

LWV Statewide Water Study Questions for Local Leagues

Douglas County – Community Survey

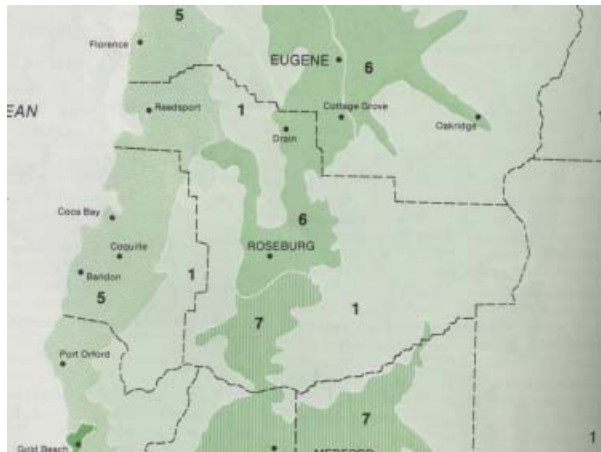
Question #1 Provide a brief description of the community surveyed, including the population and transient population, geographic location, climate, and annual rainfall.

Source: Information guide out of the NewsReview

Douglas County is an area of 5,071 square miles extending from the Pacific Ocean to the Cascade Mountain range, and has a population of 104,675. A transient population consists of students, migrant workers and homeless people, we don't know how many yet.

Douglas County's climate covers three zones (?) the ocean coast, the river valleys and the mountain ranges (Coastal range and Cascades). The hottest month is August, and the coldest is January. There are no extended freezing periods.

Light snowfalls west of the Cascades and no extended summer periods over 100°. Average annual precipitation is 32.4 inches. Elevation ranges from sea level to 9,182 feet.



Douglas County

Climate Zones

1, 2 and 3 are snowy. Snow stays on the ground for extended amount of time during the winter

6 A somewhat longer growing season and warmer summers

7 Hot summers and mild but pronounced winters give this area sharply defined seasons without severe winter cold or enervating humidity

Douglas County – Watersheds, water use and pollutants

Question No. 2

2. a) Identify the major watersheds and subwatersheds in which you live. b) Describe the uses of the water resources in that community, i.e., recreational, agricultural, industrial, residential, and ecological. c) Have major pollutant concerns been identified (sediment/turbidity, mercury, temperature, bacteria, etc.)?

**a) Watershed: Umpqua Basin
Subwatersheds: Umpqua River, North Umpqua River and the South Umpqua River**

The Umpqua River Basin covers 2,996,000 acres and shares the same general geographic boundary as Douglas County. It is the largest watershed draining into the Oregon Coast south of the Columbia and is one of two Oregon basins with headwaters in the Cascades (the Rogue Basin is the other). The Umpqua is one of Oregon's most important producers of spring chinook, fall chinook, winter steelhead, summer steelhead, coho, and sea-run cutthroat trout. The Umpqua system accounts for more total and wild coho spawners than any other river system in Oregon and about 15% of coho spawners coast-wide. The Umpqua "Basin" is part of the larger Southern Oregon Coastal Basin, or third-field watershed. The Southern Oregon Coastal Basin includes the drainages of the Umpqua, Rogue, and several coastal rivers. The Umpqua Basin itself is comprised of three subbasins, or fourth-field watersheds: Umpqua (the main stem downstream of the confluence of the north and south forks), North Umpqua, and South Umpqua. Within these three fourth-field watersheds are 33 fifth-field watersheds: 13 watersheds in the South Umpqua Subbasin, 12 watersheds in the North Umpqua Subbasin, and eight watersheds in the Umpqua Subbasin. Douglas County encompasses most of the Umpqua Basin, but headwater reaches also extend into Coos (West Fork Cow Creek Watershed), Lane (Steamboat Creek and Canton Creek watersheds), Klamath (Diamond Lake Watershed), and Jackson and Josephine counties (minor portions of several watersheds).

From the *Partnership for the Umpqua Rivers Action Plan*, June 2007

b) Uses of water in Douglas County:

Forestry, agriculture, irrigation, industrial, fisheries, recreation, drinking water, hydroelectric power.

According to the U.S. Census Bureau, the county has a total area of 5,134 square miles (13,297 km²), of which, 5,037 square miles (13,045 km²) of it is land and 97 square miles (252 km²) of it (1.89%) is water. Retrieved December 4, 2008 from http://en.wikipedia.org/wiki/Douglas_County,_Oregon.

Water bodies in Douglas County:

104 Reservoirs, 6 basins, 1125 streams and rivers, 70 lakes, 48 dams, 2 falls, 25 mines, 5 swamps, 26 bays

<http://www.placenames.com/us/41019/pp/>, 12/13/08

Beneficial uses for water in Douglas County:

1. Water for irrigation and livestock;
2. Water for municipal and industrial use;

3. Water-related recreational use;
4. Wildlife and natural resource conservation;
5. Water quality enhancement;
6. Power generation;
7. Anadromous fish enhancement;
8. Flood control; and
9. Other beneficial uses for water.

www.co.douglas.or.us/legal/rev_waterresources.PDF, 12/13/08

c) Major pollutants:

The Umpqua Basin consists of three distinct subbasins: South Umpqua, North Umpqua, and Mainstem Umpqua. The South Umpqua subbasin is the most populated and most challenged with respect to water quality. However, trend analysis shows an increase in water quality in the most populated stretch of the South Umpqua River. The North Umpqua subbasin has less pressure from population growth and has the best general water quality of the subbasins. However, a closer look at water quality trends in the subbasin is warranted. The Mainstem Umpqua subbasin receives drainage from the other two subbasins as well as from other tributaries. Water quality trends in the mainstem subbasin are mixed. Comparing minimum seasonal Oregon Water Quality Index (OWQI) values water quality in the Umpqua basin ranges from good (North Umpqua River site) to very poor (Deer Creek site). Water quality data were routinely collected by the DEQ Laboratory in 1986-1995.

Retrieved Dec. 4, 2008 from <http://www.deq.state.or.us/lab/wqm/wqindex/umpqua4.htm>.

Nutrient enrichment is the underlying cause for most of the Umpqua Basin's 303(d) listings for dissolved oxygen, pH, phosphorus, chlorophyll a and aquatic weeds/algae. Elevated stream temperatures and water which has little natural capacity for nutrient assimilation due to the area's geology contribute to the problems. Both nonpoint and point sources contribute nutrients, but streams with wastewater treatment plants typically show the most impact, particularly in the late summer and fall. This document addresses 29 listings related to excesses nutrients on the 2004-06 list of impaired waterbodies, including those associated with Diamond Lake (see below). (pg7)

Section 303(d) of the federal Clean Water Act requires states to periodically list waterbodies that do not meet water quality standards ("303(d) list"). The 2004-06 303(d) list identified 262 stream segments in the Umpqua Basin as water quality limited, and needing TMDLs. The list is available online at <http://www.deq.state.or.us/wq/303dlist/wq2004intgrpt.htm> and in Attachment D of Chapter 7, the Water Quality Management Plan. The majority of these listings (162) are for stream temperature, which affects rearing and spawning habitat for salmonids, which need cold water to survive. Three spawning listings on the North Umpqua River, which need additional data and analysis, are not addressed by this TMDL.

There are 25 listings in the basin for bacteria violations, based on standards for both water-contact recreation and the safety of shellfish for human consumption. The TMDLs for bacteria will address all 25 bacteria listings on the 2004-06 303(d) list and allocations apply basinwide. Similarly, the six listings for biological criteria are all addressed by these TMDLs.

There are also 31 listings for dissolved oxygen, pH, phosphorus, chlorophyll a and excess algae. Most of these listings (29) are addressed by the TMDLs in this document. One fall-winter-spring dissolved oxygen listing (for Calapooya Creek) has changed as a result of revised standards, and further monitoring

is needed to determine pollution limits. In addition, there is a pH listing for a one-mile stretch of the North Umpqua River that will not be covered by these TMDLs, but will likely be addressed through other processes. These listings will be addressed in the next TMDL cycle, estimated for approximately 2011, unless addressed earlier through other processes. On the 2002 303(d) list, there were seven listings in the basin for sediment. Four of those streams, all in the North Umpqua subbasin, were de-listed on the 2004-06 303(d) list based on additional data showing criteria are being met, and TMDLs were not needed. However, the de-listing for Canton Creek may have been an error. See comments in Sediment Summary below. The remaining three sediment-listed streams are in the South Umpqua subbasin. Analysis of new data, together with re-analysis of old data, indicated that there is a continuing question as to whether sediment is impairing salmonid habitat and spawning in these streams. Therefore, until further data is gathered, work to develop TMDLs on these three streams has been placed on hold, and these streams will remain on the 303(d) list. (pg5)

The TMDLs address 219 out of 262 listings of impaired waterbodies in the Umpqua Basin, and almost onethird of Umpqua Basin streams. Implementation of the waste load allocations and load allocations is expected to bring those waterbodies back into compliance with water quality standards so the beneficial uses will be protected. The other 43 listings will await new methods or additional data before TMDLs or other assessments are completed. (Conclusion)

DEQ Executive Summary and Table of Contents (pdf), "Umpqua Basin TMDL", October 2006. pp.5-10. Retrieved December 4, 2008 from <http://www.deq.state.or.us/wq/tmdls/umpqua.htm>.

Formosa Mine: Douglas County, Oregon

In September 2007, The U.S. Environmental Protection Agency (EPA) added the Formosa Mine to the National Priorities List (NPL), also known as the Superfund list. The 76-acre site is on Silver Butte in Douglas County, southwest Oregon, about 25 miles south of Roseburg, near the town of Riddle.

Storm water flowing from the underground mine workings has resulted in an annual discharge of approximately 5 million gallons of acid mine drainage, containing up to 30,000 pounds of dissolved copper and zinc, along with other metals. This contamination has severely degraded 13 miles of Middle Creek and the South Fork of Middle Creek, affecting macroinvertebrates, resident fish, coastal steelhead trout, and Oregon coastal coho salmon.

During the next several years, EPA will complete a remedial investigation and feasibility study that will lead to a proposed plan for cleaning up the site.

In the short term, EPA is working cooperatively with the Bureau of Land Management and Oregon Department of Environmental Quality to evaluate whether interim measures to divert water either away from the mine or away from the creek would help reduce ongoing risk from contamination at the site.

Retrieved December 4, 2008 from

<http://yosemite.epa.gov/r10/cleanup.nsf/5c8919bc41f032578825685f006fd670/2e0107830190476a882571f0006623b0!OpenDocument>

Douglas County- Drinking Water Systems

11/08

Question #3 Which organization/s provide the drinking water and what are the sources of that drinking water? What percentage of the population draws water from private wells?

Source: www.oregon.gov/DHS/ph/dwp/index.html
170.104.158.45/countysurface.php3
(10-28-08)

There are 41 water systems operation in Douglas County according to the Health Division website. These include both small and large populations, from 10 for the Rice Hill West Subdivision to 28,800 for the City of Roseburg, at Winchester. A detailed list is available at this website, with PWS – public water systems – registration numbers. Reports can be accessed with such numbers.

All but four use ground water wells as sources, and three use springs. The rest use surface water of rivers, creeks, or lakes.

The 2006 census estimated the population of the county to be 105,117 persons. The majority of them using surface water as a source of dinking water is approximately 84,068, and for wells, springs or other sources is thought to be 20,149. This percentage is about 80% surface water, and 20% ground water. This factor is obtained by subtracting the users of the 41 public water systems from the total population. This is necessary since information about water used from private wells is not completely known. Well registration is a recent state requirement and many wells are not recorded with the state. There are thousands of well logs registered with the county, but no agency is monitoring wells, or has data on what they are used for. Also abandoned wells are not always reported to the water resources department.

All 41 water systems are monitored by the public health department for coliform, chemical detection, lead, copper and nitrates. Reports are available online for such data.

Douglas County – Stormwater and Wastewater

Question #4 Describe briefly the characteristics of the water, stormwater and wastewater treatment utilities (number of users being served, projected growth, facilities maintained, cost to users, etc.)

Douglas County stretches from Azalea to Yoncalla and is made up of thirty four communities. Many of these small communities are facing aging infrastructure that must be replaced. Several systems have been replaced in the past couple of years. Roseburg, Winston, Sutherlin are some examples.

Winston-Green Wastewater Treatment Plant Upgrade and Reuse Planning
City of Winston/Green Sanitary District Oregon

Highlights

- 3.5-mgd wastewater treatment plant upgrade. C
- Effluent meeting Oregon Department of Environmental Quality Level II requirements for water recycling.
- Planning for pumping 1.0 mgd of recycled water to the 600-acre Wildlife

Safari animal park near Roseburg.
Minimum Monthly Rates Inside City Limits
Water \$25.00 – includes 1500 gals
(\$1.75 per 1000 gals after first 1500)
Sewer \$35.00

www.carollo.com/Pages/PRJ002_Winston-GreenWastewaterTreat
www.carollo.com/Pages/PRJ002_Winston-GreenWastewaterTreat

Roseburg is building a wetlands on the property of the treatment facility.

The town of Riddle is taking advantage of the Oregon Economic and Community Development Department (OECD) grant, which awarded more than \$2.6 million in grants for nine city and county projects across Oregon.

The grants are to be used to aid communities with funding to complete infrastructure projects. The municipal wastewater treatment and collection system in Riddle is 30-plus years old and has exceeded its original design life.

It has failing equipment and an insufficient hydraulic capacity and must face increasingly rigorous discharge requirements.

The city plans on using the funds to retain the services of a professional engineer to complete final design of the phase one wastewater treatment plant improvements and to complete development of the plans and specifications necessary to construct the improvements.

Econ.oregon.gov

Glendale also is in great need to upgrade its wastewater infrastructure. Currently, citizens pay \$60 a month for water and sewer. Citizens are concerned about the cost as these rates are high compared to other larger towns.

The plant was built in the eighties and a facility plan, funded by grant money is currently in the works.

NewsReview, October 22, 2008 by Cara Pallone

The only treatment plant run by the County is **Glide-Idleyld**. In 2007 the Douglas County Commissioners tried to find out what residents in Glide think about owning and operation their own sanitary treatment plant. Funding might become an issue, but at this time the facility is paying for itself and is running well.

You News, March 13, 2007 by Melva Mackey

MYRTLE CREEK -- Biological nutrient removal may not mean much to the average resident, but it's one feature of the area's new state-of-the-art wastewater treatment plant.

The city of Myrtle Creek and the Tri City Sanitary District's new sewer facility is more than 50 percent complete and set to open in November.

The new plant will be up to standards set by the Department of Environmental Quality and the Environmental Protection Act for years to come, district staff said.

"It's up to the standards that aren't even set yet," said Myrtle Creek Superintendent Steve Turner.

The new plant, costing more than \$10 million, is being constructed around the old one, which was built in 1971 on Hurst Street.

It was designed to last 20 years, the same as its replacement.

Even though it has outlived its expected life span by a decade, the old structure will continue to function, being renovated and incorporated into the new setup.

can reach reporter Paul Craig at 957-4211 or by e-mail at pcraig@newsreview.info.

Rates seem to range from \$35 to \$60 a month over the county. There are many projects working toward meeting the DEQ level II requirements and developing ways to be more eco friendly. Sutherlin uses waste water to water the golf course. Roseburg heats their plant with methane gas a by product of waste treatment.