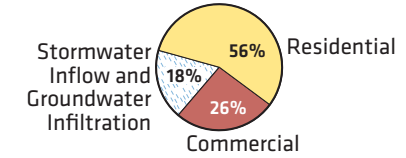


Vashon Treatment Process

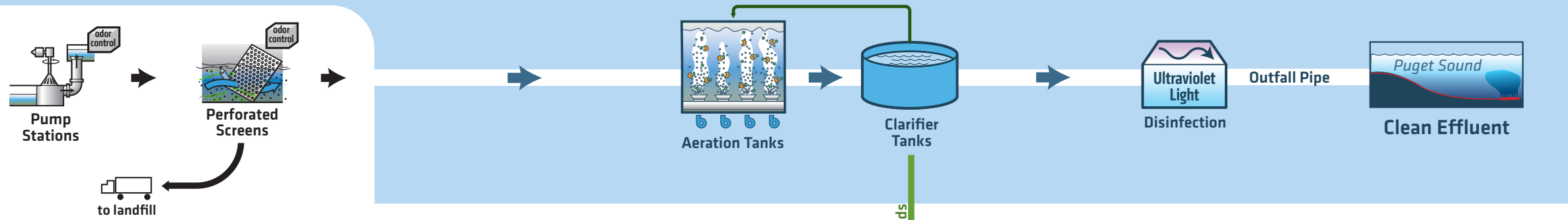
WHAT'S COMES INTO VASHON?

Typical Flows by Source During Winter Months



PRELIMINARY TREATMENT

Water Treatment →



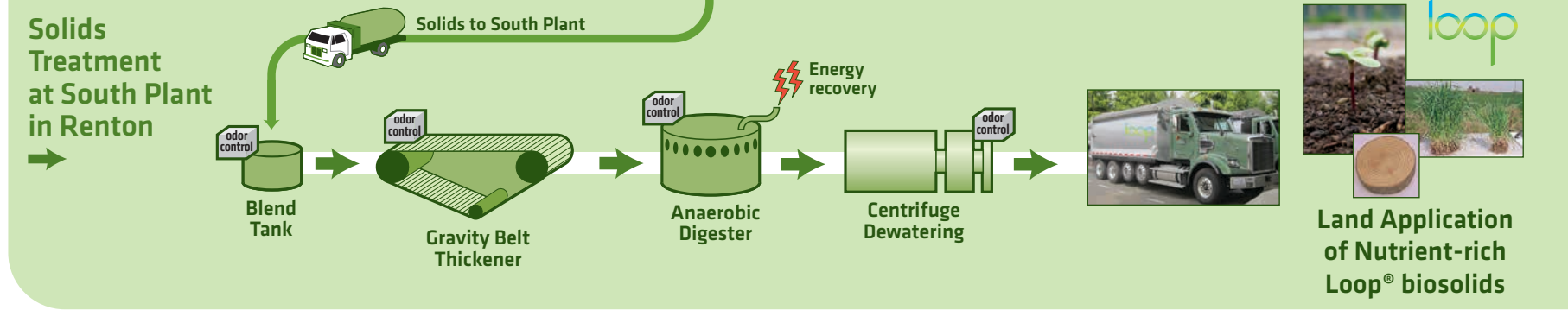
VASHON FACTS

- Design maximum capacity:** 1 million gallons per day during peak storms
- Outfall pipe:** 2,700 feet long, 200 feet deep
- Average dry weather flow:** 70,000 gallons per day
- Average wet weather flow:** 120,000 gallons per day
- Clarifier Tanks:** Two, each with a capacity of 106,000 gallons

AT SOUTH PLANT

- Biosolids produced:** about 60,000 wet tons per year
- Biogas generated:** 1.8 million therms per year

Solids Treatment at South Plant in Renton



At Vashon Treatment Plant

About 170,000 gallons of wastewater (or sewage) come through Vashon Treatment Plant every day from homes and businesses served by the Vashon Sewer District. This wastewater carries trash, dirt, organic waste, bacteria, pathogens, and small amounts of chemicals.

STEPS OF WASTEWATER TREATMENT

Preliminary Treatment: Taking Out the Trash and Grit

- Metal screens filter out trash items, such as cleaning wipes, feminine products and paper towels.
- The wastewater then enters a tank that has air added to help separate the grit (dirt, sand and gravel) out of the water.
- The trash and grit collected during preliminary treatment are trucked to a landfill.

Secondary Treatment: Organic Waste Removal

- The wastewater then flows into aeration tanks, where warm air is continuously added.
- The warm, oxygen-rich environment in these tanks activates naturally occurring bacteria. These bacteria consume the remaining organic material in the wastewater.
- After 8-16 hours in the aeration tanks, the wastewater enters a large separation tank called a clarifier. In the clarifier, the bacteria will settle to the bottom of the tank and most (90 percent) will be returned to the aeration tanks to be used again to breakdown the organic waste. The remaining 10 percent will be trucked to the South Treatment Plant for further processing.
- The water leaves the tank 95 percent cleaner than when it entered the treatment plant.

Disinfection: 'Zapping Pathogens'

- After secondary treatment, the clean water is disinfected using ultraviolet light.
- This destroys the growth of remaining bacteria and pathogens in the water. The treated water is then sent to Puget Sound.

SOLIDS TREATMENT

Biological treatment and dewatering at South Treatment Plant, Renton, WA

- The excess solids (human waste and food pieces) are removed from the tanks and trucked to the South Treatment Plant for further treatment. Approximately two truckloads of solids go to South Plant each week.
- The organic solid waste trucked from Vashon Island is blended together and put in large tanks called digesters. These big tanks use bacteria and heat to help digest, or break down, the organic solids.
- After about 30 days in the digester, excess water is removed using a centrifuge (high-powered spinning machine), and the material is now called biosolid
- Biosolids are used as a nutrient-rich soil amendment for crops and forests in Washington state, putting our "waste" to good use.

RESOURCE RECOVERY

Nutrients: Loop® Biosolids

Solids treatment produces a nutrient-rich biosolids product called Loop® that is sold to farms and forests as an alternative to chemical fertilizers. Loop® can be composted further to create GroCo®, a retail product for home gardens and landscapes.

Energy

Biogas from the solids treatment process is converted into electricity and used on the treatment plants for heating tanks and buildings. Some of the gas is also scrubbed, removing impurities, and sold to local utility companies for use as natural gas in local homes and businesses.

YOU CAN HELP

- Flush only human waste and toilet paper down the toilet. Other "flushable" products are NOT good for pipes and sewer systems.
- Use simple, biodegradable ("green") personal care and cleaning products. Find recipes to make your own!
<http://www.kingcounty.gov/depts/health/chronic-diseases/asthma/patients/green-cleaning.aspx>
- Control rainwater by installing a rain garden or rain barrel at your home. You can also prevent runoff pollution by cleaning your car at a car wash, scooping your dog's waste, and picking up litter. These actions all help protect our local water quality.



King County

Department of Natural Resources and Parks
Wastewater Treatment Division