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Section I: Application Type

☐ **Lake Management Planning Grant**

Check one:

- ☐ Large-scale planning grant
☐ Small-scale planning grant

Check one:

- ☐ Lake education
☐ Organizational development
☐ Other study or assessment, or multiple-purpose project

☒ **Lake Management Protection Grant**

Check one:

- ☐ Wetland restoration
☐ Ordinance development
☒ Lake improvement
☐ Lake classification
☐ Land or easement acquisition

Legislative District Numbers		To determine your legislative district, go to http://waml.legis.state.wi.us/munilookup.aspx Type in complete address, next screen shows information.
Senate	Assembly	
75	25	

Section II: Applicant Information

Applicant Pipe and North Pipe Lakes P&R District			Type of Eligible Applicant		
Lake Name Pipe and North Pipe Lakes			<input type="checkbox"/> County	<input type="checkbox"/> Tribe	<input type="checkbox"/> Other Governmental Unit
Size in Acres 563.00			<input type="checkbox"/> City	<input type="checkbox"/> Sanitary District	<input type="checkbox"/> Non Profit Conservation Organization
Project County/Township/Section/Range Polk County			<input type="checkbox"/> Village	<input checked="" type="checkbox"/> Lake District	<input type="checkbox"/> School Districts (Planning)
Town			<input type="checkbox"/> Lake Association		
Authorized Representative Named by Resolution Carol Vantine			Project Contact Name Carol Vantine		
Authorized Representative Title Chair			Project Contact Title Chair		
Address 45 University Avenue S.E. #606			Address 45 University Avenue S.E. #606		
City Minneapolis	State MN	ZIP Code 55414	City Minneapolis	State MN	ZIP Code 55414
Daytime Phone (area code) (612) 926-7990		Evening Phone (area code)	Daytime Phone (area code) (612) 926-7990		Evening Phone (area code)
E-mail Address carolvantine@gmail.com			E-Mail Address carolvantine@gmail.com		

Mail Check to: (if different from applicant)

Name and Title		Address	
Organization		City	State ZIP Code

For DNR Use Only			
Application Type	Date Received	Date Reviewed (LC)	Lake Coordinator Approval / Date
Waterbody ID#	Adequate Public Access <input type="checkbox"/> Yes <input type="checkbox"/> No	Environmental Grants Specialist Approval / Date	
Eligible Project <input type="checkbox"/> Yes <input type="checkbox"/> No	Eligible Applicant <input type="checkbox"/> Yes <input type="checkbox"/> No	Project Priority Rank	
Prior Grant Award(s) <input type="checkbox"/> Yes <input type="checkbox"/> No	Fiscal Year(s)	Amount Received To Date \$	Project Awarded <input type="checkbox"/> Yes <input type="checkbox"/> No

Lake Management Grant Application

Form 8700-283 (R 12/05)

Page 2 of 4

Section III: Project Information

Project Title Pipe Lakes Action Plan Implementation	Proposed Ending Date 12/31/14
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Other Management Units Around Lake	Letter of Support	Other Management Units Around Lake	Letter of Support
1. Polk County LWRD	<input checked="" type="checkbox"/>	4.	<input type="checkbox"/>
2. Town of Johnstown	<input checked="" type="checkbox"/>	5.	<input type="checkbox"/>
3.	<input type="checkbox"/>	6.	<input type="checkbox"/>

Section IV: Lake Access

Number of Public Vehicle Trailer Parking Spaces Available at Public Access Sites: 6

Number of Public Access Sites on Lake Including Boat Launches and Walk-ins: 1

Section V: Cost Estimate and Grant Request

Section V must be completed or application will be returned. Details in support of Section V are welcome.	Project Costs	
	Column 1 Cash Costs	Column 2 Donated Value
1. Salaries, wages and employee benefits		10,216.00
2. Consulting services	68,100.00	3,000.00
3. Purchased services--printing and mailing	500.00	
4. Other purchased services (specify):	132,350.00	
5. Plant material	48,200.00	350.00
6. Supplies (specify)		
7. Depreciation on equipment		
8. Hourly equipment use charges		
9. State Lab of Hygiene (SLOH) Costs		
10. Non-SLOH Lab Costs	3,866.10	
11. Land or easement acquisition value		
12. Associated acquisition costs		
13. Other (specify)		
14. Subtotals (sum each column)	253,016.10	13,566.00
15. Total Project Cost Estimate (sum of column 1 plus sum of column 2)	266,582.10	
16. State Share Requested (up to 75% of total costs may be requested)	199,936.58	

Subject to the following maximum grant amounts:

- Large-scale lake planning projects--up to \$10,000
- Small-scale lake planning projects--up to \$3,000
- Lake classification and regulation or ordinance development projects--up to \$50,000
- Lake protection projects (other than lake classification and regulation or ordinance development projects)--up to \$200,000

Section VI: Attachments (check all that are included)

A. For all applicants:

- ☒ 1. Authorizing resolution
- ☒ 2. Letters of support
- ☒ 3. Map of project location and boundaries
- ☒ 4. Itemized breakdown of expenses
- ☐ 5. For projects that entail sending samples to the State Laboratory of Hygiene (SLOH) only: a completed SLOH Projected Cost Form
- ☒ 6. Project scope/description:
 - ☒ a. Description of project area
 - ☒ b. Description of problem to be addressed by project
 - ☒ c. Discussion of project goals and objectives
 - ☒ d. Description of methods and activities
 - ☒ e. Description of project products or deliverables
 - ☒ f. Description of data to be collected, if applicable
 - ☒ g. Description of existing and proposed partnerships
 - ☒ h. Discussion of role of project in planning and/or management of lake
 - ☒ i. Timetable for implementation of key activities
 - ☒ j. Plan for sharing project results
 - ☒ k. Other information in support of project not described above

B. For applicants that are Lake Management Organizations (LMOs) or Non-profit Conservation Organizations (NCOs):

- ☐ 1. For first time applicant LMOs only: A completed Form 8700-226 (Lake Association Organizational Application)
- ☐ 2. For first time applicant NCOs only: Copy of IRS 501(c)(3) determination letter and copies of your Articles of Incorporation and Bylaws
- ☒ 3. List of national and/or statewide organizations with which you are affiliated
- ☒ 4. List of board members' names, including municipality and county of residence. Designate officers
- ☒ 5. Documentation of current financial status
- ☐ 6. For land or easement acquisition projects: Detailed description of your organization's land management experience
- ☒ 7. Brochures, newsletters, annual reports or other information about your organization

C. Wetland Restoration Projects:

- ☐ 1. Deed, easement, or land control agreement
- ☐ 2. Preliminary engineering plans
- ☐ 3. Water regulatory permits

D. Ordinance Development Projects:

- ☐ 1. Inventory of applicable existing ordinances
- ☐ 2. Description of resources each jurisdiction allocates to enforcement
- ☐ 3. Preliminary surveys

E. Lake Improvement Projects:

- ☐ 1. Engineering and design plans
- ☐ 2. Water regulatory permits

Section VI: Attachments, continued

F. Land or easement acquisition projects:

- ☐ 1. DNR Form 1800-1 (Environmental Hazards Assessment Form)
- ☐ 2. Legal description of the property
- ☐ 3. Project location boundary map
- ☐ 4. Property or easement appraisal (if not previously submitted to the Department)
- ☐ 5. If escrow closing, the title insurance commitment
- ☐ 6. Evidence of compliance with Uniform Relocation Act requirements, if applicable
- ☐ 7. Agricultural Impact Statement, if applicable
- ☐ 8. Status of acquisition negotiations, including expected time frame for closing
- ☐ 9. A land management plan
 - ☐ a. Full description of property and conditions
 - ☐ b. Description of current and proposed uses of property and adjoining properties
 - ☐ c. Management requirements for property
 - ☐ d. If roads, piers or grading are proposed, a topographic survey with feature locations, and design cross sections

Section VII: Certification

I certify that information in this application and all its attachments are true and correct and in conformity with applicable Wis. Statutes.

Print/Type Name of Authorized Representative

CAROL L. VANTINE

Title of Authorized Representative

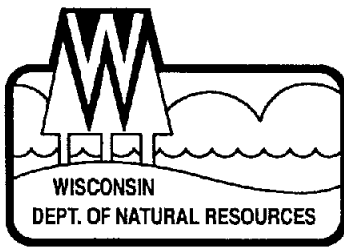
CHAIR, PIPE & N. PIPE P&R Dist

Signature of Authorized Representative

Carol L. Vantine

Date Signed

April 10, 09



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew Frank, Secretary
John Gozdziński, Regional Director

Northern Region Headquarters
810 W. Maple Street
Spooner, Wisconsin 54801
Telephone 715-635-2101
FAX 715-635-4105
TTY Access via relay - 711

April 10, 2009

Mr. Larry Bresina
Pipe and North Pipe Lakes Protection and Rehabilitation District
320 Burlington Road
Saint Paul, Minnesota 55119

Subject: Pipe Lakes Management Plan Approval Request

Dear Mr. Bresina:

This letter is to notify Pipe and North Pipe Lakes Protection and Rehabilitation District that the request for approval of recommendations within the 5-Year Protection Action Plan and associated documents has been preliminarily approved by the Wisconsin DNR. Approved management recommendations identified in the plan would be considered eligible for funding under Chapter NR 191, NR 190 or NR 198 subject to the application requirements of those programs. Please note that this preliminary approval is contingent on securing landowner permission, water regulations permits, and in some instances additional design or site information. Should a lake protection grant be awarded, these aspects would need to be resolved before implementation could occur.

Management recommendations that are approved include the following:

1. Lake protection education
2. Road improvements, including culvert replacement in high nutrient loading sub-watersheds
3. Streambank stabilization in high nutrient loading sub-watersheds
4. Improving farm management practices
5. Phosphorous retention projects in high nutrient loading sub-watersheds
6. Shoreland program, including buffer installation and upland practices
7. In-lake habitat work, including woody habitat installation and an aquatic plant survey
8. Continued water quality and tributary monitoring

DNR staff comments include:

1. Upland practices of shoreland program should include rain gardens, infiltration pits, etc. These practices were not described in the 5-Year Plan.
2. Trees should be imported from the upland area outside the buffer on parcels where there are few trees within the buffer. Fish Manager Heath Benike is available to assist with tree selection.

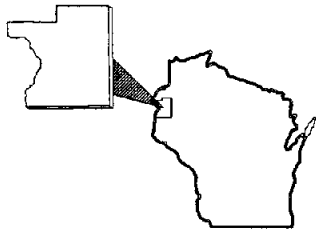
As you know some proposed activities (e.g. retention ponds, woody habitat installation) may require a water regulations and zoning permit. These permit applications should be signed by the individual property owners.

Thank you for continuing to work hard to protect the Pipe Lakes. Please contact me at (715) 635-4073 if you have any questions.

Sincerely,

Pamela Toshner
Lake & River Management Coordinator

cc. Carol Vantine, Pipe and North Pipe Lakes Protection and Rehabilitation District
Cheryl Clemens, Harmony Environmental
Tim Ritten, Polk County Land and Water Conservation Department
Kathy Bartilson, Carroll Schaal, Jim Cahow, Heath Benike, Kevin Morgan, Dan
Harrington, WDNR



POLK COUNTY LAND & WATER RESOURCES DEPARTMENT

100 POLK COUNTY PLAZA – SUITE 120 BALSAM LAKE, WISCONSIN 54810

PHONE: 715-485-8699

FAX: 715-485-8601

TIM RITTEN, DIRECTOR: 715-485-8631

Date: 3-4-2009

To: Ms. Carol Vantine, President
Pipe Lake P & R District

From: Tim Ritten
Polk County LWRD
100 Polk Plaza, Suite 120
Balsam Lake, WI 54810

Subject: Pipe Lake Protection Grant – work effort proposal

Dear Ms. Vantine,

The following is what I envision to be the LWRD work effort in support of the Pipe Lake Protection Grant.

Donated staff time:

- Assist with not more than 2 group workshops to promote shoreline restorations
- Advise as to what may be needed to address stream bank stabilization issue in subshed NPI-NE
- Advise as to what may be needed to address runoff issue from elk farm
- Advise as to what may be needed for overall nutrient retention structures in subshed NPI-NE
- Liaison between the Lake District and landowner M. Welch

Chargeable staff time:

- Survey and design of stream bank stabilization practices
- Modeling of subshed NPI-NE to determine effectiveness of nutrient retention structures using data collected by the Lake District
- Survey, design and permit applications for culvert replacements and road work
- Survey and design of nutrient retention structures
- Construction site showing to potential bidders
- Construction inspection
- Staff time and mileage associated with collection of samples
- Review of individual shoreline restoration plans

Clarification:

It is the understanding of the LWRD that individual shoreline restoration plans will be developed and installed by independent landscapers. The LWRD maintains a list of landscapers who have demonstrated ability to design and install shoreline restorations by having satisfactorily completed a restoration and/or have attended a workshop offered by the LWRD. LWRD review fee will be \$175 per review when a review is required.

Workshops and site visits will occur as staff schedules allow. LWRD is not granting unlimited advice, as many other demands on staff time exist. If donated time for site visits, landowner contacts and phone conversations becomes excessive (multiple times per week), the decision to donate such time may have to be revisited.

In the areas of engineering and construction of conservation practices, any cost estimates provided without a complete site survey and design are extremely broad generalizations only. Costs are not definite until bids are received, and even then unforeseen circumstances could alter the final cost.

Sincerely,

Tim Ritten, LWRD Director

Cc: Larry Bresina, Pipe Lake
Cheryl Clemens, Harmony Environmental
Herschel Brown, Polk County Board of Supervisors

Town of Johnstown
Polk County, WI

Arnold Peer, Chairman
2243 Polk-Barron Street
Cumberland, WI 54829
715-822-2307

Carol Wallin, Clerk
305 220th Ave
Comstock, WI 54826
715-822-2342

Susan Rouzer, Treas.
32 235th Ave.
Cumberland, WI 54829
715-822-3288

February 10, 2009

Board of Supervisors
Town of Johnstown
Comstock, WI 54826

Ms. Pamela Toshner
Water Resource Management Specialist
Wisconsin Department of Natural Resources
810 West Maple Street
Spooner, WI 54801

Dear Ms. Toshner,

Pipe and North Pipe Lakes Protection and Rehabilitation District is within the Town of Johnstown jurisdiction. We recognize that the Pipe Lakes are among the best in the state and are a valuable asset to our township, county and state. We are aware of and support the District's ongoing efforts to reduce the phosphorus load on the two lakes, to enhance the natural habitat around and in the lakes and to avoid any invasive species entrenchment. These efforts will help ensure that the quality of this resource remains at a high level for generations to come.

We have reviewed the District's Five Year Protection Action Plan and support their goals. We understand that the grant they are requesting will address both specific outer watershed issues with culverts, ditches and streams, and implement an incentive program for shore land restoration. We believe these programs will lay a foundation that ensures the quality of Pipe Land and North Pipe Lake in the future.

It is for these reasons that the Supervisors for the Town of Johnstown support the grant request of the Pipe Lakes District.

Sincerely,



Arnold Peer
Chairman
Town of Johnstown

RESOLUTION OF
Pipe and North Pipe Lakes Protection and Rehabilitation District,
Polk County, Wisconsin

WHEREAS Pipe and North Pipe Lakes are an important resource used by the public for recreation and enjoyment of natural beauty; and

WHEREAS the protection of critical watershed areas and reasonable lake use activities are paramount in the protection of water quality and the natural ecosystem of the lakes; and

WHEREAS we are qualified to carry out the responsibilities of this protection project

IT IS, THEREFORE, RESOLVED THAT:

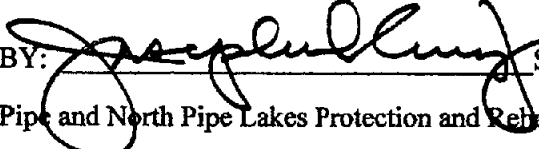
Pipe and North Pipe Lakes Protection and Rehabilitation District requests the funds and assistance available from the Wisconsin Department of Natural Resources under the "Lake Management Protection Grant Program" and

HEREBY AUTHORIZES Carol Vantine to act on behalf of Pipe and North Pipe Lakes Protection and Rehabilitation District to: submit an application to the State of Wisconsin for financial aid for lake protection purposes; sign documents; and take necessary action to undertake, direct, and complete an approved protection project.

BE IT FURTHER RESOLVED THAT Pipe and North Pipe Lakes Protection and Rehabilitation District will comply with state rules for the program, may perform force account work, and will meet the financial obligations under the grant.

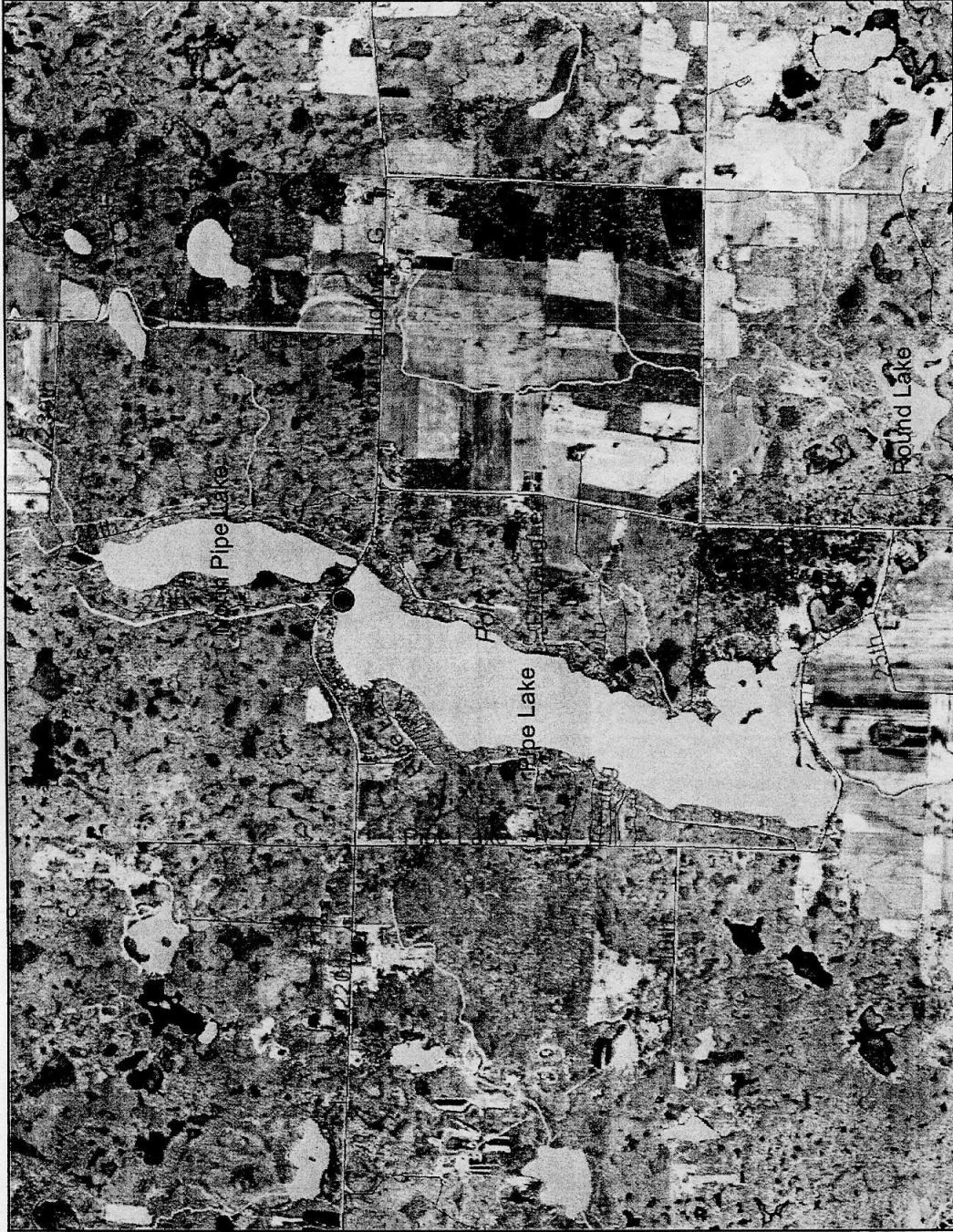
Adopted this 3rd day of April, 2009

By a vote of: 5 in favor 0 against 0 abstain

BY:  Secretary/Clerk of
Pipe and North Pipe Lakes Protection and Rehabilitation District



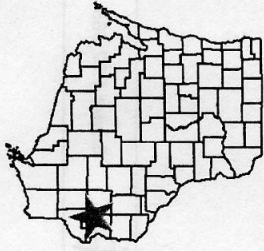
Pike Lake Boat Access



0 3250 6500 9750 ft.

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes: Note state owned islands in southern Pike Lake



Legend

- Verified Boat Access Sites
 - RAMP
 - CARRY-IN
 - UNKNOWN
- Un-Verified Boat Access Sites
 - Not Verified
- Local Roads
- Rivers and Streams
- County Boundary
- 24K Open Water
- Municipalities
- Village
- City
- DNR Managed Lands
 - Fee
 - Easement
 - Lease



Scale: 1:32,629

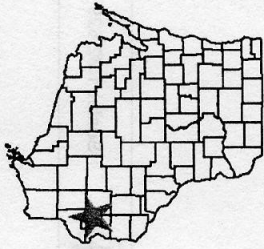
Pipe Lake Location



0 3250 6500 9750 ft.

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes: State Owned Islands are present in the southern portion of Pipe Lake



Legend

- ☐ County Boundaries
- ☐ Civil Towns
- ☐ Civil Town
- ☐ 24K Open Water
- ☐ Cities and Villages
- ☐ Village
- ☐ City
- ☐ DNR Managed Lands
- ☐ Fee



Scale: 1:32,565

No	General	Outer-watershed	Shoreland	Hours	Cash Costs						Donated Value						total			
	In-Lake	Monitor			1 Salaries etc	2. Consulting	3. Purchases	4. Other Purcl	5. Plant Mtl	6. Supplies	10 Non-SLOH	1 Salaries etc	2. Consulting	3. Purchases	4. Other Purcl	5. Plant Mtl		6. Supplies	10 Non-SLOH	
1	Coordination			33		14000						1600							15600	
2	Education			27		2000	500					640	1000						4140	
3	Culvert repair/replacement			16				5650				192			350				6192	
4	Repair stream bank erosion			11		1500		12000	1000			256	400						15156	
5	Provide support for improved farm management practices			13				200				320	300						820	
6	Install phosphorus retention BMPs in grant project sub-watersheds**			93		10000		57000	5000			1152	1300						74452	
7	Provide support for initial technical assistance					21000													21000	
8	Provide support for tech assistance, materials & installation in buffer zone			11		3000		15000	12000			1280							31280	
9	Provide support for tech assistance, materials & installation in residential area			43		7500		37500	30000			3200							78200	
10	Provide support for tech assistance, materials & installation of tree falls			11		400		3400	200			512							4512	
11	Provide 200 hours w/ CBOW education & littoral zone inspections																			
12	Aquatic plants survey & contingency plan			16		7000						448							7448	
13	Monitor Secchi depth			60																
14	Monitor lake chemistry			90																
15	Obtain TP from grab samples from major streams			100																
16	Enhance monitoring & modeling to characterize NPI-NE nutrient load			48		1700		1600			3866	616							7782	
Blue cell indicates protection grant item						0	68100	500	132350	48200	0	3866	10216	3000	0	350	0	0	0	266582.1

Lake Protection Grant Project Description

Pipe Lakes Protection Action Plan Implementation

May 1, 2009

Pipe and North Pipe Lakes Protection and Rehabilitation District
Polk County, WI

Project Area

The project area consists of Pipe Lake and North Pipe Lake and their watershed. North Pipe Lake collects surface water run-off from the northern region of the lakes' watershed. North Pipe Lake has an outlet which flows to Pipe Lake. Pipe Lake's watershed is 2,070 acres which includes North Pipe Lake's watershed of 1,106 acres. Both lakes have most of their shoreline developed with private cabins and homes. Both lakes' watersheds remain largely forested with a smaller portion in agriculture. The only known invasive species present in the lakes or on their shorelands are reed canary grass and the Chinese mystery snail.

Pipe Lake (296-acres) is designated an Outstanding Water Resource by the State of Wisconsin. The Pipe Lake shoreland varies from undisturbed forest to urban-type lawns with bare-soil banks. Its May-September Secchi clarity depth averages about 16 feet. This lake has a watershed land to lake area ratio of 7 to 1. This relatively small ratio helps maintain Pipe Lake's water clarity. Furthermore, because more than half of the run-off from Pipe Lake's watershed land first flows through North Pipe Lake, nutrient retention in North Pipe Lake reduces nutrient flow to Pipe Lake. This retention is likely a significant contributor to Pipe Lake's historical exceptional clarity.

North Pipe Lake (66-acres) has an average May-September Secchi clarity of 7.4 feet. It is mildly eutrophic and enjoys a mostly forested watershed. In the summer, the near-shore area still has an aesthetic feel of being within a forest because building structures are mostly set back at least 75 feet, and native plant removal has been limited to only a few parcels. With a land to lake ratio of almost 17 to 1, North Pipe Lake is susceptible to degradation by nutrient loads from surface runoff from its outer-watershed.

Endangered Species

The Polk County Natural Heritage Inventory map from the Department of Natural Resources' Bureau of Endangered Species indicates no record of rare species or natural communities in the townships that include Pipe Lakes.

However, the aquatic plant survey found five "Special Concern" species including spiny hornwort (*Ceratophyllum echinatum*), Farwell's water milfoil (*Myriophyllum farwellii*), Torrey's threesquare (*Schoenoplectus torreyi*), waterthread pondweed (*Potamogeton bicupulatus*), and small purple bladderwort (*Utricularia resupinata*). The main area of biodiversity is the southeast bay among the islands on Pipe Lake.

There are rare terrestrial species indicated in the northeast (NE) watershed that flows to North Pipe Lake (S11 T35N R15W). The detail of this report is not available to the public.

Sensitive Areas

The project area includes properties adjacent to DNR designated Sensitive Areas. The Sensitive/Critical Habitat Area Designation map for Pipe and North Pipe Lakes is shown below.

Sensitive areas survey

Environmentally sensitive areas were identified on Pipe and North Pipe Lakes by DNR biologists in 1999. These areas merit special protection because they provide critical or unique fish and wildlife habitat as described. The full report, *Pipe Lake Sensitive Area Survey Report and Management Guidelines*, is available from the DNR.

During this survey there were no documented occurrences of purple loosestrife; a persistent exotic plant that is dominating shallow water habitat in the Midwest and Canada. However, the threat of purple loosestrife is always a concern and should be dealt with immediately.

High quality walleye spawning habitat. No dredging, structures or deposits should occur in these areas.

Furthermore, there were no documented occurrences of Eurasian water milfoil (EWM); a persistent aquatic plant that grows in densities capable of choking out native vegetation and causing navigation problems. EWM is moved from lake to lake on boats and boat trailers that come from an infested lake.



Generally bass, panfish and northern pike spawning and nursery areas and habitat for forage species. Turtles, amphibians, eagles, loons, herons, waterfowl, and even some songbirds also benefit from these habitats. Chemical treatments and mechanical removal efforts should be limited to navigation channels only. The plant communities includes the following:

- Emergent: bur-reed, arrowroot, cattail, pickerel weed, bulrush.
- Floating leaved: yellow pond lily, white water lily, watershield.
- Submergent: wild celery, pipewort, long-leaf pondweed, Robinson pondweed, flat stem pondweed, large leaf pondweed, bushy pondweed.

From: Waalen. Polk County Land and Water Resources Dept. 2002. Page 23.

Problems to be addressed

- ◆ Residential and agricultural development has led to increased phosphorus loading to the lakes. About 25% of North Pipe Lake's phosphorus load comes from areas designated as agricultural, and about 15% of Pipe Lake's phosphorus load is estimated to come from agricultural land.
- ◆ The phosphorus loading from northeast subwatersheds of North Pipe Lake seems excessive. Total phosphorus concentrations measured in grab samples from the NPI-NE stream over the last 8 years averaged more than 400 ug/l - higher than for any of the other 7 main intermittent streams flowing to the lakes. The District's second planning grant report by Blue Water Science recommends watershed work if the flow-weighted mean concentration exceeds 150 ug/l.
- ◆ Management recommendations to date are inadequate to tell what specific actions to take in the NPI-NE subwatershed. **Modeling calculations estimate that a retention basin for the NPI-NE sub-watershed could reduce the phosphorus load to North Pipe Lake by 15-20%.** A retention basin in the North Pipe Lake watershed will benefit Pipe Lake because North Pipe Lake's outflow is into Pipe Lake. Based on preliminary investigations with the Polk County Land and Water Resources Department, an engineering study will be necessary to more completely establish the viability of constructing a retention structure in this location. This study will include soil permeability analyses, survey work to refine subwatershed boundaries, tributary stream sampling to help identify the nature and sources of nutrients in surface runoff, and identification of alternate locations to install appropriate nutrient retention practices. **The engineering feasibility study will provide information critical to further developing the restoration strategy for the lakes.**
- ◆ Eroding streambanks and improperly installed culverts are present – especially along the Northeast tributary to North Pipe Lake.
- ◆ Shorelands along Pipe Lake have been altered with residential development and concurrent losses of habitat and increases in runoff. Only a few undeveloped lots remain on either lake. Maintaining habitat for fish and other wildlife near the shore over the long-term is an important concern to the community.
- ◆ Development around Pipe Lake has been estimated to have increased the phosphorus delivered to the lake by more than 15%. About a third of Pipe Lake's near-shoreland is unprotected with natural vegetation while ten percent of North Pipe's near-shoreland is unprotected. Pipe Lake would benefit the most from restoring land near the shoreline with natural vegetation. Both lakes would benefit from reducing runoff from upland areas.
- ◆ Woody habitat in the water along the shore is known to be important for maintaining a healthy environment for fish and wildlife. However, this habitat element is frequently removed from the lakes. Addition of woody habitat would benefit both lakes.

Project Goals, Objectives, and Activities

The ***Pipe and North Pipe Lakes 5-Year Lake Protection Action Plan*** and ***10 Year Strategic Plan*** guide project goals, objectives, and activities.

Strategic Plan Vision

Our vision is a healthy lake ecosystem that attracts, protects and balances the needs of all living species.

Strategic Plan Mission

The mission of the Pipe Lakes Protection & Rehabilitation District is to improve and protect the waters and associated watershed area for the safe use and enjoyment of all.

Strategic Plan 10-Year Key Goals

1. **Develop broad community support and involvement for long term protection and enhancement of the lakes, watershed and habitat for native plants, animals, birds and fish.** *The actions of each of us collectively determine the quality of our lakes.*
2. **Improve average water clarity through significant reduction of annual phosphorus loading by 2015.** *Improved clarity makes our lakes more enjoyable and enhances our property values.*

[Successful implementation of this five-year project will result in significant water quality improvement according to lake modeling results. See 12/7/07 "Back-of-envelope" Pipe Lakes Clarity Potential Analysis included in the attachments. A 15% reduction of watershed loading to North Pipe Lake is expected to result in a 15% increase in water clarity.]

3. **Avoid Eurasian watermilfoil, Curly leaf pondweed and other invasive species.** *Our children and grandchildren will want to enjoy what we now have - waterways not clogged with invasive plants.*

Objectives from the 5 Year Action Plan.

- Protect water quality of Pipe Lake. Reduce the phosphorus load to North Pipe Lake by 15 percent.
- Enhance wildlife habitat around and in Pipe Lake. Protect wildlife habitat around and in North Pipe Lake.
- Prevent entrenchment of invasive species.

This lake protection grant project primarily addresses goals 1 and 2 from the strategic plan and the first two objectives from the 5 year action plan. Another grant project is funding implementation of Goal 3 of the strategic plan and the final 5 year action plan objective. The objectives of the action plan are the goals of this lake protection grant project.

The watersheds and practice areas are identified in maps that follow the narrative describing project goals, objectives, and activities.

PROJECT GOAL: Protect water quality of Pipe Lake. Reduce the phosphorus load to North Pipe Lake by 15 percent.

Objective: Retain runoff water by installing water retention devices such as wet detention ponds, infiltration ponds, or by restoring wetlands.

Activity: Identify sources and locations of phosphorus in the NPI-NE subwatershed following the tributary sampling plan (included as an attachment).

Activity: Conduct an engineering study to assess soil conditions, topography, hydrology, and other factors to identify appropriate practice(s), best location(s), and to model practice effectiveness.

Activity: Complete engineering design and obtain permits for recommended practice(s).

Activity: Install a water retention structure south of 230th Avenue.

Activity: Provide review and design advice for privately installed practices to reduce runoff from watershed PI-GUL (Danniger property).

Objective: Reduce nutrient loading from incorrect culvert installation.

Activity: Add culvert outlet protection and stabilize downstream streambank under and adjacent to 230th Avenue. Obtain permits as needed. (Designated C1 on map on page 7.)

Activity: Replace culvert and stabilize streambank under and adjacent to 20th Street. Obtain permits as needed. (Designated D1 on map on page 6 and C2 on map on page 7.)

Activity: Inspect all culverts draining to the lakes and arrange for any critically needed repairs.

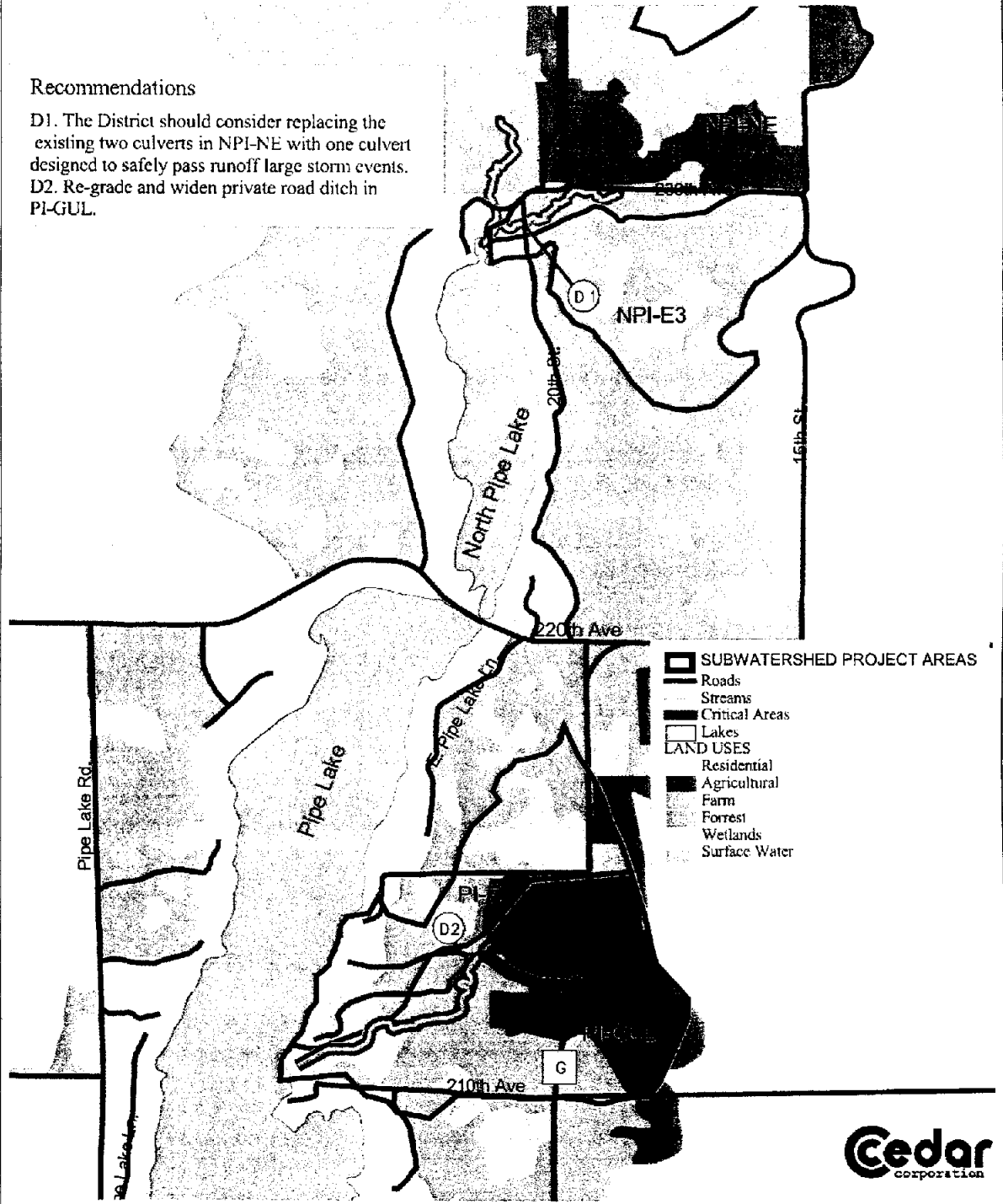
Pipe Lake Subwatershed Recommendations (D)

Recommendations

H1. Construct a large scale Wet Detention Basin to treat both the runoff quality and runoff rate within watershed NPI-NE.

Recommendations

D1. The District should consider replacing the existing two culverts in NPI-NE with one culvert designed to safely pass runoff large storm events.
D2. Re-grade and widen private road ditch in PI-GUL.



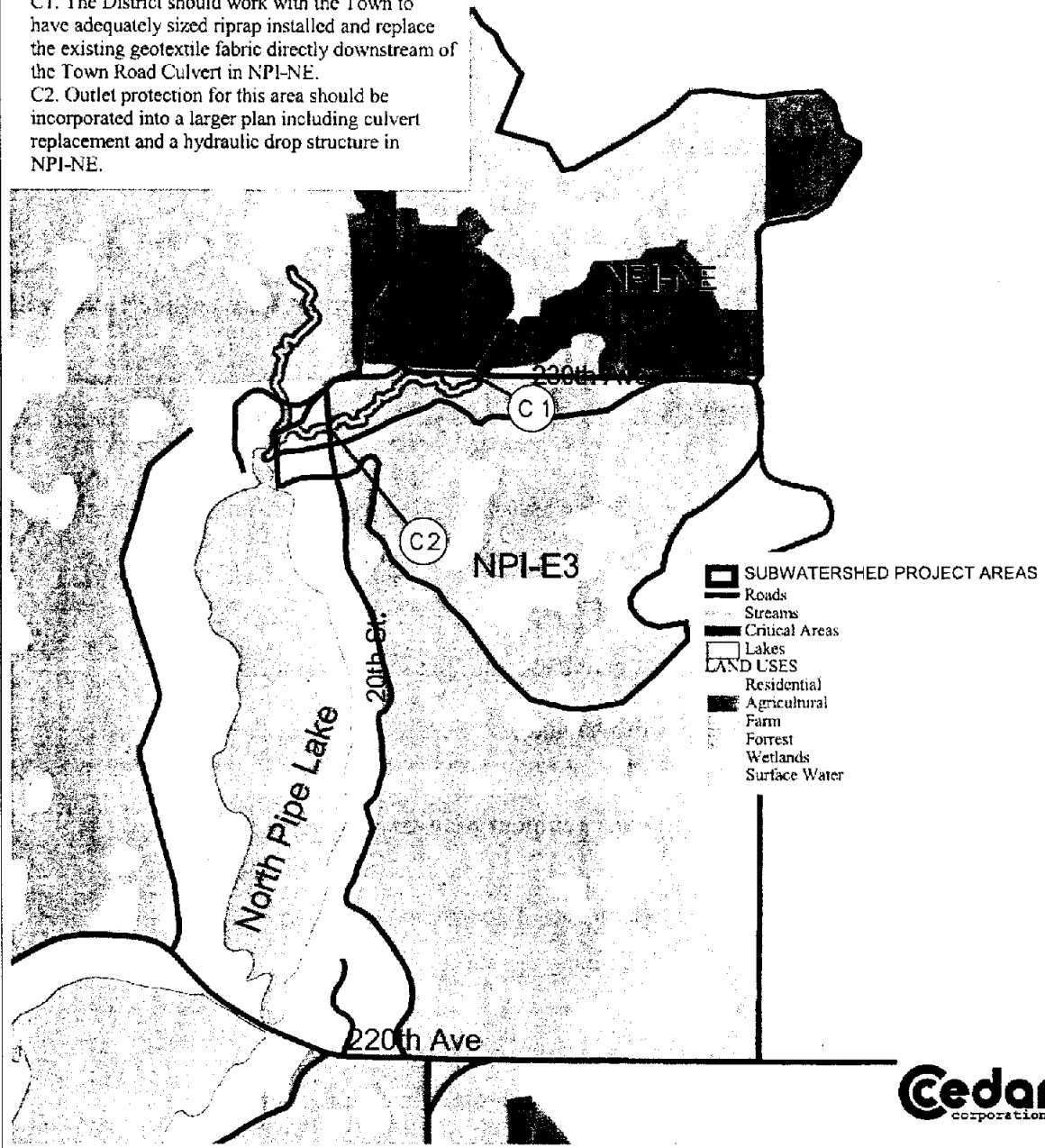
Cedar
corporation

Pipe Lake Subwatershed Recommendations (C)

Recommendations

C1. The District should work with the Town to have adequately sized riprap installed and replace the existing geotextile fabric directly downstream of the Town Road Culvert in NPI-NE.

C2. Outlet protection for this area should be incorporated into a larger plan including culvert replacement and a hydraulic drop structure in NPI-E3.



Objective: Stabilize eroding streambanks.

Activity: Identify and stabilize eroding streambanks. *Note: streambank stabilization needs will be influenced by upstream practice installation and effectiveness of practices previously installed by landowners.*

Objective: Support farmers in reducing nutrient runoff from crop fields.

Activity: Provide financial support to supplement available programs such as Conservation Reserve and Nutrient Management Plans.

Objective: Reduce runoff and improve wildlife habitat on and adjacent to waterfront property.

Activities: See detail under wildlife habitat goal below.

PROJECT GOAL: Enhance wildlife habitat around and in Pipe Lake. Protect wildlife habitat around and in North Pipe Lake.

Objective: Reduce runoff and improve wildlife habitat on and adjacent to waterfront property.

Activity: Provide technical and design assistance to encourage installation of water quality and habitat practices.

Activity: Install shoreland buffer zones.

Activity: Install residential area practices (runoff reduction projects).

Activity: Install tree falls (for fish habitat).

PROJECT GOAL: Prevent entrenchment of invasive species.

Objective: Continue regular assessment of aquatic plant species present in Pipe Lakes.

Activity: Update whole lake point intercept survey. (2012)

Objective: Respond rapidly to introduction of invasive species.

Activity: Develop an invasive species rapid response contingency plan.

PROJECT GOAL: Increase lake residents' understanding of the importance of the lake protection plan objectives to increase support and participation in plan implementation.

Activity: Mail educational materials to residents.

Activity: Hold small group guidance meetings to instruct residents about how to identify and install appropriate practices.

Activity: Provide project information and updates in the Pipe Lakes web site and newsletter.

Note: Continued implementation of the *Communication Action Plan* will guide the activities described above. This plan is included as an attachment.

Methods and Activities

Carol Vantine, Pipe Lakes P&R District Chair, will coordinate project activities. Carol has served on the District Board for five years.

The Polk County Land and Water Resources Department will provide technical assistance and engineering design services for the project as summarized below and detailed in the enclosed letter of support.

- Nutrient retention structure for northeast of North Pipe Lake
 - engineering study - suitable location, sub-watershed boundary survey, sampling program
 - engineering design
 - liaison with land owner
- Streambank stabilization
 - narrow down locations for effective stabilization projects
 - engineering design if needed
- Shoreland runoff reduction projects
 - landscape design assistance
 - small group workshops
- Tree-fall project guidance

Project activities are listed in the previous section. More detailed descriptions of some of the activities are provided below.

Tributary Sampling Plan

Tributary sampling will occur in the years 2010, 2011, and 2012. See attached *2009 Monitoring Plan*.

Major Stream Sampling

Collect grab samples during approximately five runoff events from the following intermittent streams NPI-W1, NPI-N, NPI-NE, NPI-E3, NPI-E2, and PI-GUL. Analyze samples for total phosphorus.

Enhanced Stream Monitoring

The total phosphorus concentration in the North Pipe Lake stream NPI-NE has been much higher than other streams that drain to the Pipe Lakes. To help determine the source of this high phosphorus load and if a retention structure would be beneficial, the flow rate, total phosphorus, soluble reactive phosphorus, nitrogen (nitrate plus nitrite nitrogen, ammonium nitrogen, and total Kjeldahl nitrogen), chloride, and total suspended solids will periodically be measured in this stream, its tributaries, and reference streams over the next three years. This enhanced monitoring will seek to answer the following questions and will be coordinated with the engineering study mentioned previously to investigate viability of a retention basin in this area.

*What percentage of the nutrients in NPI-NE comes from the north side of 230th Avenue?
What are the major sources of the phosphorus load north of 230th Avenue in the NPI-NE sub-watershed?*

How does the phosphorus load delivered to the lake by NPI-NE compare to the other main streams draining to North Pipe Lake?

Will large-scale projects such as swales, dry ponds, or wet ponds be effective in reducing nutrients in the NPI-NE stream?

Waterfront/Shoreland Practices

Technical Assistance

Technical assistance at a value of up to \$350 will be provided to each of 60 property owners. Property owners will be asked to pay \$25 to secure an appointment with a qualified landscape professional. The District will certify these professionals with the assistance from the Polk County LWRD or project consultant once they have demonstrated their qualifications. Technical assistance will be provided anywhere in the shoreland or littoral zone. It will include identifying appropriate permits needed for each project. The most likely permits needed are a Polk County Shoreland Landscaping permit or a DNR Tree Fall permit. The initial \$25 paid by landowners for each site visit will be refunded upon project completion.

Practice Cost Sharing

Cost sharing incentives will be offered for materials and labor to restore natural areas or to install practices to reduce runoff. This cost sharing will be above and beyond the technical assistance offered.

Shoreland Buffer Area

Maximum cost shared amount: \$3,000

Owners will pay 25% of project expenses up to \$3,000 and 100% of all project expenses above \$3,000. Within the 35-foot buffer area, DNR funding will require a perpetual conservation covenant.

Target = 10 buffer restoration projects

Upland Practices behind the 35-ft Buffer Area

Maximum cost shared amount: \$3,000

Owners will pay 50% of project expenses up to \$3,000 and 100% of all project expenses above \$3,000. Half of the landowner contribution for the first \$3,000 for these projects will go toward matching other activities in the grant. Behind the 35-foot buffer area, a 10-year agreement for practice to remain in place will be required and administered by either the District or Polk County.

Target = 25 upland runoff reduction projects

Tree-falls

Maximum cost shared amount \$1,000

Owners will pay 25% of project expenses up to \$1,000 and 100% of all project expenses above \$1,000. A 10-year agreement for practice to remain in place will be required and administered by either the District or the County.

Target = 4 tree-fall projects

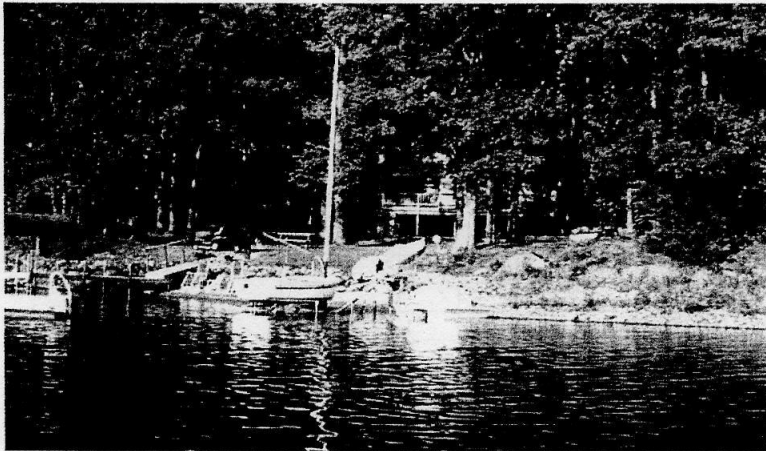
Resident Participant Volunteers

Nearly half of the respondents in a 2008 survey of property owners indicated they would like to investigate installation of a water quality protection landscape practice on their property. They did this by returning a participant volunteer sheet. The Lake District had a total of 47 volunteer sheets returned. Results of these sheets are detailed on pages 12 and 13 and summarized in the table on page 14 of this grant application narrative. The maps on pages 15, 16, and 17 provide more information about where volunteer property is located and where Cedar Corp. made recommendations for water quality practices.

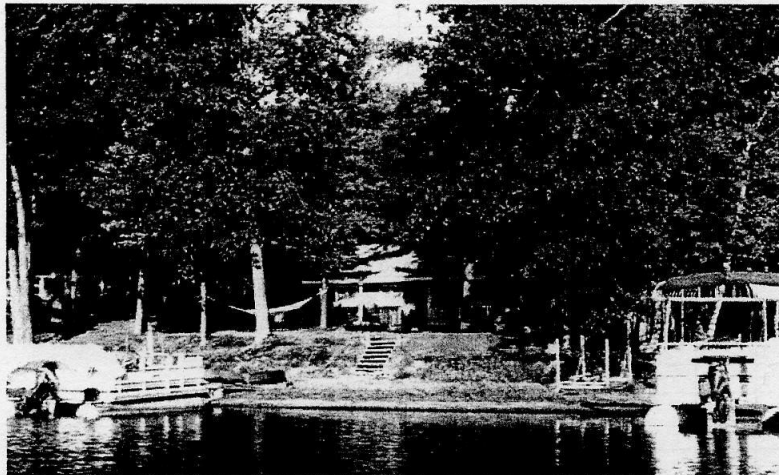
Lake Protection Interest Survey Results

Survey responses indicate that residents are most motivated to install practices by potential improvements to lake water quality followed by providing better habitat for fish and wildlife and enhancing the natural beauty of their property. Many are willing to consider installation of water quality and habitat practices. Forty-nine percent of survey respondents are willing to pay more than one quarter of the cost of practice installation and 25% are willing to pay more than half of the cost. And importantly, many residents - 78% of respondents - believe that water quality practices can help protect or improve the water quality of the lake. **Pipe Lakes residents appear to be ready to do their part to implement water quality and habitat practices. Almost half of survey respondents (49%) submitted a participant interest form.**

Selected Volunteer Sites



*Lot 51
Bob Grady
Infiltration pit or trench*



*Lot 70
Tim and Susan Schmuck
Rain garden*



*Lot 82
Tim O'Hearn
Shoreline buffer zone*

Pipe Lakes Resident Interest in Practices and Site Visits										
Respondent Name	Lake	Shoreline buffer zone	Rain garden	Infiltration pit or trench	Water diversions	Rain barrel	Plantings in the water	Tree falls/woody debris in the	Removal of invasive species	Want site visit
Carol & Ron Vantine	Pipe		1							
Merwin Moen	Pipe									
Joel Anderson	Pipe	1	1	1	1				1	1
Janice Anderson										
Joe & JoAnn Ward	N. Pipe		1	1	1	1	1	1	1	1
Daniel Thomas	Pipe	1	1		1	1	1		1	1
Jerry Backes	Pipe	1								1
Dick Braun	Pipe			1				1		1
Bourne	Pipe					1			1	1
Bob Grady	Pipe			1						
Chris Boysen	N. Pipe	1	1	1	1	1	1	1	1	1
Greg Filice	N. Pipe									1
Roger Knauf	Pipe	1	1	1	1	1			1	1
Larry & Bev Bresina	N. Pipe	1	1	1	1			1	1	1
Randy Alberg	Pipe	1		1			1			1
Doug Stahly	Pipe							1	1	
Liz O'Hern	Pipe					1			1	1
Jon Grad	N. Pipe									1
Rex & Maggie Houser	Pipe			1	1	1				1
Greg Warner	N. Pipe									1
Bev & Jim Dusso	N. Pipe	1	1			1		1	1	1
Don Glover	Pipe							1		1
Cecilia Johnson	Pipe	1	1	1	1	1			1	1
Kevin Thill	N. Pipe	1	1			1				
Chris Morton	Pipe	1							1	1
Unknown										1
Tom Storment	Pipe	1	1	1	1	1	1	1	1	1
Ron Nelson	N. Pipe									1
Jeff Thomas	Pipe		1	1	1				1	1
Ellen & Jan Bryer	Pipe									1
Tom O'Hern	Pipe	1							1	1
Gerry & Carol Ganske	Pipe									
Wark TeWinkel	Pipe									1
Tim & Susan Schmuck	Pipe		1						1	1
James Gersch	Pipe		1		1					
Chris Alexander	Pipe		1		1	1	1	1	1	
Allen Wahlstedt	Pipe									
Unknown										
Unknown				1		1			1	
Brian Price	Pipe									1
Kent Wison	N. Pipe									1
Gary Bougie	Pipe				1				1	1
Bob Witlock & Peggy V	Pipe	1	1	1	1	1	1	1	1	1
Arthur Bruning	N. Pipe		1							
Keeley	Pipe	1	1					1		1
Mary & Walter Warpe	N. Pipe		1		1		1			
Dick Hollar	N. Pipe									1
		15	19	14	15	14	8	11	20	33

DIRECTORY PIPE LAKE

Map Loc	Name	Address & Phone Number
1	James & Mary	2014
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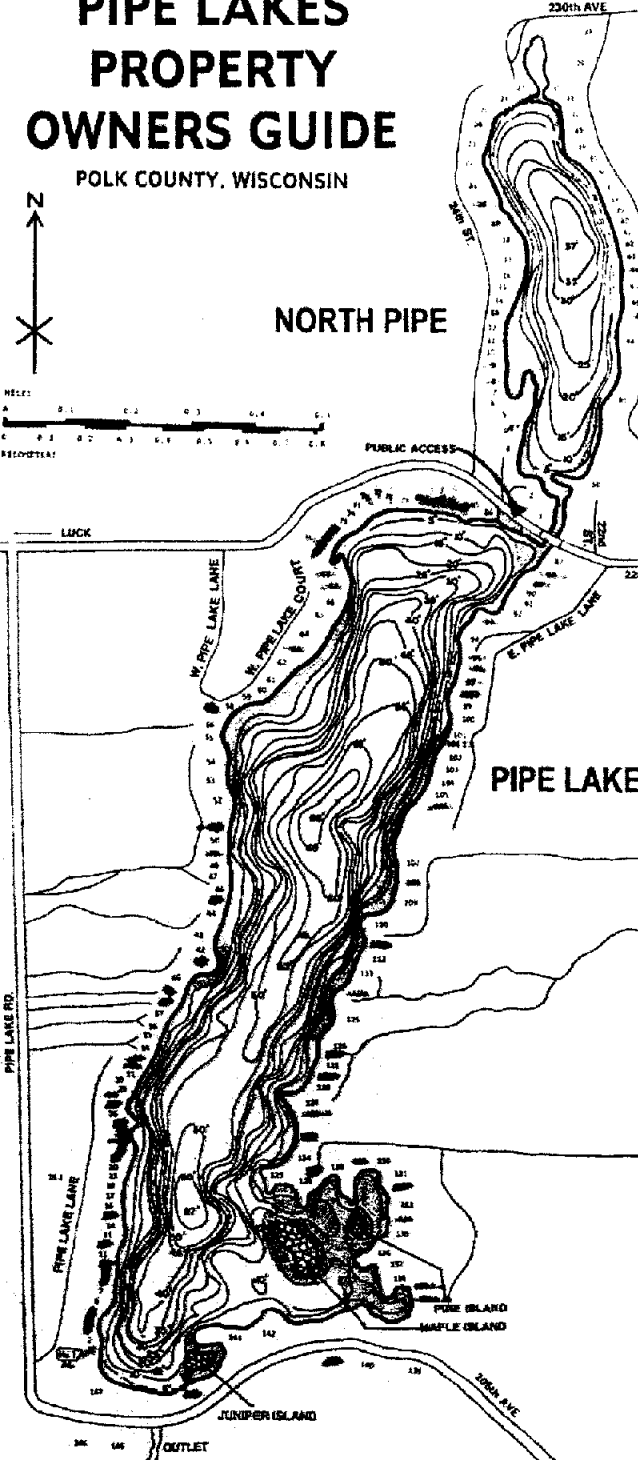
PIPE & NORTH PIPE LAKES PROPERTY OWNERS GUIDE

POLK COUNTY, WISCONSIN



DIRECTORY NORTH PIPE LAKE

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PIPE LAKE	
Map Loc	Street Address
1-33	Pipe Lake Road
34-56	Pipe Lake Road
57-68	W. Pipe Lake Court
69-87	220th Avenue
88-106	E. Pipe Lake Lake
107-125	220th St. / County G
126-131	210th Avenue
132-136	20th Street
137-147	20th Avenue

NORTH PIPE LAKE	
Map Loc	Street Address
1-2	
3-4	220th Avenue
5-25	24th Street
26-27	230th Avenue
28-47	30th Street
48-50	220th Avenue

AREA - 352 ACRES
UNDER 3 FT. - 5.4%
OVER 20 FT. - 56.5%
VOLUME - 8035 ACRE FT
SHORELINE - 6.4 MILES
MAX DEPTH PIPE - 68 FT.
MAX DEPTH N. PIPE - 37 FT.

Critical Habitat Zone
PT Farm Acres
Cedar Corp Area of Concern
mod High Priority

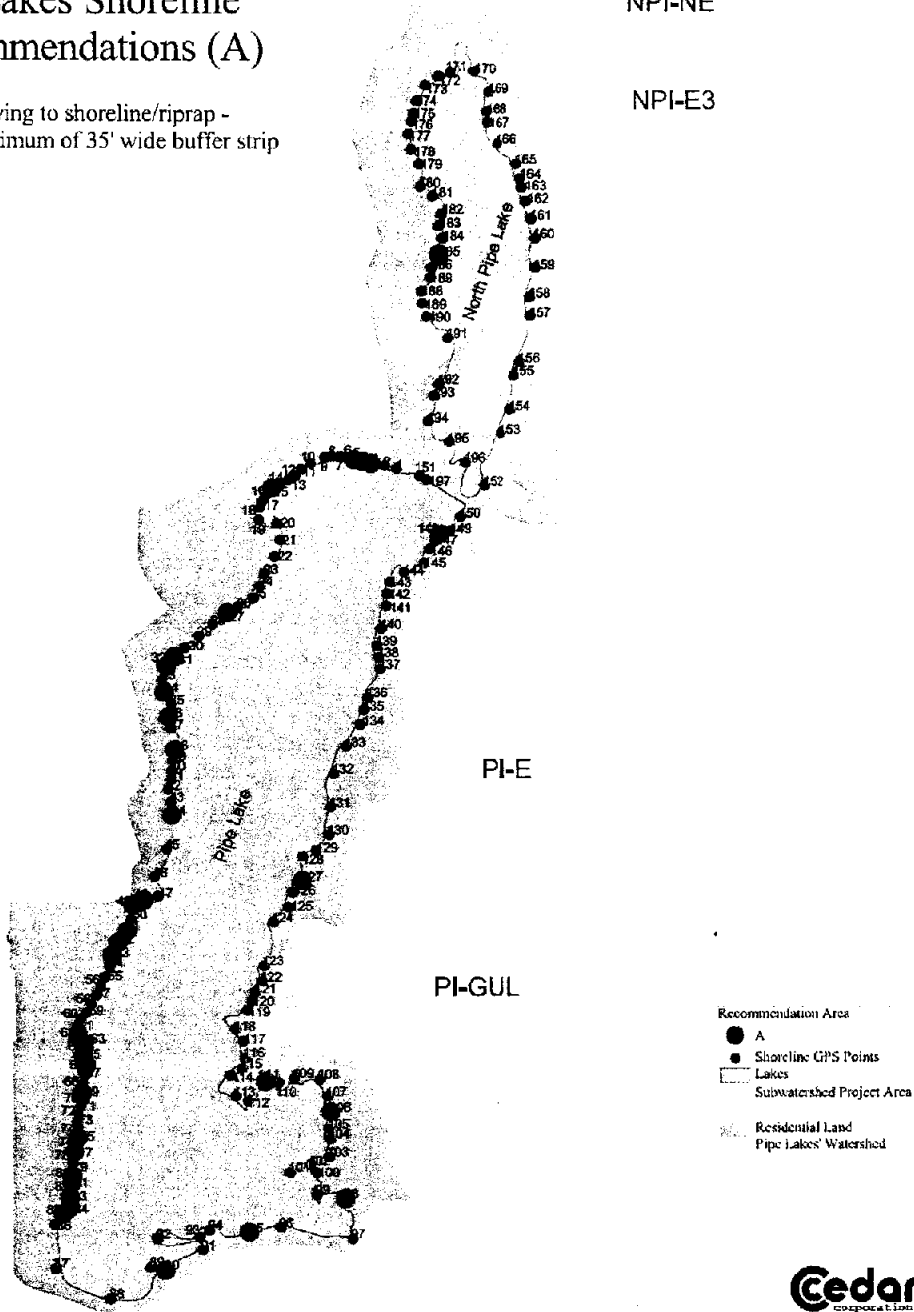
Original map by
Sandra Cole 1987
Revised 6/98
Revised 8/07

Pipe Lakes Shoreline Recommendations (A)

Stop mowing to shoreline/riprap -
leave minimum of 35' wide buffer strip

NPI-NE

NPI-E3

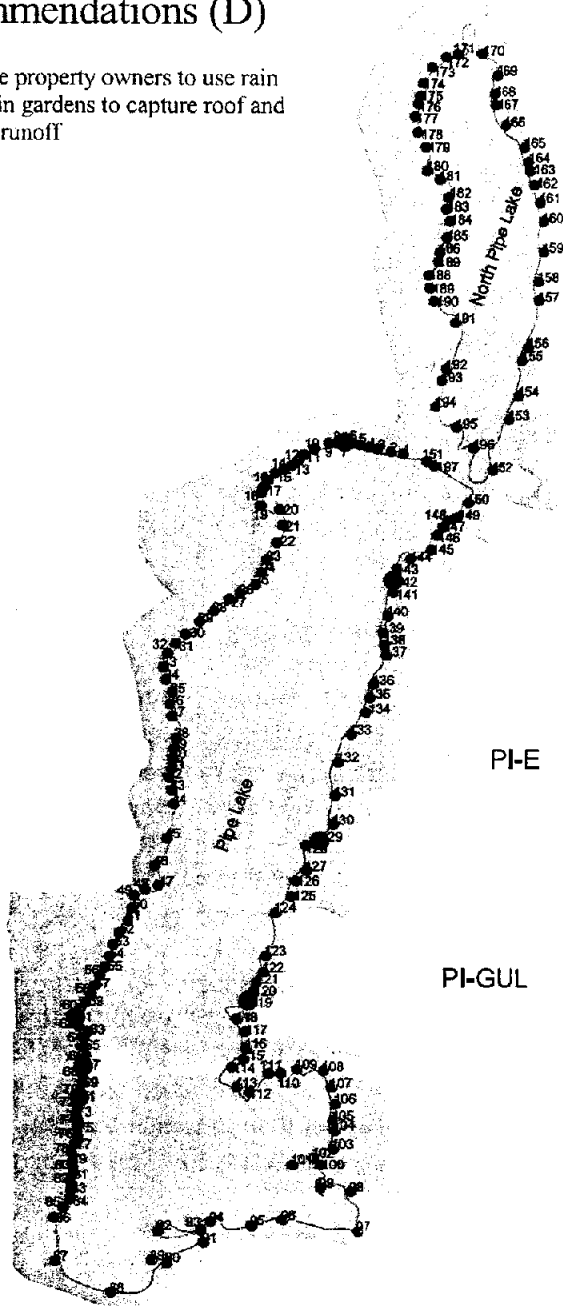


Pipe Lakes Shoreline Recommendations (D)

Encourage property owners to use rain barrels/rain gardens to capture roof and driveway runoff

NPI-NE

NPI-E3



- Recommendation Area
- D
 - Shoreline GPS Points
 - Lakes
 - Subwatershed Project Area
 - Residential Land
 - Pipe Lakes' Watershed

Cedar
corporation

Products or Deliverables

Technical assistance visits
Engineering feasibility study results
Installed water quality and habitat practices
Newsletter and web articles

Data to be Collected

Tributary sampling data
Soils investigations
Predicted reductions from practice installation
Number of water quality practices installed

Existing and Proposed Partnerships

Polk County LWRD will assist with education, landowner contacts, stream survey, and engineering feasibility and design as outlined in their letter of support.

Plan development study committees

In the summer of 2007, a **water quality committee** made up of a core group and an auxiliary group guided the development of the Cedar Corp subwatershed study. The core group carried the main responsibilities of the committee while the auxiliary group mainly reviewed draft versions of the study. The core group made up of Dick Hollar, Joe Errigo, Ron Vantine, and Larry Bresina (chair) worked together holding meetings every three weeks from May through August to develop goals for managing the lakes. They collected input from Pamela Toshner (DNR), Dale Robertson (USGS), William Rose (USGS), Paul Garrison (DNR), and Cedar Corp on setting strategic plan water quality goals during this period. Harmony Environmental also reviewed and commented on planning documents.

The Pipe Lake Protection and Rehabilitation District Board (Joe Errigo, Carol Vantine, Dick Hollar, Tom O'Hern, Larry Bresina) also provided input toward the development of strategic plan goals. In 2008 the water quality committee core group consisted of Ron Vantine, Dan Paulson, Mark Knutson, Dick Hollar, and Larry Bresina. This group and the Board of Commissioners modified the 5-Year Action Plan in winter to spring 2008 and ultimately incorporated a specific phosphorus load reduction for North Pipe Lake into the 5-Year Plan.

In the summer of 2008, the District collected comments on the 5-Year Plan through a presentation at the **Spring District Meeting**, a **public listening session**, and the **property owner survey**. In the fall of 2008, the District asked the County LWRD for input on the draft 5-Year Plan.

Planning and Lake Management

This project implements goals and activities (or action items) in the ***Pipe and North Pipe Lakes 5-Year Lake Protection Action Plan*** and ***10 Year Strategic Plan***. These plans in turn are developed based upon information synthesized from several planning documents and studies.

Recommendations from selected reports follow. Those recommendations that will be implemented as part of the lake protection grant project are listed under each report title.

Polk County Land and Water Resources Department. ***Pipe Lakes Comprehensive Planning Report***. 2002.

Study items

Survey aquatic plant communities

Survey NP-NE stream for potential sources of high nutrients and collect soil and water samples

McComas, Steve. Blue Water Science. ***Lake Management Plan for the Pipe Lakes, Polk County, Wisconsin***. July 2004.

Action items

Implement agricultural BMPs on identified critical (priority) areas

Consider stream watershed work if TP > 150 ppb

Stabilize eroding streambanks

Improve fish habitat – down trees to provide woody debris

Install shoreland buffer demonstration sites

Study items

Conduct aquatic plant survey

Cedar Corporation et. al., ***Subwatershed Recommendation Report Pipe Lakes Protection and Rehabilitation District, Polk County***. 2007.

Action items

Implement shoreline recommendations in priority areas

Stabilize streambanks

Replace culverts

Repair and improve outlet protection

Ensure Polk County and DNR program compliance

Consider wet detention basins

Additional studies used as input for the Lake Protection Action Plan and 5 Year Strategic Plan are listed below:

DNR Fishery Study (1989)
DNR Fishery Study (1995)
DNR Sensitive Area Study (1999)
Zooplankton/phytoplankton Study (2004)
DNR Fishery Study (2004-2005)
DNR North Pipe Paleolimnological Study (2004-2005)
Zooplankton/phytoplankton Study (2005)
DNR/District Understanding Updates (2006)
Historical Monitoring Summary (2006)
2005 Lake Management Program and 2006 Status (2004-2006)
Historical Documentation Review (2008)
District Communication Action Plan (2008)

The project is also guided by the results of the *2008 Lake Protection Interest Survey*.

The project is consistent with the <i>Polk County Land and Water Management Plan</i> . September 2004.
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Goal 3: Preserve, protect, and enhance riparian areas, wetlands, and aquatic and upland plant communities. Prioritize these sites to preserve the most pristine sites.

D. Enhance stewardship of resources.

1. Coordinate the distribution of information and program participation with other agencies.

Polk County LWRD staff members are assisting with the implementation of project activities.

Among the messages LWRD will try to relay (through the implementation of the Land and Water Management Plan) are:

- How and why to implement BMPs.
- Shoreland vegetation provides habitat, is low maintenance, reduces erosion, blocks noise, provides privacy, and is attractive and cost-shareable.
- The greater the amount of impervious space in a watershed, the worse the water quality tends to become.
- Land use planning tools, such as conservation easements, green space development, cluster developing, rain gardens, swales and infiltration areas, and others, exist for responsible zoning and planning.

- Sediment is the number one pollutant to many of our surface waters, from the combined effects of common daily actions that rain and snowmelt rinse from our streets, yards, and farm fields.
- Sediment from construction sites flows to and damages water resources.
- Vegetation kept in place reduces erosion by anchoring soil with the root system.

Timetable

See attached project phasing chart.

Sharing Project Results

Results will be reported in our newsletter, on our website (www.pipelakes.org), and at our annual meetings.

We will prepare regular progress reports of project accomplishments and challenges.

District Affiliation

The Pipes Lakes Protection and Rehabilitation District is a member of the Polk County Association of Lakes and Rivers.

Commissioners Permanent Residence

Name, Position	Permanent Residence
Carol Vantine, Chair	Minneapolis, Hennepin County
Joe Errigo, Secretary	St. Paul, Ramsey County
Tom O'Hern, Treasurer	North Branch, Chisago County
Herschel Brown, Polk County Rep.	McKinley Twp, Polk County
Doug Rouzer, Johnstown Rep.	Johnstown Twp, Polk County
Larry Bresina, Water Quality	St. Paul, Ramsey County
Tom Mears, District Ambassador	Johnstown Twp., Polk County

	Payable Expense Estimate*	Expense per Year				
		1	2	3	4	5
General						
Coordination	14000	2800	2800	2800	2800	2800
Mailing materials	500	100	100	100	100	100
Support for small group guidance meetings	2000	500	500	500	500	500
Road Construction and Maintenance						
Culvert outlet protection on 230 th Avenue (North Pipe NPI-NE)	350	350				
Culvert replacement on 20 th Street (North Pipe NPI-NE)	5300	5300				
Stream Bank Stabilization						
Downstream from 230 th Avenue (North Pipe NPI-NE)	5500				5500	
Upstream and downstream from logging road (Pipe PI-GUL)	5000	2500	2500			
Sub-watersheds not included in 2007 planning grant studies	4000		2000	2000		
Farm Management Practices						
Provide support for improved farm management practices	200		100	100		
Phosphorus Retention Projects						
Northeast of North Pipe Lake	70000	3000	3000	6000	13000	45000
East-central of Pipe Lake	2000		1000		1000	
Shoreland Buffers						
Initial technical assistance	21000	7000	7000	7000		
Buffer zone restoration (technical assistance, materials & installation)	30000	7500	7500	7500	7500	
Residential area practices (technical assistance, materials & installation)	75000	18750	18750	18750	18750	
In-Lake						
Tree-falls (technical assistance, materials & installation)	4000	2000		2000		
Aquatic plant survey	6000			6000		
Invasive species contingency plan	1000	500	500			
Monitoring Studies						
Enhanced Stream Monitoring	7166	2389	2389	2389		
total payable	253016	49889	45339	52339	46350	45100
donated services	13566					
total expense (includes value of donated services)	266582					

* Expenses the District will pay out. Total grant expenses are larger because of donations.

Attachments

Pipe Lakes Protection Action Plan Implementation

May 1, 2009

Pipe Lakes PR District 2009 Budget

Pipe and North Pipe Lakes Web Site Home Page and Contacts

The Pipe Lakes Newsletter. June 15, 2008.

“Back-of Envelope” Pipe Lakes Clarity Potential Analysis. December 2007.

2009 Proposed Lake and Stream Monitoring

Pipe Lakes Waterfront Property Owner Survey. June 30, 2008.

Landowner letters of support

Pipe Lakes Communication Action Plan. January 2008.