

Date | 10-28-2019
To | Chisago Lakes LID Board of Managers
cc | Jerry Spetzman
From | Greg Graske

Regarding | Fall Channel and Outlet Structure Inspection

The fall inspection of the Chisago Lakes Outlet Channels and Structures was conducted on September 10th. EOR engineer Greg Graske and District administrator Jerry Spetzman performed the field inspection of the channel system. Dan Lydon, president of the Chisago/Lindstrom Lake Association also attended. 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 up or monitoring but are not urgent, and actions in green are maintenance items that were completed recently.

Channel from Chisago Lake to Wallmark Lake

The channel from Chisago Lake to Wallmark Lake was inspected. Chisago Lake water levels rose significantly this spring reaching a peak elevation of 899.5 on May 30th. Water exceeded the weir elevation (899.2) for a period of about three weeks. During this time water overtopped the outlet weir and flowed to Walmark Lake. The trees along the channel section between Highway 8 and North Avenue were cleared last year and the channel is clear of debris. Additional woody debris was also removed from other portions of the channel last year. Damaged fence sections at Paradise Park and the along the trail south of North Avenue were noted. Dan Lydon indicated that he could check in with the parks department regarding repair of the fence. The Sportsman Drive culvert could use some more extensive clean-up of woody debris and rubbish.



Photos: Left – Outlet weir in Paradise Park 5-30-19, Right – Outlet weir 9-10-19

Recommended Action:

- None

Suggested Follow Up:

- Further cleanup of woody debris and trash at the Sportsman Drive culvert
- Report damaged fence sections to City or Park department

Minor Maintenance Items Completed:

- Removed debris and trash from Sportsman Drive culvert

Channel from Wallmark Lake to County Road 19

The outlet of Wallmark Lake is not well defined and difficult to access. This section of channel was flown with a drone last year. No major issues were noted with the drone flight, although some areas were noted for future field investigation. One of the locations noted was a private culvert crossing along the outlet channel. The property owner was visited earlier this year and the culvert was in good working condition and water was free flowing.

Recommended Action:

- None

Channel from Chisago Lake to Green Lake

No issues were noted during the inspection. Water has filled the channel between Chisago Lake and the Lofton weir.

Recommended Action:

- None

Outlet Structure from Chisago Lake Outlet Channel into Green Lake

The outlet structure connecting the channel from Chisago Lake to Green Lake was visited. Water levels exceed 899.2 on Chisago Lake and the control gates were opened on May 9th. The gate remained open until water levels dropped back below 898.7. The gates were closed on June 27th.

Photo: Flow from Lofton weir into Green Lake

Recommended Action:

- None

Suggested Follow Up:

- Consider filling area near gate (behind sheet piling) to make access easier.

Minor Maintenance Items Completed:

- None

Outlet Structure and Pipe between Lake Ellen and Swamp Lake

The Green Lake the outlet structure was visited. Due to high water levels the gate was opened on April 10th and will remain open through the fall. Water has been flowing most of the year after the gate was opened. Due to the volume of flow, debris has been collecting at the connection pipes between Lake Ellen and Little Green Lake. These culverts have been cleaned numerous times over to ensure that water continues to flow. Due to recent rain events water levels have risen again. The outlet structure will be left open as long as feasible this fall prior to ice-up on the lakes.

Lily pad roots, vegetation, and wood debris was noted as building up around the weir structure. With the help of several volunteers from the Green Lake Association, the weir was cleaned on June 7th. The debris around the structure will continue to be monitored to determine if future clean outs are needed.



Photo: Left- Lake Ellen weir, Right – Control Box

Recommended Action:

- None

Suggested Follow Up:

- Monitor erosion control device in farm field for needed maintenance
- Weed whip trail
- Clean out woody debris located inside control structure (after water recedes)
- Replace rotted support board for control box hatch

Minor Maintenance Items Completed:

- Removal of vegetation and debris at Little Green – Lake Ellen connection

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 and no issues were noted. The Operations plan requires closing the Lake Ellen Weir if water levels reach 882.7.



Photo: outlet pipes from Swamp Lake

Recommended Action:

- None

Suggested Follow Up:

- Continue monitoring of elevations of Swamp Lake and adjust Lake Ellen outlet weir as required by the management plan.

Ivywood 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. A beaver dam was noted during the summer inspection upstream of the Ivywood Outlet. The landowner has since removed half the dam and water is no longer obstructed. It is recommended that this site be observed during future inspections to see if the beavers rebuild the dam.



Photo: Beaver Dam upstream of Ivywood Control Structure

Suggested Follow Up:

- Monitor for additional beaver activity

Outlet under County Road 19 to Bloomquist Creek

The outlet channel near County Road 19 that flows to Bloomquist creek was visited. Water rose several feet at this location in the spring, but has now receded to a more normal level. The water level gauge was cleaned off during the visit. The LID has easements up to 882.7 (2-feet above the 100-year flood elevation) at this location.



Photo: Upstream of County Road 19

Recommended Action:

- None

Suggested Follow Up:

- Continue monitoring water levels at this location.

Minor Maintenance Items Completed:

- Cleaned staff gauge

Channel from North Center Lake to North Lindstrom Lake

The outlet channel near North Lindstrom was visited on October 3rd. Due to increased water levels boat traffic between North Lindstrom and North Center Lake was feasible earlier in the year. Beaver activity has resulted in trees that have fallen across the channel near North Center Lake. Movement of the bogs in the channel is also hindering boat traffic. The CLLID is considering clearing a path through the bogs in 2020.



Photo: Channel near North Center Lake

Recommended Action:

- None

Suggested Follow Up:

- Remove trees that have fallen across channel
- Submit DNR permit for potential bog removal and get quotes for clean out