

**AQUATIC INVASIVE SPECIES
ESTABLISHED POPULATION CONTROL GRANT**

**Tichigan Lake & the Fox River Impounded Waterways
Integrated AIS Management Control Project**

Waterford Waterway Management District

August 1, 2013

TABLE OF CONTENTS

Aquatic Invasive Species Control Grant Application (WDNR Form #8700-307)	3 pages
Aquatic Invasive Species Control Grant Ranking Questions	5 pages
Lake Characteristics	Page 1
Background Information	Page 1
Project Scope / Description.....	11 pages
Previous Grants Received and Projects Completed	Page 2
Description of Project Area	Page 3
Description of Problem to be Addressed by Project.....	Page 3
Description of Project Goals and Objectives	Page 5
Description of Activities and Timeline	Page 5
Description of Data to be Collected	Page 10
Description of Project Products or Deliverables	Page 10
Description of Activities and Education Efforts.....	Page 11
Description of Existing and Proposed Partnerships	Page 11
Discussion of Role of Project in Planning and/or Management of Lake.....	Page 11
Plan for Sharing Project Results	Page 12
Other Information in Support of Project Not Described Above.....	Page 12
Itemized Breakdown of Expenses.....	3 pages
Figures.....	1 page
Resolution	1 pages
Letters of Support.....	5 pages
Attachment A.....	3 pages

Notice: Use of this form is required by the DNR for any application filed pursuant to ch. NR 198, Wis. Adm. Code. Personal information collected on this form, including such data as your name, address, phone number, etc., will be used for management and enforcement of DNR programs, and is not intended to be used for any other purpose. Information may be made accessible to requesters under Wisconsin's Open Records laws (s. 19.32-19.39, Wis. Stats.) and requirements.

Section I: Application Type

Check one:

- Education, Prevention & Planning Early Detection & Response Established Infestation Control

Legislative District Numbers		To determine your legislative district, go to http://165.189.139.210/WAML/ Type in complete address, next screen shows information.
Senate	Assembly	
21	83	

Section II: Applicant Information

Applicant Waterford Waterway Management District			Type of Eligible Applicants <input type="checkbox"/> County <input type="checkbox"/> Tribe <input type="checkbox"/> Other Gov't Unit <input type="checkbox"/> Federal <input type="checkbox"/> City <input type="checkbox"/> Sanitary Dist. <input type="checkbox"/> Nonprofit Org. <input type="checkbox"/> State <input type="checkbox"/> Village <input checked="" type="checkbox"/> Dist. <input type="checkbox"/> College, School, etc. <input type="checkbox"/> Other <input type="checkbox"/> Town <input type="checkbox"/> Assoc.		
Waterbody Name Waterford Impoundment					
Project County/Township/Section/Range Racine					
Authorized Representative Named by Resolution Kelly Cornelius			Project Contact Name Stephanie Boutsikakis		
Authorized Representative Title Board Chairman			Project Contact Title Committee Member		
Address 5201 Riverside Road			Address 1155 S. State St #701		
City Waterford	State WI	ZIP Code 53185	City Chicago	State IL	ZIP Code 60605
Daytime Phone (area code) (262) 534-5570	Evening Phone (area code) (414) 416-9319		Daytime Phone (area code) (630) 306-9620	Evening Phone (area code) (630) 306-9620	
E-mail Address Kelly_Cornelius2003@yahoo.com			E-Mail Address stephanie2003@ameritech.net		

Mail Check to: (if different from applicant)

Name and Title Kelly Cornelius, Chairperson	Address Post Office Box 416
Organization Waterford Water Management District	City Waterford
	State Wisconsin
	ZIP Code 53185

For DNR Use Only

Application Type <i>AIS - Established Population Control</i>	Date Received ?	Date Reviewed (AIS/LC/RC)	AIS/Lake /River Coordinator Approval /Date
Waterbody ID# 763600	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	Research / Demo Project <input type="checkbox"/> Yes <input type="checkbox"/> No
Prior Grant Award(s) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fiscal Year(s) 2005-2006	Amount Received To Date \$	Project Awarded <input type="checkbox"/> Yes <input type="checkbox"/> No

Aquatic Invasive Species (AIS) Control Grant Application

Form 8700-307 (12/11)

Page 2 of 3

Section III: Project Information

Project Title Tichigan Lake Integrated AIS Management	Proposed Ending Date 12/31/16
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Other Management Units	Letter of Support	Other Management Units	Letter of Support
1. Runzheimer International	<input checked="" type="checkbox"/>	4. Town and Country Resource Conservation & Devel	<input checked="" type="checkbox"/>
2. Fox River C.A.U.S.E.	<input checked="" type="checkbox"/>	5. Waterford Chamber of Commerce	<input checked="" type="checkbox"/>
3. Doc's on the Fox	<input checked="" type="checkbox"/>	6.	<input type="checkbox"/>

Section IV: Public Access

Number of Public Vehicle Trailer Parking Spaces Available at Public Access Sites:	30
Number of Public Access Sites Including Boat Launches and Walk-ins:	2

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	DNR Use Only
1. Salaries, wages and employee benefits		7,200.00	
2. Consulting services	105,983.00		
3. Purchased services--printing and mailing			
4. Other purchased services (specify):			
5. Plant material			
6. Supplies (specify)			
7. Depreciation on equipment			
8. Hourly equipment use charges			
9. State Lab of Hygiene (SLOH) Costs			
10. Non-SLOH Lab Costs			
11. Other (specify)			
12. Subtotals (sum each column)	105,983.00	7,200.00	
13. Total Project Cost Estimate (sum of column 1 plus sum of column 2)	113,183.00		
14. State Share Requested (up to 75% of total costs may be requested)	██████████		

Subject to the following maximum grant amounts:

- Education, Prevention and Planning Projects--up to \$150,000
- Early Detection and Response Projects--up to \$20,000
- Established Infestation Control Projects--up to \$200,000

56,591.50 - 50% request

Use of Federal funding as match: (check box below if applicable)

We are using or planning to apply for Federal funds to be used as match.

If known, indicate source of funding:

**Aquatic Invasive Species (AIS) Control
Grant Application**

Form 8700-307 (12/11)

Page 3 of 3

Section VI: Attachments (check all that are included)

A. For all applicants: (Refer to instructions for applicability.)

- 1. Authorizing resolution
- 2. Letters of support
- 3. Map of project location and boundaries
- 4. Lake map or river segment with public access sites identified (per Section IV of this application and page 20 of the guidelines)
- 5. Itemized breakdown of expenses
- 6. For projects that entail sending samples to the State Laboratory of Hygiene (SLOH) only: a completed SLOH Projected Cost Form
- 7. 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), River Management Organizations (RMOs) or Qualified Non-profit Organizations:

- 1. For first time applicant LMOs/RMOs only: A completed Form 8700-226 (Lake Association Organizational Application) or 8700-287 (River Management Organization Application)
- 2. For first time applicant Qualified Nonprofit Organizations 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. Brochures, newsletters, annual reports or other information about your organization

C. Education, Prevention and Planning Projects: (No additional attachments required.)

D. Early Detection and Response Projects:

- 1. APM Permit application

E. Established Infestation Control Projects:

- 1. Management Plan
- 2. APM Permit application

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 Stephanie Boutsikakis	Title of Authorized Representative Committee Member
Signature of Authorized Representative <i>Stephanie Boutsikakis</i>	Date Signed 1/30/13

Aquatic Invasive Species Control Grants
Project Ranking for Subchapter IV – Established Population Control Projects
2013

A) The degree to which the project includes a prevention and control strategy.
(6 points possible)

- 1) The water being controlled has, or the project includes, a Clean Boats, Clean Waters watercraft inspection program per the requirements of s. NR 198.22 (1)(d) or an approved Alternative Equivalent (see guidance). **2 points (2 points)**
Page 7 & 11: The District has partnered with the Town and Country Resource Conservation and Development in the 2013 and beyond boating seasons to complete 200 hours of CBCW at both landings
- 2) The project will conduct other complimentary source containment activities that go above and beyond minimum level of boat landing inspection e.g. boat washing or cleaning stations, augmented enforcement. **2 points (2 points)**
Page 7 & 11: WWMD has installed additional signage at each landing indicating locations of the nearest vehicle & trailer accessible car-washes & proper cleaning procedures & a cleaning brush/broom will be provided at the landings to aid in cleaning activities
- 3) The water being controlled has, or the project will train, volunteers to identify AIS and conduct water body surveillance monitoring for early detection using accepted WDNR or citizen-based monitoring (CLMN/Project RED, etc) protocols where data is being entered into SWIMS. **2 points (2 points)**
Pages 3 & 11: Karen Stoll (WDNR) educated WWMD members on AIS identification in Oct. 2012 & all data collected during CB/CW monitoring will be entered into SWIMS.

B) The degree to which the project will prevent the spread of aquatic invasive species.
(7 points possible)

- 1a) The control activity will take place on a Statewide AIS Source Water listed on the following table.
5 points
or
- 1b) The control activity will take place on a major AIS source water with high public use (lakes greater than 500 acres and all boat-able rivers that meet or exceed the minimum boating access criteria in NR 1.91(4) or wetlands greater than 500 acres in public ownership) or the project includes a Statewide AIS Source Water where less than 50% of the activities are directed.
4 points
Page 1 & attachment, Public Paved Boat Ramp/Landings with parking for up to 30 vehicle and trailers, numerous platted ROW access points, a public park, Tichigan Wildlife Area
or
- 1c) The control activity takes place on a significant AIS source water with high public use (lakes between 500 and 100 acres and all rivers that meet or exceed the minimum boating access criteria in NR 1.91(4); wade-able streams with public access or wetlands between 500 and 100 acres in public ownership). **3 points**

or

1d) The control activity takes place on an a minor AIS source water (lakes less than 100 acres that meet or exceed the minimum boating access criteria in NR 1.91(4); any river or stream with public access or wetlands less than 100 acres in public ownership).

2 points

And

2) The project will control a NR40 prohibited species; e.g Hydrilla, yellow floating heart, spiny water flea, red swamp crayfish, etc.

2 points

Statewide AIS

Source Water

Lakes List 07/01/2011

<u>LAKE</u>	<u>REG</u>	<u>COUNTY</u>
Beaver Dam	SC	Dodge
Castle Rock	WC	Adams
Chippewa		
Flowage	NOR	Sawyer
Eagle Chain	NOR	Vilas
Geneva	SE	Walworth
Green	NE	Green Lake
Koshgonong	SCR	Rock
Madison		
Chain	SCR	Dane
Mendota	SC	Dane
Michigan	NE, SE	All counties
Minocqua		
Chain	NOR	Vilas
Onalaska	WC	La Crosse
Petenwell		
Lake	WC	Adams
Puckaway	NER	Marquette
Shawano		
Lake	NE	Shawano
Superior	NO	All counties
Winnebago & up river pools	NE	Calumet
Wisconsin	SC	Columbia
Wisconsin	WC	Chippewa
RIVERS		
St. Croix, Mississippi, Menominee	WCR,SCR,NOR	

Statewide AIS Source Water Criteria

- Great Lakes or Mississippi River tributaries up to first dam
- Great Lakes landings/shorelines, including Green Bay
- VHS waters (Lower Fox River, Lake Winnebago, upper pool lakes and rivers up to first dam)

- Waters involving “prohibited” species (as per NR40) that are established or at risk of becoming established (e.g Hydrilla pond, yellow floating heart, spiny water flea lakes, etc)
- Lakes or impoundments that meet all of the following criteria:
 - Greater than 5000 acres
 - Multiple boat landings (5 or more)
 - Contain two or more of the following species (EWM, CLP, zebra mussels)

**Regions may recommend other lakes for inclusion that meet the criteria, but do not show up on the list due to incomplete or new information.*

C) The degree to which the project protects or improves the aquatic ecosystem’s diversity, ecological stability or recreational uses.

(3 points possible)

- 1) Project plan implementation includes stocking or planting to reintroduce native community species or implements other actions or changes in management strategies that will provide added protection to native species beyond herbicide treatments alone. **2 points**

- 2) Project area has a high degree of native biodiversity or is critical habitat, as expressed by:
 - an above eco-region average aquatic or wetland plant FQI
 - the presence of a listed aquatic species (NHI endangered, threatened or watch) *(page 5)*
 - is an ERW or ORW water
 - has a Sensitive Area or Critical Habitat designation
 - is within or adjacent to a State Natural Area, State Park, other publicly owned unique natural area or such an area owned/managed by a nonprofit conservation organization (e.g., Nature Conservancy). *(page 1)*

1 point (1 point)
Page 1 & 4: 2 NHI endangered species present & adjacent to state natural area (Tichigan Wildlife Area)

D) The stage of the infestation in the water body. (4 points possible)

- 1) Project addresses a pioneer population (as defined by s.198.12 (8)), or was a past early response project.
2 point

- 2) The target species is low in density and still at a controllable level as determined by being found in 25%, or less, of the colonizable area of the project water body (e.g. only the littoral zone of a lake can be colonized by EWM).
1 point (1 point)
Pages 2, 5 & 7: 184 acres of AIS infestation within 900 acres of littoral zone (20.43%)

- 3) It is well documented (P/I surveys or GIS mapping, verified) that the target species is a rapidly expanding population (doubling annual increase in areal coverage or FOO). Population is still under 25% threshold above.
1 point (1 point)
 Page 2: 300% increase from 2012 to 2013

E) The degree to which the project will be likely to result in successful long-term control.
(4 points possible)

- 1) As also included in the approved management plan, the project employs multiple strategies (for the same species) to achieve and maintain control objectives. [e.g. hand pulling in combination with chemical treatment and biocontrol, draw downs, etc.] **2 points (2 points)**
Pages 1 & 4: the project would utilize multiple approaches as outlined in the approved APM plan, large scale, targeted EWM & CLP herbicide application as well as mechanical harvesting of AIS in near-shore riparian areas
- 2) The sponsor has had a pre-application grant scoping consultation with the Department and the application is consistent with the results of those discussions. **1 point (1 point)**
Page 2, February 1 & July 5, 2013 with Heidi Bunk
- 3) There is a low risk of reestablishment and spread after control activity occurs. All of the following apply: the project site is not impounded; is not tributary to or connected to any other AIS populated water and; the entire AIS population is being targeted for control.
1 point

F) The availability of public access to, and public use of, the water body.

- 1) Any lake of 100 surface acres or greater and any boat-able river that has more than the minimum public boating access as defined in s. NR 1.91(4) or any wetland greater than 50 acres in public ownership. **1 point (1 point)**
- 2) The water provides significant alternative public access and use opportunities that include two of the following at separate locations: public swimming beach; park or other public land with accessible frontage; public fishing pier or wildlife observation area; platted access sites and road rights-of-way reaching the water's edge; two or more private resorts, youth camps or sportsmen clubs; or where more than 50% of the lake or river shore in the project area is in public ownership as documented on the map provided with application. **1 point (1 point)**
Page 1 & 4 and attachment: Waterford Impoundment has two public improved boat landings that exceed NR1.91 requirements for vehicle/trailer parking the minimum requirements under Administrative Code would require parking for 29 units as well as other unimproved public ROW accesses, a public park and picnic/recreation located on its shores in the Village of Waterford, a private boat launch available for public use, private fishing pier for public use, two boat or canoe rental businesses, and access and recreation available within Tichigan Wildlife Area – a designated State Wildlife Area.

G) The degree to which the proposed project includes or is complemented by other management efforts including watershed pollution prevention and control, native vegetation protection and restoration and other actions that help control aquatic invasive species or resist future colonization. (2 points possible)

- 1) Applicant demonstrates that they have implemented, or been a significant participant in a shoreland restoration, habitat protection, sediment and nutrient control, water level management or other substantial lake stewardship activity (not including education or planning) that protects the lake ecosystem. (Score 1 point per action, provide documentation). **2 points (2 points)**

Pages 3, 11 & Attachment A, the District has been involved in numerous shoreland restoration projects, with the County, citizen lake monitoring, and soft sediment analysis and mapping activities.

- 2) The sponsor is a Green Tier Community Charter member. (City of Middleton, Bayfield, Fitchburg, Appleton, Weston, Monona, Eau Claire, La Crosse & the Village of Bayside)

H) Community support and commitment, including past efforts to control aquatic invasive species. (2 points possible)

- 1) This is demonstrated by requesting less than the maximum state share cost rate (cash costs) for the total project costs. No more than 25% of the project match can be in-kind or donated labor. The sponsor is requesting:

65% State share **1 point**

OR

50% State share **2 points (2 points) pages 1, 11, & 15- total cost breakdown**

In order to get points for reducing state funds, any match over and above the standard 25% of total project cost, must be cash. Donated and volunteer labor is limited to 25% of the total project costs.

Project cash cost (75%)	\$33,000
Donated match (25%)	\$11,000
<u>Total project cost (100%)</u>	<u>\$44,000 (for ranking criteria evaluation)</u>
State share requested (50%)	\$22,000
Match	\$22,000
cash match (50%)	\$11,000
donated match (50%)	\$11,000
	\$22,000

(The donated amount is 50% of the match but it is only 25% of the total project cost.)

- 2) The project has financial support from additional management units, interest groups or organizations committing > 10% of the hard cash local match.
1 point
- 3) The sponsor conducted AIS control, consistent with their Department-approved plan, in the previous season without financial assistance from the State. They may have begun implementation without a grant or received grants in past but did not receive a grant in the past season. **1 point (1 point)**

Page 2: The District has solely funded, AIS herbicide treatments as well as all aquatic plant surveys since 2004

I) Whether the sponsor has previously received a grant for a similar project for the same water body. (2 points)

- 1) There has not been an AIS Established Population Control grant for the same species in the same waterbody in the last five years. **2 point (2 points)**
Page 2, the District has not been awarded a grant for a similar project in the last 5 years

J) The degree to which the project will advance the knowledge and understanding of the prevention and control of aquatic invasive species. (1 point possible)

- 1) Project has an evaluation component that will be conducted by an objective outside entity to assess project outcomes or is a participant in a Department-sponsored research and demonstration project on the AIS research priority list. (The list projects is available from your AIS coordinator)

1 point

LAKE CHARACTERISTICS

Tichigan Lake*

County:	Racine
Lake Type:	Flowage
Surface Area:	1,132 acres
Maximum Depth:	63 feet
Mean Depth	6.27 feet
Public Facilities:	Two public, paved boat ramp/landings: one operated by the Village of Waterford with parking for up to 10 vehicle and trailers and the other operated by the WDNR in the Tichigan Lake Wildlife area with parking for up to 20 vehicles/trailers (B1b) .

* - For grant purposes, Tichigan Lake includes the impounded waterway from the Waterford dam upstream to North Bridge Road.

BACKGROUND INFORMATION

Tichigan Lake was created by damming up the Fox River in the City of Waterford. The lake is 1132 acres in size and is located in Racine County in T04N, R19E, S23. Tichigan Lake has two public improved boat landings that exceed NR1.91 requirements for vehicle/trailer parking (29 units **(F1)**) as well 3 other private accesses, a public swimming beach, two businesses providing boat and canoe rentals, privately operated fishing pier open to public use, and picnic/recreation located on its shores in Huening Park in the City of Waterford **(B1b)**. Additionally, the Tichigan Wildlife Area is a State-owned 1500 acre natural area abutting the flowage on its north shore and provides exceptional recreational activities and access **(C2 & F2)**. Being part of the Fox River watershed, the lake has a large agriculture watershed that contributes heavy loads of sediment and nutrients. This loading has created a eutrophic lake with excessive nutrient levels and overabundance of aquatic plants. The more troublesome plants are the aquatic invasive species (AIS) Eurasian water-milfoil (EWM) and, to a lesser degree, curly-leaf pondweed (CLP).

Excessive aquatic plant growth, primarily Eurasian water-milfoil (EWM) and to a lesser degree curly-leaf pondweed (CLP), have been a problem for Tichigan Lake for many years. The Waterford Waterway Management District (WWMD) formed in 2003 to protect and enhance the quality of the lake. An aquatic plant survey conducted in 2003 indicated the large portions of the waterway, especially shallow, soft bottom bays supported vegetation and EWM was listed as one of the most common species. In 2004, a lake management plan was initiated and completed in 2007 with help from the Southeastern Regional Planning Commission (SEWRPC) to lay the groundwork for future lake management; this plan was subsequently updated in 2013. Mechanical harvesting and selective aquatic herbicide control all funded solely by the District have been used in combination with very good success. **(E1)**

WWMD proposed to continue managing EWM using precise herbicide treatments tailored to each individual area's size and volume, which has proven to be successful on this lake. Control of the AIS primarily EWM is necessary to allow recreational use on the lake, improve fish and wildlife habitat, allow reestablishment of native vegetation and decrease the risk of spread of EWM to local lakes. The WWMD is seeking matching funds **(50% State and 50% District shares) (H1)** from the Wisconsin Department of Natural Resources (WDNR) Aquatic Invasive Species (AIS) Control Grant Program to

continue to implement their APM Plan and manage EWM and CLP through selective herbicide treatment (H1). A pre-application telephone conference was held on February 1, 2013 with WWMD board members, Heidi Bunk (WDNR), Craig Helker (WDNR), and Jeffery Thornton (SEWRPC). Another meeting was conducted on July 5, 2013 between WWMD members & Heidi Bunk for an additional review of the grant with an on-the water meeting also scheduled for September 20, 2013 to go over issues and conditions first hand (E2).

PROJECT SCOPE / DESCRIPTION

PREVIOUS GRANTS RECEIVED AND PROJECTS COMPLETED

The WWMD has received three previous grants as follows:

- Two large scale lake planning grants in 2003 for the Lake Management Plan for Waterford Impoundment
 - LPL-889-03 – Phase 1
 - LPL-882-03 – Phase 2
- AIS Education Grant for Exotic Species Information Distribution (ALPL-012-04) -2004

WWMD has not received a grant for a similar type AIS control project proposed within in the last 5 years. (I1) WWMD has completed a number of studies and projects funded through grants as well as funded by the District. The integrated approach to controlling aquatic vegetation including harvesting, chemical treatment, and new treatment strategy techniques has been solely funded by WWMD since 2004. Last season (2012) harvesting of vegetation, including EWM and CLP, was conducted on the lake in conjunction with current management practices within Starks Bay and Buena Lake. These areas will again be selectively harvested again starting in 2014 through 2016. Large scale selective AIS herbicide treatments were completed in 2010-2013 in varying locations throughout the impoundment as follows. All treatments were solely funded by the WWMD, endothall was used for CLP control and liquid 2,4-D was used for the EWM control. (H3)

Year	EWM Treated (ac)	CLP Treated (ac)
2010	48	11
2011	37.18	15.67
2012	34.36	11.06
2013	153.4	31.09

Going into 2013 AIS management, WWMD requested an expanded pre and post-treatment survey based off the full point-intercept survey completed in 2012. All littoral zone locations from the 2012 PI were included in the pre-treatment survey on April 30, 2013. This more intensive survey increased littoral zone points to be sampled by 81% from 288 points to 521 and focused on the entire waterway, allowing for a comprehensive plant community assessment during each forthcoming survey (D3).

However, with the more complete assessment, additional acreage of AIS were located and mapped for management in 2013, including 153.4 acres of EWM and 31.09 acres of CLP overall a 300% increase over 2012 AIS numbers. But, given the large littoral area on the impoundment (approximately 900 acres), it is still under 25% of the littoral area. (D2) These areas were managed on May 8 and 9, 2013 (respectively) to reduce the presence of AIS within the entire system to promote regrowth and increase of abundance of the native plant community. These additional acreages and intensive surveys have also been funded solely by WWMD. A 2013 post-treatment survey has not been completed at the time of this grant but will repeat all pre-treatment point-intercept survey locations (D3).

An update to the 2007 lake management plan has been recently completed in 2013. WWMD again partnered with the SEWRPC to complete this study to determine changes to the waterbody from historical data and management recommendations for the future. This project is very important to the health of the lake since it lays the ground rules water quality and lake improvement. The District is in the process of evaluating and implementing the recommendations within the report (G1).

In addition to aquatic plant management activities, the WWMD has played an active leadership role in lake issues and AIS education and water quality improvement through numerous projects. Last held in 2011, WWMD has sponsored a lake fair and completed an on the water class for local schools to teach the importance of lake stewardship and its role in maintain and improving the health of the lake and surrounding watershed. This program will again be held in 2013 for waterway education (G1) but will target local businesses and local and State politicians to show the importance of AIS control and management. Additionally, Karen Stoll (WDNR) attended the District's October, 2012 meeting to educate WWMD members on proper AIS identification and sampling (A3).

Recently, WWMD hosted a WDNR led training session and educational workshop on AIS and their impact on the waterway. The workshop was a catalyst in promoting the District's goal of AIS reduction and native plant restoration to the local community through a news story in the local paper, announcements to many active and local environmental and educational organizations (Waterford High School, Chamber of Commerce, CAUSE, local businesses, and more), and social media postings and interactions.

WWMD continues to protect the integrity of the waterway through storm water management and erosion control since its formation. Current and already completed projects by the group for lake and water quality improvement by erosion and/or storm water control into the impoundment include the following:

- 2007: Installation of rain gardens on properties up gradient of Tichigan Lake in the Town of Waterford to minimize runoff (G1)
- 2007: Redesign and implantation to slow the flow of water and minimize erosion potential within drainage ways of STH 164 (G1)
- 2007: Improvement of Island View Bay drainage through installation of rain-gardens, shoreline filtration plantings, multiple ditch checks, and extensive raving riprapping to reduce erosion.
- 2010: Repair of erosion control rip-rap to slow and reduce run off velocity and erosion into the Fox River along Grand Drive and Peninsula Road (G1)
- 2012: WWMD initiated a project to measure the depth of soft sediment in multiple bays along the Fox River to monitor increased sedimentation and initiate a potential dredging project in these areas (G1)
- ONGOING: WWMD continues to work in concert with Racine County Land Conservation Department to address current run off issues identified in their plan (G1)
- ONGOING: WWMD issues annual, out-of-pocket grants to riparian landowners to help with installation of rain-gardens and shoreline buffers. As of 2013, there have been 10 of these projects completed with one ongoing in 2013 (G1)
- ONGOING: WWMD actively monitors and inspects silt fence for construction projects on riparian properties (G1)
- ONGOING: Creation of an E-learning center to create easy access for anyone interested in further lake and AIS ecology information:
<http://www.delearning.pbworks.com/w/page/4395643/FrontPage> (G1)
- ONGOING: Citizen Lake Monitoring for secchi, chlorophyll a, and phosphorus for nearly 30 years (G1)
- For additional information on the above projects, rain garden grant program, and more, please see Attachment A (G1)

DESCRIPTION OF PROJECT AREA

Tichigan Lake is an 1132-acre impoundment of the Fox River located in the Village and Town of Waterford in Racine County (maps are provided in the attachments). The lake provides numerous recreational opportunities for a wide spectrum of users including fishing, boating, swimming, bird watching, waterfowl hunting, and leisure activities. The lake is home to one private resort, a large State owned natural area and park, and Huening Park that includes a picnic area and public boat landing with parking for 10 units, and numerous unimproved platted ROW accesses around the lake. (F1, F2) Despite the issues with AIS in this lake, it is listed as an Area of Special Natural Resource Interest due to two NHI endangered species present; the pugnose and starhead top minnows (C2). Protection and enhancement of these water resources is essential to providing continued quality recreation within Racine County and the Village and Town of Waterford. Given this, the District funded a full point-intercept survey completed in August of 2012 by Stantec.

Tichigan Lake offers the following recreational opportunities for sportsman and extended benefits for visitors and local community:

- Recreational boating
- Waterskiing
- Fishing
- Wildlife viewing
- Non-motorized watercraft use
- Aesthetic beauty
- Important habitat for fish and wildlife
- Waterfowl Hunting
- Swimming
- Snowmobiling
- Revenue for local and surrounding communities including real estate taxes and tourism dollars

DESCRIPTION OF PROBLEM TO BE ADDRESSED BY PROJECT

Tichigan Lake has had a continuous problem with excessive nuisance aquatic plant growth. Both native and AIS (CLP and EWM) have impeded navigational and recreational uses on the lake. A majority of the lake and all bays off the Fox River support plant growth with EWM documented throughout much of the lake at relatively high densities. In 2007 an APM Plan was completed and approved by DNR for the lake that outlined an integrated approach of several management techniques; this plan was updated in 2013. Using selective harvesting and herbicides in conjunction is recommended in the plan and has proven to be an effective management program for aquatic vegetation on this lake. The purpose of this project is to seek funding to continue the management outlined in the APM Plan through selective herbicide treatment (E1).

A full PI aquatic plant survey was completed in August of 2012 that documented wide spread distribution of EWM throughout the lake as well as substantial beds of CLP, the last full-impoundment survey that was performed was in 2004. Since 2004, AIS and native aquatic plants were managed using small scale selective herbicide treatments. This proved to have limited effect in controlling the AIS (in particular EWM) and increasing native vegetation abundance and frequency of occurrence. However, in 2011 a large-scale EWM treatment took place on Tichigan Lake proper (the natural lake joined to the impoundment). 36.03 acres were mapped and treated in 2011 with no re-treatment needed in 2012. This same approach was taken in Elm Island Bay in 2012 on 16.46 acres of EWM. The full PI survey in 2012 showed extremely limited regrowth of EWM in the bay with none treated in 2013. Since a vast majority of the lake is within the littoral zone (5' or less in depth ~ 900 acres or 80%), control of CLP and EWM is essential on this lake to maintain navigation and recreation, to allow native vegetation to

compete and reestablish itself, improve fish and wildlife habitat and decrease risk of spread of EWM to other water bodies (D2).

Beginning in 2013, substantially expanded pre and post treatment point-intercept surveys were initiated at the request of WWMD, finding 153.4 acres of EWM and 31.09 acres of CLP which were subsequently treated.

DISCUSSION OF PROJECT GOALS AND OBJECTIVES

The WWMD was formed to manage, protect, preserve and enhance the natural conditions of Tichigan Lake and has completed several projects to improve conditions on Tichigan Lake, which are discussed above. A major concern is the state of the aquatic plant community and the dense stands of AIS that make portions of the impoundment virtually unusable if not controlled. Preliminary project goals and objectives outlined in the plan and which have been discussed include the following action items:

- Effectively manage EWM and CLP through a combination management approach
- Maintain navigation and recreational boating opportunities throughout the lake
- Preserve and expand native aquatic plant communities
- Identify, protect and improve fish and wildlife habitat sensitive areas
- Educate lake users on AIS and native aquatic plant benefits
- Reduce risk of spread of AIS to other water bodies

Throughout this project, the goal is to decrease EWM acreages by 40% annually and CLP by 25% annually because of turion banks. This equates to a projected yearly total of each AIS as follows:

Year	EWM (ac)	CLP (ac)
2014	95	24
2015	57	18
2016	34	13

DESCRIPTION OF ACTIVITIES AND TIMELINE

The project will be completed through several project tasks. A structured program facilitates efficient project completion and limits overall cost. The project consists of the following major tasks and a timeline which are described in further detail below:

2013 Project Tasks (completed and funded by WWMD in 2013)

- Task 1.0 2013 Herbicide Treatment Permit Application & Educational Mailing (*completed*)
- Task 2.0 Pre-Treatment Aquatic Plant PI survey (*completed*)
- Task 3.0 Herbicide Treatment Targeting EWM & CLP (*completed*)
- Task 4.0 Post-Treatment Aquatic Plant Survey & Report (*forthcoming in September*)
- Task 5.0 Install Boat Trailer Cleaning Equipment & Signage (*completed*)
- Task 6.0 Train Citizen Volunteers and Implement CBCW (*120 hours as of 7/15*)

Below are project Tasks not completed for which grant funding is sought

2014 Project Tasks

- Task 7.0 Herbicide Treatment Permit Application & Educational Mailing
- Task 8.0 Pre-Treatment Aquatic Plant PI Survey
- Task 9.0 Herbicide Treatment Targeting EWM & CLP
- Task 10.0 Post-Treatment Aquatic Plant PI Survey & Report
- Task 11.0 CBCW Boat Landing Staffing

2015 Project Tasks

- Task 12.0 Herbicide Treatment Permit Application & Educational Mailing
- Task 13.0 Pre-Treatment Aquatic Plant PI Survey
- Task 14.0 Herbicide Treatment Targeting EWM & CLP
- Task 15.0 Post-Treatment Aquatic Plant PI Survey & Report
- Task 16.0 CBCW Boat Landing Staffing

2016 Project Tasks

- Task 17.0 Herbicide Treatment Permit Application & Educational Mailing
- Task 18.0 Pre-Treatment Aquatic Plant PI Survey
- Task 19.0 Herbicide Treatment Targeting EWM & CLP
- Task 20.0 Post-Treatment Aquatic Plant PI Survey & Report
- Task 21.0 CBCW Boat Landing Staffing

Task 1.0 Spring 2013 Herbicide Treatment Permit Application and Educational Mailing *(completed)*

The WWMD applied for a chemical treatment permit for areas of EWM and CLP within the Lake. Total acreage for the permit application was obtained from the 2013 pre-treatment PI survey, which amounted to a total of 153.4 acres of EWM and 31.09 acres of CLP.

This task included an educational mailing associated with an approved, chemical treatment permit. This includes a copy of the permit, proposed treatment areas, letter of intent, and copy of associated chemical labels to each land owner along the lake shoreline. All action associated with this task will be consistent with NR107.04 (3) and was funded by WWMD in 2013.

Task 2.0 Pre-Treatment Aquatic Plant Survey *(completed)*

Under this task, the consultant completed a pre-treatment point-intercept (PI) aquatic plant survey on April 30, 2013 within the entire Waterford Impoundment. Only presence and density of EWM and CLP were assessed during the survey. Sample points and the sample grid resolution were determined and by the consultant and greatly expanded upon points sampled in 2012, at the request of WWMD. The survey conformed to the WDNR's Hauxwell Pre & Post-treatment protocols and be completed in accordance with WDNR guidance. This survey ensures that areas of the Lake experiencing growth of EWM and/or CLP will be targeted to control and eliminate aquatic invasive plant growth.

Task 3.0 Herbicide Treatment Targeting EWM & CLP *(completed)*

The consultant selectively treated the 2013 permitted application areas of the lake where EWM and CLP on May 8-9, 2013. To minimize impacts to more desirable, native aquatic plants selective aquatic herbicides will be applied for control of EWM and CLP. A liquid herbicide containing 2,4-D (DMA 4) will be applied to target EWM at a rate of 4.0 ppm while a liquid herbicide containing endothal (Aquathol K) will be applied to target CLP at a rate of 2.0 ppm. Both herbicides have been shown to selectively combat infestations of their target plants and are approved by the Environmental Protection Agency and the WDNR for use in aquatic ecosystems. Application of both herbicides will be completed in April/May, based on water temperatures, to minimize impacts to more desirable native aquatic plant communities. An early chemical treatment will occur before water temperatures reach 60°F. Timing of this application is critical to ensure project success and to minimize undesirable impacts to the native aquatic plants.

Task 4.0 Post-Treatment Aquatic Plant Survey & Report *(forthcoming in September)*

Under this task, the consultant will conduct a post-treatment aquatic plant point intercept survey to determine treatment results and potential treatment areas for the following year. All data points

established during the pre-treatment survey will be sampled with presence and density of all aquatic plant species recorded. Additionally, remaining areas of the lake will be surveyed for new growth of AIS and mapped, if found, to be included for future treatments.

The post-treatment survey will follow established WDNR protocols. The post-treatment survey will be scheduled at least 60 days after the AIS treatment, but no later than September 1st to ensure any aquatic plants present can be collected and identified.

Data collected at each sample point will include species presence and density, depth, GPS location, and bottom substrate and will be compiled in the WDNR provided Wisconsin Aquatic Plant Management Spreadsheet (WiAPMS.xl) and submitted to the district.

The consultant will provide a complete report documenting all activities and project specific data. The consultant would prepare an aquatic plant management report update that would describe the following topics:

- Introduction
- Project Summary
- Background Information
- Problem
- Management Objective
- Results
- GIS mapping
- Management Suggestions

The aquatic plant management report and recommendations will be distributed to the District and/or the WDNR for grant requirement purposes. The WDNR required treatment record documenting the proposed project would also be completed and submitted to the Water Resource Management Specialist.

This report will then analyze the pre-treatment surveys of previous years as available for any changes in the AIS presence and abundance, as well as native species, which will be completed on or before November 1, 2013.

Task 5.0 Install Boat Trailer Cleaning Equipment & Signage (completed)

Under this task, WWMD will install aides to help boaters remove vegetation from under their trailer at both public boat landings. Additional signage indicating the location of the nearest vehicle and trailer car-wash facilities to assist in additional boat and trailer cleaning will be posted at both public landings (A2).

Task 6.0 Clean Boats / Clean Waters (partially completed for 2013)

Under this task, the District will partner with Town and Country RC&D who will provide primary support for boat landing monitoring and the District is providing volunteer labor of approximately 50 hours per year as in-kind match. A minimum of 200 hours of boat landing monitoring will be completed in total by both groups as part of this joint effort each summer boating season. (A1)

Task 7.0 Spring 2014 Herbicide Treatment Permit Application and Educational Mailing

The WWMD will apply for a chemical treatment permit for areas of EWM and CLP within the Lake. Total acreage for the permit application will be obtained from the 2013 post-treatment survey. However, for grant cost estimation and based on the annual reduction goal, a total of 95 acres of EWM and 24 acres of CLP are expected to be applied for within the permit (119 total acres - D2).

This task includes an educational mailing associated with an approved, chemical treatment permit. This includes a copy of the permit, proposed treatment areas, letter of intent, and copy of associated chemical

labels to each land owner along the lake shoreline. All action associated with this task will be consistent with NR107.04 (3).

Task 8.0 2014 Pre-Treatment Aquatic Plant Survey

Under this task, the consultant will repeat the 2013 pre-treatment PI survey and include any new areas of AIS found during the 2013 post-treatment PI survey following all guidelines and actions as described in Task 2.0, 2013.

Task 9.0 2014 Herbicide Treatment Targeting EWM and CLP

The consultant will selectively treat the 2014 permitted application areas of the lake where EWM and/or CLP have been confirmed during the pre-treatment survey above. Herbicides to be used and the process of application may be the same as outlined in Task 3.0, 2013, however may change based on 2013 results.

Task 10.0 2014 Post-Treatment Aquatic Plant Survey & Report

Under this task, points sampled during the 2014 pre-treatment survey will be resampled with all aquatic plants present documented with their density and presence. Any new locations of EWM or CLP will be mapped for treatment in following years. At this time, effect of the treatment can be assessed by examining the relative abundance and distribution of targeted AIS. Potential chemical treatment areas, if needed, for 2015 will be mapped under this task. The survey will conform to the WDNR post-treatment protocol and be completed in accordance with WDNR guidance.

The consultant will provide a complete report documenting all activities and project specific data completed in 2014, updating the previous year's report. Any new management activities will be reviewed and recommended, if necessary.

Task 11.0 Clean Boats / Clean Waters

Under this task, the District will continue to partner with Town and Country RC&D, who will provide primary support for boat landing monitoring while the District will provide volunteer labor to cover a portion of this commitment as in-kind match. A minimum of 200 hours of boat landing monitoring will be completed in total by both groups as part of this joint effort each summer boating season.

Task 12.0 Spring 2015 Herbicide Treatment Permit Application and Educational Mailing

The WWMD will apply for a chemical treatment permit for areas of EWM and CLP within the Lake. Total acreage for the permit application will be obtained from the 2014 post-treatment survey.

This task includes an educational mailing associated with an approved, chemical treatment permit. This includes a copy of the permit, proposed treatment areas, letter of intent, and copy of associated chemical labels to each land owner along the lake shoreline. All action associated with this task will be consistent with NR107.04 (3).

Task 13.0 2015 Pre-Treatment Aquatic Plant Survey

Under this task, the consultant will repeat the 2014 pre-treatment survey and include any new areas of AIS found during the 2014 post-treatment survey following all guidelines and actions as described in Task 2.0, 2013.

Task 14.0 2015 Herbicide Treatment Targeting EWM and CLP

The consultant will selectively treat the 2015 permitted application areas of the lake where EWM and/or CLP have been confirmed during the pre-treatment survey. Herbicides to be used and the process of application may be the same as outlined in Task 3.0, 2013, however may change based on 2014 results.

Task 15.0 2015 Post-Treatment Aquatic Plant Survey & Report

Under this task, points sampled during the 2015 pre-treatment survey will be resampled with all aquatic plants present documented with their density and presence. Any new locations of EWM or CLP will be mapped for treatment in following years. At this time, effect of the treatment can be assessed by examining the relative abundance and distribution of targeted AIS. Potential chemical treatment areas, if needed, for 2016 will be mapped under this task. The survey will conform to the WDNR post-treatment protocol and be completed in accordance with WDNR guidance.

The consultant will provide a complete report documenting all activities and project specific data completed in 2015, updating the previous year's report. Statistical comparison in the change of all aquatic plant species sampled during this project will be included to document the response of the macrophyte community. Any new management activities will be reviewed and recommended, if necessary.

Task 16.0 Clean Boats / Clean Waters

Under this task, the District will partner with Town and Country RC&D who will provide primary support for boat landing monitoring and the District will continue to provide volunteer labor to cover a portion of this commitment as in-kind match. A minimum of 200 hours of boat landing monitoring will be completed in total by both groups as part of this joint effort each summer boating season.

Task 17.0 Spring 2016 Herbicide Treatment Permit Application and Educational Mailing

The WWMD will apply for a chemical treatment permit for areas of EWM and CLP within the Lake. Total acreage for the permit application will be obtained from the 2015 post-treatment survey.

This task includes an educational mailing associated with an approved, chemical treatment permit. This includes a copy of the permit, proposed treatment areas, letter of intent, and copy of associated chemical labels to each land owner along the lake shoreline. All action associated with this task will be consistent with NR107.04 (3).

Task 18.0 2016 Pre-Treatment Aquatic Plant Survey

Under this task, the consultant will repeat the 2014 pre-treatment survey and include any new areas of AIS found during the 2015 post-treatment survey following all guidelines and actions as described in Task 2.0, 2013.

Task 19.0 2016 Herbicide Treatment Targeting EWM and CLP

The consultant will selectively treat the 2015 permitted application areas of the lake where EWM and/or CLP have been confirmed during the pre-treatment survey. Herbicides to be used and the process of application may be the same as outlined in Task 3.0, 2013, however may change based on 2015 results.

Task 20.0 2016 Post-Treatment Aquatic Plant Survey & Report

Under this task, points sampled during the 2016 pre-treatment survey will be resampled with all aquatic plants present documented with their density and presence. Any new locations of EWM or CLP will be mapped for treatment in following years. At this time, effect of the treatment can be assessed by examining the relative abundance and distribution of targeted AIS. Potential chemical treatment areas, if needed, for 2017 will be mapped under this task. The survey will conform to the WDNR post-treatment protocol and be completed in accordance with WDNR guidance.

The consultant will provide a complete report documenting all activities and project specific data completed in 2016, updating the previous year's report. Statistical comparison in the change of all aquatic plant species sampled during this project will be included to document the response of the macrophyte community. Any new management activities will be reviewed and recommended, if necessary.

Task 21.0 Clean Boats / Clean Waters

Under this task, the District will partner with Town and Country RC&D who will provide primary support for boat landing monitoring and the District will continue to provide volunteer labor to cover a portion of this commitment as in-kind match. A minimum of 200 hours of boat landing monitoring will be completed in total by both groups as part of this joint effort each summer boating season.

DESCRIPTION OF DATA TO BE COLLECTED

Response of the plant community to the integrated management using selective herbicide will be documented through various aquatic plant surveys. Pre-treatment surveys for the areas receiving herbicide will be conducted according to DNR protocol. These surveys will be used to document pretreatment conditions by collecting the following data:

- Water temperature
- AIS presence and density at sample points (pre-treatment survey)
- Calculations of AIS treatment area(s) by using GIS polygons
- Water depth within AIS beds

All aquatic plant survey data will be summarized and the data tabulated in the WiAPMS excel program.

Post-treatment surveys will be used to determine location and density of all aquatic vegetation throughout the lake. The aquatic plant survey will collect the following data:

- Geographic coordinates of sample point locations in WTM coordinate system
- Species present (native and exotic)
- Estimates of species abundance (frequency of occurrence, relative frequency of occurrence, rake fullness density ratings)
- Water depth
- Sediment composition (where observed)
- Aquatic plant distribution (emergent, floating, floating-leaved, and submergent aquatic plant types)
- Simpson Diversity Index of plant community
- Floristic Quality Index of plant community

The data collected during the post-treatment surveys will be used to determine the response of the plant community to the various methods of the treatment and to provide data on areas that may need herbicide treatment the following spring.

DESCRIPTION OF PROJECT PRODUCTS OR DELIVERABLES

The following is a list of project deliverables:

- Consultant attendance at one public kick-off meeting pertaining to the treatment timing and logistics in March 2014
- Maps and data sheets from pre and post treatment PI surveys
- Annual report summarizing treatment and vegetation response

The annual reports will include the results of all aquatic plant surveys. The report will include data tables summarizing the plant survey data and geographic locations of sampling points. The report will also include lake maps illustrating sampling points, distribution/abundance of aquatic plant species, and proposed management areas. A section will compare the distribution/abundance of the AIS species following the various treatments to determine effectiveness and longevity of treatments. Native vegetation distribution/abundance will also be tracked to determine if populations are expanding.

DISTRICT ACTIVITIES AND EDUCATION EFFORTS

WWMD is involved in a number of activities that help to educate the public, monitor and control AIS in the lake, stop the spread of AIS into and out of the lake, and care for the overall health of the Waterford Impoundment. Beginning, in 2013, they initiated an active Clean Boats, Clean Waters program in conjunction with Town and Country Resource Conservation and Development on the lake that monitors the public boat landings. WWMD runs and monitors the program by coordinating required training for inspectors, enrolling several volunteers to become monitors, running promotions, and overseeing the entire execution of the CB/CW program on the waterway. WWMD is currently monitoring the public boat landings for at least 200 hours during the 2013 boating season with at least 25% of this is volunteer labor from the District members. All data will be entered into SWIMS (A1 & A3). The project partners plan on extending this CB/CW program through 2016 as part of this grant. This will continue to be a joint effort with Town and Country RC&D staff as well as trained citizen volunteers. The District has also installed informational signs and maps at the landing alerting boaters of AIS present in the lake to identify the species of concern and stop the spread of AIS by displaying the locations of the nearest vehicle and trailer accessible car-washes to help with AIS removal. There were also tools placed at each landing to aide boaters in cleaning off their boats with garbage cans present for plant disposal (A2).

The District continues to show its commitment to AIS prevention, reduction, and education through numerous projects in 2013, including a substantial increase in monetary commitment to these activities. They have requested more in depth pre and post-treatment surveys than required by WDNR, providing an increased understanding of the entire impoundment and better monitoring of native plant community response. Their education and outreach program continues to expand and focus on not only AIS issues, but water quality as well through projects too numerous to list here (Attachment A – G1).

DESCRIPTION OF EXISTING AND PROPOSED PARTNERSHIPS

The WWMD is proposing a partnership with the WDNR to complete the above described project. The proposed partnership will include financial contributions from both the WWMD (50%) and WDNR (50%) (H1). The WWMD will complete volunteer tasks and will work with the consultant to complete technical components of the project and provide information to the public during the public informational meeting. When local community, governments and organizations learned of the proposed project, they reacted positively, and provided letters of support. The following organizations expressed support for the project:

- Fox River Citizens Against Underground Silt and Erosion
- Runzheimer International
- Doc's on the Fox
- Waterford Chamber of Commerce
- Town and Country Resource Conservations & Development

Evidence of support for the project is documented in the letters of support provided (see attachments). WWMD completed an intensive lake management study with SEWRPC and is partnering with them currently to update the plan for current issues. WWMD currently has active, established partnerships with the Fox River Citizens Against Underground Silt and Erosion, Town and Country Resource Conservation & Development, Waterford Chamber of Commerce, and the Fox River Commission for multiple past and current projects.

DISCUSSION OF ROLE OF PROJECT IN PLANNING AND/OR MANAGEMENT OF LAKE

The project plays a valuable role in the overall planning and management of Tichigan Lake and in the implementation of the approved APM Plan and creation of the new APM plan. The APM Plan outlines an integrated management strategy combining selective timed harvesting and herbicide treatment to control

AIS. The effectiveness of this combination approach will be evaluated through pre and post-treatment surveys. Comparisons of results to each herbicide treatment in this project and past projects will be made, dating back to 2010, and will be used to plan future AIS management and activities based on results achieved and goals set for the impoundment.

PLAN FOR SHARING PROJECT RESULTS

The consultant will provide the WWMD with a final paper and electronic copy (CD or media card format) of each annual project report. A hard copy and electronic copy of the report and data will also be filed at the appropriate WDNR Service Center. The electronic project report files can be used to duplicate the project report. Copies will be made available to the local library, SEWRPC, the WWMD website and any partners that provided letters of support, if they are requested. Project results will also be shared during a public informational meeting where a presentation will be provided by the consultant (see deliverables section). The WWMD will invite local media, project partners, and interest groups to the public informational meeting.

OTHER INFORMATION IN SUPPORT OF PROJECT NOT DESCRIBED ABOVE

Since forming in 2003, the Waterford Waterway Management District has been stewards for the Lake with several projects completed. Because of their commitment to the resource, an abundance of support for the proposed project exists from the local community, as discussed earlier. Additional support not previously described also exists such as local businesses, campgrounds, resorts, restaurants, fishing and wildlife guides, Ducks Unlimited and bait and sport shops all rely on tourism for their continued livelihood. These business owners most certainly support local efforts to improve recreational opportunities on area lakes and streams.

Additionally, local residents who chose the waterway as the location for their home or vacation property want protection of the quality water resources that provides the recreational opportunities and aesthetic enjoyment they desire in a community. Local residents are especially supportive of projects that are able to leverage their dollars for additional financial assistance, reducing out of pocket expenses.

ITEMIZED BREAKDOWN OF EXPENSES

The following provides a breakdown of the overall project expenses by each major project task.

2013*

Task 1.0* Herbicide Treatment Permit Application & Educational Mailing	
• Prepare WDNR large scale Permit Application and Liaison with WDNR	\$250.00
• WDNR Permit Fee 50 acres * \$25/acre + \$20 fee	\$1,270.00
• Base fee \$150 * \$1.50 each piece * 1,020 pieces	\$1,680.00
• Sign posting	\$500.00
Task 2.0* Pre-Treatment Aquatic Plant survey	\$3,250.00
Task 3.0* Herbicide Treatment Targeting EWM & CLP	
• Mobilization, equipment, vehicle/boat and per diem:	\$600.00
EWM:	
• Liquid 2,4-D @ 8.0 gal/acre @ \$168/acre * 157 acres	\$26,376.00
• Labor/equipment \$65/acre * 157 acres	\$10,205.00
CLP:	
• Aquathol K 3.75 gal/acre @ \$299.70/acre * 31 acres	\$9,290.70
• Labor/equipment \$65/acre * 31 acres	\$2,015.00
Sub-total Task	\$48486.70
Task 4.0* Post-Treatment Aquatic Plant Survey & Report	\$3,850.00
Task 5.0* Install Boat Trailer Cleaning Equipment & Signage	\$500.00
Task 6.0* Volunteer Labor CB/CW 50 hours @ \$12/hour in-kind	\$600.00
Total Costs Already Incurred by the District for 2013*	\$60,386.70

* Costs for these tasks were incurred and funded solely by WWMD in 2013 and are displayed to illustrate the substantial financial support taken on by the District. **They are not included in the grant total.**

2014

Task 7.0 Herbicide Treatment Permit Application & Educational Mailing	
• Prepare WDNR large scale Permit Application and Liaison with WDNR	\$250.00
• WDNR Permit Fee 50 acres * \$25/acre + \$20 fee	\$1,270.00
• Base fee \$150 * \$1.50 each piece * 1,020 pieces	\$1,680.00
• Sign posting	\$500.00
Task 8.0 Pre-Treatment Aquatic Plant survey	\$3,300.00
Task 9.0 Herbicide Treatment Targeting EWM & CLP	
• Mobilization, equipment, vehicle/boat and per diem:	\$600.00
EWM:	
• Liquid 2,4-D @ 8.5 gal/acre @ \$180/acre * 95 acres	\$17,100.00

Task 18.0 Pre-Treatment Aquatic Plant survey	\$3,400.00
Task 19.0 Herbicide Treatment Targeting EWM & CLP	
• Mobilization, equipment, vehicle/boat and per diem:	\$700.00
	EWM:
• Liquid 2,4-D @ 8.5 gal/acre @ \$200/acre * 34 acres	\$6,800.00
• Labor/equipment \$85/acre * 34 acres	\$2,890.00
	CLP:
• Liquid endothall@ 4.0 gal/acre @ \$335acre * 13 acres	\$4,355.00
• Labor/equipment \$85/acre * 13 acres	\$1,105.00
Sub-total	\$15,850.00
Task 20.0 Final Post-Treatment Aquatic Plant Survey & Report	\$4,200.00
Task 21.0 CB/CW staff person through Town & Country RC&D 200 hrs*\$12/hr	\$2,400.00
Total Costs for 2016	\$29,880.00
Total project costs 2014 - 2016	\$113,183.00
	WDNR Grant Request 50%
	\$56,591.50
	District Share - 50%
	\$56,591.50

These consulting service costs include labor, equipment, travel time, and direct costs to complete the field work, data collection, scheduled meetings, and reporting for the proposed scope of work.

FIGURES

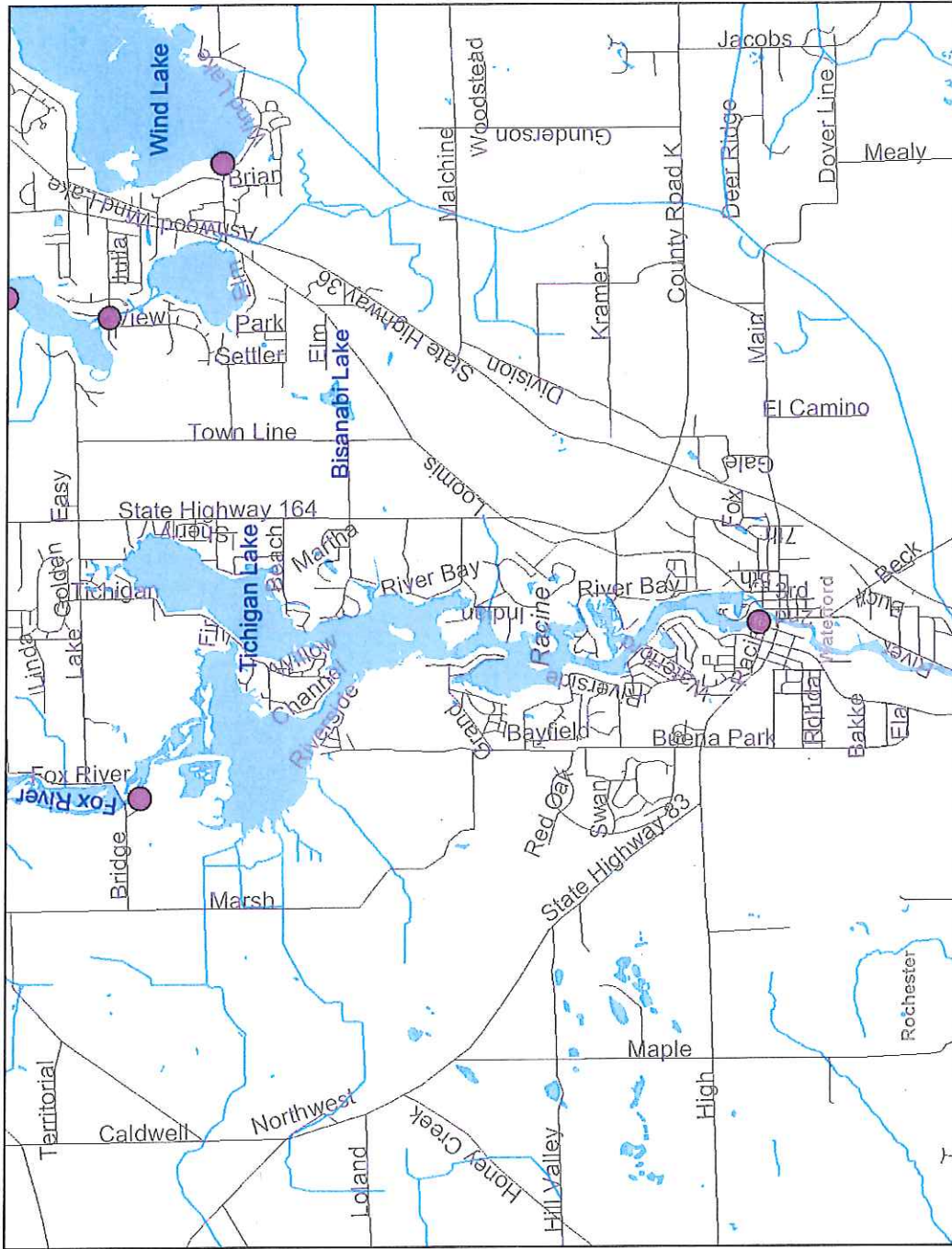


Project Boundaries & Public Access Sites



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



Scale: 1:69,387



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.

RESOLUTION

Aquatic Invasive Species Control Grants

Resolution # 2013-01

RESOLUTION OF Waterford Waterway Management District (WWMD)
County of Racine, WI

WHEREAS, Tichigan Lake (Bridge Road to Dam) is an important resource used by the public for recreation and enjoyment of natural beauty; and

WHEREAS, public use and enjoyment of, Tichigan Lake (Bridge Road to Dam) is best served by protection of, Tichigan Lake (Bridge Road to Dam) from infestation of aquatic invasive species; and

WHEREAS, we recognize the need to provide information or education about aquatic invasive species; and

WHEREAS, we are qualified to carry out the responsibilities of an aquatic invasive species control project.

NOW, THEREFORE, BE IT RESOLVED THAT the Waterford Waterway Management District (WWMD) requests grant funding and assistance available from the Wisconsin Department of Natural Resources under the "Aquatic Invasive Species Control Grant Program" and hereby authorizes Stephanie Boutsikakis to act on behalf of Waterford Waterway Management District (WWMD) to:

- submit an application to the State of Wisconsin for financial aid for aquatic invasive species control purposes;
- sign documents;
- take necessary action to undertake, direct, and complete an approved aquatic invasive species control grant; and
- submit reimbursement claims along with necessary supporting documentation within six months of project completion date.

BE IT FURTHER RESOLVED THAT the Waterford Waterway Management District (WWMD) will meet the obligations of the aquatic invasive species control project including timely publication of the results and meet the financial obligations of an aquatic invasive species grant, including the prompt payment of our 50% commitment to aquatic invasive species control project costs.

Adopted this day 26 of January 26, 2013

By a vote of: 7 in favor 0 against 0 abstain

BY:



Chair person
Secretary/Clerk of

WWMD

Stephanie Boutsikakis

NOTE: Management Unit as defined in s. 281.68, Wisconsin Statutes, or defined in s. 281.70, Wisconsin Statutes, are counties, cities, towns, villages, town sanitary districts, public inland lake protection and rehabilitation districts, qualified lake associations, qualified river management organizations, nonprofit conservation organizations, or other local governmental units established for the purpose of lake management or river management.

The management unit's representative must be indicated by naming a position or a person who is either an official or employee of the management unit. By naming a position instead of a specific person, a new resolution does not have to be submitted to the DNR if there is turnover in the position. A contracted consultant to the sponsor cannot be the authorized representative. The resolution may not pass on grant responsibility to another group or organization.

LETTERS OF SUPPORT



Waterford Area Chamber of Commerce
102 East Main Street Waterford, WI 53185
O: 262.534.5911
F: 262.534.6507
www.waterford-wi.org
chamber@waterford-wi.org

July 22, 2013

Waterford Waterway Management District
Aquatic Plant Control Committee
Post Office Box 416
Waterford, Wisconsin 53185

To Whom It May Concern:

The Waterford Area Chamber of Commerce would like to support the Waterford Waterway Management District in seeking a grant for Established Population Aquatic Invasive Species Control. We appreciate the importance of controlling the invasive species of aquatic vegetation in our local lakes and waterways, to gain and maintain a more environmentally balanced water system for our area residents to enjoy. A healthy waterway will attract additional visitors to our area, thereby increasing the exposure of our existing businesses and increasing their revenues. In addition, clean waterways could have the potential to attract more businesses to boost the local economy.

We greatly appreciate your efforts in pursuing this grant and proudly offer our support.

Sincerely,

A handwritten signature in black ink, appearing to read "Meghan Giese". The signature is fluid and cursive, with a large, stylized initial "M".

Meghan Giese, President
Waterford Area Chamber of Commerce

Board of Directors

James D. Gage, James D. Gage
Consulting

Earlene Ronk, Retired Administrator,
Countryside Home

Greg David, Jefferson County Board

Lisa Conley, Environmental Advocacy

Ruth Johnson, Retired, DNR Water
Resources

Will Green, Mentoring Positives

Chris Gutschenritter, CSA Farmer, Atty

Ray Ellenberger, Farm Service Agency

Anna Healy, DATCP

Dwayne Sperber, Wudeward
Products, Inc.

Town and Country RC&D First Principles

When development and change are in
harmony with the natural systems
that sustain us, imagination, creativity
and ingenuity are limitless.

Strong partnerships built upon the
social values of fairness, honesty,
responsibility, compassion and
respect build strong community and
shared prosperity.

When community and local food
systems are integrated, the
economic, environmental, social and
spiritual healthy and vitality of
communities are enhanced.

Stewardship of social and ecological
resources is necessary to enhance
the quality of life for subsequent
generations.

Ecopreneurs supported and educated
in these principles will develop
businesses that prosper and provide
the region with innovative and
essential products and services.



www.tacrcd.com 920-541-3208 admin@tacrcd.com PO Box 333, Jefferson, WI 53549

July 29, 2013

Waterford Waterway Management District

PO Box 416

Waterford, Wisconsin 53185

To Whom This Concerns,

Town and Country RC&D writes in support of the Waterford Waterway Management District's (WWMD) grant for Established Population Aquatic Invasive Species Control.

We have had the opportunity to partner with WWMD to participate in the Clean Boats, Clean Water (CBCW) program, and we have found the group to be communicative, easy to work with, and excellent stewards of CBCW funds. Stephanie Boutsikakis has been a great on-site supervisor for our intern, Karissa Chinault, and the program is leveraging volunteer and paid time getting education to boaters, as intended.

Town and Country RC&D is concerned about aquatic invasive species in southeastern Wisconsin waters and urges the DNR to continue with effective control programs for the sake of habitat protection, biota integrity, and the social and economic benefits of healthy surface waters.

Sincerely,

A handwritten signature in black ink that reads "James D. Gage". The signature is written in a cursive, slightly slanted style.

James D. Gage

President

Handwritten text, possibly bleed-through from the reverse side of the page, consisting of a vertical column of characters.



July 26, 2012

Waterford Waterway Management District
Aquatic Plant Control Committee
Post Office Box 416
Waterford, Wisconsin 53185

To Whom It May Concern:

We would like to support the Waterford Waterway Management District in seeking a grant for Established Population Aquatic Invasive Species Control. We appreciate the importance of controlling the invasive species of aquatic vegetation in our local lakes and waterways to gain and maintain a more environmentally balanced water system for area residents to enjoy. The Waterford area is a great place to visit and having a healthy waterway will also promote tourism and grow revenues for local businesses. Having one of the biggest waterways in the state comes with a great responsibility to take care of this precious natural resource for generations to come. We greatly appreciate your efforts in pursuing this grant and offer our support.

Sincerely,

A handwritten signature in black ink that reads 'Jackie Strelow'. The signature is written in a cursive, flowing style.

Jackie Strelow, PHR
Runzheimer International
Runzheimer Foundation



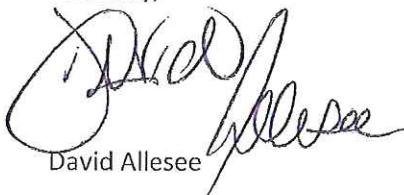
July 12, 2013

Waterford Waterway Management District
Aquatic Plant Control Committee
PO Box 416
Waterford, WI, 53185

To Whom It May Concern:

Doc's on the Fox, Inc. would like to support the Waterford Waterway Management District in seeking a grant for Established Population Aquatic Invasive Species Control. We appreciate and understand the importance of controlling the invasive species of aquatic vegetation in our local lakes and waterways to maintain a more environmentally balanced water system for the residents in our area to enjoy. We truly appreciate your efforts in pursuing this grant and offer all our support.

Sincerely,

A handwritten signature in black ink, appearing to read "David Allesee". The signature is written in a cursive, flowing style with a large initial "D".

David Allesee

Doc's on the Fox - Owner

C.A.U.S.E.

Waterford Waterway Management District
Post Office Box 416
Waterford, Wisconsin 53185
July 23, 2012

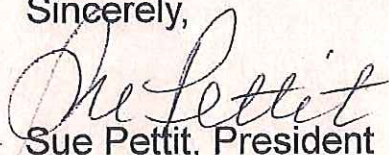
Fox River Citizens Against Underground Silt and Erosion (Fox River CAUSE) is pleased to endorse and support the Waterford Waterway Management District (WWMD) application to receive a matching grant for "Established Population AIS Control" to control invasive species in the Fox River and Tichigan Lake district.

The Fox River CAUSE is a 501c3 organization that has been in existence since 1999. This group of volunteers has worked to restore the same waterway by sponsoring activities including river cleanups, Carp Roundups, phosphate free fertilizer sales and Rain Garden development along the river.

WWMD and the Fox River CAUSE have collaborated on various activities in the past including the Pontoon Classroom, fish stocking and rain garden implementation in the district.

We look forward to our continued association with the WWMD.

Sincerely,



Sue Pettit, President

Fox River CAUSE
Post Office Box 297
Waterford, Wisconsin 53185

ATTACHMENT A



Waterford Waterway Management District

"Changing our World, One Drop at a Time"

WWMD Information for Grant requests:

The WWMD is continuing its efforts to protect and rehabilitate the Fox River, Buena Lake, Conservancy Bay, and Tichigan Lake.

Waterway Education:

Pontoon classroom program aimed at riparian owners, chamber of commerce, high and middle school students brings to light the importance of the waterway to our community.

Four student and two adult pontoon classroom events have taken place to date. One community event is planned for 2013.

Rain Garden Grant Program:

Riparian owners are offered a \$500.00 grant, one every year for the WWMD on-going rain gardens, a commissioner will inspect the site and make sure that it is strategically placed to stop run-off into the waterway. 10 gardens have been awarded and one has been awarded on Buena Lake in 2013 and is in process.

Two run-offs at Jefferson into the west side of the Fox River have been identified and the WWMD will plan in 2013 or 2014 to have two rain gardens placed at that location to filter run-off into the Fox River once approved by the board.

Fox River Island View Bay Point Project:

Approved by the WDNR, a landscaper was hired in 2012 to move boulders, rocks and logs to the shore line for fish beds.

Pre and Post Construction Projects:

Destruction of Dooley's Bar and construction of residential in 2010, created a huge rip rap project on Lake Tichigan, part of WWMD pre and post construction barrier to the waterway.

Construction in 2011 of extended Living project has added a retention pond south of North Lake Rd. and east of Rt.164, part of WWMD pre and post construction barrier to Lake Tichigan.

Construction in 2013 of Docs on the Fox restaurant, created a large rip rap project on the Fox River, part of WWMD pre and post construction barrier to the waterway.

On-Going Special Projects:

Since Rt. 164 construction in May of 2013, between Dorie Lane, Poplar Circle and Rt.164 sediment run off into Lake Tichigan is in the process of investigation, an engineering study will have to be taken.

Run-off from a retention pond at Beach Drive and Rt.164 is also being investigated by WWMD Special Projects committee, as well as a creek just south running onto Lake Tichigan, an engineering study will have to be taken.

Parcel on West Peninsula Drive owned by the Town of Waterford has an erosion problem. It has been presented to the town board for expenditure of a rip rap project. WWMD Special Projects committee is waiting for a response from the board if they will finance, if not, WWMD will raise funds and pursue a permit to proceed with a rip rap project to control shoreline erosion.



Waterford Waterway Management District

"Changing our World, One Drop at a Time"

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Waterford Waterway Management District

Storm Water Abatement Initiatives

Since the formation of WWMD the one of the primary goals has been the control of unwanted storm water run-off into the waterways within the district namely Tichigan Lake, the Fox River and all of its bays and inlets. The following is a list of actions that corroborate that incentive.

- Working in hand with Racine County, established 12 major run off areas. 8 with primary feasibility potential.
- Implemented the following storm water abatement projects:
 1. Poplar Circle / Birch lane Ravine, filtration basin, velocity suppression, culvert rip rap, ravine dissipation, 250 ft of shoreline filtration plating.
 2. Idelwood Court. Ditch configuration, culvert relocation, filtration basin, and major ravine velocity suppression measures.
 3. Wood Drive. Ditch configuration, culvert improvements, ditch suppression, and 2 major ravine suppression improvements filtering water run off into Island View Bay.
 4. Elm Island Bay. Simple ditch suppression measures. Although the bay waters are highly infiltrated with silt, land configuration, a cemetery, and existing marshes prevent major actions.
 5. Grand Drive. Installation of riprap velocity and erosion barrier along the Fox River shoreline.
- Working with the developer on Phase 2 of Fowlers Bay the district was active in improving run off abatement measures that affect waters impacting the Tamarack Bog, a SE Wisconsin environmental treasure.
- Established a pre and post construction filtration fence barrier regulations for all new construction of riparian properties and those affecting the waterway.
- Working with the Town of Waterford, initiated the development of Storm Water Ordinance controlling and regulating storm water retention on all construction and development. The first Town to adopt these controls in Racine County.
- The ordinance controlled the run off identified on the remaining areas of the original 12 surrounding the waterway then under development planning. eg. Fox water Bay, Fox River Crossing.
- Established a rain garden grant program. Starting with an informative seminar open to all residents, the district provided monies for approximately 10 rain gardens on riparian properties.
- Educated and informed property owners and local school children on the importance of storm water abatement through the Pontoon Classroom program.
- Worked with and supported the efforts of other agencies (C.A.U.S.E. and FRC) to improve all aspects of waterway improvement within and outside of district boundaries.
- Currently monitoring the DOT project of STH 164 widening that may have velocity and volume run off impact on the waterway.



Clean Boats, Clean Waters Volunteer Training Event

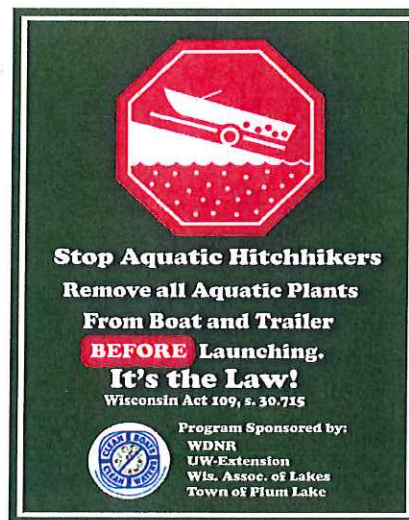
When: On Saturday, April 27, 2013, 1:30 – 4:30 pm

Where: Waterford Town Hall
415 North Milwaukee Street

Free training session to anyone interested in participating in our new Clean Boats Clean Waters (CBCW) program. Christina Wolbers, Aquatic Invasive Plant Specialist with the Wisconsin Department of Natural Resources (WDNR) will lead the activity. This session will prepare volunteers to conduct Clean Boats Clean Waters watercraft inspections at our boat launch sites.

The WWMD is collaborating with Town and Country Resource Conservation and Development (TCRCD) to provide this proactive approach to preventing unwanted Aquatic Invasive Species from entering our waterway. All individuals who complete the workshop can then volunteer to serve as watercraft inspectors this season. Students who would like to complete their community service hours are encouraged to attend.

Refreshments will be served. Questions call 630-306-9620



Buena Lake culvert is currently under investigation to find out when and why it was closed and will need to have an engineering study, once approved by the WWMD board in 2013 to proceed if engineering study shows a need for the culvert for water flow.

Visit the District's website www.waterford-waterway.com

Go to Committee's, click on "Information and Education" then click on:

Learning Opportunities:

[WWMD eLearning Center](#)

Upcoming Events can now be found on our Calendar of Events page and on [Facebook!](#)

- A tour to maintain the 2007 WWMD Rt.164 project with commissioner Don Baron, former commissioner Norm Abplanalp, WDNR Jim D'Antuono and WI-DOT is scheduled for Thursday 7-11-13; plans and pictures of the WWMD project have been sent pre WI-DOT Rt.164 project so they can maintain the velocity and volume run off impact to Lake Tichigan.
- WWMD will have a booth at the Waterford Chamber of Commerce Balloon fest on July 20 to help get the word out about all WWMD projects, rain garden grants and educational pontoon classrooms.
- A tour of our waterway is scheduled on 8-8-13 with the Chamber of Commerce members to explain why a healthy waterway is essential to sustain "Waterford's New Economy" by increasing tourism, water recreation and successfully enriching the quality of life for all its inhabitants.
- Second Public outreach meeting to be scheduled in September 2013