



Loan Contract Number DM-952-129

Project Information:

Project Title: Water Supply and Treatment Improvement

Scope of Work:

Design and construction of improvements to the North Beach Water District North Wellfield and Treatment Facility and North Beach Water District South Wellfield and Treatment Facility. Integrate telemetry so that the North and South wellfield operates as one unit.

North Wellfield - Wells:

Scope of Work:

Upgrade all electrical components to wells 1 - 8 to meet current electrical codes. Upgrade the electrical control room building by to include insulation and sheeting so that the room can be environmentally controlled to keep the relative humidity below 50% and the dew point below 55°. Install telemetry and control system to automate operation of the wells.

Make improvements to well head electrical to meet current electrical codes and bring plumbing in compliance with the Ground Water Rule. Make improvements to underground piping from well head to treatment plant. Install new source meters at well heads.

Basis for Work:

These improvements are identified in the North Beach Water 2007 Water System Plan approved by the Department of Health. Electrical improvements are needed to install telemetry. The existing electrical components are ageing and are near or past their useful life expectancy. The electrical components are not in compliance with the current National Electric Code (NEC). These improvements

will save the District money by lowering electrical costs, water by eliminating overflowing of water reservoirs, and operation expense, by automating the operations less operator time will be required. New meters will increase the accuracy of our Water Efficiency Reports required by the DOH.

North Wellfield - Treatment Plant:

Scope of Work:

Upgrade all electrical components to the treatment plant to meet current electrical codes. Install telemetry and control system to monitor operation of the filtration system and record data. The telemetry will also automate the control of the treatment plant. The telemetry will be integrated with the wellfield telemetry.

Make improvements to the filtration equipment based on the results of the full scale filtration pilot test being performed in October/November 2012.

Install new meters to the reservoirs and backwash basin.

Relocate and construct a backwash basin to meet current DOH and DOE standards.

Complete the treatment plant building to include insulation, install sheeting, replace barn door with insulated double doors, and install HVAC equipment to keep the relative humidity below 50% and the dew point below 55°.

Fence the North Wellfield property for security and sanitary protection.

Basis For Work:

These improvements are identified in the North Beach Water 2007 Water System Plan approved by the Department of Health. Installing a new backwash basin was required in the Sanitary Survey by the DOH.

Electrical improvements are needed to install telemetry. The existing electrical components are ageing and are near or past their useful life expectancy. The electrical components and are not in compliance with the current National Electric Code (NEC). The Water Treatment Plant (WTP) was installed between 1999 and 2001. The WTP has a useful life expectancy of 15-20 years before major renovation will be needed. Currently, WTP backwash telemetry is nonfunctional. Operators must manually backwash the filters. This is time consuming and if the filters are operated longer than designed (late in initiating a backwash) the media will be damaged and could fail prematurely.

The backwash basin is currently located within the sanitary control area of wells 1, 2, and three. The DOH required the District to relocate the backwash basin outside of the sanitary control area of all wells by May of 2012. They have extended that time frame due to the application of DWSRF loan that will include the relocation of the backwash basin.

The improvements to the building will provide better security and control of the environment.

Humidity and dew point control will protect telemetry, electrical components, and pipes from corrosion and premature failure.

Fencing is important for water purveyors to protect the public health of their customers by reducing vulnerability to security threats and vandalism¹. DOH has recommended security fencing in the last two sanitary surveys of the North Well Field.

North Wellfield - Booster Station:

Scope of Work:

¹ See EPA fact sheet 816-F-02-040 attached

Upgrade all electrical components to meet current electrical codes. Install telemetry to automate pump controls and integrate with the North Booster Station with the South Booster Station. Install a programmable logic controller (PLC) and Upgrade motor controls to automate pump actuation. Install new meter to the distribution system. Install HVAC equipment to keep the relative humidity below 50% and the dew point below 55°.

Basis for Work:

One of the most limiting factors in the operation of the water system is the fact that the North and South booster stations are not integrated. They both pump into the same water distribution system independently. The potential for surge, over or under pressurization and damage to District infrastructure and customer property is high. District operators have been diligent to ensure no damage occurs but the potential is an unacceptable risk that needs to be mitigated.

Humidity and dew point control will protect telemetry, electrical components, and pipes from corrosion and premature failure.

South Wellfield - Wells**Scope of Work:**

Drill up to four wells (total of 500 GPM) and install pumps, pipes, pump controls, and telemetry to place the wells in service.

The wells will be drilled on property purchased from the Wiegardt Group located north off of 205th across from Y lane.

Make site improvements (Wiegardt Property) to include, electrical service and secondary power, well head infrastructure, water mains, fencing, and site work and restoration to connect the new wells to the south wellfield treatment plant.

Basis for Work:

The South Wellfield yield has reduced from 245 gallons per minute (gpm) to 60-70 gpm today. Well # 1 and well # 2 were drilled in August 1954 (58 years). These wells need to be replaced very soon. The District has water right to pump 500 gpm from the South Wellfield. The purchase of the Wiegardt property will provide an excellent wellfield to provide water for our ratepayers now and into the future.

South Wellfield - Treatment Plant:**Scope of Work:**

Relocate existing treatment equipment and install new water treatment equipment to treat up to 500 GPM in the treatment plant/booster station building to filter water from the new wells.

Install electrical equipment to operate the treatment plant.

Install a telemetry system to control and automate the operation of the new wells.

Complete the treatment plant building to include insulation, install sheeting, replace barn door with insulated double doors, and install HVAC equipment to keep the relative humidity below 50% and the dew point below 55°.

Basis for Work:

The South wellfield has a treatment plant capacity of 100 GPM. It will need to be expanded to a capacity of 500 GPM. The booster building was constructed with extra space anticipating the need to expand the treatment capacity.

The electrical system will need upgrades to accommodate the expanded treatment facility and telemetry. Telemetry will be needed to communicate with the new wells in the South wellfield.

Complete the treatment plant building to include insulation, install sheeting, replace barn door with insulated double doors, and install HVAC equipment to keep the relative humidity below 50% and the dew point below 55°.

Loan Information:

Loan amount:	\$2,190,631
Total Estimated Cost:	\$2,190,631
Total Estimated Funding:	\$2,190,631
Loan Fee:	\$ -0-
Loan Forgiveness	30% (\$657,189)
Loan Term:	24 Years
Interest Rate:	1.50 %
Payment Month	October 1 st (first payment due in year 4 of loan term or when work is complete)

Special Conditions:

Adopt a new rate structure:

The District shall conduct a rate study and certify to the PWB the new rate structure has been adopted. The rate study and certification must be delivered to the PWB on or before December 31, 2014.

Maintenance of Reserves

In addition to the establishing and maintaining adequate water rates the District shall maintain a minimum balance in its operating reserve of 12.5% of its annual operating budget (\$175,000).