

**CHARTER TOWNSHIP OF MERIDIAN
ENVIRONMENTAL COMMISSION
REGULAR MEETING AGENDA
Wednesday, February 3, 2016**

**Town Hall Room
Meridian Municipal Building
5151 Marsh Road, Okemos, MI 48864**

1. Call to order at 7:00 p.m.
2. Approval of agenda
3. Approval of minutes of the January 6, 2016 work session/regular meeting and work session.
4. Public remarks
5. Chair's Report
6. Staff report
7. Commission Liaison/Workgroup Reports
8. *Green Theme* for February: Christine Spitzley, AICP, the chief environmental planner at the Tri-County Regional Planning Commission, will present the new *Tri-County Water Policies and Programs Guide*
9. Review of Strategic Plan 2016-17
10. Review of Environmental Commission *Rules of Procedure* and Zoning Ordinance *Chapter Two*
11. 2016 Environmental Stewardship Awards Kickoff
12. Public remarks
13. Adjournment

**CHARTER TOWNSHIP OF MERIDIAN
ENVIRONMENTAL COMMISSION MINUTES
Meridian Municipal Building – Town Hall Room
January 6, 2016 - Draft**

REGULAR MEETING

PRESENT: Chair McConnell, Vice-Chair Jackson and Commissioners Dickmann, Schools, Sarver, and Kielbaso

ABSENT: None

STAFF: Harmony Gmazel, Associate Planner; Gail Oranchak, Principal Planner

OTHERS: John Scott-Craig, Susan Masten

1. CALL REGULAR MEETING TO ORDER

Chair McConnell called the meeting to order at 7:00 p.m.

2. APPROVAL OF THE REGULAR MEETING AGENDA

Moved by Kielbaso, seconded by Schools. Approved by consent without objection.

3. REVIEW AND APPROVAL OF OCTOBER 7, 2015 WORK SESSION/REGULAR MEETING AND DECEMBER 7, 2015 WORK SESSION MINUTES

- October 7, 2015 Work Session: Moved by Sarver, seconded by Schools; **APPROVED** 6-0.
- October 7, 2015 Regular Meeting: Moved by Jackson, seconded by Kielbaso; **APPROVED** 6-0.
- December 7, 2015 Work Session: Moved by Jackson, seconded by Schools. **APPROVED** 6-0.

4. PUBLIC REMARKS

John Scott Craig commended the Environmental Commission on behalf of the Planning Commission for their commitment to environmental planning. He invited the Commission to a special joint meeting on January 14th, hosted by the Township Board to share their 2015 activities and 2016 goals.

5. CHAIR'S REPORT

No report

6. **COMMUNICATIONS/STAFF REPORT**

Gmazel directed the Commission's attention to the special Township invitations in their packet.

7. **APPROVAL OF 2016 MEETING SCHEDULE**

RESOLUTION made by Commissioner Kielbaso; SUPPORTED by Commissioner Jackson. **APPROVED** 6-0.

8. **RECOGNIZE OUTGOING COMMISSIONER, RICHARD SEARL**

- **RESOLUTION** made by Commissioner Jackson and **SUPPORTED** by Commissioner Schools. Approved 6-0.

9. **RECOGNIZE INCOMING COMMISSIONER, DONALD DICKMANN**

Chair McConnell recognized incoming Commissioner Dickmann.

10. **ELECTION OF OFFICERS (Chair & Vice-Chair) for 2016**

- **MOTION** by Commissioner Jackson to nominate Commissioner McConnell for Chair. Supported by Commissioner Kielbaso. Approved 6-0.
- **MOTION** by Commissioner Jackson to nominate Commissioner Schools for Vice-Chair. Supported by Commissioner Schools. Approved 6-0.

11. **SELECTION OF LAND PRESERVATION REPRESENTATIVE BY THE 2016 CHAIR**

- Chair McConnell selected Commissioner Kielbaso to serve as the Land Preservation Board representative for 2016.

12. **STUDY GROUPS/LIAISON REPORTS**

- Land Preservation:** Commissioner Kielbaso gave an update on a recent workday at Towar Gardens when local Cub/Boy Scouts helped with a deer repellent project. v The Board is continuing negotiations on two properties in the Township.
- Energy Team:** Commissioner Sarver reported on an upcoming energy efficiency report pertaining to the Township Hall. The Township also supported the new solar park at Burcham and is looking into buying shares in it. There is an upcoming solar forum (Jan 11) in East Lansing co-hosted by the Township and City of East Lansing.

10. **PUBLIC REMARKS**

None

11. **ADJOURNMENT**

- **MOTION** by Commissioner Kielbaso to adjourn. **SUPPORTED** by Commissioner Jackson. Approved 6-0. The Regular Meeting was adjourned at 7:34 p.m.

**CHARTER TOWNSHIP OF MERIDIAN
ENVIRONMENTAL COMMISSION WORK SESSION MINUTES
Meridian Municipal Building – Town Hall Meeting Room
January 6, 2016 - Draft**

WORK SESSION

PRESENT: Chair McConnell, Vice-Chair Schools and Commissioners Jackson, Sarver, Kielbaso, and Dickmann

ABSENT: None

STAFF: Gail Oranchak, Principal Planner; Harmony Gmazel, Associate Planner

OTHERS: John Scott- Craig, Susan Masten

1. CALL WORK SESSION TO ORDER

Chair McConnell called the meeting to order at 7:37 p.m.

2. APPROVAL OF THE WORK SESSION AGENDA

Approved by consent without objection.

3. REVIEW DRAFT COMMISSION GOALS/DEVELOP STRATEGIC PLAN for 2016-17

The Commission and staff prioritized goals for the Commission in 2016-17 and created the following strategic plan:

Administrative Goal:

The Commission desires to fill its vacancies with persons and youth who are interested in environmental aspects of community planning. There are portions of the Commission By-Laws that need to be updated in order to better support this goal.

Administrative Objectives:

- 1) Fill adult vacancies and youth vacancies (short term)
- 2) Amend the Commission By-Laws to: (short term)
 - Preserve one youth seat and create a seat for a person currently pursuing college-level environmental studies.
 - Allow the youth and college commissioners to vote at regular Environmental Commission meetings.
 - Alter the meeting requirement language to allow for more flexibility if a meeting is not warranted each month.

Collaborative Goal:

The Commission desires to more actively collaborate with the Land Preservation Board, Park Board and Planning Commission in promoting the wise management of natural resources in the township. This effort will be strengthened with increased mutual data-sharing, reporting and information gathering.

Collaborative Objectives:

- 1) Regularly engage the chairs of the Land Preservation Board, Park Board and Planning Commission to align data needs and other planning tools related to environmental protection, land acquisition and land improvement. (continual)

- 2) Engage residents, businesses, fellow appointed and elected officials in the discussion of environmental issues, and the sharing of ideas related to:
 - Zoning ordinance updates that address climate change, brownfield redevelopment, street tree replacement. (mid to long term)
 - Planning tools such as maps and data that aid environmental planning decision-making. (mid to long term)
 - Improved wayfinding throughout the Township for pathways, businesses, parks etc. (long-term)

5. OTHER BUSINESS

None

6. PUBLIC REMARKS

None

7. ADJOURNMENT

The Work Session was adjourned by Chair McConnell without objections at approximately 9:15 p.m.



TRI-COUNTY WATER POLICIES & PROGRAMS GUIDE

Planning the next steps
for water management in
Clinton, Eaton, and Ingham Counties
in mid-Michigan

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INTRODUCTION

The *Tri-County Water Policies and Programs Guide* is a unique effort that for the first time brought together experts in groundwater, drinking water, land use, surface water, and wastewater from Clinton, Eaton and Ingham Counties to examine in depth how well they are working together to protect Mid-Michigan's water resources. These experts reviewed everything from agriculture to wetlands, and throughout, considered how each system and program is interconnected and interdependent. The Tri-County Region is almost 100% groundwater dependent for its water needs and relies on the protection of all water resources to maintain a high quality source.

This report was funded by the Michigan Department of Environmental Quality (MDEQ) Wellhead Protection (WHP) Grant Program through a grant to the East Lansing Meridian Water and Sewer Authority (ELMWSA). Coordinated, designed, and written by the Tri-County Regional Planning Commission (TCRPC), it was initiated to evaluate the effectiveness of current wellhead and groundwater protection programming in the Tri-County Region. Originally envisioned as a one-time snapshot of local water policy, it evolved into a guidance document with ongoing goals and recommendations. It identifies local water protection activities, policy and programming gaps, best management practices (BMP), opportunities for complementary activities, and recommendations and plans for long term sustainability. It promotes a multi-jurisdictional WHP strategy that addresses water quality, quantities and delivery in all areas of natural and manmade water systems.

This report is intended as an informational tool and guidance document for decision makers and the citizens of the Tri-County Region. Each chapter contains a narrative that provides a topic overview, main programming components, an outline of gaps and concerns, and key resources. Each chapter also includes a correlating table that identifies central programs or activities. The table outlines standards, resources, actions, funding, evaluation, coordinating agencies, and timelines for each identified program or activity. For ease of reference, each chapter is color coded.

This document can be found electronically at www.mitcrpc.org/env.

Groundwater/ Public Water Supplies

The Tri-County Region is almost 100-percent dependent on groundwater for its water needs. Since 1983 the Greater Lansing Area has been home to the Groundwater Management Board (GMB) and its partner organization the Groundwater Technical Advisory Council (GTAC). These entities were created as a result of the 208 Water Quality Planning that took place in the 1970's and 1980's. The summary document of

that effort recommended that a permanent body be established to provide for the coordinated management of local groundwater resources.

Over thirty years later, they continue to serve as a coordinating body and technical resource for information and management of the drinking resources in our region. As a group they have continued to foster a strong coalition of communities and organizations working together to protect and conserve groundwater resources.

The GMB and GTAC are unique organizations in this country. They have received numerous awards for their innovative programming and projects. The members of these organizations are forward thinking and willing to set aside and work around differences for the greater good.

Mid-Michigan Drinking Water Consortium

Created in 2014, the Mid-Michigan Drinking Water Consortium is a group of communities that meet to share concerns common to water plants that utilize softening technologies. The group has realized large savings by jointly bidding chemicals used by water and wastewater facilities. They are currently studying the feasibility of building a local lime kiln to address the increasing issue of lime sludge disposal.

Water Regionalization Study

In 1988, twenty communities came together to examine the existing water infrastructure in their communities. As communities experienced different rates of growth and expansion some local utilities had developed excess capacity while others were facing large expansions. Various current and future scenarios were developed to depict capacity throughout the region. This work allows our regional utilities to shape their facility plans accordingly.

Aquifer Model

In 1990, twenty communities in the Greater Lansing area came together to fund and develop a regional aquifer model. It is a computer model created by

USGS which provides a three-dimensional look at our region's water supply. It provides the basis for local delineations and is a valuable tool for planning and remediation. This model is continually updated as wells are added and taken off-line and as water usage changes. It allows a community to determine what the impact of a new large water well would do to the surrounding area. For example, a proposed industrial park requiring "x" amount of water per day. The regional model can predict its impact on the surrounding water supply wells. In reverse, it can also determine the direction, rate and flow of a contaminant plume.

Wellhead Protection Programs

Having safe, good quality drinking water at a reasonable cost is something that most people take for granted. Wellhead protection programs ensure that the water supply is safe and work to avoid costly treatment or relocation of their well fields. Wellhead protection programs are designed to protect groundwater supplies through careful management of potential pollution on the land and subsurface.

Steps to Wellhead Protection

1. Creation of a Wellhead Protection Team
2. Mission, Goals and Objectives
3. Delineation of Wellhead Protection Areas
4. Management Strategies
5. Potential Contaminant Source Inventory
6. Siting New Wells
7. Education and Outreach
8. Public Participation

These eight elements create a wellhead protection plan which is then submitted to the MDEQ for approval. The Tri-County Region currently has over a dozen approved plans being implemented.

Wellhead protection plans are written and submitted by individual communities, however, the Greater Lansing area works collaboratively whenever possible sharing resources and ideas. Public relations campaigns, contaminant inventories, mapping, and delineations are all examples of coming together to achieve the common goal of groundwater protection and creating consistent



photo credit: Freemages.com_Ronald Schuster

programming across multiple communities.

Groundwater/Wellhead Audit Tool

TCRPC, in cooperation with Michigan State University's School of Planning, Design, and Construction, created a Groundwater/Wellhead Protection Audit Tool that evaluates a community's level of drinking water protection. The tool has been applied to fifteen communities in the Tri-County Region. This has set a baseline which will be valuable for rating progress in the future.

Time of Sale Ordinances

Time of Sale ordinances, sometimes called Point of Sale, implemented by the Barry-Eaton and Ingham Environmental Health Departments have created sustainable programs for identifying and properly addressing leaking underground storage tanks, failing wells and septic systems and abandoned wells. These programs have become valuable tools for reducing risks to groundwater in areas not served by public water and sewer.



photo credit: Freemages.com_Brandon Bankston

Education & Outreach

The Federal Consumer Confidence Rule requires public water suppliers to provide Consumer Confidence Reports (CCR) to their customers annually. This annual water quality report summarizes information about the source of water used, any detected contaminants, compliance and educational information. Local utilities have also included information about

wellhead protection programs, efforts to identify and close abandoned wells and public awareness opportunities.

Each of the local wellhead protection programs contain an education and outreach component. Activities have included: movie, television, and radio ads; articles, brochures, posters, and placemats; and a permanent ground water display at Impression 5 Children's Museum in Lansing.

The GMB hosted a very successful hands-on Children's Water Festival for 20 years. This event was recently merged with Michigan State University's Science Fair and will be held annually in the spring on campus.

TCRPC staff provides dozens of presentations each year to civic groups, elected officials and other decision makers in an effort to raise awareness and

change behaviors.

Gaps & Concerns

Infrastructure is aging and failing faster than it is being replaced.

The increasing number, persistence and complexity of contaminants

Lack of coordinated water testing, monitoring and reporting.

Pollution from sources such as agriculture and expanding urbanization that are not addressed or controlled by wastewater treatment

Lack of planned funding for infrastructure replacements, improved technology and treatment of an expanding spectrum of contaminants

An increasing shortage of qualified water professionals with necessary skills and licenses.

Abandoned wells and leaking underground storage tanks located on residential properties are not being identified and rectified.

Lack of Time of Sale ordinances in all three counties.

Key Resources

- Groundwater Management Board (GMB)
- Groundwater Technical Advisory Council (GTAC)
- Local Wellhead Protection Teams
- Local Utilities
- Local Health Departments
- Michigan Section American Water Works Association (MIAWWA)
- Michigan Department of Environmental Quality (MDEQ)
- Environmental Protection Agency (EPA)
- American Water Works Association (AWWA)
- Private Sector Consultants

Groundwater & Public Water Supplies

| Program/ Regulated/Activity | Highest Possible Standard | Tangible Deficiencies/Gaps | Resources (Available/Need) | Recommendation for Sustainability | Actions |
|---|---|--|--|---|---|
| <i>Environmental Permits Checklist</i> | Used in all site plan reviews; updated regularly. | Not used regularly; not updated, not distributed, not required. | <ul style="list-style-type: none"> Basic Form Updated Commitment to use Staff training Planning/Commission awareness | 100% Implementation of updated list. | Commitment by communities; update list; implement use. |
| <i>Wellhead Protection Plans</i> | All public water supply systems have approved and implemented wellhead protection programs. | Many communities do not have approved, updated, or implemented plans. | <ul style="list-style-type: none"> Guidance documents for writing WHP Technical assistance from TCRPC, MRWA, MDEQ Local commitment | Long term commitment from local communities. | Work with MDEQ to determine which communities have WHP in the Tri-County Region; offer assistance to those who do not have an approved, updated, or implemented plan. |
| <i>Aquifer Study</i> | Maintain detailed up-to-date model of aquifer systems. | Awareness, ongoing funding. | <ul style="list-style-type: none"> USGS Local communities TCRPC | Make the aquifer update part of wellhead protection updates. | Work with USGS, TCRPC and local communities to write the aquifer updates in the regional plans for wellhead protection; request scope for project update. |
| <i>Drinking Water Infrastructure</i> | Adequate funding to repair, replace, and improve water infrastructure as needed. | Lack of funding, critical and increasing infrastructure deficiencies. | <ul style="list-style-type: none"> Funding | Increased and dedicated funding. | Coordinated regional review of utility rates. |
| <i>Regional Infrastructure Planning</i> | Up-to-date evaluation of regional water utilities' current and projected needs. | The current study is over 25 years old; a new study should be developed with regard to current conditions. | <ul style="list-style-type: none"> Funding Large set of institutional knowledge and expertise Urban & Rural Services Management Committee (TCRPC) | Regularly updated regional plan that provides guidance to decision makers regarding infrastructure replacement and development. | Rescope the study to address current conditions; convene the original participants and request their support of an update. |

| Training/Education | Associated Costs | Funding Sources | Coordinating Agencies | Timeline for Implementation | Evaluation |
|---|--|---|---|-----------------------------|--|
| TCRPC staff update existing form and share with local planning staff and commissioners. | Staff and education materials. | GMB staff time; printing. | TCRPC; local planning staff; commissioners. | 1 year | Number of communities committed to regularly using and updating review. |
| Presentations to local leadership and staff. | Staff time | GMB staff time; MDEQ wellhead protection grant funding. | TCRPC; MDEQ; local communities. | Ongoing | Number of communities with approved and implemented wellhead protection plans. |
| Awareness for wellhead protection teams, local decision makers and consultants. | USGS and TCRPC staff time to update model and coordinate participation of local communities. | Local communities; wellhead protection grants; USGS cost share funds. | USGS; TCRPC; local communities. | Fall 2015 | Increased and appropriate frequency of aquifer updates. |
| Regional forum for elected officials to discuss and review utility rates and the necessary infrastructure improvements. | Forum | GMB staff time. | TCRPC; local utilities; AWWA. | Fall 2015 | Regular regional discussions of infrastructure needs and rates. |
| Awareness of local officials on the value and savings the study can provide to communities. | Cost to hire consultant to repeat study. | Local units of government. | TCRPC; local utilities; consultants. | Fall 2015 | Widely supported and coordinated regional plan. |

Groundwater & Public Water Supplies (continued)

| Program/ Regulated/Activity | Highest Possible Standard | Tangible Deficiencies/Gaps | Resources (Available/Need) | Recommendation for Sustainability | Actions |
|--|--|---|--|---|--|
| <i>Groundwater Testing/ Monitoring</i> | Testing to make sound water management decisions are done and the results are easily available. | Testing throughout the region is spotty and uncoordinated; results are not readily available. | <ul style="list-style-type: none"> Regional coordination Summary of existing efforts and results Ongoing and historic data | Create a regional coordinating committee that is dedicated to establishing coordinated testing sites and protocols and oversees the maintenance of a regional standardized database of testing data that is easily updated and available. | Convene regional coordinating committee; assemble existing testing data; determine data gaps; create a plan for a coordinated effort and a regional database. |
| <i>Outreach and Education</i> | Every person in the region knows and understands water resources and values them enough to protect them. | Many people have no idea where their water comes from or how their behavior poses a risk to it. | <ul style="list-style-type: none"> The resources available are too numerous to list. The staff time to share these resources is limited. | Continue to make water education a part of as many conversations as possible. | Make education and outreach a component of every planning effort; incorporate it into public education on all levels; make its value to public health and the economy a part of every community's message. |
| <i>Well Siting</i> | Future well fields are identified and protected far in advance of being drilled. | Wells are sited as needed. | <ul style="list-style-type: none"> Protected and reserved sites for future well field development (need is community-specific) | Future well sites that are purchased and protected similar to existing well fields. | Purchase and protect future well fields. |
| <i>Well Closure</i> | All abandoned wells are properly closed. | Not all abandoned wells are properly closed leading to increased risk to the aquifers. | <ul style="list-style-type: none"> Well drillers Funding for well closures Increased awareness | Regional awareness program and resources to assist with closures. | Time of Sale Ordinance enforcement and site plan review. |

| Training/Education | Associated Costs | Funding Sources | Coordinating Agencies | Timeline for Implementation | Evaluation |
|---|--|--|---|-----------------------------------|--|
| Bring together all organizations that currently test and explain the benefits of them working together. | Maintaining the coordinating committee and database creation and management. | Unknown | Conservation districts; consultants; health departments; MDEQ; EPA; TCRPC; Mid-MEAC; MSU. | Conversations have already begun. | A comprehensive, regional water testing database. |
| Needs to be expansive, integrated and creative. | Unknown | There are many, but there are also many ways to integrate it into existing communication strategies for little or no cost. | Conservation districts; consultants; health departments; MDEQ; EPA; TCRPC; Mid-MEAC; MSU; schools; utilities; municipalities. | Ongoing | Public education surveys (focusing on knowledge and behavior changes). |
| Raise decision makers awareness and willingness to be proactive. | Land purchase, possible loss of tax revenue. | Utility; community budgets. | MDEQ; USGS; local utilities. | Ongoing | All communities have planned and protected future well fields. |
| Raise awareness and willingness to be proactive; increase enforcement. | Varies from a few hundred to several thousand dollars. | Well owners; local utilities; limited state and federal funding. | USDA; conservation districts; utilities; well owners. | Ongoing | Increase closure of abandoned wells. |

Municipal Wastewater

The Clean Water Act (CWA) of 1972, established the basis for wastewater discharge control in the United States. The goal of the CWA is to “restore and maintain the chemical, physical and biological integrity of the nation’s waters.”

It established the National Pollution Discharge Elimination System (NPDES) Program, which protects surface water by assuring that discharges of domestic and industrial wastewater comply with state

and federal regulations. Public or private facilities that discharge wastewater to surface water or land applied biosolids generated in wastewater treatment facilities are required to have a NPDES permit.

Centralized Collection

Centralized municipal collection of wastewater for treatment significantly improved public health in the United States. Designed to treat water prior to its release into waterways, it reduces pathogens and other pollutants. Depending on volume and needs, communities in the Tri-County Region treat their wastewater through a wastewater treatment plant or lagoon system.

Wastewater treatment plants use tanks, filters, screens and other processes to remove pollutants from water.

Lagoons store and biologically treat wastewater. Lagoons are sited, approved and monitored through MDEQ. Properly sited, built and maintained lagoons are a valuable on-site management tool and the water discharged (effluent) is considered to be of equal quality to that of wastewater treatment plants.



photo credit: East Lansing Wastewater Treatment Plant

Biosolids

Biosolids are treated sewer sludge. Biosolids are rich organic material that are generally used in agriculture as a soil conditioner.

Septic Systems

A limited but significant number of septic systems can still be found in the



photo credit: Freelmages.com_Sherry Wil

urban areas of the region. In most areas where municipal sewer is available, replacement permits for failed septic systems are denied and homeowners are required to connect to available sewer. In addition, Eaton and Ingham counties have Time of Sale ordinances that require an inspection and evaluation of septic systems for homes not connected to public sewer before a residential home property is sold. This protects drinking water by identifying failing septic systems that pose a threat to human health and the environment. These efforts are steadily eliminating failed septic systems in urban areas of the region.

Industrial Pretreatment Program (IPP)

Pollutants in industrial wastewater may compromise municipal treatment plant processes or contaminate waters of the state. To protect municipal treatment plants and the environment, the Pretreatment Program requires industrial dischargers to use treatment techniques and management practices to reduce or eliminate the discharge of harmful pollutants to sanitary sewers. The Pretreatment Program is a core part of the Clean Water Act’s NPDES. (Source: MDEQ)

Gaps & Concerns

Infrastructure is aging and failing faster than it is being replaced.

The increasing number, persistence and complexity of contaminants

Pollution from sources such as agriculture and expanding urbanization that are not addressed or controlled by wastewater treatment

Not all municipalities with wastewater treatment facilities have Industrial Pretreatment Programs (IPP).

Lack of planned funding for infrastructure replacements, improved technology, and treatment of an expanding spectrum of contaminants

A shortage of qualified wastewater operators and managers with necessary skills and licenses.

Key Resources

- Local Utilities
- Local Health Departments
- Michigan Water Environmental Association (MWEA)
- Michigan Department of Environmental Quality (MDEQ)
- Water Environment Federation (WEF)
- Environmental Protection Agency (EPA)
- Private sector consultants



photo credit: Freelmages.com_Phillip Collier

Municipal Wastewater

| Program/ Regulated/Activity | Highest Possible Standard | Tangible Deficiencies/Gaps | Resources (Available/Need) | Recommendation for Sustainability | Actions |
|--------------------------------|--|--|--|--|-----------------------------|
| <i>Effluent Limits</i> | 100% NPDES attainment. | Not meeting permit requirements under nonstormwater conditions; lack of technology to treat salt, overflows, and storm events. | <ul style="list-style-type: none"> Improved technology and facilities. (need is community-specific) | Fully funded and up-to-date facilities capable of achieving 100% NPDES standards. | Fund and update facilities. |
| <i>Education/ Outreach</i> | Positive public perception of wastewater process/products. | Negative perceptions; lack of understanding of wastewater process/products. | <ul style="list-style-type: none"> Utilize existing marketing and education materials; create localized materials as needed. (need is community-specific) | Change perception of elected officials and the public about the value and quality wastewater treatment process/products. | Public relations campaign. |
| <i>Municipal Lagoons</i> | 100% NPDES attainment. | Not meeting permit requirements under nonstormwater conditions; lack of technology to treat salt, overflows, and storm events. | <ul style="list-style-type: none"> Improved technology and facilities. (need is community-specific) | Fully funded and up-to-date facilities capable of achieving 100% NPDES standards. | Fund and update facilities. |

| Training/Education | Associated Costs | Funding Sources | Coordinating Agencies | Timeline for Implementation | Evaluation |
|--|---|-----------------------------|------------------------------------|-----------------------------|----------------------------------|
| Education and outreach for decision makers and the public to garner support for facility upgrades. | Marketing; materials; design modeling; facility improvements. | Utility, community budgets. | Communities; utilities; MWEA; WEF. | Immediate/ongoing | Updated facilities. |
| Education and outreach for decision makers and the public. | Marketing; materials; facility improvements. | Utility, community budgets. | Communities; utilities; MWEA; WEF. | Immediate/ongoing | Improved perception and support. |
| Education and outreach for decision makers and the public to garner support for facility upgrades. | Marketing; materials; facility improvements. | Utility, community budgets. | Communities; utilities; MWEA; WEF. | Immediate/ongoing | Updated facilities. |

Stormwater

runoff is often transported to municipal separate storm sewer systems (MS4s) and ultimately discharged into local rivers and streams without treatment. EPA's Stormwater Phase II Rule establishes an MS4 stormwater management program that is intended to improve the nation's waterways by reducing the quantity of pollutants that stormwater picks up and carries into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and carelessly discarded trash, such as cigarette butts, paper wrappers, and plastic bottles. When deposited into nearby waterways through MS4 discharges, these pollutants can impair the waterways, thereby discouraging recreational use of the resource, contaminating drinking water supplies, and interfering with the habitat for fish, other aquatic organisms, and wildlife. In the region, we have both combined systems and separated storm sewer systems.

Stormwater is also a concern in the rural areas where local drains serve as a collection/management system. Agricultural activities like manure management, etc. often lead to polluted stormwater entering drains and then larger river systems. These issues are discussed in the Rural and Agriculture section.

Green Infrastructure

The Greater Lansing Regional Committee for Stormwater Management (GLRC) works with local municipalities to implement green infrastructure techniques through plans and projects. Green infrastructure (GI) mimics the natural

landscape before it was developed with hard surfaces like roofs, parking lots, etc. GI helps to control water runoff by treating stormwater on-site through infiltration, versus running off the landscape into storm sewers or over them through sheet flow. GI can be incorporated on municipal sites, private development and residential settings.



www.mywatersheds.org

Early collection systems often combined the collection of sanitary waste water and stormwater in a single system. The intent behind the design was to collect storm runoff and prevent flooding. However, when large rain events occur, water overwhelms a treatment system's capacity for treatment, and stormwater and untreated sanitary waste are released into our waterways. Some systems are separated, and the polluted stormwater

Greening Mid-Michigan

Greening Mid-Michigan (GMM) is a group that has developed a GI Vision for the region. This includes looking at potential conservation areas, connecting trails and greenspace and encourages the use of GI and low impact development techniques. GMM recommends that tools such as native re-vegetation, porous pavement, rain gardens, and other low impact development (LID) methods be utilized by local governments, businesses and citizens to filter water of harmful nutrients before it returns to our lakes, rivers and streams.



Emergency Management

Flooding is an unavoidable occurrence of large stormwater events. This is addressed in regional and local hazard mitigation plans, often looking at infrastructure capacity and future planning through capital improvement plans. GI can be utilized to reduce flooding. Placement of built structures is also addressed in flood plain areas.

Pollutants

Pollutants from stormwater include nutrients from over-fertilizing, improper vegetation management; *E. coli* from improper pet waste disposal; sedimentation from parking lots and streets; salt from winter maintenance, motor oil from under-maintained vehicles and more. Sediment often serves as a transporter of these pollutants when stormwater events occur. By reducing these sources of pollution, we can reduce the pollutants carried by stormwater into our waterbodies.

Homeowners

Educated homeowners are vital to watershed protection. The education of homeowners begins with the understanding that we all live in a watershed and the actions of individuals matter. Key education, outreach and demonstration projects include: knowing what watershed you are in, on-site septic systems, soil testing for fertilizer



photo credit: eaton rapids_hydro plant_UnagiUnagi



photo credit: FreeImages.com_helenej

use and application, vehicle maintenance, car washing, pet waste, catch basins, illicit discharge wetlands, and rain barrels.

Municipalities

Municipalities must take leadership in their communities to set the tone for watershed planning and protection. Through the GLRC, they have access to multiple tools to help them develop ordinances and best management practices to initiate and support watershed protection. This includes using GI and LID techniques, educating the public, and managing stormwater through their systems.

Gaps & Concerns

The stormwater discharge permit is an unfunded mandate and is often paid for through municipal general funds. Stormwater utility legislation has been difficult to achieve in Michigan, however, a designated funding

source is greatly needed to address permit requirements and offer incentives for business and residents. Partners across the state continue to work on this issue.

A cultural shift is needed within municipalities to address GI and stormwater management issues. Interdepartmental communication (planning, public works, and administration) is necessary to accomplish permit requirements and support residents. A local champion of GI and LID practices can be key to successful implementation.

Hazard mitigation planning and transportation planning can include more GI and LID techniques. This is often not incorporated enough into existing plans.

Continued education about stormwater management is needed for elected officials, planners, and the public. Existing tools through the GLRC and other watershed groups is available but under-utilized.

Key Resources

- Greater Lansing Regional Committee for Stormwater Management (GLRC)
- Community Planners and Engineers
- Michigan Department of Environmental Quality (MDEQ)
- Environmental Protection Agency (EPA)
- Consultants
- mywatersheds.org



photo credit: FreeImages.com_Bob Smith



photo credit: Greater Lansing Regional Committee for Stormwater Management (GLRC)

Stormwater

| Program/ Regulated/Activity | Highest Possible Standard | Tangible Deficiencies/Gaps | Resources (Available/Need) | Recommendation for Sustainability | Actions |
|---|---|---|--|--|---|
| <i>MS4 Regulations - overall compliance</i> | Permit compliance for all GLRC members. | Some members not in compliance/not engaged; record keeping; dedicated funding source. | <ul style="list-style-type: none"> GLRC services Guidance docs/Action plan/Manuals Record-keeping software Funding mechanism | Issued permits for all GLRC members; confident that all GLRC members can pass audit. | Consistency of record-keeping; representative that attends all GLRC meetings. |
| <i>Public Participation</i> | Follow public notice procedures/allow for comments on local websites. | Website pages lack stormwater and watershed info. | <ul style="list-style-type: none"> GLRC list of website docs for compliance | Member websites include all necessary compliance components. | Meet with GLRC members and IT person to provide recommendations. |
| <i>Public Education</i> | Implementation of High/Med PEP Action Items. | Lack of display and material usage; overall lack of implementation. | <ul style="list-style-type: none"> PEP plan Pollution Isn't Pretty GLRC public survey Willingness to implement More connections to the right people | Implement the PEP Partner with MGROW (PIP); be more deliberate with marketing; evaluate progress; increase knowledge and behavior of public. | Follow the PEP/Action Plan details. |
| <i>Illicit Discharge Elimination Permits</i> | Maintain IDEP plans, outfall maps, investigations, monitoring, and reporting. | Awareness | <ul style="list-style-type: none"> MDEQ guidance GLRC staff training videos Consistent IDEP plan implementation Record keeping | Eliminate all illicit discharges; prevention. | Implement IDEP plan; educate public - reporting |
| <i>Construction</i> | To meet 100% SESC standards; local requirements exceed state SESC. | Meeting state requirements for SESC; not enough personnel to enforce existing rules; each community has different ordinances/enforcement mechanism. | <ul style="list-style-type: none"> Staffing Funding | Consistent enforcement of existing requirements. | Communication of existing requirements; identify barriers for achievement. |

| Training/Education | Associated Costs | Funding Sources | Coordinating Agencies | Timeline for Implementation | Evaluation |
|---|---------------------------------|---------------------------|--|--|--|
| GLRC; MDEQ. | Staff time; training materials. | SAW; 319 implementation. | Work with MSU/ECD through WMPs. | Current permit through 2017; then 2017 - 2022. | Number of municipalities maintaining compliance. |
| Connect through a detailed presentation and example site. | Staff Time. | GLRC; local staff. | GLRC; local staff. | Current permit through 2017. | Increased public participation. |
| Water Words that Work training. | Staff time; training class. | 319 implementation; GLRC. | Everyone | 2018+ | Measureable change in behavior of the public and increased knowledge (through surveys 2006; 2012; 2016). |
| Staff training. | Staff time; training. | CMI | GLRC | Current permit through 2017. | Number of illicit discharges identified and eliminated. |
| Developers | Staff time. | Permits/violations | Building department; drain commission; MDEQ; DPWs; other APAs. | Immediate | Decreased number of violations. |

Stormwater (continued)

| Program/ Regulated/Activity | Highest Possible Standard | Tangible Deficiencies/Gaps | Resources (Available/Need) | Recommendation for Sustainability | Actions |
|--|---|---|--|--|--|
| <i>Post-Construction</i> | Implement GLRC design standards and policy (ordinance or resolution). | Townships: standards for sites other than township-owned land needed. | <ul style="list-style-type: none"> GLRC materials MDEQ guidance | Green infrastructure implementation to meet post-construction regulations; gain regional uniformity (level playing field). | Implement post-construction regulations; look for opportunities to use GI on new and redeveloped projects. |
| <i>Good Housekeeping for Municipalities</i> | Implementation of SOPs/SWPPP with all muni staff. | Lack of SOPs in place; record keeping; potential staff training. | <ul style="list-style-type: none"> GLRC manual MDEQ guidance docs GLRC staff training videos Record keeping/database | Stormwater plans in place at all municipal facilities. | Use GLRC manual to create SOPs; implement throughout City, Township, County. |
| <i>E.coli & DO TMDLs - look</i> | Achieve water quality standards. | Multiple sources of pollutions (septics, wildlife, agriculture, urban, small farm operations, CAFOs). | <ul style="list-style-type: none"> WMPs TMDL docs University/USGS research More proven source reduction methods | Implement WMP to reduce pollutant loading reach water quality standards. | Install BMPs to reduce pollutant loading. |
| <i>Overall WQ Monitoring - look at Surface water table</i> | Coordinate monitoring efforts. | Different monitoring approaches, protocol, and data interpretation. | <ul style="list-style-type: none"> WMPs Overall coordination Policy for monitoring activities | Coordinated efforts through a task force/group. | Develop task force to coordinate all monitoring in the region/watersheds. |
| <i>Infrastructure</i> | Clear pictures of current conditions - asset management. | Unknown improvement costs. | <ul style="list-style-type: none"> Asset management techniques Funding to develop AM plans | Asset management plans for all water/sewer infrastructure. | Conduct an inventory of current storm sewer systems. |

| Training/Education | Associated Costs | Funding Sources | Coordinating Agencies | Timeline for Implementation | Evaluation |
|--|------------------------------|---------------------------|--|--|---|
| Planners; engineers; elected officials; staff. | Staff time. | Municipal | GLRC | Current permit through 2017 | Increased use of green infrastructure in development and redevelopment. |
| Staff training. | Staff time; materials. | Municipal | GLRC | Current permit through 2017 | Compliance with implementation of SOPs for pollution prevention. |
| Land owner education; municipal staff education. | Staff time; training. | 319 implementation; GLRC. | GLRC; conservation districts; NRCS. | Short term: 1-3 years Long term: 4-10 years | Reduce <i>E.coli</i> levels and increased DO levels |
| | Staff time; equipment; labs. | 319 implementation; GLRC. | GLRC; conservation districts; MSU; MDEQ. | Short term: 1-3 years Long term: 4-10 years | Task force collaboration; coordinated database |
| Educate local officials. | Staff time; contractor. | SAW | GLRC | Short term: 1-3 years Long term: 4-10 years | Increased asset management; funding |

Rural Residential & Agriculture

Conservation districts and National Resources Conservation Service (NRCS) provide expertise and often cost share BMP's that protect and improve water quality. Examples of best management practices (BMPs) include improved drainage management and the implementation of erosion controls, cover crops, grassed waterways and buffer strips.

Manure and Nutrient Planning

The majority of rivers and streams in the region are exceeding water quality standards for E.coli (bacteria). This is a risk to public health and does not support fishable, swimmable waterways. One source of E.coli contamination is improper manure application, storage and discharge. Poor manure management as well as over fertilizing, or using phosphorus fertilizers also causes nutrient loading. Nutrient loading is a form of water pollution that stimulates excess algal growth. Soil testing is key to applying the appropriate amounts and types of fertilizer.



photo credit: Eaton Conservation District

Rural and agriculture landowners hold approximately seventy-five percent of the land in Clinton, Eaton and Ingham Counties. The areas they control are key to the economy and the environment. Land use decisions made on these properties have large scale and far reaching impacts.

Programs and Tools

Conservation Planning

Lagoons

Agriculture lagoons biologically treat manure and wastewater. Lagoons are approved and monitored through the Michigan Department of Agriculture and Rural Development (MDARD). Properly sited, built and maintained, they are a valuable on-site management tool.

Major Pollution Prevention Programs

The Spill Response Hotline, coordinated by MDEQ, helps owners and operators of

facilities in Michigan, including vehicles and farms, determine their potential notification and reporting requirements in the event of a chemical release.

Michigan Agriculture Environmental Assurance Program (MAEAP) is a voluntary, pro-active program coordinated by a coalition of Farm Bureau, Conservation Districts, MDARD, producers, and agribusiness. MAEAP is designed to reduce producers' legal and environmental risks. It teaches effective land stewardship practices and shows producers how to identify and prevent agricultural pollution risks on their farms.

Clean Sweep is an MDARD program that ensures the safe and proper disposal of outdated, unused, or unwanted pesticides

Time of Sale Ordinance

Eaton and Ingham Counties both have ordinances that require an inspection and evaluation of septic systems and/or wells before any residential home property ownership is transferred. Coordinated through the health departments, this protects water by identifying failing septic systems and wells that pose a threat to human health and the environment.

Drinking Water Wells

Installation

Each county health department has a well permit program, which sets standards for site selection, isolation from contamination, and construction technique. Health departments issue necessary permits, maintain lists of licensed well drillers, and provide site inspections.

Testing

Regular testing is important to assure a drinking well is producing safe, potable water. Local health departments educate and assist homeowners with water sampling, interpreting results, and any subsequent needed treatment.

Closure

It is not uncommon for wells to quit functioning or fail to produce water after a certain period of time, and a replacement well needs to be constructed. If this happens, the old well needs to be properly abandoned (closed). Closing of an abandoned well must be done in accordance with state and local requirements and performed ONLY by a licensed well driller. After the well is closed, an abandoned well record is provided to the well owner and sent to the health department for review.



photo credit: Freemages.com_Paollo Zannonni

Septic Fields

Proper septic system maintenance can prevent premature failures and contamination problems from occurring. It also assures a system operates effectively throughout its expected lifetime. Replacing a septic system is costly, so proper maintenance makes good economic sense. There are several important things that homeowners can do to ensure that their septic system is properly maintained. Local health departments and conservation districts both provide education and technical assistance.

Irrigation Wells

Irrigation can be key to the success of many crops in the Tri-County Region. Proper stewardship of water resources means using water as efficiently as possible while providing

for crop production needs. Using more water than necessary wastes water resources and can cause negative environmental and production impacts.

Wetland and Open Space Preservation

Preserving the region's rural farming community and natural ecosystems is a priority for the Tri-County Region. Ingham County has a millage to fund the preservation of farmland and natural land. This millage helps interested landowners permanently protect their land for future generations by allowing the County to purchase their development rights and in this way compensating them for the development value of their land.

Gaps & Concerns

There is a large knowledge gap between rural residents/small-acre farmers and agricultural producers. Unlike agriculture producers, there are no programs dedicated to educating this population about their impact on water resources. They are often unaware of basic well and septic functions and maintenance, proper application of chemicals, nutrient planning, and manure management.

The value, function and protection of natural ecosystems, especially wetlands, is often misunderstood, undervalued and underfunded.

Recycling options for the agricultural community are inadequate to address the large quantities of packaging materials from seed, feed, fertilizer, etc.

The importance of closing abandoned wells in order to protect groundwater is not widely recognized.

A lack of knowledge and information about local aquifers when considering new irrigation wells.

Very limited funding is available for septic maintenance/replacement.

Key Resources

- Conservation Districts
- Local Health Departments
- Michigan Department of Agriculture and Resource Development (MDARD)
- Michigan Department of Environmental Quality (MDEQ)
- Natural Resource Conservation Service (NRCS)
- US Geological Survey (USGS)
- Agribusiness

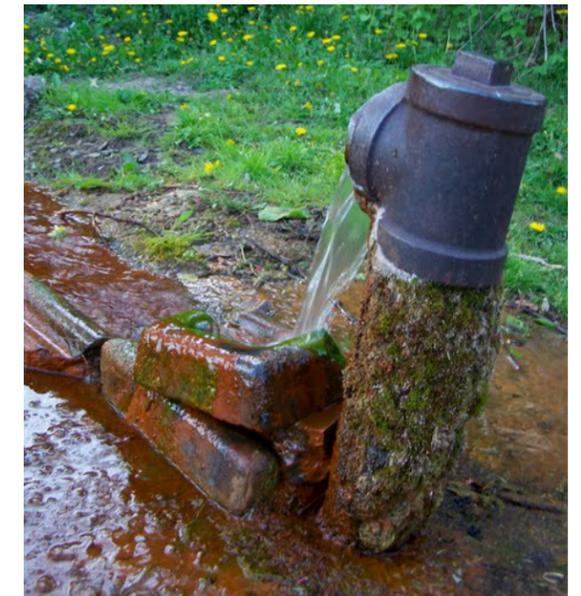


photo credit: Columbia Creek Park_Eaton Rapids_Zack Hawks

Rural Residential & Agriculture

| Program/ Regulated/Activity | Highest Possible Standard | Tangible Deficiencies/Gaps | Resources (Available/Need) | Recommendation for Sustainability | Actions |
|---|---|--|---|--|---|
| <i>Private Water Well Testing</i> | All wells are regularly tested. | A large percentage of homeowners do not regularly test their wells. | <ul style="list-style-type: none"> Education (need is community-specific) | Educated owners combined with local health departments and conservation districts who have funded outreach programs. | Raise awareness and change behaviors. |
| <i>Agricultural Lagoons</i> | Effluent quality that coincides with NPDES standards. | Lack of regulated effluent standards. | <ul style="list-style-type: none"> Improved technology and facilities (need is community-specific) | Up-to-date facilities capable of achieving 100% NPDES standards. | Update facilities and educate operators/landowners. |
| <i>Community/ Residential Lagoons</i> | 100% NPDES attainment. | Not meeting permit requirements under nonstormwater conditions; lack of technology to treat salt, overflows, and storm events. | <ul style="list-style-type: none"> Improved technology and facilities (need is community-specific) | Fully funded and up-to-date facilities capable of achieving 100% NPDES standards. | Fund and update facilities. |
| <i>Septic Maintenance</i> | 100% fully functioning systems; regular septic maintenance by homeowners. | A large percentage of septic systems are not regularly maintained and their operation is poorly understood. | <ul style="list-style-type: none"> Education (need is community-specific) | Educated owners combined with local health departments and conservation districts who have funded outreach programs. | Raise awareness and change behaviors. |

| Training/Education | Associated Costs | Funding Sources | Coordinating Agencies | Timeline for Implementation | Evaluation |
|--|--|-----------------------------|--|-----------------------------|---------------------------------|
| Public education campaign. | Small fees paid by homeowner. | Homeowner | Local health departments; conservation districts; private labs; homeowners; MDEQ. | Ongoing | Increased number of well tests. |
| Technical assistance for operations and maintenance | Facility improvements. | MDARD | MDARD; conservations districts; NRCS; MDEQ. | Immediate | Updated facilities. |
| Education and outreach for decision makers and the public to garner support for facility upgrades. | Marketing; materials; facility improvements. | Utility; community budgets. | Communities; utilities; MWEA; WEF. | Immediate/ongoing | Updated facilities. |
| Public education campaign. | Fees paid by homeowner. | Homeowner | Local health departments; conservation districts; private haulers; homeowners; MDEQ. | Ongoing | Increased septic maintenance. |

Rural Residential & Agriculture (continued)

| Program/ Regulated/Activity | Highest Possible Standard | Tangible Deficiencies/Gaps | Resources (Available/Need) | Recommendation for Sustainability | Actions |
|---|--|--|--|--|---|
| POLLUTION PREVENTION: <i>chemical storage, hazardous waste disposal, pesticide risk mitigation, water quality risk management</i> | Proper storage and disposal of all chemicals; MAEAP verification. | Lack of spill prevention; improper disposal practices; incorrect application rates; need for improved/targeted chemical selections. | <ul style="list-style-type: none"> • Increased recycling options • More funding • Increased Education/ Outreach • Increased disposal opportunities | Maintain and expand current programming. | Education and outreach; technical assistance. |
| CONSERVATION PLANNING: <i>buffer strips, drainage, erosion control, cover crops, grassed waterways, manure/nutrient planning, soil testing, water quality risk management</i> | All applicable risk identified and prevented; MAEAP verification. | Large percentage of farms do not have conservation plans in place. | <ul style="list-style-type: none"> • Technical assistance (Available AND Needed) | Educate and connect producers; maintain and increase funding; make technical assistance available as needed. | Producers develop and implement conservation plans. |

| Training/Education | Associated Costs | Funding Sources | Coordinating Agencies | Timeline for Implementation | Evaluation |
|---|---|--|--|--------------------------------|--|
| Educated producers and agribusiness to make educated and economic decisions regarding chemical use and application. | Disposal, storage and recycling; education; technical assistance. | Clean Sweep; County Hazardous Waste; CD and NRCS staff; MAEAP. | Local health department; conservation districts; producers; agribusiness; NRCS; MDEQ. | Ongoing | Increase of proper disposal; reduced spills and runoff; compliance with spill prevention plan. |
| Educate producers to change behaviors. | Staff time; cost to install necessary practices. | USDA Farm Bill; MAEAP; extension; effluent trading credits; purchase of development rights. | Conservation districts; NRCS; extension. | Ongoing | Number of new conservation plans being written and implemented; acres of development rights secured. |

Watershed Management

A watershed is any area of land that drains to a common point. It can also be defined as the area of land that catches rain and snow and drains into a marsh, stream, river, lake or groundwater. The larger Grand River Watershed encompasses our region, which includes smaller watersheds of the Maple, Looking Glass, Red Cedar, and Thornapple Rivers.

Programs & Tools

There are several watershed management efforts currently underway by local watershed groups. They each have their own specific priorities related to water quality improvements; the overall missions of these organizations are complementary, working to improve regional water quality and management.

Watershed Groups

The Clinton and Eaton Conservation Districts and Michigan State University Institute of Water Research each received a 319 non-point source grant from MDEQ to develop watershed management plans for the Maple River, Upper Looking Glass River, Middle Grand River, and Red Cedar River Watersheds



photo credit: Eaton Conservation District

respectively. These plans have been approved and focus on improving the quality of impaired water bodies. *E.coli* is the most significant pollutant impacting the ability for the surface water to be fishable and swimmable. Elevated levels of *E.coli* are a significant public health risk. Looking ahead, these agencies in partnership with the TCRPC are moving towards plan implementation with additional funding from MDEQ.



photo credit: Freemages.com_waynewrz

Local “friends” groups play an important role in watershed protection, education, recreation, and outreach in their respective watersheds. Friends of the Looking Glass River and Friends of the Maple River are an important link to the community.

The Greater Lansing Regional Committee for Stormwater Management (GLRC) is a guiding body comprised of communities with municipal separate storm sewer systems (MS4) within the Greater Lansing region. The Committee guides the implementation of the permitted stormwater program as mandated by the state and federal government. The GLRC works to meet specific permit requirements within the urbanized area to keep polluted runoff from reaching our rivers and streams.

The Middle Grand River Organization of Watersheds (MGROW) is an outgrowth of Grand River Expedition 2010, and strives to bring together local communities, watershed groups, and other stakeholders in the Middle Grand River towards a greater understanding of and stewardship for the river.

All of the watershed groups are working towards common goals and to help bring awareness of our valuable water resources. Having safe, fishable, swimmable rivers and lakes is a great asset to the region.

Outreach & Education

A coalition of organizations came together in 2013 to launch what became the *Pollution Isn't Pretty* campaign. It created a variety of coordinated campaign materials that can be used to educate the public and promote healthy choices. The goal of this campaign is to grab the attention of local residents and inform them about water concerns, as well as inspire and educate them. The campaign endeavors to engage residents so they learn more about their watershed, water



photo credit: Freemages.com_YuceI Tellici

paths, water pollution, and conservation.

Another goal is to engage the public outside of the standard environmental realm. It's intended for the average resident—people who care that their lawns look pretty but don't understand the connection between their land and Michigan's overall water quality.

Educators are one of the greatest resources for providing guidance and leadership to our future generations. Several agencies work with schools to help educate students about the importance of our water resources. This includes pollution prevention, conservation, understanding land use effects on our environment, and overall preservation of our natural resources. The GLRC focuses on our water resources and improving water quality. GLRC has developed a Web page dedicated to connecting teachers with educational programs and efforts in our region.

Gaps & Concerns

Watershed management is often funded through federal or state grants and foundations. A long term designated funding source would help watershed groups and municipalities implement management practices. Establishing a funding source for required stormwater management would complement other watershed quality improvements through watershed management.

Public awareness of how individual practices can impact water quality should continue. The more value the public holds in our water resources, the better the political will is for protection and restoration.

Implementation of agricultural and urban best management practices is lacking. The tools and information is available, but a cultural shift in implementation is needed.

Key Resources

- Greater Lansing Regional Committee for Stormwater Management (GLRC)
- Community Planners and Engineers
- Watershed Groups
- Conservation Districts
- Michigan Department of Environmental Quality (MDEQ)
- Environmental Protection Agency (EPA)
- Consultants



photo credit: Freemages.com_John Boyer

Watershed Management

| Program/ Regulated/Activity | Highest Possible Standard | Tangible Deficiencies/Gaps | Resources (Available/Need) | Recommendation for Sustainability | Actions |
|--|---|--|---|---|---|
| <i>Watershed Management Plans (WMP) - 319/MS4 - Grand, Red Cedar, Looking Glass, Maple, Thornapple and Battle Creek (Upper Grand, Portage)</i> | Implementation of the WMP; WMP are regularly revised and updated. | Need funding to implement; dedicated local funding sources (e.g. utility). | <ul style="list-style-type: none"> Plan - goals/objectives/measurable/evaluation Dedicated local funding Partners (Available AND Needed) | 100% Implementation of WMP. | Focus on WMP priority areas; cooperation through GLRC; obtain funding; public buy-in. |
| <i>WMP - E.coli & DO TMDLs - including others phosphorus, sediment - other TMDLs</i> | Meet and exceed water quality standards set by MDEQ. | Source control; unfunded mandate/MS4 program. | <ul style="list-style-type: none"> WMPs Monitoring | Meet water quality standards; show measureable progress. | Prepare/track upcoming TMDLs. |
| <i>Overall WQ Monitoring</i> | Develop a task force/coordinated monitoring goals; track results. | Many efforts, programs with loose coordination; "random acts of monitoring;" no standard data. | <ul style="list-style-type: none"> USGS willingness to assist Database developed (2011) Regional goals, strategy, protocol 319/MS4 monitoring | Regional water quality monitoring strategy; goals; partner roles; database management; mobile app; crowd hydrology. | Prioritize monitoring locations, protocol, and methods. |
| <i>WMP I/E</i> | Implement I/E Strategy. | Partner coordination. | <ul style="list-style-type: none"> Pollution Isn't Pretty Existing Conservation District programs Existing MSUE programs GLRC Public Survey (2006/2012/2016) Existing group memberships Partner coordination Expand surveys geographically | 100% Implementation of I/E Strategy; measured increased in public knowledge behavioral change. | Support details of the I/E Strategy. |

| Training/Education | Associated Costs | Funding Sources | Coordinating Agencies | Timeline for Implementation | Evaluation |
|---|---|--|---|--|---|
| Implement the I/E Strategy; train partners on funding/WMP work. | Staff Time; monitoring; project implementation; contractors/materials; marketing. | 319 implementation; GLRI; SRF funding/loans; Great Lakes Commission; Fish & Wildlife/USFW/Aquatic Habitat DNR; local communities' drain offices. | Collaboration with Middle Grand/Red Cedar WMP; GLRC - all the watersheds. | Short term: 1-3 years Long term: 4-10 years | Continued plan implementation; plan updates every 7-10 years. |
| Educate local elected officials. | Required monitoring; staff time; equipment. | 319 implementation; GLRI; GLRC; potential assessments. | Collaboration with Middle Grand/Red Cedar WMP; GLRC - all watersheds. | Short term: 1-3 years Long term: 4-10 years | Reduction of <i>E.coli</i> levels; increased DO levels. |
| | Staff time; equipment; lab. | 319 implementation; USGS Cooperative; funding; MDEQ water quality monitoring grants. | Coordination with all watershed groups, conservation districts, and USGS. | Short term: 1-3 years Long term: 4-10 years | Task force collaboration; coordinated database. |
| | Staff Time; surveys; project implementation; contractors/materials; marketing. | 319 implementation; GLRI; GLRC. | Coordination with MGROW, neighborhood associations, MSUE, and GLRC. | Short term: 1-3 years Long term: 4-10 years | Survey results show behavioral changes and increased knowledge of the public. |

Watershed Management (continued)

| Program/ Regulated/Activity | Highest Possible Standard | Tangible Deficiencies/Gaps | Resources (Available/Need) | Recommendation for Sustainability | Actions |
|---|--|---|--|--|---|
| <i>Access/ Recreation Support</i> | Support/partner with River Trail, River Town, and MGROW. | Current lack of partnership for promotion, messages, etc. | <ul style="list-style-type: none"> MGROW as the organizing partner Plan for partnership - what does this look like? | More public appreciation of the water assets. | Work with recreation groups like MGROW, LOAPC to increase access points. |
| <i>Wetlands (Conservation/ Preservation/ restoration/ mitigation/banking) (MS4)</i> | Protection beyond statewide/federal/farm bill regulations; local regulations. | Flooding; pollutant/source control; recharge. | <ul style="list-style-type: none"> Ingham greenspace preservation Example Ordinances Easement opportunities Landscape Level Function Land conservancy input | Restore and/or protect 20% of wetlands. | Work with MDEQ and the LLWFA and WMPs to prioritize areas for restoration and protection. |
| <i>Agricultural Runoff (NRCS/MAEAP programs)</i> | Manage the pollutants on-site. | Programs are voluntary (more incentives and education); buffers, manure management, etc. | <ul style="list-style-type: none"> Existing NRCS/Conservation District programs Existing MSUE programs Existing group memberships Partner coordination | Reduce sources of pollution for agricultural practices; increase the number of MAEAP verified farms and NRCS participants. | Tile education/management - BMPs; livestock/manure management/nutrient management; irrigation issues. |
| <i>Septic Systems</i> | 100% functioning septic. | Clinton Co. Time of Sale ordinance; need statewide code; lakefront property systems; funding for homeowners and health departments. | <ul style="list-style-type: none"> Existing programs Education strategy for public | Time of Sale ordinance in entire region/watersheds; targeted areas for septic meditation. | Time of Sale ordinance in all counties. |
| <i>Invasive Species</i> | Identify and prioritize risk regionally; team to react to new identified populations (isolated/satellite species). | More awareness of the public; reporting. | <ul style="list-style-type: none"> MDEQ AIS Plan Stewardship Network DNR funding Conservation District volunteer groups Crowd sources - phone app for early detection Boat launch education/wash station | Remove existing invasive species and promote prevention of additional infestations. | Educate the public, business owners, industry, and road and drain commissions. |

| Training/Education | Associated Costs | Funding Sources | Coordinating Agencies | Timeline for Implementation | Evaluation |
|--|---|--|--|--|---|
| Educate the public about recreational opportunities; value of water. | Marketing; materials; access improvements. | DNR Trust Fund; private donations. | Coordination with MGROW, LOAPC, conservation districts, and park managers. | Short term: 1-3 years Long term: 4-10 years | Increased access and recreational opportunities. |
| Educate local land owners about benefits of wetlands. | Staff time; restoration work; land acquisition. | 319 implementation. | Work with NRCS, conservation districts, and MSUE. | | Increased wetland restoration and protection. |
| Educate local land owners and farmers about BMPs. | Staff time; cost share. | NRCS; MAEAP; rural development. | Work with NRCS, conservation districts, MSUE, DNR, and MDEQ. | Short term: 1-3 years Long term: 4-10 years | Reduce pollution from agricultural sources. |
| Elected official training needed; public education on maintenance/operation. | Staff time. | 319 implementation (Maple); fees from other county programs. | Health departments and conservation districts. | Immediate | Increase septic maintenance; reduce failing systems; policy for Clinton County. |
| Train the public, business owners, industry about invasive species. | Staff time; marketing. | GLRI; MDNR; MDEQ. | Work with Stewardship Network. | Short term: 1-3 years Long term: 4-10 years | Reduce invasive species. |

Watershed Management (continued)

| Program/ Regulated/Activity | Highest Possible Standard | Tangible Deficiencies/Gaps | Resources (Available/Need) | Recommendation for Sustainability | Actions |
|---|--|--|---|--|---|
| <i>Clean Ups</i> | Coordinated clean up events (main stems/tributaries). | Uncoordinated efforts. | <ul style="list-style-type: none"> • Adopt-A-River • Conservation District events • MSU events • Calendar coordination • Reporting mechanism | Regional coordinated effort for all clean ups; consistent recording strategy. | Develop a task force for all clean up events to be coordinated. |
| <i>Drains Overall</i> | Address quality and quantity; balancing buffers/maintenance availability. | Lack of conservation techniques being used. | <ul style="list-style-type: none"> • MACDC partnership - education committee • Training for Drain Commissioners | Improve techniques used by some drain commissioners to be more environmentally-friendly. | Improved conservation and green infrastructure techniques. |
| <i>Lake Management</i> | Adopt and implement lake management plans. | A lack of adopted and implemented lake management plans. | <ul style="list-style-type: none"> • Education and outreach • Lake Associations | Adopted and updated management plans. | Lake associations work to educate members about lake quality and protection. |
| <i>Green Infrastructure (parks/corridors/natural areas)</i> | The GI Vision is implemented through coordination of all parks, river corridors, conservation planning, etc. | Need an updated, more detailed plan. | <ul style="list-style-type: none"> • GMM poster plan • MNFI connection • Funding • More education | Update/implement the Green Infrastructure Vision. | Work with MNFI to update and include additional information with a set of actions for local government. |
| <i>Green Infrastructure - LID</i> | Implement Low Impact Development techniques (urban and rural). | Very little LID is installed on developed lands. | <ul style="list-style-type: none"> • MI LID Manual • Push through the stormwater permit • Official buy-in, willingness | Implement LID techniques wherever possible on new development and redevelopment sites. | Understand the barriers for local government to implement LID. |

| Training/Education | Associated Costs | Funding Sources | Coordinating Agencies | Timeline for Implementation | Evaluation |
|--|-------------------------------------|--|--|--|--|
| Staff time. | Staff and disposal costs. | MDEQ grant funds | All partners that currently do clean ups. | 1-3 years | Continue clean up efforts, collaborating where possible. |
| Education for drain commissioners. | Staff time; training program. | Assessments | Work with MACDC. | Immediate | Improved drain maintenance techniques. |
| Education of members about lake protection. | Education and outreach. | Association members | Work with local lake management associations and friends groups. | Unknown | Improved lake conditions. |
| Train local municipalities on the importance of GI and the need to recognize it as an essential requirement of local site plan review. | Staff time; plan updates; training. | MDEQ/EPA/DNR grants; local municipalities. | GMM; GLRC; MTGA. | Short term: 1-3 years Long term: 4-10 years | Increased green infrastructure planning. |
| Educate local municipalities, public, elected officials, and contractors. | Staff time; training. | 319 Implementation | GLRC; WMPs; Mid-MEAC. | Short term: 1-3 years Long term: 4-10 years | Increased green infrastructure techniques being used. |

Water Quality Monitoring

A great deal of water quality monitoring has been done in the Tri-County Region. Unfortunately most of this has happened independently without regional coordination, dissemination of findings or opportunity to track long term trends.

Discussions have begun among the many groups and agencies that conduct both surface and groundwater testing to create a regional, shareable resource

for water monitoring that provides: increased access to existing data, improved site selection, data for more informed decision making, tracking of areas with compromised water quality, improved communication, and better stewardship of limited monitoring funds.

There is a strong need to research and compile a database of the historic and current water quality monitoring efforts in the Tri-County Region. This database would serve to identify trends and areas of compromised water quality. The database could determine the best use of limited monitoring dollars, to share information, and increase accessibility to monitoring that has already been done.



photo credit: Freemages.com_sherry wil

Gaps & Concerns

There is not a regional, shareable resource for water quality monitoring that provides: access to existing data, coordinates site selection, data for more informed decision-making, tracks of areas of compromised water quality, communication, and better stewardship of limited monitoring funds.

Key Resources

- Greater Lansing Regional Committee for Stormwater Management (GLRC)
- Groundwater Management Board (GMB)
- Groundwater Technical Advisory Committee (GTAC)
- Local Utilities
- Local Health Departments
- Watershed Groups
- Conservation Districts
- Michigan Department of Environmental Quality (MDEQ)
- Environmental Protection Agency (EPA)
- Consultants

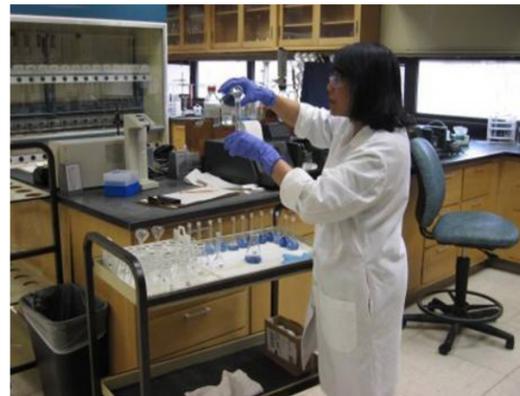


photo credit: Lansing Waste Water Treatment Division

Manufacturing

Water is key to manufacturing and water resources are rising in the importance to manufacturing site location and relocation decisions. Industries are increasingly recognizing the importance of the availability and cost of water resources. The high quality and quantities of available water place the Tri-County Region at a strong economic advantage for attracting and retaining businesses.

Agriculture

The agriculture sector extends beyond the farm business to include a range of farm-related industries, including food service and food manufacturing. Plentiful, high quality water is vital to agricultural production, and our regional economy clearly benefits from this key resource.

Recreation

Although the Tri-County Region is an inland area, it is teeming with rivers and streams that are home to a strong community of paddlers and anglers. Rivers and streams that are fishable and swimmable, with adequate access sites, provide the best recreation opportunities and an accompanying boost to the local economy.

The Middle Grand River Heritage Water Trail provides travel from Eaton Rapids to Lyons. MGROW created the Middle Grand River Heritage Water Trail Guidebook that is available as a traditional map, by using a handheld device, or computer.



photo credit: Middle Grand River Organization of Watersheds (MGROW)

Gaps & Concerns

The abundant and high quality aquifers that underlie the region should receive more recognition. Companies increasingly view water availability and cost as a primary business consideration. The high quality and quantities of water in the Tri-County Region are an economic advantage that should be marketed.

There are not adequate access sites on many rivers and streams. An analysis identifying these gaps should be done along with a plan for siting and installing the needed access infrastructure.

Fishing and swimming recreation is limited by rivers and streams that do not meet water quality standards.

The use of irrigation wells should be carefully considered and monitored for BMPs and impacts on groundwater.

Technologies and practices for water reduction and reuse should be used whenever possible.

Increasingly aging infrastructure must be addressed in order to assure reliable service and delivery.

Key Resources

- Local Government
- Paddler and Angler Groups
- Economic Development Professionals
- Tourism Industry
- Private Industry
- Consultants

Blue Economy



photo credit: Ellison Brewery + Spirits, Lansing, MI

GLOSSARY

| | |
|----------------|---|
| 208 | Section 208 of Federal Clean Water Act (Regional Water Quality Management Planning) |
| 319 | Nonpoint Source Pollution Control Grants Federal Clean Water Act Section 319 |
| AWWA | American Water Works Association |
| AM | Asset Management |
| AIS | Aquatic Invasive Species |
| APA | Authorized Public Agency |
| BMP | Best Management Practice |
| BEDHD | Barry-Eaton District Health Department |
| CMI | Clean Michigan Initiative |
| CAFO | Concentrated Animal Feeding Operation |
| CCR | Consumer Confidence Report |
| CD | Conservation District |
| DPW | Department of Public Works |
| DO | Disolved Oxygen |
| E. coli | Escherichia coli |
| ECD | Eaton Conservation District |
| FORC | Friends of the Red Cedar |
| GIS | Geographic Information System |
| GLRI | Great Lakes Restoration Initiative |
| GLRC | Greater Lansing Regional Committee for Stormwater Management |
| GI | Green Infrastructure |
| GMM | Greening Mid-Michigan |
| GMB | Groundwater Management Board |
| GTAC | Groundwater Technical Advisory Council |
| IDEP | Illicit Discharge Elimination Program |
| I/E | Information and Education |
| ICD | Ingham Conservation District |
| ICHHD | Ingham County Health Department |
| IPP | Industrial Pretreatment Program |
| IWR | Institute of Water Research |
| LLWFA | Landscape Level Wetlands Functional Analysis |

GLOSSARY (CONTINUED)

| | |
|-----------------|--|
| LOAPC | Lansing Oar and Paddle Club |
| LID | Low Impact Development |
| MAEAP | Michigan Agricultural Environmental Assurance Program |
| MIAWWA | Michigan Section American Water Works Association |
| MDARD | Michigan Department of Agriculture and Rural Development |
| MDEQ | Michigan Department of Environmental Quality |
| MDNR | Michigan Department of Natural Resources |
| MWEA | Michigan Water Environment Association |
| MGROW | Middle Grand River Organization of Watersheds |
| MGRWP | Middle Grand River Watershed Planning Project |
| Mid-MEAC | Mid-Michigan Environmental Action Council |
| MMPGS | Mid-Michigan Program for Greater Sustainability |
| MNFI | Michigan Natural Features Inventory |
| MS4 | Municipal Separate Storm Sewer Systems |
| MSU | Michigan State University |
| MSUE | Michigan State University Extension |
| MTGA | Michigan Trails and Greenways Association |
| NOAA | National Oceanic and Atmospheric Administration |
| NPDES | National Pollutant Discharge Elimination System |
| NRCS | Natural Resources Conservation Service |
| NREPA | Natural Resources Environmental Protection Act |
| PIPP | Pollution Incident Prevention Plan |
| PCA | Potential Conservation Area |
| PEP | Public Education Plan |
| RCRW | Red Cedar River Watershed |
| SESC | Soil Erosion and Sedimentation Control |
| SOP | Standard Operating Procedure |
| SAW | Stormwater, Asset Management & Wastewater Program |
| SWPPP | Stormwater Pollution Prevention Plan |
| TBC | Total Body Contact |
| TCRPC | Tri-County Regional Planning Commission |

GLOSSARY (CONTINUED)

| | |
|-----------------|---|
| TMDL | Total Maximum Daily Load |
| U.S. EPA | United States Environmental Protection Agency |
| USDA FSA | United States Department of Agriculture Farm Service Agency |
| USGS | United States Geological Survey |
| URSM | Urban and Rural Services Management Committee |
| WEF | Water Environment Federation |
| WMP | Watershed Management Plan |
| WQS | Water Quality Standards |
| WWTP | Wastewater Treatment Plant |

CONCLUSION

The next step is the continued dissemination of the *Tri-County Water Policies and Programs Guide* to the Cities of Lansing and East Lansing and the Charter Townships of Delhi, Delta, Lansing and Meridian. GMB staff and WHP team leaders will share these findings with decision makers, wellhead protection teams and water professionals encouraging them to use this report as a guide when considering local water resources and programs. This guidance document is a valuable tool for the development, implementation and effectiveness of wellhead and groundwater protection programming and policy in the Tri-County Region. Thoughtfully and thoroughly considering all areas of water quality and protection is the only way to promote a multi-jurisdictional WHP strategy that addresses water quality, quantities and delivery in all areas of natural and manmade water systems.

THANK YOU

The voices, expertise and wisdom of over sixty people are included in this document. The Tri-County Regional Planning Commission would like to thank the following for their contributions:

*City of Lansing Wellhead Protection Team
 Eaton Conservation District
 East Lansing Meridian Water and Sewer Authority Wellhead Protection Team
 Greater Lansing Regional Committee for Stormwater Management (GLRC)
 Greening MidMichigan (GMM)
 Groundwater Management Board (GMB)
 Groundwater Technical Advisory Council (GTAC)
 Jon W. Coleman
 Michigan Department of Agriculture and Rural Development (MDARD)
 Michigan Department of Environmental Quality (MDEQ)
 Natural Resource Conservation Service (NRCS)
 Urban and Rural Service Management Committee (URSM)*

Environmental Commission

Strategic Plan 2016-17

In December of 2015 and January of 2016, the Environmental Commission participated in facilitated strategic planning sessions. The outcome of the sessions gave rise to new goals and objectives set to commence in 2016-17. The items in this document address administrative and collaborative activities that promote the purpose of the Environmental Commission.

The purpose of the Environmental Commission includes promoting the wise management of natural resources in the Township, a healthy environment, long term economic health of the Township, and ensuring compliance with applicable local, state and federal laws and policies (such as Wetland Use Permit Reviews).

Along with the Goals and Objectives below, the Environmental Commission will continue its routine public engagement activities that include the Environmental Stewardship Awards and “Green Theme” Presentations.

Each Objective will begin and/or end either in the “short term” (within 6 months), the “mid-term” (6-12 months), or the “long-term” (beyond 12 months).

Administrative Goal:

The Commission desires to fill its vacancies with persons and youth who are interested in environmental aspects of community planning. There are portions of the Commission By-Laws that need to be updated in order to better support this goal.

Administrative Objectives:

- 1) Fill adult vacancies and youth vacancies (short term)
- 2) Amend the Commission By-Laws to: (short term)
 - Preserve one youth seat and create a seat for a person currently pursuing college-level environmental studies.
 - Allow the youth and college commissioners to vote at regular Environmental Commission meetings.

- Alter the meeting requirement language to allow for more flexibility if a meeting is not warranted each month.

Collaborative Goal:

The Commission desires to more actively collaborate with the Land Preservation Board, Park Board and Planning Commission in promoting the wise management of natural resources in the township. This effort will be strengthened with increased mutual data-sharing, reporting and information gathering.

Collaborative Objectives:

- 1) Regularly engage the chairs of the Land Preservation Board, Park Board and Planning Commission to align data needs and other planning tools related to environmental protection, land acquisition and land improvement. (continual)
- 2) Engage residents, businesses, fellow appointed and elected officials in the discussion of environmental issues, and the sharing of ideas related to:
 - Zoning ordinance updates that address climate change, brownfield redevelopment, street tree replacement. (mid to long term)
 - Planning tools such as maps and data that aid environmental planning decision-making. (mid to long term)
 - Improved wayfinding throughout the Township for pathways, businesses, parks etc. (long-term)

MERIDIAN TOWNSHIP ENVIRONMENTAL COMMISSION

RULES OF PROCEDURE

RULE 1. AUTHORIZATION.

The Meridian Township Environmental Commission, hereinafter called the Commission, is established pursuant to Chapter 121 of the Code of Ordinances, Charter Township of Meridian.

RULE 2. RESPONSIBILITIES.

The Environmental Commission shall:

- a. Advise the Township Board, officials and staff on matters pertaining to environmental protection and water conservation, management of natural resources and preservation of open space.
- b. Identify ways to ensure and improve the quality of the Township's environment in the interest of the public health, safety and general welfare.
- c. Develop educational and outreach programs for local schools, businesses and individuals to encourage environmental stewardship, protect property values and avoid unnecessary financial costs for correcting environmental problems.
- d. Review and offer recommendations for Township ordinances, operating procedures and programs in order to achieve the stated purposes in Chapter 121 and ensure compliance with applicable state and federal environmental laws.
- e. Assume the duties of the Township Wetland Board as outlined in Section 105-16(c) of the Township Code of Ordinances.
- f. Offer recommendations for the Township budget as it pertains to the Commission.
- g. Assume such other duties as may be assigned by the Township Board.
- h. Encourage and utilize the involvement of residents and experts in achieving the environmental goals of the Township.

RULE 3. COMPOSITION, TERMS AND VACANCIES.

3.1 **Composition and Appointment.** The Commission shall consist of seven (7) members appointed by the Township Board. Members shall be Township residents and shall have an interest or expertise in natural resources, environmental protection or ecology. In addition, **one two (2) youth members, and a member who is enrolled in a college-level courses pertaining to any environmental study area shall be appointed. These two members shall be voting members.** ~~shall serve as non-voting, ex-officio members.~~

3.2 **Terms.** Terms of appointment shall be for three (3) years or until a successor is appointed, ~~except that three (3) members of the first commission shall be appointed for a term of one (1) year and two (2) for a term of two (2) years.~~ The youth and college enrolled members shall serve one (1) year terms.

3.3 **Unexpired Terms.** A member appointed to fill an unexpired term shall serve for the remainder of the unexpired term or until a successor is appointed.

RULE 4. REMOVAL FROM OFFICE.

A member may be removed from office by the Township Board for nonperformance of duty or misconduct in office, following written charges and after a public hearing.

RULE 5. OFFICERS.

5.1 **Selection.** At its first meeting in January, the Commission shall select a chair and a vice chair from among its members. ~~except that officers selected in June, 1995 will serve until their successors are chosen in January, 1997.~~

5.2 **Terms.** Term of office shall be one (1) year, or until a successor is selected.

5.3 **Duties.**

- a. The chair shall preside at all meetings, authorize calls for special meetings, and perform such other duties as may be specified by the Commission.
- b. The vice-chair shall act in the capacity of the chair in the chair's absence.
- c. In the event the office of the chair becomes vacant, the vice chair shall succeed to this office for the unexpired term and the Commission shall select a successor to the office of vice-chair for the unexpired term.

RULE 6. COMMITTEES.

6.1 **Purpose.** The Commission may establish committees necessary to assist it in fulfilling its responsibilities and shall define the purpose, functions, tenure, selection of chair, meeting and reporting requirements for each committee. The establishment of committees shall not preclude the use of individuals or study groups in the exploration or research of specific environmental issues.

6.2 **Appointments.** Committee members shall be appointed by the chair, with concurrence of the Commission. A committee may be discharged from its responsibilities by the Commission

6.3 **Public Participation.** Committees shall meet all requirements for public participation and access to records as provided in Rule 7 of these Rules.

RULE 7. MEETINGS.

7.1 **Regular Meetings.** ~~At least~~ The Commission may call one regular meeting ~~will be held~~ each month.

7.2 **Special Meetings.** Special meetings may be called by the chair or shall be called at the written request of two (2) or more Commission members. The meeting notice shall include the purpose of the special meeting. At least forty-eight (48) hours notice of special meetings shall be given to Commission members.

7.3 **Meeting Schedule.** A schedule of regular meetings, including date, time and place, shall be established for each calendar year and shall be made available to the public in advance of said meetings. Changes in the schedule shall be posted for the public.

7.4 **Location.** Meetings shall be held at a Township facility unless otherwise indicated.

7.5 **Quorum.** Four (4) members shall constitute a quorum for the transaction of business unless otherwise indicated in these rules or required by Township ordinance, state or federal law. A member shall notify the chair or designated staff if the member will be absent from a meeting.

7.6 **Public Participation.**

- a. All regular and special meetings, work sessions or public hearings shall be open to the public, unless otherwise provided for in Township ordinance, state or federal law.
- b. Opportunity for public comment shall be provided in accordance with established Commission or Township rules and procedures (See attached Exhibit A).
- c. The chair may call to order any person who disrupts the orderly conduct of a meeting and prohibit said person from further participation or attendance at such meeting.

7.7 **Agenda.**

- a. An agenda shall be established for each meeting by the chair and designated Township staff and be made available to the Commission and public in advance of the meeting. The order of business shall be determined by the chair with concurrence of the Commission.

- b. Agenda items to be considered at a special meeting shall be limited to those included in the call-to-meeting notice unless all members are present and vote otherwise.

7.8 **Decisions.** Providing a quorum is present, a simple majority of those present and voting shall be required for Commission action, unless otherwise provided for in these rules, other Township or state statutes or parliamentary authority, as adopted.

7.9 **Records.** Designated Township staff shall be responsible for minutes and other official records of all Commission meetings and actions, including supporting documentation. Notice of meetings, minutes and other records shall be available to the public in accordance with the Freedom of Information Act (P.A. 442, 1976, as amended) and Open Meetings Acts (P.A. 267, 1976, as amended).

RULE 8. PARLIAMENTARY AUTHORITY.

Roberts Rules of Order, Newly Revised, shall govern all questions of procedure not otherwise provided for in these rules or by Township, state or federal law.

RULE 9. SUSPENSION OF RULES AND AMENDMENT.

9.1 **Suspension.** A rule may be suspended by a two-thirds (2/3) vote of Commission members present and voting at a meeting, provided said action is in accordance with established state or federal law, Township ordinance and parliamentary authority.

9.2 **Amendment.** Rules not required by state or federal law or Township ordinance may be amended by a two-thirds (2/3) vote of the Commission, provided thirty (30) days notice and an opportunity for comment is given to the public.

EXHIBIT A: PROCEDURES FOR PUBLIC PARTICIPATION AT MEETINGS**RULE 7.6**

1. The number of persons admitted to a meeting room will be in keeping with public safety requirements and availability of space. Efforts will be made to provide adequate room to accommodate those in attendance.
2. Established protocols for public participation will be announced at the beginning of the meeting.
3. Opportunity to speak will be granted either under Public Remarks or during a public hearing, as most appropriate.
4. Reasonable time limits may be allotted for public comments, in keeping with other business which must be considered at a particular meeting.
5. A member of the public will be provided no less than three minutes to speak.
6. Those completing a request form in writing shall be called upon first to speak.
7. Members of the public will identify themselves by name and address prior to presenting their comments.
8. Written communications will be read into the record during a meeting when requested by the author. All written communications will become part of the Commission record.
9. The Chair, without objections from the Commission, may invite members of the public to participate in informal discussion on all or selected agenda items during Commission work sessions.

Sec. 2-226. Establishment.

There is hereby created an environmental commission for the township.
(Code 1974, § 121-1)

Sec. 2-227. Purpose.

The purpose for the environmental commission is to advise the township in:

- (1) Preventing pollution and encouraging the wise management of the natural resources of the township in the interest of the public health, safety, and general welfare.
- (2) Preserving open space and natural areas in the township for recreational and environmental protection purposes.
- (3) Promoting a healthy environment and thus promoting the longterm economic health of the township, including protecting property values, and avoiding the high financial burden of correcting environmental problems.
- (4) Ensuring compliance with applicable state and federal environmental laws.
- (5) Meeting the policies of the township board and its agencies.

(Code 1974, § 121-2)

Sec. 2-228. Membership; terms of office.

The environmental commission shall consist of seven members, to be appointed by the township board. Members shall be residents of the township and shall have an interest or expertise in natural resources, environmental protection, or ecology. All members shall serve three-year terms, **except for the youth and college-enrolled members described herein.** ~~except that three members of the first commission to be appointed shall serve a term of one year and two for a term of two years.~~ In addition, **one two** youth members shall be appointed to the commission, **and one person shall be appointed who is enrolled in college-level classes pertaining to any environmental study area.** ~~nonvoting, ex officio members of the environmental commission.~~ Their terms shall be for one year.

(Code 1974, § 121-3)

Sec. 2-229. Compensation.

Members of the environmental commission may be compensated at a rate to be determined by the township board. Such rate of compensation, if any, shall be established and may be revised from time to time by resolution of the township board.

(Code 1974, § 121-4)

Sec. 2-230. Organization and procedures.

The environmental commission shall be organized as follows:

- (1) *Chair*. The environmental commission shall elect its chair from among the voting members and create and fill such other of its offices as it may determine. The term of the chair shall be one year with eligibility for reelection.
- (2) *Quorum*. A majority of the voting membership shall constitute a quorum for the transaction of business.
- (3) *Meetings*. The environmental commission ~~shall~~ **may** hold at least one regular meeting each month, along with a work session (**as needed**). Special meetings may be held at the call of the chair or written request of two members of the commission upon at least 48 hours'

notice to the members thereof. All meetings shall be subject to the Open Meetings Act (MCL 15.261 et seq.).

(4) *Rules of procedure.* The environmental commission shall adopt rules for the transaction of business.

(5) *Records.* The environmental commission shall keep minutes of its resolutions, findings, and recommendations which shall be available to the public.

(6) *Budget and staff.* The township board shall provide for staff support and a budget. (Code 1974, § 121-5)

Sec. 2-231. Duties.

The duties of the environmental commission shall include the following:

(1) Advise the township board, officials, and staff on matters pertaining to environmental protection, management of natural resources, water conservation, and preservation of open space.

(2) Review township ordinances, operating procedures, and activities to identify conflicts with stated purposes in this division, and propose improvements for township board consideration.

(3) Develop educational and outreach programs for local agencies, businesses, institutions, and individuals to encourage environmental stewardship.

(4) Identify ways to ensure and improve the quality of the township's environment for the health and pleasure of the residents.

(5) Assume the duties of the township wetland board as outlined in section 22-120(c).

(6) Assume such other duties that may be assigned by the township board.

(Code 1974, § 121-6)

Secs. 2-232--2-255. Reserved.¹

ENVIRONMENTAL STEWARDSHIP AWARDS

PURPOSE

To recognize and honor those who have significantly contributed to the conservation of the natural resources and the protection of the environment of Meridian Township. This outreach program was developed to encourage environmental stewardship in the Township consistent with Section 121-6 of the Code of Ordinances outlining the duties of the Environmental Commission.

PROCEDURE

- FEBRUARY 3 to MARCH 2 - Nominations for the year's ESA shall be submitted to the Township's Environmental Commission. Nominations may come from the public, the Environmental Commission, other Township Boards & Commissions. The Township will give notice to the public of the nomination process in the form of a press release and through HOMTV and online venues. The nomination form will be made publicly available.
- MARCH 2- The Commission will review the nominations and determine potential awardees at their March worksession.
- APRIL 6 - The Commission will announce awardees at its regular April meeting. The Environmental Commission will vote on recommended awardees. Staff will notify the award recipients and arrange for the presentation ceremony in May.
- MAY 4 - Awards will be presented at the Environmental Commission's regular May meeting.

CATEGORIES

Candidates for the Environmental Stewardship Award will be reviewed within broad categories such as the following:

- Education
- Business
- Public Sector/Non-Profit
- Private Individuals/Groups/Service Clubs

CRITERIA FOR REVIEWING NOMINEES

Successful efforts shall exhibit some or all of the following:

- Educational value
- Potential for stimulating other environmental efforts
- Innovation or unique character
- Actual improvement or benefit to the environment
- Environmental leadership or initiative
- Sustainability or permanence



Meridian Charter Township Environmental Stewardship Awards

If you know a resident of any age or ability who has made a difference to our environment, through local habitat stewardship, recycling or anything in between, be sure to nominate them for an Environmental Stewardship Award!

On May 4, 2016, the Meridian Charter Township Environmental Commission will recognize residents who advocate for our environment. We hope that you will consider nominating someone who has actively improved the quality of the Township's environment.



Nominations Due:
March 2, 2016, at Noon

Awards will be announced on April 6

An Awards Ceremony will occur on May 4
at 7:00 pm

For More Information, please contact the Meridian Township
Community Development & Planning Department @
gmazel@meridian.mi.us, or call 517-853-4568.

**ENVIRONMENTAL STEWARDSHIP AWARDS
Nomination Form**

The purpose of the Environmental Stewardship Awards is to recognize and honor residents who have significantly contributed to the conservation of natural resources and the protection of the environment within Meridian Charter Township.

CATEGORIES:

Education:

Nominee(s):

Reasons:

Business:

Nominee(s):

Reasons:

Public Sector/Non-Profit:

Nominee(s):

Reasons:

Private Individuals/Groups/Service Clubs:

Nominee(s):

Reasons:

CRITERIA:

Nominees should exhibit some or all of the following:

- Educational value
- Potential for stimulating other environmental efforts
- Innovation or unique character
- Actual improvement or benefit to the environment
- Environmental leadership or initiative
- Sustainability or permanence

Please return to: Meridian Township Environmental Commission: c/o Department of Community Planning & Development, Meridian Municipal Building, 5151 Marsh Road, Okemos, MI 48864 (517) 853-4568 or to gmazel@meridian.mi.us.

All nominations are due by 12:00 pm (Noon) March 2, 2016. Awards to be presented on May 4, 2016 at the 7:00 pm Environmental Commission meeting.

Nominators Name (optional) _____ Phone/email: _____