

**League of Women Voters of Lane County May 2008
Everymember material**

WATER RESOURCES

INTRODUCTION

In May 2007 the League of Women Voters of Oregon (LWVOR) adopted a 30-month study entitled “Water Resources in Oregon.” The LWVOR plans to distribute a research report as everymember material later this year.

In both May 2004 and November 2005 the League of Women Voters of Lane County (LWVLC) published reports on rivers, streams, and groundwater, focusing primarily on local issues. This month’s material is intended to review, update, and expand the information contained in those reports and to provide additional background for the state study.

Water resources are sources of water that are useful or potentially useful to humans. Uses of water include agricultural, industrial, household, recreational, and environmental activities. Virtually all of these human uses require fresh water. It is estimated that 97.5% of water on the earth is salt water, leaving only 2.5% as fresh water, of which over two thirds is frozen in glaciers and polar ice caps. The remaining unfrozen fresh water is found mainly as groundwater, with only a small fraction present above ground or in the air. Fresh water is a renewable resource, yet the world’s supply of clean, fresh water is steadily decreasing. Water demand already exceeds supply in many parts of the world, and as world population continues to rise at an unprecedented rate, many more areas are expected to experience this imbalance in the near future.¹

Oregon is blessed with lots of water, but it is not always readily available in all areas of the state. This is particularly true of groundwater. Oregon’s water is divided into two types, surface water and groundwater. Surface water includes rivers, lakes, creeks, ponds, and springs. Groundwater comes from sub-surface aquifers and wells. Surface-water sources are more stringently controlled by laws and regulations than groundwater sources.

WATER RIGHTS

Under Oregon law, all water is publicly owned. With some exceptions, cities, farmers, factory owners, and other water users must obtain a permit or water right from the Water Resources Department to use water from any source, whether it is underground

or in lakes or streams. Generally speaking, landowners with water flowing past, through, or under their property do not automatically have the right to use that water without a permit from the Department.

Oregon's water laws are based on the principle of prior appropriation. This means that the first person to obtain a water right on a stream is the last to be shut off in times of low stream flows. In water-short times, the water-right holder with the oldest date of priority can demand the water specified in their water right regardless of the needs of junior users. If there is a surplus beyond the needs of the senior-right holder, the water-right holder with the next oldest priority date can take as much as necessary to satisfy needs and so on down the line until there is no surplus or until all rights are satisfied. The date of application for a permit to use water usually becomes the priority date of the right.

The prior appropriation doctrine is the basis of water law for most of the states west of the Mississippi River. East of the Mississippi, the riparian doctrine usually applies. Under the riparian doctrine, only landowners with water flowing through their property have claims to the water. In Oregon, the prior appropriation doctrine has been law since February 24, 1909, when passage of the first unified water code introduced state control over the right to use water. Before that date, water users had to depend on themselves or local courts to defend their rights to water.

Four fundamental provisions of Oregon's water code exist:

1. Surface water or groundwater may be legally diverted for use only if it is used for a beneficial purpose without waste;
2. The water-right priority date determines who gets water in a time of shortage;
3. Generally, a water right is attached to the land described in the right, that is, the water right goes with the land if that land is sold to a new owner;
4. Once established, a water right must be used as provided in the right at least once every five years.

These provisions are monitored by the Oregon Water Resources Department, and local enforcement is done by a watermaster.

Generally, Oregon law does not provide a preference for one kind of use over another. However, if a drought is declared by the Governor, the Department can give preference to stock watering and household purposes, regardless of the priority dates of other users.

Some uses of water are exempt from the requirements of obtaining a permit.

However, such use is allowed only if it is for a beneficial purpose without waste. In addition, wells supplying water for exempt groundwater uses must comply with Oregon's minimum standards for the construction, maintenance, and abandonment of any well.

Some examples of exempt uses of surface water are the collection and use of rainwater from an artificial impervious surface such as a roof or parking lot, the withdrawal of water for emergency fire fighting or certain non-emergency fire fighting training, and stock watering from which the animals drink directly from a surface water source where there is no diversion or modification to the source. Groundwater-exempt uses include stock watering, watering of not more than one-half acre of lawn or non-commercial garden, single or group domestic purposes not exceeding 15,000 gallons a day, and single industrial or commercial purposes not exceeding 5,000 gallons.²

WATER QUALITY IN THE WILLAMETTE BASIN

The Oregon Department of Environmental Quality (DEQ) has recently completed the draft Willamette Basin Total Maximum Daily Load (TMDL) study, which is a pollution analysis of the Willamette River from Eugene to the Columbia River as well as the twelve sub-basins. A TMDL is essentially a pollution budget which determines how much pollution a stream can receive and still meet water-quality standards, how much excessive pollution is in the stream, who is responsible for reducing pollution, and a framework and commitment for those actions needed to reduce the pollution.

The study found that the three primary pollutants were bacteria, mercury, and temperature and that they were widespread throughout the watershed. Several additional pollutants, including low-dissolved oxygen, turbidity, and toxics (DDT, aldrin, dieldrin) were addressed for specific water bodies. Bacteria levels are highest in urban areas and are attributed primarily to stormwater runoff. Likely sources include failing septic tanks, leakages, and equipment failures in sanitary sewer systems, and animal wastes (pets, livestock, and wildlife). Mercury, which is a naturally occurring element in Willamette Valley soils, reaches the river through erosion of agricultural, forested, and urban lands. It also is deposited onto the land and water by numerous local, U.S. and non-U.S. air pollution sources such as fires, the burning of fossil fuels, and industrial processes. The analysis concluded that the major quantifiable causes of river warming are dams, reservoirs, and the loss of riparian vegetation.³

GROUNDWATER QUALITY AND MANAGEMENT

Elevated nitrate levels are harmful to human health, particularly to infants who can develop so-called blue-baby syndrome, which results from the blood's reduced capacity to carry oxygen. Likely sources for the high nitrate levels are thought to be septic tanks, fertilizers, and agricultural and waste management practices.

Addressing groundwater pollution is another DEQ responsibility. Groundwater (e.g. well water) supplies the drinking water for 90% of Oregon's population. This reliance is likely to increase because of population growth and declining availability of surface water. In 2002, public water systems supplied three million people with drinking water, and an additional 400,000 utilized home water wells.

The DEQ declares a Groundwater Management Area (GWMA) when nitrate levels in the soil exceed 7 mg/L or 50% of the drinking water standard. The Southern Willamette Area was declared a GWMA in 2004 and is one of three in the state. The others are in Umatilla and Malheur counties. The Southern Willamette GWMA, which stretches from northern Lane County to Corvallis, is primarily agricultural land but includes the Coburg and Junction City areas.

State law requires that an action plan be developed to restore groundwater quality. The action plan for the southern Willamette Valley was approved in 2006. The DEQ, the Department of Agriculture, the Water Resources Department, the Lane Council of Governments, the Oregon State University Extension Service, and a representative citizen committee will work together to guide activities aimed at reducing nitrate contamination in several ways:

1. Research and helping the community to better understand the causes of contamination,
2. Education and public outreach to share what is known about groundwater and how to protect it for the future,
3. Community involvement to assist local leaders in identifying the public's needs and desires related to the groundwater resource.⁴

WATERSHED COUNCILS

The 1995 Oregon Legislature unanimously passed House Bill 3441, which provides guidance in establishing watershed councils and clarifies that formation of a council is a local government decision. Watershed councils are locally organized, voluntary, non-regulatory groups established to improve the conditions of watersheds in their local areas. Councils are required to represent the interests in the basin and to be

balanced in their makeup. The official definition of a watershed council is included in Oregon Revised Statute 541.388.

These councils bring together local stakeholders from private, local, state, and federal interests in a partnership and plan watershed protection and restoration strategies in a holistic way – from ridge top to ridge top and from headwaters to mouth. Through this watershed partnership, council members collaborate to identify issues, promote cooperative solutions, focus resources, agree on goals for watershed protection and enhancement, and foster communication among all watershed interests.⁵

Watershed councils were formed to help address watershed management issues and to provide a framework for coordination and cooperation among key interests in developing and implementing a watershed action program. Watershed councils also were established as a mechanism to help resolve issues among the diverse interests in the watershed. They provide a forum to exchange information, improve communication, and hear issues related to the councils' mission. Finally, watershed councils are advisory bodies to established decision-making bodies and communities of interest. As such, councils make recommendations concerning the protection, restoration, and enhancement of the quality of the watershed. Council partners agree to advocate for council decisions within their respective organization or interest.

The agencies, organizations, and interests represented on councils are not obligated to adopt or carry out the recommendations of a council but are encouraged to give due consideration to the recommendations and take actions they consider appropriate. These agencies, organizations, and interests report back to a council on any actions taken in response to council recommendations.

MCKENZIE WATERSHED COUNCIL

Lane County and the Eugene Water & Electric Board (EWEB) played a key role as conveners in getting the McKenzie Watershed Management Program started.

The McKenzie Watershed Council's website describes the river environment and the council's mission and vision in the following manner:

Oregon's McKenzie River flows from the crest of the Cascade Mountains westward to the confluence of the Willamette River near the Eugene-Springfield metropolitan area. With headwaters in three wilderness areas, the McKenzie contains some of the purest water in America. This magnificent river and its surrounding watershed provide a multitude of benefits, including drinking water for over 200,000 Lane County residents, outstanding fish and wildlife habitat, hydroelectric generation, recreational

and open space opportunities, and productive timber and agricultural lands.

The Council's Vision is that the McKenzie River watershed supports exceptional water quality and habitats in balance with human livelihood and quality of life. It is the Mission of the Council to foster better stewardship of the McKenzie River watershed resources, deal with issues in advance of resource degradation, and ensure sustainable watershed health, functions and uses. The Council will accomplish its mission through fostering voluntary partnerships, collaboration and public awareness.

In 1995, the Mohawk Watershed Partnership (MWP) was formed in cooperation with the McKenzie Watershed Council to coordinate the efforts of local residents in the restoration and enhancement of the Mohawk watershed. As a major drainage in the McKenzie sub-basin, the Mohawk watershed falls within the management area of the McKenzie Watershed Council, yet local residents felt the size of the watershed (115,000 acres) justified a separate local committee to coordinate restoration efforts. The MWP has enjoyed the full support of the McKenzie Watershed Council and receives funding for a part-time coordinator. The MWP is made up of community volunteers dedicated to enhancing watershed health.⁶

COAST FORK WILLAMETTE WATERSHED COUNCIL

The Coast Fork Willamette Watershed Council is another watershed council in Lane County. Its twelve partner agencies include the cities of Cottage Grove and Creswell, the Bureau of Land Management, the US Army Corps of Engineers, the Oregon Watershed Enhancement Board, and the Oregon Department of Environmental Quality.

In September 2007, the Council published an action plan, which is intended to outline the known ecological priorities of the Coast Fork Willamette River watershed in a hierarchy that can guide the choices of citizen and agency restoration planners. The plan identifies three key restoration goals (water quality, aquatic habitat, and terrestrial habitat) as well as specific projects to improve environmental conditions.

The action plan is a means to identify and carry out the best and current partnership opportunities in the highest priority areas and to allow for development of new projects. One part of the planning was to identify a clear and transparent process for developing projects and creating a common frame of reference for council discussion.

The starting points for the action plan were previous assessments of the watershed done by government and non-profit natural resource agencies and the plans developed by these agencies. A stream was assigned the highest priority for action in the

watershed council plan if at least two agencies rated it as such in their plans. Mosby Creek was considered a high priority area as the largest free-flowing tributary of the Coast Fork.

For each of the restoration goals, the plan includes objectives and specific implementation strategies. The objectives related to water quality are to mitigate temperature impairment, reduce impacts of mercury contamination, reduce bacteria contamination, and minimize erosion and sedimentation. Specific strategies include such actions as increasing shade along stream channels, educating citizens about the dangers of mercury, and educating and working with landowners to reduce non-point contamination from animal manure and septic tank systems. The objectives related to improved aquatic habitat are to improve stream channel structure and function, restore channel connectivity, and restore floodplain habitats. The objectives for the goal of improving terrestrial habitat are to enhance western pond turtle habitat; to restore, enhance and conserve native ecosystems; and to develop strategies to address noxious weeds.

The action plan contains a summary matrix with information for each project including a project description, its location and priority, the partners responsible for the project, and the goals and objectives it will meet. One high priority project on the summary is TMDL implementation planning, which will be done by the cities of Cottage Grove and Creswell and the Oregon Department of Environmental Quality. The project will identify solutions and partnership opportunities that address water quality impairments of temperature, bacteria and mercury.⁷

WATER ISSUES IN SELECTED LANE COUNTY COMMUNITIES

The **City of Coburg** is located in the Southern Willamette Groundwater Management Area as described earlier in this report. To reduce groundwater pollution the city plans to construct a \$19 million sewage treatment system to replace individual septic tanks now in use. This project is necessary to protect the city's wells from nitrate contamination and to allow approval of new developments in the city. The planned treatment system selected by the city uses primary treatment tanks at each residence or business to convert solid waste into liquid that can then be pumped to a community treatment plant. At the treatment facility, filters and biological processes cleanse the wastewater so that the effluent can be used safely for irrigation or discharged to wetlands. The city hopes to have the new system operating in 2011 if it secures the necessary funding.⁸

Blue River is an unincorporated urban area located on the upper McKenzie River, which is seeking to develop a sewage treatment system to serve both residences and businesses. Plans to build badly needed low-income housing and to expand and add to

existing businesses are stalled due to the lack of adequate sewage treatment and failing septic systems. Further development in this area is not possible until the sewage issue is resolved. Efforts to obtain funding for a feasibility study have so far been unsuccessful, but citizens are continuing their efforts to move this project forward. This area has received a Ford Foundation Community Development Grant and hopes to resolve this problem through community action.

In another project designed to protect the water quality of the McKenzie River, the Eugene Water & Electric Board is conducting a sewage study in the McKenzie River area, concentrating on residential septic systems along the river. Voluntary septic system inspections are taking place in areas where clusters of residences exist.

Junction City is the proposed location for two new state institutions with plans to open by 2015: a state prison with a capacity of 1,800 to 2,000 inmates and a 360-bed state mental hospital. The proposed sites are on 236-acres located between Highway 99 and Prairie Road south of Milliron Road.

The combined effect on city services is expected to be the equivalent of doubling Junction City's current population of 4,965. As they will be 24/7 operations, they will have a larger impact than a normal office-type development would have. The new state institutions will effectively double the demand on the city's existing water and wastewater systems.

The State of Oregon has agreed to provide Junction City up to \$4.9 million to begin extending municipal services to the 236-acre site, although at this time the state has secured funding for only about \$3 million of the total needed expenditure. The \$3 million intergovernmental agreement covers costs for both the water and wastewater plans. These plans include design of a new water source, transmission line and reservoirs in the South Industrial Corridor; design of a new trunk sewer and pump stations to serve the corridor; and acquisition of right-of-way for utility easements. It also covers improvements to Junction City's existing water system, including acquisition of land for a new water treatment facility. When the \$3 million now on hand is expended, work will be stopped by the city until the balance of the \$4.9 million is made available, thus saving the city from future liability.

In order to stay on schedule with the Department of Corrections (DOC), the city needs to provide a water source for the facility. At this time, the city's water resource is used at its maximum. The city currently has six production wells but is unable to use two of them because of high nitrate levels. All the wells feed directly into the distribution system. The goal is to combine the wells, blend the water, and provide a water

treatment facility so that enough water can be provided to serve DOC and the community. The DOC will consider the combined use for the prison and the hospital in its planning.⁹

NOTES

1. Article on Water Resources found at www.wikipedia.org
 2. Oregon Water Resources Department, *WATER RIGHTS IN OREGON*, August 2006, pages 5-9.
 3. Oregon Department of Environmental Quality, *Draft Willamette Basin Total Maximum Daily Load (TMDL) and Water Quality Management Plan (WQMP)*, Executive Summary, pp i-vii.
 4. Oregon Department of Environmental Quality website: www.deq.state.or.us/wq/groundwater/groundwater.htm
 5. Oregon Watershed Enhancement Board website: www.oregon.gov/OWEB/WSHEDS/wsheds_councils_overview.shtml
 6. Home page and About Us page of the website of the McKenzie Watershed Council: www.mckenziawc.org
 7. *Coast Fork Willamette Watershed Council Action Plan*, September 2007, downloaded from www.coastfork.org.
 8. Karen McGowan, "Coburg Ready to Pipe Up for Sewers," *The Register Guard*, December 11, 2007.
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1. *The Register Guard*, 8/25/07; *The Register Guard*, 2/21/08; Minutes of the City Council for the City of Junction City, 2/20/08.

OTHER SOURCES

Interviews: Denise Kalakay, Lane Council of Governments; Michael Mattick, Water Master District 2, Northwest Region; Jim Baker, Blue River Ford Foundation team member.

LWVLC COMMITTEE MEMBERS:

Pat Bitner, Pat Hocken, Emily Schue, Veronika Walton, Kathleen Shelley, Chair

DISCUSSION QUESTIONS

1. What are the advantages or disadvantages of Oregon's water-rights system?
See pages 1 to 3 for a description of the system.
 2. What government agencies are involved in regulating/supervising water use in Oregon?
 3. What are the pros and cons of watershed councils?
 4. What are some of the problems that concern smaller Lane County communities that are outgrowing septic tanks for sewage treatment or are outgrowing their current water rights?
 5. What is the difference between handling sewage and storm water in metropolitan areas and in rural areas? How are some small cities meeting treatment needs?
 6. What can each of us do personally to improve the quality and quantity of local water supplies?
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