



Drinking Water Protection in South Deschutes County

Alternatives Analysis

Impacts of the “Do Nothing” (Status Quo) Alternative

This alternative ignores groundwater research and modeling

The results of the groundwater investigations and modeling that have occurred since 1995 will be ignored in this scenario. The results, particularly those funded as part of the La Pine National Demonstration Project, have been presented at national and regional conferences of peers. Published reports have been or are currently being peer reviewed prior to publication.

Groundwater pollution cannot be reduced economically once it enters the aquifer

In keeping with the adage, “A stitch in time saves nine,” groundwater pollution is easiest and most inexpensive to prevent before it happens. Once pollution is dispersed in the groundwater, whether it is nitrogen from onsite wastewater treatment systems or gasoline from leaking gas station tanks, it is very difficult to collect and treat the groundwater to fix the problem. In the case of nitrogen pollution,

State regulations triggered if groundwater nitrate levels exceeds 7 mg/L

The Department of Environmental Quality is required to declare an area of ground water concern and/or a groundwater management area. That means that state agencies become involved in creating solutions to the groundwater pollution issues. The current approach to problem solving has been spearheaded by Deschutes County in an effort to avoid triggering the state action levels.

Declining water quality creates a negative image of the region

Existing property owners and prospective buyers are attracted to Central Oregon because of the pristine rivers and natural beauty of the region. Taking no action to protect one of the best natural resources, a high quality drinking water source, creates a negative public image for the region that can ultimately affect property values.

Cost of Onsite Systems Under the No Action Alternative

There would be no change to the onsite system cost to existing property owners with this scenario. Onsite system upgrades or replacements would be required, as they are currently, when the home is remodeled or replaced. Current costs to repair or replace systems range between \$2,000 and \$12,000.

Maintenance on conventional onsite systems range depending on the type of system and the level of use the system receives. Septic tank pumping, recommended when the tank is 30% full of scum and sludge (about every 3-5 years for a typical house), costs between \$200 and \$400 depending on location and size of tank. Sand filters and pressure distribution systems have additional maintenance requirements because of electrical and sewage handling equipment that needs to be checked or cleaned on at least an annual basis. During the La Pine National Demonstration Project, this service cost \$250 per year or \$21 per month.

Proposed Local Rule

Comprehensive Plan

The Deschutes County Comprehensive Plan specifies that the County seek alternative onsite wastewater treatment systems to solve the groundwater pollution issues in the south Deschutes County region. This constraint on County action does not restrict private property owners from pursuing other approaches to wastewater treatment in the region. However, a Comprehensive Plan Amendment may be required.

Nitrogen Reducing System Performance

Onsite wastewater treatment systems in general and nitrogen reducing systems specifically have been the subject of numerous studies and testing programs nationwide including the La Pine National Demonstration Project. These studies clearly demonstrate that onsite wastewater treatment systems, including nitrogen reducing systems, provide as much groundwater protection as centralized sewers without the negative impacts of central collection systems on the natural water cycle.

The Local Rule proposes to use only those systems approved by the Oregon Department of Environmental Quality. The Oregon DEQ uses data from the National Sanitation Foundation testing program before approving any system for use in the state. Before any system can be used to protect groundwater from nitrate contamination the systems must also prove their nitrogen reduction capabilities with third party testing.

Performance Standard

The performance standard for existing systems is defined by three factors:

1. the vulnerability of the aquifer to contamination,
2. the density of planned development, and
3. the expectation that new development (development of bare land) will use the best nitrogen reducing system available.

As a result, if one of these factors changes, for example if more development occurs than is currently planned, the performance standard for existing systems can increase.

Cost of Onsite Systems under the Proposed Local Rule

Currently there are two systems approved for use as nitrogen reducing systems in Deschutes County. The cost of retrofitting an existing system with one of these systems ranges from \$2,250 and \$18,000 after rebate (cost estimates based on information from onsite system installers and product distributors and the \$3,750 rebate offered by Elk Horn Land Development, Inc.).

Maintenance costs on these systems ranged between \$250 and \$400 per year during the La Pine National Demonstration Project.

Sewer (Cluster and Large Centralized)

Comprehensive Plan

The Deschutes County Comprehensive Plan specifies that the County seek alternative onsite wastewater treatment systems to solve the groundwater pollution issues in the south Deschutes County region. Seeking approval for establishing or extending a sewer system in the region outside city limits requires a Comprehensive Plan Amendment.

State Policy: Goal 11

State rules specify that sewers cannot be created or extended to serve areas outside of city limits or urban growth boundaries. An exception to this rule can be granted if the applicant proves:

1. there is an imminent public health hazard, and
2. there is no alternative to sewer that will solve the problem.

The application for an exception to Goal 11 is a land use process that involves a requirement for findings of fact and public hearings on the issue.

Funding

Currently, the Environmental Protection Agency (EPA) does not provide grant funding for sewer construction. The EPA promotes decentralized approaches to managing wastewater and reported to the US Congress in 1997 that decentralized approaches (onsite systems and small clusters) are permanent solutions as long as they are maintained properly.

Existing loan funding for centralized wastewater treatment systems is focused on maintaining or improving existing systems.

Timing

Creating or expanding a sewer system is a lengthy process because of the amount of preparation required before ground can be broken. In addition to the land use processes outlined above, engineering designs developed, funding obtained, and the long term operation, maintenance and financial support structures that have to be established. As a result, from the start to finish, establishing sewer systems can be lengthy processes. For example, the expansion of the existing sewer system serving Oregon Water Wonderland, Unit 2, took about seven years from the time the decision was made to move forward in 1998 until the first additional house was connected in late 2005.

Cost of Sewer

A consultant report to the County that was completed in 1997 estimated that sewerage would cost between \$19,000 and \$28,000 per household or \$1,275 to \$1,880 per household per year (assuming a 20 year payback period at 3%). This estimate also assumed that land for the treatment site would be available at \$3,000 per acre. In addition to the capital investment for constructing the treatment plant and installing the pipes and pump stations for transporting sewage, there would be monthly charges for ongoing operation and maintenance of the sewer system. As a comparison, Bend charges about \$28,000 to hook up to the existing system and monthly charges are between \$20 and \$30. Oregon Water Wonderland charges about \$8,000 to hook up and La Pine hook up charges are around \$9,000 with installation costs. Both of these systems charge an additional monthly service fee and the hook up charges do not reflect the cost of new construction.