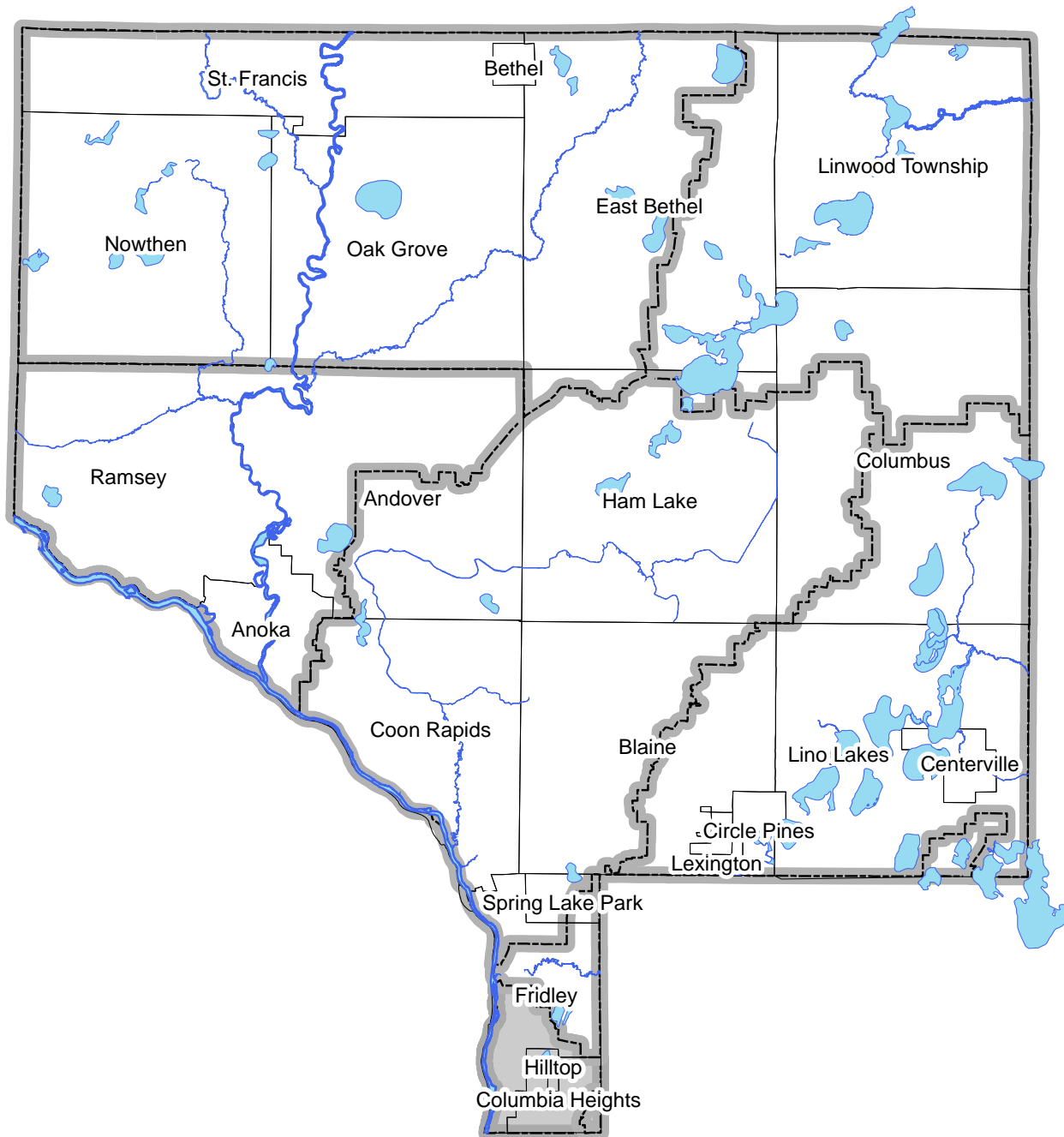


# Excerpt from the 2018 Anoka Water Almanac

## *Chapter 7: Mississippi Watershed*

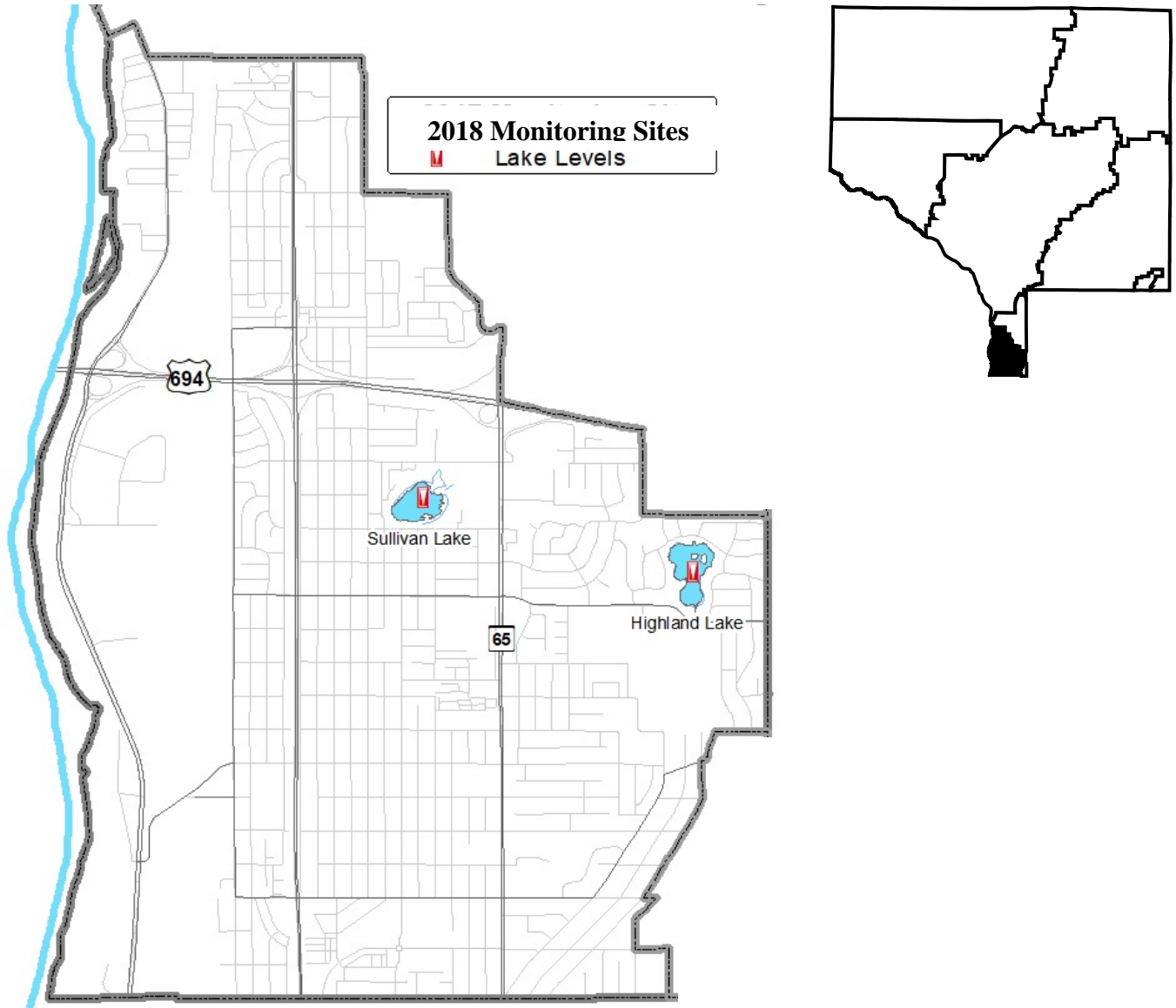


Prepared by the Anoka Conservation District

# Mississippi Watershed Management Organization

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# Lake Levels

**Partners:** MWMO, ACD, MN DNR, volunteers

**Description:** Weekly water level monitoring in lakes. These data, as well as all additional historical data are available on the Minnesota DNR website using the “LakeFinder” feature ([www.dnr.mn.us.state/lakefind/index.html](http://www.dnr.mn.us.state/lakefind/index.html)).

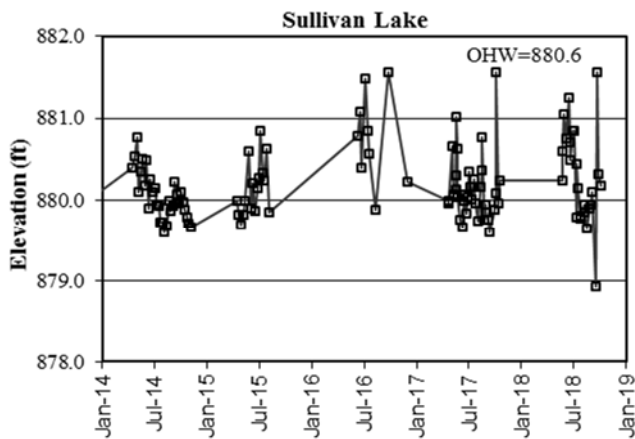
**Purpose:** To provide understanding of lake hydrology, including the impact of climate and water budget changes. These data are useful for regulatory, building/development, and lake hydrology manipulation decisions.

**Locations:** Sullivan/Sandy Lake  
Highland Lake

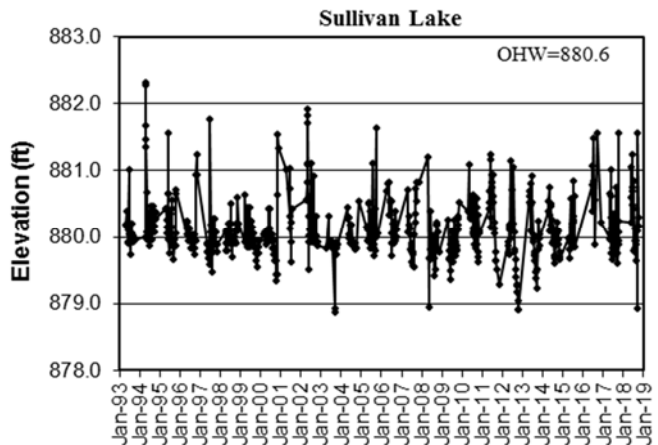
**Results:** Lake levels were measured 24 times at each lake May through October of 2018. Sullivan Lake water levels fluctuate widely, routinely bouncing by half a foot in response to rainfall and fluctuating 2.64 ft in 2018. Sullivan Lake experiences these fluctuations because it receives a large amount of storm water relative to its size, and its outlet releases water in all but the lowest water conditions. Highland Lake fluctuated very little only ranging 0.50 ft. throughout the season.

Raw lake level data for all sites and all years can be downloaded from the Minnesota DNR website using the "LakeFinder" tool. Ordinary High Water Levels (OHW), the elevation below which a DNR permit is needed to perform work, are listed for each lake on the graph below.

**Sullivan/Sandy Lake Levels last 5 years**



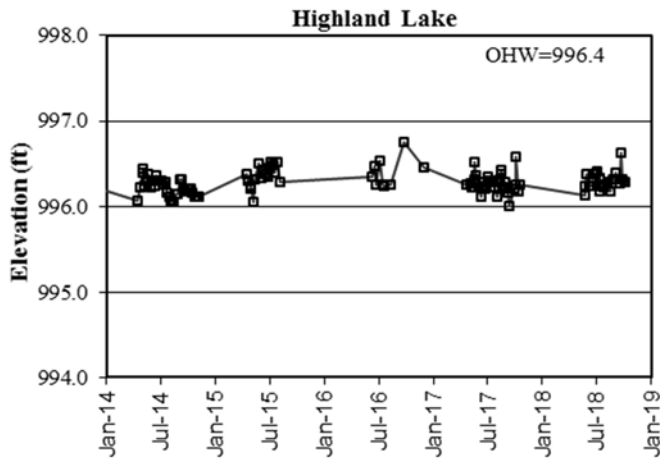
**Sullivan/Sandy Lake Levels last 25 years**



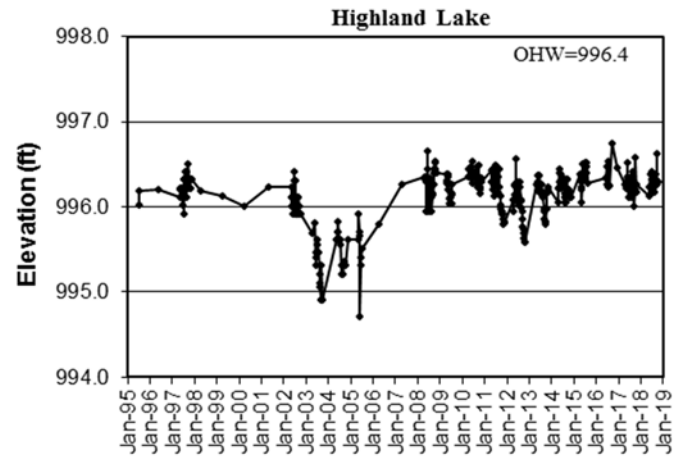
**Sullivan/Sandy Lake level 5 year summary**

Year	Average	Min	Max
2014	880.05	879.60	880.76
2015	880.14	879.69	880.85
2016	880.76	879.88	881.56
2017	880.13	879.60	881.56
2018	880.29	878.93	881.57
5-year	880.27	878.93	881.57

### Highland Lake Levels last 5 years



### Highland Lake Levels 1995-2018



### Highland Lake level 5-year summary

Year	Average	Min	Max
2014	996.22	996.05	996.44
2015	996.36	996.05	996.52
2016	996.40	996.24	996.75
2017	996.27	996.01	996.58
2018	996.30	996.13	996.63
5-year	996.29	996.01	996.75

# Financial Summary

ACD accounting is organized by program and not by customer. This allows us to track all of the labor, materials and overhead expenses for a program, such as our lake water quality monitoring program. We do not, however, know specifically which expenses are attributed to monitoring which lakes. To enable reporting of expenses for monitoring conducted in a

specific watershed, we divide the total program cost by the number of sites monitored to determine an annual cost per site. We then multiply the cost per site by the number of sites monitored for a customer. The process also takes into account equipment that is purchased for monitoring in a specific area.

## MWMO 2018 Financial Summary

Mississippi WMO	Total	Monitoring & Inventory		Analysis & Planning				Technical & Administrative Assistance										Outreach						
		Lake Levels	Inventory - Mississippi River Below Dam	Water Resources Almanac	Highland/Sullivan Subwatershed Analysis	Anoka Sandplain Partnership	Wetland Resto Opportunities	Land Prof/Resto Strategies	Land Protection Outreach	Landowner Tech. Asst.	Project Profiles	BMP Maintenance & Inspection	WCA Enforcement	Wetland Consultation	Wetland Restoration and Banking	Cooperative Weed Management	WCA Implementation	Watershed Based Funding Coordination	Video Development	Brochures & Displays	Web Blog	Web Story Map	Anoka County Outreach Program	
<b>Revenues</b>																								
MWMO	600	600																						
State - Other	2985														501	2485								
MPCA																								
DNR OHF																								
DNR CPL																								
BWSR - Service Grant	2706		657			285	289	102		259	81	177					595	84	161	16				
BWSR - Project Grant	613																							613
Metro ETA & NPEAP	1682				1659					23														
Regional/Local																								
Anoka Conservation District	2669			149	195	41		7	30	267		14	91	795	68	3	915	2		16	4	50	23	
County Ag Preserves/Projects																								
Service Fees	164								98							60	6							
<b>TOTAL</b>	<b>11419</b>	<b>600</b>	<b>657</b>	<b>149</b>	<b>1854</b>	<b>326</b>	<b>289</b>	<b>109</b>	<b>128</b>	<b>549</b>	<b>81</b>	<b>190</b>	<b>91</b>	<b>795</b>	<b>68</b>	<b>563</b>	<b>3405</b>	<b>596</b>	<b>84</b>	<b>177</b>	<b>20</b>	<b>50</b>	<b>637</b>	
<b>Expenses-</b>																								
Personnel Salaries/Benefits	9166	390	666	205	1855	274	244	94	109	479	73	153	81	663	59	417	2240	505	20	138	15	45	443	
Overhead	1029	44	56	27	163	38	37	11	16	57	10	19	11	92	8	47	250	75	3	20	1	5	39	
Vehicle/Mileage	161	10	12	2	37	2	1	1	1	10	1	3	2	9	0	9	44	6	0	2	0	1	8	
Project Direct - Supplies	1143	1								2				14		14	95	920	2	61	16	3	16	
Project Direct - Capital																								
Project Direct - Installation																								
<b>TOTAL</b>	<b>11500</b>	<b>445</b>	<b>735</b>	<b>234</b>	<b>2056</b>	<b>315</b>	<b>282</b>	<b>107</b>	<b>128</b>	<b>546</b>	<b>83</b>	<b>188</b>	<b>93</b>	<b>777</b>	<b>68</b>	<b>567</b>	<b>3453</b>	<b>587</b>	<b>84</b>	<b>176</b>	<b>20</b>	<b>51</b>	<b>506</b>	

## Recommendations

- Continue to monitor levels on Highland and Sullivan Lakes.
- Periodically monitor water quality on Highland and Sullivan Lakes.
- A Stormwater Retrofit Analysis (SRA) of the Highland and Sullivan Lake contributing drainage areas is planned for 2019. This study will result in a project list ranked by cost-effectiveness at reducing pollutant loading to the lake. Implementing the recommendations from this analysis should result in the most cost effective water quality improvement possible for these two lakes.