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MEMORANDUM

To: Crockery Township Planning Commission
From: Aaron Bigelow
Date: 9/8/2026
Re: Master Plan – Planning Commission Recommendation of Adoption

At your March 17, 2026 meeting, the Planning Commission completed an updated draft of the Chester Township Master Plan which was then approved by the Board for distribution to neighboring communities and agencies. Following this required 63-day public comment period and legal review, the proposed Master Plan has returned to the Planning Commission for a final review and recommendation of adoption to the Township Board.

We did not receive any public comments from neighboring communities or agencies. A public hearing has been scheduled for your September 15 meeting.

Resolution

Pending public comment and Planning Commission deliberations at your September 15 meeting, the Planning Commission may adopt the attached Resolution which recommends adoption of the updated Master Plan to the Township Board.

The Township Board will then review the Master Plan and proceed with their own Resolution of adoption, after which the Master Plan will become effective.

If you have any questions, please let us know.

AB

Planner

**RESOLUTION
TOWNSHIP OF CROCKERY
COUNTY OF OTTAWA, MICHIGAN**

**CROCKERY TOWNSHIP PLANNING COMMISSION
RESOLUTION 2026-__
TO APPROVE MASTER PLAN**

WHEREAS, the Michigan Planning Enabling Act (MPEA) authorizes the Planning Commission to prepare a Master Plan for the use, development and preservation of all lands in the Township; and

WHEREAS, the Crockery Township Planning Commission prepared a proposed new Master Plan and submitted the plan to the Township Board for review and comment; and

WHEREAS, the Crockery Township Planning Commission made the necessary inquiries, investigations, and surveys of the appropriate resources of the Township, and considered the character of the Township and its suitability for particular uses judged in terms of such factors as the trend in land and population development; and

WHEREAS, the Master Plan, as proposed, will promote public health, safety and general welfare; will encourage the use of resources in accordance with their character and adaptability; will avoid the overcrowding of land by buildings or people; will lessen congestion on public roads and streets; and will facilitate provision for a system of transportation, sewage disposal, safe and adequate water supply, recreation and other public improvements; and

WHEREAS, the Master Plan, as proposed, includes the material described in the following Table of Contents, Appendices, and Maps:

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- Crockery Township Community Input Summary
 - Housing Assessment and Census Data – Master Plan
 - Water Resource Friendly Marina Development

WHEREAS, on April 14, 2026, the Crockery Township Board reviewed the proposed Master Plan prepared by the Planning Commission and authorized distribution of the Master Plan to surrounding municipalities and regional planning organizations as identified in the MPEA; and

WHEREAS, notice was provided to the surrounding municipalities and regional planning organizations as provided in the Michigan Planning Enabling Act; and

WHEREAS, the Crockery Township Planning Commission held a public hearing on September 15, 2026 to consider public comment on the proposed new Master Plan, and to further review and comment on the proposed Master Plan; and

WHEREAS, the Planning Commission found that the proposed new Master Plan is desirable and proper and furthers the use, preservation, and development goals and strategies of the Township;

NOW, THEREFORE, IT IS RESOLVED, that the Crockery Township Planning Commission recommends Township Board approval of the Master Plan, as presented to the public on September 15, 2026.

The foregoing resolution was offered by Commissioner _____ second offered by Commissioner _____.

Upon roll call vote the following voted:

"Aye": _____

"Nay": _____.

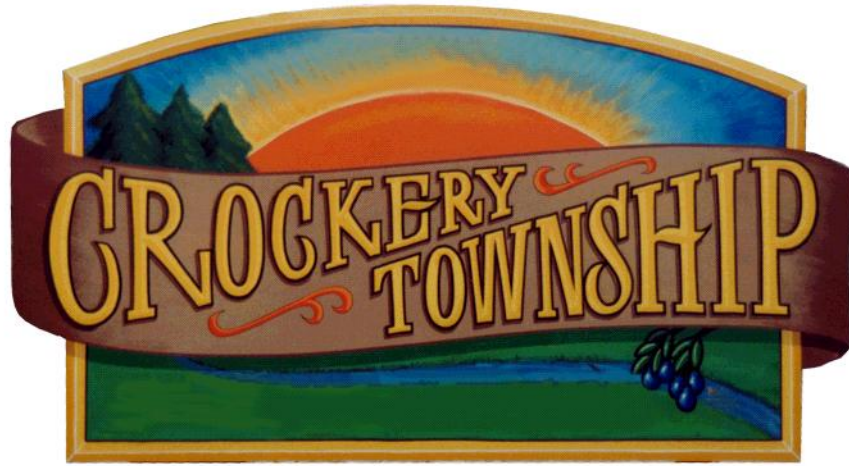
The Chairperson declared the resolution ADOPTED.

_____, Secretary

CERTIFICATE

I, the undersigned, the Secretary of the Planning Commission of the Township of Crockery, Ottawa County, Michigan, certify that the foregoing is a true and complete copy of a resolution adopted by the Planning Commission at a regular meeting held on the 15 day of September, 2026. I further certify that public notice of said meeting was given pursuant to and in full compliance with Michigan Act 267 of 1976, as amended, and that the minutes of said meeting were kept and will be or have been made available as required by the Act.

_____, Secretary
Crockery Township Planning Commission



CROCKERY TOWNSHIP
MASTER PLAN

_____, 2026

Prepared Through the Efforts of the:

CROCKERY TOWNSHIP PLANNING COMMISSION

Ryan Arends, Chair

Mike Munch, Vice Chair

Robert Machiela, Secretary

Lindsey VanDoorn, Vice Secretary

Ryan Kelly

Jake Noel

Dave Willis

With Assistance From:

Fresh Coast Planning

With the Support of the:

CROCKERY TOWNSHIP BOARD

Erik Erhorn, Supervisor

Kathy Buchannan, Clerk

Judy VanBemmelen, Treasurer

Ryan Kelly, Trustee

Rich Suchecki, Trustee

Crockery Township

17431 112th Avenue

Nunica, MI 49448

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Placeholder:

1. PC Resolution
2. Board Resolution of Adoption

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Chapter One – Introduction

Legal Requirement

In accordance with the Michigan Planning Enabling Act, Act 33 of 2008 (MPEA), as amended, this Master Plan was created to serve as a guide for development within Crockery Township (the “Township”).

Intent and Purpose

The fundamental purpose of the Master Plan is to enable the Township Planning Commission to establish a future direction for the Township's physical development. The MPEA specifically gives the Township Planning Commission the authority to prepare and officially adopt such plans. In Crockery Township, the Board asserts the right of final approval of the Plan. This Plan will serve as a policy guide for the conservation of agricultural land and natural resources as well as for the physical development of property to be enjoyed by present and future Township residents. The Plan also will serve as the basis for the Crockery Township Zoning Ordinance (the “Zoning Ordinance”) regulating the use and development of land in the Township.

The MPEA provides that a local unit of government may adopt, amend, and implement a master plan. Further, if adopted, a Master Plan shall address land use and infrastructure issues and may project 20 years or more into the future and must be reviewed every five years.

In the preparation of a Master Plan, a Planning Commission shall do all of the following, as applicable:

- Make careful and comprehensive surveys and studies of present conditions and future growth within the planning jurisdiction with due regard to its relation to neighboring jurisdictions.
- Consult with representatives of adjacent local units of government in respect to their planning so that conflicts in master plans and zoning may be avoided.
- Cooperate with all departments of the state and federal governments and other public agencies concerned with programs for economic, social, and physical development within the planning jurisdiction and seek the maximum coordination of the local unit of government's programs with these agencies.

The general purpose of a master plan is to guide and accomplish, in the planning jurisdiction and its environs, development that satisfies all of the following criteria:

- Is coordinated, adjusted, harmonious, efficient, and economical.
- Considers the character of the planning jurisdiction and its suitability for particular uses, judged in terms of such factors as trends in land and population development.
- Will, in accordance with present and future needs, best promote public health, safety, morals, order, convenience, prosperity, and general welfare.
- Includes, among other things, promotion of or adequate provision for one or more of the following:
 - A system of transportation to lessen congestion on streets and provide for safe and efficient movement of people and goods by motor vehicles, bicycles, pedestrians, and other legal users.
 - Safety from fire and other dangers.
 - Light and air.
 - Healthful and convenient distribution of population.
 - Good civic design and arrangement and wise and efficient expenditure of public funds.

- Public utilities such as sewage disposal and water supply and other public improvements.
- Recreation.
- The use of resources in accordance with their character and adaptability.

Cornerstone Components

A master plan shall include maps, plats, charts, and descriptive, explanatory, and other related matter and shall show the planning commission's recommendations for the physical development of the planning jurisdiction. A master plan shall also include those of the following subjects that reasonably can be considered as pertinent to the future development of the planning jurisdiction:

- A land use plan that consists in part of a classification and allocation of land for agriculture, residences, commerce, industry, recreation, ways and grounds, public transportation facilities, public buildings, schools, soil conservation, forests, woodlots, open space, wildlife refuges, and other uses and purposes.
- The general location, character, and extent of the following:
 - All components of a transportation system and their interconnectivity including streets and bridges, public transit, bicycle facilities, pedestrian ways, freight facilities and routes, port facilities, railroad facilities, and airports, to provide for the safe and efficient movement of people and goods in a manner that is appropriate to the context of the community and, as applicable, considers all legal users of the public right-of-way.
 - Waterways and waterfront developments.
 - Sanitary sewers and water supply systems.
 - Facilities for flood prevention, drainage, pollution prevention, and maintenance of water levels.
 - Public utilities and structures.
 - Recommendations as to the general character, extent, and layout of redevelopment or rehabilitation of blighted areas; and the removal, relocation, widening, narrowing, vacating, abandonment, change of use, or extension of streets, grounds, open spaces, buildings, utilities, or other facilities.
 - For a local unit of government that has adopted a zoning ordinance, a zoning plan for various zoning districts controlling the height, area, bulk, location, and use of buildings and premises. The zoning plan shall include an explanation of how the land use categories on the future land use map relate to the districts on the zoning map.
 - Recommendations for implementing any of the master plan's proposals.
- If a master plan includes a master street plan, the means for implementing the master street plan or elements in cooperation with the county road commission and the state transportation department shall be specified in the master street plan in a manner consistent with the respective powers and duties of and any written agreements between these entities and the municipality.

Final Document

This process is intended to create the most efficient and effective Master Plan for the community of Crockery Township. Its ultimate pursuit is to ensure the health, safety, and welfare of the residents, property, and business owners as well as visitors to this Township.

Definition of Terms

In order to streamline the content of this plan, the following terms are recognized as defined below:

Rural Character – is recognized as the natural features of the earth that minimize the visual exposure of buildings, structures, or other man-made features and which create scenic character. It is also recognized as the natural features of the earth that provide environmental buffers and/or habitat that is characteristic of the Township. Features are found to include:

- Woods, woodlots, forest areas, and trees
- Wetlands
- Natural vegetation
- Wildlife habitat
- Natural field areas
- Scenic vistas
- Farmland, which is recognized as part of the natural features that are organized and managed by man.

Open Space – is recognized as areas of land unoccupied by buildings, structures, or other man-made features, that are preserved to be unoccupied by buildings, structures or other man-made features within a project.

How to Use This Plan

For each land use attribute chapter, the following sections have been provided.

- Introduction: Provides a general introduction to each chapter.
- Development Considerations: Where appropriate, some of the items that the Planning Commission considered when developing Land Use Classifications and Implementation Measures have been included in this section.
- Land Use Classifications: Where appropriate, descriptions of future Land Use Classifications have been included in this section. Land Use Classifications are general description of the intended future land uses for each Classification.
- Implementation Measures: the plan identifies goals, recommendations, and strategies. These are the basis for future development. The goals, recommendations, and strategies are designed as follows:
 - Goals – These are community objectives derived from significant public input and Planning Commission oversight. These are applied most frequently during land use review to ensure a proposed development meets and is consistent with the core values of the Master Plan.
 - Recommendations – These are pointed direction to achieve the goals. These are applied the strongest during land use review to ensure proposed development is consistent with the intent of the Master Plan.
 - Strategies – In an effort to accomplish the goals and recommendations of the Master Plan, the strategies are the legislative methods to mandate certain physical form, through zoning ordinance or police power ordinances.

Chapter Two – Community Preferences

Introduction

In 2023 the Planning Commission began the process to update the Master Plan. Community engagement commenced with commercial and industrial property owner stakeholder interviews. Overall, commercial and industrial property owners felt that their current locations along M-104 and 112th Avenue are sustainable.

The biggest takeaway from the stakeholder interviews was a very mixed opinion on whether public sewer and expansion of public water was warranted. Some opined that public sewer may be of benefit for small commercial and industrial lot sizes with limited room for alternate drain field locations or a high-water table. For some, maintaining a healthy workforce is a challenge. Public sewers may help develop workforce housing, thus strengthening employee availability. Other owners felt public sewer and expansion of public water would increase residential development, which would create a conflict with their commercial and industrial uses. From these interviews, it was determined that the greatest focus for the community survey would be residential development, including senior housing.

Community Survey

As provided in its entirety within the Appendix, a community survey was sent to all property owners within the Township. This survey asked for the owners' opinion on everything from rural character, agricultural preservation, residential development, and the potential growth of commercial/industrial uses.

Participant Demographics and Living in Crockery Township

Four hundred six owners of Crockery Township took the public survey. There was a very even spread of respondents between the ages of 35 and 65+. Only 9% of respondents were between the ages of 18 and 34. Thirty-eight percent of respondents have lived in the Township over 20 years. Of respondents, 39% said they would recommend living in the Township and 37% were neutral.

Community Workshop

Additionally, a community workshop was held to gather more public input. As part of the workshop, visual preferences of different development topics were captured. The resounding theme from the workshop was that residents would like to maintain the rural character of Crockery Township through strategic, carefully considered development. Below is a compilation of the survey and workshop data.

Findings

Following is a summary of findings from the Community Survey and Community Workshop.

Agricultural and Rural Character

Crockery Township has historically been considered a rural and predominantly agricultural community. Fifty-eight percent of survey respondents supported continued growth at its current pace. Workshop attendees relayed a strong preference to protect the agricultural lands and rural character of the community. Seventy-two percent of survey respondents said ease of travel within the Township was good/excellent and 71% said rural character is good/excellent. However, when asked about access to healthcare facilities, 33% said it was poor and 28% said it was fair. When asked about access to shopping amenities, 39% said it was poor and 32% said it was fair. Overall,

residents in the Township are supportive of policies that are designed to protect the rural look and feel of the community and appear to be willing to forego quick access to commercial/retail and professional services in order to protect the rural character of the community.

Rate of Development

Survey respondents felt that the current rate of development in general is about right (58% agree), again, with a desire to protect the current visual character.

Residential Development

Growth of single-family neighborhoods may be supported through directed improvement and repairs to public roads. While large acreage lots were preferred, those attending the workshop suggested that any small lot development locations should be located predominantly north of M-104 near Nunica proper and the current Hathaway Lakes development. Open space, playgrounds/recreation opportunities, and street tree requirements were preferred for developments. Dark sky-friendly street lighting was also preferred.

Senior housing was supported/very supported by 47% and was opposed/strongly opposed by 16%. Again, workshop attendees suggested locations predominantly north of M-104 for this type of density housing. Small scale, one-story, free-standing homes were preferred over multi-level buildings. There was some desire for walkable senior housing with proximity to services and public transit (if/when available).

Mixed commercial and residential use was supported/very supported by 27% and opposed/strongly opposed by 39%. Duplexes (15%), apartments (17%), and Townhomes (18%) scored lower, though there was a positive reaction to development that incorporated multiple housing types within a mixed-use development. The community may be supportive of a limited mixed use downtown development district. They do not support an increase in taxes to encourage this development but may be supportive of a policy that permits such uses.

Commercial and Industrial

Survey respondents felt that economic development policies should be designed to allow for but not necessarily encourage commercial or industrial development.

Public Services

Survey respondents felt that educational and recreational opportunities are good/excellent. If the Township had extra funds, highest priorities for public services were roads, internet, and fire/EMS, prioritized in that order. However, when respondents were asked if they would support a tax increase for these services, no service scored 50% or higher even if we combined the likely/highly likely categories. The three highest scores were Fire/EMS (46%), road repair (48%), and expansion/improvements of parks and recreation (43%).

Summary

- Residents prefer the preservation of rural character and support the protection of agricultural land.
- Continued development at the current pace is supported if orchestrated with protecting the visual character of the community.
- Commercial/Industrial development should continue at its current pace without any plans to encourage infill.

- Senior housing may be supported in the right location. Multi-level senior apartment buildings were not preferred.
- Two-story mixed use development with public space may be supported in the right location.
- The potential of public utilities related to development should be discussed.

Chapter Three – Agricultural Policy

Introduction

The Township's rural openness has been highly valued by residents and is intended to be preserved. Historically, Crockery Township has been mostly an agrarian community and recent public input has indicated a desire to continue to protect agricultural lands and the rural character.

Development Considerations

Soils

Most of the land in the eastern and south-central parts of the Township are heavier clay loam soils well suited for general farming. Most of the land in the central, west, and northwest part of the Township, and along the river in the southeast, is light and sandy soil best suited for small fruits and orchards. Much of this land is classified as "prime farmland soils" by the USDA. Figure 1: Crockery Township Farmland Class Map, located in the appendix of this plan, depicts the location of prime farmland soils within the Township.

The Township recognizes that the potential loss of truly valuable farmland and unique natural resources is an irreversible loss not only to local residents but the region, state, nation, and future generations.

Agricultural Land Use Classifications

Intensive Agriculture

This Classification is intended to promote agricultural activity as the priority land use within the areas of the Township considered best suited for agricultural use and prohibit uses that would hinder farm operations and irretrievably deplete agricultural lands. Quality farmland on high ground should be retained in the Intensive Agriculture Classification. It should be used as agriculture or for extremely low-density single-family housing. Much of these lands are designated as prime or unique farmland by the United States Department of Agriculture (the "USDA") This district is also intended to promote the conservation of rural qualities such as wood lots, wetlands, and meadows. This approach will lessen the adverse effects of sprawl development along the rural roadways.

Moderate Agriculture

The Moderate Agriculture Classification would provide valuable benefits in terms of natural drainage, aesthetic, and natural wildlife habitat. Several areas are typified by wetlands and/or soils ill-suited for intensive developments. While the use of land for agriculture is valued in this area, it is not as heavily emphasized as in the Intensive Agriculture Classification. Low-density residential uses not related to farm uses and farming are therefore regarded as compatible. The development desired is rural in character. This district is also intended to promote the conservation of rural qualities such as wood lots, wetlands, and meadows. This approach will lessen the adverse effects of sprawl development along the rural roadways.

Implementation Measures

Goals

- Preserve agricultural lands.
- Protect/promote farmland in agricultural zoning districts.
- Stress the importance of Agricultural Best Management Practices
- Discourage the fractionalization of farmland brought about by scattered rural housing development.
- Provide for very low density development while maintaining and protecting the natural and rural character of the Township.

Recommendations

- Promote the enrollment of agricultural land into the Michigan Farmland and Open Space Preservation Act (PA 116)
- Discourage large scale development within areas of agricultural land.
- Encourage the majority of residential development to occur in areas less suitable for farming activities and near public services and utilities.

Strategies

- Implement policies in Agricultural areas to discourage residential incursion.
- Through zoning regulations, discourage residential development that does not directly serve farm families and farm workers.
- Avoid the extension of water and sewer utilities within agricultural areas as a means of discouraging non-farm uses in such areas.
- Allow residential development in exclusive agricultural areas by Special Land Use permit meeting certain non-productive land criteria.

Chapter Four – Residential Policy

Introduction

It is appropriate to establish residential development priorities for the various land areas in the community. The staging of development will promote more orderly and concentrated development versus expansive sprawl development. Based on the varying income levels and lifestyles of residents, the availability of utilities, and the physical limitations of the Township, a variety of housing densities should be provided.

Development Considerations

When considering residential development possibilities within the Township, trends that should be evaluated for incorporation into future zoning regulations include:

Population Growth

The US Census Bureau data for 2020 reveals that the population in Crockery Township is 4,572, which has risen 14% since 2010. The total number of households is 1,800, which has risen 17% since 2010. The total number of available housing units is 1,815, which has risen 12%. The number of vacant housing units has decreased 20% since 2010. There is not a great disparity between the number of households and the number of available housing units.

Population growth has historically created an increase in local retail, service demands, and employment opportunities. The Township should anticipate these demands, realistic within the community's financial capability, if it is to maintain the rural setting enjoyed by the majority of Township residents. Additionally, all development should consider the natural capabilities of the land to support the development and the available services and facilities necessary to assure the continued protection of the public health, safety, and welfare of all Township residents.

Nunica Area

The Nunica area within Crockery Township is an unincorporated area. It contains a mix of residential and non-residential uses. The area consists mostly of single-family dwellings on parcels ranging from 6,000 square feet to 15,000 square feet.

Senior Housing

People with grown children may not want the maintenance of a typical home (empty nesters). Low maintenance housing is generally characterized as a condo community.

A key goal of senior housing options should include the idea of non-exclusion from the rest of the surrounding community. Locating senior housing near other single-family residential uses and/or commercial hubs gives seniors and other members of the community more opportunities to interact.

Single-Family Housing

- New residential developments should be located in a centralized area that is accessible to all families and located near existing schools to promote walking. Residential developments should also be near park and recreation facilities.
- Compact development decreases site development costs, which positively affects housing costs and maximizes the public investment in capital infrastructure.
- Natural features such as wetlands and woodlots can be better preserved when developers are offered the ability to cluster and create compact development designed with nature.

Open Space

Open space areas for passive recreation can be valuable, especially in areas near the existing and proposed non-motorized trails throughout the Township. Preservation of open space can be achieved through regulatory and/or financial incentives. Conservation subdivisions allow the property owner to maintain the same build-out potential of a piece of property by developing the units on smaller more compact lots and dedicating the balance of the property as open space.

Commercial Nodes

Implementation of the commercial node concept may require a change in zoning to provide land development and building design guidelines. The commercial nodes can become the cornerstone for mixed-use walkable neighborhoods.

These nodes effectively compartmentalize commercial development into key intersections of the Township and create commercial and mixed-use development areas. To accommodate this higher density, the Township may have to coordinate with developers to provide public water and sanitary sewer facilities.

Another feature associated with this form of land development is the ability to create a definable place. Which can include mixed-use areas that include higher density residential developments supplemented with parks, community facilities, such as schools, and commercial areas.

The strategy of using commercial development nodes should significantly reduce commercial sprawl in the Township.

Workforce Housing

Given the Township's accessibility to regional transportation arteries, a range of light and heavy industrial developments should be provided. Crockery Township has abundant land zoned for industry predominantly on the North side of Cleveland Street (M-104) and south of Cleveland Street on 112th Avenue. When respondents to the Master Plan Update Community Survey were asked how they would characterize the rate of Industrial development, sixty-seven percent felt that it was about right.

It is anticipated that the land already zoned for industrial use will be sufficient to serve the needs of the Township for many years. Development assistance and tax abatement policies are in place to encourage growth in this area. The intersections of I-96 and M-231 with M-104 are expected to increase the demand for business development. By introducing higher density residential near these employment centers, the Township hopes this

helps provide employees for these business centers. More acreage north of M-104 could be made developable for industry by providing public water and sanitary sewer facilities.

Residential Land Use Classifications

Rural Estates

Lands within this Classification are intended for rural land uses such as very low-density single-family homes and farming. Extensive development is discouraged. The principal purpose of this Classification is to provide some land in the community for a permanent rural residential lifestyle.

Low Density Residential

Lands within this Classification are intended for low density residential development that does not require public utilities. Regulations within this Classification should be designed to provide the landowner with the flexibility to design with the natural terrain and features where there might be sensitive environmental areas. Public sanitary sewer is generally not available in this Classification, nor is it planned at this time, which should limit dense development. Public water is available in some of these areas. Much of this area has evidence of wetlands, high water tables, or hydric soils creating general limitations on development (see Figure 8: Areas with Severe Limitations for Septic Systems).

Medium Density Residential

This Classification reflects the development pattern of residential neighborhoods where development patterns have occurred on small lots. This Classification of land use is intended for medium density single and two-family dwelling uses. The intent is to provide varied housing choices for residents.

Soils in these areas are generally capable of supporting these densities, but the need for the eventual extension of public sewer should be taken into account. The rezoning of land to moderate density residential should be predicated on the availability of public water and the availability of public sewer or high perk of soils.

Multiple-Family Mixed Use Residential

The primary intent of this Classification is to promote housing diversification and affordability. Lands within this Classification appear to be able to support multiple-family dwellings (including apartments, condominiums, and senior citizen housing) and manufactured housing communities, prohibiting single-family uses, with some neighborhood and general commercial uses also designated. The availability of infrastructure is a significant determinant of what commercial uses should be allowed and the density of residential development allowed.

Village Mixed Use

The Village Mixed-Use Classification is intended to create a traditional mixed commercial and residential area in Nunica, allowing for higher density development, a range of dwelling types, a range of housing costs, “life cycle” housing, and some neighborhood commercial uses.

Non-residential uses that should be considered to be allowed by right include: eating and drinking establishments, farm supply, hardware, convenience shopping, and other similar small scale neighborhood commercial uses.

Implementation Measures

Goals

- Encourage the majority of new development to locate in areas where public utilities can be most efficiently provided.
- Encourage creativity in community design and land use in residential areas.
- Establish a stronger sense of place.
- Create a definable place.
- Promote compact design.
- Provide for workforce housing.

Recommendations

- Maintain the primary residential zoning in the Nunica area, M-104 corridor, and in the western 1/2 of the Township.
- Discourage the process of scattered, rural housing developments in areas of important and prime farmland.
- Ensure that the areas intended to support the highest densities of residential development are within reach of existing or planned utility extensions.
- Ensure that the density of all future residential developments that locate in areas that cannot be economically provided with public utilities be limited; to take into consideration the natural limitations of the land in terms of the soils ability to accommodate on-site septic systems and the danger of pollution to groundwater supplies (see Figure 2: Ground Water Depth and Figure 8: Areas with Severe Limitations for Septic Systems).
- Encourage multiple family units to be incorporated into larger mixed-use developments.
- Encourage property owners to rezone lands classified as Village Mixed Use to the R-5 Village Mixed Use District.

Strategies

- Revise the Zoning Ordinance to encourage the use of Open Space Preservation (clustering) in residential areas.
- Allow residential development in exclusive agricultural areas by Special Land Use permit meeting certain non-productive land criteria.
- Strive to maintain substantial open space of 65% on all open space developments.
- Require sidewalks in all new residential developments.
- Future access to adjacent vacant land should be required for all residential developments, where practicable.
- Provide Density bonus options in PUD list criteria; trails, linkages, etc.
- Create a payment in lieu of parkland for new residential developments to create a Township acquisition fund.
- Wastewater requires expansion along M-104 corridor to accommodate forecasted development.
- Water system requires expansion along M-104 corridor to accommodate forecasted development.
- Encourage mixed-use development opportunities.

- Provide environment for investment in housing and economic development.
- Dead-end streets should be prohibited in the Moderate Density Residential areas except in cases of extraordinary circumstances.
- Limit private streets within areas identified for Moderate Density Residential Uses
- Review and develop standards that provide for varying parcels distinguished based on (1) not having sanitary sewer, or (2) being served by sanitary sewer.
- Limit the density for areas designated as Moderate Density Residential unless provisions for public sewer and water are made.
- Coordinate with transportation goals to restrict dead end roads and provide a reliable, efficient transportation system.
- Consolidate R-1 Low Density Single Family Residential District and R-2A Low Density Single Family Residential District into a single zoning district.
- Develop regulations that encourage developers to create public open spaces.
- Review and amend, where appropriate, the Nunica Main Street Overlay District to ensure it is consistent with the Township's goals for future development, such as removing references to the 2014 Comprehensive Plan.

Chapter Five – Nunica Policy

Introduction

The primary intent of the Nunica Policy is to preserve and enhance the Nunica area as traditional center which fosters a vibrant “live-work-play” environment. This chapter outlines the framework for developing a downtown core that promotes walkability, high-quality architecture, and a sense of place.

Development Considerations

Nunica Area

The Nunica area within Crockery Township is an unincorporated area. It contains a mix of residential and non-residential uses. The area consists mostly of single-family dwellings on parcels ranging from 6,000 square feet to 15,000 square feet.

Strip Development

Strip Development is a pattern of commercial development where buildings are constructed side-by-side in a long row along roadways. These areas are typically designed primarily for cars, resulting in a dependence on automobiles to access the commercial businesses. This often creates traffic patterns that are unsafe for pedestrian traffic.

Additionally, strip developments are often developed into low-density, single-story buildings, including strip malls, fast food, and gas stations, which lack a sense of place or traditional downtown feel.

Land Use Classifications

Village Mixed Use

The Village Mixed-Use Classification is intended to create a traditional mixed commercial and residential area in Nunica. Allowing for higher density development, a range of dwelling types, a range of housing costs, “life cycle” housing, and some neighborhood commercial uses.

Non-residential uses that should be considered to be allowed by right include: eating and drinking establishments, farm supply, hardware, convenience shopping, and other similar small scale neighborhood commercial uses.

Nunica Main Street Overlay

This Classification is intended to provide architectural and other design provisions for areas adjacent to 112th Avenue in order to promote a “downtown” feel, allowing for a number of vibrant commercial uses intermingled with residential uses.

Implementation Measures

Goals

- Encourage the expansion of residential and non-residential uses.
- Allow for more dense development within Nunica.
- Create a traditional downtown feel within Nunica.

Recommendations

- Discourage strip development within the Nunica area.
- Encourage existing uses to connect to public water.
- Encourage connection to and expansion of non-motorized pathways.
- Encourage the inclusion of shared spaces within site development plans.

Strategies

- Prohibit private streets within the Village Mixed Use District.
- Review, and if appropriate, amend setback regulations for commercial and non-residential uses to provide flexibility in site development when adjacent to other commercial and non-residential uses.
- Review, and if appropriate, amend setback and buffering regulations for commercial and non-residential uses that are adjacent to residential uses.
- Consider review and amendment of minimum lot area and lot width provisions to allow for smaller lots when connected to public water.
- Review, and if appropriate, amend regulations for building and site design, such architectural and/or landscaping requirements.
- In coordination with the Recreational and other goals of this plan; develop a program for the creation, maintenance, and improvement of non-motorized paths and sidewalks.
- Develop a program for the creation, maintenance, and improvement of public open spaces.
- Require all future development to connect to public water.
- Encourage property owners to rezone lands classified as Village Mixed Use to the R-5 District.
- Encourage connection to and expansion of the Township trail network.
- Review and amend, where appropriate, the Nunica Main Street Overlay District to ensure it is consistent with the Township's goals for future development, such as removing references to the 2014 Comprehensive Plan, and/or discouraging strip development.

Chapter Six – Commercial Policy

Introduction

As the Greater Grand Rapids region and areas near the lakeshore continue to grow both in terms of employment opportunities and population, the residual impact of that growth should result in new residential, retail, and office development in Crockery Township. Recognizing the potential of local development pressure, the Township should provide appropriate locations for new development.

Given the Township's accessibility to regional transportation arteries, as well as the employment and shopping needs of local residents, a range of both locally and regionally oriented types of commercial developments should be provided. Although over 5,000 vehicles per day travel 112th Avenue, the lack of available land for commercial development, limited parking, and persistent residential patterns have limited commercial development. The strongest potential for Commercial growth seems to be along M-104.

Development Considerations

Commercial Nodes

Implementation of the commercial node concept may require a change in zoning to provide land development and building design guidelines. The commercial nodes can become the cornerstone for mixed-use walkable neighborhoods.

These nodes effectively compartmentalize commercial development into key intersections of the Township and create commercial and mixed-use development areas. To accommodate this higher density, the Township may have to coordinate with developers to provide public water and sanitary sewer facilities.

Another feature associated with this form of land development is the ability to create a definable place. This can include mixed-use areas that include higher density residential developments supplemented with parks, community facilities, such as schools, and commercial areas.

The strategy of using commercial development nodes should significantly reduce commercial sprawl in the Township.

Strip Development

Strip Development is a pattern of commercial development where buildings are constructed side-by-side in a long row along roadways. These areas are typically designed primarily for cars, resulting in a dependence on automobiles to access the commercial businesses. This often creates traffic patterns that are unsafe for pedestrian traffic.

Additionally, strip developments are often developed into low-density, single-story buildings, including strip malls, fast food, and gas stations, which lack a sense of place or traditional downtown feel.

Open Space

Open space areas for passive recreation can be valuable, especially in areas near the existing and proposed non-motorized trails throughout the Township. Preservation of open space can be achieved through regulatory and/or financial incentives.

Commercial Land Use Classifications

Neighborhood Commercial

This Classification provides low-volume commercial businesses that support the day-to-day needs of nearby residential areas. Uses allowed within these areas should not add extensive transportation impacts, with a focus on pedestrian traffic.

General Commercial

This Classification is intended to serve larger residential neighborhoods and transient customers. These areas should balance the needs of vehicular and pedestrian traffic.

Highway Commercial

This Classification provides areas for commercial establishments that are generally incompatible with pedestrian movement and serve highway traffic, or which are engaged primarily in heavy commercial sales or service.

Horticulture

This Classification enhances the preservation of open space with agricultural uses that incorporate office and retail facilities.

Implementation Measures

Goals

- Consider the natural capabilities of the land to support development and the available services and facilities necessary to assure the continued protection of the public health, safety, and welfare of all Township residents.
- Preserve the cultural and historic value of older buildings.
- Limit driveway interfaces in the M-104 (Cleveland St.) corridor to create safer movement of vehicular traffic.
- Protect residential areas from the encroachment of incompatible land uses.
- Create a definable place and/or a gateway into the community.
- Discourage strip development within the Nunica area.

Recommendations

- Encourage parallel service streets to serve commercial and industrial development along M-104.
- Encourage pedestrian facilities and sufficient parking for commercial buildings and properties in the neighborhood commercial district.
- Encourage commercial node development primarily at 136th/M-104, 124th/M-104 and 112th/Cleveland.
- Encourage mixed-use development.
- Require adjacent property owners to coordinate their plans for development regarding road access.
- Discourage commercial sprawl and strip development.

Strategies

- Utilize Corridor Improvement Authority to provide infrastructure funding.
- Encourage in-fill development when located within public water and sewer services areas.
- Use the commercial nodes as gateways to the Township.
- Maintain close cooperation with MDOT officials on any development which affects the M-104 corridor.
- Accommodate a mix of commercial establishments which offer a variety of goods and services to meet the needs of the area's population while taking advantage of the location of certain areas and their ability to attract tourists and other types of regional trade.
- Develop façade design standards.
- Consider amending parking, pathway, and setbacks regulations within the Neighborhood Commercial District to allow buildings to be located near the property lines, require parking in the rear or side of the buildings, and provide for safe pedestrian walkways.
- Develop regulations that encourage developers to create outdoor public spaces which encourage visitors to the neighborhood commercial district.
- Coordinate with recreational goals of this plan to create public open spaces within the Neighborhood Commercial District.

Chapter Seven – Grand River Recreational Area Policy

Introduction

Crockery Township recognizes that the Grand River Waterfront is unique in character and that this natural resource is different from any other area of Crockery Township. The Grand River Recreational Area Classification is therefore designed to provide for certain land uses which will best take advantage of the unique qualities of the waterfront. This Classification will enhance the general benefit and enjoyment of the public and provide for boating and navigational uses of the Grand River waterfront area.

Development Consideration

History

Currently there is one marina located in Crockery Township on the Grand River at the end of 120th Avenue near M-231. This marina offers dock slips as well as indoor and outdoor storage, with a private boat launch. John Bar started construction on the marina in 1958. It opened in 1961 with 28 slips, a convenience store, and fuel sales. A residential home was located on the top floor of the office building. Since 1968, the marina has gone through multiple owners and operators, including the Grand Valley Marina I and Lighthouse Cove. Throughout its history, this property has supported up to 178 slips, a pool, bathhouse, ship's store, and a fuel depot. Many of these uses have disappeared with the passage of time but remain as possible opportunities allowed for the Marina Classification.

Land Use Classification

Grand River Recreational Area

The main intent of the area is to support the continued operation of the Marina and allow for limited uses that will support this recreational activity.

The Grand River Recreational Area Classification will allow for the docking, launching, and storage of recreational boats and watercraft. Ancillary facilities that support waterfront recreation and storage including the retail sale of food, beverages, and other goods, in addition to retail commodity sales related to waterfront recreation and boating such as the sale of boats, boat engines, and accessories, fishing equipment, and similar goods, may be appropriate. Municipal or private beaches and water related recreation areas along with launching ramps may also be located in this Classification to allow for a diverse range of uses to take advantage of the unique qualities of the waterfront.

Implementation Measures

Goals

- Review the capabilities of the land to support development of recreational uses and the available services and facilities necessary to ensure the continued protection of the public health safety and welfare of all Township residents.
- Balance recreational development with the preservation of the natural area consistent with the environment and natural resources goals of this plan.
- Enable the recreational use of the Grand River frontage.

- Ensure the preservation of land and buildings for recreational uses within the Classification area.
- Develop recreational opportunities to encourage local tourism and interaction with local businesses.

Recommendations

- Accommodate a mix of uses which offer a variety of goods and services to meet the needs of the area's population while enhancing enjoyment and preservation of the natural waterfront features of the area.
- Balance marina capacity, services, and access, while minimizing environmental impacts, dredging requirements, protective structures, and other site development costs through utilization of EGLE's "Best Management Practices." (See Appendix)

Strategies

- Coordinate with owners of the historic Marina to preserve and enhance the facilities.
- Review allowed uses and zoning provisions within the Grand River Marina Zoning District to ensure they are consistent with the Goals of this plan.
- Coordinate with Ottawa County & State of Michigan to ensure a site plan meets State and County requirements for environmental protection.

Chapter Eight – Industrial Policy

Introduction

Industrial activity is important to the overall economic resilience of the Township. This chapter outlines the framework for managing industrial zones to ensure they remain competitive, sustainable, and harmonious with the broader community fabric.

Development Considerations

Given the Township's accessibility to regional transportation arteries, a range of light and heavy industrial developments should be provided. Crockery Township has abundant land zoned for industry predominantly on the North side of Cleveland Street (M-104) and south of Cleveland Street on 112th Avenue. When respondents to the Master Plan Update Community Survey were asked how they would characterize the rate of Industrial development, sixty-seven percent felt that it was about right.

It is anticipated that the land already zoned for industrial use will be sufficient to serve the needs of the Township for many years. Development assistance and tax abatement policies are in place to encourage growth in this area. The intersections of I-96 and M-231 with M-104 are expected to increase the demand for business development. By introducing higher density residential near these employment centers, the Township hopes this helps provide employees for these business centers. More acreage north of M-104 could be made developable for industry by providing public water and sanitary sewer facilities.

Development should consider the natural capabilities of the land to support the development and the available services and facilities necessary to assure the continued protection of the public health, safety, and welfare of all Township residents.

Industrial Land Use Classification

Industrial

The objectives of the Light and Heavy Industrial Classifications are to accommodate limited, high quality, environmentally compatible industrial development. Industrial uses should be carried out in an unobtrusive manner such that they are compatible with surrounding agricultural, residential, and commercial areas.

Implementation Measures

Goals

- Encourage industries to locate in well-planned industrial park settings that maximize the efficiency of providing necessary infrastructure and minimizing environmental and land uses conflicts.
- Accommodate industrial land uses but limit driveway interfaces in the M-104 (Cleveland St.) corridor.
- Accommodate the environmentally sound expansion and growth of existing and future industrial uses.

Recommendations

- Require adjacent property owners to coordinate their plans for development regarding shared road access.
- Encourage parallel service streets to serve industrial development along M-104.

- Promote concentrated industrial development in those areas in which the provision of appropriate utilities exists, highway access is available, and potential environmental degradation and conflict with other uses can be avoided or minimized.
- Require Industrial development within the Nunica area to adhere to the requirements of the Nunica Main Street Overlay District, to ensure the goals of Chapter Five- Nunica Policy of this plan are met.
- Incrementally expand the availability of industrially zoned properties based on demonstrated needs over the planning period and the availability of appropriate utilities. The zoning of land for industrial purposes that is not served by public sewer and water utilities should be held to a minimum and industrial development that occurs without such utilities should be carefully monitored.

Strategies

- Encourage the creation of industrial subdivisions rather than piecemeal development to help ensure the construction and collective use of necessary access roads, drainage improvements, and other public facilities.
- Incorporate provisions in the zoning ordinance that would discourage extensive outdoor storage areas and other open areas that may detract from the character of the Township and harm the values of surrounding properties.
- Discourage the development of “heavy” industries near environmentally sensitive areas, which because of their scale or type of operation could have negative environmental implications or overburden public services.
- Evaluate land use proposals with MDOT officials on any development which affects the M-104 corridor.

Chapter Nine – Environment and Natural Resources Policy

Introduction

Crockery Township is drained entirely by the Grand River and its tributaries: Crockery Creek and Black Creek. The extreme northwest corner of the Township is the only land area that does not drain directly into the Grand River. Here, Vincent Creek runs in a westerly direction and empties into Spring Lake near Fruitport. Approximately 3,880 acres or 18% of the Township is located within the 100-year Floodplain of the Grand River and its tributaries. (See Figure 3 Wetland Map).

Sensitive natural areas and wetlands are abundant within the Township as part of the Grand River, Crockery Creek, and Black Creek watersheds. These are designated on the Master Plan Map and include floodplain areas of the Grand River and Crockery Creek. These features, along with agricultural lands, are the main attributes that define Crockery Township's rural character. In 2024, public workshop attendees and resident survey results relayed a strong preference to protect the agricultural lands and rural character of the community.

Development Considerations

Groundwater Quality

In areas not served by public water, groundwater quality will have a major influence on development. The aquifer nearest to the surface (15-40 feet) is virtually unprotected from contamination by surface sources of pollution due to the porosity of surface soils. As a result, throughout the Township there have been cases of water wells contaminated by septic tank/drain field discharge.

The second aquifer, the Marshall Sandstone aquifer lies at depths of 100-250 feet. This aquifer is well protected from surface contamination and generally provides good water quality. It should be noted however, that high levels of sodium chloride have been documented within this aquifer. Additionally, glacial activity buried thousands of trees resulting in considerable Tannin levels in this lower aquifer.

Environment and Natural Resource Protection

As stated above, Crockery Township has a variety of environmental resources. These limited features should be protected from development projects and be incorporated as part of a project when present. The Township should promote the preservation and protection of floodplains, wetlands, and ground water by working with the Michigan Department of the Environment, Great Lakes, and Energy (EGLE) and/or the enactment of Township ordinances addressing these resources. It is the intent of this plan to support, encourage, and provide for the conservation of the natural resources of the Township and to allow for the development thereof while preventing irreparable damage to the property and inhabitants of the Township. These natural features should be buffered by green belts, park areas, and open space with a minimum of development impact.

Land Use Classification

100-year Floodplain Overlay

The boundaries of this Classification are intended to be consistent with the 100-year Floodplain of the Grand River and its tributaries, as identified by the Federal Emergency Management Agency (FEMA). The Classification is intended to support and encourage the conservation of environmentally sensitive areas and natural resources

of the Township. The 100-year Floodplain map can be seen in the Appendix under Figure 9: Crockery Township Floodplain Map.

Implementation Measures

Goals

- Protect and preserve natural features such as steep slopes, wetlands, and floodplains.
- Preserve prime agricultural land.
- Prevent conditions that increase susceptibility to dangers of flooding and pollution.
- Protect soils capable of providing necessary infiltration for the maintenance of aquifer stability.
- Prevent damage to waterways caused by erosion, scarification, sedimentation, turbidity, or siltation.

Recommendations

- Encourage Purchase of Development Rights (PDR) as permanent conservation land with mandatory clustering.
- Encourage Conservation Easements.
- Encourage Best Management Practices in farming operations especially in areas adjacent to Grand River tributaries.
- Encourage and preserve buffer strips on agricultural land adjacent to creeks and other surface waters.

Strategies

- Reduce E. coli inputs from septic systems by requiring proof of regular maintenance and inspection of septic systems in Planned Unit Developments and Subdivisions as a condition of approval.
- In areas with a high-water table, or poor soil drainage, encourage the use of alternative technologies to on-site septic systems.
- Review and develop regulations to encourage the reduction of storm water runoff during site plan review by incentivizing the use of pervious surfaces, reducing parking requirements when practical, and prohibiting parking area greater than the minimum required.
- Identify those areas with high water tables and retain zoning which would limit development in areas with severe limitations for septic systems.
- Identify ecologically sensitive areas and retain zoning which protect these areas.
- Promote guidelines for reporting illicit discharges to appropriate authorities.
- Promote the protection of waterways to prevent further degradation by working with watershed groups and educating residents about the importance of vegetative buffers.

Chapter Ten – Recreation Policy

Introduction

Adequate recreational opportunities are recognized as being essential to the general health and well-being of people in every age group. Recreational lands within Crockery Township include both public and private facilities. Among the public recreational facilities are a local Township park facility and three Michigan Department of Natural Resources (MDNR) public boat landings. Ottawa County has purchased large areas of land along the Grand River and Crockery Creek intended for future parks. Those areas presently remain in an undeveloped state with limited use by the public. Private recreational facilities include a golf course and a Recreational Vehicle campground. Recreational lands collectively represent over 500 acres of land.

Development Considerations

Parks, Paths, and Trails

Crockery Township is fortunate to have a local and regional biking and walking trail in the Township. However, the Township is divided by M-104 (east-west), M-231 (north-south), and I-96 (northeast-southwest). These physical separations segment the Township into four zones limiting non-motorized and pedestrian connections.

There are also several park and recreation facilities within or adjacent to the Township. Proximity to the Grand River and Lake Michigan coupled with natural areas provide recreation opportunities for residents and visitors. Based on National Recreation and Park standards the Township should have approximately 45 acres of parkland to serve its resident population based on 10 acres of park and open space per 1,000 in population. Although there are several hundred acres of accessible park and open space within the Township, standards would indicate that actual Township ownership of improved parkland is deficient. However, County and State acreages in the Township should be included in this calculation. Recreation facility deficiencies exist primarily at the neighborhood level and not on a community-wide basis.

Recreation

Assurances that recreation and leisure facilities are made available in the community are an important aspect of long-range planning and an important responsibility of the community. The continued purchase of land by the Ottawa County Parks and Recreation Commission along Crockery Creek and the Grand River may help the Township in meeting the need for recreational land. However, there may still be unmet needs in other areas in the Township. There are several public and private recreational facilities located in Crockery Township. Table 1 summarizes the types of facilities at each location and lists the three public launch facilities in the Township maintained by the MDNR.

To satisfy future land needs it is recommended that new recreation areas be established near to or within existing residential areas and developing subdivisions of the Township. Such facilities are recommended to be in the character of smaller neighborhood parks. Continued improvement at the Township Park including ball fields, playground, and walking trail will enhance the Township Center surrounding Crockery Township Hall.

TABLE 1 EXISTING RECREATIONAL FACILITIES		
Facility	Details	Location
Township Park	20 acres	112 th Ave.
Conestoga Campground	66 sites	On 96 th Ave. & Oriole Dr.
Terra Verde Golf Course	18-hole course	South of Nunica in Section 22, off Leonard Rd.
Ottawa County Parks	306 acres	Along Crockery Creek and the Grand River
Bruce's Bayou	Boat launch	132 nd Ave. and the Grand River
Cypress St.	Boat launch	138 th Ave. on Bruce's Bayou
Indian Channel	Boat launch	144 th Ave. and the Grand River
North Bank Trail	4.5 Miles	144 th Ave. to Village Trailhead on Main St.

Implementation Measures

Goals

- Encourage more recreational opportunities utilizing Crockery Creek.
- Encourage pocket parks at the neighborhood level.

Recommendations

- Encourage open space areas and recreational facilities to be included as part of future subdivisions, planned unit developments, other major residential developments, commercial developments, and industrial developments.

Strategies

- Develop small parks along existing and future trail network.
- Require sidewalks in all new residential developments.
- Develop a program for the creation, maintenance, and improvement of non-motorized paths, sidewalks, and public recreation opportunities.
- Review, and if necessary, develop regulations that require new residential developments to provide usable open space and parkland.
- Continue participation in the North Bank Regional Trail network.
- Focus priority to recreation development in pathways, trails, walking networks and scenic areas.
- Continue support of the community-wide trail and pathway network as the foundation of a walkable community.
- Encourage cooperation with other units of government and area schools to develop and expand recreational facilities and programs for public uses.

Chapter Eleven – Utilities Policy

Introduction

As stated in Chapter Two of this plan, Crockery Township is tasked with balancing the pressure for extension of existing public utilities to accommodate growth in development (residential, commercial, and industrial) with the residents' stated desire to protect the Township's rural character. Additionally, sandy soil, limited aquifer protection, and high water tables in the Township continue to make groundwater susceptible to contamination from septic tanks and drain fields. These conditions are likely to increasingly limit the future use of septic tanks and drain fields in many portions of the Township. (See Figure 6: Crockery Township Sewer System).

Development Considerations

Existing Utilities

In 2020-21 the Township's existing wastewater treatment plant was closed. Consequently, the Township became a customer of the Grand Haven-Spring Lake Sewer Authority and connected the Township's existing sanitary sewer collection system (that mainly serves the Hathaway Lakes development) to Spring Lake Township's wastewater collection system. The Crockery Township collection system discharges to the Spring Lake Township wastewater collection system, which then discharges to the Village of Spring Lake wastewater collection system, with the ultimate treatment at the Grand Haven-Spring Lake Sewer Authority wastewater treatment plant in the City of Grand Haven. There are capacity limits to the Crockery Township, Spring Lake Township and Village of Spring Lake collection systems. Much of the existing transportation and treatment capacity allocated to Crockery Township will be used by further planned development within the Hathaway Lakes residential development project. In order to provide for further residential and commercial development within the Township, the Township will need to acquire additional capacity in the Spring Lake Township wastewater collection system, the Village of Spring Lake wastewater collection system, and the Grand Haven-Spring Lake Sewer Authority wastewater treatment plant. Furthermore, Crockery Township's wastewater system will need to be upgraded along the M-104 corridor to accommodate existing uses and future growth in the industrial and commercial areas as well.

The Township has in place a public water system that presently serves nearly one-third of its residents. This system, which determines the intensity of land development, and ultimately the pace of development, is generally adequate and has added capacity to serve the Township. The water system must be upgraded to include the construction of a transmission main in several places to accommodate increased reliability in the system. There is a planned water system extension to be completed in 2025 from Leonard Road and 138th Avenue east to 136th Avenue and 136th Avenue north from Leonard to M-104 and east to Hathaway Lakes. (See Figure 5: Crockery Township Water System)

With infrastructure available to accommodate some new growth and development, the Township should guide development into these service areas as much as possible. New subdivisions, site condominiums, and other residential and non-residential projects should be required to locate in areas already served by public water and sewer. This strategy will properly manage growth, ensure that the previous public investment in infrastructure is realized, decrease the likelihood of possible negative impacts on the environment that could result from private on-site systems, and assist in reducing urban sprawl normally fueled by leapfrogging developments ahead of the

public infrastructure system. It would be advantageous to work with adjacent communities to prepare an intergovernmental infrastructure plan to guide public investment and sub-regional growth.

Implementation Measures

Goals

- Develop adequate public utilities that will ensure balanced, orderly growth, for the safety and well-being of Township residents.
- Concentrate the majority of new growth to avoid sprawl, protect farmland, and minimize its effects on the majority of the Township where future public utilities could gain a foothold by being cost effective.

Recommendations

- Coordinate with developers to provide public water and sanitary sewer services in areas of the Township identified for higher density residential, commercial, and industrial concentrations, particularly along M-104.

Strategies

- Support continued communication among the Corridor Improvement Authority, the Township Board of Trustees, and the Township Planning Commission to seek funding opportunities for water and sewer upgrades.
- Communicate with the Ottawa County Road Commission and the Michigan Department of Transportation to coordinate water and sewer upgrades with public road improvements.
- Encourage developer financing for sewer and water extensions.
- Maintain cooperation with neighboring units of government for the provisions of utilities, the sharing of services, and for addressing common issues and problems as a means of holding down overall costs and expense to the taxpayer while at the same time maintaining local control over the decision making processes.
- Design residential, commercial, and industrial incentives which encourage private investment in public water and/or sewer expansion.
- Amend Zoning Ordinance to require new subdivisions, site condominiums, and other residential and non-residential projects to locate in areas already served by public water and sewer when public utilities are reasonably available.

Chapter Twelve – Transportation Policy

Introduction

Crockery Township is strategically located within an active regional expansion area bounded by Grand Rapids, Grand Haven, and the City of Muskegon (see Figure 6: Location Map). The M-231 bypass and its intersection with Interstate 96 and M-104 make the Township a potential regional transportation hub. Crockery Township's proximity to major employment centers within this development area, coupled with its natural resource assets, and quality school systems, provide the ingredients for sustainable and increased growth. Additional retail development is anticipated along the M-104 corridor.

Development Considerations

Transportation System

I-96, which travels diagonally (northwest/southeast) through the Township, is maintained by the Michigan Department of Transportation (MDOT). Pursuant to the MDOT's Annual Average Daily Traffic Map, in 2023 traffic volume was estimated at approximately 31,333 vehicles near Nunica. M-104 is a two-lane highway connecting the Grand Haven/Spring Lake/Ferrysburg area with I-96 in Crockery Township. It is also maintained by the MDOT. Pursuant to the MDOT, the average traffic volume on M-104 in 2023 was approximately 11,767 vehicles per day near Nunica. (See Figure 7 Crockery Township Road Classifications).

Road Connections

The Township is served by a network of principal and minor arterials including I-96, Cleveland Street (M-104), 144th Avenue, 112th Avenue, Leonard Street, and Apple Drive. Other important cross-Township roads include Wilson Street, Taft Street, State Road, 130th Avenue, and 136th Avenue. As new development occurs, the Township should plan for an interconnected road system to maintain efficient traffic flow. Except for situations where there are extreme site topography and/or natural features, the extended use of cul-de-sacs should be limited in favor of a more traditional and functional network. Potential locations for new road connections to access land-locked parcels and/or increase connections between existing roadway segments should be identified. The construction of these new road segments should be accomplished as part of the land development process by the developer, with an emphasis on further development of cross Township routes. It is recommended that new road segments providing network connections to other public roads are dedicated as public right-of-way. In addition, rear access drives parallel to M-104 are an efficient example of network road connections, which reduce access points and the potential for traffic conflicts along M-104.

Overall, an effort to abandon the cul-de-sac in favor of street connections and attempt to provide connections for cul-de-sacs already in existence, is a primary objective within the Township. In cases where a proposed subdivision lacks sufficient street connections, a compromise to the outright prohibition of cul-de-sacs could be to require at a minimum the installation of pedestrian connections between developments.

Rural Preservation Routes

Preserving and enhancing the rural character of Leonard Street is recommended. Preservation of this route would be done through a Rural Route Preservation Overlay District. This district would include guidelines for

building setbacks from the road right of way and landscaping requirements, including the prohibition of certain tree removal, as well as guidelines for signage and lighting.

The Township should coordinate efforts with the Ottawa County Road Commission (OCRC) and utility companies to preserve landmark canopy trees along this route. When trees are removed for utility access, Crockery Township may consider opportunities to replant with “utility friendly trees.” Maintenance and pruning of the right-of-way and road front are a key component to enhance this type of overlay corridor.

This overlay designation would preserve significant vegetation for a specified setback outside of the right-of-way. Using this overlay district as a preservation tool would help the Township meet its objective to maintain the rural elements of the community.

Complete Streets Plan

In 2010, the Michigan Planning Enabling Act was amended to require that Master Plans account for “all legal users” of the transportation system within the municipality. The amended Act, in part, states that the Master Plan must include, “among other things, promotion of or adequate provision for 1 or more of the following:

- (i) “A system of transportation to lessen congestion on streets and provide for safe and efficient movement of people and goods by motor vehicles, bicycles, pedestrians, and other legal users.” MCL 125.3807(2)(d).

This Chapter of the Crockery Township Master Plan, as well as other provisions throughout this Plan regarding pathways, roadway improvements, and lessening roadway congestion, identify key means to implement complete streets. As a result, the Township is compliant with the Act’s amendment.

Implementation Measures

Goals

- Improve the quality of roads, sidewalks, and trails.
- Assess the traffic impacts of all proposed developments or the location of future streets.

Recommendations

- Direct the majority of road improvements toward areas where growth is desired.
- Ensure that growth areas are adequately served by access to major collector streets and thoroughfares.
- Require road and pedestrian access between developments.
- Limit or discourage dead-end streets.

Strategies

- Prioritize road improvements to address the greatest needs.
- Require adjacent property owners to coordinate their plans for development regarding road access.
- Ensure the capacity and function of existing roads, minimizing conflicts between through traffic and local traffic by regulating land uses, building setbacks, driveway openings, and where appropriate, requiring the development of front or rear access service drives.

- Cooperate with the OCRC and the MDOT to encourage these agencies to undertake the necessary studies and to take the necessary steps to ensure that problem areas within their jurisdiction are dealt with in a timely and efficient manner.
- In coordination with the Recreational and other goals of this plan develop a program for the creation, maintenance, and improvement of non-motorized paths and sidewalks.
- Discourage or prohibit dead-end streets, as appropriate.

Chapter Thirteen – M-104 Corridor Overlay

Introduction

The M-104 corridor serves as a primary east-west thoroughfare in Crockery Township. The principal function of M-104 is to accommodate relatively high volumes of traffic and to provide a link between I-96 and the lakeshore communities to the west. It is approximately 3.25 miles of roadway between 144th Avenue and I-96.

The standards contained in the M-104 Corridor Overlay Zoning District and the M-104 Corridor Overlay District Ordinance, Ordinance No. 2019-07 (collectively, the "Overlay District") are based upon recommendations and guidelines provided by the Michigan Department of Transportation (MDOT) "Access Management and Corridor Study" completed in 2004. Significant public input was obtained as the M-104 Overlay Zoning District was being prepared. The Study recommended adoption of a zoning ordinance amendment to implement Access Management techniques, which was completed. Access Management is accomplished using service drives, parking lot connections, and shared driveways in conjunction with driveway spacing standards. Access Management is intended to maintain a safe and efficient flow of vehicular traffic while retaining reasonable access to the property.

In addition to incorporating Access Management techniques into the zoning ordinance, a secondary goal of the Overlay Zoning District is to maintain and preserve the aesthetic quality of the corridor. Specific regulations pertaining to signage and natural feature preservation have been incorporated into the Overlay Zoning District. The standards of the Overlay Zoning District apply to the lots and parcels of land having frontage on M-104 or any parcel of land gaining access to the Corridor. The Overlay Zoning District is applicable to all uses for which site plan review and approval is required.

Corridor Access Management and Corridor Improvement Authority

When development occurs haphazardly along a transportation corridor, the result is usually less than desirable. Unplanned development often leads to traffic congestion and the typical "strip commercial" appearance currently seen along many state and county roads. The continued use of the M-104 Corridor Overlay Zoning District utilizing access management techniques to regulate site access improvements is recommended. In addition, future corridor development will require public and private funding to improve infrastructure, remove, and/or remediate blighted properties, and create a favorable investment environment. The Corridor Improvement Authority district is the ideal tool to accomplish many of these objectives. This authority was established by the Township Board in 2011 and provides the community with the opportunity to guide and redevelop these areas using tax increment financing.

Many residents of Crockery Township consider Nunica the center of the Township but depend on Spring Lake, Grand Haven, Muskegon, and Grand Rapids for shopping and social experiences. Many take the view that the M-104 commercial corridor in the Township is potentially the de facto downtown but is unusable until more is offered. The issue confronting the community is how M-104 (Cleveland Street) and 112th Avenue will be developed. Currently, the Township Zoning Ordinance, and its map, indicate that frontage along these corridors will be primarily commercially developed, with some industrial development.

Along M-104, access management is achieved through a combination of appropriate site design and land use planning. From a traffic management viewpoint, concentrating similar uses is preferred over elongating and

spreading the same building mass and usage over a lengthy distance. From a land use perspective, concentrating a similar mix of land uses in concentrated nodes creates economically viable and sustainable centers. It is recommended that proposed commercial nodes be limited to the following:

- 112th Avenue and Cleveland Street intersection.
- M-231 and M-104 intersection.
- 124th Avenue and M-104 intersection.
- 136th Avenue and M-104 intersection.
- Nunica.

Corridor Development

Commercial office space and retail are declining, as it has become more common for people to work from home and shop online. It is perhaps time to recognize that high-quality, low-impact, light industrial uses can be compatible with other high-end commercial and residential uses. A mixed-use commercial corridor could allow the introduction of research and development, and light intensity manufacturing and assembly uses as long as specific criteria in the Zoning Ordinance are met. The Township's Zoning Ordinance could be amended to permit these types of light intensity industrial and research uses to be intermixed with more traditional commercial, residential, office, and retail categories through the use of performance standards. It should be recognized that the M-104 corridor could be an appropriate location for a broader range of economic activity than the retail and service establishments typically found within these corridors. This provides just one potential approach to help retain the viability of the M-104 corridor and at the same time expand opportunities for higher paying, knowledge-based jobs. To support existing business and improvements along the corridor it is understood that public utility expansion, and cooperation with developers, is necessary.

Implementation Measures

Goals

- Maintain and preserve the aesthetic quality of the corridor.
- Maintain a safe and efficient flow of vehicular traffic while retaining reasonable access to properties.
- Encourage mixed-use development.

Recommendations

- Require new uses to provide reports or other materials to ensure that impacts on traffic and transportation networks are properly addressed prior to approval.
- Require development to expand sewer along the M-104 corridor and into the Village of Nunica
- Improve public water system reliability.

Strategies

- Invest public funds to upgrade the public infrastructure and amenities.
- Partner with private developers and grant agencies for public utility investment and improvement
- Concentrate similar uses and avoid strip development.
- Ensure that the public investment in the road system is maintained.
- Create a favorable environment for investment in the community.

Chapter Fourteen – Implementation

Introduction

The Master Plan is a compilation of descriptions, recommendations, and justification for future land use decisions in Crockery Township. It serves as an overall framework for the management and regulation of future development and also serves as the basis for evaluating rezoning and land use requests.

The Master Plan is general in scope. It is not in most cases intended to establish precise boundaries of land use or exact locations of future uses. It is also important to note that there is no schedule or timetable to implement the recommendations contained herein. The timing of a particular land use is dependent upon a number of factors such as availability of public utilities, provisions for adequate roadways, effect on public services, and the demand for a particular land use. Those, plus other factors, must be considered when reviewing a request for rezoning or a proposed land use for a particular parcel of land.

Master Plan Map

Complementing the text of the Master Plan is its map, which identifies land use Classifications by which the Township organizes and intends future improvements and uses. These Classifications are intentionally general in nature so as to not necessarily be specific to one use or types of use permitted by the Zoning Ordinance and its map.

In other words, while the land use Classifications are related to the Zoning Districts identified on the Zoning Ordinance map, as shown in the table below, specific future uses are determined by numerous natural and manmade features of the landscape such as public utilities, topography, soils, road improvements, surrounding uses, existing densities, etc., as well as other planning considerations such as compatibility, public safety, access, etc. Consequently, while the land use Classifications of the Master Plan Map are designed to serve as a guide for future uses, they are not considered to be a mandate for immediate improvements, public, private, or otherwise. Ultimately, while the Master Plan Map identifies areas for future uses, the feasibility of a proposed use is determined by the Zoning Ordinance and its regulations regarding height, area, bulk, location, etc. for each of its Districts.

Zoning Plan

Table of Master Plan Terms and Zoning Ordinance Map District Terms

Master Plan Map Classifications	Zoning Ordinance Map Districts
Intensive Agriculture	Agricultural and Open Space Ag-1
Moderate Agriculture	Rural/Agricultural Preservation Ag-2
Rural Estate	Rural Estates Residential R1-A
Low-Density Residential	Low-Density Residential R-1 and R2-A
Moderate-Density Single-Family Residential	Medium-Density Single-Family Residential R-2 and R-3
Multiple-Family Mixed Use Residential	Multiple-Family Mixed-Use R-4
Village Mixed Use	Village Mixed-Use R-5
Nunica Main Street Overlay	Nunica Main Street Overlay District
Neighborhood Commercial	Neighborhood Commercial
General Commercial	General Commercial
Highway Commercial	Highway Commercial
Horticultural	Commercial Horticultural
Industrial	Light Industrial, Heavy Industrial
100-Year Floodplain	Floodplain Overlay District
M-104 Overlay	M-104 Overlay District

Community Mapping and Appendix

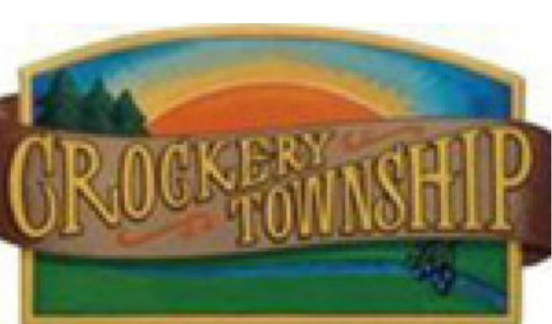
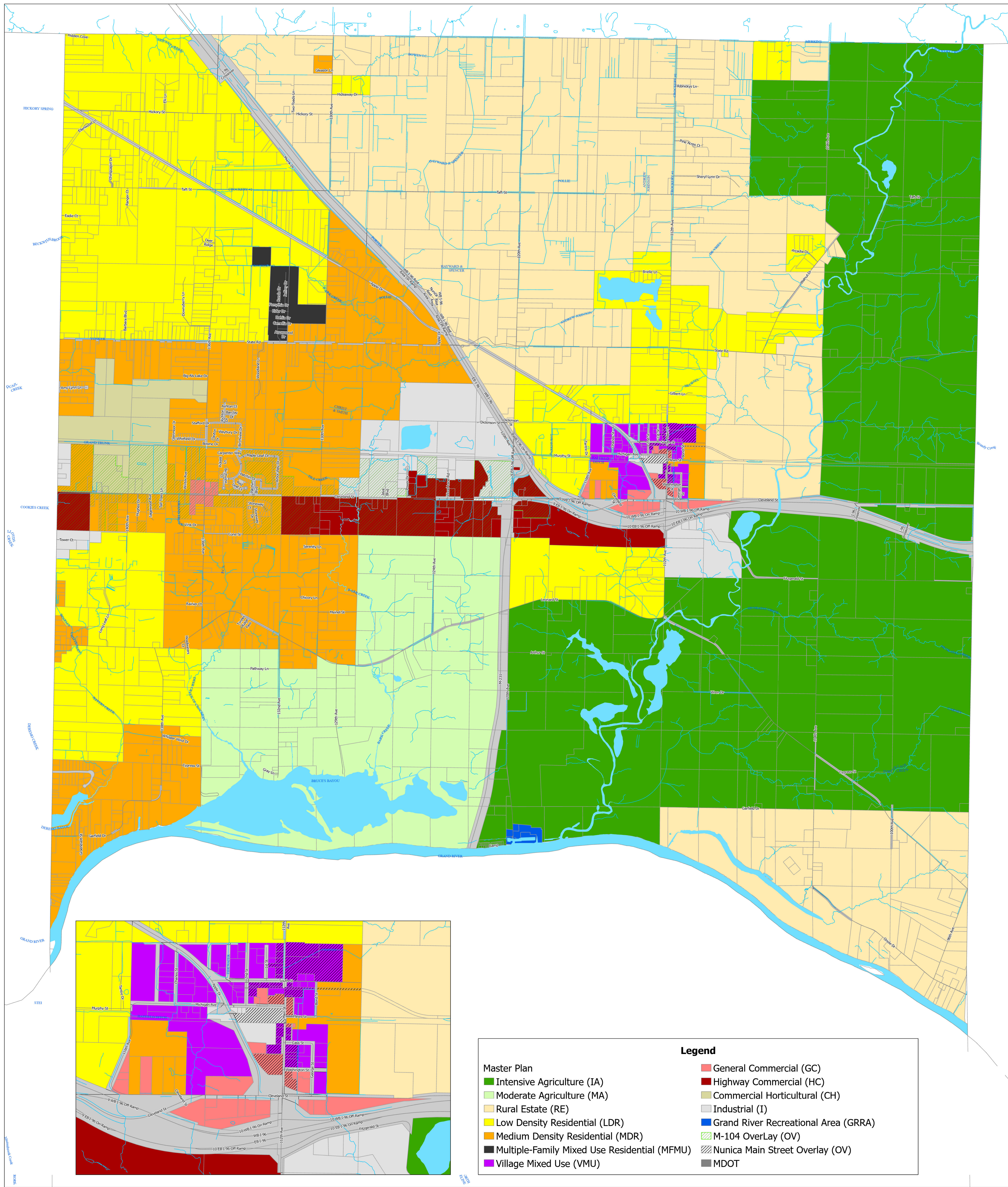
Contents:

Following are community maps as well as their established purpose, which are incorporated as part of the Master Plan. These maps are not intended to be limited to their purposes provided below but rather establish a minimum relationship to the Master Plan.

1. Master Plan Proposed Future Land Use Map – creates future land use classifications and delineates boundaries for certain uses of land.
2. Figure 1: Farmland Class- classifies areas of the Township on the basis of soil suitability for general agricultural crop production.
3. Figure 2: Ground Water Depth – identifies areas of surface water and areas where the ground water table starts on a few below the ground surface.
4. Figure 3: Wetland Map – identifies the locations of wetlands throughout the Township.
5. Figure 4: Crockery Township Sewer System- establishes exiting sanitary sewer system to illustrate feasibility of supporting proposed development.
6. Figure 5: Crockery Township Water System-establishes exiting public water system to illustrate feasibility of supporting proposed development.
7. Figure 6: Location Map – Identifies the location of the Township within Ottawa County.
8. Figure 7: Crockery Township Road Classifications- identifies existing network of transportation infrastructure to illustrate limitations and feasibility of supporting a proposed use.
9. Figure 8: Crockery Township Areas with Severe Limitations for Septic Systems- indicates the location of soils within the Township that present severe limitations for both building and onsite septic systems.
10. Figure 9: Crockery Township Floodplain Map – illustrates the location of the 100-year floodplain and other areas of the Township which may be prone to flooding.

The following information can also be found within the appendix:

- Crockery Township Community Input Summary
- Housing Assessment and Census Data – Master Plan Report
- Water Resource Friendly Marina Development

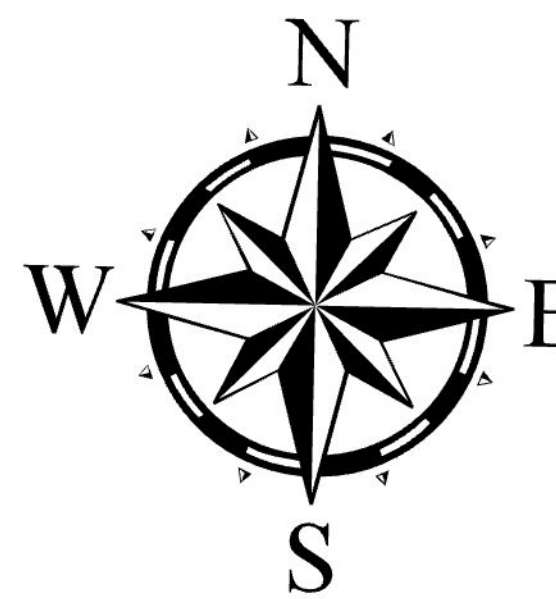


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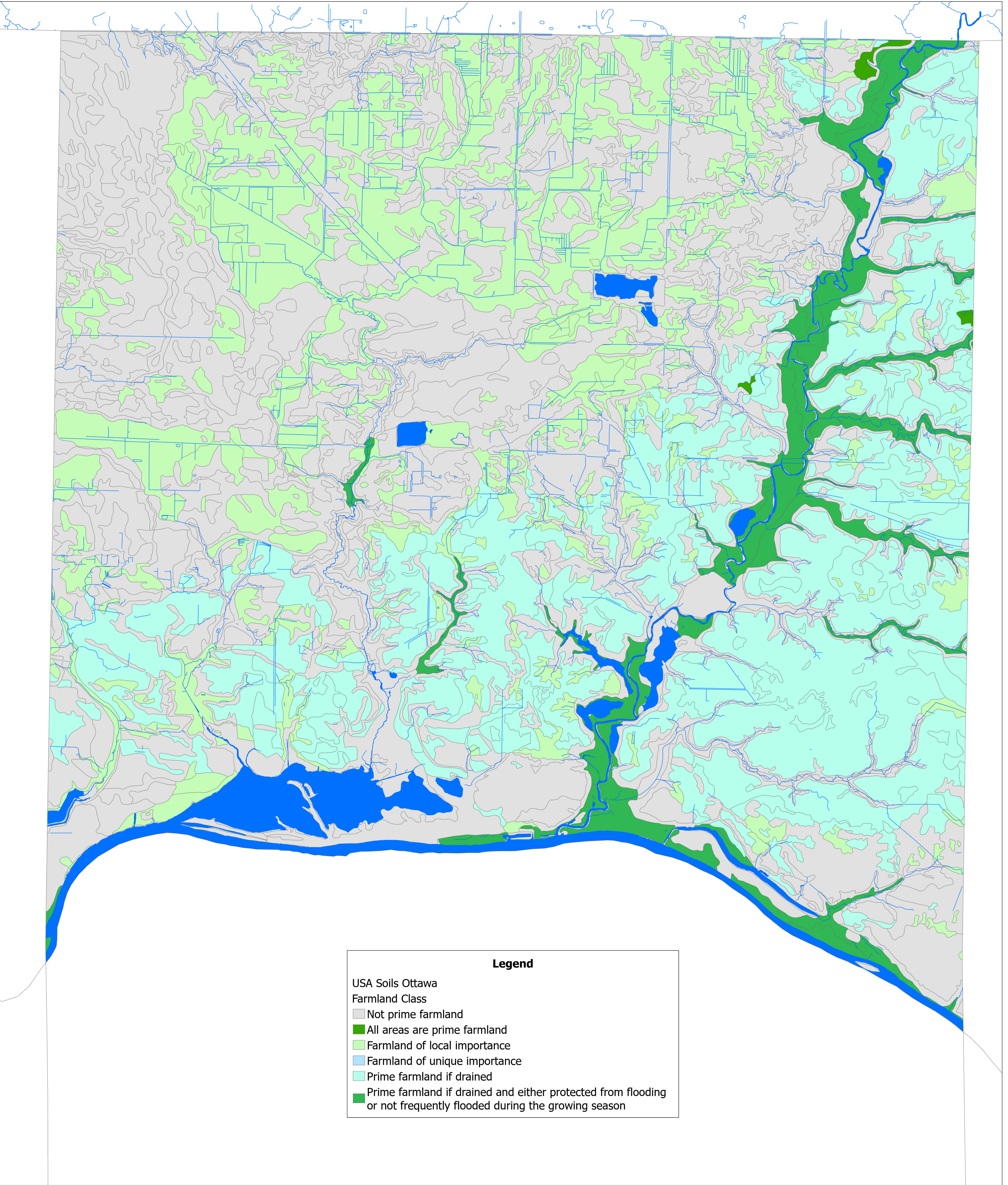
Floodplain Data Source FEMA

Crockery Township Master Plan Map



Scale: 1:12,000

0 500 1,000 2,000 3,000 4,000 Feet



Legend

USA Soils Ottawa
Farmland Class

Not prime farmland

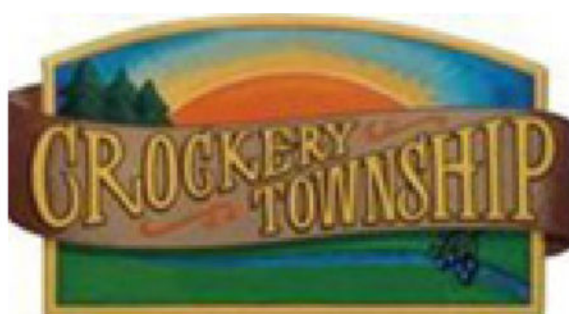
All areas are prime farmland

Farmland of local importance

Farmland of unique importance

Prime farmland if drained

Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season



**Ottawa County**

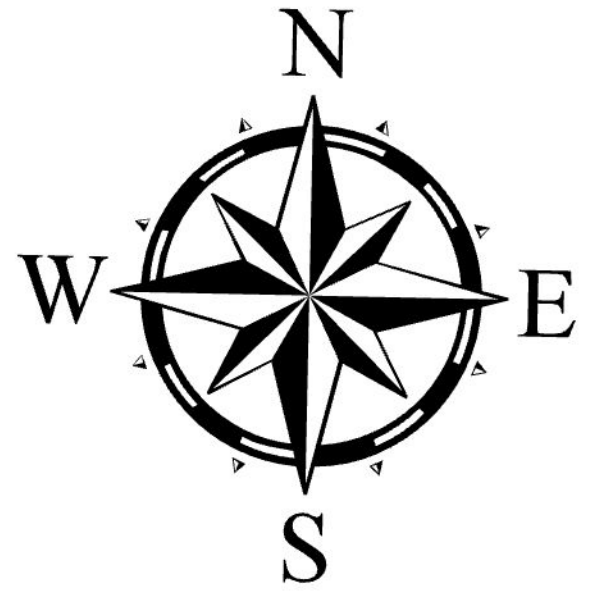
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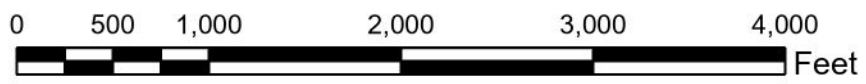
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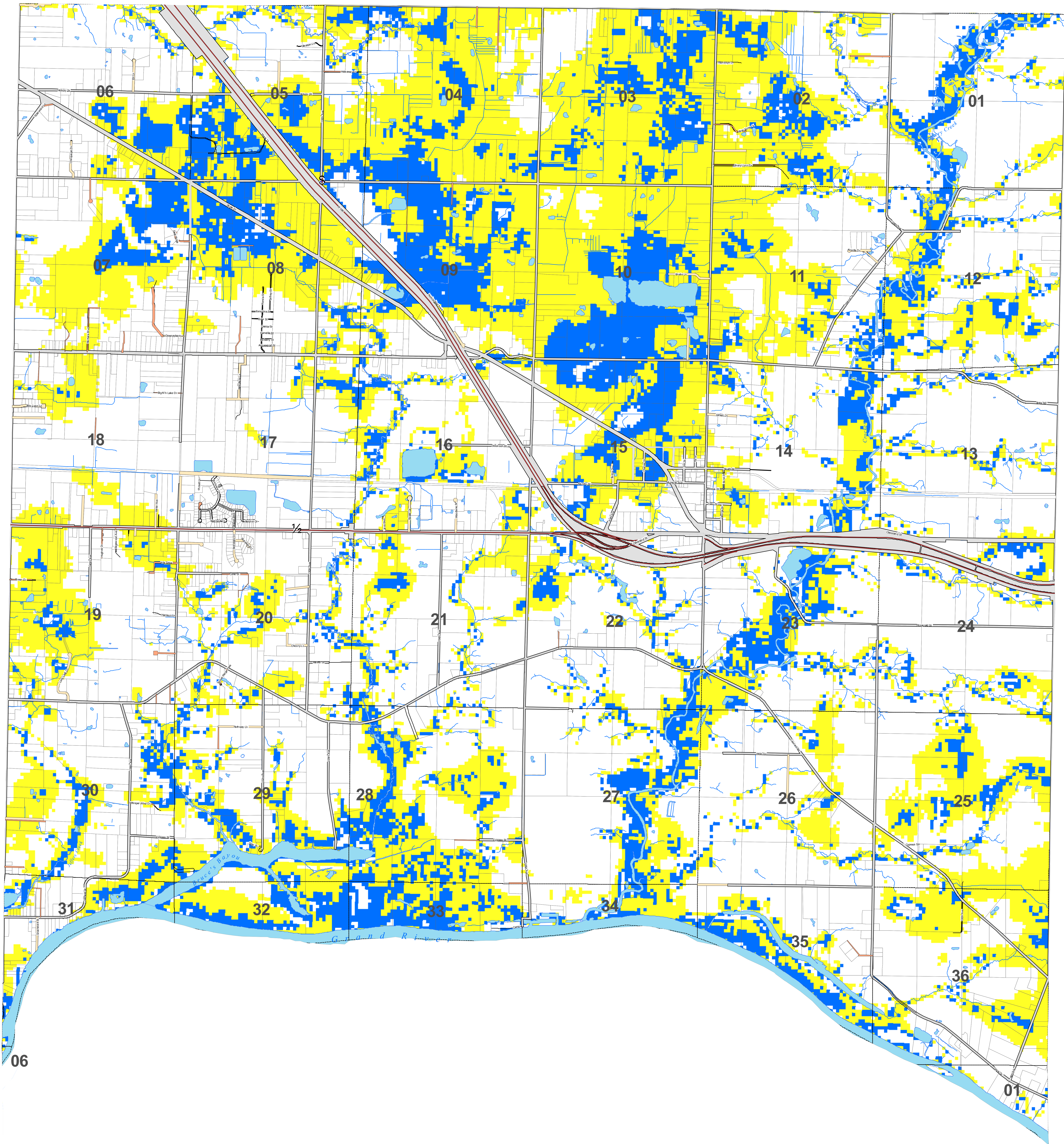
Floodplain Data Source FEMA

Crockery Township Farmland Class



Scale: 1:12,000





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 Photography date: April, 2008
 Print Date: May 20, 2009
 Groundwater Data Source: Michigan CGI

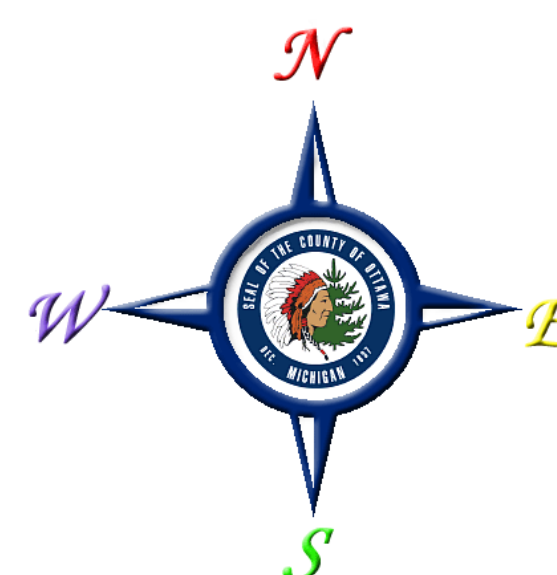
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 Fax: 616/738-4404
<http://gis.ottawacounty.org>

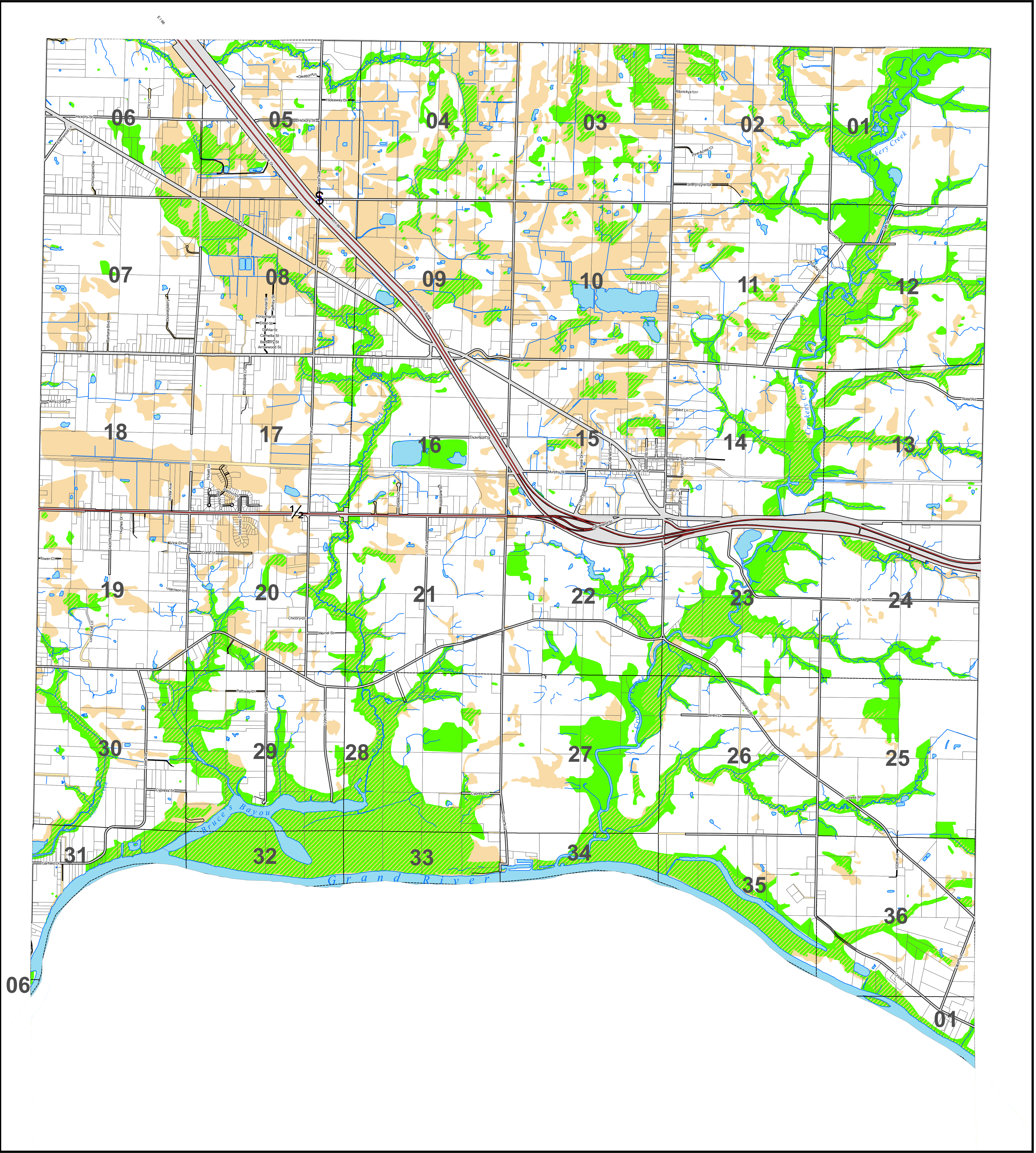
Crockery Township Ground Water Depth

1 inch = 1,000 feet



Legend
 Water Table Depth Data (Source: State of Michigan)
 Surface Water
 1.0 to 4.9 Feet Below Surface





Crockery Township Wetland Map

1 inch = 1,500 feet



Legend

- State Highways
- Easements and Right of Way
- Private Road Easements
- PrivROW
- Sections
- Water Features
- Parcels
- Wetland as identified on NWI and MIRIS maps and soil area which include wetland soils
- Soil areas which include wetland soils
- Wetlands as identified on NWI and MIRIS maps

The wetland data is provided by the State of Michigan.

According to their Wetland Inventory Map disclaimer, the Michigan Department of Environmental Quality (MDEQ) intends the wetland data to be used as one tool to assist in identifying wetlands and provides only potential and approximate location of wetlands and wetland conditions. The MDEQ obtained the data for their inventory from the following agencies and organizations:

1. The National Wetland Inventory (NWI) conducted by the United States Fish and Wildlife Service through interpretation of aerial photos and topographic data.
2. Land Cover as mapped by the Michigan Resource Inventory System (MIRIS), Michigan Department of Natural Resources, through interpretation of aerial photographs.
3. Soils as mapped by the United States Department of Agriculture, Natural Resource Conservation Service (NRCS).

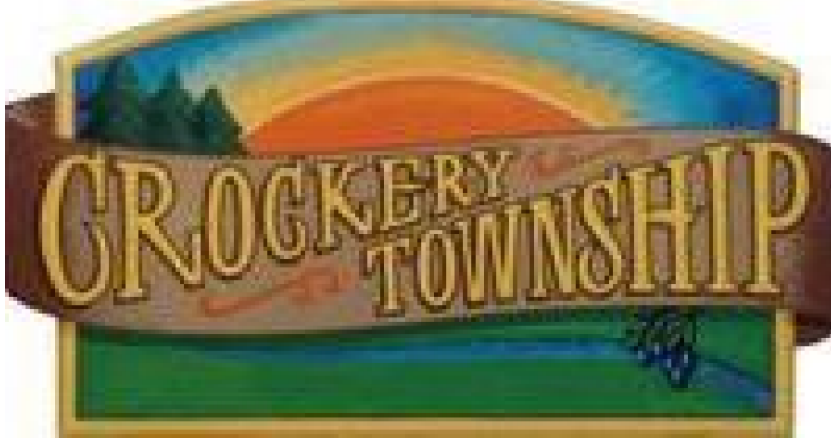
The data provided by the State on this map is not intended to be used to determine the specific locations and jurisdictional boundaries of wetland area subject to regulation under Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Only an on-site evaluation performed by the MDEQ in accordance with Part 303 shall be used for jurisdictional determination. A permit is required from the MDEQ to conduct certain activities in wetlands regulated under Part 303.

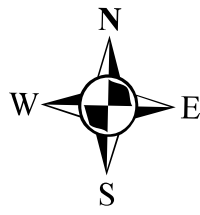
More information regarding this data, can be assessed at www.michigan.gov/deqwetlands

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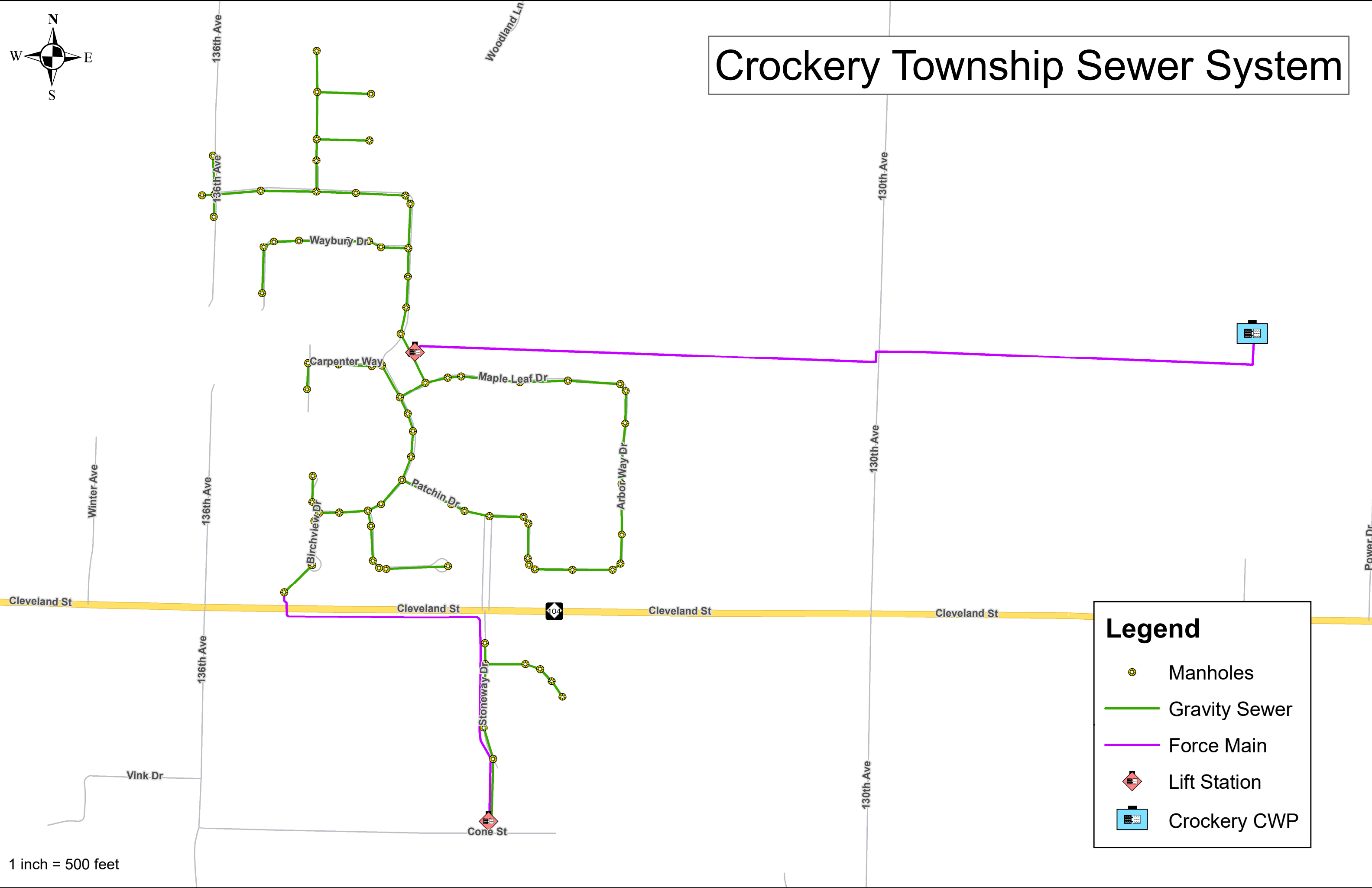
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Photography date: April, 2008





Crockery Township Sewer System



Legend

 Manholes

 Gravity Sewer

 Force Main

 Lift Station

 Crockery CWP

1 inch = 500 feet

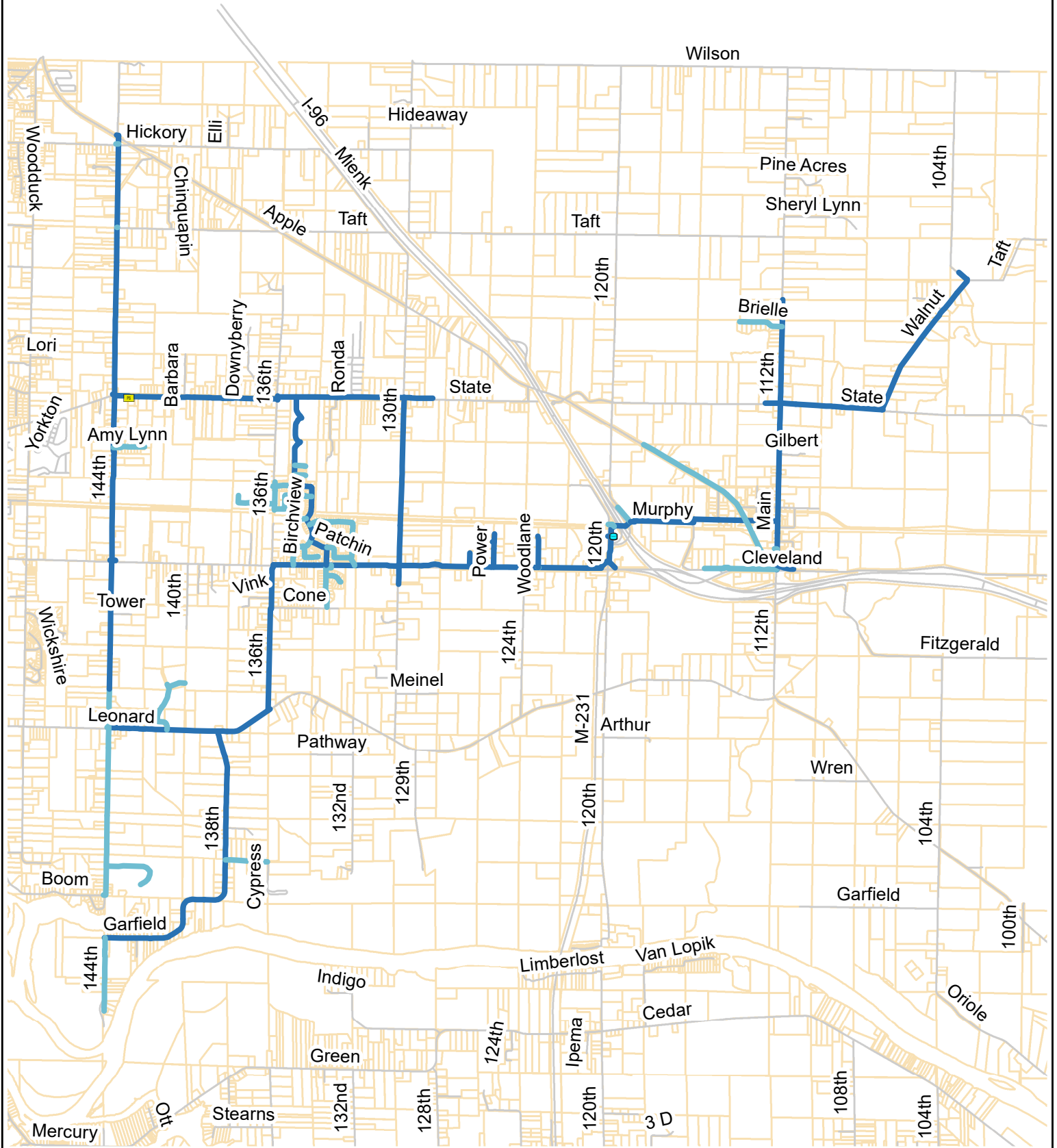
Crockery Township Water System - 2025

Water Mains

Diameter

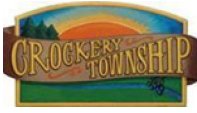
8"

12"



Crockery Township

County of Ottawa



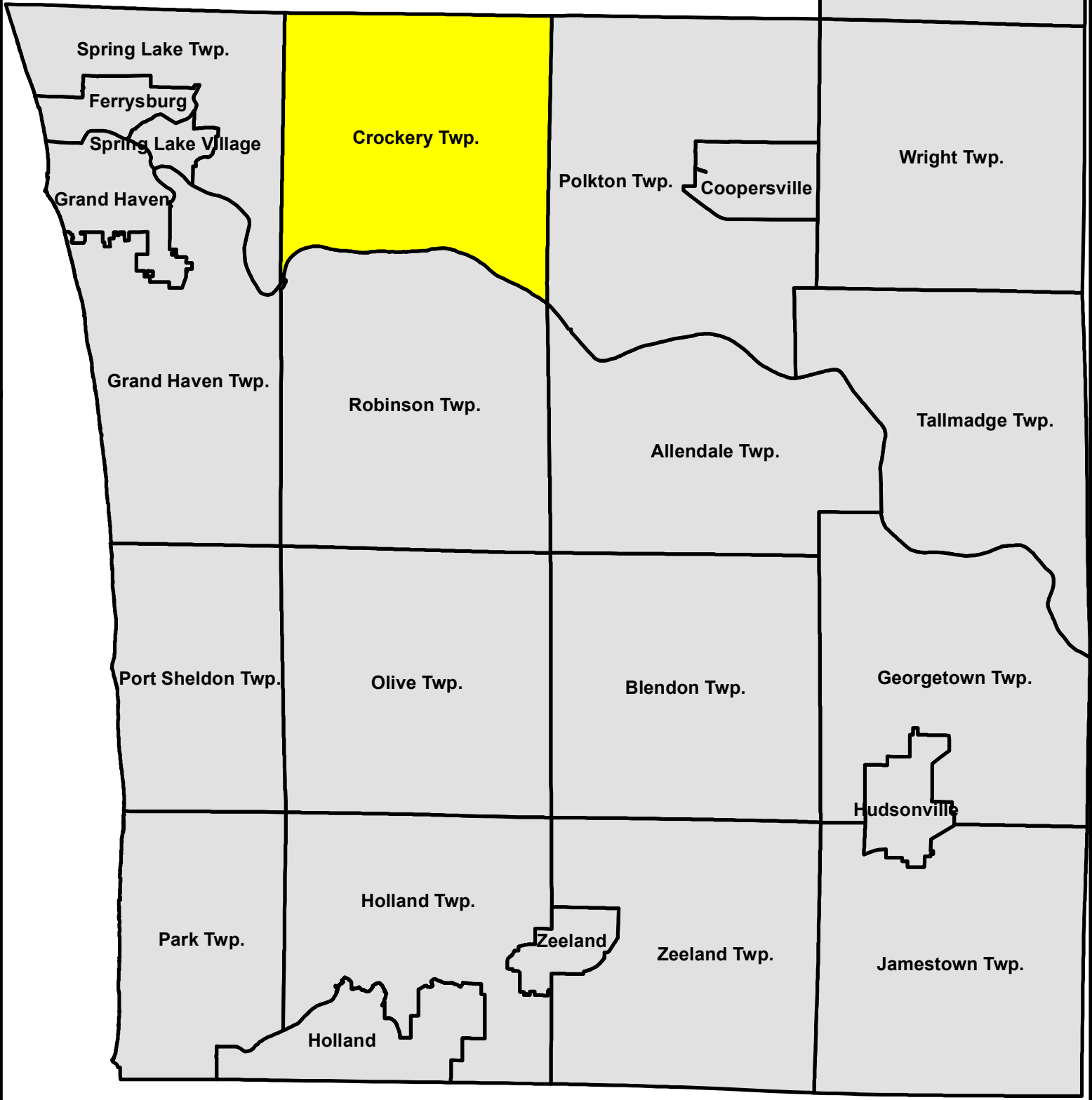
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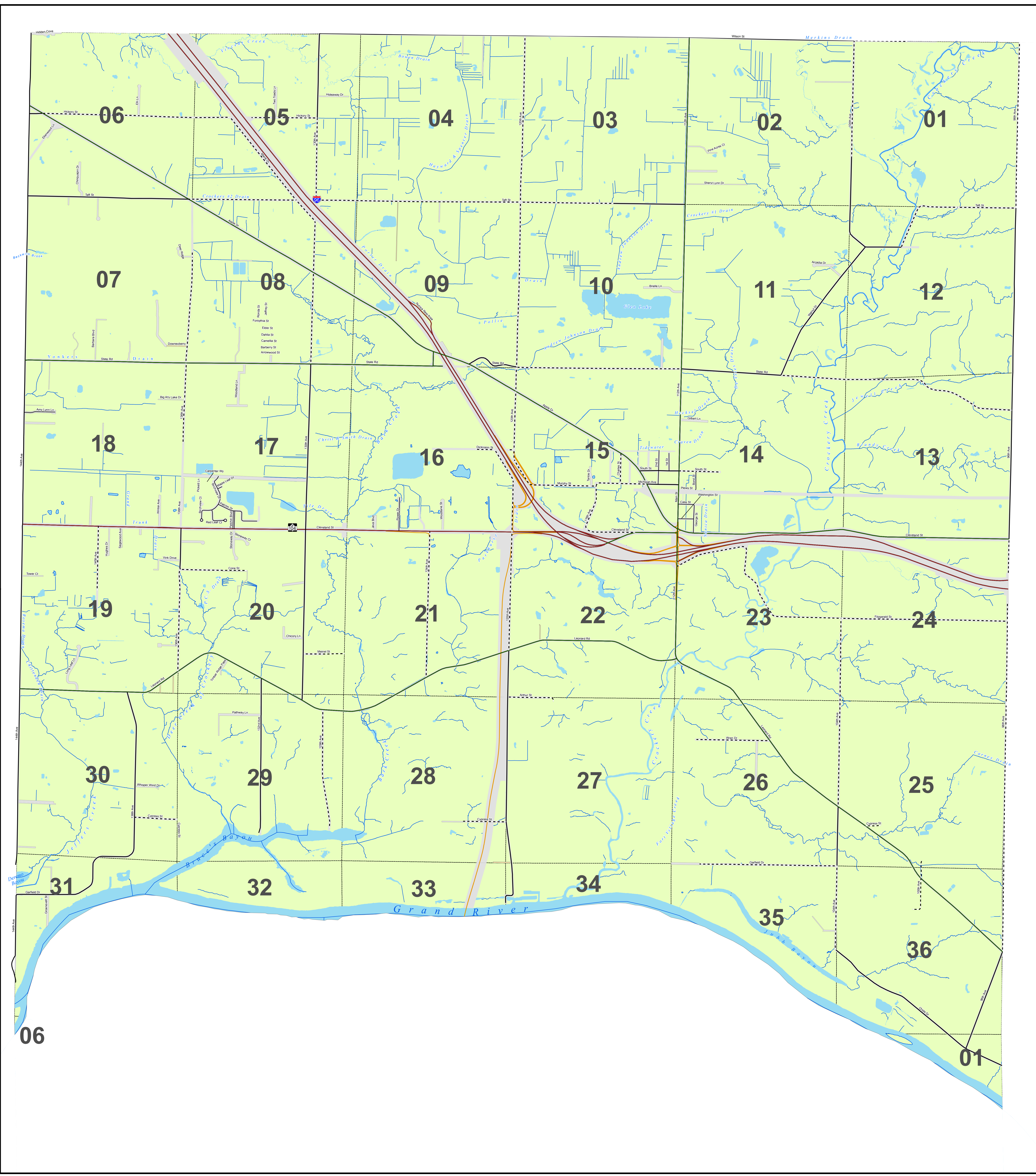
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1 in = 3 miles

0 0.5 1 2 3 Miles



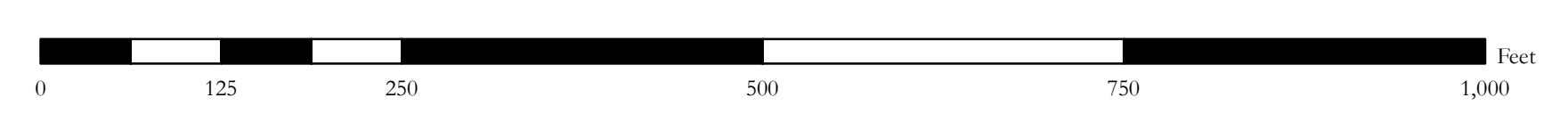


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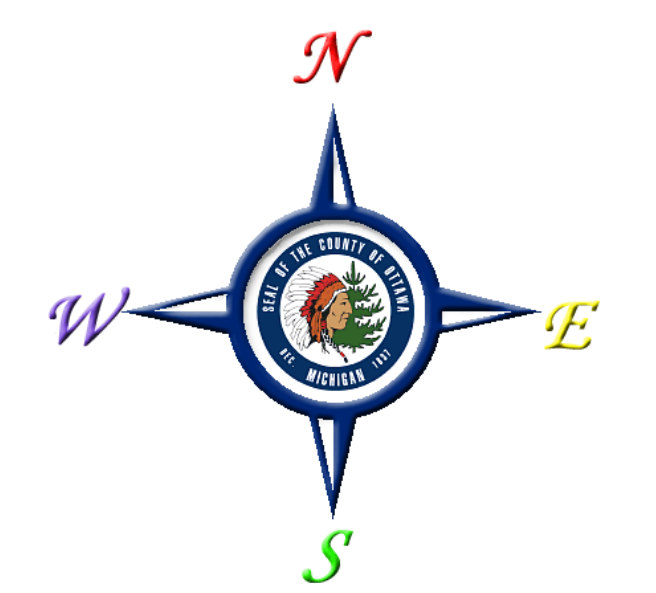
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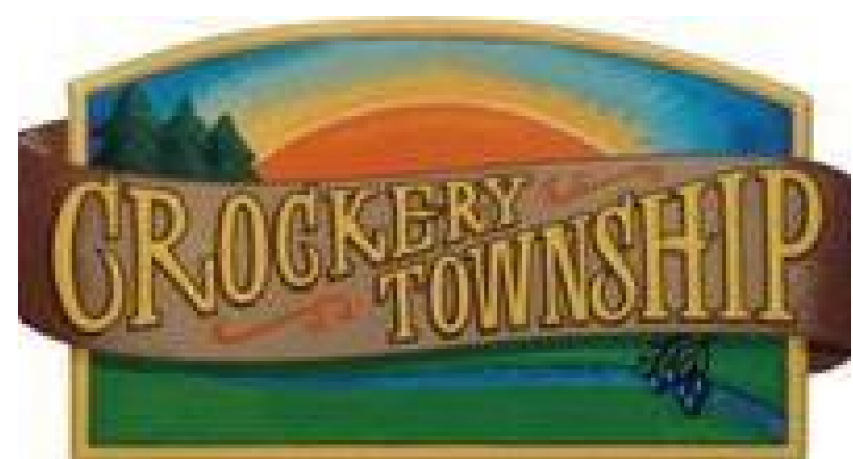
Crockery Township Road Classifications

1 inch = 1,000 feet



- Legend**
- Road Type**
- State Roads
 - OCRC Primary Roads
 - OCRC Local Paved Roads
 - OCRC Local Unpaved Roads
 - M-231 Proposed Route
 - Easements and Right of Way
 - Private Streets



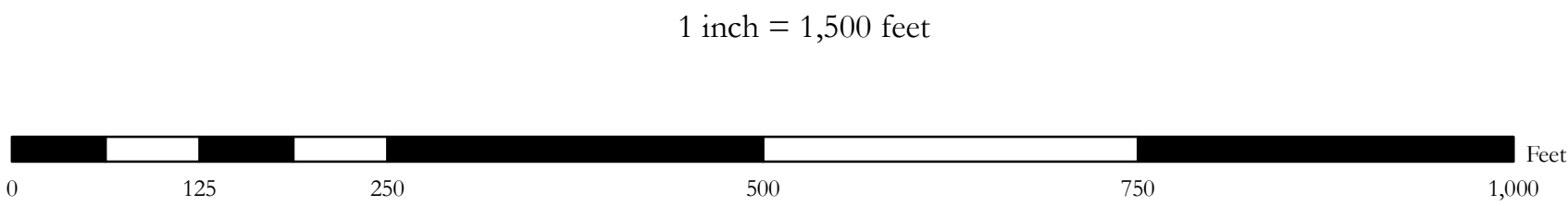


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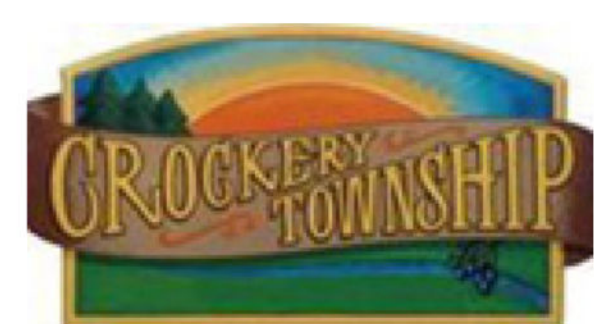
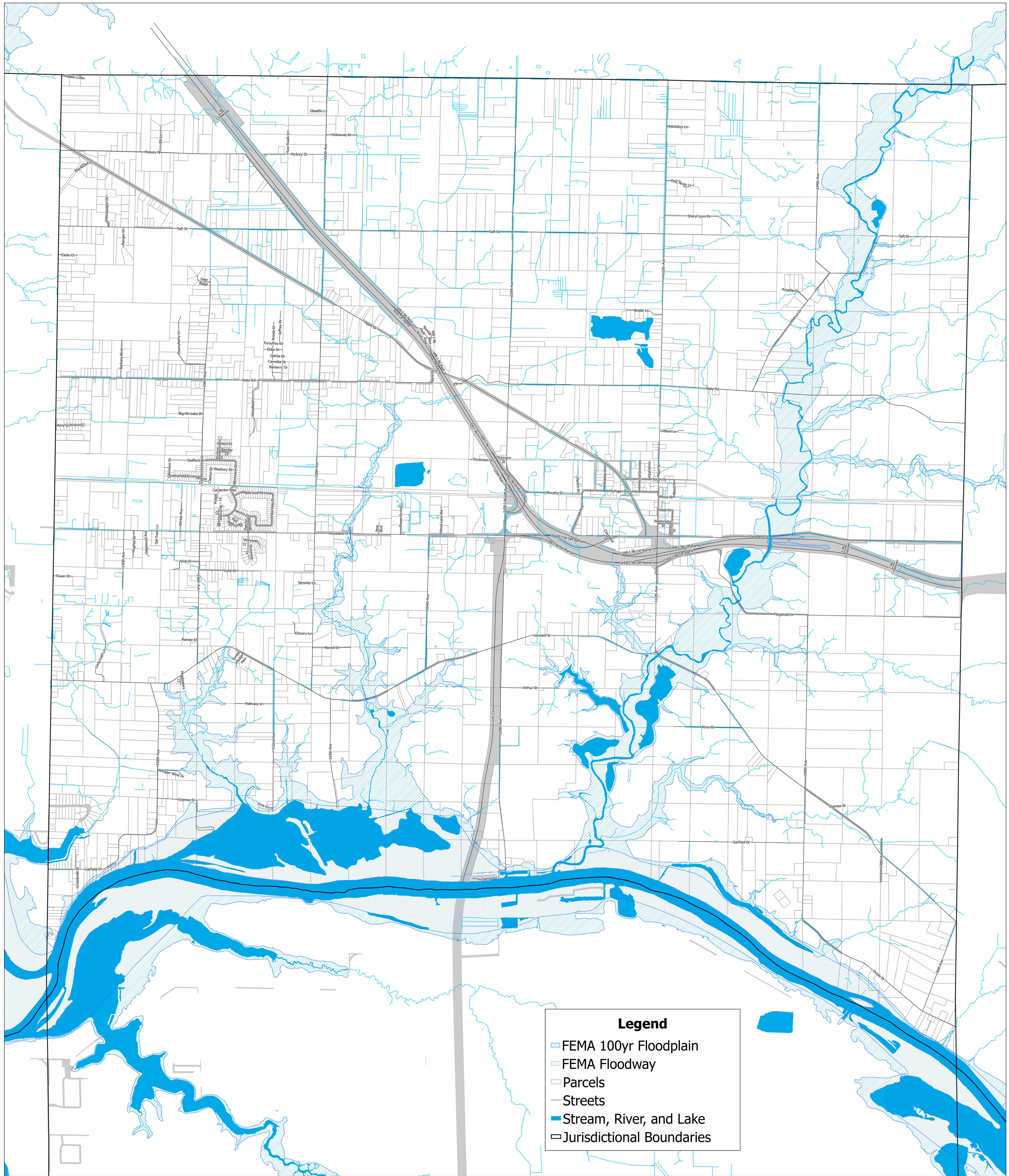
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Groundwater Data Source: Soil data developed by the National
Resource Conservation Service. The data is based on a number of
sources.



Legend

- Private Road Easements
- State Highways
- Easements and Right of Way
- Sections
- Water Features
- Parcels
- Severe Septic Limitations

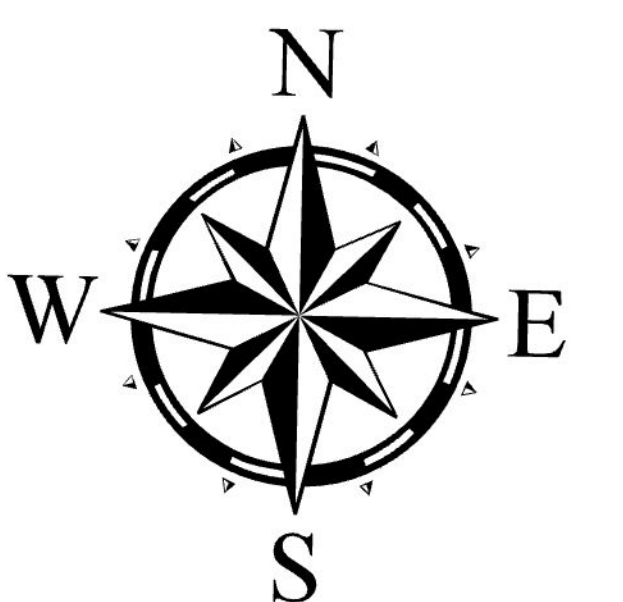


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Floodplain Data Source FEMA

Crockery Township Flood Plain Map



Scale: 1:12,000

0 500 1,000 2,000 3,000 4,000
Feet

Crockery Township Community Input Summary

In 2023 the Planning Commission began the process to update the Master Plan. Community engagement commenced with commercial and industrial property owner stakeholder interviews. Overall, commercial and industrial property owners felt that their current locations along M-104 and 112th Avenue are sustainable.

The biggest takeaway from the stakeholder interviews was a very mixed opinion on whether public sewer and expansion of public water was warranted. Some opined that public sewer may be of benefit for small commercial and industrial lot sizes with limited room for alternate drain field locations or a high water table. For some, maintaining a healthy workforce is a challenge. Public sewer may help develop workforce housing, thus strengthening employee availability. Other owners felt public sewer and expansion of public water would increase residential development, which would create a conflict with their commercial and industrial uses. From these interviews, it was determined that the greatest focus for the community survey would be residential development including senior housing.

A community survey was sent out to all property owners within the Township. This survey asked for the owners' opinion on everything from rural character, agricultural preservation, residential development, and the potential growth of commercial/industrial uses.

Additionally, a community workshop was held to gather more public input. As part of the workshop, visual preferences of different development topics were captured. The resounding theme from the workshop was that residents would like to maintain the rural character of Crockery Township through strategic, carefully considered development. Below is a compilation of this data.

Participant Demographics and Living in Crockery Township

Four hundred and six owners of Crockery Township took the public survey. There was a very even spread of respondents between the ages of 35 and 65+. Only 9% of respondents were between the ages of 18 and 34. Thirty-eight percent of respondents have lived in the Township over 20 years. Of respondents, 39% said they would recommend living in the Township and 37% were neutral.

Agricultural and Rural Character

Crockery Township has historically been considered a rural and predominantly agricultural community. Fifty-eight percent of survey respondents supported continued growth at its current pace. Workshop attendees relayed a strong preference to protect the agricultural lands and rural character of the community. Seventy-two percent of survey respondents said ease of travel within the Township was good/excellent and 71% said rural character is good/excellent. However, when asked about access to healthcare facilities, 33% said it was poor and 28% said it was fair. When asked about access to shopping amenities, 39% said it was poor and 32% said it was fair. Residents in the Township are supportive of policies that are designed to protect the rural look and feel of the community and appear to be willing to forego quick access to commercial/retail and professional services in order to protect the rural character of the community.

Rate of Development

Respondents felt that the current rate of development in general is about right (58% agree), again, with a desire to protect the current visual character.

Residential Development

Growth of single family neighborhoods may be supported through directed improvement and repairs to public roads. While large acreage lots were preferred, those attending the workshop suggested small lot development locations predominantly north of M-104 near Nunica proper and the current Hathaway Lakes development. Open space, playgrounds/recreation opportunities, and street tree requirements were preferred for developments. Dark-sky-friendly street lighting was preferred.

Senior housing was supported/very supported by 47% and was opposed/strongly opposed by 16%. Again, workshop attendees suggested locations predominantly north of M-104 for this type of housing. Small scale (perhaps a site condo), one-story, free-standing homes were preferred over multi-level buildings. There was some desire for walkable senior housing with proximity to services and public transit (if/when available).

Mixed (commercial/residential) use was supported/very supported by 27% and opposed/strongly opposed by 39%. Duplexes (15%), apartments (17%), and Townhomes (18%) scored lower, though there was a positive reaction to development that incorporated multiple housing types within a mixed-use development. The Community may be supportive of a limited mixed use downtown development district. They do not support an increase in taxes to encourage this development, but may be supportive of a policy that permits such uses.

Commercial and Industrial

Respondents felt that economic development policies should be designed to allow for, but not necessarily encourage commercial or industrial development.

Public Services

Respondents felt that educational and recreational opportunities are good/excellent. If the Township had extra funds, highest priorities for public services were roads, internet, and fire/EMS in that order. However, when asked if they would support a tax increase for these services, no service scored 50% or higher even if we combined the likely/highly likely categories. The three highest scores were Fire/EMS (46%), road repair (48%), and expansion/improvements of parks and recreation (43%).

Community Input Inconsistencies/conflicts

1. A strong theme emerged in opposition to higher-density residential development. When this concept was presented at the community workshop, respondents dramatically supported agricultural land uses and large residential lot sizes. However, large residential lot sizes can take up agricultural lands. Clustering residential development in higher density may help reduce development pressure on agricultural lands.
2. Conflicting opinions were received regarding the addition of public sewer and expansion of public water.

Summary

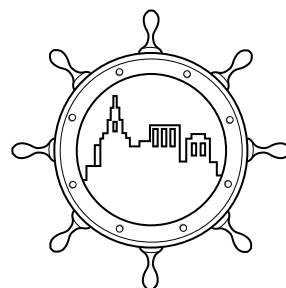
1. Residents prefer a rural setting and support the protection of agricultural land
2. Continued development at the current pace is supported if orchestrated with protecting the visual character of the community
3. Commercial/Industrial development should continue at its current pace without any plans to encourage infill.

4. Senior housing may be supported in the right location. Multi-level senior apartment buildings were not preferred.
5. Two-story mixed use development with public space may be supported in the right location.
6. The potential of public utilities related to development should be discussed.

Housing Assessment & Census Report

Master Plan Report

2025



Fresh Coast
Planning

Purpose

The purpose of the report is to provide a high-level summary of expected demand for housing in Crockery Township over the next ten years.

Summary

Development pressure in Crockery Township appears to come from the west near its border with Spring Lake Township. From 2010 to 2020 Crockery Township saw a 15% increase in population growth. This is higher than the growth rate for surrounding communities. As the Township reviews and develops land use strategies you may want to consider the amount of new housing that will be needed to continue this growth rate and the price range for an affordable house in Crockery Township.

In order to sustain the current growth rate of 15%, over the next ten years at least 264 housing units need to be created. Many of the homes being sold in Crockery Township are well outside the affordability range of many Township residents. In order to retain or attract residents, the Township may need to develop strategies to develop more affordable housing.

Growth

Between 2010 and 2020 the average growth rate for the area surrounding and including Crockery Township was 15%. If this growth rate is sustained it is projected that between 2020 and 2030 the population of Crockery Township will grow to approximately 5,258 persons, or 659 new persons to the Township. In determining the number of new housing units that may be necessary to house these individuals a few factors were considered, including average household size, occupancy/vacancy rate, and the characteristics of vacant housing.

Based on data collected from the U.S. Census Bureau, approximately 97.3% of housing in Crockery Township is occupied (1,168 units) and 2.7% (48 units) is vacant. 58% (28 units) of vacant housing being used for seasonal, recreational, or occasional use. The minimal amount of vacant housing may be an indication of high demand for housing in the Township.

The U.S. Census Bureau states that the average household in the United States is 2.5 persons. Given this, in order to sustain the current growth rate and provide housing for 659 new persons, an additional 264 housing units need to be constructed in the Crockery Township between 2020 and 2030.

The Hathaway development along Cleveland Street/M-104, initially approved by the Township in 2003, is designed to provide an additional 154 homes, additionally 29 homes are expected in the new Kingfisher neighborhood on 144th Avenue. Considering the planned homes in the Hathaway and Kingfisher developments, approximately 81 more homes appear to be needed over the next four years to sustain the growth rate in Crockery Township.

Affordability

Based on the data on household income collected from the U.S. Census Bureau and our calculations on home affordability, an affordable house for the average Crockery Township residents is between \$195,689 and \$259,410. According to the approved plans for the Hathaway and Kingfisher development, the majority of the

planned new housing in Crockery Township is expected to be above this level, creating the need for more affordable housing in other areas of the Township.

Based on a report from rocket.com, (<https://rocket.com/homes/market-reports/mi/crockery-township>) in May 2025 the median sold price for a house in Crockery Township is \$420,000. The one-year average home sale value for Crockery Township is \$393,450, making the current median price 6.7% higher than a year ago. A copy of this report has been provided in the Housing Market Report section of this report.

With this information as a basis, if the Township decides to create strategies to increase housing stock, the Township may want to focus on increasing housing that is within the range of \$180,000 and \$240,000. Additionally, further engagement with stakeholders (residents, home builders, developers, and others) may be necessary to fully develop the appropriate strategies for the Township.

Data

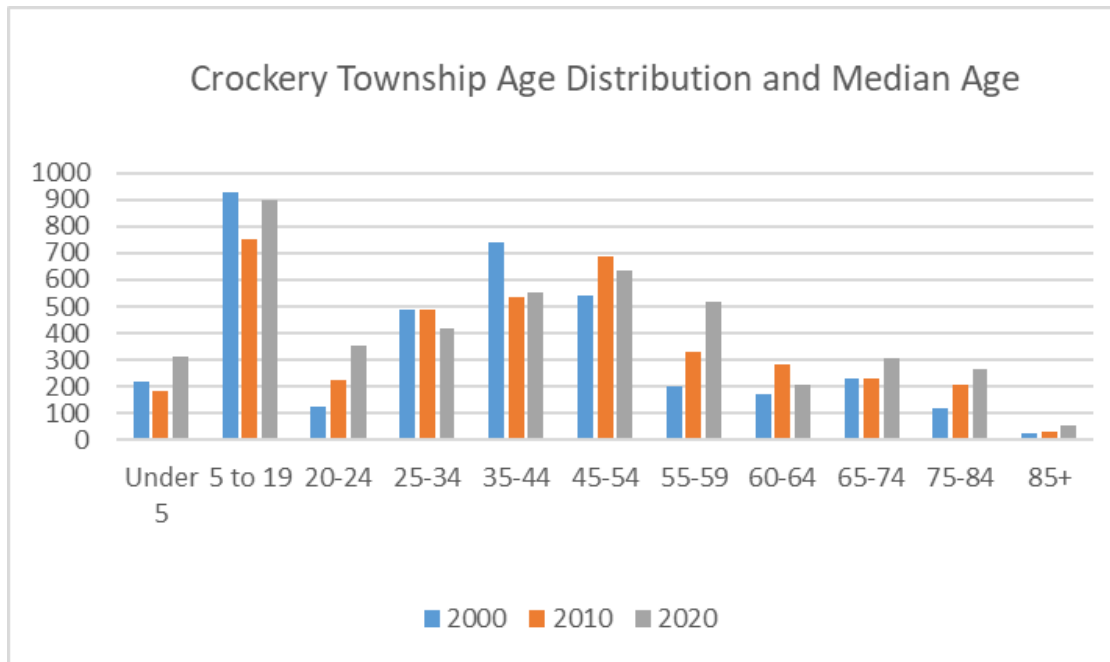
The following data was used to prepare the information provided in this report.

Population Growth 2000-2020

Township or Village	2000	Δ%	Δ#	2010	Δ%	Δ#	2020
<u>Ottawa County</u>	238,314	10.6%	25,487	263,801	12%	32,399	296,200
Crockery Township	3,782	4.8%	178	3,960	15%	612	4,572
Spring Lake Township	13,140	8.8%	1,160	14,300	6.7%	969	15,269
Village of Spring Lake	2,514	-7.6%	-191	2,323	7.8%	181	2,504
Polkton Township	2,335	3.8%	88	2,423	5.9%	142	2,565
Robinson Township	5,588	8.9%	496	6,084	4.9%	298	6,382
Allendale Township	13,042	59%	7,666	20,708	28.4%	5,874	26,582
Grand Haven Township	13,278	14.3%	1,900	15,178	18.6%	2,826	18,004
<u>Muskegon County</u>	170,200	1.2%	1,988	172,188	2.1%	3,636	175,824
Fruitport Township	12,533	8.5%	1,065	13,598	7.2%	977	14,575
Village of Fruitport	1,124	-2.8%	-31	1,093	.9%	10	1,103
Sullivan Township	2,477	1.5%	36	2,441	4.1%	100	2,541
Ravenna Township	2,856	1.7%	49	2,905	2%	57	2,962
Village of Ravenna	1,206	1.1%	13	1,219	7.3%	89	1,308

Crockery Township Age Distribution and Median Age

Year	Under 5	5-19	20-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85+	Median Age
2000	218	928	124	490	740	539	201	172	228	117	25	36.7
2010	186	751	226	491	538	689	329	284	231	206	33	42.2
2020	310	896	354	421	554	636	518	207	307	267	55	38.9



Median and Mean Household Income & Poverty

Township or Village	Median Household Income (\$)	Mean Household Income (\$)	Population in Poverty
<u>Ottawa County</u>	\$72,418	\$91,035	7.9%
Crockery Township	\$69,447	\$83,875	4.8%
Spring Lake Township	\$70,712	\$95,395	4.8%
Village of Spring Lake	\$62,857	\$79,216	6.4%
Polkton Township	\$87,250	\$96,975	2.5%
Robinson Township	\$81,287	\$95,831	3.4%
Allendale Township	\$68,171	\$74,494	24.1%
Grand Haven Township	\$85,457	\$98,967	5.2%
<u>Muskegon County</u>	\$53,478	\$68,850	14.1%
Fruitport Township	\$70,262	\$93,095	6.7%
Village of Fruitport	\$65,625	\$149,148	6.3%
Sullivan Township	\$57,167	\$66,203	10.7%
Ravenna Township	\$57,843	\$75,266	8.8%
Village of Ravenna	\$51,567	\$62,410	8%

Crockery Township Affordable Housing Costs (Including Utilities)

Affordable Housing = 30% or less of Household Income

	Annual Income	Affordable Annual Housing Budget	Affordable Monthly Housing Budget	Affordable Home Price
Median Household Income	\$69,447	\$20,834	\$1,736	\$195,689
Mean Household Income	\$91,035	\$27,310	\$2,276	\$259,410

Assumptions included in Affordable Home Price:

\$200 Monthly Utility Cost
 No Down Payment
 7% Interest Rate
 1.2% Property Taxes
 \$950/annual home insurance costs

2023 Housing Value Comparison	Crockery Township	Ottawa County	Spring Lake Twp.	Polkton Township	Robinson Township	Fruitport Township
Less than \$50,000	11.4%	6.0%	4.6%	3.7%	2.9%	8.3%
\$50,000 to \$99,999	3.9%	1.2%	1.4%	0.4%	1.5%	3.7%
\$100,000 to \$149,999	5.3%	2.6%	8.9%	0.8%	4.3%	9.1%
\$150,000 to \$199,999	16.4%	6.2%	6.5%	9.1%	10.0%	25.0%
\$200,000 to \$299,999	18.1%	26.6%	24.5%	26.8%	32.2%	30.2%
\$300,000 to \$499,999	31.1%	40.7%	31.7%	37.4%	40.9%	20.2%
\$500,000 to \$999,999	13.9%	15.1%	18.0%	20.0%	7.9%	3.3%
\$1,000,000 or more	0.0%	1.6%	4.2%	1.8%	0.4%	0.3%
Median Value (dollars)	\$268,100	\$328,400	\$318,600	\$338,000	\$297,400	\$209,600

Demographics	Crockery Township	Ottawa County	Spring Lake Twp.	Polkton Township	Robinson Township	Fruitport Township
Population	4,572	296,200	15,269	2,565	6,382	14,575
Pop. Density/ Square Mile	142.7	538.4	926.7	63.1	64.1	486.3
Average Age	38.9	36.9	46.9	38.2	37.2	44
High School Graduate or Higher	92.5%	94.1%	97.7%	95.7%	93.1%	94.2%
Bachelors or Higher	35.1%	39.9%	46.9%	25.6%	25.8%	25.5%
Civilian Percent Employed	69.2%	67.6%	61.8%	52.2%	63.8%	61.1%
Mean Travel Time to Work (Min)	22	20.4	24.4	23.8	22.1	21.4

CROCKERY TOWNSHIP HOUSEHOLDS	Total	Married-Couple Family Household	Male Householder, No Spouse present	Female Householder, No Spouse Present	Nonfamily Household
Total households	1,778	1,094	91	146	447
Average household size	2.58	3.02	3.91	3.09	1.08
FAMILIES					
Total families	1,331	1,094	91	146	(X)
Average family size	3.04	3.01	3.29	3.09	(X)
Households with own children of the householder under 18 years					
Under 6 years only	38.80%	39.40%	58.90%	0.00%	(X)
Under 6 years and 6 to 17 years	22.20%	20.50%	0.00%	77.10%	(X)
6 to 17 years only	39.00%	40.10%	41.10%	22.90%	(X)
SELECTED HOUSEHOLDS BY TYPE					
Households with one or more people under 18	29.00%	38.20%	69.20%	24.00%	0.00%
Households with one or more people 60+	30.50%	25.40%	17.60%	54.10%	37.80%
Households with one or more people 65	25.10%	(X)	(X)	(X)	25.70%
Householder living alone	23.40%	(X)	(X)	(X)	93.10%
65 years and over	6.00%	(X)	(X)	(X)	23.70%
UNITS IN STRUCTURE					
1-unit structures	84.00%	95.90%	63.70%	56.80%	67.80%
2-or-more-unit structures	6.70%	1.70%	0.00%	0.00%	22.60%
Mobile homes and all other types of units	9.30%	2.40%	36.30%	43.20%	9.60%
HOUSING TENURE					
Owner-occupied housing units	85.00%	96.40%	100.00%	76.70%	56.80%
Renter-occupied housing units	15.00%	3.60%	0.00%	23.30%	43.20%

Year Structure Built	Owner Occupied Households	Renter Occupied Households
Total	1,512	266
2020 or later	88	0
2010 to 2019	279	0
2000 to 2009	87	89
1990 to 1999	156	11
1980 to 1989	128	12
1960 to 1969	215	9
1970 to 1979	174	56
1950 to 1959	151	65
1940 to 1949	62	24
1939 or earlier	172	0

Number of Bedrooms in Household	Owner Occupied Households	Renter Occupied Households
Total	1,512	266
No bedroom	0	0
1 bedroom	56	21
2 bedrooms	247	114
3 bedrooms	689	111
4 bedrooms	304	20
5+ bedrooms	216	0

Vacant Housing	Number
Total:	48
For rent	0
Rented, not occupied	0
For sale only	0
Sold, not occupied	0
For seasonal, recreational, or occasional use	28
Other Vacant	20

Crockery Township Housing Market Report

May 2025 • Ottawa County, Michigan

Housing Prices in Crockery Township, MI

How much do homes in Crockery Township, MI cost?

Housing Market Conditions

Is Crockery Township, MI a buyer's or seller's market?



Difference Since May 2024

At the same time last year, Crockery Township was a Neutral Market.

Insight



Crockery Township is a Buyers Housing Market, which means prices tend to be lower and homes stay on the market longer.

Median Sold Price

\$420,000

\$192/SqFt

+\$26,550 **+6.7%**

Based on all homes sold in the last 12 months

Insight



Homes in Crockery Township have sold for 6.7% more than they did a year ago.

Summary: The median home sold price in Crockery Township was \$420,000 in May 2025, up 6.7% from last year, and the median price per square foot was \$192.

Median Sold Price By Cities

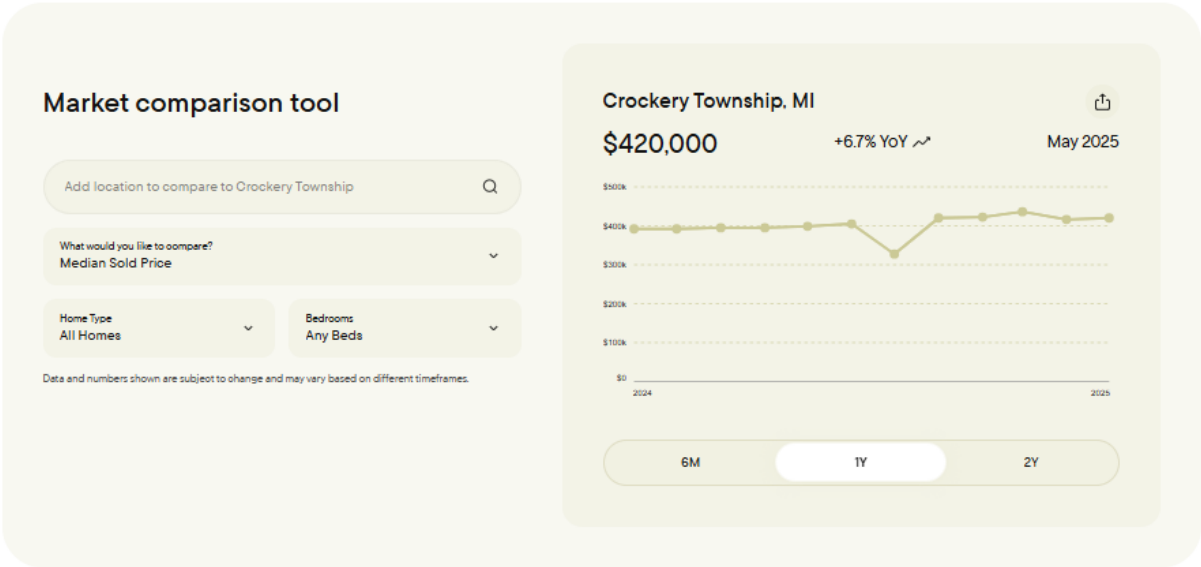
City	May 2024	May 2025	Change YoY
Sullivan Township	\$270.5K	\$315K	+16.6% ↗
Polkton Charter Township	\$384.5K	\$420K	+9.2% ↗
Crockery Township	\$393.4K	\$420K	+6.7% ↗
Robinson Township	\$385K	\$404.9K	+5.2% ↗
Nunica	\$394.9K	\$400K	+1.3% ↗

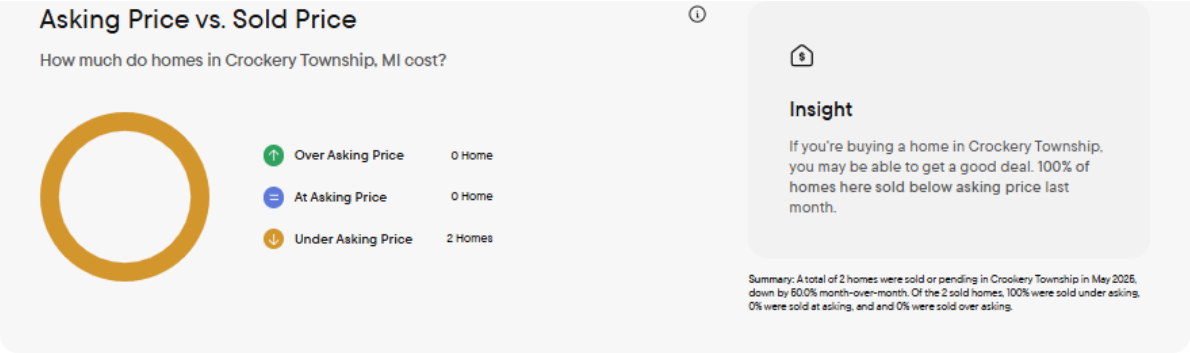
Median Sold Price By Bedrooms

Beds	May 2024	May 2025	Change YoY
1 Bedroom	-	-	N/A
2 Bedrooms	\$492K	\$183.2K	-62.8% ↘
3 Bedrooms	\$282K	\$400K	+41.8% ↗
4 Bedrooms	\$395K	\$432.5K	+9.6% ↗
5+ Bedrooms	\$429K	\$525K	+22.4% ↗

Summary: Crockery Township housing price by bedroom type for May 2025, compared to the previous year. The home price for 1 bedroom homes did not change. The home price for 2 bedroom homes decreased by -62.8%. The home price for 3 bedroom homes increased by +41.8%. The home price for 4 bedroom homes increased by +9.6%. The home price for 5 bedroom homes increased by +22.4%.

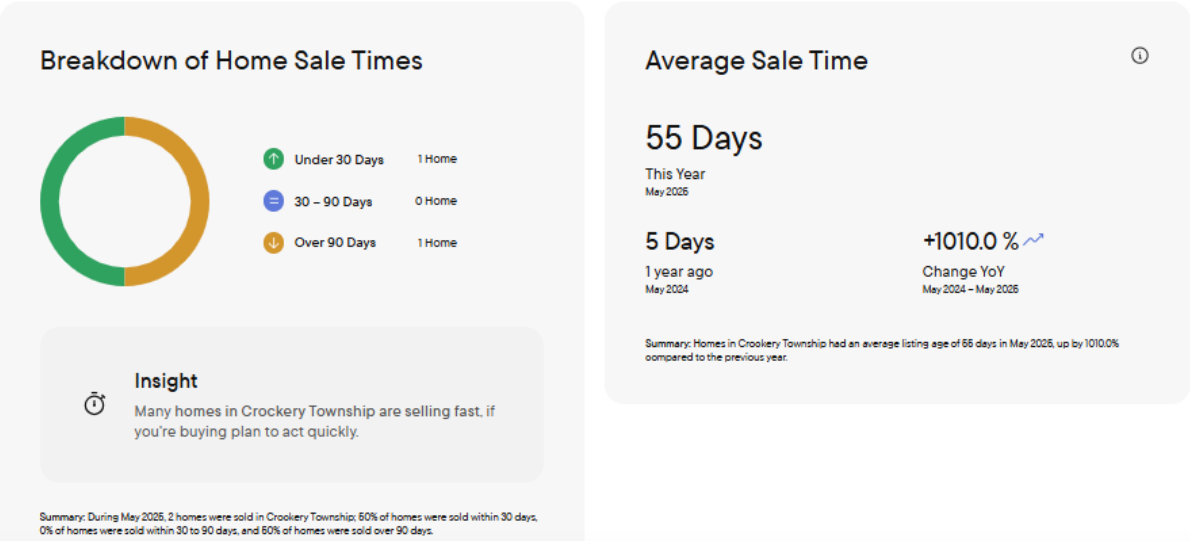
How does Crockery Township, MI compare with other places?





Days on Market for Crockery Township, MI

How long does it take to sell a home in Crockery Township, MI?



Source: Rocket Mortgage Crockery Township Housing Market Report

<https://rocket.com/homes/market-reports/mi/crockery-township>

References

Crockery Township. "Draft Master Plan: Chapter 2- Community Preferences". 2025.

Crockery Township. "Draft Master Plan: Chapter 4- Residential Policy". 2025.

U.S. Census Bureau. "Crockery Township". 2025.

<https://data.census.gov/all?q=Crockery+township,+Ottawa+County,+Michigan>

Rocket Mortgage. "Crockery Township Housing Market Report". 2025.

<https://rocket.com/homes/market-reports/mi/crockery-township>

Water Resource Friendly Marina Development

Recommendations for Michigan



EGLE

Table of Contents

- **Introduction**
- **State and Federal Regulations**
- **Finding the Right Site**
- **Avoiding and Minimizing**
- **Using Best Management Practices (BMPs)**
- **Next Steps**

Feasible and Prudent Alternatives – Tips to Reduce Impacts:

- Consider other locations, different configurations, smaller size or footprint, and alternative methods.
- Use BMPs, such as those included in this guidebook.
- Design the marina around protected resources.
- Modify the scale or scope.
- Eliminate/move components from resource impact areas that are incidental or severable.

Permit applicants are required to document consideration of alternatives and provide a feasible and prudent alternatives analysis.

Introduction

Michigan is rich with fresh water including 4 Great Lakes, 3,288 miles of Great Lakes shoreline, 11,000 inland lakes, 36,000 river miles, 6.5 million acres of wetlands, and vast groundwater resources. These waters are integral to the economy of Michigan and to the way of life of its citizens, provide immeasurable recreation and tourism opportunities, and are protected by the public trust held by the State of Michigan. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) protects and manages these water resources through many regulatory and non-regulatory programs.

EGLE created this guidebook to provide permit application and processing information to developers interested in constructing, expanding, or re-designing marinas on Michigan's waters. Guidebook goals are to promote marina design elements that avoid and minimize impacts to aquatic ecosystems, improve efficiencies in the permit application process, and provide user-friendly information to prospective marina developers and designers.

This guidebook addresses permitting and statutory requirements, Best Management Practices (BMPs) that are most likely to be permitted, and strategies to assess potential marina sites prior to extensive investment. It does not address all technical design standards for marinas, replace or modify regulatory criteria by which permit applications are reviewed, or address all environmental concerns related to marina design.

Most commonly, marina developments require permits under several EGLE programs including Inland Lakes and Streams, Wetlands Protection, and Great Lakes Submerged Lands. They may also involve Critical Dunes, High Risk Erosion Areas, Floodplains, or National Pollutant Discharge Elimination System regulations. Many of these regulations share some common overarching concepts, such as avoidance and minimization of impacts and the protection of the public trust.

To meet state and federal regulations, marina developments must avoid and minimize harmful impacts to inland lakes and streams, the Great Lakes, and other protected resources. Avoiding and minimizing impacts includes siting and designing the project appropriately based on these resources. During the permitting process, applicants must document avoidance and minimization, including:

- Use of alternatives to avoid and minimize impacts, including consideration of other locations, different

configurations, smaller size or footprint, and alternative methods that would reduce or avoid adverse impacts to aquatic resources.

- Placement of only water dependent activities, such as docks for boats, in the water, while keeping activities that are not water dependent, such as building facilities, boat cleaning facilities, and parking, in upland locations.
- Ensuring that the proposed marina structures and slips are appropriate for the waterbody where it is located. For example, marinas on inland lakes and streams should not be designed the same as Great Lakes marinas for many reasons, including the size of boats used on these waterbodies and typical wave and wind action.
- Consideration of riparian rights and protection of the public trust. In complying with state laws, EGLE cannot issue a permit if it finds that the structure or project will adversely affect the public trust or riparian rights.
- Protection of the bottomlands of the Great Lakes. The State of Michigan is the trustee of the bottomlands and waters of the Great Lakes and has a perpetual duty to the public to manage these resources for the prevention of pollution, for the protection of the natural resources, and to maintain the public's rights of hunting, fishing, navigation, and commerce.



A Note on “Harbors” and “Marinas”

- **Harbors** are located on coasts of large waterbodies, such as the Great Lakes, where ships can take shelter during storm events, including any natural or man-made protected water area affording a place of safety for vessels. A harbor of safe refuge, as outlined in federal regulations, is a port, inlet, or other body of water normally sheltered from heavy seas by land and in which a vessel can navigate and safely moor. These harbors of safe refuge are accessible to the public and provide an important public safety purpose. Marinas, however, can be located on waterbodies of all sizes, including within harbors, and are essentially any facility that includes infrastructure for dockage and mooring services to multiple people including the public or private persons.
- **“Marina”** is defined in Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act (NREPA), as “a facility that is owned or operated by a person, extends into or over an inland lake or stream, and offers service to the public or members of the marina for docking, loading, or other servicing of recreational watercraft.”
- **“Marina purposes”** is defined in Part 325, Great Lakes Submerged Lands, of NREPA, as “an operation making use of submerged bottomlands or filled-in bottomlands of the Great Lakes for the purpose of service to boat owners or operators, which operation may restrict or prevent the free public use of the affected bottomlands or filled-in lands.”
- **Harbors and marinas** may include similar structures such as docks and piers; however, within state and federal law the terms “harbor” and “marina” refer to different facilities with different goals, purposes, and considerations.



State and Federal Regulations

EGLE's Resource Program protects and regulates Michigan's natural and water resources through administration of state laws, including:

- **Part 301**, Inland Lakes and Streams, of the NREPA, which requires permits be obtained prior to construction activities in inland lakes and streams, including dredging, filling, constructing or placement of a structure on bottomlands, constructing, reconfiguring, or expanding a marina, interfering with the natural flow of water, connecting a ditch or canal to an inland lake or stream, or creating, enlarging, or diminishing a lake or stream.
- **Part 325**, Great Lakes Submerged Lands, of the NREPA, which requires that a permit be obtained prior to construction activities such as filling, dredging, and placement of structures such as docks, boat lifts, or seawalls on all of Michigan's Great Lakes Bottomlands below the statutory Ordinary High-Water Mark (sometimes referred to as the OHWM). Part 325 also requires that a conveyance be obtained for long-term occupations and uses of the bottomlands. A conveyance is an authorization from the State of Michigan allowing an adjacent riparian upland landowner to occupy and use the state owned, public trust bottomlands of the Great Lakes.
- **Part 303**, Wetlands Protection, of the NREPA, which requires a permit be obtained prior to construction activities including filling, dredging, draining surface water, or constructing or operating a use in a wetland.
- **Part 31**, Floodplain Authority, of the NREPA, which requires that a permit be obtained prior to any alteration or occupation of the 100-year floodplain of a river, stream, or drain.

These statutes require EGLE to consider factors such as whether a permit is in the public interest, whether there will be an unacceptable disruption to aquatic resources, riparian rights, and the public trust, or that no feasible and prudent alternatives exist. These statutes as well as others are part of a consolidated permit application, called the Joint Permit Application (JPA), and staff provide a simultaneous review under all pertinent authorities.

This guidebook focuses on EGLE's Resource Program, but marinas may also be regulated under other state and federal programs, such as the National Pollutant Discharge Elimination System. Local ordinances may also regulate wetlands and other natural features, boat speeds/wakes, or other factors relevant to marina developments. Hiring experienced environmental consultants and engineers to assist in planning, designing, and compiling permit application information for larger projects, including marina developments, is critical for successfully navigating the JPA process and for identifying other local, state, and federal regulations that may apply.

In most areas of the state, Michigan has received authorization from the federal government to administer Section 404 of the federal Clean Water Act, which regulates the discharge of dredge or fill material into wetlands and other waters. In other states, an applicant must apply to both the U.S. Army Corps of Engineers (USACE) and a state agency for necessary authorizations. In Michigan, applicants submit only one permit application (the JPA) to EGLE and typically receive both federal and state approvals in one permit. The exception to this is in coastal areas of the state, where Section 10 of the federal Rivers and Harbors Act applies, and the Joint Permit Application is reviewed by both the USACE and EGLE and two permits are required before the project can begin.

EGLE has a voluntary process for meeting with staff prior to submitting a permit application called a pre-application meeting. Pre-application meetings are a great way for applicants to obtain feedback about their proposed project and what information needs to be provided in the application, early in the planning process to help minimize planning costs and delays.

Applicants can submit the JPA, as well as a pre-application meeting request, through MiEnviro, EGLE's online permitting site at **Michigan.gov/JointPermit**, as well as find instructions, help documents, and other program information.



What is the Public Trust?

The basic tenant of the public trust doctrine is that certain natural resources are of such importance to the public that they are incapable of purely private ownership and control, and instead that the residents of the state collectively own the water resources. State government is the trustee of those resources and is entrusted to protect the water resources for the current and future use and benefit of the residents.

The concept of the Public Trust was first codified in Roman Law in the sixth century A.D., and has been upheld and adopted throughout the United States history including in 1842 by the Supreme Court, in 1926 in the Michigan Supreme Court, the Michigan Constitution, and into the 1970's with the implementation of many of the nation's environmental protection laws. State statutes, including Part 301 and Part 325, recognize the state's responsibility to protect the public trust, saying that the state has a perpetual duty to secure for its people: the prevention of pollution, impairment or destruction of its natural resources and the rights of navigation, fishing, hunting, and use of its lands and waters for other public purposes.

What are Riparian Rights?

Riparian rights are those rights associated with the ownership of the bank or shore of an inland lake or stream. These rights include the following, subject to the public trust: access to the navigable waters, dockage to boatable waters, use of water for general purposes (bathing and domestic use), and title to natural accretions. These rights are specific to the portion of an inland lake or stream over which a riparian owner has an ownership interest.

Riparian property owners have an ownership interest in the bottomlands of natural inland lakes and streams within an area called the Riparian Interest Area. Shoreline property owners on non-natural water bodies may not own the bottomlands or have riparian rights associated with that ownership. The Riparian Interest Area boundaries on inland lakes essentially extend from the property boundaries at the Ordinary High Water Mark on a specific property, out to the middle point of the waterbody, and on streams and rivers essentially extends from the property boundaries at the Ordinary High Water Mark on a specific property out to the middle thread line of the stream or river. Although the general approximation of the Riparian Interest Area may be made visually, the only way to map these areas is to obtain a Riparian Interest Area estimate survey by a professional surveyor, which are often required as part of the review for marina development applications.

Finding the Right Site

Appropriate siting is a critical component in avoiding and minimizing environmental impacts when developing a marina. Considerations when locating a new or expanded marina should include:

- Redevelopment of existing waterfront areas should be considered first, before development of previously undeveloped shorelines. Creation of marina basins in upland locations should also be considered as an alternative to siting on an undeveloped shoreline.
- Open coastlines without any natural protection should be avoided as these locations are generally not the best suited for marinas. Instead, sites with natural protection features such as bays, coves, barrier islands, etc., are good alternatives. Also, the orientation of the site and wind/wave action should be considered when choosing a location. Avoid high energy locations and locations where wetlands or sensitive habitats or species are present. EGLE's Inland Lake Shoreline Energy Assessment Tool can be used on inland lakes to evaluate the energy potential of the site to inform marina and shoreline protection design.
- Excessively shallow areas that would require significant dredging and locations dominated by floating leaf or emergent wetland vegetation should be avoided.

Habitat surveys should be conducted to characterize the new marina site prior to construction. Also, the site should be screened for potential contamination issues, known threatened and endangered species, and other data sources of environmental interest and concern.

On the right: An example illustration of a 70-slip marina that includes many siting and avoidance and minimization recommendations. This inland lake marina is located in a protected area where there is no riparian wetland and the water is deep enough to accommodate vessel mooring without significant dredging. It includes 8 feet wide piers and 4 feet wide docks throughout most of the marina, with slightly wider pier and dock widths along the fueling areas and around the American Disabilities Act (ADA) accessible slips. This example also includes native vegetation and bioengineering along the shoreline within the marina, an open marina design, upland/dry stack storage of boats, a boat wash station, and a bioswale for stormwater management.

Illustration by Bruce Kerr.



100'

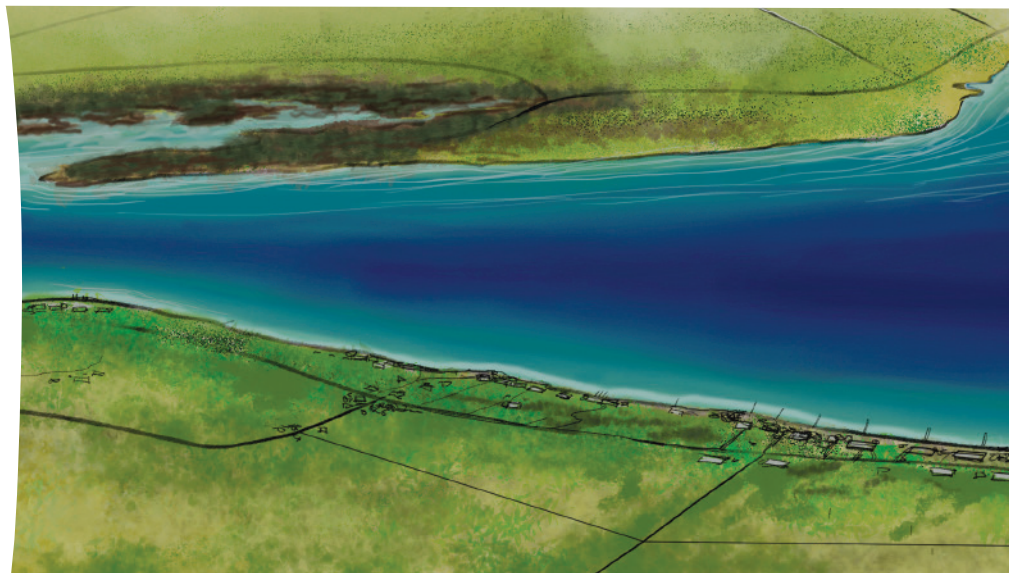
- Clean
- Drain
- Dry
- Drain
- Clean

Avoiding and Minimizing

Once avoidance and minimization of impacts has occurred in the siting phase of the project, avoiding and minimizing impacts through the planning and development of the chosen site must occur.

Consideration of existing site conditions, environmental constraints, and the public's use of the water, when planning, is crucial. Marina design (e.g., marina size, configuration, docking, protection measures) should be tailored to accommodate the existing site conditions. The marina design should be developed in a way that minimizes impacts to the public trust and riparian rights through minimizing the area being impacted and occupied and through incorporation of BMPs. While a developer may desire a certain marina size or configuration, the design should balance the functionality and public and private needs for a facility, the lake environment, and the public's use of the water. Some considerations include:

- New marinas should be located in areas where deep water can be reached with minimal excavation, filling, and dredging.
- Piers and docks should extend into areas where navigable water depths are naturally available, where feasible, to avoid and minimize dredging, and avoid negative impacts to navigation and the public trust. Slips for deep-draft boats should be located in naturally deeper areas and shallower-draft boats located in shallower areas.
- When dredging is necessary for ingress/egress or navigation within the marina, it should be designed to follow the course of the natural channel or bathymetry to minimize dredging. The marina should be designed to reduce aggradation of sediment and silt in navigation channels to minimize maintenance dredging needs. Ingress/egress navigation channels providing access between the marina and adjacent water bodies should be as narrow as possible while still meeting the minimum safe navigation standards for the specific boat sizes and physical conditions on site that affect navigation,

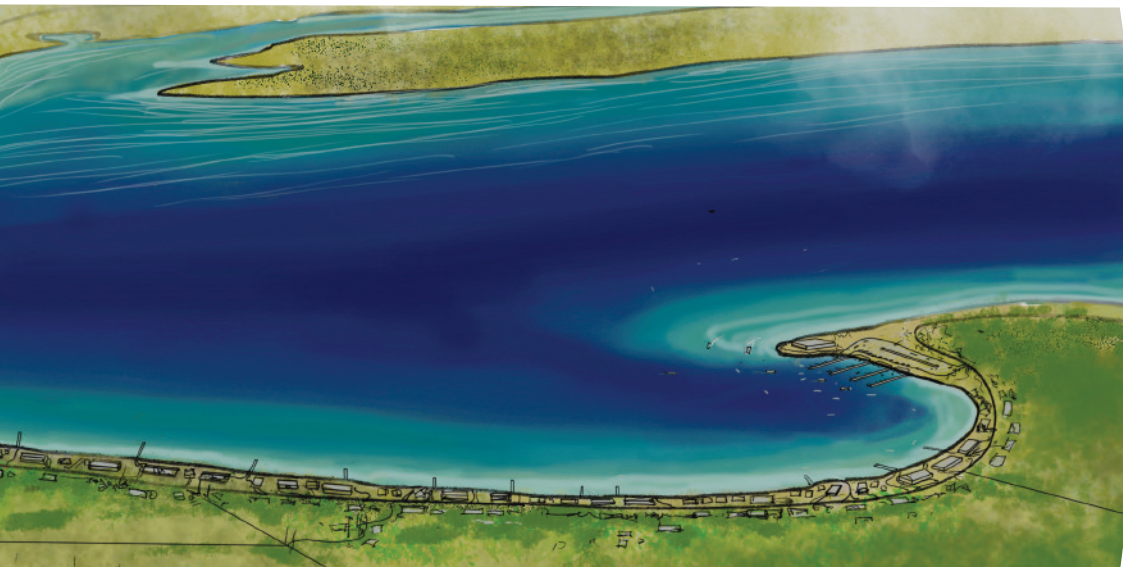


such as wind, waves, and currents. Proper siting of the marina entry should consider these factors to achieve the safest entry with the least impact to the environment. Ingress/ egress navigation channels should be designed based on the specific site conditions and thus depths and widths should be different on an inland lake versus the Great Lakes. Sites that do not require significant dredging for access to an upland cut marina may also be a way to avoid and minimize impacts in some cases.

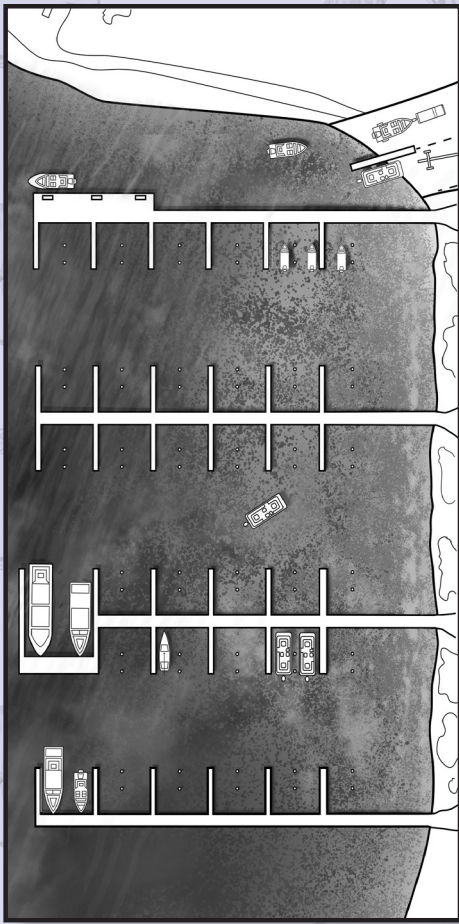
- When siting new marinas, all natural features such as wetlands, streams, forested areas, and shallow water habitat areas on the property should be mapped early in the site planning process to determine the best location for a marina while protecting the habitat and water quality functions of the existing natural features. Fish spawning locations, waterfowl nesting areas, and threatened and endangered species habitat should also be identified. Avoid wetlands and other high quality habitat areas on site.
- Wave attenuation should be avoided to the extent possible. The order of consideration for wave attenuation or other protection is: (1) none, temporary/seasonal systems, (2) floating systems, (3) attenuators incorporated into docks or other structures. Wave attenuation should be designed to balance natural resource, riparian rights, public trust, public safety, and site protection, as opposed to eliminating risk from all storm events. Improperly designed structures can cause harmful impacts to the environment while also resulting in higher costs and lost time for marina developers. For example, structures can amplify wave action, exacerbate erosion, create excessive shoaling, and interrupt or restrict circulation, as well as increase unfavorable environments for fish and wildlife.



Upland/Dry stack storage of boats



Center: View of the example illustration showing the marina following siting recommendations, including being in a protected cove on an inland lake, in an area where there is no riparian wetland, and where the water is deep enough to accommodate vessel mooring without significant dredging. Illustration by Bruce Kerr.



Example of a line drawing of marina plan. Illustration by Bruce Kerr.

- Projects should not include covered boat houses or permanent covers. In certain situations, seasonal/temporary covers may be appropriate over some slips.
- Pier and dock construction should avoid sensitive habitats, and length and width should be minimized. Typically, main pier width should be a maximum of 8 feet wide and finger dock width should be a maximum of 4 feet wide.
- Dry stack storage (i.e., boats stored on vertical stands) and minimizing disturbance, leakage, and pollution from maintenance operations should be considered. Dry stack storage for smaller boats can be a good tradeoff to maintain or restore natural shoreline (e.g., replacing multiple piers with finger docks that have a larger footprint with consolidated and more localized boat traffic and disturbed areas).
- Fill on bottomland, in wetlands, floodplains, and other regulated areas should be avoided. For shoreline restoration or other approvable uses, only clean material should be used as fill. No fill should be placed in spawning areas or areas with submerged aquatic vegetation. Temporary fills should be entirely removed, and the site restored to pre-existing elevation.
- For existing marina reconfiguration or expansion, new development and expansion should be consolidated within the present footprint of the facility (land and water) to avoid impacts to new areas.
- Consider including public walkways, scenic overlooks, fishing piers, and other facilities which may enhance public recreation, education/outreach, and other public benefits. These should be generally located in upland, and not in wetland, lakes, or streams.

The final marina design should balance marina capacity, services, and access, while minimizing environmental and public trust impacts, dredging requirements, protective structures, and other site development costs. Although any given project may not be able to include all recommended avoidance and minimization practices or BMPs, projects that can incorporate most or all these are more likely to satisfy permit review criteria. Reducing the size, angle, or dimensions of individual project components, such as docks or shoreline protection, can cumulatively lead to significant minimization of impacts, and is part of the regulatory review process for permit applications on marinas.

Using Best Management Practices (BMPs)

Once a proposed marina site is identified and approaches for avoidance and minimization have been incorporated, BMPs should be integrated into the design to minimize other harmful impacts to wetlands, lakes and streams, and the important functions they provide. At the same time, BMPs can be used to add ecological benefits to projects by taking advantage of the conditions created by marinas, such as incorporating wetland creation or other habitat improvements within the sheltered marina. BMPs typically involve implementation of specific design features and dimensions, construction methods, and stabilization and protection methods. BMPs for common marina components for dredging, docks and piers, storm and wave protection, shoreline protection, and open marina design include:

Dredging BMPs

- Hydraulic dredging or the use of low-turbidity mechanical dredging buckets can minimize environmental impacts where dredged channels are required. Dredging should be accomplished in a manner that minimizes resuspension of sediment in the water column. Floating turbidity curtains should be used to contain suspended sediments.
- Boat cleaning, both for general vessel cleaning and Aquatic Invasive Species prevention efforts, should occur in an upland area. Dredging to conduct in-water hull cleaning should not be included in the project.
- Dredging during critical migration or spawning periods should be avoided.
- Dredging in areas where there are potential contaminants should be avoided. Sediment testing will be required per EGLE procedure Water Resources Division 048, sediment testing.
- Excavated materials should be disposed of properly following EGLE's Materials Management Division guidance for dredge material.

Dock and Pier BMPs

- Floating docks systems and seasonal docks, in full or in part, should be included where possible. Advantages of floating docks include being adaptable to changing water levels, and when removed in the winter, can avoid ice damage to the dock and allow zebra and quagga mussels to be removed while the docks are stored. Because seasonal

Under Part 301, marinas must also meet certain permit review criteria in addition to the other standard permit review criteria, including:

- The marina shall be configured so that all boat mooring under any wind condition will occur solely within the marina's riparian interest area. In some cases, a riparian interest area survey may be required to be submitted as part of the permit application.
- Boat mooring and ingress and egress for an outside slip shall require a minimum maneuvering distance of 1.5 times the length of the slip. This minimum distance shall be measured from the end of the slip, or, for broadside moorage, the outside beam of a watercraft moored at the slip, to the boundary of the marina's riparian interest area.



floating structures can avoid ice damage and are adaptable to fluctuating water levels, armoring protection maintenance costs can also be reduced.

- Pier and dock widths should be minimized as much as possible, and the consolidation of multiple piers should be considered as part of the marina design. Crib docks and filled dock structures can have harmful impact and should be avoided. Efficient use of space by including shoreline dockage and broadside dockage in addition to piers should be maximized where feasible, and shoreline conditions are appropriate.
- Accessibility, including Americans with Disabilities Act requirements, should be incorporated while balancing environmental impacts (e.g., incorporating a certain percentage of wider docks or other accessibility features).

Storm and Wave Protection BMPs

- Wave attenuation should generally be avoided and only used when absolutely needed. If applicants propose wave attenuation they must provide justification in the application, including wave runup analysis and other standard engineering practices, and demonstrate the project is designed to avoid and minimize impacts to regulated

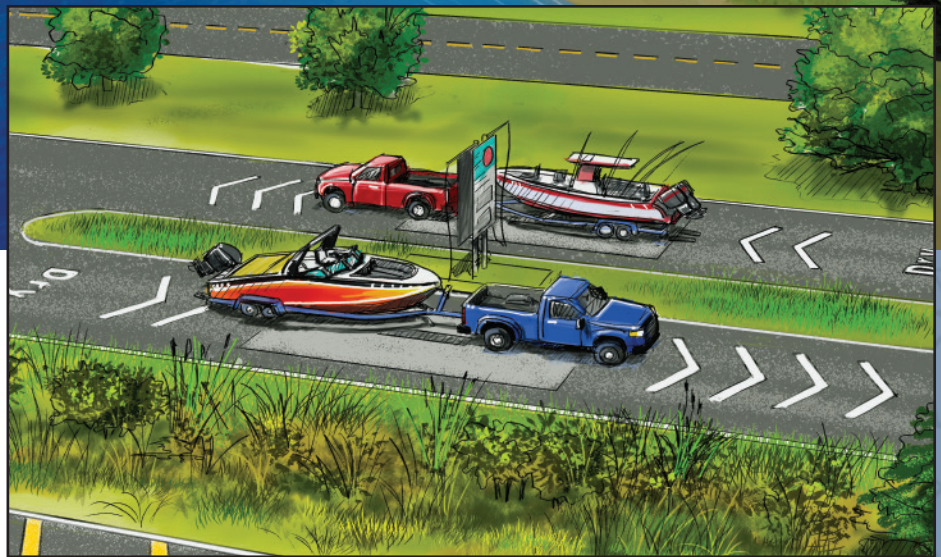


resources. Wave attenuators should not interfere with currents and sediment transport.

- As discussed above, wave attenuators should not be designed with the intention of eliminating risk. Some maintenance and repair of the marina structures will be necessary and is a normal business practice for marinas and many other facilities. The design wave height for shoreline protection should be based on data and a realistic expectation of what the site will experience.
- “No wake” or “no boating” zones should be designated to reduce erosion from boat wake in erosion-prone areas and to avoid sediment resuspension from prop wash or destruction of shallow water habitat.

Shoreline Protection BMPs

- BMPs for the protection, restoration, or incorporation of natural shorelines, bioengineering riparian wetland restoration, woody structure, and submerged aquatic vegetation should be incorporated into the design of the marina. Typically, marinas are situated in the middle of a property, so restoration or preservation can occur along the outer edges of the parcel, or within portions of the marina that



Bioswale and boat wash station. Illustration by Bruce Kerr.

Other Innovative BMPs

- Further minimization of occupation could be considered through implementation of Mediterranean mooring or stern-to-quay mooring designs.
- Light-permeable grating could also be utilized to minimize the impacts of shading to aquatic species.

are not actively used. Conditions that calm wave energy for boat protection can also create conditions suitable for the establishment of wetland vegetation.

- Habitat features should be incorporated as a natural amenity within the marina where possible. These areas can add recreational value for fishing, birdwatching, and kayaking. Designs that create or expand habitats within the marina can help balance habitat loss from other marina components.
- Excessive armoring along shorelines and adjacent areas should be avoided. Where there is a demonstrated need, shoreline stabilization should be accomplished using either vegetative or bioengineering materials where possible, or more structural stabilization techniques in combination with bioengineering. Avoidance of hard armoring like seawalls and the retention of natural shoreline features should occur to the maximum extent feasible. Natural stone riprap (not broken concrete) should be used where rock is used in structural stabilization.

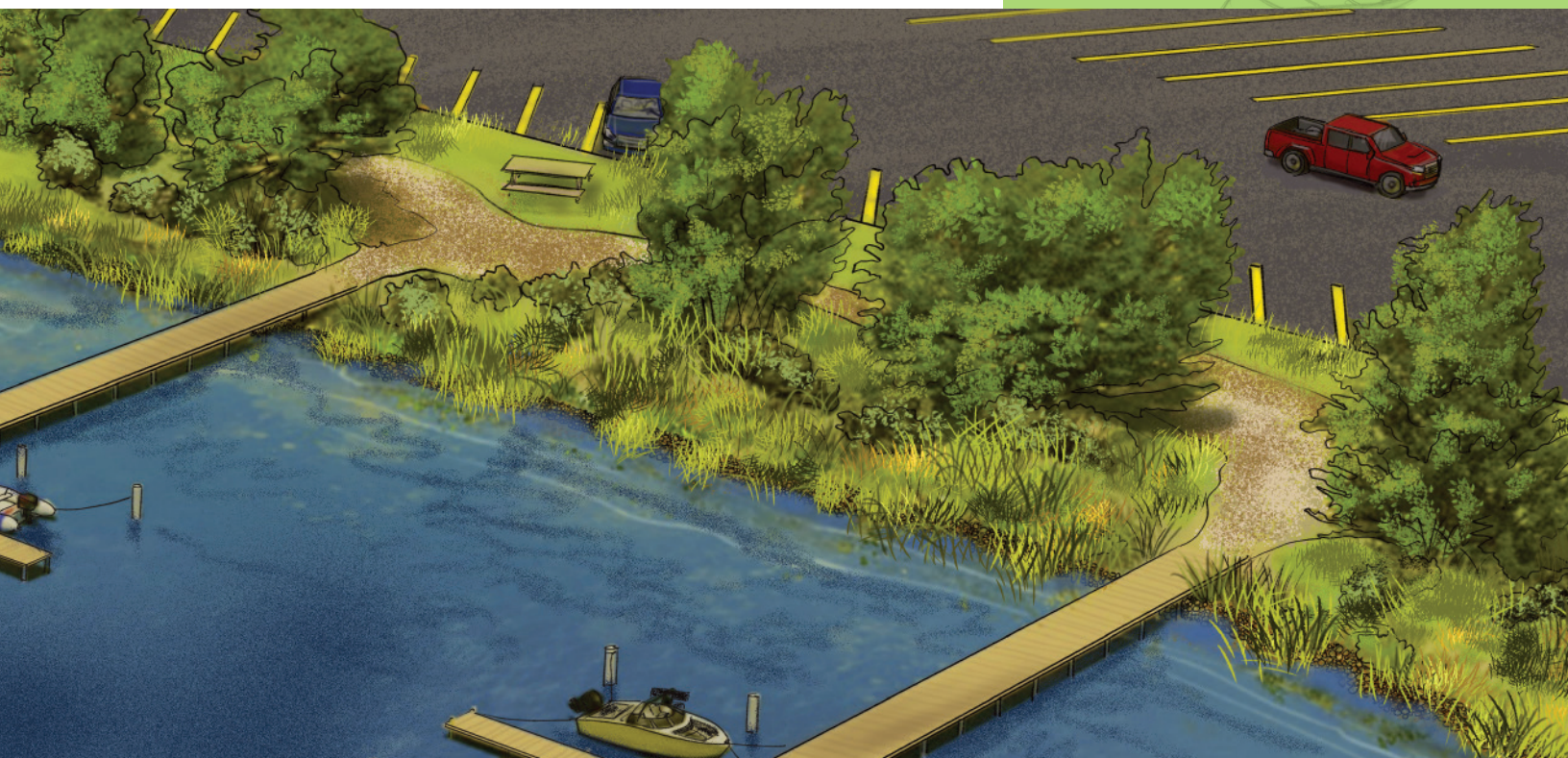
Open Marina Design BMPs

- Open marina designs that have little or no barriers to restrict the exchange of ambient water and water within the marina are another way to avoid and minimize impacts. An open design with open water circulation in a naturally protected location is preferable to a semi-enclosed design, just as minimal wave attenuators are preferable to fixed breakwaters.



- Alternatives to a single-entrance design should be considered. Two entrances at opposite ends of a marina can promote flow-through currents.
- Piers, docks, and other structures should be placed to enhance, rather than to obstruct, water circulation.
- The bottom of the marina and entrance channels should not be deeper than adjacent navigable channels to help keep the bottom of the marina basin from becoming a pollutant trap and leading to low dissolved oxygen levels.

Other best management practices such as good wastewater management, invasive species control, and green infrastructure should also be considered. Low impact development BMPs in the upland, including rain gardens, pervious surfaces, and other stormwater management, can protect the adjacent waterbodies and protect and improve water quality and habitat. More information can be found on this topic in Southeast Council of Government's (SEMCOG) Low Impact Development Manual for Michigan.



Next Steps

Once an applicant submits a permit application (JPA) for a proposed project, EGLE staff review the application to determine if the application is complete. If an application is deemed incomplete, the applicant will receive a response from EGLE explaining what is needed to reach a complete application. Once the application is complete, EGLE staff review application materials in light of statutory review criteria, public notice the file, and conduct a site inspection. Applicants may be asked to consider further ways to avoid and minimize impacts as part of the process, and then EGLE will determine if a permit can or cannot be issued for the proposed project. If applicants incorporate the concepts from this guidebook and work with EGLE staff during the permit process, permit application processing timeframes and outcomes can be improved significantly. If and when a permit is issued for a project, it is important to understand and comply with all permit conditions.

Recreation and boating on Michigan's waters is highly valued by Michigan residents and by EGLE. This guide was developed with the objective of encouraging access and enjoyment of these waters while protecting Michigan's environment and natural resources. The marina design elements, BMPs, and other methods for avoidance and minimization of impacts to aquatic ecosystems in this guidebook have been provided with this balance in mind.

*A bioengineered shoreline.
Illustration by Bruce Kerr.*

Additional Information

- Marinas:
Michigan.gov/Marinas
- Bioengineering, natural shorelines, example projects, and the Inland Lake Shoreline Energy Assessment:
Michigan.gov/ShorelineProtection
- Joint Permit Application:
Michigan.gov/JointPermit
- Wetlands Protection:
Michigan.gov/Wetlands
- Invasive Species:
Michigan.gov/Invasives



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