



Environmental Commission Meeting Packet: January 8, 2020

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Agenda: January 8 2020

PLEASE NOTE LOCATION CHANGE: NELSON ROOM, Public Safety, 2nd Floor – next to Municipal Bldg.

1. CALL MEETING TO ORDER AT 7:00 PM
2. APPROVAL OF THE AGENDA
3. APPROVAL OF THE MINUTES
4. PUBLIC REMARKS
5. NEW BUSINESS
 - A. Meeting Times and Locations for 2020
 - B. Goals for 2020
 - C. Other
6. OLD BUSINESS
 - A. Township Board Meetings
 - a. Jan 21 (Regular Meeting) 6pm
 - i. Green Community Recognition
 - ii. Climate Sustainability Report
 - iii. Climate Emergency Resolution
 - iv. Coal Tar-Based (and other high PAH) Sealant Ban
 - v. Board Liaison Invitation
 - b. Jan 28 (Joint Board and Commissions Meeting) 6pm
 - B. Commissioner Appointments
 - C. Wetland Bank
 - D. Other
7. CHAIR'S REPORT
8. STAFF REPORT
9. COMMISSION/LIASON/WORKGROUP REPORTS
 - A. Planning
 - B. Land Preservation
 - C. Energy
 - D. Brownfield Redevelopment Authority
 - E. Green Team
 - F. Transportation
10. PUBLIC REMARKS
11. ADJOURNMENT

December 2019 Minutes (draft)

CHARTER TOWNSHIP OF MERIDIAN
ENVIRONMENTAL COMMISSION REGULAR MEETING
MUNICIPAL BUILDING, 5151 MARSH RD, OKEMOS
WEDNESDAY, DECEMBER 4 2019 7:00 PM

PRESENT: Chair, Bill McConnell; Vice Chair, Ned Jackson; Commissioner, John Sarver; Commissioner, Aparna Krishnamurthy; Commissioner, Jim Kielbaso; Commissioner Kirk Lapham; Commissioner Susan Masten, Planning Commissioner Dave Premoe (Liaison)

STAFF: Phil Deschaine, Treasurer; LeRoy Harvey, Environmental Programs Coordinator; Cortland Jenkins, HOMTV Intern

GUESTS: Tom Cary, Rose Vadnais

Meeting is televised at: <http://meridianmi.swagit.com/play/12042019-994>

Agenda: Approved

Minutes: Minutes from November approved with changes.

Public Comments: Phil Deschaine mentions that the Tree Planting Project is gaining momentum. The Board appreciates the Environmental Commission's guidance on spending an allocation approved for 2020. Deschaine also reports that Trustee Courtney Wisinski is interested in discussing plastic bag reduction with the E.C. and others. Trustee Wisinski also suggests a Board Liaison on the Environmental Commission.

New Business:

Climate Sustainability Report Year 2: This was discussed in the Work Session. Staff shared a draft outline and will seek input from the Green Team, Transportation Commission, and Energy Team. This will hopefully be presented to the Board of Trustees in January along with the Climate Emergency Resolution.

Commissioner Appoint/Reappointments: We have at least one opening. One new application was received (Rose Vadnais). Harvey contacted past applicants and several remain interested (Tom Carey, Martha Stanbury, and Tom Frazier). Three commissioner terms also expire (Krishnamurthy, Kielbaso, and McConnell). Chair McConnell, invites suggestions from other Commissioners if they have input, before he makes a recommendation to the Township Supervisor. Harvey will distribute applications to the E.C.

Trustee Liaison to the E.C.: There is strong support for this idea. This has been helpful on the Land Preservation Board and on most of East Lansing Commissions. This person would not have to be a voting member. Motion to seek a liaison passed unanimously.

Old Business:

Wetland Banking: The Land Preservation Board did not meet last month to discuss. McConnell has had feedback that the Wetland Bank costs should include maintenance/monitoring costs in addition to purchase, design, construction, etc. There is also the question about the number and size of potential Township projects that require mitigation (and might warrant a need for a wetland bank). Commissioner Masten also mentions the potential assistance of MSU 495 (engineering capstone class). Chair McConnell suggests asking the Director of Public Works or other staff for more details about the amount potential need (trail connector, roads, Central Park, etc.) and whether this might warrant the expense.

Coal Tar-Based Sealant Memo: Harvey included comments from Masten and Jackson in the latest memo and draft ordinance language. Applicators would be required to register similar to the way sewer contractors. The E.C. approved forwarding the memo to the Board and include draft ordinance language.

Climate Emergency Resolution: Derek Perry suggests that the resolution be included in the January Board meeting along with the Climate Sustainability Update. No further action at this time.

Tree Planting Project: Information about the Tree Planting Project is available at <https://sites.google.com/view/meridiantreeplantinginitiative/home>. Commissioners discussed a variety of topics:

- Pros and cons of planting locations: township property, street trees, community/neighborhood/private property.
- Are there priority areas? Are there public spaces without trees?
- Do we ask for in-kind or cash matching
- Prioritize for areas with less tree coverage
- How do we ensure the success and proper maintenance? Seedlings can be deer food
- Consider tree replacement in areas impacted by ash borer or other invasives.
- Larger trees might be more deer tolerant.
- Community event on Township Property (larger trees) AND seedling for public or school groups.
- Colorful, flowering trees are popular (but also smaller, less climate impact)
- Parking Lot (to reduce run-off and heat) Kielbaso has discussed [tree planting plans](#) in Maui (HI) that involves a focus on parking lots.
- The Mall and future Farmers Market Pavilion development may have space.
- Mall management (CBL) may be interested in discussing ways to save \$ (snow plowing, etc.) (Carey). There is a lot of green space around the Mall that could benefit (Deschaine)
- Partnering with schools, registering trees, providing educational info, etc. could have multiple benefits. "Watch the tree grow as the child grows" (Deschaine)
- Being careful about planting near concrete and asphalt. (Premoe)
- The new form-based code has standards for larger setbacks which could provide more growing area for trees. (Premoe)
- See additional comments on the website above from local foresters, arborists, etc. Seek other input and see what other communities have done (Jackson)
- Talk to Parks about Communicating with/about the Mall/Pavilion area.
- Reach out to local schools
- As survey was distributed on 12/5 seeking input and involvement (see website above). (Harvey)
- A study group was established to make recommendations. This includes Jim Kielbaso, Aparna Krishnamurthy, Kirk Lapham, and Rose Vadnais (non-commissioner).

Reports:

Chair's Report: January 8 will be our next meeting. We will set remaining meeting dates at that time – normally on the 1st Wednesday.

Staff Report: Harvey invite input on topics and frequency of Green Theme Presentations in 2020. Premoe suggestion MSU's IPF Director as a good Green Theme speaker.

Planning: The Planning Commission will seek input on the Form-Based Codes early in 2020. The Commission will also be dealing with marijuana dispensaries. There is a large donation of property near north of Bennett Rd that may become a Land Preserve (or expansion of an existing preserve).

Land Preservation: No report.

Energy Team: The Energy Team will be presenting at the [Michigan Sustainability Conference](#) on Nov 21st on a panel with Grand Rapids and Detroit.

Brownfield Redevelopment Authority: Jackson mention

Green Team and Okemos Action: Krishnamurthy reports that Okemos Action is teaming up with the Greenhouse Club to harvest and distribute produce from the greenhouse and help maintain a native plant garden at the High School. They also will be working on a boat cleaning project at Lake Lansing to help reduce invasive species. They've been talking with Susan Andrews. The boat washing station is underused. Harvey also reports a recent survey about the Recycling Center:
<https://www.surveymonkey.com/r/recyclingcenter>

Transportation Commission: McConnell will be asking for input on the climate-related activities at the next meeting.

Public Remarks: None

Meeting Adjourned: 8:22 pm.

Next Meeting: January 8 at 7pm (Please send agenda items to harvey@meridian.mi.us)

Meeting Schedule

Draft Motion: Motion to set Environmental Commission meeting dates for 2020:

- *January 8 Nelson Room, Public Safety
 - February 5 Town Hall Room, Municipal Building
 - *March 4 Community Room, Main Fire Station
 - April 1 Town Hall Room, Municipal Building
 - May 6 Town Hall Room, Municipal Building
 - June 3 Town Hall Room, Municipal Building
 - July 1 Town Hall Room, Municipal Building
 - *August 5 Community Room, Main Fire Station
 - September 2 Town Hall Room, Municipal Building
 - October 7 Town Hall Room, Municipal Building
 - *November 4 Community Room, Main Fire Station
 - December 2 Town Hall Room, Municipal Building
- *Note: Change of location

Goals

2018 Goals

1. Collaborate with the Park Commission and Transportation Commission on wayfinding
2. Review progress on the Greenspace Plan
3. Actualize the Climate Sustainability Plan and review ordinances related to the Climate Sustainability Plan
4. Work with the Economic Development Director to discuss how greening the Township might attract green businesses
5. Collaborate with the Land Preservation Advisory Board

2019 Goals

1. Revise Wetland Ordinance
2. Continue Green Themes - Sustainable paving options; Green Burial; Red Cedar Cleanup; etc.
3. Review Wetland Use Permits

2020 Goals (ideas for discussion)

1. Tree Planting Initiative
2. Green Infrastructure Review
3. Enhance Green Building Codes
4. Green Themes
5. Review Wetland Use Permits
6. Climate Action Plan Incentive Recommendations (suggestion from John Sarver, to be discussed with Energy Team as well)
7. Pass a PAH Ordinance
8. Support Liaison Position from Board
9. Collaborate with Transportation, Land Preservation, Township Board, Energy Team, Planning Commission, Brownfield Redevelopment, Economic Development committees and staff.
10. Environmental Stewardship Awards
11. Other
- 12.
- 13.
- 14.

Tree Team Meeting Summary

The Tree Team, a subcommittee of the Environmental Commission, met on 12/18/2019 to discuss ideas for 2020 Tree Planting Projects. The Team hopes to support a broad range of projects in the future. It is the general consensus however, to focus our time and energy on one or two projects in the Haslett and Okemos schools at this time. There is interest in both districts in getting involved. This could involve a planting day (or days) in the Spring as well as seedling distribution to students/parents. Jim Kielbaso, our retired Forestry professor, offered guidance on species selection. We are continuing outreach to the schools and organizations (such as scouts) and others listed (see comments [here](#)).

A summary of research and resources is available at <https://sites.google.com/view/meridiantreeplantinginitiative/home> (this is editable if you have changes or additions). Contact greenmeridian@meridian.mi.us

Staff Update

Recycling	<ul style="list-style-type: none"> • Planning for 2020 • Sponsorship Outreach • Green Team Table at Mall/Farmers Market (JC Penney Wing 10am-2pm, Sat)
Green Infrastructure	<ul style="list-style-type: none"> • Met with MidMEAC to discuss potential collaboration
Energy	<ul style="list-style-type: none"> • Met with Consumers to discuss renewable and electric charging options
Outreach	<ul style="list-style-type: none"> • Met with Lynn Meikle to discuss utility bill insert topics and related eco-campaigns • January Green Gazette Published (past issues: https://www.meridian.mi.us/residents/township-services/recycle-go-green) • Responded to call-in, social media, and email info requests • Met with MSU/EL/Lansing and others to discuss collaborative outreach and interests (ways to reach students/renters/etc.)
Green Gazette	<ul style="list-style-type: none"> • Current and past issues can be found here. Subscribe here. Please send ideas to Harvey@meridian.mi.us
Environmental Commission	<ul style="list-style-type: none"> • Met with Tree Team • Prepared website to share research and perspectives on Tree Planting • Prepared January Packet • Prepared Climate Emergency Resolution, PAH Memo, Board Liaison Memo, etc. • Scheduled 2020 meeting locations • Research on Wetland Bank – potential for mitigation necessary for future pathway projects. (green lines in map below: 5 mi x 15' = ~9 acres)



Trustee Liaison Memo



To: Board Members
From: Bill McConnell, Chair, Meridian Environmental Commission
Date: December 10, 2019
Re: Trustee Liaison to the Environmental Commission

On December 4, 2019, members of the Environmental Commission unanimously supported the suggestion and recommendation to appoint a member of Meridian's Township Board to the Environmental Commission. We look forward to working with your appointee.

Our next meeting is at 7pm in the Town Hall Meeting Room on January 8th. We typically meet on the 1st Wednesday of the month in the Town Hall Room. Of course, all are welcome to attend these meetings or tune in to the live or recorded broadcast on HOMTV. We greatly appreciate your interest and leadership in helping to preserve and enhance the quality of our environment.

Please do not hesitate to contact myself, LeRoy Harvey (harvey@meridian.mi.us or 853.4466), or Derek Perry if you have questions or suggestions.



Meridian Climate Sustainability Report

January 2020 (draft 1/3/20)



Newly installed “solar garden” will provide a stunning pollinator-friendly habitat in 2020

Meridian Climate Sustainability Report 2020*

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Introduction

Meridian Township is a green community. Appreciation for the environment is revealed in its decades long commitment to its many natural areas, green spaces, rivers, lakes, trails, parks, and land preserves.

As climate change has risen as an environmental, economic, and health priority, Meridian has begun to respond. In 2007, Meridian Township joined over 1000 communities in signing the U.S. Mayors Climate Protection Agreement. In 2017, Trustees renewed this commitment by seeking to reduce greenhouse gas emissions by 80% or more by 2050. A Climate Sustainability Plan, which had been under development for several months, was adopted by reference in the Township Master Plan.

Progress on this plan was first reported in 2018. This report describes accomplishments in 2019 and opportunities for additional improvements in 2020. Much remains to be done. The Meridian Environmental Commission, Green Team, Energy Team, staff, and others invite your participation and suggestions as we move forward to address one of the greatest challenges and opportunities in this century.

We hope that reading this report inspires greater optimism, enthusiasm, ideas, participation, and collaboration. We look forward to comments and involvement as we move forward, understanding that each step we take can affect our individual and community well-being for generations to come.

This report includes a broad overview of progress on 18 Objectives and 86 action steps. These are divided in to 6 major areas and included opportunities to focus on in 2020.

Energy Efficiency

Major accomplishments in 2019 include an engineering study of the Municipal Building. This study is essential to updating the 40 year-old heating, ventilation, and air conditioning systems in the building. This upgrade will also improve comfort levels, provide energy cost savings, and reduce greenhouse gas emissions.

In addition, LED lighting has been installed in both interior and exterior locations including offices, filling bay, parking lot, and street lights. In addition, occupancy sensors have been installed.

Meridian remains a member of MAUI, Michigan Municipal Association of Utility Issues, which is representing municipalities in negotiations with Consumers Energy to secure the most efficient and affordable operation of Meridian's 2365 street lights.

Opportunities in 2020

Meridian will conduct energy audits on several more of its buildings in 2020. In addition, Meridian will utilize funding in its Revolving Energy Fund and Consumers Energy Incentives to support efficiency improvements. HVAC improvements have also been budgeted this year. Energy audits will reveals priorities for expenditures of Meridian's Revolving Energy Fund. A focus on no-cost improvements and fast payback items will help replenish the revolving energy fund. Meridian will also continue to promote energy efficiency through its Communications Department, HOMTV, the Green Gazette, newsletters, employee emails, and other venues.

Renewable Energy

The Meridian Energy Team sponsored Solar Open Houses in June and October 2019. In June, four open houses reached 15 residents and in October, two open houses reached 54 persons. One of the October solar sites was the first solar installation at a condominium in the township. HOMTV helped with promotion of these open houses and produced a more in-depth story on one of the local homes featured in the Open Houses.

Meridian Township residents interested in purchasing a solar electric system usually have a lot of questions. Three Meridian Twp. residents have volunteered to be Solar Energy Advisors to assist fellow residents by either answering their questions by email or phone or by arranging a visit to their home to see their solar system and answer questions. None of the Solar Energy Advisors work for a solar company. A list of solar installers is also available.

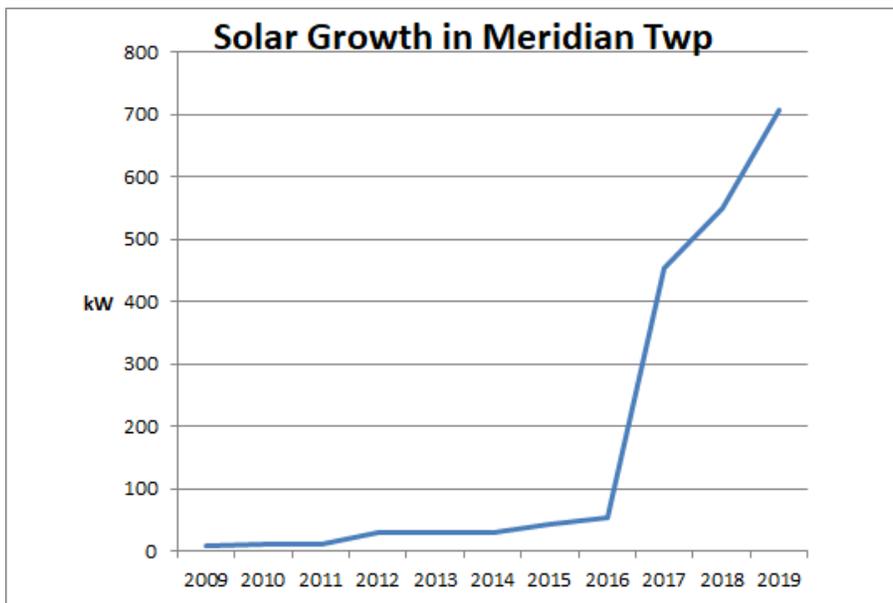
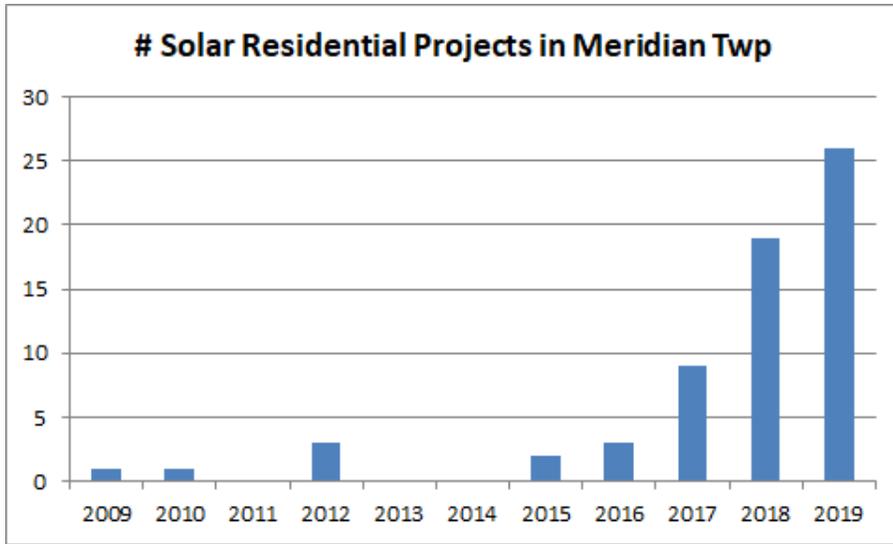
Meridian presented at the 2019 Michigan Sustainability Conference. A representative of the Energy shared details of Meridian Solar Meridian Pilot Project, PV array, Solar Garden and other accomplishments.

The Meridian Solar Array, installed in late 2018, has produced approximately 24 Megawatt-Hours (MWh) of electricity, representing 6.3 % of the current energy used at the Municipal Building in 2019. The chart below details production over 12 months (as of 12/13/19). In total, this equates to 40,600 lbs of CO2 emission saved, which is equivalent to planting over 1000 trees.



Historical and real-time solar energy production displayed at <http://bit.ly/solarmonitor> (downloaded 12/13/19)

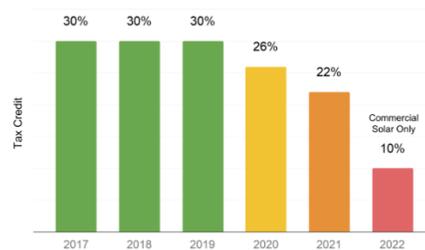
Meridian experienced substantial growth in the number of residential solar projects in 2019. This adds over 160 KW of renewable energy generating capacity bringing the Township total to approximately 700 KW.



Opportunities in 2020

Meridian has budgeted for the installation of two 20 KW installations in 2020. In addition, the Meridian Energy Team “coach” several homeowners and businesses that are purchasing solar systems in 2020. Residential and commercial systems are currently eligible for a 26% Federal credit in 2020.

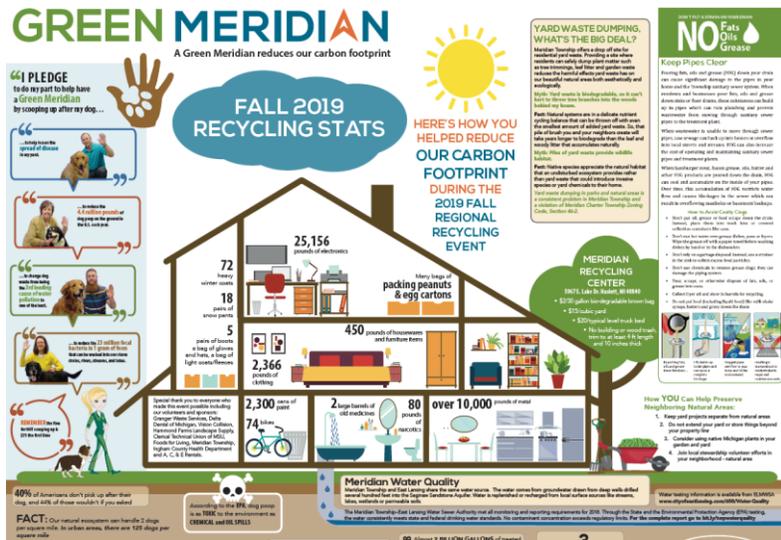
Solar Tax Credit Step Down Schedule



solar hopes to solar tax

Recycling & Waste Reduction

Meridian Township saw more progress on recycling and waste reduction than in other categories. This is partly the result of the Meridian Green Team, an active group of concerned residents. The Green Team helped organize and implement two major recycling events in 2019 and has plans for two more in 2020.



2019 Events	Fall	Spring
Visitors	~600	758
Volunteers	92	95
Electronics (lbs)	25156	33085
Metal (lbs)	14300	22,330
Freon units (AC, fridge, etc.)	93	53
Paint (containers)	2,300	2,493
Peanuts - lg. bags	8	20
Egg Ctn - lg. bags	2.5	5
Household (trucks or trailer loads)	2	1.5
Bikes	74	85
Old Medicines (barrels)	2	NA

2019 saw an increase in volunteers, household items, bicycles, metal, foam peanuts, donations, and Freon-units (AC, dehumidifiers, etc.) over 2018. The amount of paint, electronics, egg cartons, charges, and visitors declined slightly. Several businesses co-sponsored our recycling events this year including Delta Dental, Granger Waste Services, Hammond Farms Landscape Supply, Vision Collision, Foods for Living, A,C, & E Rentals, Meijer, MSU Clerical Technical Union, Ingham County Health Department, and many local restaurants.

The Green Team continued to promote recycling. In addition to outreach to apartment owners and managers, volunteers staffed an information booth at the Farmers Market. Staff, the Green Team, and volunteers collaborated with HOMTV and other local and social media sites to distribute information about recycling and waste reduction. Examples include:

- Facebook Pages: Green Meridian Group, Green Meridian Page, Meridian Township,
- Meridian Township Website
- Prime Meridian Magazine
- The Regional Recycling Coordinators Committee
- Event Flyers
- Special Flyers (fats, oils, grease, wipes, etc.)
- Regional Recycling Brochure
- A Multi-Family Brochure
- Press Releases
- Recyclopeda
- Other related resources such as www.midmichrecycles.org, www.reclaimedbydesign.com, and www.grangernet.com/meridian-township-recycling

Meridian Township also collaborated with MSU, City of Lansing, City of East Lansing, and others on a regional recycling brochure to help students and others in our communities to understand and utilize recycling opportunities.

DROP OFF CENTERS
DISCOVER MORE DROP-OFF LOCATIONS AT MIDMICHRECYCLES.ORG

EAST LANSING
1800 East State Rd, East Lansing
www.cityofeastlansing.com/206/
Drop-Off-Recycling-Guide

LANSING
16936 Wood Rd (Driveway No. 6)
www.grangermet.com/disposal-center-lansing/

MSU
458 Green Way, East Lansing
msu surplusstore.com

MERIDIAN TOWNSHIP
5976 E. Lake Drive, Haslett
redlinedbydesign.com

DELHI/HOLT
1418 Crownburg Road, Holt
www.delhiholt.com/205/
Recycle-with-Delhi

LANSING
16936 Wood Rd (Driveway No. 6)
www.grangermet.com/disposal-center-lansing/

CLINTON COUNTY
www.clinton-county.org/347/
Recycling-Services

EATON COUNTY
www.eatoncounty.org/1817/
Recycle-Centers

FOR MORE INFORMATION
Contact your local recycling office and visit midmichrecycles.org for more about what, when, where, and how to recycle. Also ask about special events, newsletters, and educational opportunities.

City of East Lansing
527.3379.4519

City of Lansing
527.4953.4000

Clinton County
989.234.5186

Delhi Township
527.899.3854

Eaton County
527.463.9889

Ingham County
527.687.4312

Meridian Township
527.955.4488

MSU Surplus Store & Recycling Center
527.355.1723

State of Michigan
800.663.8276

RECYCLING GUIDE
FOR A GREENER GREATER LANSING

WHERE CAN I RECYCLE?

RECYCLE CURBSIDE
Programs vary by community.

- Mixed paper – magazines, books, newspapers
- Mixed plastic bottles & jugs – Clear, no Styrofoam or plastic film bags
- Tin cans & aluminum
- Commingled cardboard & brown paper bags
- Cardboard (sewed boxes)
- Glass bottles & jugs

Contact your local recycling office and waste hauler for details about curbside collection available in your area.

FREE CYCLE!
Is it still usable but you don't need it anymore? Use Craigslist, Let Go, Offer Up, Facebook Marketplace, Ebay, and Freecycle.org!

Many communities offer safe places for online transactions. Contact your local municipality.

DONATE ITEMS

Salvation Army
20251 E. Grand River, East Lansing
salvation.org 527.484.4424

Goodwill
1850 W. Grand River, Okemos
goodwillmi.org 527.347.2150

Volunteers of America
Support your local thrift shops
voan.org 248.945.0101

MSU Surplus Store and Recycling
458 Green Way, East Lansing
msu surplusstore.com 527.355.1723

St. Vincent DePaul
1030 S Washington Ave, Lansing
svp.lansing 527.484.5395

APARTMENTS
Contact your property manager or recycling office to find out what programs, events, and drop-off locations are available or how to start one in your community.

BUY RECYCLED!
Support local thrift shops. Avoid non-recyclable packaging and products. Purchase items with recycled content or that can be composted or recycled easily.

SPARTANS RECYCLE
Find out more about MSU efforts to utilize waste as a resource through its reuse and recycling programs. See recycle.msu.edu

WHAT CAN I RECYCLE?

HAZARDOUS WASTE
If possible, use it up or find someone that can, following instructions on the label. Ingham, Eaton, and Clinton County offer household hazardous waste collections. (See phone #s on back). Ask about special collection options and safe disposal.

PAINT AND MOTOR OIL
To recycle your paint, separate it into two groups: latex paint and oil-based paint. Never mix. Motor oil does not wear out, it just gets dirty, so recycling it saves a valuable resource. Contact your recycling office about paint and oil recycling (including cooking oil).

YARD WASTE
Yard waste does not belong in your trash! You can compost it, or your neighbors or close-by community gardens might be interested. Ask your hauler about curbside collection, drop-off compost centers and yard waste reduction and composting tips.

NOT DOWN THE DRAIN
Do not pour or flush cooking oil, medicines, or "wipes" down the drain! Ask your recycling office about cooking oil recycling and medicine collections.

RECYCLE RIGHT!
Follow instructions for proper recycling. Plastic bags, food waste, and non-recyclables can ruin entire loads of recyclables, ending up in landfills or incinerators. Go to recycling4success.org

Regional Recycling Coordinating Committee

Curbside Recycling: Pending statistics from Granger (information available in 2020)

Recycling Center: Pending statistics from Reclaimed by Design (information available in 2020)

Transportation

Meridian Township voters passed both a road improvement and Redi-Ride millage in 2019. Resulting road improvements will have positive impacts by improving driver safety, improved vehicle mileage (smoother roads), and reduced wear and tear on vehicles. This road millage will also be used to enhance the Townships “Complete Streets” goals, creating a more walkable and bikable community. The Redi-Ride millage renewal will provide efficient transportation services for residents in the year to come. Working with Capital Area Transportation Authority (CATA), the Township has been able to increase the number of buses, expand the weekday hours to 7:30 a.m. and 6:30 p.m., and increase the service area to include locations outside the Township.

Significant pathway improvements were made in in 2019 including the Okemos Road Connector/Boardwalk which completes a major gap in our connected pathway system and a highly visible overlook of a protected wetland area. There has also been significant headway in the pathway connection to/from MSU and East Lansing.

Water Management/Green Infrastructure

Meridian’s “green amenities” remain a prime treasure to residents and visitors to the Township. Its trees, parks, land preservation properties, wetlands, trails, and other landscapes all improve the attractiveness and the environmental qualities of the community. This “green infrastructure” is gaining recognition, credibility, and importance as we seek to manage the impacts of climate change. According to the EPA, green infrastructure is an approach to stormwater management and climate resiliency which:

- Improves water quality and conserves water
- Strengthens the local economy
- Enhances community and infrastructure resiliency
- Uses plants, soils, and nature itself to manage stormwater and create healthier urban environments.
- Can reduce the need for expensive gray infrastructure—pipes, storage facilities, and treatment systems—because plants and soils soak up, store, and use the rainwater.

- Can help maintain a high quality of life through flood protection, cleaner air and water, and more appealing transportation corridors and outdoor spaces.

Meridian began a green infrastructure inventory in 2019, seeking to elevate awareness of various types of green infrastructure. Meridian also set aside resources in 2019 to create a tree planting initiative.

Meridian continues to devote significant staff resources to help reduce soil erosion and other negative environmental impacts on development and redevelopment projects. Meridian’s “Redevelopment-Ready” designation has helped facilitate redevelopment along major corridors and town centers, helping to reduce urban sprawl and balance the goals of development and environmental sustainability.

A Solar Garden installed in November 2019 now adorns the Meridian Municipal Complex. The garden was designed [Elements Studio](#) to communicate Meridian's commitment to sustainability. The various groups of pollinator friendly plants interweave throughout the planting to communicate the interconnected complexity of climate. Plantings were chosen for aesthetics, drought tolerance, deer-resistance, self-seeding abilities, height, and potential for reducing mowing in other areas as well. Installation was completed by Richard Vontersch of [Luke Landscape Company](#) with assistance from Meridian's Water and Sewer Maintenance crew.



Other notable accomplishments in 2019 include the continuation of 10 community gardens. Nine of these included a partnership with the Greater Lansing Food Bank’s Garden Project. These gardens provided growing space for 600 families and helped produce 48,000 pounds of food.

The “Hidden River Rain Garden” received several dozen news pollinator-friendly plants with assistance from the Mid-Michigan Environmental Action Council, local businesses, and volunteers from surrounding neighborhoods.

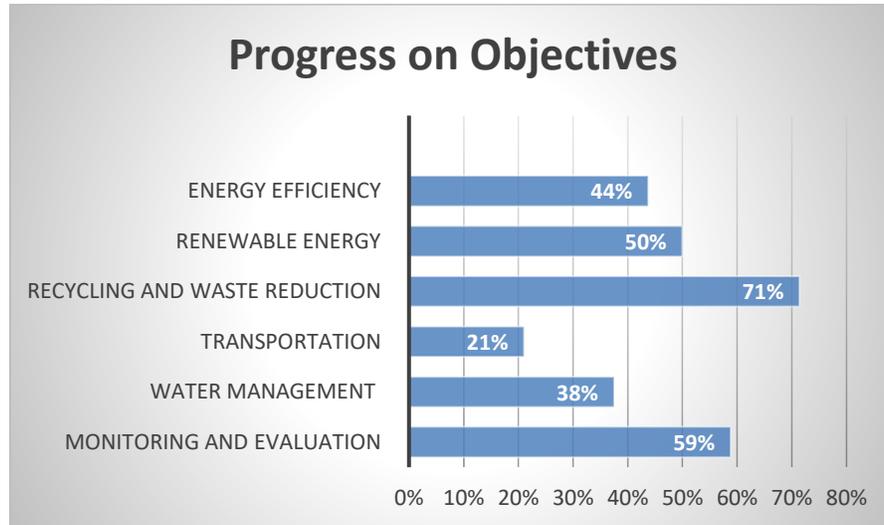


Meridian remains a partner in the East Lansing Meridian Water and Sewer Authority (ELMWSA). Significant renovations are underway which are boosting efficiency and reducing waste. ELMWSA is also considering a renewable energy project near its water treatment center.

Total water usage for 2018 in Municipal Buildings was 1,006,000 gallons (see attachment). Township-wide water consumption in 2018 was 1,043,828,000 gallons.

Conclusion

While Meridian made substantial progress in 2019, much work remains to help reduce greenhouse gas emissions and the social and environmental costs of climate change. The chart below provides a snapshot of progress on the 86 action steps identified in the original Climate Sustainability Plan (2017).



For questions or comments, please contact greenmeridian@meridian.mi.us or 517.853.4466.

Attachment: Summary of Climate Action Measures

Actions receive a “1” if progress occurred, “0” if none occurred, and a “?” if unsure or under investigation.

a. Energy Efficiency		
Objective a.1: Achieve significant energy cost savings and carbon emission reductions in Township facilities.		
1. Implement recommendations from the Consumers Energy Building Performance with Energy Star Study including development and adoption of a Meridian Energy Policy.		1
2. Implement Phase II Energy Recommendations and HVAC Engineering Study and include major HVAC upgrades in Capital Improvement Plans.		1
3. Obtain Energy Star designation for township buildings where possible.		0
4. Use LEED Gold criteria or the equivalent for all projects undertaken by the Township. LEED criteria include measures related to energy efficiency, renewable energy, recycling and waste management, transportation, and water management.		0
5. Monitor energy savings and return 80% of savings to Revolving Energy Fund.		0
6. Budget funds for energy efficiency assessments a minimum of once every five years.		1
7. 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.		1
Objective a.2: Explore other opportunities and partnerships to achieve energy savings.		
1. Identify and pursue State and Federal grant funding, pilot programs, and utility programs.		1
2. Further build partnerships such as Michigan Green Community Network, Clean Cities, Sustainability Forums, and expand collaboration with other local governments in our region.		1
3. Establish incentives to builders to exceed the energy efficiency provisions of the state building code.		0
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.		0
5. Create incentives for the use of white roofs or green roofs to reduce cooling loads.		0
6. Identify opportunities and remove barriers to support the construction of “tiny houses.”		?
7. Review parking requirements and provide incentives to reduce and remove asphalt.		?
Objective a.3: Provide educational opportunities for Township staff and residents about energy consumption, energy savings opportunities, and utility incentives.		
1. Improve delivery of information and data on energy consumption to building managers, Township staff, accounting/budgeting staff, and financial managers.		0
2. Provide Information to Township residents so they are aware of Township efforts and utility and other programs that can assist them.		1
		44%
b. Renewable Energy		
Objective b.1: Develop Township policies and procedures that encourage the use of renewable energy.		
1. Revise Township ordinances and procedures to ensure that they encourage energy conservation and the use of renewable energy.		1
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).		?
Objective b.2: Increase the use of renewable energy at Township facilities.		
1. Obtain 50% of Township electricity from renewable energy by 2025 and 100% by 2035. The Township receives almost all of its electricity from Consumers Energy and indirectly will get 15% of its electricity from renewables due to the state Renewable Portfolio Standard (RPS) requiring the 15%.		0
2. Pursue the installation of solar electric systems at Township facilities by Dec. 31 2018. Identify and evaluate options to fund solar energy installations on Township facilities.		1
3. Participate in Community Solar or other green purchasing programs where possible.		1
4. Identify and seek grant funding for demonstrations of new renewable energy technologies.		0
5. Identify opportunities for non-grid connected applications like solar street lighting and solar lighting for signs.		0
6. Explore solar and other efficient back-up power options for Township facilities.		1
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.		
1. Obtain 25% of total community electric use from renewable energy resources by 2025. This includes the 15% due to Michigan’s Renewable Portfolio Standard (RPS) requirements.		0
2. Provide educational opportunities on current and proposed policies, programs and incentives that could help Township residents, businesses, and institutions utilize renewable energy.		1
3. Share information about funding and vendors with residents and business owners.		1
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 PV systems, elimination of permit fees for PV systems.		0
5. Collaborate with schools and other institutions on joint purchasing of renewable energy systems.		0
6. Inventory, highlight, and promote Meridian homes and businesses that feature net-zero, renewable, LEED, and related features.		1
		50%
c. Recycling and Waste Reduction		

Objective c.1: Increase recycling in owner-occupied dwelling units. Reduce the amount of materials sent to landfills by 10% in 5 years.	
1. Work with Granger and others to expand the use of 96 gallon carts and remove disincentives for recycling.	1
2. Evaluate having a single hauler in the township.	0
3. Launch a collaborative marketing and outreach program in the Township to promote existing recycling services and options.	1
4. Conduct regional education and promotion opportunities in collaboration with the Regional Recycling Coordinating Committee (R2C2), Local First of Mid-Michigan, and other neighborhoods, organizations, and partners.	1
Objective c.2: Expand recycling in multi-family housing, township departments, and in other commercial settings. Reduce the amount of materials sent to landfills by 10% in 5 years.	
1. Promote and expand current recycling efforts in multi-family housing.	1
2. Revise ordinances and policies as necessary to encourage recycling.	0
3. Provide technical assistance to managers and occupants of multi-family housing/apartments.	1
4. Implement a recycling campaign for all township departments.	1
Objective c.3: Offer community- and region-wide recycling events and other partnerships	
1. Partner with local business, schools, neighborhoods, governments, churches, and others to promote and offer recycling events.	1
2. Promote Ingham County household hazardous waste collections.	1
3. Explore collaborative processing and/or transfer of recyclables locally and/or in the region.	1
4. Identify and implement food, cooking oil/grease, composting, and related organic material recycling options.	0
5. Provide educational opportunities concerning the 5 R's: Refuse, Reduce, Reuse, Repurpose, & Recycle.	1
6. Consider a ban on plastic bags for single use purposes. Promote re-usable bags, bottles, etc.	0
	71%
d. Transportation	
Objective d.1: Encourage employee and citizen participation in Smart Commute competitions and encourage Township employees and citizens to be smart commuters year round.	
1. Continue to expand the bike and pedestrian pathways network throughout the Township.	1
2. Incentivize employee participation in Clean Commute competitions and encourage employees to be smart commuters year round.	0
3. Partner with Capital Area Transportation Authority and others to promote "Clean Commute" options and identify efficient paratransit and Redi-Ride efficiency improvements.	?
Objective d.2: Decrease the use of petroleum in the Township vehicle fleet.	
1. Choose the cleanest and most fuel-efficient vehicle that meets the department's needs.	?
2. Use electric or hybrid vehicles whenever possible.	0
3. Use efficient trip planning to reduce the use of fuel.	?
4. Conduct an efficiency inventory and audit of the Township vehicle fleet.	?
5. Adopt a fuel efficiency target for the Township vehicle fleet, including an implementation plan for reaching this target. The plan should incorporate vehicle efficiency and life cycle cost analysis as well as highlight opportunities for purchasing or converting vehicles to be more efficient.	0
6. Review and update the idling policy for the government fleet and/or a community-wide policy.	0
7. Identify and seek funding for alternative fuel vehicles and electric charging infrastructure.	?
Objective d.3: Use land-use planning to reduce vehicle miles traveled and petroleum use.	
1. Accelerate 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.	1
4. Offer fast tracking and technical assistance for sustainable developments.	?
Objective d.4: Provide educational opportunities on transportation alternatives that can reduce petroleum use.	
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.	1
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. Identify funding and opportunities for electric car charging stations.	?
5. Promote the employee and volunteer bike-sharing program.	1
	21%
e. Water Management	
Objective e.1: Decrease water usage at Township facilities.	
1. Use building audits to determine which water fixtures to upgrade.	0
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.	0
Objective e.2: Reduce storm water runoff.	
1. Partner with the Ingham County Drain Commissioner on reduction in storm water runoff.	1

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.	1
5.	Provide credits on water bills for rain barrels, porous pavement, and rain gardens.	?
6.	Encourage projects that reuse storm water for irrigation purposes.	1
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.	1
Objective e.3: Provide educational opportunities concerning water conservation and management.		
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.	1
2.	Use media, web page, HOM-TV, public forums, and other means to encourage water conservation.	0
Objective e.4: Explore opportunities for water efficiency improvements within Meridian's water supply and sewage treatment systems.		
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.	1
		38%
f. Monitoring and Evaluation		
Objective f. 1: Monitor greenhouse gas reductions and energy and cost savings and determine benefits to the community.		
1.	Conduct a greenhouse gas inventory of the Township government operations.	0
2.	An annual progress report will be prepared by township management on activities related to the Climate Sustainability Plan.	1
3.	Evaluate cost-effective energy monitoring systems, software, assistance, and equipment including WeGoWise and Consumers Municipal Energy Efficiency Pilot and invest in monitoring equipment as needed	0
4.	Prioritize top energy-using sites, buildings, and equipment for more frequent monitoring.	1
5.	Explore opportunities with Consumers' E-Billing Program, smart metering, street lighting, and other pilot programs.	1
6.	Calculate annual water, energy, and cost savings and reductions in greenhouse gases. Reporting metrics would make annual comparisons and include:	
1)	Annual greenhouse gas reductions for municipal operations and the community (tons)	0
2)	Annual municipal and community energy consumption (MBTU)	0
3)	Annual energy and cost savings from energy improvements to municipal buildings (MBTU, \$)	1
4)	Annual renewable energy generated from township facilities or purchases (kWh)	1
5)	Annual renewable energy generation in the community (kWh)	1
6)	Materials recycled communitywide (tons)	1
7)	Number of participants recycling (#residents, #businesses)	1
8)	Annual municipal water consumption (gallons)	1
9)	Annual community water consumption (gallons)	1
10)	Number of electric, electric hybrid, or alternative fuel vehicles in the township fleet	0
11)	Annual fuel savings in the township fleet (gallons of petroleum-based fuel)	?
12)	Percent sustainable commutes by mode type (%walked, %biked, % public transportation)	?
7.	Objectives and strategies in this plan should be revisited every 5 years and a summary of accomplishments prepared.	
		59%