



# Prior Lake- Spring Lake Watershed District

Annual Report

# 2015

*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.*

PRIOR LAKE - SPRING LAKE  
WATERSHED DISTRICT

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## INTRODUCTION

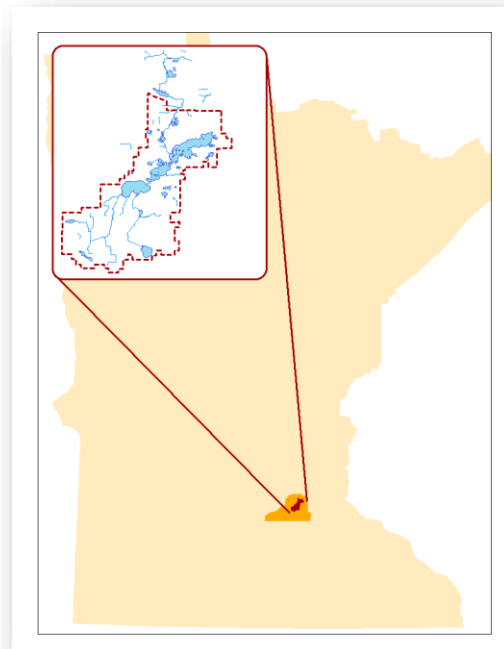
This report has been prepared by the Prior Lake-Spring Lake Watershed District (PLSLWD, or District) and details the activities of the District through the calendar year 2015. The report will focus on the District's program and project accomplishments relative to the approved Capital Improvement Plan 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

### BACKGROUND

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 is 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

The PLSLWD is administered by a five-person Board of Managers (Board) appointed by the Scott County Commissioners. All of 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](http://www.plslwd.org/meetings).

Board members serving during the calendar year 2014 are listed below.

Fred J. Corrigan

Manager

Term: 3/3/16-3/2/19

Resides in Prior Lake

8075 E. Marindale Dr.  
Prior Lake, MN 55372

952-445-9681  
fcorrigan@armofmn.com

Marianne Breitbach

Vice President

Term: 3/3/15-3/2/18

Resides in Prior Lake

14890 Pixie Point Circle SE  
Prior Lake, MN 55372

952-440-7561  
jmbreit@gmail.com

Curtis Hennes

President

Term: 2/5/2013-6/11/16

Resides in Spring Lake Township

17286 Sunset Trail SW  
Prior Lake, MN 55372

952-440-7443  
clphennes@gmail.com

Charlie Howley

Secretary

Term: 7/26/14-7/25/17

4291 Coachman Lane NE  
Prior Lake, MN 55372

952-440-5800  
chowley@htpo.com

Woody Spitzmueller

Treasurer

Term: 3/3/16-3/2/19

4279 Grainwood Circle  
Prior Lake, MN 55372

952-440-7607  
bwspitz@integra.net

## 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 2015 are listed below.

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Paul Krueger  
*Resides in Spring Lake Twp*

Steve Pany  
*Resides in Prior Lake*

Larry Rundell  
*Resides in Prior Lake*

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Kim Silvernagel  
*Resides in Prior Lake*

Elizabeth Schramm  
*Resides in Prior Lake*

Roger Wahl  
*Resides in Prior Lake*

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Jim Weninger  
*Resides in Spring Lake Twp*

Adam Fitzpatrick  
*Resides in Prior Lake*

Joe Schramm  
*Resides in Prior Lake*

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James Goodchild  
*Resides in Prior Lake*

Jodi See  
*Resides in Prior Lake*

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## 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  
[dlynch@plslwd.org](mailto:dlynch@plslwd.org)

Amy Tucci  
Administrative Assistant  
[atucci@plslwd.org](mailto:atucci@plslwd.org)

Jaime Rockney  
Water Resources Specialist  
[jrockney@plslwd.org](mailto:jrockney@plslwd.org)

Sarah Mielke  
Monitoring Assistant  
[smielke@plslwd.org](mailto:smielke@plslwd.org)

Kathryn Keller-Miller  
Conservation Assistant  
[kkeller-miller@plslwd.org](mailto:kkeller-miller@plslwd.org)

Maggie Karschnia  
Water Resources Project  
Manager  
[mkarschnia@plslwd.org](mailto:mkarschnia@plslwd.org)

Andrea Slotke  
GreenCorps Member  
[aslotke@plslwd.org](mailto:aslotke@plslwd.org)

## CONSULTING SERVICES

Solicitation for consulting services for 2015/16 were made in September 2015. The following are the consulting firms selected in 2015 for 2016/17:

Abdo, Eick and Meyers, LLP  
Audit Services  
Andy Berg  
Phone: 952-835-9090  
[www.aemcpas.com](http://www.aemcpas.com)  
(2016 Only)

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](http://www.eorinc.com)

Messerli and Schadow, PLLP  
Accounting Services  
Chris Schadow  
Phone: 952-927-8350  
[www.messerli-schadow.com](http://www.messerli-schadow.com)

Smith Partners, PLLP  
Legal Services  
Charles Holtman  
Phone: 612-344-1400  
[www.smithpartners.com](http://www.smithpartners.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 electronically 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.
2. To maintain or improve the quality of all water resources within the District.
3. To maintain and expand the recreational, aesthetic, and wildlife habitat benefits associated with surface water and natural spaces in the District.
4. To improve understanding of local water resources and practices among all stakeholders in the District.
5. To be as efficient and effective as possible in all District activities.

## ASSESSMENT OF 2015 WORK PLAN

The following is a summary of the activities completed in 2015 organized by District's revised 2013 WRMP.

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

## CAPITAL PROJECTS

### ARCTIC LAKE

A Subwatershed Analysis Project between City of Prior Lake, SMSC, and PLSLWD resulted in an implementation strategy that addressed water quality and other impairments in Arctic Lake that impact Upper Prior Lake. The District applied for a grant from the Minnesota Board of Soil and Water Resources and received funding to implement the plan through four measures to help reduce phosphorus: controlling carp, constructing a drainage swale and basin, designing and constructing iron-enhanced sand filters and restoring the wetland. Three Rivers Park District is also involved with the project because of their desire to complete the final segment of the Spring Lake Park Regional Trail nearby this project. Engineering and construction work is nearly complete.

### COUNTY ROAD 12/17 WETLAND RESTORATION PROJECT

When Scott County planned to improve the County Road 12/17 area in 2013, the PLSLWD saw an opportunity to work collaboratively with the City of Prior Lake and Scott County to restore a wetland near the intersection of County Road 12 and County Road 17 that would reduce stormwater volume runoff and nutrient loading into Spring Lake. This project was partially funded by a Clean Water Fund grant through the Board of Water & Soil Resources.

The City of Prior Lake is the owner of the property and as per an executed cooperative agreement with PLSLWD, is prohibited from altering the flood retention, water quality or ecological function of the wetland for 25 years. This agreement also holds the District responsible for maintaining the wetland and uplands plantings on the property for the first 5 years. It is expected that no further maintenance work on the vegetation is necessary after this period.

In 2015, the District worked with AES to ensure proper establishment of vegetation at the site. An interpretive sign was placed on the trail, and a large sign identifying the project and its partners was installed.

In 2016, carp barriers will be added to all three outlet structures and the water level will be manipulated to encourage desired plant growth. The District will continue to manage the vegetation at the site to ensure healthy establishment.



12/17 Wetland Restoration

## LOWER PRIOR LAKE PROTECTION PROJECT IMPLEMENTATION

Lower Prior Lake is located within the City of Prior Lake and is approximately 960 acres, with a maximum depth of 60 feet. It currently meets water quality standards, but degraded water quality is a concern in the late summer when algae is prolific. A 2013 Clean Water Partnership (CWP) Diagnostic Study concluded that the water quality of the upper bay of Lower Prior Lake is strongly influenced by the water quality of Upper Prior Lake but even more so by the phosphorus loading from the watershed.

In 2014, a Minnesota Clean Water Partnership grant was successfully obtained from the Minnesota Pollution Control agency to implement BMPs identified in the diagnostic study that could potentially result in maintaining or improving the water quality conditions in the Upper Basin as much as 10% within 10 years. The proposed projects will reduce phosphorus by 33 lb/yr, or 10% of the total drainage area phosphorus load of 326 lb/year to Lower Prior Lake.

As part of this grant project, the District partnered with the City of Prior Lake to complete a shoreline restoration at Watzl's Beach in 2015. This restoration included the removal of invasive species and undesirable woody plants, and planting native prairie and lakeshore species that will help to stabilize the shoreline and provide habitat for wildlife.

The District will be completing additional projects in 2016, such as installing infiltration basins and iron-sand filters to help reduce the phosphorus loading to Lower Prior Lake. The grant ends in 2018.



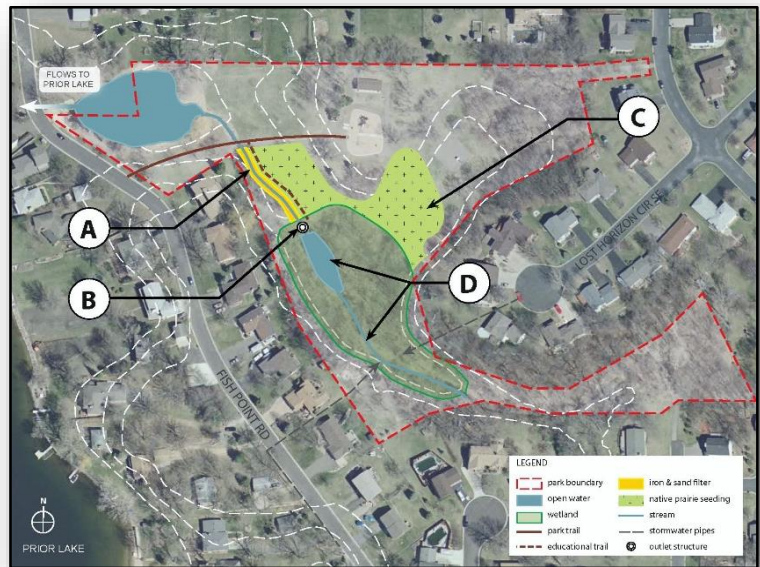
## FISH POINT PARK RETROFITS

As one of the projects identified in the Lower Prior Lake Protection Project, the Fish Point Park Water Resources Improvements Project combines the efforts of both the District and the City of Prior Lake to reach the water quality goal in this subwatershed. In the CWP Diagnostic Study, the Fish Point Park subwatershed was identified as having the fourth largest phosphorus loading to the Lake, making it a high priority area to install BMPs

Partially funded by a grant from the Clean Water Fund (CWF) through the Board of Soil & Water Resources (BWSR), the Fish Point Park Water Resources Improvements Project aims to reduce erosion and treat incoming stormwater before it reaches the lake. Three BMPs were identified to reduce phosphorus loading and control stormwater rates and volumes: 1) retrofitting an existing

ditch section with in-line iron sand filters; 2) creating a wetland for storage; and 3) installing a new predictive control structure. These three BMPs work together to enhance their collective effectiveness, making the overall project benefits greater than the sum of the benefit provided by each part.

The project was completed in the Fall of 2015. The three BMPs together will remove an estimated 34 pounds of phosphorus from Lower Prior Lake each year, resulting in a 66% decrease of phosphorus loading from this subwatershed. The District will work with the City of Prior Lake in 2016 to continue the efforts to establish native vegetation at the project site. In addition, the District anticipates it will host volunteer planting events and an open house event to help publicize the success of the project and its outcomes that were helped accomplished with CWF through BWSR.



Fish Point Park Water Quality Improvements Project

## OPERATIONS AND MAINTENANCE

### AQUATIC VEGETATION MANAGEMENT

Based upon a recommendation from Blue Water Science, 5.45 acres were treated for curlyleaf pondweed on Lower Prior Lake and 16.06 acres on Upper Prior Lake. This treatment was a partnership between PLSLWD and the City of Prior Lake. An Aquatic Invasive Plant Control grant from the DNR paid for part of the treatment and the remaining was split between PLSLWD and the City. The curlyleaf was treated by PLM Lake and Land Management.

### COST SHARE

The District has a residential incentive program and a rural cost share program. The residential incentive program included 3 raingardens, and 4 shoreline restorations. Working with the Scott Soil and Water Conservation Service, the District approved rural cost-share projects such as 4 well decommissions, 4 filter strips, 2 cover crops and 1 nutrient management project for a total of 12 landowners.



David Hymel, Rain Dog Designs

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## 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 four FLC meetings in 2015 in which a variety of agricultural topics related to water quality were discussed. The FLC implemented two cost-share programs in 2015 for variable rate application and cover crops, and helped provide direction to the District's Stormwater Management and Flood Management Study as related to agricultural lands.

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## 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 up phosphorus.

In 2013, the system was redesigned to release a Ferric Chloride ( $\text{FeCl}_3$ ) solution into a desiltation basin, rather than the stream, per a MPCA permit requirement. Initial targets for design parameters, with input and agreement by regulatory agencies, was to allow flows up to approximately 30 cfs into the desiltation pond for the majority of 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.

The desiltation pond treated water with Ferric Chloride from April 1 to October 31 in 2015. 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 48% and dissolved phosphorus by 51%. In other words, a total of 348 million gallons were treated, 402 pounds of total phosphorus were removed and 103 pounds of dissolved phosphorus were removed.

Results of the 2015 sampling can be found in the Annual Ferric Chloride Report available on [www.plslwd.org](http://www.plslwd.org).

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## ROUGH FISH MANAGEMENT

The District sponsored the 3<sup>rd</sup> Annual Carp Tournament on Prior and Spring Lakes on May 30<sup>th</sup>, 2015. At this event, 14 teams competed and removed a total of 540 pounds of carp. \$2,100 in prizes was distributed to the winners. Following the event, the carp were transported to the Shakopee Mdewakanton Sioux Community Organics Recycling Facility by Buckingham Companies, Inc. for processing.

In 2015, the District was successful in obtaining a Clean Water Partnership grant through the Minnesota Pollution Control Agency to improve the water quality of Spring, Upper Prior, and Lower Prior Lakes by decreasing total phosphorus concentrations through the use of integrated pest management to effectively manage the common carp populations. 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 2015, the District radio-tagged 7 fish in Spring Lake to help track their movement, and held an event during the implanting of the radio-tags to help educate the public and to promote the project. The carp were then tracked the remainder of the year and documented on

**2015 Carp Tournament Winners**



the District’s website so that the public could see their locations. The District also engaged local schools in the project, presenting it to six local classrooms, and asking them to “Name the Fish” that are being tracked on an interactive map on the District’s website.

In 2016, the District will be inserting additional radio-tags into 23 more carp to help track them, and will coordinate removal events on Spring and Prior Lakes. Carp will also be captured and marked to help determine a population estimate for the lakes.

**SPRING LAKE TOWNSHIP PARCEL**

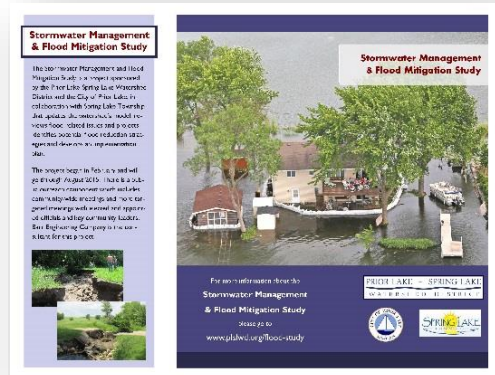
In 2015, the District partnered with Great River Greening (GRG) to help design a shoreline restoration project on the District’s Spring Lake Parcel. This project will restore an open oak–basswood understory with a robust groundlayer of native graminoids and wildflowers that stabilize soils, and install three different shoreland stabilization demonstrations including 1) cedar revetments, 2) native plantings, and 3) willow stakes/wattles. The project will also create an aesthetically pleasing landscape with open understories and low growing vegetation and will include demonstrations of natural shoreline alternatives.

In 2016, the District will implement the shoreline restoration project. Buckthorn and other undesirable woody vegetation will be removed over the winter. The District will hold a volunteer event on May 21, 2016 to help restore the shoreline with native species and three shoreline stabilization measures.

**PLANNING**

**STORMWATER MANAGEMENT & FLOOD MITIGATION STUDY**

Due to the extensive flooding in 2014, the District partnered with the City of Prior Lake and collaborated with Spring Lake Township to complete a study that updates the watershed’s hydraulic and hydrologic model, reviews flood related issues and projects, identifies potential flood reduction strategies and develops an implementation plan. This Stormwater Management and Flood Mitigation Study began in 2015 and will be completed in 2016.



2015 Flood Study Brochure

The project will include four phases: Update the Watershed Model; Identify Flood Reduction Options; Evaluate Flood Reduction Options and Draft an Implementation Plan. A Steering Committee

consisting of technical staff from the District's partners will guide the process. An Advisory Group, consisting of representatives of the District's Citizen Advisory Committee, the City of Prior Lake's Lakes Advisory Committee, lake associations and appointed and elected officials will provide input at critical junctures. The public will be invited to recommend options for the Steering Committee to consider as well as to provide input throughout the project. The updated hydraulic and hydrologic model will be used to test a series of mitigation options and their impact on flood levels. It is anticipated that several feasible options will be identified and will be considered for future actions.

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## FLOOD DAMAGE REPAIR

The District sustained over \$1 million in damages in the Prior Lake Outlet Channel due to the flood. 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 Bank Erosion.



In addition, the District secured bonding authority during the 2015 Legislative Session to provide upfront funding for Bank Erosion which is estimated to cost over \$700,000. By the end of 2015, the majority of the Downed Trees were removed. It is anticipated that the rest of the repairs will be completed by early 2017.

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## SEDIMENT CORE ANALYSIS

### SPRING LAKE

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A report on sediment coring was done on Spring Lake by the St. Croix Watershed Research Station in 2013. The report is titled "Historical water quality and ecological change in Spring Lake, Scott Co., MN" and concludes that historic, pre-settlement TP in Spring Lake was in the range of 60 ppb +/- 5 ppb. This information was used to apply to the Minnesota Pollution Control Agency (MPCA) for a Site Specific Standard for Spring Lake of 60 ppb so that the current TMDL goal of 40 ppb would be revised. The MPCA approved the application in 2015. At the end of 2015, the watershed was waiting for the EPA to finalize a review.

The complete report can be found at [www.plslwd.org](http://www.plslwd.org) or by contacting the PLSLWD office.



## 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, 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 21 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 for the Ferric Chloride site (FC\_CD1, FC\_CD2, FC\_CD3)
- For an intense study on the Upper Watershed, four sites were added in 2014 (ST\_5B, ST\_5C, ST\_5D, ST\_5E). These sites were monitored biweekly.
- The District Monitoring Program included six sites (ST\_40, ST\_19, ST\_20, ST\_17, ST\_14, ST\_PSP). These sites were monitored biweekly.
- Two sites were added in 2014 at Fish Point Park for the Fish Point Park Retrofit grant (ST\_S3, ST\_S3P). These sites only flow during rain events, so whenever possible, samples were taken.
- Four agricultural tile sites were monitored for the Farmer Led Council program. (T1, T2, T3, B3). T1 and T2 did not flow very often and were only sampled a few times. T3 and B3 were much more consistent and sampled biweekly. Site ST\_5D is a stream monitoring location a few hundred feet upstream of T1 and T2. T1, T2, and T3 are all sampled as they flow out of the tile. B3 is located downstream in a channel downstream of T3 because there is nowhere to sample upstream of T3. B3 is a tributary of Fish Lake and located approximately 100 feet before entering Fish Lake.
- Two sites along the Prior Lake Outlet Channel (DLI, DLO) were sampled. Scott SWCD sampled these sites in coordination with grants. The PLSLWD paid SWCD to sample additional parameters that were not covered by the grant.

## STAGE AND FLOW MONITORING

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Continuous stage and flow monitoring occurred in conjunction with the stream chemistry and lake monitoring. Stage and flow monitoring consists of level loggers that record 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 T1, T2, T3, and B3) all had level loggers. In addition to those sites, stage and flow were monitored on the outlets of three lakes (Fish, Spring, Prior) and the lake data was used to calculate loads (sites ST\_o8, ST\_21, PL\_OUT respectively).



Stream Monitoring

Site DLI stage and flow was recorded by Scott SWCD and site DLO flow was measured just downstream of DLO at the Met Council Field Road Crossing.

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.

## DEPLOYMENTS

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Deployment monitoring data was collected by installing sondes in the water for an extended amount of time (two weeks at a time). This method is used to collect continuous data upstream and downstream of a location of interest in order to view changes both spatially and temporally. Parameters collected include conductivity, temperature, turbidity, and dissolved oxygen. In 2015, Scott SWCD was hired to conduct the deployment study in the Upper Watershed.

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## LAKE MONITORING DATA

### AUTOMATED LEVEL LOGGERS

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Two automated level loggers were installed to monitor the lake levels on Spring and Prior 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 GAGE

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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.

**THREE RIVERS PARK DISTRICT**

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Three Rivers Park District monitored five lakes in 2015: 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**

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The CAMP program was coordinated by Metropolitan Council, and locally coordinated by the PLSLWD. Three volunteers collected lake samples for the CAMP program in 2015.

Lake	Volunteer(s)
Lower Prior (site 2)	Sarah Kitt
Haas	Tom Chaklos
Buck Lake	Steve Beckey

Volunteers collect samples every other week during ice-free conditions, which include parameters such as secchi depth, phosphorus, and Chlorophyll-A.

**AQUATIC VEGETATION SURVEYS**

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Blue Water Science conducted vegetation surveys on four lakes – Spring, Upper Prior, Lower Prior, and Fish Lake. These surveys include the type and density of vegetation at predetermined sampling locations throughout the lakes. In lakes with invasive plants, Blue Water Science recommends treatment options, when deemed appropriate.

**AQUATIC VEGETATION DENSITY MAPPING**

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A new program in 2013, lakes were mapped for aquatic vegetation density, bathymetry, and bottom hardness utilizing a depth finder. Volunteers used their own boats, attached the depth finder, and followed pre-determined tracks to cover all or parts of Spring, Buck, Arctic, Fish, Upper Prior, and Lower Prior lakes. Prior Lake Association has donated \$700 annually since 2013 towards the program. Your Boat Club volunteered the use of a boat for volunteers mapping Prior Lake at no charge to the District.

The potential 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 fisheries management and for sports fishing

#### Biobase Vegetation Density Mapping



### PRECIPITATION

Three volunteers collected rain and snowfall data daily in 2014 – Jonathan Cohen, Richard Schultz, and Larry Mueller. The PLSLWD then forwarded the data to the State Climatologist. District staff also recorded daily precipitation at the office location.

### SUBWATERSHED ASSESSMENT

As indicated earlier, one of the District's top priorities is to reduce nutrient levels in Spring Lake. In 2014, the District hired the Scott Soil and Water Conservation District to conduct a detailed analysis of the Upper Watershed. The analysis identified priority sites for rural nonpoint source pollution reduction, along with specific BMPs that would reduce phosphorus, sediment and related pollutants from reaching streams and ditches that flow into Spring Lake. The study was completed in early 2015.

### REGULATION

#### EASEMENT INSPECTIONS

The District owns many easements that were acquired while permits were being actively issued to provide water quality benefits by providing buffers around ponds and wetlands. The District's easement program contains three components to ensure protection of its investments: yearly monitoring inspections, effective communication with landowners, and a strong enforcement policy.

In 2015, the District inspected 75% of its conservation easements and adopted an easement enforcement policy



Permit Inspections

to help move forward with resolving the existing easement violations. In 2016, the District plans to monitor 100% of its conservation easements and to achieve a higher compliance rate among its landowners.

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#### PERMIT ACTIVITY

The District inspected active permits to ensure that conditions of the permit were being met. The District issued one new permit in 2015: 15.01 Mushtown Road Improvements Project. The District anticipates that it will close several permits in 2016.

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#### MS4 ACTIVITY

The District drafted and approved new rules to comply with the MPCA's and EPA's expanded MS4 regulations regarding erosion and sediment control and stormwater runoff. In addition, it will develop an Illicit Discharge Determination Plan, Spill Response Plan and update its Education and Outreach Plan.

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#### EDUCATION AND OUTREACH

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#### CITIZEN ADVISORY COMMITTEE

PLSLWD staff continued to conduct and attend monthly Citizen Advisory Committee (CAC) meetings. CAC meeting minutes and monthly updates are included in every Board meeting package, and a Board member was assigned to attend regular CAC meetings. In October, there was a joint meeting of the City of Prior Lake's Lakes Advisory Committee and the CAC. The purpose was to identify opportunities to work together on projects. The CAC and LAC coordinated Clean Water Clean-ups in the Spring and Fall, where over 150 citizens participated in preventing leaves in local parks from being deposited in lakes through stormwater runoff.

The CAC also coordinated community outreach at Ladies Night Out in April and Lakefront Days in August.

In addition, the CAC initiated a Water Quality Improvement Award that is designed to award local citizens for water protection efforts. The first awards are expected to be presented next fall.

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#### COMMUNITY INVOLVEMENT

In order to demonstrate new and ongoing projects, the District conducted three tours for the Board of Managers, District partners, Citizens Advisory Committee and Lakes Advisory Committee members. The first one, the Disaster Tour, featured the Prior Lake Outlet Structure and damages

done to segments in the Outlet Channel during the 2014 flood, such as a large sediment delta, downed trees, damaged culverts and extensive bank erosion along the entire 7 plus mile stretch. The Fall District Tour featured the Ferric Chloride Facility; 12/17 Wetland Project and the Spring Lake Parcel Shoreline Restoration Project. The November Tour featured Lower Prior Lake Restoration projects at Watzl's Beach, Fish Point Park and Sand Point Beach Park. The District gave presentations at the Prior Lake Association's Annual Meeting and at the Savage Senior Center.

The City of Prior Lake, Scott SWCD and the District hosted one raingarden workshop, three prairie workshops and one shoreline restoration workshop. 19 attended the raingarden workshop, 79 attended the native prairie workshops and 27 attended the shoreline restoration workshop.

In addition, the District presented at the annual meetings of the Prior Lake and Spring Lake Associations.

In 2015, the District continued partnering with the Scott Clean Water Education Program (SCWEP) to extend its education and outreach efforts. The key message SCWEP is promoting is, "Clean Water Starts with Me" and focused its efforts on illicit discharge, natural borders and stormwater runoff.

The District received staff assistance for Education and Outreach from MN GreenCorps. Andrea Slotke, the District's GreenCorps member, focused her work on the Stormwater Management and Flood Mitigation Study and the flood damage clean-up on the Prior Lake Outlet Channel.

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## PRESS AND SOCIAL MEDIA

The District submitted 12 articles in the Prior Lake American and the Spring Lake Association newsletter. There were educational postings regularly on the website. In addition, a section was created on the website for the Stormwater Management and Flood Mitigation Study which provided details regarding meetings of the different stakeholder groups and provided relevant materials.

Lake levels for Prior and Spring Lakes were updated daily on the website during the monitoring season. For the Water Quality Clean-ups, the District coordinated with the City of Prior Lake to recruit and register volunteers using Facebook. Updates were made to the website to make it more user-friendly.

## 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 Outlet Structure released approximately 3,043 acre-feet of water from Prior Lake during 2015.

### CHANNEL

The Channel is utilized by the District in managing lake levels on Prior Lake as well as providing a 7 mile stormwater conveyance system for the surrounding communities.

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 outlet channel (Prior Lake Outlet Structure, Pike Lake Trail, Deans Lake Inlet-by SWCD, and the Service Road). Sonde measurements were also taken at some culvert crossings.



### RESTORATION AND MAINTENANCE

The 2014 spring flooding caused extensive damage to the Prior Lake Outlet Channel and culverts. The water level of Prior Lake peaked four feet higher than average. The Channel sustained severe erosion, debris and sediment disposition. Two culverts were washed out and one field crossing sustained significant piping and erosion. In addition, a temporary dam was constructed on the channel between Spring and Prior Lakes to speed up the egress of water from Prior Lake. The dam was in place for 3 months.

The District was accepted for funding from FEMA to help complete the necessary repairs. In 2015, the District began removing the downed trees and woody debris in the outlet channel. In 2016, the District will finish up the tree and woody debris removal work, remove sediment from the channel, repair culvert and embankment damage, and fix the bank erosion along the bulk of the channel.

## 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

With approval of the District's WRMP in June of 2010, local units of government (LGU) having land use planning and regulatory responsibility are required by statute to prepare or update existing local water management plans. There were no revisions in 2015.

## STORMWATER

The District does not participate in stormwater monitoring or drainage design performance standards.



## FINANCIAL REPORT

The 2015 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, 2015. A copy of the 2015 Annual Audit is available for review on the District website and at the District office after May 10, 2015, when it is approved by the Board of Managers.

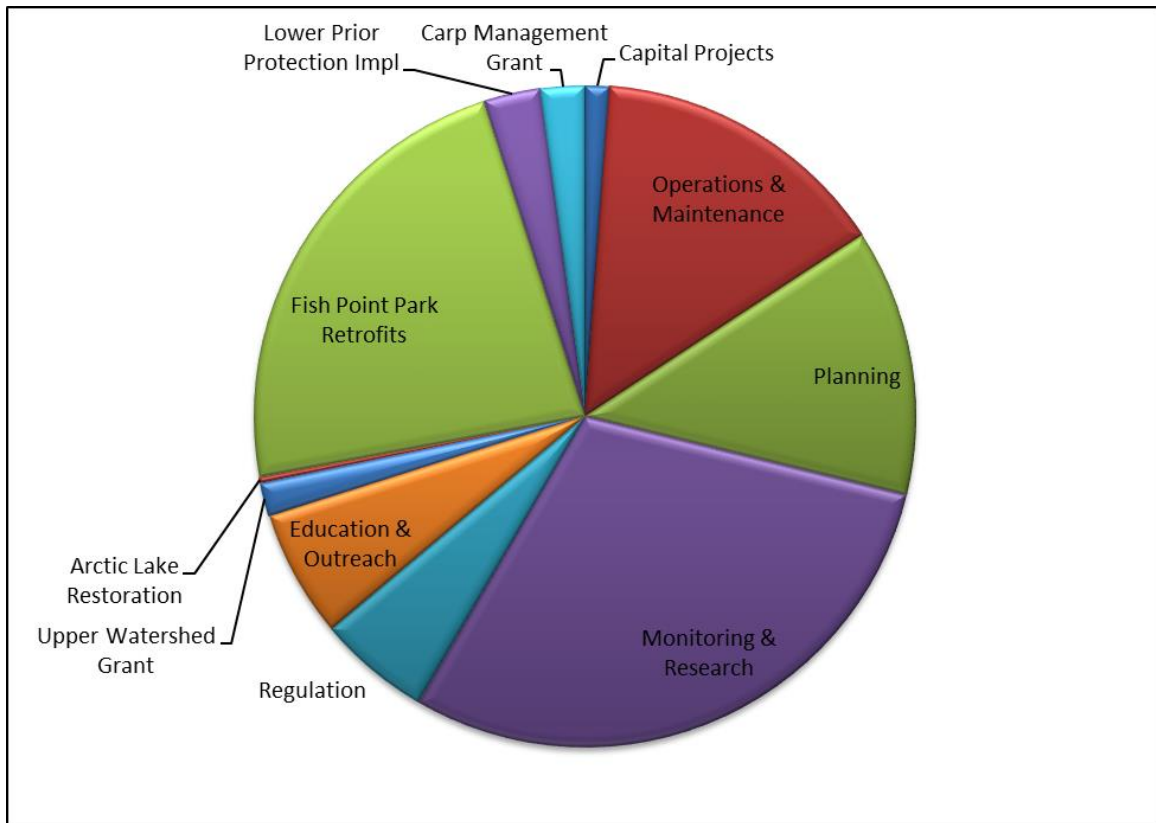
### 2015 FINANCIAL SUMMARY

Values presented in the chart and graph below are unaudited. Please refer to the 2015 Annual Audit for more details, which can be found at [www.plslwd.org](http://www.plslwd.org)

#### 2015 FINANCIAL SUMMARY

Fund	Starting Balance	Approved Budget	Tax Levy Revenue*	Additional Revenue**	Expenditures	Ending Balance
General	\$123,256	\$98,000	\$98,211	\$1,009	\$77,110	\$145,366
509 Implementation	\$460,250	\$726,268	\$598,134	\$17,870	\$757,292	\$318,962
MOA/JPA Funds	\$450,541	\$305,453	\$0	\$318,310	\$317,750	\$451,101
Bond Debt Service	\$22,697	\$152,000	\$151,759	\$52	\$151,775	\$22,733
Total	\$1,056,744	\$1,281,721	\$848,104	\$337,241	\$1,303,927	\$938,162

## 2015 Project Expenditures



### GRANTS

Grants obtained by the District that were active in 2015 were as follows:

- Aquatic Invasive Species Control Grant*  
**Goal:** Treat 22 acres of curlyleaf pondweed treatment on Upper and Lower Prior Lake  
**Funding Source:** MN Department of Natural Resources  
**Total Grant Amount:** \$2,273 for Upper Prior Lake, \$1,000 for Lower Prior Lake  
**Effective:** April 24, 2015 to October 15, 2015
- Lower Prior Lake Protection Project Implementation grant*  
**Goal:** Reduce watershed phosphorus loading by 33 lb/yr, or 10% of the total drainage area phosphorus load of 326 lb/year  
**Funding Source:** Clean Water Partnership Grant through the MN Pollution Control Agency  
**Total Grant Amount:** \$142,522  
**Effective:** October 7, 2014 to June 30, 2018

- *Fish Point Park Retrofits grant*  
**Goal:** Implement three elements designed to reduce phosphorus loading and control stormwater rates and volumes of a significant subwatershed of Lower Prior Lake  
**Funding Source:** Clean Water Fund Grant through the Board of Water & Soil Resources  
**Total Grant Amount:** \$131,200  
**Effective:** May 6, 2014 to December 31, 2016
  
- *Arctic Lake Restoration grant (paired with the Fish Point Park Retrofits Project)*  
**Goal:** Improve water quality through watershed retrofits, wetland restoration and carp control.  
**Funding Source:** Clean Water Fund Grant through the Board of Water & Soil Resources  
**Total Grant Amount:** \$58,000  
**Effective:** May 6, 2014 to December 31, 2016
  
- *Carp Management in Spring and Prior Lake grant*  
**Goal:** Utilize integrated pest management principles to effectively manage the common carp population to reduce the levels of phosphorus in the basin.  
**Funding Source:** Clean Water Partnership Grant through the MPCA  
**Total Grant Amount:** \$67,323  
**Effective:** May 6, 2014 to December 31, 2016

## 2016 WORK PLAN

The following is a summary of implementation activities planned to be completed in 2016 and the amount budgeted for that activity.

The following is a summary of implementation activities planned to be completed in 2016 and the amount budgeted for that activity.

509 Implementation Fund	\$912,500
General Revenue	\$98,000
Debt Service Fund	\$160,000

## CAPITAL PROJECTS

In 2016, The District will continue participating in a restoration partnership on Arctic Lake with the City of Prior Lake, Three Rivers Park district and Shakopee Mdewakanton Sioux Community; partnering with the City of Prior Lake on BMP Retrofits at Fish Point Park and the Lower Prior Implementation Plan and Carp Management in the Spring and Prior Lake system.

## 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. Aquatic Vegetation Treatment will occur in Prior and Spring Lakes. The District will support the Knotty Oar Marina in conducting a Carp Tournament to remove carp from both Spring and Prior Lakes. The new Carp Management Program will be in full swing.

## PLANNING

As indicated earlier, the District is partnering with the City of Prior Lake and collaborating with Spring Lake Township on a Stormwater Management and Flood Mitigation Study. It is anticipated that the study will be completed in 2016 and the results of the study will lead to a comprehensive flood mitigation plan.

## MONITORING AND RESEARCH

The District will continue its monitoring program in 2016, which includes stream monitoring, flow monitoring, lake quality, lake level, plant surveys, and plant density monitoring.

## REGULATION

The District will draft new rules and update its SWPPP to comply with the new MS4 requirements. Permits will be reviewed and closed out.

## 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 will continue. As indicated earlier, the District's Education and Outreach Plan will be updated. Work by the GreenCorps member will continue.

## PRIOR LAKE OUTLET CHANNEL

The District will continue to coordinate the partnership between PLSLWD, City of Prior Lake, City of Shakopee and the Shakopee Mdewakanton Sioux Community. Major damage to the channel will be repaired once funding is received from FEMA and the State of Minnesota. Projects and other maintenance will be discussed and decided upon by the Technical Advisory Committee and JPA/MOA members.