7. Chapter 7 - Information and Education Strategies

7.1 *Vision for Information and Education for the Kawkawlin Watershed*

The Information & Education (I&E) strategy targets specific audiences to educate them on how their everyday actions and behavior can have potential impacts on water quality in the Kawkawlin Watershed. Various media will be used to deliver these messages, such as newsletters, demonstrations, presentations, public meetings and volunteer participation opportunities. There are resources available from past education efforts that can be used for the Kawkawlin River. It is time to coordinate the environmental education resources and the groups involved in the region to determine which would be a match for this project and able to obtain funding to assist in this I&E effort. The groups that should be approached to move the I&E effort forward are the KRWPOA, BASWA, Bay County Farm Bureau, and NRCS. There are others that can facilitate and act as a catalyst in moving the I&E effort forward towards implementation, they can be local community leaders, the Bay County Drain Commissioner's office, local environmental groups that wish to be involved in sustainable education efforts in the region and volunteer groups that organize efforts for Earth Day and River Day education sessions for area school districts. The Bay/Arenac Intermediate School District and the Saginaw Intermediate School District and those of Midland and Gladwin Counties can be approached to provide educational opportunities to engage large numbers of school children in these Earth and River Day opportunities.

7.2 *Current I&E Efforts in the Kawkawlin Watershed*

The Bay Area Storm Water Authority (BASWA) developed a MS4 watershed plan for the Kawkawlin Watershed as part of the ongoing NDPES Phase II requirements for municipalities coming under the watershed based Phase II stormwater permit (MIG610000) program in Michigan. To this end the BASWA has an existing Public Education Plan (PEP) that has been in effect for almost two permit cycles (a permit cycle is 5 years). This plan was revised in June of 2010.

This Public Education Plan (PEP) has the following objectives established:

1. Build awareness and stewardship of the two Bay County Watersheds and tributaries, the urban storm water system, as well as the daily impact of activities on this resource among municipality residents.
2. Improve the public's understanding of the Saginaw and Kawkawlin Rivers and the Saginaw Bay, to improve their status as natural resources, recreational resources, and valuable community assets (i.e. foster stewardship and enthusiasm for the rivers and Bay).
3. Build awareness and foster stewardship of the local watershed management actions, NPDES General Permit requirements and the municipal partners through dissemination of informational materials and coordination of activities.

The PEP must cover 9 specific areas for educating the public in the targeted watershed, under the current Watershed Permit they are:

1. Responsibility and stewardship in their watershed

2. The connection of MS4 catch basins, storm drains, and ditches to area waterways, and the potential impacts these could have on the surface waters of the state

3. Public reporting of illicit discharges or improper disposal of materials into MS4s

4. The effects and need to minimize the amount of residential or noncommercial wastes discharged into MS4s, including:
    a. Preferred cleaning materials and procedures for car, pavement, and power washing
    b. Acceptable application and disposal of pesticides, herbicides, and fertilizers
    c. Proper disposal practices for grass clippings, leaf litter, and animal wastes that get flushed into MS4s and the surface waters of the state

5. The availability, location, and requirements of facilities for disposal or drop-off of household hazardous wastes, travel trailer sanitary wastes, chemicals, yard wastes, and motor vehicle fluids

6. For property owners with septic systems, the proper septic system care and maintenance, and how to recognize system failure

7. The benefits of using native vegetation instead of non-native vegetation

8. For permittees with riparian land owners, methods for managing riparian lands to protect water quality

9. Additional pollutants unique to commercial, industrial, and institutional entities as the needs are identified.

The BASWA has been and will continue to implement this PEP as it relates to stormwater and the issues related to stormwater and surface water. This effort will also include ongoing cooperation with the Saginaw Area Storm Water Authority (SASWA) to educate the general public. It is anticipated that Midland County may be required to obtain a NPDES stormwater discharge permit in 2013 based on the 2010 census information. If that does occur the BASWA and SASWA should enter into a cooperative regional I & E plan for the Kawkawlin Watershed. It must be remembered, however, these authorities must direct their education to stormwater issues and the communities involved will only put their budgeted funds into programs that meet requirements of their permits. There are crossover opportunities for the Kawkawlin Watershed I & E with these authorities based on cooperative efforts to obtain grant funding for large scale programs. Therefore, a future goal will be to begin cooperative ventures with Midland County in anticipation of them having to meet NPDES stormwater requirements in the near future.

Watershed Signage

The watershed signage for the Kawkawlin Watershed has taken place already and can be expanded readily. Currently, the watershed signs are located strategically around the watershed. This signage has been around long enough that it is a recognized symbol for the watershed and its use will be expanded with the I&E plan as a

branding function for the implementation phase of this WMP.

BASWA Public Education Plan (PEP) Current Status

The BASWA public education plan has been revised for the MIG619000 permit. The PEP was revised in 2010 is included as an appendix for this WMP. It is to be referenced when planning and implementation for the Kawkawlin WMP is occurring to remove any redundancy and duplication in education between the two different WMPs developed for the Kawkawlin. See Appendix O.

BASWA Survey

The BASWA completed a telephone survey to determine the education impacts of their PEP and where they needed to focus efforts for the future. In the survey a few questions were asked about watersheds. It was determined from the survey results that most people understood what a watershed was when asked that question. However, when asked if they lived in a watershed a majority of the respondents said "No, they don't live in a watershed". Based on these findings the BASWA began the task of educating the general public in Bay County. Later, in cooperation with the SASWA in Saginaw County began a radio advertisement campaign to educate the public with the message that "Everyone lives in a Watershed", and other messages related to keeping stormwater clean to protect the Saginaw Bay and "Do Your Bit for the Bay".

Phosphorus I&E Grant

The Bay County Drain Commissioner's Office is implementing a phosphorus education program for the Saginaw Bay Region, as part of the ongoing Phosphorus Initiative that is moving forward statewide. In cooperation with the BASWA and the SASWA there will be a year long effort to implement education for the general public not only in the Kawkawlin Watershed but in the greater Saginaw Bay Region on issues related to phosphorus and surface waters.

7.3 *Goals and Objectives of Information and Education Plan*

The I&E approach of this chapter provides an overview of the public participation process that will be utilized to educate the residents of the watershed and Bay County. It is also hoped that those people residing in the Greater Saginaw Bay Watershed will participate in the programs as they are offered and glean information to become informed stewards of the watershed and

region. A major objective is to promote pollution prevention and inform the public on the actions they can implement to protect water quality. Also this section will include the education of specific groups about the goals and progress of watershed management projects being implemented and familiarizing stakeholders about the sources of NPS pollution and associated water quality problems. Finally, it will involve educating municipalities, focus groups and educational institutions about the negative impacts of nonpoint source pollution within the Kawkawlin Watershed and what they can do about it.

The I&E approach has been developed into a dynamic text which provides a framework for educational opportunities and actions needed to successfully maintain and improve water quality in the Kawkawlin Watershed. Table 7.1 presents the I&E strategy.

The I&E Plan has the following objectives:

- Increase public knowledge regarding the health of the Kawkawlin Watershed.
- Educate stakeholders on how to reduce pollutants in storm water runoff from urban and rural sites.
- Develop a program for public comment and participation in implementing the WMP.
- Facilitate cooperative efforts among established agricultural groups and property owner associations to address knowledge gaps in the watershed.
- Initiate partnerships among stakeholders by sharing ideas and resources.
- Facilitate cooperative activities which will increase public awareness of watershed management and impact land use policies.

Other objectives that need to be developed to improve coordination of watershed planning efforts in the Kawkawlin Watershed during this I&E initiative are as follows:

- Educate local and county government on how the site review process for development can help improve the watershed.
- Educate local and county planning commissions on the use of the LLWFA tool to protect wetlands and wetland functions in the watershed.

- Educate local and county government on how to implement action items from the Watershed Management Plan in their local or county master plan and recreational planning documents.
- Coordinate education with local NPDES Public Education Plans (PEPs) and activities that have similar goals and objectives.

Table 7.1 - Information and Education Strategy

Objective 1			
Increase public knowledge regarding the health of the Kawkawlin Watershed.			
Message			
Water quality in lakes and streams is greatly affected by your everyday activities. Your ability to change simple activities can protect your watershed.			
Target Audience	**Component**	**Communication Method**	**Potential Partners**
All Audiences	Awareness	Use of a logo in communications about the I&E project	BCDC, local businesses & DDAs, KRWPOA
		Watershed signs at agricultural demonstration sites	BCDC, farmers
		Develop brochure, Articles in local newspapers,	Bay City Times, Saginaw News, Midland Daily News, MLive.com
	Education	Displays for fairs, events, and meetings	County fair boards, community development organizations
		Public meetings	Townships, Counties, Cities, local DDAs
		Watershed tours of problem sites. Children's activities like crosswords, mazes, word scrambles	MSUE, BCDC, ag operations, waste water treatment plant, Education institutions shoreline businesses
Agricultural Producers	Education	Articles in MSUE Newsletters, Farm Bureau Newsletters,	MSUE, Farm Bureau, MDA
		Presentations at meetings to present new agriculture BMPs	MSUE, Farm Bureau, MDA
	Action Item	Displays at Conservation District Open House, Displays at County Fairs in Bay, Saginaw, Midland and Gladwin	Conservation District Board, BCDC, BCRC,
All Residents	Education	Watershed and Community Surveys	MSUE, BCDC, Educational institutions business and marketing classes
		Presentation on on-site treatment systems and well maintenance	Bay County Health Department
	Action Item	Volunteer water quality monitoring	MDEQ, Michigan Lakes & Streams CLMP program, KRWPOA
Businesses	Action Item	Storm drain marking (not stenciling), presentations	Drain Commission, Road Commission, Lions clubs, Rotary clubs, Townships, Cities and Counties

Table 7.1 - Information and Education Strategy (cont.)

Target Audience	*Component*	*Communication Method*	**Potential Partners**
County, Township, and City Officials	Education	Direct mailings, presentations at county, township, and city meetings	BCDC, BCRC, Townships, Counties and Cities
Students	Education	Displays at Conservation District Open House	Conservation District Board
	Action Item	Involve FFA groups in I&E project	Local Schools, community colleges, and universities
		Implement a Watershed Education contest for the Kawkawlin Watershed web presence,	BCDC, KRWPOA, Bay Arenac ISD
		Have Students Develop a Facebook Page for the Kawkawlin Watershed	BCDC, KRWPOA
		Storm drain marking (not stenciling)	BCDC, BASWA
		Volunteer water monitoring	Bay Sail, Sierra club, Michigan Lakes & Streams Associations CLMP program

Objective 2

Educate stakeholders on how to reduce pollutants in storm water runoff from urban and rural sites.

Message

Your activities impact water quality. Pathogens, sediment, nutrients, erosion, fertilizer, on-site treatment systems, urban storm water runoff, and streambank erosion are impairing or threatening water quality.

Target Audience	**Component**	**Communication Method**	**Potential Partners**
All Audiences	Awareness	Use of logo in communications about the I&E project	BCDC, local businesses
		Watershed signs at agricultural demonstration sites	BCDC, farmers
		Develop brochure, Articles in local newspapers	Bay City Times, Saginaw News, Midland Daily News, MLive
	Education	Displays for fairs, events, and meetings	County fair boards, community development organizations
		Public meetings	Townships, Counties, Cities and DDAs
		Watershed tours of problem sites	MSUE, BCDC, ag operations, waste water treatment plant, Education institutions shoreline businesses
Agricultural Producers	Education	Articles in MSUE Newsletters, Farm Bureau Newsletters,	MSUE, Farm Bureau, MDA
		Presentations at meetings to present new agriculture BMPs	MSUE, Farm Bureau, MDA

Objective 2 (cont.)

Target Audience	Component	Communication Method	Potential Partners
Agricultural Producers (cont.)	Action Item	Displays at Conservation District Open House, Displays at County Fairs in Bay, Saginaw, Midland and Gladwin	Conservation District Board, BCDC, BCRC,
All Residents	Education	Community Surveys	MSUE, BCDC, Educational institutions business and marketing classes
		Presentation on on-site treatment systems and well maintenance	Bay County Health Department
	Action Item	Volunteer water quality monitoring	MDEQ
Businesses	Action Item	Storm drain marking, presentations	BCDC, BCRC, Lions clubs, Rotary clubs, Townships, Cities and Counties
County, Township, Village and City Officials	Education	Direct mailings, presentations at county, township, village and city meetings	BCDC, BCRC, Townships, Counties and Cities
Students	Education	Displays at Conservation District Open House or similar	Conservation District Board
	Action Item	Involve FFA groups in I&E project	Local Schools, community colleges, and universities
		Implement a Watershed Education contest for the Kawkawlin Watershed web presence or Facebook page	BCDC, KRWPOA, Bay Arenac ISD
		Have Students Develop a Facebook Page for the Kawkawlin Watershed	BCDC, KRWPOA
		Storm drain marking (not stenciling)	BCDC, BASWA
		Volunteer water monitoring	Bay Sail, Sierra club, Michigan Lakes & Streams Associations CLMP program

Objective 3

Develop a program for public comment and participation in implementing the WMP.

Message

We all live in a watershed. Your actions affect the health of your Watershed now and in the future. Financial and technical tools are available. A healthy community is good for business. Protecting your Watershed also protects your economic returns.

Target Audience	Component	Communication Method	Potential Partners
All Audiences	Awareness	Articles in local newspapers	Bay City Times, Saginaw News, Midland Daily News, MLive
	Education	Develop and distribute brochures and flyers	MSUE, BASWA, SASWA
		Displays for fairs, events and meetings	BCDC, BCRC, Conservation District Board, BASWA, SASWA
		Watershed tour of problem sites	MSUE, BCDC, MCDC

Objective 3 (cont.)

Target Audience	Component	Communication Method	Potential Partners
Agricultural Producers	Education	Articles in USDA Service Center newsletters, Farm Bureau newsletters	FSA, NRCS, Farm Bureau
		Presentations at meetings to present BMPs	MSUE, Farm Bureau, MDA, BCDC
		Displays at Conservation District Open House	Conservation District Board
	Action Item	Comparison plots of BMPs on farmers' properties	Bay Conservation District
All Residents	Education	Community surveys	MSUE, BCDC, Educational institutions business and marketing classes
County, Township, Village and City Officials	Education	Articles in tri-county publications	BCDC, SASWA, BASWA
		Displays at Conservation District Open House	Conservation District Board
Students	Action Item	Implement a Watershed Education contest for the Kawkawlin Watershed web presence,	BCDC, KRWPOA, Bay Arenac ISD
		Involve FFA groups in I&E Project	County school systems

Objective 4

Facilitate cooperative efforts among established agricultural groups and property owner associations to address knowledge gaps in the watershed.

Message

Runoff from manure, fertilizers, and pesticide applications on farms, lawns, gardens, parks, cemeteries and golf courses pollute surface waters.

Target Audience	Component	Communication Method	Potential Partners
All Audiences	Education	Public meetings	Townships, Counties, Cities
		Watershed tour of problem sites	MSUE, BCDC, BASWA
Agricultural Producers	Education	CREP and CCRP information, presentations at meetings to present BMPs	MSUE, MDEQ, NRCS
		Displays at Conservation District Open House	Conservation District Board
		CNMP development and implementation	MDEQ, MDA, NRCS, local ag business,
	Action Item	Encourage participation in Farm*A*Syst program	Michigan Groundwater Stewardship Program, MDA
		Comparison plots of BMPs on farmers' properties	Bay Conservation District
		Encourage Participation in buffer strip programs and cover crops.	MDEQ, MDA, NRCS, local ag business, BCDC
All Residents	Education	Home*A*Syst, presentations at county, township, village and city meetings	BCDC
	Action Item	Volunteer water quality monitoring	MDEQ

Objective 4 (cont.)

Target Audience	Component	Communication Method	Potential Partners
County, Township, and City Officials	Education	Present WMP	Townships, Counties, Cities
		Displays at Conservation District Open House	Conservation District Board
Rural Residents, Realtors, suburban residents	Education	On-site treatment system maintenance, or new systems, brochures, inspection at time of sale education	BCHD
Students	Action Item	Volunteer water quality monitoring	Bay Sail, Sierra club, Michigan Lakes & Streams Associations CLMP program
		Implement a Watershed Education contest for the Kawkawlin Watershed web presence,	BCDC, KRWPOA, Bay Arenac ISD
		Have Students Develop a Facebook Page for the Kawkawlin Watershed	BCDC, KRWPOA

Objective 5

Facilitate cooperative activities which will increase public awareness of watershed management and impact land use policies.

Message

Pollutants from failing on site treatment systems and urban / agricultural runoff contaminate your rivers, streams and drains.

Target Audience	Component	Communication Method	Potential Partners
All Audiences	Education	Watershed tour of problem sites	MSUE, BCDC, BCHD
All Residents	Education	Presentations at county, township, and city meetings	BCDCs, KRWPOA, BASWA
	Action Item	Volunteer water quality monitoring	Bay Sail, Sierra club, Michigan Lakes & Streams Associations CLMP program
Agricultural Producers	Education	Presentations at meetings to present BMPs	MSUE, BCDC, Farm Bureau
		Demonstration ag BMPs in Bay County	Bay Conservation District
Students	Action Item	Volunteer water quality monitoring	Bay Sail, Sierra club, Michigan Lakes & Streams Associations CLMP program
Representatives and Congressmen	Action Item	Presentations and individual discussions	Representatives, Congressmen, BCDC, Local Politicians, government officials
All Residents	Action Item	Participation in Home*A*Syst program, organize Household Hazardous Waste collection	Michigan Groundwater Stewardship Program, MDA, Townships, Counties, Cities
Businesses	Action Item	Storm drain stenciling	BCDC, Road Commission, Townships, Counties, Cities
		Volunteer water quality monitoring	MDEQ

Objective 5 (cont.)

Target Audience	Component	Communication Method	Potential Partners
Students, Youth Groups and Clubs	Action Item	Storm drain stenciling, trash cleanup, riparian tree planting	BCDC, Road Commission, Townships, Counties, Cities, MFB, private landowners
		Volunteer water quality monitoring	MDEQ
Golf Courses	Action Item	Involvement in MSU Turf Grass Program	MSU

Objective 6

Educate local and county government on how the site review process for development can help improve the Watershed.

Message

Proper planning procedures and a site development plan review process which favors Low Impact Development can help reduce or eliminate sources of pollutants from development, reduce the impacts of impervious surface and address the issues of altered hydrology

Target Audience	Component	Communication Method	Potential Partners
All Residents	Education	Introduction of LID concepts	MSUE, BCDC, BASWA
	Education	Presentations on LID at county, township, and city festivals, fairs, Earth Day and River Day activities	BCDC, KRWPOA, BASWA, SASWA, SBWIN, Little Forks Conservancy
Planning Commissions City Councils Township Boards, County Commissions Road Commissions	Education	Presentation on LID concepts	MSUE, BCDC, BASWA
		Workshops on new concepts in site development	BCDC, SASWA, BASWA, Little Forks Conservancy
		Education on the benefits of site review process	BCDC, BASWA, SASWA
		Presentations at meetings to present BMPs	BCDC, SASWA, BASWA, Little Forks Conservancy, MDEQ
	Action Item	Implementation of regulatory mechanism for a site review process at the planning level of local government	BCDC, BASWA, SASWA, others as identified in the future
		Master Plans to implement review process	BCDC, BASWA, SASWA, others as identified in the future
		Adoption of Post Construction Controls that use LID BMPs at local levels of government	BCDC, BASWA, SASWA, others as identified in the future
		Resolutions supporting local government in LID BMPs	Local Government, BASWA, SASWA, MDEQ, others as identified in the future
		Adoption of LID BMPs at the county level for all construction activities	County commissions and departments, BASWA, SASWA, MDEQ, others as identified in the future.

Objective 7

Educate local and county government on conservation easements and land protection strategies.

Message

Proper use of protective land strategies can promote good stewardship in the watershed and provide landowners along waterways with an opportunity to enhance and preserve the health of the watershed on a long term basis.

Target Audience	Component	Communication Method	Potential Partners
All Residents	Education	Presentations on conservations easements	Little Forks Conservancy, Saginaw Basin Land Conservancy
	Education	Presentations or displays on Conservations Easements and other protective strategies for land protection at county, township, village and city festivals, fairs, Earth Day and River Day activities	BCDC, KRWPOA, SBWIN, Saginaw Basin Land Conservancy, Little Forks Conservancy
Planning Commissions City, Village Councils Township Boards, County Commissions Road Commissions, Property Owners	Education	Presentation to local and county planning commissions and governing boards on land protection strategies and conservation easements	Saginaw Basin Land Conservancy, Little Forks Conservancy
		Presentations at meetings and gatherings of property owners in the watershed and other landowners on land protection strategies and conservation easements	Little Forks Conservancy, Saginaw Basin Land Conservancy
		Education on the benefits of land protection	Little Forks Conservancy, Saginaw Basin Land Conservancy, BCDC, BASWA, SASWA
		Education on the benefits of conservation easements	Saginaw Basin Land Conservancy, Little Forks Conservancy, MDEQ
	Action Item	Resolutions supporting land protection strategies in the Kawkawlin River Watershed.	BCDC, SCPWC, MCDC others as identified in the future
		Master Plans to implement land protection strategies	Local Governments, Planning Commissions
		Development of a Watershed Strategy for land protection.	BCDC, Local Governments, others as identified in the future

Objective 8

Educate the public and local government on invasive species threatening the Kawkawlin River Watershed.

Message

The Kawkawlin River Watershed is being threatened by invasive species and everyone should recognize and be aware of these invasive species to help support their eradication.

Target Audience	Component	Communication Method	Potential Partners
All Residents	Education	Presentations on invasive species and the harm they do to the watershed	BCDC, KRWPOA, SBWIN, BASWA, SASWA, Stewardship Network
	Education	Presentations or displays on recognition of invasive species at county, township, village and city festivals, fairs, Earth Day and River Day activities	BCDC, KRWPOA, SBWIN, Saginaw Basin Land Conservancy, Little Forks Conservancy
Planning Commissions City, Village Councils Township Boards, County Commissions, Drain Commissioners, Road Commissions, Property Owners	Education	Presentation to local and county, commissions and governing boards on invasive species and what needs to be done by local governments for controls of these species.	BCDC, KRWPOA, SBWIN, BASWA, SASWA, Stewardship Network, MDEQ
		Presentations at meetings and gatherings of property owners in the watershed and other landowners on watershed protection strategies from invasive species	BCDC, KRWPOA, SBWIN, BASWA, SASWA, Stewardship Network, MDEQ
		Education of local government staffs on recognition of invasive species and the importance of reporting locations	BCDC, KRWPOA, SBWIN, BASWA, SASWA, Stewardship Network, MDEQ
		Education on the eradication of invasive species.	BCDC, KRWPOA, SBWIN, BASWA, SASWA, Stewardship Network, MDEQ
	Action Item	Resolutions supporting strategies in the elimination of invasive species in the Kawkawlin River Watershed that can be managed	BCDC, SCPWC, MCDC others as identified in the future
		Support of county wide eradication programs where funding can be found to support the activities.	Local Governments, BCDC, SCPWC, MCDC, MDEQ, others as identified in the future
		Development of a County Wide reporting system to report invasive species.	BCDC, Local Governments, others as identified in the future

7.4 *Identification of Target Audiences*

The target audiences include individuals or groups known to impact or be impacted by the project and whose support is needed to achieve the goals of the project. In the watershed, the target audiences were identified in Table 7.1 as:

- Local and county government officials, staff and managers
- Residents and visitors of the watershed
- Community organizations, groups and clubs, such as conservation clubs, Kiwanis, Optimists, Rotary, Pheasants Forever, Ruffed Grouse Society, Ducks Unlimited, Saginaw Bay Walleye and other fishing groups.
- Businesses (industrial, commercial and agricultural)
- General construction contractors, home contractors, landscape and excavation contractors, homebuilders associations in each county.
- Local school districts and community college and university students and their internal groups such as science clubs, Michigan Water Environment Association student memberships, Stream Leaders Memberships and youth groups
- Agricultural producers, associations, and organizations such as Bean, Corn, Sugar Beet growers, Farm Bureau and others as identified or brought forth by NRCS
- State and federal representatives, senators and their staff
- Realtors and real estate brokers
- Churches that want membership involved in environmental activities such as stream cleanups, "Adopt a Drain" or "Adopt a Road" efforts
- Turf care managers

A baseline of information about the Kawkawlin Watershed project will be provided to a range of the target groups. Groups will be encouraged to participate throughout the project and to help update the plan in the future.

7.5 *Developing the Right Message*

In any education initiative, it is important to gain and hold the attention of the targeted audiences. It is crucial that a thematic hook be developed which will "brand" the education and information being put forth. The brand must emit energy and capture the imagination of those wanting to be involved in this project. The whole start of this project may focus on getting watershed-wide attention and "buy-in." The education may start with a contest with local schools, community college and university business and marketing students developing the thematic hook on which to base the I&E. For example, the Bay and Saginaw Area Storm Water Authorities have their "Do Your Bit for the Bay" education campaign for Saginaw Bay. Or, it could be something like the "Kawkawlin is Calling for Help."

The communication intended for specific groups range from broad spectrum to specific targets, depending on the demeanor of the group. Each target audience must be communicated a clear understanding of the issues being addressed by the project and how the project affects them before any behavioral changes are to take place. The known pollutants in the watershed are pathogens, sediment, nutrients and altered hydrology.

The messages being develop by the I&E Committee will use the following messages:

- Water quality in lakes and streams is greatly affected by your everyday activities. Your ability to change simple activities can protect your watershed.
- Your activities impact water quality. Sediment, nutrients, pathogens, pharmaceuticals, erosion, fertilizer, septic systems, urban storm water runoff and streambank erosion are impairing or threatening water quality.
- We all live in a watershed. Your actions affect the health of your watershed now and in the future. Financial and technical tools are available. A healthy community is good for business. Protecting your watershed also protects your economic returns.
- Runoff from manure, fertilizers and pesticide applications on farms, lawns, gardens, parks, cemeteries and golf courses pollute surface waters.
- Pollutants from failing on-site treatment systems and yard waste runoff contaminate your rivers, streams and drains.

7.6 *Selecting Delivery Mechanisms and Activities*

It will take a variety of media usage and activities in differing formats to effectively communicate the key objectives and messages to the diverse groups that will be targeted in this education and information immersion episode. Efforts will also be necessary for fringe groups and populations that typically do not get involved because of apathy to the environment and the attitude that nothing will ever change or that their effort will not make a difference in any watershed outcome. There is a diversity in the watershed that needs to be researched and trended for a better understanding to approach the I&E strategies. Overall, the messages delivered must be consistent and persistent. Delivering the messages and information in a repetitive manner is the most effective way for people to assimilate the message and information. Additionally, it must be kept simple and relevant to assure buy-in by the population and they need to see results. The target groups need to see implementation efforts taking place or interest will quickly wane. It is important to involve the KRWPOA as they have and will continue to be a driving force for efforts in the watershed. Research on as many available options to discover the best method for each target group will be an important part of this implementation process.

It will be important to involve the Saginaw Valley State University's Communication Department in the College of Behavioral Arts and Sciences. This unique educational niche can provide needed insight into current trends and utilization of communication media in today's environment. The new uses of cell phones, email, digital data transfer, socialization networks and even newer media (iPods, iPads, etc) will present new information transfer and educational opportunities. Use of social networks, such as. Facebook may provide a unique opportunity to try new forms of information transfer and develop a web-community interested in the health and well-being of the Kawkawlin River Watershed. Use of the area's university will get this WMP in touch with younger people that are proficient in the new technologies and can help identify new trends or media types that will be the "hot" information transfer media of the future. This may help get information out quicker and more effectively then traditional methods.
For the watershed project, the following methods will be used to convey the issues and rehabilitation strategies for the watershed, as detailed in Table 7.1.

- Development and use of a project logo in media communication
- Watershed signage agricultural demonstration sites in the watershed

- Articles in local newspapers, newsletters, MSUE and USDA Service Center newsletters
- Develop a web presence using a web page, Facebook and other acceptable digital media to convey messages
- Displays for fairs, carnivals, festivals and community events and meetings
- Presentations at public, county, township, village and city meetings
- Develop and distribute brochures and flyers
- Watershed tours of problem sites and implementation sites
- Watershed-wide surveys
- Water quality and biological stream monitoring by volunteers
- Storm drain marking (not stenciling)
- Involve FFA, high schools, community college and universities in I&E component of the project
- Comparison plots of BMPs on farmers' properties
- Comparison of agricultural BMPs on agricultural sites
- Development of new information and implementation strategies on vegetated buffer strips to get more involvement from farmers
- Encourage participation in Farm*A*Syst, Home*A*Syst, CREP, CCRP, EQIP and WHIP
- Develop and do presentations on the Kawkawlin WMP to as many diverse groups as possible, including the business sector
- Individual contact with attendees at information presentations
- Offer incentive payments to agricultural producers for short or variable-term enrollment in programs
- Organize Clean Sweep for farm chemicals and pesticides, as well as HHW collection
- Trash cleanup in drains, streams and river reaches
- Riparian tree planting at designated sites
- Information on value of wetlands to preserve base flow and other benefits
- Develop knowledge on improved drain maintenance
- Involvement in MSU Turf Grass Program
- Host seminars by Turf Grass Program

7.7 *Implementation of Information and Education Strategy*

The implementation of the I&E strategy will follow the three leg stool strategy. If one is missing, the program will become very unsteady. The program will follow these three steps: 1) Awareness; 2) education; and 3) action item.

Awareness

By educating focus groups and target audiences, the I&E strategy will increase their awareness regarding what a watershed is and provide examples to these groups about NPS pollution. The public will be made aware they all live in a watershed and that their day-to-day behaviors and activities can affect water quality. Participants in activities and the passive public will learn about the impacts land use activities have on water quality in the watershed. They will also learn about general approaches to minimize these impacts. Awareness and recognition will also be raised through signage, logos, brochures and articles in the popular media.

Education

The public will have many opportunities for more in-depth education through a variety of opportunities, including public meetings, presentations, displays, tours, electronic/digital media, MLive.com articles and print media articles. Many of these opportunities, especially the e-media modes, will allow the public to comment and respond to the findings of the project. Open meetings, Web presence and individual contacts will provide further opportunity for the public to offer their opinions and concerns.

Action Item

Actions occur when audiences change behaviors and develop programs and events that influence and improve water quality. Such actions include participation in Adopt-A-Stream or Drain, Stream Monitoring Volunteers, Household Hazardous Waste Day, Computer / Electronic Recycling Days, Medication Disposal Programs at Pharmacies, other Waste Management Disposal Programs, creation of recreational opportunities, implementation of BMPs to improve water quality and making informed decisions on land use planning. Finally, continue the cooperative agricultural BMP design work that has been established with representatives of the Bay County Farm Bureau group.

Taking ownership for the solutions of water quality concerns provides a framework for sustainability and ensures the continuation of the project's objectives. Sustainability for the I&E efforts will be developed throughout the project since the protection of the Watershed will be a long-term endeavor. The schedule for implementation is included in Table 7.2

Table 7.2 – Information and Education Implementation

Information and Education Activity	Target Audience	Component	Target Pollutant	Years 1 to 3 Implementation Start (2012)	Years 4 to 6 Implementation Start (2015)	Estimated Costs	Evaluation Techniques
Articles in local newspapers, MSUE newsletters, USDA Service Center newsletters, Township newsletters	All Audiences	Education, Awareness	All Pollutants	Develop a Campaign Theme or "hook" and then develop thematic templates for seasonal articles for spring, summer, fall and winter newsletters. Create 3 sets of articles. Send out to local government, agencies and media	Update and send out articles annually	$1,250 to develop, $450 to update	Surveys, responses, evaluations, comments
CNMP development	Agricultural Producers	Education	Nutrients	Complete 5 plans with landowner in each priority sub-watershed	Complete 10 plans in each targeted sub-watersheds	$5,000 each	Compliance reporting in plan
Community/watershed surveys	All Residents	Education	All Pollutants	Conduct 4 targeted surveys in year 1 and report results, Follow up survey in year 3 and report results.	Use previous survey results to develop new survey and report results	$3,500 for first survey, $2,000 for subsequent surveys	Survey report approval, determine behavioral changes. Document increase of participation in surveys, Document quantitative data gleaned.
Demonstration comparison plots of BMPs on farmers' properties	Agricultural Producers	Education	Nutrients and Sediment	Establish 4 plots and secure sustainable funding	Establish 2 permanent research plots	$1,300/plot	Cooperation and assistance from landowners
Develop and distribute brochures and flyers	All Audiences	Education	All Pollutants	Develop templates for brochures and flyers - print 1,000 of each	Update brochures and flyers every 3 years and print 100 every year	$1,500 to develop, $2,500 for printing	Number of flyers distributed to target audiences
Direct mailings	County, Township, Village, and City Officials	Education	All Pollutants	3/year to all watershed parcels in Bay County	3/year every year to 1,500 households	$750/year	Number of mailings to target audiences. Place website address for reference and determine how many visits to website
Displays for Bay and Midland County fairs, Bay County events such as Pig Gig, Tall Ships, River Roar, Fishing Tournaments and other events, meetings, and Local Conservation District Open House	All Audiences	Education	All Pollutants	Develop traveling watershed display. Set up annually at KRWPOA annual meeting and Area Festivals such as Corn Festival, Potato Festival, Pickle Fest, Walleye and Fishing Tournaments, Bay County Fair, Midland County Fair, Saginaw County Fair and any annual Conservation District events.	Update information and create new display. Set up annually at KRWPOA annual meeting Bay County Fail, and Area Festivals such as Corn Festival, Potato Festival, Pickle Fest, Fishing contests, annual Conservation District	$2,200 to create first, $1,800 to create second	Use surveys at display to document visitors and gather additional information
Encourage participation in Farm*A*Syst program, MAEAP	Agricultural Producers	Action Item	Nutrients, Pathogens, and Sediment	5 Farm*A*Syst evaluations per year	1 Farm*A*Syst per year	Varies	# of participants, feedback surveys
Encourage participation in CREP, OCRP, EQIP, WHIP	Agricultural Producers	Education	Nutrients and Sediment	10 new participants	5 new participants in each year of funding	Varies	# of acres enrolled, # of sites in critical sub-watersheds.
Home*A*Syst, presentations at county, township, and city meetings	All Residents	Education	Nutrients	Offer program 2 times	Offer Program 3 times	$225 per event	# of participants, feedback surveys
Involvement in MSU or Scott's Turf Grass Program	Golf Courses	Action Item	Nutrients	Implement to provide once per year	Implement once per year	$300 mailings	# & type of participants, feedback surveys

Table 7.2 – Information and Education Implementation

Information and Education Activity	Target Audience	Component	Target Pollutant	Years 1 to 3 Implementation Start (2012)	Years 4 to 6 Implementation Start (2015)	Estimated Costs	Evaluation Techniques
Manure, GPS soil sampling	Agricultural Producers	Action Item	Nutrients and Pathogens	5 participants per year	5 participants per year	$4,500 per site	NRCS to develop criteria
Offer incentive payments for long-term enrollment in programs	Agricultural Producers	Action Item	Nutrients and Sediment	5 participants per year	5 participants per year	$1,500 per site	NRCS to develop criteria
One-on-one discussions with Representatives and Congressmen	Representatives and Congressmen	Action Item	All Pollutants	1 meeting with each state and federal representative	1 meeting with each state and federal representative	Varies as to location of meeting	Increase in funding or change in legislation
Organize Clean Sweep for farm chemicals and pesticides, Household Hazardous Waste (HHW) collection	All Residents	Action Item	Nutrients, Pharmaceuticals, and Chemicals	Offer HHW twice per year for 3 years	Develop sustainable program	$5,000	Volume or weight of chemicals collected
Workshops and presentations at county, township, and city meetings	All Residents	Education	All Pollutants	1 workshop to present WMP, annual presentation at board and council meetings	Set schedule for 1 presentation/yr on each entity's agenda for board and council meetings	$500/workshop $150/ presentation	Exit survey
Presentations to interest groups	Interest Groups	Education	All Pollutants	2 presentations/yr	2 presentations/year, set in Conservation District schedule	$150 per presentation	Follow-up questionnaires to participants
Presentations to present CREP, CRP and BMP information to agricultural producers	Agricultural Producers	Education	Nutrients and Sediment	2 presentations/yr	2 presentations/year, set in Conservation District schedule	$150 per presentation	Follow-up questionnaires to participants
Presentation to County Farm Bureau per year on BMP effectiveness and new BMPs	Agricultural Producers	Education	Nutrients and Sediment	1 per year	Continue 1 per year	$130	Evaluation after program
Develop Education for hobby farmers and small livestock holdings	Agricultural Producers	Education	Nutrients, Pathogens, and Sediment	Develop mailing list, mail 2x/yr for 3 yrs; Hold 2 hobby / domestic livestock manure mgmt programs	Develop new program based on information from the first 3 years or new data from watershed monitoring	$100 for mailing list / $1,500 for education programs	# of mailings, # of participants, program evaluations
Public meetings	All Audiences	Education	All Pollutants	Conduct 1 public meeting for WMP per year	Schedule 1 public meeting every other year for WMP status update	$50 per meeting	Exit survey
Septic and well maintenance brochures	All Residents	Education	Nutrients and Pathogens	Develop and distribute 500; develop Maintenance folder to store information and records on OSDS	Update and distribute 300/year	$5,000 to develop, print and distribute. $500 to update, print and distribute	Increased response to brochures from year to year
Watershed / Storm Water education	All Audiences	Education	Nutrients, Pathogens, and Trash	1 event/yr	2 events per year	$250/event	Participation, comments, attendee surveys
Trash cleanup, riparian tree planting	Students, Youth Groups and Clubs	Action Item	Trash	2 events/year	1 event/year	$1,500/event	Effective use of prisons and youth groups for volunteers

Table 7.2 – Information and Education Implementation

Information and Education Activity	Target Audience	Component	Target Pollutant	Years 1 to 3 Implementation Start (2012)	Years 4 to 6 Implementation Start (2015)	Estimated Costs	Evaluation Techniques
Sponsor Contest to Area High Schools to do a Watershed Page for Kawkawlin Watershed / Facebook Presence	Students	Action Item	N/A	1 contest per year	1 contest per year	Award $500 to winning school's scholarship fund	The content of new web page representing Kawkawlin Watershed, # of hits / visitors to site, # downloads
Use logo in communications about the I&E project	All Audiences	Awareness	N/A	Use logo on letterhead, clothing and on all published articles about the watershed	Create 4 watershed boundary signs and 1 banner	$500 for clothing, $750 for signs and banner	Record number of clothing articles sold, comments on survey of increased watershed awareness and recognition of logo
Volunteer water quality monitoring	All Residents, Businesses, Students	Action Item	All Pollutants	Secure funding to begin implementing program	Establish sustainable programs to conduct monitoring on a regular cycle	$20,000/yr for testing samples & materials	Data accepted in MiCorp and MiSWMM
Volunteer Stream Monitoring	All Residents, Businesses, Students	Action Item	All Pollutants	Implement volunteer training to hold one monitoring event at 3 sites per year	Continue annual monitoring	$750 per year for equipment / supplies	Data collected from monitoring, amount of volunteers per year, # of volunteers trained per year.
Watershed tours of problem sites	All Audiences	Education	All Pollutants	Develop program of annual tours with a goal of the first tour in yr. 3	Schedule tour in NRCS or SBRC&D annual calendar of events	$125/each	Follow-up questionnaires to participants
Conservation Easements and other land protection strategies	All Residents and local governing bodies	Education	N/A	Implement training sessions and develop brochures for education, meet with county commissioners and local government	Implement active program in each county to recruit land owners for land protection strategies in riparian corridors	$100 / meeting $700 for brochures	# of acres of land in a protection strategy by 2014 # of presentations
Education on Invasive Species recognition and elimination strategies	All Residents and local governing bodies	Education	Invasive Species	Presentations to residents and municipal staff on recognition of invasive species	Reporting system for public to report locations of invasive species in the watershed	$200/presentation. $5,000 for reporting system	# of presentation and # of people attending # of reports received per year.

7.8 *Potential Watershed Partnerships*

There are many organizations and associations active in the Kawkawlin Watershed. These groups are already involved and it is to the benefit of this plan to keep many of these groups engaged in this project. The stakeholders group for the Kawkawlin has had many of these groups, agencies and organizations involved since the start of this planning process and actually some for decades. They have come forth and provided input and ideas for the betterment of the watershed. The following is a list of potential partners:

Bay County Drain Commissioner

The Bay County Drain Commissioner and staff have played an instrumental role in moving this planning project forward and will be a considerable force in the implementation phase of this project. Administrative staff has managed the grant funding, written grants and will be taking lead roles in facilitating the implementation phase. The Drain Commissioner's presence at all meetings and his cooperative efforts will be crucial during the long-term implementation phase. He brings people together and serves as the facilitator for meetings and project momentum.

Saginaw Bay RC&D

This agency has been instrumental in the planning process. Personnel have chaired the Corridor Assessment committee, completed the agricultural survey and been a great resource of experience and ideas for this project. They have provided administrative support and clerical assistance. We anticipate they will take an active role in the implementation process and provide assistance with the I&E strategies.

Bay County Health Department

This agency has been focused on the pathogen (*E.coli*) problem on the Kawkawlin River and surrounding areas. Staff has developed a much needed database and geographical information system (GIS) to help address the issue of failing on-site treatment systems and identifying areas of concern in the Main Branch. They will be providing permits for future on-site treatment systems. With the acquisition of a recent grant, they will be doing more monitoring to address

water quality concerns and beach closings. They will be a source of material for I&E for the pathogen issues.

Michigan Department of Environmental Quality

Staff from the regional Saginaw Bay office are very helpful and will assist with connection to the Lansing office for materials for the I&E strategies. They also have resources to provide some the education in the form of experts and educational programs and activities for all ages. They are also a great resource of ideas from other WMPs that have been implemented and had successful I&E programs.

USDA – Natural Resources Conservation Service – Bay County

The NRCS and the Bay County Conservation District provides technical service and assistance to landowners and agricultural operators in planning, implementation and maintenance of conservation practices on the land. They have, or can access, a considerable amount of information to explain services they provide and the function of conservation BMPs and practices.

Farm Bureau

The Farm Bureau is the state's largest general farm organization and the Bay County group is an active group of farmers. Overall the state group has over 200,000 family members in 67 county Farm Bureaus. The purpose of this organization is to represent, protect and facilitate the business, social, economic and educational interests of its membership. It publishes the *Michigan Farm News*, the only statewide farm newspaper. Articles related to water quality of surface water can be published in this forum. Additionally, they can be an educational resource for programs.

Little Forks Conservancy

The Conservancy has partnered with private landowners in or near the Tittabawassee River Watershed to protect and preserve the unique natural features of this region. They have been a stakeholder and planning partner in the Kawkawlin Watershed Management process. Their

mission is to permanently protect land with natural and cultural resources that add to the quality of life on our community.

Saginaw Basin Land Conservancy

The Saginaw Basin Land Conservancy helps preserve lands in our region and is active in the preservation of water quality across the Saginaw Basin. They own seven preserves and have conservation agreements with over 60 private landowners in the region. Their mission is to conserve land and water resources to promote sustainable communities and a higher quality of life in the Saginaw Bay Watershed. They provide education and information for the general public and have been active in the Kawkawlin River Watershed planning process.

Michigan Groundwater Stewardship Program

The mission of the MDA Groundwater Stewardship Program is to provide information and assessment tools for pesticide and nitrogen fertilizer users which help them identify risks to groundwater associated with their pesticide and nitrogen fertilizer use practices. It also coordinates local, state and federal resources to help individuals reduce the risks associated with pesticide and nitrogen fertilizer use practices. The Program administers several programs, including Home*A*Syst, Farm*A*Syst and Crop*A*Syst.

Michigan Department of Agriculture

The CREP is administered by the MDA, along with many other activities under the GSP. MDA has been assisting the Conservation Districts in contacting residents about signing up for the program. Brochures, posters, and literature about the program are readily available and widely distributed throughout the Kawkawlin Watershed. The CREP program is an important component of improving water quality in the Kawkawlin Watershed.

Michigan State University Extension

Michigan State University Extension (MSUE) is the educational arm of MSU research. Part of its responsibility as a Land Grant University is to deliver research-based educational programming to every county in the State. The mission at MSUE-Bay County is to help people improve their lives through an educational process that applies knowledge to critical needs,

issues and opportunities. It offers educational information, materials and newsletters via various media (print, workshops and internet) to residents of Bay, Saginaw and Midland Counties.

Local Newspapers

Local newspapers are excellent resources to use to distribute information to the public. Newspaper articles, MLive.com articles, brochures and inserts can be used to promote the project and educate the citizens. Some local newspapers include the *Bay City Times, Saginaw News, Midland Daily News* and MLive.com.

Local Businesses & Downtown Development Authorities

Local businesses and Downtown Development Authorities (DDAs) can assist financially to support and sponsor programs.

Landowners/Farmers

Local farmers, once awareness has increased and they have been educated as to the concerns of the Kawkawlin Watershed, can move into action and make individual efforts to improve water quality.

Local schools, Community College, Universities and Bay Arenac ISD

Local schools, community colleges, Universities and the ISDs provide a forum at which messages can be communicated to children and adults. Delta College and Saginaw Valley State University are great regional resources for the Watershed.

Wildlife, Fishing, Environmental, Conservation and Sporting Groups

The stakeholders and consultant identified many outdoor groups that have a presence in the watershed and are influential in delivering messages to target audiences. Organizations such as the Saginaw Bay Walleye Group, Bass Fishermen, Pheasants
Forever, National Turkey Federation, Ducks Unlimited, Whitetails Forever, Little Forks Conservancy and The Nature Conservancy have been identified as potential partners.

7.9 *Evaluation Measures*

Evaluating each activity on its effectiveness in getting the message to the audience is beneficial in determining the continuation or modification of that activity. An evaluation summary will be completed for every I&E strategy and reviewed annually. Indicators of success will be developed throughout the planning and implementation process to help determine whether the objectives are being achieved.

The I&E strategy will be periodically reviewed by the Stakeholders Committee and adjustments to the strategy will be made as necessary. Questions that will be answered at the meetings include:

- Are the planned activities being implemented according to the schedule?
- Should the schedule be changed?
- Are the priorities the same as when the plan was first written?
- Is additional support needed?
- Are additional action items needed?
- Do some action items need to be modified or eliminated?
- Are the resources sufficient to carry out the tasks presented?
- Are all of the target audiences being reached?
- Are there new target audiences to reach or identify?
- Are there new communication or educational media that can be used?
- What feedback has been received and how does it affect the I&E strategy program?
- How do the BMP implementation activities correspond to the I&E strategy?
- What changes need to be made to improve the strategy?