Muskegon River Water Monitoring Program

Final Report

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Submitted by:

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Introduction

The Muskegon River Watershed is one of the largest watersheds in Michigan, encompassing over 2,700 square miles, and is fed by warm, cool and coldwater tributaries. With its headwaters in the Higgins Lake/Houghton Lake areas and outlet into Lake Michigan in Muskegon, the River is over 219 miles in length and is the second longest river in Michigan.

One of the Information and Education activities recommended in the Muskegon River Watershed Management Plan is to "support local volunteer monitoring efforts". In 2004, the Muskegon River Watershed Assembly (MRWA) submitted a proposal to recruit volunteers, train them and provide them with equipment to conduct water monitoring in the streams and rivers of the Muskegon River Watershed. In 2005, the MRWA was one of the first organizations funded through the Michigan Clean Water Corps (MiCorps).

Goals and Objectives

The overall goal of this project was to incite citizen interest in water quality issues by training them to collect and record water monitoring data that will indicate the healthiness of the streams and rivers in the Muskegon River Watershed. A secondary goal was the provision of water monitoring data to assist the MRWA, local government officials and other organizations in their protective and restorative projects and to develop better ordinances. To accomplish these goals, the following tasks (objectives) were implemented:

Task 1 – Project Administration
Task 2 – Education and Training
Task 3 – Data Collection
Task 4 – Data Development and Distribution
Task 5 – Evaluation

Analysis of Goals and Objectives

Task 1 – Project Administration

Project Administration was completed by the MRWA Project Manager. Eight (8) quarterly reports were submitted, per MiCorps guidelines, in a timely fashion to the MiCorps organization. A Quality Assurance Project Plan (QAPP), final report and release of claims statement were also completed along with products and deliverables. Under this task, a sub-contract was made between MRWA and an independent training contractor.

- Successes – The MiCorps program was well received by Muskegon River Watershed residents and there is much interest in the program. Reports, trainings and other administrative tasks were completed in a timely basis.

- Challenges – Because the MRWA was one of the first organizations to receive funding through MiCorps, they had to overcome several delays and

obstacles. One of the biggest challenges was the task to complete a QAPP and obtain approval from the MiCorps organization. The QAPP needed to be revised a number of times as MiCorps officials realized various details needed to be modified in the new program. Because the QAPP needed to be approved before purchasing equipment and providing volunteer training sessions, one of the first training sessions planned in the fall of 2005 was canceled. Another challenge was the MiCorps change in the macroinvertebrate datasheet after the first MRWA training session in September 2005. The original datasheets were distributed to the first trained volunteers at that session and used for the fall monitoring. Macroinvertebrates were then changed or added in the different categories on the datasheet. Even though the Project Manager sent the revised datasheets to all volunteers and has told volunteers numerous times to use the "October 2005" marked datasheets, the original sheets are still being used by some volunteers. The revised datasheets are also available on the MRWA website.

Task 2 – Education and Training

Education and training were shared by the MRWA Project Manager and sub-contractor Cynthia Fitzwilliams-Heck, a Ferris State University instructor. They conducted various informal meetings to plan and coordinate the training sessions. Fitzwilliams-Heck created a PowerPoint training presentation and also developed an exam for the trainees to complete. A score of 95% on the exam has to be obtained before a volunteer is eligible to become qualified.

The training sessions were scheduled on Saturdays with seven hours of education provided. A training syllabus was developed by the Project Manager and provided to each volunteer attending the training sessions. Pre-training and post-training surveys were developed for the volunteers to evaluate their watershed knowledge, in addition to evaluating the training materials and session activities.

The Project Manager developed a tri-fold brochure to publicize the water monitoring program through the mail and on the MRWA website. A flyer was also developed to publicize the training sessions along with news releases in local newspapers to announce the sessions. Volunteers were also recruited through other existing MRWA volunteer activities.

Muskegon River Water Monitoring volunteer training sessions were conducted in four (4) different sub-watersheds of the Muskegon River Watershed: Ryan-Mitchell Creeks Sub-watershed, Clam River Sub-watershed, Tamarack Creek Sub-watershed and the Brooks Creek Sub-watershed.

Two (2) annual meetings, "Meeting of the Monitors", were held in Big Rapids; the first in July 2006 and the second in June 2007. These meetings were open to all volunteer monitors participating in the MR Water Monitoring Program. The first

meeting highlighted Janice Tompkins, MDEQ, who spoke to volunteers about the importance of their monitoring efforts. The second meeting highlighted Jo Latimore, MiCorps, who gave volunteers more information on macroinvertebrates than they had learned during the training sessions.

- Successes – Twenty-six (26) volunteer monitors were trained through this project's program. The two (2) annual meetings were well attended by volunteers even though many had a great distance to travel.

- Challenges – Many people were interested in the volunteer training sessions. Twenty-one (21) were registered for the first session that was held in Big Rapids but only ten (10) actually participated. This was a continual problem with the other sessions. Many people were interested but either had other activities on the training days or could not spend that much time on a volunteer activity due to work or home schedules. Many cancelled at the last minute when other things arose. The Project Manager and Trainer are discussing an alternate training schedule to help rectify this problem.

Task 3 – Data Collection

Volunteers were instructed to conduct their water monitoring during the first two weeks of May and the first two weeks of September and to send their datasheets to the MRWA within one week of their monitoring event.

- Successes – Twenty-nine (29) sites were monitored in spring 2007 with three volunteers, trained after the monitoring time period, who will add their sites in fall 2007. Sites in twelve (12) sub-watersheds of the Muskegon River's forty (40) sub-watersheds were included in this monitoring session. Five (5) counties of the Watershed's nine (9) major counties were involved in the monitoring.

- Challenges – Volunteers had previously been very prompt in returning their datasheets to the Project Manager but the spring 2007 monitoring proved different. Even though they had completed their monitoring during the first two weeks of May, a couple volunteers did not submit their datasheets until the last week of June. Per a suggestion from a volunteer, the Project Manager will create an electronic datasheet that can be completed and then submitted via email.

Task 4 – Data Development and Distribution

The Project Manager created an Access database to record and contain the data from the volunteer water monitoring datasheets. Completed reports from the database are mailed to each respective monitor. The database has also proven efficient in submitting the data to the MiCorps organization by uploading the data to an ftp address for easy retrieval by MiCorps.

The Project Manager also designed water monitoring project web-pages on the MRWA website to publicize the project and to provide volunteers with a place to easily retrieve the latest project datasheets.

The Project Manager has also submitted articles to local newspapers about the Muskegon River Water Monitoring Program both to announce the availability of the program and the dates of training sessions.

A postcard was sent to all county and township officials, with monitoring sites in their areas, telling them about the program and the sites being monitored. This mailing was sent in June 2007 and one official, to date, has requested the monitoring information for his area.

- Successes – The database created by the MRWA Project Manager is efficient and easy to input data in a very short time. Using Access formulas, the "checks" entered by each macroinvertebrate automatically adds the water quality scores for each site in the resulting reports. Any report needed by the MRWA or MiCorps can easily be created.

- Challenges – Most of the newspapers in the Watershed are very receptive in receiving articles about MRWA programs. There is at least one newspaper that rarely will print anything sent to them. Another challenge faced was the change in protocol in uploading data to MiCorps. When the Project Manager tried to upload the spring 2007 data, she could no longer get to the ftp address previously given. The Project Manager was not given new instructions for uploading the data until after the grant period was over.

Task 5 – Evaluation

To evaluate the training sessions, pre-training and post-training surveys were developed for the volunteers, for the Project Manager's evaluation of their watershed knowledge, and the evaluation of training materials and session activities. The surveys and results are contained in the CD enclosed with the report.

The original and resulting measurable monitoring objectives of the Muskegon River Water Monitoring Program are listed on the following chart:

Measurable Monitoring Objectives of Proposal	Actual Results
Four training sessions held	Four training sessions held
Monitors within four targeted sub-watersheds	Monitors within three targeted sub-watersheds plus nine additional sub-watersheds
Three sites within each targeted sub-watershed = twelve (12) sites 1. Tamarack Creek 2. Ryan/Mitchell Creek 3. Clam River 4. West Branch Muskegon River	Twenty-nine sites monitored in twelve sub-watersheds 1. Tamarack Creek – one site in Upper Tamarack and two in Lower 2. Ryan Creek/Mitchell Creek – 5 sites 3. Clam River – two sites in Upper and one site in Lower 4. Bigelow Creek – 10 sites 5. Little Muskegon River – 1 site 6. Backus Creek – 1 site 7. Hardy Dam Pond – 3 sites 8. Houghton Lake – 1 site 9. Dead Stream – 1 site 10. Haymarsh Lake – 1 site
Two annual meetings of volunteer monitors	Two annual meetings of volunteer monitors
Database created to hold data	Database created to hold data
Project web-pages developed on MRWA website	Project web-pages developed on MRWA website

All objectives were achieved except for having monitoring sites in the West Branch Muskegon River Sub-watershed. This Sub-watershed is sparsely populated. The Project Manager and Trainer traveled through this Sub-watershed looking for appropriate sites to monitor and didn't find many. It is mostly wetlands.

Environmental Benefits

The Muskegon River Water Monitoring Program provides many environmental benefits for the MRWA and other organizations. Compiling water monitoring data will help the MRWA determine the health of their streams and rivers. It has already assisted the MRWA and other organizations in the following:

- The Nature Conservancy (TNC) oversees the Coolbough Nature Preserve where the MRWA is installing habitat improvement structures. The TNC wanted monitoring completed to assure that the structures were benefiting and not harming the stream.
- Members from the Houghton Lake Lake Association are involved in the Monitoring Program and monitor streams entering and exiting Houghton Lake to see the affects of the Lake's activities on the Muskegon River.
- Two sites on Mitchell Creek, within the City of Big Rapids, are being monitored to assist in a project being developed by the MRWA and partners to observe the changes in the stream because of increased development within its Watershed.

The Project Manager presented an information/education session to four hundred Mecosta County fourth-graders during a Water Fair in September 2005. Monitoring techniques and macroinvertebrate identification were included in the session. One teacher who was trained through this program has given a macroinvertebrate session at a teacher workshop.

Overall, the most important benefit from this project is educating citizens on the importance of water quality in their communities. The annual meetings have also assembled and united people who are interested in water quality.

List of Partners

Wege Foundation – provided over $8,000 of the match
Fremont Area Community Foundation – provided almost $800 in additional funding
Cynthia Fitzwilliams-Heck, FSU instructor and independent contractor
Ferris State University – provided meeting room for both annual meetings
Mecosta County Chamber of Commerce – provided meeting room for training
Clam Union Township – provided meeting room for training
City of Howard City – provided meeting room for training
Garfield Township – provided meeting room for training
MDEQ – provided presenter at annual meeting

List of Products

Eight (8) quarterly reports (the eighth is included with draft final report)
Quality Assurance Project Plan (approved during first quarter of grant period)
One Final Report and Fact Sheet (fact sheet is included with this final report and on CD)
Release of Claims Statement (included with final report)
Database containing monitoring data
Monitoring data (unloaded bi-annually to MiCorps)
Tri-fold Brochure for project (included in the enclosed CD)
Training Certificate (included in the enclosed CD)
Flyer to publicize each training session (included in the enclosed CD)
Training Syllabus (included in previous quarterly report)
Pre-training and Post-training surveys (surveys and results are included in the enclosed CD)
Datasheets for macroinvertebrate collection and stream assessment
Web-pages about the project on MRWA website

Project sustainability

The Muskegon River Water Monitoring Program has succeeded in inciting water quality interest in citizens located within the Muskegon River Watershed. In addition to the volunteers who were trained through this program, many other people have expressed their interest.

The MRWA Executive Board has recognized the importance of the program and has designated funding to continue the training sessions and provide equipment for new volunteers for at least two years following the MiCorps grant period.

Photos, Brochures, Flyers and Surveys

A CD is included with the final report and contains:

- Annual meeting pictures and minutes
- Brochure used for program information distribution
- Certificate used for “certifying” trained monitors
- Data reports from database
- Fact Sheet included with this report
- Flyer used to publicize training sessions
- Monitoring and training session pictures
- Surveys and compiled results of surveys