

8. Information and Education (I/E) Strategy

Educating and involving the public are two key elements to the success of any watershed management plan. Public education draws interest, reinforces the importance of water quality management and informs stakeholders about decisions in which they will have a say. Involving the public throughout the planning and implementation process allows stakeholders, volunteers and other interested parties to take ownership of the planning and actions that take place. This aspect of “ownership” reinforces community partnerships as well as the level of commitment people have to their environment.

Chapter 3 describes key stakeholders and public participation in the development of the Huron Creek watershed management plan, including formation of the Huron Creek Watershed Advisory Committee (WAC), presentations on various watershed topics at the WAC meetings, and creation of the WAC’s mission statement (watershed goals). In addition to the WAC activities, several other information and education (I/E) events have taken place, as described in Section 8.1. Recommendations for future I/E strategies are described in Section 8.2.

8.1. Information and Education Activities Conducted 2001-2008

8.1.1. Watershed Plan Development Website

In spring 2007, MTU graduate students and Professor Hugh Gorman of the MTU Department of Social Sciences created a website to present proposed components of the watershed management plan. The website development was a product of the MTU Department of Social Sciences course “Environmental Decision Making.” The purpose of the website was to provide information to the public during the development of the watershed management plan for the Huron Creek watershed. Topics covered on the website include:

- A general description of the watershed
- Stormwater management issues
- Water quality management issues
- Proposed improvements to the Kestner Waterfront Park
- Conditions and features of Huron Creek
- Watershed vegetation and wetlands issues
- Cultural and historical preservation issues

This website can be found at: <http://www.social.mtu.edu/GORMAN/HuronCreek/HuronCreek.htm>.

8.1.2. Public Comment Period

After completion of the first draft of the final watershed management plan text, a one-month public review period was held in which the public was invited to review and provide comment on the plan. The review period was announced in a press release in the local newspaper. The press release described how and when the draft plan could be accessed.

The draft was made available at the Houghton Public Library and on the web from June 9th to June 30th 2008. Shortly after the public review period ended (July 7, 2008) a public meeting was held to present the main parts of the plan and to collect additional public comments. This watershed management plan has been revised according to the comments received during this period. These comments are listed in Appendix U.

8.1.3. Huron Creek Day

On April 28th, 2007, a multi-topic educational event called “Huron Creek Day” was held by MTU graduate students at the Kestner Waterfront Park in Houghton. This event was a product of the MTU Department of Social Sciences course “Environmental Decision-making.” Poster presentations were made on subjects such as wetland values and functions, stormwater management and the watershed’s historical heritage. The event also included guided bus tours of the watershed so that participants could visit areas of concern and make a visual connection with the creek. Tour locations included the Wal-Mart wetland mitigation and creek re-route area, the former Houghton landfill site and leachate collection system, and of course, the Kestner waterfront park.

The event was advertised in the Houghton Daily Mining Gazette, as well as on local radio stations and through flyers posted at local businesses. The target audience was the general public, including City of Houghton and Portage Township officials and planning commissioners. Approximately 30 people attended this event, and a lengthy article was published in the Mining Gazette. Flyers and articles covering this and other completed I/E events are provided in Appendix S.

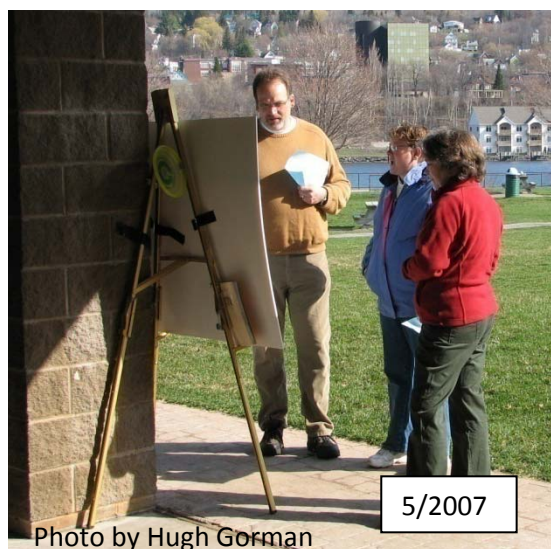


Figure 8.1 Participants viewing an educational poster at Huron Creek Day

8.1.4. Litter Clean-Up Days

Litter clean-up days were held along Huron Creek in May 2007 and May 2008. The first was organized by the MTU Center for Water & Society (CWS) and was attended by Girl Scout troops and students and teachers from a home school group. Approximately 15 people attended.

This event began with a brief educational session about the watershed and water quality. The second clean-up day was organized by CWS and the MTU Society of Wetland Scientists (SWS). This event was attended by members of other community organizations such as Trout Unlimited and Friends of the Land of the Keweenaw (FOLK). Approximately 15 people attended. The Daily Mining Gazette provided a front-page article on the clean-up and the Huron Creek watershed management plan (see Appendix S). Materials and disposal costs were paid for by the Superior Watershed Partnership of Marquette, Michigan.



Figure 8.2 Participants at a Huron Creek Clean-Up Day

8.1.5. Storm Drain Stenciling

In May 2007, CWS organized a storm drain stenciling event. At this event, participants learned about stormwater and its relationship to water quality, and how storm drain stenciling can help spread awareness. Afterwards, several watershed storm drains were stenciled with the words “Drains to Lake, Do Not Dump,” and flyers were distributed to local businesses (for distribution to the public) that contained information about local waste disposal and recycling facilities.



Figure 8.3 Storm drain stenciling

8.1.6. Educational Sign in Kestner Waterfront Park

In fall 2006, the BRIDGE alternative school in Hancock created and installed a sign describing the Huron Creek watershed in the Kestner Waterfront Park (see Figure 8.4). The content of the sign was reviewed and approved by the Huron Creek WAC. This sign was placed adjacent to the creek and shows the reader their location relative to the watershed boundaries. The sign also discusses why watershed management is important, and what can be done protect water quality in a watershed.

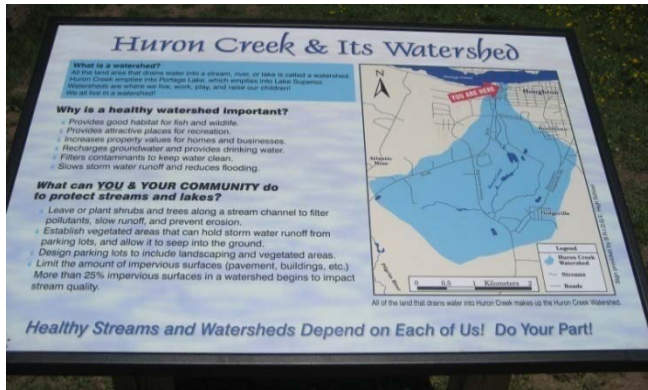


Figure 8.4 BRIDGE School sign at Kestner Waterfront Park

8.1.7. Publications in Local Media

Various publications have also assisted in spreading awareness of environmental issues in the Huron Creek watershed. These have included the Copper Country Trout Unlimited chapter newsletter, the MTU Geological and Mining Engineering and Sciences (GMES) department newsletter and several *Daily Mining Gazette* Articles. These articles have described the Huron Creek watershed, the management planning process, specific environmental concerns, and the need for public awareness. The GMES publication in particular discussed contributions of MTU undergraduate students to the formation of the management plan. As mentioned above, the *Daily Mining Gazette* published articles covering events such as Huron Creek Day and litter clean-up days. Other articles published described events of WAC meetings, methane monitoring of the former Houghton landfill, aesthetics of the creek in the Kestner waterfront park, and letters to the editor regarding the various aspects of the creek. These articles and publications can be found in Appendix S. Also, another Huron Creek article is planned for publication in the MTU Alumni newsletter in Fall 2008, which is sent to all graduates of Michigan Tech.

8.1.8. Local School Activities

From 2001 to the present, Houghton Middle School science teachers and students have used Huron Creek as a laboratory for learning about water quality. Activities have included water chemistry sampling and benthic macro-invertebrate assessments. In 2007 and 2008, representatives from the MTU Center for Water and Society (CWS) have made presentations in these classes on general aspects of the Huron Creek watershed, land use history in the watershed, current water quality issues, and the importance of

citizen involvement in watershed management. The activities have involved more than 300 middle school students.

8.1.9. Community Workshops and Courses

From 2000 to the present, Joan Chadde, Education & Outreach Program Coordinator at the Western U.P. Center for Science, Mathematics and Environmental Education (WUPCSME) has used Huron Creek for educational workshops for high school teachers, school-aged children and other grant-funded activities. Workshop activities have included water quality monitoring, macroinvertebrate sampling, watershed hydrology, wetlands, and stormwater runoff, and surveys of public knowledge of the watershed. Approximately 100 students and teachers have attended the workshops. Figure 8.5 shows teachers completing flow monitoring at the Kestner waterfront park.



Figure 8.5 Graduate student teachers monitoring the Flow of Huron Creek

8.2. Proposed Information and Education Strategy

Increasing awareness and understanding how actions on the land can impact water quality is a critical step toward protecting and improving water quality in the Huron Creek Watershed. The purpose of the proposed information and education strategy is to support the goals, objectives, and recommended actions proposed in this watershed management plan. Table 8.1 identifies key recommended actions for the proposed I/E strategy. Explanations of selected portions of the proposed actions are given in Sections 8.2.1., 8.2.2., 8.2.3., and 8.2.4.

Table 8.1 Recommended Actions: Information and Education

Recommended Action	Target Audiences	Frequency	Medium or Method	Potential Partners¹	Timeline (years out)	Estimated Cost/year	Potential Funding Sources²
Develop and distribute information on important functions of wetlands; construct Wetland Education Station (see Section 8.2.1)	General public, K-12, tourists	Develop information, annual distribution of information, construction of education station	Brochure, newsletter, newspaper, website, permanent education site	City of Houghton, Wal-Mart of Houghton, WUP Center, HKCD, NRCS	information: 0-2 station: 0-4	Cost of information development, printing, and mailing; Education Station (deck), Path, Interpretive Sign = \$4,000 to \$5,000	Wal-Mart of Houghton, Private
Develop and distribute information about the location of scenic vistas, historical sites; install educational and historical signage (see Section 8.2.2)	General public, K-12, tourists	Develop information, annual distribution of information, development and installation of signs	Brochure, newsletter, newspaper, website, permanent signs	Houghton-Portage Township Schools, BRIDGE School, WUP Center, MTU Industrial Archeology Department	information: 0-2 signs: 0-4	Cost of information development, printing, and mailing; \$200 to \$350 per sign	NPS, Private
Conduct training and implement volunteer water quality (see Section 8.2.3) and invasive species monitoring programs	Riparian landowners, general public, K-12, local governments	Develop, implement, repeat as necessary	Training packet, newsletter, workshop	Houghton-Portage Township Schools, WUP Center	0-2	Cost of packet development and reproduction, workshops	NPS
Inform public of Implementation of recommended actions (see section 8.2.4)	General public	Hold meetings, news events as necessary	Meetings, news events	City of Houghton, Portage Township	0-4	Minimal	

Recommended Action	Target Audiences	Frequency	Medium or Method	Potential Partners¹	Timeline (years out)	Estimated Cost/year	Potential Funding Sources²
Hold watershed tours to promote protection and improvement of water quality	General public, K-12, local governments	Yearly	Tours	City of Houghton, Portage Township, CWS	0-4	Cost of transportation	City of Houghton, Portage Township
Educate about proper construction techniques and stabilization practices to minimize erosion	Developers, landowners, local governments	Develop information, annual distribution of information, workshops	Brochure, newsletter, newspaper, website, workshops	HKCD, NRCS	0-2	Cost of information development, printing, and mailing, workshops	NPS
Develop and distribute information on limiting nutrient loadings to surface water through limited use of fertilizers or low phosphorus fertilizers	Landowners, businesses, general public, local governments	Develop information, annual distribution of information, workshops	Brochure, newsletter, newspaper, website, workshops	HKCD, NRCS	0-2	Cost of information development, printing, and mailing, workshops	NPS
Educate about low impact development techniques for managing stormwater runoff	Landowners, businesses, general public, local governments	Develop information, annual distribution of information, workshops	Brochure, newsletter, newspaper, website, workshops	City of Houghton, Portage Township, HKCD, NRCS, Houghton County Drain Commissioner, WUP Center	2-4	Cost of information development, printing, and mailing, workshops	NPS

Recommended Action	Target Audiences	Frequency	Medium or Method	Potential Partners ¹	Timeline (years out)	Estimated Cost/year	Potential Funding Sources ²
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¹Potential Partners

HKCD = Houghton-Keweenaw Conservation District
MDEQ = Michigan Department of Environmental Quality
MSUE = Michigan State University Extension
CWS = MTU Center for Water and Society
SWS = MTU Chapter of the Society of Wetland Scientists
MG = Houghton Area Master Gardeners
MTU C&E = MTU Civil & Environmental Engineering Department (Courses)
MTU Micro = MTU Microbiology Club
HAS = Houghton Area Schools
WUP Center = Western Upper Peninsula Center for Science, Mathematics and Environmental Education
CCTU = Copper Country Trout Unlimited

²Potential Funding Sources

CZM = MDEQ Coastal Zone Management Grant
EPA GLNP = US Environmental Protection Agency Great Lakes National Program Office Grant
U & CF = Urban and Community Forestry Grant
NPS = MDEQ Nonpoint Source Grant
Private = Private Funding/Landowners
NAWCA = North American Wetlands Conservation Act Grant
USDA = Rural Development Housing & Community Facilities
TU = Trout Unlimited Embrace-A-Stream Program.

8.2.1. Wetland Education Station

The Houghton Wal-Mart wetland mitigation area has been recognized by the Huron Creek WAC as a potentially valuable resource for on-site wetlands and water quality education.

An “education station” is proposed to be constructed near Huron Creek in the main wetland mitigation area. The education station would consist of a handicapped-accessible elevated deck and an interpretive sign. Topics discussed on the sign would include:

- History of the site in the context of mining activities.
- Values and functions of wetlands in watersheds.
- The wetland mitigation process and restoration completed at the site.

The education station would be an ideal location for use by local schools, MTU courses and community workshops, such as those discussed earlier in this chapter. The site readily combines historical and environmental education aspects, and provides a location for access to the creek for water quality or macro-invertebrate sampling. It is also proposed that a path be created from Razorback Drive leading out to the education station.

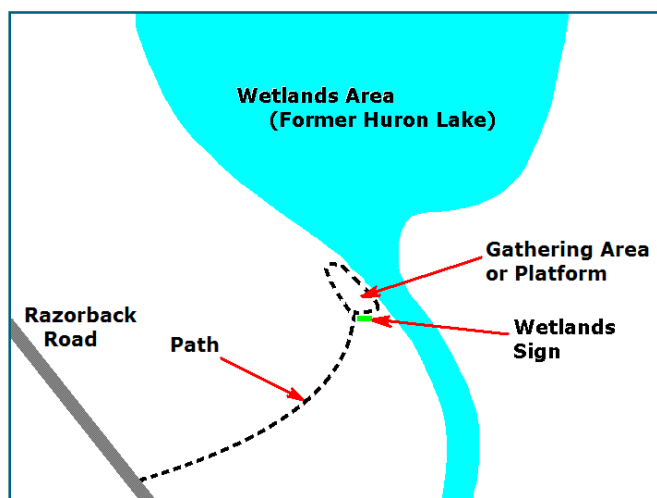


Figure 8.6 Conceptual Sketch of Path and Education Station

Currently, the City of Houghton owns and manages the wetland mitigation site and creek re-route area. Permission would have to be obtained from the city before any implementation activities begin. Also, it may be necessary to contact MDEQ as modifications to, and activities in wetland mitigation areas are limited based on state regulations for wetland mitigation sites. However, it is likely that additional use of the area for educational purposes would be considered favorable.

8.2.2. Educational and Historical Signage

Another goal identified by the Huron Creek WAC was to install interpretive signs on watershed health and historical heritage. The existing sign in the Kestner Waterfront Park and the proposed sign for the

wetland education station both address this goal. Some additional suggestions for signage in the watershed might include:

- Signs identifying Huron Creek where it crosses Sharon Avenue and Razorback Drive (see Figure 8.7).
- A historical sign in the Kestner Waterfront Park describing the history of the location, including the Copper Range roundhouse and coal dock.
- A separate sign and/or trail at the Wal-Mart wetland mitigation site describing the history of the former Huron Lake and the Huron Mine and stamp mill.



Figure 8.7 Example Sign for Creek Crossings

8.2.3. Volunteer Water Quality Monitoring

Volunteer water quality monitoring programs can provide a unique opportunity to engage citizens in watershed protection and enhancement efforts. Through monitoring, volunteers learn how the quality of surface water and groundwater is affected by human actions on the land and how to protect water resources. In turn, monitors can help to educate the local community on water quality issues. It is proposed that the MTU Center for Water and Society develop a volunteer monitoring program for the Huron Creek watershed. The program will include some or all of the water quality parameters identified in Section 7.4.1. The goal of the program will be to engage the public in ongoing monitoring and in the evaluation of the recommended actions proposed in this plan.

8.2.4. Informing the Public of Implementation of Recommended Actions

Chapter 7 identifies a series of recommended actions for improving and protecting the watershed. As each action proceeds towards implementation, a public education activity will be developed and conducted. The purpose of these activities will be to inform the public of the need for the action, the details concerning the action, and the expected outcome of the actions, in order to engage the public

before and during the implementation of the action. For example, partners responsible for implementing the proposed improvements to Huron Creek in the Kestner Waterfront Park will announce through the media the purpose of the improvements and that funds are being sought for the improvements.

While the improvements are being put in place, the public will be invited to view the activities. Finally, when the improvements are finished, a public dedication will take place. In addition to engaging the public in a particular recommended action, it is expected that these activities will help to continue public support for remaining activities.