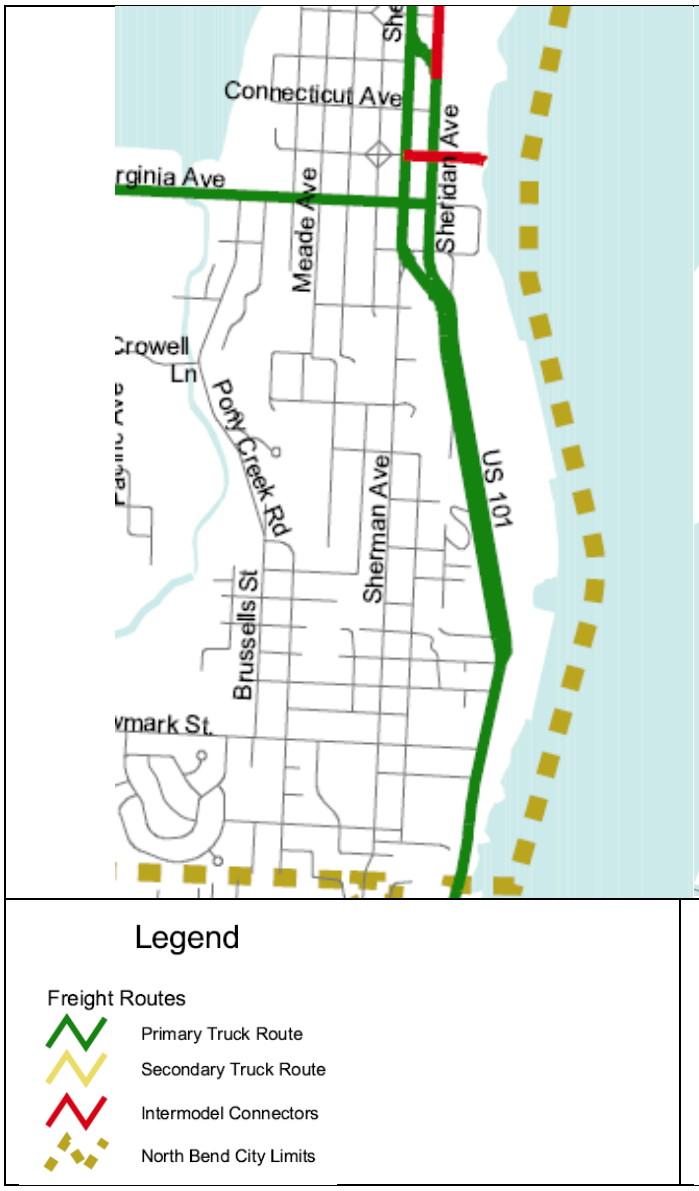
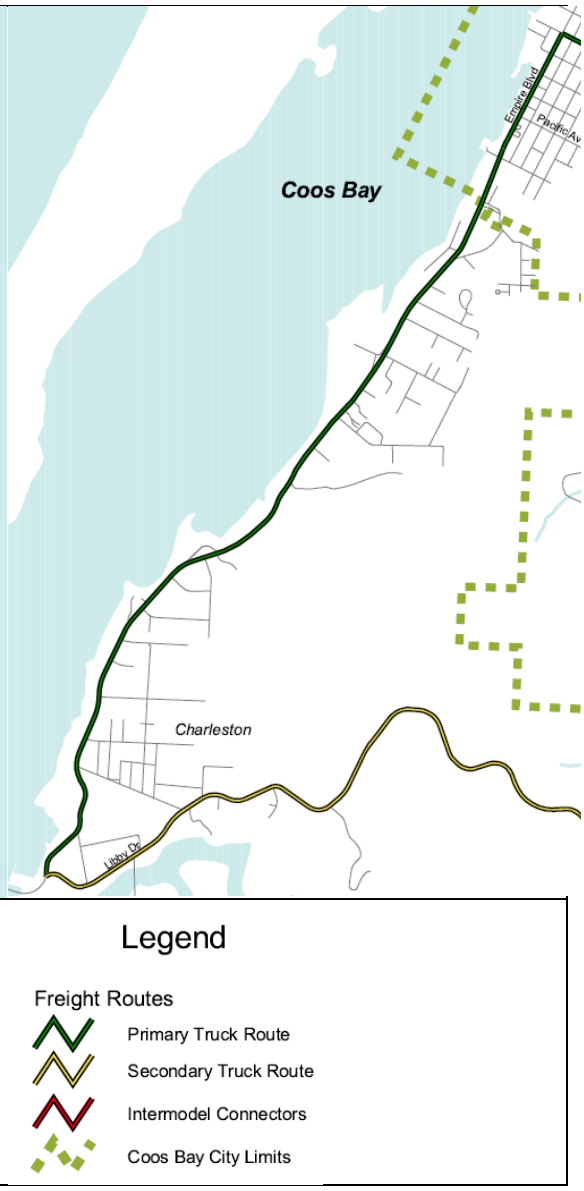


Figure 16: Coos Bay Designated Truck Routes



Legend

Freight Routes

- Primary Truck Route
- Secondary Truck Route
- Intermodel Connectors
- North Bend City Limits

Legend

Freight Routes

- Primary Truck Route
- Secondary Truck Route
- Intermodel Connectors
- Coos Bay City Limits

Sanitary Sewer

Empire Parcels

Wastewater collection from the Empire Parcels is provided by the Charleston Sanitary District. The District has a 21-inch diameter line in Cape Arago Highway that feeds wastewater to the Coos Bay Treatment Plant (see next section). There is also an 8-inch diameter sewer line in Miluk Drive that collects wastewater from Kilkich Village and surrounding institutional and cultural uses.

Wastewater treatment is currently provided by the City of Coos Bay at a treatment plant located on the Coos Bay waterfront and accessed from Cape Arago Highway. The City has a new wastewater treatment plant under construction south of this old plant on the inland (east) side of Cape Arago Highway. The new plant is off of Wisconsin Avenue, and very close to the north boundary of the Empire North Parcel. The new plant will have capacity of 8.0 million gallons per day (MGD). This new plant is designed to meet area growth over the next 20 years, including development in the Empire Parcels. As of writing, this new treatment plant will come online in 2017.

North Bend Parcels
Wastewater collection and treatment for the North Bend Parcels is provided by the City of North Bend. The City's wastewater treatment plant is located near the municipal airport, and has a dry capacity of 2.0 MGD (up to 10.0 MGD wet). The City currently has no announced plans to expand this facility.

Main collection infrastructure for the North Bend Parcels consist of a 12-inch diameter sewer main following US 101. One primary lateral main service (8-inch diameter) enters the CIT log storage site, with a second (6-inch diameter) for the casino/hotel site. Service to other CIT properties (administrative offices, etc.) located on the west side of US 101 is through smaller local sewer laterals.

Drinking Water Supply
Drinking water is currently supplied to the CIT's Empire South and North Bend Parcels by the Coos Bay-North Bend Water Board. The Water Board operates a 12.0 MGD water filtration plant at Pony Creek. The Upper Pony Creek Dam and Reservoir is the primary water storage facility with a 6,230 acre-feet capacity. These facilities are immediately east of the CIT Empire Parcels.

Empire Parcels
The primary water service to the Empire Parcels is through a 12-inch diameter water main (8-inch in some sections) along Cape Arago Highway. This main also provides drinking water to the numerous private homes and businesses along and near to the highway.

Within Empire, the primary drinking water (and sewer) customers are the residential dwelling units located in the South Parcel's Kilkich Village development, and surrounding Tribal offices, operations, and community and agricultural facilities. The primary lateral water service is a 12-inch diameter main from Cape Arago Highway

along Miluk Drive, then through the Village development, and ending at the Plank House area. An 8-inch diameter main runs along Mexeye Loop serving buildings and houses in the Kilkich Village.

North Bend Parcels
The North Bend Parcel's primary water service is delivered through a 12-inch diameter main along US 101 (termed Tremont Street/Oregon Coast Highway on some Water Board maps).

Surface Water
Storm water management within the Empire Parcels and along roadways accessing these parcels is provided through sheet flows, open ditch drainage, and cross culverts as is the conventional practice in rural areas. The exception is the Kilkich Village development which uses piped storm water systems. See Figure 18 for local topography to better understand probable water flows under current conditions.

The CIT's North Bend Parcels are highly urbanized, and primarily use conventional piped storm water management systems. The hotel/casino site is paved, as is the log yard and RV Park. Overflow parking to the west of the RV Park is gravel. Overflow storm water flows into the City of North Bend system and some privately-owned storm sewer lines. Storm water is discharged into Coos Bay.

See the Natural and Cultural Resources section and mapping in this Technical Memorandum, for more information on streams, reservoirs, and other water bodies in the Study Area.

Electrical Power
Electrical power is provided in the Coos Bay-area by Pacific Power, an investor-owned utility.

There is a transmission-scale power line owned by Pacific Power that crosses east-west through Empire North, and ends at a major power substation located at Penny Road and Spaw Boulevard just outside the west boundary of the North Parcel, as shown in Figure 17.

The location and the capacity of this transmission-scale power infrastructure would indicate that electric power transmission upgrades would only be necessary if power intensive industrial uses were developed within Empire, or perhaps with development of similar power intensive uses elsewhere in the Coos Bay area.

Natural Gas
Natural gas is provided in the Coos Bay-area by Northwest Natural, an investor-owned utility.

The NW Natural website has a function for determining whether natural gas service is provided in specific areas. Using this system, it was determined the natural gas is NOT available to the Empire Parcels (Note: two locations were tested – Wisconsin Avenue and Kilkich Village). Natural gas is however available to the CIT's North Bend Parcels.

Figure 17. CIT Built Infrastructure

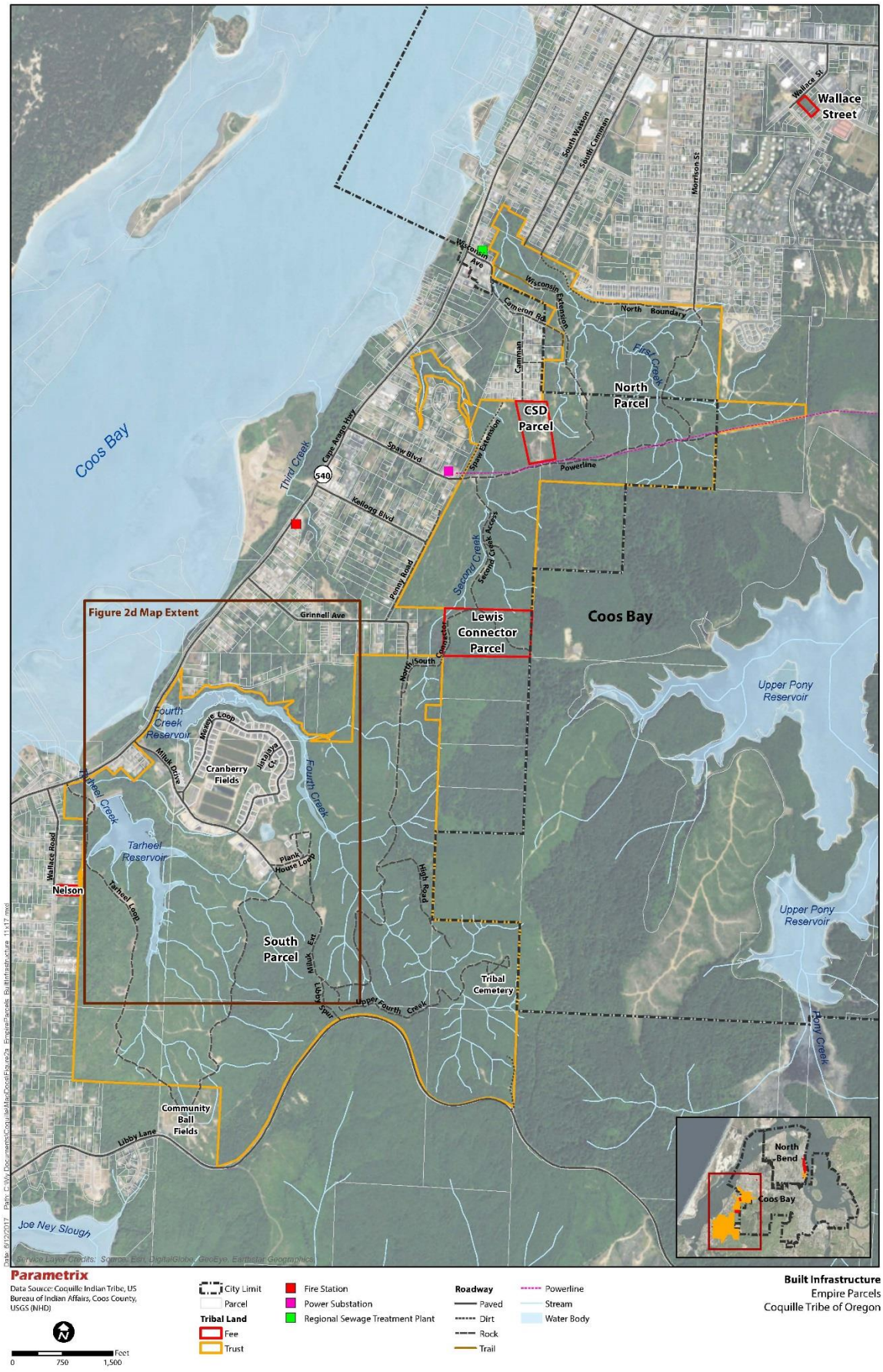
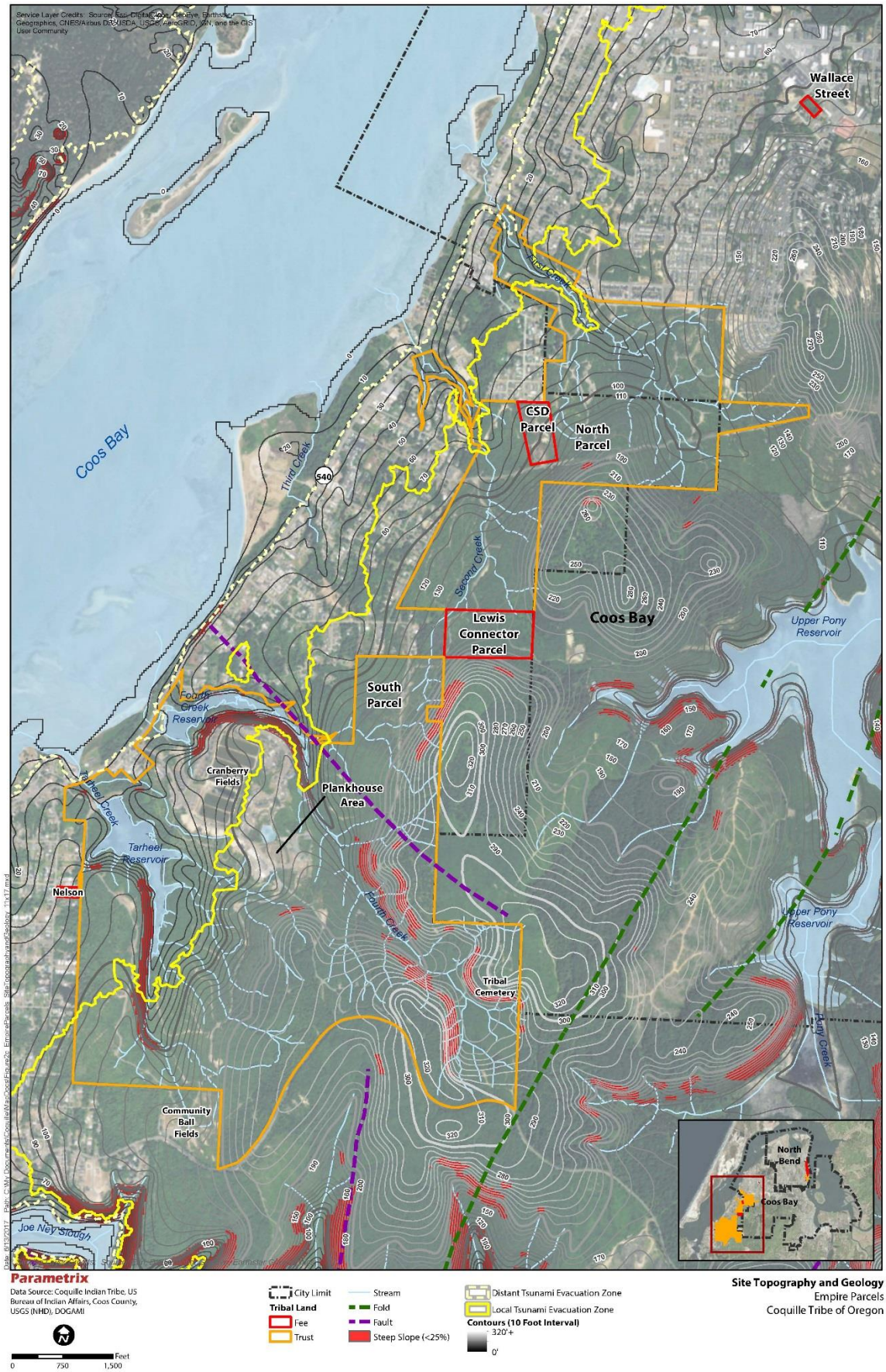


Figure 18. Empire Site Topography and Geology



Parametrix

Data Source: Coquille Indian Tribe, US Bureau of Indian Affairs, Coos County, USGS (NHD), DOGAMI

0 750 1,500 Feet

City Limit
Tribal Land
Fee
Trust
Stream
Fold
Fault
Steep Slope (<25%)
Distant Tsunami Evacuation Zone
Local Tsunami Evacuation Zone
Contours (10 Foot Interval)
320'+
0'

Site Topography and Geology
Empire Parcels
Coquille Tribe of Oregon

Natural and Cultural Resources

Statewide Planning Goal 5

Statewide Planning Goal 5: Natural Resources, Scenic and Historic Area, and Open Spaces requires local governments to adopt programs that will protect such resources. The CIT has not formally documented or designated such resources on Coos Bay-area Tribal lands as part of any comprehensive Goal 5 Inventory. No formal Goal 5 inventories conducted by Coos County, or the cities of Coos Bay or North Bend, were found from which Goal 5 Resource information could be extrapolated. County and Tribal plans were reviewed to provide information on potential Goal 5 resources.

The current Coos County Comprehensive Plan includes some "Goal 5"-type policies for Mineral and Aggregate Resources; Fish and Wildlife Habitats; Historic, Cultural and Archeological Resources; Natural Areas; Wilderness Areas; Water Resources; Unique Scenic Resources; Natural Hazards; Dunes; and Ocean and Coastal Lake Shorelines. In addition, the CIT has produced a Hazard Mitigation Plan (2006) and an Empire Property Plan Environmental Assessment (1999) which include information on some natural or cultural resources.

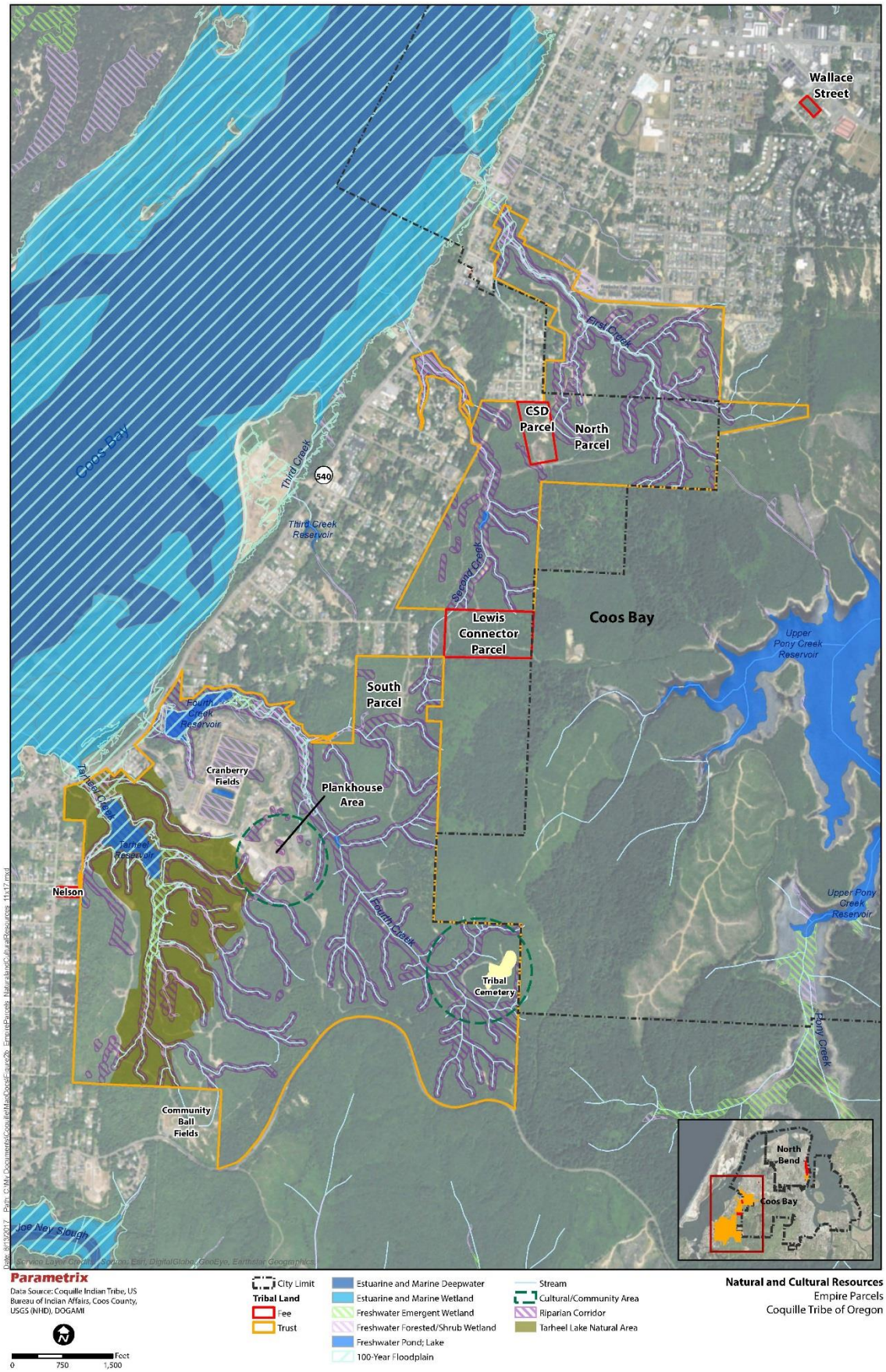
As the CIT's North Bend Parcels are highly altered by well over a century of commercial and industrial use, most of the following information applies only to the Empire Parcels. In addition, as most of the Empire Parcels were logged in advance of the transfer of this land to the Tribe in 1993, various land features, habitats, and species ranges have been significantly altered or lost.

Applicable Goal 5 Resources and the resources named in the CIT Comprehensive Plan statement of work are combined into a single list below. Goal 5 Resources that overlap with those specifically listed in the Comprehensive Plan statement of work are in *italic*. Where there is overlap, the most inclusive name/category is usually used for the purposes of this memorandum.

The CIT Comprehensive Plan statement of work specifically states historic, cultural, and archeological resources were not be inventoried as part of this planning project. In addition, as noted elsewhere in this memorandum, prior development and resource extraction activities on both the Empire and North Bend Parcels have probably altered or eliminated what cultural or archeological resources may have once been present.

Figure 19 shows two areas within Empire South that have some aspects of cultural significance. These are the Plank House site on the southeast edge of Kilkich Village, and the Tribal Cemetery further to the southeast. CIT staff has indicated that the area surrounding the Tribal Cemetery area is also an important site for Tribal members to gather plants with cultural and traditional food significance.

Figure 19. Empire Natural and Cultural Resources



Parametrix

Data Source: Coquille Indian Tribe, US Bureau of Indian Affairs, Coos County, USGS (NHD), DOGAMI

0 750 1,500 Feet

City Limit

Tribal Land

Fee

Trust

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond; Lake

100-Year Floodplain

Stream

Cultural/Community Area

Riparian Corridor

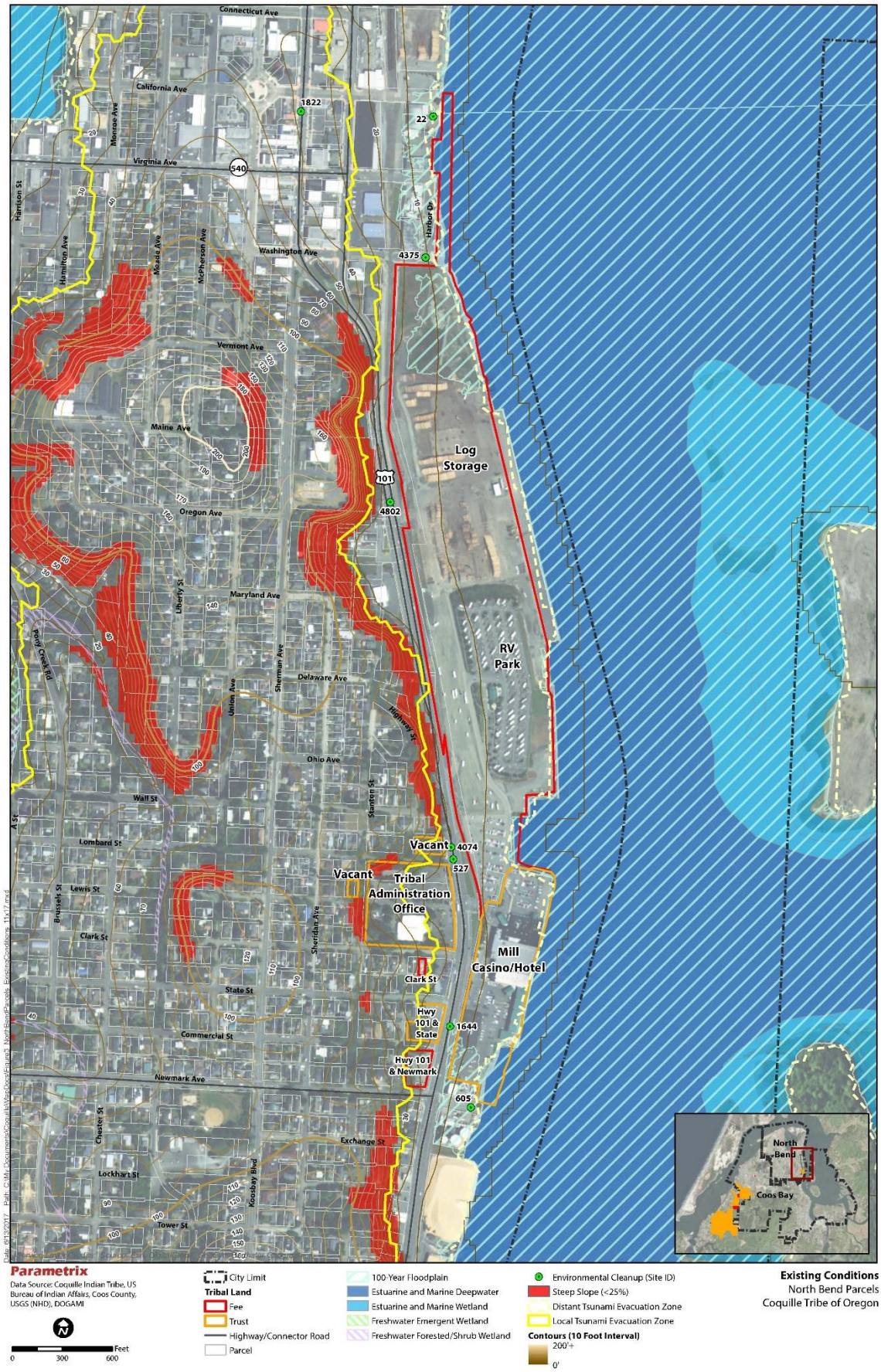
Tarheel Lake Natural Area

Natural and Cultural Resources

Empire Parcels

Coquille Tribe of Oregon

Figure 20. North Bend Parcels Natural and Cultural Resources



Riparian Corridors
The largest properties within the North Bend Parcels front onto the Coos Bay estuary. The quality of bayside riparian area resources have long been significantly diminished or outright eliminated by prior commercial and industrial development and activities. Developed "hardscape" viewing areas and accesses are present on the bayside of the CIT's casino/hotel complex, and at Harbor Avenue on the far north end of the log storage site.

Wetlands and non-Wetland Waters
Wetlands and non-wetland waters within Empire are illustrated in Figure 19. There are four primary streams draining Empire west into Coos Bay:

- First Creek and Second Creek drain Empire North. The uppermost reach of Second Creek also drains a small section of Empire South and the Lewis Connector Parcel.
- Fourth Creek drains the areas of Empire South roughly northeast of Miluk Drive. This area includes Kilkich Village, the commercial CIT cranberry fields, the Plankhouse Loop area, and the Tribal Cemetery. Fourth Creek is dammed just before the Cape Arago Highway and flows under the highway through a culvert north of the Miluk Drive entry to Kilkich Village. The long and relatively narrow Fourth Creek Reservoir arcs around Kilkich Village (Mexeye Loop). There is also a constructed mitigation wetland associated with the Plank House site.
- Tarheel Creek drains Empire South between Tarheel Loop and Miluk Drive, as well as the Community Ball Fields just outside the Reservation boundary. Tarheel Creek is dammed, creating the Tarheel Reservoir. The Reservoir is somewhat wider than the Fourth Creek Reservoir, at least in the lowest reach. The creek also flows under Cape Arago Highway through a culvert. This area is protected by the Tarheel Lake Natural Area (TLNA) Management Plan adopted by the CIT in 1998. The TLNA boundary is shown in Figure 19. For more information on the TLNA, see Technical Memorandum No. 1.

An additional stream – Third Creek – has a very short reach that ends at the west boundary of the Empire Reservation near Grinnell Avenue.

Wildlife Habitat/Endangered Species Act and State-listed Species
Wildlife habitat values within the Empire and North Bend Parcels have been significantly diminished by prior development; and the case of the Empire Parcels, the removal of nearly all timber in advance of land transfer to the CIT in 1993.

According to a US Fish and Wildlife Service database, there are potentially five non-marine federally listed or proposed endangered or threatened species that may occur in the Coos Bay area. Bird species include Marbled Murrelet, Western Snowy Plover, and Northern Spotted Owl, plus one plant species - Western Lily - and one mammal - Fisher. This is based on general criteria and historic habitat, not actual documentation. For instance, Marbled Murrelets nest in old growth and mature forests, thus the logging of Empire would have extirpated this species.

State of Oregon listed species are not documented in a form that can be tied specifically to the CIT properties. The Coos County Comprehensive Plan identifies six bird species of concern and specifically lists probable habitat areas by tax lot information for Bald Eagle, Great Blue Heron, and Band-tailed Pigeon. None of the identified areas are within the CIT lands.

As noted earlier, the Empire Parcels have no frontage on the Coos Bay estuary. There are however five creeks that drain into the bay from the Empire uplands and adjacent non-tribal residential neighborhoods. There are two anadromous species that spend a portion of their life cycle in marine waters that would have historically been present in these streams:

- Oregon Coast Coho Salmon: This species is listed as Threatened. The culverts through which First, Second, and Third Creek drain, and the dams on Fourth Creek and Tarheel Creek, probably block most if not all fish passage. Stocks of the coastal coho are so depressed that even if fish passage was restored there would be limited fish to repopulate these streams absent a successful coast-wide restoration effort.
- Pacific Lamprey: This lamprey is listed as a Species of Concern. Tribal staff have indicated the recent culvert improvements to Cape Arago Highway in the vicinity of First and Second Creeks have made visible changes to fish passage. For the first time in many decades, lamprey have reappeared in these two streams. Lamprey has important cultural and traditional food significance to the Tribe.

CIT parcels on the eastside of US 101 in North Bend do have bay frontage but this shoreline been significantly altered by long–standing industrial and commercial uses. The current estuary near-shore habitat is therefore no longer entirely suitable for Coho salmon rearing.

Federal Wild and Scenic Rivers
Coos River is not listed as a Federal Wild and Scenic River

State Scenic Waterways
Coos Bay/Coos River is not listed as a State Scenic Waterway

Groundwater Resources
There are no Critical Groundwater Areas or Limited Groundwater Areas designated or mapped by the Oregon Water Resources Department (OWRD) in the Coos Bay area. A search of Oregon Water Resources Department and other allied State of Oregon department websites found no documentation of any designated Large Wellhead Protection Areas.

Oregon Recreation Trails
US 101 and adjacent lands are the accepted route options for the Oregon Coast Bike Route (primarily intended for bicyclists). The Cape Arago Highway and adjacent lands are accepted route alternatives for the Oregon Coast Trail (intended primarily for pedestrian use, and preferred to be on beaches or adjacent uplands).

Natural Areas
There are no designated State of Oregon Natural Areas within either the Empire or North Bend Parcels.

Wilderness Areas
There are no designated Federal Wilderness Areas within either the Empire or North Bend Parcels.

Mineral and Aggregate Resources
Oregon Department of Geology and Mineral Industries (DOGAMI) records were reviewed. There are no State of Oregon recognized mineral or aggregate sites within either the Empire or North Bend Parcels.

Energy Sources
There are no documented or developed facility-based energy sources within either the Empire or North Bend Parcels. There is a transmission-scale power line that crosses the Empire North Parcel and ends at a major power substation on the west side of Penny Lane at Spew Boulevard.

Open Spaces
There are no Open Spaces that have been designated through a Goal 5 process within either the Empire or North Bend Parcels.

Scenic Views and Sites
There are no Scenic Views or Sites that have designated through a Goal 5 process within either the Empire or North Bend Parcels. Tribal staff did indicate that the view from the Tribal Cemetery (located on the southeast quadrant of the Empire South Parcel) towards the Coos Bay estuary should be protected.

Floodplains
Floodplains typically are documented by the Federal Emergency Management Agency (FEMA). See Figure 19 for documented 100-year floodplain within Empire as defined in the 2017 FEMA National Floodplain Database. All documented floodplains are associated with First, Fourth, or Tarheel Creeks. As shown in Figure 20, some 100-year floodplain is located along the Coos Bay shoreline in the North Bend Parcels at the north end of the CIT's log storage yard.

Known Hazardous Material Sites
The Oregon Department of Environmental Quality (ODEQ) documents known hazardous materials sites, and any reports of possible illegal dumping, storage, and other suspect activities. ODEQ records were reviewed and did not include any documentation of such sites <u>within</u> the Empire or North Bend Parcels (note: there are a few sites documented by ODEQ near to the perimeter of the North Bend Parcels).

The CIT's 1999 Empire Property Plan identifies the presence of many approved and informal solid waste dump sites with the Empire Parcels. This 1999 Plan identified two separate but abutting two-acre sites for solid waste consolidation near the south

boundary of the South Parcel close to McLain-Libby Road. No information was found documenting the outcomes, if any, of these recommendations.

National Environmental Policy Act 4(f) and 6(f) Resources
There are no identified 4(f) or 6(f) sites within the Study Area.

Topographic Information, including Steep and Unstable Slopes
Topographic information for the Empire Parcel is shown on Figure 19, and on Figure 20 for the North Bend Parcels. Slopes of 25% or greater are highlighted. For unstable slopes, the DOGAMI records were consulted. No documentation was found that indicated recent or historic landslides in the Study Area. DOGAMI records did however indicate a geologic fault line near Fourth Creek. This fault line is illustrated on Figure 18. Tribal Council members have indicated that other creeks that drain into the Empire Parcels also are along fault lines.

Tsunami Inundation Zones
Tsunami zones are illustrated on Figure 18 for Empire and Figure 20 for the North Bend Parcels. Two "evacuation" zones are demarcated:

- **Distant Tsunami:** This line closely follows the immediate Coos Bay shoreline and generally applies to tsunamis generated by earthquakes far distant from the Oregon coastal marine waters. This would be something like the 2011 earthquake in Japan or the 1964 Alaska earthquake.
- **Local Tsunami:** This evacuation line for a local event falls further upland than for the distant event, and would include something like a Cascadian Subduction earthquake, as well as lower magnitude earthquakes in Oregon marine waters. The lower (western) half of Kilkich Village, and the entirety of the CIT's Mill Casino/Hotel, RV Park, and log storage site, fall within this local zone.

Traffic Conditions and Impacts

Existing traffic conditions were evaluated for each of the study intersections shown in Figures 21A and 21B. The following provides a summary of the state highway classifications, freight route designations, and other roadway characteristics along Cape Arago Highway and US 101 that help determine the v/c ratio.

- Cape Arago Highway – Cape Arago Highway is classified as a District Highway. All of the study intersections along Cape Arago Highway are located outside the Coos Bay UGB and City limits with posted speeds of 40 miles per hour (mph) with the exception of the Cape Arago Highway/Wisconsin Avenue intersection, which is located within the Coos Bay UGB and city limits and has a posted speed limit of 35 mph.
- US 101 – US 101 is part of the state freight route system and classified as a Statewide Highway. All of the study intersections along US 101 are located within the North Bend UGB and city limits with posted speeds of 45 mph.

Table 9 summarizes the performance targets for the study intersections along Cape Arago Highway US 101.

Table 9 – ODOT Mobility Targets[9]

Map ID	Intersection	Traffic Control	OHP Standard	HDM Standard
		Empire Site		
1	Cape Arago Highway/Wisconsin Avenue	TWSC	0.95	0.80
2	Cape Arago Highway/Spaw Lane	TWSC	0.80	0.75
3	Cape Arago Highway/Grinnell Lane	TWSC	0.80	0.75
4	Cape Arago Highway/Tarheel Lane	TWSC	0.80	0.75
5	Cape Arago Highway/Miluk Drive	TWSC	0.80	0.75
6	Cape Arago Highway/Tarheel Loop	TWSC	0.80	0.75
7	Libby Lane/Ballfield Access Road	TWSC		
		North Bend Site		
8	US 101/Old Weyerhauser Access	TWSC	0.85	0.75
9	US 101/RV Park Entrance	TWSC	0.85	0.75
10	US 101/Mill Casino Main Driveway	Signal	0.85	0.75
11	US 101/Newmark	Signal	0.85	0.75

1. TWSC: Two-way stop controlled (un-signalized).

Existing Traffic Volumes

Traffic counts were conducted at the study intersections in April and June of 2016. Two of the counts were conducted over a 16-hour (6:00 a.m. to 10:00 p.m.) time period while eight of the counts were conducted over a 4-hour (2:00 to 6:00 p.m.) time period.

[9] All of the study intersections are maintained by ODOT. ODOT uses volume-to-capacity (v/c) ratio standards to assess intersections operations. Table 6 of the *Oregon Highway Plan (OHP)* and table 10-2 of the *Oregon Highway Design Manual* provide maximum volume-to-capacity ratios for all signalized and un-signalized intersections outside the Portland Metro area. The OHP ratios are used to evaluate existing and future no-build conditions, while the HDM ratios are used in the creation of future TSP alternatives which involve projects along state highways.

Traffic counts were not conducted at the Libby Lane/Ballfield Access Road intersection due to a gate closure. Table 10 summarizes the traffic count information obtained for the analysis.

Table 10 – Traffic Count Summary

Map ID	Intersection	Count Date	Count Type
	Empire Site		
1	Cape Arago Highway/Wisconsin Avenue	04/21/16	4-Hour
2	Cape Arago Highway/Spaw Lane	04/21/16	4-Hour
3	Cape Arago Highway/Grinnell Lane	04/21/16	4-Hour
4	Cape Arago Highway/Tarheel Lane	04/26/16	4-Hour
5	Cape Arago Highway/Miluk Drive	06/27/16	16-Hour
6	Cape Arago Highway/Tarheel Loop	04/26/16	4-Hour
7	Libby Lane/Ballfield Access Road	N/A[10]	N/A
	North Bend Site		
8	US 101/Old Weyerhauser Access	04/22/16	4-Hour
9	US 101/RV Park Entrance	04/22/16	4-Hour
10	US 101/Mill Casino Driveway	04/22/16	16-Hour
11	US 101/Newmark	04/22/16	4-Hour

PM Peak Hour Development

The traffic counts conducted along US 101 and Cape Arago Highway were reviewed to determine the potential for individual and/or system peak hours for the study areas. Based on the review, a system peak hour was found to occur along US 101 from 2:45 to 3:45 p.m. and another system peak hour was found to occur along Cape Arago Highway from 4:00 to 5:00 p.m. Table 11 summarizes the peak hours at the study intersections. The separate Attachment A document includes the traffic counts.

[10] Traffic counts for the intersection of Libby Lane/Ballfield Access Road were unable to be obtained due to a closed gate at the Ballfield Access Road leg of the intersection.

Table 11 – Peak Hour Summary

Map ID	Intersection	System Peak Hour
	Empire Site	
1	Cape Arago Highway/Wisconsin Avenue	4:00 p.m.
2	Cape Arago Highway/Spaw Lane	4:00 p.m.
3	Cape Arago Highway/Grinnell Lane	4:00 p.m.
4	Cape Arago Highway/Tarheel Lane	4:00 p.m.
5	Cape Arago Highway/Miluk Drive	4:00 p.m.
6	Cape Arago Highway/Tarheel Loop	4:00 p.m.
7	Libby Lane/Ballfield Access Road	N/A
	North Bend Site	
7	US 101/Old Weyerhauser Access	2:45 p.m.
8	US 101/RV Park Entrance	2:45 p.m.
9	US 101/Mill Casino Driveway	2:45 p.m.
10	US 101/Newmark	2:45 p.m.

Seasonal Adjustment Factor

The 30th Highest Hour Volumes (30 HV) for the Coquille Indian Tribe Comprehensive Plan were developed based on the traffic counts collected at the study intersection and the application of seasonal adjustment factors consistent with the methodology identified in the ODOT Analysis Procedures Manual (APM). The APM identifies three methods for identifying seasonal adjustment factors for highway traffic volumes. All three methods utilize information provided by Automatic Traffic Recorders (ATR) located in select locations throughout the State Highway System that collect traffic data 24-hours a day/365 days a year. Each method was evaluated to determine the most appropriate method for the study intersections. Based on the evaluations, the ATR characteristics table method was used to develop 30 HV volumes at the study intersections.

Empire Site (ATR #06-004)

The ATR selected for the Empire Site (ATR #06-004) is located along US 101 approximately 26-miles south of the Tarheel Loop/Cape Arago Highway intersection in Bandon, Oregon. The ATR was installed in September 1954 and has traffic count data for the last 29 years. Based on historical traffic data provided by the ATR, the Peak Month generally occurs in August. Table 12 summarizes the average weekday traffic percent of average daily traffic (ADT) for the past five years.

Table 12 – Seasonal Adjustment Factor (ATR #06-004)

Year	2011	2012	2013	2014	2015	Average	Seasonal Adjustment
Peak Month (August)	136	134	132	134	132	133.33	N/A
Count Month (April)	97	101	101	97	98	98.33	1.35
Count Month (June)	116	117	114	117	118	116.67	1.14

Note: Shaded values dropped from average calculation per ODOT methodology.

Based on the data shown in Table 12, the traffic counts conducted within the Empire Site along Cape Arago Highway have been seasonally adjusted by a factor of 1.35 (if counted in (if counted in April) and 1.14 (if counted in June). While the APM indicates the seasonal adjustment factors of greater than 1.30 should not be used, the adjustment was discussed with TPAU and ultimately approved for this analysis.

North Bend (ATR #06-009)

The ATR selected the North Bend site (ATR #06-009) is located approximately seven miles south of the US 101/Newmark Street intersection in Coos Bay, Oregon. The ATR was installed in September 1999 and has traffic count data for the last sixteen years. Based on historical traffic data provided by the ATR, the Peak Month generally occurs in August. Table 13 summaries the average weekday traffic percentage of average daily traffic (ADT) for the past five years.

Table 13 – Seasonal Adjustment Factor (ATR #06-009)

Year	2011	2012	2013	2014	2015	Average	Seasonal Adjustment
Peak Month (August)	129	124	121	124	122	123.33	N/A
Count Month (April)	109	105	105	104	104	104.67	1.18

Note: Shaded values dropped from average calculation per ODOT methodology.

Based on the data shown in Table 13, the traffic counts conducted within the North Bend site along US 101 will be seasonally adjusted by a factor of 1.18.

Existing Conditions

Existing lane configurations and traffic control devices at each of the study intersections are shown in Figure 21a and 21b. Existing traffic volumes (2017 30 HV) and corresponding operations for each site are shown in Figure 22a and 22b.

Figure 21a – Existing Lane Configurations and Traffic Control Devices, Coos Bay

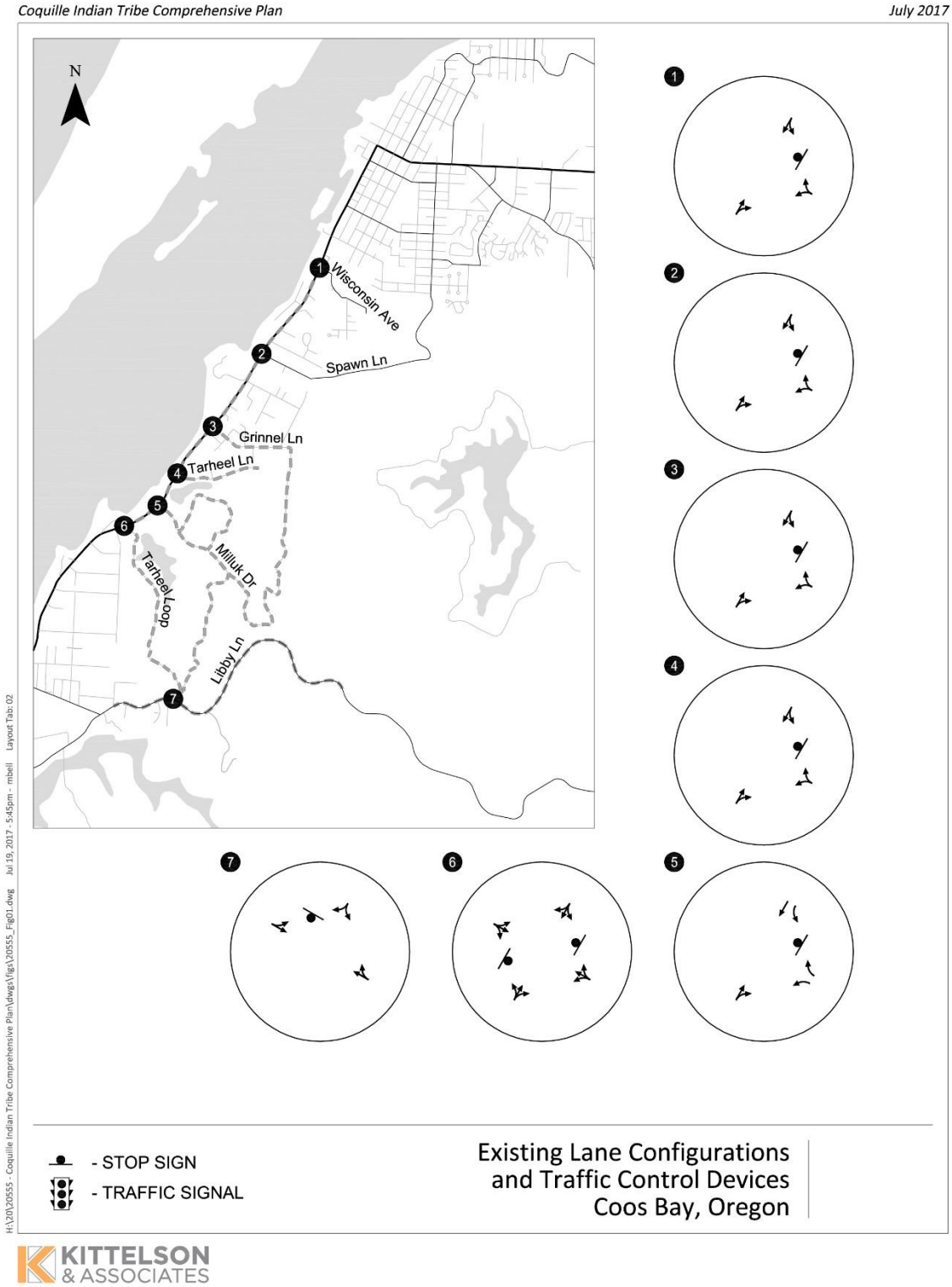


Figure 21b – Existing Lane Configurations and Traffic Control Devices, North Bend

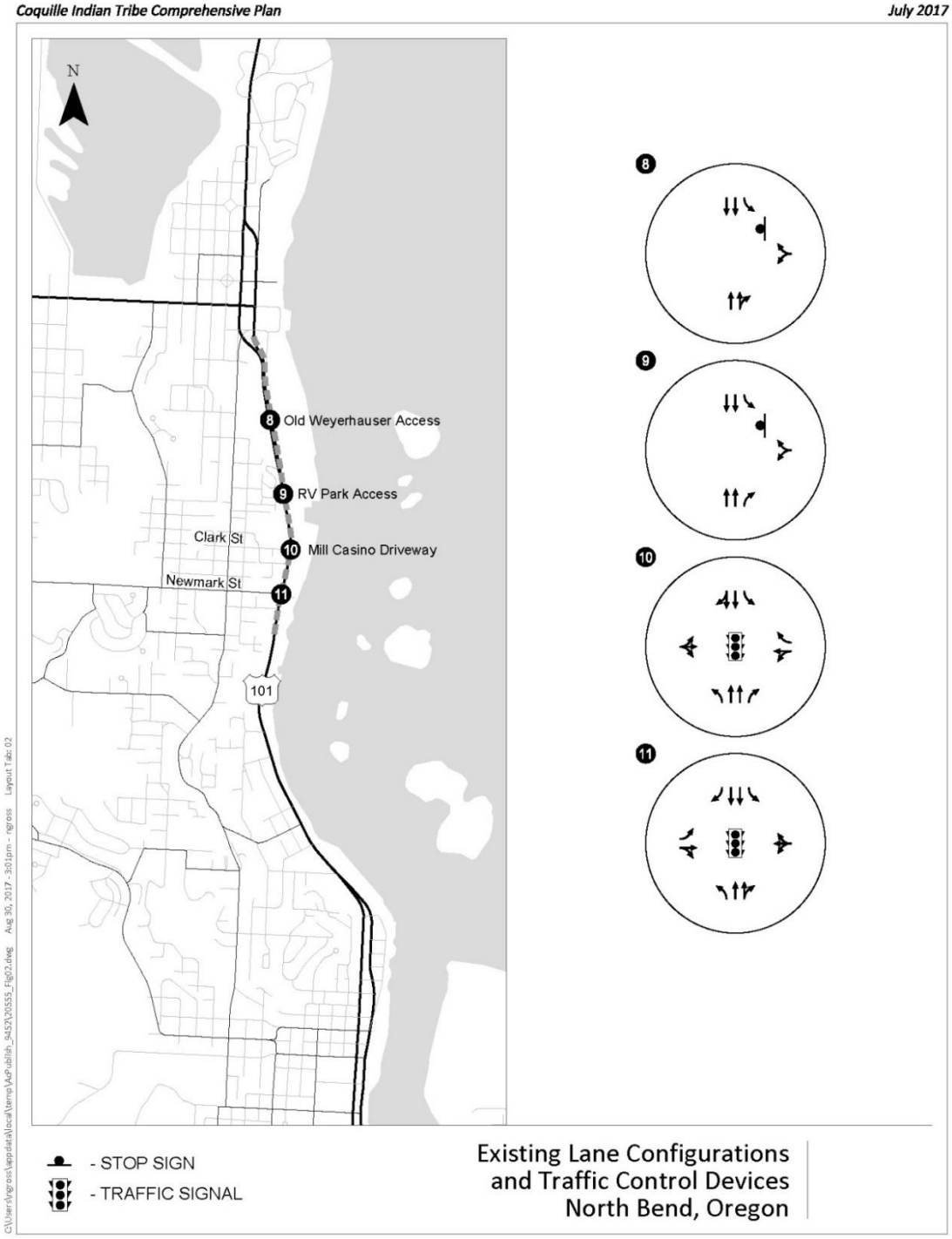
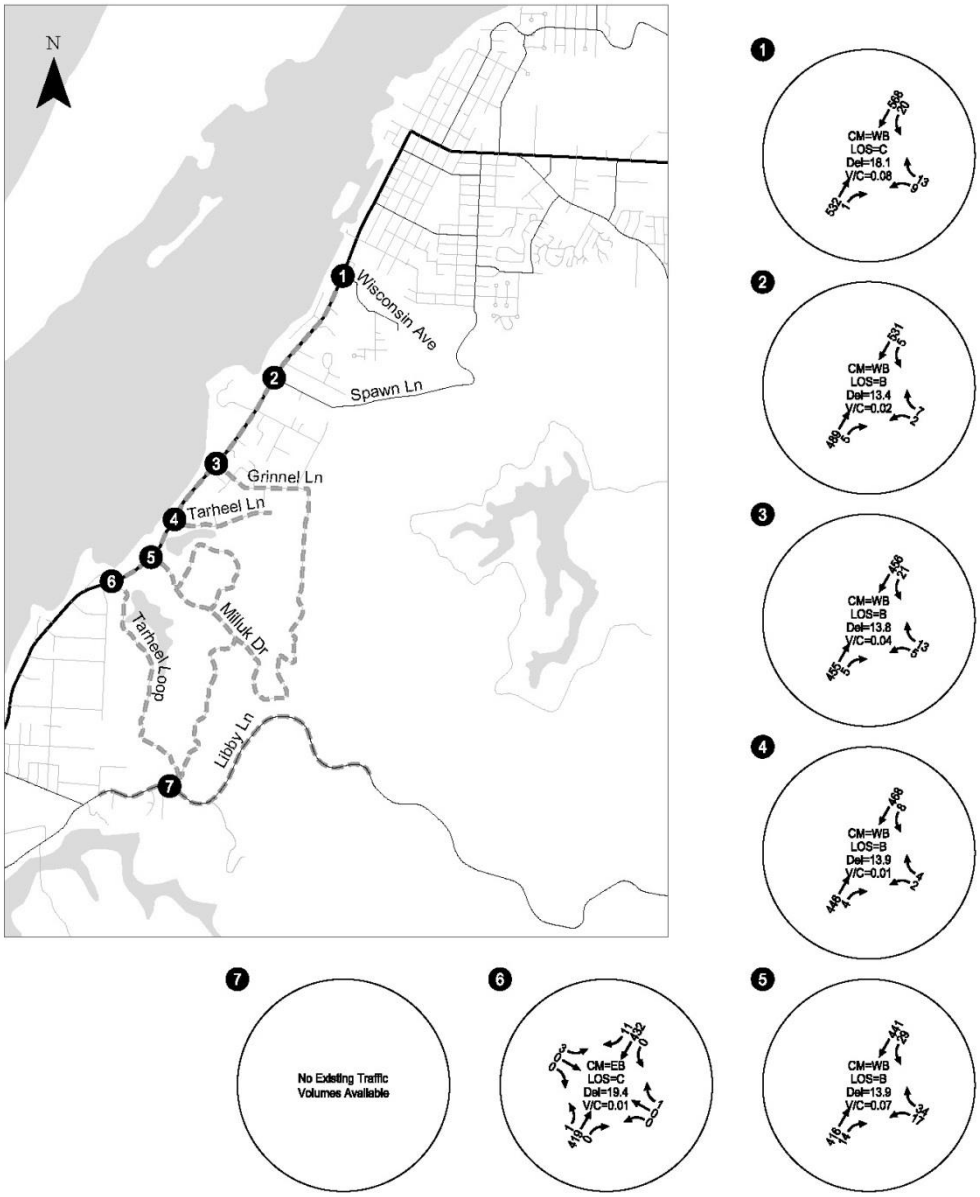


Figure 22a – Existing PM Peak Hour Traffic Volumes, Coos Bay



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = CRITICAL MOVEMENT LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO

Existing PM Peak Hour
Traffic Volumes
Coos Bay, Oregon

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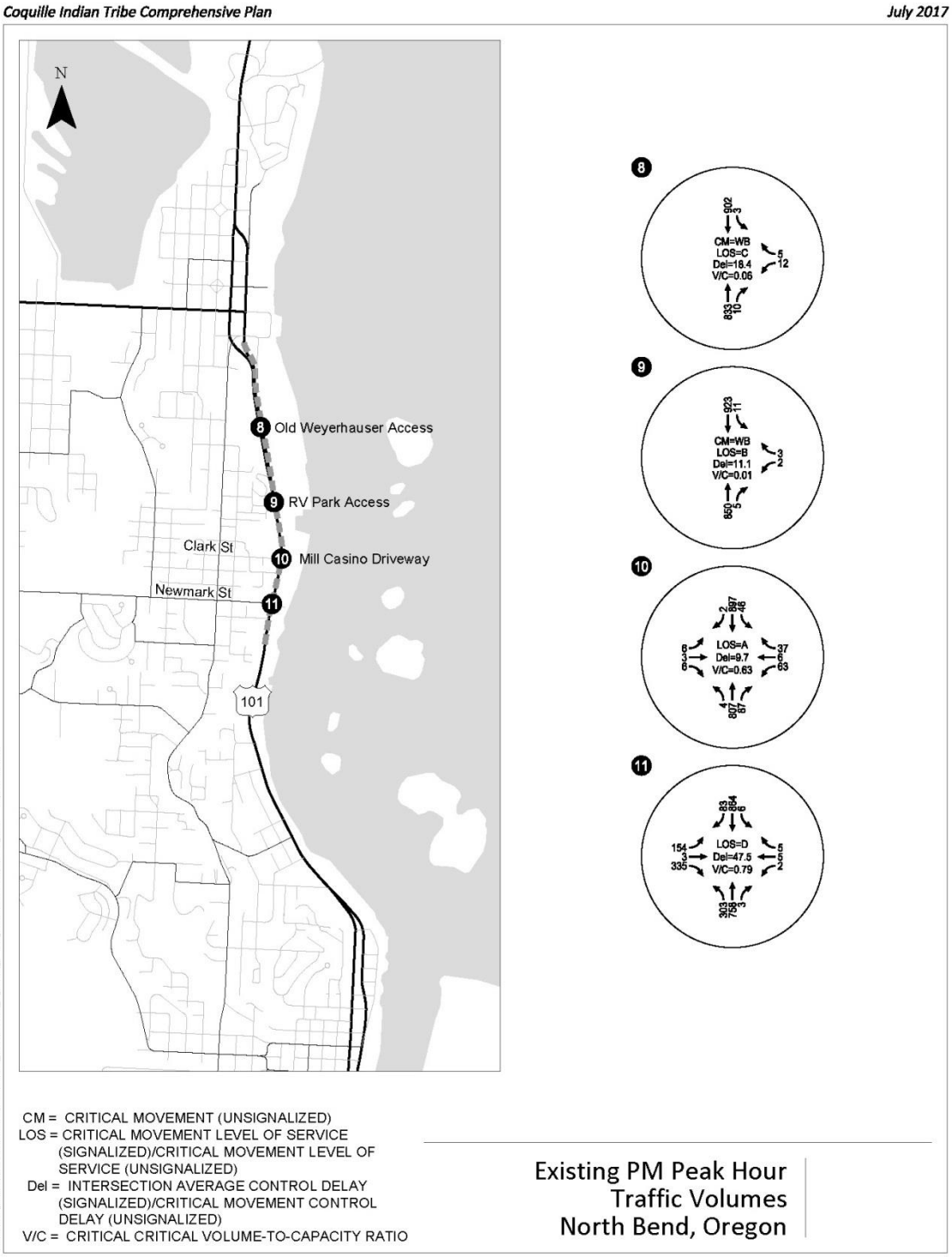
Figure 22b – Existing PM Peak Hour Traffic Volumes, North Bend



The 2000 Highway Capacity Manual (HCM 2000) methodology was used to analyze traffic operations at the signalized intersections while the HCM 2010 methodology was used to analyze traffic operations at the un-signalized intersections. As shown, all study intersections currently operate acceptably. The separate Attachment B document includes the existing conditions analysis worksheets.

Queueing

A queuing analysis was conducted at the signalized study intersections. Table 14 summarizes the 95th percentile queues during the weekday p.m. peak hour under existing traffic conditions. The vehicle queue and storage lengths were rounded to the nearest 25-feet. The storage lengths reflect the striped storage for each movement at the intersections. The separate Attachment C document includes the queuing worksheet.

Table 14 – Weekday PM Peak Hour Queuing

Intersection	Movement	95th Percentile Queue[11]		Storage Length (feet)	Adequate?
		Existing 2017	Future 2035		
North Bend Site					
US 101/Mill Casino Drive	EBT	25	25	250	Yes
	WBT	75	75	250	Yes
	WBR	0	0	250	Yes
	NBL	25	25	150	Yes
	NBT	275	325	1075	Yes
	NBR	25	50	175	Yes
	SBL	25	50	225	Yes
	SBT	350	400	N/A	Yes
US 101/Newmark Street	EBL	#250	#250	225	No
	EBT	75	75	625	Yes
	WBT	25	25	150	Yes
	NBL	#325	#650	125	No
	NBT	275	325	N/A	Yes
	SBL	25	25	150	Yes
	SBT	550	650	1075	Yes
	SBR	0	25	225	Yes

Where WB = Westbound, SB = Southbound, EB = Eastbound, NB = Northbound, L = Left, R = Right
#: 95th percentile volume exceeds capacity, queue may be longer.
N/A: Queue length is unlimited as through movement capacity.

[11] Queues calculated with Synchro not microsimulation.

As shown in Table 14, the US 101/Newmark Street study intersection currently has two 95th percentile queues that exceed the striped storage for the movements:

- The eastbound left-turn movement exceeds the striped storage for the associated movement by approximately 25-feet.
- The northbound left-turn movement exceeds the striped storage for the associated movement by approximately 200-feet. However, there is sufficient storage space located within the two-way left-turn lane to accommodate the queues.

Crash Analysis

The five most recent years of crash data were reviewed at study intersections along Cape Arago Highway and US 101 in an effort to identify any potential safety issues that could be addressed as part of the CIT Comprehensive Plan. ODOT provided the five most recent years of crash data available for study intersections which included data from January 1, 2010 through December 31, 2014. Table 15 summarizes the crash history of the study intersections over the five-year period.

Table 15 – Intersection Crash Summary (January 1, 2010 to December 31, 2014)

	Crash Type						Severity			
Location	Angle	Turn	Rear-End	Side Swipe	Fixed Object	Ped/ Bike	PDO[1]	Injury	Fatal	Total
Empire Site										
Cape Arago Highway/Wisconsin Ave	0	0	3	0	0	0	1	2	0	3
Cape Arago Highway/Spaw Lane	0	0	1	0	0	0	1	0	0	1
Cape Arago Highway/Grinnell Lane	0	1	3	0	0	0	1	3	0	4
Cape Arago Highway/Tarheel Lane	0	0	4	0	0	0	3	1	0	4
Cape Arago Highway/Miluk Drive	0	0	0	0	1	0	1	0	0	1
Cape Arago Highway/Tarheel Loop	0	1	1	0	1	0	2	1	0	3
Libby Lane/Ballfield Access Road										
North Bend Site										
US 101/Old Weyerhauser Access	0	0	0	0	0	0	0	0	0	0
US101/RV Park Entrance	0	0	0	0	0	0	0	0	0	0
US 101/Mill Casino Driveway	0	2	1	0	2	0	4	1	0	5
US 101/Newmark Street	0	19	11	0	2	0	15	17	0	32

Critical crash rates were calculated for each of the study intersections following the analysis methodology presented in ODOT's *SPR 667 Assessment of Statewide Intersection Safety Performance*. SPR 667 provided average crash rates at a variety of intersection configurations in Oregon based on a number of approaches and traffic control types. The average crash rate represents the approximate number of crashes that are "expected" at a study intersection. The intersection critical crash rate assessment for the study intersections is summarized in Table 16. The separate Attachment D document contains the crash data provided by ODOT and the critical crash rate work sheet.

Table 16 – Intersection Critical Rate Assessment

Intersection	Critical Crash Rate by Intersection	Critical Crash Rate by Volume	Observed Crash Rate at Intersection	90th Percentile rate	Observed Crash Rate>Critical Crash Rate?	Observed Crash Rate>90th Percentile Rate
Empire Site						
Cape Arago Highway/Wisconsin Avenue	0.79	0.50	0.19	0.475	No	No
Cape Arago Highway/ Spaw Lane	0.81	0.51	0.07	0.475	No	No
Cape Arago Highway/Grinnell Lane	0.83	0.57	0.30	0.475	No	No
Cape Arago Highway/ Tarheel Lane	N/A	N/A	0.32	0.475	No	No
Cape Arago Highway/Miluk Drive	0.83	0.57	0.08	0.475	No	No
Cape Arago Highway/Tarheel Loop	1.62	0.59	0.25	1.08	No	No
Libby Lane/Ballfield Access Road						
North Bend Site						
US 101/Old Weyerhauser Access	0.49	0.37	0.00	0.293	No	No
US 101/RV Park Entrance	0.49	0.37	0.00	0.293	No	No
US 101/Mill Casino Main Driveway	N/A	N/A	0.16	0.86	No	No
US 101/Newmark Street	N/A	N/A	0.77	0.86	No	No

Safety Priority Index System

The ODOT Statewide Priority Index System (SPIS) identifies sites along state highways where safety issues warrant further investigation. The SPIS is a method developed by ODOT for identifying hazard locations on state highways through consideration of crash frequency, crash rate, and crash severity. Sites identified within the top five percent are investigated by ODOT staff and reported to the Federal Highway Administration (FHWA). Per the most recent SPIS list, the US 101/Newmark Street intersection is identified by ODOT as within the top ten percent of crash sites over the most recent five-year period of available data. ODOT investigated the SPIS site and continues to monitor improvements made to the flashing yellow left turn arrow (FYLTA) operation.

US 101/Newmark Street

As shown in Table 15, a total of 32 crashes occurred at the US 101/Newmark Street intersection over the five year periods. Of the 32, crashes, 20 involved turning movements and 11 involved rear-end crashes.

Of the 19 turning movement crashes, 15 occurred in the southbound direction when a vehicle traveling northbound attempted to make a left-turn onto Newmark Street. The majority of these crashes occurred on a clear, dry day when a motorist did not have the right-of-way and attempted a left-turn in front of an oncoming vehicle. Two crashes occurred when a westbound vehicle attempted to turn right onto US 101 and was struck by an oncoming vehicle northbound on US 101, one occurred when a westbound vehicle attempted to turn left onto US 101 and was struck by an oncoming

vehicle southbound on US 101, and one occurred when a northbound vehicle turned right and a southbound vehicle turned left.

Of the 11 rear-end crashes, four occurred in the northbound direction, four in the southbound direction, and three in the eastbound direction. The majority of these crashes occurred on a clear, dry, day when a motorist was following too closely and failed to avoid a slowed or stopped vehicle in the roadway.

Future 2035 Baseline Traffic Conditions

Future forecast 2035 baseline traffic volumes were developed for the study intersections based on the methodology described in the Methodology Memo. The methodology combines the year 2017 30 HV traffic volumes developed at the study intersections with base year 2017 and future year 2035 traffic volume forecasts from the currently accepted Coos Bay – North Bend travel demand model. This model includes planned growth in the cities of Coos Bay and North Bend along with regional growth but does not include any growth for the CIT properties in either of the study areas.

The 2035 future baseline traffic volumes and corresponding operations are shown in Figures 23a and 23b. The separate Attachment "E" document includes the future baseline conditions analysis worksheets.

Access Spacing Standards

<u>ODOT Standards</u>

Oregon Administrative Rule 734, Division 51 establishes procedures, standards, and approval criteria used by ODOT 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 OHP. The OHP serves as the policy basis for implementing Division 51 and guides the administration of access management rules, including mitigation and public investment, when required, to ensure highway safety and operations pursuant to this division.

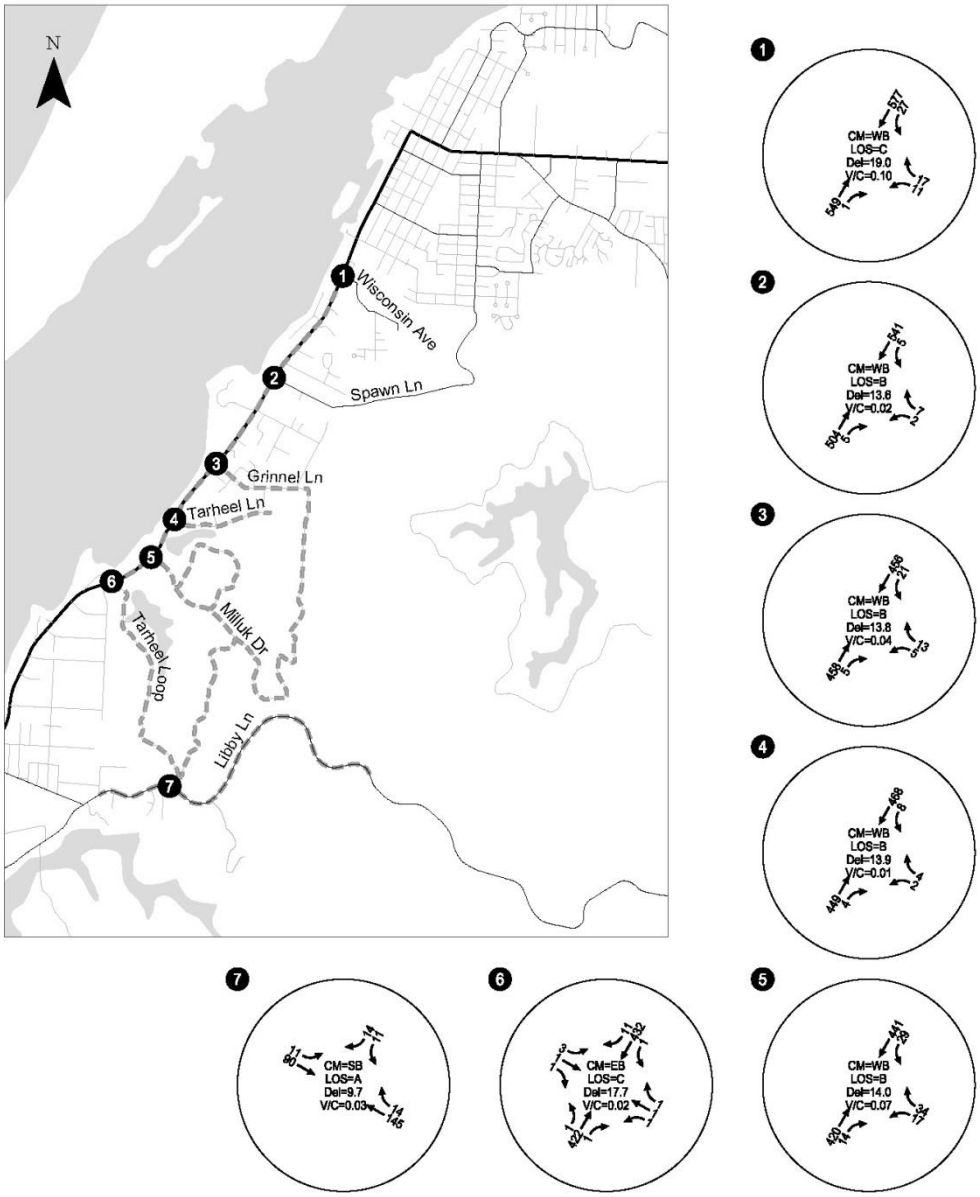
Access management standards for approaches to state highways are based on the classification of the highway and highway designation, type of area, and posted speed. Within the Coos County limits, the OHP classifies Cape Arago as a District Highway. Within the North Bend city limits, the OHP classifies US 101 as a Statewide Highway. Future developments along Cape Arago Highway and US 101 (new development, redevelopment, zone changes, and/or comprehensive plan amendments) will be required to meet the OHP access management policies and standards. Table 2 summarizes ODOT's current access management standards for Cape Arago Highway and US 101 per the OHP.

Table 17: OR 99E Access Spacing Standards

	Average Annual Daily Traffic	Highway Classification	Posted Speed (MPH)	Area Type	Spacing Standards (Feet)[1]
Cape Arago Highway	>5,000	District Highway	40	Urban	500
US 101	>5,000	Statewide Highway	45	Urban	800

[1] These access management spacing standards do not apply to approaches in existence prior to April 1, 2000 except as provided in OAR 734-051-5120(9).

Figure 23a – Future PM Peak Hour Traffic Volumes, Coos Bay



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = CRITICAL MOVEMENT LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO

Future PM Peak Hour
Traffic Volumes
Coos Bay, Oregon

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Figure 23b – Future PM Peak Hour Traffic Volumes, North bend

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = CRITICAL MOVEMENT LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO

Future PM Peak Hour
Traffic Volumes
North Bend, Oregon

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As shown, all study intersections are forecast to operate acceptably with the exception of US101/Newmark Street. This intersection is forecast to operate with a v/c of 0.99 which exceeds the ODOT's standard of 0.85. Assuming a linear growth factor, this intersection is forecasted to exceed ODOT's v/c target in the future by approximately year 2023.

Transportation Summary

- Exiting Conditions
  - All study intersections currently operate acceptably; however, the US101/Newmark Street intersection has 95th percentile queues that exceed the existing striped storage.
- Growth
  - The analysis conducted as part of the Future 2035 Baseline Traffic Conditions assumes no growth within the CIT properties but does assume local and regional background growth.
- Future Conditions
  - Under Future 2035 Baseline Conditions all intersections are forecast to operate acceptably with the exception of the US101/Newmark Street intersection which is forecast to operate with a v/c ratio of 0.99.
  - US 101/Newmark Street intersection has 95th percentile queues that exceed the existing striped storage. The increased queue length for the northbound left-turn approach can be accommodated by sufficient space located within the two-way left-turn lane.
- Crash History
  - The US 101/Newmark Street intersection has been identified by ODOT as a SPIS site and is the only study intersection identified by ODOT as within the top ten percent of crash sites over the last five-year period.
- Pedestrian System – Empire Site
  - Cape Arago Highway is considered to be Fair for pedestrians based on the presence of the multi-use path; however, the path itself is in poor condition.
  - Miluk Drive and Mexeye Loop are considered to be Good for pedestrians; however, the Miluk Drive sidewalk gap to Cape Arago Highway needs to be completed.
  - Libby Lane is considered Poor for pedestrians based on the lack of shoulder or sidewalks.
  - Future needs include upgrade of the multi-use path along Cape Arago Highway, extension of the sidewalk on Miluk Drive to Cape Arago Highway, pedestrian facilities along all on-site roadways as they are improved, and a mixed-use path or protected shoulder along Libby Lane to connect the baseball field area to Wallace Avenue or Wilshire Lane.
- Bicycle System – Empire Site
  - Cape Arago Highway is considered to be Poor for bicycles based on the lack of shoulders and the poor condition of the multi-use path.

    - Miluk Drive and Mexeye Loop are considered to be Fair for bicycles as there is no bicycle facility but shared facilities are appropriate under current conditions.
    - Libby Lane is considered Poor for bicycles based on the lack of shoulders.
    - Future needs include upgrade of the multi-use path along Cape Arago Highway, possible sharrows or protected area for bicycles on Miluk Drive to Cape Arago Highway, bicycle facilities as deemed appropriate along all on-site roadways as they are improved, and a mixed-use path or shoulders along Libby Lane to connect the baseball field area to Wallace Avenue or Wilshire Lane.
- Transit System – Empire Site
    - Transit service to the CIT is considered to be Fair based on the availability of transit with transit shelters located on-site; however the bus frequency is poor.
    - Future needs include adequate pedestrian access to the on-site transit stops and increased frequency of service.

Next Steps

Results from TM #1 and TM #2 will be used to develop Technical Memorandum #3: Opportunities and Constraints.

Appendix: Socio-economic and Demographic Information

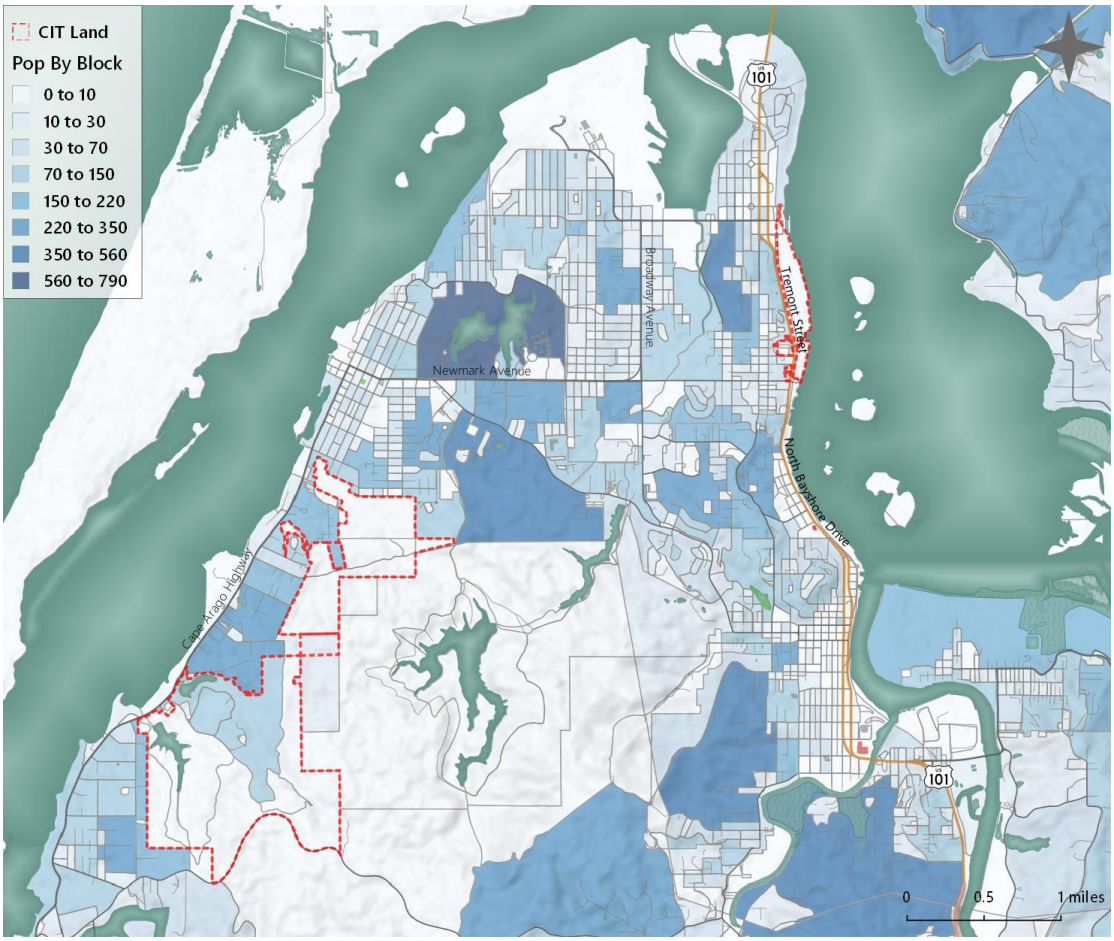
Methodology

The source of most of the demographic data shown above is ESRI Business Analyst Online, which extracts data from the US Census Bureau and other public and private sources. Most data pertains to the year of 2016, unless where otherwise specified. The smallest geographic area available for demographic data is a census block group. Only population counts and household counts (as of 2010) are available at the census block level. As such, data for these block groups serve as the most specific comparison for the Coquille Indian Tribe lands to larger areas (cities, county, and state).

Additional Figures

The following figure shows the population by block (for 2010) in the coastal region comprising of the City of Coos Bay and the City of North Bend. The Coquille Indian Tribe lands (both fee and trust) are shown in the red dotted outline. Per 2010 United State Census data, there was relatively little population living in the blocks within CIT land. Conversely, most of the area's population was located in the blocks adjacent to CIT land (west and north).

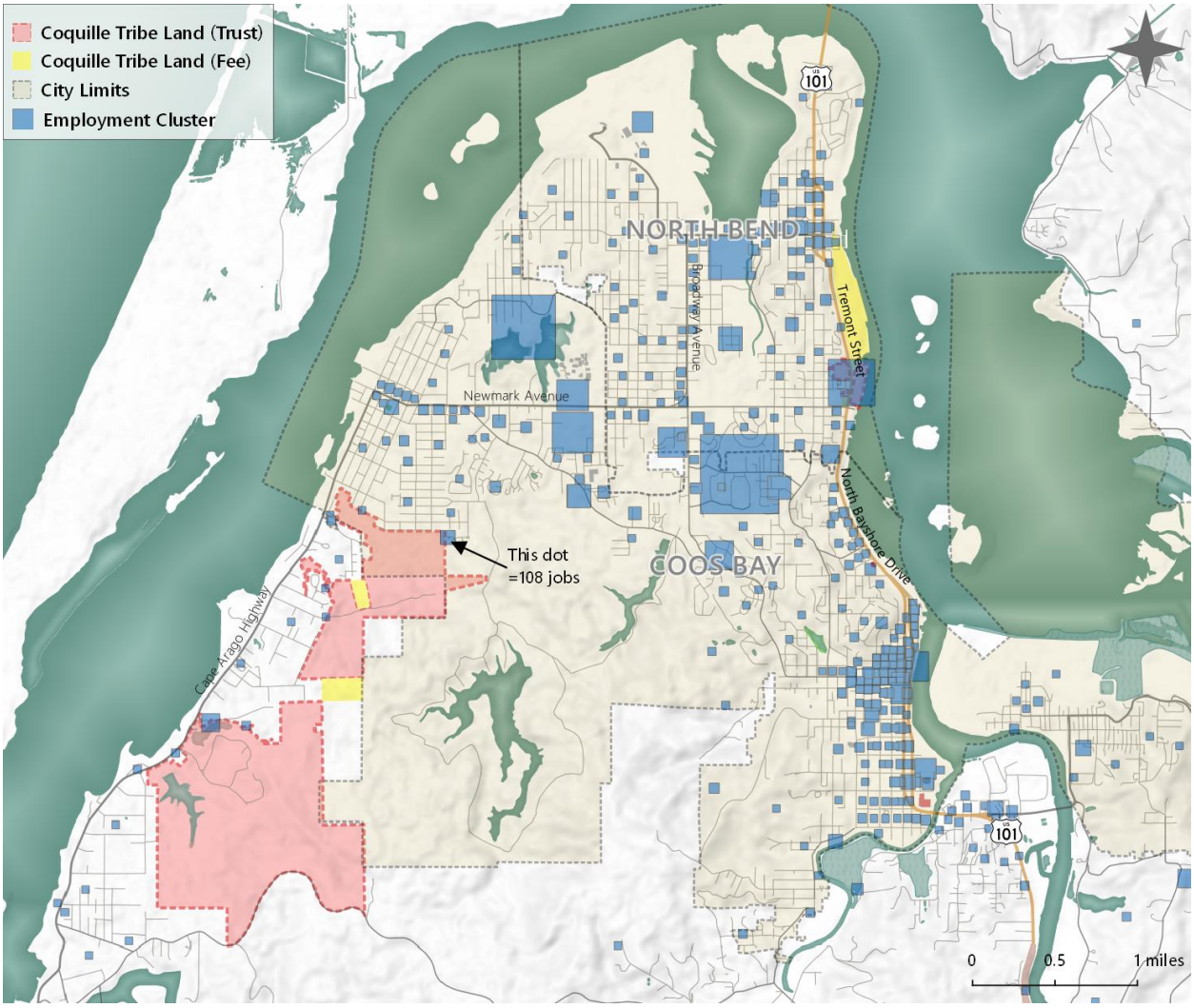
Figure A-1. Population by Block, 2010



Source: US Census Bureau, Coos County and Leland Consulting Group

The following figure shows employment clusters in the coastal region comprising of the City of Coos Bay and the City of North Bend. As shown, most of the jobs on CIT land are located on the eastern land tracts, but there are a few hundred jobs on or near the western land tracts. About 78 percent of the jobs near the eastern land tracts are in the accommodation and food services industry and about 14 percent are in the public administration industry. The employment clusters in the west are a relative mix of jobs in the public administration, manufacturing, and accommodation and food services industries.

Figure A-2. Employment Clusters by Location and Number of Employees (FTE)[12]

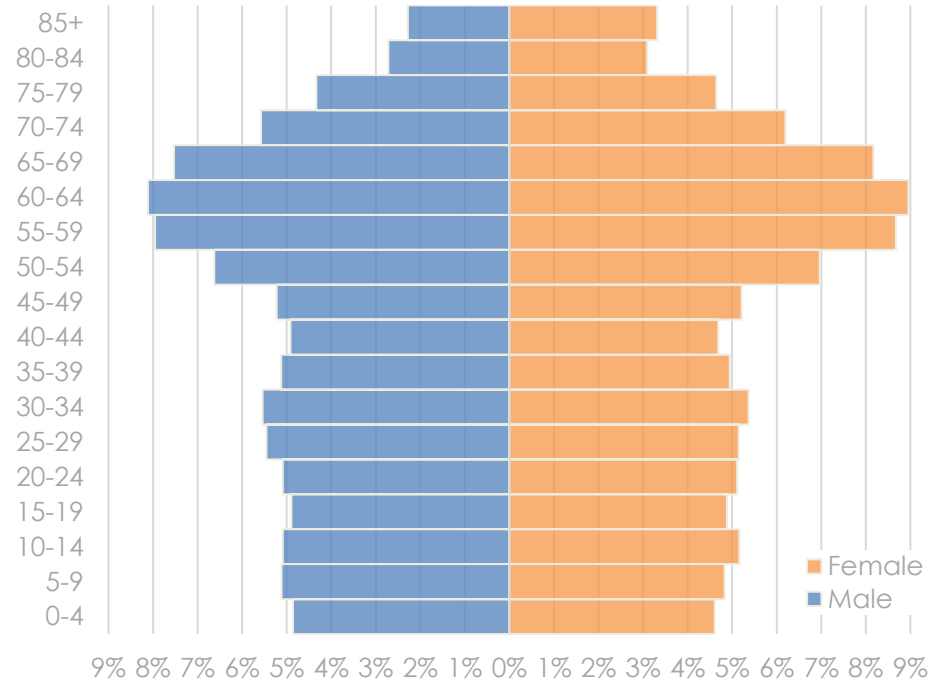


Source: LEHD, Coos County and Leland Consulting Group

[12] Locations are approximated by LEHD due to confidentiality of employment establishments/companies, and as such should be used as an indicator of clustering, rather than an exact locator of jobs.

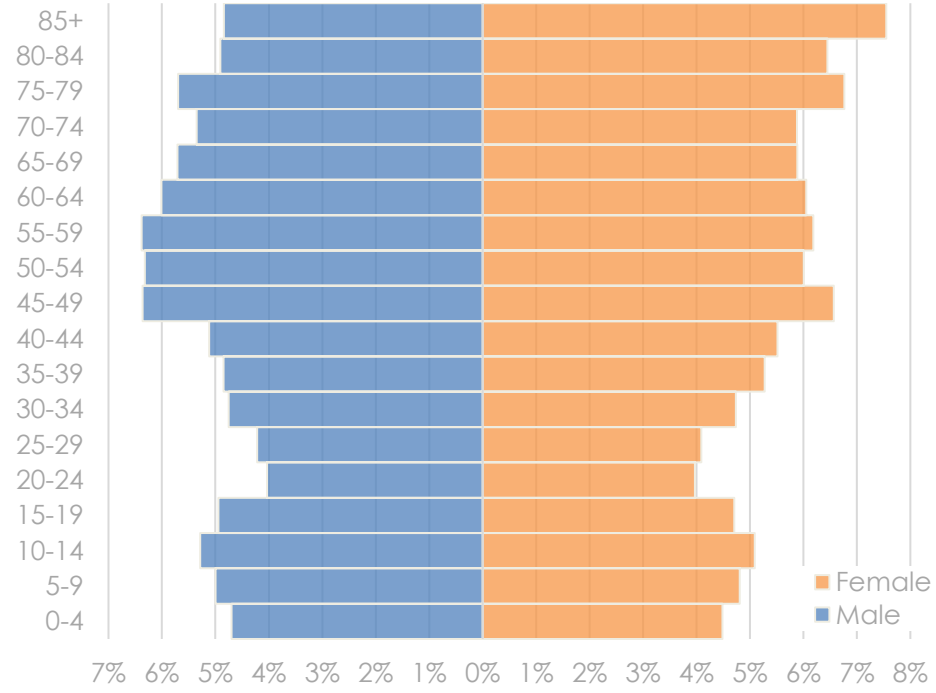
The following two figures shows population pyramids for Coos County for the years of 2015 and 2040.

Figure A-3. Population Pyramid, Coos County, 2015



Source: Office of Economic Analysis and Leland Consulting Group

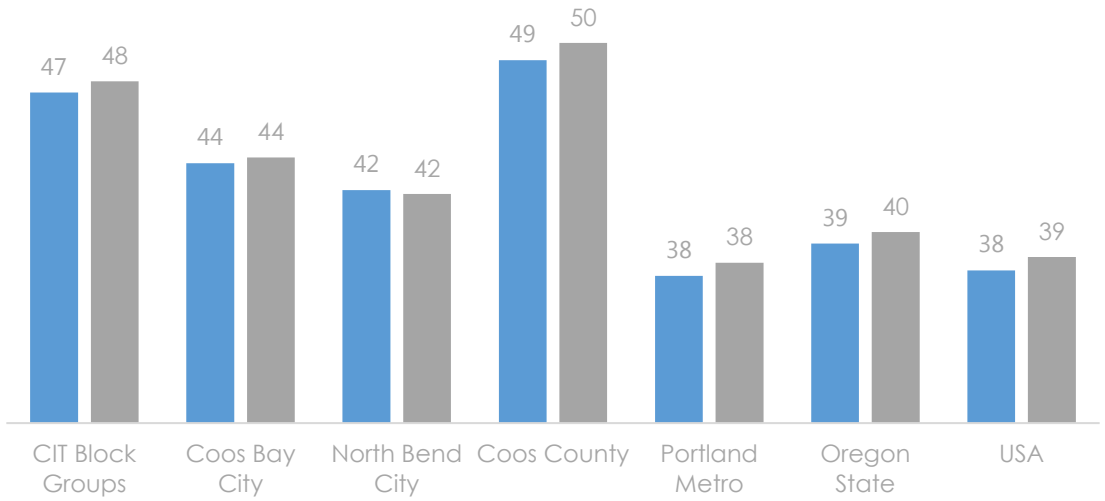
Figure A-4. Population Pyramid, Coos County, 2040



Source: Office of Economic Analysis and Leland Consulting Group

The following figure shows median age for all comparison areas for 2016 and 2021. All areas within Coos County, and the County itself, are significantly older, on average, than the state, the nation, and the Portland Metro region.

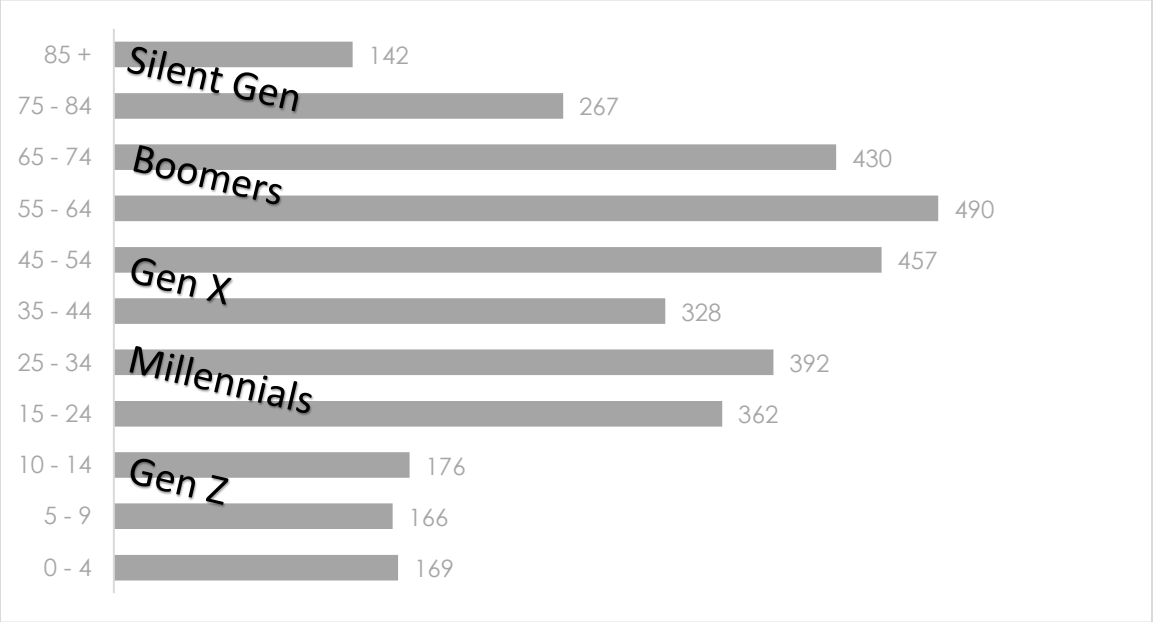
Figure A-5. Median Age, 2016 & 2021



Source: ESRI and Leland Consulting Group

The following figure shows the population living within CIT Block Groups by age for 2016. The breakdown is similar to that of Coos County (see population pyramid above), and can be expected to follow a similar pattern through 2040.

Figure A-6. CIT Block Groups Population by Age, 2016



Source: ESRI and Leland Consulting Group