APPENDIX 1

Glossary of Terms

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anaerobic: An environment devoid of oxygen and nitrate.

anoxic: An environment devoid of oxygen where nitrate acts as the electron acceptor.

aquiclude: A geologic formation which, although porous and capable of absorbing water slowly, will not transmit it rapidly enough to furnish an appreciable supply for a well or spring. The permeability is so low that, for all practical purposes, water movement is precluded or severely restricted.

aquifer: A porous, water-bearing geologic formation. Generally restricted to materials capable of yielding an appreciable supply of water.

average annual flow (AAF): The flow averaged over a 1-year period.

average design flow (ADF): The average monthly flow of the maximum month, estimated for the design year of the wastewater facility. The ADF typically occurs during wet weather.

average dry weather flow (ADWF): Average dry weather flow is the monthly average 24-hour flow during a dry weather flow period.

average wet weather flow (AWWF): Average wet weather flow is the monthly average 24-hour flow during a wet weather flow period.

biochemical oxygen demand (BOD_5): The quantity of oxygen required to support biological oxidation of the organic matter contained in wastewater. Usually referred to as BOD, this characteristic defines the strength of a wastewater and often determines the type and degree of treatment which must be provided to produce a required effluent quality. BOD is commonly expressed as the amount of oxygen utilized in the oxidization of organic matter over a 5-day period at 20°C.

carbonaceous biochemical oxygen demand (CBOD): Similar to biochemical oxygen demand, except that nitrification is excluded, typically by using inhibiting agents.

collection system: The network of sewer pipes and appurtenances that collect and carry wastewater to a sewage lift station (wet well) or a treatment plant via gravity (*note: for purposes of this Facility Plan, "collection" is used generically to describe the entire piping system that carries wastewater to a treatment plant, including both gravity and pumped systems*).

combined sewer: A sewer that receives both wastewater and stormwater or surface water.

commercial wastewater: Wastewater generated in predominantly business or commercial districts, including both sanitary wastes and wastes from the commercial activities. Typically, commercial wastewater includes wastes from restaurants, laundromats, and service stations.

conveyance system: The network of sewage lift stations, force mains, and appurtenances that carry wastewater to a sewage lift station (wet well) or a treatment plant via pump-generated pressure (*note: for purposes of this Facility Plan, "collection" is used generically to describe the piping system that carries wastewater to a treatment plant, including both gravity and pumped systems*).

denitrification: Removal of nitrogen from wastewater by convection of nitrate into nitrogen gas under anoxic conditions.

domestic wastewater: Wastewater principally derived from the sanitary conveniences of residences or produced by normal residential activities.

dry weather flow: Wastewater flow during periods of little or no rainfall. Rates of flow exhibit hourly, daily, and seasonal variations. A certain amount of infiltration may also be present. See also "average dry weather flow" and "peak dry weather flow."

hydrogen sulfide: A potentially toxic and lethal gas (chemical symbol H_2S) produced in sewers and digesters by anaerobic decomposition. Detectable in low (<0.01 percent) concentrations by its characteristic "rotten egg" odor, it deadens the sense of smell in higher concentrations or after prolonged exposure. Respiratory paralysis and death may occur quickly at concentrations as low as 0.07 percent by volume in air.

infiltration: The quantity of groundwater that leaks into the wastewater collection system from the surrounding soil. Common points of entry include broken pipes and defective joints in the pipe or in walls of manholes. Infiltration may result from sewers being laid below the groundwater table or from saturation of the soil by rain or irrigation water.

inflow: Rainwater which enters the collection system through roof drain connections, catch basin connections, and holes in the tops of manhole covers in flooded streets. Inflow is generally distinguished from infiltration by the rapidity with which inflow begins and ends after a period of rainfall. Infiltration, on the other hand, may persist for an extended period after a rainfall.

interceptor: A sewer that receives flow from a number of main or trunk sewers, force mains, etc. Minimum peak design flow should be not less than 250 percent of the average day wet weather design flow.

lateral: A sewer that has no other common sewers discharging into it. Minimum peak design flow should be not less than 400 percent of the average day wet weather design flow.

main: A sewer that receives flow from one or more submains. Also referred to as "trunk." Minimum peak design flow should be not less than 250 percent of the average day wet weather design flow.

maximum day flow (MDF): The largest estimated flow rate sustained over a 24-hour period in the design year of the wastewater facility.

mg/L: Milligrams per liter. See also "ppm."

nitrification: The process of converting organic and ammonia-nitrogen into nitrate nitrogen by nitrifying autotrophic bacteria.

nitrogen: An essential nutrient that is often present in wastewater as ammonia, nitrate, nitrite, and organic nitrogen. The concentrations of each form and the sum, total nitrogen, are expressed as mg/L elemental nitrogen. Also present in some groundwater as nitrate and in some polluted groundwater in other forms.

peak design flow (PDF): The largest estimated flow rate sustained over a 60-minute period in the design year of the wastewater facility. The PDF is, therefore, the PWWF in the design year.

peak dry weather flow (PDWF): Peak dry weather flow is the rate of flow during the peak hour during a dry weather flow day.

peak wet weather flow (PWWF): The rate of flow during the peak hour of a wet weather day. Also referred to as the peak design flow (PDF).

pH: A measure of the hydrogen-ion concentration in a solution, expressed as the logarithm (base 10) of the reciprocal of the hydrogen-ion concentration in gram moles per liter. On the pH scale (0–14), a value of 7 at 25°C represents a neutral condition. Decreasing values, below 7, indicate increasing acidity; increasing values, above 7, indicate increasing alkalinity.

phosphorus: An essential chemical element and nutrient for all life forms. Occurs in orthophosphate, pyrophosphate, tripolyphosphate, and organic phosphate forms. Each of these forms is expressed as mg/L elemental phosphorus.

Revised Code of Washington (RCW): Document that consists of laws passed by the Washington State legislature.

sewerage: A complete system of piping, pumps, basins, tanks, unit processes, and appurtenances for the collection, transporting, treating, and discharging of wastewater. Term is declining in use, generally being replaced by sewer system or wastewater facilities.

submain: A sewer that receives flow from one or more lateral sewers. Minimum peak design flow should be not less than 400 percent of the average day wet weather design flow.

suspended solids: The suspended material transported in wastewater. The quantity of suspended material removed during treatment varies with the type and degree of treatment and has an important bearing on the size of many mechanical and process units. Also referred to as "total suspended solids" (TSS).

total maximum daily load (TMDL): The maximum amount of a pollutant that can be discharged to the water body in a 1-day period without violating the water quality standard for that pollutant.

total suspended solids (TSS): See "suspended solids."

trunk: A sewer that receives flow from one or more submains. Also referred to as "main." Minimum peak design flow should be not less than 250 percent of the average day wet weather design flow.

volatile suspended solids (VSS): The organic portion of the total suspended solids which will oxidize and be driven off as a gas at 600°C. VSS typically represents 75 to 85 percent of the TSS for digested and undigested sludge.

Washington Administrative Code (WAC): Document which consists of regulations adopted by the state to carry out the RCW.

wastewater: Water-carried wastes from residences, businesses, institutions, and industrial establishments, together with such groundwater and stormwater as may be present.

wastewater treatment plant (WWTP): A water pollution control facility engineered and constructed to remove pollutants from wastewater. Also referred to as a sewage treatment plant.

wet weather flow: Wastewater flow during or following periods of moderate to heavy rainfall. Inflow may increase the wet weather flow to a rate many times greater than the dry weather flow, and unless provided for in sewerage design, can produce hydraulic overloads resulting in wastewater overflows to streets or water courses.