Northwest Water Reclamation Plant (NWWRP) Process Improvements

Pre-submittal Conference
April 30, 2020
8:00 am
Process Improvements

- New Headworks with Grit Removal System
- Aeration Basin Upgrades
- Effluent Disinfection System Overhaul
- Supplement Carbon Feeding System Upgrade
- Critical Building UPS and EI&C Upgrade
- PLC Upgrades
Headworks with Grit Removal System
Headworks with Grit Removal System

- New headworks
  - Building
  - Bar screens
  - Process flow channels
  - Mechanical equipment
  - Bring Electrical, Instrumentation and controls (EI&C) to code

- New Grit Removal System

- Replacement / Upgrade of existing flow distribution to train 3 and 4

- Evaluate existing electrical room – bring up to code

- Establish interconnection of Primary No. 3 and No. 4
Aeration Basin Upgrade
Aeration Basin Upgrade

- Improvements to meet 12 MGD flow (average day)
  - A blower study and recommend an alternative to meet the 12 MGD capacity
  - Other recommendations pertaining to aeration basin
- Life-cycle equipment replacement
  - Blower actuators
  - D.O. probes
  - Electrically actuated air control valves
  - Sampling equipment
  - Electrical equipment
  - RAS/WAS Piping replacement
  - Evaluate baffling and zoning
Effluent Disinfection System Overhaul
Effluent Disinfection System Overhaul

- Evaluate alternatives for disinfection
  - Replace existing UV system (including PLC upgrades)
  - Or install chlorine contact basin
- Effluent Pump station modifications needed to deliver the effluent to the Gila River Indian Community for Central Arizona Project (CAP) water credit exchange.
Supplement Carbon Feeding System Replacement

- Evaluate the need for a new supplement carbon feeding system based on demand from all the other process improvements.
Critical Building UPS and EI&C Upgrade

- Plant wide power study
- Identify critical buildings requiring building UPS
- Upgrade electrical system to accommodate the new UPS system
PLC Upgrades

- Replacement I/Os for PLC-C and PLC-D
- Replacement PLC processors and I/Os for filter polymer, thickening centrifuges and dewatering centrifuges
- Electrical system upgrades to accommodate the new PLCs
Project Schedule

• Expected Design
  • August 2020 – December 2021
• Expected Construction
  • January 2022 – July 2023

• Coordination with ongoing plant projects