

GOAL 6: AIR, WATER AND LAND RESOURCES QUALITY BACKGROUND REPORT

PURPOSE: To maintain and improve the quality of the air, water and land resources of Clatsop County.

HISTORICAL PERSPECTIVE

The quality of the County's environment is a factor that has drawn many visitors to this area and has also contributed to the overall quality of life of its residents. Stewardship of the air, land, and water, whether for wildlife habitat, economic development, drinking water or recreational purposes has, and continues to, be of prominent importance of all sectors of the community.

AIR QUALITY

When the Clatsop County Comprehensive Plan was first adopted in 1980, it identified the major point sources of air pollution as the paper mill and the plywood mill in Astoria. Other major sources of air pollution included burning dumps, which were closed following approval of a new landfill site. In recent years, Clatsop County has been directly impacted by smoke from wildfires in other regions of the state and the Pacific Northwest. In 2020, smoke from wildfires blanketed Clatsop County. This smoke, as discussed in further detail below, contained harmful particulate matter.

WATER QUALITY

Because of its coastal location, high rainfall and presence of the Coast Range Mountains, Clatsop County has traditionally been rich in water resources. The County is bordered by the Columbia River on the north, the largest river in western North America. Numerous streams, creeks and lakes are found throughout the county and groundwater is widely available and locally utilized. There are two recognized aquifers – Clatsop Plains and Gnat Creek.

In 1977 the then Oregon Environmental Quality Commission passed a resolution which prohibited any development utilizing septic tanks in the Clatsop Plains area. After several

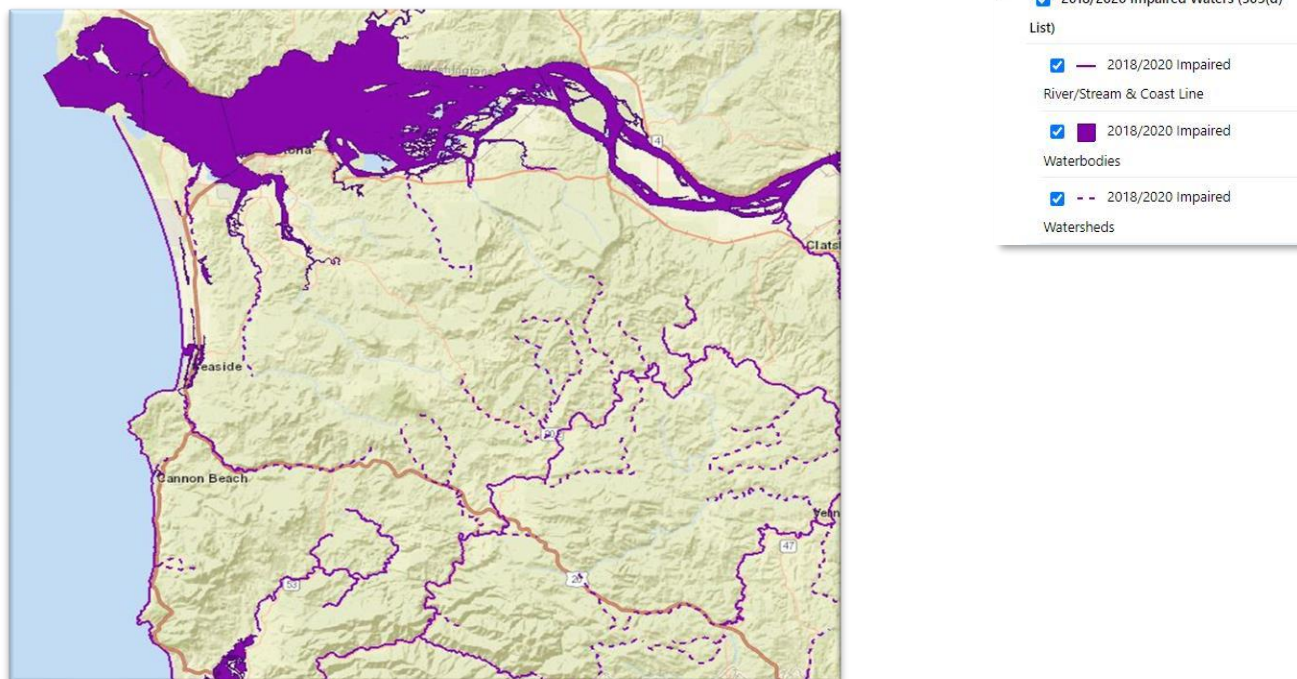
studies, including groundwater investigations and analysis, the moratorium was fully lifted in August 1982. As a result of these studies, the aquifer reserve overlay was created and groundwater monitoring was instituted.

Every two years, the Oregon Department of Environmental Quality (DEQ) is required to assess water quality and report to the U.S. Environmental Protection Agency on the condition of Oregon's waters. DEQ accomplishes this by preparing an Integrated Report that addresses the requirements of the federal Clean Water Act, sections 305(b) and 303(d).

Section 305(b) requires an overall report on the condition of Oregon's waters. Section 305(d) requires the state to identify waters that do not meet water quality standards and where a Total Maximum Daily Load (TMDL) pollutant load limit needs to be developed. Waters may be added to the 303(d) list based on evaluation of new data, application of new or revised water quality standards, or information showing water quality has declined. Waters may be removed from the 303(d) list when TMDLs or other control measures have been established that are expected to improve water quality, when data show water quality has improved, or when water quality standards are revised.

The *2018/2020 Integrated Report* prepared by DEQ was approved by the U.S. Environmental Protection Agency on November 12, 2020. Figure 1 details 303d waters in Clatsop County that were included in the 2018/2020 report. Figure 2 identifies 303d waters in Clatsop County that

Figure 1: 2018/2020 303(d) Waters

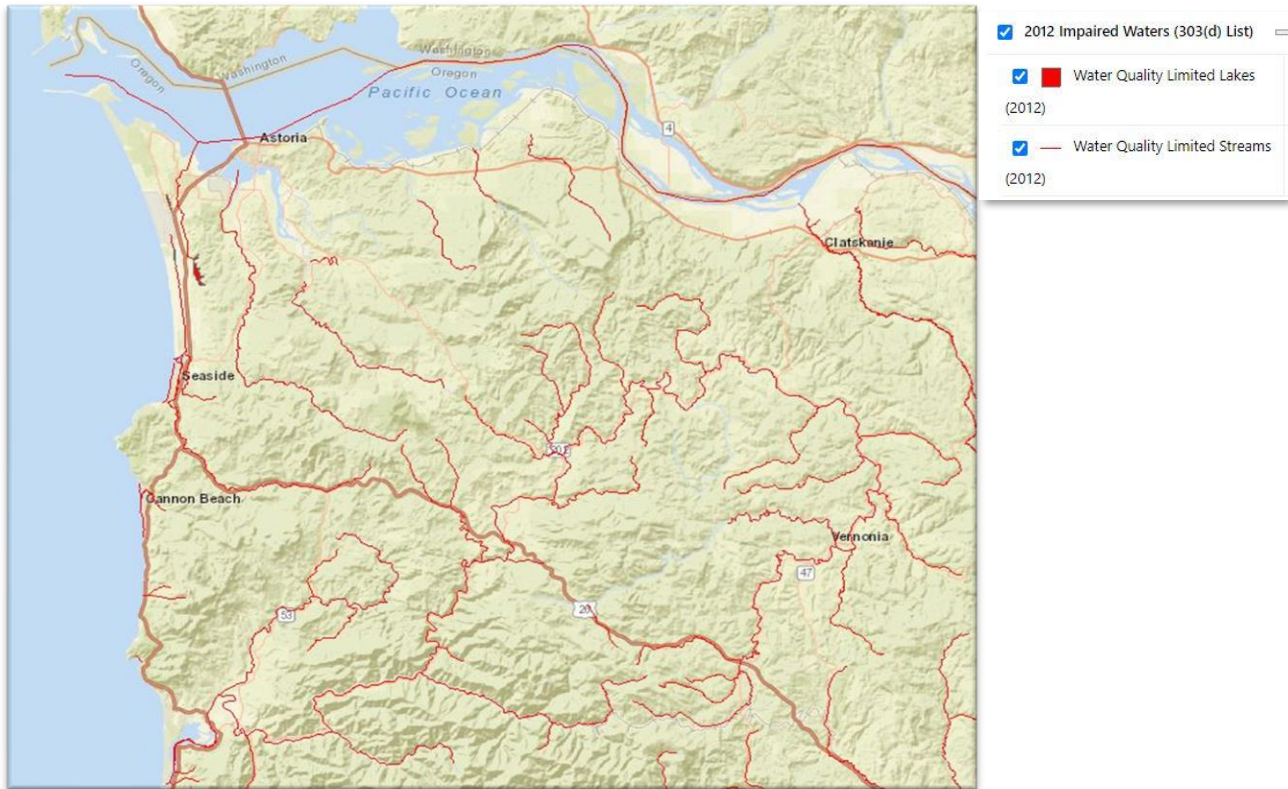


Source: *2018/2020 Integrated Report*, Oregon Department of Environmental Quality

were included in the 2012 integrated report.

As shown on Tables 3-9 and Figure 3, the Oregon Department of Environmental Protection

Figure 2: 2012 303(d) Waters



Source: 2018/2020 Integrated Report, Oregon Department of Environmental Quality

(DEQ) has determined that several water bodies within Clatsop County are impaired. Identified sites are located throughout the County and include coastal areas, rivers, lakes, streams, estuaries, and watersheds. These surface waters are divided into assessment units based on similar hydrology and homogenous water quality. In Oregon there are five types of assessment uses:

- Rivers and streams
- Lakes, reservoirs and estuaries
- Watersheds
- Beaches and coastal
- Ocean

The classification system used by DEQ identifies the beneficial uses provided by the water body and then assigns an impairment category to that water body, based upon the severity of the impact to the beneficial use. Beneficial uses identified by DEQ include:

- Aesthetic quality
- Boating
- Fish and aquatic life
- Fishing (consumption)
- Livestock watering
- Water supply (public and private)
- Water contact recreation

Although Figure 1 appears to show that a large number of waterbodies within Clatsop County are impaired, the map does not reflect *why* the water body is considered impaired. For example, DEQ analyzes 140 unique pollutants. However, a water body will be shown as impaired even if only one parameter is not met. In Clatsop County, temperature is often a parameter that is not attained, which results in the water body being classified as impaired. However, maintaining water temperature in streams and lakes within an established range (DEQ's Total Maximum Daily Load or TMDL) is critical for aquatic organisms.

Water pollution is typically classified as either point source or non-point source. Point sources are discharges that occur at a single, easily-identifiable site, such as a wastewater discharge pipe. Non-point discharges cover a broader area and cannot be attributed to a single source. Examples on non-point discharges might include road run-off, discharges from agricultural or forestry activities, activities on residential or non-residential properties, and/or construction sites. Maintaining and reestablishing riparian vegetation is one means of lowering stream water temperatures and helping to maintain the TMDL.

NOISE CONTROL

Prior to July 1, 1991, DEQ operated a Noise Control Program. This program was terminated by legislative action, but DEQ rules governing noise remain in Oregon Revised Statutes and Oregon Administrative Rules. Sources of noise are varied, constant, and in some cases, subjective. Sound from highway traffic, mining activities, children playing on the beach, loud music, barking dogs, loud neighbors, airplanes and helicopters, fireworks, and shooting ranges are some of the origins of noise complaints.

Chapter 8.12 of the Clatsop County Code contains the noise standards and regulations applicable to unincorporated Clatsop County.

CURRENT CONDITIONS

AIR QUALITY

Oregon Department of Environmental Protection

The Oregon Department of Environmental Quality (DEQ) is the regulatory agency tasked with protecting and enhancing the quality of Oregon's environment. In support of that mission, the

Air Quality Monitoring Section of DEQ's Laboratory and Environmental Assessment Division is responsible for providing accurate scientific data concerning Oregon's air quality. DEQ ensures that the state meets the National Ambient Air Quality Standards as required by the federal Clean Air Act. DEQ also monitors hazardous air pollutants to track trends and presents near real time air quality data to inform public health decisions. DEQ measures air pollutant levels by operating a network of air monitoring and sampling equipment at more than 40 sites throughout the state. None of these sites are located within Clatsop County.

In addition to monitoring, Oregon DEQ also reviews and issues air quality permits. Air Contaminant Discharge Permits (ACDP) are issued by DEQ ranging from the simplest to the most complex:

- Basic ACDP
- General ACDP
- Simple ACDP
- Standard ACDP
- Title V

In Clatsop County businesses such as paper and lumber mills are required to follow permitting thresholds for air pollutant discharges. Other businesses such as crematoria, ready-mix concrete plants, large-scale coffee roasters, and fuel stations are also required to obtain air quality permits. Air Contaminant Discharge Permits as of 2021, issued for businesses in all of Clatsop County are shown in Table 1, below.

TABLE 1: CLATSOP COUNTY AIR CONTAMINANT DISCHARGE PERMIT HOLDERS											
		EMISSION LIMITS (TONS / YEAR)									
SOURCE NAME	PERMIT TYPE	CARBON MONOXIDE (CO)	NITROGEN OXIDES (NOX)	SULFUR DIOXIDE (SO ₂)	VOLATILE ORGANIC COMPOUNDS (VOC)	PARTICULATE MATTER (PM)	PARTICULATE MATTER LESS THAN 10 MICROMETERS (PM ₁₀)	PARTICULATE MATTER LESS THAN 2.4 MICROMETERS (PM _{2.5})	GREENHOUSE GAS CO ₂ EQUIVALENT (CO ₂ e)	LEAD (PB)	TOTAL REDUCED SULFUR (INCLUDING HYDROGEN SULFIDE) (TRS)
Caldwell's Luce-Layton Mortuary Inc.	Basic ACDP	99	39	39	N/A	24	14	N/A	N/A	N/A	N/A
Georgia Pacific Consumer Operations LLC	Title V	5343	2,165	1,072	N/A	1,077	1,077	N/A	N/A	0.1	73
Bio-Oregon Protein, Inc.	Simple ACDP	99	39	N/A	39	24	14	9	74,000		
K.D.A. Inc. (A-1 Ready Mix Concrete	General ACDP Type 9	99	39	39	39	24	14	N/A	N/A	N/A	N/A
Columbia River Coffee Roaster	General ACDP Type 16	99	39	39	39	24	14	N/A	N/A	N/A	N/A
Safeway Inc. (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
City of Cannon Beach (RV Resort - Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Krista-Cody Ltd. (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Allied Petroleum LLC (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Astoria Animal Aid P.C.	Basic ACDP	Information not provided. Permit holder allowed to incinerate less than 20 tons of animal and/or human remains per year and materials normally used in cremations									
SDYB OPCO, LLC (formerly Scoular)	Simple ACDP	99	39	N/A	N/A	24	14	9	74,000	N/A	N/A
Hampton Lumber Mills, Inc.	Construction ACDP	134	106	39	111	128	81	TBD	N/A	N/A	N/A
Hampton Lumber Mills, Inc.	Title V	134	106	39	111	128	81	TBD	N/A	N/A	N/A
Northwest Ready Mix, Inc.	Basic ACDP	Information not provided. Permit holder allowed to discharge more than 5,000, but less than 25,000 cubic yards per year									
HRMORT, LLC	General ACDP Type 12	99	39	39	39	24	14	N/A	N/A	N/A	N/A
Clatsop County Animal Shelter	Basic ACDP	99	39	39	39	24	14	N/A	N/A	N/A	N/A
Zedwick DVM LLC	Basic ACDP	99	39	N/A	39	24	14	N/A	N/A	N/A	N/A
Georgia-Pacific Consumer	Construction	4,864	2,165	1,817	818	1,521	1,521	N/A	N/A	0.1	77

Products, LP	ACDP										
Jackson and Son Distributors (Fuel) – Happel Lane	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Don Small & Sons Oil Dist Co	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Trucke’s Inc.	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Jackson and Son Distributors, Inc. (Fuel) – W. Marine Drive	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Costco Wholesale Corporation (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Sundeeep & Ekam LLC (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
DRKC, LLC (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Folk Inc. (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
GHG INC (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Sundeeep & Davinder LLC (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Wilson Oil Inc. (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Wilson Oil Inc. (Bulk Gasoline Plant)	General ACDP Type 17	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
SABI Inc. (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
ALB LLC (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Morgan Mart, Inc. (Fuel) – Bakers General Store	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A
Fred Meyer Stores, Inc. (Fuel)	General ACDP Type 22	N/A	N/A	N/A	39	N/A	N/A	N/A	N/A	N/A	N/A

Source: Oregon Department of Environmental Quality

Oregon DEQ also requires certain facilities with an air quality permit subject to DEQ's Mandatory Greenhouse Gas Reporting rules to provide information on biogenic and anthropogenic greenhouse gas emissions. Information reported by Clatsop County businesses is shown in Table 2.

TABLE 2: GREENHOUSE GAS FACILITY EMISSIONS 2019			
FACILITY NAME	FACILITY REPORTED DATA (METRIC TONS CO ₂ e)		
	BIOGENIC CO ₂ EMISSIONS ¹	ANTHROPOGENIC EMISSIONS ²	TOTAL EMISSIONS
Georgia-Pacific Consumer Operations LLC	398,930	258,410	757,340
Bio-Oregon Protein LLC	N/A	2,207	2,207
Hampton Lumber Mills, Inc.	38,393	513	38,905

Source: Oregon Department of Environmental Quality

¹Biogenic: Produced or brought about by living organisms

²Anthropogenic: Originating in human activity

Open Burning and Illegal Burns

Burning of solid waste is sometimes a preferred disposal method for residents in rural parts of Clatsop County. Open burning creates air pollution in the form of smoke. Vapors and small air-borne particles can be inhaled, making breathing difficult and leading to more serious short-term and chronic health problems. Burning of illegal substances, such as asbestos, plastic and rubber products and waste oil, further degrade air quality. Complaints of burning of illegal substances and burning during fire bans are often reported to Clatsop County Code Compliance. Clatsop County, however, does not have local restrictions or standards regarding open burns and instead relies on the Oregon Department of Environmental Quality and fire districts to enforce burn bans or regulations regarding the burning of illegal substances.

Slash burning (burning debris from logging) is limited to burning on forestlands for forest management and is managed by the Oregon Department of Forestry. Open burning for agricultural purposes is usually allowed anywhere in the state, unless fire safety concerns restrict or prohibit burning at any specific time. Agricultural burning is limited to genuine agricultural waste generated by an agricultural operation. While these exemptions are permitted by state law the smoke emitted by these types of burns also play a role in overall air quality within Clatsop County.

Wildfires

In September 2020, a series of wildfires throughout Oregon covered Clatsop County with a blanket of smoke, severely impacting air quality. Although none of these wildfires were located within the boundaries of Clatsop County, residents were nonetheless directly impacted by this natural disaster. Per information from the Oregon Health Authority, wildfire smoke contains

very small particles of harmful air pollution known as particulate matter, or PM2.5. These particles, which are less than 2.5 micrometers in diameter, are about 30 times smaller than the diameter of a human hair. As discussed below in greater detail in the “Future Conditions” sections, instances of wildfire smoke are expected to increase during the 20-year planning horizon.

Greenhouse Gas Emissions

In 2019 and 2020, “cap and trade” legislation was introduced in the State Legislature, but no action was taken during either session. In March 2020, Governor Brown signed Executive Order 20-04, which directed state agencies to take actions to reduce and regulate greenhouse gas emissions. This order, which state agencies are in the process of implementing, requires greenhouse gas emissions to be reduced to at least 45% below 1990 emission levels by 2035 and at least 80% below 1990 emissions levels by 2050. On August 5, 2021, Oregon DEQ released draft rules to limit greenhouse gas emissions. The rules, which would require approval by the Environmental Quality Commission, would establish “enforceable limits on greenhouse gas emissions caused by the use of gasoline, diesel, natural gas, heating oil, propane and other fuels used in homes, cars and businesses. Those limits would be lowered every year, reaching an 80% reduction by 2050. Emissions from the generation of electricity used in Oregon are being reduced through a separate program recently approved by the Oregon legislature.

WATER QUALITY

Water pollution sources include point sources (direct sources such as wastewater outfalls) and non-point sources (indirect sources such as roadway runoff or sedimentation). Point sources require discharge permits and are closely monitored by the DEQ and the United States Environmental Protection Agency (EPA). Non-point sources are regulated by DEQ utilizing Total Maximum Daily Load (TMDL) Implementation Plans for nonpoint source pollution. TMDLs define the amount of a pollutant that a water body can accommodate without violating water quality standards. In Clatsop County, which lies within the North Coast Basin, a water quality management plan prepared by Oregon DEQ, was approved in 2003 and modified in May 2017.

TABLE 3: IMPAIRED WATERS – COASTLINE UNIT						
Assessment Unit Name	Assessment	IR_category	Rationale	Year_listed	Assessed_in_2018	Beneficial Uses
Ecola State Park	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Cannon Beach	Enterococci	Category 5	up to 19% of results within a 90-day period > 130 Enterococci per 100 mL	2010	YES	Water Contact Recreation
Cannon Beach	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Del Rey Beach State Recreation Site	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Tolovana State Park Beach	Enterococci	Category 5	up to 17% of results within a 90-day period > 130 Enterococci per 100 mL	2012	YES	Water Contact Recreation
Tolovana State Park Beach	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Arcadia State Park Beach	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Cape Falcon Shoreside Marine Protected Area	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Fort Stevens State Park Beach	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Sunset Beach	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Seaside Beach	Enterococci	Category 5	up to 20% of results within a 90-day period > 130 Enterococci per 100 mL	2018	YES	Water Contact Recreation
Seaside Beach	Fecal Coliform	Category 4A	Record ID: 9322- Previous Data: TMDL Approved: 8/20/2003; Record ID: 24733- 2010 Data: EPA addition to 303(d) list 12/14/2012: Four exceedences out of 31 days of sampling at LASAR station 13655, Seaside Beach at Promenade, between 1/18/00 and 7/22/02.	2004	NO	Fishing
Seaside Beach	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Indian Beach at Ecola State Park	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Oswald West State Park	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing
Hug Point State Park Beach	Enterococci	Category 2			YES	Water Contact Recreation

TABLE 3: IMPAIRED WATERS – COASTLINE UNIT						
Assessment Unit Name	Assessment	IR_category	Rationale	Year_listed	Assessed_in_2018	Beneficial Uses
Hug Point State Park Beach	Shellfish Toxins	Category 5	Based on fish or shellfish consumption advisories issued by ODA or OHA	2018	YES	Fishing

Source: Oregon Department of Environmental Quality

- IR_Category** - Current Integrated Report category for that specific assessment
- **Category 2** - Available data and information indicate that some designated uses are supported and the water quality standard is attained
 - **Category 3** - Insufficient data to determine whether a designated use is supported
 - **Category 3B** - This category is used when there is insufficient data to determine use support, but some data indicate possible impairment
 - **Category 3C** - This category is used to identify waters whose biocriteria scores differ from reference condition, but are not classified as impaired
 - **Category 3D** - This category is used when all the available data has criteria values below the test method’s quantification limits
 - **Category 4** - Data indicate that at least one designated use is not supported, but a TMDL is not needed to address the pollutant
 - **Category 4A** - Clean-up plans (also called TMDLs) that will result in the waterbody meeting water quality standards and supporting its beneficial uses have been approved
 - **Category 4B** - Other pollution control requirements are expected to address pollutant of concern and will result in attainment of water quality standards
 - **Category 4C** - The impairment is caused by pollution, not a pollutant. For example, flow, or lack of flow, are not considered pollutants, but may be affecting the waterbody’s beneficial uses
 - **Category 5** - Data indicate a designated use is not supported or a water quality standard is not attained and a TMDL is needed. This category constitutes the Section 303(d) list that EPA will approve or disapprove under the Clean Water Act.

CLATSOP COUNTY COMPREHENSIVE PLAN

TABLE 4: IMPAIRED WATERS – ESTUARIES		
Assessment Unit Name	IR_category	Beneficial Uses
Necanicum Creek	Category 4A	Fishing
Ecola Creek	Category 2- Category 5	Fishing Private Domestic Water Supply Public Domestic Water Supply Fish and Aquatic Life Water Contact Recreation
Necanicum River Arm Lower	Category 2 – Category 3D	Fishing Private Domestic Water Supply Public Domestic Water Supply Fish and Aquatic Life
Necanicum River Arm Upper	Category 4A	Water Contact Recreation
Neawanna Creek Arm	Category 3- Category 5	Fishing Private Domestic Water Supply Public Domestic Water Supply
Columbia River	Category 3 - Category 5	Fishing Private Domestic Water Supply Public Domestic Water Supply Fish and Aquatic Life

Source: Oregon Department of Environmental Quality

TABLE 5: IMPAIRED WATERS – LAKES/RESERVOIRS		
Assessment Unit Name	IR_category	Beneficial Uses
Cullaby Lake	Category 5	Boating Aesthetic Quality
Smith Lake	Category 5	Boating Aesthetic Quality
Unnamed Lake East of Burma Road	Category 3B	Private Domestic Water Supply Public Domestic Water Supply
Sunset Lake	Category 2 and Category 5	Boating Aesthetic Quality Fish and Aquatic Life Fishing

CLATSOP COUNTY COMPREHENSIVE PLAN

TABLE 5: IMPAIRED WATERS – LAKES/RESERVOIRS

Assessment Unit Name	IR_category	Beneficial Uses
		Private Domestic Water Supply Public Domestic Water Supply

Source: Oregon Department of Environmental Quality

TABLE 6: IMPAIRED WATERS – TERRITORIAL OCEAN UNITS

Assessment Unit Name	IR_category	Beneficial Uses
Smuggler Cove – Pacific Ocean	Category 3B	Fish and Aquatic Life

Source: Oregon Department of Environmental Quality

TABLE 7: IMPAIRED WATERS – SLOUGHS, STREAMS, CREEKS AND RIVERS

Assessment Unit Name	IR_category	Beneficial Uses
Westport Slough	Category 3 – Category 3D	Fish and Aquatic Life Fishing Private Domestic Water Supply Public Domestic Water Supply Water Contact Recreation
Big Creek	Category 5	Fish and Aquatic Life
Gnat Creek	Category 4A	Fish and Aquatic Life
Lewis & Clark River	Category 4A	Fishing
Youngs River	Category 2 – Category 5	Fishing Private Domestic Water Supply Public Domestic Water Supply Fish and Aquatic Life Aesthetic Quality Water Contact Recreation
Skipanon River	Category 2 – Category 5	Fishing Private Domestic Water Supply Public Domestic Water Supply Fish and Aquatic Life Aesthetic Quality Water Contact Recreation
Necanicum River	Category 2 – Category 5	Fishing Private Domestic Water Supply Public Domestic Water Supply Fish and Aquatic Life

CLATSOP COUNTY COMPREHENSIVE PLAN

TABLE 7: IMPAIRED WATERS – SLOUGHS, STREAMS, CREEKS AND RIVERS		
Assessment Unit Name	IR_category	Beneficial Uses
		Aesthetic Quality Water Contact Recreation
Fishhawk Creek	Category 4A	Fish and Aquatic Life
Nehalem River	Category 2 – Category 5	Fish and Aquatic Life Fishing Private Domestic Water Supply Public Domestic Water Supply Aesthetic Quality Water Contact Recreation
North Fork Nehalem River	Category 2 – Category 4A	Fish and Aquatic Life Fishing Private Domestic Water Supply Public Domestic Water Supply
Gods Valley Creek	Category 4A	Fish and Aquatic Life
Soapstone Creek	Category 4A	Fish and Aquatic Life

Source: Oregon Department of Environmental Quality

TABLE 8: IMPAIRED WATERS – OTHERS		
Assessment Unit Name	IR_category	Beneficial Uses
Youngs Bay	Category 4A	Fishing

Source: Oregon Department of Environmental Quality

TABLE 9: IMPAIRED WATERS – WATERSHEDS		
Assessment Unit Name	IR_category	Beneficial Uses
Bear Creek – Frontal Columbia River	Category 4A – Category 5	Fish and Aquatic Life
Lower Youngs River – Frontal Youngs Bay	Category 5	Fish and Aquatic Life
Lower Lewis & Clark River	Category 2 – Category 5	Fish and Aquatic Life Aesthetic Quality Water Contact Recreation Fishing
Skipanon River – Frontal Columbia River	Category 4A – Category 5	Fish and Aquatic Life Fishing

CLATSOP COUNTY COMPREHENSIVE PLAN

TABLE 9: IMPAIRED WATERS – WATERSHEDS		
Assessment Unit Name	IR_category	Beneficial Uses
Upper Necanicum River	Category 4A	Water Contact Recreation Fish and Aquatic Life
Middle Necanicum River	Category 2 – Category 4A	Fishing Private Domestic Water Supply Public Domestic Water Supply Fish and Aquatic Life
Lower Necanicum River	Category 2 and Category 4A	Fish and Aquatic Life Fishing
Ecola Creek	Category 2 and Category 5	Fish and Aquatic Life
Arch Cape Creek – Frontal Pacific Ocean	Category 2 – Category 5	Fish and Aquatic Life Fishing Private Domestic Water Supply Public Domestic Water Supply Water Contact Recreation
Wolf Creek	Category 4A and Category 5	Fish and Aquatic Life
Lower Rock Creek	Category 2 – Category 5	Fish and Aquatic Life Fishing Private Domestic Water Supply Public Domestic Water Supply
Northrup Creek – Nehalem River	Category 4A and Category 5	Fish and Aquatic Life
Little Fishhawk Creek	Category 2 and Category 4A	Fish and Aquatic Life
Beneke Creek	Category 4A and Category 5	Fish and Aquatic Life
Buster Creek	Category 4A and Category 5	Fish and Aquatic Life
Cow Creek – Nehalem River	Category 5	Fish and Aquatic Life
Humbug Creek	Category 2 – Category 4A	Fishing Private Domestic Water Supply Public Domestic Water Supply Fish and Aquatic Life
Cronin Creek – Nehalem River	Category 4A	Fish and Aquatic Life
Middle North Fork Nehalem River	Category 2	Fish and Aquatic Life

TABLE 9: IMPAIRED WATERS – WATERSHEDS

Assessment Unit Name	IR_category	Beneficial Uses
Lower North Fork Nehalem River	Category 3 – Category 3D	Fish and Aquatic Life Fishing Private Domestic Water Supply Public Domestic Water Supply

Source: Oregon Department of Environmental Quality

Drinking Water/Watershed Protection

The issue of drinking water and watershed protection has become increasingly prominent in recent years. In addition to any human-created impacts on drinking water sources and watersheds, wildfires also potentially contribute to water pollution. As human development further encroaches into areas where wildfires are likely to occur, those structures may contain hazardous or toxic materials. Fires release those elements into the ground, potentially contaminating groundwater resources, as well as particles that move through the air and land in drinking water reservoirs or other surface waters.

In 2020, the City of Warrenton, which had previously supplied potable water to houses within this area of the Clatsop Plains, adopted a moratorium which prohibited the issuance of any new water connections outside the incorporated boundaries of the city. Additional concerns regarding water quality and quantity, the impacts of septic systems on the coastal lakes and creeks in this area, and a decreasing capacity to treat septage from those systems have arisen within the past several years. These concerns over water quality/quantity are also reflected in the Strategic Plan approved by the Board of Commissioners in December 2020, and discussed in further detail below under “Future Conditions.”

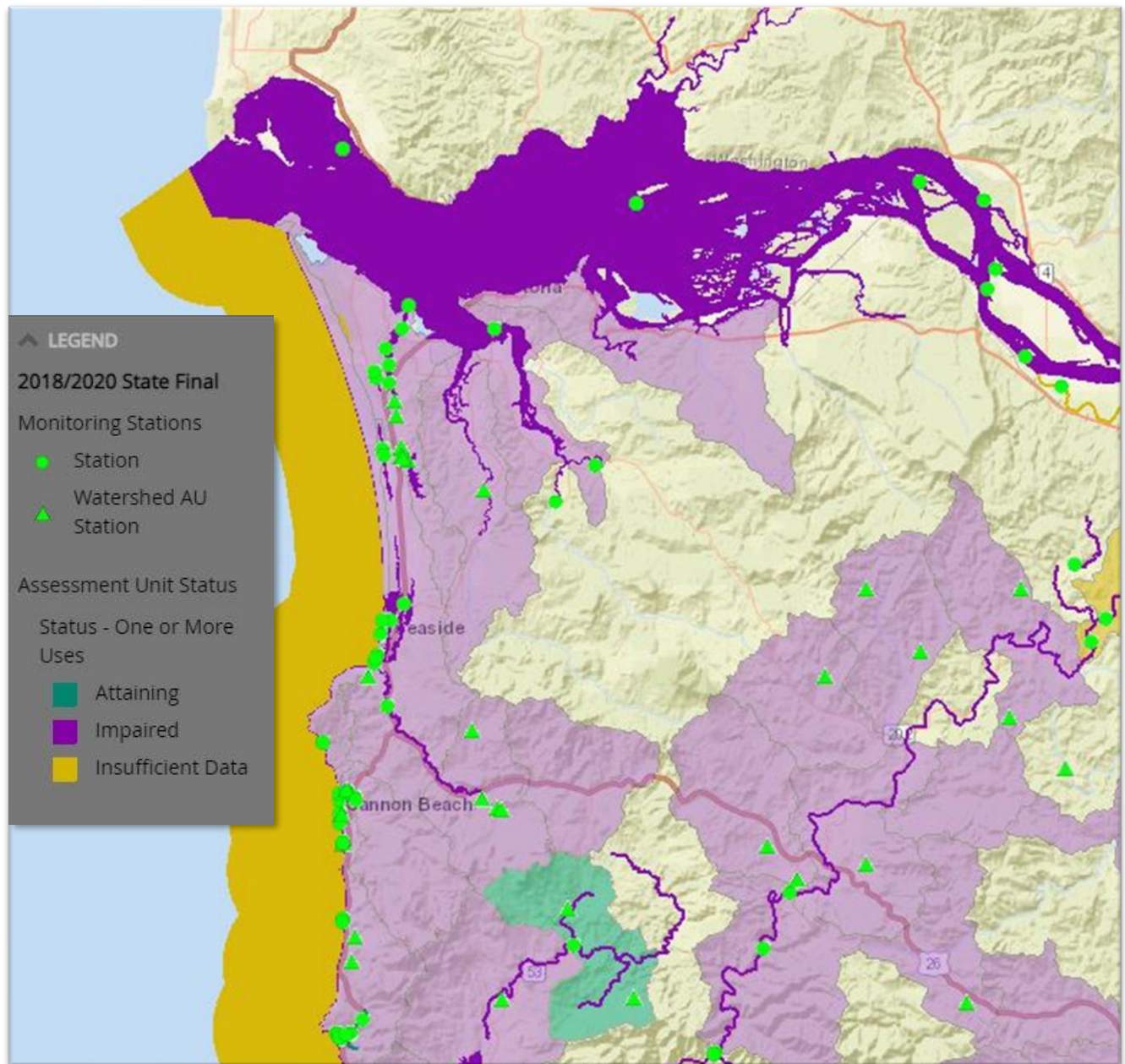
Failing Septic Systems

Malfunctioning, illegal or failing septic systems are a health hazard. These systems can discharge untreated sewage onto the ground, impacting groundwater resources, or may outfall directly to surface water, impacting drinking water resources and wildlife habitat. Additionally, natural disasters such as wildfires can also impact septic systems. Although often buried below ground, plastic, steel and concrete components are susceptible to damage from extreme heat. Some residents with failing septic systems may allow those systems to fail because they cannot afford the maintenance and/or repair costs associated with the systems. CRAFT 3, a local non-profit community development financial institution, utilizing funds from the Clean Water State Revolving Fund, provides below-market rate loans to assist low-income property owners. Those funds, however, are distributed throughout the state and the amount budgeted for this program is not sufficient to address the need. During the 2021 legislative session, HB 3090 was introduced. This bill would have appropriated moneys to DEQ to award grants for on-site septic

CLATSOP COUNTY COMPREHENSIVE PLAN

system low-interest loan programs and to cover related administrative costs. That bill was not approved during the legislative session.

Figure 3: Impaired Waters



Source: 2018/2020 Integrated Report, Oregon Department of Environmental Quality

Groundwater Resources

OAR 660-023-0140 defines “Groundwater” as “any water, except capillary moisture, beneath the land surface or beneath the bed of any stream, lake, reservoir, or other body of surface water.” Statewide Planning Goal 5 specifically requires local protection for “critical groundwater

CLATSOP COUNTY COMPREHENSIVE PLAN

areas” that have been inventoried by the Oregon Water Resources Department (OWRD). Because there are no inventoried critical groundwater areas within Clatsop County, the County may choose to protect groundwater sources used for public water systems through local regulations. Those groundwater sources are mapped by the Oregon Department of Environmental Quality (DEQ).

In Oregon, the Department of Environmental Quality (DEQ) has the primary responsibility for groundwater protection. DEQ, in coordination with the Oregon Health Authority Drinking Water Program, the Oregon Water Resources Department, and the Oregon Department of Agriculture implement the majority of federal and state programs related to groundwater. Per information from the Oregon Water Resources Department there are four observation wells currently located at Camp Rilea.

The Oregon Water Resources Department has identified a portion of the Clatsop Plains planning area where limited groundwater yield has been noted as a groundwater resource concern. The areas around Big Creek and Gnat Creek have been identified as areas of significant concern.

Groundwater and Drinking Water

While some drinking water districts obtain their supply from groundwater sources, surface water also plays a significant role as a drinking water resource. Clatsop County is developing a mapping layer on the GIS WebMaps tool to identify drinking water district watershed boundaries. There are 33 active public water systems in Clatsop County. These systems draw on both ground and surface water for the supply. Per information from the Oregon Health Authority (OHA), which inventories these systems, these active systems provide water to an estimated 40,143 people. Both groundwater and surface water systems are susceptible to contamination from chemicals, road run-off, and illegal dumping.

In addition to residents and businesses served by water districts, many households outside those districts are served by individual or small group water systems. These systems are vulnerable to drought, climate change, and contamination. These vulnerabilities may be accentuated by a lack of testing, impacts from activities on adjacent properties, and lack of expertise to maintain the systems.

LAND QUALITY

Unsheltered and Sub-sheltered Persons

As noted in further detail in other goals of this comprehensive plan, the ongoing demand for housing, lifestyles changes brought on by the coronavirus pandemic, and escalating housing prices have created a situation where an increasing number of persons are experiencing unshelteredness or are forced into sub-sheltered living situations. At times, these housing crises may be accompanied by mental or emotional health issues and/or alcohol/chemical dependency issues. Unsheltered persons, or persons domiciled in sub-sheltered situations may

CLATSOP COUNTY COMPREHENSIVE PLAN

not have onsite access to potable water and/or functioning waste treatment facilities. In some cases, human waste and solid waste are being buried, burned, dumped directly on the ground or dumped into streams, creeks, and rivers. Because many of the water supply systems within unincorporated Clatsop County draw on groundwater and surface waters the dumping of human waste and trash increases the likelihood of contaminants entering those systems.

NOISE

During the initial lockdowns associated with the onset of the coronavirus pandemic in spring 2020, many areas of the country experienced lower noise levels than had been experienced in several decades. Many residents noted not only the return of wildlife, but reported an increased awareness of bird song. This anecdotal evidence was substantiated by studies done by the California Polytechnic State University in the San Francisco area. Noise impacts not only birds, but other forms of wildlife, such as whales. Humans are also physically impacted by noise associated with increased development and urban-type activities. Increased noise levels have been found by the National Center for Biotechnology Information to not only cause hearing damage in humans, but also to elevate blood pressure, induce loss of sleep, increase heart rates and cause changes in brain chemistry.

LIGHT

Excessive light may cause a nuisance to neighboring properties and may also result in energy waste, unnecessary emission of greenhouse gases and can have negative effects on humans and wildlife.

On May 13, 2020, the Board of Clatsop County Commissioners adopted Ordinance 20-02, establishing “dark sky” lighting standards. The ordinance provides regulations for residential, commercial, and public area outdoor lighting which:

- allows outdoor lighting appropriate to the need while preventing light from shining onto adjacent properties, rights-of-way, and the night sky;
- encourages energy conservation without decreasing safety, utility, security, and productivity;
- enhances the livability and nighttime enjoyment of property in Clatsop County by minimizing the negative impacts exterior lighting can have on surrounding persons, properties, rights-of-way, and the environment;
- establishes guidelines for the installation and use of outdoor lighting that is controlled in such a way that it illuminates only the subject property and avoids illumination of surrounding properties, rights-of-way, or the night sky; and
- further defines lighting classified as a public nuisance.

FOOD WASTE

Per information from the Oregon Department of Environmental Quality (DEQ), the purchase of

CLATSOP COUNTY COMPREHENSIVE PLAN

food accounts for approximately 15% of Oregon’s consumption-based greenhouse gas emissions. Up to 40% of food grown or imported for consumption is ultimately never eaten. The production, distribution and preparation of food requires the use of land, water and energy. Information from DEQ also states:

- Approximately 1.3% of the United State’s Gross Domestic Product (GDP) is spent growing, processing distributing, and preparing food that is never eaten
- 25% of fresh water supply in the United States is used to produce food that is never eaten
- 2% of energy use in the United States is dedicated to growing, manufacturing, transporting, refrigerating, and cooking food that is never eaten – enough electricity to power 54 million homes for a year

Much of this uneaten food is deposited in landfills alongside other solid waste. Composting of organic materials, in addition to increased opportunities for recycling overall, could assist in reducing landfill waste while providing opportunities to enhance soil. The County should explore opportunities to encourage the public and private use of compost bins. The County should also consider installation of composting stations during county-sponsored events such as the Clatsop County Fair.

FUTURE CONDITIONS

CLIMATE CHANGE

In February 2020, the Oregon Climate Change Research Institute (OCCRI) released *Future Climate Projections Clatsop County*. The report forecasts that annual average temperatures in Clatsop County will increase between 0.9°-3.1° Fahrenheit between 2010-2039 and by 1.4° to 4.9° Fahrenheit between 2040-2069, utilizing a lower emissions scenario. Utilizing the higher emissions scenario, annual average temperature is expected to increase between 1.3°-3.5° between 2010-2039 and by 2.7° to 6.5° between 2040-2069. While the State has not yet mandated policies or actions that local governments must undertake to mitigate or adapt to climate change, it is probable that such requirements will be codified within the 20-year planning horizon. In 2021, the Oregon Department of Land Conservation and Development released its *Oregon Climate Change Adaptation Framework 2021*, which details actionable adaptation strategies and approaches based on six themes:

- Economy
- Natural World
- Built Environment and Infrastructure
- Public Health
- Cultural Heritage

CLATSOP COUNTY COMPREHENSIVE PLAN

- Social Relationships and Systems

Clatsop County should continue to monitor discussions at the state level and adapt policies and requirements to address specific climate change-related concerns and issues within the county.

As part of this comprehensive plan update process, a sub-committee of the Countywide Citizen Advisory Committee utilized strategies from the *Regional Framework for Climate Adaptation Clatsop and Tillamook Counties* to develop recommended policies specific to Clatsop County. While the sub-committee did not identify any new policies associated with Goal 6, Department of Land Conservation and Development staff provided suggested policies at a workshop conducted in January 2020.

Wildfires

As noted by the Oregon Department of Environmental Quality (DEQ) in *Wildfire Smoke Trends and the Air Quality Index*, issued July 2021, large wildfires have been increasing across the western United States in the last decade and are expected to become more frequent. As noted in this report, the Air Quality Index (AQI) values that are unhealthy for sensitive groups is increasing. While the report did not cover Clatsop County, it noted that in Western Oregon, Portland had not had a single day with air quality that was unhealthy for sensitive groups from 1985-2014. However, between 2015 and 2020, Portland had 23 such days, including three very unhealthy and five hazardous days in 2020.

While Clatsop County typically is not impacted by wildfire and associated smoke, it can occur, as evidenced by the 2020 wildfire season. The National Interagency Fire Center reports that fires in the temperate rainforests west of the Cascade Mountains have become more massive and burn more acres. Additionally, as noted by the Oregon Climate Change Research Institute (OCCRI) in its February 2020 report, *Future Climate Projects Clatsop County*, the frequency of very high fire danger days per year is projected to increase on average 2-5 days by 2040 and 6.5-10 days by 2050.

The same OCCRI report discussed above also notes that climate change is expected to worsen outdoor air quality. “Warmer temperatures may increase ground level ozone pollution, more wildfires may increase smoke and particulate matter, and longer, more potent pollen seasons may increase aeroallergens. Such poor air quality is expected to exacerbate allergy and asthma conditions and increase respiratory and cardiovascular illnesses and death.”

Sea Level Rise

Changes in global sea levels occur due to ocean thermal expansion, glacier and ice sheet mass loss, and land water storage. Regional and local sea levels on the Pacific Northwest coast are governed by the global mean sea level, but also by natural variability such as El Niño, by vertical land motions from subducting ocean plates, and by post-glacial isostatic adjustment. The OCCRI report discussed above also notes that globally, sea levels have risen approximately 7-8 inches

CLATSOP COUNTY COMPREHENSIVE PLAN

since 1900, with almost half that rise occurring since 1983 as oceans have warmed and land-based ice has melted. Local sea level at Astoria has lowered by about two inches during 1947-2013 (Source: *Coastal Risks for Clatsop County, OR*, 2019) due to land uplifting at a faster pace than sea level rise over that period. However, the pace of sea level rise is expected to accelerate such that the rise in the 21st century would outpace the uplifting land. Local sea level rise at Astoria (measured at the Astoria-Tongue Point NOAA water level station) is projected to rise by 0.1 – 1.6 feet by 2040, based on the Intermediate-Low and Intermediate-High scenarios used in the 2018 U. S. National Climate Assessment.

Sea level rise is often considered in conjunction with coastal erosion. However, sea level rise can also accelerate salt water intrusion into groundwater sources, including aquifers. The Clatsop Plains aquifer and coastal wells would become especially susceptible to this type of hazard.

WATER QUALITY AND SEPTIC SYSTEMS

During the process of updating the Clatsop County Comprehensive Plan it has become apparent that there is insufficient current data available to provide a foundation for policy and projects. This was recognized in the Strategic Plan approved by the Board of Commissioners in December 2020 and amended in 2022. One of the five focus areas in the strategic plan is Environmental Quality, which includes monitoring water quality and water needs assessments and working with the North Coast Watershed Association to enhance stream flow monitoring. The Board is also currently in the process of updating the strategic plan in 2023.

The work items identified in the Strategic Plan is currently ongoing. A partnership was established with the Association of Oregon Counties which established a water team to champion local water needs in future regional and statewide water funding and planning efforts. It should also be noted that the City of Warrenton issued an emergency order in March 2020, which prohibits new connections or expansion of existing water services outside of the city boundaries. Because much of the new residential development west of Highway 101 relies on water from Warrenton, this moratorium has had an impact on new development in the Clatsop Plains Planning Area.

DEMAND FOR HOUSING

In 2019, Clatsop County and the cities of Astoria, Warrenton, Gearhart, Seaside and Cannon Beach, completed a housing study to identify opportunities and weaknesses associated with housing supply in Clatsop County. That report concluded that while the County has a surplus of potentially buildable lands, certain types of housing and housing products at specific price-points are either missing from the county's housing inventory, or are not provided in sufficient quantities.

In March 2020, the coronavirus pandemic resulted in changes worldwide that significantly altered housing markets, including in Clatsop County. Some people choose to leave more

CLATSOP COUNTY COMPREHENSIVE PLAN

densely populated areas and relocate to more rural areas. Others benefited from remote work options, which no longer tied workers to a specific geographic location. As a result, the median selling price of a home in Clatsop County rose from \$322,500 in November 2018 to \$502,500 in September 2021 (Source: Realtor.com). While some of these home sales will be to households that may become permanent Clatsop County residents, many will be vacation homes and some of those will be used for short-term rentals.

The increase in median housing prices, coupled with a lack of long-term rental units, will result in increased pressure to increase housing stock by constructing new residential units. While Goal 14 stresses that higher intensity uses and dense development be directed to urban areas, there is, and will continue to be, a movement to increasing housing development on rural lands. Encroaching residential development has the potential to impact inventoried Goal 5 groundwater resources.

As that pressure continues, careful attention must be paid to the capacity of the parcels to potentially accommodate both onsite wastewater treatment systems and wells. Reducing minimum-required parcel sizes on rural residential lands may result in parcels that are too small to sustain these services in the long-term and may result in higher ownership costs when entire septic systems must be dug up and replaced because parcel sizes are not large enough to accommodate a replacement system. Additionally, treatment systems have required setbacks from drinking water systems in order to prevent cross-contamination.

TRANSPORTATION CONGESTION

As the demand for housing increases there is also a corresponding increase in the need to provide new roads to those homes. Again, while Goal 14 directs new housing development primarily to urban areas, partitioning and subdividing of rural lands continues to occur in unincorporated Clatsop County. The construction of new roads, or the expansion of existing roads, has the potential to increase runoff from vehicles into adjacent wetlands, creek, streams, sloughs and rivers. Additional vehicles and increased vehicle miles traveled to access services and shopping may result in increased emissions that impact air quality.

TOURISM

Clatsop County has historically had a strong tourism base. Per information from Travel Oregon, in 2019 local recreationists and visitors spent \$785 million on outdoor recreation in Clatsop County. Many of those visitors are drawn by Goal 5 resources, including scenic views and sites, open spaces, and wildlife, and by the air, water and land quality protected under Goal 6. During the pandemic, tourism remained strong as visitors sought outdoor experiences away from crowded venues. Because of the limited availability of public transit within the county and between adjacent counties and cities, the majority of visitors travel by vehicle to Clatsop County. This increase in non-local traffic also corresponds to an increase in vehicle emissions, which may have a long-term effect upon air quality in rural areas in which the major access highways are located.