



Fact Sheet #1

Demand Management

Spokane County Wastewater Facilities Plan

What Is Demand Management? Demand management is reducing the quantity and/or strength of wastewater from the North Spokane and Spokane Valley service areas. If the amount of wastewater generated can be minimized, then the size of facilities, such as sewers and wastewater treatment plants, may be reduced and associated costs lowered.

What Are Demand Management Approaches? There are two basic approaches: wasteload reduction and wasteload diversion. Wasteload reduction relates to measures such as water conservation, sewer infiltration/inflow control, and industrial pretreatment and recycling. Wasteload diversion involves separating flows from the sewer collection system and rerouting them to other systems such as septic tanks, storm sewers or graywater systems. The drawback to diversion approaches is that they could increase aquifer contamination, which runs contrary to the County's primary reason for implementing its sewerage and stormwater programs. For this reason, wasteload diversion practices have been eliminated from consideration.

What Are The Results Of Water Conservation On Wastewater Flows? Current plumbing codes require that low-flow toilets, shower heads, and faucets be used for new construction and remodeling. Ultra-low flush toilets use only about one-quarter as much water as older models, and the latest versions of these toilets work much better than models made in the early 1990's. Washing machine replacement is also effective in reducing water consumption. Conventional top-loading washers use about 42 gallons of water per load. New, front-loading washers, although more expensive, use only about 26 gallons per load, a considerable reduction in water consumption. Use of low flow devices in future homes will reduce the average amount of waste generated per household.

Retrofitting existing homes on a large-scale basis would be costly (approximately \$1,000 per home). A key issue is whether this action would sufficiently reduce wastewater conveyance and treatment costs to offset this investment. This concern stems from the fact that wastewater conveyance costs are driven by peak flow requirements, and wastewater treatment costs are driven predominantly by organic loadings and peak flows. Water conservation measures are effective for reducing "average" wastewater flows, but have a lesser impact on peak flows, which are usually strongly influenced by infiltration and inflow contributions. Also, water conservation has little or no impact on the organic loading to the treatment plant. An economic analysis will be conducted to estimate the "return on investment" that could realistically be expected from a fixture replacement program.

Can Spokane County Reduce Wastewater Flows by Fixing Leaky Sewer Pipes? Many communities benefit greatly from repairing old leaking sewer lines. However, almost all of Spokane County's sewer system was constructed in the last 15 years and has few leaks that let in infiltration from groundwater or inflow from stormwater runoff. In checking flow records, some inflow was discovered, but the amount was small compared to other communities in the region. One likely cause of the inflow is basement sump pumps. The County sewer code does not allow sump pumps to discharge to the sewer system. Instead, sump pump discharges should be routed to a County-approved alternate discharge point. (Spokane County residents should call Spokane County Stormwater Management at 477-3604 to discuss sump pump discharge options for their area).

How Can Industries and Businesses Reduce Wastewater Flows and Strengths? Industries and commercial enterprises may produce large volumes of wastewater, high-strength wastewater, or wastewater containing pollutants that could upset the treatment processes or pass through the treatment plant and adversely affect the quality of the treated effluent or biosolids. Communities use various techniques to prohibit discharge of unwanted pollutants or to reduce the quantity and strength of wastewater discharged to sewers. These techniques include 1) permit limitations on the strength and contaminant levels of industrial and commercial wastewater, 2) increased rates or surcharges on high strength wastes, and 3) incentives or requirements for water recycling and reuse within the industrial or commercial operation.

What Wastewater Demand Management Techniques Are Currently Being Considered by Spokane County?

1. Water Conservation:

- **Public Education.** Develop an education program to encourage people to use less water in daily activities. Since consumers often slip back into old habits if not reminded of the conservation needs, the County would maintain a continuous education program to help maintain conservation goals.
- **Plumbing Fixture Replacement.** Because of the low return on investment of a large-scale retrofit program, the County is considering a program to encourage replacement of old plumbing fixtures through public education efforts. Providing low flow fixtures at no cost to homeowners for installation at the homeowners cost may be considered. Coordination and collaboration with other agencies, organizations and businesses that promote water conservation would be pursued.
- **Inverted Rate Structures.** Encourage local water purveyors to implement potable water rate structures that charge consumers a higher unit cost for any water that is consumed above a base amount. This provides an economic incentive for water conservation.

2. Infiltration and Inflow Control:

- **Removal of Basement Sump Pump Discharges to Sewers.** In areas of the County with high groundwater tables, the County would use targeted public education and notifications to residences and businesses. The public would be informed of the requirement to remove basement sump pump flows from the sewer and County staff would provide limited technical assistance.
- **Review Codes, Inspection and Enforcement Requirements.** A review of current County requirements regarding sewer and lateral inspection would be conducted to ensure that future construction produces minimal contributions of infiltration and inflow.

3. Industrial Requirements for Reducing Wastewater Strength and Flows:

- **Prohibition or Limitations on Wastewater Discharges.** Current County ordinances require industries to minimize wastewater quantities and strength. This effort will determine whether increased requirements are appropriate to protect operation of the treatment system and ensure compliance with effluent quality and biosolids limits.
- **High Strength Surcharges.** Implement increased rates or surcharges for industries and businesses discharging high strength wastes. This is essentially a cost recovery mechanism.
- **Recycling and Water Reuse.** Establish requirements or develop incentives to encourage industries to maximize water recycling and reuse within their operation prior to discharge of wastewater to the sewer. (Note: As seen in "Fact Sheet #2, Effluent End Use", we are also exploring opportunities for industries to use treated wastewater produced by the County.)

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.

- ? Do you feel that public education efforts on water conservation are adequate? Rather than requiring more specific mandatory requirements to reduce water consumption and wastewater flows.
- ? Do you think that low flow fixtures should be provided at no cost to individual homeowners for them to install at their own cost to replace traditional higher flow fixtures?
- ? Should the County expand efforts to strictly enforce disconnection of basement sump pumps from the sewer system?
- ? Do you feel sewer rate surcharges on industries and businesses that contribute high-strength wastewater are appropriate?
- ? How do you think the County could best increase water recycling and reuse at industry and commercial enterprises?