WHITE WATER
ASSOCIATES, INC.
429 River Lane, Amasa, Michigan 49903

April 30, 2018

Pickerel Crane Protection & Rehabilitation District
Mike Zelinski
Email: mzelinski@waukbearing.com

Dear Mike,

This letter represents White Water Associates' proposal to the Pickerel Crane Protection & Rehabilitation District for lake studies and preparation of an updated lake management plan. I have read through your previous plan and reports of work previously conducted on the lakes. I appreciate the time that you and Chuck spent with me on the phone last week. This gave me a clearer picture of your consulting needs on this next phase of lake stewardship. I am honored that the district is considering White Water Associates as a prospective consultant and hope that this proposal meets with your approval. White Water has worked for thirty years on northern Wisconsin lakes. We are currently working on several long-term projects, some quite near to you. This provides us with experience that directly applies to your lakes. I sincerely hope that we have the opportunity to work with you.

I have developed a ***Project Budget*** for the proposed project using the same "fillable form" required by the WDNR in the grant application procedure. I thought that this made sense as it will provide the District with some insight into the various budget categories and expectations by the WDNR. I provide an annotated version of this completed budget as part of this proposal to clarify each of the categories. I want to stress, however, that this proposal and the associated budget is easily amendable to accommodate any changes in priorities that you might realize between now and the time when grant applications are due (December 10, 2018). It can be scaled up or down and I fully anticipate direct input by the District in developing the final project scope. That said, this is a budget that can get the job done and would be able to stand even if you suggest no changes. I have included some anticipated volunteer hours from lake steward volunteers, but these can be adjusted in the final budget depending on anticipated availability.

Also included in this proposal is a ***Table of Goals, Activities, Tasks, Responsibility, Calendar and Notes***. This table succinctly presents what I recommend be included in the proposal. Its organization would be reflected in the technical proposal that we would submit to the WDNR. The Project Budget is based on these activities. Like the budget, this table is subject to amendment based on the District's recommendations, but it stands as a solid and substantial project that will serve the stated goals and what I understand to be the District's mission.

The largest effort on the proposed project is directed at aquatic plants (both native plants and the invasive Eurasian water milfoil). We plan to conduct a point-intercept aquatic plant survey according to the strict WDNR protocol. This would provide information compatible with the previous point-intercept survey so

that direct comparisons between the data sets will be possible. We also plan a thorough mapping of the population of Eurasian watermilfoil that exists in both Pickerel and Crane Lakes.

Another priority area of this proposed project is assessing the shoreland (both nearshore riparian area and the shallow water littoral zone). This effort is covered in Activity 1e (aquatic habitat) and Activity 2b (riparian habitat). This assessment will be conducted using the WDNR protocol.

Education is an important part of the proposed work. This will take place in several informal and formal efforts. White Water staff will be available for consultation at any time from District Board members and other stakeholders. Our interactions with lake volunteers will always include an education component. We plan a formal education program in the form of a "floating workshop" that will use Pickerel-Crane Lakes as the classroom for a field trip lead by White Water Associates.

An important product of all of the outlined activities is a new Lake Management plan that incorporates historic and newly acquired information. White Water will prepare the draft documents and District Board members will review in an iterative process.

We have outlined and discussed White Water Associates' experience and credentials in our two previous phone meetings and an earlier letter I sent to you. Nevertheless, I reiterate that summary here for completeness. Our website (www.white-water-associates.com) provides an excellent overview of our company and services. White Water was founded by my wife (Bette has a doctorate degree in limnology) and me in 1985 in Iron County, Michigan. We are located about 80 miles from Pickerel and Crane Lakes. We have 24 employees and provide environmental laboratory services and consulting throughout the U.S. We offer ecological consulting services to a broad variety of clients, including lake consulting work in northern Wisconsin. I have a long-time professional relationship with the agency resource managers in northern Wisconsin counties and scientists at the UW Trout Lake Station–Center for Limnology. I am past Chairman of the Michigan Water Quality Monitoring Advisory Board (a Governor appointed board that advised Michigan's Department of Environmental Quality on water quality monitoring strategy). I have also been a member of the National Research Council (National Academy of Sciences) Committee on Inland Aquatic Ecosystems. I am a senior certified ecologist with the Ecological Society of America. I am directly involved with all of White Water's lake studies and management planning.

Much of our lake work in Wisconsin has been funded from WDNR Lake Planning Grants. The studies often involve a comprehensive investigation of the lake and its watershed. Water chemistry and aquatic plants are components of these studies. We have conducted many point-intercept aquatic plant surveys. Our lake studies sometimes contain components of lake level analysis, lake-user surveys, fish surveys, frog and toad surveys, aquatic invasive species (AIS) surveys, education, rare animal surveys, watershed analysis, and more. We have conducted projects that involve some of the most noxious AIS in the region (for example, zebra mussels, spiny water fleas, rusty crayfish, Eurasian water milfoil, and curly-leaf pondweed). We often address two of the most important stressors to lake health: poor lakeshore habitat and poor shallow water habitat. We view these projects in a broad ecological context. Diverse healthy ecosystems tend to be resilient to stresses like AIS. Although the presence of AIS is an important concern, it is not what should define a lake ecosystem, nor should it dominate the viewpoint of lake users.

I expect that our final approach and proposal will be fully developed after additional discussions between White Water and the District. With White Water will prepare a grant application that request WDNR

funds for the proposed work. The attached budget summarizes the possible fiscal and volunteer commitments of the District.

I have reviewed your previous lake management plan and understand that our task will be to create an updated plan that builds on the solid foundation you have established. Our plan will identify practical actions that the District can take to ensure long-term health of the lakes. The District will be able to coordinate activities, manage volunteers, determine education needs, and other stewardship work more efficiently in a single integrated program.

Once we've decided on our final approach, I am willing to prepare the technical portions of a grant application for you at no charge. The technical narrative is the major portion of the application as it spells out everything that will be done, how it will be done, when it will be done, who will do it, what products will result, and what it will cost. In return for this complimentary service, I expect that White Water will be engaged to conduct the proposed work if the grant is awarded. If the grant is not awarded, we can re-work and re-submit in the next cycle. In either case, you will be under no financial obligation to White Water for preparation of the application. In the process of grant application, I expect the District to offer support to me (e.g, provide information about the lakes and the District) and prepare minor aspects of the grant application (e.g., a resolution).

In the table below are several references with whom we have conducted lake studies and planning projects under the WDNR lake planning grants program.

Spread Eagle Chain of Lakes Association
Contact: Darlin Verley
Phone: (262) 366-5020
Email: darlinv@wi.rr.com

Town of Presque Isle-Lakes Committee
Otto Novak
Home Phone: (715) 686-2628
Email: oandlnovak@gmail.com

Lake Alice
Glenn Mott (Lake Alice Assoc. President)
(715) 453-7378
Email: glennmott42@gmail.com

High-Fishtrap-Rush Lakes Association
Ken Wiesner
Phone: (608) 772-6432 (cell)
E-mail: wiesnerk@msn.com

We work diligently towards long-term relationships with our lake steward clients and are pleased to be able to respond to your request for a proposal. Please let me know if there is any other information that you would find useful for your consideration.

Sincerely,

Dean B. Premo, Ph.D.

ANNOTATED PROPOSED BUDGET FOR THE PICKEREL-CRANE LAKE STEWARDSHIP PROGRAM

Project Budget

Costs for Each Category	Project Costs: Activity	Time (hr.)	Cash Cost	Time (hr.)	Donated Value	Subtotal
Consulting Services	1.a. Water quality	80	4,800.00	12	720.00	$5,520.00
Consulting Services	1.b. Fish community	12	720.00			$720.00
Consulting Services	1.c. Aquatic plants	240	14,400.00	6	360.00	$14,760.00
Consulting Services	1.d. Aquatic animals	5	300.00	4	240.00	$540.00
Consulting Services	1.e. Aquatic habitat	56	3,360.00	8	480.00	$3,840.00
Consulting Services	1.f. Aquatic invasive species	24	1,440.00	4	240.00	$1,680.00
Consulting Services	2.a. Watershed analysis	6	360.00	3	180.00	$540.00
Consulting Services	2.b. Riparian habitat	72	4,320.00	12	720.00	$5,040.00
Consulting Services	2.c. Watershed threats	10	600.00			$600.00
Consulting Services	3.a. Education	40	2,400.00	10	900.00	$3,300.00
Consulting Services	3.b. Lake user survey	6	540.00			$540.00
Consulting Services	4.a. Adaptive Mgt. Plan	84	5,040.00	10	900.00	$5,940.00
State Lab	Water chemistry		700.00			$700.00
Donated Services	1.a. Water quality			16	192.00	$192.00
Donated Services	1.f. Aquatic invasive species			24	288.00	$288.00
Donated Services	2.e. Watershed threats			10	120.00	$120.00
Donated Services	3.a. Education			120	1,440.00	$1,440.00
Donated Services	3.b. Lake user survey			75	900.00	$900.00
Donated Services	4.a. Adaptive Mgt. Plan			24	288.00	$288.00
Subtotals			38,980.00		7,968.00	$46,948.00
Override Default State Share Percentage:	**Alternative State Share %**				**Total Project Cost Estimate** (Cash + Donated Value)	$46,948.00
					State Share Requested	$25,000.00

Large Scale Lake Planning Project - maximum grant up to $25,000 - up to 67% state share, cannot exceed cash cost.

Line item costs of White Water Services (Total = $38,280)

Cost of lab work for Wisconsin State Lab of Hygiene

Value of budgeted White Water Associates donated services (Total = $4,740)

Total Cash Cost of Proposed Project = $38,280 (White Water billables) + $700 (State Lab costs)

Value of District volunteer donated services (Total = $3,228)

Total value of donated services

Total Cash Requested from State

Total cash needed from District = $38,980 - $25,000 = $13,980

WHITE WATER ASSOCIATES, INC.

PICKEREL-CRANE LAKES STEWARDSHIP PROGRAM – GOALS, ACTIVITIES, TASKS, RESPONSIBILITY, CALENDAR & NOTES						
Goals	**Activities**	**Methods/Tasks**	**Responsibility***	**Calendar**	**Notes**	**HRS****
1. **The Lake**: integrate historic and new information about water quality, fish, aquatic plants aquatic animals, aquatic habitat, and aquatic invasive species in order to understand Pickerel and Crane Lakes in an ecosystem context.	1.a. - Water quality	Gather and review historical water quality data	WWA	Apr 2019		
		Collect new water quality data	WWA/PCPRD	2019-2020	PCPRD continues CLMN	8
		Conduct dissolved summer and winter oxygen profiles	WWA/PCPRD	Aug '19/Mar '20	PCPRD volunteer assists WWA	8
	1.b. - Fish	Gather and review existing fish information	WWA	May 2019		
	1.c. - Aquatic plants	Gather existing information on aquatic plants	WWA	May 2019		
		Obtain point-intercept (P-I) coordinates from DNR	WWA	May 2019		
		Deploy field team to conduct point-intercept survey	WWA	Jul-Aug 2019		
		Manage aquatic plant specimens	WWA	Sep 2108		
		Conduct field work and Map Eurasian water milfoil	WWA	Jul-Aug 2019		
		Manage data, analyze, interpret results	WWA	Aug-Dec 2019		
	1.d. - Aquatic & water animals	Gather existing information on Pickerel-Crane Lakes fauna	WWA	May-Oct 2019		
		Record observations of other animals on the lakes	WWA	2019-2020		
	1.e. - Aquatic habitat	Verify Pickerel-Crane Lakes depth/substrate based on P-I data	WWA	Jan 2020		
		Characterize littoral zone w/Shoreland Hab Mon Protocol	WWA	Jul-Aug 2019		
		Manage data, analyze, interpret results	WWA	Sep-Dec 2019		
		Characterize near-shore habitat areas in regard to quality	WWA	Dec 2019		
	1.f. – Aquatic invasive species (AIS)	Employ DNR AIS Early Detection protocol	WWA/PCPRD	Jun-Aug 2019	PCPRD volunteer assists WWA	6
		Determine lake suitability to zebra mussels	WWA	Aug 2019		
		Manage data, analyze, interpret results	WWA	Aug-Oct 2019		
		PCPRD conducts regular AIS (plant) monitoring	PCPRD	2019 and 2020	PCPRD volunteers take the lead	18
2. **The Watershed**: update existing information about Pickerel and Crane Lakes watershed and collect new data that will reflect the state of health of the watershed.	2.a. – Water-shed analysis	Review Pickerel-Crane Lakes watershed cover types	WWA	Sep 2019		
		Review if changes in watershed require re-analysis with WiLMS	WWA	Jan 2020		
	2.b. – Riparian habitat	Evaluate riparian area w/Shoreland Habitat Monitoring Protocol	WWA	Jul-Aug 2019	PCPRD volunteer assists WWA	20
		Manage data, analyze, interpret results	WWA	Sep-Dec 2019	PCPRD volunteer assists WWA	
		Characterize shoreland areas in regard to quality	WWA	Dec 2019	PCPRD volunteer assists WWA	
	2.c. – Water-shed threats	Identify potential and actual threats to Pickerel-Crane Lakes	WWA/PCPRD	2019-2020	PCPRD volunteer assists WWA	10
		Canvas lake users regarding threats to Pickerel-Crane Lakes	PCPRD/WWA	2019-2020	PCPRD volunteer takes the lead	
3. **The People**: understand and educate the people who use and enjoy Pickerel-Crane Lakes and its surroundings.	3.a. – Education	Prepare two press releases	PCPRD/WWA	May '18 & May '21	PCPRD volunteer takes the lead	120
		Create/maintain Pickerel-Crane Lakes website and/or Facebook	PCPRD	2019-2021	PCPRD volunteer takes the lead	
		Conduct "floating workshop" on Big Portage L. ecology	WWA	Jul-Aug 2020	PCPRD volunteers attend	
	3.b. – Lake user survey	Draft lake user survey questions	PCPRD/WWA	Jun 2019	PCPRD volunteer takes the lead	75
		Submit draft questions for WDNR review	PCPRD	Jun 2019	PCPRD volunteer takes the lead	
		Deploy Pickerel-Crane Lakes survey to lake users	PCPRD	July 2019	PCPRD volunteer takes the lead	
		Manage data, analyze, interpret results	PCPRD	Oct-Nov 2019	PCPRD volunteer takes the lead	
4. **The Plan**: Prepare a Lake Management Plan that integrates historic and new information.	4.a. – Adaptive mgt plan	Prepare and integrate deliverables into a comprehensive adaptive management plan (includes the aquatic plant management plan).	WWA/PCPRD	Jan-June 2021	PCPRD reviews draft plan	24

**WWA=White Water Associates and PCPRD= Pickerel Crane Protection & Rehabilitation District; **This column indicates the number of PCPRD budgeted volunteer hours*

White Water Associates, Inc.