

GARRISON DIVERSION CONSERVANCY DISTRICT**ENGINEERING & OPERATIONS COMMITTEE**

**Garrison Diversion Conservancy District
Carrington, North Dakota
October 6, 2016**

A meeting of the Engineering and Operations Committee of the Garrison Diversion Conservancy District was held at the Garrison Diversion headquarters, Carrington, North Dakota, on October 6, 2016. The meeting was called to order by Chairman Anderson at 10:30 a.m.

DIRECTORS PRESENT

Board Chairman Ken Vein
Committee Chairman Dave Anderson
Director John Peyerl
Director Tim Schindler
Secretary Kip Kovar

DIRECTORS ABSENT

None

OTHERS PRESENT

Staff members of the Garrison Diversion Conservancy District were present along with others. The registration sheet is attached to these minutes as Annex I.

The meeting was recorded to assist with compilation of the minutes.

READING OF THE MINUTES

Motion by Director Vein to approve the July 11, 2016, Engineering & Operations Committee minutes as distributed. Second by Director Schindler. Upon voice vote, motion carried.

PAINTED WOODS LAKE PROJECT

Kip Kovar, Secretary, distributed a map of the McClusky Canal calling attention to the Chain of Lakes area and the Painted Woods Outlet and explained the history behind the outlet. There is a structure located there, including a turnout and channel, which is the only way to release water from the canal. The original concept would have delivered water to the Lonetree Wildlife Refuge into the Sheyenne River. Currently, Painted Woods Creek receives discharges from the McClusky Canal at New Johns Lake.

Mr. Kovar added that the McClusky Canal capacity is approximately 2,000 cfs and about 35-40 cfs can be released from the Painted Woods Outlet. This is limited by a high elevation and by pipe size. The outlet typically runs all year long unless there is flooding, at which time the outlet is shut off. It does help with the canal freshening program when the outlet is running.

Roger Clay, Moore Engineering, distributed a project overview for the Painted Woods Lake Mitigation Project and provided a PowerPoint presentation describing the project. He stated that the project is believed to be of statewide importance. Painted Woods Creek is a relatively large watershed, consisting of 305 square miles located in Burleigh and McLean Counties. The proposed project is about providing an adequate outlet for the watershed.

A copy of the project overview is attached to these minutes as Annex II. A copy of the PowerPoint presentation is also attached as Annex III.

Painted Woods Lake has been a statewide resource for hunting, fishing and general recreation. The land was purchased as part of mitigation acres for the Garrison Diversion Unit. This year, the Natural Resources Trust purchased another parcel of land that will be transferred to the Game and Fish Department for management. An additional parcel is also planning to be purchased in this area to build onto the wildlife management area.

Mr. Clay said there is currently a lake level control structure that holds the water in the lake at its historic elevation. This structure needs to be replaced with a structure that has more modern features. The next project component would be to construct a high flow channel from Painted Woods Creek to the east of the lake. The final component is to repair and restore the severely eroded and unstable stream banks on Merry's Creek.

Mr. Clay said the schedule for the project is to replace the lake level control structure and complete Phase 1 of the overflow channel at a cost of \$2.2 million in 2017. In 2018, they would like to restore Merry's Creek at a cost of \$1.75 million. Phase 2 of the overflow channel would take place in the future.

Mr. Clay also reviewed a list of project stakeholders and commitments that are being made to the project.

Mr. Clay added that he is here with the water resource district today to discuss how Garrison Diversion can assist with this project. They are asking for a contribution of \$350,000 in value either through direct funding or from in-kind services. In-kind services from Garrison Diversion's operation and maintenance division could include excavation, bank stabilization and/or riprap installation.

Mike Marohl, Bureau of Reclamation, commented that Reclamation is providing materials. The placement would be on the existing weir. The ND Game & Fish Department has indicated an interest in the existing weir staying in place. It is in need of maintenance, and Garrison Diversion has made improvements making it easier and safer to operate. Right now, riprap is needed to stabilize the weir. Reclamation will haul the 4,000 cubic yards of riprap to the site, and if the county's project does not move forward, then it would make sense to place the riprap on the existing weir but they would allow it to be used for the new weir structure. If the project gets delayed and doesn't move forward, then Reclamation has to make a decision. Without the rock in the existing weir, it is questionable how long the weir

would last. They are committed to providing the rock this winter. Garrison Diversion would perform the work, but Reclamation would pay for the costs as part of the operation and maintenance program.

Lynn Oberg, McLean County Water Resource District, said the water depth at its deepest is approximately four feet in Painted Woods Lake. It has silted in over the last 15-20 years. There are a number of area landowners that have experienced breakout flows from flooding in the spring. The buildup of cattails act as a dam in the spring and forces the water straight west to the Missouri River. Then breakouts happen and cause damage to private land.

Mr. Kovar commented that we do need the ability to release water into Painted Woods Creek. It is the only outlet, and if it became blocked, it would cause problems.

Mr. Kovar added if Garrison Diversion chooses to assist with the project, the General Fund would have to reimburse the O&M Fund for whatever work is done.

Mr. Oberg said the water district's part is to help manage and protect this resource and to also protect the interests of the local landowners and farmers.

Mr. Kovar asked what the committee wishes to do with this request.

The committee discussed various possible ways that Garrison Diversion may be able to assist the water resource district with the project.

Mr. Kovar asked if the committee could have additional time to further investigate what Garrison Diversion could provide for the \$350,000. The committee will meet again the first part of January and could make a recommendation at that time.

Mr. Oberg said that would work for them.

COOPERATIVE AGREEMENT – MCCLUSKY CANAL PRE-SLIDE REPAIR

Mr. Kovar reminded the committee that they had reviewed the draft pre-slide repair scope of work at their July meeting. Since that time, the Pre-Slide Repair Cooperative Agreement has been approved. The dollar amount associated with that budget is approximately \$4.7 million. A majority of that budget is for purchasing equipment. The process of generating specs for those purchases is currently underway.

Mr. Kovar said work will now begin on the Construction Cooperative Agreement and the new O&M Agreement, adding that perhaps Reclamation can be asked to combine these two agreements.

The committee agreed to proceed with this request to Reclamation.

GDU RECLASSIFICATION

Mr. Kovar explained the process used by Reclamation for planning, design, construction, repayment, and operation and maintenance of GDU projects. Once a project is completed from an auditor's standpoint, it is moved into the plant-in-service category.

Mr. Kovar said since the GDU Project was suspended because of environmental and other issues, the project has been at a standstill. As far as the costs go for the project, they go into a category called construction in abeyance. This is where all of Garrison Diversion's costs on the project have gone until now. Recently, we were informed that Snake Creek Pumping Plant, Lake Audubon and the McClusky Canal from Mile Marker 0-59 and other facilities have been placed in plant-in-service without prior notification. It is uncertain what this means or how it will impact the irrigators' water rates. He feels that the Dakota Water Resources Act set the path for the project and that the project was suspended and is considered incomplete. Legislation has not changed so how can the project status change?

Mr. Kovar reported that a list of questions has been developed internally and will be submitted to Reclamation. He also distributed a handout that provides a brief background of the Garrison Diversion Unit reclassification. A copy of the handout is attached to these minutes as Annex IV.

Mr. Marohl commented that the Office of Inspector General (OIG) recommendation's is to come up with a plan by September 2017 to complete the project as is. As Reclamation progresses through that activity, there will be those questions: what should Reclamation recommend to the OIG be done with Reach 4 of the McClusky Canal, what are they going to recommend be done with the New Rockford Canal and the Oakes Test Area. The OIG does not care to continue as construction in abeyance. They want to finish the project.

Mr. Marohl added in regard to the slides, the Bismarck Reclamation office is of the position that the slide repair is a construction activity, and they will continue to use construction funding to complete that work. There are presumably two pots of money; one for construction and the other for operation and maintenance. Part of the canal maintenance is going to be charged to operation and maintenance and part is going to be construction. Reach 5 of the McClusky Canal will be construction funding as well as the slide repair project. There is question; however, as to whether or not the slide repair should be construction or operation and maintenance. Bismarck is taking the approach, as originally proposed, to do it as construction, which the regional office has agreed to so far.

OTHER BUSINESS

O&M Report - - Darren Murray, Garrison O&M Division, gave a status report on ongoing operation and maintenance projects and activities.

There being no further business to come before the committee, the meeting adjourned at 11:55 a.m.

(SEAL)

Dave Anderson, Chairman

Kip Kovar, Secretary

REGISTRATION

Engineering and Operations Committee
Carrington, North Dakota
October 6, 2016

NAME	ADDRESS
Nathan Kraft	Reclamation Bismarck
Ryan Anderson	GDCD
Darren Murray	GDCD
Lynn Oberg	WASHBURN ND
Shannon Jeffers	GARRISON, ND
Pat Baesra	BTU
Jeff Braker	GDCD
Mew Munnid	GDCD
Kelly Klusterman	GDCD
Kimberly Cook	GDCD
Ken Pette	GDCD
Mike Marahl	Reclamation - Bismarck
Tim Schindler	GDCD Sheridan Co.
Kip Kos	GDCD
Dave Anderson	GDCD
John Beyers	GDCD - Penn ND
Lisa Schaefer	GDCD

Painted Woods Lake Mitigation Project

Project Overview

McLean County, ND



October 2016

Consulting Engineering • Land Surveying

North Dakota

Bismarck

Minot

West Fargo

Minnesota

Fergus Falls



mooreengineeringinc.com

Project No. 17889

Project Overview – Painted Woods Lake Mitigation Project

Project Area Description

The Painted Woods Lake Mitigation Project (Project) is centered on Painted Woods Lake, a Sovereign Land of the State of North Dakota. Painted Woods Lake is contiguous with the east side of a federal Wildlife Development Area (WDA) owned by the US Fish and Wildlife Service and managed by the North Dakota Department of Game and Fish (Figure 1). A federally owned lake level control structure is located within the WDA at the lake outlet. A parcel of land on the east side of Painted Woods Lake was purchased this year by the North Dakota Natural Resources Trust. The ownership of this parcel is being transferred to the North Dakota Department of Game and Fish who will manage the land as a Wildlife Management Area (WMA).

Painted Woods Creek enters the north end of Painted Woods Lake. Water flows south and west through the lake to its outlet, a channel known as Merry's Creek, through which water flows approximately 5000-ft to the Missouri River. Snow and ice accumulations in the northern end of the lake, along with cattails that have recently grown there, periodically restrict spring floods from flowing through the lake to Merry's Creek, particularly after winters of heavy snow fall. When this happens, flood waters break out at multiple locations north of the lake, flowing westward of Painted Woods Creek between US Highway 83 and the lake. Flood waters then flow west cross country to the Missouri River, causing gully erosion and head cutting of overflow channels on private lands.

Painted Woods Lake has been a state wide resource for hunting, fishing and general recreation for over a hundred years. In the last 50 years, however, access to the lake has been limited. One public access point was created by the purchase of the federal WDA in the early 1980s. The recent land purchase will lead to the creation of several more public access points. Improving both public access and the quality of habitat provided by this resource is a long term goal for the area.

Approximately two thirds of the watershed of Painted Woods Lake is in Burleigh County, the remainder being in McLean County (Figure 2). Some water flowing into Painted Woods Lake is released into the headwaters of Painted Woods Creek from the Garrison Diversion Project (McClusky Canal) for various purposes.

Problems the Project Will Address

The sheet pile lake level control structure is aging and doesn't have facilities that meet present standards for operator safety. In the summer of 2008, after the control structure was bent over during spring flooding, the sheeting was reinstalled. During the reinstallation process, the lake was largely dewatered and cattails became established, particularly in the northcentral areas of the lake, eventually overwhelming the lake in that area.

After 2008, cattails have increased the accumulation of ice and snow in upper areas of the lake, constricting flood flows through the lake and increasing the severity of overflows from north of the lake to the Missouri River. Cattails are also an impediment to the recreational use of Painted Woods Lake.

Soil eroded from lands in agricultural production in the watershed and washed down Painted Woods Creek has partially filled Painted Woods Lake, reducing lake depth and decreasing the flow through capacity of the lake. Other sources of sediment that have contributed to lake infilling include bank erosion and ice jams in the Missouri River.

The lake level control structure does not allow fish passage from the Missouri River to Painted Woods Creek. Drowning of cattails by raising the water level above the normal operating elevation of the lake is not possible because the level control structure wasn't constructed with the facilities to accomplish that management action.

Public access to the area is limited, and it is desirable to substantially increase the ability of the general public to access and utilize the resource. There are portions of the new property where improvement of the available habitat would greatly increase the public's enjoyment of the area.

Over the years the banks of Merry's Creek have become severely eroded and over steepened. For a majority of the channels length the banks of Merry's Creek have no vegetation and have side slopes of approximately 1-ft vertical to 1-ft horizontal, a highly unstable condition.

Project Features

A report titled Painted Woods Lake Mitigation Study, completed in December 2015 by Moore Engineering, contains an alternatives analysis for management practices to mitigate the various problems identified. The following alternatives were selected for implementation:

1. Alternative 5: Improve Merry's Creek below the Painted Woods Lake water level control structure. The proposed improvements involve restoration of the severely eroded and unstable stream banks by constructing stable side slopes, stabilizing the banks with a wildlife supporting vegetation, and stabilizing the bank toe with rip rap. Water quality will be improved and protected and wildlife habitat provided by the restoration process (Figure 1).

Alternate 5 Preliminary Opinion of Probable Cost: \$1,746,250

2. Alternate 3A: A new high flow channel to be constructed to add additional capacity to Painted Woods Creek just upstream of Painted Woods Lake to minimize break out flows to the Missouri River at undesirable locations. During floods water would be diverted from Painted Woods Creek just downstream of US Highway 83 and would be directed into the east side of Painted Woods

Lake. Phase 1 involves the construction of the channel across the new WMA. Phase 2 of the project would connect the channel north to Painted Woods Creek. Water quality will be improved and protected by the control of gully erosion and wildlife habitat will be provided adjacent to the high flow channel.

Phase 1 of Alternate 3A Preliminary Opinion of Probable Cost: \$979,250

Phase 2 of Alternative 3A Preliminary Opinion of Probable Cost: \$1,853,250

3. Alternative 3C: A new lake level control structure for Painted Woods Lake. The new structure would replace the aging and unsafe structure now existing. Fishery enhancement would involve restoring fish passage from the Missouri River into the lake and Painted Woods Creek by the construction of a rock ramp fish passage facility. The replacement structure will have a low flow draw down gate and the ability to raise the water level 2-ft above the normal operating pool elevation on a temporary basis for the control of aquatic vegetation.

Alternative 3C Preliminary Opinion of Probable Cost: \$1,094,045

Combined Total Preliminary Opinion of Probable Project Cost: \$5,602,295

Preliminary Plans have now been completed for the three alternatives and additional stakeholder meetings held.

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Painted Woods Lake Mitigation Project

McLean County
NORTH DAKOTA




Painted Woods Creek Watershed

Characteristics:

- 305 square mile watershed in two counties
- Receives discharges from McClusky Canal at New Johns Lake



Painted Woods Lake Location



Painted Woods Lake Mitigation Project

Painted Woods Lake:

- Sovereign Land
- Has been a recreational resource for over 100-years



Painted Woods Lake Mitigation Project

Surrounding Land Is Wildlife Habitat

- West Side: Federal Wildlife Development Area
- East Side: Land Recently Purchased To Become State owned Wildlife Area




Painted Woods Lake Mitigation Project

Surrounding Land Is Wildlife Habitat

- Future Land Purchase Plan on Northeast Side




Painted Woods Lake Mitigation Project



Summary of Key Project Components

- Replace Lake Level Control Structure
- Construct High Flow Channel From Painted Woods Creek to East Side of Lake
- Repair Scour Damaged Merry's Creek



Existing Lake Level Control Structure




Problems:

- Inability to manage aquatic vegetation
- Fish passage blocked
- Relatively difficult to operate
- Downstream Bank Scour

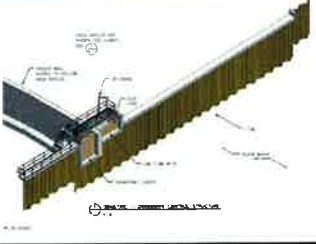


Replacement Lake Level Control Structure




Solutions:

- Replacement sheet pile structure
- Flash boards to temporarily raise water levels
- Slide gate to draw down lake

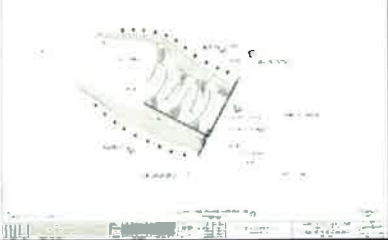


Replacement Lake Level Control Structure




Solutions:

- Fish Passage Provided
- Diverse Missouri River Ecosystem Connected to Lake/Painted Woods Creek
- Repair Eroded Banks




High Flow Channel



Problems:

- Blockage to floodwaters in northcentral lake basin from snow/ice/cattails
- Break out flows to Missouri River




Example Breakout Flow Channel




High Flow Channel

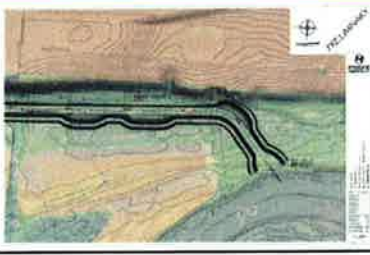
Solutions:

- Construct High Flow Channel From Painted Woods Creek to East Side of Lake
- Provide Wildlife Enhancement



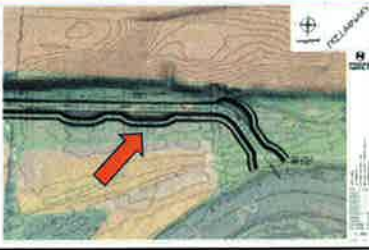
Solutions

- High Flow Channel



Solutions


- High Flow Channel
- Incorporates Wetland Habitat
- Will Provide Lake Access
- Constructed in 2 Phases



Repair Merry's Creek

Problems:

- Stream Reach is Severely Degraded
- Is the Outlet Reach of the Watershed



Bank Restoration



Bank Restoration

Solutions:

- Bank Restoration with rip rap at toe of slope
- Planted with native vegetation beneficial to wildlife



Project Benefits



- Provide an Adequate Outlet
- Provide Modern Lake Level Control Structure to Manage Water Levels and Provide Fish Passage
- Improve Passage of Flood Waters Into Painted Woods Lake and Provide Wildlife Habitat and Public Access
- Repair the Outlet Channel by Providing Stable Restored Banks and Provide Wildlife Habitat

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Project Schedule and Cost



2017:	Replace Lake Level Control Structure and Phase 1 of Overflow Channel (\$2,201,750)
2018:	Restore Merry's Creek (\$1,746,250)
Future:	Phase 2 of Overflow Channel

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Project Stakeholders



McLean County Water Resources District – Lead Local Agency


US Fish and Wildlife Service – Verbally committed to providing \$50,000 for 4 years

Bureau of Reclamation – Providing 4,000 Cubic Yards of Riprap

State Water Commission – Will Provide 45% Cost Share

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Project Stakeholders cont.




North Dakota Game and Fish – Reviewing Possible Funding Support

Outdoor Heritage Fund – Grant Application Being Submitted This Month

Burleigh County Water Resources District – Supports the Project and Looking at Providing Funding for 2018

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How GCD Can Help



Year 2017

- Provide In-Kind Services
 - Excavation
 - Bank Stabilization
 - Riprap Installation
- Provide Funding

Asking for Contribution \$350,000 In Value

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Discussion

Garrison Diversion Unit (GDU) Reclassification

August 2016

The GDU is an authorized feature of the 10-state Pick Sloan Missouri Basin Program, and delivers benefits within central North Dakota.

Since its authorization in 1965 which included initially irrigating 250,000 acres, many important statutory changes for the GDU have occurred, the most important in 1986 and 2000; which have significantly changed the unit's scope, cost allocations and repayment requirements.

While many of the GDU's project features were completed by Reclamation and are providing benefits, federal appropriations were expended on investigations and facilities that, for a variety of reasons, were not finished, used, or not placed into service.¹

Reclamation follows established procedures for how to treat costs associated with projects during planning, design, construction, and being placed into service, with processes for repayment and operations and maintenance.

The procedures regarding the treatment of costs are explained in the Reclamation Manual (CMP TRMR-88, FIN TRMR-91, FIN TRMR-92, FIN TRMR-93), and tier from projects' statutory authorization and from Standards published by the Federal Accounting Standards Advisory Board (FASAB).

During the audit of the FY 2015 Department of the Interior's Consolidated Financial Statement (discussed below), the auditors noted that certain GDU assets were in service and providing a benefit while the costs were recorded in Reclamation's construction in abeyance general ledger. The auditors pointed out this was not consistent with federal accounting standards. Reclamation subsequently determined that those assets which were in operation and delivering benefits² must be moved to plant in service. These features will be reclassified from "construction in abeyance" to "plant in service."

The costs for the other features will currently remain suspended as "construction in abeyance".³

In order to assess if there will be an impact on any repayment provisions, Reclamation is reviewing the executed Project beneficiary contracts, the 2012 GDU interim cost allocation, and the existing legislation. Currently, the water service contracts include a charge for water service which is credited to the outstanding construction costs of GDU as well as a charge for their appropriate share of the annual operation, maintenance, and replacement. Once Reclamation

¹ Deauthorized features and activities include Harvey Pumping Area; Lincoln Valley Irrigation Area; LaMoure Irrigation Area; West Oakes Irrigation Area; Lonetree Dam; New Rockford Irrigation Area; James River Study; Sykeston Canal; Glover Reservoir; and Hudson Bay features. Constructed but not used features includes the New Rockford Canal, McClusky Canal Mile Marker 59 to 73.61; authorized activities which have not yet been constructed or used include, James River Feeder Canal studies, Turtle Lake Study, other misc. studies and investigations.

² McClusky Canal (59 miles); Audubon Refuge and GDU Mitigation features; Snake Creek Pump Plant; Arrowwood Refuge Bypass channels; and misc. other features.

³ McClusky Canal (15 miles); James River Feeder Canal; and New Rockford Canal and associated interest during construction.

completes their review and if it is determined that water rates may be affected, Reclamation will begin discussions with GDU beneficiaries, as appropriate. It is unlikely that any potential change will occur before the end of FY 2017.

BACKGROUND:

During the fiscal year (FY) 2015 audit of the Department of the Interior's financial statements the Department received a material weakness finding regarding internal controls and accounting for property. Reclamation contributed significantly to this finding due to its accounting treatment of costs recorded for suspended construction activities. The finding from the auditors stemmed from new accounting standards that were issued and a review of existing accounting standards. Reclamation responded to this finding by establishing a multi-disciplinary team to address the recommendations of the finding. This team clarified, updated, and issued new guidance to address findings, which ultimately changed the accounting treatment of some of the costs recorded for suspended construction activities with Reclamation projects including GDU.