



AGENDA
CHARTER TOWNSHIP OF MERIDIAN
ENVIRONMENTAL COMMISSION
REGULAR MEETING
November 4, 2020 7 pm

ZOOM MEETING: ID: **867 3903 8953** Password: **5151**

1. CALL MEETING TO ORDER
2. APPROVAL OF THE AGENDA
3. APPROVAL OF THE MINUTES
4. PUBLIC REMARKS
5. GREEN THEME: "Saving Our Wetlands" with Kendra Grasseschi (presentation and discussion)
6. NEW BUSINESS
 - A. Regional Government/Environmental Networking Session: Nov 17 at 1pm
 - B. Other
7. OLD BUSINESS
 - A. Green Infrastructure Audit - Draft Memo to Planning Commission
 - B. Green Infrastructure Grant Discussion
 - C. Other
8. CHAIR'S REPORT
9. STAFF REPORT
10. WORKGROUP REPORTS & DISCUSSIONS
 - A. Environmental Justice
 - B. Tree Team
 - C. Sustainable Development
11. Commission, Committee, and Trustee Reports
 - A. Board of Trustees
 - B. Brownfield Redevelopment Authority
 - C. Energy Team
 - D. Green Team
 - E. Land Preservation Advisory Board
 - F. MI Township Association (MTA) or MI Municipal League (MML)
 - G. Planning Commission
 - H. Transportation Commission
12. PUBLIC REMARKS
13. ADJOURNMENT



ENVIRONMENTAL COMMISSION REGULAR MEETING
WEDNESDAY, October 7, 2020 7:00 PM

PRESENT: Tom Frazier, Ned Jackson, Jim Kielbaso, Bill McConnell, John Sarver (Chair), Rose Vadnais (Vice Chair), Courtney Wisinski (Trustee Liaison), Luca Wisinski
STAFF: LeRoy Harvey, Stephen Gebes, Samantha Diehl, Phil Deschaine (Treasurer)
GUESTS: Cliff Walls, Tri-County Regional Planning Commission
Kendra Grasseschi, Resident

Approval of Agenda: Approved unanimously with addition of Environmental Commission Grant.

Approval of Minutes: Minutes approved unanimously.

Public Remarks: Gebes mentioned the call in #: 517.349.1232. Grasseschi mentioned her interest in Green Infrastructure.

New Business:

2021 Grant to E.C.: Deschaine provided an update of the Township Budget including the addition of \$300,000 for solar (towards our 2030 100% renewable goal) and \$10,000 for a Green Infrastructure grant to the Environmental Commission. Because 95% of revenue comes from property taxes, the budget is in relatively good shape. Wisinski also mentions \$30,000 to hire a consultant for a Diversity, Equity, and Inclusion (DEI) initiative. This might relate to our environmental justice efforts.

Sarver invited ideas for the \$10,000 grant to the E.C.

- McConnell mentions a demonstration related to **Green Infrastructure**.
- Vadnais voiced support for an educational initiative such as a **green roof**.
- Jackson mentioned **porous pavement** – possibly test zones at local schools. L. Wisinski mentioned a parking shortage at Okemos High School. The tennis courts at Chippewa Middle School are a potential site. Jackson cited a study.
- Harvey and Kielbaso mentioned **rain gardens**. Possibilities include the Market on the Green and learning from the Toward Garden 100+ rain gardens.
- Sarver encourages exploring permeable pavement before the next meeting.
- McConnell mentions a **tree project** in Haslett.
- Deschaine mentions a potential **competition** between schools, involving youth which might also be fundable by local service clubs such as Rotary and Kiwanis.

Please send additional ideas to Harvey. Rose, Ned, and LeRoy (and anyone else who desires) will meet to review ideas and present for further discussion at our November Meeting.

Old Business:

Green Stormwater Infrastructure (GSI) Audit: Cliff Walls provided an overview of his recommendations. Many GSI decisions are in the hands of the Drain Commissioners' office so Walls focused his recommendations on those practical to us, such as clarification of green infrastructure terms (deep-rooted plants), etc. Walls recommends two phases...

PHASE I: Encouraging Green Infrastructure – low hanging fruit.

PHASE II: More technical such as reducing parking requirements and other recommendation mention in the GSI Audit Tool.

Grasseschi suggested that there are opportunities to clarify and simplify the existing code. Sarver mentions that this could happen simultaneously, but is different than the Phase 1 suggestions.

McConnell offered to poll the Planning Commission for their receptivity to support a resolution to the Board supporting modifications to the Code of Ordinances. The Planning Commission may also be interested in GSI-related language in Form-based Code changes Mixed Use Planned Unit Development guidelines. McConnell also suggests the vegetation ordinance could be a logical starting point.

Walls also hopes to move this along on a regional level through the Greater Lansing Committee for Stormwater Management. He will approach the developer of the audit tool about a boilerplate that may have been used elsewhere. McConnell mentions a related document from the MSU Sea Grant. Harvey also invites Walls to suggest materials that might help with Grasseschi's interest in educating people about wetland protection, maintenance, and codes. Walls mentioned that a point person in the township could be helpful for folks who have interest in GSI-related ideas such as rain barrels, rain gardens, etc. Frazier suggested a breakdown between the Phase 1 and Phase 2. Walls offered to help. C. Wisinski will ask the Supervisor about how we might move forward including a possible presentation at a future meeting.

Staff Report:

Harvey briefly provided an update on the Tree Planting and Tree Distribution which was a large success. He also shared an updated on the Recycling Event as well. The pavement sealant ordinance is also beginning to be publicized.

Workgroup Reports

Environmental Justice: Vadnais asked who would like to remain involved and kept in the loop? Sarver is interested. McConnell mentioned that Walls' involvement with and knowledge of Indigenous populations could be helpful. C. Wisinski offered to discuss with Vadnais for potential collaboration with and involvement on the Township's DEI initiative.

Sustainable Building: The current focus is on the GSI audit. Walls will keep us updated on E. Lansing's progress. Sarver will attend a webinar on the Building Code conducted by EGLE.

Tree Team: Kielbaso felt that the project was a big success. He mentions that it will be nice to have trees at Haslett next year. He appreciated L. Wisinski's ability recruit students. McConnell felt the event was inspirational and appreciated the partnerships, especially with Ingham Conservation District and the additional trees that ICD contributed. Harvey also mentioned

support from Lansing Forestry. Vadnais also encouraged us to continue to explore Tree City USA.

Commission, Committee, and Trustee Reports

Township Board: C. Wisinski provided an update on the Diversity, Equity, and Inclusion Work Group (DEI). She is working with our new Human Resources Person and Trustee Jackson on a survey. There is a focus on working internally at first and then expanding in to a larger Task Force. There is funding to bring in experts. C. Wisinski also mentions the grand opening of the Market on the Green. There are some other environmental features such as rain gardens, solar panels, led lights, recycled plastic chairs, and others in the new market. She also mentions that she has some contacts at Michigan Energy Options and the Dept of Health on both green roofs and permeable pavement.

Brownfield Development: Pine Village agreement was postponed. Next meeting is on the 20th.

Energy Team: The Virtual Solar Home Tour occurred on Oct 3 and will continue through the month, focusing on different themes. He'll be keeping track of Youtube views. Harvey mentioned that the solar projects are moving forward.

Green Team: The Green Team will meet Thursday to discuss future recycling events. 1008 vehicles dropped off almost 85,000 lbs of electronics.

Land Preservation Advisory Board: LPAB did a walk-through of the Central Meridian Uplands (across from the Service Center off Okemos Rd.). This may also be the location of a potential wetland mitigation along Grand River near Hamilton. A meeting will be held next Wednesday. The deer management program is underway. 16 deer are at the processor and will be donated to the Food Bank. The Land Preservation millage is on the ballot in the fall and is down to .1 mil (a fraction of the original amount.)

Michigan Township Association: Frazier reports that there is a package of bills related to PACE (Property Assessed Clean Energy) to help finance energy improvements on residential properties. Bill # 6036-6039. This could be an opportunity for the Township and/or the County. Jackson asked about Electric Vehicle legislation. Sarver mentioned that this relates to Tesla auto sales circumventing dealerships.

Planning Commission: McConnell mentions a rezoning of a foster care facility on Park Lake and a review of the multi-use planned unit development ordinance.

Transportation Commission: The Commission has not met since August. There is upcoming discussion about traffic lighting at Mt. Hope on

Public Comments: Walls mentions the Wild and Scenic Film Festival coming up on December 6 which will include national films and clips from local watershed groups. This is a fundraiser for the Middle Grand River Organization of Watersheds. (MGROW)

Meeting Adjourned at 8:44 PM

Wetlands in the Township

Most people are familiar with the cattail or lily pad wetland found in areas with standing water, but wetlands can also be grassy meadows, shrubby fields, or mature forests.

Many wetland areas have only a high ground water table and standing water may not be visible.

According to the U.S. Fish and Wildlife Service, over 50% of Michigan's original wetlands have been drained or filled, thereby making the protection of remaining wetlands that much more important.

Over 25% of Meridian Township is covered in wetlands (5778 of 20,160 acres), making wetland stewardship an important responsibility and opportunity in every neighborhood.

Want to help protect our wetlands?

Volunteer with the Meridian Township Conservation Corp! Call Emma Campbell at 517.853.4614 for more info!

Also visit MyWatersheds.org, MGROW.org, and Meridian.mi.us/gogreen to more about local water protection efforts!

Your actions can help keep our water clean, reduce pollution, and prevent flooding!



*Help keep Meridian Township beautiful!
Find out how and spread the word!*

Meridian.mi.us/GoGreen
www.MyWatersheds.org



**POLLUTION
ISN'T PRETTY.**

Protect Our Wetlands

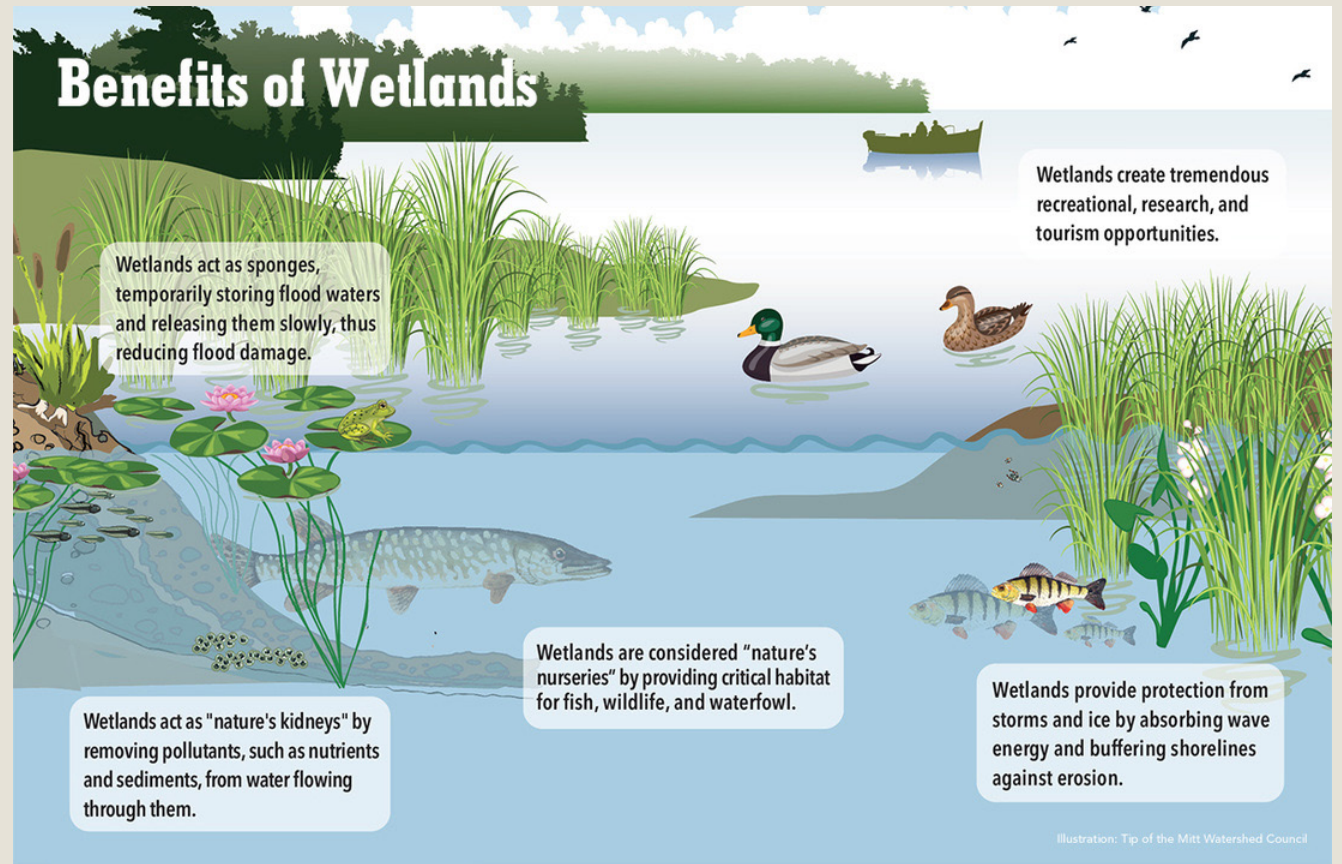
for clean water and a greener Meridian



Wetland Services

Wetlands are a critical part of our environment helping reduce flooding, clean water, provide habitat, and offer other benefits:

- **Water storage** – wetlands act as a sponge to absorb water during floods and slowly release the water back during droughts. They also slow down the water's momentum and decrease erosion.
- **Water filtration** – wetlands allow pollutants like sediments and nutrients to be absorbed or settle to improve water quality.
- **Habitat and nurseries**– wetlands are diverse ecosystems that are home to a wide variety of plants and animals.
- **Recreation** – wetlands offer opportunities to hike, birdwatch, canoe and enjoy nature along with educational opportunities for youth and adults alike
- **Reduction of mosquito populations** – a healthy, functioning wetland can actually reduce mosquito populations by providing proper habitat for the natural enemies of mosquitos and by preventing or reducing flooding.



Together We Can Protect Our Wetlands

- DO inform neighbors, developers, and state and local governments about the important role wetlands play.
- DO plant native vegetation on your property and remove invasive species.
- DO protect a 20 foot natural vegetation buffer around the wetlands.
- Do contact the Planning Department at 517.853.4560 if you are planning construction or landscaping within 40 feet of a wetland.
- Do contact Public Works at 517.853.4440 any time you are moving dirt and/or disturbing the earth. A Soil Erosion and Sedimentation Control (SESC) Permit may be required.
- Do not put yard waste or "fill material" (soil/dirt, stones, mulch, etc.) in wetlands or within the 20 foot natural vegetation buffer.
- Do not mow in the wetlands or within the 20 foot natural vegetation buffer.
- Do not use any chemicals, fertilizers or pesticides in the wetlands or within the 20 foot natural vegetation buffer.



Clinton County
Clinton County Road Com.
Delhi Charter Twp
Delta Charter Twp
DeWitt Charter Twp
City of DeWitt
City of East Lansing
Eaton County

City of Grand Ledge
Ingham County
Lansing Charter Twp
Lansing School District
City of Lansing
City of Mason
Meridian Charter Twp
Michigan State University
Waverly Community Schools

Administrative Support:

Tri-County Regional
Planning Commission
3135 Pine Tree Road.
Suite 2C
Lansing, MI 48911
(517) 393-0342
Fax (517) 393-4424

To: Meridian Township Environmental Commission
From: Clifford Walls, GLRC Coordinator
Date: 10-29-20
RE: Meridian Township Green Stormwater Infrastructure Code Audit

With help from the Greater Lansing Regional Committee for Stormwater Management (GLRC) Coordinator, Meridian Township's Environmental Commission performed an audit of the Township's Code of Ordinances. The goal of this audit was to identify sections of municipal code that may discourage, complicate, or outright prevent the widespread adoption of green infrastructure in the Township. Using a Green Stormwater Infrastructure (GSI) Audit Workbook developed by the Wisconsin SeaGrant, Township regulations were reviewed to identify any barriers to green infrastructure stemming from outdated, unclear, or prohibitive code language.

With a Municipal Separate Storm Sewer System limited to Township owned properties, much of the permitting and design of stormwater management infrastructure at private developments falls outside of the Township's purview and is instead administered by the county Drain Commission. However, the Township's zoning, landscaping, and other non-stormwater specific regulations can still have great influence on the potential adoption of green infrastructure practices. These areas were the focus of this exercise.

The GSI audit identified various codified barriers that fall into two categories. The first category of barriers is best described by a lack of language defining, allowing, or encouraging green infrastructure. While the Township Master Plan and Code of Ordinances express the Township's desire for sustainability and to preserve its natural resources, nowhere is green infrastructure mentioned by name as a valuable tool to achieve it. Green infrastructure features are not defined and there are no purpose statements indicating the Township's support for their installation. In the absence of clear language and intent, the likelihood of GSI implementation is determined by the interpretation of the code by staff, builders, and developers. Solutions to barriers in this category can be addressed by broad purpose statements that communicate the Township's desire for developers to propose or include more green infrastructure in their plans.

The second category of barriers are more technical in nature and are related to either specific requirements of the ordinance or Township processes. Some present outright obstacles to GSI implementation while others are simply opportunities to optimize specific standards to either accommodate green infrastructure or discourage the advance of turf and hardscape. Some of these obstacles could also be overcome by making minor changes to code language but are considered Phase 2 recommendation because their adoption would more significantly impact current processes or require new layers of Township approval.

Recognizing that the remedies to these different obstacles will require layers of discussion and consideration by multiple commissions and the Township Board, it is recommended that these barriers

are addressed in a phased approach. The following Phase 1 recommendations address the absence of GSI language and recommend minor changes to codify the Environmental Commission's existing goals. Rather than prescribing new requirements, Phase 1 recommendations will seek to clearly encourage the implementation of GSI. In contrast, Phase 2 recommendations focus on structural or procedural changes of a technical nature that expand the options available to homeowners and developers.

It should also be noted that the Environmental and Planning Commissions, staff, and Township Board must determine which of these suggested changes are desirable and/or feasible in Meridian and do not conflict with other Township goals or ordinances. Any change should also conform with the requirements of the county drain commission and any other relevant authority. The following recommendations are simply areas that deserve a closer look. Once Township priorities and possibilities are identified, then begins the work of drafting specific language for inclusion in the Code.

A handwritten signature in black ink, appearing to read 'C. Walls', with a long horizontal flourish extending to the right.

Clifford Walls
GLRC Coordinator

Phase 1 Recommendations

Use purpose statements to specifically encourage green stormwater infrastructure and naturalized drainage in the Code of Ordinances.

Though existing purpose statements (Section 86-5) and review criteria (Section 86-156) either mention outcomes that can be achieved through GSI or allude to natural stormwater solutions, there is no direct mention of Green Infrastructure, Low Impact Development, or other specific reference that encourages a naturalized, engineered stormwater control measure.

Section 86-5: "Encourage the preservation and use of lands, open space, and natural resources in accordance with their character and suitability for particular purposes and limit the improper use of land and natural resources."

Section 86-156: "Stormwater detention, retention, transport, and drainage facilities shall, insomuch as practical, be designed to use or enhance the natural stormwater system on-site, including the storage and filtering capacity of wetlands, water features, and/or the infiltration capability of the natural landscape. Stormwater facilities shall be designed so as not to cause flooding or the potential for pollution of water features or groundwater, on-site or off-site."

Add goal/purpose about how low impact design/GSI/naturalized drainage is a preferred feature.

Example: "It is the purpose of these standards to promote the use of green infrastructure or vegetated stormwater management measures, where suitable, to manage stormwater runoff."

Clearly state green infrastructure implementation goals in the Master Plan.

Currently there is no direct mention of green stormwater infrastructure in the Master Plan. GSI is a tool to meet some of the Township's stated goals in the "Preserve Open Space and Natural Areas" section, such as "conserve water retention areas, linking natural areas, promote sustainable growth, water quality protection...". There is an opportunity to include a direct reference (or stated preference) for GSI.

The Master Plan does reference the TCRPC Water Policy document which does expand on GSI and watershed protection, but there is no specific commitment to it.

Consider stating GSI goals directly during the next Master Plan update.

Workbook Example: "It is the goal of the Township to implement policies, investments, standards and actions, including the use of green infrastructure, that will protect and enhance water quality within the Township and its watersheds."

In the Master Plan, describe green infrastructure and water quality beyond its drainage/infrastructure utility.

GSI has many community benefits beyond drainage and flood control. It can increase property values, sequester carbon, reduce energy and chemical usage, increase biodiversity and provide placemaking benefits. Promote the multitude of benefits of GSI techniques in private and municipal projects in Master Plan.

Include GSI pilot/municipal projects in Master Plan objectives.

Specific language such as “complete a permeable paving demonstration project in a municipal parking lot” helps in grant applications.

Define “Low Impact Development” or “Green Infrastructure” in the Code of Ordinances.

Green Infrastructure and Low Impact Development is not defined in the Code. There are stated goals/preferences for reducing impervious surfaces/protecting water/reducing runoff/maximizing green space, etc that GSI helps achieve, but it should be defined in the Code in order to promote it throughout.

An inclusive definition of green infrastructure can be: “Vegetated stormwater management measures. Swales, bioretention areas, rain gardens, amended soil areas, pocket or modular wetlands, stormwater trees, vegetated or green roofs, and similar practices *specifically designed to provide water quantity and water quality treatment of stormwater runoff, and to promote evapotranspiration and infiltration of stormwater.*”

Add definitions of the different GSI practices to Code of Ordinances.

Adding definitions of the different green infrastructure practices themselves (rain garden, bioretention, bioswale, etc) is especially important to providing guidance and encouragement to applicants and effective standards for its use in the community.

Include definitions of rainwater-harvesting and stormwater control elements in Code.

Include definitions or illustrations of green roofs, planter boxes, rain barrels and cisterns; this ensures reviewers and designers will know that these elements are allowed or encouraged. There is currently no mention of rain barrel, rain collection, etc in municipal code.

Promote naturalized landscaping for use in stormwater treatment practices in Landscaping standards/specifically allow native plantings in lawns and front yards.

Adding language like *“rain gardens, naturalized landscapes, and vegetated stormwater controls may be incorporated in lawn areas where planned and designed to receive stormwater runoff”* or *“The incorporation of stormwater trees, native plants, and other vegetative stormwater control measures into landscaping plans are encouraged”* makes it clear that these are allowable features. Referencing the function of its design helps reduce confusion or abuse of the ordinance, preventing a property owner from justifying a neglected lawn/landscape as a “naturalized landscape.”

Currently, no occupancy can be granted until a lot has been “seeded, covered with sod, or covered with appropriate ground cover.” Language could be added to include that native/deep rooted plants may be used. Make it known that native plants are “appropriate ground cover” and may be used (with or without review/approval).

Promote native plants in the Lake Lansing Residential Overlay District.

“Section 86-442 (10) Stormwater” requires that runoff from new construction directed towards Lake Lansing shall be filtered through a vegetated area, a minimum of 20 feet in width, before entering the lake. It states that the vegetated area may include a grass lawn.

Encourage the planting of native, deep rooted buffers to receive this runoff.

Add “reducing runoff” as a goal for parking lot landscaping requirements.

Currently, Section 86-758 indicates that parking lot interior landscaping “shall be installed and designed to control traffic, provide shade, screen views into and within vehicular use areas, and separate parking.” The inclusion of “reducing runoff,” either in a following sentence or within the existing language, will help communicate that goal. The word “shall” may be too strong, so a separate sentence encouraging it may be more appropriate.

Phase 2 Recommendations

Encourage that parking lot islands, cul de sacs, and other parking lot landscaping are designed for stormwater treatment. Create a process to waive numerical, spacing, and species requirements in landscaping areas in exchange for GSI.

Actively encouraging the use of islands and perimeters for green infrastructure gives important direction to site planners. Landscaping in parking lots, parking lot islands, and cul de sacs can mitigate urban heat island effects, beautify what is otherwise hardscape, and be co-designed as green infrastructure for stormwater treatment. Encourage this practice.

Existing numerical, dimensional, and species requirements may conflict with the design of these vegetated stormwater controls. Waivers can allow variation where needed to accommodate green stormwater infrastructure implementation.

For Parking Lot Landscaping standards, the Code is currently prescriptive:

Section 86-758:

"A minimum of two canopy trees shall be provided for every 10 parking spaces, meeting the following standards:

1. Canopy trees shall be a minimum of two inches in caliper at time of planting.
2. Conifer trees shall be a minimum of eight feet in height at time of planting.
- d. A minimum of 50% of each landscaped area, at time of planting, shall be planted with grass, ground cover, shrubs, or other living vegetation."

Similar with cul de sac requirements:

Section 62-64

- a) A minimum of one canopy tree or one conifer tree shall be planted for every 1,000 square feet of ground area within each cul-de-sac island.
- b) Canopy trees shall be a minimum of three inches in caliper and shall be planted at least 10 feet from the back of curb.
- c) Conifer trees shall be a minimum of eight feet in height and shall be planted at least 15 feet from the back of curb.
- d) Canopy trees shall be maintained so the lowest branch is a minimum of 13 feet above the elevation of the street surface.

The Township should exempt these requirements if the design serves the interest of stormwater control.

Example: "The planting plan may be varied to accommodate the design of vegetated stormwater control measures, so long as the total number of trees required is met. The use of deciduous trees (which may function as stormwater trees) is encouraged."

Example: "The integration of depressed bioretention areas used for landscaping and stormwater management is strongly encouraged. Where areas are designed specifically for stormwater management, the planting and dimensional requirements may be varied"

as necessary to ensure the area functions effectively for stormwater treatment, so long as the equivalent amount of landscaping, planting, or screening is provided.”

Allow vegetated stormwater management areas, such as bioretention areas, rain gardens, stormwater trees or other plantings, to count towards required landscape minimums.

Requiring ornamental landscaping in addition to bioretention areas or other GSI is a significant barrier. Often, there will not be enough area on the site to accommodate both.

Allow variation in landscape requirements in exchange for GSI implementation.

Example: “The planting plan may be varied to accommodate the design of vegetated stormwater control measures, so long as the total number of trees required is met. The use of deciduous trees (which may function as stormwater trees) is encouraged.”

Allow greater flexibility in parking deferments.

Current language indicates that the purpose of parking deferrals is to eliminate unused paved areas and unnecessary levels of stormwater runoff. However, it states that areas of land where parking construction was deferred shall not be used to satisfy landscaping requirements or stormwater detention/retention requirements. While the intent is likely to prevent stormwater ponds from being sited in these areas, the Township could encourage bioretention/naturalized drainage by offering deferments in exchange for utilizing these areas for GSI.

Encourage or require that preliminary or sketch plans include stormwater measures and landscape techniques for initial review.

Early review of land use concepts helps identify opportunities to integrate green infrastructure into landscaping and drainage. Putting grading/drainage and landscaping plans on the same sheet can illustrate where and how landscaping and stormwater management can be integrated.

Encourage the integration of vegetated stormwater controls into screen or buffer areas.

Current language is prescriptive on design. Section 62-64 requires a landscape buffer 20 feet wide when a subdivision entrance is along a major road. It states the buffer shall include trees, shrubs, berms or walls. Section 86-756 requires a vegetated buffer and vertical screen for parking lots adjoining residential districts or public streets. Per Code definitions, “When a screen is called for, this shall be a dense evergreen planting area or solid fence as determined and approved by planning commission.”

The inclusion of language allowing for variation if co-designed for stormwater, and/or indicating a preference for naturalized buffers, can loosen this prescriptive requirement.

Example: *“The buffer planting plan may be varied to accommodate the design of vegetated stormwater control measures, so long as the equivalent amount of screening is provided.”*

Allow vegetated open channels/curb cuts in lieu of curb and gutter.

Options for swale drainage, or partial curb-and-drain profiles with inlets for bioretention can allow for enhanced water quality and infiltration. Current parking lot requirements (Section 86-756) do offer flexibility to waive curb and gutter requirements for parking lot exteriors and islands. However, one criterion is that the parking lot has fewer than 25 parking spaces, which is limiting.

A process for a waiver exists, but it’s recommended to include language promoting “curb cuts” and inlets for bioretention and reference them as practices that could waive curb and gutter requirements.

Section 62-62: requires 6 inches straight faced curb and gutter on all streets and roads in accordance with the standards of county road commission.

Offer waivers of design or architectural provisions to accommodate stormwater harvesting/control measures (planters, cisterns, green roofs, etc).

Where there are waivers for standards, “siting of green infrastructure measures” should be a specific reason for the grant of a waiver.

Currently, section 86-440 MUPUD 3 A/B/F offers design flexibility in exchange for amenities like porous pavement, the reduction of impervious surfaces, more greenspace, etc, but GSI should be encourage by name. There are many amenities listed under a wide variety of goals. An Overall purpose statement, or one withing each district regulation section, that communicates the Township’s preference for GSI, would be clearer. Offer flexibility in design, upon approval, if it is for a stormwater control. “Siting of green infrastructure measures” should be listed as a reason for a waiver.

Allow stormwater control measures to be sited within setback areas.

Allowing ponds, bioretention areas and other surface stormwater controls within setback typically increases the density that can be achieved on site. Currently, half of the area of a detention or retention pond counts as “pervious surface” under the pervious surface percentage requirement.

Increasing the percentage of stormwater ponds that is considered “pervious” can reduce the total amount of turf grass planted on site.

Include “siting of green infrastructure” as a permitted yard encroachment (Section 86-564).

Clearly encourage permeable/porous pavement.

Current code language requires “concrete or asphaltic” surfacing. While there are porous asphalt and concrete options, that is not obvious to the average person. Add “Permeable pavement is encouraged and may be use upon approval of the Township engineer.”

There is reference to porous pavement in Section 86-440 as a possible amenity in mixed use PUDs, however it is listed as one of many possible design features and limited to this section of the Code. The above suggestion makes the Township’s preference known to developers of all sites and homeowners looking for options to redo their driveways.

Reduce the Maximum Lot Coverage percentage unless a portion is permeable.

The current impervious yard coverage limitation (Section 86-754) is 35%. It’s possible to lessen the allowable cover unless a portion is permeable or allow for expanded parking if that expanded area is permeable.

For example, East Lansing’s existing code indicates that: *“In all residential districts, the amount of paving in a front yard and in a side yard along a street on a corner lot shall not exceed an amount equal to 25 percent of the front yard area as defined in section 50-9 of this chapter or up to 35 percent where 10 percent of the paving is pervious paving material.”*

Consider maximum rather than minimum frontage and setback requirements.

Per the dimensional requirements form (Section E) Current setback and frontage requirements are set as minimums. Reduced setbacks and frontages requirements make for reduced roadway/driveway length and smaller areas of turfgrass. Consider setting a ceiling rather than a floor.

Include a roof material and design exception for Green Roofs.

Currently code (86-368) requires residential roofs follow prescriptive design and material specifications. There is exemption for alternative energy/solar panels, but not for green roofs.







Add Green Roofs as an eligible exemption upon approval of the Township.

Designate staff person to field citizen questions regarding GSI and develop procedures to address common GSI questions from residents.

It is important that all staff know to transfer questions to a knowledgeable person or department, and having a written procedure for common requests greatly facilitates both the use of these techniques and the management of neighbor inquirers and concerns.

For example, many in the region believe rain collection is illegal. By offering guidelines and encouragement for installation, the Township can reduce these concerns. Having a point person within the township to field general questions or concerns regarding GSI (and its legality under the code) is an important step.

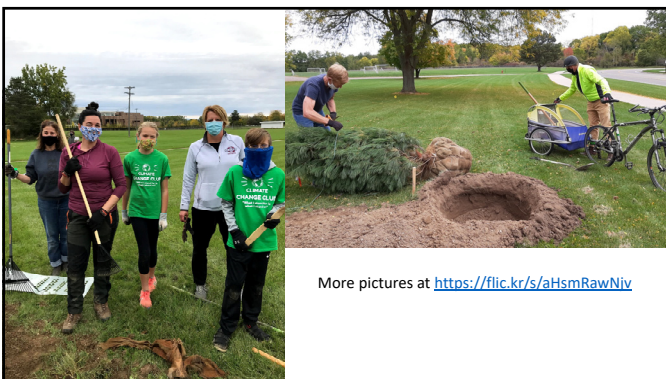


 Air Trees improve air quality by producing oxygen and storing carbon. • 100 trees remove 53 tons of carbon dioxide (CO ₂) and 430 pounds of other pollutants every year	 Water & Soil Trees improve water quality by: • Filtering pollutants • Stabilizing soils • Absorbing rainwater • Reducing erosion	 Energy Trees reduce our energy usage by providing shade. • The net cooling effect of a young, healthy tree is equivalent to 10 room size air conditioners operating 20 hours a day
 Biodiversity Trees support biodiversity by providing food, shelter and habitat for wildlife. • A single tree can be home to hundreds of other forms of life, including mammals, birds, amphibians, insects and other plants.	 Economic Benefits Trees improve the economic viability of communities. In tree-lined areas: • Visitors spend 9 to 12% more in businesses • Residential property values increase up to 37%	 Trees Also: • Reduce noise pollution • Encourage neighborhood interactions • Reduce graffiti and crime • Reduce speeding in residential areas

Timeline

- 2019 Trustees budget for a Green Infrastructure Project
- Tree Team formed
- Reach out to experts for ideas
- 460 saplings distributed at Farmers Market
- 40 larger trees planted at Chippewa Middle School, Okemos involving 50+ volunteers
- Begin to envision 2021! More projects? Tree City USA?





More pictures at <https://flic.kr/s/aHsmRawNiv>

Thank you!

- Meridian Board of Trustees, Environmental Commission, and Staff
- Ingham Conservation District
- Michigan Demolition and Excavation
- Okemos Public Schools
- Lansing Forestry Department
- Environmental Committee, League of Women Voters Lansing Area
- Hammond Farms
- 50 Volunteers and 12 additional Tree Lovers, Experts, and Advisors
- And more!