

Date | 5-4-2012

To | Chisago Lakes LID Board of Managers

cc | Jerry Spetzman

From | Greg Graske

Regarding | Spring Channel and Outlet Structure Inspection

On April 6, 2012 an inspection of the Chisago Lakes Outlet Channels and Structures was conducted. Chisago County staff Jerry Spetzman along with EOR engineer Greg Graske performed the field inspection. The following summarizes the inspection, actions performed, and any future actions recommend. Actions in red are recommended for follow up in the near future, actions in orange are actions that require future follow or monitoring up but are not urgent, and actions in green are minor maintenance items that were completed in field prior to this report.

Channel from Chisago Lake to Wallmark Lake

The length of the channel from Chisago Lake to Wallmark Lake was inspected. The channel area near Stinson Avenue appeared to be stable and the existing rock check dam appears to be eliminating any further head cutting and erosion of the channel. The channel section between Highway 8 and North Avenue is relatively free of debris however numerous small trees are starting to grow along the bank of channel. This provides a visual barrier but may also limit future access in the future if they are allowed to continue to get larger. It is recommended that the Board consider the pro vs. cons of removal of these theses small tree located along this channel section.



Photos: Channel between Highway 8 and North Avenue

Similar to previous inspections just North of North Avenue it was noted that several large branches had been placed across the channel to provide a crossing for a path from the nearby tot

lot. These logs should be removed. Because this appears to be an ongoing problem the CLLID has directed District Staff to work with the park owner to determine if a bridge should be placed at this location to allow for crossing the channel without placing obstructions in the channel. Discussions are ongoing.

Logs and Boards were noted in the channel in several locations between North Avenue and Sportsman Drive. This debris should be removed from the channel.



Photos: debris between North Avenue and Sportsman Drive

Recommended Action:

- Consider Removal of Trees between Highway 8 and North Avenue
- Remove branches in channel near tot lot
- Remove logs and board in channel between North Avenue Sportsman Drive

Suggested Follow Up:

- Continue efforts regarding placement of small foot bridge across the channel.

Channel from Wallmark Lake to County Road 19



No concerns were noted.

Recommended Action:

- None

Channel from Chisago Lake to Green Lake

The entire length of the channel from Chisago Lake to Green Lake was inspected. Between Chisago Lake and County Road 83 had been a location for frequent beaver activity and dams. The CLLID hired a trapper two years ago to remove the beavers. No new beaver activity was observed.

Two falls ago some erosion areas from flow being delivered off the adjacent farm field were repaired by the contractor. One of the areas is holding up well, while the other area is starting to see some of the erosion return. This was previously noted but was not a high priority item and assess is limited. Follow up repairs when possible are recommended to prevent future erosion and sediment transport into the channel.



Photos: Left: Erosion cause by flow from adjacent farm field, Right: Downed Tree in Channel

Recommended Action:

- Follow up corrective action at erosion site in fall after harvest
- Remove downed tree

Suggested Follow Up:

- Continue to monitor for Beaver activity in channel

Outlet Structure from Chisago Lake Outlet Channel into Green Lake

The outlet structure connecting the channel from Chisago Lake to Green Lake was visited. The structure was cleared of debris two years ago and the structure is still clear of debris. The gates were opened to test operation and water did flow through the structure to Green Lake. Muskrats have been observed at the outlet of the pipe during the last two inspections. Six muskrats were flushed out when the gates were opened. The gates were returned to the closed position upon completion of the inspection.



Photos: Outlet structure from Chisago to Green

Recommended Action:

- None

Suggested Follow Up:

- Monitor site for continued beaver activity and need for beaver control.

Minor Maintenance Items Completed:

- Tested Gate Operation

Outlet Structure and Pipe between Lake Ellen and Swamp Lake

The outlet structure on Lake Ellen was visited. Debris was removed from around the Lake Ellen two years ago. The gate was exercised and appeared to be operational. The emergency management plan calls for the gate to be open when the lake level is 891.5. The plan also says that the gate may remain closed when lake levels are below 891.0. Lake Ellen was below the weir overflow elevation; therefore the gate was left closed. No new beaver activity was observed. The erosion control device installed on the catch basin located over the outlet pipe in the farm field appeared to be working as intended.



Photo: Left: Lake Ellen weir, Right: Catch Basin with Erosion Control Cover

Recommended Action:

- None

Suggested Follow Up:

- Monitor Beaver Activity going forward and determine need for additional beaver control.
- Open gates and test for flow when water gets high-enough
- Monitor Erosion Control Device for needed maintenance

Minor Maintenance Items Completed:

- Exercised Gate

Swamp Lake Outlet

The Swamp Lake outlet pipes under County Road 80 were visited. This location has 7 pipes under the road to convey flow. Water was flowing at the time of the inspection. In previous inspections the pipes were partially filled with water due to rock and debris just downstream of the culverts that appeared to be obstructing some of the flow causing tailwater on the pipes. The obstruction was removed by the contractor last year; however it appears that someone has started placing more rocks back across the channel. These rocks should be permanently removed from the site.



Photos: Pipes leaving Swamp Lake

Recommended Action:

- Remove rock placed across the channel downstream of the pipes

Ivy wood Outlet Structure

The culvert crossing under Ivywood Trail was visited. This site is not generally part of the outlet conveyance due to the outlet channel to Carlos Avery WMA never being fully completed. No issues noted.

Recommended Action:

- None

Bloomquist Creek Crossings @ County Road 19 and Ivywood Trail

The Bloomquist Creek Crossing at Ivywood Trail was visited. A new culvert had recently been installed at this location. Water was flowing through the stream and no maintenance issues were noted. The Bloomquist Creek Crossing at County Road 19 was also visited and water was flowing at this location as well.



Photos: Bloomquist Creek at Ivywood Trail

Recommended Action:

➤ None

Miscellaneous

The channel at the outlet of North Center Lake was visited. The contractor had removed the trees near the channel outlet as requested by the Board. While out at the site a significant amount of debris was noted along the shoreline of North Center. Although not part of the channel system it is recommended that this area be cleaned up if possible.



Photos: Left: Channel outlet for North Center Lake, Right: Tires along shoreline of North Center Lake