

**Date** | 9-6-2016  
**To** | Chisago Lakes LID Board of Managers  
**cc** | Jerry Spetzman  
**From** | Greg Graske  
**Regarding** | Summer Channel and Outlet Structure Inspection

August 15, 2016 an inspection of the Chisago Lakes Outlet Channels and Structures was conducted. EOR engineer Greg Graske and District administrator Jerry Spetzman performed the field inspection of the channel system. 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 minor maintenance items that were completed in field prior to this report.

### Channel from Chisago Lake to Wallmark Lake

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. Water is now starting to fill the portion of the channel closest to Chisago Lake as water levels rise. The trees along the channel section between Highway 8 and North Avenue were cleared three years ago, this are starting to grow back and additional maintenance may be needed in the near future. The trash rack at the sportsman drive culvert was covered with branches, trash and debris. This was removed at the time of the inspection. West of Lake Pointe Drive there was a build of woody debris which should be removed.



Photos: Left – Woody debris in channel west of Lake Pointe Drive. Right - Sportsman Drive culvert covered with debris

**Recommended Action:**

- Remove woody debris in channel west of Lake Pointe Drive

**Suggested Follow Up:**

- Monitor tree growth between Highway 8 and North Avenue
- Survey Channel between Chisago Lake and Wallmark Lake for sediment build up

**Minor Maintenance Items Completed:**

- Debris Cleared from Sportsman Drive culvert trash rack

**Channel from Wallmark Lake to County Road 19**

No issues noted.

**Recommended Action:**

- None

**Channel from Chisago Lake to Green Lake**

As noted in the 2015 spring inspection report, a bridge crossing has been constructed at about the halfway point along the channel. It is unclear who constructed this bridge and for what purpose. In the past there have been planks and ladders seen across the channel and it was assumed that this was being used by hunters to gain access to the other side of the channel. The new bridge is much more substantial and would likely create a measurable obstruction during high water flows through the channel. Chisago County parks has agreed to remove the bridge and repurpose it elsewhere.

Sediment build up at the County Road 23 culvert was removed by the County and erosion control blankets were placed over the disturbed areas adjacent to the channel. Vegetation is coming in well in the areas of the banks that were disturbed.



Photos: Left – Bridge over channel. Right - Culverts under County Road 23

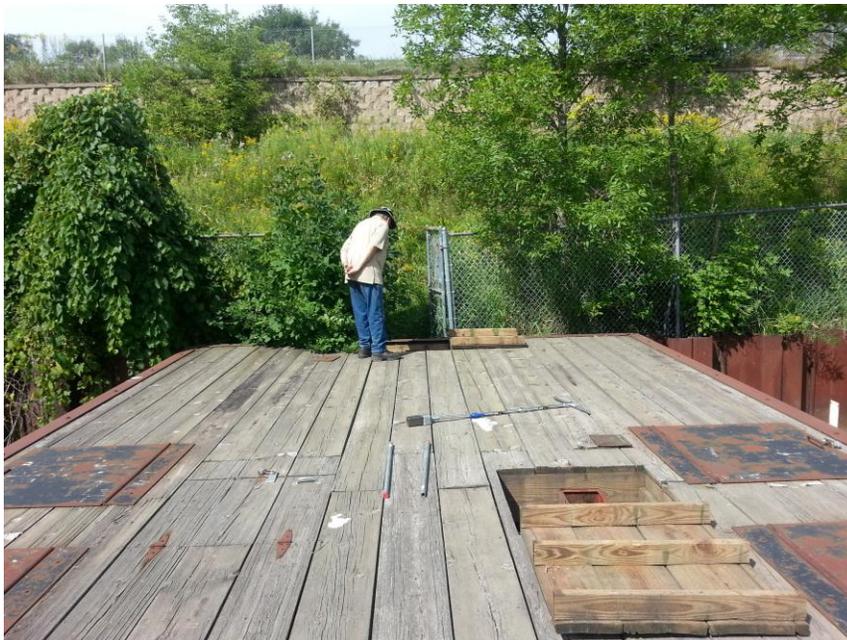
**Recommended Action:**

- County Parks to remove the bridge

**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 nut that operates the gates is loose and should be tightened, if possible, with an Allen wrench.

The vegetation along the fence is starting to fill in and could use some trimming. Mice have been using the gate control boxes as nests, a deterrent such as dryer sheets or covers without holes is recommended. The gates were tested and operational.



Photos: Outlet Control Structure

**Recommended Action:**

- None

**Suggested Follow Up:**

- Minor vegetation maintenance along fence
- Test out mouse deterrent options
- Tighten loose nut with Allen wrench

**Minor Maintenance Items Completed:**

- Tested control gate mechanism

**Outlet Structure and Pipe between Lake Ellen and Swamp Lake**

No issues were noted at the time of the inspection. The gates were opened in the spring and will remain open until fall. Vegetation is starting to overtake the ramp and should be cleared during the next inspection



Photo: Left – Ramp leading to weir structure. Right – Water flowing into weir structure

**Recommended Action:**

- None

**Suggested Follow Up:**

- Monitor erosion control device in farm field for needed maintenance
- Clear vegetation from ramp

**Minor Maintenance Items Completed:**

- Tested control gate mechanism

**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. Vegetation is starting to get thick near several of the culverts. It is recommended that this vegetation be removed by a contractor in 2016.



Photo: Pipes leaving Swamp Lake

**Recommended Action:**

- Have contractor remove vegetation build up in 2016

### 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. No issues noted.



Photo: Top view of outlet structure

#### Recommended Action:

➤ None