

4.5 OTHER IMPROVEMENTS: CODE COMPLIANCE, SAFETY AND PLANT REHABILITATION

Virtually all process equipment requires inspection and repair at a minimum. In most cases, replacement is warranted. Building codes have become more stringent, and what was deemed acceptable 25 years ago, may now be viewed as a hazard or safety issue. HVAC systems and electrical components also require replacement. This subsection is focused on code compliance, safety, plant rehabilitation, and other improvements needed to provide a service life through the end of the 20-year planning period in 2035.

4.5.1 Phosphorus Removal & pH Limit

The chemical currently used to remove phosphorus from the wastewater causes the pH of the water to drop below the permit limit minimum of 6. The City had the chemical supplier perform jar tests for alternate chemicals and also tested caustic addition to raise the pH. Currently it appears the alternate chemical will not be cost effective. The new chemical storage and feed facilities will include space for caustic.

Biological phosphorus removal was considered for the Gilbert facility but is not recommended as a cost effective solution. Construction of bio-P removal tanks and equipment would likely exceed the benefit of the biological reduction in phosphorus. Gilbert's influent phosphorus averages around 4 mg/l requiring the removal of only 3 mg/l. In addition fluctuations in influent flow, pH and wastewater temperature (due to snow melt runoff) can adversely affect bio-P.

4.5.2 Influent/Screening Building

To meet code the ventilation system must provide continuous air changes at 12 per hour, or provide 30 air changes per hour when occupied. The exhaust fans were not operating when the building was occupied. Proper function of the ventilation system must be verified and brought into compliance with current Code and Standards for operator safety. It appears that this can be resolved by changing the control wiring.

4.5.3 Control Building, Operators Space

The building ventilation must be brought up to standards and a new operations center be constructed in another building. All options include cost for addressing this building.

4.5.4 Boiler/Pump Room by Aerobic Digester

This area contains the boiler/heat exchanger and sludge pump for the aerobic digester. The space is a rated environment unless continuous ventilation is provided. The cost effective solution for this area is to provide continuous ventilation. The alternative is to provide rated electrical equipment which is very expensive. Rated electrical equipment would not alleviate the possible hazard of unbreathable air in the space.