
Glossary

absorption	The penetration of a substance into or through another.
access shaft	See portal .
action alternatives	The three alternatives evaluated in this EIS that would involve construction and operation of the Brightwater Regional Wastewater Treatment System. (See Route 9–195th and Route 9–228th Street Systems and Unocal System .)
activated carbon	Carbon that is heated to a high temperature in the presence of oxidizing gases. The resulting material has highly adsorptive properties. Often used in wastewater treatment processes to treat odors.
activated sludge process	See conventional activated sludge .
adsorption	The adhesion of a substance to the surface of a solid or a liquid.
advanced treatment	See tertiary treatment .
aeration	The promotion of contact between air and wastewater by bubbling air or oxygen through the wastewater.
aerobic	Living or occurring only in the presence of oxygen.
aerobic digestion	The decomposition of organic matter in wastewater solids into carbon dioxide and water by microorganisms in the presence of oxygen.
aerobic treatment	A biological treatment process in which organic matter in wastewater solids (aerobic digestion) or in clarified wastewater (secondary treatment) is broken down by microorganisms in the presence of oxygen.
aerosol	Microscopic airborne droplet that may be carried through the atmosphere. Aerosols may be generated by aeration basins and other aerated processes at wastewater treatment plants.
agricultural land	Land on which crops are grown, range land, or land used as pasture.
agronomic rate	The whole biosolids application rate (dry weight basis) designed to provide the amount of nitrogen needed to grow vegetation on the land.
algae	Simple rootless plants that contain chlorophyll. Algae blooms, or sudden growth spurts, can adversely affect water quality.
alevin	A newly hatched salmon that still has its yolk sac attached to its body.

Glossary

alluvium	A general term for consolidated clay, silt, sand, gravel, or a combination of these materials that has been transported by a stream or river and then deposited. Commonly referred to as alluvial deposits.
ambient air quality	The quality of the portion of the atmosphere external to buildings to which the general public has access.
anadromous	Refers to fish, such as salmon, that migrate up rivers from the sea to breed in fresh water.
anaerobic	An environment that lacks the presence of atmospheric or dissolved oxygen .
anaerobic digestion	The decomposition of organic matter in wastewater solids into methane and carbon dioxide by microorganisms in the absence of oxygen.
anoxic	Sometimes used interchangeably with anaerobic . A formerly aerobic environment in which the oxygen has been depleted to very low or zero concentration. Secondary treatment often uses anoxic processes.
anoxic hypolimnion	The bottom and most dense layer of a stratified lake that has turned anoxic .
aquifer	A layer of permeable rock or soil underlain by impermeable material that is capable of storing significant quantities of water and through which groundwater flows. The saturated portion of an aquifer is referred to as the zone of saturation . An unconfined aquifer is one in which the water table defines the upper water limit. A confined aquifer is sealed above and below by impermeable material. A perched aquifer is an unconfined groundwater body supported by a small impermeable or slowly permeable unit.
aquitard	Area of fine-grained sediments that inhibits the flow of water underground.
arch	A geologic or structural feature that may be bending or folding or may represent past compression and folding of the rock. Arches are not known for earthquake activity.
artesian groundwater	Water in a confined aquifer that is under pressure by less permeable formations where the potential energy of the water, or “ head ,” is above the ground surface. When intercepted during well drilling or other excavation, artesian water is forced upward by pressure and often spurts above the surface of the ground. A free-flowing artesian well is a well where water seeps out of the ground without being pumped.
attainment area	An area in which the federal and state standards for ambient air quality are being met.

average dry-weather flow (ADWF)	The average non-storm related wastewater flow between May and October. Composed of the average base flow and the average infiltration/inflow (I/I) .
average monthly discharge limitation	The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (40 CFR 122.2).
average weekly discharge limitation	The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week (40 CFR 122.2).
average wet-weather flow (AWWF)	The average flow between November and April on days when no rainfall has occurred on the previous day. Composed of the average base flow and the average infiltration/inflow (I/I) .
backfill	The operation of refilling an excavation, usually after some structure or pipeline has been placed. Also the material placed in an excavation in the process of backfilling.
bacteria	Single-cell or non-cellular microorganisms that lack chlorophyll. Some cause disease; others aid in pollution control by breaking down organic matter in air and water.
baffle	A deflector that changes the direction of flow or velocity of water, wastewater, or particulate matter. Also used on mechanical equipment to deflect air and noise away from sensitive receptors .
ballasted sedimentation	A primary treatment process used instead of conventional primary clarifiers in which a combination of coagulants and polymers is added to the wastewater to promote aggregation and settling of suspended solids . Ballasted sedimentation removes a higher rate of solids and BOD than do conventional clarifiers.
bar screen	A device that removes large debris from wastewater early in the treatment process before the wastewater undergoes primary treatment .
base flow	Wastewater flow (not including inflow and infiltration) originating from residential, commercial, and industrial sources. Base flow can also refer to the portion of streamflow contributed by groundwater as opposed to runoff.
bathymetry	The underwater equivalent of land topography. Describes the spatial variations of water depth (depths of underwater hills, plains, valleys, and so forth).
beach	The area along a water body that extends from the extreme low tide line to the riparian zone . Also can refer to the present or past accumulation of sand and gravel found within this zone.

benthic/benthos	Organisms attached to, resting on, or living in the bottom sediment of a water body.
berm	A constructed barrier of compacted earth, rock, or gravel. In a stormwater facility, a berm may serve as a vertical divider typically built up from the bottom.
best management practice (BMP)	A method, activity, or procedure for reducing the amount of pollution entering a water body. The term originated from the rules and regulations developed pursuant to Section 208 of the Federal Clean Water Act (40 CFR 130). Best management practices may include schedules of compliance, operation and maintenance procedures, and treatment requirements.
bioaccumulation	The accumulation of chemicals and nutrients in organisms.
biochemical oxygen demand (BOD)	The quantity of oxygen used in the breakdown of organic matter in water or wastewater. (BOD ₅ is the biochemical oxygen demand after 5 days.)
biofilter	Natural material, such as wood chips or sand, placed on the ground with piping underneath to distribute air through the material. Biofilters are often used for odor control; they can also be used for water treatment.
biogas	See digester gas .
biological treatment process	Any secondary treatment process that uses microorganisms to break down organic materials in wastewater .
bioscrubber	A device that employs bacteria to treat and filter odors from wastewater.
biosolids	Municipal sewage sludge that is treated to meet standards for land application.
biota	All living organisms in a region.
biotic community	An aggregation of organisms characterized by a distinctive combination of both animal and plant species in a particular habitat.
bioswale	A broad, open channel lined with grass or vegetation, which acts as a filter to remove pollutants from runoff .
biotransformation	The changes that occur in sediments as a result of the movements and biological processes of the benthic communities and microorganisms that live in sediments.
boring	A hole drilled or augured into the ground in which soils are sampled at intervals.
brackish water	The water in estuarine areas where freshwater and saltwater mix.
Brightwater System	The combined components necessary to operate and maintain the Brightwater Treatment Plant—including the plant itself, pipelines, pump stations, odor control facilities, ventilation equipment, tunnel access, and outfall.

buffer zone	A neutral area established as a safety precaution to prevent contamination of sensitive areas.
buildout	Refers to the development density of the Urban Growth Area after essentially all developable land has been developed. For this evaluation, the year 2050 was assumed to be the point of buildout, also known as “saturation.”
bypass	A diversion of flow around all or part of the treatment plant in emergencies.
caisson	A watertight structure. Some caissons are used to perform underwater construction work.
calcium nitrate	A type of salt used to control the generation of odorous hydrogen sulfide in wastewater conveyance systems.
candidate portal site	One of three or four parcels identified during Level 2 portal screening and evaluated in this Final EIS as potential sites within a portal siting area for use as a portal and staging area during tunnel construction for conveyance pipelines.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	Regulates uncontrolled hazardous materials and contamination. CERCLA (42 USC §9601) establishes a process for investigating, documenting, and cleaning up contaminated sites and provides a legal mechanism to assign liability for the costs of investigations and cleanup. Also known as “Superfund.”
chemical oxygen demand (COD)	A measure of the amount of oxygen required to oxidize organic and oxidizable inorganic compounds in water.
chemical treatment	Any one of a variety of technologies that use chemicals or a variety of chemical processes to treat material.
clarification	The process of removing the solids from wastewater . Typically, the solids are allowed to settle in clarifiers , often aided by centrifugal action and chemically induced coagulation in the wastewater.
clarifier	A settling tank where wastewater is held to allow solids to sink and be removed from the wastewater. Primary clarifiers are used in primary treatment ; secondary clarifiers are used as the final step in secondary treatment , prior to disinfection and discharge. Also referred to as sedimentation tanks.
Clean Water Act (CWA)	The Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.) as amended by the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500 and PL 93-243). Regulates discharge of pollutants into surface waters of the United States.
Code of Federal Regulations (CFR)	A codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.

coliform bacteria (fecal coliform)	Bacteria found in the intestinal tracts of mammals. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces. These organisms may also indicate the presence of pathogens that are harmful to humans.
colluvium	Weathered soil and rock debris that has moved down a slope either by creep or surface wash. Often accumulates at the foot of cliffs.
combined sewers	A conveyance system designed to carry both wastewater and stormwater .
combined sewer overflow(CSO)	An overflow of combined sewers into surface waters when flows in the system exceed the capacity of the wastewater conveyance system. King County categorizes its CSO locations as either controlled or uncontrolled. Controlled CSO locations meet the Washington State Department of Ecology requirement that allows for no more than one untreated discharge per year.
comprehensive plan	A legal document required under the Washington State Growth Management Act to be adopted by local officials, establishing policies and procedures that guide the future physical development of the community.
concurrency	Provision of public services and facilities at levels that keep up with the increased demand of the forecasted growth.
conditional use permit (CUP)	A permit that allows a city or county to consider and approve designated uses not ordinarily allowed within a zoning district, subject to specified conditions.
conductivity	A measure of the ability of a liquid to conduct an electrical current, which is directly related to the content of dissolved ions in the water.
constituents of concern	Constituents potentially found in wastewater , biosolids , or contaminated soils that could pose an environmental risk; also chemicals and gases used or produced by the wastewater treatment process that could pose a health or safety risk.
construction trip	A one-way trip (assumed to be part of a roundtrip) made by a truck or other vehicle as part of construction of the Brightwater System .

conventional activated sludge (CAS) process	A biological secondary treatment process in which a mixture of wastewater and microorganisms is agitated and aerated to encourage the microorganisms to grow and feed on the organic matter in the wastewater. The activated sludge, made up primarily of microorganisms, is subsequently separated from the wastewater by clarification and is either recycled to the head of the aeration process (return activated sludge) or routed to the solids handling systems (waste activated sludge). Secondary treatment at the Brightwater Treatment Plant would consist of activated sludge in combination with membrane bioreactors for the clarification step.
conveyance system	A system, consisting of trunks, interceptors, force mains, pump stations , and other facilities, that moves wastewater from one place to another.
corridor	A 1,000-foot-wide band that shows the general path of a pipeline.
criteria pollutants	Six principal pollutants (carbon monoxide, sulfur dioxide, lead, ozone, and two categories of particulate matter) for which the Environmental Protection Agency has set air quality standards under the Clean Air Act. These standards are known as the National Ambient Air Quality Standards (NAAQS).
critical areas	Wetlands ; streams; areas with a critical recharging effect on aquifers used for drinking water supply; fish and wildlife habitat conservation areas; frequently flooded areas; and geologically hazardous areas.
cross country	An area where the conveyance pipeline would be installed under property that is not in a public right-of-way .
CSO treatment plant	A primary wastewater treatment plant designed to treat combined wastewater and stormwater for peak flows that exceed 2.5 times the average wet-weather flow. CSO treatment plants operate intermittently, unlike most wastewater treatment plants which operate continuously. King County has two such plants: Alki and Carkeek.
culvert	A closed channel or conduit for passage of drainage waters under a highway, railroad, canal, or other structure.
cut-and-fill balance	A calculation of how much soil must be excavated and exported from a site and how much soil must be imported to enable construction, grading, and backfilling around structures.
dechlorination facility	A building that would store and add sodium bisulfite to the treated effluent to remove the chlorine residual in the effluent prior to discharge to Puget Sound.
decibel, A-weighted (dBA)	A unit of sound pressure level that is electronically filtered to approximately duplicate human sensitivity to sound.

decomposition	The breakdown of organic matter by bacteria and/or environmental processes that change the chemical makeup and physical appearances of materials.
detention	The process of collecting and holding back stormwater for delayed release to receiving water .
detritus	Unconsolidated sediments comprised of both inorganic and dead and decaying organic material. Also inorganic material derived from the mechanical breakdown of rock and soil by the processes of weathering and erosion.
dewatering	The removal of groundwater to reduce the flow rate or diminish pressure. Dewatering is usually done to improve conditions in surface excavations and to facilitate construction work. Can also refer to removing water from a basin, tank, reservoir, or other storage unit, or from solid material such as the solids that are a byproduct of wastewater treatment.
diaphragm wall	See slurry wall .
differential settlement	Unequal settling of material and soil; gradual downward movements of foundations as a result of compression or settling of soil, which can lead to damage if the settlement is uneven.
diffuser	The device at the end of an outfall pipe that distributes effluent into the receiving water so that maximum dilution is achieved.
diffuser site	Locations within an outfall zone that are being considered for placement of the diffuser .
digestion	The decomposition by microorganisms of organic matter in wastewater solids . Digestion can take place in either aerobic or anaerobic conditions.
digester gas	A gas generated when bacteria degrade biological material in the absence of oxygen during anaerobic digestion . Digester gas (also called biogas) is a mixture of methane and carbon dioxide.
dilution ratio	The relationship between the volume of water in a receiving water and the volume of effluent discharged to the water; used as a measure of the amount of dilution that occurs when wastewater is discharged into the receiving water.
discharge—direct or indirect	The release of treated or untreated wastewater into the environment. A direct discharge of wastewater flows into surface waters. An indirect discharge of wastewater enters a sewer system. Also used to describe water from a groundwater dewatering operation that enters surface water (direct) or a storm sewer (indirect) or to describe stormwater discharged to surface water.

disinfection	Destruction of pathogens . Wastewater treatment plants often use ultraviolet light or chemicals to disinfect effluent .
displacement grouting	A method of grouting, also called compaction grouting, that pumps a pressurized cement mixture into the soil to compact the surrounding area for foundation support. The injected grout displaces the soils to form a column or bulb to increase the foundation bearing capacity.
dissolved oxygen (DO)	A measure of the amount of oxygen available for biochemical activity in a given amount of water. Adequate levels of DO are needed to support aquatic life.
dissolved solids	Disintegrated organic and inorganic material contained in water. Excessive amounts make water unfit to drink or use in industrial processes.
diversion structure	An underground structure that would be built on top of or adjacent to existing pipelines to divert wastewater to the Brightwater conveyance system.
diversity	The general relationship between the number of species and the number of individuals in a biological community.
drainage basin	Area that is drained by a river and its tributaries.
drawdown	Lowering of the water level in an aquifer, well, reservoir, or other body of water.
drop structure	A structure that would be built inside the influent portals to lower the wastewater conveyed from the shallower diversion structures to the deeper influent tunnel.
<i>E. coli</i>	<i>Escherichia coli</i> , a bacterium that is a common—but not the most abundant—inhabitant of the human intestine. It also lives in the intestine of many other animals, wild and domestic. Normally <i>E. coli</i> does not cause disease.
earth berms	A mound of dirt typically used in landscaping applications to buffer potential visual and noise impacts of a building to local residences. Earth berms are covered with vegetation to prevent erosion.
easement	Rights obtained from a landowner to use a parcel of land for a specific purpose such as for an underground pipeline or utility or for vehicular or pedestrian access to a road or sidewalk.
Edmonds Crossing	The SR 104 Edmonds Crossing Connecting Ferries, Buses, and Rail Project proposed by the U.S. Department of Transportation, Federal Highway Administration; the Washington State Department of Transportation; and the City of Edmonds. This “multimodal” facility would serve ferry, bus, and rail travel. Its proposed location is the western portion of the Unocal site. A sub-alternative to the Unocal System alternative is to build a structural lid over part of the treatment plant and to locate the Edmonds Crossing Project on the lid.

eelgrass	Grass-like flowering plant (<i>Zostera marina</i>) with dark green, long, narrow, ribbon shaped leaves with rounded tips. Eelgrass forms dense swards in the subtidal, supports a diverse fauna and flora, and may act as a nursery for fish and shellfish. Creates a highly structured habitat from loose and shifting sands.
effluent	Treated wastewater that leaves the treatment plant.
effluent limitations	Restrictions established by the state or by the Environmental Protection Agency on quantities, rates, or concentrations of pollutants in treated wastewater discharges (40 CFR 122.2 and WAC 173-220-130).
emergency flow management system	A five-part system developed for the Brightwater System alternatives to prevent overflows of untreated wastewater that could potentially occur during rare combinations of extreme circumstances, including extremely heavy storms and multiple equipment and power failures.
Endangered Species Act of 1973, as amended (ESA)	Federal statute that provides protection for species of fish, wildlife, and plants that are listed as threatened or endangered.
<i>Enterococcus</i>	As nonpathogenic subgroup of bacteria called fecal streptococcus that is usually used as an indicator of the presence of fecal material. Studies have determined a correlation between <i>Enterococcus</i> concentrations in water and increased probabilities of illness in swimmers. <i>Enterococcus</i> itself does not normally cause illness.
environmental impact statement (EIS)	A document that discusses the probable significant adverse environmental impacts of a development project or a planning proposal, discusses reasonable mitigation of identified impacts, and evaluates alternatives to the project and/or proposal. EISs are required under certain circumstances by the National Environmental Policy Act (NEPA) and/or Washington State Environmental Policy Act (SEPA).
epibenthic	Organisms that live on the surface of a substrate, including motile organisms such as fish, gastropods, echinoderms, and a variety of crustacea.
erosion	The wearing away of land surfaces by wind or water. Erosion can be intensified by land clearing processes.
essential public facility (EPF)	A facility that is an essential element of the public infrastructure that is typically difficult to site. Examples of EPFs include, but are not limited to, a wastewater treatment plant, airport, solid waste handling facility, correctional facility, mental health home, or group home. Under Washington state's Growth Management Act , no local comprehensive plan or development regulation may preclude the siting of EPFs.

estuary	The part of the wide lower course of a river where its current is met by the tides. Also, an arm of the sea that extends inland to meet the mouth of a river.
ethnographic period	A period of time (1792–1860) used by archaeologists to estimate the probability for archaeological resources at archaeological sites.
euphotic zone	The upper layer of a water body where light penetrates and photosynthesis occurs.
eutrophication	The intentional or unintentional enrichment of water with nutrients . High eutrophication often leads to reduced dissolved oxygen concentrations and algal blooms.
expansion phase	The second phase of implementation of the Brightwater System in which the capacity of the 36-mgd treatment plant would be expanded to 54 mgd in 2040.
exposure pathway	The way in which a person or animal may come into contact with a hazardous substance, whether it is a chemical or some other harmful substance. Three basic exposure pathways are inhalation, ingestion, and direct contact.
Facilities Plan	Describes the existing and future wastewater service needs of north King County and south Snohomish County and the development of a system of treatment, conveyance, effluent management facilities to meet these needs (Brightwater System). The Facilities Plan for the Brightwater System is being prepared under the Washington State Department of Ecology requirements for Engineering Reports (WAC 173-240-060) and 40 CFR Part 35. The most current version is the preliminary working draft issued in May 2003 and included as Appendix 3-L to this EIS.
fecal coliform	A group of bacteria that are passed through the fecal excrement of humans, livestock, and wildlife.
ferric and ferrous chloride	Corrosive chemicals that promote sedimentation of liquid sulfides and other suspended solids in wastewater . Used at treatment plants and conveyance lines for odor control or to improve solids settleability.
fill	Material used to raise the level of a low area or to make an embankment.
filtration	A treatment process for removing particles from water by passing the water through porous media such as sand or a man-made filter. This process is used to purify water to drinking water standards and effluent to water reclamation standards.
final design	The final phase of project design when contract plans and specifications necessary for bidding are prepared, and information needed by suppliers and contractors to construct the facility is provided. Follows predesign .

fjord	A long, narrow, deep inlet of the sea between two slopes.
flocculation	The process by which fine particles in water or wastewater are made to clump together into larger masses. Often conducted prior to clarification and/or filtration in the wastewater treatment process.
floodplain	A low flat area on either side of a river that can accommodate large amounts of water during a flood, lessening flood damage further downstream.
flowmeter	A gauge that shows the rate of flow or volume of a fluid. In wastewater treatment, flowmeters measure how many million gallons of wastewater moves through the system per day.
footprint	The area that a building or other structure will occupy, as shown on a map, photo, or plans.
force main	A pipeline that transports wastewater under pressure resulting from pump action.
free-phase product	Liquids, such as petroleum, gasoline, or solvents, that are floating on the surface of groundwater .
fry	A small fish, especially a young recently hatched fish.
fuel cell	A device that chemically combines hydrogen and oxygen to make electrical energy without combustion. Fuel cells can operate on a variety of fuels including natural gas, methanol, ethanol, landfill methane , coal gas, digester gas , propane, gasoline, and pure hydrogen.
fugitive dust emission	Dust that is distributed over a wide area and is not confined to a specific discharge point.
geographic information system (GIS)	A system of computer software, hardware, data, and personnel that helps manipulate, analyze, and present information that is tied to a spatial (usually a geographic) location.
Geomorphology	Configuration of land forms.
grading	The changing of the ground's slope to a different one, typically during construction using heavy equipment.
gravity belt thickener (GBT)	A piece of equipment used in wastewater treatment to thicken the solids collected during treatment. Water is released as the solids travel across a drainage belt.
gravity sewer	A sloping sewer pipe in which wastewater can flow by gravity.
ground freezing	Use of refrigeration to convert water in soil pores beneath the groundwater table to ice, thus increasing the strength of loose or soft soils and making them impervious so that excavation can proceed.

groundwater	Water that infiltrates into the earth and is stored in the soil and rock within the zone of saturation below the earth's surface. Groundwater is created by rain, which soaks into the ground and flows down until it is collected at a point where the ground is not permeable. Groundwater then usually flows laterally toward a river, lake, or ocean. It is often used for supplying wells and springs.
groundwater table	The upper limit in the soil of underlying material permanently saturated with water.
Growth Management Act (GMA)	A Washington state law (Chapter 36.70A RCW), guided by procedural criteria and adopted by the Washington State Department of Community Development, that provides a legal framework and guidance for the preparation of comprehensive plans, development regulations, and other land use planning for local governments.
habitat	The area or environment where an organism or ecological community normally lives or occurs.
Habitat Conservation Plan	An agreement between a non-federal landowner and the Services whereby the landowner provides habitat protection and other benefits to species covered by the Endangered Species Act (ESA) in return for regulatory assurances under ESA. King County is currently developing an HCP with the Services.
head	The potential energy of water above a point. Head may be measured in either height (feet or meters) or pressure (pounds per square inch or kilograms per square centimeter).
headworks	The part of a wastewater treatment plant where preliminary treatment occurs.
heavy metals	Metallic elements like mercury, chromium, cadmium, arsenic, and lead that can damage organisms at certain concentrations.
historic period	A period of time (1860–1952) used by archaeologists to estimate the probability for archaeological resources at archaeological sites.
hunter-fisher-gatherer period	A period of time defined as the time before contact with Europeans (“pre-contact”) and used by archaeologists to estimate the probability for archaeological resources at archaeological sites.
hydrocarbon	Any organic compound, such as methane , that contains only hydrogen and carbon.

hydrogen sulfide (H₂S)	A gas produced in sewers and digesters by anaerobic decomposition . Is detectable in low concentrations by its characteristic "rotten egg" odor, deadens the sense of smell in higher concentrations or after prolonged exposure, and damages the human nervous system from high exposure. Also converts to an acid when exposed to water and corrodes unprotected wastewater pipelines.
hydrograph	A series of flows and their associated times coming from one or more subbasins. Hydrographs are used as input to King County's hydraulic routing model to simulate the flows through trunk and interceptor systems.
hydrologic analysis	The study of the intensity and frequency of rainfall and the subsequent distribution and magnitude of flow into the wastewater conveyance system.
hydrologic cycle	The cycle of the Earth's water supply from the atmosphere to the Earth and back, including precipitation, transpiration, evaporation, runoff, infiltration, and storage in water bodies and groundwater .
impervious surface	Any impenetrable material that prevents infiltration of water into the soil. Examples include rooftops, roads, parking lots, sidewalks, patios, bedrock outcrops, and compacted soil.
infauna	Aquatic animals that live in the substrate of a water body, especially in a soft sea bottom.
infiltration	The water that enters a wastewater conveyance system from the ground through means such as corroded or broken pipes, pipe joints, pipe connections from storm sewers or combined sewers , catch basins, and surface runoff.
infiltration/inflow (I/I)	The total quantity of water from both infiltration and inflow without distinguishing the source.
inflow	The water discharged into a wastewater system from sources such as roof leaders, yard and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, manhole covers, cross connections from storm sewers and combined sewers , catch basins, surface runoff, and street wash waters.
influent	Water, wastewater , or other liquid flowing into a reservoir, basin, or treatment plant.
initial phase	The first phase of implementation of the Brightwater System in which the treatment plant would be constructed to treat 36 mgd in 2010.
interceptor sewer	Large pipelines that collect the flows from trunk sewers and carry them to the wastewater treatment plant.

intertidal zone	The shoreline area that is between the high and low tide levels. The alternate wetting and drying of this area makes it a transition between land and water and creates special environmental conditions and habitats.
isolated wetlands	Wetlands, as determined by the U.S. Army Corps of Engineers, that are not adjacent or connected to a navigable water body, such as a river, lake, or marine waters.
jacking and boring	A tunnel boring method used for short crossings of features such as railroad tracks, intersections, and streams. Involves use of a horizontal boring machine or auger to drill a hole under the crossing. As the machine is advanced, a pipe is pushed into the hole using a large hydraulic jack in a pit located at one end of the crossing. The machine used in jacking and boring can tunnel through rocky soils. This method is the most effective means for installing pipes less than 5 feet in diameter. It is not effective for projects near the groundwater table because groundwater can pass through the machine and flood the unfinished tunnel behind it.
jet grouting	The simultaneous mixing, removal, and replacement of soils with grout (cement and water) to produce a “plug” of impermeable material to reduce the inflow of groundwater into a portal .
junction box	An underground structure between the land-based and water-based portions of an outfall.
lacustrine	Pertaining to lakes.
land application	The depositing of biosolids onto the ground for use as a soil amendment.
lateral sewers	Pipes that receive wastewater from homes and businesses and transport that wastewater to trunks .
lateral spreading	Ground movement.
launching portal	A primary portal that will be used to insert the tunnel boring machine for excavation of tunnels for conveyance pipelines. Lining and ventilation operations would also occur at these portals.
LEED™	A self-certifying, performance-based system designed for rating new commercial, institutional, and high-rise residential buildings in terms of green building features. Green building practices include practices that conserve resources, maximize the use of recycled materials, and minimize energy consumption.

level of service (LOS)	A measure of the effect of a number of factors on traffic flows. LOS is a function of volume and composition of traffic and speeds attained on any specific roadway, and is defined as LOS A through F. LOS A is unencumbered free flow, B is good flow with little delay, C is stable flow with frequent delay, D is congested flow with long delay, E is unstable flow with continuous backup, and F is forced flow with extensive backup. Traditionally, traffic facilities are designed to operate at LOS C. Under the Washington state Growth Management Act , local jurisdictions are required to adopt an LOS standard in the transportation area and may also set LOS standards in other public areas, such as parks and schools.
Level 1, 2, and 3 portal screening	Processes used to determine possible locations for portals within each portal siting area . Level 1 screening was used to identify sensitive areas, such as wetlands, that must be avoided during tunnel construction. Level 2 screening evaluated the remaining properties in each portal siting area to identify three or four candidate portal sites in each portal siting area (evaluated in this Final EIS). Level 3 screening will be used during predesign to recommend a preferred candidate portal site in each area. (A preferred candidate portal site has already been identified for Portal Siting Area 19 to facilitate outfall predesign work.)
liquefaction	The process of soil or sand behaving like a dense fluid rather than a solid medium during an earthquake. Saturated soils, sands, and fills are especially susceptible to liquefaction.
loading	The amount of material entering a wastewater system from all sources.
loam	A mix of sand, silt, and clay.
local agencies	Water and sewer districts that receive wholesale wastewater services from King County.
low-impact development (LID)	Measures that would minimize the amount of stormwater runoff from the treatment plant site.
lux	A measurement of light levels equal to one lumen per square meter (lm/m ²).
macrophyte	Any aquatic plant large enough to be seen with the naked eye.
manhole	A vertical shaft covered by a lid at ground level that provides access for maintenance of an underground pipe.
marine biotoxins	Any poisonous compound produced by marine microorganisms that can be accumulated by shellfish.
marsh	See wetland .

maximum wet-weather flow (MWWF)	The maximum daily wastewater flow during the wet winter months on rainy days. It is composed of maximum daily wastewater flows plus the maximum wet-weather infiltration/inflow during an approximately annual rainfall event.
mean lower low water (MLLW)	The average of the lowest low tide from each day taken over a period called the National Tidal Datum Epoch (a 19-year epoch).
membrane bioreactor (MBR)	A biological process that uses microporous membranes to filter out particulate matter and bacteria, resulting in treated wastewater that is 7 to 10 times cleaner than wastewater treated with typical secondary treatment processes.
methane	A colorless, odorless, flammable gaseous hydrocarbon present in natural gas and formed by the decomposition of vegetable matter or produced artificially by heating carbon monoxide and hydrogen. A byproduct of solids digestion in wastewater treatment plants.
microlayer	The uppermost layer of the sea surface.
microorganisms	Microscopic organisms (bacteria, viruses, protozoans) that are not visible to the unaided eye. Some cause diseases in humans, animals, and plants; some are important because they are involved in breaking down and stabilizing wastewater and solid waste.
microtunneling	A technology that uses a remotely controlled microtunnel boring machine to directly install pipes underground. This method is suitable for relatively short distances, for smaller diameter pipes, and for routes with angles or bends. Generally, microtunneling requires smaller land areas and shorter construction periods than does the tunneling method.
mitigation	The avoidance of an adverse impact by not taking a certain action or parts of an action; minimizing adverse impacts by limiting the degree or magnitude of the action and its implementation; rectifying an adverse impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating an adverse impact over time by preservation and maintenance operations during the life of the action; compensating for adverse impacts by replacing or providing substitute resources or environments.
mixing zone	A region defined by Washington State regulation (WAC 173-201A) that surrounds a discharge within which Water Quality Standards may be exceeded but is small enough not to interfere with beneficial uses. The acute and chronic mixing zones refer to the areas in which the acute and chronic water quality standards may be violated.

Model Toxics Control Act (MTCA)	A Washington State statute that is analogous to the federal Superfund law (CERCLA). The MTCA establishes a process to identify, investigate, and cleanup contaminated properties that threaten human health or the environment.
morphology	Form and structure.
motile	Moving or having the power to move spontaneously.
muck car	A rail car used in tunneling to transport excavated rocks and soil to the surface through the portal . The muck cars travel along a rail system inside the tunnel to the portal opening. When the cars reach the portal opening, they are lifted above waiting dump trucks. A gate in the bottom of the muck car is opened, and the spoils drop into the trucks for conveyance offsite.
National Environmental Policy Act (NEPA)	Federal legislation establishing national policy that environmental impacts will be evaluated as an integral part of any major federal action. Requires the preparation of an Environmental Impact Statement (EIS) for all major actions significantly affecting the quality of the human environment (42 U.S.C. 4321-4327).
National Pollutant Discharge Elimination System (NPDES)	Section 402 of the federal Clean Water Act . Prohibits discharge of pollutants from a point source into (navigable) surface waters of the United States unless a permit is issued by the Environmental Protection Agency, a state, or (where delegated) a tribal government on an Indian reservation. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington State Department of Ecology .
nearshore	The area that extends from the riparian zone through the intertidal (area within the tidal exchange) and subtidal (area below low tide) habitats.
nephelometric turbidity unit (NTU)	Turbidity (cloudiness of water) measured by the nephelometric (deflected light) instrumental procedure.
No Action Alternative	One of four alternatives evaluated in the Brightwater EIS. The other three alternatives are evaluated as “action alternatives.” (See Route 9–195th and –228th Street Systems and Unocal System .) Under the No Action Alternative, King County would not build a third regional wastewater treatment plant. It would, however, continue to implement other programs and projects called for in the Regional Wastewater Services Plan .
nitrification	The process where ammonia in wastewater is oxidized to nitrate by microorganisms .
NPDES permit	Permit issued under the National Pollutant Discharge Elimination System to regulate discharges from point sources to surface waters of the United States.

nutrient	Essential chemical needed by plants or animals for growth. Excessive amounts of nutrients, such as nitrogen and ammonia, can lead to degradation of water quality and algal blooms. Some nutrients can be toxic at high concentrations.
offshore	Waters extending beyond the nearshore area.
onshore	See riparian zone .
open cut	A method for installing pipe near the surface, also called “trenching.” The open-cut method consists of three stages: digging a trench and stockpiling excavated materials; installing pipe in the trench; and backfilling the trench and restoring the surface.
ordinary high water mark (OHW)	For lakes, streams, and tidal waters, the mark found on the bank that indicates the common and usual presence and action of waters. Land that is waterward from the OHW mark typically possesses soil and vegetation characteristics distinct from areas upland of the OHW. For tidal waters, OHW can be defined as the line of mean higher high tide.
organic soil	A dark soil produced by partial decomposition and disintegration of plants and animals that grow in marshes, bogs, and wetlands .
outfall	The final portion of a pipeline that carries treated wastewater from the treatment plant through riparian, nearshore, and offshore areas to discharge into receiving waters .
outfall zone	A broad area where the outfall pipeline and diffuser will be located.
outwash	Stratified detritus (chiefly sand and gravel) removed or washed out from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of an active glacier; or soil material washed down a hillside by rainwater and deposited on more gently sloping land.
palustrine	Freshwater wetland.
pathogen	A microorganism that can cause disease in other organisms.
PCBs (polychlorinated biphenyls)	A group of toxic, persistent chemicals used in electrical transformers and capacitors. Further sale or new use of PCBs was banned in the United States in 1979.
peak flow	The highest base flow and infiltration/inflow expected to enter a wastewater system during wet weather at a given frequency that the treatment plant is designed to accommodate.
peak hydraulic capacity	The maximum wastewater flow that can be moved through a treatment plant, pump station, or pipeline.
perched aquifer	Groundwater that occurs above the regional water table and is separated from it by an unsaturated zone.

pH	A measure of acidity or alkalinity of a solution, numerically equal to 7 for neutral solutions, increasing with increasing alkalinity and decreasing with increasing acidity. The pH scale ranges from 0 to 14.
piezometer	An instrument for measuring pressure in a pipe, tank, or soil.
pile	A large pole driven into the earth to support a building, a pier, or other superstructure; or to resist lateral pressure in structures such as bulkheads and cofferdams.
pit	A vertical shaft constructed for microtunneling or jacking and boring . Because these operations are used to excavate smaller diameter tunnels than those excavated by tunneling , pits are smaller than portals and are in operation for shorter durations. A typical pit including the working area would require about 0.25 acre.
plume	A space in air, water, or soil that contains pollutants released from a point source .
point source	A stationary location or fixed facility from which pollutants are discharged or emitted. Also, any single identifiable source of pollution, such as a pipe or ditch. A discharge pipe from a wastewater treatment plant or factory is a point source.
portal siting area (PSA)	An approximately 72-acre (2,000-foot-diameter) area in which a portal may be located. Primary portal siting areas are situated approximately every 20,000 feet along an alternative conveyance corridor. Portals constructed in these areas would be needed for tunnel construction. Secondary portal siting areas have also been identified within 10,000 feet of a primary or another secondary portal along each corridor. Secondary portals will most likely not be needed for tunnel construction but may be required for temporary ventilation, ground improvement, or grouting supply. A PSA is named by reference to an identified intersection in the center of the area.
polychaete	A marine worm having paired flattened bristle-tipped organs of locomotion.
polymer	A natural or synthetic substance used as a conditioning aid to improve the thickening and dewatering characteristics of solids.
portal	A vertical shaft and staging area constructed and maintained for the purpose of tunneling .
predesign	The initial phase of a project design process. For the Brightwater project, this initial phase generally would include determination of alignments, layouts, and technology options.
Preferred Alternative	Route 9–195th Street System.

preliminary treatment	The stage before primary treatment that physically removes pollutants, such as rocks, sticks, and grit, from wastewater through screening and settling processes.
pretreatment	The process used to reduce the amount of pollution in wastewater before it enters the conveyance system and treatment plant. Usually occurs at the source, such as an industrial plant.
primary treatment	A stage in wastewater treatment in which about 60 percent of the solids in the wastewater are removed, primarily by allowing the solids to settle via gravity in large tanks called clarifiers .
Puget lowland	An elongated topographic and structural depression bordered by the Cascade mountains on the east and the Olympic mountains on the west.
pump station	For wastewater purposes, a structure that houses pumps and other equipment for lifting wastewater in pipes to higher elevations so that it can continue to flow by gravity.
putrescible	Organic matter that can decompose quickly enough to cause odors.
receiving water	Any body of water where treated or untreated wastes are discharged.
recharge	The process of water soaking into the ground to become groundwater. The area on the surface where water soaks in is called the recharge area.
reclaimed water	Effluent that receives advanced treatment (beyond secondary treatment) and is used for non-drinking purposes such as landscape irrigation, heating and cooling, and other industrial uses.
reclamation site	Drastically disturbed land that is reclaimed using biosolids , including strip mines and construction sites.
recovery portal	A primary portal that will be used to remove tunnel boring machines during construction of tunnels for conveyance pipelines. These portals will also provide ventilation, egress, and access during the final lining, cleanup, and testing stages of construction.
redd	A salmonid spawning nest in the substrate .
Regional Wastewater Services Plan (RWSP)	A capital improvement program adopted by the King County Council in December 1999 to provide wastewater services to the King County Service Area through 2030.

regulator	A structure that controls the flow of wastewater from two or more input pipes to a single output. Regulators can be used to restrict or halt flow, thus causing wastewater to be stored in the conveyance system until the treatment plant can handle it. Also a person from a local, state, or federal agency who enforces regulations and issues permits.
residential customer equivalent (RCE)	A means by which King County charges its component agencies for wastewater services. For example, the charge for individual customers—single-family, multifamily, commercial, or industrial—in the City of Seattle is based on water consumption, which is converted into RCEs by dividing the monthly water consumption by 750 cubic feet. Component agencies outside the City of Seattle that do not measure residential water use charge each single-family house as one RCE; these agencies use the same method as the City of Seattle for their multifamily, commercial, and industrial customers.
Resource Conservation and Recovery Act (RCRA)	A federal statute that is designed to provide cradle-to-grave regulation of hazardous waste.
Revised Code of Washington (RCW)	A compilation of laws of the State of Washington published by the Statute Law Committee.
right-of-way	A public or private right to use linear portions of properties, typically for roadway, railway, or utility purposes. Rights-of-way may be established through deeds or easements .
riparian zone	A transition area between aquatic and terrestrial environments. The microclimate, soil, and vegetation are typically influenced by both surface water and groundwater .
route	The pathway of a pipeline within a conveyance corridor . Can also refer to the pathway of a corridor.
Route 9–195th Street System	One of three action alternatives considered for the Brightwater System. The Route 9–195th Street System, which is the Preferred Alternative, would include a wastewater treatment plant at the Route 9 site in unincorporated Snohomish County. The system would also include a conveyance corridor with an influent tunnel extending underground from existing pipelines in Kenmore and Bothell to the treatment plant site and an effluent pipeline extending underground from the site primarily along NE 195th Street in King County to an outfall extending into Puget Sound from Point Wells west of the city of Shoreline.

Route 9–228th Street System	One of three action alternatives considered for the Brightwater System . The Route 9–228th Street System would include a wastewater treatment plant at the Route 9 site in unincorporated Snohomish County. The system would also include a conveyance corridor with an influent tunnel extending underground from existing pipelines in Kenmore and Bothell to the treatment plant site and an effluent pipeline extending underground from the site primarily along 228th Street SE/SW in Snohomish County to an outfall extending into Puget Sound from Point Wells west of the city of Shoreline.
safety relief point	For the Route 9 Systems and Unocal System , a point in the lower Sammamish River just above the point where the river flows into Lake Washington. Untreated wastewater would be discharged at this point in extremely rare events when emergency flow management system measures are implemented and a threat of uncontrolled overflows still exists. Additional safety relief would be designed for the Unocal System whereby influent could bypass treatment and be discharged through the plant outfall.
Salmon Habitat Management Plan Administrative Rule (HMP rule)	A rule requiring that a Habitat Management Plan be prepared for development projects that may affect fish and wildlife habitat conservation areas that have a primary association with any Endangered Species Act -listed threatened or endangered salmonid species.
sanitary sewer	A pipeline that carries household, industrial, and commercial wastewater.
sanitary sewer overflow (SSO)	Untreated or partially treated overflows from a separated sewer in a wastewater conveyance system.
scrubber	An air pollution control device that uses a spray of water, chemicals, or activated carbon to trap pollutants in emissions.
secant pile	A type of shoring used to withhold unstable and/or water bearing soils from excavated areas. The piles, typically cast in place, interlock or overlap to form a continuous, nearly watertight wall, preventing water or soils from leaching between the piles after excavation.
secondary treatment	A two-phase process that consists chiefly of clarification (primary treatment) followed by a biological process—with separate solids collection and treatment—and by secondary clarification, disinfection , and discharge through an outfall . Can also be followed by tertiary treatment. A combination of primary and secondary treatment removes about 85 to 90 percent of the solids in the wastewater .

sedimentation	The processes of erosion, transportation, and deposition of sediment by water and air. These occur naturally but may be enhanced by human activities such as road and reservoir construction, logging, mining, and livestock grazing. Wastewater treatment: See clarification .
seismic	Pertaining to, characteristic of, or produced by earthquakes or earth vibrations from an event such as an explosion.
sensitive receptors	Properties that could receive noise and other impacts from construction or operation of the Brightwater System .
separated sewer	A wastewater pipe designed to accept and transport household, industrial, and commercial wastewater and to exclude stormwater sources.
septage	The material that is pumped out of a septic tank.
the Services	National Oceanographic and Atmospheric Administration (NOAA) Fisheries and the U.S. Fish and Wildlife Services.
settleable solids	Material heavy enough to sink to the bottom of a wastewater treatment clarifier .
72-mgd sub-alternative	One of two possible courses of action evaluated in this EIS for the Unocal System alternative in addition to the basic system alternative. The Unocal Treatment Plant would be expanded to 72-mgd capacity to accommodate wastewater flows that are currently being treated by treatment plants operated by the Cities of Edmonds and Lynnwood.
sewage	See wastewater .
sewer	A pipe that carries wastewater and/or stormwater runoff from the source to a treatment plant or receiving water . Sanitary sewers carry household, industrial, and commercial wastewater. Storm sewers carry runoff from rain or snow. Combined sewers are used for both purposes.
shelf	The underwater equivalent of a plateau.
shoreline	The area between the extreme high tide line and the riparian zone .
shoring	Props or posts of timber or other material in compression used for temporary support of excavations, formwork, or unsafe structures.
site setting	A framework for evaluating the aesthetic environment. A site setting encompasses the visual land use and environmental character of the natural and cultural landscape image surrounding a site. (See view corridor and viewpoint .)
sludge	The untreated accumulated solids that have been separated from liquids during the wastewater treatment process.

slurry wall	A construction method used when excavating in wet, unstable soil. As a trench is excavated, it is filled with bentonite (an absorbent clay) slurry . This fluid mixture allows the excavation to continue while preventing the passage of groundwater or the collapse of the trench walls. The trench is later backfilled with other material, forms for poured concrete walls, or pre-fabricated wall sections.
sodim bisulfite	A type of salt used to dechlorinate treated wastewater prior to discharge.
sodium hydroxide	A highly reactive, corrosive liquid used to manage the pH in odor control facilities.
sodium hypochlorite	A liquid commonly used as household bleach and used at stronger concentrations to disinfect wastewater and to control odor at treatment plants and conveyance lines.
solids	The organic and inorganic material in wastewater that is removed during treatment.
sole source aquifer	Designated by the Environmental Protection Agency as an aquifer that supplies 50 percent or more of the drinking water for a given area, and for which there are no reasonably available alternative sources should the aquifer become contaminated.
South Treatment Plant	A King County regional wastewater treatment plant, located in the city of Renton.
split flow	Used in combination with membrane bioreactor (MBR) technology in which the average wet-weather flows are treated using MBR, excess flows are routed to ballasted sedimentation , and then both flows are blended and disinfected prior to discharge.
spoils	Excavated material that cannot be immediately reused as backfill and must be transported for disposal or storage.
spud	A means to anchor the barge (“working barge”) that would be used to install the outfall pipe on the seafloor. Studs act like pins stuck to the seafloor below the barge.
staging area	An area used for a number of purposes, such as parking and storing of materials and equipment, to support construction activities.
State Environmental Policy Act (SEPA)	A Washington State law (Chapter 43.21C RCW) that requires state agencies and local governments to consider environmental impacts when making decisions regarding certain activities, such as development proposals over a certain size, and comprehensive plans. As part of this process, environmental impacts are documented and opportunities for public comment are provided.

Glossary

storm drain	A system of gutters, pipes, or ditches used to carry stormwater from surrounding lands to streams, lakes, or other receiving water . Also refers to the end of the pipe where the stormwater is discharged.
storm sewer	A pipe (separated from sanitary sewers) that carries only stormwater runoff from buildings and land surfaces.
stormwater	The portion of precipitation that does not percolate into the ground or evaporate. Stormwater flows across the ground surface in channels or ditches, or flows within pipes.
stormweather plant	See CSO treatment plant .
stratigraphy	The orderly succession (in space and time) of geological units. Also refers generally to any given vertical succession of sediment or rock.
structural lid sub-alternative	One of two possible courses of action evaluated in this EIS for the Unocal System alternative in addition to the basic system alternative. A structural lid could be constructed to cover part of the treatment plant to accommodate the Edmonds Crossing project or other amenities, such as a park. (See 72-mgd sub-alternative .)
subduction zone	An elongated region where two tectonic plates collide, resulting in one plate overriding the other.
substrate	Soil layers below the surface of the bed of a body of water.
subtidal	The shallow waters immediately seaward of the mean lower tide line where the sediments are never exposed.
sulfuric acid	A highly reactive, corrosive liquid used for pH control in odor control facilities.
Superfund	See Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) .
surcharge	The process of filling a conveyance pipe as a means to control sanitary sewer overflows .
surface water	Any water, including fresh water and salt water, on the surface of the earth.
suspended solids	Particles of organic or inorganic pollutants that float on the surface of, or are suspended in, wastewater and that cloud the water. Refers to sand, mud, and clay particles as well as solids in wastewater .
temperature inversion	Occurs when cold air is trapped under warm air, preventing vertical mixing in the atmosphere.
tertiary treatment	Any advanced treatment of wastewater that goes beyond the secondary or biological treatment stage and includes the removal of nutrients such as phosphorus and nitrogen and a high percentage of suspended solids .

303(d) list	A list of surface waters in Washington State that do not meet applicable surface water quality standards. The list is prepared by the Washington State Department of Ecology .
till	Glacial drift, consisting of an overconsolidated mixture of clay, silt, sand, gravel, and boulders ranging widely in size and shape.
total maximum daily load (TMDL)	The maximum amount of pollution that can be assimilated in a water body in a day that will not violate water quality standards. A margin of safety is included so that any variability, regardless of source, would not produce a violation of Washington State Water Quality Standards .
total suspended particulate matter (TSP)	Particulate matter measured by the federal reference high volume method. TSP samples collect all particles up to 25 to 50 micrometers in diameter.
total suspended solids (TSS)	A measure of the concentration of particles suspended in water. Suspended solids reduce the amount of light that penetrates the water and can clog the gills of fish and aquatic invertebrates. The wastewater treatment process uses a number of techniques to settle out and remove suspended solids before discharge.
trace metal	Any metallic element detected in biosolids in extremely low concentrations (equal to or less than 100 parts per million). The term is also commonly used as a synonym for micronutrient, although not all nutrients are metals.
transition structure	A structure that connects the discharge end of the effluent conveyance tunnel to the inlet of the outfall .
trenching	See open cut .
truck trip	A one-way trip made by a truck either inbound or outbound (assumed to be part of a roundtrip) for purposes of constructing or operating Brightwater System facilities.
trunk	A pipeline that receives flow from many tributary pipes and serves a large territory. Also known as a main sewer.
tunneling	Method used for excavating a tunnel within the earth and installing pipes. A tunnel boring machine (TBM) is inserted through a launching portal and retrieved from a recovery portal. Workers are positioned immediately behind the cutting head of the TBM to control and operate the machine. The cutting head breaks up the ground and sends it through the TBM. The excavated soils and rocks are loaded into rail cars, brought to the surface through the portal, and hauled away by trucks. The tunnel is lined as the soil is removed. Because of the large size of the TBM, this method requires more surface area for portals than microtunneling . It is more suitable for installing larger diameter pipes and for routes with few angles or bends.

turbidity	A measure of the amount of material suspended in water. Increasing the turbidity of the water decreases the amount of light that penetrates the water column . High levels of turbidity are harmful to aquatic life.
tsunami	A very large ocean wave caused by an underwater earthquake or volcanic eruption.
ultraviolet disinfection (UV)	A means to disinfect treated wastewater prior to discharge or reuse. Ultraviolet light penetrates the cells of microorganisms and destroys their ability to reproduce.
underpinning	A means or device to keep structures erect, stable, or secure. One type of underpinning involves driving a hollow caisson into the ground and filling it with concrete to support the structure.
Unocal System	One of three action alternatives considered for the Brightwater System. The Unocal System would consist of a wastewater treatment plant at the Unocal site in the city of Edmonds in Snohomish County, a conveyance corridor with an influent tunnel extending underground from existing pipelines in Kenmore and Bothell to the treatment plant site, and an outfall extending into Puget Sound from Point Edwards west of the treatment plant site.
urban growth area (UGA)	Areas designated by counties in Washington state under the Growth Management Act within which urban growth is encouraged and outside of which growth can occur only if it is not urban in nature. Areas must be designated sufficient to accommodate projected growth for a 20-year period, and public services and utilities must be provided to serve the projected growth with the UGA.
vehicle trip	A one-way trip either inbound or outbound (assumed to be part of a roundtrip) for purposes of constructing or operating Brightwater System facilities.
view corridor	A framework for evaluating the aesthetic environment. A view corridor is a continuous composite view of a site either along a linear path or across an expanse. (See site setting and viewpoint .)
viewpoint	A framework for evaluating the aesthetic environment. A viewpoint is a location from which a site can be seen, sometimes defining a specific point within a view corridor . (See site setting .)
volatile organic compounds (VOC)	Carbon-based chemical compounds that evaporate quickly (have a high vapor pressure) under atmospheric conditions.
volitalization	A change in a chemical's form from liquid to a vapor, facilitating its emission into the surrounding air.

Washington Administrative Code (WAC)	The codified regulations adopted by various Washington State agencies through the rule making process.
Washington State Department of Ecology (Ecology)	The state agency designated by the Environmental Protection Agency to be responsible for developing, implementing, and enforcing environmental protection laws and policies, including the state Clean Water Act and the Shoreline Management Act. Ecology issues the NPDES permit , which allows a wastewater treatment plant to operate.
Washington Ranking Method (WARM)	A method developed by the Washington State Department of Ecology that ranks the environmental and public health risk associated with a known or suspected hazardous waste site.
wasteload	The mass of a particular pollutant discharged to a receiving water .
wasteload allocation	The portion of a receiving water's total maximum daily pollutant load that is allocated to one of its existing or future point sources of pollution.
wastewater	The water and wastes from homes and businesses that enter pipes and are transported to treatment plants for treatment and disposal.
water column	The open-water environment, as distinct from the bed or shore, that may be inhabited by swimming marine or freshwater organisms.
water table	The upper surface of the zone of saturation of groundwater .
Water Quality Criteria	The levels of pollutants that affect use of water for drinking, swimming, raising fish, farming, or industrial use.
Water Quality Standards	Washington State standards that define what water will be used for, set levels to protect those uses, implement and enforce water treatment plans, and protect existing high quality waters.
water reclamation	The reuse of wastewater treated to tertiary levels according to the Water Reclamation and Reuse Standards, issued by the Washington State Departments of Health and Ecology in 1997. Four classes of reclaimed water were established based on the end uses of the reclaimed water. The Brightwater plant will produce Class A reclaimed water. Allowed end uses of Class A reclaimed water are irrigation of food and non-food crops and irrigation of open access areas, such as parks. The water could also be used for industrial cooling and process water and other non-drinking-water (non-potable) uses.
wellhead protection area	The area managed by a community to protect groundwater-based public drinking water supplies.
weir	An obstruction in the wastewater flow that is used to measure or control flow.

Glossary

wetland	Land with saturated soils that are at least periodically inundated and that under normal conditions support vegetation suited to such environments. Wetlands include swamps, marshes, and bogs.
West Point Treatment Plant	A King County regional wastewater treatment plant, located in Seattle's Discovery Park.
vadose zone	Relating to water that is located in the zone of aeration in the Earth's crust above the groundwater level.
zone of initial dilution	The region in which a discharge is being mixed into the ambient environment due to the initial buoyancy or momentum of the discharge. Usually comprises the distance between the discharge location and the location at which the plume reaches its trapping depth.
zone of saturation	An underground layer in which every available space is filled with water.