

Introduction:

The Saginaw Bay is the single most important natural resource to the Bay County Community. Its health and continued improvement is critical to the future viability of the area. The Saginaw Bay and its feeding tributaries have been the focus of environmental concern and improvement for many years. Government, community organizations and partnerships have worked for decades to make improvements and continue their efforts to restore the resource.

The Saginaw Bay Watershed is Michigan's largest and encompasses all or part of 22 counties and drains 15% of the State's land area. Although the land area is relatively homogeneous, its use and population is very diverse. Heavy industry, agriculture, tourism and other economic activities dominate various portions of the watershed. The 8,700 square mile area is home to more than 1.4 million people.

The watershed provides vital habitat for millions of migrating waterfowl and songbirds and more than 90 fish species. There are 175 inland lakes and 7,000 miles of streams. The watershed area is home to 138 endangered species.

As far back as 1973, the Saginaw River and Bay were designated major pollution areas in the Great Lakes by the International Joint Commission (IJC). In 1987, it was designated as an "Area of Concern" by the Great Lakes Water Quality Agreement. This designation was the result of degraded water quality impairing certain beneficial uses as defined by the agreement. Contaminated sediments, excessive nutrients (phosphorus & nitrogen) soil erosion, fish consumption advisories, degraded fisheries and the loss of recreational opportunities were the primary causes for the designation.

A remedial action plan (RAP) for the Saginaw River and Bay was submitted to the IJC in September of 1988. It cited 12 impairments and 101 action activities, including 37 that were considered a priority. Since that time the RAP has acted as a guide for efforts to improve water quality.

The Bay County Urbanized Area (BCUA), which is the area of land that falls under the Phase II requirements, represents a fraction of the Saginaw Bay Watershed. Although only a small land area, over 75% of the tributary hydraulic flow entering the Saginaw Bay flows through it. Any watershed management for the BCUA would require recognition of the overall watershed and the factors influencing its current condition.

Geographic Boundaries

The BCUA is made up of all or part of 9 municipalities within Bay County. The communities are nearest the Saginaw River and Bay. They have either Saginaw Bay Shoreline or, the Saginaw or Main Branch of the Kawkawlin Rivers flow through them. The municipalities include: Cities of Bay City and Essexville, and the Townships of Bangor, Hampton, Fraser, Kawkawlin, Monitor, Portsmouth and Frankenlust. The population of the area is approximately 82,500.

The BCUA has an approximate land area of 131.6 square miles (84,239 acres). It is a fraction of the much larger Saginaw Bay Watershed (nearly 8,700 square miles) making up 1.5% of the land area. The geographic area is also only a small portion of the Kawkawlin River and Saginaw River sub-watersheds. A map of the urbanized area is included as Figure 1.

Overview of Existing Conditions:

Again, it is important to indicate that separating the existing conditions of the BCUA and the overall Saginaw Bay Watershed is difficult. In identifying the beneficial uses and impairments they, for the most part, overlap. The Remedial Action Plan developed for the Saginaw Bay Watershed identified beneficial uses and impairments that will be used as a basis for this plan. The Saginaw River and Bay listing as an "Area of Concern" will likely be maintained for the foreseeable future.

The Remedial Action Plan for the Saginaw River and Bay completed in 1988, contained 101 actions, including 37 priority actions. In 2001, over two-thirds of these actions, including all 37 priority actions had been at least partially implemented. Approximately \$170 million has been spent by government and private entities on the action steps. In addition, over \$700 million has been invested since 1972, by municipalities to improve wastewater facilities.

In 2005, the Bay County Health Department conducted a Bathing Beach/Surface Water Quality Monitoring Program. The program monitored the potential exposure to contaminated waters by monitoring eight (8) sites, seven (7) of which were in the urbanized area. Advisories were issued for total body contact in the Kawkawlin River for thirty-four (34) days from the end of June until August 2nd due to high level of E-Coli. The 30 day geometric mean at the site exceeded 130 Escherichia coli organisms per milliliters of water during that period.

Beneficial Uses:

Through the development of the Remedial Action Plan and subsequent updates, beneficial uses for the watershed were developed and defined. In addition, at a stakeholder meeting for BASWA under the public participation plan (PPP) the previous beneficial uses and impairments were affirmed and added to. They include:

Recreational:

- Swimming (total body contact)
- Boating (partial body contact)
- Fishing (partial body contact)
- Hunting
- Birding
- Hiking

Drinking Water Supply

Agriculture Irrigation
Navigation
Industrial Water Supply
Community Development
Tourism

The economic future of Bay County is dependant on tourism and community development. A disproportionate share of development had occurred on the waterfront of the Saginaw River. In addition, tourism has been identified as a potential source of economic growth. Both of these "uses" are dependent of improvements to the quality of the water resource. Stakeholders have identified then as critical to the quality of life in Bay County.

Impairments to Beneficial Use:

Traditional impairments identified through previous efforts to address the Area of Concern identified 14 potential impairments. The Saginaw River and Bay included 12 of the 14. These included impairments to:

Restrictions on fish and wildlife consumption
Degradation of fish & wildlife populations
Degradation of fish & wildlife habitat
Degradation of benthos
Restrictions of dredging
Eutrophication (nuisance algae blooms, oxygen depletion, and nutrient loading)
Drinking water restrictions
Beach closings
Degradation of aesthetics
Degradation of phytoplankton

This plan targets those impairments within the BCUA that can be impacted by efforts to improve storm water quality. Table 1 outlines the impairments as well as sources or causes of the impairments that fall within the scope of the objectives of this watershed management plan.

Watershed Management Plan Review Committee & Process:

The Saginaw Bay Watershed and its tributaries have been the focus of numerous efforts to improve the quality of the water and health of the ecosystem. Groups such as the Partnership for the Saginaw Bay Watershed and the Saginaw Bay Watershed Initiative Network have focused time and resources improving the Bay. A Remedial Action Plan developed for the Great Lakes Commission and prepared by the Partnership has provided a basis for the development of this plan.

A public meeting was held on September 27, 2005 as part of the Public Participation Plan developed by the Authority. Beneficial uses, impairments and objectives were discussed at that meeting and incorporated into the WMP. A second public meeting was held to review and take public comment on the plan on February 28, 2006. The meeting was published in various news outlets.

In addition, a committee of stakeholders was formed to more thoroughly review the WMP and provide comment. The committee was provided draft copies of the plan and presented comments up until the February 28, 2006 meeting. The committee included: (*denotes Authority Member)

Ms. Valerie Roof
Bay Area Chamber of Commerce

Ms. Ashley Morse
Bay Area Community Foundation

Mr. Joel Strasz
Bay County Health Department

Mr. Terry Miller
Lone Tree Council

Mr. Tom Trombley

Mr. Robert Pawlak
* Portsmouth Township

Ms. Hilda Dijak
* Frankenlust Township

Mr. Terry Watson
* Bangor Township

Mr. Dick Gromaski
* Fraser Township

Mr. Roy DeLorge
* Kawkawlin Township

Mr. Gary Brandt
* Monitor Township

Essexville Hampton Schools

Mr. Lyle LeCronier
Bay County Farm Bureau

Mr. Howard Wetters
MSU Extension Office

Mr. Mike Kelly
Saginaw Bay WIN

Mr. Jack Hetherington
Kawkawlin Township Planning

Mr. Dale Majerczyk
* City of Essexville

Mr. Terry Spegel
* Hampton Township

Mr. Bill Kaiser
*City of Bay City

Mr. Ernie Krygier, Jr.
*Bay County
Board of Commissioners

Ms. Laura Ogar
Bay County Environmental
Affairs

Saginaw Bay Walleye Club

Ms. Gracie Moreno
Soil Conservation Service

Mr. Jim Lillo
* Bay County Road
Commission

Actions to Achieve Goal & Measure Successes

Achieving BASWA's goal of improving the quality of storm water in the BCUA must be measured by our effort, increased public awareness and eventually, targeted/limited sampling. Recognizing its size compared to the overall watershed makes it difficult to effectively measure BASWA's success by sampling the Saginaw River & Bay Directly. Targeting our evaluation is necessary to truly understand the impact of the Authority's work.

The focus of BASWA's efforts in the urbanized area will be to:

- Carry Out Public Education
- Remove Identifiable Illicit Discharges
- Implement Pollution Control Techniques
- Incorporated Low Impact Development and Best Management Practices in the Public & Private Sectors with the BASWA Communities

The basis of our initial efforts will be to make improvements to storm water quality are outlined in our Public Education and Illicit Discharge Elimination Plans (attachments to this document). They provide specific actions, timetables and measurable goals.

In conjunction with the implementation of those programs, BASWA will develop storm water pollution prevention programs to be implemented by Authority members and nested jurisdictions. Finally, on a long-term basis, Practices will be utilized that will avoid adverse impacts on storm water. This will ultimately lead to measurable improvements in suspended solids, phosphorus levels and other pollution in the storm water out letting into our waterways.

Table 2 outlines several goals and actions BASWA will undertake.

Benefit Assessment & Costs

The Bay County community's economy is increasingly dependent on the Saginaw River and Bay. Nearly all efforts toward community development have centered on the waterfront. Direct activity such as tourism, port/boating activity, power generation and housing development are directly linked to the viability and quality of the water resource. All other economic growth is dependent on the indirect, or quality of life, benefit of the water.

The drinking water supply for the community is drawn from the Bay at the center of the urbanized area. Waterfront special events draw hundreds-of-thousands of visitors each summer to the heart of the BCUA. Thousands of acres of agricultural land are irrigated to produce vegetables, potatoes and other crops.

The very name of the community, Bay City/County symbolizes its dependence on the water resource. It would be appropriate to utilize as much as 90% of the gross domestic product of our community (\$.3.7 billion) and 90 plus % of the tourism income (in excessive of \$150 million) to quantifying its benefit. Virtually all real (non-inflationary) economic growth will be directly tied to or impacted by the quality and improvement of the River and Bay. Marginal benefits in water quality will directly correlate to economic growth.

As indicated, estimates show that \$170 million has been spent over a 10-year period in the 1990's to implement actions to improve the Saginaw Bay Watershed. Millions of dollars are spent annually in the urbanized area for soil erosion and sedimentation prevention, storm water detention, conservation easement payments and other storm water quality activities. All of these expenditures represent costs of improved water quality.

BASWA has received grant funding in the amount of \$100,000 to implement an Illicit Discharge Elimination Program that is expect to cost a minimum of \$160,000 over the next three years. They also committed to expending \$12,000 to \$15,000 annually over the next five years to carry out public education related to storm water quality.

The return on any investment of resources to improve the water quality in the Saginaw Bay and River is significantly higher than most areas of our State. Although extremely difficult to accurately quantify, both direct and indirect benefits are apparent. So apparent the general public, the citizens,

of the Bay Area see the correlation and have begun to embrace the value of eliminating storm water pollution activity.

BASWA is of the belief that the best expenditure to improve the urbanized area watershed and storm water quality as an entity is the implementation of the Illicit Discharge Elimination Program and Public Education Plan. Prioritization of expenditures will focus on those aspects in the short-term.