

Great Lakes Basin Program GLRI Project:

Oneida Nation addressing AOC & TMDL Targets - Lower Fox Watershed

Size: watershed

Grant Amount: \$366,160

Year awarded: 2011

Sponsor: Oneida Nation of Wisconsin Environmental Health and Safety Division

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Submitted Project:

Total Grant Amount Requested: \$366,160

Match Amount

In-Kind: \$9,250

Cash: \$256,155

Total Project Soil Savings: Between 3780-5000 tons of soil over the life of the project

Congressional District(s) project is located in: WI008

II. Project Background

Sediment Sources

Briefly describe the sediment loading issues, including sediment sources, in your watershed and their relevance to sediment loadings to a Great Lake.

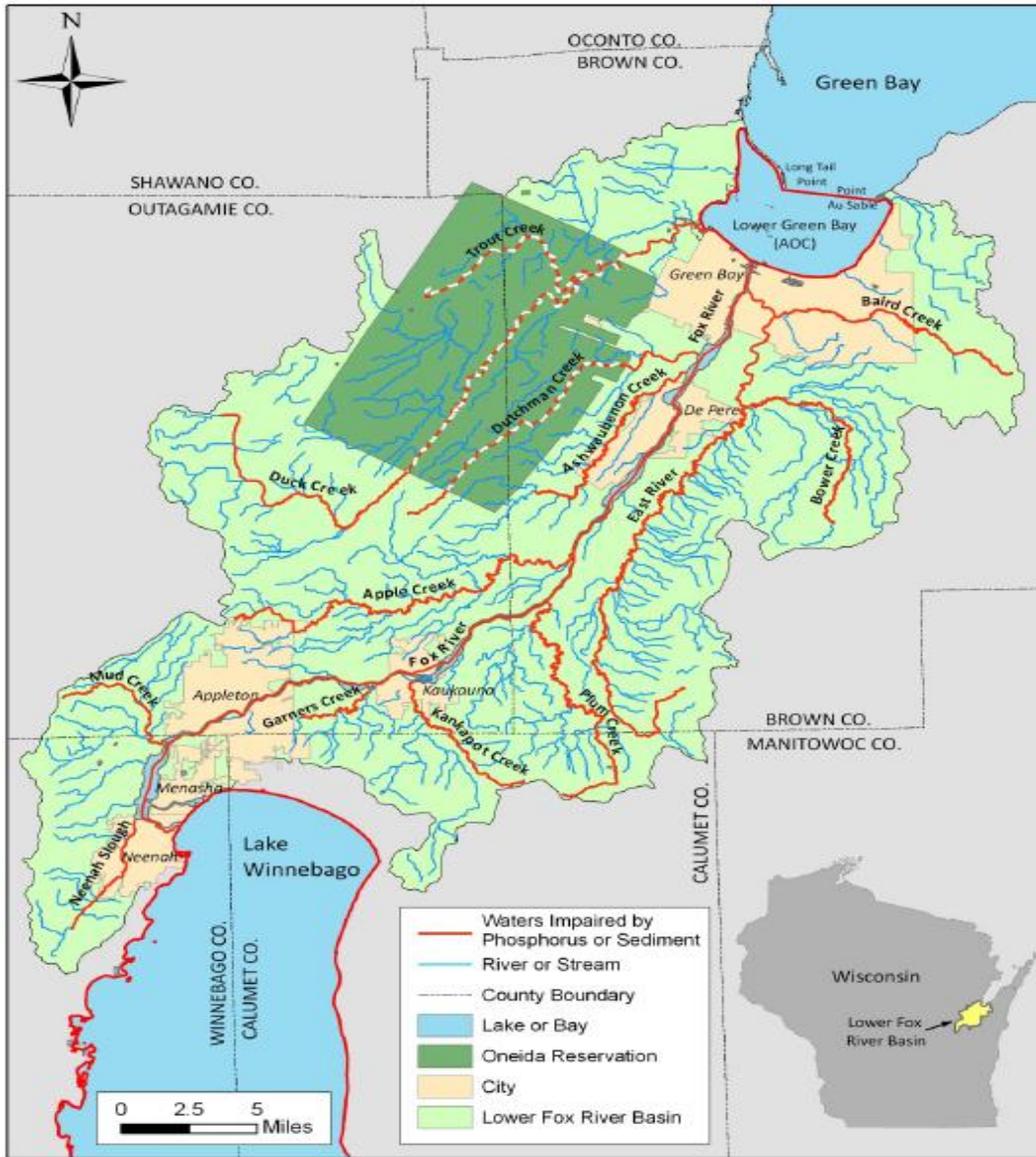
Explain:

Project relevance to Great Lakes related to improvement of the Health of Great Lakes Ecosystems

The health of Lake Michigan depends on the stewardship of its individual watershed ecosystems. The Fox River is the second largest contributor of suspended sediment to Lake Michigan (17%) and largest contributor of phosphorus (21%) (USGS Water Resources). Studies by UWGB indicate that the main source of suspended solids loading (63%) and phosphorus (44%) are from Agriculture sources.

This project was funded by the Great Lakes Restoration Initiative, and is maintained through the Great Lakes Basin Program for Soil Erosion and Sediment Control at the Great Lakes Commission.





Approximately half of the sediment and phosphorus loading to Lower Green Bay comes from Watersheds in the Lower Fox Basin, even though they are only 10% of the Fox/Wolf Watershed. In the Lower Fox Basin the Oneida Tribe is the largest holder of land and the largest agricultural operator with over 16,000 acres of operating agricultural land. In addition, 500 – 1000 acres of new rural land is purchased annually.

As a single Tribal land owner and the major agricultural operator in the region, the Oneida Tribe has the opportunity and has attempted to be a model of comprehensive non-point reduction strategies and Watershed restoration; with programs and staff focused on non-point and restoration projects annually.

This comprehensive approach is making a difference. A UWGB Masters thesis in 2009 analyzing available historical data over the last 20 years showed water quality is improving when measured by phosphorus loadings (sediment loading did not have enough consistent data for analysis) and Fish IBI metrics, which measures fish habitat health, have improved in Duck Creek (73% of 11 metrics measured).

Reservation watersheds are significant contributors of sediment and phosphorus to the Bay. Adding up the 4 major watersheds of the reservation; Ashwaubenon, Dutchman, Duck, and Trout Creek account for

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approximately 17% of the phosphorus and 25% of the sediment loading going to the Bay from the Lower Fox Basin Watersheds.

| Sub-Basin | Total Phosphorus (lbs/yr) | Total Suspended Solids | |
|--------------------------|------------------------------|------------------------|---------------|
| | | lbs/yr | mt/yr |
| East River | 48,748 | 19,796,496 | 8,980 |
| Baird Creek | 12,748 | 3,791,217 | 1,720 |
| Bower Creek | 27,777 | 10,318,235 | 4,680 |
| Apple Creek | 35,088 | 12,736,271 | 5,777 |
| Ashwaubenon Creek | 15,681 | 4,871,171 | 2,210 |
| Dutchman Creek | 15,280 | 5,033,703 | 2,283 |
| Plum Creek | 31,569 | 12,038,905 | 5,461 |
| Kankapot Creek | 20,050 | 7,253,520 | 3,290 |
| Garners Creek | 6,575 | 2,863,318 | 1,299 |
| Mud Creek | 6,594 | 2,924,841 | 1,327 |
| Duck Creek | 63,172 | 25,394,165 | 11,519 |
| Trout Creek | 4,518 | 1,451,838 | 659 |
| Neenah Slough | 11,912 | 4,846,168 | 2,198 |
| Lower Fox River (main | 237,339 | 23,968,139 | 10,872 |
| Lower Green Bay | 12,652 | 4,301,706 | 1,951 |
| TOTAL (in-basin)* | 549,703 | 141,589,693 | 64,226 |

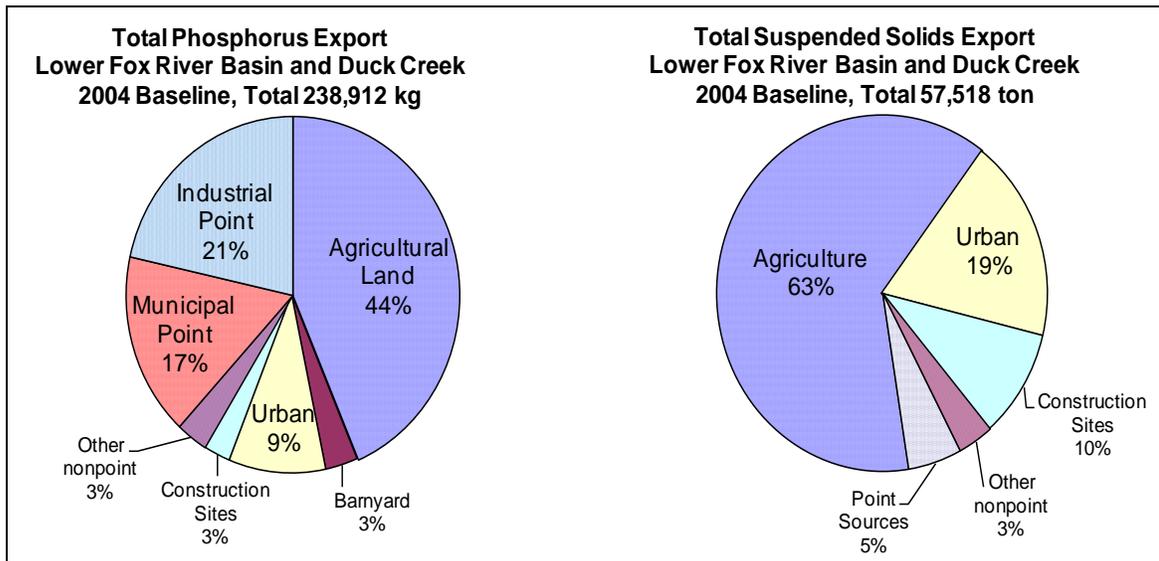
In order to address regional and Lower Green Bay Water quality implementation, activities related to education, remediation, restoration, and pollution prevention in Reservation watersheds is essential.

Addressing the regional and National AOC, and TMDL concerns

All Reservation Watersheds, except the Little Suamico, drain to the Lower Green Bay Area of Concern (AOC). Two of the top five high priorities for the Lower Fox River and Green Bay Remedial action plan are to reduce suspended sediments and phosphorus loading

The TMDL for Lower Green Bay and the Lower Fox Basin are focused on reducing sediment and phosphorus loadings. Both acknowledge restoration of the Lower Green Bay ecosystem and are dependent on reducing loads significantly in order to increase light penetration and allow a natural plant and fish community to be reestablished.

The Lower Green Bay and Lower Fox Tributary Modeling Report: Source allocation of suspended sediment and phosphorus loads to Green Bay from the Lower Fox River Sub Basin using the Soil and Water Assessment Tool (SWAT) calculated the following sources of phosphorus and sediment delivery.



Simulated Phosphorus Loading to Lower Green Bay from the Lower Fox River Basin. 2004 Baseline conditions (Paul Baumgart UWGB). Excludes loading from Lake Winnebago.

Comprehensive Approach is required

As part of the TMDL each sub basin, including those on the reservation, was evaluated and load reductions were determined. Each source category by sub watershed was given a reduction target; Duck Creek, for example, is the major watershed of the reservation and has an agricultural non-point reduction target of 76% for phosphorus and 58% for sediment.

To accomplish these goals, measures greater than the standard non-point program, as outlined by Wisconsin NR 151, will be required. Already the Tribal non-point standards go above and beyond this code. As part of the TMDL a phase 1 "Optimization Analysis" looked at 8 different approaches that would require new incentives and could be included as an "Integrated Approach". Currently, a Pollutant Trading task force is investigating the potential and strategies for trading the Lower Fox Basin.

The bottom line: the Oneida Tribe is uniquely positioned to take advantage of these more comprehensive approaches as a pilot, or comprehensive program because of our values and land ownership.

Readiness to implement project

Describe your ability to readily implement conservation practices proposed in this project. Include each of the following:

What fund raising activities from other sources have you engaged in, including local public and private sources, to fund watershed projects? As part of this, list approved grants over \$25,000 received from other sources within the past three years. Include the Grantor's name and a brief description of the projects.

Explain:

- 1997-2009; The Oneida Non-point Program received Duck/Apple/Ashwaubenon Priority Watershed Program funding for implementation of BMPs such as grassed waterways, diversions, rock crossings, water and sediment control basins, and wetland restoration. (over \$1.3 million)
- 2000 and 2003; Wisconsin DNR received grant from Great Lakes Protection fund to partner with Brown and Outagamie counties and Oneida Tribe to implement 103 acres of buffers enhancing

- and restoring Pike spawning habitat in the Priority Watershed Area. (\$103,000)
- 2008 to present; EPA CWA Section 319 partially funds the salary for two technicians annually. (\$30,000 per year)
- 2010-2011; Oneida Non-Point Program received BIA Circle of Flight Program Grants to implement buffers and BMPs, also partially funding two technicians. (\$163,727)
- 2011 Oneida Non-Point Program received a BIA Circle of Flight Program Grant to implement/restore the native prairie/wetland headwater of Silver Creek. (\$119,925)
- Annually the Oneida Non-point program receives funding from the NRCS Environmental Quality Incentive Program (EQIP). Funding is facilitated through the Wisconsin Tribal Conservation Advisory Council (WTCAC), 11 Tribes who act as a Technical Advisory Council to the State Conservationist of the NRCS. (approximately \$40,000 to \$60,000 per year)

Is there a state approved watershed plan (or one in development) that includes your designated implementation HUCs? If yes, does the watershed plan denote specific soil/sediment reduction BMPs and list implementation locations for those BMPs?

Explain:

In 1997, as part of the Duck/Apple/Ashwaubenon Priority Watershed Program that became state and tribally approved plan; assessments, target reductions, community education and outreach, and an implementation plan. The Plan was implemented from 1997 – 2008.

In 2006 Oneida completed an EPA approved CWA Section 319 Non-point Assessment and Non-point Source Management Program which includes the watershed management within in reservation boundaries.

In 2010 Reservation waterways were included in the draft Total Maximum Daily Load (TMDL) for the Lower Fox River Basin Watershed as a Watershed Restoration plan. Water quality targets and load reductions are integrated and consistent with the overall plan and have a goal of restoring regional impaired waters, including Lower Green Bay.

What other on-going conservation activities are taking place in the HUCs? Are there any existing project being implemented such as a Section 319 project?

Explain:

The Oneida Nation of Wisconsin has an ongoing Non-Point Pollution Abatement Program that has been implementing projects since 1997. Our Non-point Program includes the installation of Best Management Practices (BMPs) and a Buffers Program which installs a minimum width of 35 feet of grass along waterways in agricultural fields. The goal of the program is to improve water quality and stream habitat by reducing non-point source pollution. To date the Oneida Nation has installed over 50 BMPs and over 300 acres of vegetated buffers since 2005. The Non-point program implements 4-6 BMPs yearly.

Is there an established watershed council or steering committee involved with the project? If yes, briefly describe the mission of the group. When was it established, how often does it meet, what is the average attendance at the meetings? If not, what is your plan for broad based community involvement in implementing the project?

Explain:

The Oneida Sustainable Resource Advisory Council (OSARC) was established in the late 1990's. The mission of the Council is to preserve, restore and enhance our environment, and protect and educate its people consistent with the culture, vision and priorities of the Oneida Nation. The Council meets quarterly with 8-16 people in attendance.

What partnerships (outside of your organization) have you established to help implement this project? List your partners.

Explain:

- Brown County Land and Water Conservation Department
- Outagamie County Land and Water Conservation Department
- NRCS
- BIA Circle of Flight Program

Meetings held with Brown and Outagamie County in March 2011 outlined a strategy to work together in implementing the TMDL for the Lower Fox River Basin. Projects totally over \$9,000,000 were outlined. Part of this effort is to begin to document cost effective responses to the Pollutant Trading opportunities as a result of the TMDL implementation. A partnership group in the Lower Fox is on-going to investigate the potential for that trading, building upon pilot studies done with the DNR in the Mid 2000's.

Watershed/ Project Work Area

List up to three **12 digit USGS HUC codes** that comprise your watershed implementation area:

The Oneida Reservation is a checkerboard ownership and falls within six of the sub-watersheds of the Lower Fox River:

- Oneida Creek 04030204 0103
- Middle Duck Creek 04030204 0104
- Lower Duck Creek 04030204 0106
- Trout Creek 04030204 0105
- Dutchman Creek 04030204 0404
- Ashwaubenon Creek 04030204 0403

Data has shown that all of these sub watersheds within the Lower Fox River Watershed are severely impaired. These watersheds all have heavy agricultural impacts. The Oneida Non-point Program will implement buffers throughout these sub watersheds.

Enter the total acres that are in the selected HUCs: The Oneida Reservation boundaries encompass approximately 61,000 acres

Enter the number of acres in those HUCs that are in the following land uses:

- Agriculture including pasture land use: approximately 45,000 acres
- Forest including brushland land use: approximately 9,000 acres
- Urban, suburban, industrial, commercial and rural residential land use: approximately 7,000 acres

Is your proposed area upstream from a significant dam? If so, explain why the reservoir is not acting as a sediment trap, especially for clay particles, and how your project is reducing sediment in the Great Lakes.

Explain:

There are no major dams located down stream of the Oneida Reservation.

Describe the **Priority Areas** within the watershed where you are going to concentrate your efforts, list by geographic area or narrative description of specific conditions.

Explain:

The goal of the Oneida Nation Non-point Program is to reduce sediment and phosphorous runoff from agricultural fields from getting into water bodies within the reservation boundaries. The Non-point Program prioritizes fields with phosphorous levels above 30 ppm and fields with highly erodible soils with steep slopes that intersect with any navigable waterway.

III. Implementation

Project start date will be October 1, 2011

Implementation Strategy

Briefly describe the specific methodology(ies) you are going to use to implement the project. These can be traditional or creative nontraditional efforts. **While 100% cost-share is allowed it is not encouraged.** Include such items as:

- The types of BMPs you are planning to install i.e. tree planting, easements, conservation tillage, streambank stabilization, hay in rotation, sediment basins, buffers, other
- timeline for implementation
- priority areas identification process
- incentive methods
- equipment purchases

Explain:

Funding will be used to partially fund staff working on Non-point BMPs and riparian buffers.

BMPs vary year to year but generally focus on grassed waterways, water and sediment control basins (WASCOB), critical area plantings and other practices as outlined within the NRCS standards. Practices area determined by the Tribal NRCS Liaison who completes a Conservation Plan for each field parcel and works within the NRCS and Tribal approval systems to complete contracts and determine funding approvals.

Already planned for the 2012 -14 years are:

- Tsyunhehkwa access roads, roof runoff system, and subsurface drain
- Van Wychen grassed waterway, critical area planting, and stream crossings
- Smits stream crossing
- Cornelius stream crossing and access road
- Linsmeyer waterway repair
- Heyrman WASCOBs and underground outlets
- Theis WASCOBs and underground outlets
- Tsyunhehkwa underground outlet
- Van Groll grassed waterway
- Silver Creek Headwater Grassland and Wetland Restoration

The Oneida Non-point Program will be installing 22 miles (approximately 90 acres) of permanent riparian buffers that are a minimum 35 ft from the waterway bank and install 2 miles of permanent riparian buffer and trees that are from 35-115 ft from the bank of the waterway (approximately 18 acres) within the reservation boundaries. The program prioritizes fields with phosphorous levels above 30ppm or highly erodible soils on steep slopes.

Cost Share Incentive package:

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- Riparian Buffers 0-35 ft (87 acres) \$2500/acre
- Riparian Buffer and Trees 35-115 ft (18 acres) \$2500/acre
- Construction Cost for grass buffer(87 acres) \$50/acre
- Construction Cost for grass/trees buffer(18 acres) \$800/acre

Buffers will be installed as permanent cover and enforced through the Tribal Agricultural lease arrangements with each farm lessee.

Technical Assistance

Grant money can be used to pay for technical assistance. Briefly describe the technical assistance required to implement the project over a three year period. You will be required to provide in-kind office space, administrative support, computer and other equipment, general office supplies, and other items and services required to perform their job. This can be shown as match.

Explain:

Technical assistance will be provided by Tribal non-point staff in the Non-Point Program which includes but is not limited to activities such as: identifying problem areas, topographic surveys of the project areas, designing BMP projects and putting together construction plans, getting NRCS engineering approvals on construction plans for BMPs, bidding projects, construction checks on BMPs and implementation of buffers totaling 1,456 hours for a technician. Office space, administrative support, computers and equipment will all be provided.

BMPS - Fill out all that apply (A-E):

A. Agronomic/Cover-based Practices (BMPAs) installed by Landowners/Landusers with incentives paid for with this grant (ex. Cover Crops, conservation tillage, no-till.) If you have more than three BMPAs, copy and paste BMAP1 section and change the number as appropriate.

BMAP1

Description: Riparian Buffers (0-35 ft from waterway bank)

Check the quarters the task is to be started and completed:

| | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|----|----|----|
| Quarter | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Start/Complete | x | | | | | | | | | | | x |

Number of acres/units of BMP to be installed during project: 21 miles (approximately 87 acres)

Incentive method: per acre at \$2,500 per acre

Expected soil savings from BMAP1: 3300-4350 total tons over the life of the BMPs

BMAP2

Description: Riparian Buffer and Trees (35-115 ft from waterway bank)

Check the quarters the task is to be started and completed:

| | | | | | | | | | | | | |
|----------------|---|---|---|---|---|---|---|---|---|----|----|----|
| Quarter | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Start/Complete | | x | | x | | | | | | | | |

Number of acres/units of BMP to be installed during project: 2 miles

Incentive method: per acre at \$2,500 per acre

Expected soil savings from BMPA2: 480-650 total tons over the life of the BMP

Note: The first quarter is from October 1, 2011 to December 31, 2011. A written contract will be required between you and the landusers/landowners to fund conservation practices with GLBP funds. The contract will include among other items, the type, number and location of each practice to be installed as well as the cost-share/incentive rate to be paid for each practice. (We will also use the signed contract as proof of commitment of funding for reimbursement of your expenses.)

Media Campaign

1. You will be required to conduct a kickoff event in the first quarter of the project. You are specifically to invite, among others, all members of congress who have a portion of their district within your watershed project boundaries, the media and the chairperson of the Great Lakes Commission delegation from your state. Describe how and what you will do to meet this requirement.

Explain:

The Oneida Tribe will hold a tour explaining the Non-Point Program's historical achievements and project sites throughout the reservation. Invited to the tour will be members of the Wisconsin Tribal Conservation Advisory Council, members of Congress, the media, and leaders/elected officials of the Oneida Tribe. Historically the Oneida Tribe has been a model for Tribal Non-Point Programs and hosted similar tours for conferences and events such as the American Indian Alaskan Native Employee Association Conference held in 2009.

2. You are also required to establish an on-going outreach campaign. Describe your on-going outreach campaign strategy for the general public/media, landowners/landusers and elected officials

Explain:

A community outreach and education display for the project will be developed for community events held by the Oneida Nation's Environmental Health and Safety Division. Over 600 people attend these events each year.

In addition, upon completion of the project, a tour of field projects will be held to show accomplishments.



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