Powers Lake Watershed Project
Phase V

Project Sponsor:
City of Powers Lake
218 N Main, PO Box 198, Powers Lake, ND 58773

City of Powers Lake
218 N Main, Box 198
Powers Lake, ND 58773
701-464-5055

STATE CONTACT PERSON: Emily Novak
Phone: 701-328-5240
e-mail: ejnovak@nd.gov

STATE: North Dakota

WATERSHED: Powers Lake Watershed

HYDROLOGIC UNIT CODE: 10110101

PRIORITY WATERSHED: Yes

TMDL Development and/or Implementation: Yes

(Check any that apply)

PROJECT TYPES	**WATERBODY TYPES**	**NPS CATEGORY**
[] STAFFING & SUPPORT	[] GROUNDWATER	[X] AGRICULTURE
[X] WATERSHED	[X] LAKES/RESERVOIRS	[X] URBAN RUNOFF
[] GROUNDWATER	[] RIVERS	[] SILVICULTURE
[] I&E	[X] STREAMS	[] CONSTRUCTION
	[X] WETLANDS	[] RESOURCE EXTRACTION
	[] OTHER	[] STOWAGE/LAND DISP
		[] HYDRO MODIFICATION

PROJECT LOCATION: LATTITUDE: 48N 34' 19" LONGITUDE: 102W 40' 06"

MAJOR GOAL: The primary goal of Phase V of the Powers Lake Watershed Project is to protect and restore recreational and aquatic life beneficial uses. Phase V has two natural resource management objectives. One objective is designed to provide technical, financial, and educational assistance to landowners within the watershed to implement BMPs addressing potential nutrient sources in the watershed. A second objective, and the main focus of Phase V, is to continue operating the lake dredge to remove nutrients stored in the bottom sediments of Powers Lake.

PROJECT DESCRIPTION: Project sponsors intend to 1) address in-lake nutrient cycling with selective dredging for phosphorus and nitrogen removal; 2) provide technical and financial assistance to landowners wishing to implement BMPs designed to reduce delivery of nutrients and sediments to the lake; 3) continue to develop and maintain partnerships in the local community to benefit water quality in the lake; 4) continue educational programs to inform the public of nonpoint source pollution concerns and solutions; and 5) monitor water quality for use in adaptive management throughout the period of the grant .

FY2025 319 Funds: $281,720

Match: $204,480
Total project cost: $486,200

2.0 Statement of Need

2.1

Initiated at the request of the local community, the 2000-2001 Water Quality Assessment conducted by the City of Powers Lake and the ND Department of Health identified excess phosphorus as the main factor contributing to the hypereutrophic condition of the lake. From this study modeling results indicated that Powers Lake received an annual phosphorus load of 11,564lbs – 6,339 lbs from external sources and 5,225 lbs from internal sources (nutrient cycling). Phase I of the Powers Lake Watershed Project was initiated to address the water quality issue, focusing on the external sources (those from the watershed). Achievements of Phase I and II included over 20,000 acres of cropland BMPs implemented (close to 50% of the watershed) and significant amount of feet of pipeline, fence, and tree plantings established, in addition to grassland plantings, grazing systems, livestock wells, and wetlands created (see Appendix 2). The numerous conservation practices installed during this phase greatly benefited the water quality entering the lake.

During Phase I, the North Dakota Department of Environmental Quality (NDDEQ) developed a total maximum daily load (TMDL), for Powers Lake. This TMDL identified the load reduction needed to restore recreation and aquatic life beneficial uses as listed in the 2006 Section 303(d) List of Impaired Waters Needing Total Maximum Daily Loads (NDDoH, 2006). Based on the modeling in the TMDL, nutrient loading to Powers Lake needed to be reduced by 75% from external sources and 50 % from internal sources (NDDoH, 2008). Using Trophic State Indicators (TSI) as a target, chlorophyll a was chosen as the variable most accurate at predicting algal biomass for the lake as well as being the most easily identifiable to the general public. The restoration target TSI for chlorophyll a is 55.02, which corresponds to the needed phosphorus load reductions.

Phase I also began research into options for addressing the in-lake nutrient cycling. During the end of Phase I, Houston Engineering developed a Lake Restoration Feasibility Plan to examine potential nutrient management alternatives, along with cost and feasibility options to reduce internal nutrient cycling. Given the various cost/benefit options, the Powers Lake Advisory Committee felt that selective dredging provided the best alternative.

Phase II of the Powers Lake Watershed Project began the task of moving towards acquiring a dredge and land disposal site. This process was more time consuming than planned for initially, so it wasn't until the end of the grant period significant progress was made. Because of the limits on what could be accomplished in the remaining time period, a large portion of the grant funding was returned to the state.

Phase II of this project was considered a stepping stone for what the Powers Lake Advisory Committee hopes will complete the recovery process for Powers Lake. A significant portion of external nutrient loading has been addressed with the first two phases.

Phase III, the Powers Lake Watershed Plan is currently addressing the outstanding issue of in-lake nutrient cycling determined to be so critical in the initial investigations of the lake. With the dredge and pipe purchased, and the sediment disposal site established, Phase III of the Project began reducing the internal nutrient loading in the lake. The dredged sediment which is loaded with very high amounts of Nitrogen and Phosphorous will provide a great benefit to the water quality in the lake. In particular the removal of sediment is a direct removal of the phosphorous.

Phase IV the Powers Lake Watershed Plan is to continue making great strides in removing the excess nutrients out of the lake. With the removal of the nutrients and providing more water volume in return will show improved water quality results and get us closer to more of a natural equilibrium of nutrient ratio in the lake.

Phase V the project plan is still to concentrate on the in-lake nutrient cycling. Look at making great improvements in the dredging process. Like stated before by removing the sediment we will be removing very high concentrations of nutrients that will help to getting the lake closer to a natural equilibrium of nutrient ration in the lake.

2.2

Powers Lake is located on the south edge of the City of Powers Lake and is used year round. Camping, fishing, picnicking, hiking, bird watching, swimming, boating and other activities are important to the City of Powers Lake and visitors.

Powers Lake is a 1,616-acre lake that serves as a recreational area for the town of Powers Lake and Mountrail and Burke Counties. The lake serves as a classroom for Powers Lake Public School, a bird and fish habitat, recreation, an aesthetic draw to the community, and many other uses.

The Powers Lake Water Quality Assessment Project carried out in 2001 shows the lake is in a hypereutrophic state. The TMDL report completed in 2008 by the NDDEQ, indicates that to support the beneficial uses of recreation and aquatic life, external phosphorus loading needs to be reduced by 75% in addition to an internal loading reduction of 50%.

Bottom sediment samples taken in 2009 indicate that there are no toxic elements in the sediment and that the dewatered sediment would be suitable for land application.

The Phase V goal is removal of approximately 50,000 yd^3 of sediment. The current disposal/dewatering site is approximately 80 acres in size with three cells totaling 13 acres. As the project progresses, a second disposal site may be needed, if the dredging operation is moved to another part of the lake.

2.3
See attached maps (Appendix #1)

2.4
The Powers Lake Watershed is fed by four tributaries draining a surface area of 44,458 acres. See Appendix 1.

For the entire Powers Lake watershed, approximately 65.63 percent of the watershed is cropped and 29.69 percent is in some form of permanent grass or herbaceous cover. Land use in permanent cover is divided into range/pasture land (20.19%), hayland (9.25 %), Conservation Reserve Program (<1%), and other uses (4.68%). The primary crops in the watershed are durum wheat, spring wheat, canola, field peas, winter wheat and flax. There are eight livestock operations in the watershed as well. Since the implementation of Phase I of the project, no till farming has grown to almost 100%.. Many landowners have acknowledged the benefits of BMPs and continue to use them even after contracts have expired. Interest in cover crops as grown some but would hope to continue growing in the future. As time frame can be an issue in the short growing season that is common around this country.

The City of Powers Lake is located at the northwest end of the lake and has a park and campground for recreation enjoyment.

2.5
In Phase I of the Watershed Project, five locations within the Powers Lake watershed were monitored for concentrations of nitrogen, phosphorus, total suspended solids and fecal coliform bacteria from April through October, 2001 and again during the runoff events from 2006-2009. In-lake water quality data, collected during the 2001 sampling season, indicates that Powers Lake is hypereutrophic, nitrogen limited water body that does not thermally stratify. Also, the assessment project identified that Powers Lake is hypereutrophic from both external and internal pollution sources.

The internal sources are most likely stored in the lake sediments and become available for primary production through both wind/wave action and internal releases during anoxic and near anoxic conditions.

Conservation practices were installed during Phase I and II of the project from 2003-2010 have greatly benefited and improved the water quality within the watershed. See Appendix 2.

The Powers Lake Nutrient Management Alternatives report completed by Houston Engineering Inc. in October 2008 found that based on bathymetric measurements, dredging 3.6 feet of the soft bottom material would increase the average lake depth from about 5.6 to about 9.2 feet with a maximum depth of 13.6 feet. Dredging will add depth to the lake, which would also remove possible internal sources of phosphorous and other materials that could be detrimental to lake water quality. The increased depth resulting from dredging would make it more difficult for the wind energy to create enough turbulence to stir up bottom sediments. This phase of the project will only focus on dredging specific critical locations. The selected area to be dredged to reduce the amount of internal cycling of nutrients, along with dewatering location, is shown in Appendix 6.

The Powers Lake Restoration Plan completed by Houston Engineering in 2010 summarized the total phosphorus content of the sediment. Provided in the report were maximum, minimum, and the mean values for all samples. Based on this information and the estimated removal of 50,000 yd^3 of sediment that is the goal of Phase V, the table 1 below provides phosphorus removal values based on an Olsen Phosphorous level maximum of 24 ppm. The sediment sampling that has been taken place since the start of the dredging has resulted in an Olsen Phosphorous level on average 32-33ppm. The Total Phosphate and Phosphorous estimates per cubic yard of sediment removed has been higher than previously predicted, which is indicating the removal of more Total Phosphate then originally was estimated. An analysis of total phosphate in the current sediment will be conducted to determine the actual amount of Phosphate removed by the project. See Table 1

While we realize that selective dredging will not yield the same results that dredging the entire lake would, given that the internal phosphorus load reduction needed as listed in the TMDL was 1,185 kg/yr, which is equal to 2,612 lbs/yr, we feel that continuing on removing the phosphorous out of the lake will go a long way towards improving water quality in Powers Lake.

Table 1:

Total P in Sediment Samples	µg/g	lbs/yd^3	P removal in lbs (per 50,000 yd^3)
Olsen Phosphorous Test Minimum 14ppm	406	0.684335305	34,216
Olsen Phosphorous Test Maximum 24ppm	793	1.336645067	66,832
Olsen Phosphorous Test Actual 33ppm	~1000	~1.613076076	~80,654

3.0 Project Description

GOAL:

The goal of Phase V of the Powers Lake Watershed Project is to continue to restore and protect the recreation and aquatic life beneficial uses of Powers Lake through reducing the amount of internal cycling of phosphorus in the lake to help reach the TMDL goal. This will be accomplished through the continued implementation of BMPs, selective dredging, and an active information and education program

Objective 1:

Enhance the effectiveness of in-lake restoration activities by supporting the implementation of additional BMP that will ensure nutrient (N & P) inputs from the watershed are maintained at or below concentrations documented at the end of phase I.

Task: 1

City of Powers Lake will employ personnel to manage the project during the grant period. Responsibilities will include inventories, producer contacts, water quality sampling, permits, dredge operation, public relations, etc.

Product – Watershed Project Manager.
Cost – **$120,000**

Task: 2

City and landowners will install conservation practices within the watershed to address reducing nutrient load . Plans will include BMPs such as field borders, nutrient management, conservation tillage, grass or tree plantings, grazing management, or sediment dams.

Product – BMP contracts with individual producers.
Cost - **$50,000**

Objective 2:

Selective dredging and removal of 50,000 cubic yards of nutrient laden sediment.

Task: 3

The City will meet with the landowner to rent a site for the disposal area and offer a rental lease agreement for the land. The disposal site will be approximately 80 acres.

Product – Land Lease
Cost - **$10,000**

Task: 4
The City will hire a contractor to work on the disposal site, when needed, to remove and distribute sediment stored in the cells.

Product – Disposal Site work, sediment removal and land spreading costs.
Cost - **$130,000**

Task: 5
Utilize the City owned dredge to remove 50,000 cubic yards of sediment from selected sites in the lake. Costs include the In-kind depreciation value of the dredge purchased by the City and operating costs supported with Outdoor Heritage Funds.

Product – 50,000 cubic yards of sediment removed from the lake
Cost - **$135,000**

Objective 3:

Increase awareness in the rural and urban watershed of the importance of daily practices to achieve and maintain fully supporting status of recreational uses of Powers Lake, by delivering a Watershed Information/Education Program on activities and accomplishments.

Task: 6
The City will conduct public meetings, tours and/or events on watershed accomplishments. The City will carry out information and education program on the Lake Restoration utilizing newspaper articles.

The City will continue to provide landowner/producer awareness and understanding of practices and management systems that improve cropland nutrient management and reduce the transport of nutrients to the lake within the watershed. There will be a minimum of 50 people informed.

Product – Lake restoration updates, Tours, newspaper articles, web site, displays, and one on one contacts.

Cost - **$1,500**

3.3
See attached Milestone Table (Appendix #4)

3.4
Several permit requirements may be needed to complete some of the practices, such as manure management systems and shoreline stabilization work. Manure management systems will require a permit from the NDDEQ. The State Historic Preservation Office (SHPO) will also be contacted regarding requirements related to potential BMP impacts to cultural resources. The city has a Stormwater Permit from the NDDEQ on the dredging operation.

3.5
The City of Powers Lake is the appropriate entity to coordinate and implement this project. The city council is a locally elected organization which serves all people in the community. This project was developed at the beginning stages by the City of Powers Lake Advisory Committee. The Powers Lake Advisory Committee and the City Council has been the leading organization since the beginning and would like to see this project to continue moving forward.

3.6
While the Powers Lake Advisory Committee is responsible for gathering community support and determining the direction of the Project, the City of Powers Lake will be responsible for auditing Operation & Maintenance Agreements (O&M) on BMPs during the project period through and completing yearly status reviews of EPA-319 contracts. The City of Powers

Lake will also be responsible for O&M for the dredge material containment site. The lifespan of each BMP will be listed in the individual contract to ensure longevity of the practices. The producer signs the "EPA 319 Funding Agreement Provisions" form, which explains in detail the consequences of destroying a BMP before the completion of its lifespan. The Powers Lake Advisory Committee is a local volunteer conservation organization.

4.0 Coordination Plan

4.1
The City of Powers Lake with the Powers Lake Advisory Committee (PLAC) has cooperated with many organizations and individuals, including the; North Dakota Department of Environmental Quality, NRCS, USFWS.
NDDEQ– Provides oversight on project management and administration as well as technical and financial assistance for the water quality data collection and interpretation..
NRCS – will provide technical assistance with further watershed evaluation and producer contracts.
The PLAC has been instrumental in organizing labor and community support for the project. They will continue to supervise the direction of this project, while the City of Powers Lake will act as the administrative office for the grant.

4.2
Local support for the project shows in the response received from the monitoring phase and public meeting held to discuss water quality results and project potential. Attendance was about 80 at a public meeting and requests for information on how to improve and protect the lake shows a broad-based support for actions necessary to accomplish this project. There has been a lot of excitement for the dredging portion of the Project. There was very little negativity about the City purchasing the dredge as they see Powers Lake to be a great asset to the community. There is constantly people asking about the dredging and how it is going.

4.3
The working relationship with numerous organizations during Phase I and II of the project shows the coordination with various agencies to succeed in the overall goal of establishing a quality lake once again. Organizations that we have coordinated with and expecting to continue working with to achieve our goals is the NRCS, SCD, NDG&F, NDDEQ, and USFWS. The City will continue to coordinate with the appropriate agencies on any project.

4.4
The City of Powers Lake will continue working with EQIP, CRP, WHIP, and other USDA programs. This EPA 319 project will be coordinated with these and other programs. The sponsor plans to coordinate with all agencies and individuals possible to carry out an efficient project and to utilize this project to fill in and offer assistance that is not available through programs listed. The sponsor will coordinate and communicate with other agencies to prevent the duplication of efforts with landowners.

5.0 Evaluation and Monitoring Plan

5.1
Monitoring strategy for Powers Lake Watershed and Lake, will be done according to North Dakota Department of Environmental Quality recommendations and standards. The Quality Assurance Project Plan (QAPP) was developed by the NDDEQ and is fully approved.

6.0 Budget

6.1 See Attachments (Appendix #5)

7.0 Public Involvement

7.1
Educational and informational meetings will be conducted to keep the community informed. Community leaders, commissioners, water resource board members, city council members, and district supervisors will be involved in decision-

making processes involving the implementation of BMPs within the Powers Lake Watershed. The Powers Lake Watershed Advisory Council is open to all people that want to be involved.

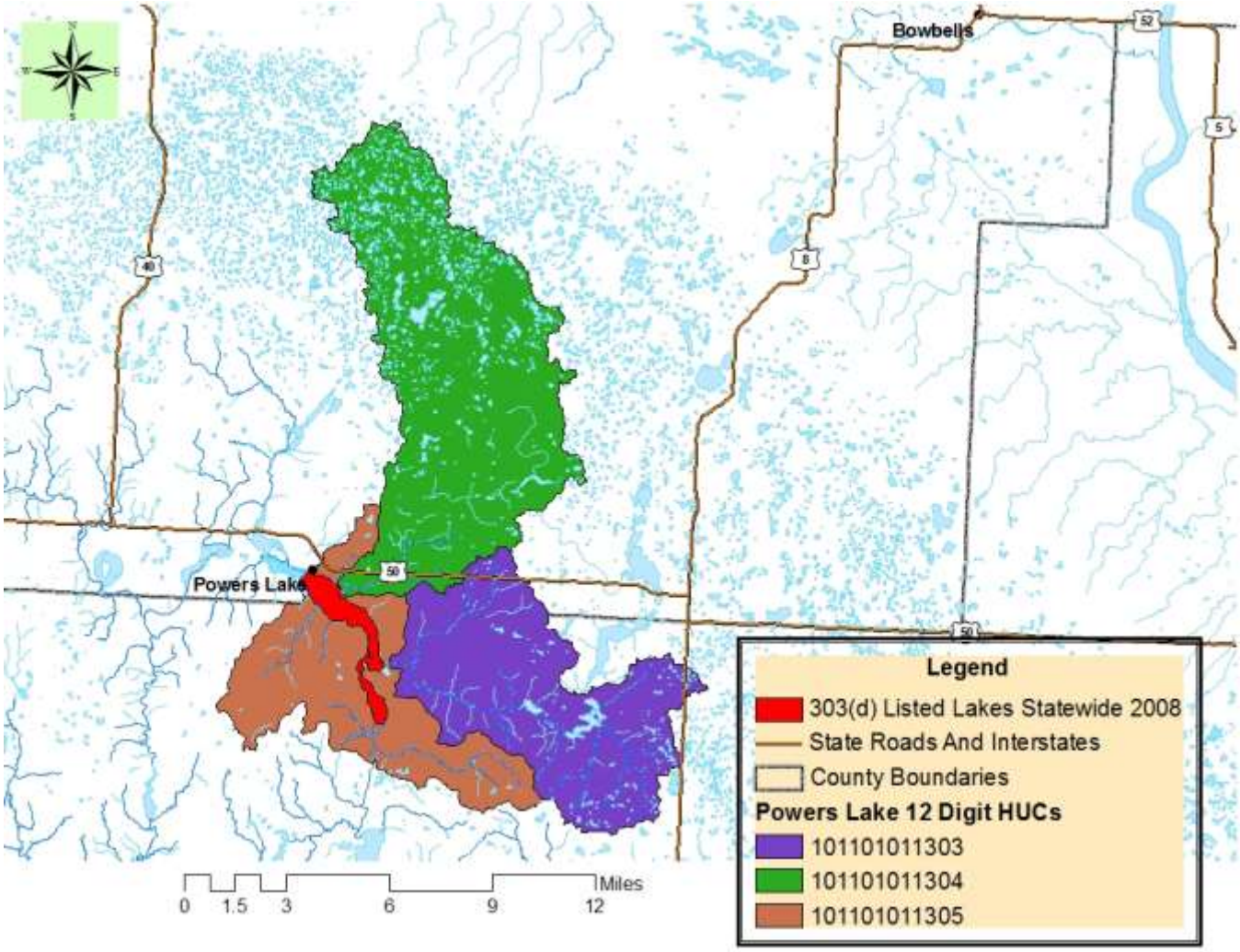
Powers Lake Watershed Project
Phase V

Appendix List

1	Powers Lake Watershed Maps
2	Summary of Phase I and II Accomplishments
3	NDDEQ Brief Water Quality Discussion
4	Milestone Table
5	Budget
6	Potential Dredging Area Locations

APPENDIX #1

Powers Lake Watershed Map


Bowbells
Powers Lake
Legend
303(d) Listed Lakes Statewide 2008
State Roads And Interstates
County Boundaries
Powers Lake 12 Digit HUCs
101101011303
101101011304
101101011305
0 1.5 3 6 9 12
Miles

APPENDIX #2

Summary of Phase I&II Accomplishments

Cumulative #'s for Practices completed through USDA programs, 319 BMP, NDGF, USFWS, NDNRT, DU during Phase I&II.

BMP Type	Units
Res-Till 329A	19,144 ac.
Nutrient Mgt.	12,103 ac.
Past/Hay planting	1,053 ac.
Pipelines	32,320 ln. ft
Fence	66,349 ln. ft
Well	7 number
Tanks	23 number
Grazing Systems	4,790 ac.
Waste Mngt Sys.	1 number
Tree plantings	35,840 ln. ft
Well Decommissioning	1 number
Urban stormwater	1 number
Grass Easement	1,487 ac.
Wetlands created	9 number

APPENDIX #3

NDDoH Brief Water Quality Discussion

SUMMARY

1. Water Body Information

State: North Dakota
County: Burke and Mountrail

Major River Basin: Missouri River Basin
8-Digit Hydrologic Unit Code: 10110101

Water-body Name: Powers Lake
Location: Burke and Mountrail Counties

Water-body size: 1,616 acres
Watershed Area: 44,458 acres(approximate)

Discharges to: Tributary to White Earth River

Designated Uses Impaired: 1) Aquatic Life (eutrophication, sedimentation, low dissolved oxygen)
2) Recreation (Fishing, boating, swimming)

Constituent(s) of Concern: Phosphorus, Nitrogen, Sediment, Dissolved Oxygen

Applicable Water Quality Standard:

Aquatic Life:

The quality of water shall be such to support the propagation of life, of both of resident fish species and other aquatic biota. The standard for dissolved oxygen is 5 mg/L.

2. Water Quality Results

The Powers Lake community has long been dedicated to preserving the lake's natural value for both its aquatic ecosystem and its residents. As early as the 1800s, Powers Lake served as a beloved gathering spot where families would travel from miles around for picnics, fishing, and boating. So it came as no surprise when concerned citizens took action upon noticing a decline in water quality. They established a community board and reached out to the North Dakota Department of Health (now the Department of Environmental Quality) for support in addressing the issue. What started as a water quality assessment in 2001 has turned into two successful Section 319-funded watershed management plans.

The primary goal of these management plans was to restore Powers Lake's aquatic life and recreational beneficial uses, as identified in the State's 303(d) list. To measure the effectiveness of the installed BMPs and recent dredging efforts accomplished through the Section 319 grants, water quality samples were regularly collected and compared to various guidelines and standards. Key water quality parameters—such as nutrient levels (nitrogen and phosphorus), dissolved oxygen, and total suspended solids (TSS)—were monitored to assess improvements in the lake's overall condition.

However, interpreting these parameters can be complex, as they interact with each other and are influenced by external factors like ice cover, precipitation, and temperature. For instance, nitrate levels may exceed water quality standards, yet if dissolved phosphorus levels are particularly low, the nitrogen-to-phosphorus ratio needed to stimulate algal growth (which had been impairing the lake) may not be met. Although a high nitrate reading alone might seem concerning, a broader view reveals significant progress in water quality.

Tributary data collection is primarily aimed to pinpoint areas with higher nutrient loading so that BMPs could be effectively targeted within the watershed to address the sources. Each tributary watershed contributes uniquely to the lake's nutrient load.

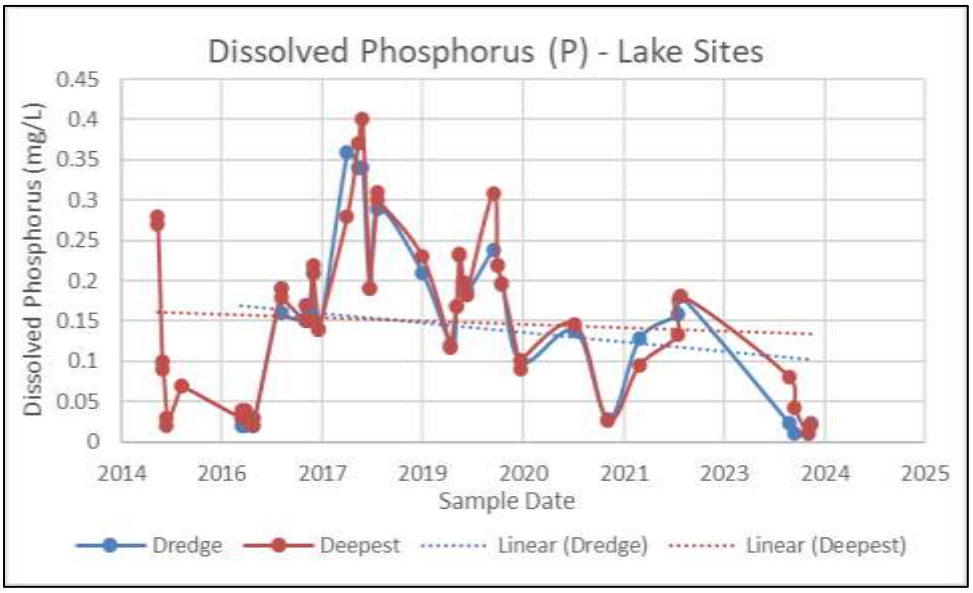
For instance, the west tributary (385037) is small but exhibits "flashy" behavior, flowing strongly after a storm but remaining dry most of the year. As a result, nutrient values fluctuate widely but contribute relatively little overall. In contrast, the NE tributary (305035) maintains more consistent flows, reflected in steadier nutrient values over time. It's also essential to consider concentration values alongside flow data for tributaries; for example, a cup and a swimming pool of coffee could have the same concentration (taste), but vastly different amounts of coffee beans were used for each. Similarly, nutrient concentration without corresponding flow data can give an incomplete picture of overall nutrient loading and should not be used in isolate of other factors..

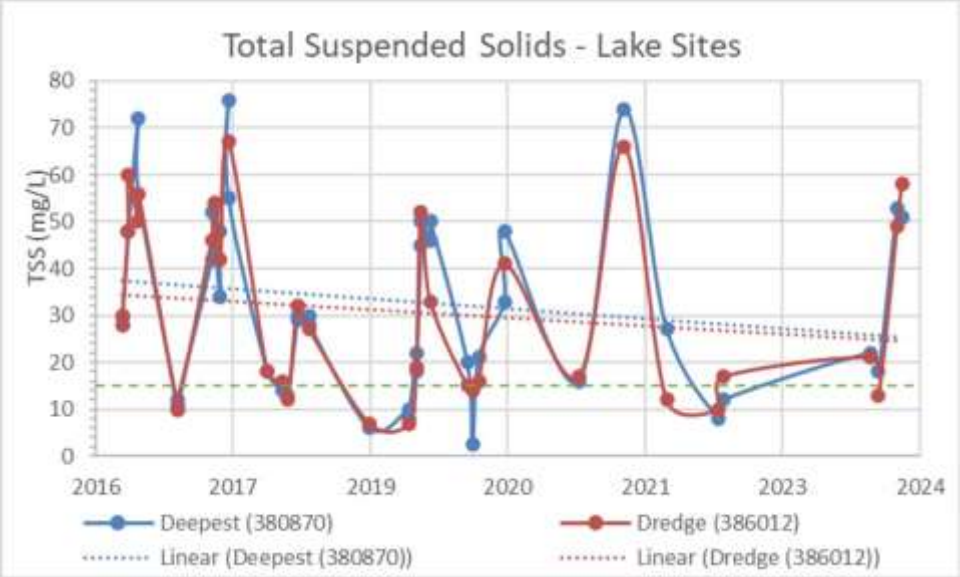
One set of tributary data that highlights the success of lake improvements is the data on total suspended solids (TSS). TSS refers to all particles suspended in the water, which impact light penetration and water temperature—factors critical to aquatic life. These particles can include sediment from surface runoff as well as small bits of algae or plant material within the water.

Initial water quality assessment results (2008) indicated tributary TSS levels had maximum values ranging from 83 to 276, mainly attributed to algae and other plant matter. However, recent samples collected in 2023 and 2024 showed a dramatic decrease, with TSS values ranging from below the lab detection limit (2.5) to a maximum of 32, and most readings around 10. This substantial decline indicates that nutrient levels are no longer supporting high algae production—a clear sign of improvement in the lake's ecosystem health.

Lake data further illustrates the link between reduced TSS, changes in the nitrogen-to-phosphorus ratio, and decreased algae production. Similar to tributary data, lake measurements can reveal fluctuations in response to varying environmental conditions, such as drought, heavy rainfall, temperature shifts, and wind, which can stir up bottom sediments and increase mixing in shallow lakes like Powers Lake. Given these variable factors, examining long-term trends is essential to gain an accurate understanding of overall improvements in lake health.

The first key trend is a marked decrease in dissolved phosphorus, the reactive form that drives algae growth. From 2021 to 2024, dissolved phosphorus levels have frequently fallen below detection limits. TSS values are also on a downward trend within the lake, aligning with a substantial drop in chlorophyll-a concentrations which indicate algae production. Notably, average chlorophyll-a concentrations were 70.58 µg/L at the start of the project in 2008; by 2022-2024, these averages had fallen to 6.4 µg/L at the dredge site and 4.7 µg/L at the lake's deepest point. These improvements highlight significant progress toward restoring Powers Lake's suitability for aquatic life and recreational use.




Total Suspended Solids - Lake Sites
TSS (mg/L)
80
70
60
50
40
30
20
10
0
2016
2017
2019
2020
2021
2023
2024
Deepest (380870)
Dredge (386012)
Linear (Deepest (380870))
Linear (Dredge (386012))

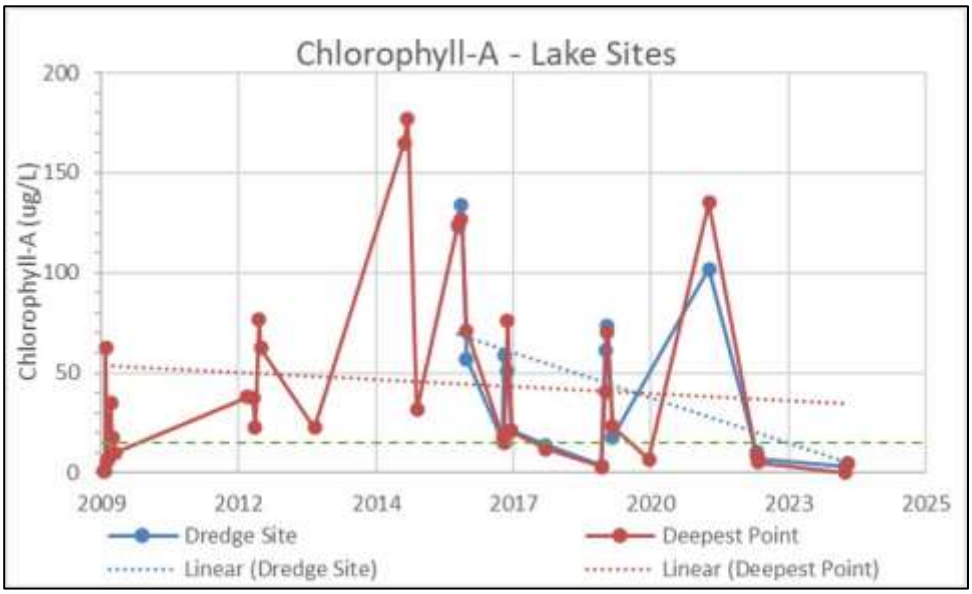

Chlorophyll-A - Lake Sites
Chlorophyll-A (ug/L)
200
150
100
50
0
2009
2012
2014
2017
2020
2023
2025
Dredge Site
Deepest Point
Linear (Dredge Site)
Linear (Deepest Point)

Table 6. Summary Statistics for TSS for Powers Lake Tributaries and Outlet.

TSS – Tributary (385035)						TSS – Tributary (385037)				
	2001	2007	2009	2023	2024		2001	2009	2023	2024
Minimum	2.5	2.5	2.5	2.5	2.5	Minimum	2.5	2.5	2.5	5
Maximum	83	18	6	12	10	Maximum	209	7	32	10
Mean	9.7	9.8	3.1	3.7	3.7	Mean	55.9	3.6	17.3	7.5
Median	2.5	9	2.5	2.5	2.5	Median	9	2.5	17.3	7.5
Count	33	3	11	8	13	Count	7	4	2	2

TSS – Tributary (385038)					TSS – Powers Lake Outlet (385039)				
	2001	2009	2023	2024		2001	2009	2023	2024
Minimum	2.5	2.5	2.5	6	Minimum	2.5	2.5	2.5	5
Maximum	163	2.5	2.5	8	Maximum	112	123	57	172
Mean	26.6	2.5	2.5	7	Mean	27	42	24	71
Median	11	2.5	2.5	7	Median	24	44	18	6
Count	22	4	4	2	Count	30	12	9	11

TSS – Tributary (385412)				TSS – Tributary (385413)				
	2009	2023	2024		2007	2009	2023	2024
Minimum	2.5	2.5	2.5	Minimum	2.5	2.5	2.5	2.5
Maximum	5	2.5	2.5	Maximum	7	5	2.5	6
Mean	2.9	2.5	2.5	Mean	3.4	2.8	2.5	2.8
Median	2.5	2.5	2.5	Median	2.5	2.5	2.5	2.5
Count	7	5	4	Count	5	10	9	13

APPENDIX #4

Milestone Table

MILESTONE TABLE -- POWERS LAKE WATERSHED PHASE V Page 1

Task	Quantities	Responsibility	Output	2025	2026	2027	2028	2029
Task 1: Employ Project Manager	1 employed	City of PL	Watershed Project Manager					
Task 2: BMP contracts with producers .	250 ac.	City of PL	Conservation practices					
Task 3: Land Lease	80 ac.	City of PL	Lease land from landowner					
Task 4: Disposal Site Work	80 ac.	City of PL	Dirtwork on disposal site					
Task 5: Sediment Removal/Spreading	50,000 cuyds	City of PL	Dredge sediment					
Task 6: Watershed/Lake Restoration meetings	50 contacts	City of PL	Public meetings, Educational/Informational Meetings, one on one contacts					

APPENDIX #5

Budget Tables

BUDGET TABLE
POWERS LAKE WATERSHED – PHASE V

PART 1: Funding Sources	FY2025	FY2026	FY2027	FY2028	FY2029	Totals
US EPA						
FY2020 Section 319 Funds (FA)	$51,000.00	$61,680.00	$61,680.00	$58,680.00	$58,680.00	$291,720.00
Other Federal Funds						
1) NRCS	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 10,000.00
2) USFW&S (TA & FA)	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 2,000.00	$ 10,000.00
3) ND Department of Health(TA & FA)	$ 4,000.00	$ 4,000.00	$ 4,000.00	$ 4,000.00	$ 4,000.00	$ 20,000.00
Subtotals	$ 8,000.00	$ 8,000.00	$ 8,000.00	$ 8,000.00	$ 8,000.00	$ 40,000.00
State & Local Match						
1) Local PLWAC (TA & FA)	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 5,000.00
2) Landowners (FA)	$ 4,800.00	$ 8,800.00	$ 8,800.00	$ 800.00	$ 800.00	$ 24,000.00
3) ND Game & Fish (TA)	$200.00	$200.00	$200.00	$200.00	$200.00	$ 1,000.00
4) City of Powers Lake	$ 13,000.00	$ 16,120.00	$ 16,120.00	$ 37,120.00	$ 37,120.00	$ 119,480.00
5) Outdoor Heritage Funds	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 0.00	$ 0.00	$ 45,000.00
Subtotals	$ 34,000.00	$ 41,120.00	$ 41,120.00	$39,120.00	$39,120.00	$194,480.00
TOTAL BUDGET	$ 85,000.00	$ 102,800.00	$ 102,800.00	$ 97,800.00	$ 97,800.00	$486,200.00

FA: Financial Assistance
TA: Technical Assistance

PLWAC: Powers Lake Watershed Advisory Council
NRCS: Natural Resources Conservation Service
USF&WS: U.S. Fish & Wildlife Service

Part 2: Detailed Budget (Section 319/Non-Federal)								
	2025	2026	2027	2028	2029	Total Costs	Cash and In-kind Match	319 Funds
Objective 1: PERSONNEL/SUPPORT/ADMIN								
Task 1: Salary/Fringe	$20,000	$25,000	$25,000	$25,000	$25,000	$120,000	$34,280	$85,720
Travel	$500	$500	$500	$500	$500	$2,500	$1,000	$1,500
Office Space ($500/month x 12 months)	$3,500	$6,000	$6,000	$6,000	$6,000	$27,500	$7,500	$20,000
Equipment/Supplies	$500	$500	$500	$500	$500	$2,500	$1,000	$1,500
Training	$300	$300	$300	$300	$300	$1,500	$600	$900
Telephone/Postage	$500	$800	$800	$800	$800	$3,700	$1,300	$2,400
Subtotals	$25,300	$33,100	$33,100	$33,100	$33,100	$157,700	$45,680	$112,020
Objective 2: Financial & Technical Assistance								
Task 2: BMPs for Rangeland, Cropland, Riparian, etc.	$10,000	$20,000	$20,000	$0	$0	$50,000	$20,000	$30,000
Task 3: Land Lease (80 ac.)	$2,000	$2,000	$2,000	$2,000	$2,000	$10,000	$4,000	$6,000
Task 4: Site Work	$2,000	$2,000	$2,000	$2,000	$2,000	$10,000	$4,000	$6,000
Task 5: Sediment Removal and Land Spreading Costs	$20,000	$20,000	$20,000	$30,000	$30,000	$120,000	$38,000	$82,000
Miscellaneous	$10,000	$20,000	$20,000	$20,000	$20,000	$90,000	$36,000	$54,000
Outdoor Heritage Funds	$15,000	$15,000	$15,000	$0	$0	$45,000	$45,000	$0.00
Subtotals	$59,000	$69,000	$69,000	$54,000	$54,000	$325,000	$147,000	$178,000
Objective 3: Information/Education								
Task 6: Public meetings/Tours/Education	$200	$200	$200	$200	$200	$1,000	$800	$200
Survey/Newsletters/News releases	$100	$100	$100	$100	$100	$500	$200	$300
Subtotals	$300	$300	$300	$300	$300	$1,500	$1,000	$500
Objective 4: Water Quality Monitoring								
Sampling/Transport/Supplies	$400	$400	$400	$400	$400	$2,000	$800	$1,200
Subtotals	$400	$400	$400	$400	$400	$2,000	$800	$1,200
Total for all Objectives/Tasks								
Total 319/Non-federal Budget	$85,000	$102,800	$102,800	$97,800	$97,800	$486,200	$194,480	$291,720

APPENDIX # 6

Potential Dredging Area Locations