



AGENDA
CHARTER TOWNSHIP OF MERIDIAN
ENVIRONMENTAL COMMISSION
REGULAR MEETING
October 5, 2022 7 pm

Town Hall Meeting Room, 5151 Marsh Rd, Okemos

1. CALL MEETING TO ORDER
2. PUBLIC REMARKS
3. CHANGES TO/APPROVAL OF AGENDA
4. APPROVAL OF MINUTES
5. NEW BUSINESS
6. OLD BUSINESS
Climate Sustainability Plan Updates
(drafts/comments here: https://drive.google.com/drive/u/0/folders/1SbEWt-oRErviNffrv8Lp_8XHMDWiXfw ; current plan available at <https://bit.ly/climatesustainabilityplan>)
7. REPORTS AND ANNOUNCEMENTS
(staff update at <https://sites.google.com/view/staff-update/home>)
8. PUBLIC REMARKS
9. ADJOURNMENT

Environmental Commission Meeting: August 3, 2022 (Draft)

SUMMARY

The Environmental Commission continued reviewing the Climate Sustainability Plan with updates on energy, food composting, water managements, and recycling.

AGENDA & MINUTES

Agenda and minutes approved with some changes.

PESTICIDES

Public notices of the application of pesticides in public places were discussed. The township does not actively control mosquitoes, but it was discussed that in the past, pesticides have been used at schools and parks. In this case, notices were sent out. McConnell suggested looking into park procedures for notifying residents when applying treatments. He also suggested social media could be used for notices.

CLIMATE SUSTAINABILITY PLAN UPDATES

Energy:

Sarver mentioned the statistics on greenhouse gas emission reductions were disused with reductions as several major township buildings. One objective is to achieve energy cost savings for township facilities. Coordinating with MSU's energy assessment center discussed to track usage. Another objective is to explore other opportunities like federal funding for projects. The last objective is to explore educational opportunities. McConnell discussed the success of the Solarize Meridian project.

Food composting

Lafferty highlighted that there has been a lot of volunteer interest for the gleaning initiative. Colby reported that 1,167 pounds have been collected since the start of the program. Next steps for expanding the program distributions were discussed. McConnell discussed that several places are exploring options for disposing organic waste not in a landfill, so there are future opportunities to expand.

Water Management (Kendra)

McConnell discussed the additions to the water management section of the plan and suggested a system for tracking new additions to make it easier to see what parts are new. Grasseschi spoke on how the importance and benefits of wetlands in the township were added to the section. McConnell suggested adding information about how much township wetland has been protected as a result of the township regulations. This could go towards evaluating how the ordinance could be possibly be adjusted in the future. The objectives include furthering public education, continuing to monitor and measure conditions of wetlands, increase wetland acreage, and increase wetland functionality. McConnell suggested a new assessment of wetlands might be needed. It was agreed that it would be beneficial to contact a consultant to see if a comprehensive assessment is needed and what it could cost. Harvey mentioned a state wide assessment is currently being done. Colby suggested it would be beneficial to know not only the amount of wetlands but also the condition of them. It was discussed that to increase wetlands, it might be necessary to purchase land. Harvey mentioned that the green infrastructure audit will need to be included in the section. Expanding native plant education was discussed using demonstrations within the community. McConnell suggested being ambitious with specific goals and targets in all sections. Grasseschi mentioned that additions on Lake Lansing will be included.

Recycling & Waste Reduction

It was mentioned that communications and marketing of recycling initiatives could be improved. Having a single hauler in the township was removed from the plan. Frazier mentioned that it is difficult to get exact data from private waste haulers, and it was mentioned that it might be possible to receive data from EGLE instead of directly from the private haulers. This would depend on if they have data on specific areas or if it is broad across the state. Colby requested looking into obtaining data on organic waste if possible. It was discussed to explore if licenses are required for haulers to operate in the township.

REPORTS AND ANNOUNCEMENTS

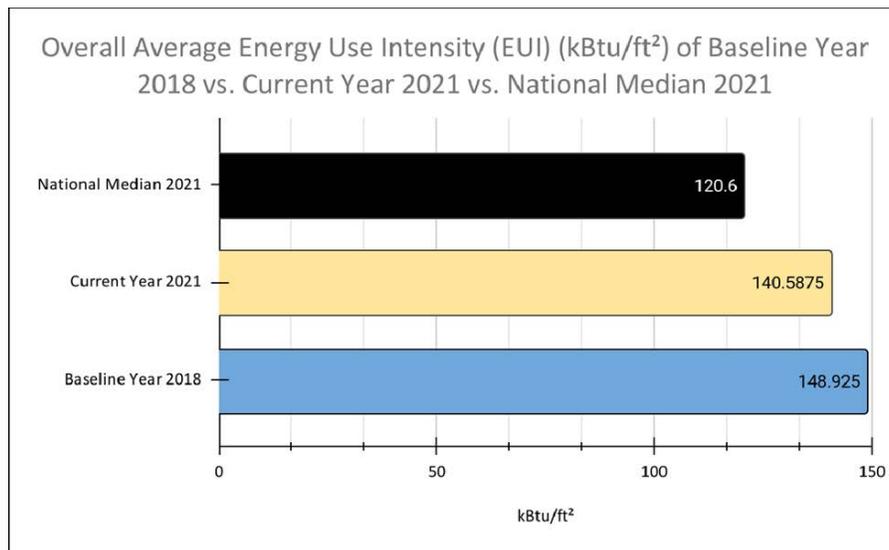
- Grasseschi mentioned there is an opening on the Land Preservation Advisory Board. Colby suggested making adjustments to the application process for boards.
- There will be a future compost and rain barrel sale along with a recycling event.
- Harvey mentioned information on staff updates can be found at bit.ly/update-leroy (also linked below). He mentioned exploring funding opportunities. <https://sites.google.com/view/staff-update/home> [or here](#)

a. Energy Efficiency

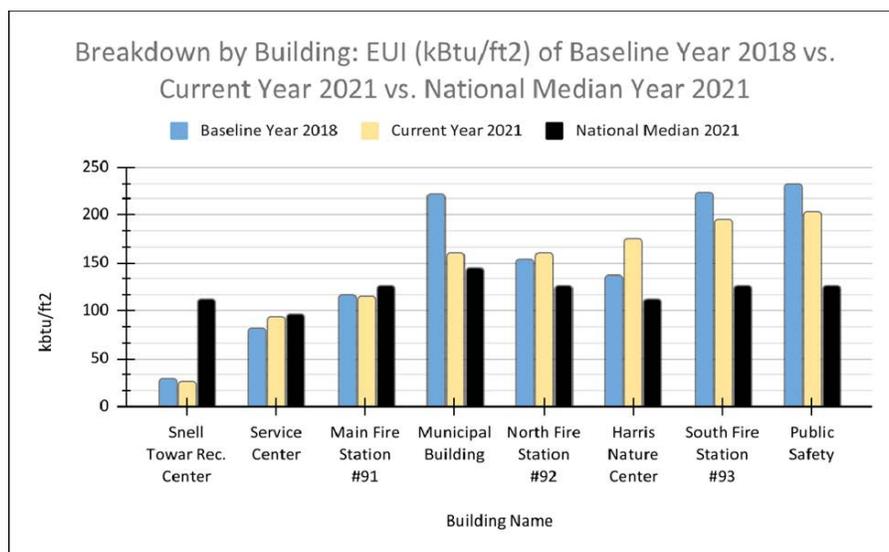
Energy efficiency remains one of the quickest, safest, and most cost-effective ways to reduce greenhouse gas emissions and save money. Energy efficiency also offers other important security benefits, helping reduce power outages, shortages, and risk of grid failure during times of peak energy use.

Meridian has invested in significant energy saving measures over the years. More recent improvements include a major overhaul of the HVAC system in the Municipal Building and LED office lighting improvements in the Public Safety, Municipal, and Service Center Buildings.

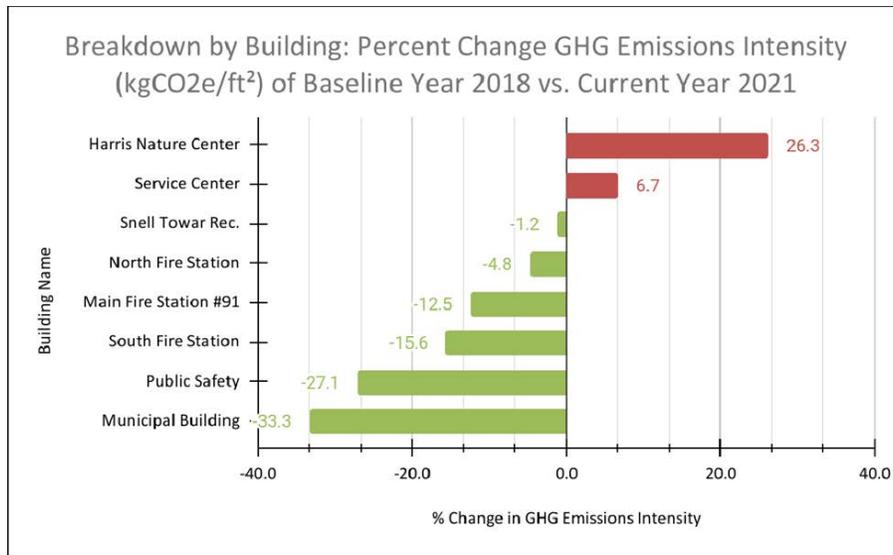
An Energy Benchmarking Study 2018-2021 revealed progress in energy savings. The average overall Energy Use Intensity (EUI) of buildings improved by 5.6% or 8.3 (kBtu/ft²) as illustrated below. However, the average EUI in 2021 is still about 16% higher than the National Median, indicating room for improvement.



The chart below illustrates the performance of Meridian’s major buildings compared to the national average. Buildings on the far right have the greatest opportunity for improvement and savings.



This chart shows a significant reduction in greenhouse gas emissions for most Township buildings.



The most improved building GHG emissions intensity was the Municipal Building with a 33.3% reduction followed by Public Safety with 27.1%, South Fire Station with 15.6%, Main Fire Station #91 with 12.5%, and Snell Towar Rec. with 1.2% reductions in GHG emissions intensity. The building with the least improved GHG emissions intensity was the Harris Nature Center with an increase of 26.3% followed by the Service Center with 6.7% increase in GHG emissions intensity.

Meridian has opportunities for energy savings, water savings, greenhouse gas reductions, and cost saving in its building, but also in its vehicle fleet and in streetlighting. Meridian Township spent \$734,000 on energy and water in 2021. This includes natural gas, electricity, propane, and streetlighting.

Energy Expenditures in 2021

Street Lights	\$396,821
Electricity	\$249,939
Natural Gas	\$64,336
Water	\$20,791
Propane	\$2,483
Total	\$734,370

Several energy audits have been performed over the years including one in 2015 (<http://bit.ly/phase-ii>) and a Building Performance review (<http://bit.ly/energy-performance-17>). These studies have helped guide efficiency investments. New energy audits will help identify additional measures to pursue in the years to come.

Meridian has also launched a streetlighting inventory to assist in keeping track of future improvements, outages, and street light districts. Meridian's ongoing support for the Michigan Municipal Association for Utility Issues ([MI-MAUI](#)) has served as a means to collaborate with other municipalities to negotiate mutually beneficial policies with Consumers Energy and other utility providers.

Objective a.1: Achieve significant energy cost savings and carbon emission reductions in Township facilities.

Strategies:

1. Complete implementation of recommendations from the EcoWorks' Benchmarking Study and Consumers Energy's Building Performance with Energy Star Study.
2. Update energy audits through Consumers, and develop a partnership with MSU's new DOE grant funded IAC pilot program, etc.
3. Continue to track municipal energy consumption within the City's Portfolio Manager account and update energy consumption metrics at least quarterly.
4. Prioritize energy efficiency opportunities at Municipal Building, Public Safety, South Fire Station, Harris Nature Center and North Fire Station.
5. Obtain Energy Star designation for township buildings where possible with a focus on the Municipal Building.
6. Explore opportunities to include energy saving in the Employee Handbook.
7. Explore opportunities to include LEED criteria or the equivalent for projects undertaken by the Township. LEED criteria include measures related to energy efficiency, renewable energy, recycling and waste management, transportation, and water management.
8. Budget funds for energy efficiency assessments a minimum of once every five years. Utilize the Revolving Energy Fund as needed. Consider utilizing the Revolving Energy Fund for energy audits, heat pump at Harris, or other demonstration projects.
9. Address sustainability implications in proposals for capital improvements. Township Manager will consider criteria related to energy efficiency, renewable energy, waste management, transportation, and water management when developing a capital improvement plan.
10. Prioritize weatherizing and electrifying the Harris Nature Center first. Explore switching from a propane energy system to a cold weather heat pump system at the Harris Nature Center. In many cases switching from propane to a heat pump results in energy and cost savings. The Harris Nature Center is the only building benchmarked that utilizes propane for heating.
11. Resolve inverter connection issue with solar array at Harris Nature Center and create a solar meter for the Harris Nature Center in Portfolio Manager to add the missing electricity data. Please note that the energy usage and GHG emissions data would have looked different if the solar array electricity generated and used would have been reported.

Objective a.2: Explore other opportunities and partnerships to achieve energy savings.

Strategies:

1. Identify and pursue State and Federal grant funding, pilot programs, and utility programs.
2. Pursue and build a partnership with MSU's new DOE grant funded IAC pilot program to provide free energy assessments to all qualifying Township facilities, which includes information on all available incentives and grants that the Township may pursue. ,
3. Further build partnerships with programs such as Michigan Green Community Network, EcoWorks, Clean Cities, Sustainability Forums, and expand collaboration with other local governments in our region.
4. Increase tree canopy throughout the township and especially in business areas to reduce cooling loads. Consider the potential for future solar energy installations when deciding placement of trees. Propose ordinance changes and provide incentives for existing businesses to upgrade their parking lots and landscaping to increase tree cover and shade to be energy efficient and environmentally friendly.
5. Create incentives for the use of white roofs or green roofs to reduce cooling loads.
6. Identify opportunities and remove barriers to support the construction of accessory dwelling units, and

other housing options that indirectly affect energy consumption by improving density, reducing transportation costs, or improving resource efficiency.

Objective a.3: Provide educational opportunities for Township staff and residents about energy consumption, energy savings opportunities, and utility incentives.

Strategies:

1. Create an in-house “Green Team” involving interested staff that can help with outreach and brainstorming.
2. Improve delivery of information and data on energy consumption to building managers, Township staff, accounting/budgeting staff, and financial managers using Portfolio Manager and other tools.
3. Provide energy efficiency information to Township residents so they are aware of Township efforts and energy efficiency opportunities and programs to help improve their own homes, businesses, and neighborhoods.

b. Renewable Energy

Renewable energy systems continue to become more cost effective as technology advances lead to increased efficiencies and system cost decreases, while the cost of traditional power sources continue to increase. Meridian Township will develop and identify opportunities to install solar and other renewable energy systems at Township facilities, and encourage and facilitate residential and commercial installations in Meridian Township. The focus will be on solar energy because there are many opportunities.

Past and Current Progress:

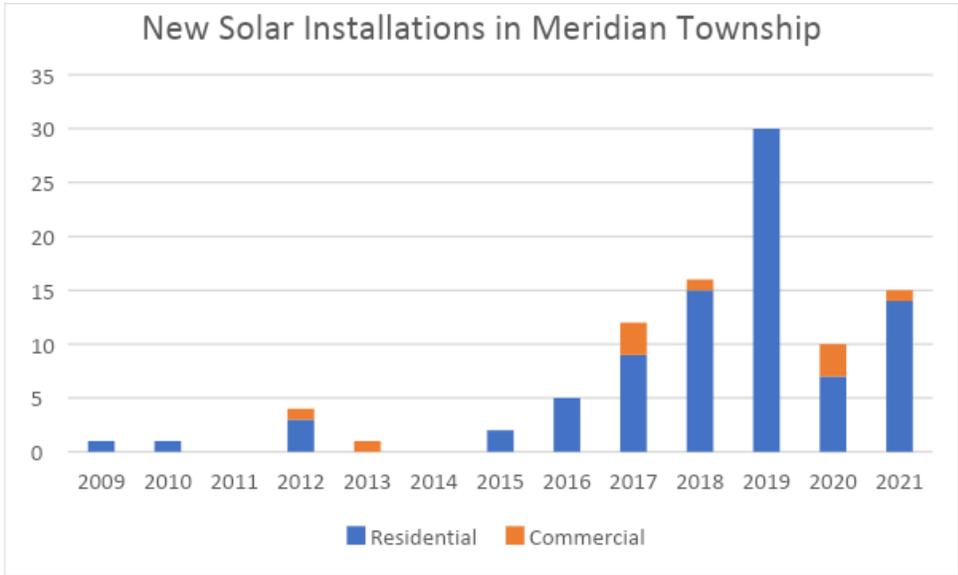
Meridian Township adopted a wind energy ordinance in May 2011 (Ord. No. 2011-05) to provide standards and regulations pertaining to the location, construction, design, maintenance, and abandonment of wind energy systems and anemometer towers.

The Township worked with Peninsula Solar, Michigan Energy Options, U.S. Dept. of Energy, and Consumers Energy to create a solar demonstration and educational project at Harris Nature Center. The demonstration included a solar-powered webcam system and a grid-connected solar system.



The Lansing Board of Water & Light (LBW&L) has developed a 300 kW Community Solar project in Burcham Park on the border of Meridian Township. Since the Township does have LBWL street lighting accounts, the Township Board authorized leasing ten 300 watt solar panels at the Burcham Park solar array. The Township will receive utility bill credits for 25 years based on the electric production from the leased solar panels.

After the Township Board approved the Climate Sustainability Plan in October 2017 including a commitment to obtain 100% of the township government's electricity from renewable energy by 2035 and 25% of the total community electricity from renewable energy by 2025, the Meridian Energy Team developed a workshop program to encourage and make it easier for homeowners, businesses, and churches to install solar electric systems on their buildings. The Meridian Energy Team worked with local civic organizations and houses of worship to hold a series of solar workshops in 2018. There were 11 workshops that reached 272 persons and there was a significant increase in new solar system installations in 2018 and 2019. We cannot attribute all new installations to the Solarize Meridian project, but it is reasonable to assume that the project was a major influence in increasing the number of solar installations in the township. <add neighborhood/community influence study from MSU a few years go>.



Meridian Township has also been working on achieving the 100% Renewable Energy Goal for Electricity for Township Operations. The Township has installed solar arrays at 4 municipal buildings and a fifth 40 kW solar array is planned for the Public Safety Building in 2022.

2018	Municipal Building	17.4 kW
2020	Fire Station 3	36.5 kW
2020	Marketplace on the Green	3.8 kW
2021	Service Center	142.0 kW
Total		199.7 kW





The Township's 100% goal takes into account that a significant portion of the electricity from Consumers Energy will come from renewable energy resources (40%) by 2035 and that it is important to use energy efficiency to reduce electric consumption (30%). The goal includes obtaining 30% of electricity used for township operations from on-site solar and the Township is already more than half way to achieving that goal.

Objective b.1: Develop Township policies and procedures that encourage the use of renewable energy.

Strategies

1. Revise Township ordinances and procedures to ensure that they encourage energy conservation and the use of renewable energy.
2. Develop renewable energy and other practices that reduce greenhouse gas emissions that can be included in the list of amenities allowed in mixed use and commercial planned unit developments (PUDs).
3. Encourage policies for electrification of buildings, vehicle fleet, and appliances so that more renewable energy can be utilized for energy.
4. Encourage policies that will make buildings solar-ready.

Objective b.2: Increase the use of renewable energy at Township facilities.

Strategies

1. Obtain 50% of Township electricity from renewable energy by 2025 and 100% by 2035.
2. Pursue the installation of solar electric systems at Township facilities . .
3. Participate in Community Solar or other green purchasing programs where possible.
4. Identify and seek grant funding for demonstrations of new renewable energy technologies.
5. Identify opportunities for non-grid connected applications like solar street lighting and solar lighting for signs.

Objective b.3: Provide educational opportunities regarding renewable energy options and encourage the installation of renewable energy at private and public facilities throughout the Township.

Strategies

1. Increase the number of solar installations in the township from 97 in 2021 to 250 by 2025.
2. Provide educational opportunities on current and proposed policies, programs and incentives that could help Township residents, businesses, and institutions utilize renewable energy.
3. Share information about funding and vendors with residents and business owners.
4. Provide incentives to developers to employ renewable energy in site plan and construction of new development. Identify and adopt incentives to encourage greater use of renewable energy, e.g. incentives for net zero homes or solar systems, elimination of permit fees for solar systems.
5. Inventory, highlight, and promote Meridian homes and businesses that feature net-zero, renewable, LEED, and related features.
6. Educate homeowners' associations about solar power and encourage less restrictive covenants that inhibit the installation of solar energy systems.

Water Management

Water and how it is managed impacts almost all aspects of society, in particular health, food production, water supply and sanitation, and the functioning of ecosystems. Higher temperatures and changes in extreme weather conditions due to climate change are projected to affect rainfall, river flows groundwater, and water quality. Water management is an important Township responsibility and pollution prevention and wetland preservation are priorities. One of the most significant Climate Change impacts in Meridian Township will be more major rain events that lead to flooding.

Drinking water and wastewater systems account for approximately 2 percent of energy use in the United States, adding over 45 million tons of greenhouse gases annually. As much as 40 percent of operating costs for drinking water systems can be for energy.¹

Past and Current Progress:

Meridian Township Public Works and Engineering maintains, repairs and operates the water distribution system; which includes 158 miles of water mains, 12,000+ water services, 15,000+ water meters, over 15,000 remote readers, over 1,900 fire hydrants, and two 500,000 gallon elevated storage tanks. The Township's web site has information on storm water management and pollution prevention including the following topics: Pollution Isn't Pretty, How to Properly Wash Pavement and Your Car, Pesticides and Fertilizers, Green Infrastructure and Low Impact Development, and Managing Riparian Lands.

The Township is a member of the East Lansing Meridian Water & Sewer Authority and purchases treated water from the Authority for areas of the Township north of Bennett Road and Kinawa Dr. The Township purchases treated water from the Lansing Board of Water & Light for areas south of Bennett Road and Kinawa Dr.

The Township enacted a wetlands protection ordinance that is more protective of wetlands than State regulations. The Township ordinance stipulating "no net loss" of wetlands means that wetlands drained or filled must be replaced by a wetland of equal or greater size. This includes wetlands as small as .25 acres. The Township maintains a wetland inventory and incorporates wetlands considerations into the site plan review process, including setbacks from natural features such as wetlands. [\(how much wetland has been protected? Number of permits, etc.\) feedback from Planning Staff? How much has been improved?](#)

Wetlands cover over 25% of Meridian Township (5,778 of 20,160 acres). Wetland types in the Township include emergent marshes, wet meadows, forested swamps, and two rare or special types of wetlands called prairie fens and vernal pools. Prairie fens are rare wetlands dominated by sedges, grasses, and flowering herbaceous plants that occur in areas with organic soils and cold, calcium- and magnesium-rich groundwater that reaches the surface through seeps and springs. An example of a prairie fen can be found in Meridian Township's Davis-Foster Preserve. Vernal pools are small, shallow, seasonally flooded wetlands or waterbodies that typically occur in forests and are wet in the spring for at least two months and dry by late summer or fall. Because vernal pools dry up, they lack fish predators and, as a result, provide critical breeding habitat for frogs, salamanders, and insects including some species that only occur in or depend on vernal pools for their survival (e.g., fairy shrimp, blue-spotted and spotted salamanders, wood frogs). These species are important components of the food chain and energy-nutrient cycles that support healthy, resilient ecosystems. Vernal pools also provide habitat for many other animal and plant species including common species such as wood ducks, great blue herons, painted turtles, and deer, and rare,

¹ Sustainable Water Infrastructure: Energy Efficiency for Water Utilities, U.S. Environmental Protection Agency, April 24, 2017

threatened, or endangered species. Although these wetlands are not rare in Michigan, they have limited protection under current wetland regulations given their small size (generally smaller than 1 acre and most under 0.25 ac).

Wetlands provide many natural benefits or ecosystem services and play an important role in maintaining healthy watersheds and communities. These benefits or services are even more critical in light of climate change. However, wetlands continue to face a number of threats including climate change. Protecting, managing, and restoring wetlands in the Township will ensure that they continue to provide essential benefits and services that will help the Township mitigate and adapt to risks and impacts associated with climate change in the following ways:

1. Water quantity management – Climate change is predicted to increase air temperatures and alter the timing, amount, frequency, and nature of precipitation in Michigan, including the potential for more precipitation in the fall and winter and less in the summer; increased evaporation, an overall drier climate and drier soils/drought conditions, particularly in the summer, and increased frequency of extreme/severe weather events. These changes could lead to lower water levels in lakes, rivers, streams, and the groundwater table. Wetlands act as sponges, temporarily holding and storing water, and providing water for surface and groundwater recharge.
2. Water quality protection – Climate change can increase storm intensity and increase frequency of severe storms, resulting in increased stormwater runoff. This will increase erosion and input of pollutants that runoff from land into the water, impacting water quality for drinking water, recreational use, and fish and wildlife habitat. Wetlands are often referred to as “kidneys” in the landscape. Through cycles of wetting and drying, combined with the bacteria and plants that live in wetlands, they can store, alter, and/or filter out pollutants such as excess nutrients, heavy metals, and petroleum products, and help maintain or improve water quality.
3. Hazard management – By acting as sponges and temporarily holding and slowly releasing water, wetlands can buffer the effects of extreme storm events which are predicted to increase in frequency and severity with climate change and reduce flooding and erosion in the Township. Flooding from more frequent and severe storm events has already caused increased flooding and property damage in the Township. Maintaining and increasing wetlands in the Township can reduce the potential for these impacts in the future in light of climate change.
4. Habitat/wildlife protection – Wetlands are vital to Michigan's wildlife as well. Acre for acre, they produce more wildlife and plants than any other Michigan habitat type. Over 50% of the plants and over 40% of the animals in Michigan utilize wetlands for at least part of their life history, including over 40% of the rare, threatened and endangered species in Michigan. Wetlands can reduce the effects of climate change-related drought and heat on wildlife by providing a source of water or moist, cool conditions or habitats. As the climate changes, wetlands also provide a corridor or stepping stones on the landscape that may help species move to more suitable habitats. As mentioned earlier, wetlands can also help reduce potential impacts to water quality due to climate change. Protecting wetland extent, condition, and diversity will help support fish and wildlife populations and habitat in the Township and in Michigan.
5. Carbon sequestration – Wetlands also can mitigate or reduce climate change by storing carbon, primarily in the soil but also in the vegetation and dead leaf litter. Wetlands only cover about 5-8% of the Earth's land surface but are estimated to store between 20-30% of earth's total soil carbon. Globally, wetlands store ~225 billion metric tons of carbon, which is equivalent to carbon emissions from ~189 million cars/year. Wetlands currently cover

about 4% of the surface area of the contiguous U.S. (excluding Alaska and Hawaii) but the total amount of carbon currently stored in wetland soils, peat, litter and vegetation in the U.S. is undetermined; no comprehensive inventory of soil carbon has been completed in the United States. Maintaining, restoring, and increasing wetlands in the Township will help maintain and increase the carbon stored in these wetlands

Objective e.1: Decrease water usage at Township facilities.

Strategies

1. Use building audits to determine which water fixtures to upgrade.
2. Amend purchasing policy to require that when purchasing or replacing new toilets only low flow fixtures will be purchased.
3. Install waterless urinals where appropriate.
4. Implement, as funds allow, a system to capture and use rainwater and gray water for turf and landscape irrigation at municipal facilities.

Objective e.2: Reduce storm water runoff.

Strategies

1. Partner with the Ingham County Drain Commissioner on reduction in storm water runoff.
2. Review and change policies as needed to accommodate expected changes in storm surges and extreme weather events.
3. Increase the number of street trees.
4. Use porous pavement, rain gardens, bioswales, riparian buffers, and retention ponds as appropriate. Use township parks and other properties to demonstrate these strategies.
5. Provide credits on water bills for rain barrels, porous pavement, and rain gardens.
6. Encourage projects that reuse storm water for irrigation purposes.
7. Discourage development within wetlands, floodplains, floodplain fringe areas, and water retention areas. Strengthen the Township wetlands ordinance in order to increase wetland acreage in the Township.

Objective e.3: Provide educational opportunities concerning water conservation and management.

Strategies

1. Use signs, brochures, and other outreach materials to describe why we conserve water and what the Township is doing to conserve water, alternatives to fertilizer use and how it affects stream ecosystems, drought resistant grasses, native plants, rain barrels, water efficient appliances such as low-flow toilets, and how one's water usage compares to a typical home's water usage.
2. Use media, web page, HOM-TV, public forums, and other means to encourage water conservation.

Objective e.4: Explore opportunities for water efficiency improvements within Meridian's water supply and sewage treatment systems.

Strategies

1. Work with East Lansing Sewage Treatment Plant and Lansing Board of Water and Light to identify ways to reduce water use and sewage.
2. As a member of the East Lansing Meridian Water & Sewer Authority, identify ways to reduce water use.
3. Review water safety and supply plans and strategies.

Objective e5: Provide education on how critical wetlands are to climate sustainability

Strategies

1. Help decision makers and the community identify wetlands
2. Help the decision makers and the community understand wetlands' critically important function of water filtration, flood protection, absorbing carbon, providing critical wildlife habitat, etc.
3. Provide (or regularly update) educational materials on wetland benefits, laws, and ordinances via township website, brochures, and flyers. (any data on impact, media data, inquiries, ?)
4. Provide signage to identify wetlands throughout the township

Objective e6: Identify and continue to measure and monitor the amount and condition of wetlands remaining.

Strategies

1. Utilize EGLE Wetland Viewer
2. Utilize Meridian Township GIS system
3. Work with researcher/contractor to map and monitor amount, distribution, and condition of wetlands in the Township on a regular basis (e.g., every 5-10 years).
4. Assess whether wetlands in the Township are adequately protected (e.g., whether vernal pools are adequately protected, are all wetlands adequately buffered, etc.) and address gaps in protection
5. Identify and ensure high quality or high functioning wetlands in the township are protected; determine criteria and process for identifying these wetlands
6. Explore a comprehensive assessment of wetland quantity and quality, including updates to the State wetland maps (check with Elise Tripp)

Objective e7: Increase wetland acreage

Strategies

1. Discourage development within wetland, floodplains, and water retention areas
2. Encourage to infill development
3. Continue to purchase land preserves
4. Identify potential areas that could be restored to wetlands on Township property and initiate restoration efforts

Objective e8: Increase wetland's functionality by extending wetland buffers

Strategies

1. Educate the community and contractors/builders/landscapers on wetland buffers
2. Continue the work of the Wetland Education Team's "Build Back the Buffer" education initiative along with any future wetland restoration educational efforts and projects
3. Continue to build the Meridian Conservation Corps and Vernal Pool Patrol
4. Utilize Meridian Township's Native Plant Guide and sample plant plan guides
5. Create and/or extend demonstration areas throughout the community
6. Educate residents/businesses on ways to successfully create and maintain a natural vegetation buffer
7. Utilize the Harris Nature Center Native Plant Sale and other native plant retail opportunities
8. Continue to offer educational opportunities to safely remove invasive species
9. Use signage to identify buffer areas
10. Determine if current wetland buffers are adequate for all wetland types and modify if necessary

c. Recycling and Waste Reduction

Recycling is an important environmental action taken by most Meridian Township residents and businesses. Recycling saves resources, prevents pollution, supports public health, and creates jobs. Harmful chemicals and greenhouse gasses are released from rubbish in landfill sites. It takes less energy to create new items from recycled materials than it does to create new products from raw materials.

Past and Current Progress:

For over a decade Meridian Township has partnered with citizen groups and waste haulers and recycling providers to provide recycling options to residents. During this time, Meridian has offered drop-off for yard waste, paper, metal, glass, and #1-#2 plastic at its Recycling Center and Transfer Station at 5976 E. Lake Drive in Haslett. This has been expanded to include electronics, Styrofoam/expanded polystyrene, green glass, and batteries. In addition, useable household furniture and knick-knacks are often reclaimed and refinished for resale. **Tom suggestions updating)**

In 2005, Granger, who serves the majority of single-family residential customers in the Township, began providing curbside recycling at no charge to their customers in 1-5 unit single-family dwellings. Also, in 2006, the Meridian Township Citizen's Recycling Advisory Committee formed and offered the first bi-annual community-wide recycling day. In 2007, Meridian hired a Recycling Coordinator to assist with recycling efforts in the township.

In 2015, larger residential recycling carts were offered, which helped increase recycling rates in the residential sector in 2016. In addition, more materials were collected at our Recycling Center.

Objective c.1: Increase recycling in owner-occupied dwelling units.

Strategies

1. Collaborate with Granger, Emterra, local municipalities, and others to promote recycling and best practices to reduce contamination and waste.
2. Expand the use of 96 gallon carts and remove disincentives for recycling.
3. Expand marketing and outreach to promote existing recycling services and options.
4. Collaborate with regional municipalities, the Regional Recycling Coordinating Committee (R2C2), and other neighborhoods, organizations, and others to increase recycling.

Objective c.2: Expand recycling in multi-family housing and in other commercial settings.

Strategies

1. Establish an additional recycling drop-off facility in partnership with Granger and the State of Michigan.
2. Review Township purchasing policies for waste reduction opportunities including the use of supplies that are compostable or higher recycled content.
3. Promote and expand current recycling efforts in multi-family housing.
4. Explore ordinances, policies, and programs that encourage recycling.
5. Provide technical assistance to managers and occupants of multi-family housing/apartments.
6. Review internal township recycling practices, procedures, and participation.

Objective c.3: Offer community- and region-wide recycling events and other partnerships including expanded recycling facilities and options.

Strategies

1. Establish an additional recycling drop-off facility in partnership with Granger and the State of Michigan.
2. Increase recycling, composting, and reclamation of lumber, food, cooking oil, etc. at Meridian's Recycling Center.
3. Partner with local business, farmers market, schools, neighborhoods, governments, departments, parks, churches, and others to promote and offer recycling events and enhanced recycling opportunities.
4. Promote Ingham County household hazardous waste collections.
5. Explore collaborative processing and/or transfer of recyclables locally and/or in the region.
6. Identify and implement food, cooking oil/grease, composting, and related organic material recycling options.
7. Provide educational opportunities concerning the 5 R's: Refuse, Reduce, Reuse, Repurpose, & Recycle including simple instructions reduce "wishcycling" and contamination.
8. Improve signage that promotes recycling and directions to recycling drop off facilities.
9. Promote re-usable bags, bottles, plastic waste reduction, compostable single-use alternatives, etc.
10. Consider an annual solid waste audit and participation in EGLE's Municipal Measure Program.
11. [Explore state, county, and local licensing and reporting requirements for waste haulers.](#)
12. [Plastics, Circular Economy,](#)
- 13.

d. Transportation

Transportation produced 27% of greenhouse gases in 2020 ¹. Public and non-motorized alternatives can reduce the impacts from these greenhouse gases. The most accessible alternative to petroleum is often overlooked -- walking and biking. Transportation fuel use reduction measures decrease emissions, save the Township and residents money, enhance environmental quality, and promote public health. The Township will focus on its own fleet, walking and biking, and land use decisions. Land use decisions that lead to infill development and a greater use of public and non-motorized transportation can significantly impact petroleum use.

Past and Current Progress:

A Complete Streets Ordinance was adopted by the Meridian Township Board on Sept. 18, 2012. The ordinance is intended to provide safe, convenient, and comfortable routes for multiple modes of transportation including but not limited to walking, bicycling, personal vehicles and public transportation.

The Township has 20 miles of trails and 80 miles of pedestrian/bicycle paths. The development and maintenance of the trails and pathways are funded through the Park Millage and Pedestrian/Bicycle Pathway Millage. They are maintained by Township Parks and Grounds Maintenance Staff. The purpose of the pedestrian/bicycle pathway system is to provide a network of interconnected pathways throughout Meridian Township that connect destination points including schools; libraries; parks; public buildings; commercial areas; and connecting routes outside the Township.

The Meridian Transportation Commission began meeting in January 2017. The purpose of the commission is to review transportation services, both public and private, within the township as to their efficiency, sufficiency, and costs and make recommendations, if necessary, for improvements.

Objective d.1: Encourage Township employees and citizens to be smart commuters year round.

Strategies

1. Continue to expand and close gaps in the bike and pedestrian pathways network. Promote the bike and walkways.
2. Incentivize and encourage employees to be smart commuters year round.
3. Partner with Capital Area Transportation Authority and others to promote "Clean Commute" options and identify efficient paratransit and Redi-Ride efficiency improvements.
4. Encourage bike/ebike transportation by offering secure parking at local stores/restaurants.
5. Consider engineering safe, separated/protected bike lanes to link residential areas to commercial districts.
6. Consider closing down lanes to bike/pedestrian traffic only on a periodic or permanent basis to encourage bike/pedestrian use and recreation.

Objective d.2: Decrease the use of petroleum in the Township vehicle fleet.

¹ <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> downloaded 5/19/22

Strategies

1. Choose the cleanest and most fuel-efficient vehicle that meets the department's needs.
2. 2035. Use electric or hybrid vehicles whenever possible.
3. Implement the installation of charging infrastructure necessary to achieve these goals.
4. Identify and seek funding for alternative fuel vehicles and electric charging infrastructure.
5. Use efficient trip-planning to reduce the use of fuel.

Objective d.3: Use land-use planning to reduce vehicle miles traveled and petroleum use.

Strategies

1. Continue implementation of the Township's Complete Streets policy to ensure that entire roadways are designed and operated with all users in mind - including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities.
2. Use the Urban Services Boundary to reduce vehicle miles traveled and encourage infill and redevelopment.
3. Encourage cluster developments, mixed use and other compact residential choices closer to shopping, public transit and other services.
4. Offer incentives for sustainable developments.

Objective d.4: Provide educational opportunities on transportation alternatives that can reduce petroleum use.

Strategies

1. Provide educational opportunities concerning public transit, car sharing, smart commuting, and transportation-efficient communities.
2. Provide educational opportunities on biking, walking, and driving safely, especially around bikers and walkers.
3. Continue membership in and partnerships with Greater Lansing Area Clean Cities (<http://michigancleancities.org>) and providers of efficient vehicles, equipment, and fuels.
4. Provide web sites and apps that identify charging stations for electric vehicles. Map locations of public charging stations. Identify funding and opportunities for electric car charging stations.
5. Promote the employee and volunteer bike-sharing program.



Meridian Township
5151 Marsh Road
Okemos, MI 48864

P 517.853.4000
F 517.853.4096

Township Board:

Patricia Herring Jackson
Township Supervisor

Deborah Guthrie
Township Clerk

Phil Deschaine
Township Treasurer

Schott Hendrickson
Township Trustee

Kathy Ann Sundland
Township Trustee

Marna Wilson
Township Trustee

Courtney Wisinski
Township Trustee

Frank L. Walsh
Township Manager

October 2022

Dear Meridian Township Resident,

On behalf of the Township Board, Commissions, Staff and neighborhoods of Meridian Township, we invite you to join us in preserving and enhancing one of our community's greatest assets; our wetlands. Over 25% of Meridian Township is covered in wetlands! You are receiving this letter because you have a wetland on or adjacent to your property.

Protecting wetlands is important for many reasons. Wetlands act like a sponge, protecting us from flooding. They also help recharge our groundwater/drinking water and provide other benefits such as protection of fish, wildlife, and pollinator habitats.

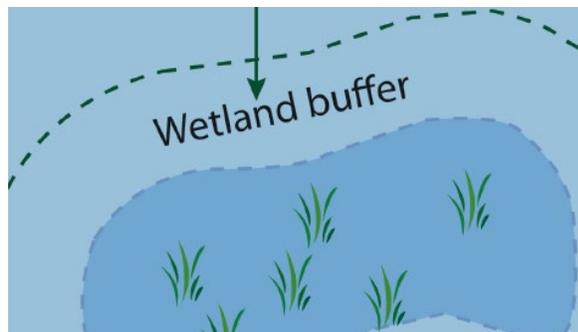
This letter and the enclosed flier describe these benefits and current laws that may affect your property.

There are different types of wetlands and most are protected. Protected wetlands include:

1. Wetlands, equal to or greater than 1/4 acre and determined to be essential to the preservation of natural resources.
2. Wetlands contiguous to inland lakes, streams, rivers or ponds (or within 500 feet of the ordinary high water mark)*
3. Wetlands, which are essential to the preservation of the natural resources of the State from pollution, impairment or destruction.

* Unless determined by Michigan Department of Energy, Great Lakes, and the Environment (EGLE) that there is no surface or groundwater connection between the wetland and the water body.

A wetland buffer or natural vegetation strip is also protected by law. Wetland buffers/vegetation strips help minimize erosion, stabilize streambanks and wetland edges, protect water quality, preserve wildlife habitat and protect from flooding.



The wetland buffer is typically 20-50 feet wide, depending upon the size and location of wetland, and is treated the same as the wetland.

There are some things that you can and can't do in a protected wetland and wetland buffer/vegetation strip. For example:

Do...	Don't...
Preserve natural ground cover to the fullest extent feasible. Trees, shrubs, and native plants have deep roots which help protect your property from flooding.	Do not alter existing soil and organic matter. Please do not add or remove soil, stones, yard debris, etc.
Plant perennial native species, especially on exposed soil and steep slopes. Lawns have shallow roots and do not protect from flooding.	Do not apply fertilizers or pesticides (insecticides, herbicides, etc.).
Minimize pruning and removal of trees, shrubs, and ground covers unless providing access or views to water features, removing hazardous or nuisance exotic vegetation, or improving wildlife habitat.	Do not mow or clear cut more than 10% of the length of the buffer strip. A lawn is not considered a natural vegetation strip.
Consider attending a workshop with the Meridian Conservation Corp on how to remove invasive species from your property.	Do not remove stumps. Live root systems must be maintained to provide erosion control.
Learn more about wetlands and environmental stewardship at the website below.	Do not build structures or grade the soil without contacting the Planning Department.

We hope that this information is helpful in understanding the importance and benefits of our wetlands in reducing flooding, protecting our water resources, and preserving the environmental quality and natural beauty of our community.

If you'd like to learn more about wetlands, natural landscaping, rain/pollinator gardens, land preserves, native plant sales, or the Meridian Conservation Corps, please visit our website at www.meridian.mi.us/GreenMeridian. For code or construction-related questions, please contact the Community Planning & Development Department at 517.853.4500.

Thank you,



Bill McConnell, Chair
Meridian Environmental Commission

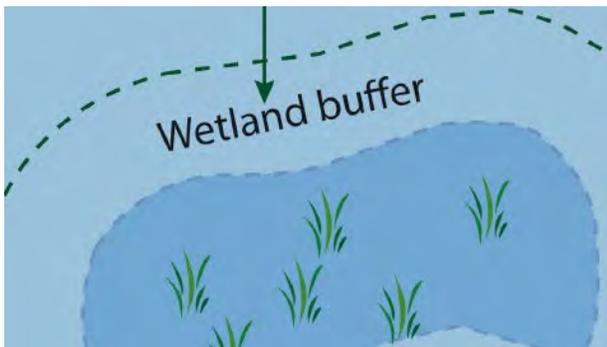
IMPORTANT NOTICE



Attention Residents Near or Adjacent to a Wetland:

Meridian Township Ordinance Reminder

Does your lawn mower leave muddy ruts in your yard? You may be encroaching on a wetland buffer. Knowing where your wetland buffer starts is important, but it is also the law. These areas are protected by the Township.

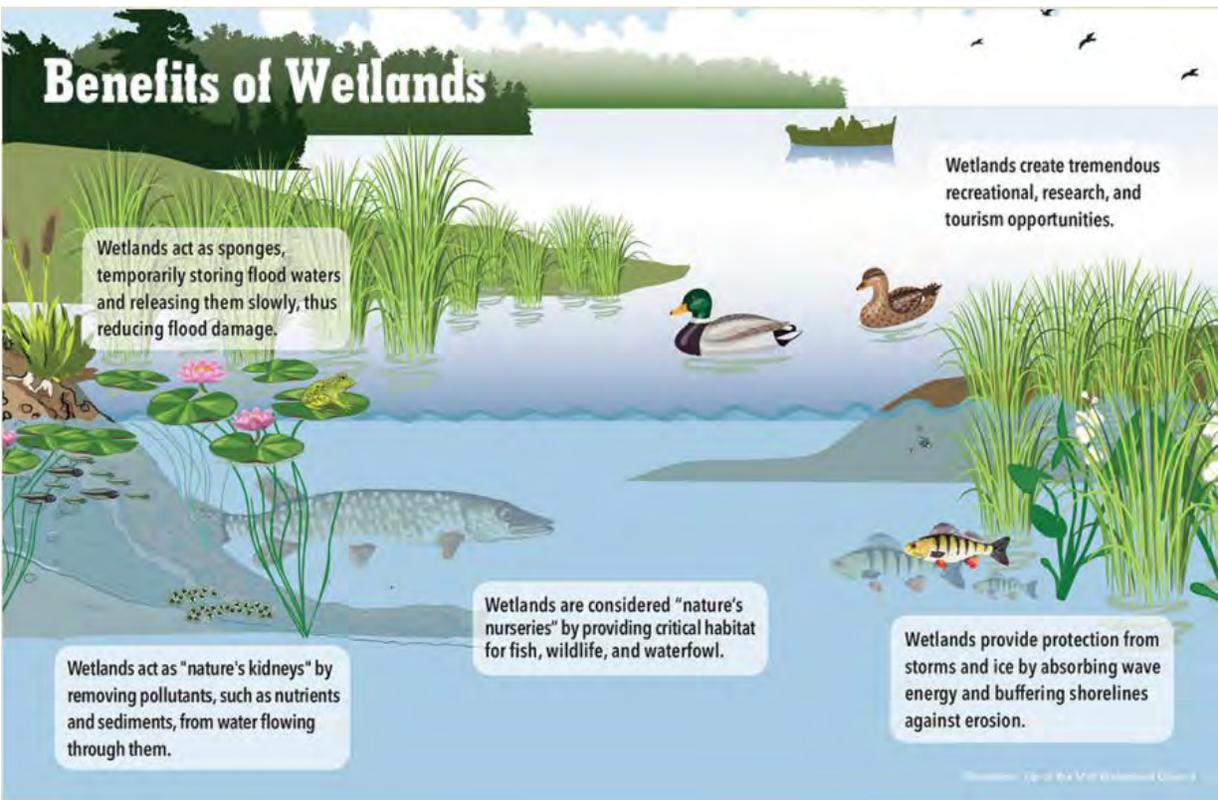


When working within 20 feet of a wetland, wetland buffer or natural area, please remember:

-  **DO NOT** apply fertilizers, herbicides, insecticides, or other pesticides
-  **DO NOT** mow
-  **DO NOT** dump yard waste
-  **DO NOT** add any fill material such as fill dirt, stone or mulch
-  **DO NOT** remove stumps/roots



meridian.mi.us/Wetlands



How to enhance your wetland buffer:

- 
DO plant native vegetation on your property and remove invasive species
- 
DO protect the required 20 foot natural vegetation buffer around wetlands
- 
DO contact the Planning Department at 517.853.4560 if you are planning construction or landscaping within 40 feet of wetlands
- 
DO contact the Land Stewardship Coordinator at ecampbell@meridian.mi.us for information on native plant lists and invasive species information



NATIVE PLANT SALE

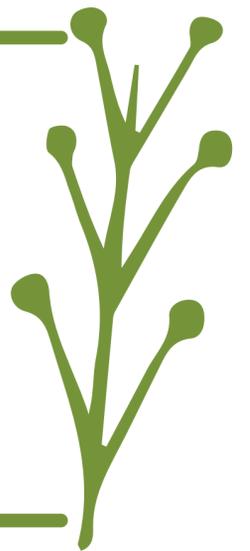
Saturday, October 1

9:00 am - 1:00 pm

(while supplies last)



The Native Plant Sale includes Michigan native shrubs, sedges, grasses, wildflowers, ferns and complete garden kits.



For more information contact HNC
517.349.3866 | hnc@meridian.mi.us





REGIONAL ELECTRONICS RECYCLING DAY

Chippewa Middle School
4000 Okemos Road

Saturday
October 8, 2022
9:00 am - 1:00 pm

Accepted Items

TVs, computers, monitors, printers, cords/ cables, phones, VCRs, stereos, and more*

TVs & Monitors: \$20 donation each

(cash or check payable to Meridian Township)

*Consumers Energy will be accepting working room air conditioners, dehumidifiers, compact fridges/freezers from their customers with electric service and provide a rebate of \$15 for each eligible unit. Items must be in working condition. Limit four small units per account. Bring your account# to assure your rebate. Contact 800.977.4995 or visit ConsumersEnergy.com/recycle for more information.

Accepted Items

TVs	monitors	computers	laptops
printers & scanners	fax machines	keyboards	mice
VCRs, DVRs & DVD players	small servers	hard drives	satellite boxes
tablets & e-readers	mobile phones	MP3 players	video game consoles

Non - Accepted Items

batteries	light bulbs or ballast
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Non-Accepted Items

No batteries, smoke detectors, lighting, vacuum cleaners, coffee makers, toasters, air conditioners*, dehumidifiers* & large appliances.

*see exceptions above

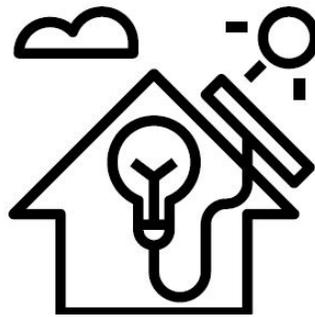
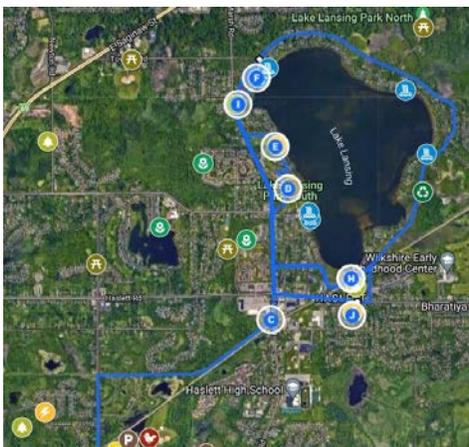
Event Sponsors

For more information visit
meridian.mi.us/recycle



Meridian's Sustainable Home & Landscape Tour

On-Line in October!
(virtual)

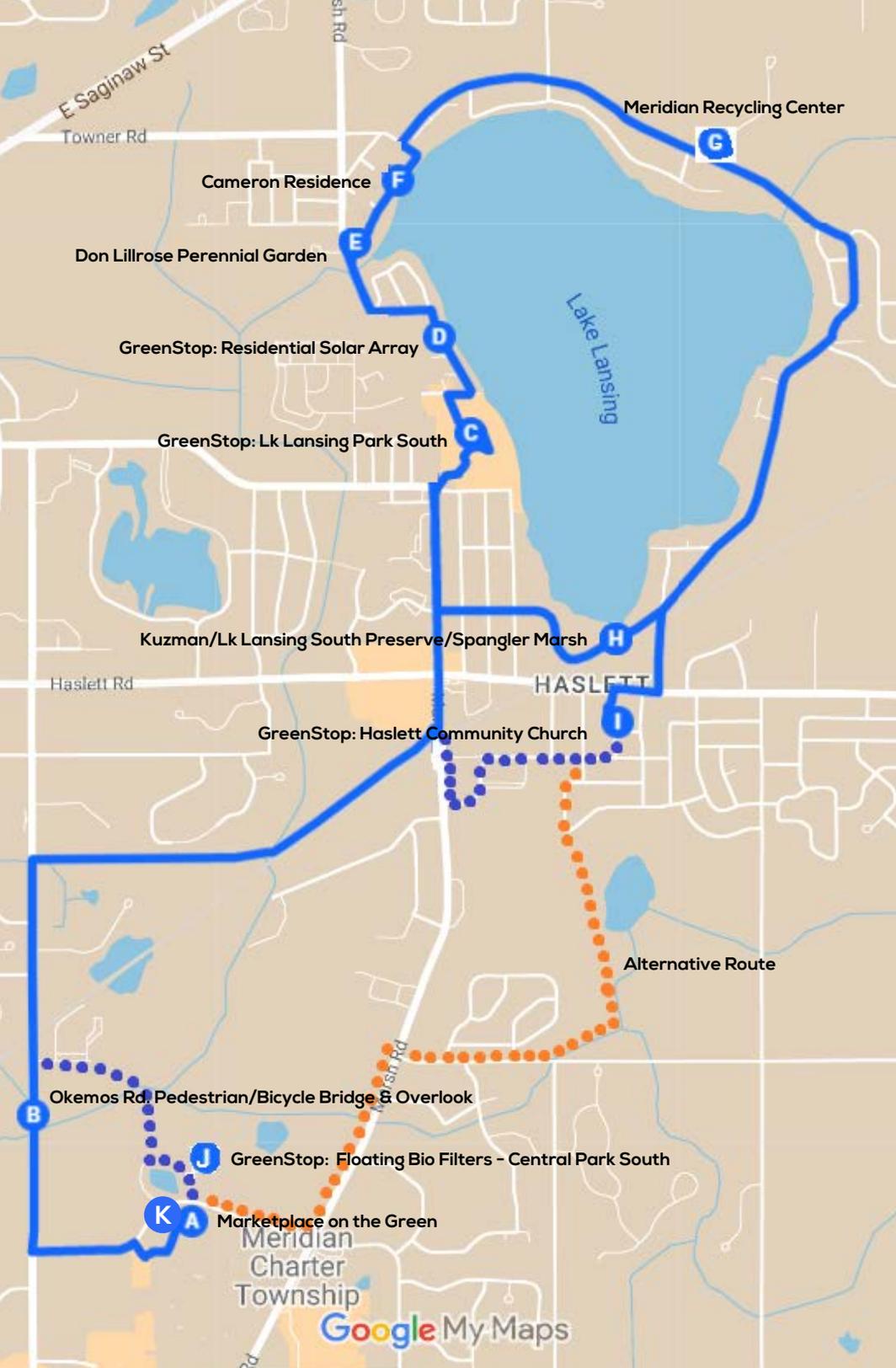


Dozens of green destinations
at bit.ly/meridiangreenmap

For more information, call 517.853.4466
or email recycle@meridian.mi.us



Explore Great Lakes Renewable Energy Association's
Solar Home Tour on Zoom Oct 6 at 7pm More at www.glrea.org



E Saginaw St

sh Rd

Towner Rd

Meridian Recycling Center

Cameron Residence

G

Don Lillrose Perennial Garden

E

GreenStop: Residential Solar Array

D

Lake Lansing

GreenStop: Lk Lansing Park South

C

Kuzman/Lk Lansing South Preserve/Spangler Marsh

H

Haslett Rd

HASLETT

GreenStop: Haslett Community Church

I

Alternative Route

Okemos Rd. Pedestrian/Bicycle Bridge & Overlook

B

GreenStop: Floating Bio Filters - Central Park South

K A

Marketplace on the Green

Meridian
Charter
Township

Google My Maps

10-Mile Bike Tour

Virtual Sustainable Home & Landscape Tour Kick-off

Saturday, October 1
10:00 am

Community members are invited to meet at Marketplace on the Green for a 10-mile bike ride, visiting several eco-friendly destinations in the Township.

The bike tour kicks off the Virtual Sustainable Home & Landscape Virtual Tour held during the month of October. The tour will highlight a multitude of "green" sites in the Township.

Note: Bicycle helmet and flat repair kit are strongly recommended.

- A. Start: Marketplace on the Green - Bike repair station.
- B. Okemos Road Pedestrian/Bicycle Bridge and Overlook
- C. GreenStop: Lake Lansing Park South
- D. GreenStop: Residential Solar Array - Lafferty Residence
- E. Don Lillrose Perennial Garden
- F. Cameron Residence
- G. Meridian Recycling Center
- H. Kuzma/Lake Lansing South Preserve/Spangler Marsh
- I. GreenStop: Haslett Community Church
- ● ● Alternative Route: This off-road alternative route runs through a diverse natural area behind Haslett High School.
- J. GreenStop: Floating Bio-Filters - Central Park South
- K. End: Marketplace on the Green

