**Project Profile**

**Project Title:** Watershed Education and Stewardship Teams (WEST) **Grantee Organization:** Tip of the Mitt Watershed Council (TOMWC) **Project Team:** Maria Affhalter, TOMWC maria@watershedcouncil.orgElijah Baker, TOMWC eli@watershedcouncil.org

**Contact Person:** Maria Affhalter, maria@watershedcouncil.org
**Grant Amount:** $10,000.00
**Time Frame:** March 15, 2016 to March 15, 2017
**Focus:** Planning-Stewardship

**Brief Project Summary**

The Tip of the Mitt Watershed Council utilized GLFT grant funds to plan and develop a pilot water resources education program for middle school science students and teachers in local Northern Michigan schools. Development of the program plan included partnering and collaborating with Great Lakes Stewardship Initiative hubs and local environmental partners, as well as surveying middle school science teachers to establish program needs and recruitment. The original program, Watershed Education and Stewardship Teams (WEST), is now fully funded by GLFT and renamed the Tip of the Mitt Watershed Council Water Resources Education Program (WREP).

**Project in Context**

Our experience with implementing the third year of the Watershed Council’s Watershed Academy program in area high schools shows that many students continue to have limited exposure and understanding of water resources management and ecology. Previous survey efforts of area biology students and teachers regarding watershed knowledge shows little foundation for understanding basic issues with water resources.

Middle school-aged students are uniquely positioned to benefit greatly from a long term focus on a chosen watershed issue. Seeing a need for improved water resources education at the middle school level in our service area (Emmet, Cheboygan, Charlevoix and Antrim counties), the Tip of the Mitt Watershed Council used GLFT funding to identify the needs of local educators and students. The Watershed Council collaborated with Great Lakes Stewardship Initiative (GLSI) hubs ([Grand Traverse Stewardship Initiative](http://www.glstewardship.org/About/RegionalHubs/GrandTraverseStewardshipInitative.aspx) (GTSI) in Traverse City, MI and [Northeast Michigan Great Lakes Stewardship Initiative](http://www.glstewardship.org/About/RegionalHubs/NortheastMichGreatLakesStewardshipInitiative.aspx) (NEMGLSI) in Alpena, MI) to share expertise and resources to support planning and development. Additionally, environmental organizations such as Little Traverse Conservancy (LTC), Little Traverse Bay Band of Odawa Indians (LTBB), Awareness to Action (A2A), and community resource organizations have supported our efforts in this planning grant.

The Watershed Council Water Resources Education program (WREP) will help middle school students build a connection with their watershed by identifying and learning about an issue or topic, and committing to a corresponding stewardship action. Integration within the school curriculum allows participants to experience community collaboration and extend the classroom experience, helping students view themselves as a part of the entire community. This pilot program will provide an opportunity for middle school students to engage in meaningful research that enhances their understanding of local aquatic ecosystems and empowers them with tools to become effective stewards of their communities and the broader Great Lakes Basin.

**Project Goals**

The primary goal of the WEST planning grant was to support collaboration with two nearby regional Great Lakes Stewardship Initiative hubs that provided additional tools and resources to further develop a pilot water resources education program for the middle school level. Development of a survey tool for area middle school science teachers allowed the Watershed Council to identify specific watershed topics and areas of curriculum integration for each school responding. Survey results provide both school and teacher interest, along with areas of curriculum in need of resources and support.

**Results**

* Meetings with hubs, NEMGLSI and GTSI, helped with the development of organizational and planning documents. Both hubs provided extensive resources, answered programming questions and shared teacher documents for the pilot program.
* 12 of 40 teacher surveys were returned to establish program needs and teacher/team recruitment. Four schools from the respondents were selected to participate in our 2017-2018 pilot Water Resources Education Program.
* Watershed topics and curriculum integration identified in surveys will be developed for the pilot program.
* Development of the GLFT grant proposal “Tip of the Mitt Watershed Council Water Resources Education Program” funded in March 2017.

***Products and Resources***

Teacher letter

Survey

Survey Data

NEMGLSI letter of support

**FINAL NARRATIVE REPORT**

**Background/Overview**

The Tip of the Mitt Watershed Council utilized the Great Lakes Fishery Trust (GLFT) Stewardship grant to plan and develop a pilot water resources education program for middle school science students and teachers in local Northern Michigan schools between April 2015 and January 2017. GLFT funding encouraged and endorsed the emerging efforts of the Watershed Council in outreach and education.

Area teachers were surveyed to determine program needs and interests with regard to water resource education at the middle school level. Collaboration with two regional GTSI hubs and local environmental organizations supported program development through the sharing of organizational documents, lessons and curriculum. Results from the survey and collaboration with the hubs resulted in the GLFT funding of a pilot program (WREP) 2017-2019 and the recruitment of 10 teachers, four schools and over 400 middle school students for participation in this new program.

**Project Outcomes**

**Outcome 1: Collaborate with local partners**

Education staff met and collaborated with Great Lakes Stewardship Initiative (GLSI) hubs, [Grand Traverse Stewardship Initiative](http://www.glstewardship.org/About/RegionalHubs/GrandTraverseStewardshipInitative.aspx) in Traverse City, MI and [Northeast Michigan Great Lakes Stewardship Initiative](http://www.glstewardship.org/About/RegionalHubs/NortheastMichGreatLakesStewardshipInitiative.aspx) in Alpena, MI. to share expertise and resources to support planning for WREP.

Two meetings with Michelle Handke, Grand Traverse Stewardship Initiative (GTSI) in Suttons Bay, MI resulted in the sharing of planning resources to help with the implementation of the pilot program. Most valuable to the process were planning documents for teacher/team project, a final project plan for placed-based projects, coordination of community resources plan and place-based education resources.

Two meetings with Meaghan Gass, Northeast Michigan Great Lakes Stewardship Initiative (NEMGLSI) resulted in the sharing of sample place-based education (PBE) lessons, program evaluation GTSI “Most Significant Change,” methods of sharing team projects and structures to support teacher involvement and engagement.

Meetings with teachers from selected pilot WREP schools were used to establish a year-long commitment of teachers and begin planning for the 2017-2018 school year.

Six Petoskey Middle School 6th grade science teachers and 240 6th grade students will be participating in Emmet County. Boyne City Middle School 8th grade Flex Class (1 teacher) and approximately 60 students will be participating in Charlevoix county. The Wolverine Middle School 7th and 8th grade science teacher and 60 students will be participating in Cheboygan County. The Ellsworth Middle School middle school teachers (2 teachers) and 50 6th-8th grade students will be participating in Antrim County.

**Outcome 2: Develop and conduct a survey to establish program needs and teacher/team recruitment**

Education staff developed a survey to establish program needs and teacher/school recruitment for participation in the W.R.E.P. program during the 2017/18 school year.

The survey was conducted within the Watershed Council service area (Emmet, Antrim, Charlevoix and Cheboygan counties). Surveys were mailed to 40 identified middle school science teachers in February 2017. Eight surveys were returned through mail. An email was sent in March 2017 to teachers not responding through mail with a link to a Survey Monkey. Four additional teachers responded via the online survey. The results include teacher interest regarding the type and extent of programming needed, grade level appropriateness, possible focus areas or topics of interest, and workability with schools.

The surveys were used to select the four teachers/schools who would engage in the pilot year of the program. They allowed Watershed Council staff to determine which teachers had interest in the program and had classroom populations that would work well with the Water Resources Education Program organizational model.

Teachers were asked to select factors that act as barriers to water resource education from a list including funding, materials, time, and resources. Six out of the 12 teachers responded that funding is the biggest barrier to education, with the other barriers following closely behind.

Teachers were also asked to select the Michigan K-12 Science Standards that they would be able to meet with the help and support of the Tip of the Mitt Watershed Council. The results indicate that the majority of the surveyed teachers are interested in receiving support in communicating real world data and scenarios to their students in order to help students better comprehend earth systems. Teachers also expressed interest in help communicating the impacts of humans on the environment, and the predicted impacts of climate change.

Teachers were asked to select topics they were interested in learning more about or needed additional support from the Watershed Council. Each topic had at least two teachers that were interested. All but two of the teachers were interested in learning more about aquatic invasive species, and over half were interested in climate change, habitat loss, Great Lakes studies, Wetlands, and groundwater.

The final question asked teachers to select the type of assistance that they would prefer the Watershed Council provide them with. The results show that over half of the teachers are interested in professional development focusing on water resources education. And all but one are interested in a classroom visit from the Watershed Council staff to support their regular curriculum. Almost half of the surveyed teachers also expressed interest in funding, instructional and planning support.

**Outcome 3: Develop Program Plan for implementation in 2017-2018**

Watershed Council staff gauged the interest and needs of middle school teachers in Antrim, Charlevoix, Cheboygan, and Emmet Counties with a water resources education survey. The survey asked teachers to share information about their classes and curriculum, the challenges they face when implementing water resources education, topics that they would be interested in learning more about, and the type of help or assistance that Watershed Council staff could provide them with. Watershed Council staff used this survey to select four teachers who would engage in the pilot year of the Water Resources Education Program.

Education staff attended the NEMGLSI Annual Networking Meeting “Place-Based Stewardship Education meets Environmental-STEM Opportunity” in February 2017. Place-Based Education training supports development and planning of watershed educational experiences that reflect Great Lakes Stewardship Initiative goals.

Planning surveys and meetings with pilot teachers have identified areas of curriculum integration within team schools including the introduction of Great Lakes Literacy Principles and Next Generation Science Standards. Middle school science teachers selected for the pilot program have agreed to collaborate with the integration of water resources education developed in current science curriculum.

Future meetings with teachers and teams will help develop specific experiences that utilize local community and environment as a resource for the team stewardship action project.

Approximately 400 students and 10 teachers will benefit from recent GLFT funding of the Watershed Council’s Water Resources Education Program, the pilot program developed with the support of GLFT planning grant. Current GLFT funding of $25,000 enables benefits are provided for less than $75 per student in GLFT funding. The benefits can be provided at this relatively low level of GLFT investment due to a number of characteristics that are built into the program.

These include:

* Involving an entire class (20-30 students) in the experience.
* Combining classroom and practical field experiences that reinforce learning by the students participating and increase its effectiveness. Projected minimum 6-8 hours of student contact time per class.
* The program is designed to be very cost effective in the use of organizing and teaching staff. The curriculum content is already available to Watershed Council education staff and would be designed for grade appropriate learning.
* Depending on the focus area, the pilot program will draw strategically on the staff of partner organizations.
* GLFT funding will complement funding already secured from community foundations and Watershed Council donors stretching GLFT’s investment dollars.

**Related Efforts**

The GLFT planning grant provided the Watershed Council the opportunity to use the additional year of experience implementing the Watershed Academy to secure connections to area schools and further develop school based programming. Conversations among education staff and two nearby regional Great Lakes Stewardship Initiative hubs provided additional tools and resources to support development of a water resources education middle school program.

In March 2017, the Tip of the Mitt Watershed Council received a grant from the Great Lakes Fisheries Trust to provide middle school water resources education in the Watershed Council service area (Antrim, Charlevoix, Cheboygan and Emmet Counties). Funding for this pilot program, WREP was a direct result of efforts funded in the planning grant. Community foundations, private foundations, and private funders have shown strong support for the Watershed Council’s Watershed Academy program since 2015 and we believe similar support will be present for this new pilot program.

In addition to securing funding from GLFT and commitments from four area schools, the survey increased discussion at the school administrative level about educational resources the Watershed Council provides. In May and June 2017, Watershed Council staff provided programming support to the Petoskey Public Schools K-12 STEM Coordinator, Rebecca Smith, by developing and facilitating the 5th grade Underwater ROV water collection project. A unique feature of our involvement was the student participating will also be involved in the Water Resources Education Program as 6th graders in the fall.

**Communication/Dissemination**

**Teacher Survey:** Surveys were mailed to middle school science teachers and an email was sent to teachers not responding through mail with a link to a Survey Monkey.

**Reflections**

GLFT funding for planning and development of the pilot program was extremely successful, the additional year of programming and collaboration with GLSI hubs was needed.

The teacher survey was a very useful tool for gauging teacher interest.

Future surveys would include the option to respond to survey via mail and online at the same time, which may increase response percentage.

**Attachments**

GLFT #1514 WA Financial Report

Financial Narrative

Teacher Letter

Teacher Survey

Survey Results

Letter of Support