Shawano County AIS Program Implementation

Shawano Lake (south shore)

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Introduction

Aquatic Invasive Species (AIS) are an on-going concern throughout Shawano County and Wisconsin. They have been increasing at a steady rate throughout the past two decades. The lakes, rivers and other waterways of Shawano County are important natural resources enjoyed by the public for water dependent recreation and their natural beauty. Water bodies within Shawano County also have a significant impact on the local economies and should be afforded protection from AIS. Shawano County staff, residents and public officials have joined forces over the past 2 ½ years to protect these valuable water resources. Through this process the Shawano County Aquatic Invasive Species Partnership (SCISP), a multitude of interested stakeholders, has been established. This invasive species project proposal combines state and local resources to continue implementation of an effective education, monitoring and prevention program for long term water quality benefits. An Aquatic Invasive Species (AIS) Coordinator is needed for implementing our prevention and control strategies, as well as continuing to build on our public education component for AIS issues. State grant funding is necessary to support this position and program as Shawano County does not currently have tax levy funding for another paid position.

PROJECT AREAS AND ACTIVITY

The main goal is to focus on implementing the AIS components of the recently (June 26, 2013) approved Shawano County Invasive Species Strategic Management Plan. This strategic plan attempts to complement existing efforts approved by the Wisconsin Department of Natural Resources and local lake organizations. The plan outlines approaches and supporting tasks in education, monitoring & prevention and control of invasive species. The majority of project activity will take place with lakes in the Shawano Lake Watershed including, but not limited to: Shawano Lake (a Statewide AIS Source Water) and outlet channel, Loon Lake, Lulu Lake, Washington Lake and White Clay Lake. These lakes are utilized by surrounding property owners as well as the general public for many recreational opportunities. The remaining hours will be used for countywide implementation of the aforementioned plan. Public outreach, a significant part of our program, is the primary component to address the introduction and spread of aquatic invasive species (AIS) to and from Shawano County. Coordinating and assisting with invasive species management, specifically physical and chemical control efforts, has already begun and will continue.

All lakes mentioned have active lake associations/districts and have completed comprehensive lake management plans that cover aquatic invasive species issues including education, prevention and management.

Shawano Lake

Shawano Lake is situated in Shawano County in northeastern Wisconsin. It is a hard water drainage lake with multiple inlets and one major outlet, the Wolf River. Shawano Lake is approximately 6,178 acres, with an average depth of approximately 9 feet and a maximum depth of approximately 42 feet. The shoreline length is estimated at 18 miles. The Towns of Wescott and Washington and the Village of Cecil border Shawano Lake. Aquatic invasive species known to exist in Shawano Lake are Zebra Mussel, Banded Mystery Snail,

Shawano Lake Park/Campground

Chinese Mystery Snail, Rusty Crayfish, Eurasian Water Milfoil (EWM), Hybrid Eurasian/Northern Milfoil and Curly-leaf Pondweed.

Activities

Shawano Lake is a popular lake for recreational fishing, boating, swimming, water skiing, bird watching, hunting, and other outdoor activities. It is currently a eutrophic lake with elevated levels of algae blooms, nutrients and nuisance aquatic plants. Aquatic plant management is a major management objective for the lake. Shawano Lake is one of the most heavily fished lakes in the area. It contains many species of fish including walleye, largemouth bass, northern pike and panfish. Ice fisherman concentrate on northern pike and panfish. Fishing tournaments are common on the lake. Two ice racing tracks are also used on the lake in the winter.

Development

Shawano Lake is heavily developed, with around 1000 residential housing units surrounding most of the shoreline. It also lies within the Shawano Lake Sanitary District, so all dwellings have sanitary sewers and public water supply. There are many resorts and cabin rentals on the lake.

Fishing and Wildlife

Shawano Lake is managed as a warm water fishery. The primary game fish species are northern pike, largemouth bass, and walleye. The predominant panfish are bluegill, black crappie, yellow perch and pumpkinseed. Good natural reproduction supports the fishery. Over the last ten years a musky population has been established and is maintained by annual stocking. A walleye spawning reef was developed on Shawano Lake in the mid 1980's. Annual fall electro fishing surveys are conducted on the lake to monitor the reproductive success of walleye and largemouth bass, with periodic spring fyke netting surveys conducted to monitor the overall fishery.

Shawano Lake is important as a resting stop for migrating waterfowl. Numerous species of wildlife inhabit the undeveloped shoreland areas. Standing dead and dying trees (snags) on the uplands provide habitat for various species of birds and insects, including bald eagles, bats, woodpeckers and songbirds. Several species of mammals and birds use cavities in trees for dens. Salamanders, small mammals, and invertebrates use downed and rotting logs for protection, feeding and breeding sites. Downed trees in or at the water's edge (woody cover) are especially valuable for resting and feeding areas. Aquatic and wetland vegetation at or near the water's edge provides critical habitat for small mammals, amphibians, reptiles, birds and fish at all life stages.

Lake Access

Residents and the general public have many opportunities to access these waterbodies. There are over 100 public access locations within Shawano County. Shawano Lake has about 25 access points, which are a combination of public and private landings and town owned fire lanes. These landings can hold 200 + car/ trailer parking spaces. A county park is located on Shawano Lake, with a campground, swimming beach, boat launch and boat/trailer washing station. A

Boat/trailer washing station

Shawano Lake – Cecil Sandbar

second park is located within the Village of Cecil, which is also used as an access point for one of the ice racing tracks. Two heavily used sandbars are located on Shawano Lake. One lies at the beginning of the Wolf River Channel (Airport) and the other is near Cecil Bay. It is not uncommon to see a combination of 200 boats at these sandbars on summer weekends. Shawano Municipal Airport is also located on Shawano Lake and uses part of the lake for a runway. It is frequently used for pontoon plane take-offs and landings during the summer months.

Washington Lake


Washington Lake – South shore

Washington Lake is connected by a channel to Shawano Lake on its northern side. It is approximately 75 acres with a mean depth of 9 feet and 1.45 miles of shoreline. Washington Lake is a popular lake for recreation and fishing and has one public boat landing that can accommodate about 12 boat/trailer units. Washington Lake has been plagued with Eurasian Water milfoil (EWM) and has spent thousands of dollars with chemical treatments to manage it. Zebra mussels were first documented in Washington Lake in 2012. This was not a surprise since zebra mussels inhabit the connecting Shawano Lake. Washington Lake is involved with UW-Extension Clean Boats Clean Waters program.

Upper Red Lake


Upper Red Lake – North shore

Upper Red Lake, also known as the Gresham Pond, is a 188 acre impoundment of the Red River. It has a maximum depth of 15 feet and 4.8 miles of shoreline. Upper Red is a popular lake for fishing and has 2 public boat landings. One landing on the North shore can accommodate about 10 boat/trailer units and one on the south shore. To date the only aquatic invasive species known to exist on Upper Red are Banded Mystery Snail, Chinese Mystery Snail, Eurasian Water milfoil (EWM) and Curly-leaf Pondweed. The Lake District did stock the EWM eating weevil but this couldn't keep up with the infestation. The district now chemically treats and harvests the plants to keep them in check.

Lower Red Lake


Lower Red Lake – West shore

Lower Red Lake is a 240 acre impoundment connected to Upper Red Lake. It has a maximum depth of 28 feet and 6.3 miles of shoreline. Lower Red Lake is a popular lake for fishing and has two public boat landings (north shore and west shore). The landing on the north shore can accommodate about 15 boat/trailer units. To date the only aquatic invasive species known to exist on Lower Red is the Banded Mystery Snail, Eurasian Water milfoil and Curly-leaf Pondweed. The Lake District did stock the EWM eating weevil but this couldn't keep up with the infestation. The district now chemically treats and harvests the plants to keep them in check.

Cloverleaf Lakes


Grass Lake

Cloverleaf lakes, also known as the Cloverleaf Chain, are a cluster of 3 lakes, Grass, Pine and Round, located 5 miles northeast of the city of Clintonville and 7 miles south of the city of Shawano. They have a surface area of 216 acres with a maximum depth of 52 feet and 4.9 miles of shoreline. The Cloverleaf Chain has one public boat landing on Grass Lake, one public beach on Pine Lake and serves as the headwaters of the Matteson watershed. The Cloverleaf Lakes Protection Association (CLPA) has been extremely active with the DNR's aquatic invasive species program. In 2007, the CLPA was awarded an aquatic invasive species grant to control Eurasian Water milfoil. The grant also provided funding for information and education that included a Clean Boats Clean Waters boat inspector to inspect boats as they were entering and leaving the landings. In spite of the activeness of the CLPA, zebra mussels still managed their way into the chain. Adults were discovered there in 2008 and a reproducing population was confirmed in 2009. Historically, there have been many visiting fishing boats from Shawano Lake targeting the Cloverleaf Chain. In addition, there have also been numerous musky and bass fishing tournaments during the summer months. These lake hoppers, also known as transient boaters, were probably the carriers of the Eurasian Watermilfoil and Zebra Mussels.


Round Lake

Loon Lake

Loon Lake is a 305 acre lake with a maximum depth of 22 feet and 2.7 miles of shoreline. The east side of the lake is upland and is developed with homes and cottages. There is one public boat landing on the South shore that will accommodate about 15 boat trailers. Aquatic invasive species known to exist in Loon Lake are Banded Mystery Snail, Chinese Mystery Snail, Eurasian Water Milfoil (EWM), Hybrid Eurasian/Northern Milfoil and Curly-leaf Pondweed. The Loon Lake Management District has been very active in fighting aquatic invasive species. Loon Lake has an invasive hybrid Eurasian/Northern water milfoil which they have been trying to combat over the last decade. The Lake District has been awarded two DNR aquatic invasive species control grants to fight their 88 acres of invasive hybrid milfoil. They have also spent thousands of their own money trying to fight this weed. Their hybrid milfoil project is part of a big research project being conducted by the Army Corp of Engineers and the DNR's Research service.


Loon Lake Boat Landing

The association is also very active in the Clean Boats Clean Waters program and has signs on the landing informing lake users of the critical habitat areas. In addition, the entire western shore of the lake was purchased by the district under a DNR lake protection grant. The wetland area remains undeveloped and is utilized mainly in the winter for recreational purposes. The intention of the lake association is to protect the wetland from development which would disturb the lake ecosystem and disturb the tranquil aesthetics for residents.

White Clay Lake

White Clay Lake is a 234 acre lake with a maximum depth of 46 feet and 2.8 miles of shoreline. Approximately 90% of the shoreline is wetland marsh. There is one public boat landing on the south shore that will accommodate 14 truck/boat trailers. It is a very popular lake for fishing and is not uncommon to have over 20 truck/boat trailers parked here at any one time. Early detection surveys done in 2012 found the following aquatic invasive species: Curly-leaf Pondweed, Eurasian Water milfoil and Chinese Mystery Snail. The White Clay Sportsman Club has been active since the early 1970's and promotes recreational activities including an annual fishing derby and fish stocking on White Clay Lake.


White Clay Lake

The White Clay Lake P & R District was established in 1975 and worked with EPA, DNR, SCS and local government staff on the White Clay "Clean Lakes" Protection and Rehabilitation Project Watershed project. It was the first lake protection project under the new lake management program and was also the first Lake District to attempt to address agriculturally related problems through upland treatment practices.

Embarrass River Watershed

Four main branches of the Embarrass River are located in western Shawano County. They include the South, Middle, North, and Main stem Branches. Much of the Embarrass River watershed is classified as a trout stream. There are numerous impoundments and millponds within the incorporated communities and hamlets as the branches traverse throughout western Shawano County. Extensive, interconnected stands of Floodplain Forest along the Embarrass Rivers are a major feature of ecological significance. Native community management of these areas will support a wide variety of wildlife, including many rare species such as red-shouldered hawk and prothonotary warbler. Fishing, canoeing and kayaking are popular recreational activities.

The Middle and South Branches are located in southwestern and extreme western Shawano County. The entire watershed covers 251 square miles within portions extending into Marathon and Langlade Counties. The Middle Branch is 52 miles long, provides excellent fisheries habitat and has excellent water quality as indicated by its Hilsenhoff Biotic Index scores. The soils, geology and other physical resources create areas which are highly susceptible to groundwater contamination. Most of the buffer areas along the streams are natural and undisturbed.

The North Branch and Main stem Embarrass River lie in western and central Shawano County. Approximately 99 miles of river corridor are located in the watershed. Portions of the rivers may experience erosion runoff and related problems due to the presence of agriculture. The North Branch Embarrass River is a trout stream from its headwaters to the Pella Pond where it supports an excellent warm water sport fishery.

DESCRIPTION OF AIS PROBLEM TO BE ADDRESSED

Water is one of the defining features of Shawano County. The Wolf River, Shawano Lake and other area lakes are regionally known for their quality fishing, hunting, wildlife viewing and other

recreational opportunities. This attraction also makes our area surface waters one of the most threatened resources. Aquatic invasive species harbor both biological threats to native ecosystems and economic concerns to communities. AIS jeopardize the integrity and biodiversity of aquatic habitats and diminish water recreational activities and property values. Many species are unintentionally introduced by humans which makes education a significant prevention tool. Shawano County has undertaken several initiatives to complete its first comprehensive baseline inventory of invasive species within the county. Two specific studies have been completed to delineate aquatic, wetland, and terrestrial occurrences. Several common invasive species are located within Shawano County lakes and rivers. Eurasian water-milfoil, hybrid northern-Eurasian water milfoil, curly-leaf pondweed, banded mystery snails, Chinese mystery snails and rusty crayfish are the most common invasive species affecting aquatic environments. Zebra mussels are currently located in at least six lakes, the Wolf River and some of its tributaries. Phragmites, Japanese Knotweed, Purple Loosestrife and Narrow-leafed Cattails are the most common species found in wetlands (Map 3.2). Also, in 2011 Shawano County had the first known discovery of Policeman's Helmet in Wisconsin.

Detrimental invasive species have been introduced to the Shawano Lake watershed (common carp, purple loosestrife, zebra mussels, Eurasian water milfoil, and curly-leaf pondweed). Many more potential AIS inhabit Lake Michigan 40 miles away. In fact, boat inspectors have stopped boats from entering Shawano Lake that have previously been on Lake Michigan and the Mississippi River without draining their water.

The US Army Corps of Engineers completed an aquatic plant survey on Shawano Lake in 2005, which identified 23 aquatic plant species, the most abundant being Eurasian watermilfoil (EWM) at 2,640 acres, curly-leaf pondweed (CLP) at 1,640 acres, and common waterweed. Shawano Lake was also given a FQI index of 28.59, higher than the state average, indicative of a diverse and healthy plant community. Shawano Area Waterways Management (SAWM) is updating its aquatic plant inventory in 2013. Information gathered will be the basis behind future large-scale chemical treatments of EWM and CLP.

Furthermore, Shawano Lake also faces numerous water quality issues. Its quality, clarity and productivity are affected by a number of internal and external factors. Sediment and phosphorus load have been identified as particular challenges to Shawano Lake, with the sources of these varied. Phosphorous and sediment are coming from small tributaries carrying agricultural runoff, internal recycling and adjacent lakeshore properties.

Until recently, most control and management efforts have been undertaken by each entity. Limited coordination has occurred between the lake organizations and other stakeholders in Shawano County. Development of the Shawano County Invasive Species Strategic Management Plan was the first attempt to combine efforts on a county-wide scale and its implementation will begin to manage invasive species in a comprehensive, coordinated effort.

METHODS AND ACTIVITIES

Prevention and Control Strategy

The Shawano County Invasive Species Strategic Management Plan (the IS Plan) focuses on prevention as the key strategy for limiting the impacts of AIS by controlling their initial introduction and subsequent transfer between water bodies. Prevention strategies rely heavily on information, education and communication. Therefore this plan includes a full range of these activities needed to implement an effective prevention program.

The IS Plan relies heavily on public education strategies. Shawano County staff will continue to utilize local media outlets to broadcast the "Protect Wisconsin Waters/It's the Law" campaigns. The AIS Coordinator (AISC) will appear on the local radio station community talk program six times per year to discuss a variety of AIS prevention issues including monitoring, prevention and shoreland restoration. During radio appearances, "It's the Law" public service announcements (PSAs) are played and discussed. The local Shawano radio stations have also agree to play these PSAs as a portion of the news stories periodically throughout the year. Shawano County has will continue to partake in the annual Landing Blitz campaign during the July 4th holiday. Approximately six lakes will be covered each year. Shawano County piloted and assisted to develop materials for the Wisconsin Bait Shop Dealer initiative. Shawano County staff will continue to collaborate with bait shop dealers to train business owners to educate anglers on the ever present AIS dangers. Shawano County will expand this program to include all outlets which sell bait on a minimum of passive outreach. The IS Plan outlines several strategies to establish enforcement partnerships with local law enforcement agencies. Local municipalities with police departments and/or constables will be contacted to discuss AIS provisions within Wis. Stats. 30 and Administrative Code 40. To the greatest degree possible, local enforcement officers will be trained to identify and administer citations for AIS violations contained within these documents.

The IS Plan also promotes creating monitoring teams at the individual lake level for Citizen Lake Monitoring Network (CLMN) data for water quality and AIS. Volunteers will continually be trained either at an annual CLMN workshop or on an individual basis. Volunteers will be trained to record observations and enter their results into the WDNR SWIMS database. Where volunteers cannot enter data, Shawano County staff will enter the data. Data will be entered into SWIMS.

Currently volunteers monitor to collect water quality data. With approximately 60 named lakes, only about 20% of lakes have any water quality monitoring data. Tests taken include Secchi depth readings; chlorophyll and total phosphorus concentrations; and temperature/dissolved oxygen profiles. Other than Secchi readings, water quality monitoring is typically confined to lakes with organizations currently receiving WDNR AIS control grants; WDNR river/lake planning and protection grants; or under a new U.S. Environmental Protection Association study. Water quality monitoring is done on a limited basis mostly due to an inability to easily access equipment. SCISP will explore grant opportunities to purchase sampling equipment to loan to lake organization members and private citizens to make water quality monitoring a more feasible option. The Shawano County Capital Improvement Program has funding for environmental "green" projects. SCLC Committee has recommended approval of a proposal of county funding ($20,262) for purchase of water quality monitoring equipment and supplies. This is first step as it

still needs approval from the CIP Committee and then ultimately be passed in the 2014 Budget by the Shawano County Board in October 2013.

Shawano County completed an extensive AIS Early Detection Survey on 45 waterways within the County in 2012. During these surveys, local volunteers from a majority of the lakes were trained in the WDNR approved protocol. A WDNR SWIMS data file was created specifically for this project. Volunteers began periodic monitoring in 2013. This monitoring will continue into 2016. It is anticipated several lakes will be re-examined in 2014 – 15 for verification purposes. The Shawano County AIS Coordinator (AISC) and volunteers will participate in these ventures. To date simple county-wide maps have been made for each WDNR tracked AIS species and assembled in a report. The report will be made available on hardcopy at the public library system. The report will also be available at all municipal offices and the Shawano County AIS web site for public inspection. The AISC will create a detailed map for each public access water bodies detailing specific AIS populations. PDFs of these maps will be created and displayed on boat landing kiosks or the Shawano County AIS web site where appropriate.

EWM was documented on the Pensaukee Lakes in 2009. The 2012 Shawano County Early Detection Surveys and other water monitoring efforts did not re-locate EWM. A point-intercept survey will be conducted by the AISC on the Pensaukee Lakes to determine the overall extent of both CLP and EWM for a potential WDNR AIS Rapid Response grant project. All field work and reporting will be done in accordance with WDNR accepted protocol. EWM was documented on Korth Lake in 2009 and appears to be widespread. A point-intercept survey will be completed on Korth Lake to determine the overall population size to determine if this lake qualifies for a WDNR Rapid Response Grant.

Aquatic Plant Management

Aquatic plants are vital to the health of a water body. Unfortunately, people all too often refer to rooted aquatic plants as weeds and ultimately wish to eradicate them. This misconception needs to be changed as aquatic plants serve many purposes, such as filters and food and habitat for aquatic animal life. The problem exists when aquatic plants reach a nuisance level and need to be managed because they hamper recreational activities. It can be difficult to explain to people that aquatic plants are needed but certain ones like Eurasian water milfoil and curly-leaf pondweed are a problem because of the invasive way they act. The Shawano AIS Coordinator in cooperation with area Lake Associations/Districts, UWEX and DNR will educate lake property owners on the importance of native weeds and ways they can work with the aquatic plant management program to promote a healthy diversity of aquatic plants in lakes.

Clean Boats Clean Waters

Recreational boating is the most common method of invasive species introduction in Shawano County lakes. Invasive species are unintentionally introduced into new water bodies. Clean Boats, Cleans Waters (CBCW) activities and data collected provide an invaluable insight to how informed Shawano County and Wisconsin boaters are in invasive species issues and how prepared they are in preventing new introductions. Inspecting watercraft for invasive species, vegetation and water offers a frontline defense at the lake landings to prevent further spread and new introductions. Watercraft inspections are designed to increase public awareness about

invasive species and train boaters to proactively take preventative steps to avoid spreading invasive species.

Between 2004 and 2010, approximately 1,000 boats were inspected annually. During this time period, over 15,000 individuals were contacted with a high of 3,477 contacted in 2010 and only the Cloverleaf Lakes Protective Association (CLPA) was routinely inspecting watercraft. CLPA has hired a paid part-time intern and has had a high volunteer participation during much of this time period. The Loon Lake Management District has also had an active CBCW program as a part of a chemical control grant. The Shawano County Land Conservation Division (SCLCD) has been implementing a Clean Boats Clean Boats, Clean Waters program since 2011. In 2012 and 2013 SCLCD has also partnered (Memorandum of Understanding) with the Washington Lake Management District to enable them to meet their CBCW requirements. CBCW workshops are sponsored by the Shawano County Invasive Species Management Partnership (SCISP) and hosted by the Land Conservation Division at the courthouse annually in April. Since 2011, the number of boats inspected and boaters contacted has increased exponentially. In 2011 and 2012, Shawano County employed two CBCW interns each summer as a part of their AEPP grant. In 2012, paid staff and volunteers throughout Shawano County inspected 2,710 boats and interviewed 5,926 individuals.

Clean Boats, Clean Waters inspectors are required to have attended a CBCW training workshop and received program materials prior to conducting inspections. Trained CBCW inspectors will be at boat launch sites to conduct inspections, collect and report data, provide boater education and report suspect specimens. A Shawano County Land Conservation Division CBCW intern would be manning the boat landings on high traffic water bodies (Shawano Lake, Washington Lake, Loon Lake, Upper & Lower Red Lakes, White Clay Lake) where AIS are present for a total of 200 hours each summer in the proposed grant period (2014-2016), with 50% of the time being spent at Shawano Lake landings (including Huckleberry Harbor) from Memorial Day weekend to Labor Day. They will be inspecting the landings at the prime recreational boating hours (11:00 am– 6:00 pm) on Fridays, Saturdays, Sundays and holidays. Some time will also be spent targeting anglers from the times of 6:00 am – 11:00 am. Since there are many fishing tournaments on Shawano Lake and the conjoining Wolf River the inspector would be also be targeting those landings where the events are headquartered. Additionally, the CBCW interns will help host booths at educational events in the surrounding Shawano area, especially the Shawano County Fair. They will also assist the County AIS Coordinator as needed. Inspection data collected will be reported through the statewide watercraft inspection (SWIMS) database.

The Shawano County Land Conservation staff has established several enforcement activities that augment Clean Boats, Clean Waters activities. An annual group check was scheduled under the current Shawano County AEPP grant. Under this program the AISC and CBCW volunteers partner with the Shawano County Sherriff Department (SCSD) and WDNR wardens and water guards to perform boat inspections and issue citations for AIS violations. An annual group check around Shawano Lake will be scheduled between 2014 and 2016 under this grant. The AISC has collaborated with the SCSD to establish an “AIS violation hotline.” CBCW staff and volunteers can report Wis. Stats. 30 violations to the SCSD non-emergency number. SCSD will send available personnel to respond to citizen complaints. In addition, the SCSD operates a boat patrol on Shawano and Washington Lakes each weekend. Officers enforce water safety and AIS

violations during these operations. These patrols will continue through the duration of this grant. The portable WDNR water guard boat decontamination station will be secured for public demonstration and usage during the group check. In the first year, local media will be contacted to write a newspaper article on the benefits of decontamination procedures.

The IS Plan stresses the need for increased decontamination facilities around "high priority landings." These landings include all public Shawano Lake boat landings and other lakes with documented zebra mussel occurrences. The AISC will write and submit grant proposals to obtain funding to procure one mobile decontamination unit and install permanent facilities at the Shawano County Park. Likely grant applications will include the WDNR Recreational Boating Facilities Grants Program, the Shawano County American Transmission Grant Funds and local community foundation grant programs.

Preventing the Spread of AIS

The Shawano County AIS Management Program is a comprehensive county-wide effort. Shawano Lake, a WDNR recognized Statewide AIS Source Water, contains half of the 24 WDNR tracked invasive species. The 2012 Shawano County AIS Early Detection results showed that over 90% of all lakes and impoundments with trailered boat access contained either Eurasian water milfoil (EWM), curly-leaf pondweed (CLP), or zebra mussels. It is likely that Shawano Lake is the source population of these "satellite" occurrences. In order to create greater AIS awareness throughout Shawano County, this grant will focus on prevention and control efforts contain and control AIS occurrences on all lakes in Shawano County. The majority of project activity will take place with lakes in the Shawano Lake Watershed including, but not limited to: Shawano Lake and outlet channel, Loon Lake, Washington Lake and White Clay Lake. Technical assistance services will be provided to Shawano Area Waterways Management, Inc. (SAWM). It is anticipated that less than 50% of the project activities will be directed to Shawano Lake.

NR40 Prohibited Species

Due to the regional draw of Shawano Lake, additional efforts are necessary to monitor potential NR40 prohibited species populations within Shawano County. Under the existing AEPP grant, the AISC has initiated an annual spiny water flea monitoring program on 17 public access lakes throughout Shawano County. All lakes are accessible to trailered watercraft. Zooplankton samples are collected according to WDNR AIS Early Detection protocol. Spiny water flea monitoring will be conducted by the AISC and local volunteers and entered into the SWIMS database where appropriate. Due to the popularity of water gardening, other surveys for other prohibited species will be conducted during other routine field work.

The first documented occurrence of Policeman's helmet (*Impatiens glandulifera*) was identified in Shawano County in 2011. This species is listed as a wetland "early detection" invasive plant and is being considered for inclusion in NR40 as a prohibited species. Shawano County implemented a rapid response project to control policeman's helmet. A WDNR/ U.S. Forest Service Suppression grant was received in 2012 for printing, public education, control, and disposal costs. Field surveys in 2013 indicate that mechanical control efforts were highly successful. Additional monitoring and control efforts will be required between 2013 and 2015.

Monitoring will be completed by the AISC. Control efforts will be completed by several entities. It is anticipated one week of staff time will be required for this project.

Protecting or Improving the Aquatic Ecosystem's Diversity, Ecological Stability and Recreational Uses

Point-intercept surveys conducted on White Clay Lake in 2011 and AIS Early Detection Surveys completed in 2012 indicate that both CLP and EWM are present. The White Clay Lake P&R District and White Clay Lake Sportsmen Club have been actively applying for control permits for EWM. Due to the prolific nature of CLP, these entities will be applying for a joint application for WNDR Lake Planning Grants to establish an aquatic plant management plan under NR 198.43 (1) between 2014 and 2016. The AISC will provide technical assistance in all phases of this project.

The Shawano County Invasive Species Plan (IS Plan) was completed and adopted under WDNR grant 2011-AEPP-262. The IS Plan outlines numerous monitoring, prevention, educational and implementation activities to manage existing and future anticipated AIS populations throughout Shawano County. All proposed grant activities herein are contained within the IS plan. The AISC will collaborate with members of the Shawano County Invasive Species Partnership to implement as many guidelines as possible to increase AIS awareness and improve AIS monitoring, prevention and control activities.

Natural Communities and Rare Species

WDNR's Natural Heritage Inventory (NHI) program maintains data on the general location and status of threatened or endangered plant and animal species and natural communities and species and communities of special concern (Map 3.3). According to this inventory, Shawano County has at least 82 animal species (aquatic and terrestrial), 13 plant species and 23 natural communities that have been documented into one of these categories. Animal species include, but are not limited to, the Bald Eagle, Henslow's Sparrow and the Blanding's Turtle. Plant species include, but are not limited to, the Glade Fern, American Shore-grass and Wild Licorice. A recent biological inventory required by the Federal Energy Regulatory Commission revealed the presence of several NHI tracked species within the upper reaches of the Upper Red Lake. The NHI also indicates several occurrences within the Embarrass River watershed. More specific information on location and type of species is available from the State's Bureau of Endangered Species.

Areas of Special Natural Resource Interest

Areas of Special Natural Resource Interest are a diverse group of unique intact natural ecosystems. These areas have specific requirements as defined in Wisconsin Statutes or Administrative Code. State natural areas are defined under Wisconsin Statutes 23.27 to 23.29. Trout streams are designated by the WDNR under Administrative Code NR 1.02 (7). Outstanding and exceptional waters are defined under Wisconsin Statutes 281.15. Wild rice waters are identified by both the WDNR and Great Lakes Indian Fish and Wildlife Commission. Federal or state waters are designated within Wisconsin Statutes 30.26 and 30.27. Finally all waters which are inhabited by a special concern, threatened, or endangered species or unique ecological community as are classified by the WDNR NHI are considered an ASNRI. Numerous ASNRI's have been identified in Shawano County. All areas have documented NHI occurrences. Special care should be taken prior to undertaking invasive species control projects in these lakes. If specific species data or locations are needed, NHI staff should be consulted prior to project

commencement. In addition, these lakes should be periodically monitored for invasive species to assure that these rare resources are protected. The Shawano County ASNRI areas include:

Cloverleaf Lakes	Loon Lake	Mud Lake (Red Springs)	Washington Lake
Cranberry Lake	Lost Lake	Lower Red Lake	White Lake
Kroening Lake	Malone Lake	Pensaukee Lakes	White Clay Lake
Lily Lake	Mud Lake (Aniwa)	Shawano Lake	

AIS management activities will occur on over half of these lakes within the overall scope of this grant project. Shawano Lake and others have an above average FQI as indicated by point-intercept surveys conducted and included in WDNR accepted aquatic plant management plans. The Dent Creek and North Branch Embarrass River State Fisheries Area are pristine parts of the Embarrass River basin.

Pioneer Populations and Rapid Response Projects

WDNR and Shawano County AIS Early Detection surveys discovered numerous AIS pioneer populations in 2011 and 2012 as defined under Wis. Stats. 198.12 (8). In total, CLP was documented on ten different waterways and EWM was documented on seven waterways. EWM was documented on four additional waterways in either 2009 or 2010. Lake organizations and or municipal staff from several of the affected waterways are extremely interested in applying for WDNR AIS Rapid Response grants. Several projects will be initiated under this grant proposal.

In 2012 the Embarrass River communities began a coordinated effort to control EWM at Tilleda. The AISC will provide technical assistance to write grant proposals and initiate a large-scale coordinated EWM control project at the Tigerton, Caroline, Tilleda, Leopolis and Pella impoundments. Since grant funding must be applied for by 2017, all five projects will be a high priority under this grant proposal. Pioneer populations of CLP were documented at Kolpack Lake, Korth Lake, the Pensaukee Lakes, Lower and Upper Red Lake and Washington Lake. Municipal staffs or lake organizations will be contacted to determine if additional Rapid Response projects can be initiated with local assistance at these lakes. Since 2009, pioneer populations of EWM have been documented at Bahr Lake, Korth Lake, and the Pensaukee Lakes. The AISC will work with the Town of Washington staff and local citizens to determine if Rapid Response projects are feasible. EWM populations at Bahr Lake are minimal and will be hand pulled. Point-intercept studies will be completed at Korth Lake and the Pensaukee Lakes to determine if EWM population levels are considered “pioneer” as set forth in Wisconsin Statutes.

Project Management

SCLCD is currently administering AEPP-262-11. To date, the AISC, local businesses and members of the Shawano County Invasive Species Partnership have successfully completed the deliverables and implemented a majority of the overall project. An Invasive Species Management Plan was compiled under a local steering committee, adopted by the Shawano County Board and approved by WDNR staff. Within the past 2 ½ years Shawano County staff have addressed many priority goals and optional duties. All required reports and deliverables have been addressed in a timely, efficient manner. Since this was Shawano County’s first endeavors with AIS management, additional reports were created and distributed to better educate the public.

SCLCD has also successfully administered multiple WDNR funded Targeted Runoff Management (TRM) grants and Gypsy Moth Suppression Program grants in the past 5 years.

Shawano County staff met with WDNR staff including Brenda Nordin, Lakes Biologist, to discuss the AIS Program and this grant application on February 19, 2013. A draft copy of our grant application was submitted for review to Brenda Nordin on July 24, 2013.

Complementing other Management Efforts

The goals of this project are consistent with the Shawano County Land and Water Resource Management Plan and the Shawano County Comprehensive Plan. These plans identify protecting and improving the water resources of the county as a priority. This project is also supported by pollution prevention and control activities through the Shawano County Land & Water Resource Management Plan, Shoreland Ordinance and Animal Waste Management Ordinance. The IS Plan stresses the need for local communities to partner in AIS Management efforts. Most likely, this assistance will include adopting new ordinances which emphasize invasive species control efforts and improve water quality measures. The AISC will be involved in several projects. First, draft language for local invasive species management ordinances will be created and distributed to all municipalities within Shawano County. Where feasible, the AISC will provide technical assistance to local zoning staff or other appropriate individuals to amend local ordinances to reflect these changes. The AISC will assist Shawano County Zoning staff to ensure that appropriate language is included in the Shawano County Shoreland Zoning Ordinance for monitoring and controlling invasive species within the shoreland areas. These changes will be implemented as required statewide changes are made. The AISC will also assist the Shawano County Parks staff to draft language to prevent boaters from transporting vegetation on trailers/water sources in boats from the County Park boat landing to the adjacent camp sites. The draft language will incorporate NR40 restricted species into local "weed" ordinances. Other ordinance language will be drafted/amended for slow no wake; stormwater; erosion control; runoff and non-point source pollution ordinances or plans as the opportunities arise.

Shoreline Best Management Practices and Stormwater Runoff

In developed areas such as the Shawano Lake watershed, impervious surfaces (pavement, roofs, etc.) prevent water from infiltrating. The resulting runoff is loaded with nutrients, sediment and other pollutants which enter local waterways. Shawano Area Waterways Management, Inc (SAWM) has identified the need to restore 10% of the Shawano Lake shoreland properties by 2019. In addition, they have indicated a willingness to collaborate with landowners along tributaries to prevent upstream erosion from occurring. The Shawano County Capital Improvement Program has funding for environmental "green" projects. SCLC Committee has recommended approval of a proposal including $105,000 of county funding (for work to be done in 2014-2017) for Shawano Lake Basin Shoreland Restoration Projects. This is a big first step but it still needs approval from the CIP Committee and then ultimately be passed in the 2014 Budget by the Shawano County Board in October 2013. This project will implement several shoreline restoration projects which will improve water quality and protect the future usability of the County's valuable water resources.

The Shawano AIS Coordinator will educate the lake property owners on the importance of buffers and how they reduce the amount of nutrients going into the lake. The DNR recommends

at least a 35 foot buffer of native vegetation to serve as a filter to help capture stormwater runoff that carries nutrients. If a lawn or otherwise manicured garden landscape is to exist, fertilizers should be excluded from routine management of lawn/garden. Where impervious areas are adjacent to steep or sloping terrain that would lead to stormwater runoff reaching the lake, best management practices such as constructed swales, rain gardens or rain barrels should be installed. Demonstrations and/or speakers of these topics or ideas will be presented at community events and/or demonstration days.

Nutrient Management

Nutrients, specifically phosphorus and nitrogen, are the fertilizer of aquatic plants. The SCLCD will work with Lake Associations/Districts, farming community, and Conservation groups to promote nutrient management throughout the Shawano Lake Watershed. The SCLCD in cooperation with a number of partners (UWEX, WIDATCP, USDA-NRCS, DNR) will educate lake property owners and farmers about nutrient loading when using phosphorus and on ways to reduce the amount of nutrient loading in the Shawano area lakes. The 2008 Watershed Assessment of Shawano Lake by the University of Wisconsin-Stevens Point Center for Watershed Science and Education discusses in great detail the topic of complete nutrient inputs and management within Shawano Lake. According to the assessment: Total nitrogen to total phosphorus ratios indicated that phosphorus was the limiting nutrient. Lake modeling demonstrates significant benefits from total phosphorus load reduction. Therefore efforts to control phosphorus inputs would have the most direct impact to lake water quality. A reduction of phosphorus in Shawano Lake would reduce the frequency of algae blooms; it is predicted that a 20% reduction in phosphorus load to Shawano Lake may result in decreasing nuisance algae blooms in the summer from 17 days to 6 days. It is important to note the single greatest contributor of total phosphorus is internal release of sediment (25%). When lake stratification does occur, phosphorus can be released from particulates in the lower water layer. The die-off of aquatic plants also results in a large pulse of phosphorus into the lake (10%). Water quality in Shawano Lake is dependent upon internal and external factors. The watershed, as a whole, contributes about half (48%) of the annual phosphorus load. This includes direct runoff and tributary loads. Land use practices near shore and within the watershed are probably the most manageable aspect in terms of phosphorus reduction. Each monitored stream contributes 7% to 11% of the annual phosphorus load. Lake and tributary near shore land management improvements would have the swiftest effect on nutrient reduction to Shawano Lake. For long term improvement it is also important to address land management issues further out in the watershed including reducing phosphorus inputs to groundwater which contributes about 9% of the phosphorus load to the lake. Although there is no single, clear phosphorus source that stands out as problematic, a watershed scale management approach may bring water quality in Shawano Lake closer to the desired levels. This assessment will be the basis behind the watershed nutrient reductions education portion of this project.

SCLCD has scheduled for later this fall/winter our first annual Nutrient Management Plan Workshops for farmers. We have targeted farmers in the Shawano Lake Watershed and those in the Farmland Preservation Program who currently do not have a nutrient management plan but it is open to any farmer in Shawano County. Here in NE Wisconsin we are fortunate enough to have many qualified nutrient management plan writers but this will provide another option. It will be done in partnership with staff at the WI Department of Agriculture, Trade and Consumer

Protection and will enable 10-15 farmers to write and certify their own nutrient management plans. It has proven to be the case in most scenarios the more one is involved, the better their understanding of what is needed to be done. We are expecting this to be no different and see it as an important component to improved management of nutrients countywide.

The Town of Washington, through adoption of exclusive agricultural zoning, has made farmland preservation a priority for the past 30 years. In doing so many landowners in the town have been participating in the program and claiming the income tax credits. A majority of the Town of Washington is located in and comprises approximately 40% of the Shawano Lake Watershed. Since 2009 landowners participating in the Farmland Preservation Program have increased Soil & Water Conservation Compliance requirements if they are to remain eligible for the programs income tax credits. SCLCD is required to complete on-farm conservation compliance inspections once every four years for program participants. This enables us to get on the land and work with the property owners to achieve compliance. By achieving compliance with soil & water conservation standards we are reducing nutrient loadings to surface and groundwater in the Shawano Lake Watershed.

Large-scale watershed projects take a significant amount of time to coordinate and implement. Water quality education through targeted events and mailings are important components of the overall project and has been a good start but more needs to be done. With limited time and resources we need to find ways to maximize the effect of our efforts. To compliment work that has already been done along with stream monitoring being done this summer we are proposing to create a crop field level soil test phosphorus GIS data layer for the Shawano County portions of the Shawano Lake Watershed. This is currently being done off of existing nutrient management plan data in the Pensaukee River Watershed in partnership with The Nature Conservancy. It will enable us to better focus time and financial resources to lands that have a higher potential to contribute nutrients (phosphorus, nitrogen) through runoff and groundwater. It is anticipated Land Conservation Division staff will complete this work during the upcoming winter months in order to allow time to prepare a Targeted Runoff Management grant application (likely focusing on cropping practices and buffers) for the April 15, 2014 deadline.

Changes in Scope and Projects from Current AEPP Grant

Although this is Shawano County's second request for an AEPP grant, the scope and projects considered in the grant application has significantly changed. Shawano County will be focusing on developing and implementing a true county-wide AIS Management program. Additional emphasis will be placed on developing watershed management strategies to prevent, control or contain invasive species within their specific watersheds. A wide variety of widely accepted and innovative educational, monitoring and control programs were established within the Shawano County Invasive Species Strategic Management Plan. In addition, new partners and collaborators were identified to strengthen AIS management opportunities. Additional emphasis will be placed on developing an array of policy tools (e.g., ordinance, increased enforcement efforts) as well as maintaining traditional educational programs. Smaller communities, lake organizations and school districts will be highly encouraged to become actively involved with local partnerships and county-wide AIS management efforts in conjunction with targeting the most commonly used lakes.

Advancing the Knowledge and Understanding of Prevention and Control of AIS

Shawano County has the proven capability and capacity to undertake and local and regional research projects. Shawano County has been actively involved in statewide AIS research projects. The AISC collaborated with UW – Madison staff and students on the pilot project to develop the current bait shop dealer AIS education program. The AISC interviewed and collaborated with local dealers to develop easily understandable and implementable educational tools and promotional items that local business owners can give to transient anglers. Bait shop dealers throughout Wisconsin are now assisting in AIS educational in part due to Shawano County staff's efforts. Shawano County staff also assisted U.S. Geological (USGS) staff from the Upper Midwest Environmental Sciences Center (UMESC) to complete the first phase of a multi-year research project to develop a whole lake scale chemical control treatment for zebra mussels. Shawano County staff assisted USGS UMESC staff in obtaining local disposal permits, performing field research trials, and arranging local lodging and research related accommodations, and setting local/regional media interviews. The AISC also organized a zebra mussel educational fair with live displays and educational programs to inform residents from throughout northeastern Wisconsin on the imminent dangers zebra mussels present to local waterways. The AISC presented preliminary research findings at the 2013 Wisconsin Lakes Convention when UMESC staff was unable to attend due to federal sequestration cuts. The presentation was well received by all conference attendees. Shawano County staff is open to and looks forward to future research opportunities as they arise.

PROJECT PRODUCTS and DELIVERABLES

Duties of the Shawano County AIS Coordinator:

A majority of program activities will be dedicated to Shawano Lake Watershed Comprehensive Management. The rest of the time will be spent on Countywide AIS coordination.

Primary Duties:

- *Implementation of countywide AIS Strategic Plan compliant with NR 198.43*—Ensure that a comprehensive countywide plan for AIS prevention and control is in place. Plan outlines county goals and strategies, and complements statewide AIS goals. AIS Coordinator is responsible for overseeing plan implementation. Public participation and involvement of diverse stakeholders in plan implementation is necessary to meet goals and objectives.
- *Aquatic Plant Management*—Work with lake groups to monitor and map aquatic plants and develop native plant protection and invasive plant control plans. Help plan, implement and conduct aquatic invasive species treatment strategies as needed.
- *Coordinate countywide network of AIS partners*—Create, expand and nurture an active network of stakeholders interested in AIS issues in the county. This network can be fostered through an electronic mailing list, website, written updates, networking events, one-on-one interactions, etc. Create connections and coordinate county activities within our region and with statewide AIS coordinators.
- *Clean Boats, Clean Waters*—Serve as county coordinator for *Clean Boats, Clean Waters* watercraft inspection activity. Work with statewide CBCW coordinator to streamline delivery of training and materials. Maintain working list of lakes with active CBCW efforts and prioritize lakes for new CBCW efforts. Work with local groups to ensure complete and

accurate data reporting into SWIMS. Provide a countywide (Shawano) watercraft inspection summary, including all data entered into SWIMS.

- *Providing AIS information & educational opportunities*—(Shawano County Fair, association/district annual meetings (minimum of 4 per year), community events and shows (boat, home & garden), Shawano County Brunch on the Farm, schools, area youth camps, etc). This includes creating countywide network of volunteers and partners and participating in state and regional AIS Coordinator meetings. Participate in AIS Group Checks, the Landing Blitz and Ice Your Catch events.
- *Work with Shawano County Highway Department*—Promote Best Management Practices in preventing the spread of AIS such as Japanese Knotweed, Phragmites, Wild Parsnip and Purple Loosestrife along Right of Ways. Project to eradicate pioneering populations of Phragmites australis has begun in 2013 in highly visible areas of the Shawano Lake Watershed. The County Land Conservation and Highway Department have partnered to map, cut, chemically treat and monitor the Phragmites. The project will continue to take place in 2014, 2015 and 2016. A final report will be submitted to the Department detailing areas cut and chemically treated, results of the annual plant surveys, herbicide treatment records and a discussion of the successes and challenges of the project.
- *Citizen Lake Monitoring*—Serve as county coordinator for Citizen Lake Monitoring Network of aquatic invasive species monitoring. Work with statewide CLMN coordinator to streamline delivery of training and materials. Maintain working list of lakes with active CLMN efforts and prioritize lakes for new CLMN efforts. Work with local groups to ensure complete and accurate data reporting into SWIMS.
- *AIS Grant Mentorship & Coordination*—Working with DNR Lake Coordinator and Grants Specialist, assist local groups in preparation of AIS grant applications. As needed, serve as liaison between DNR staff and local groups in project development and implementation. Mentor local groups to ensure that submitted applications are complete, realistic, and in line with statewide grant investment goals.
- *Statewide AIS Coordinator network*—Participate in statewide network of county AIS coordinators, including semi-annual meetings, email listserv, and other training/networking forums. Maintain communication with statewide AIS Education Specialist.
- *Reporting*—Complete all necessary AIS grant reports and share success stories and photos with statewide AIS contacts through AIS listserv. Provide quarterly reports to the Shawano County Land Conservation Committee and annual report to the Shawano County Board.
- *Media*—Continue relationships with local media to highlight successful AIS efforts. Place a minimum of 3 press releases or news articles each year in local media for public educational purposes. Summary and examples of press releases, newsletter articles, and other media contacts.
- *Countywide Watershed Management (primary focus on Shawano Lake Watershed)*—Watershed nutrient reductions, stormwater management, recreational impacts, aquatic plant management (including harvesting, hand pulling and chemical use), shoreline management (including buffers), water quality monitoring, etc.
- Networking with Shawano Area Waterways Management Inc. (SAWM), Shawano Country Chamber of Commerce, Shawano Lake Sanitary District, Town of Wescott, Town of Washington, City of Shawano and Village of Cecil.
- *Policy*—Serve as an advocate for sound AIS policy at state, county and local level. May be involved in county-level policy development (i.e. illegal to transport ordinances)

- *Mapping & Inventory*—Develop countywide maps for particular AIS and wetland species of concern (e.g. purple loosestrife, Japanese knotweed, Phragmites, Policeman's helmet). Ensure that monitoring is conducted in a way that yields data that are reliable, accurate, and compatible with statewide data tracking systems (SWIMS).

Educational Efforts

- Implementing a Clean Boats Clean Waters (CBCW) program on Shawano Lake and surrounding area lakes. Intern to complete 200 hours of CBCW inspections each year.
- Providing an annual Shoreline restoration and AIS educational booth at the Wolf River Builders Association (WRBA) Home Show. WRBA staff will be contacted to have the AIS Coordinator to provide an AIS workshop or presentation. Topics may include an overview of AIS in Shawano County, hands on training of AIS identification, shoreline restoration and other water quality concerns. The surrounding lake associations will especially be invited as a collaborative effort to keep the AIS in Shawano Lake from invading the surrounding lakes.
- Demonstration days given showing interested parties how to effectively identify and treat AIS.
- Educational presentations will be given at a variety of community sponsored events such as the "Library at 7," civic organization meetings, monthly community church dinner, agricultural conferences and other appropriate civic venues.
- Booths will also be set up at Shawano events, especially the Shawano County fair since this is a heavily attended event, advertising the efforts of the battle with AIS in Shawano area water bodies.
- I & E will also occur at local marinas, resorts, area school districts and through press releases informing lake users of the AIS in area lakes.
- Annual tour for County Land Conservation Committee of projects and sites.
- Disseminate AIS information at boat landings, public areas, resorts, campgrounds, businesses, tournaments, on county website and in news releases.

Optional Additional Duties:

- *Education & Outreach Materials*— Develop additional tailored outreach materials and tools (signs, coasters, placemats, bumper stickers, etc.) as needed. Relay AIS messages and materials to angler and boater main points of contact, in particular bait shops, marinas and boat dealers. Work with statewide AIS Education Specialist when creating new materials to ensure consistency and efficiency.
- *Terrestrial Invasive Species*—Coordinate county plans and activities for the prevention and control of terrestrial invasive species.
- *Research Participation*—Work with academic partners to investigate questions of interest on topics such as economic impact, effectiveness of control treatments and prioritized prevention for aquatic invasive species.

<u>Plan for Sharing Project Results</u>

Project results will be shared with local and state individuals, associations and agencies through a variety of methods. AIS Strategic Plans will be available to individuals, lake groups, and town, county and state officials. The plans will also be made available on county website as well as countywide lake group websites, if applicable.

All monitoring data will be accessible via the SWIMS database and made available to individuals, groups and government officials as requested. All necessary AIS grant reports; project successes and areas of concern will be distributed to lake groups, town, county and state officials and the AIS listserv.

Six (6) semi-annual reports and a final report will be submitted to the DNR, the Shawano County Land Conservation Committee, Shawano County Board, individual lake associations/districts and other conservation and sportsman groups. The final grant report will be made available on county website.

Budget

Shawano County estimates the total cost of this project to be $210,084. For detailed information please see the enclosed Shawano County 2014 – 2016 AIS Project Budget.