



Fact Sheet #2

Effluent End Use

Spokane County Wastewater Facilities Plan

What Happens to the County's Effluent Now? Nearly all County wastewater is treated at the City of Spokane's wastewater treatment plant and then discharged to the Spokane River on a year-round basis. A small portion of the County's wastewater is treated in small treatment plants or community septic tanks. Effluent disposal is by either a community drainfield or exfiltration pond. These small systems will be removed from service when the County's collection system is extended to these service areas.

How are Water Quality Requirements and Management Practices Determined for Different Effluent End Use Alternatives? All of the effluent management options being considered are permitted by the Washington State Departments of Ecology and Health. To guide their implementation, these agencies have established rules or guidelines for each alternative. These rules specify treatment requirements, establish water quality limits, outline management practices, and identify other measures to protect public health. The guidelines were conservatively developed based on national experience with effluent reuse. In developing effluent end use alternatives for Spokane County, the State's guidelines were considered the minimum requirements that must be met.

What Options Are Currently Being Considered for Effluent End Use Management if the County Builds Its Own Treatment Plant?

- 1. *Surface Discharge and Streamflow Augmentation*** – Given the volume of wastewater generated in the Spokane County service area, it is likely that surface water discharge will continue to be used for much of the flow, particularly during the winter months when several of the reuse options have no water demand. As described in “Fact Sheet #3, Wastewater Treatment Plant Configurations,” new effluent discharge locations are being considered for several locations along the Spokane River and at least one location along the Little Spokane River. Advantages of surface discharge include augmentation of minimum stream flows, low effluent conveyance cost, and simple effluent management requirements. Disadvantages include limited use of the effluent as a water resource and discharge of pollutants to the river(s) during critical water quality periods.
- 2. *Irrigation of Urban Greenspaces*** – This option involves use of treated effluent as an irrigation supply for golf courses, school grounds, parks, cemeteries, highway medians, industrial campuses and other greenspaces. Implementation of the program would require construction of distribution piping and may require extensive storage facilities to match water supply with demand. Also, to irrigate property over the aquifer, additional treatment may be needed to reduce nitrate-nitrogen to below drinking water limits. Advantages include conservation of groundwater currently used for irrigation, reduction of discharge to rivers during the summer, and use of a well-established practice. Disadvantages include infrastructure requirements for storage and distribution, possible adverse public perception of wastewater use over the aquifer, and limitation to seasonal use when irrigation demand is high.
- 3. *Irrigation of Agricultural Land*** – In this alternative, effluent would be used to irrigate agricultural properties. This is particularly attractive for dry-land farms if it allows production of higher value crops. Advantages of agricultural irrigation include increased farmland value, use of a well-established practice, use of high volumes of water, and reduction or elimination of effluent discharge to surface waters during critical water quality conditions. Disadvantages include the long distance to suitable farmlands, the need for long-term contracts, susceptibility to land use changes, and limitation to seasonal use when irrigation demand is high.

4. **Industrial Reuse** – In this alternative, treated municipal wastewater would be routed to an industry for use in cooling or process applications. Both State rules and the specific needs of the industrial user would drive effluent quality requirements. A key advantage of industrial use is the potential development of a large-volume, year-round use, and the potential conservation of groundwater that is presently used for cooling and process applications. Disadvantages include potentially high treatment costs to meet end-user needs, risk that the industry may move or change requirements, and the potential for more complicated discharge permitting requirements for the County and industry.
5. **Wetlands Creation or Enhancement** – Treated effluent could be used to create constructed mitigation wetlands or as a reliable water source to restore degraded existing wetlands. One configuration that may work well in Spokane County would be to locate wetlands along stream corridors such that water infiltrating from the wetlands would migrate toward the streams to augment flows. Advantages for the wetlands option include habitat creation, development of a wetlands bank to facilitate economic development, and the potential to enhance stream discharge options. Disadvantages include a relatively low water demand, high land requirements, and the potential for adverse public perception of wastewater use over the aquifer.
6. **Groundwater Recharge** – In this option, the effluent would be treated to a very high level, likely involving reverse osmosis treatment, and used to recharge the groundwater supply. Either surface percolation (spreading basins) or direct injection wells would be used to convey the water to the aquifer. Once in the ground, the water could be withdrawn for any permitted use. Advantages of groundwater recharge include maximum use of the effluent as a water resource, minimal discharge to receiving streams, and recharge of the aquifer to help provide an adequate water supply for future customer and development needs. Disadvantages include the high cost of treatment, and the likelihood of public and regulatory concern about this practice in a sole-source aquifer.

We Need Your Input! Please consider the following questions, discuss the issues with the planning team representatives, and fill out the public meeting questionnaire to ensure that the planning team understands and can consider your concerns, issues, and opinions.

- ? Which of the proposed alternatives do you prefer and/or support?
- ? Would you support irrigation of golf courses, parks and other green spaces with treated effluent if these properties were located over the aquifer?
- ? In terms of dollars per gallon, the cost of supplying treated effluent to agricultural lands will likely exceed the current market rate for agricultural irrigation water, which may be the upper limit that farmers would be willing to pay for the water. Should treated effluent be supplied to agricultural lands if Spokane County ratepayers must subsidize the cost of the supply?
- ? If the opportunity were available and affordable, should the County supply treated effluent for industrial reuse?
- ? Do you support use of wastewater effluent to create wetlands over the aquifer?
- ? Do you support the concept of groundwater recharge with highly treated effluent?
- ? Would you be willing to pay \$5 to \$10 more per month to implement effluent end use measures that increase beneficial reuse?