Yellowstone National Park

Rehabilitate/Replace Old Faithful Water Treatment Plant (WTP)

Rehabilitate/Replace Grant Wastewater Treatment System and Collection System

Rehabilitate Canyon Wastewater Treatment System and Collection System

Rehabilitate Mammoth Collection System

YELL 310533, 310402, 311631
Replace/Rehabilitate Old Faithful Water Treatment Plant

FY22 Wastewater Treatment Facilities

- Estimated Price: $85M - $100M
- Design & Construction Method: Design / Build
- Procurement Method: Full and Open Competition
- Schedule (Approximate):
  - Solicitation Date: 07/2022
  - Award Date: 09/2022
  - Period of Performance: (anticipated)
    - Design: 228 days
    - Construction: 915 days
    - Overall: 1,143 days
Replace/Rehabilitate Old Faithful Water Treatment Plant

• Brief Description

The existing Old Faithful water treatment system was constructed in the early 1980s and supplies drinking water to the Old Faithful Village. A combination of aging infrastructure, new regulatory requirements, and building code deficiencies, necessitate a replacement of the water treatment plant and associated supply and distribution pipelines. Improved arsenic removal is a critical consideration.

• Location: Old Faithful Area, Yellowstone National Park WY
Replace/Rehabilitate Old Faithful Water Treatment Plant

- Performance Constraints & Other Considerations
  - Geothermal features lead to high arsenic levels in source water
  - Seasonal construction challenges due to heavy snows
  - High variability in seasonal demand
Replace/Rehabilitate Old Faithful Water Treatment Plant

Performance Constraints & Other Considerations

- Plant must remain operational during construction with only short outages
- Requires SCADA – no current infrastructure in place

Aging Plant Components

Protection of wildlife and natural resources

Lack of modern controls/SCADA
Replace/Rehabilitate Old Faithful Water Treatment Plant

Additional Challenges: Existing raw water and finished water lines are "Techite" brand pipe. Known to be brittle and result in catastrophic failure.

Replacement will require a temporary bypass line to ensure continued potable water supply to Old Faithful Village.

Raw Water Intake Structure will be rehabilitated
Replace/Rehabilitate Old Faithful Water Treatment Plant

- Rehabilitate Pre-sedimentation system
- New WTP Building
- New SCADA, improved plant automation
- New Solids Drying Beds
- New backup generator
- Demolish existing WTP Building
Replace/Rehabilitate Canyon Village Wastewater Treatment Plant & Collection System (Phase 1)

• Brief Description

The existing Canyon Village Wastewater system treats all wastewater from the Canyon Village. Aging infrastructure and code deficiencies, necessitate the rehabilitation of the collection system and wastewater treatment plant. Due to funding limitations this will be accomplished in a phased program. Phase 1 will include rehab of two lift stations, rehab of the collections system to reduce I&I, and a full replacement of the headworks/septage receiving as well as component rehabilitation to ensure operability for the planning horizon.

• Location: Canyon Village, Yellowstone National Park (YELL), WY
Replace/Rehabilitate: Canyon WWT System, Grant WWT System, & Mammoth Collection System

- Performance Constraints & Other Considerations
  - Effluent discharges to Yellowstone River – a designated blue-ribbon river
  - Seasonal construction challenges due to heavy snows
  - High variability in seasonal flows

Headworks facilities: Inadequately sized, poor ventilation, require modern pre-treatment technology

Aging Collection System components

Necessary to Protect Yellowstone’s pristine waters
Replace/Rehabilitate Canyon Village Wastewater Treatment Plant & Collection System

- Performance Constraints & Other Considerations
  - Plant must remain operational during construction
  - Requires SCADA – no current infrastructure in place
  - Off-road travel limited due to natural resource protection

Lower Falls: Grand Canyon of the Yellowstone – Plant discharges to the Yellowstone River above the lower falls

Canyon Headworks/Septage Receiving requires full replacement

Canyon Village WWTP Lagoon - surface aeration system
Replace/Rehabilitate Cayon Village Wastewater Treatment Plant & Collection System

Phase 1 (FY22 Project)
- Replace Headworks
- Replace/Rehabilitate Collection System and Upper Brink and Government Area lift stations
- Rehabilitate/replace solids pond decant lift station

Phase 2 (Future Project)
- New activated sludge MBR w/ nutrient removal
- Digesters
- Dewatering
Replace/Rehabilitate Canyon Village Wastewater Treatment Plant & Collection System

Collection system rehabilitation through trenched and trenchless methods

- Approx. **9.4** miles of sewer **mains**
- Approx. **2.6** mile of sewer **laterals**
- CCTV and condition assessment is ongoing to evaluate the existing system
- Data from the condition assessment will be provided to develop an appropriate trenched/trenchless rehabilitation methods
- The project will rehabilitate the highest priority sewer lines to the extent of available budget
Replace/Rehabilitate Grant Village Wastewater Treatment Plant & Collection System

• Brief Description

The existing Grant Village Wastewater system treats all wastewater from the Grant Village. A combination of aging infrastructure, new regulatory/permitting requirements, and code deficiencies necessitate the replacement of the wastewater treatment plant. Grant collection system also experience high seasonal I&I and the system requires significant rehabilitation through both trenchless and trenched construction. Previous issues with nitrate discharge has resulted in past algae blooms in Yellowstone Lake.

• Location: Grant Village, Yellowstone National Park (YELL), WY
Replace/Rehabilitate Grant Village Wastewater Treatment Plant & Collection System

- Performance Constraints & Other Considerations
  - Site abuts Yellowstone Lake
  - Seasonal construction challenges due to heavy snows
  - High variability in seasonal flows
  - Plant must remain operational during construction with only short outages
  - Requires SCADA – no current infrastructure in place
  - Off-road travel limited due to natural resource protection

Percolation Pond: Inadequate treatment has led to high nitrates percolating into the Groundwater leading to concerns of contamination in Yellowstone lake

Yellowstone Lake: Grant WWTP is on the shores of the 132 square mile lake

Grant Headworks Lift Station with Yellowstone Lake behind
Replace/Rehabilitate Grant Village Wastewater Treatment Plant & Collection System

Collection system rehabilitation through trenched and trenchless methods

- Approx. **6.1** miles of sewer **mains**
- Approx. **1.0** mile of sewer **laterals**
- CCTV and condition assessment is ongoing to evaluate the existing system
- Data from the condition assessment will be provided to DB Contractor to develop appropriate trenched/trenchless rehabilitation methods
- The project will rehabilitate the highest priority sewer lines to the extent of available budget
Replace/Rehabilitate Grant Village Wastewater Treatment Plant & Collection System

- Replace Headworks w/ Lakeside Lift Station
- Collection System rehab
- New plant, activated sludge MBR w/ nutrient removal to meet WYDEQ requirements
- Lagoon inspections/rehabilitations
- New Mechanical Dewatering
- New SCADA and telemetry
Replace/Rehabilitate Mammoth Collections System

• Brief Description

The Mammoth Collection System is original infrastructure from the 1950s. It transports all Mammoth Village sewage to Gardiner, MT for treatment. Deterioration of the system has led to high I&I. Due to high levels of arsenic in the groundwater from hydrothermal features, infiltration of arsenic resulted in a lawsuit settled in 2019 and instigated spot repairs of the collections system. This project will focus on full rehabilitation of the system using both trenchless and open trench technologies.

• Location: Yellowstone National Park (YELL), WY, MT
Rehabilitate Mammoth Wastewater Collections System

- Performance Constraints & Other Considerations
  - Sewer Main is under the two-lane highway from Gardiner to Mammoth Village. Main entrance road must remain open during construction.
  - Off-road travel limited due to natural resource protection
  - Trenchless technologies preferred to protect natural resources
  - Limited storage capacity in Mammoth. The system must remain operational during construction. Max outages <30 minutes.

Elk and other wildlife frequent the area, particularly during the fall rut.

Mammoth Hot Springs: High Geothermal Activity in the area

Yellowstone North Entrance Road must remain open.
Rehabilitate Mammoth Wastewater Collection System

- CCTV and condition assessment (including manhole assessment) is ongoing to evaluate the existing system
- Data from the condition assessment will be provided to DB Contractor to develop appropriate trenched/trenchless rehabilitation methods
- The project will rehabilitate the highest priority sewer lines to the extent of available budget