

2020 SUMMARY FOR CHISAGO LAKES LAKE LEVEL MONITORING ACTIVITIES

The goals for the Chisago Lakes Lake Improvement District lake level monitoring program for the 2020 monitoring season included:

- Monitor lake levels weekly during the open water season,
- Improve the safety and efficiency of the monitoring process whenever possible,
- Evaluate and upgrade worn out gauges and equipment, and
- Evaluate monitoring site locations and revise where appropriate.

The 2020 monitoring season began on May 21, 2020. Ice-out had occurred on area lakes during the first week of April. However, lake level monitoring began in May due to the COVID 19 pandemic and the closure of the Chisago County Government Center and Water Resource Manager staffing reductions that occurred in April and May of 2020.

From May 18 to 21, 2020, the Chisago County Surveyor reset and calibrated the gauges for the following lakes: Kroon, Linn, Little, Little Green/Green, North Center North Lindstrom/South Lindstrom/Chisago, Pioneer, South Center and Spider Lakes. On May 29, the county Surveyor reset and calibrated the gauges at Linn, School and Wallmark Lakes.

1. **Little Lake:** The gauge is located at the Little Lake public water access.
2. **Pioneer Lake:** The gauge is located in the southwest corner of the lake. The gauge is in a good location, although it can be difficult to see when tree vegetation is thick.
3. **North and South Center Lakes:** The gauge is located at the South Center Lake public water access where it can easily be viewed from the docks.

On July 22, 2019, county staff attached an orange flag to the top of the lake level gauge to prevent boaters from hitting the gauge with their boat. The gauge is located next to a bed of cattails and hidden from view. The flag alerts boaters to the gauge.

4. **North Lindstrom, South Lindstrom and Chisago Lakes:** In previous years, the Minnesota Department of Natural Resources (DNR) set a gauge at North Lindstrom and another gauge at South Lindstrom and Chisago Lakes. However, this year the DNR set only one gauge located in North Lindstrom Lake near the Lakeview Motel along Highway 8, as the lake level elevations for North and South Lindstrom Lakes were considered equalized due to high water levels.

Water levels at this gauge were used as the basis for opening or closing the Lofton Avenue Weir due to high water levels in 2020.

5. **Wallmark Lake:** The gauge is located on private property and is read from the back yard. Readings were taken consistently without major issues.
6. **School Lake:** The gauge is located on private property and is read from the back yard. Readings were taken consistently without major issues.
7. **Swamp Lake:** There are 7 culverts located at Swamp Lake; the 2nd culvert from the east is used for lake level measurements. Staff noticed low levels of water flowing through the culverts during lake level monitoring in October. On October 13, staff inspected the culverts and found significant vegetation and plant debris, as well as rocks, in all of the culverts, which caused them to plug and stop water from flowing through the culverts. County and EOR staff and volunteers removed more of the rocks located in the culverts during the Fall Channel and Outlet Structure inspection on October 29, 2020.



8. **Weir at Ivywood Trail:** The weir is used for measurements. County and EOR staff cleared excess vegetation located at the weir during the Summer Channel and Outlet Structure Inspection on August 20, 2020.



9. **Lofton Avenue Weir:** Located between Chisago and Green Lakes; the permanent gauge is attached to the side of the weir. The gauge can be difficult to read when algae from receding water levels sticks to the gauge. County and EOR staff cleared excess vegetation located at the weir during the Summer Channel and Outlet Structure Inspection on August 20, 2020.

On April 2, the Lofton Avenue Weir high and low control gates were opened due to high water on Chisago, and North and South Lindstrom Lakes. This resulted in a significant drawdown at the gauge at the Lofton Avenue Weir. The weir remained open until Chisago/North Lindstrom/South Lindstrom water levels were lowered to 898.7. The Lofton Avenue Weir control gates were closed on June 11, 2020.

10. **Little Green, Green, and Ellen Lakes:** The gauge is located on Little Green Lake near a private residence on West Street. Water levels at this gauge, and a gauge located on the Lake Ellen weir, were used as the basis for opening or closing the Lake Ellen Weir due to high water levels in 2020.

On March 26, the Lake Ellen Weir was opened. The weir remains open during the open water season when Little Green Lake water levels exceed 891. The Lake Ellen Weir control gate was closed on October 29, 2020.

11. **Kroon Lake:** The gauge is located at the Kroon Lake public water access. The gauge can be difficult to read due to excessive vegetation growth.

12. **Spider Lake:** The gauge is located at the Spider Lake public water access. The gauge can be difficult to read due to excessive vegetation growth.
13. **Linn Lake:** The gauge is accessed by a dock on private property on Newberry Trail. Lake levels were significantly lower in 2020 and access to the gauge was not an issue.
14. **County Road 19:** The gauge is located in the wetland complex near County Road 19. The gauge was underwater during most of the months of May and June due to high water levels. The Chisago County Surveyor provided a zero elevation at an electrical box located near the gauge in order to provide staff with water level elevations until the water receded and staff could read the gauge.

The 2020 monitoring season concluded on November 20, 2020, as cold temperatures had arrived and the lakes began to freeze.