

**ATTACHMENT 2:
WASTEWATER TREATMENT
PLANT DESCRIPTION**

Attachment 2: Description of the Grass Valley Wastewater Treatment Plan Process

Influent wastewater enters the WWTP through two gravity interceptor sewers and is screened through a headworks facility consisting of mechanical bar screens and a grit separator before the water is conveyed to the primary clarifiers. The primary clarifiers remove settleable and floatable material. From the primary clarifiers, wastewater can bypass into equalization storage. After primary clarification and/or equalization storage, the wastewater then moves into two aeration basins that utilize a nitrifying and denitrifying activated sludge system that includes both anoxic and aerobic processes. The bacteria in the activated sludge remove nitrogen in the wastewater. The partially treated wastewater is now called a "liquor." A portion of the mixed liquor is recycled to maintain the desired concentration of organisms in the reactors. Following aeration, secondary clarifiers separate the mixed liquor solids from the wastewater stream during the process of secondary treatment.

Solids from the primary and secondary treatment processes are pumped to an anaerobic digester for decomposition and stabilization of the solids. A gravity belt thickener thickens waste activated sludge from the secondary clarifiers or it is cosettled in the primary clarifiers before it is pumped to the anaerobic digester. Digested sludge is displaced from the digester to a supernatant pit for further digestion, thickening and storage. Stored sludge is dewatered using a 1.5 meter belt filter press and land applied to agricultural reuse sites by contract operators. Supernatant from the supernatant pit and filtrate from the sludge dewatering operation is drained into a filtrate storage tank so that these return flows, which have high ammonia concentrations, can be metered into the liquid stream wastewater treatment processes during off-peak hours.

After secondary clarification deep bed granular media filters remove remaining suspended solids. Accumulated solids are removed by backwashing the filter with treated effluent and air, the backwash water is eventually returned to the primary clarifier after the solids are settled out. Currently, the WWTP continuously adds chlorine in proportion to flow and chlorine demand to the filtered effluent. The chlorinated effluent is held in two plug-flow chlorine contact basins that are time dependent. After the disinfection process, sulfur dioxide is added to neutralize any remaining chlorine. Treated wastewater is discharged through an outfall equipped with cascade aerator to Wolf Creek.

A flow diagram for the liquid stream wastewater treatment facilities is provided in Figure 1.

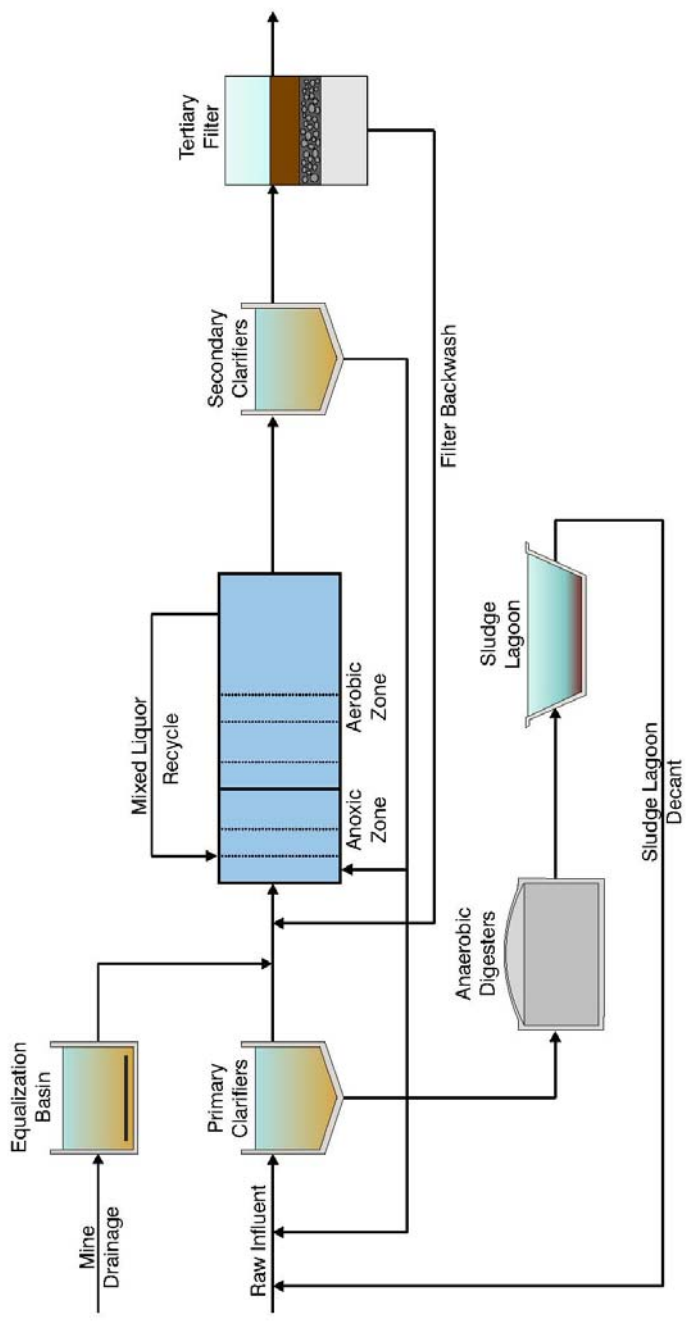


Figure 1.3
GRASS VALLEY WWTP PROCESS FLOW SCHEMATIC
 CITY OF GRASS VALLEY WASTEWATER TREATMENT PLANT