

Garrison Diversion O&M Excels in 2019

By Kimberly Cook

The Garrison Diversion Conservancy District (Garrison Diversion) employs an operations and maintenance (O&M) staff second to none. With a primary goal to keep the principal supply works of the Garrison Diversion Unit (GDU) in optimal condition, the men and women on board work hard to do the job right.

The principal supply works consists of the McClusky Canal, New Rockford Canal, Snake Creek Pumping Plant (SCPP), and Oakes Test Area. The facilities are owned by the Bureau of Reclamation (Reclamation) and Garrison Diversion is responsible for the O&M on the GDU project facilities under a cooperative agreement with Reclamation. Additional facilities like the Jamestown Reservoir, Lonetree Wildlife Management Area, and Arrowwood and Audubon National Wildlife Refuges, receive Garrison Diversion's O&M assistance when requested.

Garrison Diversion has recently taken over the leadership role on maintenance at the SCPP from Reclamation. Reclamation's employee at the site recently retired, and now Garrison Diversion employs the lead operator, Dustin Offerdahl.

Garrison Diversion maintains offices in multiple locations – Carrington, McClusky, New Rockford, Oakes, and at the SCPP near Coleharbor. Garrison Diversion employs an impressive staff with high levels of expertise, including a professional engineer, master electrician, certified diesel mechanic, painting and coating specialists, vegetative management specialists, and multiple heavy equipment operators. In addition, the majority of full-time O&M employees have their CDL (commercial driver's license). A safety coordinator promotes safety procedures and implements a comprehensive safety program to ensure a safe work environment for all employees. O&M employees are located in Carrington, McClusky, New Rockford, Oakes, and at the Snake Creek Pumping Plant. "We have a skilled collection of staff that is capable of performing a wide variety of jobs to a high standard," says Ryan Anderson, Garrison Diversion Engineer.

A large fleet of equipment is maintained with dozers, loaders, backhoes, trucks and excavators, and many specialized pieces that allow for work in a variety of situations.



Expertise in canal maintenance, earthmoving and other construction areas enables the O&M staff to assist federal and state government agencies such as the State Water Commission (SWC), Reclamation, N.D. Game & Fish, and U.S. Fish and Wildlife Service. These partnerships benefit everybody involved!

SPECIAL JOBS

In 2019, the team completed several jobs from their work plan, and also took care of additional incidents that presented themselves. Due to record breaking moisture in the fall, fall flooding was a major problem for the McClusky Canal and significant man-hours were spent trying to lower the water level of the canal in order to get water off of bridges before a hard freeze.

Much of the crew's time and talent in 2019 was occupied completing major reconstruction at the canal. The McClusky Canal's side-slopes are failing between mile marker (MM) 20 and MM 22 and have reduced the water flow of the canal downstream of MM 22, approximately seven miles south of

Turtle Lake. While the McClusky Canal was designed for 2,000 cfs flows, under 100 cfs is flowing through at the slide area, reducing the amount of available water to irrigators downstream and presenting challenges in maintaining Chain of Lakes at the desired elevations. Lower water elevations of the canal can also cause erosion of the canal prism beneath the existing beachbelting. The work is being completed in cooperation with Reclamation.

The objective is to flatten the currently failing 2 to 1 side-slope to a more stable 4 to 1 slope. Overall, a total of 2.4 million cubic yards is estimated to be moved over the course of five to six years. In 2019, crews removed approximately 323,000 cubic yards of spoil material from the area to

Right, removing spoil at the McClusky Canal's side-slopes.

Below, silt fence installed on major slide area at the McClusky Canal.



stabilize the slope, bringing the total to about one million cubic yards since the project began in the fall of 2017.

O&M crews at the slide area performed earth-moving activities as well as installed silt fence, and seeded completed slopes to help with erosion control and establish vegetation. On average, five to seven workers are working the slide area. Four tractors pull two pans each, a skid steer operator removes large rock, and, on occasion, a dozer operator is on-site. This time-consuming project is important to enhancing the overall function of the McClusky Canal.

Other special projects included sand-blasting and coating tunnel #1 at the SCPP. The tunnel is 11 feet in diameter and runs underneath Highway 83, serving as the water conveyance from Lake Sakakawea to Lake Audubon to regulate Audubon's elevation. There are three tunnels total, and each is on a three-year maintenance rotation.

Additional projects at the SCPP included a lighting upgrade, where roughly 125 new energy efficient LED fixtures were installed throughout the plant. A new security system was installed at the facility, which includes seven high-definition cameras with remote access.

BASIC MAINTENANCE

General facilities maintenance is always included in the work plan in order to keep the buildings, McClusky Canal and all other features in the best condition possible. Spraying for noxious weeds, blading maintenance roads and mowing rights-of-way, removing cattails, as well as cleaning the



Resealing expansion joints and concrete deck maintenance activities at the Snake Creek Pumping Plant.

canals and canal drains are all tasks that take a considerable amount of work.

Each year, water is delivered through the McClusky Canal to be used for purposes such as livestock watering, water for wildlife mitigation areas, water quality improvements, irrigation, recreation, and fish and wildlife. In 2019, approximately 22,500 acre-feet of water was delivered through the McClusky Canal Headworks. The canals and canal drains must be cleaned regularly, and cattails must be removed.

Garrison Diversion O&M staff completes regular maintenance of irrigation systems that comprise the McClusky Canal Irrigation Project, including installing pumps each spring, dewatering the systems in the fall, and storing the pumps for the winter, along with assisting in operating problems that may arise each year.

Once again, Garrison Diversion employees assisted the North Dakota SWC with monitoring and operating the Devils Lake Outlets and providing additional assistance as requested.

SAFETY TRAINING

Garrison Diversion also takes the safety of our employees very seriously. O&M employees underwent training to receive certification and qualification, while others were recertified, in rigging/signalperson, overhead, and mobile crane operations.

The training is necessary to comply with OSHA regulations and also ensures safety when the O&M staff is performing a variety of jobs. Mobile cranes are used for routine maintenance within daily O&M operations, while overhead cranes are utilized when servicing pumps in pumping plants maintained by Garrison Diversion.

The class instructed staff on how to properly secure loads and equipment. The course also taught proper hand signals for directing a crane operator. In order to receive their qualification, employees must pass practical and written exams with an 80% or better score.

“The courses taught by the Crane Institute of America, Inc. are outstanding,” says Judy Allmaras, Garrison Diversion Safety Coordinator. “The instruction our staff received will benefit them on a daily basis.”

Certification and qualification is valid for two years, upon which employees will again complete the course for recertification and requalification.

Garrison Diversion is dedicated to maintaining the federal investment of the GDU facilities, and we are proud of our excellent staff putting their best foot forward each day. Whether for irrigation, recreation, natural resources or otherwise, water flowing through the GDU system benefits citizens across the state.