

GLOSSARY OF KEY TERMS

Average dry weather flow: The average non-storm flow over 24 hours during the dry months of the year (May through September). It is composed of the average sewage flow and the average dry weather inflow/infiltration.

Average wet weather flow: The average flow over 24 hours during the wet months of the year (October through April) on days when no rainfall occurred on that or the preceding day.

Base flow: Wastewater flow (including a reasonable amount of inflow and infiltration) originating from residential, commercial and industrial sources.

Baseline Study: A study that documents the existing state of an environment to serve as a reference point against which future changes to that environment can be measured.

Best Management Practice (BMP): A method, activity, or procedure for reducing the amount of pollution entering a water body.

Calibration: The determination, checking, or rectifying of the graduation of any instrument giving quantitative measurements. With respect to a computer model, calibration is a process whereby data recorded during an actual event is compared with data derived from a computer simulation of that event in order to determine the accuracy of the simulation.

Clean Water Act (CWA): Also known as the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.).

Collection main: In collection systems, this is a larger pipe in which smaller branch and submain sewers are connected. The collection main may also be called a main or trunk sewer.

Collection system: In a wastewater system, a collection system is a system of pipes, which receives and conveys sewage and/or storm water.

Combined sewers: A sewer that carries both sewage and stormwater runoff.

Combined sewer overflows (CSOs): Overflows, during wet weather, of combined wastewater and stormwater. CSOs happen when flows in the wastewater collection system exceed the capacity of that system. The term "CSO" is also sometimes used to denote a pipe that discharges those overflows.

Combined sewer system: A wastewater collection and treatment system where domestic and industrial wastewater is combined with storm runoff.

CSO event: A period of rainfall during which an overflow was recorded and that was preceded by 24 hours with no overflow and followed by 24 hours.

CSO treatment plant: A plant designed to provide primary treatment of combined sanitary sewage and storm water for peak flows above the 2.25 times the average wet weather flow. Such plants operate only intermittently, unlike most wastewater treatment plants, which operate continuously.

Design event: A computer-simulated combined sewer overflow event, usually based on a design storm, which is used to determine the probable response of the sewer system to proposed modifications.

Design storm: A rainstorm used in the design of wastewater systems, primarily for systems that control combined sewer overflows. A particular storm may be selected as a design storm because adequate data exist to allow a calibration of a computer model being used to simulate the behavior of the sewer system during that storm.

Detention: The process of collecting and holding back stormwater or combined sewage for delayed release to receiving waters.

Discharge, direct or indirect: The release of wastewater or contaminants to the environment. A direct discharge of wastewater flows from a land surface directly into surface waters, while an indirect discharge of wastewater flows into surface waters by way of a wastewater treatment system.

Disinfection: A chemical or physical process that kills organisms, which cause infectious disease. Chlorine is often used to disinfect treated sewage.

Diurnal base flow: Two peaks in the wastewater flow within the wastewater system in a single day.

Domestic wastewater: Human-generated sewage that flows from homes and businesses.

Effluent: Treated water, wastewater or other liquid flowing out of a treatment facility (see influent).

Environmental assessment: A written environmental analysis which is prepared pursuant to the National Environmental Policy Act to determine whether a proposed action would significantly affect the environment and thus require preparation of a more detailed environmental impact statement.

Environmental Impact Statement (EIS): A document that discusses the likely significant impacts of a development project or a planning proposal, ways to lessen the impacts, and alternatives to the project or proposal. EISs may be required by national and state environmental policy acts.

Environmental Protection Agency (EPA): A federal agency established in 1979 by presidential executive order to control pollution of the environment.

Fecal coliform bacteria: A group of organisms common to the intestinal tracts of humans and animals. The presence of fecal coliform bacteria in water, wastewater, or biosolids is an indicator of pollution and possible contamination by pathogens.

Groundwater infiltration: Infiltration that enters the sewage system through pipe defects located below the normal groundwater table.

Impervious Surface – A surface that does not allow water or other liquids to pass through it (for example, pavement).

Infiltration: The penetration of water from the land surface into the soil, or the penetration of water from the soil into a sewer system by such means as defective pipes, pipe joints or connections, or manhole walls.

Inflow: Flows of extraneous water into a wastewater conveyance system from sources other than a sanitary sewer connection, such as roof leaders, basement drains, manhole covers, and cross-connections from storm sewers.

Influent: Water, wastewater or other liquid flowing into a reservoir, basin or treatment plant (see effluent).

Influent pump station: A pump station that pumps flow from an interceptor sewer into a treatment plant.

Infrastructure: Streets, water, sewer lines, and other public facilities basic and necessary to the functioning of an urban area.

Interceptor: Large sewers that collect wastewater from local trunk sewers and convey it to the wastewater treatment plants.

Lateral sewers: Pipes that receive sewage from homes and businesses and transport that sewage to trunks and mains.

Long-Term Control Plan (LTCP) – A detailed plan required under NPDES permits for combined sewer systems. The plan, which includes costly infrastructure projects, must reduce overflows, and must not impact water quality.

Main sewer: This is a larger pipe in which smaller branch and sub-main sewers are connected. It may also be called a trunk sewer.

MG: Million gallons, a measure of liquid volume.

Mgd: Million gallons per day, a rate of liquid flow.

National Pollutant Discharge Elimination System (NPDES): The national program administered by the EPA in compliance with the Clean Water Act that controls discharges of pollutants into waters such as lakes, rivers and streams. NPDES permits contain limitations based on water pollution control technology and surface water (lakes, rivers, streams) quality standards, whichever is more stringent. They also establish best management practices (BMPs) and monitoring and reporting requirements. Entities that discharge or propose to discharge into the Nation's waters must apply for a permit.

Non-point source pollution: Pollution that enters water from dispersed and uncontrolled sources (such as surface runoff) rather than through pipes. Non-point sources (for example, stormwater runoff from agricultural or forest operations, on-site sewage disposal systems, and discharge from boats) may contribute pathogens, suspended solids, and toxicants. The cumulative effects of non-point source pollution can be significant.

NPDES Permit: Permit issued under the National Pollution Discharge Elimination System, which establishes reporting requirements and other conditions for discharge of pollutants to receiving waters.

Outfall: The exit point, usually a pipe or pipes where flow is discharged from the wastewater system into receiving water and which is engineered to ensure dispersion and dilution of the effluent in the receiving waters.

Pathogens: Microorganisms that can cause disease in other organisms or humans, animals, and plants. Pathogens include bacteria, viruses, fungi, or parasites found in sewage, in runoff from farms or city streets, and in water used for swimming. Pathogens can be present in municipal, industrial, and non-point source discharges.

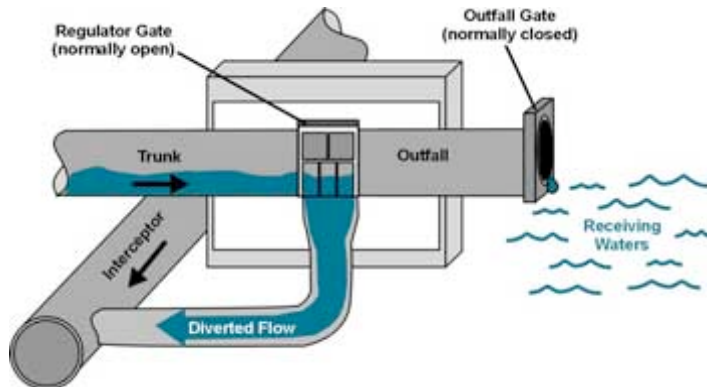
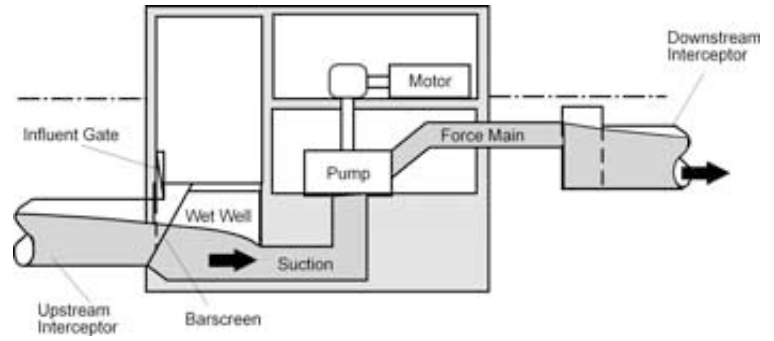
Peak flow: The maximum flow expected to enter a facility.

Primary treatment: The first stage of wastewater treatment involving removal of floating debris and solids by screening and/or settling.

Point Source Pollutants: Those pollutants that enter the receiving water from any discernable, confined and discrete source or outlet such as a sewer pipe, culvert, tunnel or other channel.

Publicly-Owned Treatment Works (POTW): A treatment system, as defined by the Clean Water Act (Section 212) that is owned by the state or municipality. This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW treatment plant.

Pump station: A pump station is used when sewer trunk lines have conveyed flows to a low-lying area. The pump station lifts the wastewater up to a point where it can flow by gravity to a wastewater treatment plant or another pump station.



Regulator: A structure that controls the flow of wastewater from two or more input pipes (trunk lines) to a single output (usually a larger interceptor line). Regulators can be used to restrict or halt flow, thus causing wastewater to be stored in the conveyance system until it can be handled by the treatment plant.

Runoff: That part of precipitation, snow melt, or irrigation water that runs off of the land surface into streams or other surface water instead of infiltrating the land surface.

Secondary treatment: Biochemical treatment of wastewater after the primary stage, using bacteria to consume the organic wastes. The secondary treatment step includes aeration, settling, disinfection and discharge through an outfall. Secondary treatment in conjunction with primary treatment removes about 85 to 90 percent of suspended solids in wastewater.

Sediment: Once-suspended material, which has settled to the bottom of a liquid.

Sediment quality standards: Standards which identify chemical concentration and biological toxicity limits allowed in sediments which correspond to no observable acute or chronic adverse effects on biological resources and which do not pose a significant health threat to humans.

Sedimentation tanks: Tanks or tunnels for holding wastewater where floating wastes are

skimmed off and solids settle by gravity. Settled solids, called "sludge," are pumped out for further treatment. Sedimentation tanks are also referred to as clarifiers.

Separation, total or partial: A method for controlling combined sewer overflow whereby the combined sewer is separated into both a sanitary sewer and a storm drain, as is the practice in new development. Separation may be total, in which case no stormwater is diverted to the sanitary sewer, or it may be partial, involving only the removal of runoff from streets and parking lots from the sanitary system.

Setpoint: A defined indicator point in an electronic or mechanical control system where an action takes place. In a sewage conveyance system, a setpoint is generally the liquid level or flow rate, which causes a valve to be opened or closed or a pump to be activated.

Sewerage: The system of sewers and physical facilities employed to transport, treat, and discharge sewage.

Sewer: A channel or conduit that carries wastewater or stormwater runoff from the source to a treatment plant or receiving stream. Sanitary sewers carry household, industrial, and commercial wastewater. Storm sewers carry runoff from rain or snow. Combined sewers carry both kinds of water.

Sewer system: Collectively, all of the property involved in the operation of a sewer utility. It includes land, wastewater pipes, pumping stations, treatment plants, and general property. It may also be called a sewerage or wastewater system.

Side sewer: A privately owned and maintained sewer which connects the plumbing system of the building to the public sewer pipes.

State Environmental Policy Act (SEPA): A state law (Chapter 43.21C RCW) that requires state agencies and local governments to consider environmental impacts when making decisions about 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.

Storage: A method for controlling combined sewer overflows by storing the combined sewage until the rainstorm subsides, then releasing it back into the conveyance system to be treated at the usual treatment plant.

Storm drain: A system of gutters, pipes, or ditches used to collect and carry stormwater from buildings or land surfaces to streams, lakes, or other receiving waters. In practice storm drains carry a variety of substances such as sediments, metals, bacteria, oil, and antifreeze which enter the system through runoff, deliberate dumping, or spills. This term also refers to the end of the pipe where the stormwater is discharged.

Storm sewer: A system of pipes (separate from sanitary sewers) that carry only water runoff from building and land surfaces.

Stormwater: Water that is generated by rainfall and is often routed into drain systems in order to prevent flooding.

Suspended solids: Small particles of organic or inorganic materials that float on the surface of, or are suspended in, sewage or other liquids and which cloud the water. The term may include sand, mud, and clay particles as well as waste materials.

Toxic: Causing death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), or physical deformations in any organism or its offspring upon exposure, ingestion, inhalation, or assimilation.

Treatment: Chemical, biological, or mechanical procedures applied to industrial or municipal wastewater or to other sources of contamination to remove, reduce, or neutralize contaminants.

Trunk sewer: This is a larger pipe in which smaller branch and submain sewers are connected. It may also be called a main sewer.

Wastewater: Total flow within a sewerage system. In separated systems, it includes sewage and infiltration/inflow. In combined systems, it includes sewage and stormwater.

Wastewater collection system: The piping and pumping system used for the collection and conveyance of domestic, commercial, and industrial wastewater.

Water quality criteria: Standards used to protect of water for drinking, swimming, raising fish, farming or industrial use.

Water pollution: The addition of harmful or objectionable material to water in concentrations or sufficient quantities to adversely affect its usefulness or quality.

Weir: An overflow section of a pipe.