

August 31, 2014

Pine Lake Protection and Rehabilitation District
% James Gehl
10231 N. Rangeline Ct.
Mequon, WI 53092

RE: Final Report – Pine Lake Dredging Feasibility Study
CBGroup No. 14-R010

Dear Mr. Gehl:

It has been a pleasure working for you and the Pine Lake Protection and Rehabilitation District (PLPRD) in developing the Feasibility Study for dredging parts of Pine Lake in the Town of Hiles, Forest County.

We have attached the Feasibility Study accompanied with thirteen (13) Appendices supporting the recommendations and conclusions drawn in the feasibility report. The feasibility report details the process CBGroup used to draw the conclusions and recommendations.

Briefly, the report states that dredging parts of Pine Lake is physically feasible to meet the goals of the PLPRD. More up-to-date information, such as a bathymetric survey and sediment sampling & analysis are needed in order for the PLPRD to make a final informed decision with current information.

Funding will be a limiting factor. Design of the dredging operation will need to meet the PLPRD's goals and keep costs within the District's financial capabilities.

It is a pleasure to present the attached Feasibility Report for the Sediment Removal from part of Pine Lake to the PLPRD. If you have questions regarding the contents of the attached report, please feel free to contact me at (715) 203-4629 or Russ Fish at (715) 203-4630.

Sincerely,
CHEQUAMEGON BAY GROUP, INC.



James Grafelman
Waterway, Wetland & Regulatory Specialist

Russell Fish, PE
Sr. Engineer, Civil Department

Enclosures: Pine Lake Dredging Feasibility Study

Cc: _____



Feasibility Study
Pine Lake Sediment Removal
Pine Lake
Town of Hiles, Forest County
Presented to:
Pine Lake Protection and Rehabilitation District
By Chequamegon Bay Group, Inc.

Background

In January 2014 the PLPRD contacted CBGroup, Inc. to discuss the possibility of dredging part of Pine Lake. The reasons for wanting to remove sediments from Pine Lake include control of excessive macrophytes, increase of water quality and the loss of usable near shore areas for recreation due to excessive muck and soft sediment buildup over the past 10 to 15 years or more, especially along the western and northern shores of the lake.

CBGroup met with the PLPRD in May 2014 to formulate a plan to aid the PLPRD in making decisions needed to go forward with the plan to remove sediments from the bed of Pine Lake. That plan consists of eight (8) tasks that need to be done in order to ensure the plan's feasibility. These tasks include the following:

- 1 - Pre-Application and Scoping Meeting and Report
- 2 – Determine and Contact All Agencies
- 3 – Determine need for WEPA compliance
- 4 – Contact & Determine Available Dredging Contractors
- 5 – Contact Public and Private Landowners
- 6 – Contact Local Surveying Firms for Required Project Services
- 7 – Contact Laboratories for Sediment Analysis Costs
- 8 – Deliver Feasibility and Permit Study Report

At the May 8, 2014 meeting with CBGroup, a number of issues were raised by the PLPRD which needed to be addressed in the Feasibility Study. These issues are listed in Appendix 1.



CBGroup prepared a Task 1 report and presented it to the PLPRD in its draft form at the District's Annual meeting on July 6, 2014. At that time, the PLPRD voted to continue with the project and have CBGroup continue with the Feasibility Study to be completed at the end of August 2014. The final Task 1 Report is also included in Appendix 1.

History

Pine Lake is a 1,684-acre seepage lake located northeast of Crandon in the Town of Hiles, Forest County. It has a maximum depth of 15 feet with a mean depth of ten feet. There are three streams that empty into Pine Lake. Pine Creek enters from the north, Copper Creek from the northeast and Wildcat Creek from the west. Pine Lake forms the headwaters of the Wolf River, which drains southward from the lake through culverts under the Soo Line railroad.

There is a local belief that Pine Lake was originally a stream surrounded by wetlands and the lake was formed by placement of culverts under the Soo Line railroad and water control structures in the 1930's. The original survey map and survey notes of 1858 and 1859 show that Pine Lake was actually a natural lake in much the same configuration as it is today prior to European settlement. The survey map of that time actually names it as "Pine Lake". A copy of the original survey map is included with this report in Appendix 2.

In May 2013 the Pine Lake Protection and Rehabilitation District (PLPRD) commissioned a Comprehensive Management Plan written by Onterra, LLC under the WDNR Grant Program. That plan described a number of lake management alternatives for the control of excess macrophytes and the improvement of water quality. Dredging of the lake was only described as "incredibly expensive and harmful to the native plant populations." There was no analysis presented in the Onterra lake management plan to draw this conclusion. The Comprehensive Management Plan of May 2013 is incorporated in this report by reference.

Over 35 years ago in 1978 the Wisconsin Department of Natural Resources, Office of Inland Lake Renewal, did a feasibility study for the removal of sediments from the bed of Pine Lake. Excerpts of that report are attached in Appendix 3. That report described dredging as the best alternative for the control of macrophytes down to a depth of ten feet. The report stated that soft sediment removal to that depth would require the removal of 680,000 cubic yards of material. The report

also stated that dredging to a depth of 15 feet would require the removal of 6 million cubic yards of material. Cleaning out of all soft sediments would require removal of 12.5 million cubic yard, making a project of that magnitude impractical, according to that 1978 Feasibility Study.

Purpose and Need

The US Forest Service operates a boat landing and a campground on the northwestern shore and formerly a swimming area near the same location. The swimming area is reportedly abandoned due to presence of excessive muck and soft sediment overlaying the sand bottom.

CBGroup contacted the Wisconsin Department of Natural Resources to review its files concerning lake monitoring, use of herbicides to control weeds and harvesting of vegetation to control weeds in the lake. The WDNR files indicated the use of some herbicides in localized areas in the past. The synopsis of the herbicide treatments is contained in Appendix 4. A description of the herbicides used is shown in Appendix 5.

PLPRD formerly operated a weed harvester to remove excessive vegetation from Pine Lake. Due to the costs of operation and maintenance of the equipment the PLPRD now contracts with a private company for this service. The areas of weed removal are shown on the attached copy of the Mechanical Harvesting Plan map. See Appendix 6. The areas in most need of sediment removal closely follow the areas of mechanical harvesting.

Agencies Having Jurisdiction

CBGroup contacted a number of agencies to determine which ones will have jurisdiction and permitting authority over the dredging of Pine Lake. Following are the state, federal, tribal and private organizations contacted along with a description of their authority or interest.

- **Wisconsin Department of Natural Resources (WDNR)**
 - The WDNR has direct authority to regulate the removal of materials from the bed of navigable waters under Section 30.20, Wisconsin Statutes and Chapter NR 345, Wisconsin Administrative Code. A

permit is required for the removal of materials from the bed of navigable waters.

- Chapter NR 347, Wisconsin Administrative Code sets the sampling, analysis and disposal standards for dredged materials.
- Discharge of materials into wetlands is regulated under Section 281.36. Wisconsin Statutes, Chapters NR 103 and NR 299 Wisconsin Administrative Code. Discharge of dredge spoils into wetlands is prohibited.
- Discharge of carriage water is regulated to either groundwater or surface waters under Chapter 347, Wisconsin Statutes. Coverage under a General Permit is required for discharge of carriage water.
- **US Army Corps of Engineers**
 - Removal of sediments from the bed of navigable waters is no longer regulated under Section 404 of the Federal Clean Water Act. Due to rulings in the Tulloch Decision, the Corps of Engineers no longer regulates removal of materials from the beds of navigable waters, but defers the authority to the State of Wisconsin.
 - Discharge of sediments to wetlands or Waters of the United States is regulated by the Army Corps of Engineers under Section 404 of the Federal Clean Water Act. Disposal of dredge spoils into wetlands is prohibited.
- **US Forest Service**
 - The Forest Service operates a campground and boat landing at the northwestern corner of Pine Lake. There is a small swimming area which has been discontinued due to muck and excessive vegetation in the water at the site. The Forest Service has an interest in improving the swimming area but lacks the funding to assist in this project.
 - The Forest Service owns and manages numerous large acreages along the western side of Pine Lake. Most of these sites are predominantly wetland and cannot be used for dredge spoil disposal. There is one gravel pit on USFS land. However, the Federal NEPA regulations require extensive analysis, archeological surveys and endangered species inspections for each site, making federal authorization to use

the federal lands time consuming, expensive and impractical for dredge spoil disposal.

- **Wisconsin Historical Society**

- The State Historic Preservation Office (SHPO) has authority to inventory, assess and protect archeological and historical sites of significance. All state permit actions, including issuance of permits to dredge navigable waters and disposal of dredge spoil materials, requires review by the SHPO. All permit decisions must be made to preserve and protect significant historical and archeological sites. Normally, all that is needed is literature or record review to determine the likelihood if any significant sites exist. If historical or archeological resources are located, SHPO must be advised and the project may be delayed or modified as necessary.

- **Forest County Zoning Department**

- Any manipulation of land within the shoreyard of a navigable waterway is regulated by the Forest County Zoning Department. The shoreyard is the area within 1,000 feet of a lake or within 300 feet of a stream. The Forest County Zoning Administrator, Pam Labine, is also the administrator of the Department of Land and Water Conservation. Ms. Labine has expressed possible interest in cooperating and cost sharing in the dewatering of sediments and their re-use as soil builders and fertilizers.

- **Forest County Highway Department**

- The Forest County Highway Department has jurisdiction over the use of the Forest County road system. The pumping of sediments may require piping to pass under county or local highways via use of culverts to reach disposal areas on the other sides of roadways. Permits will be needed from the Forest County Highway Department or from local town road authorities to use culverts to pass through for sediment transport to disposal sites.

- **Great Lake Indian Fish and Wildlife Commission (GLIFWC)**

- Pine Lake is within the Ceded Territory in which local Chippewa tribes retained certain fishing and hunting rights as per treaties of the mid to late 19th Century. GLIFWC is the organization which regulates and promotes the exercise of tribal hunting and fishing rights within the Ceded Territory. CBGroup has contacted GLIFWC through contact with Mr. John Coleman of GLIFWC in May and again in June 2014. CBGroup has not received a response from them as of this report.
- CBGroup has also contacted Mr. Matt Steinbach of the Forest County Potawatomi. Mr. Steinbach explained that the Potawatomi did not retain the treaty rights as had the Chippewa and they have no interest in the Pine Lake dredging project.
- **Forest County Association of Lakes**
 - CBGroup contacted the Forest County Association of Lakes in May 2014 and has not received a reply to date.
- **Town of Hiles**
 - The Town of Hiles has been aware of the Pine Lake dredging project and has attended PLPRD meetings concerning the project
- **Senator Tom Tiffany**
- **Representative Jeff Mersau**
 - CBGroup has made contact with the office of State Senator Tom Tiffany and Representative Jeff Mersau and apprised them of the project and its importance to the region.

Bathymetric Surveys of Bottom of Pine Lake

A bathymetric survey is one where the bottom of a lake is surveyed to determine the lake bottom contours. In the case of Pine Lake the survey is also needed to determine the depth and volume of sediment that needs to be removed to achieve the goals of the PLPRD of removing soft sediments to sand or gravel bottom. Sediments would be removed to a depth which will restore the recreational enjoyment, reduce the need for excess removal of vegetation and improve the water quality and clarity of Pine Lake.

CBGroup contacted a number of surveying firms. Of those contacted, two showed interest and capability of performing the required bathymetric surveys. These surveying firms are:

- Mid State Associates (MSA Professional Services). MSA is a large company who do consulting business in several midwest states. Their estimate for doing the bathymetric survey ranges from \$10,000 to \$20,000 depending on conditions. A copy of MSA's proposal is found in Appendix 7.
- Bixby Land Surveying. Kevin Bixby is a local surveyor from Rhinelander, Wisconsin. His estimate for doing the bathymetric survey is \$8,000. A copy of his estimate and contract is also found in Appendix 7.
- In addition to the surveyors capable of performing the bathymetric survey, one of the dredging operators, Peterson Companies, has indicated they can help estimate the amount of sediment to be removed. Peterson has not given an estimate of costs for doing the survey, however.

CBGroup finds both MSA and Bixby to be acceptable firms to perform this work as chosen by PLPRD.

Analysis of Lake Bottom Sediments

The bottoms of lakes often act as collectors of pollutants from agricultural, industrial and domestic sources. Chemicals found in the lake bottom sediments can often be found in amounts and concentrations which can render the sediments unusable as fertilizers or soil builders. In extreme cases some chemicals can cause the sediments to be classified as hazardous materials, making their removal and disposal difficult and expensive.

There are no known industrial discharges to Pine Creek, upstream of Pine Lake or to the Copper Creek or Wildcat Creek, the other two streams emptying into Pine Lake.

The watershed of Pine Creek is largely forested with some farming and residential development.

There are records, however, of past herbicide treatments in parts of Pine Lake as mentioned earlier and described in Appendix 5.

To comply with the Chapter NR 347, Wisconsin Administrative Code, the sediments need to be sampled and analyzed for heavy metals and organics. The specific chemicals that need to be analyzed are proscribed in Section 347.06, Wis. Adm. Code.

CBGroup contacted a number of laboratories capable of sampling and analyzing the sediments in Pine Lake. The following laboratories provided estimates for their services:

- Great Lakes Environmental Center (GLEC). This company has laboratories located throughout the Great Lakes region. They can do both the sampling and analysis for the Pine Lake dredging project. Their estimated cost is \$8510 for both sampling and analysis. A copy of their proposal is contained in Appendix 8.
- Pace Analytical. Pace is located in Green Bay, Wisconsin. They can do the sediment analysis but not the sampling. They subcontract out with Sand Creek Associates for the sampling. Their estimate for analyzing the sediments in Pine Lake is \$8,300. A copy of their proposal is contained in Appendix 8. Their combined estimated costs with Sand Creek Associates for both sampling and analysis would be \$10,000.
- Sand Creek Associates. They are located in Rhinelander and are capable of doing the sampling as a sub consultant to Pace Analytical. Their estimated cost for sampling of Pine Lake sediment is \$1,700 with any additional services at \$80 per hour. A copy of their proposal is contained in Appendix 8.

CBGroup finds both GLEC and Pace Analytical/Sand Creek Associates to be acceptable for final selection by the PLPRD.

Dredge Operator Availability and Costs

CBGroup contacted a number of dredging operators using the internet and other sources. Of those contacted, these three dredging operators expressed an interest in the Pine Lake Sediment Removal Project:

- Great Lakes Dredge and Dock Corporation. They are located in St. Peters, Missouri. They are capable of doing the sediment removal in Pine Lake. Their cost estimate is based upon information available at this time. Their rough estimate is approximately \$4 per cubic yard and \$1 per cubic yard for every mile of piping or transport.
- Marine Tech, LLC is located in Duluth, Minnesota. They are capable of performing the sediment removal. Their estimated cost ranges from \$10 to \$25 per cubic yard of material removed, depending on circumstances and the materials to be removed.
- Peterson Companies is located in Minocqua, Wisconsin and performs sediment removal projects throughout the United States. They did not present a cost estimate at this time as they will need more information. As previously mentioned, Peterson Companies is also capable and willing to assist with the Bathymetric Survey if requested.

Copies of each dredging company response are found in Appendix 9.

Availability of Dredge Spoil Disposal Sites

Use of any site for the disposal or dewatering of dredge spoil or lake sediments requires both the permission and cooperation of the land owner. In the case of public properties, certain protocols and procedures must be followed in order to meet each public land owners' requirement.

Additionally, dredge spoils and sediments cannot be deposited in wetlands. The sites selected must also be of sufficient size to allow construction of temporary dewatering pits or dewatering basins of sufficient size to make their use practicable.

Private Land Owners

CBGroup screened a number of land owners along the western and northern shores of Pine Lake. Using the Forest County Land Use Web site as a starting point, along with the Wisconsin Wetland Inventory layer, properties within one mile of Pine Lake were screened for possible upland sites of usable area. Those landowners with sufficient upland areas were sent a letter describing the project and the need for disposal/dewatering sites. Copies of the letters requesting permission to use each property are included in Appendix 10. In order to use

private lands for sediment disposal or dewatering a temporary easement may be required. Examples of temporary easements are included in Appendix 10. A list and results of these landowner contacts are included in Appendix 11.

Public Land Owners

There are public lands located along both the west and north sides of Pine Lake. Most of these lands are under the ownership of the US Forest Service and are part of the Chequamegon-Nicolet National Forest. The sites which appear to contain some upland are listed in Appendix 11 along with the private ownerships.

CBGroup contacted the US Forest Service to determine which if any sites they would be willing to let be used for dredge spoil disposal. Their reply can be found in Appendix 12. Essentially, the only site the Forest Service will consider for use for sediment disposal is on an abandoned gravel pit straddling two parcels in their ownership. In addition, the US Forest Service needs to conduct an environmental review to ensure no impacts to heritage resources, T&E species, etc. would occur. If the FS is chosen as a disposal site the Forest Service needs some time to conduct the environmental review.

There is one property located north of Pine Lake along Pine Creek which is owned by the Wisconsin Department of Natural Resources. This site is predominantly wetland and was not considered further for analysis.

Availability of Funding Sources

CBGroup has researched sources of funding or cost sharing for use in the Pine Lake sediment removal project. To date, only the Forest County Land and Water Conservation Department has indicated availability of funding through a cost sharing program.

Projected Costs for Permitting with WDNR

The sediment removal from parts of Pine Lake would be covered under an Individual Permit (IP) under Section 30.20, Wisconsin Statutes. The application fee for an IP is \$600. There is no fee for application for coverage under the

General Permit for Dewatering or discharge of carriage water to either groundwater or surface water.

Opinion of Probable Costs for Dredging Along Western and Northern Shorelines.

Based upon the scope of construction summarized in our recommendations, we have prepared a projected construction cost budget for the project. Details of the cost projections are included in Appendix 13. We have utilized the following sources of cost data to prepare this budget: recent bidding history on similar projects in the area, discussions with contractors and suppliers, and several nationally recognized construction cost data bases. In addition, we are recommending a 10% contingency in the construction budget to account for unexpected costs which may be incurred during the course of the project. We have also provided an estimated budget for design professional services on the project, in accordance with the scope of services in our engineering services agreement. Using information provided by you or others involved with the project, we have summarized what appears to be a Total Project budget.

It is important to recognize that the above describe Dredging Budget is strictly an opinion of the probable cost of construction based upon the previously discussed sources of information. It does not represent a guaranteed maximum for the construction cost on this project. There is no assurance that proposals, bids, or actual Dredging Costs or Total Costs will not vary from the above stated opinion of cost, for several reasons:

1. The impact of potential inflation or other economic factors may change significantly.
2. We have no control over the cost of labor, materials, equipment or services furnished by others who will be involved with this project.
3. Competitive bidding or market conditions at the actual time of bidding or negotiation can greatly impact the cost of construction project.
4. The estimated quantities of work in this cost study are preliminary in nature. During actual design of the project, it is very likely that some details, unknown at the time of this preliminary study, will be discovered and need to be included in the project.

5. The actual timing of the project in the bidding market place can often impact the cost of the project. Winter construction can greatly increase project cost.
6. During final design development, you may determine other work items which you wish to have included in the project.
7. It is a fact of life on most dredging projects, especially those involving dredge disposal or dewatering site, that conditions unknown to the Owner, Engineer, or Contractor may not be disclosed until dredging is actually taking place. These changed conditions may or may not result in additional project costs, but there must be a clear understanding that such contingencies must be planned for in the budget.

In summary, we have presented our opinion of probable cost based upon our experience and qualifications as design professionals familiar with the construction industry. However, if greater assurance regarding the Total Budget or the Construction Budget is desired, we recommend that an independent cost estimator be retained to determine your budget.

Conclusion

Removal of soft sediments from the bed of Pine Lake is physically possible.

1. There are at least three private companies with means of hydraulically dredging and removing the sediments.
2. There are private and public land owners who have shown interest or willingness in using part of their properties for the disposal and/or dewatering of the sediments once they are removed from the lake.
3. There appears to be interest within the community to improve the water quality of Pine Lake, reduce the need for excess weed harvesting and to make the near shore areas more usable for recreation and boating.

The limiting factors in permitting include:

1. The costs of the bathymetric surveying, which range from \$8,000 to \$20,000
2. Sediment sampling and sediment analyses which range from \$8,510 to more than \$10,000.

3. Fees for preparing permit application materials are not included.

Other limiting cost factors include:

1. The actual dredging or removal of the sediments from the bed of Pine Lake.
2. These costs range from \$1.3 Million to \$8.5 Million but are based upon information from the 1978 Report from WDNR and removal to the 10-foot water depth.
3. The 1978 information is likely no longer valid.
4. The amount of sediments in Pine Lake are likely much different than those described in the 1978 report.
5. The costs for disposal or dewatering of the sediments and costs for any easements to use private property are not calculated in this report.

Recommendations

The decision to move forward into the permitting phase of this project lies with the Pine Lake Protection and Rehabilitation District (PLPRD).

The bathymetric survey can show the following:

1. Depths, volume and extent of sediments on the bed of the lake in areas where the PLPRD wants to explore for sediment removal.
2. Indicate areas in most need of sediment removal.
3. Help to reduce the costs of dredging by limiting the areas of sediment removal

Sediment sampling and analysis can show:

1. The quality and content of materials within the soft sediments.
2. Suitability of the sediments for beneficial reuse as soil builders or fertilizers.
3. Help offset part of the costs via cost-sharing with the Forest County Land and Water Conservation Department.
4. Help offset costs by offering dried sediments for sale.

The above items, bathymetric survey and sediment sampling & analysis, could be done prior to and in preparation for making application to WDNR for permitting. The areas in most need of sediment removal could be identified and the project limited in scope to reduce costs. Plans could be made for beneficial reuse of the

sediments including fees for purchasing the materials to help offset costs of the project.

Limitations

The primary factor limiting the removal of sediments from the bed of Pine Lake is the costs for permitting and dredge operations. The PLPRD has already committed to this Feasibility Study. There do not appear to be public funding sources available for sediment removal from lakes in Wisconsin. These projects are normally funded through private donations and fund raising activities.

Appendix 1

Scoping Meeting of May 8, 2014

Task 1 Report



Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP

Pine Lake Sediment Removal
Scoping Meeting
May 8, 2014

Issues Identified

- Reduced Water Clarity is a major concern.
- Silt and organic sediment buildup along western and northern shorelines covers the original sand beach.
- Silt and organic sediment buildup at mouth of Pine Creek is a concern.
- Pine Lake was stated to be originally a stream but was dammed up by culverts installed in 1938 under the railroad at the south end where it empties into the Wolf River. A dam was subsequently built to control water levels.
NOTE: The 1859 map of Pine Lake found by CBG since the meeting indicates that the lake was probably not a river stream.
- Pine Creek, which empties into Pine Lake at the north end, is silted in and may be discharging sediments into Pine Lake.
- The west side of the lake had a sandy bottom up until 15 to 20 years ago. Many west side residents remember the sandy lake bottom, which is now covered with silt.
- Weeds have been harvested, but not in the amounts desired by the lake residents
- Eurasian Water Milfoil is found throughout the lake, but not in nuisance amounts.
- The US Forest Service closed its swimming area at the boat landing.
- PLPRD has not cut weeds for 5 years. This is contracted out today.
- Silt and organic muck has appeared in the past 15 to 20 years along the west side. Near shore bottom was sand prior.
- The lake used to be “flushed” every year until 1963 when the Public Service Commission (predecessor to WDNR) ordered the flushing stopped.
- Aquatic plant growth appears to be increasing
- Fishery appears to be decreasing. Although some thought the fishing was as good or better in recent times.
- Leaves of deciduous trees are not being flushed from the lake system as in the past.
- Algae problems occur in the lake, especially in late summer and after weed harvest.

Resolve to Commit to Project Funding

- PLPRD has approximately \$300,000 on hand to devote to the project
- Forest County Land and Water Conservation may be able to devote cost share funding under Chapters 91 & 92, Wisconsin Statutes for sediment dewatering and beneficial reuse of sediments removed from lake.
- US Forest Service may have funding available to rehabilitation of the federal swimming area at the Pine Lake boat landing.





May 30, 2014
Final Report
Pine Lake Dredging
Pre-Application Requirements

Presented to Pine Lake Protection and Rehabilitation District

Respectfully Submitted
James Grafelman
Waterway, Wetland and Regulatory Specialist

Russ Fish
Project Manager



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN
www.cheqbaygrp.com
Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP



May 30, 2014

Pine Lake Protection and Rehabilitation District
% James Gehl
10231 N. Rangeline Ct.
Mequon, WI 53092

Subject: Pine Lake Pre-Application Requirements for Selected Sediment
Removal from the bed of Pine Lake – Task 1 Final Report

Dear Mr. Gehl:

It was truly a pleasure meeting with you and the rest of the Pine Lake Protection and Rehabilitation District on May 8 to present our draft report. We are pleased to present to you the enclosed Final Task 1 Report.

As we had discussed at the May 8 meeting, CBGroup is developing a proposal for the completion of Tasks 2 through 8, which culminate with the completion of the Pine Lake Dredging Feasibility Study. We agreed to provide you with a copy of this proposal by the middle of June and to present and discuss it with the District at your annual meeting on July 6, 2014.

Again, it is pleasure working with the PLPRD. We look forward to presenting our proposal to the District for the rest of the Feasibility Study. You are truly a progressive and caring group and we look forward to continuing serving you.

Thank you for selecting CBGroup for your lake management needs.

Sincerely,

James Grafelman
Waterway, Wetland and Regulatory Specialist



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN
www.cheqbaygrp.com
Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

**Pine Lake Sediment Removal
Town of Hiles, Forest County, Wisconsin
Task 1 Report**

Background

The Pine Lake Protection and Rehabilitation District (PLPRD) has entered into an agreement with Chequamegon Bay Group, Inc. to perform Task 1 of the process to prepare a feasibility study on the possibility of removing sediments from the bed of Pine Lake in the Town of Hiles, Forest County.

Pine Lake is a natural lake and is the headwater of the Wolf River. It has several inlet streams entering the lake including Pine Creek from the north, Wildcat Creek from the west and Sueber Creek from the east. Pine Lake appears on the original survey map of 1859 in very much the same configuration as it appears today, and is named as “Pine Lake” on the original survey map.

In April 1978 the Wisconsin Department of Natural Resources (WDNR), Office of Inland Lake Renewal, performed a Feasibility Study of lake management alternatives, including removal of sediments from the lake. The 1978 report stated that wave action prevented the accumulation of sediments out to the five or six foot depth contours in the near shore areas and extending out to 300 to 600 feet from unprotected shorelines resulting in relatively “weed sparse” areas. The report also states that in 1977 macrophytes grew over almost the entire lake bottom. The 1978 report discussed dredging as the best method of controlling macrophytes as well as deepening the lake. According to the report 680,000 cubic yards of materials would need to be taken from the lake to reduce macrophyte populations. The anticipated costs in 1978 dollars was \$1.25 per cubic yard or \$850,000 for sediment removal to control macrophytes at that time. The 1978 report states dredging of the entire lake would require removal of 12.5 million cubic yards of sediments. The 1978 report does not address costs of bathymetric surveys, disposal options or costs of sediment analyses.

In May 2013, Onterra LLC produced a Comprehensive Management Plan for Pine Lake for the PLPRD. That report addresses the alternative of dredging only as prohibitively expensive.



Task 1, Pre-Application and Scoping

Chequamegon Bay Group, Inc. (CBGroup) entered into a contract with the PLPRD authorizing Task 1 to produce a feasibility study for dredging Pine Lake. On May 8, 2014 representatives of CBGroup, Russell Fish and Jim Grafelman, met with the PLPRD at a project scoping meeting to determine the issues surrounding the dredging of Pine Lake and the projected tasks required for making a successful application to the Agencies Having Jurisdiction (AHJs).

The Issues surrounding the removal of sediment from the bed of Pine Lake resulting from that meeting were recorded and are contained in Attachment 1, List of Issues. Also identified were potential Agencies Having Jurisdiction (AHJs) and state legislators to be involved in the planning and permitting of the sediment removal. A list of the potential AHJs and legislators is contained in Attachment 2.

Two of the most important parameters that need to be determined for any lake dredging project include:

- Chemical analysis of the sediments proposed to be removed. Chapter NR 347, Wisconsin Administrative Code requires that sediments on the bed of navigable waters be analyzed for pollutants that could be harmful to the aquatic ecosystem if re-suspended during the removal process or may cause the sediments to be unsuitable for disposal. To help determine what kinds of pollutants may be found in the lake sediments WDNR, records were researched for any industrial discharges or applications of herbicides and pesticides on the lake. Research of WDNR records found the following:
 - No records of industrial discharges to Pine Lake or Pine Creek upstream
 - Herbicides were applied to parts of Pine Lake. Records in WDNR files show herbicide treatments from 1983 to 2006. A list of herbicides used and their locations of application are shown in Attachment 3.

Several laboratories were contacted for estimates of sampling and analysis of the sediments in Pine Lake. Of these, only one laboratory has provided us with an estimate of sampling and analysis costs – Great Lakes Environmental Center. A synopsis of their estimate is found in Attachment 4.



- Volume of sediment to be removed. As previously noted, the 1978 DNR feasibility study indicated that 680,000 cubic yards of sediment would need to be removed from the lake down to a depth of 15 feet. To help make this a more manageable amount, CBGroup advises doing a narrower area of sediment removal to reduce the amount of sediments. In order to determine where the most cost-effective areas would be located, PLPRD provided a map of areas of the vegetative harvesting plan where the sediments are most prevalent in the near-shore areas. These are at the north shore near the mouth of Pine Creek and along the west side of the lake.

CBGroup has made contacts with surveying firms in the area familiar with Bathymetric Surveys. This survey is used to determine the current depth contours of the lake and the depth of sediments to be removed. To date the surveying firms contacted include:

- Maines & Associates – No Response
- Bixby Surveying. Bixby Surveying has supplied us with a \$7,000 estimate for a bathymetric survey in winter and \$9,000 in summer. A synopsis of this bathymetric survey estimate is found in Attachment 5.
- Mid-State Associates Professional Services. MSA supplied us with an estimate of between \$10,000 and \$20,000. A copy of MSA's estimate is attached to Attachment 5

Agencies Having Jurisdiction

CBGroup contacted all of the agencies shown on the Attachment 2 list of AHJs.

- Of those listed only the WDNR has direct permitting authority.
- The US Army Corps of Engineers has authority only if materials are deposited into waters of the United States and will defer all authorities to the WDNR.
- The Great Lake Indian Fish and Wildlife Commission has not returned our messages.
- Wisconsin Historical Society has been contacted with no response to date.
- Wisconsin Department of Transportation contacted with no response do date.
- Forest County Potawatomi was contacted and has no jurisdiction.



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

- Mole Lake Band of Chippewa was contacted with no response to date.
- Northeast Wisconsin Regional Planning Commission – Unable to contact.
- Forest County Association of Lake – Contacted with no response to date.
- Forest County Zoning & Land and Water Conservation – on board.
- The US Forest Service operates a boat landing and swimming area.
- Tom Tiffany, Wisconsin State Senator, 12th Senate District – Was contacted.
- Jeffrey Mersau, State Representative, 36th Assembly District - Was contacted.

Summary of Task 1 Findings

- Sediment volumes must be determined via use of Bathymetric Surveys. Two firms have responded to date: Bixby Land Surveying and MSA Professional Services. Bixby estimated the costs between \$7,000 and \$9,000. MSA estimated the costs from \$10,000 to \$20,000.
- Sediments must be analyzed for metals, pesticide and toxic organics. One laboratory responded, which has the capability to sample and analyze the necessary parameters. Costs for the sampling and analyses were estimated to range from \$5,100 to \$10,200.
- The Forest County Land and Water Conservation Department LCC is interested with the dewatering and disposal of the sediments as farm soil builder. There may be funding available for this through the Forest County LCC, but likely not until 2016.
- The WDNR will require an Individual Permit for the sediment removal. The application fees for an individual permit is \$606. As part of the application process a Public Notice must be published in the local newspaper at the applicant's expense. The cost will depend on the newspaper.
- WEPA Compliance. According to the new NR 150, this proposed dredging project would be an Equivalent Analysis Action under NR 150.20(2)14. Therefore, no additional environmental analysis is needed.
- The US Forest Service has interest in assisting with removal of sediment at the federal boat landing and swimming area. The extent of Forest Service Involvement is yet to be determined.



Estimated Costs for Completing Pine Lake Dredging Feasibility Study

Task	Description	Estimated Cost	Due Date or Date Completed
1	Pre-Application meeting and Report	\$5,000 already paid	May 30, 2014
2	Determine and Contact All AHJ's	\$3,250	To be Determined
3	Determine WEPA Compliance	\$2,200	To be Determined
4	Contact, Interview & Supervise Dredging Contractors	\$5,200	To be Determined
5	Contact Public & Private Land Owners for dredge spoil disposal	\$4,000	To be Determined
6	Interview and Select Local Surveying Firms	\$1,500	To be Determined
7	Interview and Select Laboratories for Sediment Sampling and Analysis	\$2,100	To be Determined
8	Deliver Final Feasibility and Permit Study Report	\$18,250**	To be Determined

**This fee includes completion of Tasks 2 through 8. A fee of \$5,000 has been paid and credited for the completion of Task 1. Only the remaining fee of \$18,250 is applied to the completion of the Feasibility Study. Costs for preparing WDNR Permit application materials, hiring of a dredge, dredging operation and spoils disposal are separate from these costs and will be addressed in the Feasibility Study. The cost of a bathymetric survey and sediment analysis are not included and will be separate with those firms.

These findings were presented to the PLPRD at the District meeting on May 8, 2014 held at the Hiles Town Hall. There was a mix of reaction to the findings of



Task 1, but generally the District membership and board were in favor of continuing with the Feasibility and Permit Study process.

CBGroup agreed to finalize the findings of Task 1 and proceed to draft a proposed amendment to our agreement for the continuation of Tasks 2 through 8. This proposed amendment will be provided to the PLPRD by June 13, 2014 and be presented to the District at the annual meeting on July 6, 2014. Approval of the proposal and contract will culminate with completion and delivery of the Pine Lake Dredging Feasibility Study. CBGroup estimates the feasibility study can be completed by August 29, 2014.

We look forward to meeting with the Pine Lake Protection and Rehabilitation District at the annual meeting to present our proposal for this most important project. You all should be commended for your proactive stance in protecting and improving the quality of your lake.

Respectfully Submitted,

James Grafelman
Waterway, Wetland and Regulatory Specialist
Chequamegon Bay Group



Attachment 1

Pine Lake Sediment Removal Scoping Meeting May 8, 2014

Issues Identified

- Reduced Water Clarity is a major concern.
- Silt and organic sediment buildup along western and northern shorelines covers the original sand beach.
- Silt and organic sediment buildup at mouth of Pine Creek is a concern.
- Pine Lake was stated to be originally a stream but was dammed up by culverts installed in 1938 under the railroad at the south end where it empties into the Wolf River. A dam was subsequently built to control water levels.

NOTE: The 1859 map of Pine Lake found by CBG since the meeting indicates that the lake was probably not a river stream.

- Pine Creek, which empties into Pine Lake at the north end, is silted in and may be discharging sediments into Pine Lake.
- The west side of the lake had a sandy bottom up until 15 to 20 years ago. Many west side residents remember the sandy lake bottom, which is now covered with silt.
- Weeds have been harvested, but not in the amounts desired by the lake residents
- Eurasian Water Milfoil is found throughout the lake, but not in nuisance amounts.
- The US Forest Service closed its swimming area at the boat landing.
- PLPRD has not cut weeds for 5 years. This is contracted out today.
- Silt and organic muck has appeared in the past 15 to 20 years along the west side. Near shore bottom was sand prior.
- The lake used to be “flushed” every year until 1963 when the Public Service Commission (predecessor to WDNR) ordered the flushing stopped.
- Aquatic plant growth appears to be increasing
- Fishery appears to be decreasing. Although some thought the fishing was as good or better in recent times.
- Leaves of deciduous trees are not being flushed from the lake system as in the past.
- Algae problems occur in the lake, especially in late summer and after weed harvest.

Resolve to Commit to Project Funding

- PLPRD has approximately \$300,000 on hand to devote to the project



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

- Forest County Land and Water Conservation may be able to devote cost share funding under Chapters 91 & 92, Wisconsin Statutes for sediment dewatering and beneficial reuse of sediments removed from lake.
- US Forest Service may have funding available to rehabilitation of the federal swimming area at the Pine Lake boat landing.



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN
www.cheqbaygrp.com
Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

Attachment 2

Agencies Having Jurisdiction

- US Forest Service – Boat landing, swimming area and possible funding
- US Army Corps of Engineers
- Wisconsin Department of Natural Resources – Permitting
- Wisconsin Historical Society
- Wisconsin Department of Transportation – State Highway 32
- Forest County Zoning Department
- Forest County Land and Water Conservation Department
- Forest County Forestry Department
- Forest County Potawatomi
- Great Lake Indian Fish and Wildlife Commission (GLIFWC), ceded territory
- Town of Hiles
- Northeast Wisconsin Regional Planning Commission
- Forest County Association of Lakes

State Legislators

- Tom Tiffany, Wisconsin State Senator, 12th Senate District
- Jeffrey Mersau, State Representative, 36th Assembly District



Attachment 3

Pine Lake
 Town of Hiles
 Forest County
 DNR Records of Chemical Treatments
 From DNR Lake Management File

<u>Year</u>	<u>Chemicals Used</u>	<u>Location</u>
2006	Aquathol K	16 acres near island at SW
1992	Aquathol K, Diquat CuSO4	“Channel Areas”
1992	Aquathol K Diquat CuSO4	North End
1991	Aquathol K Diquat CuSO4	
1984	Hydrothol 191 2,4-D	Sunset Resort
1983	Hydrothol 191 2,4-D A&V 70 Diquat CuSO4	Sunset Resort



Attachment 4

Sampling and Analysis Estimate

As a rough estimate, we would expect that the samples could be collected from each of the areas of interest in one work day (excluding travel time) if we only collected one sample from each area of interest. We would mobilize for this work from our Eau Claire, WI office so the travel costs will be minimized. As a rough estimate, \$3,000 per day will cover the cost of a sampling boat, sampling equipment, two field technicians, and the shipment of the samples to the laboratory for analysis. Base on an estimate for a hydro power project I just completed, the analytical costs will vary between \$350 and \$800 per location, depending on the suite of parameters analyzed.

\$350/sample will provide results on pesticides/PCBs, a suite of 10 metals (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn), oil and grease, total phosphorus, sulfides, and total organic carbon.

\$800/sample would include the analysis of acid volatile sulfides (AVS) in addition to the other parameters. Arguably, the AVS analysis may not be necessary unless high concentrations of metals were expected. AVS is used to estimate the bioavailability of metals in sediment.

Looking at the map, I would guess that you will need to collect between 6 and 12 samples (1 or 2 from each area of interest).

Sampling and Analysis Cost Breakdown:

- Sampling - \$3,000 per day, up to 2 days = \$6,000
- Analysis - 6-12 samples @ \$350/Sample = \$2100 to \$4,200

Estimated total sampling and analysis range - \$5,100 to \$10,200

Attachment 5

Bathymetric Survey Estimates

The Winter bathymetric survey of the above noted lake would be \$7000.00. A bathymetric summer survey would be \$9000.00. If you have any questions, please do not hesitate to contact me. Thanks and have a great day.

Kevin Bixby
Bixby Land Surveying Inc.
O:715-362-5263



May 20, 2014

James Grafelman
Chequamegon Bay Group
Rhineland, WI 54501

Re: Pine Lake Bathymetric Survey

Dear Jim:

Thank you for the opportunity to partner with Chequamegon Bay Group on a project near our Rhineland office. MSA has performed a number of boundary surveys on the shores of Pine Lake making us familiar with the area. It goes without saying that there are many unknowns in performing a bathymetric survey of a lake bottom; therefore our fees are presented as an estimate only and contracted on a Per Diem basis. Chequamegon Bay and the client will only be charged the actual cost of performing the survey.

MSA is proposing to this work to be done in either the summer or winter months and will delivered via email in an ASCII file (PNEZD) that depicts the horizontal coordinates referenced to the Forest County Coordinate system, with a vertical datum referenced to the NAVD88. Coordinate values and elevations will be collected on the top of the water, top of sediment, and the observed lake bottom.

The cost of this effort is estimated between \$10,000 and \$20,000 and includes the cost of equipment, travel, and manpower to complete the task. This estimated fee is based on the best case scenario of 5 crew days to the worst case scenario of 10 crew days. This includes the cost of equipment, mileage, travel, and the associated office computations. This again is only an estimate and will be tailored to actual needs of the project when the scope is defined.

Additional tasks that can be provided by MSA

- Lake Bottom contours, provided in Civil3D 2014
- Quantities of sediment
- River Cross sections
- Wetland locations
- Floodplain mapping

MSA is proud to be able to assist Chequamegon Bay in such an exciting project for the Pine Lake Protection and Rehabilitation District. This study will provide the PLPRD with the much needed information to go forward with whatever project they decide to pursue to improve the quality of Pine Lake, for the wildlife and the patrons that enjoy it. If there are any questions or comments please don't hesitate to call, so we can get them resolved before your meeting on May 24th.

Sincerely,

MSA Professional Services, Inc.

Jeffrey L. DeMuth, PLS
Project Manager

Offices in Illinois, Iowa, Minnesota, and Wisconsin

1835 N. STEVENS STREET • RHINELAND, WI 54501-2163
(715) 362-3244 • (800) 844-7854 • FAX: (715) 362-4116
www.msa-ps.com

Appendix 2

Original Survey Map Of 1859

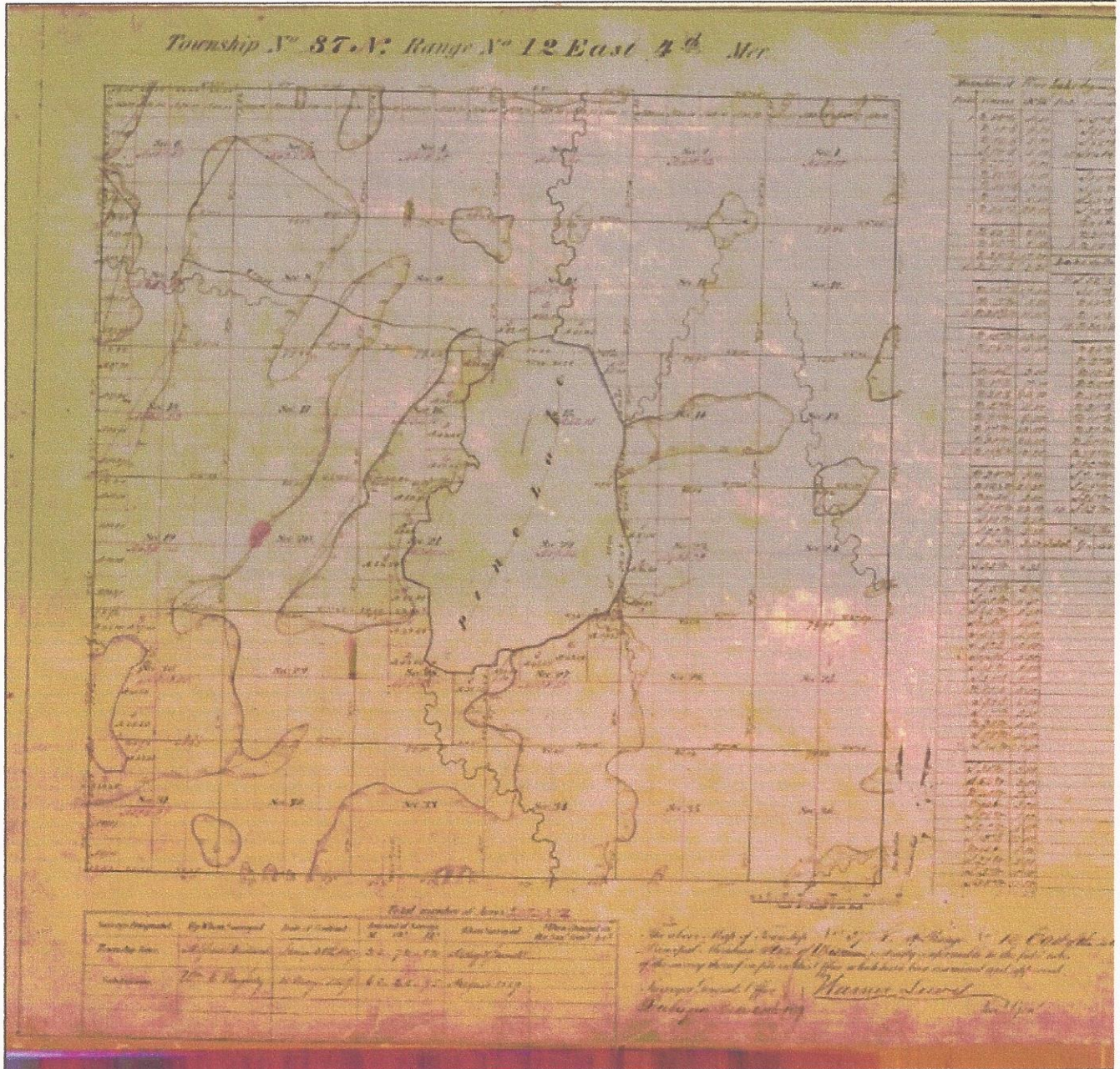


Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP



Plat Map for T37N R12E (original)



[Technical Assistance](#) | [Content/Navigation Questions](#) | [University of Wisconsin Digital Collections](#)

Appendix 3

1978 Feasibility Report



Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP

PINE LAKE, FOREST COUNTY

Feasibility Study Results;
Management Alternatives

April 1 1978

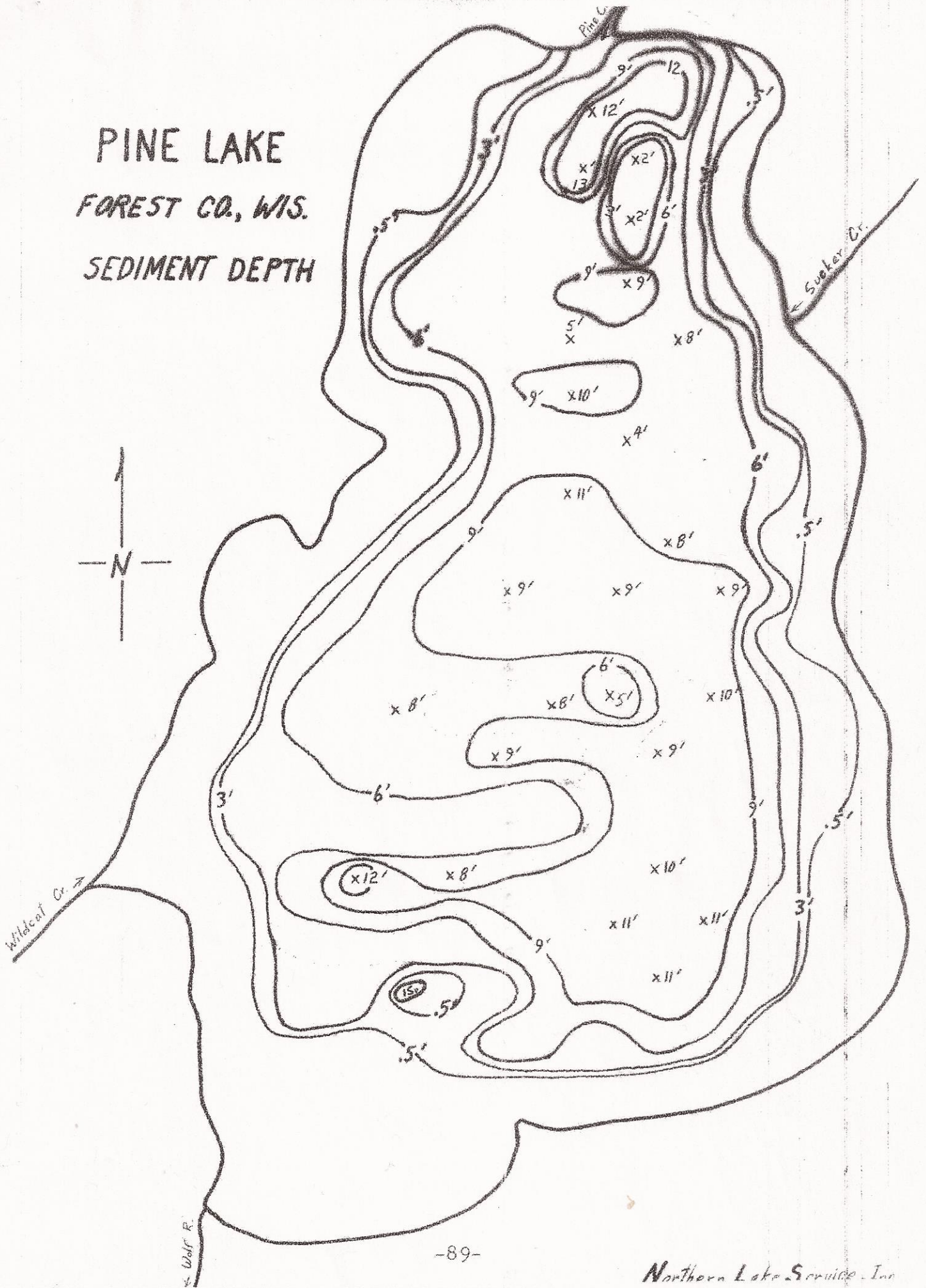
by

Office of Inland Lake Renewal

Wisconsin Department of Natural Resources

MAILS

PINE LAKE
FOREST CO., WIS.
SEDIMENT DEPTH



LAKE SEDIMENTS

A bottom survey was conducted on January 4 and 5, 1978, by the district and consultant to determine the depth of soft sediment. In much of the central area of the lake the twenty foot probe was not long enough to reach hard bottom, so the district used a longer pole on January 12, 1978, to recheck about twenty additional sites. Detailed isopach and hydrologic maps were drawn using this data.

The 600 foot grid pattern appears to have produced adequate detail, however, the southeast corner of the lake protrudes somewhat, suggesting that measurements and/or directional transects could have been more accurate. The transects on the south end of the lake were run on the second day when snow squalls interfered with siting a straight line. Some of these transects were a mile and a half long. The information appears plenty accurate for the scope of this study.

Sediment depths do not seem to follow any specific pattern in the lake. The suggestion of local residents that high sediment loads were transported via Pine Creek during lumber mill days upstream is not substantiated by this survey. Somewhat higher sediment depths are noted near the mouth of Pine Creek, but this narrow north end of the lake might be considered the "leeward bay", the area in which sediments are not dispersed by wind action. Most lakes commonly have such an area where sediments tend to accumulate. If Pine Creek were a major sediment contributor, the isopach contours would indicate a delta pattern. This is not to say that Pine Creek and the other tributaries do not contribute sediments to the lake system, but it does appear that such contributions have not been significant.

Probably much of the sediments present have resulted from plant material produced within the lake. Except for the far north end, wave and wind action prevents sediments from accumulating in most shoreline areas out to the five or six foot depth contour. Thus, a sandy, relatively weed sparse area extends out from 300 to 600 feet from most unprotected shorelines.

Costs will depend upon the equipment selected, but a small harvester can be obtained for under \$15,000. Macrophytes can be cut and removed from 1-4 acres per day, depending on abundance. Labor costs would probably be about \$5.00 per hour per person, or \$120.00 per day for 3 men. Disposal may be a problem, although application to cropland or gardens has proven to be beneficial elsewhere. Raking or some similar technique might also be considered, especially around special usage shoreline areas. Because of the presence of species that routinely fragment and/or free-float in the water, macrophytes will continue to wash up on the shoreline, especially on the windward side of the lake. Also, some cuttings will escape during the harvesting process. None of the macrophyte control measures will completely eliminate this problem. A few private companies advertise macrophyte harvesting services. Prices vary between companies and will be influenced by lake location and macrophyte density. Anticipated costs would, however, be \$150.00-\$200.00 per acre. Disposal of the macrophytes is usually, but not always, included in the services available.

During 1977, macrophytes grew over almost the entire lake bottom. However, growth did not reach the surface beyond 4-5 feet deep. Surface growths were therefore limited to about 265 acres. At 4 acres per day, 66 days would be required for one complete harvest using one machine. Of course, it would be neither necessary nor desirable to harvest such an extensive area. Critical use areas (e.g. boat access to open water, swimming areas, boating and water skiing, etc.) need to be identified before an accurate cost projection is possible.

Dredging

Dredging may be the best method of controlling the macrophytes as well as simply deepening the lake. There would seem to be three possible objectives of a dredging project: 1) reduction of the area where macrophyte growth interferes with lake surface activities. Removal of soft sediments down to a depth of 10 feet will permit continued growth on the lake bottom, but should eliminate any limitation

on boating or other near surface activity. About 680,000 cubic yards of sediment would have to be taken from the lake (Table 8). 2) reduction of the area where macrophyte growth is possible. Soft sediments would have to be removed down to a depth of 15 feet. Dredging over the entire lake bottom would involve 6 million cubic yards of material. 3) clean out all of the soft sediments. Over 12.5 million cubic yards are present in the lake, making a project of this magnitude totally impractical.

The lake could also be divided up, with each area being dredged according to usage need. This might range from no dredging to removal of all of the soft sediments. Table 8 and Figures 14 and 15 can be used to determine the sediment volumes. In designing a project, District Commissioners should keep in mind that growth will not be totally eliminated at depths under 13 feet. Removal of soft sediments may uncover primarily sand bottom. Although studies elsewhere have shown that macrophyte biomass will be reduced by more than 50 percent, growth will not be inhibited entirely.

Due to the very slow rate of sediment infilling noted in other natural lakes, dredging should be a relatively permanent lake restoration approach. Availability of dredge spoil disposal sites needs to be considered--upland sites (non-wetland or flood plain) may be required--and the consistency of the sediments will have to be evaluated in more detail. Hydraulic dredging equipment could probably be utilized. Anticipated costs should be \$1.25 per cubic yard; however, this will depend on the consistency of the sediments, distance to the disposal site and magnitude of the dredging project. Recent projects in the Inland Lake Renewal Program have been under \$1.00 per cubic yard. Permits would be necessary from the Department of Natural Resources District Headquarters at Rhinelander, and preparation of an Environmental Impact Statement may be necessary.

TABLE 8: SEDIMENT VOLUMES POTENTIALLY REMOVABLE (CUBIC YARDS)

<u>If Dredge To:</u>	<u>10 Feet</u>	<u>15 Feet</u>	<u>20 Feet</u>
Shore - A*	30,041	54,781	70,684
A - B	147,792	356,635	491,581
B - C	61,051	276,308	440,168
C - D	35,344	260,255	411,238
D - E	38,568	327,720	517,271
E - F	54,620	353,411	600,805
F - G	32,137	289,153	604,012
G - H	9,638	208,842	552,615
H - I	12,845	199,205	526,909
I - J	9,638	208,842	600,805
J - K	16,069	208,842	668,270
K - L	25,706	215,257	703,614
L - M	19,276	221,688	787,148
M - N	16,069	481,927	1,079,524
N - O	22,499	539,754	1,066,663
O - P	22,499	353,411	902,819
P - Q	28,914	420,892	909,249
Q - R	48,189	440,168	777,510
R - S	35,344	228,118	375,910
S - T	9,638	160,653	285,946
T - U	3,223	128,516	253,825
U - V	0	0	0
V - shore	0	0	0
	<hr/> 679,100	<hr/> 5,934,378	<hr/> 12,626,566

* The letters refer to the transects shown in Figures 14 and 15. The volumes correspond to the amount of soft sediment removable between the two transects.

Figure 14

PINE LAKE
FOREST CO., WIS.
WATER DEPTH
And
Sediment
Transects

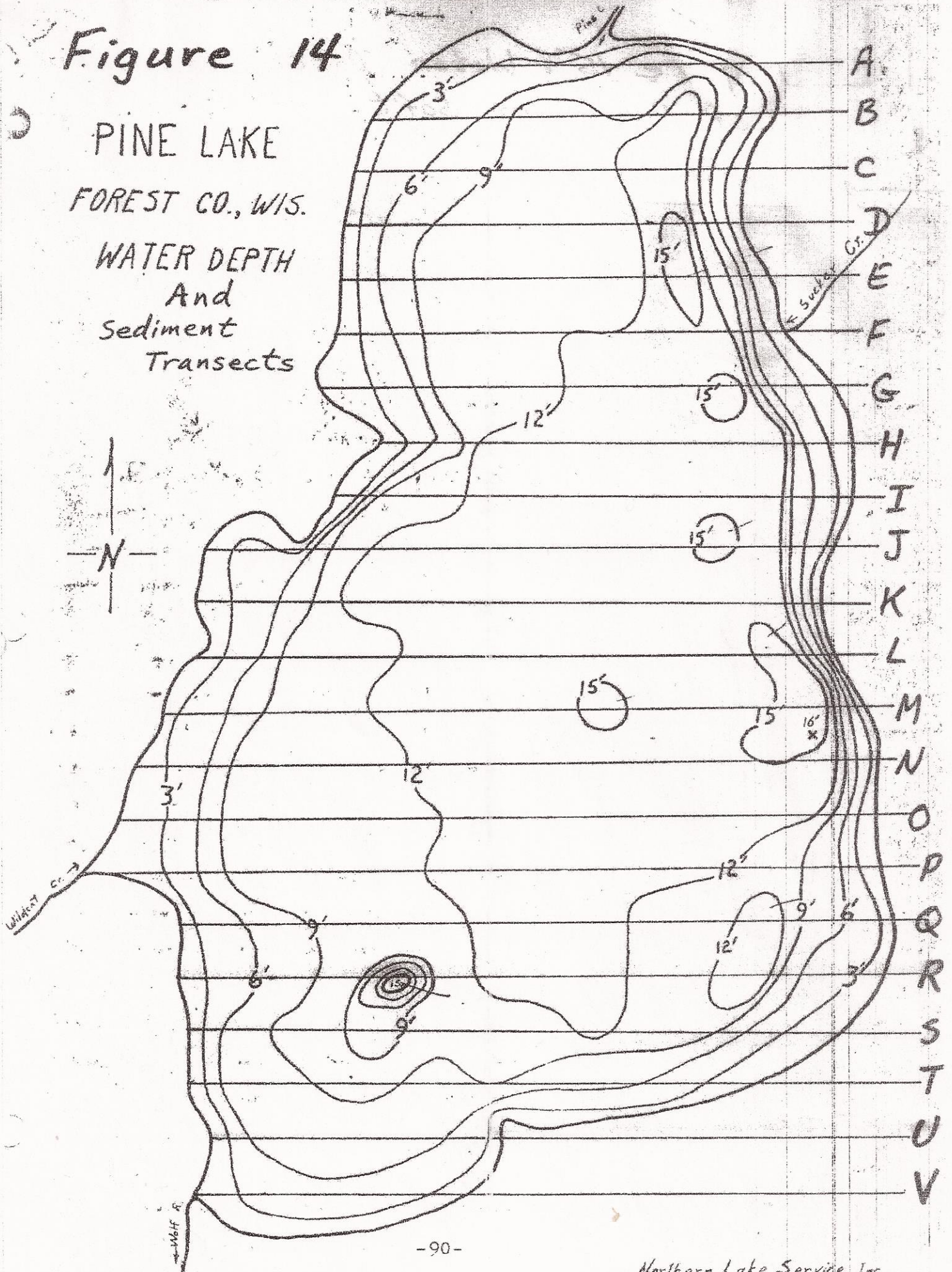
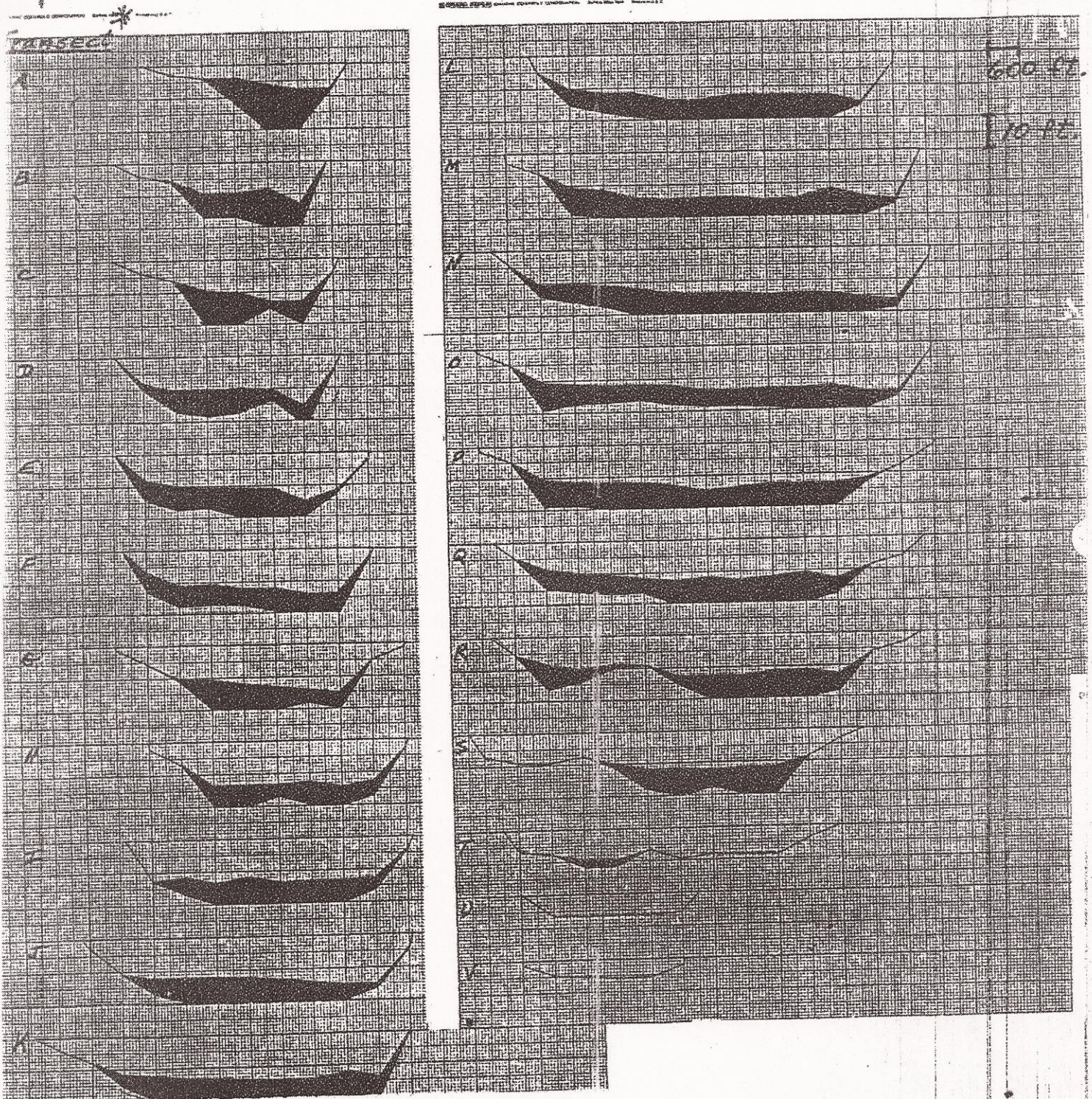


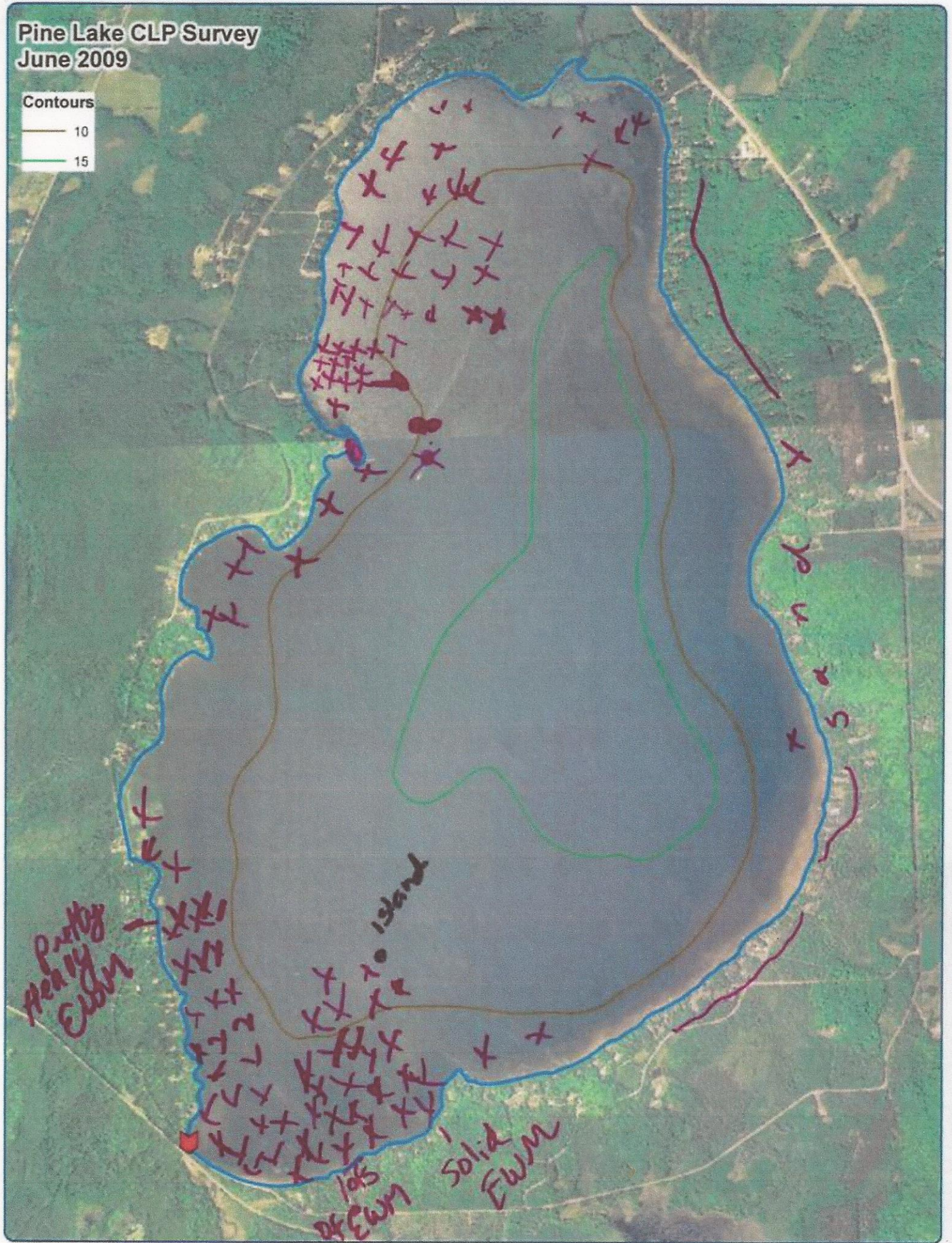
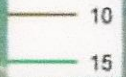
Figure 15: Water Depth and Depth of Underlying Soft Sediments



* see Figure 14 for locations

Pine Lake CLP Survey
June 2009

Contours



Appendix 4

List of Herbicides Use Records On Pine Lake



Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP

Pine Lake
Town of Hiles
Forest County
DNR Records of Chemical Treatments
From DNR Lake Management File

<u>Year</u>	<u>Chemicals Used</u>	<u>Location</u>
2006	Aquathol K	16 acres near island at SW
1992	Aquathol K, Diquat CuSO4	“Channel Areas”
1992	Aquathol K Diquat CuSO4	North End
1991	Aquathol K Diquat CuSO4	
1984	Hydrothol 191 2,4-D	Sunset Resort
1983	Hydrothol 191 2,4-D A&V 70 Diquat CuSO4	Sunset Resort



Appendix 5

Copper Sulfate and Endothol Fact Sheets



Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP

Endothall Chemical Fact Sheet

Formulations

Endothall is the common name of the active ingredient endothal acid (7-oxabicyclo[2,2,1]heptane-2,3-dicarboxylic acid). Endothall products are used to control a wide range of terrestrial and aquatic plants. Both granular and liquid formulations of endothall are available for aquatic use in Wisconsin. Two types of endothall are available: dipotassium salt (such as Aquathol®) and monoamine salts (such as Hydrothol 191). Trade names are provided for your reference only and are neither exhaustive nor endorsements of one product over another.

Aquatic Use and Considerations

Endothall is a contact herbicide that prevents certain plants from making the proteins they need. Factors such as density and size of the plants present, water movement, and water temperature determine how quickly endothall works. Under favorable conditions, plants begin to weaken and die within a few days after application.

Endothall products vary somewhat in the target species they control, so it is important to always check the product label for the list of species that may be affected. Endothall products are effective on Eurasian watermilfoil (*Myriophyllum spicatum*) and also kill desirable native species such as pondweeds (*Potamogeton* spp.) and coontail (*Ceratophyllum* spp.). In addition, Hydrothol 191 formulations can also kill wild celery (*Vallisneria americana*) and some species of algae (*Chara*, *Cladophora*, *Spirogyra*, and *Pithophora*).

Endothall will kill several high value species of aquatic plants (especially *Potamogeton* spp.) in addition to nuisance species. The plants that offer important values to aquatic ecosystems often resemble, and may be growing with those plants targeted for treatment. Careful identification of plants and application of

endothall products is necessary to avoid unintended harm to valuable native species.

For effective control, endothall should be applied when plants are actively growing. Most submersed weeds are susceptible to Aquathol formulations. The choice of liquid or granular formulations depends on the size of the area requiring treatment. Granular is more suited to small areas or spot treatments, while liquid is more suitable for large areas.

If endothall is applied to a pond or enclosed bay with abundant vegetation, no more than 1/3 to 1/2 of the surface should be treated at one time because excessive decaying vegetation may deplete the oxygen content of the water and kill fish. Untreated areas should not be treated until the vegetation exposed to the initial application decomposes.

Post-Treatment Water Use Restrictions

Due to the many formulations of this chemical the post-treatment water use restrictions vary. Each product label must be followed. For all products there is a drinking water standard of 0.1 ppm and can not be applied within 600 feet of a potable water intake. Use restrictions for Hydrothol products have irrigation and animal water restrictions.

Herbicide Degradation, Persistence and Trace Contaminants

Endothall disperses with water movement and is broken down by microorganisms into carbon, hydrogen, and oxygen. Field studies show that low concentrations of endothall persist in water for several days to several weeks depending on environmental conditions. The half-life (the time it takes for half of the active ingredient to degrade) averages five to ten days. Complete degradation by microbial action is 30-60 days. The initial breakdown product of endothall is an amino acid, glutamic acid, which is rapidly consumed by bacteria.

Impacts on Fish and Other Aquatic Organisms

At recommended rates, the dipotassium salts (Aquathol and Aquathol K) do not have any apparent short-term effects on the fish species that have been tested. In addition, numerous studies have shown the dipotassium salts induce no significant adverse effects in aquatic invertebrates (such as snails, aquatic insects, and crayfish) when used at label application rates. However, as with other herbicide use, some plant-dwelling populations of aquatic organisms may be adversely affected by application of endothall formulations due to habitat loss.

In contrast to the low toxicity of the dipotassium salt formulations, laboratory studies have shown the monoamine salts (Hydrothol 191 formulations) are toxic to fish at dosages above 0.3 parts per million (ppm). In particular, the liquid formulation will readily kill fish present in a treatment site. By comparison, EPA approved label rates for plant control range from 0.05 to 2.5 ppm. In recognition of the extreme toxicity of the monoamine salt, product labels recommend no treatment with Hydrothol 191 where fish are an important resource.

Other aquatic organisms can also be adversely affected by Hydrothol 191 formulations depending upon the concentration used and duration of exposure. Tadpoles and freshwater scuds have demonstrated sensitivity to Hydrothol 191 at levels ranging from 0.5 to 1.8 ppm.

Findings from field and laboratory studies with bluegills suggest that bioaccumulation of dipotassium salt formulations by fish from water treated with the herbicide is unlikely. Tissue sampling has shown residue levels become undetectable a few days after treatment.



Human Health

Most concerns about adverse health effects revolve around applicator exposure. Liquid endothall formulations in concentrated form are highly toxic. Because endothall can cause eye damage and skin irritation, users should minimize exposure by wearing suitable eye and skin protection.

At this time, the EPA believes endothall poses no unacceptable risks to water users if water use restrictions are followed. EPA has determined that endothall is not a neurotoxicant or mutagen, nor is it likely to be a human carcinogen.

For Additional Information

Environmental Protection Agency
Office of Pesticide Programs
www.epa.gov/pesticides

Wisconsin Department of Agriculture, Trade,
and Consumer Protection
<http://datcp.wi.gov/Plants/Pesticides/>

Wisconsin Department of Natural Resources
608-266-2621
<http://dnr.wi.gov/lakes/plants/>

Wisconsin Department of Health Services
<http://www.dhs.wisconsin.gov/>

National Pesticide Information Center
1-800-858-7378
<http://npic.orst.edu/>



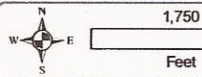
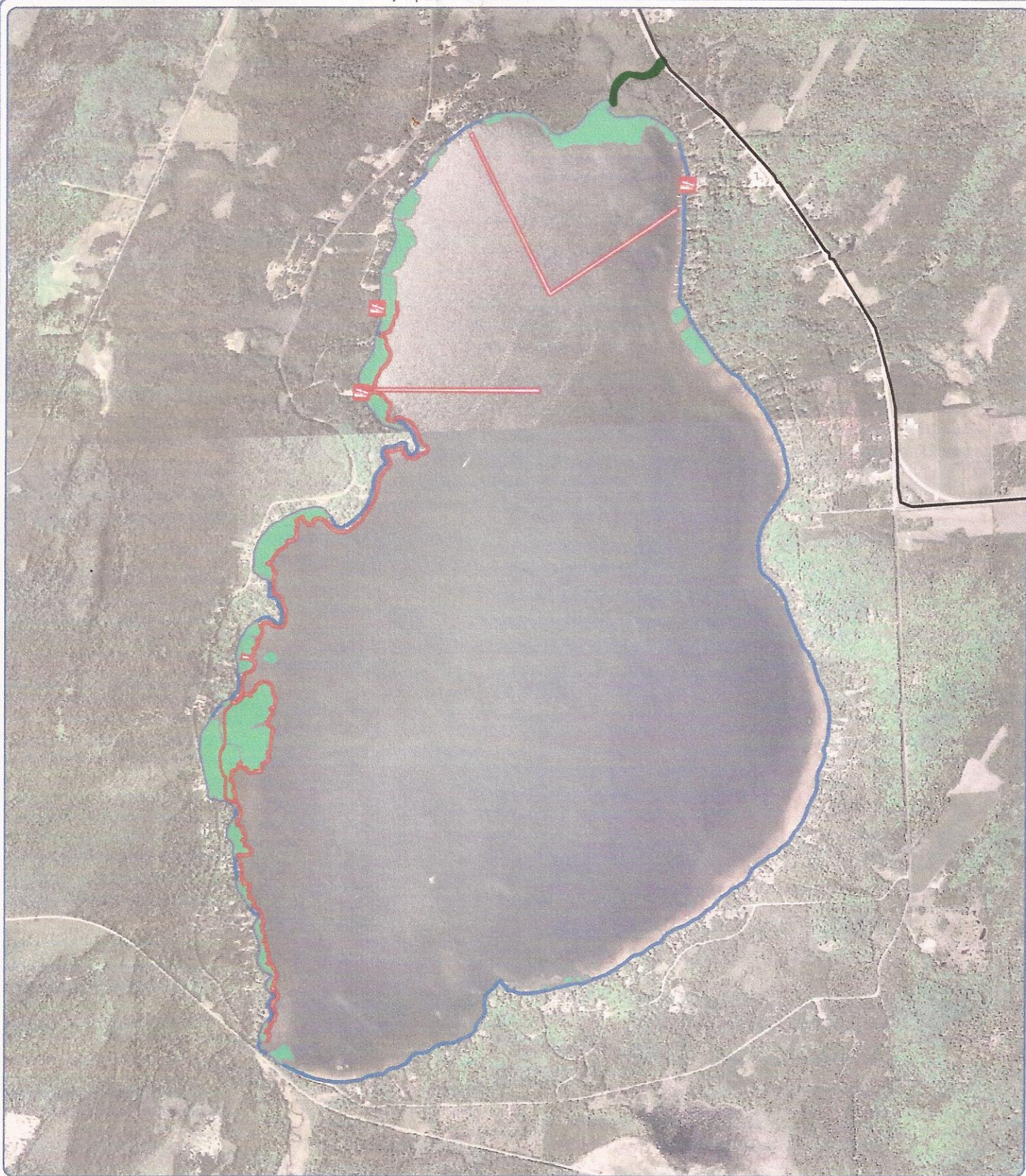
Appendix 6

Mechanical Harvesting Plan Map



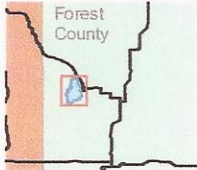
Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP





Onterra LLC
 Lake Management Planning
 135 South Broadway Suite C
 De Pere, WI 54115
 920.338.8869
 www.onterra-llc.com

Sources:
 Roads & Hydro: WDNR
 Map date: June 3, 2010



Extent of large map shown in red.

Legend

-  Harvest Lane - ~ 20 acres
-  No Harvest Area

Pine Lake
 Forest County, Wisconsin
Mechanical
Harvesting Plan v.2

Appendix 7

Bathymetric Survey Proposals



Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP

BIXBY LAND SURVEYING, INC.

P.O. BOX 1532, RHINELANDER, WI 54501 715-362-LAND (5263)

E-MAIL ADDRESS: bixbyland@frontiernet.net

SURVEYING CONTRACT

This Surveying Contract is entered into this _____ day of, _____, 2014, by and between:

Customer Name: Pine Lake Protection and Rehabilitation District

Customer Address: 10231 N. Rangeline Ct. Mequon, WI. 53092

And Bixby Land Surveying, Inc., hereinafter called the "Surveyor."

1. The Customer hereby hires Bixby Land Surveying, Inc., to perform the following surveying services: Collect x,y, and z coordinates on Pine Lake in The Town of Hiles, Forest County, Wi. to produce a contour map of the floor Pine Lake and /or what is known as a bathymetric survey. The data produced and map shall be made available to Chequamegon Bay Group, Inc of Ashland, WI. and The Pine Lake Protection and Rehabilitation District to assist with a sediment removal planning project.
2. Approximate location of survey: Pine Lake, Town Of Hiles, Forest County, WI.
3. The Customer and the Surveyor have discussed the cost of performing the above services. The Surveyor estimates that the cost for the above-described work shall be: \$8000.00 (The estimate is subject to any specifications and/or changes that The Pine Lake Protection and Rehabilitation District may have and is subject to any specifications and/or changes that Chequamegon Bay Group Inc. of Ashland, WI. may have.)
4. The Customer acknowledges that the cost referenced immediately prior thereto is for providing the services referenced above. If additional work is requested by the Customer during the survey, the Customer and the Surveyor shall agree on a price to perform such services, and an addendum to this contract will be signed by the Customer and the Surveyor.

One-half (1/2) of the above-described estimate must be paid prior to the Surveyor commencing work pursuant to this agreement. The remaining balance of the contract amount is payable, in full, once Chequamegon Bay Group, Inc of Ashland, Wi. has had opportune time to review the data and mapping (30 days after receiving x,y,z, data and associated mapping.) All unpaid balances shall accrue interest at the rate of ten percent (10%) per annum.

5. It shall be the Customer's responsibility to pay any and all state, county, town, or other municipal fees as may be necessary to record certified survey maps or deeds, to obtain approvals, etc. N/A
6. The Customer acknowledges that to perform the services described above, and to mark survey lines, that some brushing may be necessary. The Customer acknowledges that the Surveyor will not be liable for any costs or damages as a result of said brushing, tree limbing, etc., as may be necessary to complete the survey provided for herein.
7. Any interpretation of this agreement, or any enforcement of the terms of this agreement, shall be in accordance with the laws of the State of Wisconsin.
8. LIEN RIGHTS – As required by the Wisconsin Construction Lien Law, Surveyor hereby notifies the owner that he may have lien rights on owner's land and buildings if not paid, pursuant to Wis. Stats. §779.
9. All agreements and understandings between the Customer and Surveyor contained are herein, and there are no verbal representations or agreements that are not a part of this written agreement.

Contract accepted and deposit acknowledged:

Customer(s): _____

Kevin P. Bixby, Owner R.L.S. 2343
Bixby Land Surveying, Inc.



More ideas. Better solutions.®

MSA

PROFESSIONAL SERVICES

PROPOSAL TO PROVIDE
BATHYMETRIC SURVEY

*Prepared for Chequamegon Bay Group
June 13, 2014*

More ideas. Better solutions.

MSA Professional Services, Inc. is a multi-disciplinary consulting firm serving public and private clients throughout the Midwest. Our planning, engineering and architectural professionals meet the needs of a diverse client base with an emphasis on creativity and results. We provide our clients with more ideas and better solutions.

Proposal contact

Jeffrey L. DeMuth, PLS

Project Manager

Phone: 1-800-844-7854

Email: jdemuth@msa-ps.com

James E. Anderson

Project Surveyor

Phone: 1-800-844-7854

Email: janderson@msa-ps.com

The information contained within this proposal is of proprietary nature and is submitted in confidence for use by the clients of MSA Professional Services, Inc. only. The information contained herein is and remains property of MSA Professional Services, Inc. Receipt or possession of this information confers no right or license to use or disclose to others the subject matter contained herein for any uses but authorized purposes.

© 2014 by MSA Professional Services, Inc. All rights reserved.

CONTENTS

Letter of Intent	
MSA Overview	1
Similar Experience	2
Proposed Fees	3
Resumes	5



June 13, 2014

James Grafelman
Chequamegon Bay Group
Rhineland, WI 54501

Re: Pine Lake Bathymetric Survey

Dear Jim:

Thank you for the opportunity to partner with Chequamegon Bay Group on a project. As noted in our May letter, MSA is familiar with Pine Lake because we have performed a number of boundary surveys on its shores. It goes without saying that there are many unknowns in performing a bathymetric survey of a lake bottom; therefore our fees are presented as an estimate only and contracted on a Per Diem basis. Chequamegon Bay and the client will only be charged the actual cost of performing the survey.

MSA is proposing that this week be done in either the summer or winter months. We will deliver an ASCII file (PNEZD) via email that depicts the horizontal coordinates referenced to the Forest County Coordinate system, with a vertical datum referenced to the NAVD88. Coordinate values and elevations will be collected on the top of the water, top of sediment, and the observed lake bottom.

MSA is proud to assist Chequamegon Bay in such an exciting project for the Pine Lake Protection and Rehabilitation District (PLPRD). This study will provide the PLPRD with the much needed information to go forward with whatever project they decide to pursue to improve the quality of Pine Lake, for the wildlife and the patrons that enjoy it. If there are any questions or comments, please don't hesitate to call me at (715) 362-3244 or email at jdemuth@msa-ps.com.

Sincerely,

MSA Professional Services, Inc.

A handwritten signature in black ink, appearing to read 'Jeffrey L. DeMuth'.

Jeffrey L. DeMuth, PLS
Project Manager

A handwritten signature in black ink, appearing to read 'James E. Anderson'.

James E. Anderson
Project Surveyor

MSA PROFESSIONAL SERVICES

MORE IDEAS. BETTER SOLUTIONS.®

As a full service consulting firm, MSA Professional Services (MSA) is all about creating communities that work. We partner with our clients to help them solve today's complex and multi-faceted challenges and improve the quality of their neighborhoods. Our focus is on providing exceptional service to build strong communities.

MSA's roots reach back to the 1930s. Once a rural land survey company, our firm now consists of more than 300 engineers, architects, planners, funding experts, surveyors, GIS experts and environmental scientists. MSA excels at helping clients identify grant and funding sources and then delivering high quality, cost-effective solutions. Based in 15 offices across four states, our technical teams collaborate to assist communities throughout the Upper Midwest.

While we've expanded to serve communities, private developers and government agencies, MSA remains true to our mission of being a trusted partner helping clients succeed. More than a technical resource, MSA strives to earn the privilege of being a part of your community. We want to help, especially when you face challenging circumstances.

MSA supports many larger cities and agencies, but remains committed to understanding and serving the needs of the Midwest's small and rural communities. Our portfolio ranges from complex projects for governmental agencies and large municipalities to more straightforward infrastructure projects in unincorporated rural townships. MSA knows what it takes to build—large and small.

As an employee-owned company, MSA has additional value to offer its clients and communities. Every professional in the company has a vested interest in each project's success. MSA has built a corporate culture based on sustainability, enduring relationships, highly skilled professionals, and respect for community and the environment.

“Our focus is on providing exceptional service...”



SIMILAR EXPERIENCE

MSA has successfully surveyed projects for flood plain, culvert, bridge, and boat landing replacement/design. MSA Surveyors work with municipalities, private clients, and designers to provide accurate data which is used to determine project goals and remedies.

Our Surveyors spend their time in the water collecting topographic features for a variety of projects including

- Hydraulic surveying for:
 - » Flood Plain mapping and determination
 - » Culvert and bridge replacement and design
 - » Dam replacement and design
- Lakebed topographic surveys for:
 - » Boat ramp replacement and design
- Streambed topographic surveys for
 - » Whitewater Kayak courses

Below is a list of projects that our team has completed.

PROJECT NAME	DESCRIPTION	CLIENT
CTH F Bridge, Soft Maple Creek, Rusk Co.	Topographic Survey of the river bottom to aid in the design and replacement of an existing bridge	RUSK County Highway Department
CTH GG Bridge Sawyer County 8448-00-01	Topographic Survey of the river bottom to aid in the design and replacement of an existing bridge	Sawyer County Highway Department
CTH YY Bridge - Marathon County	Topographic Survey of the river bottom to aid in the design and replacement of an existing bridge.	Marathon County Highway Department
Post Lake Dam - Field Survey Work for Dam Analysis	Locate River Bottom and Lakebed for Dam Break Analysis	Post Lake Protection and Rehabilitation District
Thunder Lake Dam Survey and Preliminary Permitting Actions	Hydraulic Survey of the river bottom to aid in the design and replacement of an existing dam	Town of Three Lakes
Town of Upham Culvert Replacement	Topographic Survey of the river bottom at three failing culverts to aid in the design and replacement Worked with the Town of Upham, Langlade County to achieve their goals	Town of Upham
Rhineland - Boyce Drive Boat Landing	Topographic Survey of the river bottom to aid in the design of a new boat landing	City of Rhineland
WDSF - WDNR Statewide Boat Launches	Topographic Survey of multiple lake and river bottoms to aid in the design of new boat landings and improve existing boat landings	Wisconsin Department of Administration



PROPOSED FEE'S

HOURLY COST

The cost of this effort is estimated between \$10,000 and \$20,000 which includes cost of equipment, travel, and manpower to complete the task.

This estimated fee is based on the best case scenario of five crew days to the worst case scenario of 10 crew days. This includes the cost of equipment, mileage, travel, and the associated office computations. This is only an estimate and will be tailored to actual needs of the project when the scope is defined.

MSA's hourly rate schedule is provided on the following page.

Additional tasks MSA can provide are:

- Lake Bottom contours, provided in Civil3D 2014
- Quantities of sediment
- River Cross sections
- Wetland locations
- Floodplain mapping



RATE SHEET

RATE SCHEDULE MARCH 2014/2015*

<u>CLASSIFICATION</u>	<u>LABOR RATE</u>
Architects.....	\$125-\$151.00/hr.
Clerical.....	\$56-\$78.00/hr.
CAD Technician.....	\$47-\$103.00/hr.
Geographic Information Systems (GIS).....	\$71-\$125.00/hr.
Housing Administration.....	\$55-\$103.00/hr.
Hydrogeologists.....	\$99-\$142.00/hr.
Planners.....	\$83-\$160.00/hr.
Principals.....	\$142-\$175.00/hr.
Professional Engineers.....	\$85-\$175.00/hr.
Project Manager.....	\$62-\$170.00/hr.
Registered Land Surveyors.....	\$88-\$145.00/hr.
Staff Engineers.....	\$76-\$115.00/hr.
Technicians.....	\$47-\$103.00/hr.
Wastewater Treatment Plant Operator.....	\$71-113.00/hr.

REIMBURSABLE EXPENSES

Copies/Prints.....	Rate based on volume
Fax.....	\$1.00/page
GPS Equipment.....	\$40/hour
Mailing/UPS.....	At cost
Mileage – (currently \$0.56/mile).....	Rate set by Fed. Gov.
Nuclear Density Testing.....	\$25.00/day + \$10/test
Organic Vapor Field Meter.....	\$100.00/day
PC/CADD Machine.....	Included in labor rates
Robotics Geodimeter.....	\$30/hour
Stakes/Lathe/Rods.....	At cost
Total Station.....	Included in labor rates
Travel Expenses, Lodging, & Meals.....	At cost
Traffic Counting Equipment & Data Processing.....	At cost

* Labor rates represent an average or range for a particular job classification. These rates are in effect until March 1, 2015. After March 1, 2015, these rates may increase by not more than 5% per year.





Jeffrey DeMuth, RLS

Project Manager

EDUCATION:

*A.S., Lands Survey Tech
Nicolet Area Technical College*

ASSOCIATIONS:

Professional Land Surveyor WI

As a professional land surveyor and project manager Mr. DeMuth coordinates all survey related projects obtaining background information, setting up project teams and assuring the expeditious completion of each project to the client's satisfaction. Mr. DeMuth has worked on a variety of survey projects for village, city, county and state governments, agencies of the Federal Government such as the U.S. Forest Service and the U.S. Fish and Wildlife Service, and agencies of the State of Wisconsin such as WisDOT and the WDNR. He has also worked on survey projects for private sector clients including single parcel boundary surveys, residential and commercial subdivisions. Mr. DeMuth also offers his survey expertise to other project teams within MSA.

EXPERTISE:

- Topographic Survey
- Boundary Survey
- Survey Team Management

PROJECT EXPERIENCE:

Boundary Surveys /Retracement Surveys, Wisconsin

Research the public and private records such as deeds, survey maps, right-of-way records and public land survey system records. Field work includes locating ownership/ occupation lines. Drafting and preparing computations to calculate the position of the property boundary and provide a detailed map of our conclusions.

Public Land Survey System (PLSS), Wisconsin

Researched the historic evidence of the corners position, field located existing section corners and established the position of lost or missing section corners on the ground. After the position of the specified corner was determined, a county specific coordinate value was given to all corners using GPS. The end product was a network of points whose position is known and relative to the entire county, which assist future surveyors, land owners and public agencies.

Engineering Surveys, Wisconsin

Established survey control points whose horizontal and vertical positions are relative to each other. Performed topographic survey of improvement areas. Provided construction staking for utilities/improvements being installed.





GENE UTTECH

Senior Project Surveyor

As a Professional Land Surveyor and Project Manager, Mr. Uttech coordinates all survey related projects obtaining background information, setting up project teams, and assuring the expeditious completion of each project to the client’s satisfaction. Mr. Uttech has worked on a variety of survey projects for village, city, county, and state governments. He has also worked on survey projects for private sector clients including single parcel boundary surveys, small residential and commercial subdivisions. Mr. Uttech also offers his survey expertise to other project teams within MSA.

EDUCATION

University of Wisconsin

ASSOCIATIONS

Professional Land Surveyor, WI

PROJECT EXPERIENCE

- **Superior Super One Topographic Survey**, Superior, WI
- **Lincoln County Remonumentation Project**, Lincoln County, WI
- **Public Land Survey System**, Oneida County, WI
- **Public Land Survey System**, Langlade County, WI
- **County Plat Of Jennie Creek Pines**, Rhinelander, WI
- **County Plat Of Red Fox Run**, Near Elcho Wisconsin



JAMES E. ANDERSON

Project Surveyor

Mr. Anderson has experience in all aspects of the surveying and construction services. He has worked on a variety of survey related disciplines, including boundary, ALTA, topographic, Section corner location and transportation project plats. His services include the field work, calculations, and final CADD drafting of the map. His construction services include the staking, observation, and plan preparation for various construction projects.

EDUCATION

Bachelor’s Degree, Civil Engineering,
Michigan Technological University

AFFILIATION

Northern Lakes Chapter -Wisconsin Society of Land Surveyors

PROJECT EXPERIENCE

- **Sandpoint Lake**, Juneau County, WI
- **NEPCo Lake Subdivision**, Wisconsin Rapids, WI
- **Spring Brook Trail**, Antigo WI
- **Three Eagle Bike Trail**, Three Lakes, WI
- **Eagle River Segment Three Eagle Bike Trail**, Eagle River, WI
- **CTH B Bicycle and Pedestrian Trail**, Land O’ Lakes, WI
- **North Agonikak Recreational Trail**, Watersmeet, WI



Appendix 8

Sampling and Analysis Proposals



Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP



June 12, 2014

**Great
Lakes
Environmental
Center**

Applied
Environmental
Sciences
www.glec.com

**Traverse City
Operations**
739 Hastings St.
Traverse City
MI 49686

231 941-2230
231 941-2240 fax

**Columbus
Operations**
1295 King Ave.
Columbus
OH 43212

614 487-1040
614 487-1920 fax

Pine Lake Protection and Rehabilitation District
James Gehl
10231 N. Rangeline Ct
Mequon, WI 53092

**RE: PROPOSAL FOR THE PINE LAKE SEDIMENT SAMPLING AND
ANALYSIS**

Dear Sirs:

Enclosed please find one copy of Great Lakes Environmental Center's (GLEC) technical and cost proposal for the Pine Lake sediment sampling and analysis project. The Pine Lake Protection and Rehabilitation District's cost for this work will be \$8,510.

GLEC staff has a great deal of experience conducting studies identical to the proposed study for Pine Lake Protection and Rehabilitation District. Our team of professionals are committed, enthusiastic and have the necessary experience to conduct this project in a scientifically sound and efficient manner. The staff we have assigned to this project have personally been responsible for performing studies identical to those required for this project, and GLEC has been very effective in the successful completion of those studies. You can be assured that GLEC will perform equally as well for the Pine Lake Protection and Rehabilitation District with this work.

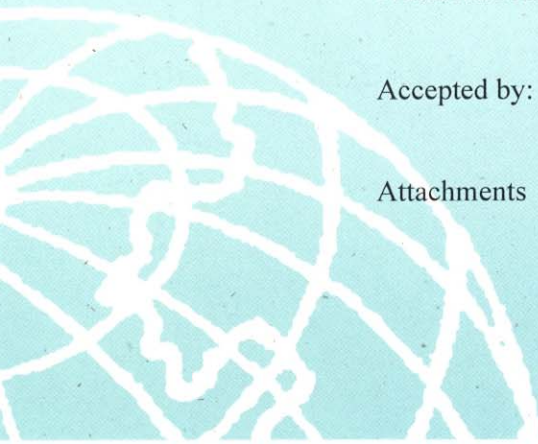
If you have any specific questions regarding our approach to the work, or if you would like additional information, please call me at (231) 941-2230 (e-mail: dmccauley@glec.com). Your signature with this proposal letter or an administrative purchase order will allow us to begin work. We are looking forward to developing our working relationship with you and your staff at Pine Lake Protection and Rehabilitation District.

Sincerely,

Dennis J. McCauley
President/Principal Research Scientist

Accepted by: _____
Pine Lake Protection and Rehabilitation District

Attachments



PROPOSAL FOR PINE LAKE SEDIMENT SAMPLING AND ANALYSIS

INTRODUCTION

Pine Lake is a 1,700 acre lake located in Hiles, Forest County, Wisconsin. It serves as the headwaters of the Wolf River. The watershed is primarily forested and has no industrial discharges or records of herbicidal treatments.

The Pine Lake Protection and Rehabilitation District (PLPRD), in cooperation with the Chequamegon Bay Group (CBGroup), is preparing a feasibility study for the removal of sediments from Pine Lake. Attached is a map of Pine Lake showing the areas of interest where PLPRD would like sediment removal to occur (see Attachment A - green shaded areas on the map). The volume of sediment to be removed is unknown at this time but will be determined via a bathymetric survey which will indicate the depth and volume of sediments for removal.

Great Lakes Environmental Center, Inc. (GLEC) was contacted by the Chequamegon Bay Group and asked for a proposal to provide the equipment and personnel to conduct sediment sampling and analysis from the areas of interest on Pine Lake.

Team Qualifications

For over 25 years, Great Lakes Environmental Center, Inc. (GLEC) has provided ecological services to evaluate the health of our nation's wetlands, lakes, rivers and streams. We are an environmental services firm specializing in surface water and sediment quality assessments, and integrated ecological risk assessments including fish population and macroinvertebrate studies, bioaccumulation studies, and specialized surface water and sediment analysis services.

GLEC is an established national leader in applied environmental sciences, research, development, and compliance assistance. GLEC has grown steadily over the past 25 years, delivering services and solutions to government and commercial clients throughout North America. The dedicated employee-owners at GLEC often set the standard in their respective fields by consistently applying our core philosophies of corporate responsibility, environmental stewardship, scientific excellence, and dedication to fulfilling client needs. Our unique experience serving both regulatory agencies and the regulated community translates into viable, insightful, and creative solutions to complex environmental challenges.

GLEC is committed to providing highly qualified and experienced staff to support the Pine Lake Protection and Rehabilitation District's needs to implement the sampling of sediments from Pine Lake. GLEC associates hold academic degrees in many fields, including biology, chemistry, aquatic toxicology, engineering, entomology, fisheries biology, environmental sciences, geology, statistics, economics, and business. The average individual experience level is 15 years with some senior researchers having over 35 years experience. Almost half of our associates hold post-graduate degrees and are widely published in their respective fields.

The Pine Lake sediment sampling effort will be lead by Mr. Chris Turner from GLEC's Eau Claire, Wisconsin office. Chris has extensive experience in the sampling and analysis of lakes, rivers and streams, wetlands and coastal aquatic communities throughout the United States, including Wisconsin. Ms. Michelle VanDenBrand of GLEC will oversee the sampling and analysis project and will be responsible for the data summation, analysis and reporting. Resumes for Chris and Michelle are attached as Appendix B of this proposal. Dennis McCauley (President and Principle Research Scientist at GLEC) will oversee the project and review the final deliverable to the Pine Lake Protection and Rehabilitation District.

The Pine Lake sediment sample analysis will be completed by Pace Analytical Laboratories of Green Bay, Wisconsin.

Methods

A dredge (Ponar) bottom sampler will be used to collect bottom sediment samples from each area of interest on Pine Lake. Specific sampling stations will be determined by PLPRD and Chequamegon Bay Group and coordinates for those stations will be provided to GLEC. Twelve investigative samples and one field replicate sample will be collected and shipped to Pace Analytical for analysis. The field replicate sampling location will be selected randomly from the twelve investigative sampling locations.

Each sediment sample will be analyzed for the following parameters:

- Pesticides and PCBs
- Metals (As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)
- Oil and grease
- Total Phosphorus
- Sulfides
- Total Organic Carbon

Sampling Plan

The lead field sampler and one field technician will travel to Pine Lake in Hiles, Forest County, Wisconsin from GLEC’s office in Eau Claire, Wisconsin. GLEC will provide the boat and field equipment necessary to complete the sampling. Twelve investigative sediment samples plus one field replicate will be taken from the areas of interest using a ponar sampler. Sediment samples will be shipped from the field via overnight courier (FedEx) to Pace Analytical for analysis. Extra staff time and overnight lodging has been budgeted into the cost estimate to account for potential weather delays.

Cost Estimate

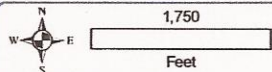
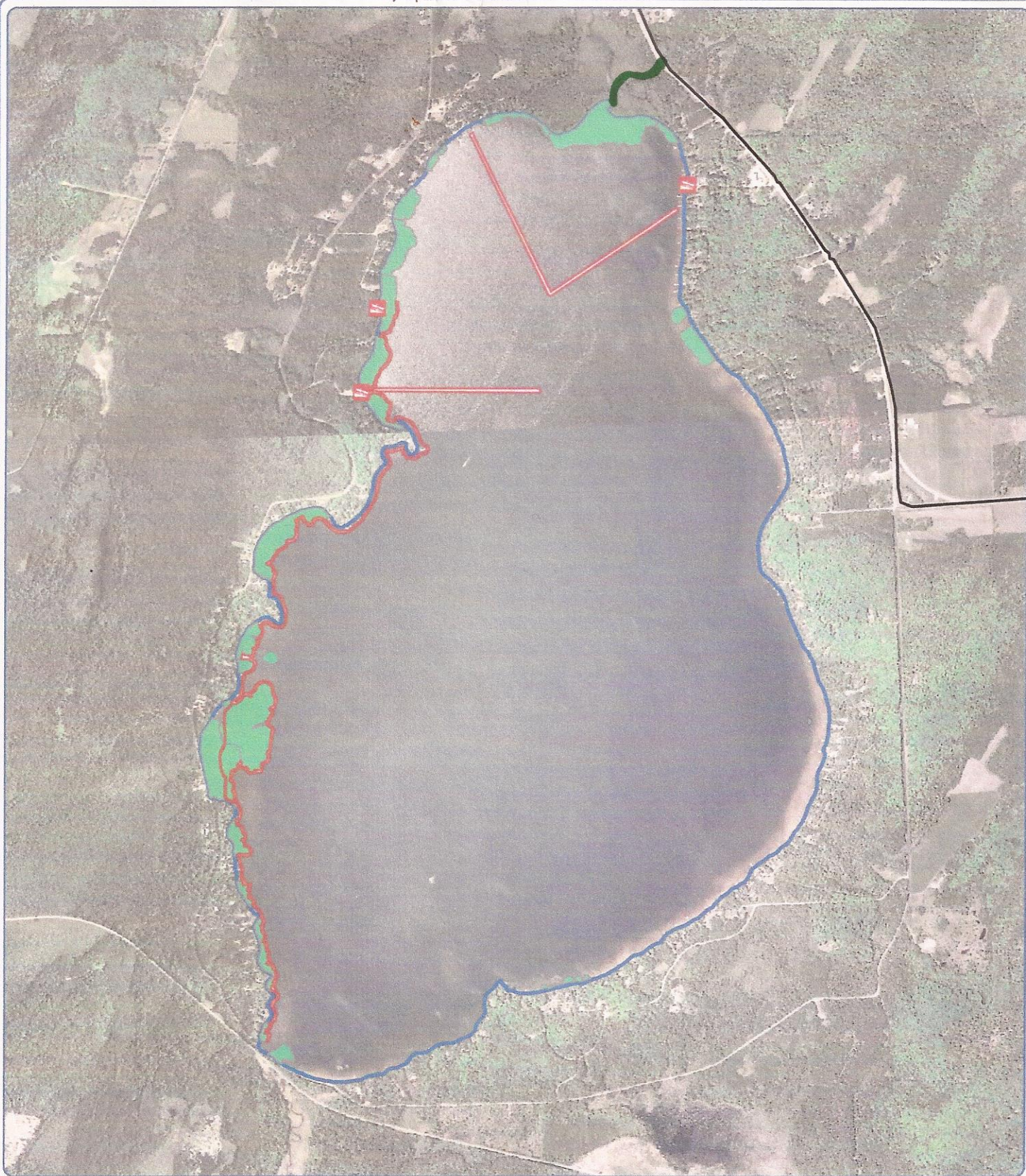
The total estimated cost for this work (including staff time and other direct costs) is **\$8,510**. A detailed explanation of this cost is presented in the two tables below.

Estimates of Staff Time/Cost by Project Task			
Task	Staff Member	Hours	Cost
Project Management	McCauley	1	\$135
	VanDenBrand	4	\$260
Travel Time and Sediment Collection	Turner	20	\$1,800
	Field Technician	20	\$700
Data Summation, Analysis, and Reporting	VanDenBrand	4	\$260
Staff Time/Costs Total		49	\$3,155

Other Direct Costs		
Category	Description	Cost
Boat and Equipment Rental	2 days @ \$50 per day	\$100
Travel – Mileage	400 miles @ \$0.85 per mile	\$340
Travel – Meals	2 people x 2 days @ \$35 per day	\$140
Lodging	1 room for 1 night @ \$75 per night	\$75
Shipping	FedEx shipping	\$150
Sediment Analysis, Pace Analytical	12 samples plus one field replicate @ \$350 per sample	\$4550
Other Direct Costs Total		\$5,355
TOTAL PROJECT COST		\$8,510

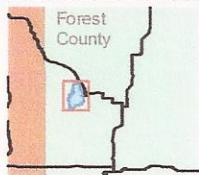
Appendix A

Mechanical Harvesting Plan Map Pine Lake, Forest County, Wisconsin





Onterra LLC
 Lake Management Planning
 135 South Broadway Suite C
 De Pere, WI 54115
 920.338.8869
 www.onterra-llc.com

Sources:
 Roads & Hydro: WDNR
 Map date: June 3, 2010



Extent of large map shown in red.

Legend

-  Harvest Lane - ~ 20 acres
-  No Harvest Area

Pine Lake
 Forest County, Wisconsin
Mechanical
Harvesting Plan v.2

Appendix B

Resumes



Education

B.S., Biology (Wildlife and Fisheries Emphasis), University of Wisconsin, Eau Claire, 1996
Graduate Studies, Fisheries Biology, University of Wisconsin, Eau Claire

Environmental Science Courses Completed

- Ichthyology
- Aquatic Ecology
- Natural History of the Vertebrates
- Dendrology
- Invertebrate Zoology
- Ornithology
- Entomology
- Fisheries Research Methods

Qualifications

Through his education and nearly 18 years of experience, Mr. Turner has developed a diverse background in the environmental sciences. Throughout his studies at the University of Wisconsin, Eau Claire, he had the opportunity to take numerous field related courses covering many different aspects of wildlife and fisheries biology, and environmental studies in general. While with Northern States Power Company (Xcel Energy) and now with Great Lakes Environmental Center, Mr. Turner organizes and performs various environmental studies; many directly related to the relicensing of hydroelectric facilities. These studies include: one year creel surveys, catfish and sturgeon assessments, turtle surveys, water quality monitoring, recreation surveys, water level fluctuation assessment, erosion assessment and mapping, purple loosestrife infestation assessment and control, fish habitat and spawning assessments, threatened and endangered species habitat inventories, waterfowl observations, and the aging of fish through the examination of scales and/or spine cross-sections. His duties also include scheduling and managing on-site field crews, communication and coordination with resource agencies and providing timely updates to sponsor staff. Furthermore, Mr. Turner is responsible for writing reports summarizing the results of these studies to be included in license applications submitted to the Federal Energy Regulation Commission. Mr. Turner also has extensive experience with various forms of fish sampling gear including, full flow tailrace nets, seines, fyke nets, hoop nets, gill nets, trammel nets, electrofishing and under-ice seining. Mr. Turner is skilled at identifying freshwater fish of the Upper Midwest including Great Lakes and Mississippi River species. Mr. Turner also has gained experience in a broad range of computer software packages.

Over the course of the last 10 years, Mr. Turner has been very active as a trainer in a number of different arenas. Mr. Turner has organized and led numerous trainings for EPA's National Aquatic Resource Surveys (NARS); has trained fellow employees in sampling techniques, boat handling and other safety topics; and Mr. Turner is an Adjunct Instructor through the Wisconsin Technical College System.

Relevant Experience

Field Logistics Coordinator and lead trainer, for EPA's National Rivers and Streams Assessment (NRSA 2013/14). Currently serving as Field Logistics Coordinator and direct point of contact for field crews participating in the survey. Serving as lead trainer/facilitator

for NRSA field training across the US, including Train-the-Trainer. Assisting in the development and writing of the Field Operations Manual and leading the development of the Quick Reference Guide and training materials. Will be tracking the sampling effort during the 2013 and 2014 field seasons to ensure samples are collected and shipped to the labs in a timely manner and to identify potential breaches in sampling protocol. Surveys are done in strict adherence to specific protocols, and included the collection of water, macroinvertebrate and algae samples, chlorophyll-a filtering, and the collection of physical habitat data.

Field Logistics Coordinator and lead trainer, for EPA's National Lakes Assessment (NLA 2012). Served as Field Logistics Coordinator and direct point of contact for field crews participating in the survey. Served as lead trainer/facilitator for Lakes Survey field training across the US, including Train-the-Trainer. Assisted in the development and writing of the Field Operations Manual and led the development of the Quick Reference Guide and training materials. Tracked the sampling effort throughout the field season to ensure samples were collected and shipped to the labs in the appropriate timeframes and to identify potential breaches in protocols. Surveys are done in strict adherence to specific protocols, and included the collection of water, sediment, zooplankton and algae samples, chlorophyll-a filtering, and the collection of various types of physical habitat data.

Field Logistics Coordinator and lead trainer, for EPA's National Wetland Condition Assessment (NWCA). Served as Field Logistics Coordinator and direct point of contact for field crews participating in the survey. Served as lead trainer/facilitator for Wetland Survey field training across the US, including Train-the-Trainer. Assisted in the development and writing of the Field Operations Manual. Surveys are done in strict adherence to specific protocols, and included the collection of water, sediment, plant and algae samples, chlorophyll-a filtering, and the collection of vegetation and physical habitat data..

Field Logistics Coordinator and lead trainer, for EPA's National Coastal Condition Assessment (NCCA). Served as Field Logistics Coordinator and direct point of contact for field crews participating in the survey. Served as lead trainer/facilitator for Coastal Survey field training across the US, including Train-the-Trainer. Assisted in the development and writing of the Field Operations Manual. Assisted in tracking samples sent from field teams to labs. Surveys are done in strict adherence to specific protocols, and included the collection of water and sediment samples, benthos, hydrographic profiles, Enterococci and chlorophyll-a filtering, and the collection of fish for tissue analysis.

Field crew leader, trainer, auditor for EPA's National Rivers and Stream Assessment (NRSA). Served as a member of the training team for Rivers and Streams Survey teams across the US. Completed field team audits for the program. Field crew leader for the sampling of numerous large rivers in the Midwest. Assisted in the development and writing of the Field Operations Manual. Assisted in tracking samples sent from field teams to labs. Surveys are done in strict adherence to specific protocols, and included the collection of water samples, sediment benthos, DO/Temperature measurements, Enterococci and chlorophyll-a filtering, and collection of fish specimens for both species composition and fish tissue analysis.



Field crew leader, trainer, auditor for EPA's National Lakes Assessment (NLA). Served as a member of the training team for Lake Survey teams across the US. Completed field team audits for the program. Field crew leader for the sampling of numerous reference lakes in the Midwest. Surveys are done in strict adherence to specific protocols, and included the collection of water samples, sediment cores, zooplankton, benthos, DO/Temperature profiles, chlorophyll filtering, and qualitative assessments of the lake's catchment area. Mr. Turner also produced a short training video on the use of a sediment core sampler to be distributed to field crews.

Sampler, trainer and support for EPA's Unregulated Contaminant Monitoring Rule. Has sampled various small public water systems across the country to be analyzed for select contaminants under EPA's UCMR program. Sampling is done in strict adherence to national protocols. Mr. Turner has also trained other samplers at small public water systems for the collection of other contaminants under this same program. In addition, Mr. Turner has acted as a point of contact for public water systems and has assisted systems in understanding UCMR requirements, reviewing and approving data, and registering on the CDX SDWARS web site.

Assistant Project Manager – Wisconsin Entrainment Study. Coordinated and supervised the routine sampling at a one-year fish entrainment study at Northern States Power Company's Wisconsin Hydroelectric plant near Chippewa Falls, Wisconsin. Duties included scheduling of field technicians, initiating and completing sampling events, as well as data collection and summary. Mr. Turner was responsible for the accurate identification of the 45 species collected during the study as well as the creation and maintenance of a reference collection of the collected species.

Assistant Project Manager – St. Anthony Falls Entrainment Study. Assistant Project Manager at a one-year fish entrainment study at Northern States Power Company's St. Anthony Falls Hydroelectric plant in Minneapolis, Minnesota. Duties included scheduling of field technicians, initiating and completing sampling events, as well as data collection and summary. Mr. Turner was responsible for the accurate identification of the 47 species collected during the study as well as the creation and maintenance of a reference collection of the collected species.

Assistant Project Manager – Ford Entrainment Study. Assistant Project Manager at a multi-year fish entrainment study at Ford Motor Company's Twin Cities Assembly Plant Hydroelectric plant in St. Paul, Minnesota. Duties included scheduling of field technicians, initiating and completing sampling events, designing and implementing turbine survival of capture efficiency tests, as well as data collection and summary. Mr. Turner was responsible for the accurate identification of the 56 species collected during the study as well as the creation and maintenance of a reference collection of the collected species.

At each of these one-year fish entrainment studies, several critical duties were performed by Mr. Turner. These included not only oversight of the project and round-the-clock sampling, but training and supervising field crews in the use of sampling gear and in fish identification. Mr. Turner also field-verified fish identification to the species level and assembled voucher

collections of adult and juvenile fish at each project. Each project entailed the sampling of tens of thousands of fish from roughly 50 species. Young-of-the-year fish were common and identification of post-larval individuals in the 10 mm size range was often necessary. Mr. Turner also coordinated Turbine Survival and Efficiency tests at each project. This involved the marking (with fin clips) and introduction of commercially supplied fish into turbine intakes. The demonstrated efficiency levels were used in conjunction with average entrainment rates to extrapolate a total yearly estimated entrainment at each project. Another important aspect of these projects was Mr. Turner's ability to effectively coordinate and cooperate with hydro operators and other on-site personnel, ensuring that the scheduled sampling events were completed as smoothly as possible.

Project Manager – LSAF Fish Protection Effectiveness Monitoring Plan. Designed and implemented studies at a newly installed hydroelectric facility in the Lower St. Anthony Lock and Dam. The study was aimed at evaluating the impact on the Mississippi River fish population in the vicinity of the project. Tasks included resident fish characterizations through boat electrofishing, flow velocity measurements using acoustic doppler profiling, impingement monitoring, evaluation of the effectiveness of an Obermeyer gate as a downstream passage for fish, estimations of annual fish entrainment and an extensive literature review to estimate the overall impact of turbine passage on fish as compared to the passage through the existing dam's spillway gates.

316(b) Studies: Mr. Turner was the Field Supervisor at a one-year fish impingement and mortality study at Minnesota Power's Taconite Harbor Energy Center near Tofta, MN. This study involved 24 hour sampling including the monitoring of screen-wash for adult and juvenile fish as well as high capacity pumping of the facility's cooling water to monitor for the presence of fish eggs and larvae. Mr. Turner's duties include site mobilization, technician training, technician supervision, adult and larval fish identification, data summation and report writing. At several subsequent studies in Michigan, Mr. Turner has provided logistical support and expertise in larval fish identification, data summation and has written the reports for these studies. Most recently, Mr. Turner led the field sampling effort at a 1 year impingement study at PCA's Tomahawk Mill in Tomahawk, WI.

Instream Flow Studies. Has assessed numerous streams and rivers in Wisconsin and Michigan. Goals have been for both determining appropriate minimum flow for small hydroelectric projects and mixing zone demonstrations for effluent discharges. This work included stream gaging, depth and velocity measurements, habitat assessments, and modeling of stream flow using RHABSIM methods. Mr. Turner was also involved with stream data collections on three streams near Salida, CO. This work, contracted by the US Forest Service, included transect selection, habitat inventories, and stream modeling using the PHABSIM methodology. The goal of this study was to recommend appropriate minimum flows in the stream that would be sufficient to protect resident trout populations.

Fish Entrainment Desktop Studies. Designed and performed studies to estimate fish entrainment and mortality at Michigan hydroelectric projects. These studies made sufficient estimates of the impact to resident fish populations without the expense and work of full one-year entrainment studies.

Nutrient Criteria / Biological Evaluation Development. Has assisted in the creation of nutrient criteria and biological evaluation documents for numerous chemicals and compounds. Duties have included obtaining and qualifying data from sources such as Ecotox, NAWQA, and others; peer review of documents; populating criteria document tables; and assisting with the creation of ICE and SSD models.

Water and Sediment collections in the NY/NJ Harbor. Participated in the collection of water and sediment samples from various locations around the NY/NJ Harbor system. Samples were collected under strict quality guidelines and were designated for acute and chronic toxicity tests.

Fish collections for Mercury analysis. Assisted personnel from Minnesota Power and Light in the sampling of age 1 yellow perch to be analyzed for mercury contamination. Sampling was conducted in several impoundments of the St. Louis River and was completed through the use of electrofishing gear.

Suspended Sediment Trapping and PCB Monitoring. Deployed and recovered suspended sediment traps in northern Michigan's Torch Lake. Also deployed and recovered PCB monitoring devices. This lake is an EPA Superfund site with known mercury and PCB contamination. Monitoring was done in compliance with Federal mandates.

Water quality sampling. Has performed water quality sampling at numerous hydroelectric impoundments, rivers and streams. Data collected has included dissolved oxygen and temperature profiles, secchi disk readings, total phosphorus and chlorophyll sample collection, and sediment sampling. The majority of this work has been in central and northern Wisconsin.

Fish Community Surveys. Has participated in studies to identify and characterize fish assemblages in Wisconsin waterbodies including Grandmother Falls Flowage, Lake Holcombe, Lake Wissota, Chippewa River and Wisconsin River, among others. These surveys included fish sampling with various types of gear including electrofishing, seining, and fyke netting. Identification to the species level was performed of fish collected at each of these studies.

Computer Data Management. Has worked extensively with developing computer databases and spreadsheets summarizing and organizing data. Tasks have included summarization of both entrainment and creel survey data, aiding in new Bioaccumulation Factor Methodology Verification, and NPDES Mixing Zone Rule projections.

Exotic species infestation assessment and control. Monitors several hydroelectric impoundments in central and northern Wisconsin yearly for the presence of purple loosestrife and Eurasian milfoil. Identified, characterized and mapped purple loosestrife infestations. Implemented purple loosestrife control efforts at select sites.



Water level fluctuation assessment. Monitored northern pike ova during a spring spawning assessment to determine the impact of water level fluctuations due to hydroelectric operations.

Turtle Survey. Performed turtle survey of Lake Wissota. Tasks included identifying turtle species present and using time-based counts to enable comparisons with other Wisconsin impoundments.

Professional Recognition and Affiliation

Certified Instructor, Wisconsin Technical College System (WTCS)

Member, The American Fisheries Society (AFS)

Certified SCUBA diver (PADI)

Specialized Training

Certified Hazardous Materials Technician (NFPA/EPA)

Certified Search and Recovery Diver, Rescue Diver, Ice Diver, and Night Diver (PADI)

Certified in Basic River Rescue (Ohio DNR)

Certified Dive Rescue Technician (Dive Rescue International)

Education:

M.S., Aquatic Sciences, University of Michigan, 2009

B.S., Natural Resource Management, Grand Valley State University, 2006

Qualifications

Ms. VanDenBrand has extensive experience in water quality monitoring methods and data collection, analysis, and interpretation. She is skilled in fish, aquatic macroinvertebrate, and zooplankton identification. Ms. VanDenBrand has experience in conducting laboratory analyses that monitor the impact of effluents and chemicals on water quality and aquatic communities. At GLEC, she provides assistance to research programs for industrial, municipal, and government clients including the Michigan Department of Environmental Quality (MDEQ) and the U.S. Environmental Protection Agency (EPA).

Relevant Experience

MDEQ Work Assignments

At GLEC Ms. VanDenBrand is the Work Assignment Leader for two projects under the contract: *Strategic Monitoring of Michigan's Surface Water*. These projects include: 1) water quality trend monitoring on Saginaw Bay (Lake Huron) and Grand Traverse Bay (Lake Michigan), and 2) water quality trend monitoring in Michigan's Great Lakes connecting channels. For these projects, Ms. VanDenBrand is responsible for work plan preparation and the submission of weekly sample tracking documents as well as field sample collection and shipment.

Ms. VanDenBrand is also Work Assignment Leader for the project: Michigan's Non-Wadeable Streams Assessment, which assesses the ecological integrity of non-wadeable rivers in Michigan through a qualitative assessment of benthic macroinvertebrates and physical habitat. She is responsible for work plan preparation as well as benthic macroinvertebrate collection and identification for this project.

Ms. VanDenBrand is Lead Field Sampler for the MDEQ Kids Creek TMDL study. The goal of this study is to monitor Kids Creek watershed and identify likely stressors to the aquatic community in preparation for the development of a TMDL. As Lead Field Sampler, Ms. Lelli coordinates the collection of all water samples and *in-situ* measurements, and reports field conditions to the MDEQ.

EPA Work Assignments

Ms. VanDenBrand has assisted in the preparation, assembly, and quality control of field crew daily supply kits, served as a field crew member, and conducted regional field methods trainings for the National Aquatic Resource Surveys (NARS) including the National Rivers and Streams Assessment (NRSA) and the National Lakes Assessment (NLA). As a field crew member for NRSA, she conducted river and stream surveys that included electrofishing, physical habitat assessment, macroinvertebrate and periphyton collection, and water quality sampling.

Invertebrate Taxonomy Experience

Ms. VanDenBrand has experience with the processing and identification of macroinvertebrate samples from university, tribal, and government clients. She has also identified hundreds of zooplankton samples to the lowest possible taxonomic level for the US Army Corps of Engineers.

Fish and Invertebrate Culturing

At GLEC, Ms. VanDenBrand is responsible for the culturing of *Pimephales*, *Ceriodaphnia*, *Hyalella azteca*, and *Chironomus dilutus*. These animals are reared and maintained for use in bioassay and other water quality testing in the toxicology laboratory.

Prior Professional Experience

Laboratory Technician – Cooperative Institute for Limnology and Ecosystems Research

For CILER, Ms. Lelli was responsible for collecting water samples and conducting nutrient analyses as part of a project aimed at determining the effects of multiple stressors on Saginaw Bay.

Stewardship Director – River Raisin Watershed Council

As stewardship director for the River Raisin Watershed Council, Ms. Lelli assisted in the development of the River Raisin Watershed Management Plan. She also coordinated the Adopt-A-Stream Program and was responsible for identifying the benthic macroinvertebrates for this project. During this program, Ms. Lelli was also responsible for developing watershed education publications, newsletters, and children's activity books.

Graduate Student Instructor – University of Michigan

As a student instructor, Ms. Lelli conducted outdoor field trips in numerous aquatic settings as well as lectured on various aquatic taxonomic materials.

Certification/Training

Certified in Adult CPR and First Aid
Completed 8-hour HAZWOPER Safety Training Course

Publications and Presentations

Lelli M.L. 2009. Net Daily Metabolism in Agricultural Drainage Ditches. M.S. Report. University of Michigan, School of Natural Resources and Environment.



Pace Analytical Services, Inc.
 1241 Bellevue Street
 Green Bay, WI 54302
 Phone: 920-469-2436
 Fax: 920-469-8827

Contact Information

Contact Name	Jim Grafelman	Quote Number	00013684
Account Name	Chequamegon Bay Group Inc.	Prepared By	Michael Dew
Phone	(715) 682-6004	E-mail	michael.dew@pacelabs.com
Email	jgrafelman@cheqbaygrp.com		

Project Information

Quote Name	Pine Lake Sediment	Created Date	6/11/2014
Turn Around Time	10 Business Days	Report Level	2
		Certification Requirements	Wisconsin

Address Information

Bill To Name	Chequamegon Bay Group Inc.	Ship To Name	Chequamegon Bay Group Inc.
Bill To	211 Sixth Street Ashland, WI 54806		

Quote Details

Quantity	Method	Product	Line Item Description	Sales Price	Sub-Total	Total-Price
12.00	EPA 8081	Pesticides, Organochlorine (GC)	Standard WI List	\$135.00	\$1,620.00	\$1,620.00
12.00	EPA 8082	Polychlorinated Biphenyls (PCBs) (water)		\$75.00	\$900.00	\$900.00
12.00	EPA 6010B (ICP)	Metal Analysis: 9+ Metals (Incl. digestion)	As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn	\$150.00	\$1,800.00	\$1,800.00
12.00	EPA 1664A	Oil & Grease, Water (Gravimetric)		\$60.00	\$720.00	\$720.00
12.00	EPA 365.4	Phosphorus, Total - Water		\$25.00	\$300.00	\$300.00
12.00	SM 4500-S2D or F	Sulfide		\$20.00	\$240.00	\$240.00
12.00	EPA 9060	Total Organic Carbon (TOC) (Water only)		\$60.00	\$720.00	\$720.00

Grand-Total \$6,300.00

Additional Pricing Considerations:

If you have specific questions about any conditions noted below, please contact your Pace Analytical Representative.

- Proposal expires 60 days from created date above, unless accepted, signed and returned.
- Quoted prices include standard Pace Analytical QA/QC, reporting limits, compound lists and standard report format unless noted otherwise.
- If project specific MS/MSD samples are submitted, they may be billable.
- TAT (Turn Around Time) is in working days unless otherwise specified above.



Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
Phone: 920-469-2436
Fax: 920-469-8827

- To ensure requested TAT is available, please coordinate with your Pace Analytical representative at time of sample submittal.
- Any deviation from the above quoted scope of work, including sample arrival date and volume, may result in adjustment of prices.
- Please include Quote Number on Chain-of-custody to ensure proper billing.
- Pricing includes standard delivery of bottle/sample kits and coolers.
- Charges will apply for non-standard shipping and for projects where shipping exceeds 10% of the total analytical costs of the shipment.

Client Signature _____

Date _____

Terms and Conditions

Pace Analytical Services, Inc.: Terms and Conditions

1. Controlling Provisions - These Standard Terms and Conditions are an integral part of the Agreement between Pace Analytical Services, Inc. ("PASI") and CLIENT ("Client"), and supersede any other document provisions not consistent herewith. Further, the Agreement, including these Terms, constitutes the entire agreement between PASI and Client relating to the project and any written or oral representations, assurances, commitments, premises, or agreements by PASI not contained herein are void.
2. PASI General Responsibilities - Performance by PASI shall meet current reasonable scientific and engineering standards in effect in the industry at the time the service is performed. Tests and observations will be conducted using test procedures and laboratory protocols as specified in accepted task orders, Scope of Work, proposals prepared by PASI or written instructions to PASI from Client. If Client directs a manner of performing analyses that varies from PASI's standard or recommended methods and procedures, Client agrees to hold PASI harmless from all claims, damages, and expenses arising out of Client's direction.
3. Reports and Records - PASI will provide copies of each report to Client as specified in the task order or PASI proposal. PASI will retain final reports in a retrievable manner for five years from the date of issuance, and will retain back up data for those reports for a minimum of one year and a maximum of three years. PASI agrees to provide reports for Client's use only for purposes disclosed to PASI at the time of contracting. If Client does not pay for PASI's services as agreed, Client agrees that PASI may retain all reports and work not yet delivered to Client and request the return of the original reports issued. Methods, discoveries, procedures, and equipment developed by PASI during or for the project shall remain the sole property of PASI.
4. Delivery and Acceptance of Samples - Client will notify PASI of upcoming work at least ten working days prior to delivery of the samples. PASI can accept or refuse the work within two days thereafter. Client is responsible for loss of or damage to samples until PASI accepts delivery of samples by notation on chain of custody documents. PASI reserves the right to transfer samples within our laboratory system, after prior notification to Client. Such transfers will be made only to PASI laboratories which meet certification and/or approval requirements defined by client. In the event Client chooses to restrict the transfer of samples between PASI laboratories, PASI will not be responsible for the payment of penalties, fines, resampling or reanalysis charges. PASI reserves the right to charge for sample containers that are provided yet unused by the client or received by PASI and unanalyzed at the request of the Client.
5. Sample Retention and Disposal – PASI will dispose of all non-hazardous samples. It is the responsibility of the Client to inform PASI should it be desired that non-hazardous waste samples or extracts be saved beyond 30 days after the issuance of the final report or if alternative or special disposal methods are desired. PASI reserves the right to charge for storage of any sample(s) or extract(s) stored beyond 30 days after the date of the final report or for any disposal costs incurred. PASI reserves the right to return highly hazardous, acutely toxic, or radioactive samples and sample containers and residues to Client. In addition, samples containing analytes for which there is no approved method of disposal may also be returned to Client. Client agrees to accept them.
6. Non-Assignment - Neither party may assign or transfer any rights or obligations existing under the Agreement without prior written consent of the other party; provided, however, that PASI may distribute the project within its system of laboratories or may subcontract such part or parts of the project as PASI may deem appropriate.
7. Time of Completion - Force Majeure - PASI shall use its best efforts to accomplish the project within any specified time limitations. PASI shall not be responsible for any non-performance or delay in the work to be performed caused by Client, Client's employee, agents or contractors, or caused by factors beyond PASI's control such as governmental authorities, unanticipated physical conditions not now known, labor disputes or acts of God.
8. Successors and Assigns - The Terms shall be binding upon, and inure to the benefit of the successors and assignee of Client and PASI.
9. Compensation - The pricing offered to Client by PASI is predicated upon Client's acceptance of this Agreement. In most cases, the pricing includes all sample containers and preservatives as prescribed by the analytical method requested for each determination. Credit worthiness will be determined based upon an assessment of Client's payment history, credit reports, financial stability or other factors. If credit is not granted, Client must pay PASI in advance prior to initiation of the project. In the event that PASI is serving as a subcontractor for Client, PASI will be informed, upon request, of the identity of the ultimate client and may make inquiries of the ultimate client prior to granting credit.



Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
Phone: 920-469-2436
Fax: 920-469-8827

Client agrees to pay for services as stated in the PASI proposal or price quote as accepted by Client. Invoices are due 30 days from the date of the invoice. Within 15 days from receipt of invoice, client will notify PASI in writing of any particular item that is alleged to be incorrect. Uncontested portions of the invoices will be due within 30 days from initial invoice date. Interest will be charged on unpaid balances at the rate of 1.5% per month, but not to exceed the maximum rate allowed by law, beginning 30 days after receipt of invoice. PASI may choose to invoice a third party if requested by Client, however, Client agrees to be ultimately responsible for payment until PASI is provided with that third party's written acceptance of all terms of the Agreement and until PASI agrees to a substitution.

In the event that payment is not made within 60 days following the invoice date, PASI will consider the default a total breach of the Agreement and may terminate all duties without liability to Client or to others. In the event that PASI must take action to collect payment, Client shall pay all costs of collection, including attorney's fees. Any significant changes to the scope of work subsequent to the submittal of a price quotation, or the delivery of samples to the laboratory are subject to a renegotiation of prices or terms relating to the original scope of work. Such changes include, but are not limited to: QA/QC requirements and

procedures, detection limits, samples received and stored, but not analyzed, decrease in quantity of samples delivered compared to quantity quoted, reporting and other deliverable format requirements. PASI shall not be required to comply with such changes unless requested in writing and agreed upon by PASI in writing.

10. Risk Allocation, Disputes, and Damages - PASI's aggregate liability for negligent acts and omissions and of a non-intentional breach by PASI will not exceed the fee paid for the services. Client agrees to indemnify PASI from all liabilities to others in excess of that amount. The limitation does not apply to losses arising from gross negligence or intentional breaches of contract by PASI. Neither PASI nor Client will be liable to the other for special, incidental, consequential, or punitive losses or damages, including but not limited to those arising from delay, loss of use, loss of profits or revenue, or the cost of capital. PASI will not be liable to Client unless Client has notified PASI of the discovery of the claimed negligent act, error, omission or breach within 30 days of the date of its discovery, and within two years of the date of injury or loss, and unless PASI is given an opportunity to investigate and to recommend ways of mitigating Client's damages. If it is claimed by a third party that PASI did not complete an acceptable analysis, Client will seek further review and acceptance of the completed work by the third party and use their best efforts to obtain that acceptance. Subject to an overall limitation of liability provided for in this Agreement, if PASI has failed to meet an established holding time through negligence or non-intentional breach, PASI will be responsible for the actual costs of resampling and reanalysis, but not exceeding the value of the individual task order or proposal.

11. Client Responsibility – Client shall:

(a) Provide PASI full and complete information regarding all factors known to Client, or which Client has access to, which could have any affect on the ability of PASI to perform its obligations, and notify PASI should Client acquire information of this type during performance of the project.
(b) Provide to PASI personnel and/or subcontractors access to any site where PASI is to perform work, and access to all personnel of Client who are in any way involved in the project, including (but not limited to) any authority or permission which must be obtained by any third party.
(c) Notify PASI of any delay regarding the start-up, progress or completion of the project caused by Client, or caused by others and known to Client, not less than two (2) weeks before such delay. In the event that Client fails to give the notice required by the Paragraph, Client agrees to pay PASI for labor and material, and for lost profits due to PASI being unable to work elsewhere during the period of delay.

12. Indemnities - PASI will indemnify and hold Client harmless from and against demands, damages, and expenses caused by negligent acts and omissions and breaches of contract by PASI and by the negligent acts and omissions and breach of contract of persons for whom PASI is legally responsible. Client will likewise indemnify and hold PASI harmless.

13. Insurance - PASI carries liability insurance with limits as follows: General liability - \$2,000,000 general aggregate, each occurrence \$1,000,000; personal and advertising injury \$1,000,000; Automobile Liability - \$1,000,000; Excess Liability Umbrella - \$5,000,000 aggregate, \$5,000,000 each occurrence; Worker's Compensation Insurance - with statutory limits; Professional Liability \$5,000,000 aggregate, \$5,000,000 per claim. PASI will, at Client's request, submit certificates of insurance from insurers showing limits of coverage.

14. Change Orders - PASI shall not be required to comply with any requested changes in the project unless agreed to by PASI in writing. Any changes may increase the amount due PASI.

15. Confidentiality - Each party agrees that if during the performance of the project it becomes aware of trade secrets, confidential or proprietary information of the other, it will not disclose except to its employees or contractors and then only as necessary to complete the project.

16. Liability Limited - Client is aware that the project may involve inherent risks, both patent and latent, and that PASI cannot guarantee satisfactory results or indemnify Client from any damages, direct or indirect, resulting from the project. Should it be determined by a Court of competent jurisdiction that PASI did not meet current reasonable scientific regulatory and engineering standards in effect in the industry at the time the service is performed, and if Client suffers damages directly as a result thereof, PASI liability is limited to the amount of the project cost. PASI shall not be responsible for any consequential or indirect damages in any amount. If Client desires any alteration of the limitation of PASI liability provided for in the Paragraph, it shall so advise PASI in writing prior to commencement by PASI of work on the project and agree to pay for the cost of any additional insurance PASI may agree to purchase to cover such liability. PASI shall not be required to undertake the project if it cannot, in PASI's opinion, adequately cover its exposure by insurance. Client will advise its agents, contractors and subcontractors involved in the project, if any, of the liability limitation.

17. Miscellaneous Provisions - PASI requests written acceptance of these terms and conditions, however, the arrival of samples at a PASI laboratory will be considered an intent to do business and constitute agreement to these Terms and Conditions. This Agreement constitutes the



Pace Analytical Services, Inc.

1241 Bellevue Street

Green Bay, WI 54302

Phone: 920-469-2436

Fax: 920-469-8827

summary of terms and conditions between Client and PASI. In no event will the printed terms or conditions stated in a purchase order, other than agreed upon task order, be considered part of this Agreement. These terms shall be governed by the laws of the State of Minnesota.



June 10, 2014

Mr. Michael Dew
Pace Analytical Services
715 Parkview Drive
Oconomowoc, WI 53066

Re: Pine Lake, Town of Hiles
Forest County, Wisconsin

Subject: Proposal for Sediment Sampling at Pine Lake

Dear Mr. Dew:

Thank you for contacting Sand Creek Consultants, Inc. (Sand Creek) regarding our sediment sampling services. We are pleased to present this proposal for collecting sediment samples at Pine Lake in the Town of Hiles, Wisconsin.

Project Site

Pine Lake is located in the Town of Hiles in Forest County. The lake is located in Township 37 N, Range 12 E. The lake is approximately 1,500 acres with a maximum depth of 15 feet and 7.5 miles of shoreline.

Scope of Services

As requested, Sand Creek will collect 12 sediment samples from locations around Pine Lake. In general, the sediment collection work will include:

- Coordination with Pace Analytical Services (Pace) and Chequamegon Bay Group about the sample locations.
- Performing field activities at Pine Lake including traversing the lake for sample locations via boat, using a clean, stainless steel sample dredge to collect sample locations at depth, homogenize sediments collected at each location in a clean, 2-gallon stainless steel mixing bowl, fill laboratory-provided sample containers, and submit samples to Pace for analysis of the following parameters.
 - Pesticides
 - PCBs
 - Metals (As, Ba, Cd, Cr, CU, Pb, Hg, Se, Ag, and Zn)
 - Oil and grease
 - Total Phosphorus
 - Sulfides
 - Total organic carbon
- Preparing a map of the approximate locations of the field sample location data points using field GPS locations (generally +/- 10 feet horizontal).

- Preparing a report that documents the sediment sampling activities and summarizes the analytical results in tabular form.

Schedule for Implementation

The field activities will be performed once the proposal has been deemed acceptable and the contract signed. It is estimated that the field work will be completed in one day. A map of the sample locations will be available within a week of the field activities. Normal turn around time for laboratory results can be expect to be 2 to 3 weeks. The report will be completed within one week of receiving the laboratory analytical results.

The timing of actual sampling work will be coordinated with all parties.

Assumptions

Assumptions considered in developing this proposal include:

- The locations will be accessible by boat or by wading.
- The laboratory analytical costs are provided under a separate proposal.

Cost for Services

The scope of services will be implemented for a fixed-base fee of \$1,700, and includes one on-site meeting the day of the sampling to discuss sample locations. If additional services are required, (i.e., supplemental site visits, additional meetings with the relevant parties to discuss the sample locations) these will be performed on a time-and-material basis at a rate of \$80/hour.

Agreement

An Agreement that incorporates the scope of services and costs described in this letter will be prepared once the award of the project is announced and will serve as our notice to start.

If you have any questions or concerns, please contact me via phone at 715.365.1818 or by email at hollie.depuydt@sand-creek.com. Your questions on this matter will receive my prompt response.

Sincerely,

SAND CREEK CONSULTANTS, INC.



Hollie DePuydt, PE
Environmental Engineer

Via email only

Appendix 9

Dredging Operations Proposals



Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP

Jim,

Thank you for the soils information, I have forwarded this to our Terra Contracting Division. We remain very interested in performing the dredging services required at Pine Lake. As I mentioned on the phone yesterday, a very rough estimate of dredging costs would be \$4/CY (assuming soft non virgin material) plus \$1 for every mile the material needed to be pumped, depending on changes in elevation and distance from the dredge site to the disposal site. I have attached an interactive Corporate Capabilities Brochure which will give you an idea of Great Lakes Dredge & Dock experience and capabilities. If you have any questions on our capabilities, or if we can be of further assistance in the dredging of Pine Lake, please do not hesitate to contact me.

Thanks again, and have a great weekend,

STEVE PEGG

President

Rivers & Lakes Group

**Great Lakes
Dredge & Dock
Corporation**

Rivers & Lakes Group Office
2041 Trade Center Dr. E.
St. Peters, MO 63376
+1 (314) 696-0083 (direct)
+1 (630) 441-8616 (cell)
SEPegg@gldd.com

Jim

Marine Tech is capable of performing the hydraulic dredging you are referring to in your email. The cost to perform this work varies pending material, distance to pump and preparation of the dewatering/disposal area. Pricing can vary from less than \$10 cy to \$25 cy depending on the situations I have just mentioned. When you get more detail as to how you want or need to dispose of the material I would be glad to quote this project.

Ted Smith, President

Marine Tech LLC

716 Garfield Ave

Duluth, MN 55802

p: 218-720-2833 x 200

f: 218-525-9574

www.marinetechduluth.com



Solid Solutions for a *Fluid* Industry

This communication, including attachments, is confidential, may be subject to legal privileges, and is intended for the sole use of the addressee. Any use, duplication, disclosure or dissemination of this communication, other than by the addressee, is prohibited. If you have received this communication in error, please notify the sender immediately and delete or destroy this communication and all copies.

Hi Jim,

Sorry for the delay in getting back to you. We can do this project - we are currently doing 78,000 CY in Fond du Lac and we are bidding a 400,000 CY project in OH. To work on budget numbers we would need to have some detailed discussions. We can also help with the survey if needed.

Kent

Kent Petersen

[PCI Dredging](#)
[Petersen Companies](#)
kpetersen@petersencompanies.com

Phone 800.356.1835
Cell 715.892.0460
Fax 715.358.3372

On Jun 16, 2014, at 10:08 AM, Jim Grafelman wrote:

From: Jim Grafelman
Sent: Monday, June 16, 2014 9:51 AM
To: 'inland@inland-lake.com'
Subject: Pine Lake Sediment Removal

Hi Kent,

Chequamegon Bay Group has been hired by the Pine Lake Protection and Rehabilitation District (PLPRD) to develop a feasibility study for the selective removal of sediments on parts of Pine Lake, located in the Town of Hiles, Forest County, Wisconsin. I have attached a copy of the WDNR map of Pine Lake as well as a map of the Mechanical Harvesting map for Pine Lake.

The areas for removal are along the western shoreline and northern shoreline, near the mouth of Pine Creek. These areas are depicted in green on the Mechanical Harvesting Map.

There will be a bathymetric survey and sediment sampling & analysis done prior to any permit applications made to the WDNR.

The sediment will be removed by hydraulic dredging. We will be finding the areas for disposal of the dredge spoils which are proposed for beneficial re-use as soil builders on farm fields, pending results of the sediment analyses.

By this message I am requesting:

- Can your company do this kind of sediment removal
- What would be the estimated cost for your services.

If you have further questions or concerns, please feel free to contact me at any time

Thanks

James F. Grafelman | Wetland, Waterway & Regulatory Specialist

Chequamegon Bay Group, Inc.

Design. Engineer. Construct.

211 Sixth Street West

PO Box 692

Ashland, WI 54806

715-682-6004 (p)

715-290-7706 (c)

715-682-6025 (f)

jgrafelman@cheqbaygrp.com

www.cheqbaygrp.com

<image001.png>

A Service Disabled Veteran Owned Small Business | WI Certified Disabled Veteran Business

Disclaimer

This entire e-mail may contain confidential information belonging to the sender which is legally privileged. This information is intended only for the use of the individual(s) or entity named above. If you are not the intended recipient you are hereby notified that any disclosure, copying, distribution or the taking of any action in reliance on the contents of this is strictly prohibited. If you have received this e-mail in error please notify the sender immediately by e-mail and then delete this e-mail from your system. Mail delivered by Chequamegon Bay Group, Inc. mail system.

<Pine Lake Map.pdf> <Mechanical Harvesting Plan map.pdf>

Appendix 10

Disposal Site

Landowner Information



Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP

July 21, 2014

William Ferris
8896 W. Pine Lake Rd
Hiles, WI 54511

Subject: Pine Lake Sediment Removal – Possible Disposal Site on Your Property

Dear Mr. Ferris :

The Pine Lake Protection and Rehabilitation District (PLPRD) has hired our firm, Chequamegon Bay Group (CBGroup), to do a feasibility study on removing some of the soft, near-shore sediments along the western and northern shores of Pine Lake. We are removing these sediments in an effort to improve water quality, reduce the need for excess plant harvesting and to enhance the usability of the near shore areas for recreational enjoyment. The feasibility study is needed to help the PLPRD to decide whether or not to continue on to the permitting phase of the project.

If approved by the Wisconsin Department of Natural Resources, the sediments would be removed by a process called hydraulic dredging. This removal process works like a large vacuum cleaner. It sucks up the sediment along with carriage water and pipes it to a site on land where it can be either disposed of or dewatered. The Forest County Land and Water Conservation Department is interested in sharing the cost for the construction of temporary sediment dewatering basins to enable the sediments to be dried and used as soil builders and fertilizers.

As part of the feasibility study we must find areas where the sediments can be deposited and/or dewatered. These sites must not be in wetlands, but need to be on upland sites where the sediments can dry. It is also preferred that the sites be close to the lake to reduce the costs of pumping the sediment.

CBGroup has searched the Forest County Land Records for sites which appear to contain sufficient upland acreage for a sediment dewatering site. Your property located on Parcel 016-00161-0000 appears to have areas which may fit the criteria for use as a sediment disposal or a temporary dewatering site.

By this letter we are asking if you may be interested in allowing part of your property to be used for sediment disposal/dewatering. If so, please let us know. We will also need your permission to enter your property to verify if there is indeed any upland site(s) which may be useful for this purpose.

You likely have many questions regarding this letter, so please feel free to contact me with any concerns you may have. I can be reached by several means

- My phone number is (715) 203-4629 or



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

- You may e-mail me at: jgrafelman@cheqbaygrp.com.
- My mailing address is: Chequamegon Bay Group, PO Box 692, Ashland, WI 54806

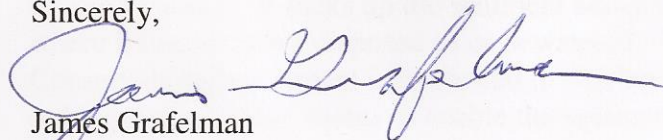
You may also e-mail Mr. Jim Gehl at jgehl@gmail.com.

Please know your consent allowing part of your property to be used for sediment disposal/dewatering will be for the Feasibility Study only and any findings will be included in a report to indicate the feasibility of proceeding with this project to be presented to the PLPRD. Any further legal consent or documentation for the actual project will be part of the permitting process to come at a later time before the project would actually proceed.

We are scheduled to have the Feasibility Study done by August 31, 2014. I hope to hear from you by August 15, 2014, in order to maintain this schedule.

If there is anything else I can do for you or answer any of your questions please let me know. I hope this meets with your satisfaction. I can be reached at (715) 203-4629 or e-mail me at jgrafelman@cheqbaygrp.com.

Sincerely,



James Grafelman
Waterway, Wetland and Regulatory Specialist

Cc: Jim Gehl, PLPRD
Russ Fish, CBGroup



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

July 21, 2014

Joseph Freundorfer
8780 Spruce Hollow Ln
Hiles, WI 54511

Subject: Pine Lake Sediment Removal – Possible Disposal Site on Your Property

Dear Mr. Freundorfer :

The Pine Lake Protection and Rehabilitation District (PLPRD) has hired our firm, Chequamegon Bay Group (CBGroup), to do a feasibility study on removing some of the soft, near-shore sediments along the western and northern shores of Pine Lake. We are removing these sediments in an effort to improve water quality, reduce the need for excess plant harvesting and to enhance the usability of the near shore areas for recreational enjoyment. The feasibility study is needed to help the PLPRD to decide whether or not to continue on to the permitting phase of the project.

If approved by the Wisconsin Department of Natural Resources, the sediments would be removed by a process called hydraulic dredging. This removal process works like a large vacuum cleaner. It sucks up the sediment along with carriage water and pipes it to a site on land where it can be either disposed of or dewatered. The Forest County Land and Water Conservation Department is interested in sharing the cost for the construction of temporary sediment dewatering basins to enable the sediments to be dried and used as soil builders and fertilizers.

As part of the feasibility study we must find areas where the sediments can be deposited and/or dewatered. These sites must not be in wetlands, but need to be on upland sites where the sediments can dry. It is also preferred that the sites be close to the lake to reduce the costs of pumping the sediment.

CBGroup has searched the Forest County Land Records for sites which appear to contain sufficient upland acreage for a sediment dewatering site. Your property located on Parcel 016-00392-0000 appears to have areas which may fit the criteria for use as a sediment disposal or a temporary dewatering site.

By this letter we are asking if you may be interested in allowing part of your property to be used for sediment disposal/dewatering. If so, please let us know. We will also need your permission to enter your property to verify if there is indeed any upland site(s) which may be useful for this purpose.

You likely have many questions regarding this letter, so please feel free to contact me with any concerns you may have. I can be reached by several means



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

- My phone number is (715) 203-4629 or
- You may e-mail me at: jgrafelman@cheqbaygrp.com.
- My mailing address is: Chequamegon Bay Group, PO Box 692, Ashland, WI 54806

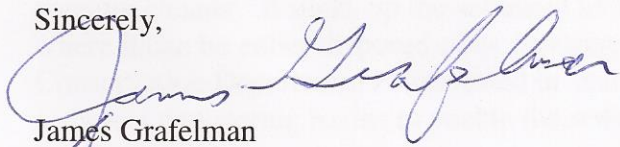
You may also e-mail Mr. Jim Gehl at jgehl@gmail.com.

Please know your consent allowing part of your property to be used for sediment disposal/dewatering will be for the Feasibility Study only and any findings will be included in a report to indicate the feasibility of proceeding with this project to be presented to the PLPRD. Any further legal consent or documentation for the actual project will be part of the permitting process to come at a later time before the project would actually proceed.

We are scheduled to have the Feasibility Study done by August 31, 2014. I hope to hear from you by August 15, 2014, in order to maintain this schedule.

If there is anything else I can do for you or answer any of your questions please let me know. I hope this meets with your satisfaction. I can be reached at (715) 203-4629 or e-mail me at jgrafelman@cheqbaygrp.com.

Sincerely,


James Grafelman
Waterway, Wetland and Regulatory Specialist

Cc: Jim Gehl, PLPRD
Russ Fish, CBGroup



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

July 21, 2014

Brian Handeland
8745 W. Pine Lake Road
Hiles, WI 54511

Subject: Pine Lake Sediment Removal – Possible Disposal Site on Your Property

Dear Mr. Handeland :

The Pine Lake Protection and Rehabilitation District (PLPRD) has hired our firm, Chequamegon Bay Group (CBGroup), to do a feasibility study on removing some of the soft, near-shore sediments along the western and northern shores of Pine Lake. We are removing these sediments in an effort to improve water quality, reduce the need for excess plant harvesting and to enhance the usability of the near shore areas for recreational enjoyment. The feasibility study is needed to help the PLPRD to decide whether or not to continue on to the permitting phase of the project.

If approved by the Wisconsin Department of Natural Resources, the sediments would be removed by a process called hydraulic dredging. This removal process works like a large vacuum cleaner. It sucks up the sediment along with carriage water and pipes it to a site on land where it can be either disposed of or dewatered. The Forest County Land and Water Conservation Department is interested in sharing the cost for the construction of temporary sediment dewatering basins to enable the sediments to be dried and used as soil builders and fertilizers.

As part of the feasibility study we must find areas where the sediments can be deposited and/or dewatered. These sites must not be in wetlands, but need to be on upland sites where the sediments can dry. It is also preferred that the sites be close to the lake to reduce the costs of pumping the sediment.

CBGroup has searched the Forest County Land Records for sites which appear to contain sufficient upland acreage for a sediment dewatering site. Your property located on Parcel 016-00406-0000 appears to have areas which may fit the criteria for use as a sediment disposal or a temporary dewatering site.

By this letter we are asking if you may be interested in allowing part of your property to be used for sediment disposal/dewatering. If so, please let us know. We will also need your permission to enter your property to verify if there is indeed any upland site(s) which may be useful for this purpose.

You likely have many questions regarding this letter, so please feel free to contact me with any concerns you may have. I can be reached by several means



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

- My phone number is (715) 203-4629 or
- You may e-mail me at: jgrafelman@cheqbaygrp.com.
- My mailing address is: Chequamegon Bay Group, PO Box 692, Ashland, WI 54806

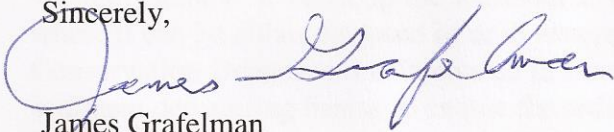
You may also e-mail Mr. Jim Gehl at jgehl@gmail.com.

Please know your consent allowing part of your property to be used for sediment disposal/dewatering will be for the Feasibility Study only and any findings will be included in a report to indicate the feasibility of proceeding with this project to be presented to the PLPRD. Any further legal consent or documentation for the actual project will be part of the permitting process to come at a later time before the project would actually proceed.

We are scheduled to have the Feasibility Study done by August 31, 2014. I hope to hear from you by August 15, 2014, in order to maintain this schedule.

If there is anything else I can do for you or answer any of your questions please let me know. I hope this meets with your satisfaction. I can be reached at (715) 203-4629 or e-mail me at jgrafelman@cheqbaygrp.com.

Sincerely,



James Grafelman
Waterway, Wetland and Regulatory Specialist

Cc: Jim Gehl, PLPRD
Russ Fish, CBGroup



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN
www.cheqbaygrp.com
Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP



July 21, 2014

Richard Herman
9192 Hermans Lane
Hiles, WI 54511

Subject: Pine Lake Sediment Removal – Possible Disposal Site on Your Property

Dear Mr. Herman :

The Pine Lake Protection and Rehabilitation District (PLPRD) has hired our firm, Chequamegon Bay Group (CBGroup), to do a feasibility study on removing some of the soft, near-shore sediments along the western and northern shores of Pine Lake. We are removing these sediments in an effort to improve water quality, reduce the need for excess plant harvesting and to enhance the usability of the near shore areas for recreational enjoyment. The feasibility study is needed to help the PLPRD to decide whether or not to continue on to the permitting phase of the project.

If approved by the Wisconsin Department of Natural Resources, the sediments would be removed by a process called hydraulic dredging. This removal process works like a large vacuum cleaner. It sucks up the sediment along with carriage water and pipes it to a site on land where it can be either disposed of or dewatered. The Forest County Land and Water Conservation Department is interested in sharing the cost for the construction of temporary sediment dewatering basins to enable the sediments to be dried and used as soil builders and fertilizers.

As part of the feasibility study we must find areas where the sediments can be deposited and/or dewatered. These sites must not be in wetlands, but need to be on upland sites where the sediments can dry. It is also preferred that the sites be close to the lake to reduce the costs of pumping the sediment.

CBGroup has searched the Forest County Land Records for sites which appear to contain sufficient upland acreage for a sediment dewatering site. Your property located on Parcels 016-00054-0000 and 016-00056-0000 appear to have areas which may fit the criteria for use as a sediment disposal or a temporary dewatering site.

By this letter we are asking if you may be interested in allowing part of your property to be used for sediment disposal/dewatering. If so, please let us know. We will also need your permission to enter your property to verify if there is indeed any upland site(s) which may be useful for this purpose.



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

You likely have many questions regarding this letter, so please feel free to contact me with any concerns you may have. I can be reached by several means

- My phone number is (715) 203-4629 or
- You may e-mail me at: jgrafelman@cheqbaygrp.com.
- My mailing address is: Chequamegon Bay Group, PO Box 692, Ashland, WI 54806

You may also e-mail Mr. Jim Gehl at jgehl@gmail.com.

Please know your consent allowing part of your property to be used for sediment disposal/dewatering will be for the Feasibility Study only and any findings will be included in a report to indicate the feasibility of proceeding with this project to be presented to the PLPRD. Any further legal consent or documentation for the actual project will be part of the permitting process to come at a later time before the project would actually proceed.

We are scheduled to have the Feasibility Study done by August 31, 2014. I hope to hear from you by August 15, 2014, in order to maintain this schedule.

If there is anything else I can do for you or answer any of your questions please let me know. I hope this meets with your satisfaction. I can be reached at (715) 203-4629 or e-mail me at jgrafelman@cheqbaygrp.com.

Sincerely,



James Grafelman
Waterway, Wetland and Regulatory Specialist

Cc: Jim Gehl, PLPRD
Russ Fish, CBGroup



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

July 21, 2014

David Houle
9186 N. Main St
Hiles, WI 54511

Subject: Pine Lake Sediment Removal – Possible Disposal Site on Your Property

Dear Mr. Houle :

The Pine Lake Protection and Rehabilitation District (PLPRD) has hired our firm, Chequamegon Bay Group (CBGroup), to do a feasibility study on removing some of the soft, near-shore sediments along the western and northern shores of Pine Lake. We are removing these sediments in an effort to improve water quality, reduce the need for excess plant harvesting and to enhance the usability of the near shore areas for recreational enjoyment. The feasibility study is needed to help the PLPRD to decide whether or not to continue on to the permitting phase of the project.

If approved by the Wisconsin Department of Natural Resources, the sediments would be removed by a process called hydraulic dredging. This removal process works like a large vacuum cleaner. It sucks up the sediment along with carriage water and pipes it to a site on land where it can be either disposed of or dewatered. The Forest County Land and Water Conservation Department is interested in sharing the cost for the construction of temporary sediment dewatering basins to enable the sediments to be dried and used as soil builders and fertilizers.

As part of the feasibility study we must find areas where the sediments can be deposited and/or dewatered. These sites must not be in wetlands, but need to be on upland sites where the sediments can dry. It is also preferred that the sites be close to the lake to reduce the costs of pumping the sediment.

CBGroup has searched the Forest County Land Records for sites which appear to contain sufficient upland acreage for a sediment dewatering site. Your property located on Parcels 016-00064-0000, 016-00074-0000, 016-00075-0000, 016-00079-0000, 016-00102-0000, 016-00142-0000 , 016-00390-0000 and 016-00640-0000 appear to have areas which may fit the criteria for use as a sediment disposal or a temporary dewatering site.

By this letter we are asking if you may be interested in allowing part of your property to be used for sediment disposal/dewatering. If so, please let us know. We will also need your permission to enter your property to verify if there is indeed any upland site(s) which may be useful for this purpose.

You likely have many questions regarding this letter, so please feel free to contact me with any concerns you may have. I can be reached by several means



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

- My phone number is (715) 203-4629 or
- You may e-mail me at: jgrafelman@cheqbaygrp.com.
- My mailing address is: Chequamegon Bay Group, PO Box 692, Ashland, WI 54806

You may also e-mail Mr. Jim Gehl at jgehl@gmail.com.

Please know your consent allowing part of your property to be used for sediment disposal/dewatering will be for the Feasibility Study only and any findings will be included in a report to indicate the feasibility of proceeding with this project to be presented to the PLPRD. Any further legal consent or documentation for the actual project will be part of the permitting process to come at a later time before the project would actually proceed.

We are scheduled to have the Feasibility Study done by August 31, 2014. I hope to hear from you by August 15, 2014, in order to maintain this schedule.

If there is anything else I can do for you or answer any of your questions please let me know. I hope this meets with your satisfaction. I can be reached at (715) 203-4629 or e-mail me at jgrafelman@cheqbaygrp.com.

Sincerely,



James Grafelman

Waterway, Wetland and Regulatory Specialist

Cc: Jim Gehl, PLPRD
Russ Fish, CBGroup



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

July 21, 2014

Aelb Ison Living Trust
N306 CTY D
Antigo, WI 54409

Subject: Pine Lake Sediment Removal – Possible Disposal Site on Your Property

Dear Mr. Ison :

The Pine Lake Protection and Rehabilitation District (PLPRD) has hired our firm, Chequamegon Bay Group (CBGroup), to do a feasibility study on removing some of the soft, near-shore sediments along the western and northern shores of Pine Lake. We are removing these sediments in an effort to improve water quality, reduce the need for excess plant harvesting and to enhance the usability of the near shore areas for recreational enjoyment. The feasibility study is needed to help the PLPRD to decide whether or not to continue on to the permitting phase of the project.

If approved by the Wisconsin Department of Natural Resources, the sediments would be removed by a process called hydraulic dredging. This removal process works like a large vacuum cleaner. It sucks up the sediment along with carriage water and pipes it to a site on land where it can be either disposed of or dewatered. The Forest County Land and Water Conservation Department is interested in sharing the cost for the construction of temporary sediment dewatering basins to enable the sediments to be dried and used as soil builders and fertilizers.

As part of the feasibility study we must find areas where the sediments can be deposited and/or dewatered. These sites must not be in wetlands, but need to be on upland sites where the sediments can dry. It is also preferred that the sites be close to the lake to reduce the costs of pumping the sediment.

CBGroup has searched the Forest County Land Records for sites which appear to contain sufficient upland acreage for a sediment dewatering site. Your property located on Parcel 016-0767-0000 appears to have areas which may fit the criteria for use as a sediment disposal or a temporary dewatering site.

By this letter we are asking if you may be interested in allowing part of your property to be used for sediment disposal/dewatering. If so, please let us know. We will also need your permission to enter your property to verify if there is indeed any upland site(s) which may be useful for this purpose.

You likely have many questions regarding this letter, so please feel free to contact me with any concerns you may have. I can be reached by several means



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

- My phone number is (715) 203-4629 or
- You may e-mail me at: jgrafelman@cheqbaygrp.com.
- My mailing address is: Chequamegon Bay Group, PO Box 692, Ashland, WI 54806


You may also e-mail Mr. Jim Gehl at jgehl@gmail.com.

Please know your consent allowing part of your property to be used for sediment disposal/dewatering will be for the Feasibility Study only and any findings will be included in a report to indicate the feasibility of proceeding with this project to be presented to the PLPRD. Any further legal consent or documentation for the actual project will be part of the permitting process to come at a later time before the project would actually proceed.

We are scheduled to have the Feasibility Study done by August 31, 2014. I hope to hear from you by August 15, 2014, in order to maintain this schedule.

If there is anything else I can do for you or answer any of your questions please let me know. I hope this meets with your satisfaction. I can be reached at (715) 203-4629 or e-mail me at jgrafelman@cheqbaygrp.com.

Sincerely,



James Grafelman
Waterway, Wetland and Regulatory Specialist

Cc: Jim Gehl, PLPRD
Russ Fish, CBGroup



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN
www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

July 21, 2014

Dean Mullikin
W4558 Clearview Rd
Waldo, WI 53093

Subject: Pine Lake Sediment Removal – Possible Disposal Site on Your Property

Dear Mr. Mullikin :

The Pine Lake Protection and Rehabilitation District (PLPRD) has hired our firm, Chequamegon Bay Group (CBGroup), to do a feasibility study on removing some of the soft, near-shore sediments along the western and northern shores of Pine Lake. We are removing these sediments in an effort to improve water quality, reduce the need for excess plant harvesting and to enhance the usability of the near shore areas for recreational enjoyment. The feasibility study is needed to help the PLPRD to decide whether or not to continue on to the permitting phase of the project.

If approved by the Wisconsin Department of Natural Resources, the sediments would be removed by a process called hydraulic dredging. This removal process works like a large vacuum cleaner. It sucks up the sediment along with carriage water and pipes it to a site on land where it can be either disposed of or dewatered. The Forest County Land and Water Conservation Department is interested in sharing the cost for the construction of temporary sediment dewatering basins to enable the sediments to be dried and used as soil builders and fertilizers.

As part of the feasibility study we must find areas where the sediments can be deposited and/or dewatered. These sites must not be in wetlands, but need to be on upland sites where the sediments can dry. It is also preferred that the sites be close to the lake to reduce the costs of pumping the sediment.

CBGroup has searched the Forest County Land Records for sites which appear to contain sufficient upland acreage for a sediment dewatering site. Your property located on Parcel 016-00096-0001 appears to have areas which may fit the criteria for use as a sediment disposal or a temporary dewatering site.

By this letter we are asking if you may be interested in allowing part of your property to be used for sediment disposal/dewatering. If so, please let us know. We will also need your permission to enter your property to verify if there is indeed any upland site(s) which may be useful for this purpose.

You likely have many questions regarding this letter, so please feel free to contact me with any concerns you may have. I can be reached by several means



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

- My phone number is (715) 203-4629 or
- You may e-mail me at: jgrafelman@cheqbaygrp.com.
- My mailing address is: Chequamegon Bay Group, PO Box 692, Ashland, WI 54806

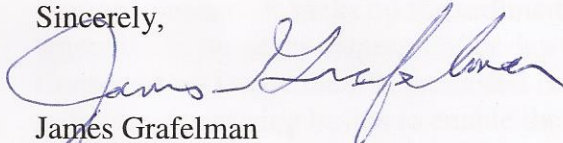
You may also e-mail Mr. Jim Gehl at jgehl@gmail.com.

Please know your consent allowing part of your property to be used for sediment disposal/dewatering will be for the Feasibility Study only and any findings will be included in a report to indicate the feasibility of proceeding with this project to be presented to the PLPRD. Any further legal consent or documentation for the actual project will be part of the permitting process to come at a later time before the project would actually proceed.

We are scheduled to have the Feasibility Study done by August 31, 2014. I hope to hear from you by August 15, 2014, in order to maintain this schedule.

If there is anything else I can do for you or answer any of your questions please let me know. I hope this meets with your satisfaction. I can be reached at (715) 203-4629 or e-mail me at jgrafelman@cheqbaygrp.com.

Sincerely,



James Grafelman
Waterway, Wetland and Regulatory Specialist

Cc: Jim Gehl, PLPRD
Russ Fish, CBGroup



Ashland, WI
Wauwatosa, WI
Middleton, WI
Duluth, MN

www.cheqbaygrp.com

Service Disabled Veteran Owned Business | Disabled Veteran Business | LEED AP

**TEMPORARY CONSTRUCTION EASEMENT
(Traditional Right-of-Way Plat)**

Wisconsin Department of Transportation
DT2216 4/2007

, Grantor, which has an interest in the lands described below, grants to the Wisconsin Department of Transportation (WIDOT), Grantee, the right and permission to occupy Grantor's easement area for highway improvement purposes, which may include but are not limited to: 1) Constructing slopes and drainage facilities on the following described lands, including the right to operate necessary equipment thereon; 2) The right of ingress and egress, as long as required for such public purpose, including the right to preserve, protect, remove or plant thereon any vegetation that the highway authorities may deem desirable to prevent erosion of the soil, provided such activities are consistent with the rights held by the Grantor under its easement.

The said lands are situated in the _____ of _____ County, Wisconsin and are shown on Sheet Number(s) _____, which is a part of the Right-of-Way Plat for Project No. _____, filed by the grantee with the County Clerk and County Highway Committee of the said County as required by Section 84.09(1) Wisconsin Statutes. This plat is also available for viewing at the WIDOT Office located at _____.

The said lands are part of Parcel(s) _____ as shown on said Right-of-Way Plat and are further described as lying in the _____ of Section(s) _____, T _____ N, R _____, of _____.

This Temporary Construction Easement establishes the right of Grantee to occupy lands on which Grantor has easement interests. However, Grantor reserves to itself the right to continue to use said easement area with its present and future overhead and/or underground facilities in a manner which is consistent with this grant, and further, that the costs of any relocation or alteration of any facilities of Grantor required by Grantee to accomplish its work, now or in the future, will be paid by Grantee.

This Temporary Construction Easement shall terminate upon completion of Construction Project No. _____ for which this instrument is given, or _____, whichever comes first.

The Grantor has a prescriptive right or an easement and therefore grants this Temporary Construction Easement as a holder of a property interest and not as a property owner.

The Grantor's easement is recorded as _____ in the _____ County Register of Deeds Office or exists by prescriptive rights as defined by Section 893.28 Wisconsin Statutes.

(Document Created Date)

(Company)

(Signature) _____ (Date)

(Title)

(Signature) _____ (Date)

(Title)

Utility or R/W Project ID

R/W Parcel No.

**TEMPORARY CONSTRUCTION EASEMENT
(Transportation Project Plat)**

Wisconsin Department of Transportation
DT2217 4/2007

, Grantor, which has an interest in the lands described below, grants to the Wisconsin Department of Transportation (WIDOT), Grantee, the right and permission to occupy Grantor's easement area for highway improvement purposes, which may include but are not limited to: 1) Constructing slopes and drainage facilities on the following described lands, including the right to operate necessary equipment thereon; 2) The right of ingress and egress, as long as required for such public purpose, including the right to preserve, protect, remove or plant thereon any vegetation that the highway authorities may deem desirable to prevent erosion of the soil, provided such activities are consistent with the rights held by the Grantor under its easement.

The said lands are situated in the _____ of _____ County, Wisconsin and are shown on Transportation Project Plat(s) _____, which depicts the right-of-way required for Highway Construction Project No. _____ in accordance with Section 84.095 Wisconsin Statutes. This plat is _____.

The said lands are part of Parcel(s) _____ as shown on said Transportation Project Plat and are further described as lying in the _____ of Section(s) _____, T _____ N, R _____, of _____.

This Temporary Construction Easement establishes the right of Grantee to occupy lands on which Grantor has easement interests. However, Grantor reserves to itself the right to continue to use said easement area with its present and future overhead and/or underground facilities in a manner which is consistent with this grant, and further, that the costs of any relocation or alteration of any facilities of Grantor required by Grantee to accomplish its work, now or in the future, will be paid by Grantee.

This Temporary Construction Easement shall terminate upon completion of Construction Project No. _____ for which this instrument is given, or _____, whichever comes first.

The Grantor has a prescriptive right or an easement and therefore grants this Temporary Construction Easement as a holder of a property interest and not as a property owner.

The Grantor's easement is recorded as _____ in the _____ County Register of Deeds Office, or exists by prescriptive rights as defined by Wisconsin Statutes, Section 893.28.

(Document Created Date)

(Company)

(Signature)

(Date)

(Title)

(Signature)

(Date)

(Title)

Utility or R/W Project ID

R/W Parcel No.

Appendix 11

Results of Landowner Contacts



Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP

Parcels with Potential Disposal Site(s)

Owner(s)	Parcel #	Address	Acreage	Permis sion	Phone #
Aelb Ison Living Trust	016-0767-0000	Aelb Ison Living Trust N306 CTY D Antigo, WI 54409	55.6	Yes MFL	715-219-0476
Brian Handeland	016-00406-0000	Brian Handeland 8745 W. Pine Lake Road Hiles, WI 54511	16.64		
Jean D. Mulliken	016-00096-0001	Dean Mullikin, et.ux. W4558 Clearview Rd Waldo, WI 53093	20.0		
Joseph Freundorfer	016-00392-0000	Joseph Freundorfer 8780 Spruce Hollow Ln Hiles, WI 54511	4.60	yes	715-649-3396
William Ferris	016-00161-0000	William Ferris et.ux. 8896 W. Pine Lake Rd Hiles, WI 54511	20.0	yes	715-649-3319
US Government	016-00453-0000	US Government	80		
US Government	016-00462-0000	US Government	120		
US Government	016-00492-0000	US Government	40		
US Government	016-00776-0000	US Government	88.37		
US Government	016-00430-0000	US Government	44.5		
US Government	016-00093-0000	USA 626 E. Wisconsin Ave., Suite 601 Milwaukee, WI 53202	40.0		
David Houle	016-00064-0000	9186 N. Main St Hiles, WI 54511	25.4		
David Houle	016-00074-		37.42		

	0000				
David Houle	016-00075-0000		40.0		
David Houle	016-00079-0000		0.91		
David Houle	016-00102-0000		11.0		
David Houle	016-00142-0000		1.94		
David Houle	016-00390-0000		7.19		
David Houle	016-00640-0000		37.9		
Richard Herman	016-00054-0000	9192 Hermans Lane Hiles, WI 54511	40.0	yes	715-649-3231
Richard Herman	016-00056-0000		20.0	yes	

Appendix 12

US Forest Service Parcel Information



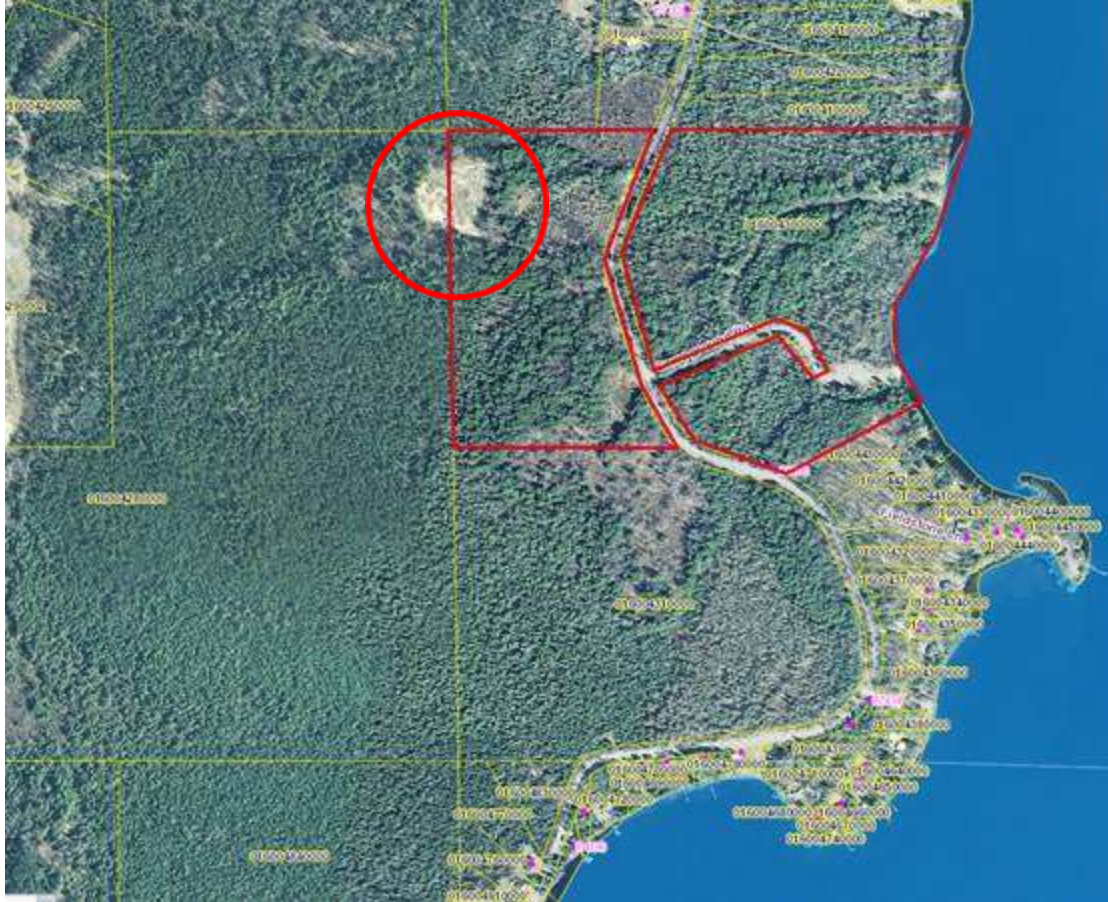
Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP

Parcel ID: 016-00428- 0000	US Government	120 ac	NE corner with gravel pit
Parcel ID: 016-00430- 0000	US Government	44.5 ac	NW corner with gravel pit

Jim- I had a chance to speak with the Lakewood/ Laona Ranger District and the gravel pit you mentioned/questioned would be the only site the FS would be willing to accept as a disposal site. Keep in mind this would require the Forest to conduct an environmental review to ensure no impacts to heritage resources, T&E species, etc. would occur. If the FS is chosen as a disposal site the Forest needs some time to conduct the environmental review. I know this project is still in its infancy so please keep us informed on the progress.

Abandoned gravel pit is circled in red below.



From: Jim Grafelman [<mailto:jgrafelman@cheqbaygrp.com>]
Sent: Friday, June 27, 2014 12:58 PM
To: Sommer, Sara -FS
Cc: Seefeldt, Jeff -FS
Subject: Pine Lake Sediment Disposal - USFS Ownership

Hi Sara and Jeff,

Our firm has been hired by the Pine Lake Protection and Rehabilitation District (PLPRD) to do a feasibility study on the removal of near-shore sediment along the west and north shores of Pine Lake in the Town of Hiles, Forest County. I have researched ownerships of larger parcels within a reasonable distance from the lake which appear to have some upland components, according to the Wisconsin Wetland Inventory. I have attached a list of the parcels which are listed as owned by the US Government, I assume this to be the US Forest Service. These are listed with their parcel numbers according to Forest County – I do not know how these would correlate with Forest Service parcel numbers.

The last six are the Federal Ownerships.

Can you tell me if these parcels are administered by the Forest Service. Otherwise please direct me to who I can contact for this information.

If any of the sites listed are under FS ownership, we may want to discuss if any portion of them could be used for sediment disposal or temporary sediment dewatering.

If you have any questions regarding this issue, please feel free to contact me.

James F. Grafelman | Wetland, Waterway & Regulatory Specialist

Chequamegon Bay Group, Inc.

Design. Engineer. Construct.

211 Sixth Street West

PO Box 692

Ashland, WI 54806

715-682-6004 (p)

715-290-7706 (c)

715-682-6025 (f)

jgrafelman@cheqbaygrp.com

www.cheqbaygrp.com



A Service Disabled Veteran Owned Small Business | WI Certified Disabled Veteran Business

Disclaimer

This entire e-mail may contain confidential information belonging to the sender which is legally privileged. This information is intended only for the use of the individual(s) or entity named above. If you are not the intended recipient you are hereby notified that any disclosure, copying, distribution or the taking of any action in reliance on the contents of this is strictly prohibited. If you have received this e-mail in error please notify the sender immediately by e-mail and then delete this e-mail from your system. Mail delivered by Chequamegon Bay Group, Inc. mail system.

This electronic message contains information generated by the USDA solely for the intended recipients. Any unauthorized interception of this message or the use or disclosure of the information it contains may violate the law and subject the violator to civil or criminal penalties. If you believe you have received this message in error, please notify the sender and delete the email immediately.

Appendix 13

Cost Estimate Analysis



Ashland, WI | (715) 682-6004
Wauwatosa, WI | (414) 258-6004
Duluth, MN | (218) 728-4293
www.cheqbaygrp.com

Service Disabled Veteran Owned Small Business | Disabled Veteran Business | LEED AP

Estimated Cost Projections
 Pine Lake Sediment Removal
 Along West and North Shores

Estimated costs for permitting the removal of soft sediments along the western and northern shores of Pine Lake in the Town of Hiles, Forest County are based upon estimates and ranges provided by contractors doing this kind of work.

Construction costs for the actual removal will also depend largely on the extent of dredging, the amount of sediments to be removed and the Pine Lake Protection and Rehabilitation District's willingness and ability to devote funding to this project.

Costs for each phase of the project are described below along with the estimated costs or range of costs based upon estimates received in 2014.

PERMITTING WITH WDNR

Bathymetric Survey

MSA Professional Services	\$10,000 to \$20,000
Bixby Land Surveying	\$8,000

Sampling and Analysis

Great Lake Environmental Center	\$8,510
Pace Analytical (Testing Only)	\$6,300
Sand Creek Associates (Sampling only)	\$1,700 plus \$80/hour over

Permitting

The permit application fee IP	\$600
-------------------------------	-------

TOTAL OF PERMITTING \$16,600 to \$29,110*

*These costs do not include engineering or consulting fees for preparation of permit application materials.



DREDGING COST ESTIMATES

Dredging Operations

Great Lakes Dredge & Dock Corp.	\$4/Cubic Yard plus \$1/Cubic Yard per mile of pumping (\$1,360,000 to \$1,700,000)**
Marine Tech LLC	\$10 - \$25/Cubic Yard (\$3,400,000 to \$8,500,000)**
Peterson Companies	Needs more detailed discussions

**Note: Based upon the 1978 Feasibility Study by WDNR for removing soft sediment to a depth of 10 feet over the entire lake would require the removal of 680,000 cubic yards of materials. This estimate was based upon sediment removal along the entire 10-foot depth contour throughout the entire lake. The PLPRD wants only to remove sediments in select areas as shown on the Mechanical Harvesting Map in Appendix 6, which are along the western and northern shores. The bathymetric survey will more accurately determine the volume of soft sediment that needs to be removed to meet the goals of the PLPRD.

The actual removal of sediments is the most costly part of the project. Limiting the areas and depths of removal will reduce the volume to be removed and reduce the costs as well.

Sediment Disposal and Dewatering

The costs of sediment disposal and dewatering are dependent upon the costs of site preparation and the obtainment of any easements. Examples of easements used by the Department of Transportation are included in Appendix 10. These may be modified for use in this project. Costs for easements are not included in that each is individually negotiated.



Costs for sediment dewatering may be partially offset by cost sharing with the Forest County Land and Water Conservation Department. Figures for these costs are not available at this time.

TOTAL ESTIMATED DREDGING COSTS

The construction costs include the sediment removal only and are based upon the assumption of sediment removal to the 10-foot depth and using the sediment depths included in the 1978 study, which are likely obsolete and no longer valid.

Estimated Dredging Costs **\$1,360,000 to \$8,500,000*****

Estimated Spoil Disposal **Not available at this time.**

*** As stated earlier, a bathymetric survey of a reduced area of removal, similar to that shown on the Mechanical Harvesting Plan Map found in Appendix 6, will more accurately estimate the costs. The PLPRD should carefully consider the scope of the project to help ensure it fits within their goals and financial abilities.

