



**Prior Lake-
Spring Lake
Watershed
District**

Annual Report

2019



**PRIOR LAKE-SPRING LAKE
WATERSHED DISTRICT**

Mission: To manage & preserve the water resources of the Prior Lake-Spring Lake Watershed District to the best of our ability using input from our communities, sound engineering practices, and our ability to efficiently fund beneficial projects which transcend political jurisdictions.

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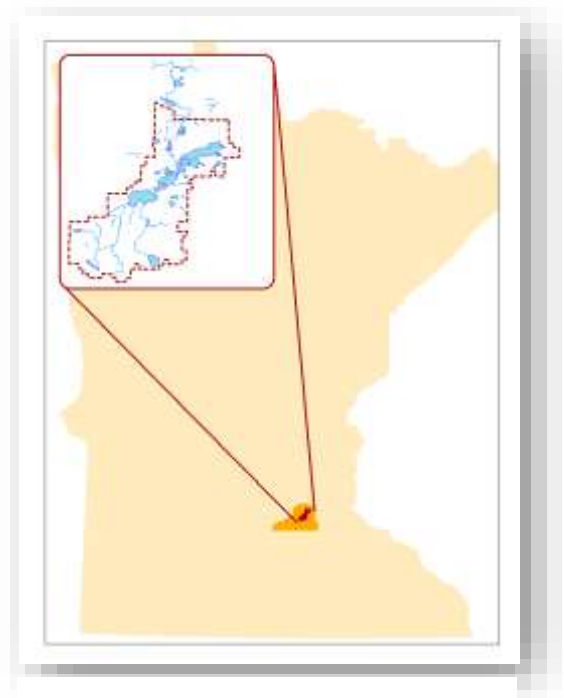
INTRODUCTION

This report has been prepared by the Prior Lake-Spring Lake Watershed District (PLSLWD, or District) and details the activities of the District through the calendar year 2019. The report will focus on the District's program and project accomplishments relative to the approved Capital Improvement Plan established in the 2010 PLSLWD Water Resources Management Plan, and annual work plan. Annual reporting requirements listed in Minnesota Rules Chapter 8410.0150, Subpart 3 will also be included in this report.

ABOUT THE DISTRICT

The Prior Lake-Spring Lake Watershed District was established on March 4, 1970 by order of the Minnesota Water Resources Board (MWRB) under the authority of the Minnesota Watershed Act (Minnesota Statutes, Chapter 112). The order was in response to a petition filed by resident landowners within the watershed on June 24, 1969. This citizen petition sought establishment of the District for the purposes of wisely managing and conserving the waters and natural resources of the watershed.

The PLSLWD is approximately 42 square miles in size and located in north central Scott County, Minnesota, encompassing parts of the cities of Prior Lake, Shakopee, and Savage and parts of Sand Creek and Spring Lake Townships. In addition, a portion of the Shakopee Mdewakanton Sioux Community tribal lands are located within the District.



Location of PLSWD

BOARD OF MANAGERS

PLSLWD is administered by a five-person Board of Managers (Board) appointed by the Scott County Commissioners. All the District's policies, goals, and accomplishments are directed by the citizens who serve on the Board. The Board of Managers meets the second Tuesday of the month at 6:00 PM at the Prior Lake City Hall, located at 4646 Dakota St. SE, Prior Lake, MN 55372. Meeting notices, agendas and approved minutes are available on the District website at www.plslwd.org/meetings.

Board members serving during the calendar year 2019 are listed below.

<p><u>Fred J. Corrigan</u> Vice President Term: 3/3/19-3/2/22 Resides in Prior Lake</p>	<p><u>Curt Hennes</u> Board Member Term: 6/12/19-6/11/22 Resides in Spring Lake Township</p>	<p><u>Charlie Howley</u> Treasurer Term: 7/26/17-7/25/20 Resides in Prior Lake</p>
<p>8075 E. Martindale Dr. Prior Lake, MN 55372</p>	<p>17286 Sunset Trail SW Prior Lake, MN 55372</p>	<p>4291 Coachman Lane NE Prior Lake, MN 55372</p>
<p>952-445-9681 fcorrigan@armofmn.com</p>	<p>952-440-7443 clphennes@gmail.com</p>	<p>952-440-5800 howleyctccn@gmail.com</p>

<p><u>Bruce Loney</u> Secretary Term: 3/3/19-3/2/22 Resides in Prior Lake</p>	<p><u>Mike Myser</u> President Term: 3/12/18-3/13/2021 Resides in Prior Lake</p>	<p><u>Woody Spitzmueller</u> Treasurer Term: 3/3/16-3/2/19 Resides in Prior Lake</p>
<p>5870 Shannon Circle SE Prior Lake, MN 55372</p>	<p>3857 Island View Cir NW Prior Lake, MN 55372</p>	<p>4279 Grainwood Circle Prior Lake, MN 55372</p>
<p>952-769-7408 bruceloney@nuveramail.net</p>	<p>651-341-5932 m.myser@mchsi.com</p>	<p>952-440-7607 bwspitz@gmail.com</p>

CITIZEN ADVISORY COMMITTEE

The Prior Lake-Spring Lake Watershed District formalized its Citizen Advisory Committee (CAC) in 2011. The CAC consists of residents who provide input and recommendations to the Board on projects, reports, prioritization and act as the primary interface for the Board to integrate the current issues of concern of the local citizens. The CAC meets monthly on the last Thursday of the month at 6:30pm at the Prior Lake City Hall, located at 4646 Dakota St. SE, Prior Lake, MN 55372.

Citizen Advisory Committee members that served during the calendar year 2019 are listed below.

Jerry Mealman
Resides in Spring Lake Twp

Steve Pany
Resides in Prior Lake

Larry Rundell
Resides in Prior Lake

Kim Silvernagel
Resides in Prior Lake

Elizabeth Schramm
Resides in Prior Lake

Roger Wahl
Resides in Prior Lake

Jim Weninger
Resides in Spring Lake Twp

Adam Fitzpatrick
Resides in Prior Lake

Joe Schramm
Resides in Prior Lake

James Goodchild
Resides in Prior Lake

Jodi See
Resides in Prior Lake

Marianne Breitbach
Resides in Prior Lake

Woody Spitzmueller
Resides in Prior Lake

Christian Morkeberg
Resides in Spring Lake Township

STAFF

Day-to-day operations of the Prior Lake-Spring Lake Watershed District are managed by a District Administrator and staff. All staff can be contacted through the main District phone number, 952-447-4166, or at the District Office, 4646 Dakota Street SE, Prior Lake, MN 55372.

Diane Lynch
District Administrator
Primary Contact
dlynch@plslwd.org

Amy Tucci
Administrative Assistant
atucci@plslwd.org

Jaime Rockney
Water Resources Specialist
jrockney@plslwd.org

Kathryn Keller-Miller
Water Resources
Assistant/Outreach
Specialist
kkeller-miller@plslwd.org

Maggie Karschnia
Water Resources Project
Manager
mkarschnia@plslwd.org

Jeff Anderson
Water Resources Technician
janderson@plslwd.org

CONSULTING SERVICES

The following are the consulting firms selected in 2017 for 2018/19 consulting services:

Abdo, Eick and Meyers, LLP
Audit Services
Andy Berg
Phone: 952-835-9090
www.aemcpas.com

Blue Water Science
Ecological Services
Steve McComas
Phone: 651-690-9602

Emmons and Olivier Resources, Inc
Engineering Services
Carl Almer
Phone: 651-770-8448
www.eorinc.com

HG & K, Ltd
Accounting Services
Chris Schadow
Phone: 952-927-8350
www.hgkcpa.com

Smith Partners, PLLP
Legal Services
Charles Holtman
Phone: 612-344-1400
www.smithpartners.com

WSB & Associates
Carp Management Services
Tony Havranek
Phone: 651-286-8473
www.wsbeng.com

WATER RESOURCES MANAGEMENT PLAN

The Minnesota Board of Water and Soil Resources (BWSR) approved the District's third generation Water Resources Management Plan (WRMP) on June 23, 2010 and the District Board adopted the plan at its July 13, 2010 meeting. A copy of the WRMP is available on the District website or by request, or in hard copy format at the District office.

In 2013, a major update to the WRMP was approved by BWSR in August and adopted by the District Board in September. The three major categories to the amendment included:

1. Goal Revisions
2. Reorganized Policies and Projects
3. Additional and Revised Implementation Projects

Goals Revision: Previously the District had 13 goals. This led to some confusion about what the top priorities of the District were as it related to Board actions. This plan update narrows the goals to just 5, which will make it easier for the Board and staff to focus on the priorities of the organization. The revised goals can be found in Section 2.3, and are as follows:

1. **To minimize the negative effects of water level fluctuations in the District.**
Action: The District completed a Flood Study, updated its O&M Plan for the Outlet Structure and initiated a major flood storage project at Sutton Lake. The District also restored a wetland at highways 12/17 in Prior Lake providing water quality and water storage benefits.
2. **To maintain or improve the quality of all water resources within the District.**
Action: The District completed several water quality projects on Upper and Lower Prior Lake, Arctic Lake as well as Spring Lake. It continued major projects, such as capturing phosphorus through dosing from the Ferric Chloride Plant, killing curlyleaf pondweed and developing and implementing a comprehensive Integrative Pest Management Program (IPM) for common carp.
3. **To maintain and expand the recreational, aesthetic, and wildlife habitat benefits associated with surface water and natural spaces in the District.**
Action: The District restored the 12/17 wetland and restored shorelines and habitat at its Spring Lake Demonstration Project area, Raymond Park and Fish Lake Park, where some threatened species have been identified. In addition, the District required contractors on projects to use erosion and sediment control measures that protect wildlife.
4. **To improve understanding of local water resources and practices among all stakeholders in the District.**
Action: The District undertook a vigorous Education and Outreach effort, expanded its social media presence, conducted numerous educational events and facilitated the efforts of the CAC.
5. **To be as efficient and effective as possible in all District activities.**
Action: The District has completed many programs and projects with a small staff and budget.

2020 Plan Update: The District worked on updating its 2010 Plan, due in 2020.

ASSESSMENT OF THE 2019 WORK PLAN

The following is a summary of the activities completed in 2019 organized by District's revised 2013/18 WRMP.

1. Capital Projects
2. Operations and Maintenance
3. Planning
4. Monitoring and Research
5. Regulation
6. Education and Outreach
7. Prior Lake Outlet Channel
8. Administration

CAPITAL PROJECTS

CARP MANAGEMENT PROJECT



In 2019, the District continued into its fourth year with its Carp Management Program in Spring and Prior Lakes, which was partially funded through a 319 grant from the Minnesota Pollution Control Agency and a Watershed Based Funding grant from BWSR. The project aims to improve the water quality of Spring and Upper Prior Lakes by decreasing total phosphorus concentrations using an Integrated Pest Management Plan (IPM). The

project has several different components, including: track movement and population of carp, complete carp removals, install barriers at strategic locations, and engage local community through outreach materials and events.

In 2019, the District continued to actively track the movement of 18 carp that were implanted with radio-tags in Spring Lake and Upper Prior Lake systems with a Yagi antenna. The carp location maps were documented on the District's website so that the public could see their locations. The District also continued to track carp through Passive Integrate Transponder (PIT) tags that were implanted into an additional 180 carp in 2019. PIT tags are used to track movement of carp through a specific channel where a receiver is installed. This is a more economical way of tracking carp but has its limitations as the carp can only passively be tracked through a specific location. In 2019, the District installed three receiver devices to study the movement of PIT tagged carp throughout different waterbodies which helped document movement and determined the effectiveness of installed carp barriers. The receivers were installed at the Arctic Lake Outlet, the Spring Lake Outlet, and downstream of the ferric chloride weir.

Telemetry surveys were conducted on Spring Lake and Prior Lakes to determine aggregation areas and migration routes. These surveys guided timing and location of seine (carp removal) events and identified potential carp barrier locations.

As winter conditions were not suitable this year for under ice seines (removals), the District worked with its consultants and three commercial fishermen to complete open water seines on Upper Prior Lake. This was supplemented with electrofishing efforts on the same lake.

<u>Date</u>	<u>Population Estimate</u>	<u># Carp Removed</u>	<u>Total Weight Removed</u>	<u>lbs/acre Removed</u>
4/19/2019	233.8 lbs/acre	397	5,448 lbs.	13.1 lbs/acre
5/20/2019	224.4 lbs/acre	266	3,644 lbs.	9.4 lbs/acre
TOTAL:		663	9,092 lbs.	22.5 lbs/acre

Potential carp barrier locations were identified which were determined by the radio-tag monitoring, site visits, anecdotal information and staff knowledge. Staff explored different carp barrier designs and conducted site visits to determine the barrier suitability for the sites. Carp were discovered in a wetland to the west of Upper Prior Lake in 2019, including a radio-tagged carp. Barrier designs were developed in 2018 & 2019 in partnership with the City of Prior Lake in coordination with the MnDNR and are ready for implementation in 2020.

Additionally, the existing carp barrier located at the ferric chloride facility had not been functioning for several years. WSB engineers and District staff worked together to re-design this weir to include a different, functional carp barrier, as well as some safety updates. These updates will be completed in 2020.

In 2020, the District will continue with its carp management efforts under its current, approved version of the IPM Plan and under new grant funding provided through a federal 319 grant and a Watershed-Based Funding grant through BWSR to help accelerate management efforts moving forward. The goal in 2020 is to expand carp management efforts into connecting waterbodies, managing carp on a watershed level.

PUBLIC INFRASTRUCTURE PARTNERSHIP PROJECTS

Fish Lake Shoreline & Prairie Restoration Project

Fish Lake Park is located on the northwest corner of Fish Lake at Spring Lake Town Hall and is owned by Spring Lake Township. The project aims to enhance a section of shoreline along Fish Lake behind the town hall and create a prairie restoration on the north side of the property.



The restorations will improve habitat for wildlife and pollinators and act as a demonstration site for landowners interested in completing restorations on their own properties, giving them an opportunity to view an example of a rain garden (existing project), prairie and shoreline restoration all in one, easily accessible location. This project is a frequent site for

events and is home to Spring Lake township's main park. This project is a partnership between Spring Lake Township and the Prior Lake-Spring Lake Watershed District.

The initial site restoration was completed in 2019. Invasive species including reed canary grass and buckthorn along shoreline controlled and existing turf grass in prairie restoration area was terminated and the prairie and shoreline areas seeded with native plant species in fall 2019.

Red Wing Avenue Ditch Checks & Filter Strips Project

The ditches at the intersection of Redwing Avenue and North Sutton Lake Boulevard have significant erosion and were brought to the District's attention by one of its partners, Sand Creek Township. A preliminary assessment identified a potential solution: regrade and stabilize the ditches with erosion control blanket and permeable ditch checks to stabilize the erosion, along with riprap energy dissipation at the outlet to prevent in future erosion. The District moved forward with a feasibility study in 2020 for this future potential project.



Fairlawn Shores Drainage Improvement Project

The Fairlawn Shores Project was completed in 2018, but after installation it was noted that the drainage from the street into the project area could be improved. There was an opportunity to make a small modification to the existing project to improve the conveyance of stormwater from the street to the biofiltration basin. Construction for this modification project was completed in 2019.

OPERATIONS AND MAINTENANCE

AQUATIC VEGETATION MANAGEMENT

Aquatic vegetation management for curlyleaf pondweed occurred on Spring and Upper Prior Lake in 2019. 14 acres on Upper Prior and 15 acres on Spring Lake were treated by PLM Lake and Land Management Corporation with Diquat chemical.

COST SHARE

The District has a residential incentive program and a rural cost share program coordinated with the Scott Soil and Water Conservation District (SWCD). The District approved rural cost-share projects including 1 grassed waterway, 5 raingardens and 3 well decommissions. The SWCD received requests and provided follow-up assistance to 71 landowners in the watershed. They assisted 28 landowners with conservation programs; approved 9 new contracts for cost share assistance and issued payment on 15 projects. Seven landowners received assistance for equipment rental and one received facility planning and design assistance.



FARMER-LED COUNCIL

The Farmer-Led Council (FLC) was created in 2013 to help the District reduce nutrient loading to Spring Lake to levels that meet or exceed state water quality standards. Agricultural lands make up the majority of the landscape in the Spring Lake & Upper Prior Lake watersheds. As such, farmers are the most important stewards of the land and their active input and participation is critical to achieving water quality goals.

Represented by local leaders in the farming community, the role of the FLC is to develop and guide the implementation of strategies that PLSLWD will use to accomplish agriculture's share of the nutrient reduction goal. Specifically, the FLC aims to:

- Inform decision makers and the general public about practical issues and opportunities related to soil and water conservation on agricultural lands.
- Identify base-level and site-tailored practices that are available and needed.
- Define the approach for engaging with and assisting farmers to implement practices.
- Establish a schedule with reasonable milestones and timelines for progress.
- Identify potential barriers to implementation, along with tools and resources are needed to overcome them.

The District held three FLC meetings in 2019 where a variety of agricultural topics related to water quality were discussed. At its meetings, the FLC brought in two guest speakers to learn more about key topics, including Ross Bishop from Cedar Creek Farmers Watershed Group and Mitch Holicky, a farmer from Le Center who brought experience with cover crops.

The FLC provides recommendations for innovative cost-share programs and incentives that are not included in the PLSLWD's current cost share programming. The FLC continued with its inlet protection program which included offering free Agri-Drain water quality inlets to farmers.

The Lake-Friendly Farm program was piloted by two FLC members in 2017, and two additional members in 2018. In 2019, nine more farms, represented by four farmers, were certified through the Lake-Friendly Farm program.

In 2018, the FLC developed a new Cover Crop Initiative Program that targeted critical water quality fields in the watershed, identifying tiered priority areas. Over 500 acres were enrolled in the program in 2019. Scott SWCD helped to coordinate the aerial seeding of both over-winter and winter-kill seed mixes on most of the fields, with a couple of farmers opting to interseed the mixes directly on their fields. In addition to no-cost seeding, the program also offered free rental of the no-till & interseeder equipment to aid in implementation. The program is anticipated to continue on a slightly larger scale in 2020 with the hopes of getting more new farmers working with cover crops in the upper watershed.

FERRIC CHLORIDE TREATMENT FACILITY

A desiltation pond was built in 1978 to capture phosphorus before the stormwater from County Ditch 13 reached Spring Lake. In 1998, a ferric chloride plant was constructed to use this chemical upstream of the desiltation pond to bind with phosphorus and preventing it from entering the lake.

In 2013, the system was redesigned to release the ferric chloride (FeCl_3) solution into a desiltation basin, rather than the stream, per a MPCA permit requirement. The initial targets for design parameters, with input and agreement by regulatory agencies, was to allow flows up to approximately 30 cubic feet per second (cfs) into the desiltation pond for normal operations. High flows were to overtop a high flow bypass weir east of the existing pond which flows directly to Spring Lake to prevent possible resuspension and flushing within the desiltation pond.

In September 2018, the pump was programmed to dose ferric chloride based on a relationship with stream height. The maximum treatment dose rate is 4 gallons per hour when the depth over the ferric chloride weir is 0.50 feet. Once the depth is greater than 0.50 feet, the pump will continue dosing at 4 gallons per hour based on the maximum flow calculations of the desilt pond diversion culvert.

The desiltation pond treated water with ferric chloride from April 1 to November 12 in 2019. Samples were taken weekly during treatment to analyze efficiency of the treatment system. On average, the treated water decreased the concentration of total phosphorus by 19% and dissolved phosphorus by 43%. In other words, a total of 1,981 million gallons were treated, 466 pounds of total phosphorus were removed and 594 pounds of dissolved phosphorus were removed.

Results of the 2019 sampling can be found in the Annual Ferric Chloride Report available at www.plslwd.org.

ROUGH FISH MANAGEMENT



In 2019, the District developed a plan for a new initiative for carp management: Accelerated Carp Management Strategies. These strategies were created to accelerate the removals of carp in Spring and Upper Prior Lakes by allowing staff to implement new techniques and to promote innovation.

The District approved moving forward with such strategies as using underwater speakers to train and move carp, purchasing a boat so that staff can implement small removals and tracking independently, to design and install innovative carp traps that take advantage of carp's natural instinct to move upstream to spawn, purchasing block nets to direct carp to removal areas during seines, and additional funding for multiple seine efforts. While some of these efforts were implemented in 2019, many of them will be begin in 2020.

RAYMOND PARK

In 2017, the District partnered with Great River Greening (GRG) to restore shoreline and habitat at the City of Prior Lake's park. The project also aimed to create a demonstration site for four different habitat types: beach restoration, oak savanna restoration, shoreline restoration and low maintenance turf grass. Twenty-five Prior Lake High School students helped plant native plants along the shoreline and hauled woodchips for the trail. The project was partially funded by a Conservation Partners Legacy grant and Great River Greening.

In 2019, additional seeding was done at the park and Great River Greening provided vegetation maintenance. Maintenance responsibilities will be transferred to the city in 2020 and interpretive signs will be designed and installed.

RESTORATION PROJECTS MAINTAINENCE

The District conducted vegetation maintenance on restoration projects that were installed in previous years. These projects include the District-owned shoreline parcel on Spring Lake, the Indian Ridge biofiltration basin project, the Fairlawn Shores biofiltration project, and the 12/17 wetland restoration project.

PLANNING

2020 WATER RESOURCES MANAGEMENT PLAN

In 2019, the District continued updating its Water Resources Management Plan, meeting with stakeholders, conducting public meetings and continuing plan revisions. The updated ten-year management plan laying out the District's goals and activities for the next ten years is due to be completed in 2020.

MONITORING AND RESEARCH

Monitoring was conducted in accordance with the Monitoring Plan and included a mix of staff, volunteer, and contract work which incorporated in-lake monitoring, stream water quality and flow measurements, precipitation and aquatic vegetation monitoring. Partners included Metropolitan Council Environmental Services, Three Rivers Park District, Shakopee Mdewakanton Sioux Community (SWCD), Scott Soil and Water Conservation District (SWCD), Blue Water Science, and Emmons and Oliver Resources (EOR). The District also hired interns.

STREAM MONITORING DATA

STREAM CHEMISTRY SAMPLING

Stream chemistry samples were collected at 15 locations around the watershed by PLSLWD staff. Water temperature, conductivity, pH, turbidity, and dissolved oxygen were also measured at these locations using a Hydrolab MS5 multi-parameter meter.

- Three sites were sampled weekly to fulfill the MPCA permit requirements for the Ferric Chloride site (FC_CD1, FC_CD2, FC_CD3)
- The District Monitoring Program included eight sites (ST_40, ST_19, DLO, ST_14, ST_24, ST_26A, ST_S3P, ST_S3PP). These sites were monitored biweekly.
- Two agricultural monitoring sites were monitored biweekly for the Farmer-Led Council program (T3 and B3). T3 is sampled where it flows out of the tile and B3 is located in a channel downstream of T3. B3 is a tributary of Fish Lake and located approximately 100 feet before entering Fish Lake.

STAGE AND FLOW MONITORING

Continuous stage and flow monitoring occurred in conjunction with the stream chemistry and lake monitoring. Stage and flow monitoring consisted of level loggers that recorded stage continuously and flow measurements. By combining chemistry and stage/flow monitoring results, loads can be calculated using the FLUX modeling software. The sites mentioned in the stream chemistry section above (except T3) all had level loggers. In addition to those sites, stage and flow were monitored on the outlets of Fish, Spring, Sutton, Prior Lakes (sites ST_o8, ST_21, ST_5D, PL_OUT respectively).



Stream Monitoring

Flow measurements were collected by PLSLWD and Scott SWCD. Flow meters used include FloMate 2000 and a Sontek Flowtracker. Continuous stage was recorded using level loggers, such as pressure transducers and ultrasonic distance sensors.

LAKE MONITORING DATA

AUTOMATED LEVEL LOGGERS

Four automated level loggers were installed to monitor the lake levels on Spring, Prior, Fish, and Pike Lakes. The loggers were programmed to log the lake level every 15 minutes and then transmit the data to the PLSLWD website once per hour which was accessible to the public.

DNR STAFF GAGES

Three staff gages were monitored for the DNR on Pike, Spring, and Lower Prior Lake. Staff gages are surveyed in every year by DNR to tie the results to Mean Sea Elevation. Volunteers helped monitor the levels of Pike Lake.

THREE RIVERS PARK DISTRICT

Three Rivers Park District monitored five lakes in 2019: Fish, Pike, Upper Prior, Lower and Upper Prior and Spring Lakes. These lakes are monitored 13 times per year, and where possible, profile samples are collected.

CAMP VOLUNTEER LAKE MONITORING

The CAMP program was coordinated by Metropolitan Council, and locally coordinated by PLSLWD. Four volunteers collected lake samples for the CAMP program in 2019.

Lake	Volunteer(s)
Lower Prior (site 2)	Steve Reinders
Haas	Tom Chaklos
Buck Lake	Steve Beckey
Cates	Paula Thomsen

Samples were collected every other week during ice-free conditions, which include parameters such as Secchi depth, phosphorus, and chlorophyll-a.

AQUATIC VEGETATION SURVEYS

Blue Water Science conducted summer aquatic vegetation surveys on six lakes – Buck Lake, Pike Lake, Cate’s Lake, Arctic Lake, Crystal Lake, and Swamp Lake. These surveys include the type and density of vegetation at predetermined sampling locations throughout the lakes during summer, which is the time most vegetation is present.

Curlyleaf pondweed (CLP) surveys were completed in springtime on Spring, Fish, Upper Prior, Lower Prior, Buck, and Pike Lakes to determine if treatment was needed. Aquatic vegetation management for curlyleaf pondweed occurred on Spring and Upper Prior Lake in 2019.

AQUATIC VEGETATION DENSITY MAPPING

Since 2013, the density of aquatic vegetation in District lakes has been mapped using BioBase. The BioBase software creates maps of aquatic vegetation density, bathymetry, and bottom hardness utilizing a depth finder mounted to a boat.

Volunteers and staff mapped all or parts of Swamp, Arctic, and Spring Lake in 2019.

Prior Lake Association has donated \$700 annually since 2013 towards the BioBase program. Volunteers donated their time and boats. The District purchased a boat in 2019 that will be able to be used for future mapping.

The benefits of this project include:

- A better understanding of density and location of vegetation in lakes
- More accurate bathymetric maps
- Lake bottom sediment composition maps
- Improved implementation and analysis of curlyleaf pondweed treatments
- Greater understanding of lake ecology and sediment deposition rates
- Better management of fisheries and for sports fishing

PRECIPITATION

One volunteer collected rain and snowfall data daily in 2019 –Richard Schultz. PLSLWD forwarded the data to the State Climatologist. District staff also recorded daily precipitation at the office location.

The District installed a weather station in 2018 at the Spring Lake Townhall which is logging and transmitting data to Weather Underground.

REGULATION

EASEMENT INSPECTIONS

The District holds many conservation easements and development agreements that were acquired while permits were being actively issued. These easement and agreement restrictions provide water quality benefits by protecting water resources with buffers and water quality features. The District's conservation easement program contains three components to ensure protection of its investments: yearly monitoring inspections, effective communication with landowners and a strong enforcement policy.

In 2019, the District inspected all 37 conservation easements with 172 landowners. Of the landowners' properties that were visited by District staff, 76% of properties were in compliance with the easement terms, 10% had minor violations, 7% were working towards a resolution of easement violations and 7% were multi-year violators with no action towards compliance. Many landowners have made improvements, correcting some, if not yet all, of the easement violations on their property, and we have made initial contact and begun to resolve issues with many of the other landowners.

Staff wrote letters to all the landowners advising them of the violations and offering to provide them further assistance to ensure the violations would not continue. The most common easement violations were mowing, yard waste, storage (wood etc.), dumping/trash, landscaping, and planting non-natives. During the 2020 inspections, staff will concentrate on monitoring the violating properties and working with landowners to resolve issues.



PERMIT ACTIVITY

The District inspected active permits to ensure that conditions of the permit were being met. The District issued three new permits in 2019:

- 19.01 County Public Works
- 19.02 Kici Yapi Culvert
- 19.03 Scott County Culvert

Weekly permit inspections began in April and went through November 2019. Inspections also continued from previous years' open permits: 17.01, 17.03, 18.01, 18.02, 18.03, 18.04, 18.05, and 18.06.

In addition, the District continued to close out permits as the projects met all necessary requirements.

EDUCATION AND OUTREACH

CITIZEN ADVISORY COMMITTEE

PLSLWD staff continued to conduct and attend monthly Citizen Advisory Committee (CAC) meetings. CAC meeting minutes and monthly updates were included in every Board meeting package, and a Board member was assigned to attend regular CAC meetings.

The CAC and City of Prior Lake coordinated Clean Water Clean-ups in the Spring and Fall, where over 90 citizens participated in preventing organic material in local parks from being deposited in lakes through stormwater runoff. The CAC also conducted community outreach at Lakefront Days in August.

COMMUNITY INVOLVEMENT

The District conducted a tour of the District's Upper Watershed for the Board of Managers and District partners. The City of Prior Lake, Scott SWCD and the District hosted a native prairie workshop, a shoreline workshop and a cover crop workshop. For the first time ever, the District provided an annual presentation to the Cities of Prior Lake, Savage, Shakopee, Scott WMO, Sand Creek and Spring Lake Townships. In addition, the District gave presentations at the annual meetings of the Prior Lake and Spring Lake Associations. Other annual updates will be completed in 2020. The District also gave several presentations to local classrooms on various topics including carp management, watershed management and water quality.

PRESS AND SOCIAL MEDIA

The District submitted 10 articles to be published in the Prior Lake American. The District also provided articles for the Prior Lake and Spring Lake Association newsletters. Staff submitted 5 articles to be published in the bi-monthly Scott County SCENE. The District's carp management program was featured in one of BWSR's Snapshots articles in 2019.

In addition, other media outlets and newsletters were used to publicize District events and initiatives. The District met with local reporters to provide an overview of the District's programs and projects. The District also provided input on a story KSTP did on spring flooding.

Lake levels for Prior and Spring Lakes were updated automatically on the website year-round and for Fish and Pike Lakes during the growing season. Numerous Facebook and Twitter posts were made on a wide variety of topics.

PRIOR LAKE OUTLET CHANNEL

STRUCTURE

The Prior Lake Outlet Structure was constructed in 1983 to address high lake level issues on Prior Lake, which does not have a natural outlet. The structure received a major update in 2010 to incorporate an improved design.

PRIOR LAKE OUTLET CHANNEL (PLOC)

The Prior Lake Outlet Channel (PLOC) is utilized by the District and other partners in managing lake levels on Prior Lake as well as providing a 7-mile stormwater conveyance system for the surrounding communities. There is a Memorandum of Agreement between the Cities of Prior Lake, Shakopee, the Shakopee Mdewakanton Sioux Community and the District that specifies operation and maintenance as well as cost-sharing.

The PLOC is considered an MS4 municipal stormwater conveyance system and the District must secure permits and submit annual reports.

Channel inspections were made throughout the year to ensure the integrity and efficiency of the system was maintained. Continuous flow was recorded at four locations along the channel and Sonde measurements were taken at some culvert crossings.

The remainder of the repair work to fix major damage to the channel from 2014 flooding will be completed in 2020. Funding was partially from FEMA and the State of Minnesota.



FLOOD DAMAGE REPAIR

The District sustained over \$1 million in damages in the Prior Lake Outlet Channel due to the 2014 flooding events. The District was approved for federal funding for repairs from the Federal Emergency Management Administration (FEMA) for Emergency Protective Measures (temporary Spring Lake Dam); Culverts and Crossings; Downed Trees and Sediment Delta and Bank Erosion.

By the end of 2019, all of the projects were completed except for the Bank Erosion, which is the most expensive and extensive project, estimated at \$750,000. The Bank Erosion project was substantially completed in 2019.

WETLAND BANKING PROGRAM

The Prior Lake-Spring Lake Watershed District does not have a locally adopted wetland banking program within its jurisdiction.

STATUS OF LOCAL PLAN ADOPTION AND IMPLEMENTATION

Minnesota Rule 8410 required that local units of government complete their Surface Water Management Plans and Comprehensive Plans by December 31, 2018. The District reviewed and/or approved: the Scott WMO's Comprehensive Water Resources Management Plan; Lower MN River Watershed District's Watershed Management Plan and Prior Lake's Local Surface Water Management Plan.

EVALUATION OF PROGRESS

The following are major projects and programs completed since 2016 PRAP Level II Report:

- The Prior Lake Stormwater Management and Flood Mitigation Study (2016 Flood Study) was completed. Two of the three recommendations of the Flood Study were also completed: The City of Prior Lake completed a Flood Response Policy to coordinate temporary protection measures during flood events and the District updated its Management Policy and Operating Procedure and received approval by the Minnesota Department of Natural Resources (MDNR) to open the low-flow gate at its own discretion, by following the Procedure. The third recommendation was to meet the first-tier, high priority Prior Lake protection level of 905.5 for the 25-year return period. The District is nearing completion of its first flood storage project, the Sutton Lake Outlet Modification Project.
- FEMA-funded projects resulting from the 2014 Flood are nearly complete. Nearly \$1 million in damages to the Prior Lake Outlet Channel included stream bank erosion, downed trees, sediment delta and culvert replacements.
- Four Lower Prior Lake Retrofit Implementation Projects were completed which will reduce phosphorus by 33 lb. or 10% of the total drainage area phosphorus load to Lower Prior Lake. In addition, the Fish Point Park Water Quality Improvements Project was completed and was expected to reduce phosphorus from entering Lower Prior Lake by 34 pounds per year.
- The Farmer-Led Council (FLC) was created in 2013 to develop and guide the implementation of strategies the District will use to accomplish agriculture's share of the nutrient reduction goal. The FLC has expanded to include more area farmers who participate in regular meetings, attend workshops, participate in new incentive programs like the Lake Friendly Farm and Cover Crop Incentive Program and initiate new projects, such as the Cover Crop Reverse Auction.

- Carp management has grown from sponsoring carp tournaments and occasional seines to implementing a comprehensive Integrated Pest Management Plan (IPM Plan) that includes population estimates, installing carp barriers, large open and closed water seines and an Accelerated Carp Management Plan that focuses upon innovative techniques to reduce the carp population in Spring and Upper Prior.
- Two demonstration shoreline restoration projects were completed on Spring Lake—on the District’s property and at the city of Prior Lake’s property, Raymond Park. Another shoreline restoration project began in 2019 on Fish Lake.
- Conservation easements were not a high priority of the District prior to 2015. All 37 conservation easements, which represent 155 landowners, have been inspected annually and most have responded to easement violations by correcting problems or making improvements.
- The Citizen Advisory Committee met monthly and participated in Lakefront Days and Clean Water Clean-ups. In 2019, they initiated a new action plan for CAC-sponsored activities and events for 2020 and beyond, such as fish stocking, AIS/Signage, shoreline restoration and the District’s 50th Anniversary.

FINANCIAL REPORT

The 2019 PLSLWD Audit was completed by Abdo, Eick and Meyers LLP, and includes both the District’s Annual Financial Report and the Independent Auditor’s Report on Compliance with Minnesota Legal Compliance Guide for Local Governments for the year ended December 31, 2019. A copy of the 2019 Annual Audit will be available for review on the District website and at the District office after May 12, 2020, when it is approved by the Board of Managers.

2019 FINANCIAL SUMMARY

Values presented in the chart and graph below are unaudited. Please refer to the 2019 Annual Audit for more details, which can be found at www.plslwd.org

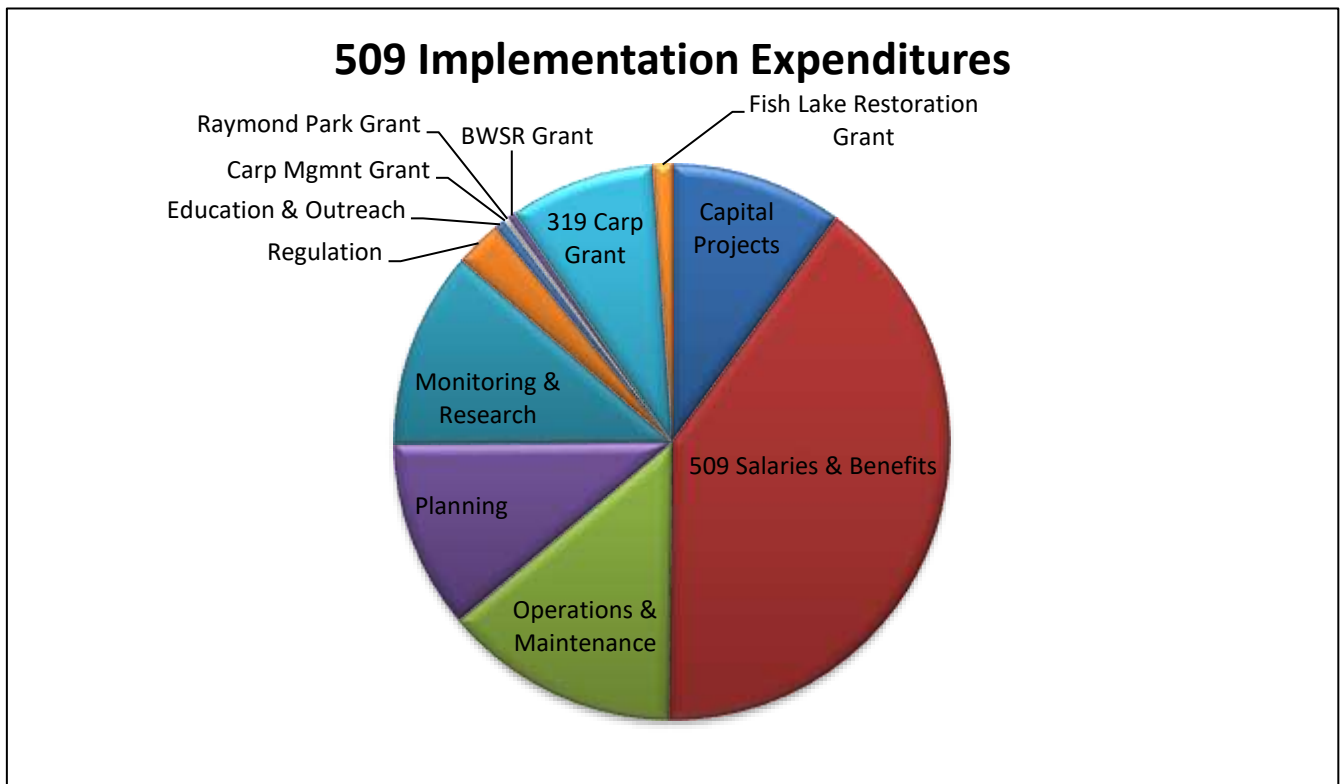
2019 Project Expenditures

2019 FINANCIAL SUMMARY

Fund	Starting Balance	Approved Budget	Tax Levy Revenue*	Additional Revenue**	Transfers to/(from)	Expenditures	Ending Balance
General	\$218,718	\$200,722	\$200,454	\$3,852	\$0	\$117,066	\$305,958
509 Implementation	\$769,659	\$2,207,118	\$1,419,360	\$90,704	(\$26,453)	\$1,013,172	\$1,240,098
MOA/JPA Funds	\$473,452	\$592,750	\$0	\$540,934	\$26,453	\$640,081	\$400,758
Bond Debt Service	\$22,107	\$170,375	\$169,862	\$390	\$0	\$170,375	\$21,984
Total	\$1,483,936	\$3,170,965	\$1,789,676	\$635,880	\$0	\$1,940,694	\$1,968,798

*Tax levy revenues shown are actual tax levy dollars collected. The 2019 tax levy was \$1,794,632.

** Additional revenue is comprised of permit fees, investment income and grant funding.



GRANTS

Grants obtained by the District that were active in 2019 were as follows:

- *Internal Loading BMPs in Spring and Prior Lakes grant*
Goal: Utilize integrated pest management principles to effectively manage the common carp population and manage aquatic vegetation to reduce the levels of phosphorus in Spring and Prior Lakes.
Funding Source: 319 Grant through the MPCA
Total Grant Amount: \$80,300
Effective: February 14, 2019 to December 31, 2021
- *Watershed Based Funding grant*
Goal: Utilize integrated pest management principles to effectively manage the common carp population and aquatic vegetation to reduce the levels of phosphorus in several District lakes and wetlands including Spring Lake, Prior Lake, Pike Lake, the Geis wetland and the Northwoods wetland. The District's Farmer-Led Council will hold two workshop events for the District's agricultural community to promote new and innovative conservation practices within Scott County. Two feasibility studies will be conducted to determine suitability for possible future projects.
Funding Source: BWSR
Total Grant Amount: \$185,000
Effective: May 15, 2019 to December 31, 2021
- *Raymond Park Restoration Project grant*
Goal: Restore the shoreline and oak savanna of Raymond Park (located on the south side of Spring Lake) and convert the existing turfgrass to a low-maintenance grass mix.
Funding Source: Conservation Legacy Partners through the DNR
Total Grant Amount: \$24,000
Effective: February 8, 2017-June 30, 2020
- *Fish Lake Shoreline & Prairie Restoration Project grant*
Goal: Enhance the shoreline and reconstruct a prairie on Fish Lake at Spring Lake Townhall.
Funding Source: Conservation Legacy Partners through the DNR
Total Grant Amount: \$13,800
Effective: April 4, 2019-June 30, 2022

2020 WORK PLAN

The following is a summary of implementation activities planned to be completed in 2020 and the amount budgeted for that activity.

509 Implementation Fund	\$1,391,718
General Revenue	\$225,739
Debt Service Fund	\$177,175

CAPITAL PROJECTS

In 2020, the District will partner with Spring Lake and Sand Creek Townships and the City of Prior Lake on Public Infrastructure Partnership Projects. In addition, the District will finish engineering and construction on the Sutton Lake Flood Mitigation Project in late 2020/early 2021.

OPERATIONS AND MAINTENANCE

The Cost Share and Residential Incentives programs and Farmer Led Council will be continued. Operation and Maintenance of the ferric chloride facility will continue. The District will also complete an updated NPDES/SDS Permit for the Ferric Chloride Plant. Aquatic vegetation treatment may occur in Prior and Spring Lakes, depending upon the survey reports. Vegetation maintenance will continue on restoration projects like the District's Spring Lake parcel.

PLANNING

The District will continue to identify and explore locations for upper watershed storage. It will complete an Upper Watershed Blueprint in 2020 that will identify short and long-term activities to increase water quality and water storage. The District will complete its 2020 Water Resources Management Plan.

MONITORING AND RESEARCH

The District will continue its monitoring program in 2020, which includes stream monitoring, flow monitoring, lake quality, lake level, plant surveys, and plant density monitoring. The District will begin a wetland quality and macroinvertebrate monitoring program in 2020.

REGULATION

The District will complete an MS4 Annual Report and apply for a new MS4 permit. The District's rules were last substantially revised in 2003. A decade later, planning was undertaken by the District and its municipal partners to advance rule revisions, but ultimately, the District decided not to move

forward with finalization and adoption of a new set of rules. The new rule for Illicit Discharge, Rule P, was adopted by the District on December 10, 2013. Four rules were revised and adopted to meet MS4 requirements on October 13, 2015 in order to meet MS4 permit requirements: A (Definitions), D (Stormwater Management), E (Erosion & Sediment Control) and P (Illicit Discharge). The District convened a Rules TAC in August of 2017 and rule revisions are expected to be completed in 2020. The District will continue enforcing its Rules, inspecting permit sites and monitoring conservation easements.

EDUCATION AND OUTREACH

The District will continue its education and outreach program to meet the requirements of its MS4 permit and improve understanding of local water resources and practices among all stakeholders in the District. The District will continue working with the Scott County Clean Water Education Program and will be participating in innovative public outreach and education opportunities. Updating the website and writing articles for submittal to local newspapers will continue.

PRIOR LAKE OUTLET CHANNEL

Repair work to fix major damage to the channel from 2014 flooding was substantially completed in 2019 with funding from FEMA and the State of Minnesota. Vegetation restoration around the repair work will be monitored in 2020. Projects and other maintenance will be discussed and decided upon by the Technical Advisory Committee and the Cooperators (Memorandum of Agreement) members. The Memorandum of Agreement, which was approved in 2006, was revised in 2019.

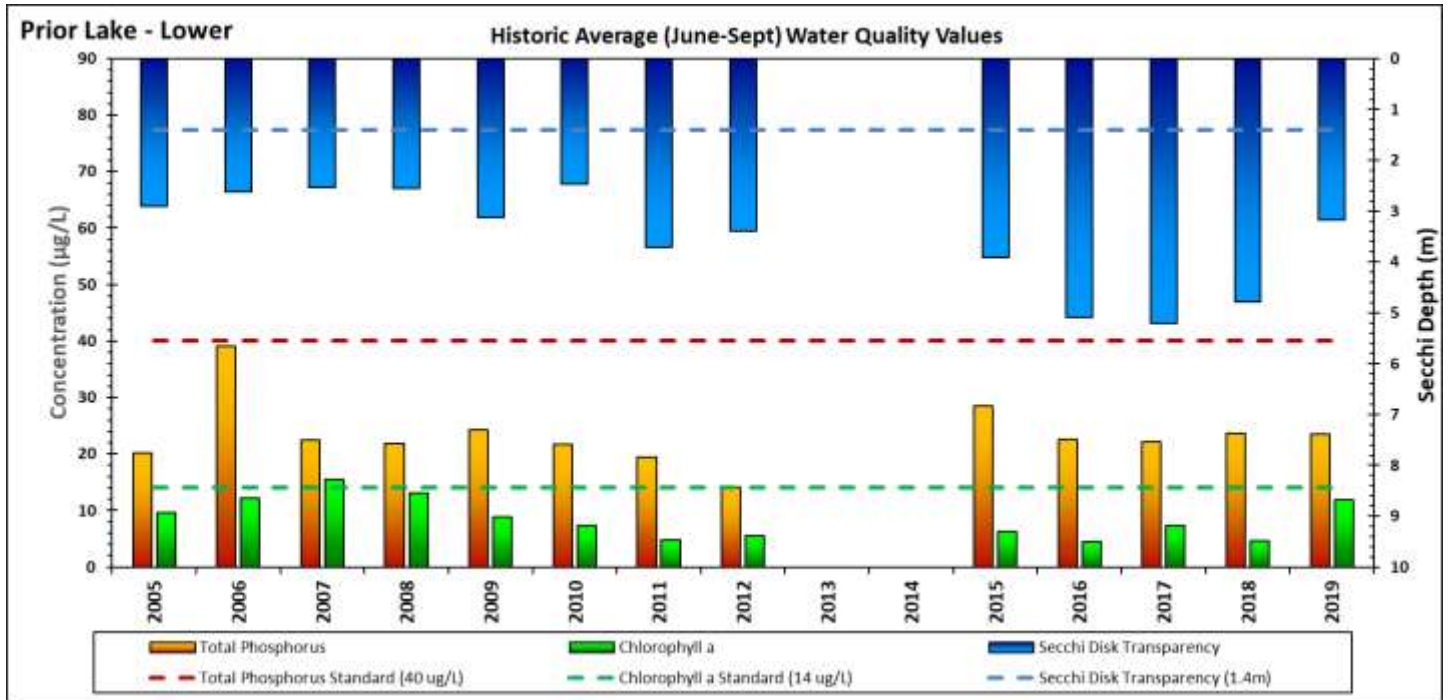
ATTACHMENTS & WATER QUALITY GRAPHS

The Annual Communications Plan, Implementation Plan Update and Annual Solicitation Letter are provided in separate documents. The District solicited for proposals for Auditor, Accountant, Engineer and Attorney in October 2019.

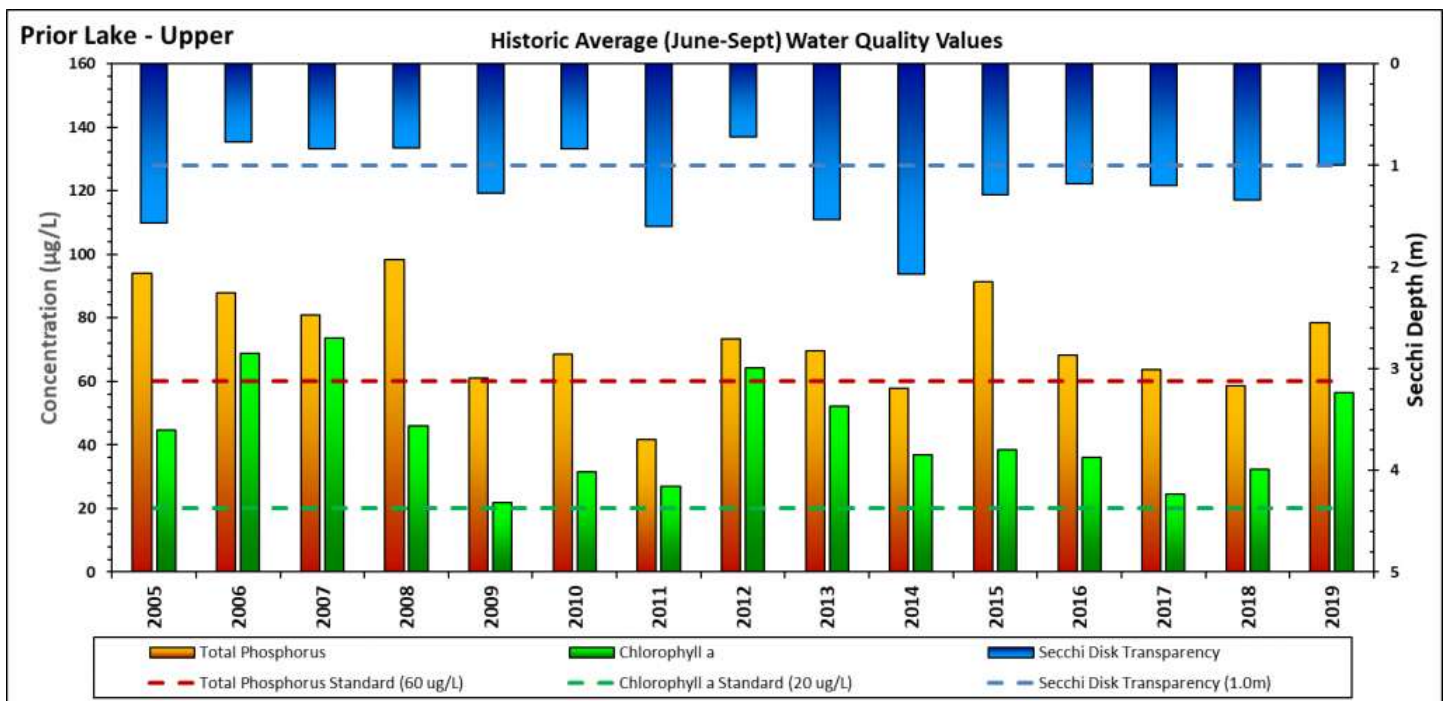
WATER QUALITY DATA FOR DISTRICT LAKES

The following graphs indicate the status of the District's monitoring efforts on District lakes since 2004.

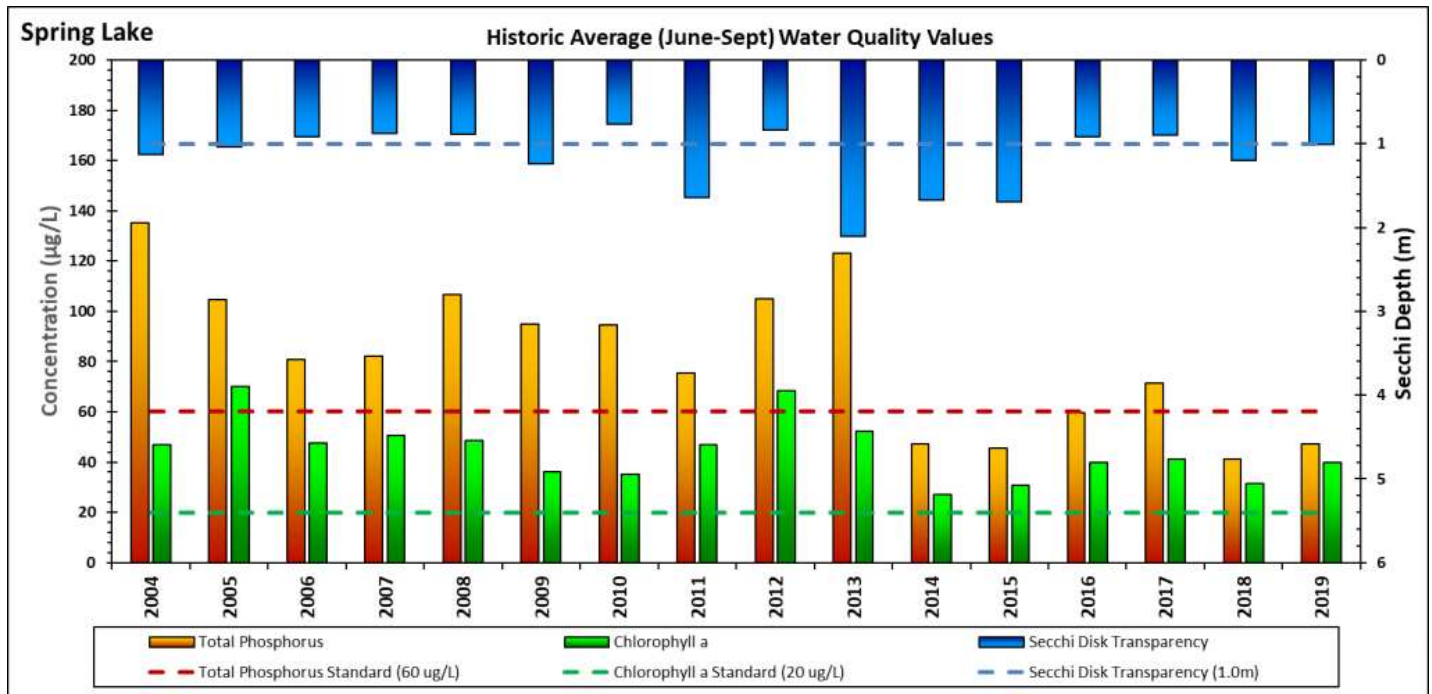
Lower Prior Lake



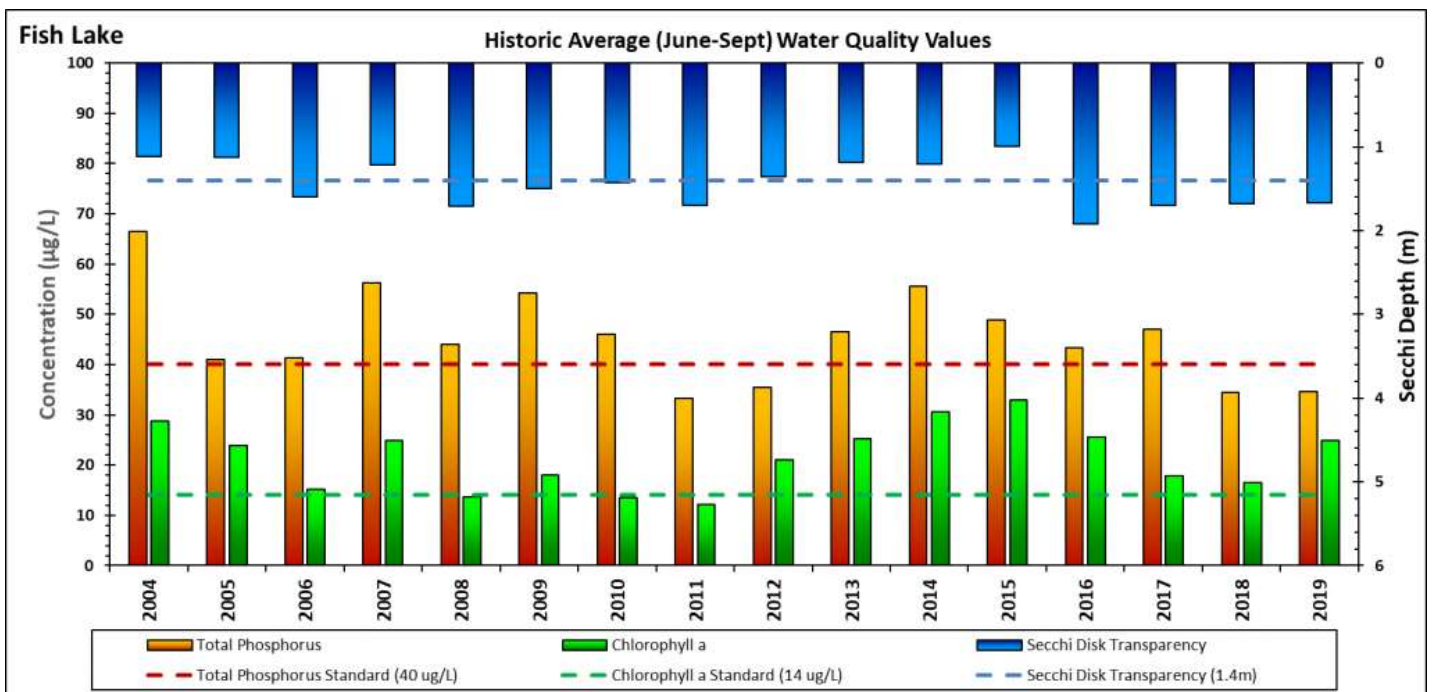
Upper Prior Lake



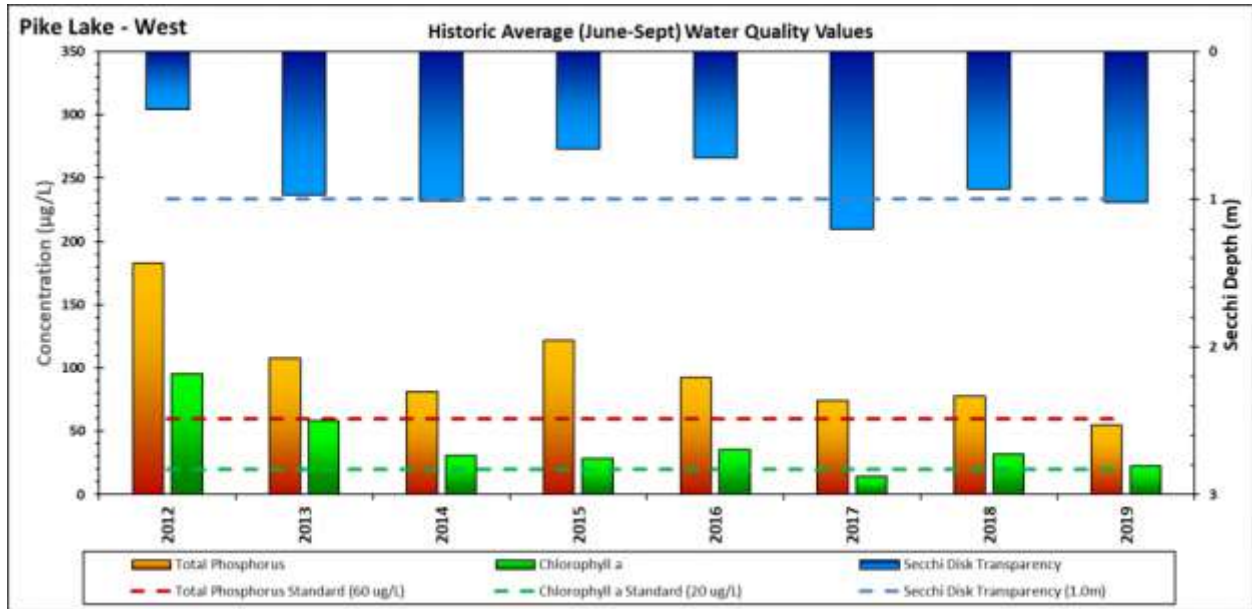
Spring Lake



Fish Lake



Pike Lake - West



Pike Lake - East

