

BIOSOLIDS RECYCLING

fact sheet



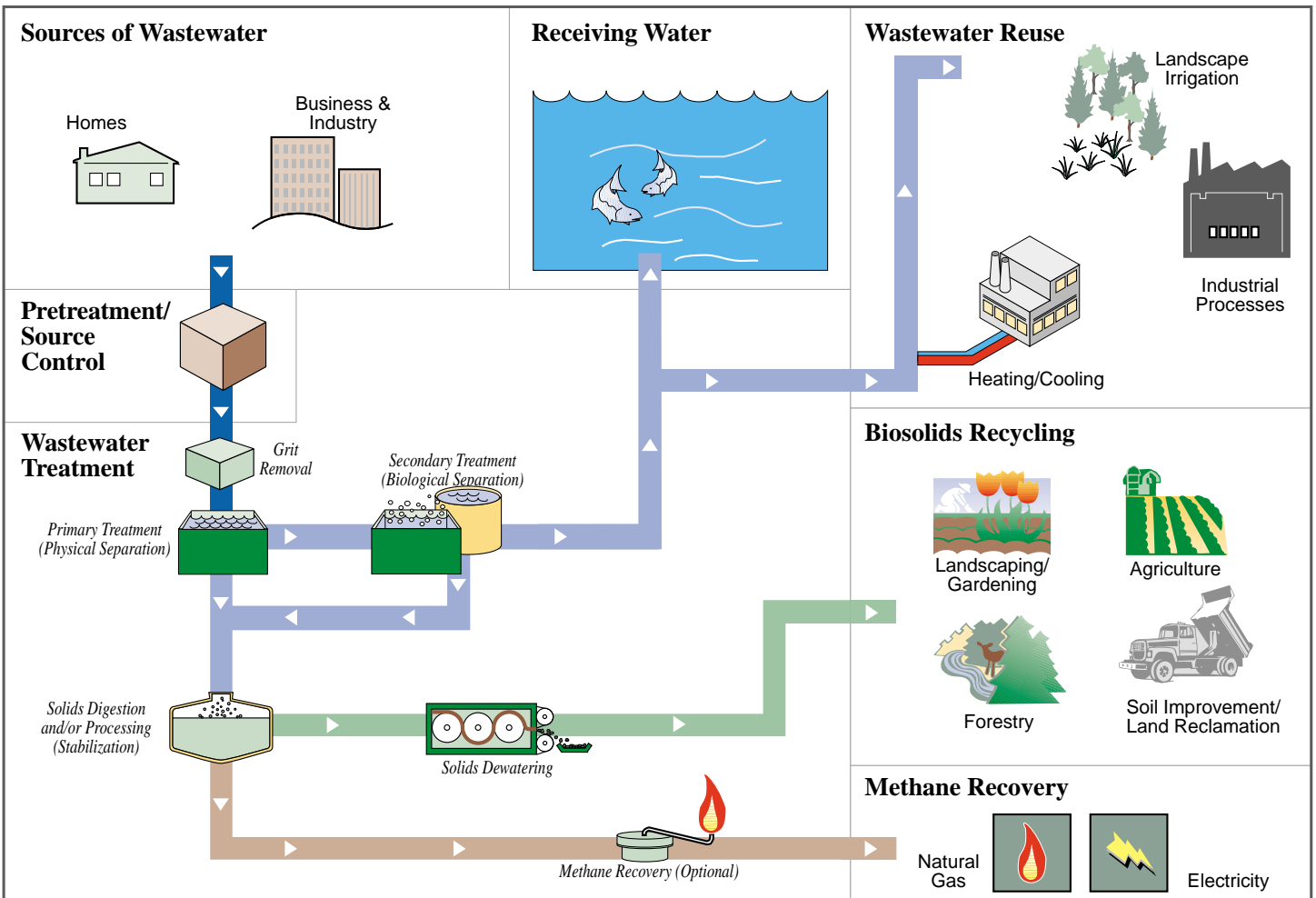
WASTEWATER TREATMENT

Modern treatment processes and strict controls on discharges to sewers contribute to high quality, recyclable biosolids.

Seeking Solutions

The water we use every day in our homes, offices and factories becomes wastewater. Most of this wastewater is treated to separate and process the liquids and solids, which are returned to the environment. Wastewater treatment protects public health by destroying disease-causing organisms that may be in the wastewater. Treatment also safeguards water quality by preventing pollution in our lakes, rivers and oceans.

How It Works - A Typical Wastewater Treatment Process

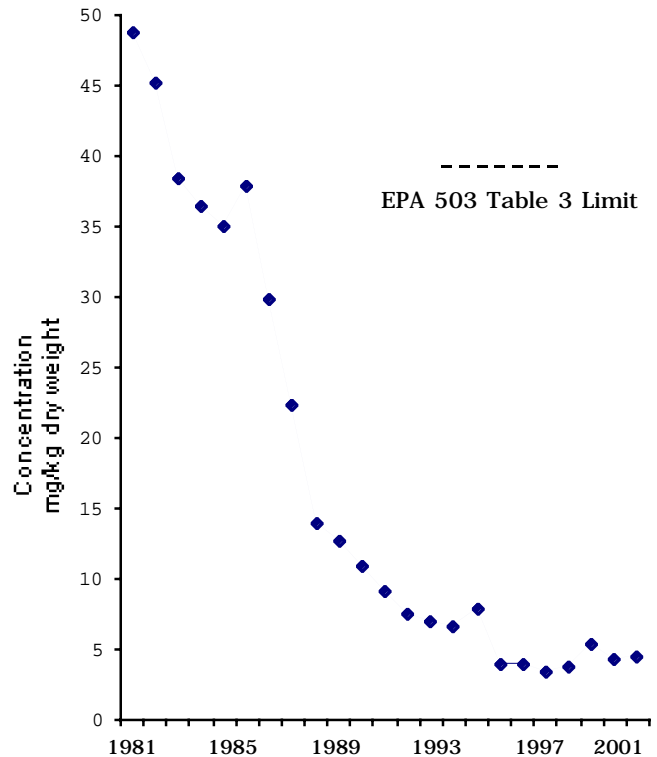


benefits of biosolids • landscaping • forestry • soil improvement • agriculture • benefits of biosolids • landscaping • benefits of biosolids

Cleaned Water...

With the passage of the Clean Water Act of 1972, municipalities instituted programs to decrease or eliminate the quantities of hazardous substances discharged into the wastewater collection system. Hazardous substances include processing liquids, inks, paints, dyes, solvents, heavy metals and petroleum products from a wide variety of manufacturing and industrial sources. The diligent efforts of these pretreatment or source control programs have significantly improved the quality of wastewater that is discharged to the collection system and subsequently the quality of our recycled water and biosolids.

Once wastewater is conveyed to a treatment facility, "grit" materials such as sticks, rags and pebbles are removed. The wastewater is next allowed to sit in large sedimentation tanks, where solids physically separate from liquids by gravity and settle to the bottom. The liquids may be further treated by aeration and the biological action of beneficial microorganisms that remove additional organic matter. From here the cleaned water is disinfected and ready to be returned to lakes, streams, the ocean or recycled directly for irrigation or non-drinking commercial use.



Trend in Average Cadmium Concentration
King County Biosolids, 1981-2003

And Biosolids....

The solids are collected and biologically stabilized by beneficial microorganisms that decompose, or digest, the solids. This stabilization process reduces odors and destroys most of the potentially harmful pathogens contained in the solids. These stabilized solids are now called biosolids and are mostly organic matter, rich in essential plant nutrients. Biosolids, in liquid or dewatered form, are ready to be returned to the environment as a fertilizer and soil conditioner. Biosolids can be recycled directly onto soils in the forest or on agricultural land or be composted and used for landscaping and gardening. Environmental and public health protection is ensured through biosolids application site monitoring and extensive research.

The Septic Tank Connection

Septic tanks, used by many rural residents, process wastewater similarly to treatment plants. Wastewater is channeled into a tank where solids are allowed to settle while microorganisms degrade and stabilize the organic matter. Liquid effluent travels through pipes, usually by gravity, into a drain field—a gravel and soil bed where additional microbial activity removes most of the remaining organic matter. The cleaned water then filters its way through the soil, receiving further purification and eventually reaching the groundwater. Solids are periodically removed from septic tanks and directly recycled onto land or sent to wastewater treatment or composting facilities for further processing.