Saginaw Bay Watershed Initiative Network

Watershed Challenges, Watershed Solutions

2003 ANNUAL REPORT

ENVIRONMENT ECONOMY COMMUNITY

On behalf of the Saginaw Bay Watershed Initiative Network (WIN) and its partners, I am pleased to present to you the 2003 WIN Annual Report.

The theme of this year's annual report – ***watershed challenges; watershed solutions*** – reflects how WIN is making important contributions to how we all view our relationship to the Saginaw Bay. Through our focus on "sustainability," WIN is demonstrating that we can both improve and protect our environmental resources, without negatively impacting the critical economic and community matrix that makes our region a desirable place to work and live. The projects profiled in this year's report demonstrate innovative ideas and our continued commitment to advancing sustainable development principles as they relate to the Saginaw Bay Watershed. In 2003, our areas of special focus included land use, agriculture and pollution prevention, water resources, wildlife stewardship, sustainable business strategies, and regional marketing.

This was another outstanding year for WIN. With the support of our Funders Network, and through the good work of our various task groups, we were able to provide more than $220,000 to 12 local and regional organizations for projects that have environmental, economic, and community impacts. Since 1996, WIN and its partners have provided in excess of $1.6 million to more than 80 programs and organizations in the Saginaw Bay region. Even more striking, WIN support has leveraged an additional $2 million from other participating funders.

That fact that WIN continues to make strong progress is a testament to our network of partners. These partners represent a "who's who" of nonprofit organizations, foundations, corporations, government agencies, and individuals in our region. These groups work in concert to identify creative projects and then allocate financial and technical resources to make them successful.

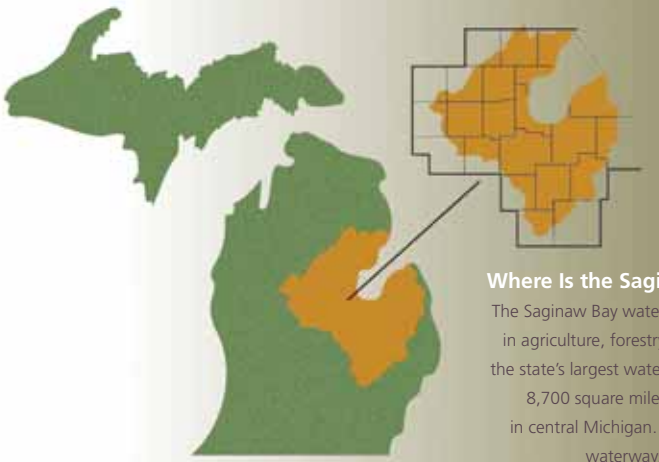
Thank you for your interest in WIN and for helping us develop sustainable solutions to the challenges that we face – together – in the Saginaw Bay watershed.

Michael Kelly,
Project Coordinator
The Conservation Fund

WIN
SAGINAW BAY WATERSHED INITIATIVE NETWORK

About the Saginaw Bay Watershed

- Home to more than 90 fish species, 138 endangered or threatened species and 1.4 million people
- Includes more than 175 inland lakes
- Contains about 7,000 miles of rivers and streams
- Path for migrating song birds and waterfowl on the Central flyway
- Significant agricultural and industrial resources supporting Michigan's economy



Where Is the Saginaw Bay Watershed?

The Saginaw Bay watershed contains rich resources in agriculture, forestry, industry and recreation. As the state's largest watershed, it encompasses nearly 8,700 square miles in all or part of 22 counties in central Michigan. Fifteen percent of the state's waterways drain into the Saginaw Bay.

SUSTAINABILITY:
A FOCUS TODAY AND FOR THE FUTURE

If one word could classify the focus of WIN projects for 2003, it would be sustainability. In awarding grants to 12 organizations that requested funding during the year, WIN's focus continued to be on projects that use the resources available today without jeopardizing their availability for use by future generations.

The following projects received WIN funding in 2003:

Fish Point Interpretive Trail

Invasive Brush Control for the Enhancement of Conservation Reserve

Enhancement Program (CREP) Grassland Restorations

Native Michigan Planting in Bay City's Kantzler Arboretum

Identifying Priority Conservation: A Green Infrastructure Based Strategy for the Tittabawassee River Watershed

Whitney Drain Restoration Project

Sebewaing River Watershed Information and Education Project

Genesee, Lapeer, Shiawassee Greenway Initiative Project

Farmland and Open Space Preservation Project

Kawkawlin River Watershed Public Education Program and Impervious Surface Analysis

Tesla Turbine for Recovery of Electrical Energy from Waste Heat

Publication of 2003 WIN Annual Report

"WIN's mission of sustainable development within the Saginaw Bay Watershed is critical to making the communities where we live strong socially, environmentally, and economically. WIN is unique in that it brings a diverse group of individuals and organizations together – nonprofits, government, foundations, local citizens, and business – to work on a common theme. The Little Forks Conservancy believes in the mission of WIN and is an active participant. Additionally, the projects funded by WIN have direct benefits to the Saginaw Valley. Without WIN, some of these innovative projects may not have come to fruition."

— Elan Lipschitz, land protection specialist, Little Forks Conservancy

"Water is vital to all forms of life, whether if be man, animals, or plants. Protecting the waterways of the Saginaw Valley is just as important. We are blessed with many rivers and streams. It is what makes this area unique. The waterways are shared by sportsmen, tourists, and industry, which also includes agriculture. WIN is working to ensure that these waterways will be preserved for all to enjoy."

— Dennis Mahoney, chairman, Farmland and Open Space Preservation Committee, Saginaw County Vision 2020

WIN Funding Process

WIN follows a unique, interactive process for awarding grant funding for projects and initiatives. Throughout the community-based review process, individuals from many organizations take part by reviewing project applications and offering their expertise on a variety of topics.

WIN awards grant funding twice each year. If you have a project to submit for funding consideration, contact WIN at (989) 662-6024.

PROJECT FOCUS

MAKING "GREEN" ELECTRICITY

TESLA TURBINE FOR RECOVERY OF ELECTRICAL ENERGY FROM WASTE HEAT

Research is at its best when it can make a positive impact locally – and globally. With a WIN grant, a multidisciplinary team of professors and students at Saginaw Valley State University (SVSU) is working to bring solutions to local organizations, while investigating alternate energy sources for the nation and the world.

Throughout 2004, SVSU will measure the efficiency and feasibility of using Tesla turbines to recycle waste heat energy into electricity. Unlike the traditional bladed turbine engine, the Tesla engine is cheaper to manufacture and more durable. In addition, it can operate at lower temperatures of waste heat. Using the technology patented by Nikola Tesla in the early 1900s, the turbine uses a series of thin metal discs. As hot fluids or gases (such as air, steam, or water) flow through the engine, the discs spin and generate electricity.

Equipped with special sensors to carefully measure the energy efficiency, SVSU's Tesla turbine will be tested at a variety of locations around Michigan's Saginaw Valley, including the Good Neighbors' Mission in Saginaw and Monitor Sugar in Bay City.

The mission previously benefited from a WIN-funded SVSU project that installed a biomass furnace burning fuel pellets derived from agricultural waste – specifically, corn cobs. Because this clean corn-burner exhausts hot waste air, SVSU researchers plan to return to test the efficiency of the Tesla turbine and produce electricity.

SVSU also plans to build on another WIN-funded project at Monitor Sugar. The sugar manufacturing process yields waste hot water. SVSU will look at capturing the energy in this water to generate additional heat and electricity.

"We're looking at the broad-based problem of how to take agricultural residue, such as corn cobs or sugar beet pulp, and burn it cleanly and make electricity from it," says SVSU Professor Christopher Schilling, the Tesla turbine project leader. The team is made up of professors and students in mechanical and electrical engineering, biochemistry, biology, business, art, and sociology.

"We have team members who are not traditionally involved in this type of research but who are supporting the activities in the project and in the community," says Dr. David Swenson, H.H. Dow Professor of Chemistry at SVSU.

The research has numerous possibilities for the future. Beyond generating electricity from waste energy, SVSU may show possible applications for this efficient engine, such as stationary power generators for businesses and vehicle power sources for tractors, trains, and automobiles. The research also may result in a business structure for turbine manufacturing in Michigan.

"Our country is starting to focus on distributed micro-generation, which means neighborhood electrical generators or people having generators in their backyards," says Schilling. "Right now, centralized power plants ship electricity over long distances to the customer. But the power grid is aging and breaking down. So there's a big need to find smart ways of making local power. But you want to go further than that and make the local power from non-fossil fuels that are clean, renewable, and, better yet, recycled from waste energy."

"These turbines are cost-effective, could increase the market for agricultural waste, and could provide an environmentally friendly electricity generator for many applications," says Swenson. "Without the WIN support, we wouldn't have been able to acquire this Tesla engine and do independent efficiency testing."

Local Champion:
Saginaw Valley State University

WIN Grant Award: $40,200

"We can extract energy that's already been paid for. The steam you see going up in the air as waste hot water is actually dollar bills being thrown away. We want to change that."

— Dr. David Swenson,
H.H. Dow
Professor of Chemistry,
Saginaw Valley State University

PROJECT FOCUS

BUILDING WATERSHED AWARENESS

KAWKAWLIN RIVER WATERSHED PUBLIC EDUCATION PROGRAM AND IMPERVIOUS SURFACE ANALYSIS

The headwaters of the Kawkawlin River originate in northern Midland and southern Gladwin Counties, where there are large tracts of wetlands and forests. This watershed contains all or part of four counties and 14 townships.

The project is being led by the Kawkawlin River Conservation Partnership, with the assistance of other local partners. The partnership itself is made up of the Little Forks Conservancy, the Kawkawlin River Watershed Property Owners Association, and the Saginaw Basin Land Conservancy.

The goal of the project is to educate the public about this important watershed. "Building awareness is the first step in working to protect the health of the watershed," says Elan Lipschitz, land protection specialist with Little Forks Conservancy.

First, the partnership is creating road signs. "The signs will be common throughout the watershed, with prominent road placement at points where you enter the watershed," says Lipschitz. "Our goal is to have the signs designed so they could be replicated for other sub-watersheds of the Saginaw Bay Watershed. Road signs are a great tool for building watershed awareness. Community members will have a tangible, in-the-ground signal letting them know that the land they own, visit, or drive through is part of something bigger – something with larger ecological significance."

Second, a watershed poster will be developed as an environmental education tool and will give details about water quality, land use, and conservation features of the watershed. The poster will be widely distributed throughout the watershed to schools, municipalities, conservation districts and libraries.

The last component of the 2004 project is an impervious surface analysis, which is expected to chart urban development in five sub-watersheds of the 250-square-mile region. These developed areas include roads, homes, businesses, industrial facilities and parking lots.

"Studies have shown that when the impervious surfaces in a watershed increase, there are negative effects on water quality," says Lipschitz. "Generally, as imperviousness exceeds 8 to 10 percent of the land surface, water courses and water quality become degraded. By determining the current levels, it will be possible to identify waterways that may be impaired or have a high likelihood of impairment in the future."

The results of the analysis will be used as a planning tool for local municipalities to address water-quality concerns. Additionally, conservancies will be able to use the results to identify areas that would benefit from private conservation initiatives.

Local Champions:
Kawkawlin River Watershed Property Owners Association,
Little Forks Conservancy, and
Saginaw Basin Land Conservancy

WIN Grant Award: $25,200

"Every drop of water that falls within the Kawkawlin watershed eventually flows into the Saginaw Bay. The river is made up of numerous waterways and flows through woods, farmland, and residential areas. The north branch of the Kawkawlin River provides spawning habitat for walleye, and large expanses of wetlands. For example, the Kawkawlin River flooding in Mills Township provides breeding habitat for migratory waterfowl and neotropical songbirds."

— Elan Lipschitz,
land protection specialist,
Little Forks Conservancy

PROJECT FOCUS

PROVIDING ACCESS TO NATURE

FISH POINT INTERPRETIVE TRAIL

Outside of Unionville, Michigan, the Fish Point Wildlife Area includes a wildlife and waterfowl observation tower and a wetland restoration project – both previously funded by WIN. In this area was an existing, but unimproved, nature trail. The Fish Point Wildlife Association (FPWA) and its partners are working to improve this trail and add educational features.

"Originally established in the 1980s, the Fish Point Nature Trail was largely forgotten until the Fish Point Wildlife Association made a concerted effort to reestablish it in 2003," says Ron Hohne, FPWA president.

In the summer of 2003, the FPWA placed benches along the trail, and the Michigan Department of Natural Resources (DNR) brought in gravel to re-define its course. In 2004, six interpretive signs will be placed along the trail and an information kiosk will be added to the main parking lot, adjacent to the wildlife observation tower and trailhead. The entire project will be completed by September 2004.

"The nature trail is accessible to the general public, including schools and outdoor groups," says Stephen Karas, FPWA treasurer. "The addition of the interpretive signs and kiosk will help individuals and groups understand the features of the wildlife, without the need for a guide. The signs will describe the different wildlife habitats and species present, as well as illustrate recreational opportunities, ecosystem management techniques and sustainability."

Over the years, abuse and neglect have lessened the opportunities that were once available. The existence of an organization like WIN – along with fellow organizations like the Fish Point Wildlife Association – will ensure the continued restoration and growth of these important ecosystems, which are not only required for recreation and enjoyment but also for the wildlife that are the original, primary residents of these areas."

—Ron Hohne, president,
Fish Point Wildlife Association

The trailhead is located a half mile north of the Fish Point DNR station on Ringle Road, approximately five miles northwest of Unionville. The trail is approximately one-and-a-half miles in length and begins at the wildlife observation tower. It meanders along the main county drain and two water impoundments, looking out over the wildlife refuge and state management areas. The wildlife area itself covers more than 3,600 acres, including flat lake plains, sand beach ridges, and vast coastal emergent marshes. The area is used by wildlife observers, students, hunters, boaters, fishermen, and outdoor enthusiasts.

Local Champion:
Fish Point Wildlife Association

Partners: Michigan Department of Natural Resources, Reese Public Schools, and Unionville-Sebewaing Area Schools

WIN Grant Award: $7,500

"The Fish Point Wildlife Association is a fairly new organization of approximately four years. We have made great strides in our contributions to the Fish Point Wildlife Area – in excess of $15,000 – and are continuing to grow every year. However, as with most nonprofit organizations, the amount of funding required versus the amount available usually differs. The grant from WIN has allowed us to pursue this project many years sooner than it may have been completed otherwise."

— Stephen Karas, treasurer,
Fish Point Wildlife Association

PROJECT FOCUS

PRESERVING EXPANSES OF FARMLAND

FARMLAND AND OPEN SPACE PRESERVATION PROJECT

Saginaw County Vision 2020 and its Farmland and Open Space Preservation Committee are working to keep farmland from being fragmented by residential and commercial development.

"By protecting large blocks of farmland, this project provides for the economic viability of agriculture and its support networks," says Dennis Mahoney, chairman of the committee. "The program is not meant to stifle or stop development but to help direct it to areas that have the proper business or residential infrastructure in place."

Landowner participation in the grassroots preservation project is on a voluntary basis. "The landowner applies to Saginaw County to surrender development rights through an easement that restricts property usage to agricultural purposes only," says Mahoney. "In turn, the landowner is compensated for this easement. The compensation is generally the difference between the value of the land as farmland as opposed to commercial or residential land. Once a price is negotiated and approved, a conservation easement is permanently placed on the deed, restricting the use to agriculture purposes. The land still retains it agricultural value, and the owner can sell the land as such."

Formed in the fall of 2003, the committee is made up of farmers, township officials, consultants, developers, and private citizens. The committee has drafted a Purchase of Development Right (PDR) ordinance and, in 2004, is seeking public input on the PDR program – meeting with township, county, and city officials, as well as landowners and other stakeholders.

After the public input, other steps in this project include:

- PDR ordinance and program approval by the Saginaw County Board of Commissioners
- Acceptance by the townships
- Establishment of an administrator and an agriculture preservation board, which will review, score, and rank landowner applications and report back to the Board of Commissioners

"The administrator would collect the applications, verify the scoring information, handle the negotiations, do site verifications, and answer landowner questions. The County Board of Commissioners would have to give final approval to all PDR purchases," says Mahoney. "The WIN grant made it possible for us to hire a facilitator to help with the technical portion of the PDR ordinance. Without this help, it may have taken two to three years to accomplish the same program."

Local Champion:
Saginaw County Vision 2020

Partners: Saginaw County Farm Bureau, Saginaw County Michigan State University Extension, Saginaw Township, Thomas Township, Chesaning Township, and the Home Builders Association of Saginaw

WIN Grant Award: $18,500

"When you look at farmland preservation, you are looking to the future. Saginaw County has some of the richest farmland in the state. It is a precious commodity that we need to keep. Currently, Saginaw County agriculture generates $92 million in revenue from the commodities that are raised. Each dollar is turned over five times before it leaves the county. That equates to $460 million. However, above and beyond all this, we are trying to preserve a way of life and make agriculture sustainable for future generations."

— Dennis Mahoney, chairman, Farmland and Open Space Preservation Committee, Saginaw County Vision 2020

OUR VISION

As stewards of the Saginaw Bay Watershed, we value our shared, unique resources, and together we will balance economic, environmental, and social priorities to enhance the quality of life for this and future generations.

WIN'S GUIDING PRINCIPLES

- Provide a pleasant and healthy environment
- Conserve historic, cultural, and natural resources
- Integrate economic prosperity, ecology, and aesthetics
- Use land and infrastructure effectively
- Continually evaluate and refine shared vision and goals

SAGINAW BAY WATERSHED INITIATIVE NETWORK

The WIN Funders' Network

A committed group of 12 foundations support WIN with financial contributions and technical support. They are:

Bay Area Community Foundation

Charles J. Strosacker Foundation

Consumers Energy Foundation

Cook Family Foundation

The Dow Chemical Company Foundation

Harry A. and Margaret D. Towsley Foundation

Herbert H. and Grace A. Dow Foundation

Kantzler Foundation

Midland Area Community Foundation

Rollin M. Gerstacker Foundation

S.C. Johnson Fund

Saginaw Community Foundation

For a list of participating companies and organizations with their web site links, visit *saginawbaywin.org/info/overflow.html*.

The Saginaw Bay Watershed Initiative Network is facilitated through a partnership of The Dow Chemical Company, The Conservation Fund, and local and regional organizations dedicated to promoting the concepts of sustainability.

Contact Us

For more information about WIN, visit *www.saginawbaywin.org* or contact:

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