

WATER**Chemical Feed Improvements** **\$ 22,500.00**

Issue: Currently the Plant is operating with the required number of pumps and motors to inject chemical into the water for treatment. However, for emergency scenarios when equipment fails there is not current replacement unit available to use ready for immediate installation.

Solution: The cost for replacement chemical injection pumps is approximately \$12,500 for one type and \$9,000 for the other.

Result: Operationally ready for injection pump failure, reducing the potential for non-compliance.

Transfer Pump Rehab **\$ 48,000.00**

Issue: The plant's operation utilizes four (4) vertical turbine 50 Horsepower pumps to distribute raw water from our ponds into the plant for treatment. These pumps although still in working condition have not been rehabilitated since opening of the plant. These pumps control a critical point of treatment and we would like to rehab both pumps and motor to prevent any breakdown in the future.

Solution: We have acquired pricing for the repair with annual contractor and local repair shops for best pricing. This requires a contract machine shop for complete repair.

Result: Prevention of possible breakdown and eliminate our ability to treat water.

Disinfection System Conversion **\$ 68,000.00**

Issue: Currently plant utilizes Gas Ammonia used in the treatment of water regarding disinfection of water. This system has been identified with multiple leaks and equipment disrepair needed improvements. However, it is recommended we convert the usage of gas and utilize a safer more effective liquid ammonia source to provide this disinfection.

Solution: We received proposals of \$35,000 to repair leaks within the gas system, and the cost for a full new conversion to liquid ammonia would cost 68,000. It is recommended we install the required tanks and pumps to provide this improvement.

Result: Safer and more reliable injection system to provide for Chloramines our water disinfectant.

SCADA System Upgrade **\$ 148,000.00**

Issue: Currently the SCADA system in use and being repaired is a older hardware and software combination that has made the system difficult to repair and difficult to continue operating consistency. SCADA monitoring and control are requirements of TCEQ but also serve to provide more effective and precise treatment of water.

Solution: Staff recommends we change our the software and hardware control systems (PLC) along with communication wiring to fiber controls. In addition, we recommend improving our treatment controls for chemical additon into our clarification process where the injection is controlled via flow pacing. This essentially means the computer will measure the current waters chemistry and flow and calculate the required chemical additon.

Result: TCEQ compliance and improvement of water treatment controls.

Solids Handling Disposal Service **\$ 78,000.00**

Issue: We currently have no contract or services to dispose of solids from both our Water Plant and Wastewater Plant. Drying beds at the Wastewater Treatment Plant are now at 80% capacity. Additonal operation will eliminate our ability to process sludge at our Water and Wastewater Plants.

Solution: Staff has acquired pricing for solids disposal from the Wastewater Drying beds from local Landfills and one landfill has provided for pricing for transportation to the landfill from the plant site as well as landfill fees. These costs are \$30 dollars per ton and \$100 per roll off bin to landfill. This will be required to be programmed into operational funding in FY 2016 for continuous service.

Result: Appropriate disposal of solids handling materials and TCEQ compliance.

Warehouse and Maintenance Shop **\$ 97,000.00**

Issue: We have successfully hired additional personnel with the ability to improve our repair and maintenance, and also our construction ability to improve our distribution and collection systems. However, a maintenance shop is needed where repairs or modifications can occur but also inventory storage where materials can be kept secured on hand for emergency response. This is a dual service project fro Water and Wastewater.

Solution: Staff has acquired pricing through formal Request for Proposals and is awaiting funding to construction this facility on the Water Plant grounds. Sufficient space and utilities are available for the projects completion.

Result: Improves our preventive maintenance capacity, secured county inventory, and greatly improves our ability to respond to customer emergencies.

Elevated Storage Improvements **\$ 360,000.00**

Issue: Lack of maintenance has worn down the required elements of the storage tanks internally and externally, inclusive of manways, corrosion, and access concerns. In addition, the control of disinfection requires post chlorination improvements for the El Cenizo Elevated Storage Facility.

Solution: Contract with LNV Engineering has provided a 90% design for the improvement as well as Plans and Specifications for the project bid.

Result: Compliance with TCEQ Requirements.

River Intake Electrical Improvements **\$ 32,500.00**

Issue: The River Intake Station is the facility on the river bank that houses three (3) submersible pumps providing transmission of water from the River to the plants reservoir. These pumps have been replaced recently, but identification of electrical improvements such as surge suppression and monitoring with controls along with security lighting is required for its maintenance.

Solution: Contract of Annual Contractor for installation of electrical controls.

Result: Redundancy of electrical service along with prevention of vandalism and theft we have had in the past.

Bulk Water Dispensing Station and Accounting System **\$ 62,500.00**

Issue: Treatment of Water produces a waste sludge that contains the removed silt, solids, and chemicals that was in the water. The original plant was not designed with an effective method of sludge removal. Currently we siphon out the solids with our Vacuum Truck and transport to the Sewer Plant for solids drying and disposal to an approved landfill. This operation incorporates multiple inefficient steps and inefficient use of the Vacuum Truck service.

Solution: Initial Feasibility Study and Engineering Report to determine the best effective implementation of either drying beds, Belt Filter Press, or Centrifuge drying of the solids on site. This cost estimate only includes the cost for Engineering and site preparation.

Result: Reduced cost in handling and disposal of waste sludge eliminating the use of equipment that can be providing service within the collection system.

Solids Processing Improvements (Centrifuge Installation) \$ 218,000.00

Issue: Treatment of Water produces a waste sludge that contains the removed silt, solids, and chemicals that was in the water. The original plant was not designed with an effective method of sludge removal. Currently we siphon out the solids with our Vacuum Truck and transport to the Sewer Plant for solids drying and disposal to a approved landfill. This operation incorporates multiple inefficient steps and inefficient use of the Vacuum Truck service.

Solution: Initial Feasibility Study and Engineering Report to determine the best effective implementation of either drying beds, Belt Filter Press, or Centrifuge drying of the solids on site. This cost estimate only includes the cost for Engineering and site preparation.

Result: Reduced cost in handling and disposal of waste sludge eliminating the use of equipment that can be providing service within the collection system.

Distribution Improvements \$ 210,000.00

Issue: Old degraded distribution lines and improvements made where construction of the lines resulted in very limited controls and dead end mains that lead to accumulation of silt and reduced disinfection.

Solution: In-house projects where we can utilize maintenance staff to install isolation valve controls as well connection of dead main for full circulation and improved water quality. This entails excavation and installation of main extension within Rio Bravo and El Cenizo.

Result: Improved water quality, reduced chemical usage.

Security Improvements \$ 22,500.00

Issue: We have been provided an observation from the last TCEQ inspection that our security fencing requires improvements to prevent going into violation status. We also maintain a concern with past occurrences of finding persons in the reservoir that we would like to prevent.

Solution: Repair and improve existing fencing as well as providing for gate access controls

Result: Compliance with TCEQ requirements. Improved safety of customers, employees, and critical equipment.

Safety and Construction Equipment (Excavation Control, Barricades, \$ 62,500.00

Issue: Currently staff is operating with old and outdated maintenance and construction tools needed for emergency response and construction improvements.

Solution: Requesting the acquisition of safety equipment such as barricades, night time lighting, on-site generation, compressor for tools and equipment as well as critical shoring for deep excavation needs within our system.

Result: Complete more in-house repair and improvements and reduce operational costs.

Heavy Equipment (Grounds Maintenance) \$ 75,000.00

Issue: Ground maintenance of the plants facilities is a requirement under State regulations. We have the personnel but not the equipment such as Tractor and Shredder that we could easily maintain both water and sewer facilities.

Solution: Purchase of small 40-50 Horsepower Tractor that with 12" foot shredder for maintenance of grounds

Result: Serviced and neat kept facility.

\$ 1,504,500.00

SEWER**Lift Station Improvements** **\$ 730,000.00**

Issue: This collection system utilizes five pumping stations that transmits wastewater from El Cenizo and Rio Bravo to the Plant for its effective treatment. These units have been in major disrepair for multiple years without the appropriate repair. TCEQ has issues a Notice of Violation regarding elements of these stations that must be corrected prior to Enforcement Action.

Solution: LNV Engineering has completed an engineering design to repair the structures, replace pumping equipment, repair and replace the electrical services, and provide remote alarming of pump failures and overflows.

Result: Comply with current TCEQ Notice of Enforcement regarding plant effluent violations.

Monitoring and Controls **\$ 65,000.00**

Issue: Initial design for the Sewer Plant incorporated monitoring and controls integrated with the collection system Lift Stations that provided for computer monitoring and alert of operator when there are failures. These controls have never been placed back into service after their initial disrepair.

Solution: Acquisition of a project to replace communications and equipment into the Sewer Plant that would repair the monitoring and controls initially operational at the plant.

Result: Improved ability to respond to overflow conditions and equipment failure during raw treatment operation.

Thickener Repair **\$ 128,500.00**

Issue: Removal of expired solids and microorganisms within the Sewer Plant Treatment process does not currently occur. This is an atypical condition in all wastewater plants. The solids are to be removed, dried, and disposed. These solids are to be sent to a Thickener where digestion and liquid removal occurs. The operation of our plant under disrepair has increased treatment costs associated with power, chemicals, and labor has increased exponentially without this process.

Solution: We are estimating that the cost to repair leaks, rake operation, and air injection within the digester will require contractual assistance.

Result: Proper operation of the Plant with more efficient operation.

Waste Sludge Improvements **\$ 78,500.00**

Issue: As discussed in the Thickener Repair above the reactors chamber must be retrofitted with missing submersible pumps and transmission to the Thickener. This is not in operation at this time.

Solution: Project consisting of new electrical wiring of new submersible pumps for waste activate sludge and return activated sludge including the piping repairs need to transfer sludge to the Thickener for additional treatment.

Result: Proper operation of the Plant with more efficient operation.

SBR Mixing Chamber Repair **\$ 138,000.00**

Issue: SBR stands for Sequential Batch Reactors which is the technical term of the designed plant operation. The limits of repairs and maintenance of this system has damaged even further the initial chamber of these reactors that will need repair.

Solution: Demolition of current baffling system in place and installation of concrete baffling system as originally designed.

Result: Proper operation of the Plant with more efficient operation. In addition, this improvement will enable us to utilize the enhanced treatment capacity of Ammonia removal when the new rule is approved.

Security Improvements **\$ 21,000.00**

Issue: We have been provided an observation from the last TCEQ inspection that our security fencing requires improvements to prevent going into violation status. We also maintain a concern with past occurrences of finding persons in the reservoir that we would like to prevent.

Solution: Repair and improve existing fencing as well as providing for gate access controls

Result: Compliance with TCEQ requirements. Improved safety of customers, employees, and critical equipment.

Collection System Improvements **\$ 185,000.00**

Issue: Due to the hazardous and acidic environment our collection lines and manholes must endure we would like to repair multiple manholes before collapse creates emergency blockages. Our examination and inspection of the collection system has identified some critical manholes and collection system lines that have collapsed or are near collapse that internally with existing staff we can provide repair.

Solution: Repair existing manholes with the needed equipment and tools needed to complete the work such as shoring and bypass pumping.

Result: Increase the life of our infrastructure, and eliminate unnecessary sewer overflows endangering our customers.

Sludge Handling Heavy Equipment

\$ 75,000.00

Issue: Currently we do not have equipment necessary to remove sludge out of drying beds.

Solution: Purchase of Bobcat to remove and dump the solids.

Result: Compliance with TCEQ requirements.

\$ 1,421,000.00

Grand Total

\$ 2,925,500.00
