A GOOD NEIGHBOR

King County is committed to protecting the water resources of the region and the health and well-being of our customers and future generations. We work to ensure safety and minimize impacts of all projects affecting the natural environment, wastewater facility neighbors and our employees.

At West Point, we have devoted extensive effort to odor and noise control and native landscaping to minimize the impacts of the plant on the surrounding community and Discovery Park. We also created a publicly accessible wetland.

Contact Us:

West Point Treatment Plant
1400 West Utah Street
Seattle, WA 98199  206-263-3800

For Treatment Plant Tours or further information please call 206-274-8286 or 1-800-325-6165, ext. 66286, or see our Web site www.kingcounty.gov/wtd

Alternative formats available 206-684-1280 or TTY Relay: 711

WEST POINT TREATMENT PLANT

Preparing Public Health
and the Environment

For more than 40 years, the people of King County’s Wastewater Treatment Division have been committed to protecting public health and the environment by transporting, treating and reclaiming wastewater and its byproducts. We work continually to improve and protect regional water quality.

The West Point Treatment Plant is part of the regional wastewater treatment system that is funded by monthly sewer rates and serves more than 1.4 million people and covers 420 square miles. West Point cost-effectively treats wastewater and stormwater from homes, offices, schools, agencies, businesses and industries in Seattle, north King County, south Snohomish County, and some areas east of Lake Washington.

THE PEOPLE OF WEST POINT

Thanks to about 150 dedicated employees, the West Point treatment system runs 24 hours a day, seven days a week. Trained professionals — operators, lab technicians, maintenance employees, process control personnel and administrative staff — ensure the West Point plant and the pipelines and pump stations that supply it with wastewater operate effectively. Our goal is to provide the region with the best wastewater treatment service available while operating as efficiently and effectively as possible.

The West Point Treatment Plant is four miles north of downtown Seattle on 32 acres next to Puget Sound and Seattle’s Discovery Park. Plant workers operate facilities for treating wastewater and stormwater, producing biosolids, reclaiming water, recovering energy, and testing new treatment technologies.

A combined system is one in which stormwater and wastewater are treated together and discharged to the nearest water body. West Point’s treatment system is a combined system. As a result, West Point treats a lot of stormwater that would otherwise flow untreated into Puget Sound.

In 1911, the City of Seattle built what is called the Fort Lawton Tunnel to discharge untreated wastewater from Seattle into the pipes. Increased population and public concerns about the wastewater treatment system.

The West Point Treatment Plant workers operate facilities for treating wastewater and stormwater, producing biosolids, reclaiming water, recovering energy, and testing new treatment technologies. We work to make sure West Point is a good neighbor.
MANAGING COMBINED SEWER SYSTEMS

A combined system is one in which stormwater and sewage are conveyed in the same pipeline to the treatment plant. The West Point service area is largely a combined system. As a result, West Point treats a lot of stormwater that would otherwise flow untreated into Puget Sound. During heavy rains, the volume of flows to West Point can exceed the capacity of the conveyance system. Under these conditions, excessive combined flows may be released through permitted outfalls to protect public and private property and the county’s facilities. These events are called combined sewer overflows, or CSOs. King County provides public notification when CSOs occur.

King County’s CSO Control Program reports CSO events and develops plans and priorities to reduce the number of CSO events in the county’s system. CSO events have been reduced significantly by control strategies including on-site primary treatment and storage facilities that retain flows until storms have passed. King County continues to work with state agencies to minimize the number of untreated discharges each year.

WATER REUSE AND RECLAIMED WATER

Wastewater treated to secondary standards is reused on-site for cleaning and as a water source for the treatment process. Some of the treated water undergoes further treatment for use where potable water would otherwise be required saving hundreds of thousands of dollars in city water.

CREATING RESOURCES FROM WASTEWATER

West Point Treatment

Plants wastewater treatment facilities produce many valuable resources that can be used within the plant and throughout the region.

ENERGY RECOVERY

Digester gas is a byproduct of the biosolids digestion process. It is a gas composed of methane and carbon dioxide produced by active anaerobic bacteria. West Point uses digester gas to power its raw sewage pump engines which require lots of power. In addition, the heat generated from the engines is recovered to heat the plant. Digester gas is also used to fire boilers which supply most of the plant’s heat needs.

Biosolids are the nutrient-rich organic product of treating wastewater. Biosolids provide organic matter that improves soil properties and enhances plant growth.

Don’t Flush Trouble!

Put used cleaning wipes, cloths and pads in the trash, NOT the toilet!

The label might say “flushable”, but disposable wipes are clogging our sewer lines and damaging pumps and other equipment.

Not only are these problems expensive to fix, they can also cause raw sewage overflows into homes, businesses and local waterways. So, think trash, not toilet!

The PEOPLE OF WEST POINT — ‘24/7’

West Point Treatment Plant workers operate facilities for treating wastewater and its byproducts. We work reclaiming wastewater and transporting, treating and recycling the wastewater and returning it to the environment by ways other than the system. We also provide information about safe practices and alternatives.

Some of West Point Treatment Plant’s biosolids are sold as a soil amendment for agriculture in Eastern Washington. The rest is composted for use in landscaping and gardening.

A GOOD NEIGHBOR

The label might say “flushable”, but disposable wipes are clogging our sewer lines and damaging pumps and other equipment.

Not only are these problems expensive to fix, they can also cause raw sewage overflows into homes, businesses and local waterways. So, think trash, not toilet!
WASTEWATER TREATMENT PROCESS
How is wastewater treated at King County’s West Point Treatment Plant?

PRELIMINARY TREATMENT
'Taking out the trash'
- Bar screens remove large debris like rags, paper, and leaves from wastewater (influent) as it enters West Point.
- After screening, wastewater is pumped into aerated grit chambers that remove sand and gravel.
- The trash and grit collected during this process are trucked to a landfill.

PRIMARY TREATMENT
a physical process ‘Scum floats; sludge settles’
- Wastewater settles in long tanks called primary sedimentation tanks. Heavy organic material sinks to the bottom (as sludge), and light material (fats, oils and greases) floats to the top (as scum).
- Skimmers remove scum from the surface of the water and conveyor belts remove sludge from the tank bottom. Both are then sent onto the solids handling process.
- The treated water, now called primary effluent, flows to the secondary treatment process. Primary treatment removes approximately 60 percent of the organic solids.
- West Point’s primary treatment system is designed to handle a peak combined flow of 440 million gallons a day (mgd).

SECONDARY TREATMENT
a biological process ‘Friendly bugs eating contaminants’
- Primary effluent is pumped to aeration tanks where oxygen is added to encourage growth of useful bacteria naturally present in the wastewater.
- Bacteria eat suspended and dissolved organic material in the water. In the process, they produce more bacteria.
- The wastewater then goes to secondary clarifiers, large round sedimentation tanks where bacteria settle to the bottom of the tank as secondary sludge.
- Most (90 percent) of secondary sludge goes back to the aeration tanks to keep a healthy bacteria population going; the rest goes to the solids handling process.
- The remaining water — secondary effluent — leaves the clarifiers at least 85 percent cleaner, typically close to 95 percent, than when it entered West Point.

DISINFECTION
‘Zapping pathogens’
- Secondary effluent is chlorinated, destroying most remaining pathogens, or disease-causing bacteria.
- To protect the receiving water environment, the final effluent is dechlorinated before it is released through an outfall pipe and diffuser into Puget Sound.

RECLAIMED WATER
‘Saving H2O’
- After disinfection, some secondary effluent undergoes advanced treatment (coagulation, filtration, disinfection) to reduce use of water for irrigation and some plant processes.

SOLIDS HANDLING
Creating biosolids and energy, ‘Blend, thicken, digest, dewater’
- Organic solids — primary and secondary scum and sludge from the sedimentation and clarifier tanks — are blended and thickened in a gravity-belt thickening process. The solids are then pumped to digester tanks where anaerobic bacteria at 98 degrees Fahrenheit break down organic material and kill pathogens. The activity of the bacteria creates digester gas and reduces the solids mass by 50 percent.
- The digested solids are then pumped from digesters to equipment that uses centrifuges to remove excess water from the solids.
- The resulting dewatered solid material is nutrient-rich biosolids, safe for use as a soil amendment.
- West Point Treatment Plant has been nationally recognized for its environmental management system and commitment to continual improvement.

King County Department of Natural Resources and Parks
Wastewater Treatment Division
www.kingcounty.gov/wtd
206-684-1280