



City of Yachats Water System Summary

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Purpose:

This document is a general overview of the City of Yachats water system. It outlines sources, rights, watershed area, water infrastructure, usage, and finance. This document is a compilation of facts and information gathered to educate citizens and local leaders about the water system in Yachats.

Background on Water in Yachats

Our cities drinking water starts its journey to our cups in the rain clouds above the coast range. As the rain falls on the land it is filtered through the soil and vegetation, flowing under soil and over bedrock. The water that is not absorbed by the plants is channeled downhill, down ravines and hillsides, and eventually down to the lowest point in the landscape. Water trickles in from the landscape into small tributary streams that feed Salmon and Reedy Creek. Our primary source of drinking water is Reedy Creek, located upstream from where the creek joins the Yachats River, in the creek bed, lies the Infiltration Gallery Water Intake. In 1998 a landslide destroyed the original intake and surrounding infrastructure as a result of poor forestry practices on the slopes above. Our current intake was constructed following the slide which is now capable of collecting about 700 gallons per minute. From the intake it is directed to the water treatment plant where it undergoes a process at the Cities' treatment facility. After treatment the water is pumped to the one-million-gallon reservoir where it is distributed throughout the water system.

Yachats Water Rights:

Yachats takes its water solely from surface sources such as streams and rivers. Preliminary surveys have shown that ground water is not a viable water source for Yachats. Our main source of drinking water is Reedy Creek with Salmon Creek as our secondary source. Though the City has rights to the Yachats River, due to the proximity to the ocean it is not a viable source of water except in cases of emergency. The table below shows the maximum amount of water the city has a right to for each source. The measurement of the volume of water flowing in the stream or river is cfs, which stands for "cubic feet per second".

Surface Water Rights	Magnitude
Reedy Creek	2.0 cfs
Salmon Creek	2.0 cfs
Yachats River	2.0 cfs
Cape Creek (no longer viable)	0.5 cfs

**cfs: cubic feet per second*

Table 1. Water Rights and Magnitude for the City of Yachats

Water System Infrastructure:

The following is a summary of the capacity and rates of water intake, storage, and treatment.

Intake Capacity:

Primary: Reedy Creek 700 gpm, (1.56 cfs)

Secondary: Salmon Creek, 420 gpm, (.94 cfs)

Emergency: Yachats River

**gpm: Gallons per Minute*

Treatment Plant: Can produce 350 gallons of treated water per minute and up to 500,000 gallons a day

Storage:

Untreated (Raw) Water Storage:

- 500,000 gallon reservoir

Treated Water Storage:

- 1 Million gallon reservoir
 - 200,000 gallon reservoir
 - 10,000 Gallon tank w/pressure tank (**not currently in service**)
 - 10,000 Gallon tank
 - 125,000 gallon tank
 - 250,000 gallon tank
 - 10,000 gallon reservoir w/ pressure tank (for consumers above 500 ft)
 - **Total Treated Water Storage: 1,595,000**
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- With the given numbers if treatment plant were to stop while maximum treated water is stored, City of Yachats would have drinking water stored for approx. 7-8 days based off of average day demand. Were it to be days of peak water use: 2.35 days of drinking water.

Water Use in Yachats:

The following figures come from the 2001 Master Water Plan. The figures for the last 20 years will be included in the updated plan, expected to be finished in 2021

-Average Day Demand 1997-2000: 205,000 Gallons a day

-Average use in Winter: 100,000 Gallons a day

-Average use in Summer: 250,000 Gallons a day

-Maximum Day Demand: 515,000 Gallons a day

-Average Consumption per Year: 42,898,000 Gallons

- The vast majority of commercial water use is accounted for in the numerous motels, condos, rentals, and second homes. The historic influx of tourists and seasonal residents during the summer months, when rainfall and subsequent stream flow is at its lowest,

creates increased demand on surface water sources. In recent years this has resulted in water scarcity during peak summer months.

- Current city water capacity is source limited rather than water right limited. This means our ability to produce water is limited by the magnitude of flow in Reedy and Salmon Creek.

Scarcity:

In the event of scarcity in the water supply the city will implement conservation actions based on flow levels in the water source to conserve water for necessary functions. There are four levels of conservation action, summarized below. In the event of curtailment all water customers will be notified as to the level of severity, restrictions, and penalties for noncompliance. In recent years the city has gone into both Phase 1 and Phase 2. For more detail about curtailment measures see Yachats Municipal Code chapter 8.22.

Water Conservation Level	Curtailment Criteria	Restrictions
Phase 1	Yachats River flow is below 35 cfs OR combined flow of Salmon and Reedy Creek is below .65 cfs OR if the coastal region is in a moderate to extreme drought based on the Palmer Drought Severity Index.	1: Watering of lawns, gardens, and landscaping will be restricted to alternate days based on address. 2: Sales of water to non-residents is prohibited. 3: No water shall be used by the fire dept. for drills, truck washing, hydrant flushing, etc. 4: Operations of ornamental fountains is prohibited unless it has a recirculating system.
Phase 2	Yachats River flow is below 20 cfs OR combined flow of Salmon and Reedy Creek is below .5 cfs OR if the coastal region is in a severe or extreme drought based on the Palmer Drought Severity Index.	In addition to Phase 1 restrictions: 1: the watering of any vegetation other than by handheld device such as a bucket. 2: the use of water for washing buildings, streets, or other pedestrian surfaces. 3: Drinking water served at restaurants by request only. 4: Washing of all vehicles and watercraft. 5: Operations of all ornamental fountains, even with recirculating system. 6: Use of City water for dust control.
Phase 3	Yachats River flow is below 15 cfs OR combined flow of Salmon and Reedy Creek is below .4 cfs OR if the coastal region is in a extreme drought based on the Palmer Drought Severity Index.	In addition to Phase 1 and 2 restrictions: 1: All landscape watering prohibited. 2: Use of water from fire hydrant or any use other than firefighting. 3: Use of non-recirculating hot-tubs, pools, or spas. 4: All “commercial large meter users” required to send linens for laundering outside the city. 5:
Phase 4	Critical Water Supply Status - implemented in case of disaster conditions and may be put into effect without further action of the City Council upon determination by the Public Works Director that the water system has been damaged beyond immediate repair.	1: The City shall discontinue service through its normal distribution system 2: if there is adequate water in the City reservoirs, water may be distributed directly to residents, health clinics, and assisted living facilities during set hours. 3: If reservoirs are destroyed or damaged the City shall purchase water from the nearest city or water district. If water is unavailable from neighbors, the

		city shall contract or commandeer private vehicles to bring water to the city.
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cfs*- Cubic Feet per Second

- In the event of scarcity caused by low flow in Salmon and Reedy Creek the City of Yachats plans to purchase water from the South Lincoln County Water District (SLCWD) as it is more cost effective than attempting to treat the water in the Yachats River.
- In the event of scarcity, if using the Yachats River, the City is limited to diverting .5 cfs in order to allow for access of other junior water rights along the river.
- Pulling water from the SLCWD system would only happen when the treatment plant is unable to meet the demand of the city.
- The water from SLCWD would supplement the water already being produced by the Yachats system in order to meet demand.
- This would increase the price per unit of water by \$2.50 for residents.
- Water insecurity is an issue in many coastal towns in Oregon, there is a initiative to interconnect water systems of the central coast region to combat this problem. For more information see Rocky Creek Connection Project in resources.

System Finance and Efficiency

For a small town, Yachats has a complex water system with 21 different pressure zones throughout the system and over 24 miles of pipes and valve connections. Both our drinking water treatment plant and wastewater treatment plant are enterprise funds meaning that they generate revenue to pay for the operations of the plants as well as local water infrastructure projects. Currently, 15% of water is lost due to inefficiencies in the system, this is down from a stunning 40% water loss recorded in 1997. This is caused by leaks in underground pipes that are challenging and costly to locate and fix.

Yachats Watershed:

A watershed, also called a drainage basin or catchment, is a land area that channels rain or snowfall to a common low point in the landscape, generally rivers or streams. Below is a map showing the geographic extent of the watershed that supplies us with our water.

Figure 1. City of Yachats (PWS 00966) Drinking Water Source Area and Adjacent Source Areas

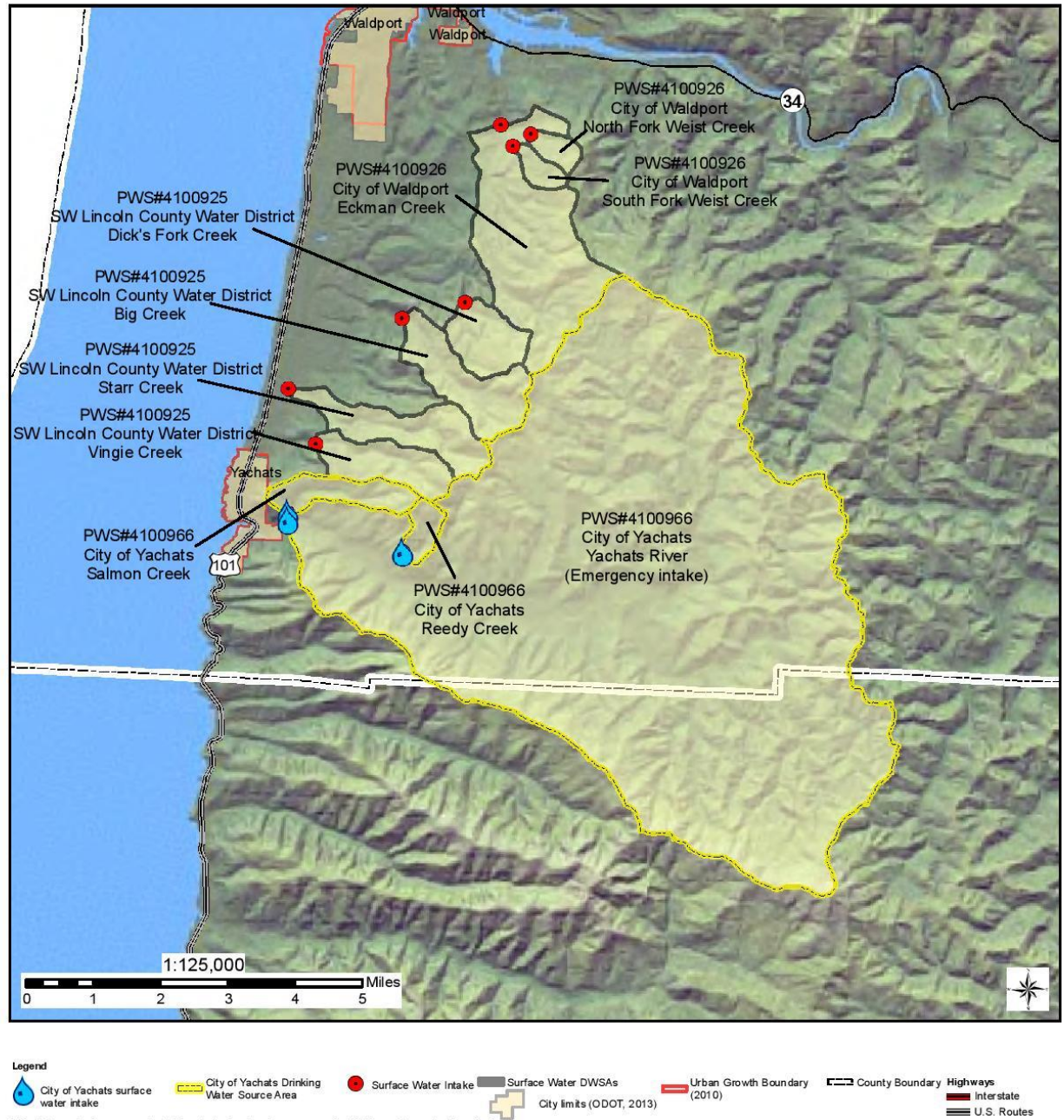


Fig 2. City of Yachats Drinking Water Source Area, DEQ Source Water Assessment, 2016

Ownership of Land in the Yachats Watershed

The following data comes from the Source Water Assessment conducted by the Oregon Dept. of Environmental Quality in 2016.

- **Salmon and Reedy Creek:**

Drinking Water Source Area (DWSA): 1.21 sq. miles/ 773 acres ... 9.36 Stream miles

Ownership:

Private Industrial Timber Companies: 178 Acres, 23% of DWSA

City of Yachats: 15 Acres, 2% of DWSA (Water Treatment Plant)

US Forest Service: 580 Acres, 75% of DWSA

100% of the 9.36 stream miles have a high erosion potential.

- **Yachats River (Emergency Source Only):**

Drinking Water Source Area (DWSA): 41.46 sq. miles/ 26,536 acres.... Stream Miles: 341.7

Ownership:

Agriculture: 1392 Acres, 5% of Drinking DWSA

Private Industrial Forest: 3128 Acres, 12% of DWSA

Private Landowners: 1408 Acres, 5% of DWSA

City of Yachats: 2 Acres

Bureau of Land Management: 264 Acres 1% of DWSA

US Forest Service: 20,246 Acres 76% of DWSA

18% of 341.7 Stream miles have a high erosion potential.

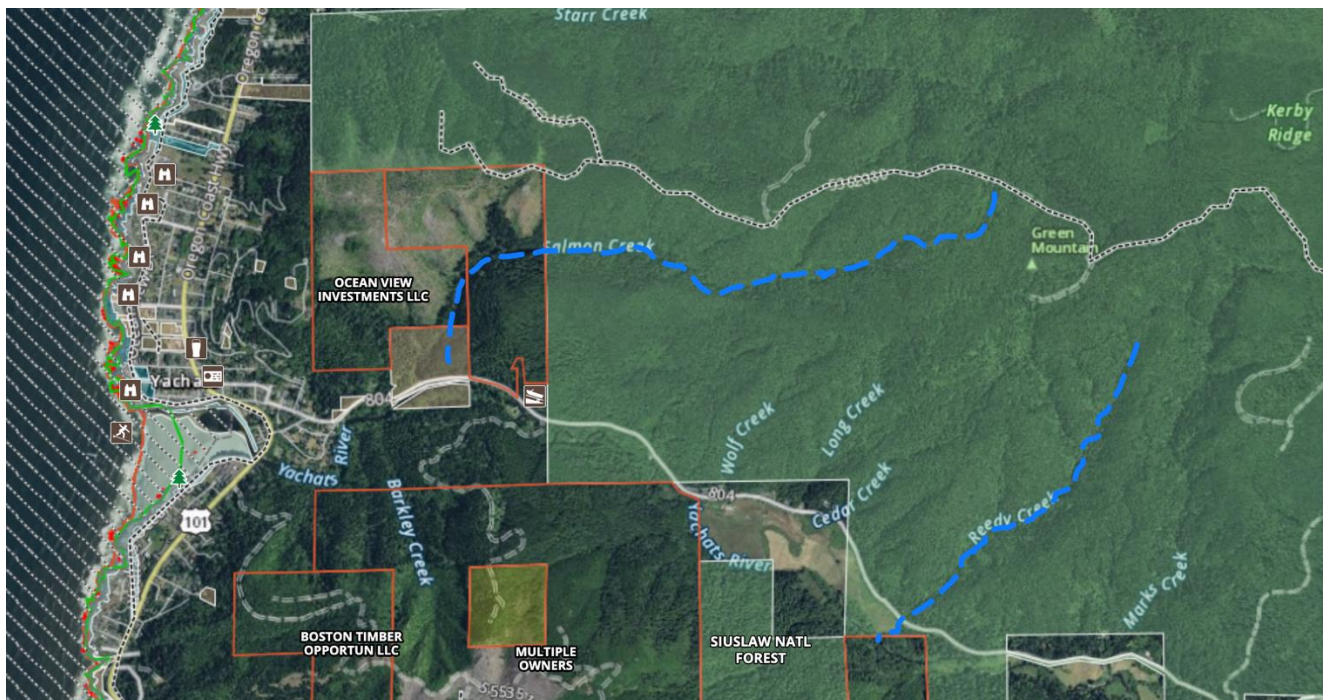


Fig 3. Salmon and Reedy Creek Ownership Context Map, Sourced from OnX Hunt.

Future of Yachats Water

Currently, the Water Master Plan for the City of Yachats is undergoing its scheduled 20 year update. The master water plan is projected to be completed by the end of 2021

As a sub-section to the master plan, a Drinking Water Protection Plan is being created to characterize the current risks to the water system. The drinking water protection plan is projected to be completed by Summer of 2021

Resources:

- Yachats Water Master Plan:
<https://www.yachatsoregon.org/DocumentCenter/View/227/Water-Master-Plan-PDF>
- DEQ Source Assessment Plan:
https://www.deq.state.or.us/wq/dwp/docs/uswareports/USWA_00966Yachats.pdf
- Drinking Water Protection Plan Info: <https://www.yachatsoregon.org/372/Drinking-Water-Protection-Plan>
- Rocky Creek Connection Project resources:
<https://www.newportoregon.gov/dept/pwk/documents/rc/RockyCreekRegionalWaterSupplyProject-Dec-3-2001.pdf> ;
 - <https://www.newportoregon.gov/dept/pwk/rockycreek.asp>