

Final Design

The final design addresses the main issues the plant faced when it closed such as lack of grit removal and too much grit overloading and wearing on the system, issues with the operation and maintenance of the UltraViolet disinfection system leading to insufficient disinfection, lack of redundancy, and the plant would not have been able to treat the increasing flow rate for future populations without upgrades. The final design for the plant includes the treatments in the following order, belt bar screen, aerated grit chamber, in-line equalization basin, traction primary clarifier, rotating biological contactor, upflow anaerobic sludge blanket reactor, spiral scraper secondary clarifier, sand filter, and UV disinfection. The design is broken into three phases in order to accommodate increasing populations and flow rates. Phase 1 is designed for 10 MGD, phase 2 is designed for 12 MGD, and phase 3 is designed for 14 MGD. Throughout each phase additional units of each treatment technology will be added to aid in redundancy and to ensure that the plant can treat the increasing influent flow rate. A grit removal system was added to reduce grit within the system and the Tojan UV Signa disinfection system has automatic lamp sleeve cleaning which aids in the issue of operation and maintenance and increased efficiency of the system while decreasing fouling. The A+ reclaimed effluent that will be discharged after disinfection is recommended to be utilized for aquifer recharge via a streambed in addition to serving current reclaimed users. Below is the final design for each phase along with a flow diagram of the treatment plant.



