MONROE COUNTY COMPREHENSIVE PLAN 2010 Update

Monroe County Planning Department & Commission
Monroe County, Michigan

I hereby certify that the Monroe County Comprehensive Plan – 2010 Update was approved at a regular meeting of the Monroe County Planning Commission on October 14, 2009.

Mary K. Webb

Mary K. Webb, Chairman
Monroe County Planning Commission

I hereby certify that the Monroe County Comprehensive Plan – 2010 Update was approved at a regular meeting of the Monroe County Board of Commissioners on February 23, 2010.

Vickie Koczman

Vickie Koczman, Deputy Clerk
County of Monroe, Michigan

MONROE COUNTY COMPREHENSIVE PLAN
RESOLUTION OF ADOPTION

RESOLUTION OF ADOPTION
MONROE COUNTY COMPREHENSIVE PLAN – 2010 UPDATE

WHEREAS, the Michigan Planning Enabling Act, Public Act 33 of 2008 as amended, authorizes and empowers counties to make, adopt, amend, extend, add to, or carry out a master plan; and

WHEREAS, according to this Act, a master plan shall guide and accomplish development that is coordinated, adjusted, harmonious, efficient, and economical; shall consider 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; and will, in accordance with present and future needs, best promote public health, safety, morals, order, convenience, prosperity, and general welfare; and

WHEREAS, according to this Act, a master plan shall address land use and infrastructure issues and may project 20 years or more into the future and 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; and

WHEREAS, the Monroe County Planning Commission has made careful and comprehensive surveys and studies of present conditions and future growth within Monroe County with due regard to its relation to neighboring jurisdictions; has consulted with representatives of adjacent local units of government in respect to their planning so that conflicts in master plans and zoning may be avoided; has cooperated with all departments of the state and federal governments and other public agencies concerned with programs for economic, social, and physical development within the County; and has sought the maximum coordination of the County's programs with these agencies; and

WHEREAS, the Monroe County Planning Commission has updated the Master Plan for the county which had last been approved in 1985; and

WHEREAS, the Monroe County Comprehensive Plan 2010 Update addresses land use and infrastructure issues and projects 20 years into the future and includes maps, plats, charts, and descriptive, explanatory, and other related matter and shows the Planning Commission's recommendations for the physical development of the County; and

WHEREAS, the Monroe County Comprehensive Plan contains recommendations for agricultural preservation, industrial and economic development, open space and natural resource protection, community facilities and services, transportation and infrastructure development; and

WHEREAS, the Monroe County Planning Commission has sought public input into the planning process and has complied with the requirements for public notification, distribution of draft plans, and plan adoption; and

WHEREAS, the Monroe County Planning Commission held an advertised public hearing on the plan on October 14, 2009 to formally receive community input.

NOW THEREFORE BE IT RESOLVED that the Monroe County Planning Commission adopts the Monroe County Comprehensive Plan – 2010 Update together with the future land use map and all other maps and descriptive matter contained within, in accordance with Section 43 of Public Act 33 of 2008 as amended.

Mary K. Webb
Mary Webb, Chairman
Monroe County Planning Commisision

October 14, 2009
date of adoption

MONROE COUNTY COMPREHENSIVE PLAN
RESOLUTION OF ADOPTION

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MONROE COUNTY COMPREHENSIVE PLAN – 2010 UPDATE

WHEREAS, the Michigan Planning Enabling Act, Public Act 33 of 2008 as amended, authorizes and empowers counties to make, adopt, amend, extend, add to, or carry out a master plan; and

WHEREAS, according to this Act, a master plan shall guide and accomplish development that is coordinated, adjusted, harmonious, efficient, and economical; shall consider 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; and will, in accordance with present and future needs, best promote public health, safety, morals, order, convenience, prosperity, and general welfare; and

WHEREAS, according to this Act, a master plan shall address land use and infrastructure issues and may project 20 years or more into the future and 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; and

WHEREAS, the Monroe County Planning Commission has made careful and comprehensive surveys and studies of present conditions and future growth within Monroe County with due regard to its relation to neighboring jurisdictions; has consulted with representatives of adjacent local units of government in respect to their planning so that conflicts in master plans and zoning may be avoided; has cooperated with all departments of the state and federal governments and other public agencies concerned with programs for economic, social, and physical development within the County; and has sought the maximum coordination of the County's programs with these agencies; and

WHEREAS, the Monroe County Planning Commission has updated the Master Plan for the county which had last been approved in 1985; and

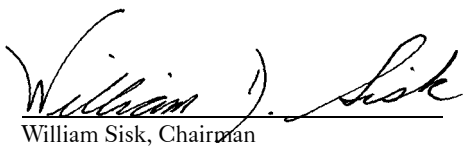
WHEREAS, the Monroe County Comprehensive Plan 2010 Update addresses land use and infrastructure issues and projects 20 years into the future and includes maps, plats, charts, and descriptive, explanatory, and other related matter and shows the Planning Commission's recommendations for the physical development of the County; and

WHEREAS, the Monroe County Comprehensive Plan contains recommendations for agricultural preservation, industrial and economic development, open space and natural resource protection, community facilities and services, transportation and infrastructure development; and

WHEREAS, the Monroe County Planning Commission has sought public input into the planning process and has complied with the requirements for public notification, distribution of draft plans, and plan adoption; and

WHEREAS, after holding an advertised public hearing the Monroe County Planning Commission adopted the Plan and forwarded a copy to the Monroe County Board of Commissioners;

NOW THEREFORE BE IT RESOLVED that the Monroe County Board of Commissioners asserts its right to approve or reject the plan and moves to hereby approve the Monroe County Comprehensive Plan – 2010 Update together with the future land use map all other maps and descriptive matter contained within, in accordance with Section 43 of Public Act 33 of 2008 as amended.



William Sisk, Chairman
Monroe County Board of Commissioners

February 23, 2010
date of adoption

MONROE COUNTY BOARD OF COMMISSIONERS

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John Fowler
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Lee Markham, Planner
Ryan Simmons, AICP, Planner
Jeff Boudrie, GIS Specialist

Royce R. Maniko, AICP, County Administrator/CFO

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February 2010

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MONROE COUNTY COMPREHENSIVE PLAN

PART ONE – FACTS & INFORMATION / ISSUES & OPPORTUNITIES

INTRODUCTION

THE PLANNING PROCESS

The development of a community plan is a process which involves several steps, with the goal being the adoption and implementation of a set of policies and tasks to guide future community growth and development.

The process used to develop this plan involved the following steps:

1. Data collection and analysis

This step involves conducting studies, developing reports, updating maps and databases, and collecting the information necessary to define and document existing conditions and trends as they relate to the physical, social, and environmental conditions within the county. Individual sections of this present much of this documentation, including information on geography, history, natural resources, demographics, infrastructure, economy, human and social resources, land ownership and land use.

2. Identification of issues and opportunities

Based on the information collected, input from citizen planning commissions, and on the results of community visioning and public input, a list of specific planning concerns and issues were identified. These issues were divided into planning components, including: land use, transportation, public utilities, natural resources and environment, agriculture, housing, recreation and open space and economic development. Along with the identification of issues, or what were perceived as problems needing action, there was also an effort made to identify opportunities, or areas where existing conditions or trends present a situation favorable for future courses of action.

3. Formulation of goals and objectives

Goals are statements defining a desired future in a general or philosophical manner, while objectives are more concrete and measurable outcomes. The identification of issues and opportunities led into the formulation and refinement of the plan's goals and objectives that would be used to guide the more specific plan policy recommendations. Beginning with an evaluation of the goals and objectives from previous planning efforts, the Commission developed overall plan goals as well as goals and objectives for each of the individual plan components.

4. Development of alternative plans and selection of a future land use plan

Perhaps the most important element of this plan is the recommended future land use map, which is intended to serve as a basis for the future growth and develop-

ment of the county, especially as it relates to local planning, zoning and permitting of future growth and land use change. The Planning Commission considered various alternative future land use maps, and refined and modified these alternatives, while assessing their suitability as a means of meeting and implementing the plan's goals and objectives, the result being the selected future land use plan.

5. Plan adoption and implementation

The development of this plan would be meaningless without it being adopted and implemented. More important than its official adoption, however, is the "buy in" from the public and from public officials. This planning effort is intended to be a shared vision of the future, and although it is difficult to create a shared vision which completely satisfies all parties involved, it is hoped that this plan and the planning process used, has created a roadmap to the future which can be used as a basis for decisions involving future growth and development.

6. Plan review and update

The final step in the planning process begins upon adoption – the monitoring and review of the plan and its recommendations. As conditions change and unforeseen events occur, it will become necessary to update, amend, or re-initiate the planning process. At least once every five years it will be necessary to review this plan and determine whether or not changing circumstances demand amendments to the plan or if it is necessary to begin the entire planning process anew.

LEGISLATIVE AUTHORITY FOR PLANNING

Michigan counties are specifically authorized to develop county plans. Michigan's Planning Enabling Act, Act 33 of 2008, authorizes and empowers counties to make, adopt, amend, extend, add to, or carry out a master plan. According to the Act, "a master plan shall address land use and infrastructure issues and may project 20 years or more into the future. 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." The purpose of a master plan is to guide and accomplish development "that is coordinated, adjusted, harmonious, effi-

MICHIGAN PLANNING ENABLING ACT
Act 33 of 2008

AN ACT to codify the laws regarding and to provide for county, township, city, and village planning; to provide for the creation, organization, powers, and duties of local planning commissions; to provide for the powers and duties of certain state and local governmental officers and agencies; to provide for the regulation and subdivision of land; and to repeal acts and parts of acts.

History: 2008, Act 33, Eff. Sept. 1, 2008.

The People of the State of Michigan enact:

ARTICLE I
GENERAL PROVISIONS

***** *125.3801 note: THIS NEW SECTION IS EFFECTIVE SEPTEMBER 1, 2008.* *****

125.3801 new Short title.

Sec. 1. This act shall be known and may be cited as the "Michigan planning enabling act".

History: 2008, Act 33, Eff. Sept. 1, 2008.

***** *125.3803 note: THIS NEW SECTION IS EFFECTIVE SEPTEMBER 1, 2008.* *****

125.3803 new Definitions.

Sec. 3. As used in this act:

(a) "Chief administrative official" means the manager or other highest unelected administrative official of a city or village.

(b) "Chief elected official" means the mayor of a city, the president of a village, the supervisor of a township, or, subject to section 5, the chairperson of the county board of commissioners of a county.

(c) "County board of commissioners", subject to section 5, means the elected county board of commissioners, except that, as used in sections 39 and 41, county board of commissioners means 1 of the following:

(i) A committee of the county board of commissioners, if the county board of commissioners delegates its powers and duties under this act to the committee.

(ii) The regional planning commission for the region in which the county is located, if the county board of commissioners delegates its powers and duties under this act to the regional planning commission.

(d) "Ex officio member", in reference to a planning commission, means a member, with full voting rights unless otherwise provided by charter, who serves on the planning commission by virtue of holding another office for the term of that other office.

(e) "Legislative body" means the county board of commissioners of a county, the board of trustees of a township, or the council or other elected governing body of a city or village.

(f) "Local unit of government" or "local unit" means a county or municipality.

(g) "Master plan" means either of the following:

(i) As provided in section 31(1), any plan adopted or amended before the effective date of this act under a planning act repealed under section 85.

(ii) Any plan adopted or amended under this act. This includes, but is not limited to, a plan prepared by a planning commission authorized by this act and used to satisfy the requirement of section 203(1) of the Michigan zoning enabling act, 2006 PA 110, MCL 125.3203, regardless of whether it is entitled a master plan, basic plan, county plan, development plan, guide plan, land use plan, municipal plan, township plan, plan, or any other term.

(h) "Municipality" or "municipal" means or refers to a city, village, or township.

(i) "Planning commission" means either of the following, as applicable:

(i) A planning commission created pursuant to section 11(1).

(ii) A planning commission retained pursuant to section 31(2) or (3), subject to the limitations on the application of this act provided in section 31(3) and (4).

(j) "Planning jurisdiction" for a county, city, or village refers to the areas encompassed by the legal boundaries of that county, city, or village, subject to section 12(1). Planning jurisdiction for a township refers to the areas encompassed by the legal boundaries of that township outside of the areas of incorporated villages and cities, subject to section 12(1).

cient, 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, and will, in accordance with present and future needs, best promote public health, safety, morals, order, convenience, prosperity, and general welfare."

APPROVAL PROCESS

The Planning Enabling Act provides a required procedure for plan adoption:

- After preparing a proposed master plan, the planning commission submits the plan to the county board of commissioners for review and comment. The process of adopting a plan shall not proceed further unless the county board of commissioners approves the distribution of the proposed plan.
- If the county board of commissioners approves the distribution of the proposed plan, it shall notify the secretary of the planning commission and the secretary shall submit a copy of the proposed plan, for review and comment, to the following:
  - the planning commission of each municipality located within or contiguous to the county,
  - the regional planning commission,
  - the county planning commission, or if there is no county planning commission, the county board of commissioners, for each county located contiguous to the county,
  - any public utility or railroad which has registered for this purpose.
- After the above entities have had at least 63 days to review and submit comments on the plan, and before approving a proposed master plan, the planning commission shall hold not less than 1 public hearing on the proposed master plan.
- The planning commission shall adopt the plan by a resolution approved by a majority of the members of the planning commission.
- Following approval of the proposed plan by the county planning commission, the secretary of the planning commission shall submit a copy of the proposed plan to the county board of commissioners.
- Approval of the plan by the planning commission under subsection (1) is the final step for adoption of the plan, unless the board of commissioners by resolution has asserted the right to approve or reject the plan. In that case, after approval of the plan by the planning commission, the county board of commissioners shall approve or reject the plan.

References:
Michigan Planning Enabling Act – Act 33 of 2008
http://www.legislature.mi.gov/documents/mcl/pdf/mcl-Act-33-of-2008.pdf

"Community Planning Principles." 2005. Michigan Society of Planning.
http://www.planningmi.org/resources4560087.asp

HISTORY OF PLANNING IN MONROE COUNTY

The update of the Monroe County Comprehensive Plan is the culmination of much work and processing of information from many different sources. Over two decades of changes—social, economic, demographic, and in the infrastructure have transpired since the last update. Recommendations have been based on new data, and the style, format, and presentation of the plan have been updated, following much thought and consideration by the planning staff.

The Monroe County Board of Supervisors established the Monroe County Regional Planning Commission in 1961, and John Knox was hired as Monroe County's first Planning Director. In 1964, the first set of quality base maps was completed, and in 1965, the first of five preliminary reports entitled Background for Planning was published. The single-volume Complan 2000, the first official comprehensive plan for Monroe County, was officially adopted in 1967. The planning staff was small at that time, so Complan 2000 was prepared by the consulting firm Parkins, Rogers and Associates in conjunction with the staff, the Regional Planning Commission and the Board of Commissioners. Population growth projections of that era were based on trends from the postwar baby-boom, and the plan foresaw rapid urbanization of the southeast Michigan region.

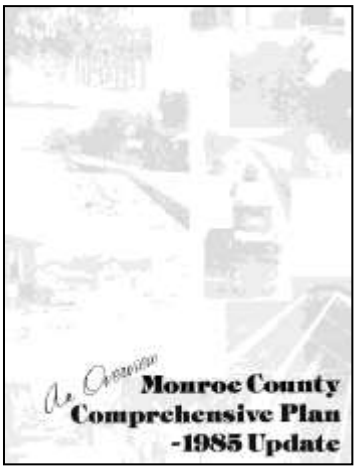
The Monroe County Planning Commission was established by the old Monroe County Board of Supervisors on August 19, 1968 under the Monroe County Planning Ordinance, and it was authorized by Governor George Romney. It replaced the former Monroe County Regional Planning Commission.

Ronald F. Nino was hired as Planning Director in 1973, and in 1976, the three-volume Monroe County Comprehensive General Development Plan 2000 was adopted and published, updating Complan 2000. By the mid seventies, planners were beginning to recognize the temporary nature of the now-slackened population boom, and the new plan reflected a somewhat slower growth pattern, and made its land use recommendations accordingly.

Royce R. Maniko was hired as Planning Director in 1977, and in 1985, the ten-volume Monroe County Comprehensive Plan: 1985 Update was adopted and published. This update of the plan was even more conservative in its growth projections, but noted that the number of persons per household was shrinking, a trend that accelerated the need for new housing units.

Monroe County has continued to exhibit growth in the intervening years, particularly in Bedford Township, a bedroom community adjacent to Toledo, the Dundee area, which has benefited from the opening in 2000 of the giant outdoor sports retailer Cabela's and the subsequent development of the Global Engine plant, the northeast corner of the County which has seen migration from the Detroit area, and the urbanized area directly surrounding the City of Monroe.

This document, the Monroe County Comprehensive Plan: 2010 Update brings these and hundreds of other factors into focus, providing an adept analysis and recommendations for land use, infrastructure, and transportation patterns into the future. It will be used as the basis for specific case-related recommendations of the Monroe County Planning Commission in the years to come.



References:

Complan: 2000 Comprehensive Development Plan for Monroe County. August 1967. Monroe County Regional Planning Commission / Parkins, Rogers & Associates.

Monroe County : Year 2000 -- Comprehensive General Development Plan. September 1976. Monroe County Planning Department and Commission.

Monroe County Comprehensive Plan Update. September 1985. Monroe County Planning Department and Commission.

BACKGROUND INFORMATION

GEOGRAPHY

From prehistoric times, to the original French Canadian settlements, to modern, industrialized society, the geographical setting of Monroe County and its surroundings have influenced its economy, development patterns, transportation methods, and many other facets of daily life.

Planning Significance:

- Urbanization pressure from Toledo, Detroit, and Ann Arbor presents challenges for retaining rural character while also providing opportunities for employment, markets, and culture.
- The Great Lakes shoreline provides opportunities for recreation and habitat, for industrial development, and for tourism, while also presenting flooding concerns.

LOCATION

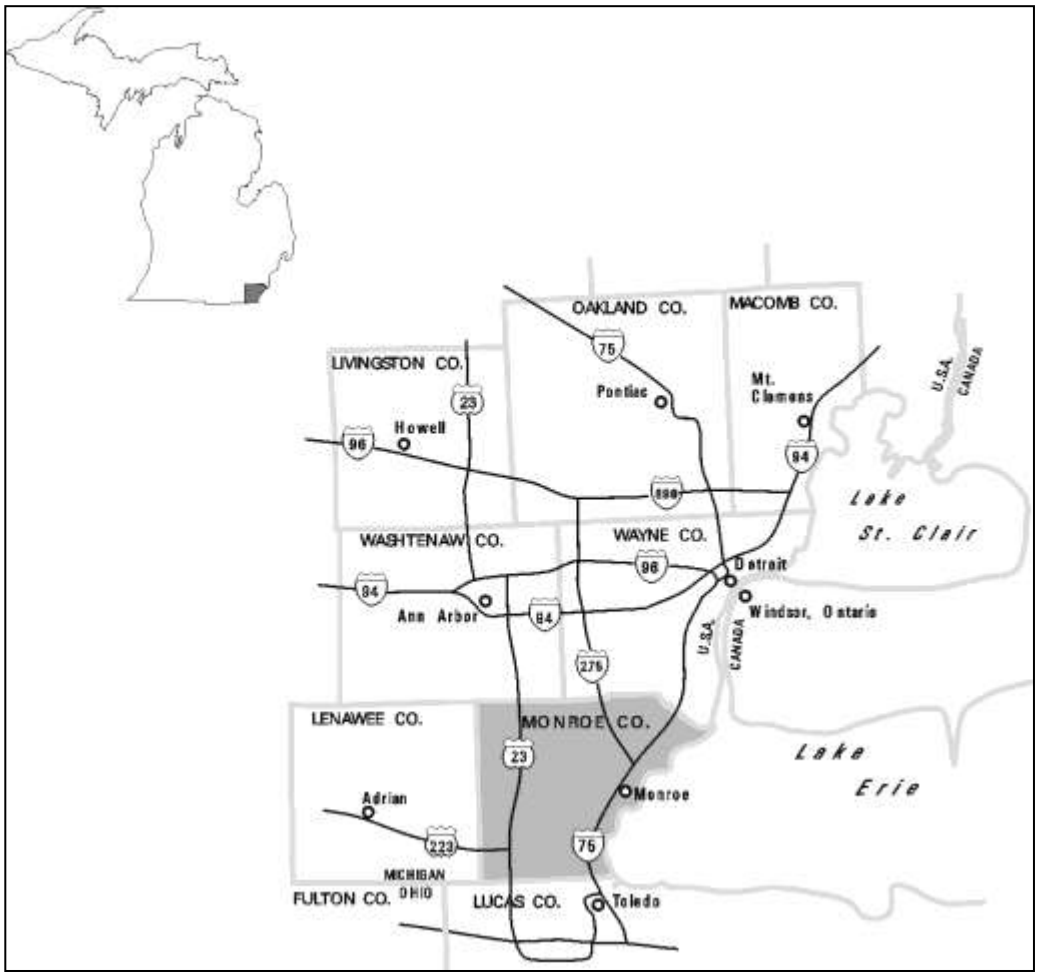
Monroe County is located in the southeastern-most corner of the State of Michigan and boarders the State of Ohio (Lucas County) to the south, Lenawee County to the west and Washtenaw and Wayne Counties to the north. The Lake Erie shoreline forms the eastern border of the County.

REGIONAL SETTING

As part of the southeast Michigan and northwest Ohio region, Monroe County is part of a region that is characterized by the Great Lakes, the transportation industry, agricultural production, and midwestern values, among other influences. Monroe County is considered part of both the Toledo and Detroit metropolitan area. The 2000 Census considers portions of northern Monroe County as part of the Detroit Urbanized Area, and parts of southern Monroe County as part of the Toledo Urbanized Area. In 2000, the City of Monroe and portions of surrounding townships were designated as the Monroe Urbanized Area, the first time Monroe has received this designation.

The Census also considers Monroe County, along with 9 other southeast Michigan counties as the Detroit-Ann Arbor-Flint Consolidated Metropolitan Statistical Area (CMSA) as well as part of the 6-county Detroit Primary Metropolitan Statistical Area.

Monroe County is an active member of both the Southeast Michigan Council of Governments (SEMCOG)and the Toledo Metropolitan Area Council of Governments (TMACOG).



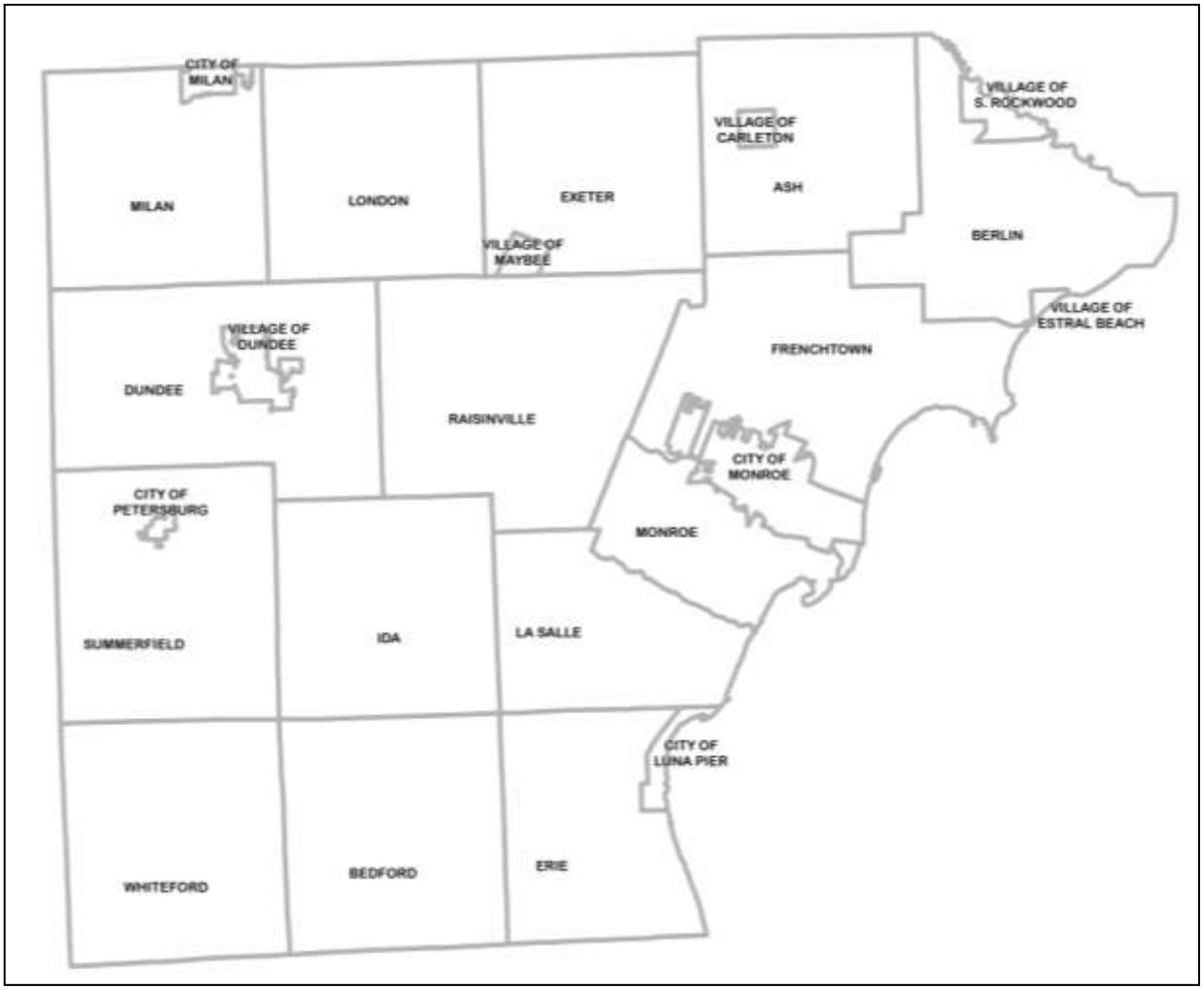
Regional Setting

INFLUENCES OF SURROUNDING AREAS

Despite its proximity to the urban centers of Detroit, Ann Arbor and Toledo, Monroe County has managed to retain a unique identity characterized by a rural landscape, historic small and medium sized towns, with a limited amount of suburban and commercial development. However, the influence of these three urban centers can be felt, especially in the border communities of Bedford Township, adjacent to Toledo, and Berlin Township, adjacent to the "Downriver" area of the Detroit area. The Detroit – Toledo influence is also felt in the major railroads and highways that pass through the county in a north-south direction, in the manufacturing industries – primarily related to automotive and steel, and in the energy

production (three major power plants are located in the county). Monroe benefits from its proximity to the airports in Detroit and Toledo, to the major universities and medical centers in the region, and in the employment opportunities that this region offers.

References:
United States Census Bureau. Census 2000.
http://www.census.gov/geo/www/maps/



Monroe County Municipalities

GEOLOGY

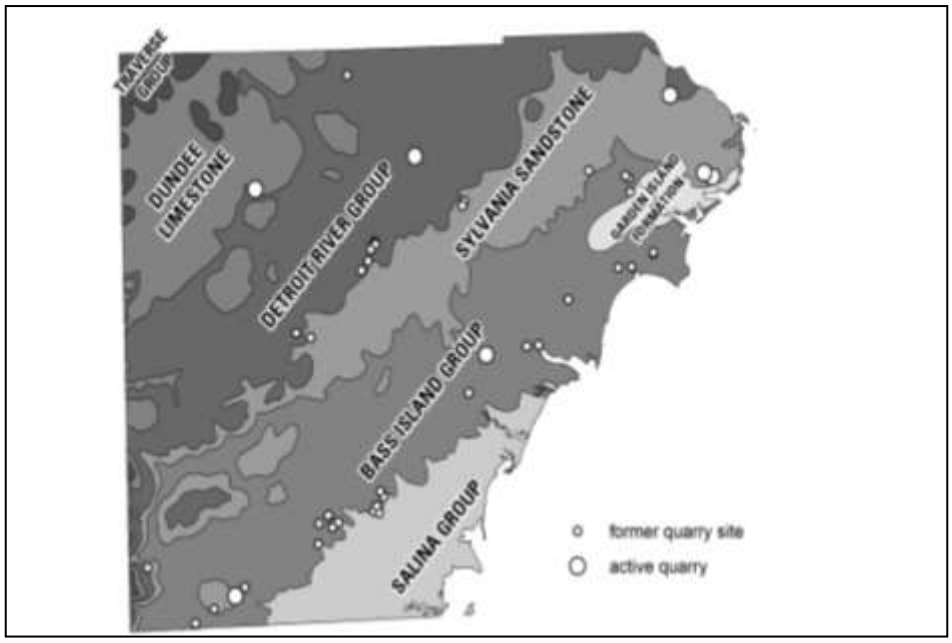
Much of what makes Monroe County unique in terms of land use planning, growth and development has its origins millions of years ago when Michigan's bedrock was formed. The landscape was then reshaped in the most recent ice ages and then again by the early Great Lakes.

Planning Significance:

- Shallow bedrock creates opportunities for mineral resource exploitation, while providing challenges for groundwater issues and public health.
- The presence of karst formations presents special concerns for development and groundwater protection.

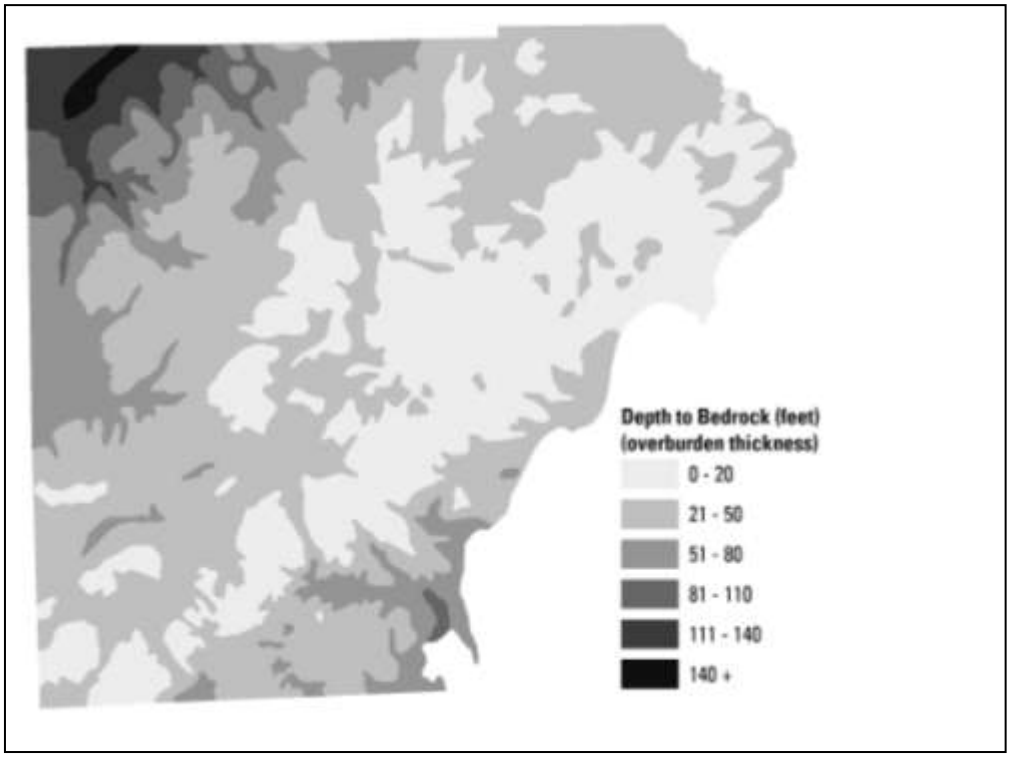
BEDROCK FORMATIONS

Monroe County is located in the southeast rim of a geological region known as the Michigan basin, which, in this area, is characterized by successive bands of sedimentary rock which become relatively younger from the southeast to the northwest. The county is underlain by Paleozoic rock strata consisting mainly of limestone and dolomite (carbonate rocks) with some sandstone and shale.



Bedrock Geology of Monroe County
source: Mozola, 1970

The bedrock surface tilts slightly to the northwest, and is topographically irregular, with many valleys and ridges. Throughout much of the county the bedrock is within 10 or 20 feet of the surface, and in a few locations the rock is exposed. In general, the depth to bedrock increases in a southeast to northwest direction, with much of Milan Township containing over 100 feet of unconsolidated materials (overburden) between the surface and the bedrock.

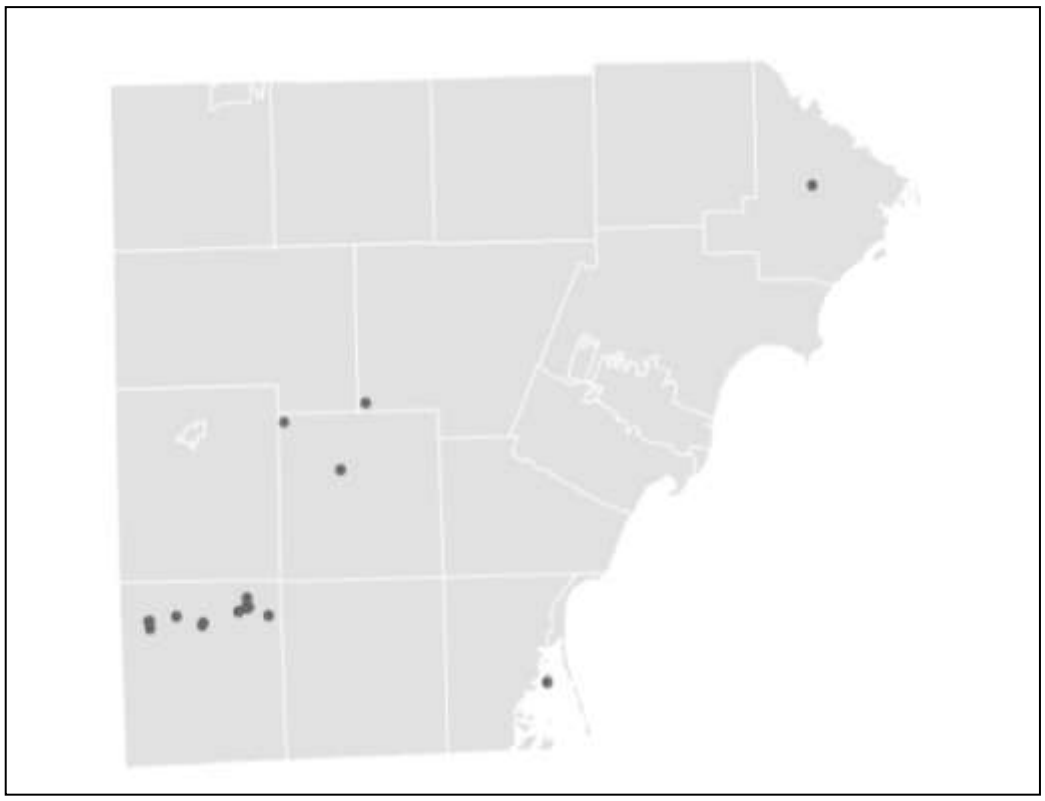


Depth to Bedrock
source: Mozola, 1970

In the areas of the county where the bedrock is close to the surface, several of the formations have proven economically useful. No metallic minerals are present, but the Dundee Limestone has proven useful for cement production and the Sylvania Sandstone for high quality glass manufacturing. Many quarries have operated over the years for the production of building materials, including cut stone and crushed aggregate. Oil and gas wells have been drilled in the area with very limited amounts of economic success. Perhaps the most important resource extracted from the subsurface in Monroe County is the groundwater, which is usually easily obtained from the porous and fractured bedrock.

KARST

In some areas of Monroe County, the underlying carbonate rocks have dissolved as a result of contact with mildly acidic water, forming what is known as Karst. Karst landforms present a variety of unique challenges in planning, as the presence of these underground voids can lead to sinkholes, caves, and other unstable, and sometimes changing, surface topography. Karst formations may also have serious impacts on groundwater quality and quantities, as the dissolved rock may create direct conduits between the surface and underground water, providing a potential pathway for the pollution of drinking water sources.

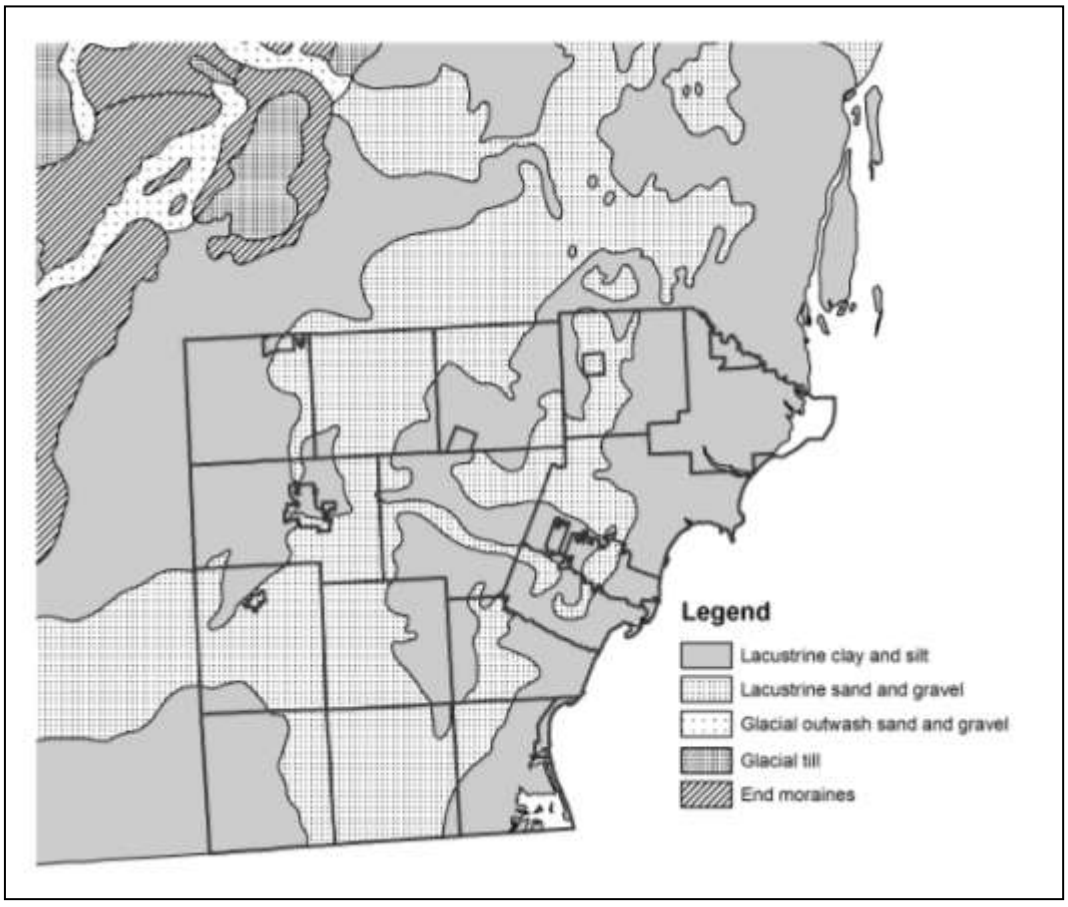


Known and Suspected Sinkholes
source: Monroe County Planning Dept.

Due to the hidden nature of karst, it is difficult to be certain exactly where in the county these formations exist. However, karst sinkholes have been found in many areas of Whiteford Township, as well in other locations. A unique karst feature known as the Great Sulfur Spring is located in the Erie Marsh, which is a tufa mound spring fed from the karstic bedrock aquifer.

GLACIAL GEOLOGY

Almost the entire State of Michigan is covered by glacially deposited material, known as glacial drift. Although many parts of the state have complex hills, ridges, and valleys which were the result of glacial features such as moraines, eskers, and kames, Monroe County owes its general lack of topographic relief to ancient lake beds. The bedrock in Monroe is, in general, directly overlain by a layer of clay till, deposited as a till plain by receding glaciers. This till layer is, in turn, overlain by glacial lake bed sediments, composed of various textures, but primarily lake plain clay and lake plain sand. Beach ridges, deposited as ancient Lake Erie successively rose and fell over time, left long sandy ridges in the western half of the county running roughly parallel to the present shoreline.



Glacial Deposits
source: Michigan Natural Features Inventory & Michigan DNR

In general, the glacial deposits in Monroe County are fairly thin when compared to much of the lower peninsula, where there may be several hundred feet of material. The thickness of glacial deposits in Monroe varies from none (rock outcroppings) in Stony Point and other scattered locations to over 150 feet in Milan Township. This thin drift layer has proved useful for stone quarrying, but can occasionally be troublesome for the construction of underground sewer and water lines. The majority of water wells in Monroe County are in bedrock, with the clay till layers providing a degree of protection from the more easily contaminated perched ground water that exists within the overlying drift.

Although some sandy deposits have been mined commercially, there are no economically significant deposits of glacial materials such as gravel or sand, in Monroe County, unlike many areas of Michigan where there are ample supplies of this type of aggregate. Much of the stone for road beds and other construction in the area is derived from crushed stone.

References:

Sherzer, W. H. 1900. Geological Report on Monroe County Michigan. Volume VII of Geological Survey of Michigan - Lower Peninsula – 1896-1900. Michigan Board of Geological Survey.

Mozola, A.J. 1970. Geology for Environmental Planning in Monroe County. Michigan Geological Survey Division Report of Investigation 13.

Nicholas, J.R., G.L. Rowe, and J.R. Brannen. 1996. Hydrology, Water Quality, and Effects of Drought in Monroe County, Michigan. U.S. Geological Survey - Water Resources Investigations Report 94-4161.

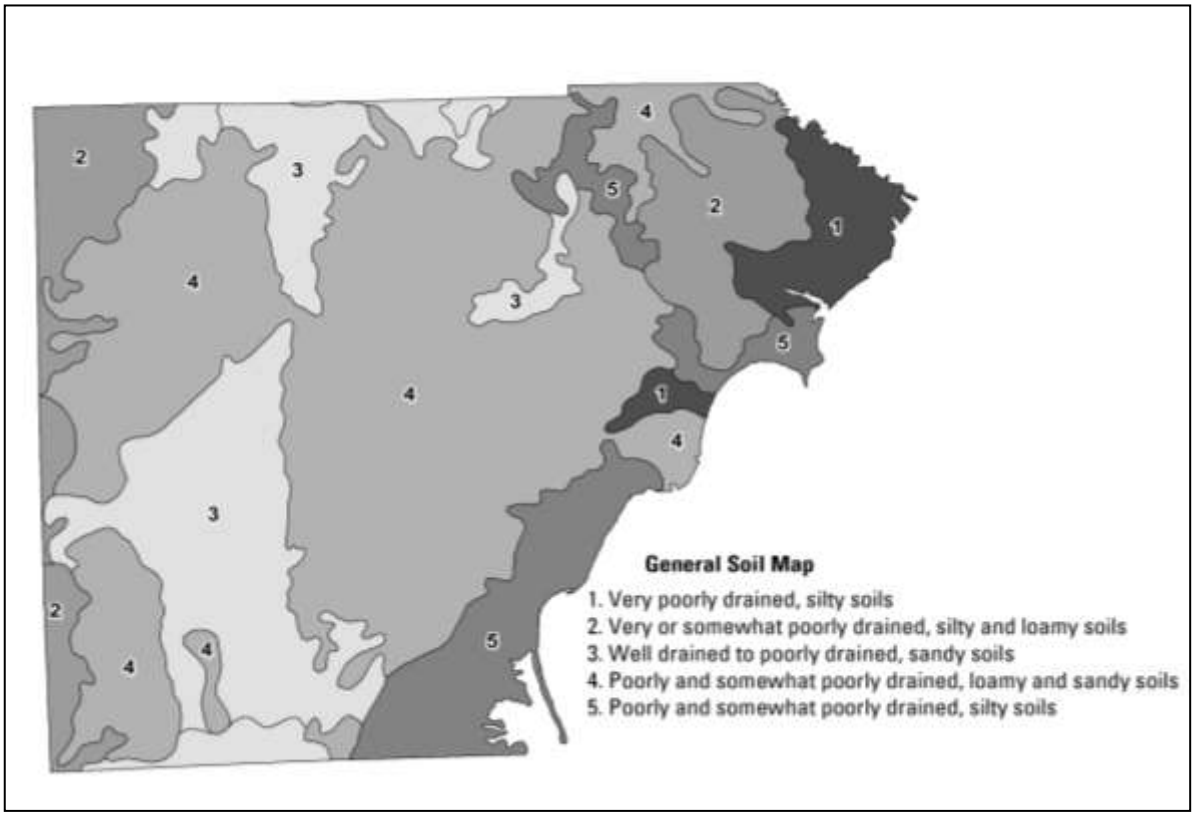
SOILS

The soils of Monroe County have been extensively studied and mapped, and detailed information is available on the various properties of the different types of soils found in the county. In different areas of the county the soils will provide unique sets of opportunities and limitations for such uses as agriculture, forestry, building site development, on-site waste water disposal, and road construction.

Planning Significance:

- Especially productive farmland soils are present in Monroe County, although, in general, subsurface drainage is necessary to prevent wetness. The band of sandier soils which runs north-south in the western part of the county is less productive for agriculture but contains some of the counties most important forest lands.
- Widespread areas of poorly drained soils present limitations for urban development and the use of septic systems for waste water disposal.

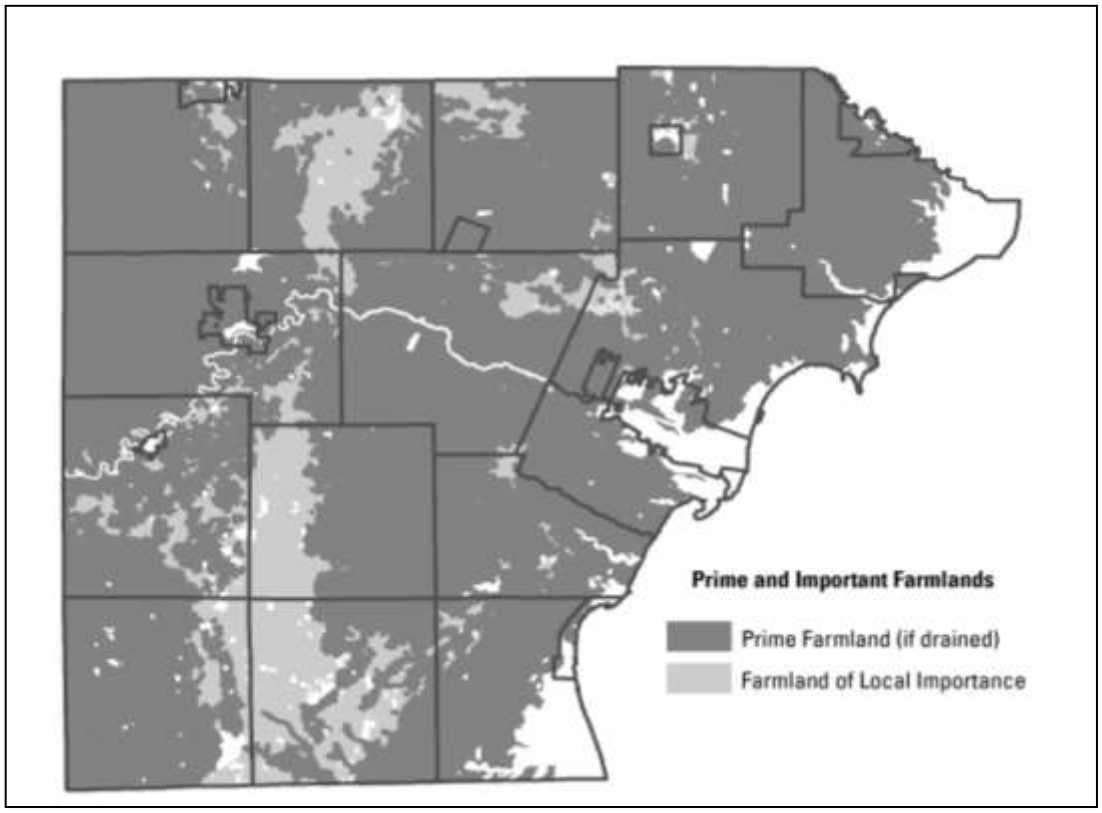
The soils of Monroe County range from well drained sandy soils to very poorly drained clay and silt soils. Most soils are nearly level and either lake plain soils or outwash plains. A large percentage of the soils are considered either prime farm



General Soil Map
source: USDA Monroe County Soil Survey (1981)

land soils or soils of local importance. "Prime farmland" those areas with soils considered by the USDA as having the best combination of physical and chemical properties for producing food, forage, fiber, and oilseed crops. In addition to prime farmland, state and local soil conservation agencies have identified "farmlands of local importance" which are considered nearly as productive as prime farmland. In Monroe County, the farmlands of local importance are generally sandier soils which have especially high potential for the production of vegetable and other specialty crops.

Many areas within Monroe County have severe limitation for development due to poor drainage. In the past the County Sanitary Code prevented development or required large lots in areas with soils with low permeability. Both the expansion of areas served by sanitary sewers and the development of mounded or alternative septic system designs have resulted in more development in areas which were once seen as unsuitable.



Important Farmlands
source: USDA Monroe County Soil Survey (1981) & Natural Resource Conservation Service

References:
Bowman, William. 1981. Soil Survey of Monroe County, Michigan. US Department of Agriculture, Soil Conservation Service.

TOPOGRAPHY, DRAINAGE AND FLOOD ZONES

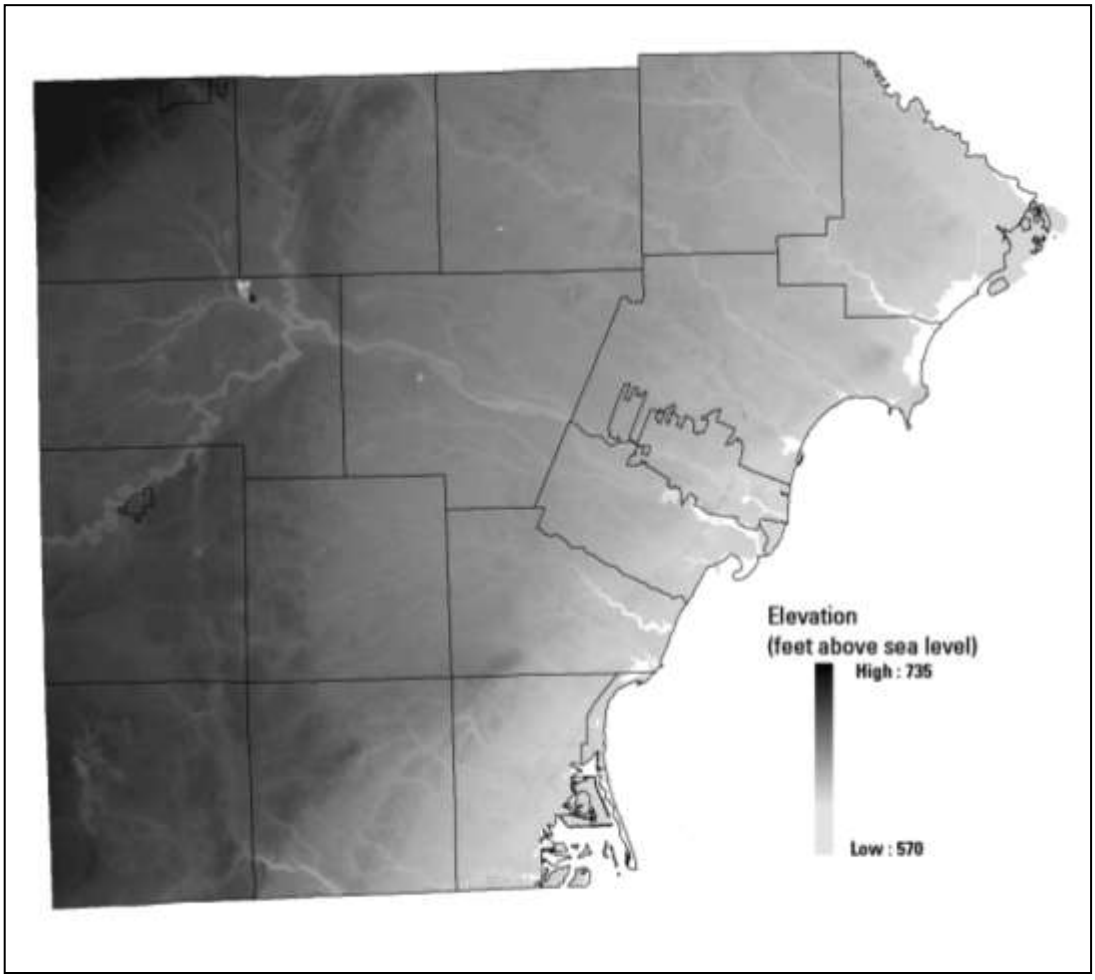
Monroe County is a fairly level area of former lake bottom and glacial outwash plains. The topography of the county, along its Lake Erie shoreline, the presence of the lower portion of many rivers and streams, and poorly drained soils, makes the county particularly flood prone.

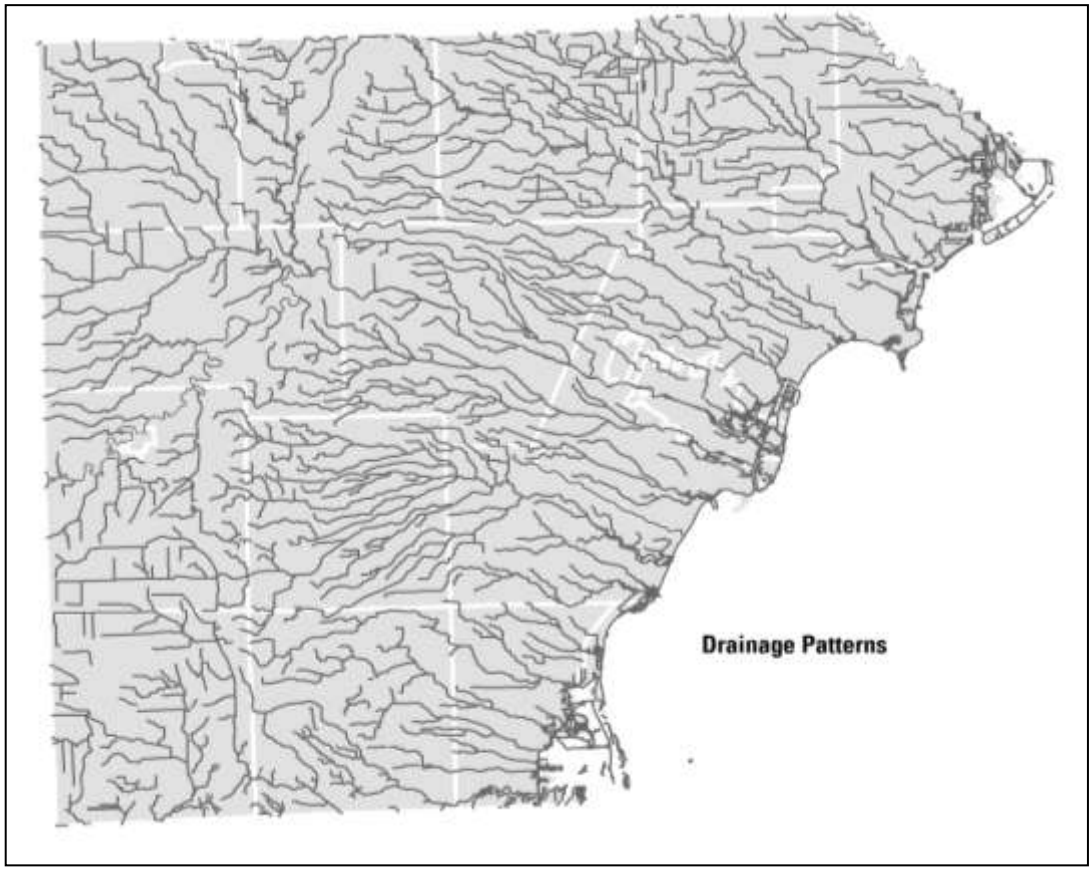
Planning Significance:

- Flood plains are, in general, poorly suited for urban development due to the risk to life and property.
- Stream courses and their associated flood plains provide the county with a network of corridors potentially well suited for open space, natural habitat, and outdoor recreation.

The surface elevation in Monroe County ranges from a high point of 734 feet about sea level in the northwest corner of Milan Township to the Lake Erie shoreline which has a mean elevation of 570 feet. The county is relatively flat, with a gentle slope from west to east. Almost all of the watercourses in the county flow from the west or northwest to the east or southeast.

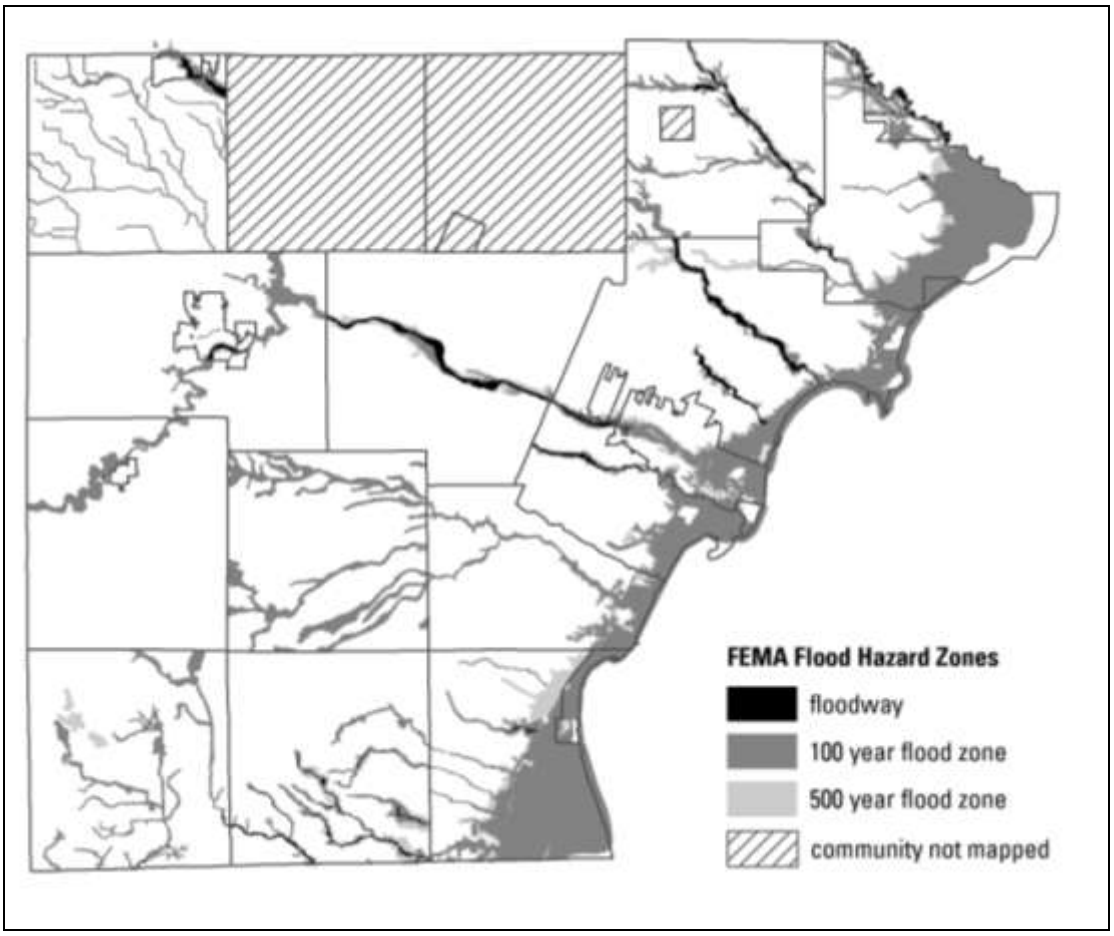
Surface Elevation
source: 2005 Digital Elevation Model





Drainage Patterns
source: Michigan Geographic Information Center

The Federal Emergency Management Administration (FEMA) has mapped the presence of flood hazard zones in Monroe County. For flood insurance purposes, the county has been mapped and divided into different flood hazard areas based on the frequency or probability of flooding. The 100 year flood zones have a 1% chance of flooding in any given year, while the 500 year flood zones have a 0.2% chance. The mapped floodways are the areas most severely affected by flooding and tend to contain high velocity waters during flood events.



Flood Zones
Source: FEMA Flood Insurance Program, Q3 FIRM Maps

NATURAL RESOURCES AND ENVIRONMENT

Monroe County has a wide diversity of natural habitats which contain an equally wide diversity of plants and animals. The Lake Erie coast, the River Raisin and other water bodies and their associated watersheds, and the underground aquifers of the region provide the county with a unique set of resources with unique opportunities and challenges.

Planning Significance:

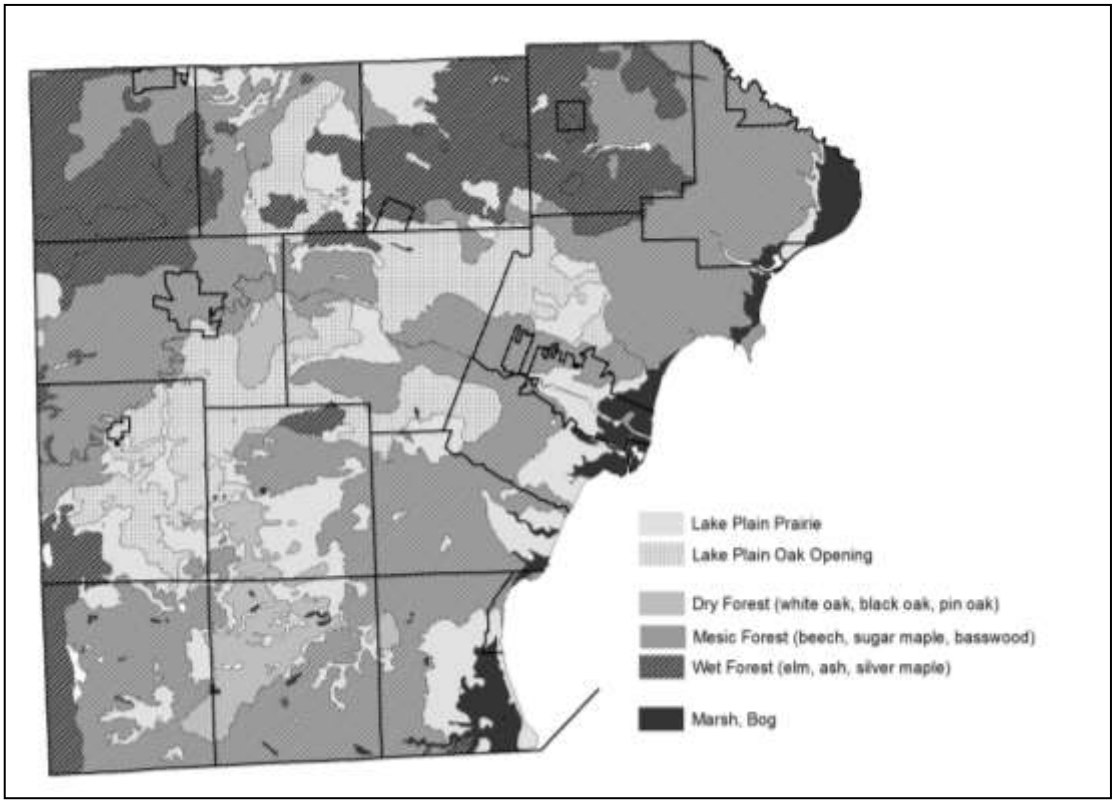
- Historically, the settlement of Monroe County has introduced change to both upland and lowland natural habitats, with the few remaining intact natural areas being of increased significance.
- Past practices regarding waste disposal, soil erosion, shoreline alterations, and wetland filling have resulted in the need for remedial action and restoration.
- Existing natural areas vary in their importance due to their rarity, species diversity, level of disturbance, size, function, and other factors. Efforts can be taken to prioritize natural areas based on their importance.
- A healthy natural environment, including clean air and water, is essential to life. The presence of natural areas and intact biological communities adds to the county's value as a place to live and can have a significant impact on attracting visitors.
- The presence of invasive species has had a significant impact on natural communities. The control of invasive species and the restoration of natural areas would help protect the area's biodiversity.

The combination of its rivers and waterways, its Great Lakes coast, its soils and bedrock, and its climate and geography gives Monroe County a unique combination of plants and animals. The health of these natural communities affects the quality of life for the human community. And our impact on the land, air and water affects the quality of the natural communities.

VEGETATION

Prior to 1800, Monroe County contained a diverse mosaic of plant communities. Much of the area was forested with both upland and lowland forest types, but significant areas were covered by grasslands, savannahs, and marshland. Today, there are only a few scattered remnants of the large prairies and oak openings that once existed and which have become increasingly rare throughout the region. Likewise, the vast coastal wetlands that once existed have been significantly reduced. More common are the forested areas, although even forested land has mostly scattered, fragmented woodlots rather than large, unbroken areas of natural habitat. The

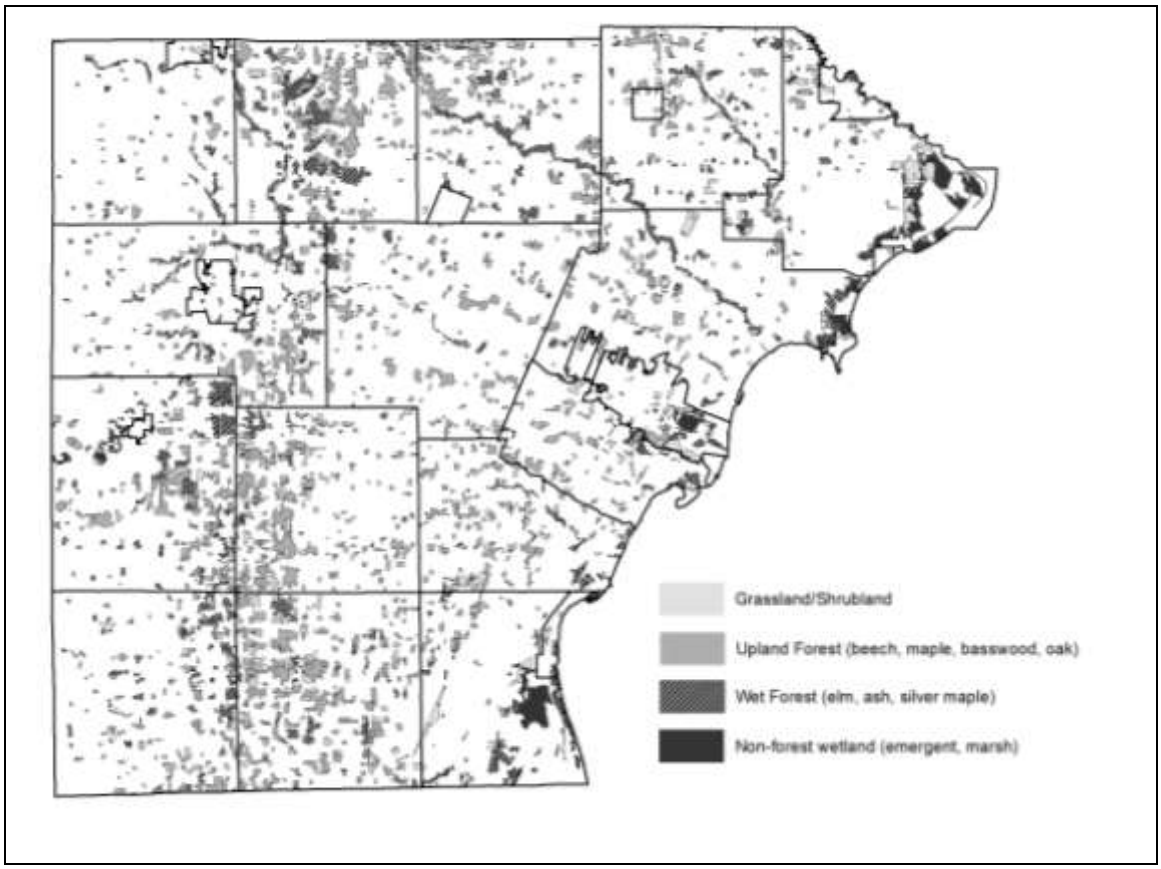
largest intact woodlands are located in the western part of the county in areas with sandy, well drained soils. Significant areas of floodplain forests exist along some of the major rivers and streams, particularly the Saline River, the Macon River, Stony Creek, the River Raisin and the Huron River. Although there is limited forest and woodlot management, forestry is not considered an important economic activity.



Presettlement Vegetation (c. 1800)
source: Michigan Natural Features Inventory

The wildlife of the area includes deer, rabbit, fox, muskrat, coyote, squirrel, raccoon, opossum, and a variety of other small mammals. Hunting is enjoyed primarily on private lands and within the three state game areas (Pte. Mouillee, Erie, and Petersburg). Monroe County's shoreline has always been an important destination for waterfowl hunting.

As well as waterfowl, Monroe County also provides important habitat for resident and migratory songbirds, birds of prey, shorebirds, and other types of birds. Woodlots, coastal wetlands, floodplain forests, and open fields present diverse habitat which makes Monroe County a destination for birders and others interested in the diversity of wildlife, which also includes reptiles, amphibians, mollusks, butterflies, and other insects.



Existing Natural Areas
source: SEMCOG (from 2000 aerial photography

SPECIAL PLANTS AND ANIMALS

Monroe County contains habitat which supports a large number of rare plant and animal species, including fish, mollusks, insects, amphibians, reptiles and birds. Species listed as endangered or threatened are given special protection through either the federal or state endangered species acts. Species listed as being of special concern are not protected, but have the potential to have their status changed if their chance of extinction becomes increased.

State and Federally Listed Species

Scientific Name	Common Name	Status
Acris crepitans blanchardi	Blanchard's Cricket Frog	SC
Agalinis gattingeri	Gattinger's Gerardia	E
Alasmidonta marginata	Elktoe	SC
Alasmidonta viridis	Slippershell Mussel	SC
Ambystoma texanum	Smallmouth Salamander	E
Ammocrypta pellucida	Eastern Sand Darter	T
Ammodramus savannarum	Grasshopper Sparrow	SC
Angelica venenosa	Hairy Angelica	SC
Arabis missouriensis var. deamii	Missouri Rock-cress	SC
Aristida longespica	Three-awned Grass	T
Asclepias hirtella	Tall Green Milkweed	T
Asclepias purpurascens	Purple Milkweed	SC
Asclepias sullivantii	Sullivant's Milkweed	T
Aster furcatus	Forked Aster	T
Aster praealtus	Willow Aster	SC

Atrytonopsis hianna	Dusted Skipper	T
Baptisia lactea	Prairie False Indigo	SC
Camassia scilloides	Wild-hyacinth	T
Carex crus-corvi	Raven's-foot Sedge	T
Carex davisii	Davis's Sedge	SC
Carex festucacea	Fescue Sedge	SC
Carex frankii	Frank's Sedge	SC
Carex squarrosa	Sedge	SC
Castanea dentata	American Chestnut	E
Cistothorus palustris	Marsh Wren	SC
Cuscuta polygonorum	Knotweed Dodder	SC
Cyclonaias tuberculata	Purple Wartyback	SC
Diarrhena americana	Beak Grass	T
Emydoidea blandingii	Blanding's Turtle	SC
Epioblasma obliquata perobliqua	White Catspaw	LE, E
Epioblasma torulosa rangiana	Northern Riffleshell	LE, E
Epioblasma triquetra	Snuffbox	E
Erimyzon oblongus	Creek Chubsucker	E
Erynnis baptisiae	Wild Indigo Duskywing	SC
Euphyes dukesi	Dukes' Skipper	T
Falco peregrinus	Peregrine Falcon	E
Flexamia reflexus	Leafhopper	SC
Gallinula chloropus	Common Moorhen	SC
Gymnocladus dioicus	Kentucky Coffee-tree	SC
Haliaeetus leucocephalus	Bald Eagle	T
Helianthus mollis	Downy Sunflower	T
Hemicarpha micrantha	Dwarf-bulrush	SC
Hemileuca maia	Barrens Buckmoth	SC
Hibiscus laevis	Smooth Rose-mallow	SC
Hibiscus moscheutos	Swamp Rose-mallow	SC
Hydrastis canadensis	Goldenseal	T
Hypericum gentianoides	Gentian-leaved St John's wort	SC
Hypericum sphaerocarpum	Round-fruited St John's wort	T
Incisalia irus	Frosted Elfin	T
Ixobrychus exilis	Least Bittern	T
Juncus brachycarpus	Short-fruited Rush	T
Justicia americana	Water-willow	T
Lactuca floridana	Woodland Lettuce	T
Lampsilis fasciola	Wavy-rayed Lampmussel	T
Lechea minor	Least Pinweed	SC
Lechea pulchella	Leggett's Pinweed	T
Leucospora multifida	Conobea	SC
Ludwigia alternifolia	Seedbox	SC
Lycaeides melissa samuelis	Karner Blue Butterfly	LE, T
Macrhybopsis storeriana	Silver Chub	SC
Mesodon elevatus	Proud Globe	SC
Morus rubra	Red Mulberry	T
Nelumbo lutea	American Lotus	T
Notropis photogenis	Silver Shiner	E
Noturus miurus	Brindled Madtom	SC
Nycticorax nycticorax	Black-crowned Night-heron	SC
Obovaria subrotunda	Round Hickorynut	E
Opsopoeodus emiliae	Pugnose Minnow	E
Oxalis violacea	Violet Wood-sorrel	T
Panax quinquefolius	Ginseng	T
Panicum leibergii	Leiberg's Panic-grass	T
Pantherophis gloydi	Eastern Fox Snake	T
Papaipema beeriana	Blazing Star Borer	SC
Papaipema maritima	Maritime Sunflower Borer	SC
Papaipema sciata	Culvers Root Borer	SC
Papaipema silphii	Silphium Borer Moth	T
Percina copelandi	Channel Darter	E
Percina shumardi	River Darter	E
Phalaropus tricolor	Wilson's Phalarope	SC
Phoxinus erythrogaster	Southern Redbelly Dace	E
Platanthera ciliaris	Yellow Fringed Orchid	T
Platanthera leucophaea	Prairie Fringed Orchid	LT, E
Pleurobema coccineum	Round Pigtoe	SC
Polygala cruciata	Cross-leaved Milkwort	SC
Pomatiopsis cincinnatiensis	Brown Walker	SC
Potentilla paradoxa	Sand Cinquefoil	T
Pycnanthemum pilosum	Hairy Mountain-mint	T
Pyrgulopsis letsoni	Gravel Pyrg	SC
Quercus shumardii	Shumard's oak	SC
Rallus elegans	King Rail	E
Rotala ramosior	Tooth-cup	SC
Sagittaria montevidensis	Arrowhead	T
Sander canadensis	Sauger	T
Silphium perfoliatum	Cup-plant	T
Simpsonaias ambigua	Salamander Mussel	E
Spiza americana	Dickcissel	SC
Sterna hirundo	Common Tern	T
Strophostyles helvula	Trailing Wild Bean	SC
Terrapene carolina carolina	Eastern Box Turtle	SC
Toxolasma lividus	Purple Lilliput	E
Tradescantia virginiana	Virginia Spiderwort	SC
Tyto alba	Barn Owl	E
Valerianella umbilicata	Corn-salad	T
Villosa fabalis	Rayed Bean	C , E
Villosa iris	Rainbow	SC
Zizania aquatica var. aquatica	Wild-rice	T

Federal Status: Listed Endangered (LE), Listed Threatened (LT), Candidate (C)
State Status: Endangered (E), Threatened (T), Special Concern (SC)

Source: Michigan Natural Features Inventory

INVASIVE SPECIES

In recent years, the presence of invasive plants and animals which have been introduced to this area from Europe, Asia or elsewhere have had a devastating effect on the landscape and the local ecology as well as economic impacts. The zebra mussel has fouled beaches and clogged water intakes, common reed (phragmites) and purple loosestrife have destroyed wetland habitat, the emerald ash borer has killed thousands of trees in cities and forests, and the flowering rush has clogged waterways. Efforts at eliminating accidental introductions and at eradicating existing populations have begun on a limited basis and would have many benefits.

GROUNDWATER

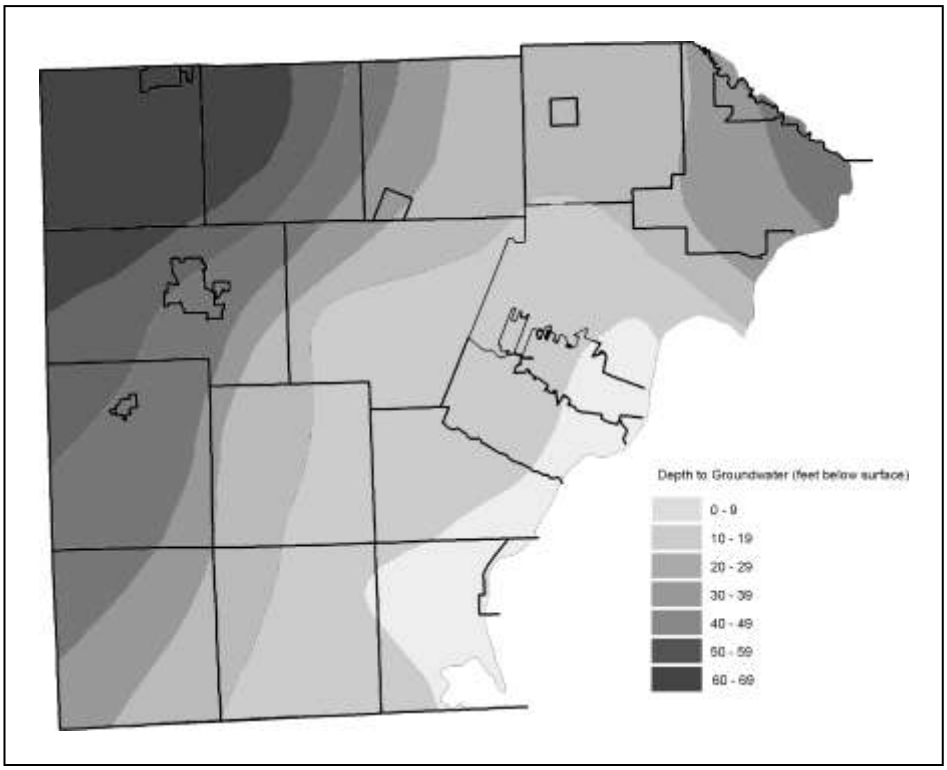
The County of Monroe relies heavily on its underground aquifers as a source of water for drinking, irrigation and other uses. Both the quality and quantity of groundwater have been of concern, both in the past and currently.

Planning Significance:

- In areas of the county without public water, adequate supplies of potable water are essential to sustain existing residents and future development.
- Areas of the county have experienced groundwater issues, including hydrogen sulfide, bacterial contamination, and dry wells. Restrictions on development may be necessary if adequate supplies of drinking water are unobtainable. Alternative solutions such as hauled water, bottled water, and extension of public water lines can be expensive or impractical, but may be necessary to serve existing residents.
- Both drought and groundwater pumping can affect groundwater levels. Pumping of quarries is estimated to use over 70% of groundwater withdrawals in the county.

The groundwater used by residents of Monroe County is generally taken from wells drilled into the fractured bedrock. Groundwater can generally be obtained in sufficient quantities at depths of less than 100 feet. Most of the densely populated areas of the county are served by public water, but about 20 percent of the households in the county rely on wells for drinking water.

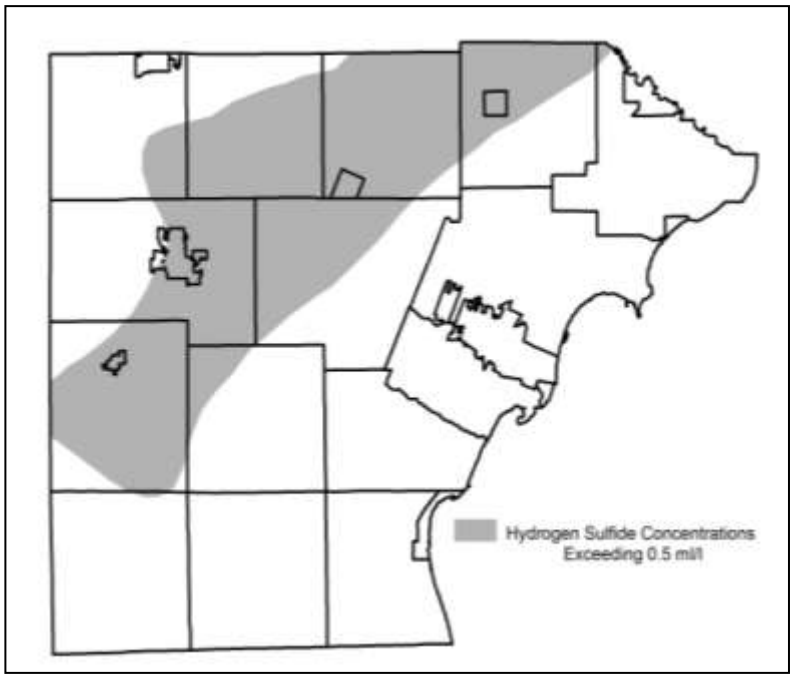
Concerns include depletion of groundwater resources as well as contamination. Pumping of groundwater in large quantities, as is done in quarry dewatering operations, can lower water tables and create dry wells, forcing users to either redrill deeper wells or to rely on hauled water. Hydrogeological studies can be performed prior to large withdrawals in order to ascertain the potential impacts on groundwater levels.



Depth to Groundwater (average depth 1990 – 1993)
source: Nichols, JR, GL Rowe and JR Branner. 1996. Water Quality and Effects of Drought in Monroe County, Michigan. USGS.

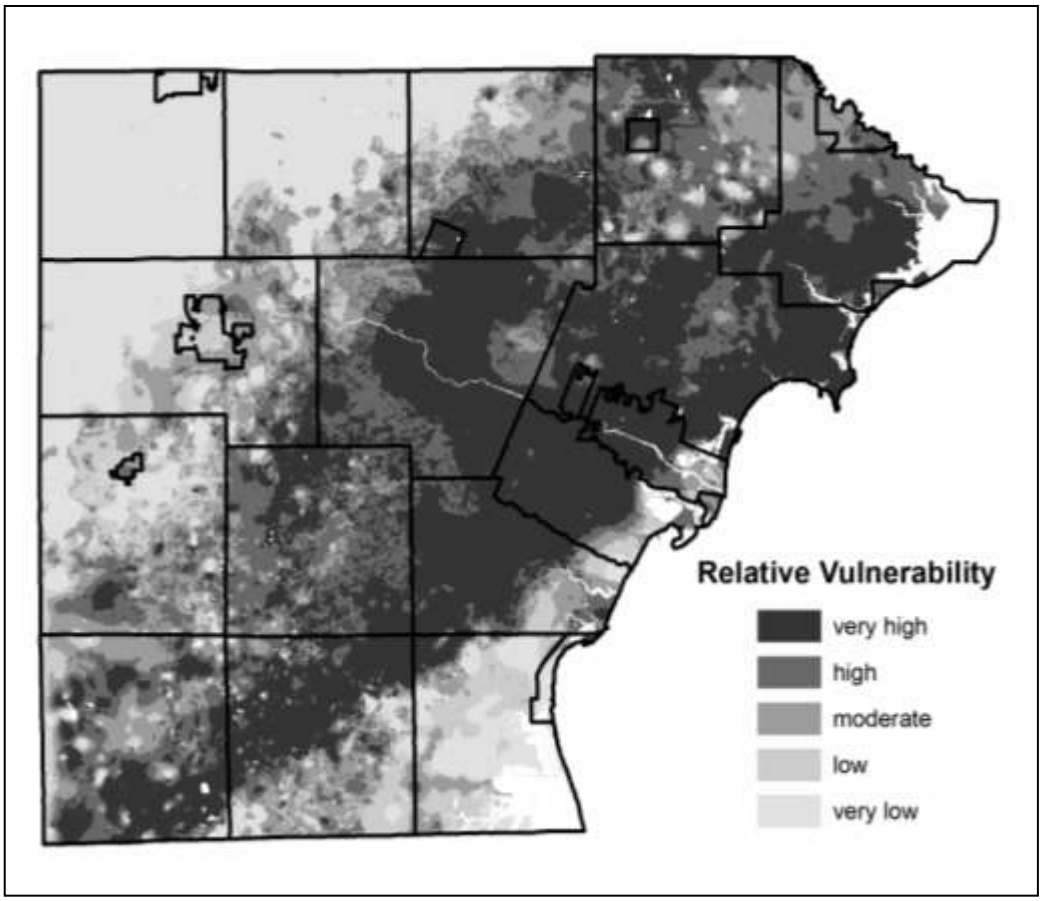
The groundwater in Monroe County is subject to naturally occurring dissolved substances. Areas of Monroe County contain high levels of dissolved solids, high degrees of hardness, and also high levels of dissolved hydrogen sulfide, a gas which imparts an odor to groundwater and can corrode metals and plumbing fixtures. Persons relying on wells in areas of high concentrations of hydrogen sulfide often use hauled water stored in refillable tanks for their domestic water supply, a practice which is not generally viewed as being as safe as a municipal water supply.

Groundwater is subject to pollution from a variety of sources, including industrial discharges, agricultural chemical use, livestock waste, failed septic systems, and accidental spills. Pollutants that have caused concern include nitrates, hydrocarbons, and bacteria. The identification and protection of aquifer recharge areas, especially in locations with karst topography, can greatly reduce the risk of groundwater contamination. Monroe County has developed a process to identify areas with a high degree of vulnerability to groundwater contamination which was based on a combination of bedrock type, depth to bedrock, and soil permeability. Areas with deep, clay soils, such as those in the northwest part of the county are less vulnerable than those areas with sandy soils overlying bedrock close to the surface.



Areas with High Levels of Hydrogen Sulfide in Groundwater
source: Nichols, JR, GL Rowe and JR Branner. 1996. Water Quality and Effects of Drought in Monroe County, Michigan. USGS.

Water Service Areas / Private Wells
source: Monroe County Planning Department



Vulnerability of Groundwater to Contamination
source: Monroe County Planning Department & Monroe County Environmental Health Division

References:

Nichols, JR, GL Rowe and JR Branner. 1996. Water Quality and Effects of Drought in Monroe County, Michigan. USGS.

Monroe County Planning Dept. and Monroe County Environmental Health Division. 2008. "The Vulnerability of Groundwater to Contamination in Monroe County, Michigan." (maps and poster)

SURFACE WATER

Monroe County relies on clean and safe water from the Great Lakes as a source of drinking water for all areas served by public water. Although the River Raisin at one time was the source for the Dundee system (it has since been connected to Monroe's water lines) the river's water quality is a concern for fish and wildlife, recreation, and public health, and, as it empties into Lake Erie, has an effect on that water body as well. In fact all rivers and streams in Monroe County drain into Lake Erie, through the Huron, Raisin, or Maumee Rivers or through one of the many smaller drainage basins that lead to the lake, such as Stony Creek, Swan Creek, Plum Creek, and others.

Planning Significance:

- The quality of surface waters is affected by both point and non-point source pollution as well as atmospheric deposition.
- Some surface waters in Monroe County have had uses impaired due to pollution. The ability of the public to enjoy swimming, fishing, and the aesthetics of clean waterways adds to the quality of life as well as to a diverse and healthy natural community.
- Monroe County's position at or near the mouths of the Detroit River, Huron River, River Raisin, Maumee River and Ottawa River, as well as numerous other smaller streams, places the county in a position where land use policies, waste water treatment efforts, sedimentation, and other potentially impacting practices of neighboring communities have some of their greatest effects.

Surface waters in Monroe County consist of Lake Erie coastal areas, two major rivers (the River Raisin and the Huron River) and their tributaries, many smaller river systems which drain into Lake Erie, and numerous small lakes and ponds, most of which have been artificially created.

The Lake Erie shoreline contains numerous important ecological areas, many of which are afforded protection as State Game Areas (Pte. Mouillee SGA and Erie SGA), State Parks (Sterling), nature preserves (Erie Marsh), and units within the federal Detroit River International National Wildlife Refuge (Lagoona Bearch, Brancheau Tract, Eagle Island Unit, Plum Creek Bay, Erie Marsh, and Lady of the Lake).

Water quality issues have long been a concern in the Lake Erie basin. Since the passage of the federal Clean Water Act in 1970, Lake Erie has made a tremendous comeback. Improvements to sewage treatment plants are responsible for much of the improved water quality in Lake Erie as well as the River Raisin.

Challenges that still exist include treatment plant overflows, persistent toxic sites, "dead zones" in Lake Erie, the presence of numerous exotic invasive species, and

issues related to non-source point pollution from both urban storm water and runoff from agricultural lands.

Surface Waters
source: Michigan Center for Geographic Information

Many of the water quality issues faced by Monroe County are issues which extend beyond our borders and are more properly addressed by approaches that take a basin-wide perspective.. Monroe County has been active in regional planning efforts aimed at improved water quality, including the River Raisin Watershed Council, the International Joint Commission, TMACOG, and SEMCOG. Participation with state and federal government agencies such as the MDNR, MDEQ, EPA, FEMA, NRCS, and the Army Corps of Engineers is equally important. Activities at the county and local level can take the form of storm water management, stream side buffering, soil conservation, animal waste management, improvements to sewage treatment plants, and the elimination of illegal or improper discharges.

References:

Monroe County Planning Department. 2008. Coastal Zone Management Plan.

Nichols, JR, GL Rowe and JR Branner. 1996. Water Quality and Effects of Drought in Monroe County, Michigan. USGS.

River Raisin Watershed Council. 2008. River Raisin Watershed Management Plan (draft).

HISTORY

Monroe County has a particularly rich history, which is reflected in the many significant archeological and historical sites throughout the county. The county's historic patterns of growth and development has resulted not only in important sites and artifacts, but in a culture and a landscape that gives the county a unique sense of place.

Planning Significance:

- Historic and archeological sites, cemeteries, battlefield sites, and historic barns, bridges and other structures have the potential, when properly protected and recognized, to provide a community with important resources for education, culture, tourism, and uniqueness.
- The first step in preserving important elements of the past is their identification and location.
- Legal issues regarding the uncovering of burial grounds, the right of access to cemeteries, and the responsibilities of local government can create controversy and affect proposed urban development.

EARLY SETTLEMENTS

The earliest known inhabitants of what is now Monroe County were native Americans, primarily from the Ottawa and Pottawatomie tribes and the routes of many ancient trails still exist today in the form of modern roads.

French explorers probably visited the area beginning in the late 1600's, but the first European settlers in the area were French Canadians who settled in the 1780's. Having acquired land from the Pottawatomie natives, the first settlements were established on the River Raisin in what is now the City of Monroe. By 1810 there were over 20 buildings in this area. Additional frontier settlements were established in other locations

The Ottawa and Pottawatomie Indians occupied villages in the area now known as Monroe County, during the period prior to 1600. A variety of archeological sites representing encampments, burial grounds and villages have been found throughout the county. Many trails were cut through the Michigan wilderness as a result of the migratory lifestyle of these Native Americans. These early trails are still visible today in the form of highways, which were developed along their routes.

Monroe County was first explored in the 1600s by French missionaries from Montreal. French Canadians arrived in the late 1700s and established the first permanent settlement along the River Raisin in the area now known as the City of Monroe. A trading post and fort were established here in 1778. Francois Navare was

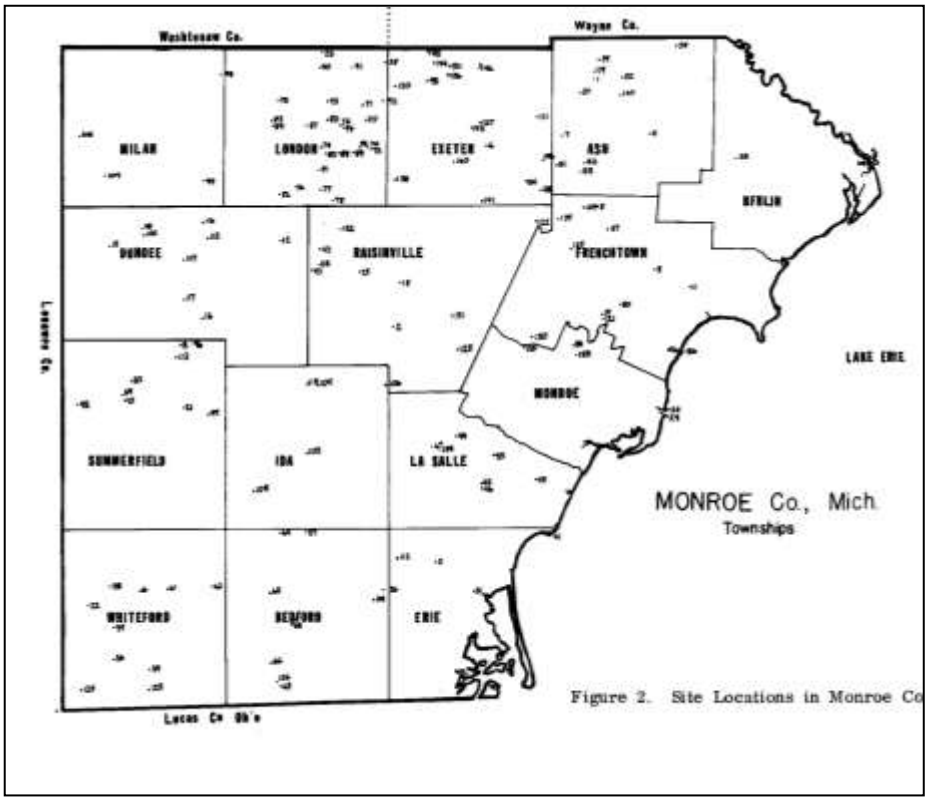


Figure 2. Site Locations in Monroe Co

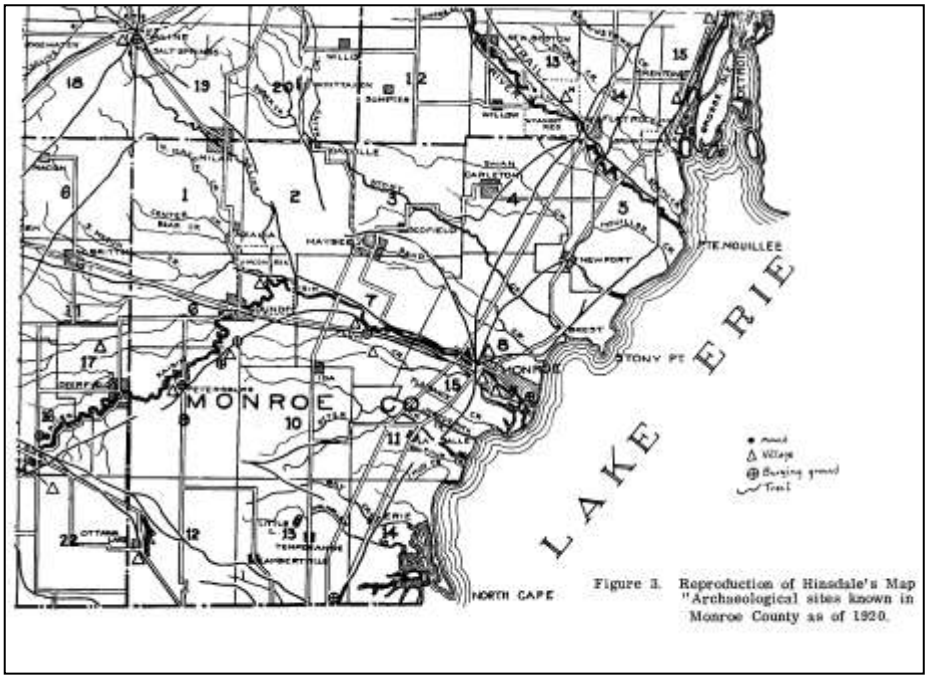


Figure 3. Reproduction of Hinsdale's Map "Archaeological sites known in Monroe County as of 1920.

Monroe County Archeological Sites

Source: Brose, D.S. and P.S. Essenpreis. "A Report on a Preliminary Archaeological Survey of Monroe County, Michigan." The Michigan Archaeologist. Vol. 19 No. 1-2. March-June 1973.

first European settler in 1780. The first settlement was called French Town when about 100 French families came here from Detroit and Canada. Additional small settlements were founded along some of the smaller rivers, including Stony Creek, Sandy Creek, Otter Creek, and La Plaisance Creek.

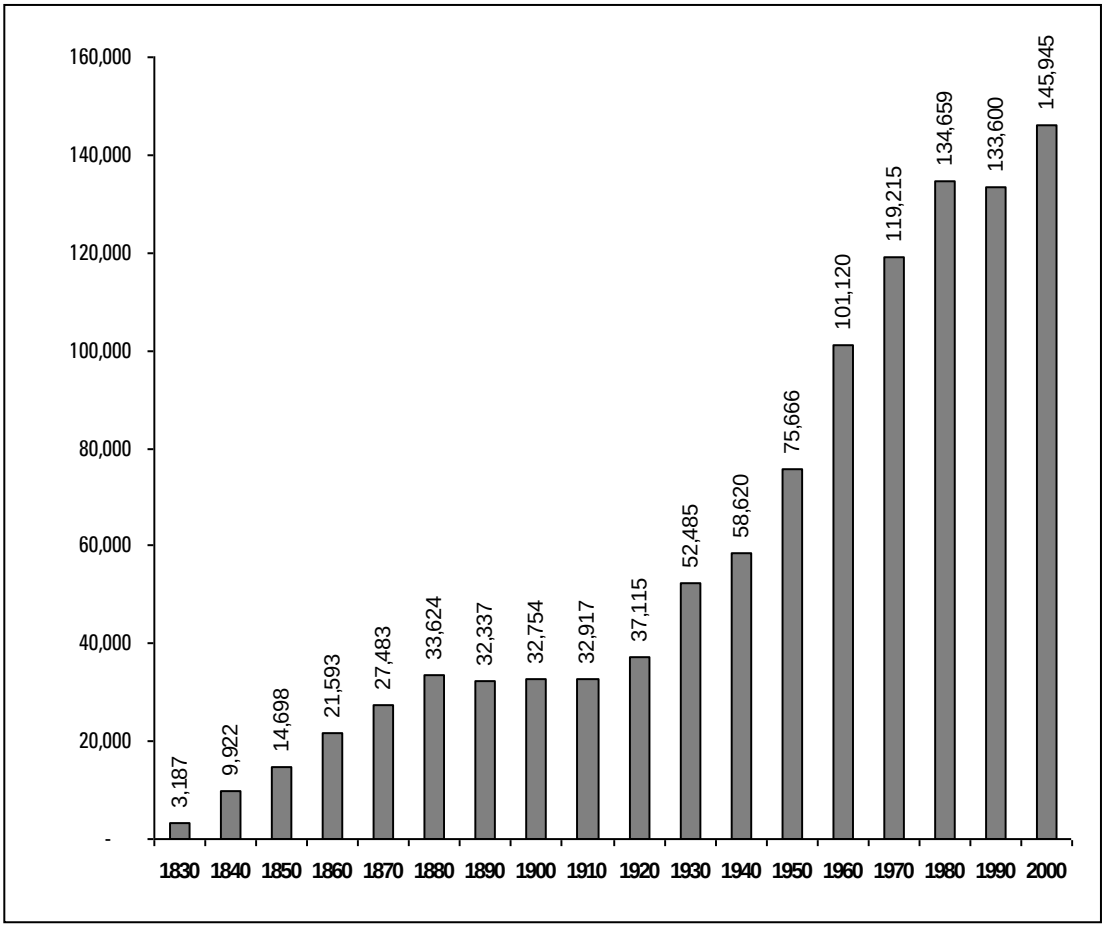
French Claims of Monroe County
source: Michigan Resource Inventory System

The original French and French-Canadian settlers divided land using a traditional system of parceling property into long, narrow pieces, each of which had frontage on the river, which was the main source of water, transportation, commerce and communication. These "French Claims," also known as long-lots or ribbon farms, persist today and give the landscape in eastern Monroe County a unique quality. It wasn't until the early 1800s that the United States government survey, with its system of towns, ranges and sections began to split up the land into the more familiar checkerboard pattern which covers the rest of the county and most of the western United States.

After the War of 1812, settlers began to arrive in large numbers to southeast Michigan. American settlers arrived in the area, established a small community and changed "French Town" to "Monroe" in honor of the president. Rural homesteads were being established throughout the area, with land being cleared, farms established, industries developed and communities built. Small towns began to be platted, including Carleton (1872), Dundee (1836), Maybee (1873), Milan (1831), Petersburg (1836), South Rockwood (1863).

Monroe was established as a county in July, 1817. Monroe County at first included the land now known as Lenawee and Washtenaw Counties and portions of Wayne and Jackson Counties in Michigan and the northerly portion of what is now Lucas County, Ohio and the City of Toledo. Lenawee County was attached to Monroe

County for administration purposes from 1822 through 1826. Controversy over the county's southern boundaries culminated in the bloodless Michigan-Ohio War of 1836. To settle this dispute, the United States Congress gave the State of Ohio the southern portion of Monroe County lands which included what is now the City of Toledo (Port Lawrence). In return, Michigan received land that is now known as our Upper Peninsula. This settlement finally established the present day boundaries of Monroe County.



Historic Population Trends - Monroe County, Michigan
Source: US Census

Monroe County has remained a mostly rural area with scattered small towns. However, in the first half of the 20th century, rapid industrialization and the birth of the automotive industry in the region changed the landscape with the development of large industries, railroads, highways, and electricity. Lakefront areas became popular resort destinations as well as hunting grounds.

HISTORIC SITES

Monroe County contains many historic sites and building of local, state and national significance. The River Raisin Battlefield, the site of a battle between the Americans and the British during the War of 1812 is located within the City of Monroe and is currently being studied for inclusion within the National Park System. Many other sites in Monroe County are listed on the State and National Registers of Historic Places:

BEDFORD DISTRICT NO. 6 SCHOOL
25 East Stearns Road, Bedford Township
Other Names Banner Oak School
Property Type schoolhouse
Period of Significance 1866-1900
Registry Type(s) 08/12/1983 State Register listed

BRIDGE SCHOOL
96 Ida-Maybee Road, Raisinville Township
Other Names Raisinville Township Hall
Property Type schoolhouse
Period of Significance 1826-1865
Registry Type(s) 12/17/1987 State Register listed

CUSTER EQUESTRIAN MONUMENT
SW corner of the intersection of Elm and North Monroe
Other Names "Sighting the Enemy"
Period of Significance 1908-1910
Registry Type(s) 1992 Marker erected
12/09/1994 National Register listed
06/15/1992 State Register listed

DETROIT RIVER LIGHT STATION
Lake Erie, 3.75 miles SE of Millerville Beach, Berlin Township
Other Names Bar Point Light Station
Property Type lighthouse
Period of Significance 1866-1900
Registry Type(s) 08/04/1983 National Register listed

DUNDEE HISTORIC DISTRICT
Roughly bounded by Main, Monroe, and Toledo streets, the River Raisin, Riley, Tecumseh, and Ypsilanti streets, Dundee
Period of Significance 1850-1940
Registry Type(s) 08/20/1990 National Register listed

EAST ELM - NORTH MACOMB STREET HISTORIC DISTRICT
Roughly bounded by the River Raisin, Lorain, Monroe and Macomb streets, Monroe
Property Type residential district
Period of Significance 1825-1925
Registry Type(s) 05/06/1982 National Register listed

EXETER TOWNSHIP HALL
6158 Scofield Road, Maybee
Property Type town hall
Period of Significance 1866-1900
Registry Type(s) 04/23/2001 Marker erected
09/03/1998 State Register listed

FIRST ORGANIZED PUBLIC SCHOOL DISTRICT
T7S, R8 & 9E, Monroe
Registry Type(s) 09/17/1957 State Register listed

FIX HOUSE (demolished 1980, NR delisted 1981)
Sterling State Park, Frenchtown
Property Type brick house
Period of Significance 1826-1865
Registry Type(s) 10/29/1971 State Register listed

JOHNSON-PHINNEY HOUSE
22 West Second, Monroe
Other Names Phinney House
Property Type frame house
Registry Type(s) 02/23/1978 State Register listed

LORANGER, EDWARD, HOUSE
7211 South Stony Creek Road, Frenchtown
Other Names Edward Loranger House
Property Type brick house
Period of Significance 1600-1825
Registry Type(s) 05/31/1984 National Register listed
10/02/1980 State Register listed

MAYBEE VILLAGE HALL
9059 Raisin Street, Maybee
Property Type town hall
Period of Significance 1901-1930
Registry Type(s) 03/15/1988 State Register listed

MCCLELLAND, GOVERNOR ROBERT, HOUSE
47 East Elm Street, Monroe
Property Type frame house
Period of Significance 1826-1865
Registry Type(s) 09/03/1971 National Register listed
03/03/1971 State Register listed

MICHIGAN HISTORIC CROSSROADS INFORMATIONAL SITE
Information Center on I-75 near Monroe
Other Names Michigan - Twenty-Sixth State
Period of Significance 1600-1825
Registry Type(s) 04/11/1958 Marker erected
09/17/1957 State Register listed

MICHIGAN SOUTHERN RAILROAD
Flat Iron City Park at intersection of First and Front, Monroe
Period of Significance 1826-1865
Registry Type(s) 09/25/1956 State Register listed

MONROE COUNTY INFORMATIONAL DESIGNATION
Inside of the Monroe County Historical Museum, 126 S. Monroe, NW corner of Second, Monroe
Period of Significance 1600-1825
Registry Type(s) 01/18/1957 Marker erected
07/19/1956 State Register listed

MONROE PAPER INDUSTRY
Near junction of East Elm and Old Dixie North, Monroe
Registry Type(s) 09/25/1956 State Register listed
Site ID# P24244

NAVARRE-ANDERSON TRADING POST
W. of Monroe at N. Custer and Raisinville, Frenchtown
Other Names Monroe Log Cabin
Property Type trading post
Period of Significance 1600-1825
Registry Type(s) 07/31/1972 National Register listed
06/16/1972 State Register listed

NEW YORK CENTRAL RIVER RAISIN RAILROAD BRIDGE
Across River Raisin, E of Winchester St., Monroe
Historic Significance: Architecture/Engineering
Period of Significance: 1900-1924
Registry Type 1982 National Register listed

NIMS, RUDOLPH, HOUSE
206 West Noble Avenue, Monroe
Property Type frame house
Period of Significance 1826-1865
Registry Type(s) 10/18/1972 National Register listed
10/29/1971 State Register listed

NORTH MAUMEE BAY ARCHEOLOGICAL DISTRICT
Erie Township
Other names Gard Island; Indian Island; Woodtick Peninsula; Erie Fish and Hunt Club
Historic Significance: Information Potential
Period of Significance: 499-0 BC, 0-499, 500-100,1000-1499
Registry Type(s) 1980 National Register Listed

OLD VILLAGE HISTORIC DISTRICT
Roughly bounded by the River Raisin, Navarre, Wedsworth, LaPlaisance, Seventh, Washington, Monroe and 3rd Sts, Monroe
Property Type district
Period of Significance 1825-1925
Registry Type(s) 05/06/1982 National Register listed

RIVER RAISIN BATTLEFIELD SITE (20MR227)
Bounded by the River Raisin, Detroit Avenue, Mason Run, and south at Noble Avenue, Monroe
Period of Significance 1600-1825
Registry Type(s) 12/10/1982 National Register listed
02/18/1956 State Register listed

SAINT JOHN THE BAPTIST CATHOLIC CHURCH
511 Monroe Street, Monroe
Property Type Catholic church
Period of Significance 1866-1900
Registry Type(s) 06/15/1999 Marker erected
04/15/1999 State Register listed

SAINT JOHN'S EVANGELICAL LUTHERAN CHURCH AND PARSONAGE
460 Riley Street, between Plank and Maple streets, Dundee
Other Names Saint John's Church and Parsonage
Property Type church
Period of Significance 1866-1900
Registry Type(s) 10/19/1993 Marker erected
09/19/1991 State Register listed

ST. MARY'S ACADEMY HISTORIC DISTRICT
610 W. Elm Ave., Monroe
Historic Significance: Event, Architecture/Engineering
Period of Significance: 1900-1924, 1925-1949
Registry Type(s) 1982 National Register listed

SAINT MARY'S CHURCH COMPLEX
Elm Avenue and M-125 (North Monroe Avenue), Monroe
Property Type brick buildings
Period of Significance 1826-1865
Registry Type(s) 05/06/1982 National Register listed

SAINT PATRICK'S CATHOLIC CHURCH
2996 West Labo Road, east of Exeter Road, Ash Twp.
Property Type church
Period of Significance 1826-1865
Registry Type(s) 05/01/1991 Marker erected
10/10/1989 State Register listed

SAWYER HOUSE
320 East Front Street, Monroe
Property Type brick house
Period of Significance 1866-1900
Registry Type(s) 11/23/1977 National Register listed
06/19/1975 State Register listed

SEITZ INN
8941 North Custer, west of Ida-Maybee Road, Raisinville Twp
Other Names Seitz, Peter, House
Property Type stagecoach stop
Period of Significance 1826-1865
Registry Type(s) 08/20/1980 Marker erected
10/23/1979 State Register listed

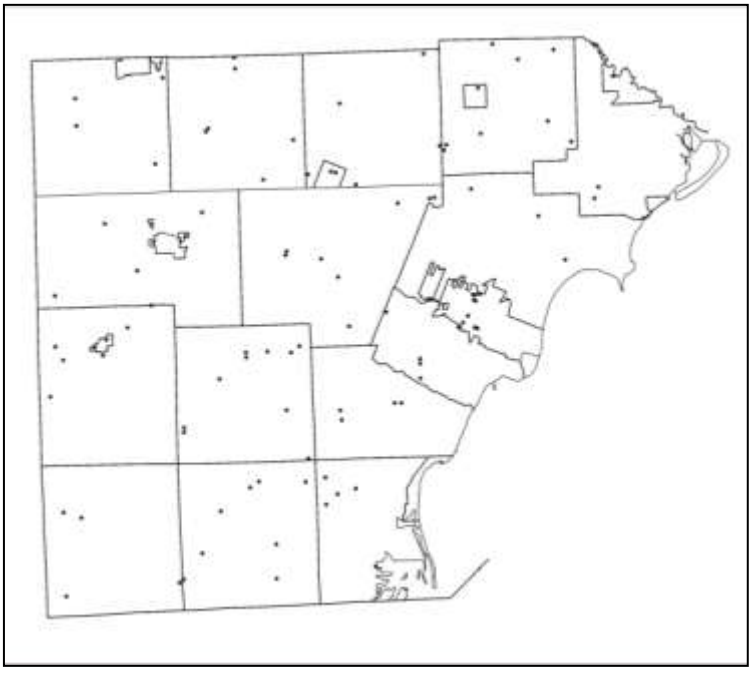
WEIS MANUFACTURING COMPANY
Union and Seventh streets, Monroe
Other Names WoodCraft Square
Property Type brick building
Period of Significance 1901-1930
Registry Type(s) 10/26/1981 National Register listed

WILKERSON, ALFRED, GRIST MILL
242 Toledo Street, Dundee
Other Names Dundee Grist Mill
Property Type factory
Period of Significance 1866-1900
Registry Type(s) 08/03/1979 State Register listed

WOODLAND CEMETERY
Jerome Street near Fourth Street, Monroe
Property Type cemetery
Period of Significance 1600-1825
Registry Type(s) 07/21/1988 State Register listed

CEMETERIES

Monroe County contains over 80 identified cemeteries and burial grounds. Recent issues involving the discovery of historic burial grounds, cemetery abandonment, and the right of the public to access landlocked cemeteries prompted the Planning Commission to assist in the development of what is thought to be a fairly complete inventory of known cemeteries and burial plots in the county. This resource should serve as a guide to warn future land development activities of the need to preserve and respect these historic sites.



Monroe County Cemeteries and Burial Grounds
Source: Monroe County Planning Dept.

References:

Brose, D.S. and P.S. Essenpreis. "A Report on a Preliminary Archaeological Survey of Monroe County, Michigan." The Michigan Archaeologist. Vol. 19 No. 1-2. March-June 1973.

Bulkley, J. M. History of Monroe County Michigan – A Narrative Account of its Historical Progress, its People, and its Principal Interests. 1913. New York: The Lewis Publishing Company.

County of Monroe, Michigan. The History of Cemeteries and Family Burial Plot in Monroe County, Michigan 1795 – 2005.

Michigan State Register of Historic Places.
http://www.mcgi.state.mi.us/hso/advancematch.asp?ctype=county&cname=&cnty=Monroe

National Register of Historic Places.
http://www.nationalregisterofhistoricplaces.com/MI/Monroe/state.html

Zeisler, K. 1960. "A Brief History of Monroe." Monroe, MI: Monroe Evening News.

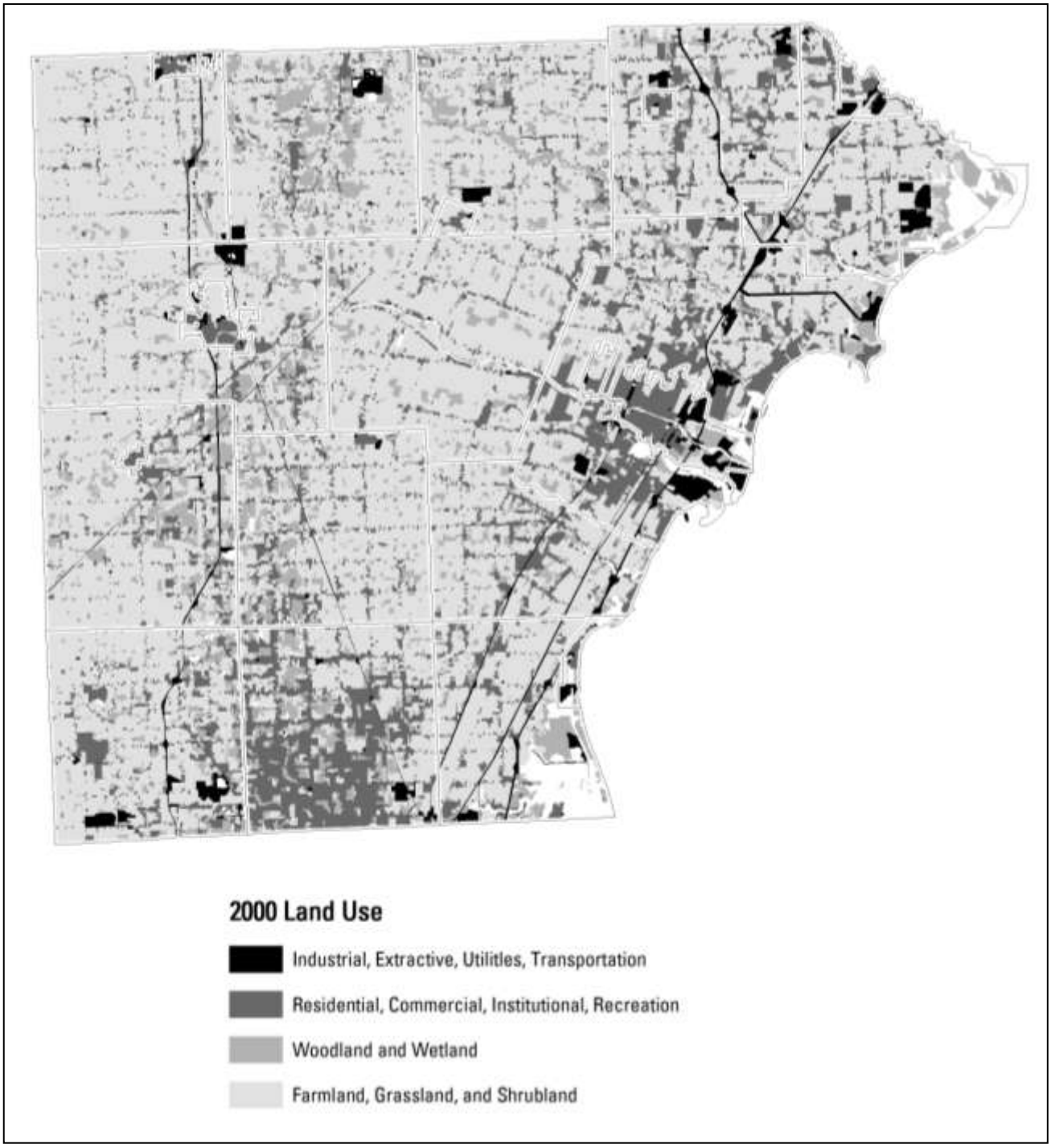
LAND USE

Monroe can be characterized as a predominately agricultural county, with significant urbanized areas as well as natural areas and other land uses. Public utilities, extractive operations, disposal sites, industrial parks, and transportation facilities occupy large areas of the county.

The pattern of land use in Monroe County can be described as two major residential areas (City of Monroe and Bedford Township), connected by a major transportation/utility corridor (I-75, along with railroads and electric transmission lines), located within an agricultural region with scattered smaller towns, forested areas and wetlands. Forests and wetlands tend to follow river corridors as well as the sandier soils which roughly follow the US-23 corridor from north to south in the western part of the county. Recent years have seen a more decentralized pattern of growth, with a large amount of land in rural areas of the county being converted to residential uses.

Planning Significance:

- Monroe County contains large areas of agricultural land, as well as significant areas devoted to urban uses, forests and wetlands.
- Changing land use patterns have seen increasing amounts of land devoted to residential use, most of which has been accomplished through the conversion of farmland.
- Planning for the future requires that a reasonable supply of land be allocated for a variety of uses. Agricultural land is an irreplaceable resource essential for the production of food. The preservation of land suitable for agriculture needs to be balanced with the demand for land suitable for housing, economic development, and the other uses upon which modern society depends.



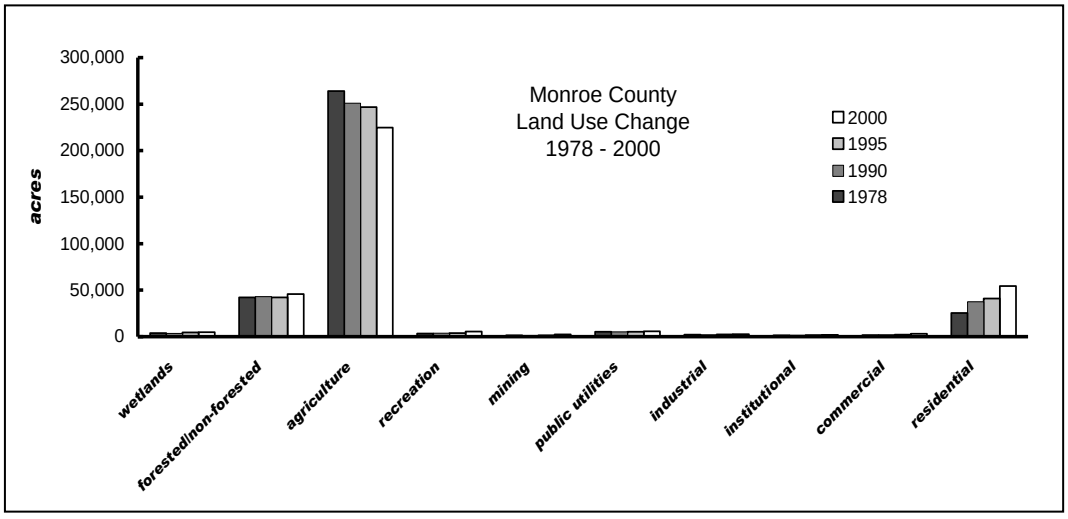
Monroe County 2000 Land Use/Land Cover
source: SEMCOG & Monroe County Planning Dept.

Land Use/Land Cover – 1990 & 2000

	1990		2000		change	
	acres	percent of total	acres	percent of total	acres	percent change
Residential	**38,778.5**	**10.8%**	**48,129.9**	**13.4%**	**9,351.5**	**19.4**
Multiple Family	361.2	0.1%	461.8	0.1%	100.6	21.8
Single Family	37,859.4	10.5%	46,413.4	12.9%	8,554.0	18.4
Mobile Home Park	557.9	0.2%	1,254.8	0.3%	696.9	55.5
Under Development	**213.9**	**0.1%**	**1,057.7**	**0.3%**	**843.7**	**79.8**
Single Family	158.6	0.0%	687.2	0.2%	528.6	76.9
Undetermined	55.3	0.0%	370.5	0.1%	315.1	85.1
Commercial, Office	**2,309.9**	**0.6%**	**3,031.3**	**0.8%**	**721.4**	**23.8**
Central Business District	184.4	0.1%	184.6	0.1%	0.2	0.1
Shopping Center, Mall	296.3	0.1%	337.7	0.1%	41.4	12.2
Secondary, Mixed	1,755.0	0.5%	2,367.2	0.7%	612.2	25.9
Office, Research	74.2	0.0%	141.9	0.0%	67.8	47.7
Institutional	**1,712.5**	**0.5%**	**1,911.2**	**0.5%**	**198.7**	**10.4**
Institutional	1,712.5	0.5%	1,911.2	0.5%	198.7	10.4
Industrial	**2,129.4**	**0.6%**	**3,013.2**	**0.8%**	**883.9**	**29.3**
General Industrial	2,024.3	0.6%	2,599.4	0.7%	575.1	22.1
Industrial Park	105.0	0.0%	413.8	0.1%	308.8	74.6
Trans., Communication, Utility	**6,554.1**	**1.8%**	**6,976.8**	**1.9%**	**422.7**	**6.1**
Air Transportation	273.2	0.1%	257.9	0.1%	-15.3	-5.9
Rail Transportation	959.9	0.3%	969.2	0.3%	9.4	1.0
Water Transportation	22.6	0.0%	22.6	0.0%	0.0	0.0
Road Transportation	2,836.2	0.8%	2,837.4	0.8%	1.2	0.0
Communications	74.6	0.0%	188.3	0.1%	113.7	60.4
Utilities	2,387.7	0.7%	2,701.4	0.8%	313.7	11.6

	1990		2000		change	
	acres	percent of total	acres	percent of total	acres	percent change
Cultural, Recr., Cemeteries	**4,061.3**	**1.1%**	**5,538.7**	**1.5%**	**1,477.5**	**26.7**
Public Assembly, Cultural	112.2	0.0%	82.6	0.0%	-29.6	-35.9
Outdoor Recreation	3,699.3	1.0%	5,195.7	1.4%	1,496.5	28.8
Cemeteries	249.8	0.1%	260.4	0.1%	10.6	4.1
Agricultural and Farmsteads	**244,784.4**	**68.2%**	**228,091.4**	**63.5%**	**-16,693.0**	**-7.3**
Cropland	238,984.7	66.6%	221,391.0	61.7%	-17,593.8	-7.9
Orchard, Fruit, Ornamentals	794.5	0.2%	1,203.7	0.3%	409.1	34.0
Feedlots	30.5	0.0%	45.7	0.0%	15.2	33.3
Permanent Pasture	133.0	0.0%	145.4	0.0%	12.5	8.6
Other agricultural	410.5	0.1%	533.3	0.1%	122.8	23.0
Farmsteads	4,431.1	1.2%	4,772.3	1.3%	341.2	7.1
Grassland and Shrubland	**9,897.0**	**2.8%**	**12,284.7**	**3.4%**	**2,387.8**	**19.4**
Herbaceous Open Land	4,444.8	1.2%	6,407.7	1.8%	1,962.9	30.6
Shrub Land	5,452.1	1.5%	5,877.0	1.6%	424.9	7.2
Forest and Wetland	**39,575.9**	**11.0%**	**39,497.1**	**11.0%**	**-78.8**	**-0.2**
Upland Forest	21,687.6	6.0%	20,906.7	5.8%	-780.9	-3.7
Forested/Shrub Wetlands	15,114.2	4.2%	15,561.3	4.3%	447.1	2.9
Non-Forested Wetlands	2,774.1	0.8%	3,029.0	0.8%	254.9	8.4
Extractive/Barren	**1,418.4**	**0.4%**	**2,447.4**	**0.7%**	**1,029.0**	**42.0**
Extractive Operations	1,305.8	0.4%	2,269.7	0.6%	963.9	42.5
Beach, Riverbank	112.6	0.0%	177.7	0.0%	65.0	36.6
Water	**7,658.8**	**2.1%**	**7,051.2**	**2.0%**	**-607.7**	**-8.6**
Streams	1,602.5	0.4%	1,602.3	0.4%	-0.1	0.0
Lakes	6,056.3	1.7%	5,448.8	1.5%	-607.5	-11.1
TOTAL	**359,093.9**	**100.0%**	**359,030.6**	**100.0%**	**-63.3**	**0.0**

source: SEMCOG & Monroe County Planning Dept.



Land Use Change 1978 – 2000
Source: Michigan Resource Inventory System; Monroe County Planning Dept.; & SEMCOG

- **Residential –** Most residential uses are in the cities and villages of the county, with the exception of Frenchtown, Monroe, and Bedford Townships, which have a high level of residential land, especially in areas served by sewer and water. The most residential growth in the past 20 years has been in the Townships surrounding Monroe (Frenchtown, Monroe Township) and in Bedford Township. Other centers of residential development have been in the City of Monroe, the Village of Dundee, and in Ash and Berlin Townships. There have also been significant increases in manufactured housing communities in Monroe County. Today with over 7,400 sites in 29 communities, there is almost double the amount of this type of housing than was present in 1990.
- **Under Development** – This category includes land which is currently being developed for urban use, primarily residential developments. In some years a significant amount of land is in transition, however a slowdown in new housing construction in recent years has seen this 'use' decrease.
- **Commercial/Office** – Commercial uses tend to be concentrated in the centers of the cities and villages of the county, as well as at highway interchanges, and in strips along some of the major thoroughfares in the larger townships (Bedford, Monroe, and Frenchtown). Major commercial growth in the past 20 years has been focused on large commercial development projects, including the Frenchtown Square Mall, Horizon Outlet Center, and Cabela's with its associated development.

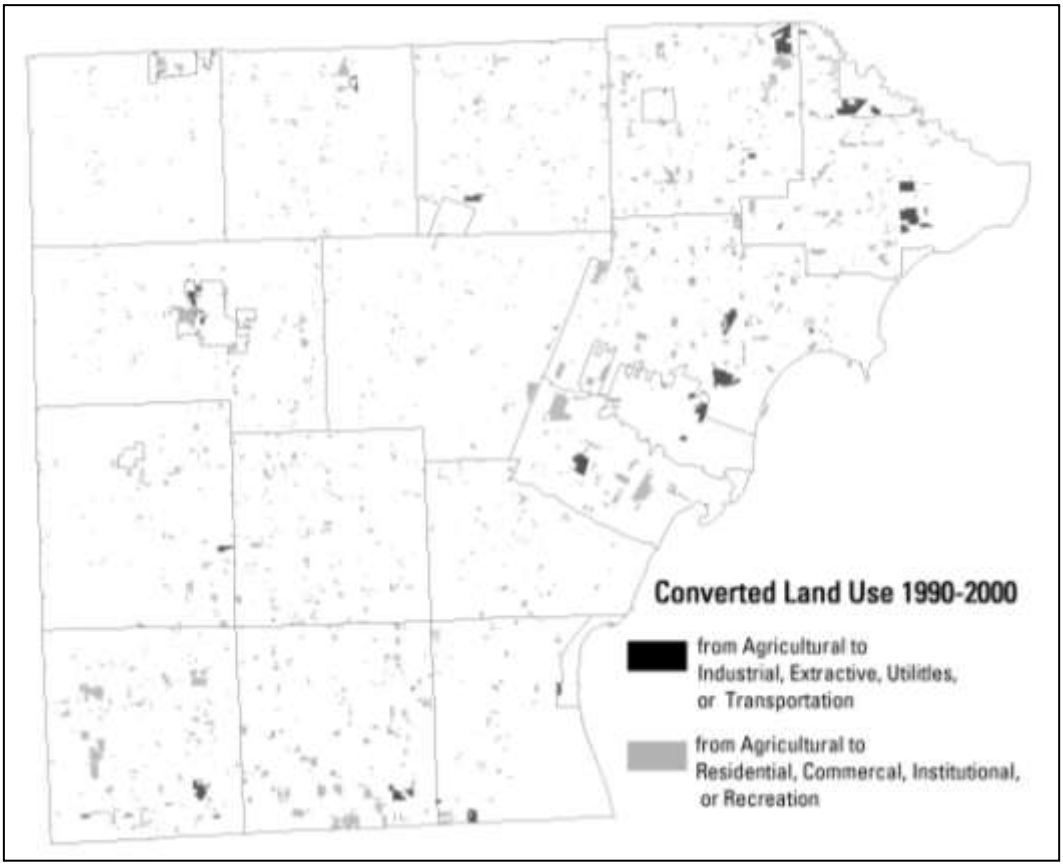
- **Institutional** – Schools, government buildings, religious institutions, and correctional facilities make up the institutional uses in the county, the largest of which consist of public school campus, the city and county offices in Monroe, Mercy Memorial Hospital, the IHM convent in Monroe, and the county's detention facility in Monroe Township. Some of the most significant changes in this land use category have been the new high school, as well as new municipal offices, in the Village of Dundee, the county detention facility in Monroe Township, new schools in Bedford, Jefferson, and Milan districts, and expansion or construction of municipal buildings in Ida, Ash, Exeter, Bedford, Frenchtown, LaSalle, and Erie Townships.
- **Industrial** – Industrial uses in Monroe County include a wide variety of manufacturing, assembly, fabrication, and processing facilities, including steel, automotive, glass, furniture, and electronics. Industrial parks located in Milan, Dundee, Whiteford, Bedford, Monroe and Frenchtown contain well planned centers of industrial uses in attractive settings. One of the largest industrial developments since 2000 has been the GEMA engine plant in Dundee, although an active industrial development program in Monroe County has assured that there has been steady growth in both new industrial uses and expansions of existing uses.
- **Transportation, Communication, and Utilities** – The highway corridors (I-75, I-275, US-23, US-24, M-50) and railroads of Monroe County add up to significant acreage devoted to these uses. The most significant use in this category, however, are the three power plants – Fermi II (nuclear) plant in Frenchtown, Monroe Power Plant (coal) in Monroe, and the Whiting (coal) plant in Luna Pier. Over the last 20 years there have been several new or expanded landfills in the county, including a type II (sanitary) facility in Erie Township, and type III (demolition) landfills in Berlin and Ash Townships, as well as expanded ash disposal facilities in Luna Pier, Dundee, and Monroe Township.
- **Cultural/Recreation/Cemeteries** – Parks, golf courses, and cemeteries are scattered throughout Monroe County. The 1990s saw extensive growth in golf course construction. Several new municipal parks have also been developed in recent years, including large township parks in Ash, Frenchtown, Monroe and Whiteford and the county's West County Park in Dundee Township.
- **Agriculture and Farmsteads** – Agriculture in Monroe County consists mainly of cultivated farmland, but there are significant orchards, livestock operations, pasture, greenhouses and nurseries. Agriculture is the largest land use category in every township in the county, with the exception of Bedford Township, where the acreage of residential land surpassed farm-

land in the 1990s. The loss of cropland due to conversion to other uses has been the single largest land use shift in Monroe County over the past 20 years.

- **Grassland and Shrubland** – Although some land in this category consists of high quality natural areas, most of this acreage represents old fields, cut over forested land, and poorly drained areas along waterways, forest edges, and wetlands.
- **Forest and Wetland** – Over 10% of Monroe County is upland forest, forest wetland, or non-forested wetland. Most of the upland forested land is located in the western third of the county, with a significant amount of the lowland forested areas located in flood plains.
- **Extractive/Barren** – Mining in Monroe County consists of open pit quarries for stone, used primarily for aggregate, silica glass, and cement. The Holcim quarry in Dundee has been active for 50 years, and there are long established quarries in Berlin and Exeter Township. In recent years, quarries have closed in London, Whiteford and Monroe Township, and new quarries have opened in Whiteford, Monroe, and Berlin.
- **Water** – Open water, in the form of rivers, ponds, and coastal areas makes up the majority of this category. Changing amounts are due to the rise and fall of lake levels and the construction of new ponds and water bodies.

LAND USE CHANGE AND "URBAN SPRAWL"

The following map highlights those areas in Monroe County which were classified as agricultural land in 1990 and which were classified as urban land in 2000. There were over 13,000 acres of farmland converted to residential, commercial, industrial, extractive, recreational, and other urban uses during this 10 year period. The vast majority of these changes have occurred well outside of existing population centers, and illustrates a trend toward the type of scattered and decentralized growth often referred to as urban sprawl. Most of this growth has occurred in areas not served by public utilities, on roads not well suited for urban development, and which require communities to provide for additional services, such as police and fire protection, schools, and infrastructure.



Land Use Change – 1990-2000
source: Monroe County Planning Department / SEMCOG

References:

Monroe County Planning Department. 2008. 2007 Building Activities Report.
SEMCOG. 2008. Manufactured Housing Parks and Sites in Southeast Michigan, 2007.
SEMCOG. 2008. Land Use Change Reports - www.semcog.org/Data/Apps/landuse.cfm?mcd=8999

DEMOGRAPHICS

In planning for the future of Monroe County it is important to study the community's population and its characteristics, patterns, trends, and projections. Monroe County has experienced shifts in its demographics over time, with the most recent trends showing slower growth rates, greater diversity, an aging population, increasing educational attainment, and shifts in employment away from manufacturing.

Planning Significance:

- The rate and location of population growth and change will require future plans to provide adequate land and resources to accommodate these shifts.
- Changes in the age structure, commuting patterns, employment opportunities and other demographic characteristics also require future plans to provide for changing social and economic needs.

POPULATION

The growth and distribution of Monroe County's population is tied closely to population growth trends in the metropolitan areas of both Detroit and Toledo. This is understandable given the close relationship of the County's economy to both of these major cities. The growth of the County's population during this century is presented below.

Monroe County Population Trends 1900-2008

Year	Population	Percent Change
1900	32,754	---
1910	32,917	+ 0.5%
1920	37,115	+12.8%
1930	52,405	+41.4%
1940	58,620	+11.7%
1950	75,666	+29.1%
1960	101,120	+33.6%
1970	119,215	+15.2%
1980	134,659	+13.0%
1990	133,600	-0.8%
2000	145,945	+9.2%
2008 (est.)	152,947	+4.8%

Source: U.S. Census Bureau

During the twenty-year period between 1900 and 1920, the County's population grew at only modest rates. Population growth increased significantly during the 1920s, however, due largely to a growing industrial economy which was centered mainly in the Midwest. The depression of the 1930s had a dampening effect on the County's population, which grew at only modest rates during this period.

Monroe County's most significant population growth period occurred after World War II and during the "baby boom" years of the 1950s and early 1960s. After the post-war period, population growth leveled off to 15.2 percent and 13.0 percent for 1970 and 1980, respectively, then decreased by 1990 by 0.8% and increased again in 2000 by 9.2%. The most recent Census (2000) placed the county's population at 145,945 and the most recent estimate (July 2008) gives a figure of 152,947.

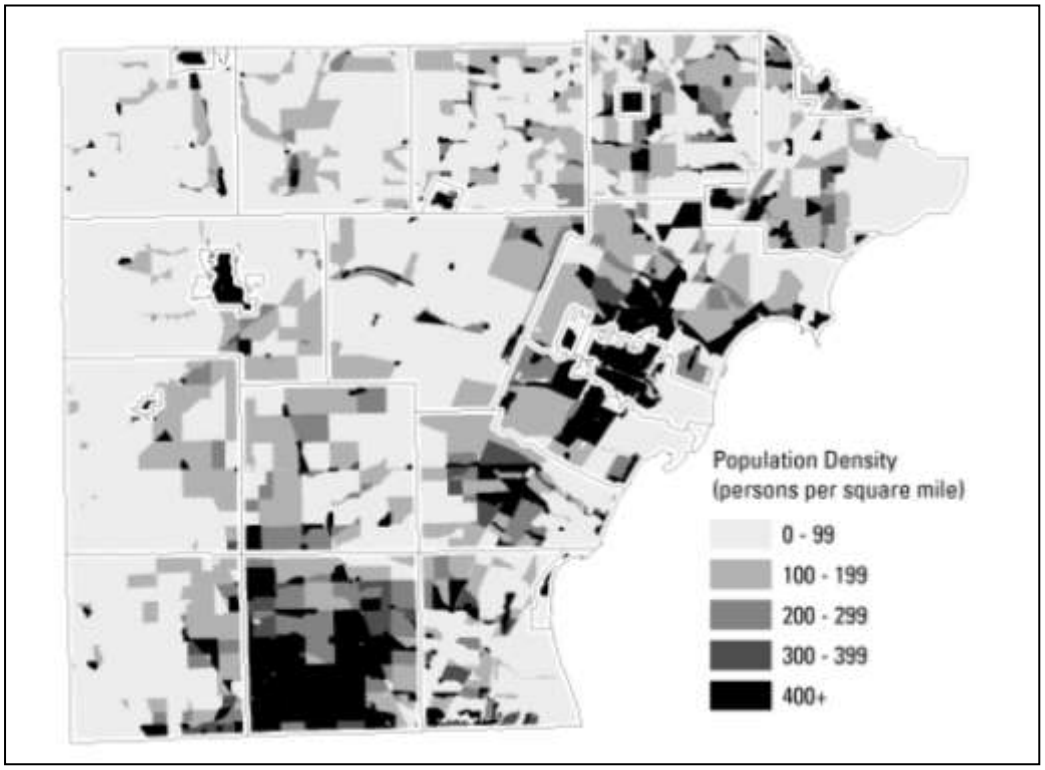
Population Change 1990-2008 by Unit of Government

				change 1990 - 2008	
Unit of Government	**1990**	**2000**	**2008 (est.)**	**number**	**percent**
Ash Township	4,710	5,048	6,109	1,399	29.7%
Bedford Township	23,748	28,606	31,141	7,393	31.1%
Berlin Township	4,635	5,154	6,628	1,993	43.0%
Dundee Township	2,712	2,819	2,702	-10	-0.4%
Erie Township	4,492	4,850	4,674	182	4.1%
Exeter Township	2,753	3,222	3,347	594	21.6%
Frenchtown Township	18,210	20,777	20,925	2,715	14.9%
Ida Township	4,554	4,949	4,895	341	7.5%
LaSalle Township	4,985	5,001	4,953	-32	-0.6%
London Township	2,915	3,024	3,182	267	9.2%
Milan Township	1,659	1,670	1,658	-1	-0.1%
Monroe Township	11,909	13,491	13,943	2,034	17.1%
Raisinville Township	4,634	4,896	5,560	926	20.0%
Summerfield Township	3,076	3,233	3,327	251	8.2%
Whiteford Township	4,433	4,420	4,475	42	0.9%
Village of Carleton	2,770	2,562	2,572	-198	-7.1%
Village of Dundee	2,664	3,522	4,253	1,589	59.6%
Village of Estral Beach	430	486	464	34	7.9%
Village of Maybee	500	505	520	20	4.0%
Village of S. Rockwood	1,221	1,284	1,654	433	35.5%
City of Luna Pier	1,507	1,483	1,520	13	0.9%
City of Milan (part)	980	1,710	1,951	971	99.1%
City of Monroe	22,902	22,076	21,374	-1,528	-6.7%
City of Petersburg	1,201	1,157	1,120	-81	-6.7%
TOTAL	133,600	145,945	152,947	19,347	14.5%

Source: US Census Bureau

Three major population areas influence population distribution in Monroe County: the City of Monroe, the City of Toledo and the suburban area south of the City of Detroit. Monroe County's population has historically been centered in the City of Monroe, which is the County seat. During the last four decades, however, this traditional population center has expanded into the adjacent communities of Frenchtown Township and Monroe Township. Migration of suburban Detroit and Toledo residents into the north and south portions of the County has also been seen in recent years. This influence is most evident in Bedford Township, which experienced a population increase of 4,858, or 20.5 percent between 1990 and 2000.

New industrial developments in the Village of Dundee have spurred rapid growth there, and the opening of a Cabela's outdoor sportsman's megastore there in 2000 is continuing that trend, as other commercial developments are following it. The cities of Monroe, Luna Pier, and Petersburg all showed losses, as did the Village of Carleton and Whiteford Township. That portion of the City of Milan in Monroe County showed the greatest percentage change since 1990 (74.5%), but the actual numbers are relatively small, and not particularly significant.

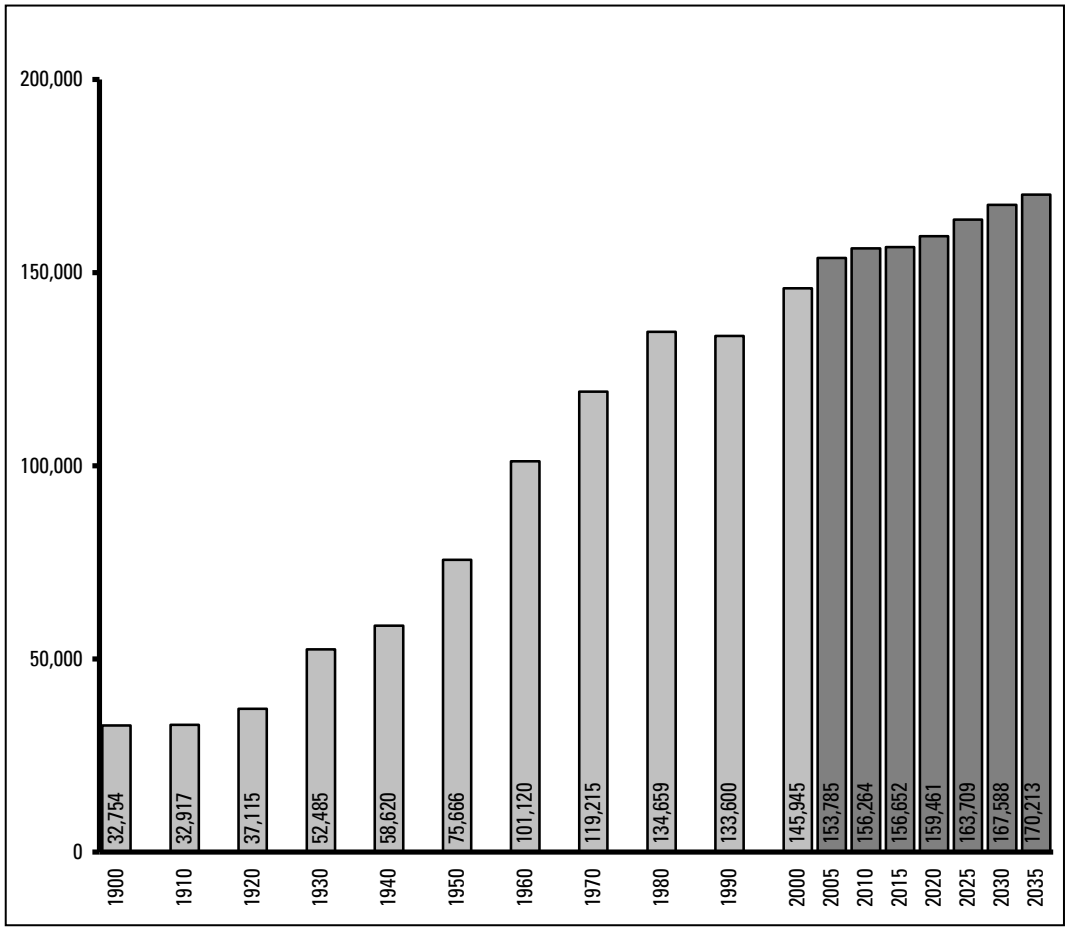


Population Density by US Census Block (2000)
source: 2000 Census

POPULATION PROJECTIONS

Projecting future population levels is a critical component in long range economic development planning activities. These projections provide some idea of the number of new jobs and corresponding economic development activity that will be required to sustain an increased population base.

The Southeast Michigan Council of Governments (SEMCOG) projects population, households, and employment for all municipalities in the seven-county area. Their current projections are through 2035. Projections were based on a variety of factors, including past trends, land use patterns, transportation plans, and local policies. The projections set a regional total, and then allocated population changes to smaller areas, including counties, municipalities, and subareas. The forecast projects modest growth in southeast Michigan, with an increase of 3.4% between 2005 and 2035 for the region as a whole, but a 10.7% increase for Monroe County.



Monroe County Population Growth – Actual and Projected
source: US Census (1900-2000) & SEMCOG (2005-2030)

Population Projections 2005 – 2035

	2005	2010	2015	2020	2025	2030	2035	change 2005 - 2035 number	change 2005 - 2035 percent
Ash Township	5,734	5,913	5,954	6,011	6,314	6,523	6,616	882	15.4%
Bedford Township	30,582	31,361	31,228	31,669	32,504	33,456	34,347	3,765	12.3%
Berlin Township	6,781	7,054	7,239	7,609	8,134	8,468	8,745	1,964	29.0%
Dundee Township	2,939	2,947	3,025	3,205	3,445	3,672	3,666	727	24.7%
Erie Township	4,803	4,774	4,878	4,917	4,944	4,954	5,002	199	4.1%
Exeter Township	3,452	3,439	3,433	3,479	3,567	3,528	3,561	109	3.2%
Frenchtown Twp	21,175	21,439	21,498	21,868	22,236	22,873	23,430	2,255	10.6%
Ida Township	5,040	5,006	4,883	4,923	4,921	5,074	5,165	125	2.5%
La Salle Township	5,103	5,081	4,880	4,969	5,013	5,138	5,148	45	0.9%
London Township	3,225	3,224	3,159	3,168	3,226	3,262	3,315	90	2.8%
Milan Township	1,743	1,744	1,806	1,808	1,910	1,993	2,064	321	18.4%
Monroe Township	14,013	14,495	14,435	14,688	15,199	15,826	16,090	2,077	14.8%
Raisinville Twp	5,343	5,478	5,512	5,626	5,650	5,806	5,861	518	9.7%
Summerfield Twp	3,357	3,320	3,306	3,450	3,499	3,620	3,757	400	11.9%
Whiteford Twp	4,554	4,711	4,738	4,857	4,942	5,048	5,141	587	12.9%
Village of Carleton	2,696	2,757	2,781	2,747	2,920	2,896	2,832	136	5.0%
Dundee Village	3,785	3,941	4,118	4,281	4,751	4,975	5,039	1,254	33.1%
Vil. of Estral Beach	482	494	606	633	643	638	625	143	29.7%
Village of Maybee	596	609	604	601	629	658	687	91	15.3%
Vil. of S. Rockwood	1,593	1,651	1,700	1,771	1,964	2,011	2,175	582	36.5%
City of Luna Pier	1,529	1,537	1,604	1,639	1,583	1,601	1,575	46	3.0%
City of Milan (part)	1,939	1,942	1,964	1,990	2,100	2,177	2,170	231	11.9%
City of Monroe	22,152	22,229	22,238	22,475	22,518	22,283	22,064	-88	-0.4%
City of Petersburg	1,169	1,118	1,064	1,077	1,097	1,108	1,138	-31	-2.7%
Monroe County	153,785	156,264	156,652	159,461	163,709	167,588	170,213	16,428	10.7%

Source: SEMCOG (2007). 2035 Forecast for Southeast Michigan

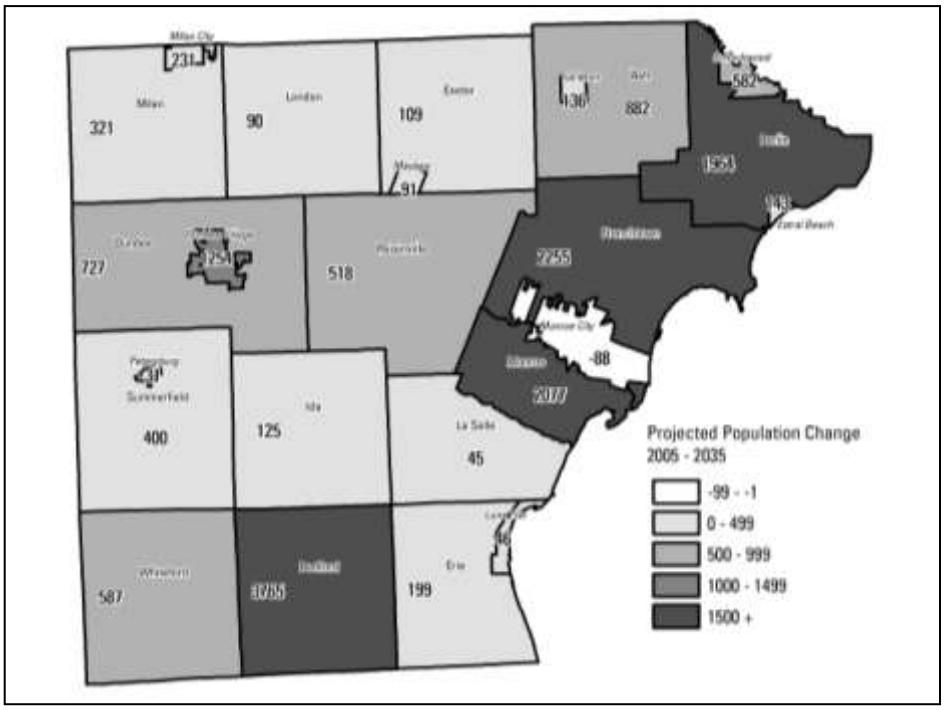
The largest population increases between now and 2035 are projected to occur in or near existing urbanized areas along the I-75 corridor and adjacent to the Detroit Downriver area or the City of Toledo. Bedford, Frenchtown, and Monroe Townships are expected to have the largest population increases during that period, with 3,765, 2,255, and 2,077 additional persons respectively. Berlin Township with 1,964 additional persons and the Village of Dundee with 1,254 are also projected to have large increases. The Village of South Rockwood shows the largest percentage gain, with 36.5% growth along with the Village of Dundee at 33.1%. The City of Monroe and the City of Petersburg are projected to have a slight loss of population.

Household Projections 2005 – 2035

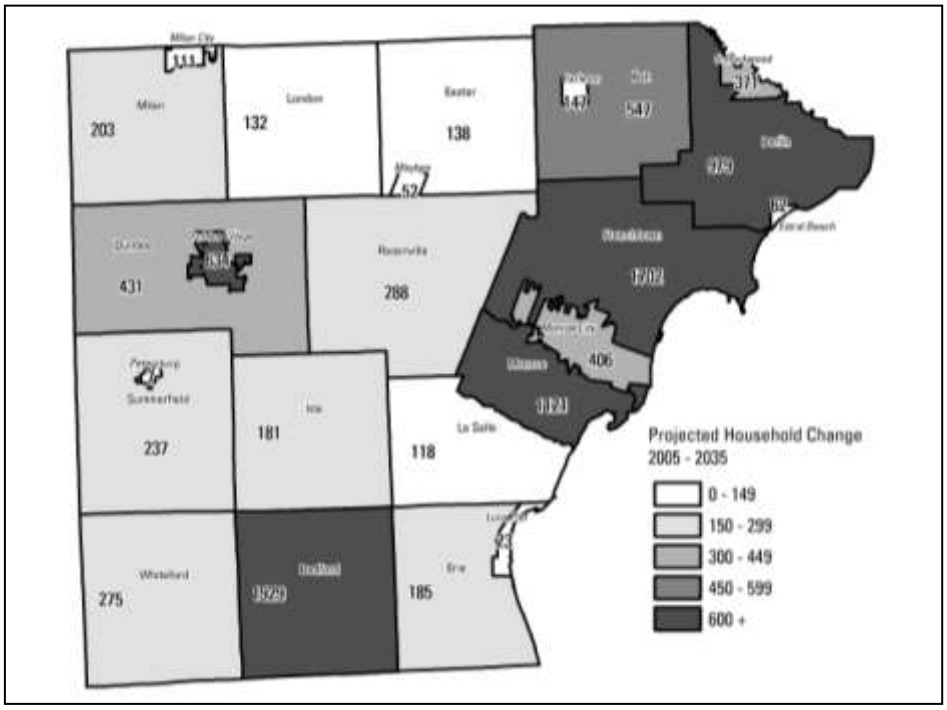
	2005	2010	2015	2020	2025	2030	2035	change 2005 - 2035 number	change 2005 - 2035 percent
Ash Township	2,148	2,247	2,297	2,358	2,502	2,594	2,695	547	25.5%
Bedford Township	11,548	11,927	12,105	12,428	12,757	13,114	13,477	1,929	16.7%
Berlin Township	2,593	2,734	2,838	3,019	3,266	3,425	3,572	979	37.8%
Dundee Township	1,076	1,112	1,148	1,212	1,336	1,439	1,507	431	40.1%
Erie Township	1,851	1,870	1,913	1,948	1,974	2,008	2,036	185	10.0%
Exeter Township	1,246	1,244	1,252	1,311	1,353	1,362	1,384	138	11.1%
Frenchtown Twp	8,199	8,418	8,516	8,796	9,188	9,541	9,901	1,702	20.8%
Ida Township	1,734	1,736	1,729	1,783	1,835	1,874	1,915	181	10.4%
La Salle Township	1,889	1,891	1,874	1,931	1,952	1,991	2,007	118	6.2%
London Township	1,149	1,149	1,153	1,199	1,232	1,253	1,281	132	11.5%
Milan Township	666	676	708	717	767	809	869	203	30.5%
Monroe Township	5,719	5,967	5,981	6,116	6,366	6,683	6,840	1,121	19.6%
Raisinville Twp	1,918	2,007	2,018	2,070	2,128	2,186	2,206	288	15.0%
Summerfield Twp	1,207	1,213	1,221	1,283	1,344	1,393	1,444	237	19.6%
Whiteford Twp	1,714	1,780	1,794	1,852	1,896	1,943	1,989	275	16.0%
Village of Carleton	1,082	1,121	1,144	1,140	1,229	1,248	1,229	147	13.6%
Dundee Village	1,551	1,626	1,713	1,795	2,009	2,120	2,185	634	40.9%
Vil. of Estral Beach	191	196	242	254	259	258	253	62	32.5%
Village of Maybee	206	213	214	216	230	245	258	52	25.2%
Vil. of S. Rockwood	601	635	667	708	801	860	972	371	61.7%
City of Luna Pier	641	651	668	686	676	677	664	23	3.6%
City of Milan (part)	812	816	825	840	886	922	923	111	13.7%
City of Monroe	8,925	9,103	9,140	9,204	9,265	9,322	9,331	406	4.5%
City of Petersburg	442	443	440	438	441	443	449	7	1.6%
Monroe County	59,108	60,772	61,600	63,307	65,693	67,709	69,388	10,280	17.4%

Source: SEMCOG (2007). 2035 Forecast for Southeast Michigan

Overall, the number of households in Monroe County is projected to increase by 17.4% between 2005 and 2035, compared to a projected population increase of 10.7%. Due to a trend toward smaller household size – the average household size of 2.69 in 2000 is projected to decrease to 2.41 by 2035 – the demand for residential development will outpace the actual increase in population, and communities such as the City of Monroe, which is projected to lose population is also projected to have a significant increase in the number of households and housing units.



Projected Population Change by Community 2005 – 2035
Source: SEMCOG. (2007). 2035 Forecast for Southeast Michigan



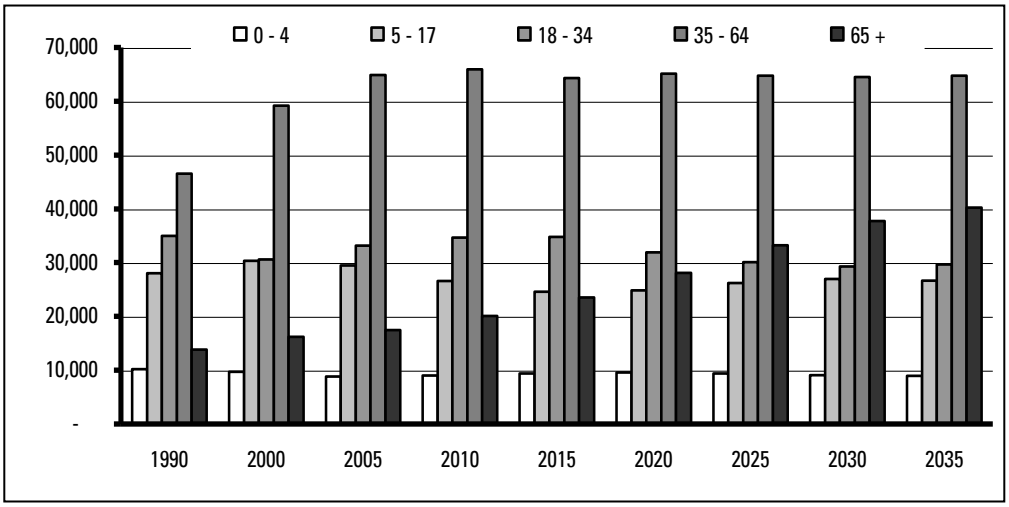
Projected Household Change by Community 2005 – 2035
Source: SEMCOG (2007). 2035 Forecast for Southeast Michigan

AGE

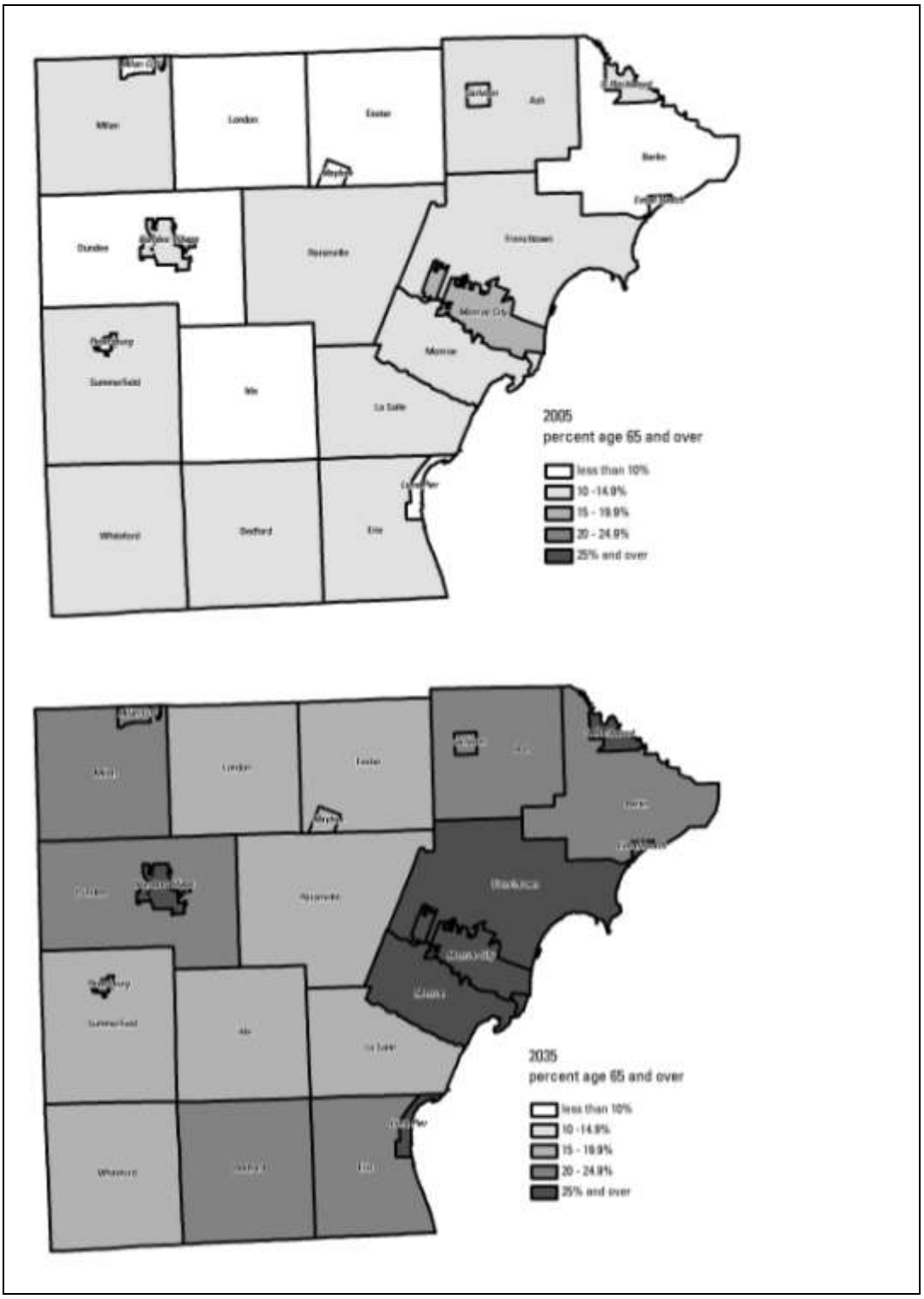
One of the most significant demographic changes in Monroe County over the next 30 years may be the change in age structure and the aging of the population. In 1990, 10.3% of Monroe County was age 65 or over. By 2035 it is predicted that 23.6% of the population will be in this age group, an increase of almost 27,000 persons. The large growth of older persons will have an impact on housing, employment, education, public services, health care, transportation, and many other aspects of society which affect community planning.

Monroe County Population by Age Class

	ages 0 - 4		ages 5 - 17		ages 18 - 34		ages 35 - 64		ages 65 +	
	persons	percent of total	persons	percent of total	persons	percent of total	persons	percent of total	persons	percent of total
1990	10,226	7.7%	28,018	21.0%	34,973	26.2%	46,556	34.8%	13,827	10.3%
2000	9,683	6.6%	30,310	20.8%	30,564	20.9%	59,166	40.5%	16,222	11.1%
2005	8,847	5.8%	29,453	19.2%	33,125	21.5%	64,893	42.2%	17,467	11.4%
2010	9,008	5.8%	26,609	17.0%	34,668	22.2%	65,919	42.2%	20,059	12.8%
2015	9,411	6.0%	24,565	15.7%	34,791	22.2%	64,338	41.1%	23,547	15.0%
2020	9,565	6.0%	24,820	15.6%	31,905	20.0%	65,103	40.8%	28,068	17.6%
2025	9,395	5.7%	26,229	16.0%	30,107	18.4%	64,739	39.5%	33,239	20.3%
2030	9,084	5.4%	26,960	16.1%	29,294	17.5%	64,512	38.5%	37,738	22.5%
2035	8,915	5.2%	26,632	15.6%	29,677	17.4%	64,761	38.0%	40,229	23.6%



Source: US Census (1990, 2000) & SEMCOG (2005 – 2035)



Projected Percent of Population Age 65 and over -- 2005 and 2035
Source: SEMCOG. 2007. 2035 Forecast for Southeast Michigan

GENERAL PROFILE

The following tables are provided to give a general profile of the demographic, social, economic, and housing characteristics of Monroe County. The most recent Census data which provides a complete profile is the 2007 American Community Survey data. It should be noted that these data are based on a sample of the population and are subject to a margin of error. The percentages should be considered more accurate than the actual figures, especially for small samples.

Monroe County Census Profile

DEMOGRAPHIC CHARACTERISTICS	2007 Estimate	Percent
Total population	**153,608**	**100%**
SEX AND AGE		
Male	75,698	49.3%
Female	77,910	50.7%
Under 5 years	8,653	5.6%
5 to 9 years	8,634	5.6%
10 to 14 years	12,017	7.8%
15 to 19 years	11,629	7.6%
20 to 24 years	10,037	6.5%
25 to 34 years	19,826	12.9%
35 to 44 years	21,603	14.1%
45 to 54 years	24,718	16.1%
55 to 59 years	10,503	6.8%
60 to 64 years	7,601	4.9%
65 to 74 years	9,961	6.5%
75 to 84 years	6,252	4.1%
85 years and over	2,174	1.4%
Median age (years)	37.8	
18 years and over	116,727	76.0%
21 years and over	110,319	71.8%
62 years and over	22,494	14.6%
65 years and over	18,387	12.0%
18 years and over	116,727	100%
Male	57,217	37.2%
Female	59,510	38.7%
65 years and over	18,387	100%
Male	7,762	5.1%
Female	10,625	6.9%
RACE		
Total population	**153,608**	**100%**
One race	150,774	98.2%
White	144,618	95.9%
Black or African American	4,605	3.1%
Amer. Indian and Alaska Native	489	0.3%
Asian	94	0.1%
Some other race	968	0.6%
Two or more races	2,834	1.8%
HISPANIC OR LATINO		
Total population	**153,608**	**100%**
Hispanic or Latino (of any race)	4,008	2.6%

Source: US Census Bureau, 2007 American Community Survey

SOCIAL CHARACTERISTICS	2007 Estimate	Percent
HOUSEHOLDS BY TYPE		
Total households	**57,333**	**100%**
Family households (families)	41,166	71.8%
With own children < 18	19,502	34.0%
Married-couple families	34,022	59.3%
With own children < 18	14,999	26.2%
Male hholder, no wife present	1,802	3.1%
With own children < 18	1,035	1.8%
Female hholder, no husb. pres.	5,342	9.3%
With own children < 18	3,468	6.0%
Nonfamily households	16,167	28.2%
Householder living alone	12,922	22.5%
65 years and over	5,363	9.4%
Households with one or more people under 18	21,314	37.2%
Households with one or more people 65 years +	12,802	22.3%
Average household size	2.65	
Average family size	3.13	
RELATIONSHIP		
Household population	**152,087**	**100%**
Householder	57,333	37.7%
Spouse	34,022	22.4%
Child	48,200	31.7%
Other relatives	5,566	3.7%
Nonrelatives	6,966	4.6%
Unmarried partner	3,077	2.0%
MARITAL STATUS		
Males 15 years and over	**61,166**	**100%**
Never married	19,109	31.2%
Now married, except separated	34,360	56.2%
Separated	610	1.0%
Widowed	1,131	1.8%
Divorced	5,956	9.7%
Females 15 years and over	**63,138**	**100%**
Never married	14,573	23.1%
Now married, exp. separated	35,325	55.9%
Separated	802	1.3%
Widowed	6,612	10.5%
Divorced	5,826	9.2%
FERTILITY		
Number of women 15 to 50 years old who had a birth in the past 12 months	**1,967**	**100%**
Unmarried women (widowed, divorced, and never married)	451	22.9%
Per 1,000 unmarried women	26	(X)
Per 1,000 women 15 to 50	50	(X)
Per 1,000 women 15 to 19	8	(X)
Per 1,000 women 20 to 34	101	(X)
Per 1,000 women 35 to 50	23	(X)
GRANDPARENTS		
Number of grandparents living with own grandchildren under 18 years	**2,301**	**100%**
Responsible for grandchildren	1,046	45.5%
Years respons. for grandchildren		
Less than 1 year	138	6.0%
1 or 2 years	340	14.8%
3 or 4 years	338	14.7%
5 or more years	230	10.0%
SCHOOL ENROLLMENT		
Population 3 years and over enrolled in school	**39,962**	**100%**
Nursery school, preschool	2,256	5.6%
Kindergarten	1,355	3.4%
Elem. school (grade 1-8)	16,520	41.3%
High school (grades 9-12)	10,180	25.5%
College or graduate school	9,651	24.2%
EDUCATIONAL ATTAINMENT		
Population 25 years and over	**102,638**	**100%**
Less than 9th grade	3,253	3.2%
9th to 12th grade, no diploma	11,079	10.8%
High school grad (inc. GED)	39,908	38.9%

Some college, no degree	23,326	22.7%
Associate's degree	9,406	9.2%
Bachelor's degree	10,815	10.5%
Graduate or profession. deg.	4,851	4.7%
Percent high school grad or higher		86.0%
Percent bachelor's deg. or higher		15.3%

VETERAN STATUS

Civilian population 18 +	**116,647**	**100%**
Civilian veterans	12,775	100%

DISABILITY STATUS OF THE CIVILIAN NONINSTITUTIONALIZED POPULATION

Population 5 years and over	**143,645**	**100%**
With a disability	22,393	15.6%
Population 5 to 15 years	**23,189**	**100%**
With a disability	1,679	7.2%
Population 16 to 64 years	**102,287**	**100%**
With a disability	14,298	14.0%
Population 65 years +	**18,169**	**100%**
With a disability	6,416	35.3%

RESIDENCE 1 YEAR AGO

Population 1 year and over	**152,368**	**100%**
Same house	136,996	89.9%
Different house in the U.S.	14,912	9.8%
Same county	8,596	5.6%
Different county	6,316	4.1%
Same state	4,156	2.7%
Different state	2,160	1.4%
Abroad	460	0.3%

PLACE OF BIRTH

Total population	**153,608**	**100%**
Native	150,710	98.1%
Born in United States	150,304	97.8%
State of residence	93,318	60.8%
Different state	56,986	37.1%
Born in Puerto Rico, U.S. Island areas, or born abroad to Amer. parent(s)	406	0.3%
Foreign born	2,898	1.9%

U.S. CITIZENSHIP STATUS

Foreign-born population	**2,898**	**100%**
Naturalized U.S. citizen	1,049	36.2%
Not a U.S. citizen	1,849	63.8%

YEAR OF ENTRY

Population born outside the US	**3,304**	**100%**
Native	406	100%
Entered 2000 or later	0	0.0%
Entered before 2000	406	100.0%
Foreign born	2,898	100%
Entered 2000 or later	1,053	36.3%
Entered before 2000	1,845	63.7%

ANCESTRY

Total population	**153,608**	**100%**
American	6,934	4.5%
Arab	465	0.3%
Czech	1,095	0.7%
Danish	218	0.1%
Dutch	3,602	2.3%
English	14,406	9.4%
French (except Basque)	18,897	12.3%
French Canadian	2,404	1.6%
German	52,779	34.4%
Greek	1,247	0.8%
Hungarian	5,136	3.3%
Irish	22,874	14.9%
Italian	9,502	6.2%
Lithuanian	259	0.2%
Norwegian	831	0.5%
Polish	13,575	8.8%
Portuguese	0	0.0%
Russian	331	0.2%
Scotch-Irish	3,278	2.1%
Scottish	3,287	2.1%
Slovak	664	0.4%
Subsaharan African	0	0.0%
Swedish	2,597	1.7%
Swiss	1,042	0.7%
Ukrainian	339	0.2%
Welsh	882	0.6%
West Indian	328	0.2%

Source: US Census Bureau, 2007 American Community Survey

ECONOMIC CHARACTERISTICS	2007 Estimate	Percent
EMPLOYMENT STATUS		
Population 16 years and over	**121,670**	**100%**
In labor force	79,156	65.1%
Civilian labor force	79,076	65.0%
Employed	72,045	59.2%
Unemployed	7,031	5.8%
Armed Forces	80	0.1%
Not in labor force	42,514	34.9%
Civilian labor force	**79,076**	**100%**
Unemployed	8.9%	
Females 16 years and over	**61,708**	**100%**
In labor force	36,159	58.6%
Civilian labor force	36,159	58.6%
Employed	33,315	54.0%
Own children under 6 years	**10,314**	**100%**
All parents in family in labor force	6,386	61.9%
Own children 6 to 17 years	**24,832**	**100%**
All parents in family in labor force	18,169	73.2%
COMMUTING TO WORK		
Workers 16 years and over	**70,169**	**100%**
Car, truck, or van - drove alone	60,727	86.5%
Car, truck, or van - carpooled	5,092	7.3%
Public transportation (exc.taxi)	568	0.8%
Walked	1,504	2.1%
Other means	541	0.8%
Worked at home	1,737	2.5%
Mean travel time to work (mins.)	23.8	
Civilian employed population 16 years and over	**72,045**	**100%**
OCCUPATION		
Management, professional	18,965	26.3%
Service	11,324	15.7%
Sales and office	17,870	24.8%
Farming, fishing, & forestry	81	0.1%
Construction, extraction, maintenance and repair	8,095	11.2%
Production, transportation, and material moving	15,710	21.8%
INDUSTRY		**100%**
Agriculture, forestry, fishing and hunting, and mining	477	0.7%
Construction	4,735	6.6%
Manufacturing	16,528	22.9%
Wholesale trade	2,583	3.6%
Retail trade	9,486	13.2%
Transportation and warehousing, and utilities	4,409	6.1%
Information	1,360	1.9%
Finance & insurance, & real estate & rental & leasing	3,033	4.2%
Professional, scientific, & management, & administrative & waste mngt services	4,829	6.7%
Educational services, & health care, & social assistance	14,562	20.2%
Arts, entertainment, and recreation, and accommodation, and food services	5,565	7.7%
Other services, except public administration	3,012	4.2%
Public administration	1,466	2.0%
CLASS OF WORKER		
Private wage & salary workers	60,885	**100%**
Government workers	8,110	84.5%
Self-employed workers in own not incorporated business	3,050	11.3%
Unpaid family workers	0	4.2%
INCOME AND BENEFITS (IN 2006 INFLATION-ADJUSTED DOLLARS)		
Total households	**57,333**	**100%**
Less than $10,000	2,568	4.5%
$10,000 to $14,999	2,909	5.1%
$15,000 to $24,999	4,448	7.8%
$25,000 to $34,999	6,786	11.8%
$35,000 to $49,999	9,813	17.1%
$50,000 to $74,999	12,257	21.4%
$75,000 to $99,999	8,253	14.4%
$100,000 to $149,999	7,998	14.0%
$150,000 to $199,999	1,640	2.9%
$200,000 or more	661	1.2%
Median household income	$53,750	
Mean household income	$63,020	

Total households	**57,333**	**100%**
With earnings	45,810	79.9%
Mean earnings	$62,741	
With Social Security	16,144	28.2%
Mean Social Security income	$16,059	
With retirement income	14,952	26.1%
Mean retirement income	$17,556	
With Supplemental Security Income	1,694	3.0%
Mean Supplemental Security Income	$7,505	
With cash public assistance income	1,073	1.9%
Mean cash public assistance income	$2,561	
With Food Stamp benefits in the past 12 months	4,501	7.9%
Families	**41,166**	**100%**
Less than $10,000	1,018	2.5%
$10,000 to $14,999	1,014	2.5%
$15,000 to $24,999	2,589	6.3%
$25,000 to $34,999	3,816	9.3%
$35,000 to $49,999	6,484	15.8%
$50,000 to $74,999	9,955	24.2%
$75,000 to $99,999	7,423	18.0%
$100,000 to $149,999	6,766	16.4%
$150,000 to $199,999	1,598	3.9%
$200,000 or more	503	1.2%
Median family income	$65,121	
Mean family income	$70,879	
Per capita income	$24,075	
Nonfamily households	**16,167**	**100%**
Median nonfamily income	$31,712	
Mean nonfamily income	$40,461	
Median earnings for workers	$30,189	
Median earnings for male full-time, year-round workers	$49,699	
Median earnings for female full-time, year-round workers	$33,992	

PERCENTAGE OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL

All families	5.5%
With related children under 18 years	9.5%
With related children under 5 years only	22.0%
Married couple families	2.3%
With related children under 18 years	3.5%
With related children under 5 years only	7.6%
Families with female householder, no husband present	27.2%
With related children under 18 years	34.7%
With related children under 5 years only	62.3%
All people	6.8%
Under 18 years	7.4%
Related children under 18	7.1%
Related children under 5	12.6%
Related children 5 to 17	5.4%
18 years and over	6.7%
18 to 64 years	6.9%
65 years and over	5.3%
People in families	4.5%
Unrelated individuals 15 years +	20.0%

Source: US Census Bureau, 2007 American Community Survey

HOUSING CHARACTERISTICS	2007 Estimate	Percent
HOUSING OCCUPANCY		
Total housing units	**63,421**	**100%**
Occupied housing units	57,333	90.4%
Vacant housing units	6,088	9.6%
Homeowner vacancy rate	5.3	
Rental vacancy rate	9.5	
UNITS IN STRUCTURE		
1-unit, detached	46,557	73.4%
1-unit, attached	1,869	2.9%
2 units	2,196	3.5%
3 or 4 units	929	1.5%
5 to 9 units	2,722	4.3%
10 to 19 units	865	1.4%
20 or more units	2,180	3.4%
Mobile home	6,103	9.6%
Boat, RV, van, etc.	0	0.0%
YEAR STRUCTURE BUILT		
Built 2005 or later	2,677	4.2%
Built 2000 to 2004	5,891	9.3%
Built 1990 to 1999	11,700	18.4%
Built 1980 to 1989	5,228	8.2%
Built 1970 to 1979	9,144	14.4%
Built 1960 to 1969	5,475	8.6%
Built 1950 to 1959	8,643	13.6%
Built 1940 to 1949	3,506	5.5%
Built 1939 or earlier	11,157	17.6%
ROOMS		
1 room	154	0.2%
2 rooms	631	1.0%
3 rooms	2,316	3.7%
4 rooms	9,419	14.9%
5 rooms	14,901	23.5%
6 rooms	14,937	23.6%
7 rooms	9,957	15.7%
8 rooms	6,309	9.9%
9 rooms or more	4,797	7.6%
Median (rooms)	5.8	
BEDROOMS		
No bedroom	154	0.2%
1 bedroom	3,640	5.7%
2 bedrooms	14,471	22.8%
3 bedrooms	32,490	51.2%
4 bedrooms	10,402	16.4%
5 or more bedrooms	2,264	3.6%
Occupied housing units	**57,333**	**100%**
HOUSING TENURE		
Owner-occupied	46,434	81.0%
Renter-occupied	10,899	19.0%
Average household size of owner-occupied unit	2.77	
Average household size of renter-occupied unit	2.14	
YEAR HOUSEHOLDER MOVED INTO UNIT		
Moved in 2005 or later	14,522	25.3%
Moved in 2000 to 2004	14,224	24.8%
Moved in 1990 to 1999	14,313	25.0%
Moved in 1980 to 1989	5,574	9.7%
Moved in 1970 to 1979	4,391	7.7%
Moved in 1969 or earlier	4,309	7.5%
VEHICLES AVAILABLE		
No vehicles available	2,735	4.8%
1 vehicle available	15,533	27.1%
2 vehicles available	25,045	43.7%
3 or more vehicles available	14,020	24.5%
HOUSE HEATING FUEL		
Utility gas	46,523	81.1%
Bottled, tank, or LP gas	5,598	9.8%
Electricity	3,095	5.4%
Fuel oil, kerosene, etc.	733	1.3%
Coal or coke	0	0.0%
Wood	919	1.6%
Solar energy	0	0.0%
Other fuel	415	0.7%
No fuel used	50	0.1%
SELECTED CHARACTERISTICS		
Lacking complete plumbing facilities	132	0.2%
Lacking complete kitchen facilities	134	0.2%
No telephone service available	5,922	10.3%

OCCUPANTS PER ROOM		
1.00 or less	56,922	99.3%
1.01 to 1.50	362	0.6%
1.51 or more	49	0.1%
VALUE		
Owner-occupied units	**46,434**	**100%**
Less than $50,000	4,094	8.8%
$50,000 to $99,999	3,745	8.1%
$100,000 to $149,999	8,737	18.8%
$150,000 to $199,999	13,293	28.6%
$200,000 to $299,999	11,307	24.4%
$300,000 to $499,999	4,632	10.0%
$500,000 to $999,999	297	0.6%
$1,000,000 or more	329	0.7%
Median (dollars)	170,100	

MORTGAGE STATUS AND SELECTED MONTHLY OWNER COSTS		
Owner-occupied units	**46,434**	**100%**
Housing units with a mortgage	33,521	**100%**
Less than $300	0	0.0%
$300 to $499	689	1.5%
$500 to $699	1,334	2.9%
$700 to $999	5,086	11.0%
$1,000 to $1,499	10,619	22.9%
$1,500 to $1,999	10,004	21.5%
$2,000 or more	5,789	12.5%
Median (dollars)	1,455	
Housing units without a mortgage	12,913	100%
Less than $100	99	0.2%
$100 to $199	632	1.4%
$200 to $299	1,810	3.9%
$300 to $399	2,874	6.2%
$400 or more	7,498	16.1%
Median (dollars)	430	

SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME		
Housing unit with a mortgage	33,521	100%
Less than 20.0 percent	10,111	21.8%
20.0 to 24.9 percent	6,970	15.0%
25.0 to 29.9 percent	4,600	9.9%
30.0 to 34.9 percent	3,455	7.4%
35.0 percent or more	8,385	18.1%
Not computed	0	
Housing unit without a mortgage	12,913	100%
Less than 10.0 percent	4,047	8.7%
10.0 to 14.9 percent	2,964	6.4%
15.0 to 19.9 percent	1,698	3.7%
20.0 to 24.9 percent	1,367	2.9%
25.0 to 29.9 percent	574	1.2%
30.0 to 34.9 percent	495	1.1%
35.0 percent or more	1,687	3.6%
Not computed	81	

Renter-occupied units	**10,899**	**100%**
GROSS RENT		
Less than $200	661	6.1%
$200 to $299	643	5.9%
$300 to $499	1,374	12.6%
$500 to $749	3,257	29.9%
$750 to $999	2,751	25.2%
$1,000 to $1,499	1,718	15.8%
$1,500 or more	0	0.00%
No cash rent	495	
Median (dollars)	678	

GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME		
Less than 15.0 percent	1,463	13.4%
15.0 to 19.9 percent	2,150	19.7%
20.0 to 24.9 percent	1,623	14.9%
25.0 to 29.9 percent	937	8.6%
30.0 to 34.9 percent	560	5.1%
35.0 percent or more	3,671	33.7%
Not computed	495	

Source: US Census Bureau, 2007 American Community Survey

AGRICULTURE

The importance of agriculture in Monroe County is reflected by the amount of land in agricultural use, the taxable value of agricultural land and improvements, the amount of income generated by farming, and by the investment made in agriculture. Equally important, but less quantifiable, are the social and culture traditions, the scenic quality, the value of open space, and the community character derived when a significant portion of the population earns their living directly from the land. Agriculture is also important to the community as a source of food, wildlife habitat, flood water storage and infiltration, and as areas which demand much less than urban areas in terms of public services, such as utilities, infrastructure, and other public improvements.

Agriculture at times may resemble an industrial land use, a commercial use, a residential use, or recreational or open space land uses – or a combination of all of these. Agriculture is also constantly changing, with different crops, techniques, methods, buildings, and impacts. Agriculture is affected by government programs and incentives, by commodity and market prices, by consumer preferences and demand, and by changing practices and research.

Issues:

- Conversion of agricultural land to other uses is usually irreversible. And farmland is a finite resource upon which food and other resources essential to life are produced.
- Without a significant "critical mass" of agricultural investment, the remaining farmland becomes more difficult to maintain due to loss of markets, suppliers, and other resources.
- Farmland is often easier and less expensive to convert to other land uses when compared to re-developing existing urban uses.
- The public derives many benefits from having significant areas of farmland, including open space, a local source for food and farm products, environmental benefits such as flood and storm water control, and large areas of the community with lower or less intense demands for public services
- Both urban and rural residents of Monroe County seem to place a high value on the community's 'rural character' and there has generally been strong public support for agricultural preservation efforts.
- Efforts to preserve farmland can involve a wide variety of tools, which may vary in their success. Zoning techniques, participation in state or federal incentive programs, purchase of development rights, preservation easements are all techniques which have proven successful in different settings.

- It should be recognized that although farmland preservation may be a community priority, the farmland in a community is privately owned land, and farm owners have the same rights as other property owners.
- There are opportunities to strengthen the local food system, which would allow producers, processors, distributors, retailers, and consumers to create greater markers for locally produced food products.

AGRICULTURE IN MONROE COUNTY

There is over 207,000 acres of farmland in Monroe County, representing about 62% of the county's land area. Major crops consist of corn, soy beans, and wheat, although there is a great diversity in local farm products, with significant acreage devoted to vegetable crops, potatoes, fruit crops, livestock and poultry, dairy, and greenhouse and nursery crops. There are over 1,100 farms in the county, averaging 186 acres in size. The market value of agricultural products sold in 2007 was over $130 million.

The success and diversity of agriculture in Monroe County is related to many factors, including soils, topography, climate, drainage and location of markets. Much of Monroe County's soils are considered either 'prime farmland' or 'farmland of local importance.' The flat terrain and extensive drainage network, including significant investment in subsurface drainage tiles, has resulted in very few areas of the county having severe limitations for farming. The southern Michigan climate provides a relatively long growing season with generally adequate amounts of moisture. Irrigation is not essential for most crops, although ground and surface water supplies are generally adequate for irrigation purposes. A local support network including grain mills and depots, farmer cooperatives, university extension service, farm equipment and supply stores, and similar institutions provide the needed infrastructure to support the local agricultural economy.

The following table presents detailed information on agriculture in Monroe County:

Agriculture in Monroe County, 2007 & 2002

		2007	2002
Farms	number	1,119	1,183
Land in farms	acres	207,812	217,421
Average size of farm	acres	186	184
Median size of farm	acres	43	66
Estimated market value of land and buildings			
Average per farm	dollars	710,533	578,759
Average per acre	dollars	3,826	3,152
Estimated market value of all machinery and equipment			
Average per farm	dollars	102,813	79,298
Farms by size			
1 to 9 acres		141	114
10 to 49 acres		445	492
50 to 179 acres		275	273
180 to 499 acres		146	185
500 to 999 acres		61	76
1,000 acres or more		51	43
Total cropland	farms	1,008	1,076
	acres	189,529	199,619
Harvested cropland	farms	869	917
	acres	182,693	189,011
Irrigated land	farms	101	108
	acres	6,483	6,403
Market value of agricultural products sold	$1,000	130,069	92,243
Average per farm	dollars	116,237	77,973
Crops, including nursery and greenhouse crops	$1,000	122,058	86,148
Livestock, poultry, and their products	$1,000	8,012	6,095
Farms by value of sales			
Less than $2,500		349	412
$2,500 to $4,999		84	107
$5,000 to $9,999		111	127
$10,000 to $24,999		135	180
$25,000 to $49,999		110	109
$50,000 to $99,999		120	100
$100,000 or more		210	148
Government payments	farms	547	403
	$1,000	3,127	4,129
Total income from farm-related sources, gross before taxes and expenses	farms	460	406
	$1,000	5,134	2,390
Total farm production expenses	$1,000	111,301	85,379
Average per farm	dollars	99,465	72,110
Net cash farm income of operation	farms	1,119	1,184
	$1,000	27,029	12,781
Average per farm	dollars	24,155	10,795
Principal operator by primary occupation			
Farming	number	495	661
Other	number	624	522
Principal operator by days worked off farm			
Any	number	767	700
200 days or more	number	502	524
Livestock and poultry			
Cattle and calves inventory	farms	149	154
	number	4,095	4,777
Beef cows	farms	82	67
	number	535	732
Milk cows	farms	8	10
	number	409	529
Cattle and calves sold	farms	110	108
	number	4,250	4,248
Hogs and pigs inventory	farms	43	40
	number	946	2,834
Hogs and pigs sold	farms	38	45
	number	1,976	7,143
Sheep and lambs inventory	farms	70	57
	number	1,419	1,227
Layers inventory	farms	79	61
	number	4,742	2,600
Broilers and other meat-type chickens sold	farms	11	18
	number	764	1,140

		2007	2002
Selected crops harvested			
Corn for grain	farms	452	441
	acres	77,345	60,444
	bushels	11,803,432	6,753,053
Corn for silage or greenchop	farms	14	19
	acres	528	675
	tons	9,399	8,491
Wheat for grain, all	farms	285	284
	acres	21,122	18,435
	bushels	1,486,737	1,272,746
Winter wheat for grain	farms	281	278
	acres	21,001	18,156
	bushels	1,479,117	1,253,962
Spring wheat for grain	farms	4	6
	acres	121	279
	bushels	7,620	18,784
Oats for grain	farms	32	36
	acres	634	1,219
	bushels	55,140	101,686
Soybeans for beans	farms	498	581
	acres	70,797	95,809
	bushels	2,968,774	3,181,990
Forage - land used for all hay and all haylage, grass silage, and greenchop	**farms**	**256**	**243**
	acres	4,972	6,174
	tons, dry	16,742	16,415
Vegetables harvested for sale	farms	85	71
	acres	6,707	4,479
Potatoes	farms	12	12
	acres	2,049	1,903
Land in orchards	farms	27	47
	acres	139	299
MARKET VALUE OF AGRICULTURAL PRODUCTS SOLD INCLUDING DIRECT SALES			
Total sales	farms	1,119	1183
	$1,000	130,069	92243
Average per farm	dollars	116,237	77973
Value of sales			
Less than $1,000	farms	229	266
	$1,000	29	25
$1,000 to $2,499	farms	120	146
	$1,000	199	234
$2,500 to $4,999	farms	84	107
	$1,000	307	366
$5,000 to $9,999	farms	111	127
	$1,000	763	915
$10,000 to $19,999	farms	112	137
	$1,000	1,519	1,997
$20,000 to $24,999	farms	23	43
	$1,000	502	970
$25,000 to $39,999	farms	80	82
	$1,000	2,522	2,602
$40,000 to $49,999	farms	30	27
	$1,000	1,340	1,198
$50,000 to $99,999	farms	120	100
	$1,000	8,358	7,222
$100,000 to $249,999	farms	114	93
	$1,000	17,433	14,092
$250,000 to $499,999	farms	48	29
	$1,000	16,689	9,687
$500,000 or more	farms	48	26
	$1,000	80,408	52,935
Value of sales by commodity or commodity group			
Crops, including nursery and greenhouse	farms	811	826
	$1,000	122,058	86,148
Grains, oilseeds, dry beans, and dry peas	farms	614	664
	$1,000	66,922	34,827
Corn	farms	456	(NA)
	$1,000	37,104	(NA)
Wheat	farms	285	(NA)
	$1,000	6,966	(NA)
Soybeans	farms	514	(NA)
	$1,000	22,721	(NA)
Other grains, oilseeds, dry beans, and dry peas	farms	33	(NA)
	$1,000	131	(NA)
Market Value of Agricultural Products Sold Including Direct Sales			
Total sales Value of sales by commodity or commodity group			
Crops, including nursery and greenhouse			
Vegetables, melons, potatoes, and sweet potatoes	farms	85	77
	$1,000	18,563	15,803
Fruits, tree nuts, and berries	farms	32	34
	$1,000	430	505
Nursery, greenhouse, floriculture, and sod	farms	81	79
	$1,000	34,866	33,900
Cut Christmas trees and short-rotation woody crops	farms	26	18
	$1,000	110	195
Other crops and hay	farms	156	149
	$1,000	1,166	917
Livestock, poultry, and their products	farms	293	260
	$1,000	8,012	6,095

		2007	2002
Poultry and eggs	farms	83	58
	$1,000	92	124
Cattle and calves	farms	110	108
	$1,000	4,135	3,285
Milk and other dairy products from cows	farms	4	10
	$1,000	1,452	1,072
Hogs and pigs	farms	38	45
	$1,000	192	617
Sheep, goats, and their products	farms	61	57
	$1,000	122	(D)
Horses, ponies, mules, burros, and donkeys	farms	53	61
	$1,000	404	261
Aquaculture farms		3	1
	$1,000	1,432	(D)
Other animals and other animal products	farms	38	26
	$1,000	182	(D)
Value of agricultural products sold directly to individuals for human consumption	farms	114	116
	$1,000	628	1,275

FARM PRODUCTION EXPENSES

Total farm production expenses	farms	1,119	1,184
	$1,000	111,301	85,379
Average per farm	dollars	99,465	72,110
Fertilizer, lime, and soil conditioners purchased	farms	778	928
	$1,000	15,662	8,453
Chemicals purchased	farms	658	884
	$1,000	6,543	5,656
Seeds, plants, vines, and trees	farms	692	816
	$1,000	14,187	10,930
Livestock and poultry purchased or leased	farms	161	143
	$1,000	3,252	1,578
Breeding livestock purchased or leased	farms	52	13
	$1,000	713	13
Other livestock and poultry purchased or leased	farms	127	130
	$1,000	2,540	1,565
Feed purchased	farms	344	293
	$1,000	2,244	928
Gasoline, fuels, and oils	farms	1,095	1,119
	$1,000	8,011	3,273
Utilities	farms	565	588
	$1,000	2,433	2,151
Supplies, repairs, and maintenance	farms	1,031	1,072
	$1,000	9,669	10,567
Hired farm labor	farms	222	268
	$1,000	15,154	12,842
Contract labor	farms	60	85
	$1,000	1,534	267
Customwork and custom hauling	farms	249	250
	$1,000	1,290	827
Cash rent for land, buildings, and grazing fees	farms	356	508
	$1,000	11,282	9,625
Rent & lease expenses for machinery, equip., & farm share of vehicles	farms	73	101
	$1,000	978	1,059
Interest expense	farms	380	399
	$1,000	5,498	3,902
Secured by real estate	farms	308	312
	$1,000	3,543	2,890
Not secured by real estate	farms	223	213
	$1,000	1,955	1,012
Property taxes paid	farms	1,049	1,098
	$1,000	3,941	3,409
All other production expenses	farms	595	743
	$1,000	9,624	9,912
Depreciation expenses claimed	farms	593	607
	$1,000	11,369	9,628

NET CASH FARM INCOME OF OPERATIONS AND OPERATORS

Net cash farm income of the operations	$1,000	27,029	12,781
Average per farm	dollars	24,155	10,795
Farms with net gains	number	608	541
Average per farm	dollars	54,258	39,868
Farms with net losses	number	511	643
Average per farm	dollars	11,663	13,666
Net cash farm income of operators	$1,000	24,895	11,270
Average per farm	dollars	22,248	9,519
Farm operators reporting net gains	farms	592	541
Average per farm	dollars	52,819	37,312
Farm operators reporting net losses	farms	527	643
Average per farm	dollars	12,095	13,865

GOVERNMENT PAYMENTS AND COMMODITY CREDIT CORPORATION LOANS

GOVERNMENT PAYMENTS			
Total received	farms	547	403
	$1,000	3,127	4,129
Average per farm	dollars	5,717	10,245
Amount from Conservation Reserve, Wetlands Reserve, Farmable Wetlands, and Conservation Reserve Enhancement Programs	farms	153	93
	$1,000	300	219
Average per farm	dollars	1,958	2,352

		2007	2002
Amount from other federal farm programs	farms	492	358
	$1,000	2,828	3,910
Average per farm	dollars	5,747	10,922
Commodity Credit Corporation Loans			
Total	farms	33	95
	$1,000	1,724	2,731
Income From Farm-Related Sources			
Total income from farm-related sources, gross before taxes and expenses	farms	460	406
	$1,000	5,134	2,390
Average per farm	dollars	11,160	5,887
Customwork and other agricultural services	farms	79	73
	$1,000	810	407
Gross cash rent or share payments.	farms	155	119
	$1,000	1,244	747
Sales of forest products, excluding Christmas trees, short rotation woody crops, and maple products	farms	10	6
	$1,000	37	56
Agri-tourism and recreational services	farms	8	7
	$1,000	587	16
Patronage dividends and refund from cooperatives	farms	264	215
	$1,000	342	70
Crop and livestock insurance payments	farms	31	(NA)
	$1,000	377	(NA)
Amount from state and local government agricultural program payments	farms	12	(NA)
	$1,000	17	(NA)
Average per farm	dollars	1,439	(NA)
Other farm-related income sources.	farms	84	(NA)
	$1,000	1,719	(NA)
FARMS AND LAND IN FARMS			
Farms	number	1,119	1,183
Land in farms	acres	207,812	217,421
Average size of farm	acres	186	184
Estimated market value of land and buildings	farms	1,119	1,184
	$1,000	795,086	685,251
Average per farm	dollars	710,533	578,759
Average per acre	dollars	3,826	3,152
2007 farms by value group			
$1 to $49,999		141	78
$50,000 to $99,999		85	55
$100,000 to $199,999		152	309
$200,000 to $499,999		397	418
$500,000 to $999,999		171	189
$1,000,000 to $1,999,999		93	56
$2,000,000 to $4,999,999		56	70
$5,000,000 to $9,999,999		17	7
$10,000,000 or more		7	2
Approximate land area	acres	351,614	352,704
Proportion in farms percent		59.1	61.6
Size of farm			
1 to 9 acres	farms	141	114
	acres	758	596
10 to 49 acres	farms	445	492
	acres	10,674	11,910
50 to 69 acres	farms	86	82
	acres	4,961	4,854
70 to 99 acres	farms	77	84
	acres	6,396	6,938
100 to 139 acres	farms	70	69
	acres	8,278	8,182
140 to 179 acres	farms	42	38
	acres	6,496	5,934
180 to 219 acres	farms	31	35
	acres	6,205	6,806
220 to 259 acres	farms	34	34
	acres	8,102	8,081
260 to 499 acres	farms	81	116
	acres	28,043	40,344
500 to 999 acres	farms	61	76
	acres	41,808	52,133
1,000 to 1,999 acres	farms	40	32
	acres	52,335	42,505
2,000 acres or more	farms	11	11
	acres	33,756	29,138
LAND IN FARMS ACCORDING TO USE			
Total cropland	farms	1,008	1,076
	acres	189,529	199,619
Harvested cropland	farms	869	917
	acres	182,693	189,011
Cropland used only for pasture or grazing	farms	129	197
	acres	1,518	2,436
Other cropland	farms	228	273
	acres	5,318	8,172
Cropland idle or used for cover crops or soil improvement, but not harvested and not pastured or grazed	farms	182	210
	acres	3,970	6,385
Cropland on which all crops failed	farms	56	72
	acres	847	1,482

		2007	2002
Cropland in cultivated summer fallow	farms	14	20
	acres	501	305
Total woodland	farms	371	388
	acres	9,018	8,432
Woodland pastured	farms	51	77
	acres	522	1,049
Woodland not pastured	farms	335	331
	acres	8,496	7,383
Permanent pasture and rangeland, other than cropland and woodland pastured	farms	261	152
	acres	2,302	1,636
Land in farmsteads, buildings, livestock facilities, ponds, roads, wasteland, etc.	farms	670	722
	acres	6,963	7,734
Pastureland, all types	farms	388	339
	acres	4,342	5,121

Farms by North American Industry Classification System

	2007	2002
Total farms	1,119	1,183
Oilseed and grain farming (1111)	568	627
Vegetable and melon farming (1112)	37	49
Fruit and tree nut farming (1113)	21	27
Greenhouse, nursery, and floriculture production (1114)	85	79
Other crop farming (1119)	150	115
Tobacco farming (11191)	- -	
Cotton farming (11192)	- -	
Sugarcane farming, hay farming, and all other crop farming (11193,11194,11199)	150	115
Beef cattle ranching and farming (112111)	37	45
Cattle feedlots (112112)	21	26
Dairy cattle and milk production (11212)	4	6
Hog and pig farming (1122)	12	13
Poultry and egg production (1123)	26	13
Sheep and goat farming (1124)	34	28
Animal aquaculture and other animal production (1125,1129)	124	155

VALUE OF MACHINERY AND EQUIPMENT

Estimated market value of all machinery and equipment	farms	1,118	1,156
	$1,000	114,945	91,668
Average per farm	dollars	102,813	79,298

source: USDA Census of Agriculture, 2002 and 2007

LOCAL FOOD SYSTEMS

Much of the agricultural production of Monroe County - especially wheat, corn, and soy - is shipped great distances to out-of-state food processors. In addition, much of the food purchased and consumed by residents is also shipped great distances, whether it is fresh produce, meat, dairy, or processed foods.

Due to its agricultural strengths, transportation systems, and proximity to markets, Monroe County has great potential for producers, processors, and consumers to benefit from the food system economy.

In an effort to understand the complexity of the 'local food web,' the Food Systems Economic Partnership (FSEP), a consortium of five counties, farm organization leaders, food industry heads, community groups, and food system and economic development experts, was formed with a mission to study ways in which southeast Michigan can strengthen its ability to produce, process, distribute, sell and consume local agricultural products. One of the main goals of the FSEP is to "improve the viability of the agricultural sector in the region by identifying consumer demand and helping farm and food system businesses and entrepreneurs convert that demand into new ventures," including processing facilities, marketing campaigns, value chain partnerships, and new infrastructure.

Related efforts regarding "agri-tourism," the development of "value-added" farm products, and "buy local" marketing campaigns can all help to strengthen the diversity and viability of local agriculture. Related efforts at locating processing facilities, including bio-fuel plants, can also serve to create new markets for local agricultural products. Expanded grain processing and milling facilities has been specifically identified as having potential.

FARMLAND PRESERVATION

Farmland preservation is an effort which requires participation of local government, land owners, and the general public. A shared desire to preserve farmland is important, as is the incorporation of farmland preservation goals into planning documents. Other important practices include: identifying target preservation areas; reviewing and evaluating applicable preservation tools; and the implementation of programs, policies, and regulations aimed at meeting shared preservation goals. Communities in southeast Michigan and elsewhere have turned to two major techniques to preserve farmland – zoning / land development controls and voluntary development rights agreements. The following descriptions of these techniques are adapted from SEMCOG's "Land Use Tools and Techniques":

Zoning and Land Development Controls

Various zoning techniques should be considered to protect farmland. These techniques include:

- sliding scale zoning,
- quarter/quarter zoning,
- exclusive agricultural zoning, and
- agricultural buffer zoning.

Sliding scale zoning limits the number of lot splits allowed in agricultural areas for other than agricultural uses. The number of divisions (or lot splits of land) allowed depends on the size of the parent parcel. The larger the original parcel, the higher the number of splits allowed, up to a cap (established by the community).

Quarter/quarter zoning allows one residential nonagricultural lot per 40 acres of farmland. (The area of one-fourth of a quarter section of one square mile survey section of land is 40 acres.) Once the lot has been created, the landowner is entitled to no further non-farm development. Parcel splits are recorded and monitored by the local unit of government. If the farmer owns multiple quarter/quarter sections, then all of the permitted lots can be concentrated on one section. The quarter/quarter system works best in areas where the average parcel sizes are 40 acres or more. To further protect present and future property owners, require-

ments can also be placed on new lot splits that prevent creating inefficient or undesirable parcels.

Exclusive agricultural zoning prohibits all nonfarm dwellings. Agriculturally related activities such as grain elevators, farm equipment repair facilities, etc., need a special permit. If extensive areas are prime agricultural land, the best way to protect them is by prohibiting nonfarm uses, including residences. Communities usually permit residences for family or workers employed on a farm.

Agricultural buffer zoning is a transition zoning technique that can be used to help protect the long-term integrity of prime or unique agricultural lands. A residential/agricultural zone is created in appropriate areas of the community between more intensive development and large tracts of agricultural land. This transitional area, or buffer zone, allows for rural residential lifestyle opportunities and isolates agricultural operations from higher-intensity uses. The buffer district should be placed in areas not considered prime or unique for agriculture. The captured funds can be used within the specified district for various allowable uses, as outlined in the pertinent legislation.

In addition to the above controls, other elements of local zoning ordinances can impact efforts to preserve farmland. Minimum (and maximum) parcel sizes, minimum frontage requirements, setbacks, and the permitted uses within agricultural districts can affect the degree of non-agricultural development that can occur in various zoning districts.

Development Rights Agreements

The state has numerous programs in place to preserve farmland by temporary and permanent restriction on development of farmland in return for various benefits such as tax benefits, exemptions from special assessments, and cash.

Farmland Development Rights Agreement *(Part 361 of the Natural Resources and Environmental Protection Act (NREPA), but commonly known as P.A. 116*)

This is a voluntary partnership between the state and the landowner putting a temporary restriction (minimum of 10 years) on development of the land. In return for preserving their land for agriculture, the landowner receives certain tax benefits and exemptions from special assessments.

State Purchase of Development Rights (PDR)Program

This is a voluntary partnership between the landowner and the state putting a permanent restriction on development of the land. In return for preserving their land for agriculture, the landowner receives a cash payment.

Agriculture Preservation Fund

This fund provides grants to local units of governments for the implementation of local purchase of development rights program. These local governments must have

adopted a development rights ordinance providing for a PDR program in accordance with the applicable zoning act and adopted, within the last 10 years, a comprehensive land use plan that includes a plan for agricultural preservation.

In addition to state programs, townships and/or counties can choose to implement and fund their own purchase of development rights programs. Either through special property tax initiatives or through partnerships with private land conservancies, local PDR programs have been successfully used to preserve farmland in Michigan.

AGRICULTURE RECOMMENDATIONS

- Monroe County should actively pursue the preservation of farmland by encouraging voluntary participation in Michigan farmland preservation programs.
- Monroe County should seek to implement the Monroe County Farmland Preservation Ordinance which enables the county to participate in purchase of development rights (PDR) programs.
- Land use planning and decision making at the township level should strive to recognize the importance of agriculture and the agricultural economy.
- Planning efforts should focus on identifying areas of the community especially well suited for long term agricultural preservation and to focus preservation efforts within these areas. Also important is maintaining 'rural character' as well as maintaining attractive urban areas and suitable land for development as a means of reducing pressure for development within agricultural zones.
- Continue the current efforts of groups such as the Food System Economic Partnership which have as a goal the growth and development of the agricultural economy through expanded opportunities for processing, distribution, and consumption of locally produced agricultural products.

ECONOMY

Despite the downturn which has afflicted Monroe County, along with the state, nation, and even much of the global economy, the County and the region continue to possess many attributes which puts the community in a position to rapidly recover. Monroe County has a skilled workforce, modern infrastructure, rail and road transportation networks, a Great Lakes port, proximity to major urban areas, and a commitment to quality of life. Although manufacturing has long been the strong point of the local economy, agriculture remains an important sector of the economy, along with retail trade, service industries, mining and construction, as well as emerging 21st century fields such as technology, alternative energy, and advanced automotive related fields.

Issues:

- The current record levels of unemployment emphasize the need for a diverse economy, efforts to attract new employers, and to reserve suitable sites as well as the functional infrastructure necessary to support the types of employment centers needed for the future.
- Large economic shifts have resulted in the loss of many manufacturing jobs and a corresponding growth in retail and service sectors. Monroe County faces the challenge of its legacy of an industrial and manufacturing economy. Brownfield sites, empty factories, and other areas of concern create both problems and opportunities.
- However, Monroe County has a tradition of manufacturing expertise, and possesses a wide variety of assets making it an attractive location for industrial development, including rail lines, a Lake Erie port, highways, skilled workers, and competitive markets for labor, land and utilities.
- The ability to attract new employers and investors in the local economy depends not only on providing adequate sites and resources, but a skilled workforce and a community with a high quality of life are also important elements in attracting new businesses in an evolving economy.

LABOR FORCE

Labor force is generally defined as the total number of employed and unemployed persons who are actively seeking work. The characteristics of a community's labor force are a critical component of economic development planning. The following discussion focuses on four specific aspects of the County's labor force: 1) place of work; 2) the employment and occupational characteristics of the County's economy; 3) unemployment rates; and 4) the future employment outlook.

Place of Work

Monroe County's close proximity to Detroit and Toledo and the availability of several major highways linking the County to these two metropolitan areas provides a wide range of employment opportunities in addition to those within the County. This phenomenon can be documented through 2000 Census data.

Slightly more than half (51.1%) of the County's workers are employed at establishments located within the County. The remaining 48.9% travel outside of the County to their place of work. An overwhelming majority of these commuters travel to either the Detroit-Ann Arbor metropolitan area or to the Toledo area.

Monroe County Residents' Place Of Work - 2000

	number	percent
Live and Work in Monroe County	35,202	51.1
Lucas Co. OH	12,654	18.4
Wayne Co, MI	12,161	17.7
Washtenaw Co. MI	4,587	6.7
Oakland Co. MI	1,256	1.8
Lenawee Co. MI	817	1.2
Wood Co. OH	778	1.1
Macomb Co. MI	369	0.5
Livingston Co. MI	132	0.2
Fulton Co. OH	87	0.1
Ottawa Co. OH	68	0.1
Other	744	1.1

Source: Census of Population, U. S. Bureau of Census

Monroe County Total Labor Force

Of persons who work in Monroe County, nearly three quarters (72.5%) also reside in the County. The remaining workers commute in primarily from adjacent counties of Lucas, Wayne, Washtenaw, and Lenawee.

Monroe County Workers' County Of Residence 2000

	number	percent
Total Working in Monroe County	48,526	100
Live and Work in Monroe County	35,202	72.5
Lucas Co. OH	4,456	9.2
Wayne Co. MI	4,111	8.5
Washtenaw Co. MI	1,085	2.2
Lenawee Co. MI	1,074	2.2
Oakland Co. MI	565	1.2

	number	percent
Wood Co. OH	384	0.8
Macomb Co. MI	235	0.5
Fulton Co. OH	122	0.3
Jackson Co. MI	115	0.2
Ottawa Co. OH	90	0.2
Other	1,087	2.2

Source: Census of Population, U.S. Bureau of the Census

Occupation

There are six major occupational categories for employed persons 16 years and older that are reported by the US Census, with additional detailed subcategories. The following table provides a detailed breakdown of the occupation of employed persons.

Employed Persons 16 Years And Over - Monroe County, 2000

	Male	Female	Total
TOTAL EMPLOYED PERSONS	**38,677**	**31,667**	**70,344**
Management, professional, and related occupations:	**7,757**	**9,710**	**17,467**
Management, business, and financial operations occupations:	3,645	2,822	6,467
Management occupations, except farmers and farm managers	2,573	1,716	4,289
Farmers and farm managers	192	72	264
Business and financial operations occupations:	880	1,034	1,914
Business operations specialists	431	474	905
Financial specialists	449	560	1,009
Professional and related occupations:	4,112	6,888	11,000
Computer and mathematical occupations	506	250	756
Architecture and engineering occupations:	1,605	120	1,725
Architects, surveyors, cartographers, and engineers	1,259	62	1,321
Drafters, engineering, and mapping technicians	346	58	404
Life, physical, and social science occupations	99	44	143
Community and social services occupations	226	467	693
Legal occupations	132	209	341
Education, training, and library occupations	642	2,529	3,171
Arts, design, entertainment, sports, and media occupations	396	403	799
Healthcare practitioners and technical occupations:	506	2,866	3,372
Health diagnosing and treating practitioners & technical occupations	379	1,819	2,198
Health technologists and technicians	127	1,047	1,174

	Male	Female	Total
Service occupations:	**3,477**	**6,316**	**9,793**
Healthcare support occupations	116	1,268	1,384
Protective service occupations:	911	189	1,100
Fire fighting, prevention, & law enforcement workers, inc. supervisors	523	71	594
Other protective service workers, including supervisors	388	118	506
Food preparation and serving related occupations	893	2,374	3,267
Building and grounds cleaning and maintenance occupations	1,282	936	2,218
Personal care and service occupations	275	1,549	1,824
Sales and office occupations:	**4,834**	**11,786**	**16,620**
Sales and related occupations	2,969	3,904	6,873
Office and administrative support occupations	1,865	7,882	9,747
Farming, fishing, and forestry occupations	**285**	**141**	**426**
Construction, extraction, and maintenance occupations:	**8,753**	**307**	**9,060**
Construction and extraction occupations:	4,710	162	4,872
Supervisors, construction and extraction workers	517	26	543
Construction trades workers	4,183	136	4,319
Extraction workers	10	0	10
Installation, maintenance, and repair occupations	4,043	145	4,188
Production, transportation, and material moving occupations:	**13,571**	**3,407**	**16,978**
Production occupations	8,340	2,104	10,444
Transportation and material moving occupations:	5,231	1,303	6,534
Supervisors, transportation and material moving workers	145	56	201
Aircraft and traffic control occupations	89	27	116
Motor vehicle operators	2,364	466	2,830
Rail, water and other transportation occupations	188	53	241
Material moving workers	2,445	701	3,146

Source: Census of Population, US Bureau of the Census

Employment Rates

Monroe County has a large, diverse and well-trained labor force. However, with a large portion of the labor force having been tied to manufacturing, particularly automotive related manufacturing, the unemployment rate in Monroe County tends to be higher than the state and national rates when economic conditions result in poor auto sales, and lower than state and national rates when the economy improves. Currently, Monroe County, the state, and the nation are facing some of the largest unemployment rates in recent history.

Unemployment Rates, 1990-2009

Year	labor force	employed	unemployed	Monroe Co. unemployment rate	Michigan unemployment rate	United States unemployment rate
1999	74,825	72,706	2,119	2.8	3.8	4.2
2000	77,194	74,756	2,438	3.2	3.7	4.0
2001	77,548	74,130	3,418	4.4	5.2	4.7
2002	76,810	72,842	3,968	5.2	6.2	5.8
2003	77,130	72,444	4,686	6.1	7.1	6.0
2004	76,946	72,190	4,756	6.2	7.1	5.5
2005	77,830	73,084	4,746	6.1	6.8	5.1
2006	78,784	73,700	5,084	6.5	6.9	4.6
2007	77,709	72,561	5,148	6.6	7.1	4.6
2008	76,285	69,471	6,814	8.9	8.4	5.8
2009 (May)	76,239	63,900	12,339	16.2	13.9	9.1

Source: U.S. Dept. of Labor, Bureau of Labor Statistics http://www.bls.gov/data/

ESTABLISHMENTS

The economy in Monroe County is based on both large and small businesses, with a handful of large employers, and hundreds of smaller operations.

Number of Establishments and Employees by Economic Sector

Manufacturing businesses have traditionally represented the major segment of Monroe County's economy, and have eroded in recent years, while retail trade and some other service sectors have shown significant growth.

Number of Establishments by Major Industry, Monroe County,1998 - 2006

	1998	1999	2000	2001	2002	2003	2004	2005	2006
NUMBER OF ESTABLISHMENTS - Total	2,476	2,514	2,486	2,502	2,574	2,589	2,613	2,601	2,617
Forestry, fishing, hunting, and agriculture support	6	5	4	3	2	3	3	2	2
Mining	8	9	8	8	8	8	8	8	6
Utilities	18	19	20	20	20	18	17	17	17
Construction	376	387	375	377	400	377	375	370	361
Manufacturing	140	143	133	144	149	151	151	144	137
Wholesale trade	102	102	98	95	99	104	98	94	104
Retail trade	440	433	436	436	447	429	437	424	426
Transportation & warehousing	59	59	73	75	80	83	86	96	100
Information	27	27	25	33	32	32	30	34	30
Finance & insurance	129	133	129	129	132	140	144	147	144
Real estate & rental & leasing	76	81	83	84	86	99	94	93	91
Professional, scientific & technical services	140	144	138	133	138	143	154	151	156
Management of companies & enterprises	6	9	9	8	7	7	7	7	7
Admin, support, waste mgt, remediation services	121	121	126	126	109	116	127	131	134
Educational services	15	15	17	19	17	17	20	21	24
Health care & social assistance	227	220	212	214	239	247	257	260	270
Arts, entertainment & recreation	60	60	61	57	63	63	63	59	56
Accommodation & food services	210	225	223	230	245	260	245	255	260
Other services (except public administration)	283	287	291	287	287	281	280	277	280
Auxiliaries (exc corporate, subsidiary & regional mgt)	4	5	4	5	5	(a)	(a)	(a)	(a)
Unclassified establishments	29	30	21	19	9	11	17	11	12

source: US Census Bureau, County Business Patterns

(a) – beginning in 2002, "Auxiliaries" were tabulated in the industry of the service performed

Number of Employees by Major Industry, Monroe County, 1998 - 2006

	1998	1999	2000	2001	2002	2003	2004	2005	2006
NUMBER OF EMPLOYEES - Total	36,779	37,729	39,555	39,441	38,679	38,469	39,254	39,279	39,983
Forestry, fishing, hunting, and agriculture support	26	19	0-19	5	0-19	0-19	0-19	0-19	0-19
Mining	70	110	137	148	146	131	100-249	100-249	20-99
Utilities	1,768	1,722	1,000-2,499	1,879	1,900	1,000-2,499	1,000-2,499	1,000-2,499	1,000-2,499
Construction	1,909	1,974	2,336	2,193	2,075	1,843	1,971	1,865	1,592
Manufacturing	9,535	10,124	10,423	9,349	7,967	7,948	7,905	8,315	8,771
Wholesale trade	1,204	1,092	1,002	943	1,371	1,481	1,533	1,505	1,710
Retail trade	5,767	5,649	5,923	6,830	7,059	6,954	6,993	6,794	6,231
Transportation & warehousing	864	882	1,003	928	843	1,721	1,636	1,491	1,787
Information	363	369	396	447	458	437	388	411	398
Finance & insurance	1,328	953	895	947	912	957	964	1,007	1,040
Real estate & rental & leasing	332	344	322	401	432	441	442	438	402
Professional, scientific & technical services	630	669	736	914	928	912	1,138	1,117	1,130
Management of companies & enterprises	1,092	1,231	1,242	1,268	1,055	1,017	1,051	1,080	500-999
Admin, support, waste mgt, remediation services	1,559	1,503	1,477	1,574	1,308	1,325	1,428	1,642	1,512
Educational services	192	210	100-249	226	235	250-499	262	268	286
Health care & social assistance	3,471	4,084	4,261	4,133	4,512	4,177	4,430	4,429	4,589
Arts, entertainment & recreation	619	690	851	605	803	919	1,018	815	840
Accommodation & food services	3,377	3,434	3,640	3,885	4,020	4,083	4,165	4,104	4,225
Other services (except public administration)	2,125	2,299	2,401	2,289	2,199	2,104	2,048	2,044	2,081
Auxiliaries (exc corporate, subsidiary & regional mgt)	481	335	420	465	451	(a)	(a)	(a)	(a)
Unclassified establishments	67	36	36	12	0-19	0-19	20-99	20-99	18

source: US Census Bureau, County Business Patterns

(a) – beginning in 2002, "Auxiliaries" were tabulated in the industry of the service performed

Large Employers

Monroe County has a large and diverse group of employers with over 100 employees. Although the following table is somewhat dated, it gives a general idea of the range of large employers, which range from manufacturing and automotive related businesses, to retail, schools and hospitals, public utilities, mining interests, agricultural related businesses, and banking and finance.

Monroe County Top Employers – 2005

employer	employees
Automotive Components Holdings Inc. Total	3,144
Monroe	1,954
Milan	1,190
DTE Energy Total	1,530
Fermi II Nuclear Power Plant	1,000
Monroe Power Plant	530
Mercy Memorial Hospital System	1,246
Monroe Public Schools	1,000
Frenchtown Square Mall	909
County of Monroe	750
Bedford Public Schools	725
Plastech	720
Frenchtown I	438
Frenchtown II	282
Meijer (Frenchtown Store)	625
Guardian Industries	540
La-Z-Boy Incorporated	522
Tenneco Automotive	500
MACSTEEL	450
Airport Community Schools	450
Meijer Distribution Center	450
Detroit Auto Auction	435
Monroe Bank & Trust	401
Jefferson Public Schools	363
Monroe County ISD	355
Cabela's	350
Holcim (US) Inc.	350
TWB Company LLC	303
MTS Seating	300
Sisters, Servants of the Immaculate Heart of Mary	265
Wal-Mart	265
City of Monroe	257
Bay Corrugated	250
Ida Public Schools	205
Mason Consolidated School	200
Monroe Publishing Company	200
Cressive Die and Tool	180
Dundee Community Schools	175
Midwest Products Finishing, Inc.	175
SYGMA Network	165
Detroit Stoker	160
Metalforming Technologies	160
Horizon Outlet Stores	150
Ort Tool and Die	150
MAC Valve	150
Sunrise Windows	150
Consumers Energy (Whiting Plant)	131
Pioneer Metal Finishing	130
Four Star Greenhouse	125
KC Transportation	125
Georgia Pacific Corporation	120
Guardian Science & Technology Center	120
AutoLign Manufacturing	110
Automatic Handling	100
Dundee Castings Company	100
National Galvanizing	100

Source: Monroe County Planning Department
2005Employment Projections

SEMCOG's latest employment forecasts, developed as part of their 2035 Forecast for Southeast Michigan, show projected Monroe County employment trends through 2035. The forecasted figures are for the number of projected jobs within each community and also projected growth within major economic sectors.

Projected Employment Growth 2005-2035

Community	2005	2035	Employment Growth	Percent Change 2005-2035
Ash Twp.	2,019	2,183	164	8.1%
Bedford Twp.	6,459	7,574	1,115	17.3%
Berlin Twp.	560	1,018	458	81.8%
Carleton	521	865	344	66.0%
Dundee	2,774	3,412	638	23.0%
Dundee Twp.	697	626	-71	-10.2%
Erie Twp.	1,025	1,165	140	13.7%
Estral Beach			n/a	
Exeter Twp.	155	210	55	35.5%
Frenchtown Twp.	10,509	11,409	900	8.6%
Ida Twp.	628	779	151	24.0%
La Salle Twp.	319	457	138	43.3%
London Twp.			n/a	
Luna Pier	276	215	-61	-22.1%
Maybee	104	128	24	23.1%
Milan (Part)*	1,700	1,537	-163	-9.6%
Milan Twp.	128	189	61	47.7%
Monroe	15,455	16,220	765	4.9%
Monroe Twp.	6,867	7,754	887	12.9%
Petersburg	264	270	6	2.3%
Raisinville Twp.	392	503	111	28.3%
South Rockwood	182	364	182	100.0%
Summerfield Twp.	454	527	73	16.1%
Whiteford Twp.	1,231	1,373	142	11.5%
Total County	**52,850**	**58,975**	**6,125**	**11.6%**

*Monroe County portion of Milan only

Source: Southeast Michigan Council of Governments, 2035 Forecast for Southeast Michigan

Projected Employment Growth 2005-2035 – Growth by Major Sector

	2005	2010	2015	2020	2025	2030	2035	change	% change
Monroe County - total employment	52,850	53,479	55,635	56,937	57,600	58,162	58,975	6,125	11.6%
Natural Resources & Mining	335	273	237	239	229	222	218	-117	-34.9%
Manufacturing	9,038	8,160	7,823	7,592	7,346	7,198	7,152	-1,886	-20.9%
Wholesale Trade	1,304	1,222	1,155	1,102	1,022	947	886	-418	-32.1%
Retail Trade	7,618	7,402	7,202	7,098	6,809	6,476	6,158	-1,460	-19.2%
Transportation & Warehousing	2,250	2,317	2,429	2,519	2,568	2,633	2,703	453	20.1%
Utilities	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
Information	588	564	548	532	522	508	495	-93	-15.8%
Financial Activities	3,875	3,952	4,240	4,510	4,708	4,890	5,056	1,181	30.5%
Professional, Scientific, & Technical Services	2,441	2,460	2,495	2,553	2,570	2,608	2,636	195	8.0%
Management of Companies & Enterprises	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)
Administrative, Support, & Waste Services	3,115	3,423	3,795	4,103	4,335	4,555	4,824	1,709	54.9%
Education Services	5,046	5,241	5,325	5,274	5,304	5,301	5,359	313	6.2%
Health Care & Social Assistance	5,054	6,210	7,184	7,898	8,546	9,202	9,912	4,858	96.1%
Leisure & Hospitality	5,610	5,895	6,220	6,439	6,569	6,583	6,585	975	17.4%
Other Services	3,610	3,520	3,626	3,806	3,907	3,978	4,012	402	11.1%
Public Administration	1,594	1,667	1,667	1,626	1,616	1,588	1,569	-25	-1.6%

Source: Southeast Michigan Council of Governments, 2035 Forecast for Southeast Michigan

(c) - Confidential. At the sub-regional level, SEMCOG blocked the employment numbers for communities that did not meet minimal publishing conditions in order to keep local establishments confidential.

HOUSING

An important component of the planning process is ensuring that citizens have access to adequate shelter. This includes not only providing housing to meet the needs a growing population, but also the ability to ensure that adequate housing opportunities exist for those groups with less economic opportunities such as those with limited incomes, or the homeless. Providing housing for a growing senior citizen population in Monroe County is also a main concern. Sustainable housing, or "green" housing is becoming a much more important element in residential development as energy continues to rise in price and pollution and global warming remain major environmental concerns.

Issues:

- Continuing to provide adequate housing for a growing Monroe County population and focusing housing growth in areas where the infrastructure can support it
- The growing number of senior citizens in Monroe County who need suitable housing
- The need for mixed –income neighborhoods, and the need for housing opportunities for lower-income residents and homeless residents of Monroe County
- A current lack of sustainable, "green" housing in Monroe County

HOUSING CHARACTERISTICS IN MONROE COUNTY

HOUSING TYPE

Monroe County consists of mostly single-family homes. According to the U.S. Census, in 2007 the estimated percentage of single-family homes in the County was 76.3% (48,426 units). Multiple family units (structures containing more than two dwelling units) make up 14.1% of the housing stock (8,892 units). Mobile homes are also prevalent in Monroe County. In 2007, the U.S. Census estimated that 9.6% of the housing stock was made up of mobile homes (6,103 units).

Housing Type

	Housing Units	Percentage
Single Family Units	48,426	76.4%
Multiple Family Units	8,892	14.0%
Mobile Homes	6,103	9.6%
Total	**63,421**	**100%**

source: US Census Bureau, 2007 American Community Survey

HOUSING TENURE

Most residents of Monroe County live in units that they own themselves. The U.S. Census estimated that in 2007, 81% of Monroe County residents owned their residences. 19% of residents are renters.

Housing Tenure

	Housing Units	Percentage
Owner-occupied Units	46,434	81.0%
Renter-occupied Units	10,899	19.0%

source: US Census Bureau, 2007 American Community Survey

Home ownership has traditionally been considered an indicator of population stability. The assumption is that homeowners are more likely to be long-term residents of a community and more active in community affairs than renters since they have a real estate investment to consider and protect. While this assumption may be true to a limited extent, it may need to be reconsidered in light of the changing social and economic conditions that currently exist in this country. Many long-time residents of Monroe County have had difficulty in affording single-family houses due to the housing crisis in both Michigan and the United States in general. Furthermore, credit is becoming much more difficult to acquire for first-time homebuyers, and more residents are thus either being forced into or choosing to rent housing, despite the County's best effort to emphasize home ownership.

AGE OF THE HOUSING STOCK

The age of Monroe County's housing stock is an important factor in assessing the County's housing situation, especially in regards to housing assistance programs regarding home rehabilitation.

Year House Built

	Housing Units	Percentage
Built 2000 or later	8,568	13.5%
Built 1970 to 1999	26,072	41.1%
Built 1940 to 1969	17,624	27.8%
Built 1939 or earlier	11,157	17.6%
Total Housing Units	**63,421**	**100%**

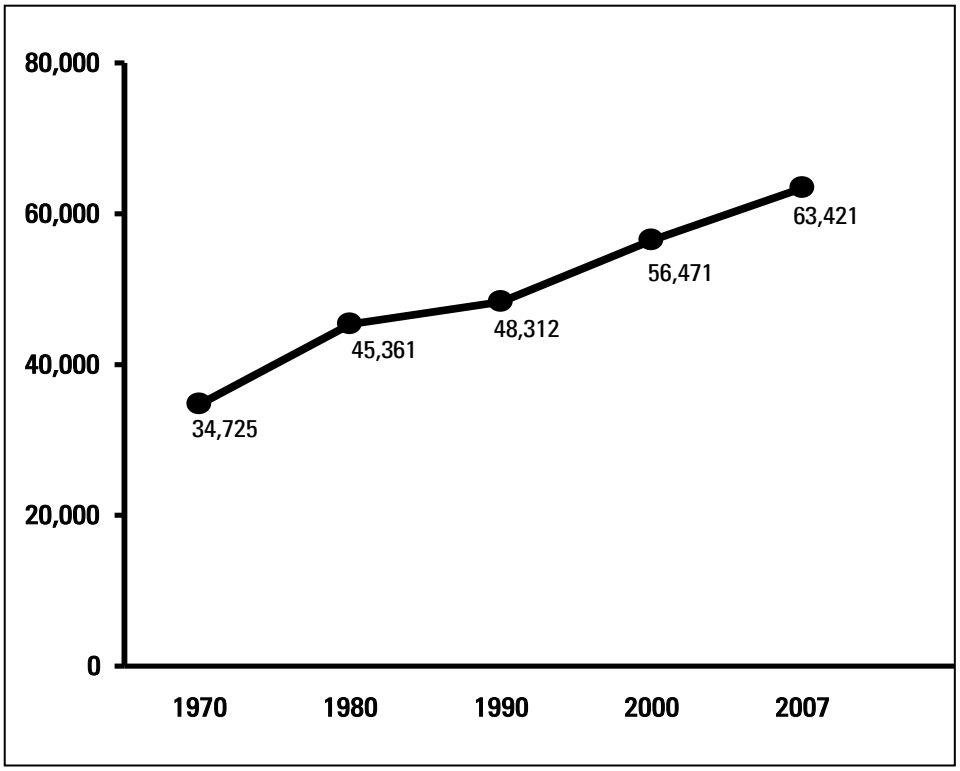
source: US Census Bureau, 2007 American Community Survey

Of the 63,421 housing structures estimated to exist in the County in 2007, 17.6% of the structures were constructed before 1940. Another 41.1% of the structures were built between 1940 and 1970. These structures possibly represent the continued need to rehabilitate housing in the County, and the necessity for the fund-

ing for those owners who cannot afford to make all of the necessary repairs to their structures. 13.5% of structures were built after the year 2000, representing a growth in residential construction in the past decade. However, construction has begun to slow down considerably due to the real estate crisis of the late 2000's.

CHANGE IN HOUSING STOCK OVER TIME

The chart below shows how the number of residential structures in the County has steadily increased since 1970, reflecting Monroe County's continued population growth. Between 1980 and 1990, the rate of housing growth substantially decreased due to a temporary lull in the economy, but new structures have picked up once again between 1990 and 2007. However, as the economy goes through another downturn, the growth in residential structures will most likely decrease once again.



Monroe County Housing Units
source: US Census Bureau

Looking at the actual number of new residential units in Monroe County from 1975 through 2007, there has been an average of 621 new residential units per year. Many new residential units were built from 1975 to 1979. Residential growth dropped off in the 1980s, only to grow again in the 1990s. In the early 2000s, resi-

dential growth was at its highest rate ever, when several years had more than 1,000 new residential units being built. However, recent years have displayed a marked decline in residential growth, a trend that is anticipated to continue for a significant period of time like in the 1980s.

New Housing Construction 1975 - 2007

Year	New Residential Units	Year	New Residential Units	Year	New Residential Units
1975	675	1986	375	1997	788
1976	512	1987	486	1998	743
1977	900	1988	432	1999	757
1978	708	1989	531	2000	1,024
1979	726	1990	670	2001	733
1980	230	1991	547	2002	905
1981	146	1992	753	2003	1,078
1982	241	1993	562	2004	1,169
1983	221	1994	767	2005	887
1984	272	1995	798	2006	586
1985	240	1996	687	2007	351

source: Monroe County Planning Department

VACANCY RATES

Vacancy rates are one of the most significant indicators of existing conditions in the local housing market. The vacancy rate is the ratio of the number of unoccupied housing units to the total housing stock.

2007 Vacancy Rate

Monroe County Homeowner Vacancy Rate	5.3%
Monroe County Renal Vacancy Rate	9.5%
Michigan Total Homeowner Vacancy Rate	3.5%
Michigan Total Rental Vacancy Rate	9.7%

source: US Census Bureau, 2007 American Community Survey

While the County rental vacancy rate is roughly equal to the Michigan rental vacancy rate, the homeowner vacancy rate is significantly worse. This rate of homeowner vacancy is undoubtedly caused by many economic factors that currently exist in the County, and should be considered a top planning priority in future years.

QUALITY OF HOUSING STOCK

Assessing the quality of Monroe County's housing stock can be a difficult task, as the characteristics of housing in the County are continually changing due to both the decay of existing housing over time, and due to the housing improvements that are constantly made on a daily basis by homeowners in the County.

Due to the absence of a recent, detailed housing survey in the County, there are three good measures that can be used to measure housing quality that are used by the U.S. Census. The first is the value of housing, or the rent paid by renters to landlords. The second is the percentage of housing units that are overcrowded, or in other words, units that have an average of more than 1.0 persons per room. Finally, the U.S. Census also measures the percentage of housing units that do not currently have complete plumbing.

Housing Quality Indicators

	Median Housing Value	Median Contract Rent	# of Units Overcrowded	% of Units Overcrowded	Number of Units Without Complete Plumbing	% of Units Without Complete Plumbing
Monroe County	$170,100	$678	411	0.7%	132	0.2%
State of Michigan	$153,100	$683	58,609	1.5%	12,105	0.3%

source: US Census Bureau, 2007 American Community Survey

The median value of housing in Monroe County in 2007 is $170,100. This compares very favorably to the State of Michigan's median value, which is $153,100. Accounting for this is not only the fact that residents of Monroe County are on average slightly wealthier than citizens elsewhere in the State, but also due to the investment that County residents put year after year into their residences. Median contract rent is on average about identical to median rent for the State.

Seven tenths of one percent (0.7%) of Monroe County residential units are considered overcrowded. Compared to 1.5% for the State, this is a favorable value. Still, it is imperative that the County addresses the causes of the overcrowding that still exists. The percentage of units without complete plumbing is very low in 2007, but this also represents an important housing issue that the County and related agencies need to address and eliminate.

MANUFACTURED HOUSING IN MONROE COUNTY

Mobile and manufactured homes have in the past played a significant part in the growth of housing in Monroe County. There are currently 29 mobile home communities in Monroe County. Twelve of these communities are in the Monroe area,

eight of them are in the northeast part of the County, six are in the south of the County, two are in the Dundee area, and there is one community in the Milan area. There are 7,407 licensed sites among these 29 communities. The following pages contain a map and list of current mobile home facilities in Monroe County as of 2008.

Although there has been a recent slowdown in the construction of new manufactured housing communities in Monroe County, this housing type remains controversial for a variety of reasons. Manufactured housing communities with their high density of residents often give the perception of producing and contributing on a large scale to the tax base of local units of government. However, a 1997 study by the Southeast Michigan Council of Governments (SEMCOG) compared the local taxation of manufactured housing communities with the taxation of other housing types. This study identified the concerns of local governments with the taxation structure of mobile home parks and the resulting impacts on our communities. The study demonstrated a comparison of the average amount of annual property tax generated into the tax base of the local community per mobile home unit ($242) to a stick built single family unit ($1,928) and an apartment unit ($453). While the park resident pays a monthly lot rent to the park owner (some consider as property tax), only a small portion of rents are eventually collected as taxes by the local government unit and school district. The deficit occurs in the property tax structure for mobile home parks on the value of the improved land, which is based on the value of the vacant land itself, along with any improvements, such as roads, utilities and amenities made by the developer. Under Michigan's current system, the mobile home unit moved to the site within the park is not taxed as real property and therefore the manufactured home resident does not pay a property tax. The manufactured home resident does pay a vehicle registration fee of $3 per month. The $3 monthly fee is distributed, with 50¢ going to the county, 50¢ to the city or township, and $2 to the state school aid fund. Act 243, P.A. 1959 created a trailer park vehicle registration that has never been adjusted to stay current with the Consumer Price Index.

Monroe County Manufactured Housing Communities
source: Monroe County Planning Department

map	Mobile Home Park	Location	Licensed Sites
1	Americana	Berlin Twp.	121
2	Bennett	Bedford Township	28
3	Carleton	Village of Carleton	228
4	Hometown Country Heritage	Village of Dundee	213
5	Dundee Meadows	Village of Dundee	80
6	Elizabeth Woods	Frenchtown Twp.	369
7	Erie	Erie Township	20
8	Flat Rock Village	Ash Township	332
9	Frenchtown Villa	Frenchtown Twp.	692
10	Hidden Creek	Erie Township	351
11	Holiday South	Monroe Twp.	143
12	Inverness	Bedford Township	518
13	Kimberly Estates	Frenchtown Twp.	387
14	Meadowbrook Estates	Monroe Twp.	453
15	Mill Race Shores	City of Milan	97
16	Monroe Gardens	Frenchtown Twp.	29
17	Newport Farms	Ash Township	513
18	North Towne Meadows	Bedford Township	384
19	Oakridge Estates	Monroe Twp.	621
20	Oakwood	Bedford Township	67
21	Pleasantville	Frenchtown Twp.	152
22	Raisin Ridge	Raisinville Twp.	319
23	Shamrock Village	Frenchtown Twp.	54
24	South Huron River	Berlin Charter Twp.	48
25	Sunny South Villa	Monroe Twp.	67
26	The Orchards	Ash Township	393
27	Tiny Village	Berlin Twp.	22
28	Willow Green	Monroe Twp.	426
29	Yorkshire Manor	Village of Carleton	280

In regard to Act 243, the Michigan legislature over the past ten (10) years has debated this issue with limited results. A move to increase the $3 per month ($36 per year) to $12 per month by 2014 for singlewide units and $14 per month by 2013 for doublewide units failed in the legislature. The Manufactured Housing Association disputes SEMCOG's figures and reasoning by citing sales tax and title fees on new/ used units when sold, the single business taxes of the developer as additional taxes paid that should have been included into SEMCOG's calculations. However, these monies go to the state, not the local unit of government. The Association cites the state's revenue sharing program as providing those additional tax monies to local units of government. However, all individuals and companies provide the state with various tax revenues, of which only a small portion is returned to the local municipality. For instance, for Monroe County in 2003, revenue sharing was approximately $2,700,000 or 6.02% of the total budget. With an estimated 57,900 households in the County, revenue sharing equated to $46 per household or $17 for each of the estimated 151,200 residents.

The taxes of each household would have to be raised proportionately, not just manufactured community households. Also, the same taxes the developer pays to the State should be looked at for housing contractors and apartment developers as well.

Under the current economical conditions throughout the country, revenue sharing cannot be looked at as a given to local government. The current budgetary situation in Michigan calls for less in revenue payments to communities until the economy and revenues to the State increase.

As well as the taxation issue, other concerns with manufactured housing have to do with impact on schools, health and safety issues, issues regarding local control over zoning approval and site design issues, and the prevalence of manufactured housing court cases which pit local government against the manufactured housing industry. There is also a concern which arises when the number of manufactured homes in a community becomes disproportionately large when compared to other communities, counties or the state. It is often a planning goal to offer residents a variety of housing options, although it is also often a goal to encourage home ownership, attractive neighborhoods, and land uses which have a positive impact on the local tax base. There is a role for manufactured housing in a well planned community, however, as with all land uses, communities need to have the authority to designate the proper allocation of land and locations for all uses for which there is a need and desire.

PUBLICLY ASSISTED HOUSING PROGRAMS

Publicly assisted housing programs largely exist in two different forms in Monroe County. The first category of programs are those that attempt to put people that

are currently either homeless or in inadequate housing into suitable long-term housing according to their needs. The second category are those that attempt to assist current homeowners or renters with housing needs, such as mortgage payments, rent, home improvements or energy payment needs.

Emergency and Transitional Shelters

Emergency and transitional shelters exist for both the homeless and for those who may be in unsuitable family situations. The homeless as a category include not only those who live on the streets, but also those who may be sleeping on a couch at a relative's house. Homeless people are not just individuals, but families with young children, and statistics exist showing a significant number of homeless children even in Monroe County.

Emergency shelters provide assistance for 90 days, although extensions are granted if a person has shown an effort in achieving long-term housing goals, or based upon other needs on a case-by-case basis. On the other hand, transitional housing provides assistance for up to two years.

The following is a list of housing shelters in Monroe County as of 2008:

Emergency Shelters

Shelter Name	Number of Family Units	Number of Family Members	Number of Beds for Individuals	Total
Philadelphia House II (men only) East Third Street, Monroe, MI	9	0	8	8
Fairview – Single Adults 3604 South Custer Rd, Monroe	0	0	36	36
Women Empowering Women – Paula's House *contact: pwhitman@monroecmha.org*	0	0	5	5

Transitional Shelters

Shelter Name	Number of Family Units	Number of Family Members	Number of Beds for Individuals	Total
Salvation Army – Family Manor 815 East First Street, Monroe,	12	35	5	40
Salvation Army – Warming Center 1018 East Second St, Monroe (Open in the winter when the temperature is 32º or below.)	N/A	N/A	Up to 30	30
Family Counseling – Sun Rise House (DV Shelter – Call 734-242-SAFE	Varies by Family Size		18	
Philadelphia House I – men only 218 Washington Street, Monroe, MI	0	0	22	22
MCOP – Hometown Inn -- Vouchers 1040 South Telegraph, Monroe	9	18	2	20
SE Veteran's Center 14 South Monroe St., Monroe	0	0	8	8

Affordable housing facilities exist in several forms in Monroe County. Some facilities are targeted towards the County's growing senior citizen population, serving either only seniors or primarily seniors. Other facilities exist for families in need of affordable housing. The Monroe Housing Commission runs some facilities, with rent restricted to 30% of the individual's income. Other facilities independent of the Housing Commission have been designated affordable housing complexes and have various rent subsidization schemes. The following are a list of affordable housing facilities in Monroe County:

Affordable Housing · Housing Commission Facilities

Housing Commission Facilities	Location	Number of Units
Bedford Housing Commission - Ivor Lindsey Senior Preference	Bedford Twp.	97
Dundee Housing Commission – Senior Preference	Village of Dundee	75
Luna Pier Housing – Lotus Manor Seniors / Disabled	City of Luna Pier	102
Monroe Housing Commission Greenwood – Family	City of Monroe	115
Monroe Housing – River Park Plaza – Senior / Handicap	City of Monroe	148
Monroe Housing Commission Individual Houses	City of Monroe	30

Affordable Housing · Independent Facilities

Housing Commission Facilities – Independent	Location	Number of Units
Canfield Crossing – Family	City of Milan	32
Carleton Apartments – Family	Village of Carleton	24
Carleton Co-Op – Elderly Only	Village of Carleton	47
Charring Square – Family	Monroe Twp.	200
Creekside Village – Senior Preference	Monroe Twp.	77
Frenchtown Place -- Elderly Only	Frenchtown Twp.	151
Greenwyke Commons 1 – Family	Monroe Twp.	116
Highland Terrace Apts. – Family	Village of Dundee	24
Mable Kehres – Senior Preference	Monroe Twp.	200
Marian Place	City of Monroe	52
Milan Village Apt. – Elderly Only	City of Milan	36
Norman Towers – Senior Preference	City of Monroe	108
Park West Club Apt. – Family	Frenchtown Twp.	160
Petersburg Apartments – Family	City of Petersburg	24
Village Green Monroe – Family	City of Monroe	190
Woodcraft Square – Senior / Family	City of Monroe	208

RENT AND MORTGAGE ASSISTANCE

Programs also exist in Monroe County for those who need assistance with rent and mortgage payments who live in conventional housing. These programs are an important tool that keeps those with limited means in suitable housing.

The following organizations are organizations that provide rent and mortgage assistance in Monroe County. Each organization has various criteria in determining who is eligible for assistance.

- Department of Human Services
- Monroe County Opportunity Program
- The Salvation Army
- The Salvation Army – Harbor Light
- Monroe Community Mental Health
- Veterans' Trust Fund

OTHER HOUSING ASSISTANCE

Monroe County Opportunity Program

Monroe County Opportunity Program (MCOP) is an organization that seeks to aid residents of Monroe County in matters of economic self-sufficiency. Regarding home ownership, MCOP has programs that are designed to foster home ownership and home maintenance in the County. The organization uses Community Development Block Grant funds administered by Monroe County in order to provide funding for home improvements. MCOP also administers the Property Improvement Program, which provides loans for home improvement, and the Rental Rehabilitation program, which provides funding for landlords to improve rental units. MCOP also has the Acquisition Development and Resale Program, which provides economic assistance to first time house buyers, and the Replacement Housing Program for homeowners whose repair costs may be too excessive for them to bear.

MCOP also aids with several other programs to help homeowners. These include:

- Energy Conservation
- Home Chore service for senior citizens
- Home Care service for those eligible
- Home Injury Control for senior citizens
- Homelessness Prevention programs

Monroe County Network on Homelessness

The Monroe County Network on Homelessness is a County group made up of various agencies and private groups with the purpose of ending homelessness in the County. In 2006, the Network worked to create the Ten-Year Plan to End Homelessness. The Plan's goals include:

- Increasing community awareness of the problem of homelessness in Monroe County
- Developing a "housing first" philosophy for providing housing and helping to move individuals towards goals of self-sufficiency
- Ensuring that all social service and health needs are met for individuals
- Ensuring educational and employment support for individuals so that they may support their families and themselves
- Ensuring that the criminal justice system addresses the needs of homeless individuals
- Helping to eliminate barriers at the federal, state and local levels so that homeless individuals may be better served

Habitat for Humanity

Habitat for Humanity is an international organization whose purpose is to raise funds, buy building materials and to provide volunteer labor to construct homes for individuals in need. Selection into the Habitat for Humanity program is based upon income and need, and individuals selected must provide at least 250 labor hours per person in the construction of their home. Monthly payments for these houses is not to exceed 30% of the individuals income, and the organization provides assistance for individuals who due to unforeseen circumstances find themselves suddenly unable to make house payments. Habitat for Humanity also provides furniture and other housing goods for a low cost for needy homeowners, as well, through donations provided by Monroe County area residents.

SUSTAINABLE HOUSING

The U.S. Green Building Council defines sustainable, or "green" housing as buildings that incorporate smart design, technology, construction and maintenance elements in order to significantly lessen their negative impact upon the environment, and to improve the health of people living inside the buildings. Green houses are increasingly being developed across the country by progressive developers, and developers have begun to develop sustainable housing in Monroe County. According to the World Business Council for Sustainable Development, the cost to construct sustainable housing is only 5% greater than constructing a conventionally built house. Yet, the benefits of these houses are greater than the costs, as green buildings are healthier for residents and have less impact upon the environment. Furthermore, these buildings use much less energy and have less of a "carbon footprint," meaning the measure of the amount of carbon dioxide emissions created by the house and by the energy it consumes. Thus, green houses have less of a negative impact upon the Earth's ozone layer.

Green neighborhoods are those neighborhoods that encourage sustainability by reducing urban sprawl, encouraging walking and bicycling, have suitable access to public transit and overall decrease the impact of human residential development upon the environment. In a "traditional" subdivision, residents are often automobile dependent due to residential developments being placed out in the country nowhere near urban destinations, being constructed without sidewalks and being constructed with various cul-de-sacs that don't allow for minimal use of the automobile and cause greater congestion on adjacent major roads. On the other hand, sustainable neighborhoods are often constructed with a grid road system rather than a cul-de-sac system in order to encourage pedestrianism and to cut down on automobile dependence, and are placed near commercial areas in order to provide for more mixed land uses.

New Urbanism is a developing movement in residential development that attempts to foster mixed-use neighborhoods with diverse land uses. New Urbanism

promotes walkable neighborhoods with traditional architectural elements, such as can be seen in old neighborhoods in urban areas of Monroe County. As energy prices continue to increase on a yearly basis, consumer demand in the County for New Urbanist residential developments may increase in future years. It is up to the County and township governments to encourage the construction of these types of developments in and near existing cities and villages as traditional subdivision developments become more impractical and costly due to rising energy and infrastructure costs.

The Leadership in Energy and Environmental Design Program, or LEED Program as it is commonly known, has been developed by the U.S. Green Building Council in order to certify green buildings in the United States. LEED buildings can either be newly constructed buildings, or they can be existing buildings that are retrofitted to be green. LEED has categories for both LEED for Homes and LEED for Neighborhood Development in order to encourage developers to develop sustainable buildings and neighborhoods. Multi-family residential buildings fall under the general LEED for New Construction category. LEED awards fall into four categories, Certified, Silver, Gold and Platinum, depending upon the amount and the quality of the green elements incorporated into the house, apartment building or neighborhood.

HOUSING RECOMMENDATIONS

- Encourage developers to develop high quality neighborhoods in Monroe County with a diversity of housing styles in order to appeal to County residents of all economic groups. These housing types should include single family, multiple family and mobile homes, and should be located in areas with suitable infrastructure
- Help to provide housing opportunities for Monroe County residents with lower incomes. These opportunities should be located in mixed income areas so that housing for lower incomes does not stand out from other County housing.
- Continue to work with the Monroe County Network on Homelessness and support housing first programs for the homeless so that homelessness can be eliminated in the County.
- Support the development of sustainable, “green” housing in Monroe County and the construction of green neighborhoods that support walking and bicycling by neighborhood residents.

TRANSPORTATION

Monroe County's transportation network is multimodal in nature and consists of roads, railroads, air, water, public transit, pedestrian and bicycle transportation. Transportation planning is a complex task which requires input, and is conducted, not only at the local and county government level, but with significant emphasis on regional, state, and national priorities. Transportation improvement projects are generally expensive and require many years of forethought and planning before they can be implemented.

A safe and effective transportation network is essential to functional communities, for everything from getting children to school, getting to and from work, and having places for exercise and enjoyment. Economic development and job creation, as well as our farm economy, depend on being able to transport raw materials and finished products, and by giving workers access to employment opportunities.

Planning Significance:

- A safe and efficient system of transportation is a necessity for a healthy economy.
- The location of highways, roads, railroads, airports, ports, and public transit has a tremendous impact on the ability to develop property for almost all land uses.
- The cost of building new roads and/or improving existing roads places strain on local authorities. Promoting appropriate development in areas served by existing and adequate transportation systems reduces this cost to the public.
- A lack of public transportation and pedestrian/bicycle facilities creates a situation where the private ownership of automobiles is practically a necessity, and creates a hardship for those who cannot afford it, those unable to drive, and those who desire to reduce their use of fossil fuels.

ROAD TRANSPORTATION

Monroe County has the distinct status of being the major gateway between the State of Michigan and the State of Ohio, connecting the economic centers of Detroit/Southeast Michigan and Northwestern Ohio. Because of its border with Ohio, the roads of Monroe County are Michigan's paths to the rest of the Eastern United States, connecting Michigan to the rest of the nation's economy.

As the county is situated on the Michigan-Ohio border, Monroe County's road network has strong transportation impacts from both the Detroit and Toledo metropolitan areas, as well as impacts from the County's own growing population. As a result of this, the County has sought both to maintain and conserve its present ex-

tensive road system. And, with the help of the Southeast Michigan Council of Governments (SEMCOG) and the Toledo Metropolitan Area Council of Governments (TMACOG), the County plans future road improvements in order to facilitate the movement of both people and goods throughout the county for the years to come.

Parts of Monroe County have been identified as Urbanized Areas by the Federal government. Three different Urbanized Areas are contained or partly contained within the County. These are the Monroe Urbanized Area, which is fully contained within the County, the Toledo Urbanized Area, with the southern portions of Bedford, Erie and Whiteford Townships contained within that Area and the Detroit Urbanized Area, with northern portions of Berlin and Ash Townships contained within that Area. All of these urbanized areas qualify for federal funding for various transportation needs, most of the time with a 20% local match required to obtain federal funding.

The first part of this section will describe the current state of the road network within Monroe County. The second part will identify how the Michigan Department of Transportation (MDOT), SEMCOG and TMACOG incorporate Monroe County into their state and regional transportation plans. These sections will be followed by a conclusion containing issues and recommendations that the County feels should be addressed in the coming years.

DESCRIPTION OF ROAD NETWORK

Major Routes

Freeways

Monroe County has three freeway facilities that traverse the County. The first is **Interstate 75**, which is a major transportation corridor that serves the entire United States on a national level. Traveling north/south, I-75 has a northern terminus at Sault Ste. Marie, Michigan and a southern terminus near Miami, Florida. At its northern terminus, I-75 connects with Trans-Canada Highway 17, which provides further transportation for people and goods into Canada. Within the Lake Erie region, I-75 provides the most important surface connection between Detroit and Toledo, making this freeway essential for both the movement of people and goods as it travels through the eastern part of Monroe County.

US-23, another north/south freeway, travels through the western portion of Monroe County and serves primarily as a bypass of the Detroit metropolitan area for people and goods. While it is a less traveled freeway than I-75, US-23 has always experienced a significant amount of traffic through the county as it crosses the County from Northwest Ohio through to Ann Arbor and then north to Flint before merging with I-75. US-23 becomes double-signed as US-223 southward from Exit 5 to the Ohio state border.

Finally, **Interstate 275** has its southern terminus in Monroe County at Exit 20 of I-75 and serves the western suburbs of the Detroit Metropolitan Area, as well as the Detroit Metropolitan Wayne County Airport. I-275 runs all the way north to the I-96/I-696 junction in Farmington Hills, and traffic on this freeway has steadily grown as Detroit has developed both residentially and commercially in the western portion of its metropolitan area.

While the I-75 corridor has presented many opportunities for development for Monroe County, the US-23 corridor has remained less developed, primarily due to the lack of public utilities. One exception to this includes the US-23 exit at Dundee, which has been developed with a 225,000 sq. ft. Cabela's megastore that attracts an estimated 6 million visitors a year. With US-23 providing a connection to the Toledo and Ann Arbor areas, with their associated universities, hospitals, and research facilities, this corridor, with its large amount of undeveloped land, presents an opportunity for attracting the types of science and technology related industries that may represent an important part of the future of Michigan's economy.

While interchanges at I-275 have remained mostly undeveloped, there are significant opportunities for development at the US-24/Telegraph Road exit, especially as traffic heading to and from suburban Detroit continues to grow.

Major State Trunklines

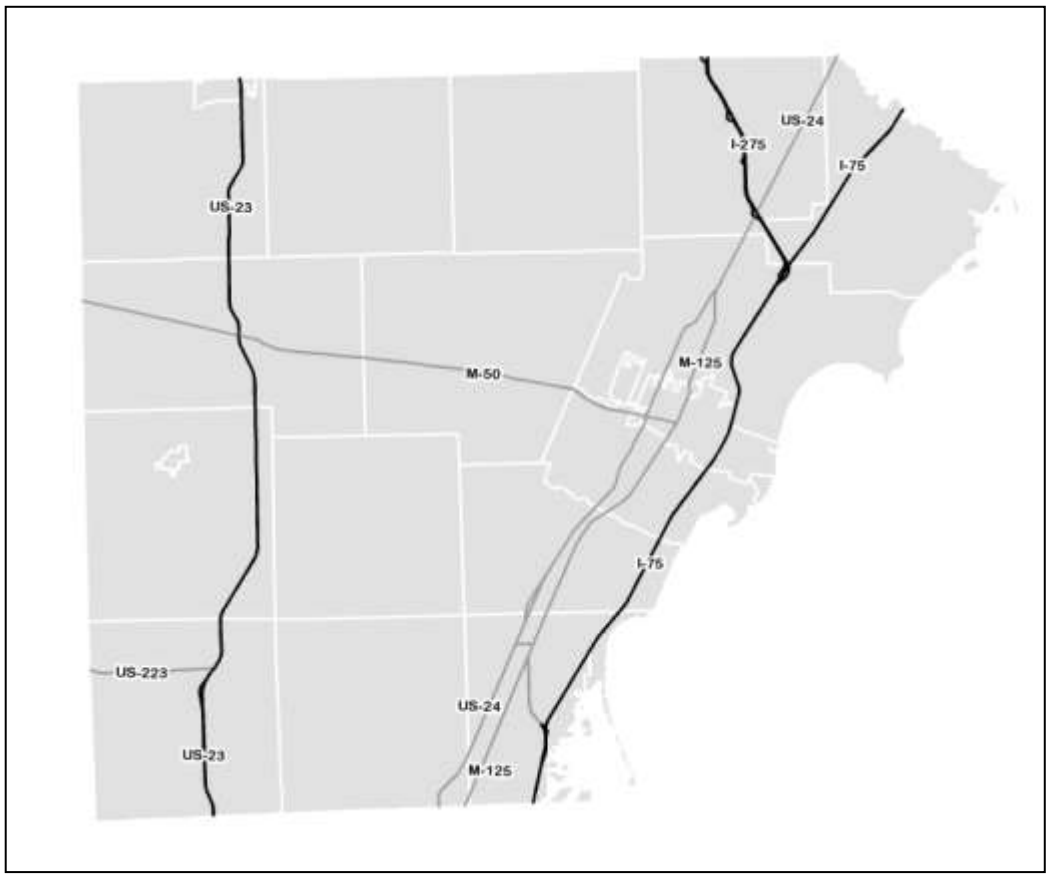
North/South

US-24 is a north-south trunkline known as Telegraph Road throughout the State of Michigan, and serves primarily as a major commercial corridor from Pontiac all the way to the Ohio State Line. Growth in areas both within and adjacent to the City of Monroe has prompted MDOT to conduct a recent access management study in order to seek solutions to relieve growing congestion problems for this trunkline. More details of the US-24 study are discussed later in this section.

M-125 is another commercial corridor that runs parallel to US-24, forking off from US-24 in Frenchtown Township and heading through downtown Monroe before eventually terminating at the Ohio State Line. M-125 was historically part of US-25 until that highway was completely decommissioned by the Federal government in 1974. The presence of both US-24 and M-125 helps to relieve the heavy congestion that might occur if only one of the two trunklines existed.

East/West

M-50 is a trunkline that travels from M-125 in Monroe west to US-23 through Dundee, and then to the County Line. After leaving the County, M-50 travels in a northeasterly direction towards Jackson and eventually ends just east of Grand Rapids at I-96. While the main function of M-50 is to provide an east-west route for county traffic traveling from the rural western part of the County to the urban eastern part, the trunkline has increased in traffic volume recently. This is due to the construction of a Cabela's west of Dundee that attracts many visitors from outside the County.



Road Network – State and Federal Highways
Source: Monroe Co. Planning Dept

In 1996, M-50 was truncated so that it ended in Monroe at M-125 rather than continuing to I-75 as it had done since 1966. The reason for this was mostly to eliminate heavy truck traffic on Monroe's historic Elm Street. Oversize or overweight trucks are now directed to travel on M-125 north to I-275 to the north, or to travel south on M-125 to the Summit Street I-75 Connector, which also serves as a connector for vehicles traveling south on US-24/Telegraph Road (via the Luna Pier

Road Connector). MDOT has expressed interest in continuing M-50 along both Dunbar Road and LaPlaisance Road south of the City of Monroe, so that it reconnects with I-75 once again. However, this does not seem feasible in the near future as issues remain with at-grade rail crossings on these roads.

US-223 is numbered as a north-south trunkline. However, the trunkline retains a roughly east-west orientation throughout most of the State. The highway runs north from the state line, concurrent with US-23, then branches off east at Exit 5 in Monroe County, heading towards the county line and the city of Adrian in Lenawee County, before finally ending at US-127. US-223 was at one time planned to become a freeway as part of the I-73 project. However, environmental concerns lead the State of Michigan to suspend planning for the project, spending money on improvements for that trunkline instead.

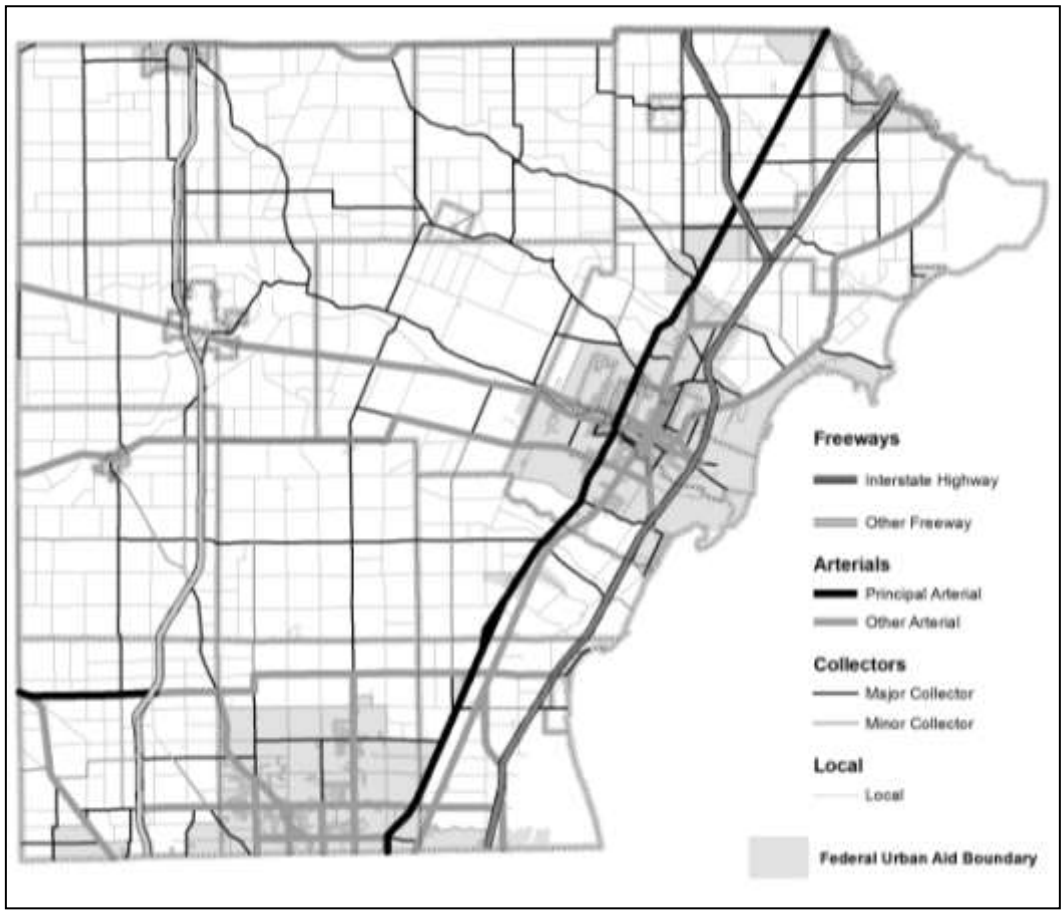
Other county roads are under the jurisdiction of the County Road Commission. The Road Commission has designated certain roads within their jurisdiction as Special Designated Highways, which are designed to handle certain freight loads, as provided under the Michigan Vehicle Code. Many other roads are designated as Class A All-Weather Roads. These roads are shown on the map below. All roads not marked are normal-loading roads with all restrictions under the Vehicle Code intact.

ROAD CLASSIFICATION SYSTEM

Transportation professionals classify every road within a road network based upon its physical characteristics and the purpose of that road. This classification is known as the National Functional Classification (NFC), and is used for planning and funding purposes within jurisdictions.

MDOT is in charge of determining the NFC of roads within Monroe County, performing this task while consulting with SEMCOG, TMACOG, the County Road Commission and Planning Commission, and other county, city and township officials. Roads are classified as Interstate Freeways, Other Freeways, Principal Arterials, Minor Arterials, Rural Major or Urban Collectors, Rural Minor Collectors and Local Roads. Government funding of these road classifications is heavily dependent upon whether each road is located in an urbanized area or a rural area.

Monroe County's functional classification was updated in early 2005. The Monroe County Planning Department made an effort to coordinate meetings between SEMCOG and TMACOG in order to determine the appropriate functional classification for each of the County's roads. I-75 and I-275 are classified as Interstate Freeways, the highest classification. US-23 is classified as "Other Freeway." Within the County, the only roads classified as Principal Arterials are US-24/Telegraph Road and US-223.



Road Network – Functional Classification
Source: Michigan Geographic Framework

TRAFFIC VOLUMES

One of the primary measures of the performance of individual roads in a road system, and how a road network interacts as a whole, is the traffic volume of each individual road within the system. Traffic counts are conducted both by MDOT on state roads, and by the Monroe County Road Commission on all county roads of at least collector status.

The highest 24-hour count recorded on the Monroe County road network, including MDOT freeways and highways, is 80,100 vehicles. This occurs just south of the junction of I-75 with I-275. Counts average around 60,000 vehicles a day on I-75 throughout the county, which emphasizes this freeway's importance in the County. The US-23 freeway, on the other hand, averages about half as much traffic with 38,000 vehicles, and I-275 averages around 22,000 daily vehicles.

US-24/Telegraph Road reaches an average daily traffic of nearly 33,000 vehicles just north of the City of Monroe, emphasizing the regional importance of this ma-

jor arterial. M-125 provides another important conduit for much of this north/south traffic, with counts of up to 28,000 vehicles within the City of Monroe. Traffic volumes on both of these north/south facilities vary depending upon through what part of the county one travels, but both are definitively the major north/south arterials for Monroe County.

M-50 carries most of the east/west traffic within the County, with counts as high as 25,000 vehicles just east of Monroe, with relatively heavy traffic continuing all the way to an area just east of the junction with US-23, where Cabela's is located. Traffic on east/west US-223 reaches 10,000 daily vehicles, as traffic exits US-23 heading towards Lenawee County.

On county facilities, high counts are recorded in the vicinity of the City of Monroe. North Dixie Highway, LaPlaisance Road, Cole Road, Dunbar Road and Nadeau Road all record high ADTs of 10,000+ vehicles. Other areas where county traffic is heavy include Smith Road and Sterns Road in Bedford Township among east/west roads, and Lewis Avenue and Secor Road among north/south roads.

TRAFFIC SAFETY

As population grows within the Monroe County area, and as more households own more automobiles now than ever before, traffic safety is an area of transportation that needs to be strongly stressed more by communities.

The following is a five-year trend of crashes in Monroe County, divided by severity of the crash:

Crash and Crash Severity – Monroe County 2003-2007

Crash Severity	2003	2004	2005	2006	2007	Percent of Crashes 2003-2007
Fatal	25	26	20	17	23	0.5%
Incapacitating Injury	116	102	107	103	146	2.6%
Other Injury	951	967	901	709	724	19.1%
Property Damage Only	3,837	3,567	3,681	3,062	3,157	77.8%
Total Crashes	4,929	4,662	4,709	3,891	4,050	100.0%

Source: Michigan Department of State Police, Criminal Justice Information Center, and SEMCOG.

SEMCOG also keeps track of accident reports by intersection throughout the southeastern Michigan region. The following ten intersections have been identified as having the most crashes in Monroe County based upon accidents in 2003-2007.

High Crash Intersections– Monroe County 2003-2007

	Total Crashes 2003-2007	Annual Average 2003-2007	Total Crashes 2007
Stewart Rd @ Telegraph Rd N	169	34	38
Custer Rd S @ Telegraph Rd S	164	33	32
Mall Rd @ Telegraph Rd N	125	25	28
Dunbar Rd W @ Telegraph Rd S	122	24	30
Dixie Hwy S @ Dunbar Rd W	121	24	22
Secor Rd @ Sterns Rd	110	22	20
Cole Rd @ Monroe St N	89	18	15
Elm Ave E @ Monroe St N	88	18	13
Front St E @ Monroe St S	74	15	5
Lorain St W @ Telegraph Rd N	69	14	14

Source: Michigan Department of State Police, Criminal Justice Information Center, and SEMCOG.

Most of these intersections are located in or near the City of Monroe, where most of the county's traffic is concentrated. However, Bedford Township also has some safety issues that need to be addressed as well.

HAZARDOUS MATERIAL TRANSPORT

Because of the high number of factories and power plants in the vicinity of Lake Erie, Monroe County's roads have a high number of trucks transporting hazardous chemicals. Accidents involving these trucks could cause a major safety hazard to residents of the County, and to those who travel on the County's roads. As a result of this, the County makes an effort to consider emergency management as part of its transportation plans. The Monroe County Emergency Management Division applies Federal Emergency Management Authority (FEMA) standards in its emergency planning work. US Department of Transportation warning placards placed on trucks aid the Division in determining the danger of a chemical spill, and help it to determine what precautionary measures need to be taken in the event of an accident.

ROAD CONDITIONS

While the Monroe County road system is extensive, many unpaved and uncertified roads also exist within the County. The following map shows which county roads are paved and unpaved. Also shown are "Class A" roads, which are those roads which have been built in accordance with certain state provisions making them exempt from seasonal load and speed limitations.

Monroe County Roads – Road Conditions
Source: Monroe County Road Commission

US 24/TELEGRAPH ROAD ACCESS MANAGEMENT STUDY

In 2004, Monroe County participated in an access management study commissioned by MDOT in regards to the US 24/Telegraph Road corridor south from Labo Road in Ash Township to Albain Road in Monroe Township. This study used principles included in MDOT's Access Management Guidebook in an effort to decrease congestion and delay along this important regional commercial corridor.

In future years, it will be important for the jurisdictions within Monroe County, in cooperation with MDOT, to implement the recommendations included within this access management plan. The study recommended several different ways this could occur. A major recommendation was the widening Telegraph Road between Stewart Road and the M-125 junction in order to relieve congestion for the northern portion of this corridor. Other recommendations included approaching existing business owners and suggesting access management measures, such as the closing of excessive driveways, the sharing of driveways with other businesses or cross access among existing commercial lots, and creating Access Management overlay

districts in which sound access management principles are applied before traffic volumes and congestion increase to an unmanageable level. Currently, the County has entered into talks with MDOT planners about the possibility of implementing some of the widening suggestions contained within this report. An access management committee has also been created that will unite planners and public officials in bringing about other changes recommended within the report.

STATE, REGIONAL AND COUNTY ROAD NETWORK PLANS

Southeast Michigan Council of Governments

Monroe County forms the southernmost county in the southeast Michigan metropolitan planning area, and the County is also a member of the Southeast Michigan Council of Governments (SEMCOG). While the County does not bear the brunt of much of the metropolitan area's traffic, regional pressures continue to grow on the road network every year. As such, SEMCOG is focusing increasing attention upon Monroe County in its transportation planning efforts.

SEMCOG adopted the current transportation plan in 2004. The 2030 Regional Transportation Plan for Southeast Michigan focuses on a long-term planning range up to the year 2030. The region's short-range transportation program is called the Transportation Improvement Program (TIP). The TIP is a list of priorities chosen by cities and transportation agencies for federal funding. The TIP projects are in keeping with the 2030 Regional Transportation Plan for Southeast Michigan.

Toledo Metropolitan Area Council of Governments

Monroe County is also a member of the Toledo Metropolitan Area Council of Governments (TMACOG), and TMACOG includes the southern townships of Bedford, Erie and Whiteford within its metropolitan planning boundary. The On the Move: 2007-2035 Transportation Plan became the region's official transportation plan on July 1, 2008.

THE FUTURE OF AUTOMOBILE TRANSPORTATION

With the cost of gasoline steadily rising, there may be trends in the future that should be anticipated when it comes to the road transportation system. Depending upon technological developments in the future, the following may become realities within Monroe County in the near future, and the possibilities of such technologies, as well as their positive impacts upon the road system, should be considered in future plans.

Future technologies that could potentially decrease the cost and environmental impacts upon the road network, while increasing use of the road network and congestion, include inexpensively produced ethanol fuel, environmentally friendly bio-diesel and hydrogen fuel cars. On the other hand, if such technologies remain undeveloped in the future, a point may be reached where the costs of obtaining

crude oil drive up gasoline prices to the point where transportation will dramatically decrease in the future.

Also, future computer networking technology may allow for even greater telecommuting than what can be done presently, decreasing the amount of commuting that consumers may need to do, as workers perform their job tasks at home.

ISSUES

- Preserving mobility on the I-75 corridor due to its regional and national importance in the face of continued growth in the County
- Retaining the traditional rural character of communities around US-23 interchanges while not ignoring suitable economic development opportunities
- Maintaining safety at Monroe County's most dangerous urban intersections while retaining the mobility of these intersections
- Preventing fatalities at dangerous turning locations on Monroe County's high-speed trunklines
- Alleviating the congested corridors and bottlenecks that occur now, and also the ones that occur in the next 25 years.
- Continuing to maintain special designated highways and all-weather roads in order to both facilitate freight transportation and to help the County in the event of emergency disaster

RECOMMENDATIONS

- To continue to monitor traffic growth on Monroe's freeways, trunklines and county roads and report any perceived congestion to MDOT or SEMCOG so funds for projects may be placed into future transportation plans
- To investigate intersections of special safety concern and determine if countermeasures need to be taken to improve safety
- To reserve funds to conduct studies of corridors or intersections of special concern within the county
- To continue to train appropriate personnel to respond to transportation accidents on Monroe County roads that involve potentially hazardous chemicals

PUBLIC TRANSPORTATION

HISTORY OF PUBLIC TRANSPORTATION IN MONROE COUNTY

Public Transportation in Monroe County has followed a pattern typical of many communities in the United States. Before the advent of the automobile and a high quality road system, rail transportation was the choice mode of transportation when traveling to other points within the region as well as for cross-country travel.

During the 19th century, passenger service was established on each of the railroads that passed through the County, with points of connection to the national rail network. Although service began to dwindle after 1920 with the advent of the automobile and the major improvements to the road system, larger railroads such as the Chesapeake and Ohio (now CSX) and the New York Central (now Norfolk Southern) continued to provide service well into the mid twentieth century, with some remnants of service continuing through the 1960s. The last passenger trains to serve Monroe County were *The Sportsman*, operated by the C&O between Detroit and Huntington, West Virginia, via Monroe, and *The Wabash Cannonball*, made famous in song, and operated by the Norfolk and Western Railway, making flag stops in Milan. All rail passenger service to Monroe County ceased when Amtrak, the National Railroad Passenger Corporation, took over most of the nation's rail services on May 1, 1971. Although daily Amtrak trains ran between Detroit and Toledo for several years beginning in 1976, none stopped in Monroe County.

The era of the interurban railroad in Monroe lasted from 1893 to 1932. One company that resulted from several mergers, the Detroit United Railway, operated a power plant and car barns near the northeast corner of Elm and Monroe Streets in Monroe. The electric-powered line ran from Detroit to Toledo with connections to other destinations, and later built a line east from Monroe to the Lake Erie shore, where it transported passengers to the Monroe Piers, a beach resort attraction. Another line, the Toledo, Ann Arbor, and Jackson, never laid tracks north of Petersburg, but for a few years beginning in 1915, operated a rickety steam train between Toledo and Petersburg. The Toledo and Western ran from Toledo to Adrian via Sylvania and Ottawa Lake from 1901 through the mid Twenties.

During the latter part of the Twentieth Century, bus companies such as Short Line and Greyhound operated busses through Monroe that offered transportation to Detroit, Toledo, Ann Arbor and beyond. The last of these lines ran during the 1990s. Today, Greyhound operates busses between Detroit and Toledo, but they do not stop in Monroe.

Today, predominant modes of transportation are the automobile and private airlines that serve the public, but Monroe County citizens seeking public transportation modes, within the region and connecting to other destinations, have several choices, which are described here.

LAKE ERIE TRANSIT

The Lake Erie Transportation Commission (LETC) was created by an interlocal agreement with City of Monroe and Frenchtown Township in 1980 under Public Act 7, as a government designated non-profit entity. It operates Lake Erie Transit, which offers a variety of bus transportation services in Monroe County using federal, state, and local funding, and fare box revenues. Its state and federal funding is administered on a pass-through basis by the Suburban Mobility Authority for Regional Transit (SMART), which also oversees major equipment acquisitions, and assures that equipment purchases comply with federal regulations. Local communities receiving services help support the program through locally passed millage issues (Bedford, Frenchtown, and the City of Monroe), or in the case of Monroe Township which has limited service, through their general fund.

Fixed Routes

LET busses travel along 8 distinct routes with stops at many of Monroe's most popular destinations. These routes cover a large part of the City, as well as some destinations in Frenchtown and Monroe Townships. Seven of the routes converge in Monroe's central business district, and four of them interchange at LET's transfer station on North Telegraph Road.

Dial-A-Ride

Dial-A-Ride services are available to residents of Frenchtown and Bedford Townships. Riders can be picked up at their homes, and be taken to any destination within the township. In Frenchtown, transfers can be requested at no extra charge, and connections made to fixed route lines where those lines enter the Township.

Essential Transportation Systems (ETS)

ETS is a door-to-door service for Senior and Handicapped Citizens the in the Monroe County area who meet one or more of the following criteria:

- Sixty years of age or older.
- Wheelchair restricted.
- Unable to go up or down a flight of stairs without assistance.
- Great difficulty walking without a cane or walker.
- Emotional impairment recognized by a state or federal agency.

Americans with Disabilities Act (ADA) Services

LET provides complimentary on call service to qualifying riders with disabilities. Persons with an ADA certified ID can call 24 hours to two weeks in advance and make a reservation and be picked up anywhere within ¾ mile of any fixed route.

PASSENGER RAIL - AMTRAK

During the 1940s the passenger train began fighting a battle against the airplane and private automobile. By the 1960s, the passenger train's heyday had passed. On all but the most prestigious lines, schedules were erratic, trains were run down, and more often than not the journey was a miserable experience.

The National Railroad Passenger Corporation, known as Amtrak, was established by an act of Congress in October, 1970 as a private company to revive inter-city rail passenger service, which had suffered from competition from the automobile and the airplane, and the decline of postal service contracts that helped subsidize the trains. The official transition took place on May 1, 1971. Amtrak's stock is entirely owned by the Federal Government, and like virtually all passenger rail services worldwide, it is dependent upon government subsidies for its operation. Several states, including Michigan, have entered into operating partnerships with Amtrak, notably California, Illinois, Oregon, Washington, North Carolina, and Oklahoma.

The nationwide network of 22,000 miles of routes serves 500 communities in 46 of the United States, with some of the routes serving communities in Canadian provinces along the United States border. In fiscal year 2004, Amtrak routes served over 25 million passengers, a company record.

In recent years, Amtrak has struggled to survive. While highways and airlines are heavily subsidized, Amtrak has no permanent funding mechanism, and its subsidy must be renewed annually by Congress. Its role should not be diminished. Amtrak serves an ongoing day-to-day need for long distance and city-to-city transportation, bringing a balance to the transportation alternatives enjoyed by Americans. At certain critical times such as 9/11/2001 when airlines were grounded, it serves as an essential stop-gap to provide long distance passenger transportation.

The recent passage of the Rail Safety Improvement Act of 2008 and the Passenger Rail Investment and Improvement Act of 2008 reauthorizes Amtrak for five years at a total of $13 billion, which is a significant increase over previous authorizations.

For a brief period in the early 1980s, Amtrak operated service through Monroe between Detroit and Toledo, but trains did not stop in Monroe. Ridership was sparse, likely due to a lack of frequency of trains and a lack of on-time reliability.

Presently, no Amtrak trains pass through Monroe County, but nearby connections can be made in Toledo to trains traveling between Chicago and the east coast, and in Ann Arbor or Dearborn for trains traveling between Pontiac, Detroit, and Chicago. Connections can be made to other trains for travel to most regions of the continental United States.

THE FUTURE OF PUBLIC TRANSPORTATION

Southeast Michigan, unlike many major metropolitan areas, lacks a strong regional public transit system, connecting the central city to a major airport and to surrounding suburban communities. An efficient system of public transportation throughout the region, including connections in Monroe County, would undoubtedly create improved employment, education, and economic development opportunities, lessen reliance on automobiles, and reduce gasoline consumption, air pollution and traffic congestion.

Ann Arbor to Metro Airport

The Southeast Michigan Council of Governments (SEMCOG) Regional Transit Plan advocates for an improved rapid transit system that would enhance the overall transportation system in the region, provide greater mobility options and improve the region's economic competitiveness. As part of its adopted 2001 Regional Transit Plan, SEMCOG has led planning efforts for the development of an Ann Arbor to Detroit regional rail service, with a connection to Detroit-Metro airport. Although Monroe County would not be directly served, it is hoped an connection to the line would eventually be made available.

WALLY: Ann Arbor to Howell Commuter Rail Line

A coalition of government officials and business leaders in Washtenaw and Livingston Counties is working to institute a 27-mile long commuter rail service between Howell and Ann Arbor. The Great Lakes Central Railroad (GLC) maintains operating rights over the State of Michigan-owned rail line connecting these communities. The WALLY (Washtenaw-Livingston Rail Line) Coalition has already completed a variety of efforts aimed at implementing the service. A potential would exist in the future for a corridor connecting Ann Arbor and Toledo on the Ann Arbor Railroad line, with a possible station at the University of Toledo campus.

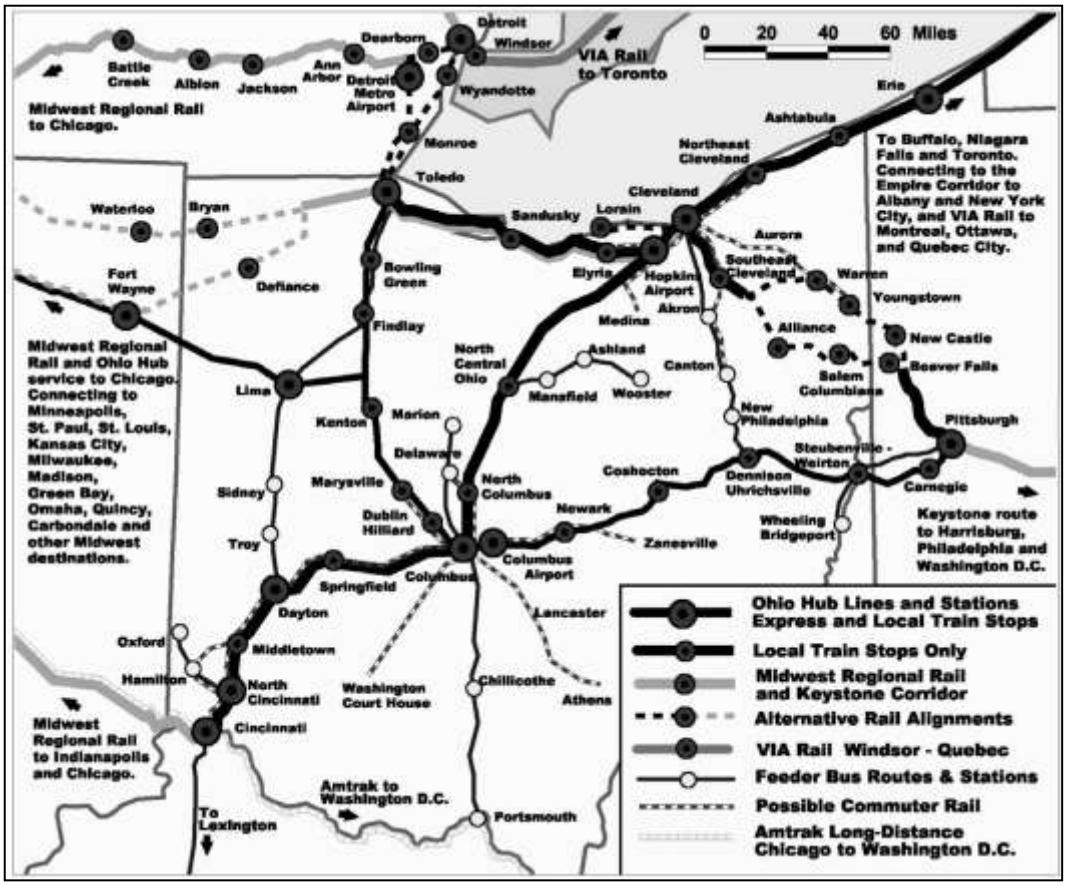
High-Speed Rail: The Cleveland Hub Study

The Ohio Rail Development Commission (ORDC) released its Ohio and Lake Erie Regional Rail Ohio Hub Study in October 2004 and updated in 2007. The study proposes a "Cleveland Hub" that would have high-speed rail lines connecting Cleveland with Buffalo and Toronto, Pittsburgh, Cincinnati, and Detroit.

Proposed Regional Rail Hub
source: The Ohio & Lake Erie Regional Rail - Ohio Hub Study (2007)

As currently envisioned, the line to Toledo and Detroit would pass through Monroe County along the CSX line, on its way to Detroit Metropolitan Airport and the city of Detroit. The Cleveland Hub would be connected to other similar systems being proposed, such as the emerging Midwest Regional Rail system and Chicago Hub systems, and the existing Northeast Corridor. ORDC is currently seeking funding alternatives. The Michigan Department of Transportation is working in conjunction with the ORDC on this project and its potential entry into southeast Michigan.

A key provision of the Ohio Hub Study is to mostly use existing freight lines, but to improve rights-of-way and add capacity to these lines in order to minimize conflicts between freight and passenger services. The plan is for a fast, efficient, and reliable transportation network that would be widely used and ultimately self-sustaining.



Proposed Regional Rail Hub – Detailed Layout
source: The Ohio & Lake Erie Regional Rail - Ohio Hub Study (2007)

Connectivity

In consideration of the Cleveland Hub Study and the proposal for a transit line between Ann Arbor and Detroit via Metro Airport, a coordinated planning effort tying the two lines together for passenger convenience would be prudent. Assuming that the Detroit-Ann Arbor line would follow the Norfolk Southern rail line or I-94 from Detroit to the airport, and then I-94 from the airport to Ann Arbor, an intermodal station linking the two lines and fed by busses for surface transit to nearby communities and the airport would be highly desirable. The station should ideally be located at a point where the two lines intersect, with adequate short term parking facilities and space for bus loading and unloading.

While the current Cleveland Hub Study has not yet addressed details such as precise station locations, an intermodal station for Monroe could be located at the site of the present LETC bus garage on Seventh Street just east of Telegraph Road, and it could be served by Lake Erie Transit busses. The LETC property is easily accessed from the City of Monroe and other nearby communities and lies directly adjacent to the CSX tracks upon which the train is proposed to run.

PRESERVATION OF RIGHTS-OF-WAY

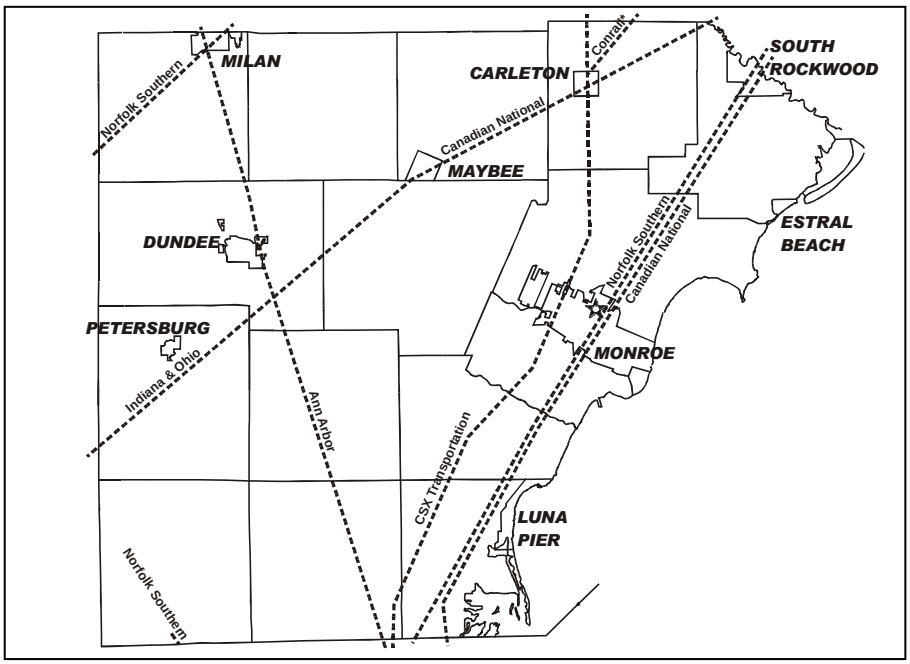
Most rights of way for transportation were established early in our nation's history when private land ownership was less pervasive. When routes are abandoned, it is tempting to sell the land piecemeal to adjacent landowners. Once this has been done, it is virtually impossible to re-establish transportation lines. Preservation of existing right-of-way is essential to future transportation needs. It can be achieved in a number of ways, including making old rights-of-way into public recreational bicycle or hiking trails. This preserves routes for possible future use with modern and future higher-technology transportation alternatives.

PUBLIC TRANSPORTATION RECOMMENDATIONS

- Local Transit: Encourage possible expansion of LET services to Dundee and Monroe Township (with local community participation) and to serve public school students as needed within participating communities. Encourage expansion of hours of service as well as service areas. Recognize the future need for public transportation as a result of the growing numbers of older residents.
- High Speed Rail: Work with those agencies that are proposing and planning for a high speed rail system that would serve our region to encourage its development. Locate an intermodal station in Monroe where CSX tracks pass adjacent to Lake Erie Transit headquarters property.
- Regional Transit Planning: Work with the Regional Transit Coordinating Council and other agencies to promote mass transit routes which would connect various locations, including Monroe, throughout southeast Michigan.
- Connectivity: Assure a convenient passenger connection between the proposed Ann Arbor-Detroit and Ohio Hub lines at Detroit Metropolitan Airport.
- Long Distance Rail: Encourage federal and state support for continuation of Amtrak's long distance and city-to-city passenger rail service, with the goal of an ongoing public funding mechanism.
- Right-of-Way: Preserve existing transportation rights of way for future uses.

RAIL TRANSPORTATION – FREIGHT

Most operating freight railroads in the United States are the product of a long history of mergers and takeovers that began as hundreds of independent rail lines were established in the early nineteenth century, later consolidating into a smaller numbers of larger companies. Today there are only 7 Class I railroads in the United States (with revenues exceeding $277.7 million), and there are two in Canada that would qualify under this criteria. Many railroads have become Class II or III due to the rising cutoff, while others have been merged or leased by others.



Rail Lines – Freight
Source: Monroe County Planning Department

According to the American Association of Railroads, freight railroads move 42 percent of all freight, measured in ton-miles, in the United States. Freight railroads excel best at hauling bulk commodities and larger finished goods, connecting businesses across the country with each other and with markets and suppliers abroad.

CURRENTLY OPERATING FREIGHT RAILROADS

Five railroads currently operate trains in Monroe County on approximately 123 miles of main line. Two of these (NS and CSX) are Class I, and one (CN) is one of the large Canadian railroads.

Ann Arbor

The Ann Arbor Railroad is a Class III rail carrier providing rail service between Ann Arbor, Michigan and Toledo, Ohio. The Ann Arbor Railroad was sold to the present owner, Ann Arbor Acquisition Corporation in October 1988. Ann Arbor interchanges traffic with three Class I railroads in Toledo, Ohio: CSX, Norfolk Southern and Canadian National Railway; with one regional railroad in Toledo, Ohio; Wheeling and Lake Erie. In addition, Ann Arbor has interchange connections with Norfolk Southern at Milan, MI, the Tuscola & Saginaw Bay Railway Co., Inc. (TSBY) and Norfolk Southern at Ann Arbor, MI, and the Indiana & Ohio Rail System (I&O) at Diann Tower in Monroe County south of Dundee. The company has offices in Howell, Michigan and Toledo, Ohio.

Canadian National

Canadian National (CN), headquartered in Montreal, Quebec is a Canadian Class I railway operated by Canadian National Railway Company. It is the largest railway in Canada, and has extensive trackage in the central United States running along the Mississippi River valley from the Great Lakes to the Gulf of Mexico.

Its line through Monroe County generally runs east of and parallel to that of Norfolk Southern between Detroit and Toledo, passing through Monroe's east side. That line was formerly part of the Detroit and Toledo Shoreline Railroad, which was acquired by Grand Trunk and Western in 1981. GTW was originally established by CN as its US subsidiary, and later it took the name of its parent company.

Another CN line runs from Detroit and Flat Rock, southwesterly through Carleton and Maybee, extending to Diann Tower south of Dundee. There, it intersects with the Ann Arbor and meets with trackage owned by the Indiana and Ohio Railroad. This portion of the line was formerly part of the Detroit, Toledo and Ironton Railroad, which was acquired by Grand Trunk and Western in 1980. The DT&I has a colorful history, having been personally owned by Henry Ford from 1920 to 1929.

CSX Transportation

CSX Transportation is a Class I railroad owned by the CSX Corporation, serving 22 states, the District of Columbia, and parts of Canada. It is one of the two Class I railroads serving much of the eastern United States, the other being the Norfolk Southern Railway. CSX has headquarters in Jacksonville, Florida and Baltimore, Maryland.

On June 23, 1997, CSX Corporation and Norfolk Southern (NS) filed a joint application with the Surface Transportation Board (STB) for authority to operate the routes and assets of Conrail, the Consolidated Rail Corporation. In mid-1998, the STB approved the CSX-Norfolk Southern application and set Aug. 22, 1998, as the effective date of its decision.

Although NS received the main Conrail line between Detroit and Toledo, some portions of Conrail were allocated as "shared assets" between the two acquiring roads. A small section of a Conrail shared assets line runs northeasterly from Maybee in Monroe County to Detroit.

The main CSX line through Monroe County has its roots in the former Chessie System, which merged with Seaboard Coast Line in 1980 and with other railroads in 1986 to become CSX Transportation. This line passes from the state line at Toledo through the west side of the City of Monroe, and then turns due north passing through Maybee and connecting with Detroit.

Norfolk Southern

The Norfolk Southern Railway Company is operated by the Norfolk Southern Corporation of Norfolk, Virginia. The railway operates approximately 21,300 route miles in 22 eastern states, the District of Columbia and Ontario, Canada. Its line through Monroe County runs between Detroit and Toledo, connecting with its main New York/Chicago line at Toledo. This portion of the line was acquired from Conrail when that railroad was allocated between NS and CSX. Previous to Conrail, it had been part of the Penn Central Railroad, and the New York Central before that. NS operates a "Conrail Shared Assets" line between Maybee and Detroit in conjunction with CSX (see third paragraph under CSX Transportation). It also has a very short spur that comes into Whiteford Township from the Ohio line. NS operates the Warner Classification Yard on the City of Monroe's north side.

Indiana and Ohio

In 1990, the Grand Trunk and Western sold former Detroit Toledo and Ironton Railroad trackage from Springfield to Washington Court House in southern Ohio to the Indiana & Ohio Railroad. The GTW continued to operate the former DT&I from Flat Rock (Through Monroe County) to Springfield until February 15, 1997, when most of it was sold to the I&O. Everything south of the Ann Arbor Jct. at Diann Tower (south of Dundee) was included in the sale. The I&O has undertaken a massive capital investment program, rebuilding the railroad.

RAIL CONSOLIDATION

The Railroad Consolidation Taskforce has been working since 1983 to find consensus and to secure funding on a plan to consolidate the multiple rail lines on the east side of the City of Monroe. Detailed technical studies were prepared by consultants DeLeuw Cather & Company in association with Barton-Aschman Associates, Inc. (1989), Envirodyne Engineers, Inc. (1993), and Consear Townsend Envirodyne Engineers, Inc. (1995-96), offering suggested alternatives for track plans and operational considerations to accomplish the goals of the plan.

The lines in question are Norfolk Southern's northbound and southbound tracks, which in some places are separated by two city blocks, and Canadian National's line that runs parallel to the NS lines, a short distance to the east of the northbound NS track. Major reasons for the project are substandard, unsafe grade crossings, blockage of street traffic by passing trains and rail yard operations, blocked access for emergency vehicles responding to certain parts of the city, division of the Orchard East community, and perhaps most importantly, safety of residents.

The line targeted for abandonment runs through a residential neighborhood on Monroe's east side, just a few yards from occupied homes and very closely parallel to Kentucky Avenue. The first phase of the project, the construction of a highway underpass beneath the tracks at the North Dixie grade crossing, was completed in 2002. In addition to eliminating an oft-congested grade crossing, the underpass

would help to clear the way for relocating the Norfolk Southern's Warner Yard, but that phase has not been implemented.

Options for relocating Warner Yard and removing the Norfolk Southern line along Kentucky Avenue were included in the original plans. Tracks would have been removed from some residential areas and several grade crossings would have been eliminated. Should a new yard be built as recommended, its operations would not interfere with traffic on adjacent streets.

In 2005, a new set of priorities was outlined by the committee. These are scaled back from the original parameters of the project, in consideration of the difficulty of finding adequate funding for all of the desired reconstruction. The original concept is compared with three new alternatives, which take varying approaches to the problems. None of the new alternatives requires the relocation of Warner Yard, the most expensive remaining part of the original plan. The first 2 alternatives would relocate some of the Kentucky Avenue track, while the last alternative would not relocate any tracks at all, but would include changes in street patterns and proposes to purchase the 10-20 homes that lie adjacent to the track along Kentucky Avenue.

In 2008, the rail consolidation efforts have been indefinitely tabled due to inadequate funding for the project.

LAPLAISANCE GRADE CROSSINGS

In view of heavy freight traffic and frequent use of LaPlaisance Road between the City of Monroe, I-75 and Bolles Harbor, grade separation for those crossings would be highly desirable. Regrettably, several roadblocks exist to implementation of such a project. First, it would not be feasible until rail traffic on the NS and the CN tracks could be segregated to a single right-of-way. Imminent accomplishment of that goal is not likely. Secondly, the cost of the grade separation itself, whether as a road underpass or overpass, is currently cost prohibitive without a massive infusion of funds from multiple sources. This remains a very long-term goal.

IMPACT OF PASSENGER TRAINS

While no regularly scheduled passenger trains presently operate within or through Monroe County, private freight railroads in other areas have shown mixed acceptance of publicly operated passenger trains for which they are legally bound to provide trackage rights on their routes. Freight routes are often strained as traffic increases, and dispatchers may give priority to freight trains, causing delays in passenger service.

If the Ohio & Lake Erie Regional Rail Ohio (high speed passenger) Hub Study (see Chapter 3 Public Transportation Section) is implemented as proposed, with passenger trains running from Toledo to Detroit Metropolitan Airport via Monroe,

frequent movements of high speed passenger trains will take place over the same rights-of-way used by freight trains. This could potentially present an undesirable hindrance to freight operations, but steps are being planned to alleviate this problem. The study points out, "The approach to planning a passenger rail service must be sensitive to the railroad's capacity and operational needs. New passenger service must not impair railroad operations, create impediments or bottlenecks, nor should it constrain future growth." The study proposes fair compensation of the railroads for right-of-way use, substantial improvements to the infrastructure systems, and an increase in capacity and safety of rail lines to accommodate the new trains with smooth operation and minimal impacts on freight service.

In January 2006, CSX and Norfolk Southern railroads, the two most prominent Class I railroads in the east and Midwest, wrote individual letters to the Ohio Rail Development Commission, which is working to develop the Ohio Hub. In the letters, they indicated that they believe that passenger trains can be run on their corridors, as long as there is no interference with their freight trains. The Ohio Hub Plan calls for reducing or eliminating many of Ohio's railroad "bottlenecks" in or near the large urban areas, and upgrading tracks, bridges and signals so both passenger and freight rail traffic can move faster and in greater numbers than is now possible.

HAZARDOUS MATERIALS

Although hazardous materials incidents from highway sources represent a far greater problem than those from freight railroads, large volumes of highly volatile substances travel through Monroe County via rail, and much of it passes through the most populous areas of the County in close proximity to residents. Derailments, accidents, and failure of chemical containment in freight cars can cause explosions, fires, and release of dangerous chemicals into the atmosphere, which may result in personal injuries and property damage. Evacuation may be called for. Local zoning measures should require setbacks of any new development from rail lines to help insulate it from these dangers.

The Monroe County Emergency Management Division applies Federal Emergency Management Authority (FEMA) standards in its emergency planning work.

QUIET ZONES

With the recent significant residential development in Monroe County, many new subdivisions, condominium projects, and apartment complexes have been built or are being planned in places that are adjacent to, or in close proximity to, active railroad tracks and street grade crossings. This is in addition to a large stock of older housing that is already near to busy railroad tracks. This is very likely to bring citizen complaints about the noise emitted by locomotives that blow their air horns as they approach crossings. In some areas, such as in Florida, where "quiet

zones" have been declared, grade crossing accidents have increased dramatically, but implementing supplemental safety measures can significantly reduce accidents. These measures can include improved warning devices, stationary automated wayside horns that direct their sound to a more limited area, more flashing signals and gates, and quad crossing gates that block all lanes of traffic, and ultimately, but most expensively, grade separations.

A new Federal Railroad Administration rule effective on June 24, 2005 provides an opportunity for localities nationwide to establish quiet zones. This rule preempted applicable state laws and related railroad operating rules requiring locomotive horns be sounded, and it also supersedes the previously issued Interim Final Rule.

The Final Rule provides for six types of quiet zones, ensures the involvement of state agencies and railroads in the quiet zone development process, gives communities credit for pre-existing safety warning devices at grade crossings and addresses other issues including pedestrian crossings within a quiet zone.

In order to qualify, communities wishing to establish quiet zones must equip proposed grade crossings with adequate safety measures to overcome the compromise in safety created by silencing the train horns. The additional safety measures must be constructed at the communities' own expense, and must meet federal specifications. The rule also contains language that for the first time restricts the volume of train horns.

RECOMMENDATIONS

- Continue to support and encourage implementation of the Monroe Rail Consolidation Plan for the City of Monroe. While funding for this project remains elusive, a full consolidation of east side rail lines, with elimination of the track along Kentucky Avenue and relocation of Warner Yard would serve the long-envisioned purposes of the project far better than the greatly scaled back "Rail Safety Plan" that has been advanced.
- Support as a long term goal the establishment of grade separation at LaPlaisance Road and the Norfolk Southern and Canadian National tracks.
- If and when passenger service either begins to serve or pass through Monroe County, seek opportunities to minimize conflicts between freight and passenger trains, including encouraging improved signalization and improvement and expansion of right-of-way capacity.
- Should there be a demand for railroad "quiet zones," local communities may be encouraged to investigate the new regulations and to seek assistance from the Michigan Department of Transportation and the Federal Railroad Administration in establishing quiet zones along with the required supplemental safety measures.

- Support the efforts of the Monroe County Emergency Management Division with regard to preparation for and mitigation of hazardous materials incidents related to railroads.

AIR TRANSPORTATON

Aviation is an essential part of the overall transportation system, and has the advantage of moving people and goods more swiftly over long distances than other modes. Public airports are regulated by the Federal Aviation Administration (FAA) and the Michigan Aeronautics Commission (MAC). They control the design, construction, and maintenance of airports, as well as the location of publicly owned international, regional, and municipal airports. Private airports and landing fields also must comply with FAA and MAC specifications, but their locations are controlled by local zoning ordinances.

Several small public and private airports are located in Monroe County, and two major airports, Detroit Metropolitan (Wayne County) and Toledo Express Airport, are located within an hour's driving time from Monroe.

MAJOR REGIONAL AIRPORTS

Detroit Metropolitan (Wayne County) Airport

Detroit Metropolitan Airport (DTW) is located in Romulus, Michigan, less than ten miles north of the Monroe-Wayne County line. It is by far the largest airport in the area, averaging 1344 aircraft operations per day, with 67% of those being commercial flights. It has 18 major commercial airlines, 7 commuter airlines, 3 charter airlines, 3 commercial airlines and 2 cargo airlines.

The Smith Terminal services most other U.S. airlines plus Air Canada, and the Berry International Terminal services British Airways, Royal Jordanian and charter airlines.

The new North Terminal is a 26-gate terminal complex designed to replace the airport's older Davey & Smith terminal complex. The new North Terminal complex is being used to accommodate the airport's other airlines that had been operating out of the aging L.C. Smith Terminal.

The Edward H. McNamara terminal opened in 2002, serving as a regional hub for Northwest Airlines. Twenty-five new gates opened in the summer of 2006, bringing the total number of gates at the McNamara Terminal to 122.

Willow Run Airport

Managed by the Wayne County Airport Authority, Willow Run Airport (YIP) is located seven miles west of Detroit Metropolitan Airport. Occupying 2,600 acres, Willow Run serves cargo, corporate, and general aviation clients. The airport offers

five runways 24-hour FAA Tower and U.S. Customs operations, to provide ease of access for its users.

Willow Run Airport has over 100,000 operations per year. Approximately 400 million pounds of cargo are transferred through the airport annually, making Willow Run the third largest airport in the state of Michigan. Willow Run's runways include ILS all-weather and crosswind runways. The airport accommodates small private planes as well as international 747 cargo jets.

"Aerotropolis"

The Aerotropolis is a concept envisioned by Wayne and Washtenaw Counties and the impacted local communities to link Detroit Metro and Willow Run airports and the connecting large areas of developable land, in order to create a global logistics hub and center for economic development and opportunity. Still in its early stages, the concept will require an unprecedented level of intergovernmental cooperation, a unified vision, and creative financing. The benefits of such a venture, however, could have a dramatic effect on the regional economy.

Toledo Express Airport

Toledo Express Airport (TOL), located in Swanton, Ohio, is about 15 miles from the Monroe County/Ohio border at US-23. The airport is the main passenger and cargo airport for the Toledo area and a secondary airport for Detroit. Passenger traffic has been in decline for several years, with only about 8 departures per day. The majority of air traffic in and out of Toledo Express is cargo.

LOCAL PUBLIC AIRPORTS

Monroe Custer Airport

The City of Monroe along with the Monroe Airport Board, established in 1968, are responsible for the operation and maintenance of Monroe Custer Airport (TTF). The fixed-base operator (FBO) is Monroe Aviation. The airport has a 5000' by 100' runway that can handle most airplanes except larger commercial airliners. Pavement maintenance is carried out under FAA standards. An updated Precise Approach Path Indicator (PAPI) runway lighting system was installed in 2002 and a new taxiway was completed in 2004. The FBO offers aircraft fuel, aircraft rental, flight training, maintenance, and charter services.

The potential of the airport's value in local economic development continues to be explored, and possible organizational changes are being considered. Traffic averages about 55 aircraft per day, and about 32 aircraft are based at the airport. The airport offers charters, fueling, maintenance, flying lessons, rental cars, and other special services. A five-year plan was completed in October 2005, calling for several improvements, including the rehabilitation of the airport's entrance road. An update of the Airport Layout Plan includes proposed acquisition of land adjacent to the airport to help buffer the runways from residential development, and an envi-

ronmental assessment for a future precision approach system for one of the runways. These projects, along with a new T-hangar and taxi street, and removal of an underground storage tank, are slated for 2009-10.

Custer Airport receives an annual entitlement from the Federal Aviation Administration's Airport Trust Fund. Each general aviation airport is entitled to receive the amount of money needed for their planned development as listed in the FAA's national plan known as the National Plan of Integrated Airport System (NPIAS). Listing in the NPIAS also makes them eligible for Airport Improvement Plan grants. The amount of this entitlement is currently limited to $150,000 per year per airport.

In 1984, Custer Airport was designated as a reliever airport for Detroit Metropolitan Airport by the Federal Aviation Administration. The purpose of reliever airports is to divert smaller airplanes from Metro Airport during times of congestion to free airspace for the larger aircraft that use that airport.

Toledo Suburban Airport

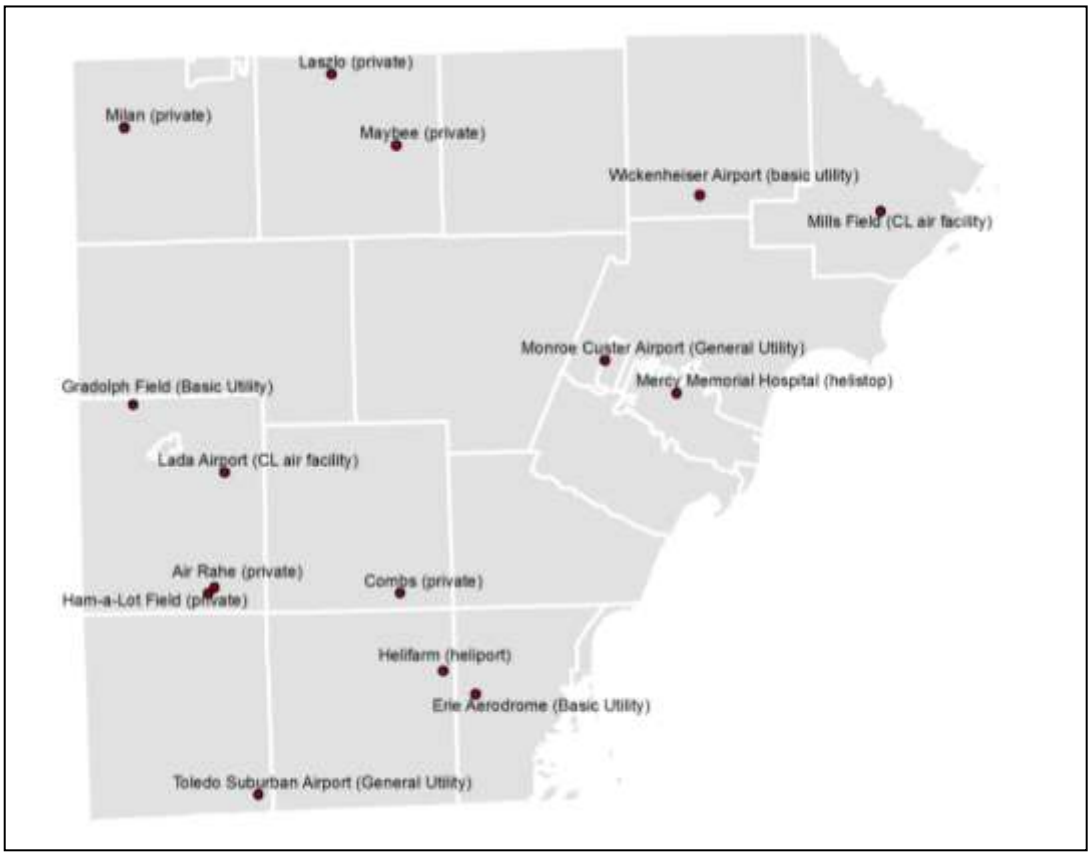
Toledo Suburban Airport in Whiteford Township, established in 1984, is a privately owned, public use airport. It has a 5,013' long 50' wide runway, with a VOR approach and medium-intensity pilot-controlled lighting. Services offered include flight training, aircraft rental, aircraft sales, maintenance, fueling, and a courtesy van. The majority of its business is focused on Toledo area customers.

Other Public Use Airports

- Erie Aerodrome, Erie
- Gradolph Field, Petersburg
- Wickenheiser Airport, Carleton

Private Airports

- Air Rahe Airport, Petersburg
- Combs, Ida
- Erie Aerodrome, Erie
- Ham-A-Lot Field, Petersburg
- Helifarm Heliport, Temperance
- Lada Airport, Petersburg
- Laszlo Airport, London Twp.
- Maybee Airport, Maybee
- Milan Airport, Milan
- Mills Field, Newport



Airports in Monroe County
Source: Monroe Co. Planning Dept. & Michigan Aeronautics Commission

Air Ambulance Facilities

Mercy-Memorial Hospital in Monroe also has a heliport landing pad for receiving air ambulance helicopters operated by other facilities, primarily in Toledo and Ann Arbor.

ISSUES

Economic Development – Monroe County's proximity to nearby major airports provides convenient connections for business and personal travelers. Monroe County's public use airports provide an important service to users of private recreational and business aviation. Monroe Custer Airport is an economic development asset to Monroe County. Business and industry often have a need for quick movement of people or goods, and a viable airport is essential to any community that hopes to attract commerce and jobs. The viability of the County's only municipal airport should be preserved and improved so that it can continue to serve the aviation needs of this area. Furthermore, Monroe County's location with easy access to major airports (Detroit Metropolitan and Toledo Express) should be promoted.

Airport Zoning – For reasons of safety and noise, local zoning ordinances should include provisions, where applicable, to prevent creation of urbanized development near to airport runways. This would apply especially to residential development, as well as other types. All zoning decisions impacted by their proximity to airports should take into account potential safety and noise issues.

Public Act 23 of 1950, or the Michigan Airport Zoning Act, was passed to protect airspace necessary for the safe flight of aircraft in landing or takeoff at an airport. The Act provides the opportunity for political subdivisions to adopt, establish, administer, and enforce airport zoning regulations limiting the height of structures and objects of natural growth, and otherwise regulating the use of property within the vicinity of publicly owned airports.

Municipalities that fall within or partially within the airport hazard area, defined by a 10-mile radius of the airport, can create a joint airport zoning board, which has the same power to adopt, administer, and enforce airport zoning regulations applicable to the hazard area. Each political subdivision may adopt, administer, and enforce zoning regulations for that part of an airport hazard area within the jurisdiction to protect public health and safety. These regulations pertain primarily to buildings, signs, construction equipment, antenna towers and even trees, all of which can pose a very real threat to aviation safety.

RECOMMENDATIONS

- Support continued maintenance and upgrading of Monroe Custer Airport for business and economic development purposes, and recreational purposes.
- Explore methods to prevent inappropriate development of residential uses in close proximity to active public airports.
- Establish an airport hazard area and a Joint Airport Zoning Board for Monroe Custer Airport.

OTHER MODES

As transportation costs continue to rise, and because of Americans' lack of physical activity, there are three transportation modes that will need to be focused upon in the future in Monroe County. These three modes are bicycling, walking and ride-sharing/carpooling.

The last section of this chapter will include a short section on taxis, rental cars and other transportation modes that exist within the County.

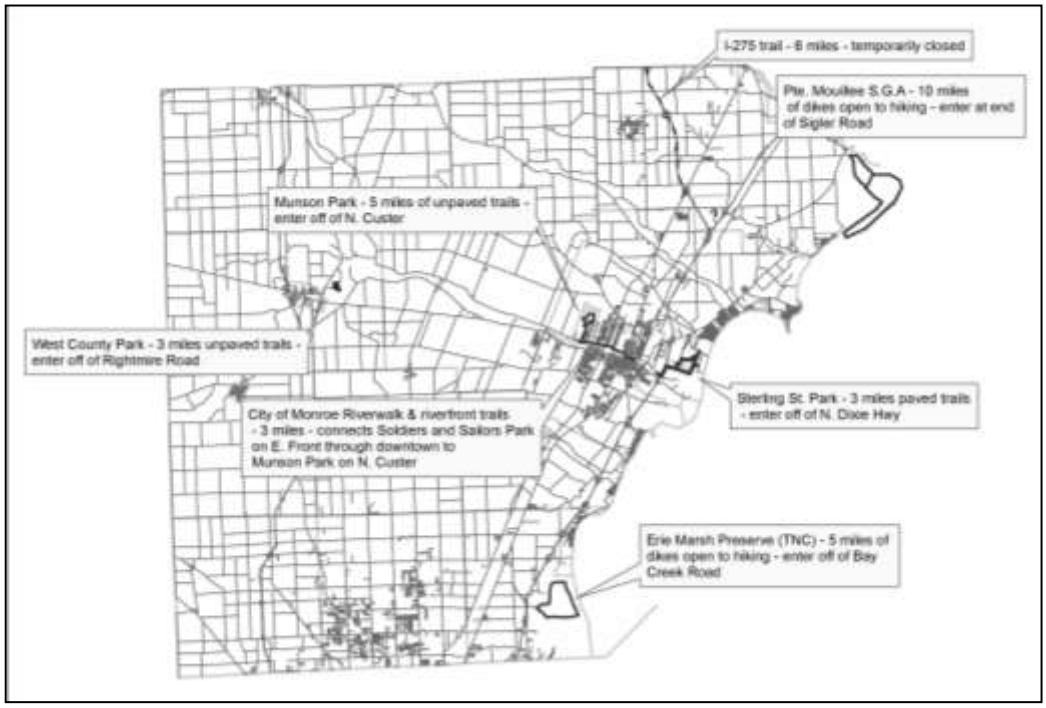
BICYCLE AND PEDESTRIAN FACILITIES

The current update of the Monroe County Recreation Plan was adopted in February of 2008. In this plan, linear parks and greenways are noted as one of the major

deficiencies within the County. There are some designated bikeways in Bedford, Monroe and Luna Pier, and the City of Monroe riverwalk provides an important bicycle/pedestrian facility for the city's largest metropolitan area. However, these facilities are a limited number and will not be enough to fully serve a rapidly growing County population. Clearly more bicycle and pedestrian facilities will be needed in the next 25 years to adequately provide for the non-motorized transportation needs of the County's growing population.

Existing Trails

The following is an inventory of trails that currently exist within Monroe County. County residents use these trails for both recreational bicycling and pedestrian activities. By increasing both the length and connectivity of these trails, the County seeks to transform these trails into a viable transportation network for those wishing to use non-motorized transportation to navigate around the region.



Major Trails in Monroe County
Source: Monroe Co. Planning Dept.

- Monroe Riverwalk – Munson Park to Soldiers and Sailors Park
- West of I-75 to Sterling State Park & Trails within Sterling State Park
- Trails on the dikes of Pte. Moulliee State Game Area and Erie Marsh

- Trails with local and county parks, including West County Park, Waterloo Park, Heck Park and Munson Park

Within 60 miles of Monroe there are a variety of recreational facilities available to County residents. The Huron-Clinton Metropolitan Authority (HCMA) operates 13 Metroparks totaling 23,630 acres. Nature trails within these facilities provide important recreational pedestrian facilities for Monroe County residents.

MONROE AREA GREENWAYS PROJECT

One of the major ways that this deficiency is currently being addressed is through a plan that the County has developed which would extend the City of Monroe's Riverwalk and pathway system to the Monroe County Community College west of the City of Monroe, and to Sterling State Park east of the City.

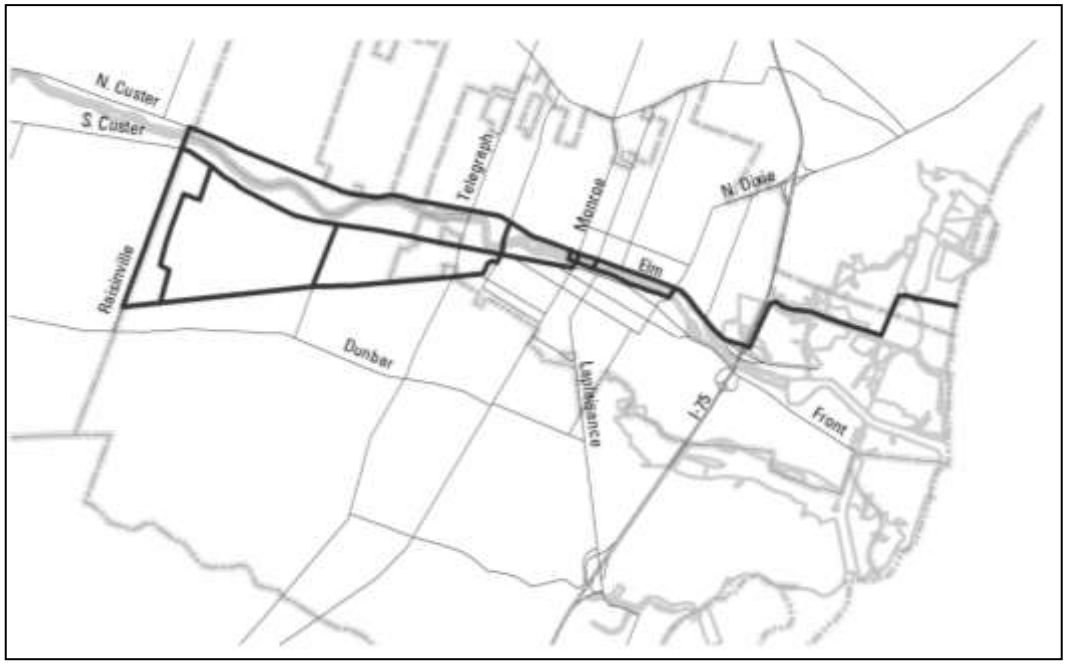
This trail would not only provide recreational biking and walking opportunities for County residents, but would also be a viable transportation facility for those living near the trail who wish to bike or walk to work or to school. The trail would provide easy access and connectivity to and from the following sites in Monroe County:

- Sterling State Park
- Ford Marsh
- City of Monroe Parks (Hellenburg Field, Soldiers and Sailors, Munson, St. Mary's, Veterans, Roessler Field)
- County of Monroe Parks (Waterloo Park)
- Historic Sites (1813 Battlefield Site and Visitor's Center, St. Antoine's Memorial Site, Anderson-Navarre Trading Post, Barker Country Store, City of Monroe Historic Districts)
- Monroe County Fairgrounds
- Monroe County Community College
- Public and Private Schools (Monroe High School, Waterloo School, Riverside School, SMCC, Meadow Montessori)
- YMCA
- Monroe Sport Center (Ice Rink, Skateboard Park)

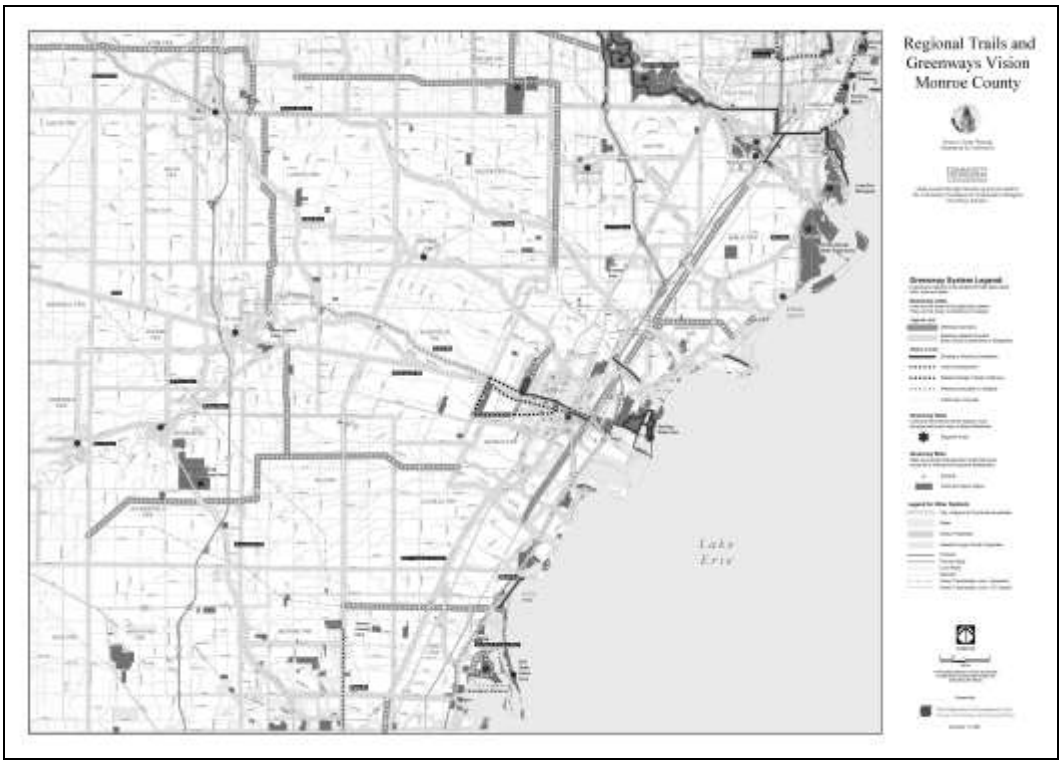
If completed, this trail would provide truly multi-modal transportation to County residents and address the concerns that have arisen about the lack of physical exercise of Americans in the 21st Century. With a county trail system that attracts bicyclists and pedestrians exercise needs on a daily basis, we can begin to address these health issues. This trail project would also address energy concerns by providing transportation without the need for non-renewable fossil fuels, and thus would cut down on the pollution caused by automobiles.

Furthermore, it is the County's hope that the extended Monroe riverwalk trail can also connect to a regional trail system that will not only spread throughout the en-

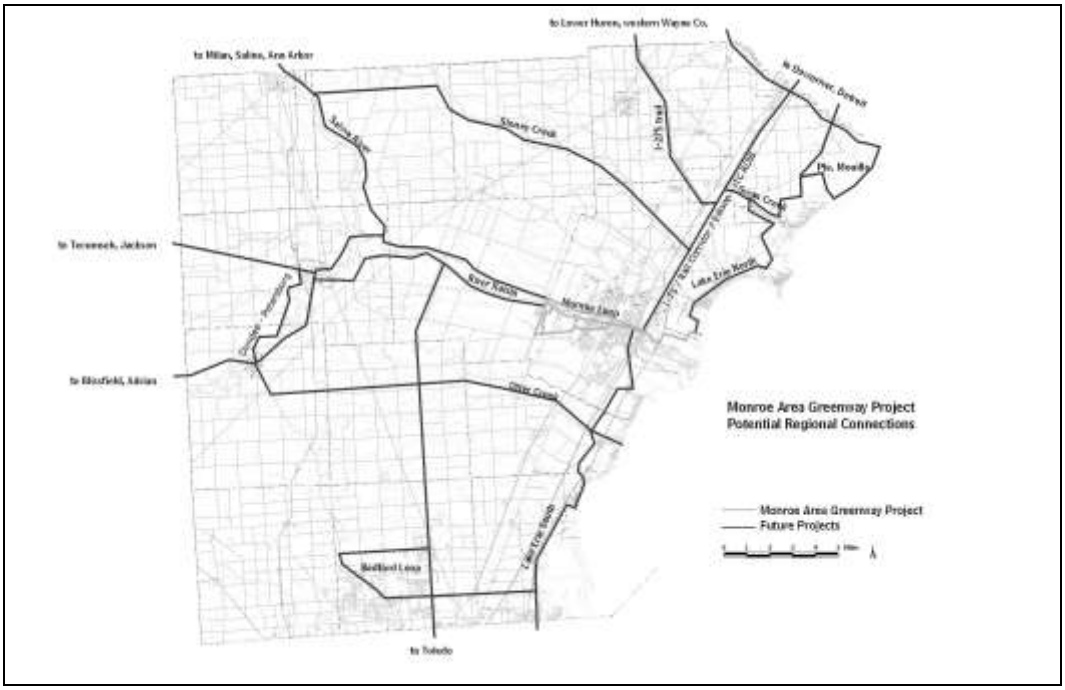
tire County, but connect the region to the Detroit, Toledo and Ann Arbor metropolitan areas. Maps of both the extended trail proposal, as well as a vision for a regional greenways system, are shown below.



Proposed Monroe Area Trail Project
Source: Monroe County Planning Department



Monroe County portion – Regional Greenways Vision
Source: Southeast Michigan GreenWays Initiative



Monroe County – Potential Regional Greenways System
Source: Monroe County Planning Department

TMACOG PEDESTRIAN FACILITIES INVENTORY

TMACOG has done a significant amount of work when it comes to identifying pedestrian needs for its region's schools, which includes the school systems within Bedford, Erie and Whiteford Townships. After completing a pilot walking to school survey in 2001, TMACOG created a survey for school pedestrian facilities for all of its regions' schools, as part of Phase II of its Pedestrian Facilities Inventory. Four Monroe County schools in the Toledo metropolitan area participated in this survey and all four reported significant barriers when it came to pedestrian facilities for their schools, whether this was due to their schools being in rural locations or due to their communities possessing inadequate sidewalk facilities. In the coming years, surveying County schools will become more important in discovering their pedestrian needs. Adequate facilities of this type would not only cut down on bussing costs for the County's school districts, but would improve the general health of the student population as well.

RIDESHARING

Ridesharing first became popular during the days of the oil embargo in the 1970s. Nowadays, ridesharing has become even more beneficial in reducing fuel costs for Americans and reducing our dependence upon foreign oil. Ridesharing also cuts down on emissions and congestion by reducing the number of vehicles on the road. As Monroe County is only covered by a limited, regional transit system, ridesharing in the County has always been important, as many residents commute to employment centers in the Detroit, Toledo and Ann Arbor metropolitan areas.

The Southeast Michigan Council of Governments (SEMCOG) and the Toledo Metropolitan Area Council of Governments (TMACOG) are the regional agencies responsible for ridesharing services. SEMCOG's involvement in ridesharing dates back to 1975. In 1978, SEMCOG began working with regional employers to assist in the development of employer-sponsored vanpool programs. Two years later, in 1980, those activities were expanded, and evolved into a full-scale employer-based ride-sharing effort which provides computer matching services for carpooling and vanpooling, as well as technical program assistance. The Michigan Department of Transportation (MDOT) currently operates three carpool lots (park and ride) in Monroe County. One in Dundee, the second in Carleton and the third just south of the City of Monroe.

Also in 1980, MDOT sponsored the introduction of a third-party ownership vanpool program, called MichiVan. The SEMCOG RideShare office became responsible for coordinating the MichiVan program in Southeast Michigan, increasing MichiVan vanpool availability to more residents of the region.

Since 1980, RideShare has helped more than 100,000 people that currently use SEMCOG's RideShare carpool and vanpool service. Furthermore, census estimates show that 200,000 total residents in the region share their ride to work. SEMCOG

publishes a newsletter quarterly to inform metropolitan area residents of news and enhancements to their rideshare program. Some of these enhancements have included the Guaranteed Ride Home, which ensures that riders who rideshare to work will be able to leave work in the case of an emergency, unscheduled overtime or unscheduled departure of the rideshare driver. Recently renamed as MiRideshare, there are over 4,100 commuters participating in the ride sharing program, an increase of 8% over the previous year.

TMACOG's involvement in ridesharing dates back to 1980. Its program is a computerized match program called Share A Ride. Share A Ride also offers a Guaranteed Ride Home program, with a free ride home offered up to four times a year. In addition, TMACOG operates several Park & Ride lots. At present, none of these lots exist within the Monroe County suburban areas of Toledo. This is something that should be pursued by the County and by TMACOG in the future, as the suburban population continues to grow in the County's southern townships.

TMACOG has also started a Pool to School program offering a carpool program for older students who drive to school. This comes in handy especially for students who attend schools that do not offer any kind of bus service in the Toledo area.

TAXIS AND RENTAL CARS

Taxi and rental car services are a mode of transportation that are often overlooked, but that play a major role in fulfilling the transportation needs of visitors to the County. Those who need transportation in an emergency and those who lack adequate transportation due to the high cost of owning a vehicle also use these services, especially in portions of the County where public transit is unavailable. With rental cars, people arrange payment for the temporary use of an automobile. Taxi service can be either called ahead of time or hailed for.

Monroe Taxi provides taxi service throughout the County. For automobile rentals, Enterprise Car Rental in Monroe and Hertz Local in Bedford Township provide services.

ISSUES

- A lack of dedicated trails within Monroe County, especially near schools
- Lack of connectivity in already existing trails within the County
- A deficiency in the number of sidewalks in suburban areas of the County

RECOMMENDATIONS

- Pursue grants in order to fund more trail projects, including developing a county-wide trail system with regional connections

- Continue to hold a countywide workshops so that the public and policymakers can come to a consensus about how to best implement a regional trail system in Monroe County.
- Survey area schools about pedestrian and bicycle transportation facilities, and document any needs they have in order to pursue "safe routes to school" programs.
- Inform the citizens of Monroe County about the Monroe Riverwalk trail and the County's intentions to improve it in order to encourage public support for a better trail system
- Pursue funding to increase the widening of roads for bicycle lanes whenever funds are available.
- Encourage local municipalities to negotiate with developers to dedicate additional right-of-way width for future walkways and bicycle paths.

PORTS AND MARINAS

Water transportation is another element that needs to be considered as part of any comprehensive plan dealing with transportation in Monroe County. This element is particularly important to the County, considering its location on the western shore of Lake Erie. Proximity to Lake Erie provides the County with easy access to the Great Lakes and St. Lawrence Seaway transportation system. Monroe County is the only county in Michigan that has a developed port facility on Lake Erie. This fact holds a great deal of potential for future economic development within the County.

PORT OF MONROE

The Port of Monroe is located on the south side of the River Raisin in the City of Monroe and encompasses approximately 600 acres in total area. The navigable portion of the Port consists of both an inner and outer channel and a turning basin. The inner channel, which connects the turning basin to the mouth of the River Raisin, is 200 feet wide and 8,200 feet long. The outer channel, which extends from the mouth of the river into Lake Erie, is 300 feet wide and 15,800 feet in length. Both channels have a depth of 21 feet. The turning basin encompasses roughly 22 acres and is 18 feet deep and 800 feet in diameter. There is 2,250 feet of frontage on the turning basin. In 2003, the Port shipped 1,088,446 total tonnage. The majority of this tonnage (914,150) consisted of coal. Another 157,914 tons consisted of liquid bulk asphalt. Both coke and petroleum coke made up the remainder of tonnage shipped.

The Port is well situated in relation to other major transportation routes and with the surrounding land uses. Highway access to the Port of Monroe is very conve-

nient. Interstate 75 is located within one-half mile of the Port and has an exit at Front Street, the surface street that serves the Port. Major improvements are scheduled for this exit in the near future, which will provide more convenient access to the Port upon completion. The Port is also served by several railroad spur tracks that connect the Port to a major railroad corridor, containing several sets of tracks, approximately one mile to the west. In addition, 328 acres are currently available for development around the Port.

Full development of the Port and surrounding land into a major industrial complex is compatible with the surrounding land uses. Three major industrial uses are currently located in the area: the ACH Glass Corporation, the Detroit Edison Monroe Power Plant and the Macsteel Corporation. The nearest residentially developed properties are located on the west side of I-75 and would not be adversely affected by the development of the Port.

Existing projects near the Port have been careful to avoid and mitigate any pollution of Lake Erie or disruption of fragile wetlands adjacent to the lake. While some short-term negative impacts may be associated with construction around the Port, measures have been undertaken to avoid any undesirable long-term consequences. Officials at the Port contracted with N.U.S. Corporation to conduct a health and safety plan that will ensure that the Port's operations continue to remain safe for County residents.

The Port of Monroe has potential to be a hub for "short sea shipping," of the movement of freight within the Great Lakes and other inland waterways as an alternative to the highway system. Recently, the United States Department of Transportation has recognized that the U.S port and Intermodal freight system is now operating at capacity in many areas. A new National Freight Action Plan being developed within the Maritime Administration has positioned short sea shipping as a transportation priority. Considering the cost to expand and repair the existing interstate highway and rail systems, this transportation mode has been identified as the most economical and environmentally beneficial solution to solve the Nation's congestion problem.

GREAT LAKES HARBORS PROGRAM

The Michigan State Waterways Commission launched its Great Lakes Harbors Program in 1947. Since that time, a series of protective harbors and public marinas has been established for the convenience and safety of boaters using the Great Lakes. The goal of the program is to locate these harbors so that no boater will ever be more than approximately 15 shoreline miles from safety.

This harbor development program has largely been funded through taxes paid on marine fuel by boaters. Additional funds have come from the Federal Government

through allocations to the Army Corps of Engineers, which carries out the construction of the harbors. Each local community adds its share to the program and then maintains and operates the facilities after they are constructed. While many communities do charge fees for upkeep or overnight accommodation, the protective harbors are themselves free, and available to all boaters along the Michigan shoreline.

Bolles Harbor in Monroe Township is the only facility in Monroe County sponsored by the Michigan State Waterways Commission and one of two on Lake Erie. The other is located in Wayne County at the Lake Erie Metropark operated by the Huron-Clinton Metropolitan Authority.

OTHER MARINAS

Monroe County possesses many other marinas that provide recreational opportunities for County residents. Many of these marina facilities are heavily used, and increase adjacent property values significantly.

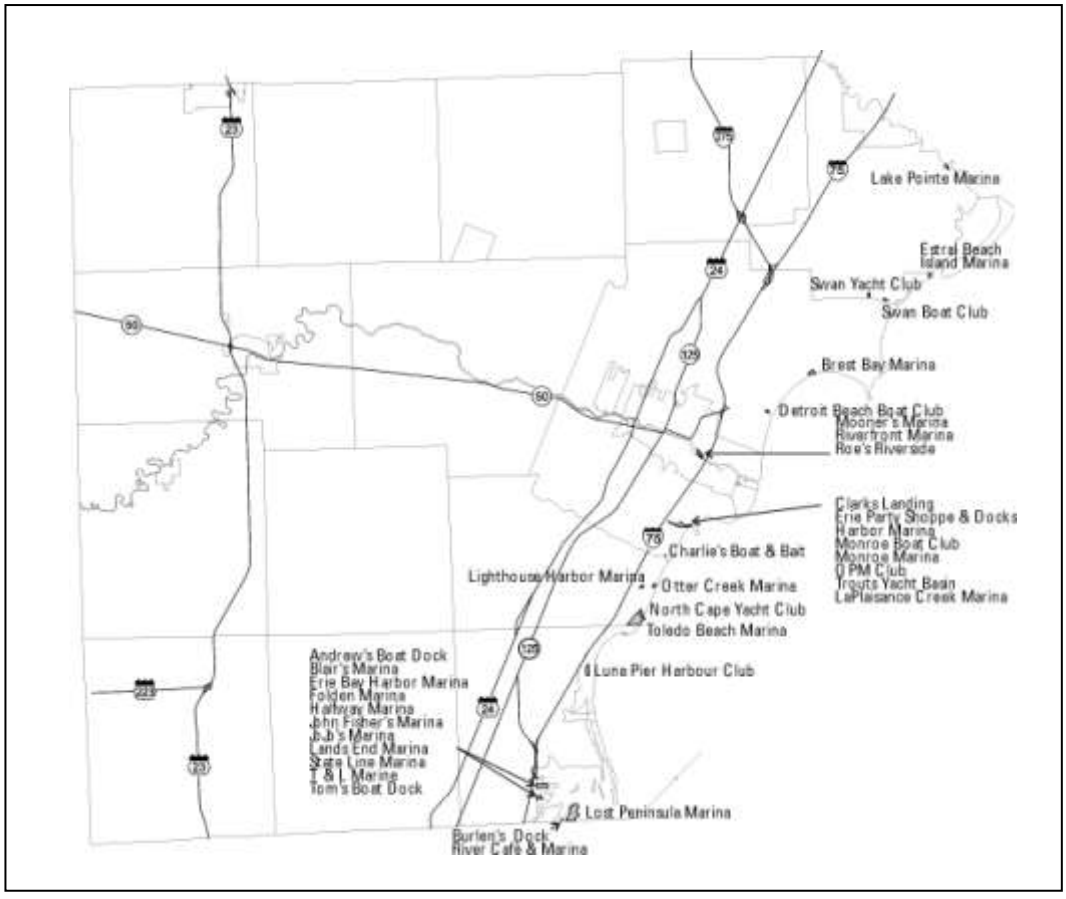
A major project under consideration is the Ottawa River dredging project on the Lost Peninsula. The Lost Peninsula is an area of Erie County north of the City of Toledo. If the Ottawa River were to be dredged, the marina could be expanded for the benefit of residents. This potential project is being held up due to an inability to acquire the necessary permits from the Michigan Department of Environmental Quality. However, the County of Monroe and Erie Township are continuing to work to make this project possible.

Below is a list of other marinas located within Monroe County, as outlined in the 2008 Monroe County Recreation Plan.

Marina	Location	Boat Slips
Lake Pointe Marina	Berlin	68
Swan Boat Club	Berlin	127
Swan Yacht Club	Berlin	29
Andrew's Boat Dock	Erie	145
Blair's Marina	Erie	80
Burlen's Dock	Erie	35
Erie Bay Harbor Marina	Erie	227
Folden Marina	Erie	22
Halfway Marina	Erie	39
John Fisher's Marina	Erie	32
JoJo's Marina	Erie	57
Lands End Marina	Erie	32
Lost Peninsula Marina	Erie	300
River Café & Marina	Erie	6
State Line Marina	Erie	141
T & L Marine	Erie	10
Tom's Boat Dock	Erie	39
Estral Beach Isl. Marina	Estral Beach	69
Brest Bay Marina	Frenchtown	358
Detroit Beach Boat Club	Frenchtown	94
Lighthouse Harbor	LaSalle	177
North Cape Yacht Club	LaSalle	150
Otter Creek Marina	LaSalle	75
Toledo Beach Marina	LaSalle	555
Luna Pier Harbour Club	Luna Pier	392
Roe's Riverside Bait & Tackle	Monroe City	14

Marina	Location	Boat Slips
Riverfront Marina	Monroe City	155
Mooner's Marina	Monroe City	34
Charlie's Boat & Bait	Monroe Twp.	50
Clarks Landing	Monroe Twp.	24
Erie Party Shoppe & Docks	Monroe Twp.	70
Harbor Marine	Monroe Twp.	20
Monroe Boat Club	Monroe Twp.	88
Monroe Marina	Monroe Twp.	42

Marina	Location	Boat Slips
OPM Club	Monroe Twp.	28
Trout's Yacht Basin	Monroe Twp.	94
LaPlaisance Ck. Marina	Monroe Twp.	68



Monroe County Marinas
source: Monroe County Planning Department

ISSUES

- The ability to acquire funding to improve the Port of Monroe in order to make it a hub for the County's economic growth
- Improving marinas and recreational opportunities for boaters on Lake Erie

RECOMMENDATIONS

- Continue to pursue economic development funding for the Port of Monroe in order to improve the Port
- Pursue plans to augment development opportunities around marinas, including acquiring the necessary approval to improve the Ottawa River within the County's borders

PUBLIC UTILITIES

One of the most important components of any general development plan is the consideration of public utility systems, principally sanitary sewers and public water. A community's decision to provide public utilities will always have significant, long-term consequences. Land development patterns, environmental quality and municipal finances, particularly long-term debt, are all impacted by the development, operation and maintenance of public utility distribution and treatment systems.

The purpose of this section of the County Plan is to conduct a thorough analysis of existing and proposed wastewater disposal and water supply systems. This analysis will provide the basis for subsequent recommendations regarding the need to expand existing facilities, or to develop new systems based upon projected population levels and land use considerations.

An important premise of this component of the plan is that existing public investments in municipal utility systems should be maximized before additional infrastructure is developed. Future growth should first be encouraged in those communities that can accommodate expansion based largely upon the capacities of the existing public utility systems. This approach to the utility planning process has two important advantages: 1) it provides for the more efficient use of public funds and 2) it discourages random, leap-frog development patterns which may eventually require the premature extension of public utilities.

This report is divided into three major sections. The first section deals with sanitary sewer systems, the second focuses on public water supply systems, and the third section discusses energy utilities. The water and sewer sections provide an inventory of existing public utility systems in Monroe County, and suggest recommended improvements that may be necessary to accommodate future growth. Electricity and gas utilities are discussed in the final section of the report.

WASTEWATER TREATMENT

Two basic types of wastewater treatment alternatives are available in Monroe County: 1) community-wide sewage collection and treatment systems; and 2) privately owned and operated, on-site sewage treatment systems. Municipally owned and operated systems are provided in the more urbanized and densely settled portions of Monroe County, including all or large portions of the following communities: The City of Monroe, Frenchtown Charter Township, Monroe Charter Township, the City of Milan, Dundee Village, the City of Petersburg, Bedford Township, the City of Luna Pier, Berlin Township, Estral Beach Village, Ash Township, Carleton Village, South Rockwood Village, Maybee Village and the unincorporated

town of Ida. The remaining communities in Monroe County are served mostly by private, on-site wastewater disposal systems.

MUNICIPAL SYSTEMS

In community-wide systems, sewage or wastewater is collected from individual buildings by a network of sewers that include the building/house sewer connection, lateral or street sewers, branch or trunk sewers and finally, main or interceptor sewers. Sewer lines are normally constructed to allow for the natural flow of wastewater by the force of gravity. Pump stations and force mains are utilized when the topography does not permit gravity flow. Sewers transport wastes to a treatment plant where they are discharged, treated and ultimately deposited back into the natural system. Sewage is organic in nature and therefore may be processed by decomposition using the oxygen present in the carrying water.

In large urban areas, sewage treatment facilities are generally very complex because of the properties of the sewage that must be treated. Industrial operations compound the complexity of the treatment process by adding non-organic substances to the system. Such substances often include grease, oils, chemicals and other non-organic and often toxic materials. Industries are often required to process and neutralize their own industrial wastes before they enter the public collection and treatment system. The liquids can then be discharged back into rivers or streams via outfall sewers when the required degree of purity has been obtained.

Solids remaining after the treatment process are first obtained in the form of sludge, the disposal of which presents the most difficult problem in the complete treatment process. Sludge has considerable bulk due to its high water content. Decomposition of the sludge by bacteria is accompanied by the production of gases, some of which are combustible and may be used for plant lighting or treatment purposes. Digested and dried sludge may be disposed of in landfills or it may be used as a fertilizer if possessing suitable qualities. Sludge can also be incinerated before or after drying and the residue used for landfill purposes.

Three methods of treating sewage are commonly utilized today. These three methods are described on the following page.

- Primary Treatment – Primary treatment refers to the removal of between 30 and 35 percent of organic pollutants and up to one-half of the suspended solids. Generally, the processes involved include a screening process for removal of heavy solids, a skimming process, which removes floating solids, and a settling period to remove heavier suspended materials.
- Secondary Treatment – Secondary treatment removes between 80 and 90 percent of the organic materials and over 80 percent of the suspended solids. It generally requires a multi-step process involving a biological process and

one or more processes for the settling of suspended solids. Biological processes include activated sludge, stabilization ponds and trickling filters. The objective of all the steps in the secondary treatment process is to increase the amount of both organic and suspended matter that is removed.

- Tertiary Treatment – Tertiary or advanced treatment adds additional steps to primary and secondary treatment in order to provide additional removal of standard organic pollutant or to remove one or more specific organic compounds or inorganic ions from the stream. Common pollutants removed are phosphate and nitrate. The actual process chosen depends upon the ions or organic compounds to be removed. Nowadays, such treatment often involves membrane bioreactor filters.

A variation of the large-scale sewage treatment plant is the lagoon wastewater treatment system. In a lagoon system, wastewater is collected from individual sites and transmitted through a sewer system to an open lagoon. The wastewater is then processed in the lagoon through bacterial action and the liquid effluent is eliminated either through evaporation or percolation into the subsoil. Lagoons should be located in remote areas that are sufficiently isolated from existing development so that the odors that accompany the evaporation and percolation of the processed effluent do not contaminate either the surrounding land or the water supply of the community.

Lagoon systems in Michigan must be designated and operated according to standards adopted by the Water Resources Commission of the Michigan Department of Natural Resources. Lagoon systems are prohibited from discharging effluent from lagoons onto the surface of the ground or into any body of water. In Monroe County, lagoon treatment systems are allowed to discharge treated effluent into the existing stream system. Such systems are often considered as temporary solutions until such time as a connection to a larger municipal treatment system becomes possible. Two such systems are currently in operation in Monroe County: the Village of Maybee and the Ida lagoons.

ON-SITE TREATMENT SYSTEMS

Alternative methods of wastewater treatment are needed for those areas that are not served by centralized collection and treatment facilities. The three most common types of treatment systems used in rural areas consist of septic tanks, cesspools and package treatment plants.

Individual on-site sewage disposal systems are generally only acceptable when soil conditions, water table levels, slopes, and depth of bedrock within a given area are such that the effluent, meaning the liquid from the system, can percolate into the soil without contaminating the groundwater or without surfacing. The Monroe County Environmental Health Division, working under the requirements of the

County's Sanitary Code, has the authority to issue or deny applications to construct on-site sewage disposal systems.

Another constraint that is somewhat unique to Monroe County is its Karst topography. Karst sinkholes are created when the carbonic acid in underground water interacts with soluble limestone underground, creating an underground "hole." Placing septic tanks in karst topographical areas will result in contamination of the groundwater as these sinkholes allow for sewage and other pollutants to quickly reach the water table.

Several areas of the County have known karst topography, including a central area of Monroe County near the conjunction of Dundee, Ida and Raisinville Townships, and in some of the marsh areas on the shore of Erie Township. However, most of the County's sinkholes are in northern Whiteford Township. As a result of this, the County Health Department has instituted a "well-first" policy for this part of the Township. Although this policy is aimed at assuring safe water supply, the implication is that areas which are affected by groundwater problems are likely to also be areas which are not well suited for on-site waste disposal.

On-site waste water disposal systems are generally comprised of two major components: the septic tank and the drainage field. A concrete or steel septic tank receives waste from the home and allows for a period of settling, during which time, a significant portion of the suspended particulate matter settles out. The solids accumulate at the bottom of the tank and are gradually decomposed by bacteria. The drainage field is usually composed of lengths of clay pipe placed at shallow depth. The pipe is spaced or perforated to allow the sewage to flow into the soil, where microorganisms and absorption complete the purification of the waste. A well-designed and well-constructed septic system is an ecologically sound treatment device; it returns purified water to the aquifer and recycles nutrients to the soil. Moreover, relatively little maintenance is required; only periodic inspection and occasional (about once every two to three years) pumping-out of partially decomposed sludge from the tank.

The review of on-site disposal systems in Monroe County is particularly important in light of the County's overall soil characteristics. Large portions of the County are characterized by soils that are not suitable for the installation of on-site sewage systems. Poor percolation, flooding, ponding and wetness are among the typical problems that frequently cause existing systems to fail.

INVENTORY OF EXISTING WASTEWATER TREATMENT SYSTEMS

The following table lists the existing wastewater systems in Monroe County and provides details on plant capacity, daily flows, and level of treatment.

Characteristics of Existing Municipal Wastewater Treatment Systems

Service Area	Plant Capacity	Daily Flows	Level of Treatment
Monroe Urban Area	25 MGD	13-14 MGD	Secondary
Bedford Township	6 MGD	3 MGD	Tertiary
Dundee Village	4 MGD	.8 MGD	Secondary
Milan City	1.85 MGD	1.2 MGD	Tertiary
Carleton/Ash	.75 MGD	.25-.30 MGD	Secondary
Berlin Township	1.8 MGD	0.4 MGD	Secondary
South Rockwood Village	12 MGD	7 MGD	Secondary
Petersburg City	0.5 MGD	0.08 MGD	Secondary
Luna Pier City	0.7 MGD	0.2 MGD	Secondary
Maybee Village	0.18 MGD	0.03 MGD	Lagoon
Ida	1 MGD	0.18 MGD	Lagoon
Erie Township/Toledo	102 MGD	Amt from Erie Twp. Unknown	Secondary
Whiteford Township/Sylvania	15 MGD	0.22 MGD from Whiteford Twp.	Secondary

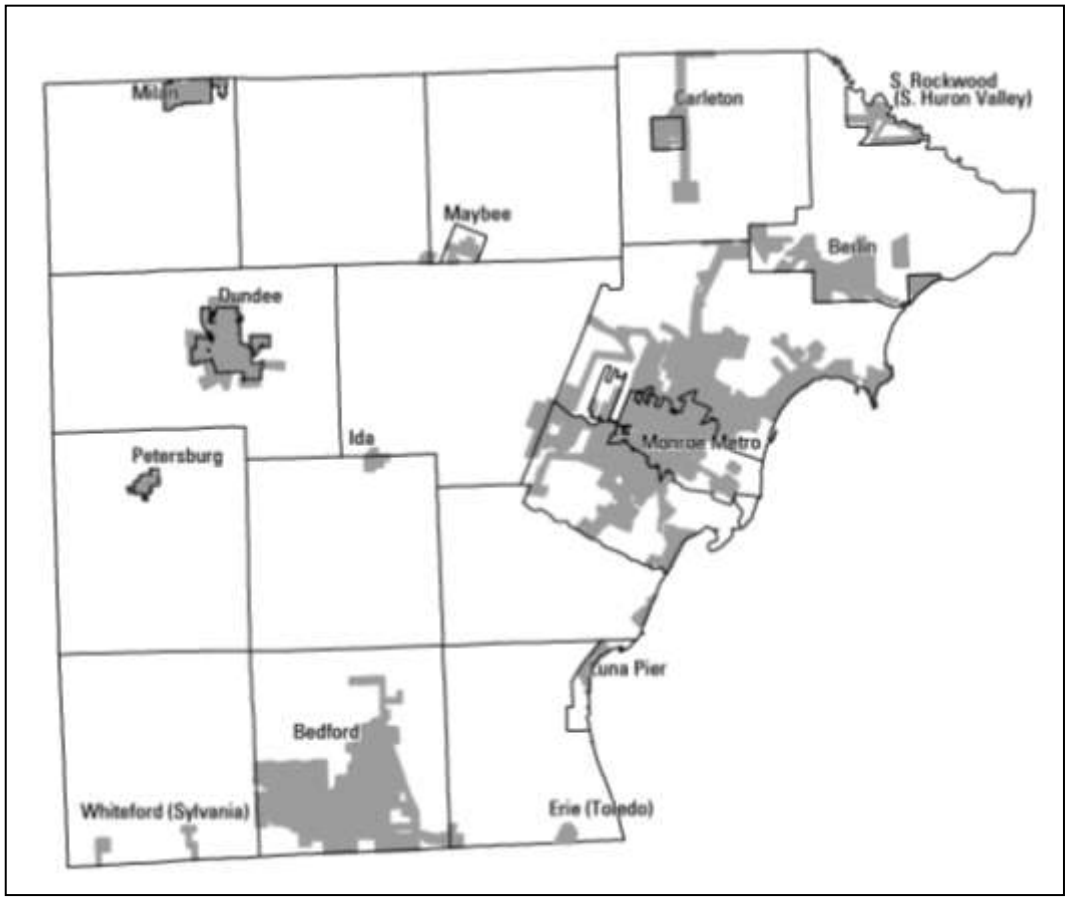
MGD - Million gallons per day

Source: Monroe County Planning Department & SEMCOG

Monroe Urbanized Area

The single largest wastewater collection and treatment system in Monroe County is located in the Monroe urbanized area, and serves the entire City of Monroe and large portions of Monroe Charter Township and Frenchtown Charter Township. A small portion of Raisinville Township is also served by this treatment system. The Raisinville portion is confined primarily to those single-family residential units located along South Raisinville Road and M-50. In the past, Raisinville Township purchased 994 sewer taps from Monroe Township to accommodate any future development in the eastern part of that township.

The sewer system transports more than 4.9 billion gallons of wastewater a year to the treatment facility for processing. More than 200 miles of sanitary sewer lines and 32 remote pumping stations provide service to approximately 17,000 residential and industrial customers in four communities. Each year, the Department builds more pump stations because of a greater need to serve new subdivisions that are being built throughout the service area. The plant has an overall design capacity of 25 million gallons a day (MGD). Average daily flows are approximately 13 to 14 MGD.



Monroe County Sewer Service Areas
Source: Monroe County Planning Department & SEMCOG

The facility uses both primary and secondary treatment of wastewater. During primary treatment, sand, grit and solids are separated from the wastewater. Bar screens, grinding units, grit removal tanks primary settling tanks and skimming devices remove roughly 50 percent of the incoming pollutants. The secondary treatment process utilizes a system commonly referred to as activated sludge, in which large quantities of compressed air are used to thoroughly mix wastewater and microorganisms, causing the microorganisms to rapidly reproduce. These microorganisms will then consume much of the waste materials, converting them to substances such as carbon dioxide and water through cellular respiration. The remaining byproduct is a concentrated sludge.

During the process of cleaning wastewater, the facility removes 10 dry tons of sludge from the community's wastewater every day. The sludge is stabilized with lime to kill any harmful bacteria and is then disposed of in landfills. The microorganisms stabilize the waste material and produce an acceptable effluent. After aeration, the solution of waste and organisms flows to the final stage where the

sludge is removed for processing. The final effluent is treated with chlorine to kill potentially harmful microorganisms. The residual chlorine is then treated with a new ultraviolet disinfection system, added in 2004. Such cleaning is required by the Michigan DEQ, and was performed in the past chemically by adding sodium bisulfate to the treated effluent.

On October 8, 1999, the United States Environmental Protection Agency published the Phase II Storm Water Regulations for control of polluted discharges through separate municipal storm sewer systems. At that time, the Monroe area was not included in the list of Michigan municipalities subject to these permitting requirements. However, as of 2000, the Monroe Urban Area now fits the criteria established for inclusion into the Phase II Storm Water Program. In light of the new storm sewer regulations, the facility recently conducted a flow study that will help update the computer model in order to determine areas of immediate concern where the rehabilitation or replacement of sewers is needed. This is especially of concern as the City of Monroe operates an older sewer system that has problems with inflow and infiltration during storms. During major storms, flows in excess of 50 million gallons per day have been recorded. Due to space restrictions for the current plant, possible solutions to this problem include constructing a temporary detention facility for excess wastewater, or to identify and eliminate major sources of storm water infiltration.

New areas added to the sewer system since the last county plan include neighborhoods off of Telegraph Road in Frenchtown Township, as well as new neighborhoods on North Stony Creek Road, Nadeau Road and North Dixie Highway. In the eastern part of Frenchtown Township, neighborhoods around the airport are also growing, including areas off of Bates Lake Road and Ruff Drive. In Monroe Township, newer expansions include subdivisions off of Albain and Dunbar Roads, as well as extending service south along US-24 and M-125 all the way to the township line. Avalon Beach is also a growing area of the township and has received sewer service expansions recently.

In 2006, the City began the creation of a plan that will highlight a 10-year timeframe for other future improvements to the wastewater plant.

Bedford

The Bedford Township plant is the second largest wastewater collection and treatment system in the County. The plant has an average daily flow of 3 MGD, and a maximum treatment capacity of approximately 6 MGD. The peak daily flow of the plant is around 4.5 MGD. However, the plant has seen peak flows over 10 MGD during storms, and sometimes reaches its maximum hydraulic capacity of 13.2 MGD. At this point, any additional effluent is untreated.

The sewage treatment plant is located in the southeast corner of the township, with most of the sewer service serving areas of the Township south of Temper-

ance Road. However, service extends north along the major thoroughfare of Lewis Avenue north to Samaria Road. The plant provides primary, secondary and tertiary treatment of the sewage

Bedford Township is continuing to grow at a fairly rapid rate due to Toledo-related suburban development. Due to the population growth, as well as the aforementioned excessive storm water flows, expansion of the current treatment facility is being recommended. A recent study suggested replacing pumps and digester equipment, as well as adding an additional grit tank and improvements to sludge treatment system. Furthermore, it is recommended that the plant expand to a capacity where it can handle a 9 MGD daily flow, and a 16 MGD maximum flow.

A new sewer sludge de-watering facility for the plant is now in the planning stages. This facility would reduce the need for storage space for sludge by 90% and will meet new state regulations for handling sewer sludge. An extension of the sewer system into Erie Township is also planned for a proposed industrial park that would be partly in Bedford Township and partly in Erie Township.

Dundee

The Village of Dundee is served by a sanitary sewer collection and treatment system that was initially constructed between 1948 and 1958. This sewer system provides service for the village itself and is generally not available to areas outside of the village boundaries.

The system provides secondary treatment through a membrane bioreactor system (MBR). The MBR provides an additional "membrane" that filters out even more pathogens than the conventional activated sludge method. This system was updated recently in June 2005. The capacity of the plant is 4 MGD. However, the average flow through the plant is only .8 MGD. All suspended solids are removed during primary treatment. After secondary treatment with the MBR, the treated effluent is discharged into the River Raisin.

Future plans for the system include providing sewer service for the Helle Property Development at US-23, M-50 and Brewer Road. This would provide service for approximately 150 acres of commercial and industrial uses. Also proposed is sanitary sewer along Hatter Road. This expanded service would provide sewers for a future industrial park. As population in Dundee Township is predicted to grow to the northeast of the village, other local roads that are candidates for sewer service include Rogers, Lafler, Covell and Stowell Roads. A sanitary forced main and pumping station, consisting of three 35-foot pumping stations to serve the area west of Dundee may also be constructed west of Wilcox Road. This system would use force mains that parallel the river interceptor sewer for 1.9 miles, and would provide sewer for a sizeable area west of US-23.

Milan

The City of Milan owns and operates its own municipal wastewater and collection system that serves the area inside the city limits, including the portion of the City within Monroe County. The wastewater plant also serves areas of the township which are contained within an Act 425 intergovernmental agreements. The plant serves approximately 5,000 persons, and there are about 17.7 miles of sanitary sewer lines with over 300 manholes in the City of Milan. The plant had a design capacity of 1.85 MGD, and work was completed to expand to 2.5 MGD in 2007. The ultimate peak capacity is estimated to be around 5.4 MGD. Currently, the plant averages a 1.2 MGD daily flow. There are 7 lift stations in the system that collect and deliver wastewater to the wastewater treatment plant. The plant provides tertiary treatment, with most of the effluent cleaned through a rotating biocontactor treatment system. Effluent from the plant is discharged into the Saline River.

In future years, the City may have to extend its service along Ann Arbor Road in Milan Township as residential developments along that road becomes more numerous. However, it is the City's policy not to extend service unless land is transferred with an Act 425 conditional land transfer agreement.

Village of Carleton

The Village of Carleton operates a wastewater collection and treatment system that serves nearly the entire village plus a portion of Ash Township. The Ash Township portion includes sewer lines along Grafton Road from Sigler Road north to the Wayne County line, and along Will-Carleton Road between Grafton and Romine Roads. The village uses secondary treatment with an activated sludge oxidation ditch, which was built in 1999. Design capacity for the plant is .475 MGD, with a peak capacity of .750 MGD. However, the plant averages .25 to .3 MGD a day. Effluent is discharged into Swan Creek.

There are no immediate plans for expansion of the plant, however room exists for expansion if needed, according to the Village. Recent projects have included extending sewer service to some of the new subdivisions in Ash Township.

Berlin

The Berlin Wastewater Plant consists of 2,100 taps. Since the 1985 County Plan, Berlin plant has undergone a major expansion, doubling its capacity to treat sewage. The plant now has a 1.8 MGD max capacity, with a .4 MGD average daily flow. Sewage is treated by secondary treatment. Sewer service is centered on Swan Creek Road east from Ash Township line to Dixie Highway. Sewer branches also exist on Trombley and Niedermeier Roads. Estral Beach and Newport are also covered by sewer service.

As Berlin Township continues to grow in future years, other expansions to the plant may become necessary. At the moment, however, the Township is planning

to concentrate its developments in the south portion of the Township, including sites near the unincorporated village of Newport, as well as along Brandon Road east of Interstate 75. Developing in these areas will minimize wastewater infrastructure costs. Development along N. Dixie Highway and Carleton Rockwood Road is also a possibility in the distant future, though, as the Township continues to grow.

South Rockwood

The Village of South Rockwood is served by the South Huron Valley Wastewater Treatment System in Wayne County, and its sewage is treated at a plant in Brownstown Township. Sewer service is provided to most areas of the Village. The plant is extensive, with a 12 MGD capacity and an average daily flow of 7 MGD. Wastewater is treated through a biological secondary treatment system. Existing service is confined primarily to the more densely populated portions of the village located along South Huron Village Drive and Carleton Rockwood Road, along with urban portions of Sylvania Drive and Dixie Highway. Areas of the village not served include existing homes along Haggerman and Ready Road.

Petersburg

The City of Petersburg plant serves the entire city plus the Summerfield High School complex located immediately outside the city in Summerfield Township. The plant has 476 taps. Maximum capacity is .5 MGD, with an average daily flow of .08 MGD avg. The plant currently provides secondary levels of treatment. There are currently no plans to significantly increase sewer service in the Petersburg area, as new development near this village is minimal.

Luna Pier

The other main south county community with existing wastewater treatment facilities is the City of Luna Pier. The developed portion of the City is served by sanitary sewer lines. The plant also serves the Toledo Beach and North Shores areas in neighboring LaSalle Township. The capacity of the existing plant is .7 MGD with a .2 MGD average flow and provides secondary treatment to sewage with removal levels between 81 to 85 percent of sediment. In 1987 a Southeastern Monroe County Facilities Plan Addendum for the Lakeshore Area of LaSalle Twp was approved, which included the areas of North Shores and Grandview Beach Subdivisions along with the North Cape Yacht Club. An expansion of the Luna Pier WWTP was designed and approved in 1988 at a projected initial cost of $1,026,000 and in January of 1991 the expansion was completed. The Luna Pier plant currently has 785 taps.

Maybee

A small wastewater collection and treatment system is located in the Village of Maybee. This system was constructed in 1972 and serves nearly the entire village

area. The treatment system consists of three lagoons with a capacity of 0.18 MGD and average flows of 0.03 MGD.

This system also serves the Collingwood Estates subdivision in London Township. The extension of Maybee's system to homes in Collingwood Estates was a response to the repeated failures of existing on-site sewage disposal systems in this subdivision. Connection of this subdivision to the system includes gravity flow sewers, a force main and a pump station. There is capacity available for additional service as the village slowly grows in future years. However, there are no plans to extend service outside of the village to new developments as was done in the case of Collingwood Estates.

Ida

The other lagoon system within Monroe County is operated by the Monroe County Drain Commission. The Ida Township system serves an area around the unincorporated village of Ida, in both Ida and Raisinville Townships. This plant averages sewage flows of .18 MGD a day, and has a total capacity of 1 MGD. There remains plenty of capacity available for the Township lagoons, but it is unlikely to be used in the near future as Ida is a slow-growing area. The Township may have to spend money soon to rehabilitate the lagoons, however.

Toledo

The City of Toledo currently provides very limited sewer service to Erie Township in Monroe County. This service to Erie Township consists of the Lost Peninsula, an area that is contiguous with Ohio and not the State of Michigan, but that still has substantial single-family residential development. The Township also has an agreement with the City to provide sewer service to the neighborhood south of Lotus Drive, adjacent to Toledo. Representatives of the plant were unable to provide an accurate figure of how many gallons of sewage flow from Michigan properties on a daily basis. However, the plant treats a maximum of 102 MGD with secondary treatment.

It is anticipated that a new mixed-use residential marina development will increase the amount of service that the City of Toledo wastewater facility provides for Monroe County. The future TMACOG planning area for the Toledo wastewater facility extends from all areas of Erie Township south of Smith Road, between Lake Erie and Dixie Highway/M-125, so it is quite possible that agreements will be reached to extend service to these areas in the near future.

Lucas County/Sylvania

The City of Sylvania has sold sewer taps to two separate developments in Whiteford Township. One is the Dana Technical Research Park on Yankee Road and the other is the Midwest Products Finishing plant on Section Road. The plant treats an average of .22 million gallons a day from Whiteford Township through a secondary treatment system that has a total capacity of 15 MGD. It is anticipated that

Sylvania officials will continue to sell taps to any commercial or industrial developments in the southern part of the township in future years, as it has additional capacity to its plant that it wishes to use. However, residential developments will likely continue to use private sewage treatment systems, as population growth for future years in Whiteford Township is likely to remain minimal.

SEWER RECOMMENDATIONS

The extension of sanitary sewers to unserved areas or the expansion of existing treatment facilities to accommodate additional development is an important consideration of any comprehensive development plan for two reasons: 1) the availability of sanitary sewer lines influences future development patterns; and 2) the cost of providing sanitary sewers impacts government finances and tax levels. Considering the importance of sanitary sewers to local communities, the purpose of the following narrative is to discuss those criteria that should be present to justify either the development or expansion of sanitary sewers. This narrative will also identify those areas of the County where the development or expansion of sanitary sewer lines may be appropriate.

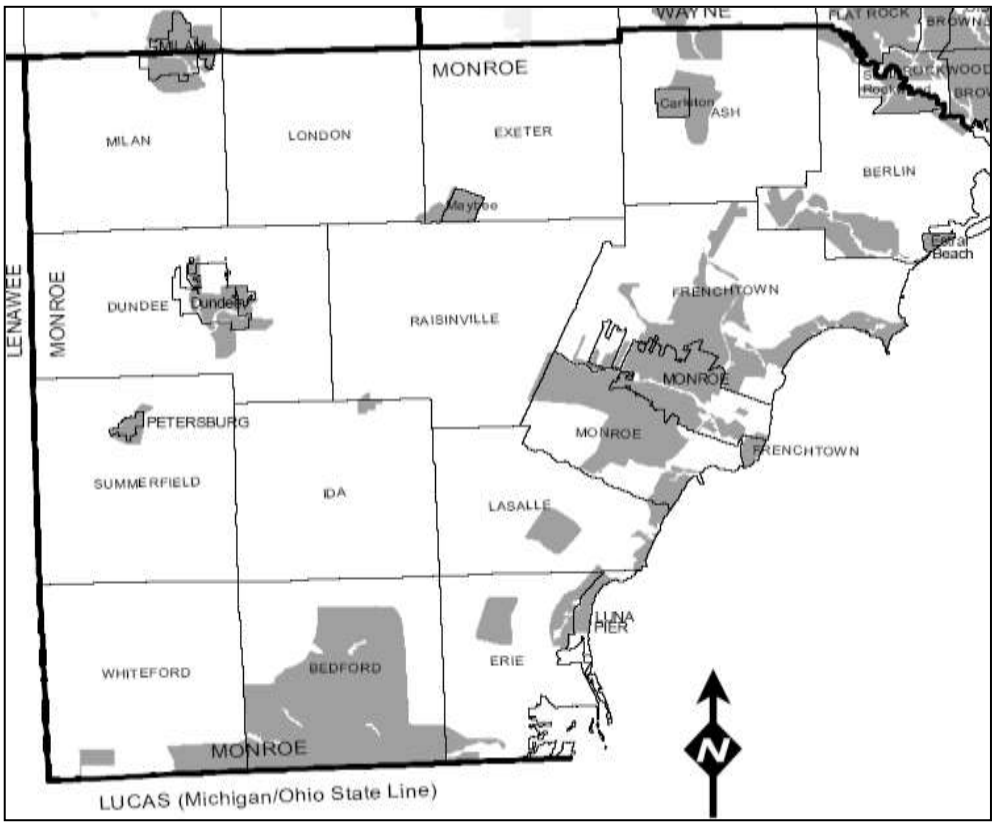
Sanitary sewers should not be provided on an arbitrary basis. Specific conditions should be present to justify the development or expansion of wastewater treatment services. Appropriate densities, public health problems or increased economic development activities represent the more obvious reasons that may be used to justify a need for sanitary sewers.

Density is an important criterion to prevent sewers from being arbitrarily extended to an area that is characterized by scattered residential development. At some point, a community will likely reach a size where the development of public wastewater disposal systems is more efficient and more appropriate environmentally than the continued use of on-site disposal systems. Providing sanitary sewers to areas that are spread out is both inefficient and expensive.

Public health problems often represent a compelling reason to provide wastewater treatment services to a specific area. Continued reliance upon individual disposal systems for densely populated communities or in areas that are characterized by poor soil conditions often creates public health problems that may necessitate the eventual extension or development of sanitary sewer lines.

A final reason often used to justify the expansion of sanitary sewer lines is to provide the infrastructure necessary to accommodate increased economic development activity. Sanitary sewers represent one of the necessary prerequisites for industrial and commercial development. As such, the extension of sanitary sewer lines and/or the development of increased treatment plant capacity may represent important components of a community-wide economic development program.

The previous comprehensive plan for Monroe County anticipated less growth than what is occurring in the County today. In 1985, when the previous plan was written, the total number of residential units a year was only around 250 units. Since 1985, residential growth has increased year-by-year at a mostly constant rate. This increase peaked in the years 2003 and 2004, in which the County averaged approximately 1,125 new units for these years alone. Most of this growth is focused in Ash and Berlin Townships due to their proximity to the downriver Detroit area, as well as in Bedford Township due to its location near Toledo. The Village of Dundee and Dundee Township are also growing as well. Last but not least, the Monroe urban area has also been experiencing steady growth.



Areas Eligible for State and Federal Sanitary Sewer Funding
Source: SEMCOG. 1999. Water Quality Management Plan for Southeast Michigan.

Despite the high capacity of wastewater plants in these regions, extension of sewer service will be likely in the next 20 years due to increasing development pressures. Because of this, the most important recommendation that underlies this analysis is to encourage development in concentrated urban patterns and not to promote urban sprawl. Existing infrastructure must be utilized before municipalities spend money on the unnecessary extension of public utilities that may only serve to encourage sprawl. This type of "smart growth" development pattern not

only makes sense from an economic point of view with respect to investment in public infrastructure, but works in tandem with concepts such as farmland and open space preservation, conservation of natural resources, and the ability of communities to provides services such as fire and police protection.

Finally, in order to receive state and federal funding assistance, it is necessary for sewer service expansions to be consistent with Section 208 of the Federal Clean Water Act and with the regional Water Quality Management Plan, last updated in 1999 by SEMCOG, the designated regional agency for water quality planning.

Monroe Urbanized Area

Minimal expansion of the existing sewer service area is anticipated for the Monroe urbanized area over the next twenty years. This is because most of the major roads in the urban area already have sewer lines. Most importantly, both the Telegraph Road and M-125 (Monroe Street and South Dixie Highway) corridors, where much of the residential and commercial development for the next twenty years is expected to be, are completely sewered. Other major roads with existing sewer lines that have not been fully developed are Nadeau, Stewart and Blue Bush Roads in Frenchtown Township. Before extending sewer service, development should be concentrated in these areas first.

Despite the available room for growth, several possible extensions of sewer service are likely in the future. In Frenchtown Township, both North and South Stony Creek Roads are likely to see new neighborhoods in the near future. New development along both sides of North Dixie Highway north to Enrico Fermi Road is also likely. Even further off, development may also occur off of Buhl Road as growth extends further north along US-24.

Areas in Monroe Township that will most likely see expansion in the future include Hull and Mortar Creek Roads. Single-family developments along Albain Road west of Telegraph may eventually necessitate a sewer extension as well. Although most of this part of the Township is designated agricultural, it may not always be so as developers seek to invest in this still rural area. Future industrial development of the property between Waters Edge Drive and Dunbar Drive east of I-75, if it occurs, would also require additional sewer service.

A second limitation on the expansion of the existing service area is the capacity of the City of Monroe's wastewater treatment plant. While there appears to be a considerable amount of unused capacity at this facility, this is only the case during dry weather. Wet weather flows through the plant create a situation where there is no longer a significant amount of unused treatment capacity.

In spite of this problem, it is reasonable to expect some limited expansion of the existing sewer service area over the time frame of this plan. In most cases, the an-

ticipated expansions are intended to fill in gaps in the existing system or represent short extensions to include small residential enclaves that are immediately adjacent to the existing service area.

Southern Monroe County

Expansion of the existing sewer service in southern Monroe County is dependent to a large extent on the capabilities of the existing wastewater treatment facilities located in Bedford Township and the City of Luna Pier. The previous plan suggested that expansion of the Bedford Township sewer service might include expansion into neighboring communities in Erie and Whiteford Townships. This expansion has not occurred yet, and is not likely to occur into Whiteford Township. However, expansion of Bedford sewer service into Erie Township is still a strong possibility, with expansion centered around Sterns Road from Telegraph Road east to Summit Street. Future extension may also include portions of Erie Township along the Telegraph Road and S. Dixie Highway corridors.

Within Bedford Township itself, the Township is attempting to concentrate any additional growth as close to public sewer utilities as possible. Sewers may extend north up Secor and Douglas Roads as far as Temperance Road in the near future, but other sewer additions in the Township are unlikely.

Another factor limiting expansion of the sewer service area is Bedford Township's existing treatment plant, which often exceeds capacity due to infiltration and inflow into the existing treatment system during periods of wet weather. Correcting this problem, either through plant expansion or a reduction in the amount of water that enters the system during wet weather, would provide for additional treatment capacity for the plant.

The extension of the City of Luna Pier's wastewater plant is unlikely until current problems with the treatment system are corrected. Possible growth areas for the City's plant include the undeveloped southern portions of the City, as well as the Luna Pier Road/Victory Road commercial node in Erie Township. Expansion of sewer service into LaSalle Township could occur in the distant future from either the Monroe or Luna Pier sewer systems. The 1985 County Plan recommends a separate lagoon treatment system for LaSalle, however. If the LaSalle village area continues to grow, this remains a possibility despite the increased capital expenditures of such a project.

Northeast Monroe County

Since 1985, significant growth has occurred in this portion of the County. Both the Berlin Township and Village of Carleton's facilities have expanded during the time period of the previous County Plan. As these Townships continue to grow in the next twenty years, the placement of developments in order to minimize sewer infrastructure costs to residents will be of the utmost importance.

Most of Berlin Township's sewer infrastructure investment is to the south of the Township, near the unincorporated village of Newport. Extensions of the sewer system would ideally include minor extensions to serve future neighborhoods off of North Dixie Highway north of U.S. Turnpike, and an extension to serve the future marina residential area that the Township envisions between Trombley Road and the Village of Estral Beach. A sewer line extension north up Brandon Road to the Village of South Rockwood boundary line is also likely in the future. Envisioned medium- and high-density developments along South Huron River Drive east of South Rockwood, however, may be more adequately served by sewer service from the South Rockwood sewer system.

Ash Township is attempting to concentrate the vast majority of its development along Telegraph Road and Carleton-Rockwood Road. The Township may use its own sewer service to serve residential developments on Carleton-Rockwood Road, or it may just designate these developments as private, onsite septic tank developments. Commercial development along Telegraph Road may use The City of Monroe's wastewater plant, as the City has already expanded to the Ash Township boundary line.

The Village of South Rockwood will continue minor expansions to its South Huron Valley wastewater service as the village continues to grow in future years, while expansions to the Village of Maybee's lagoon system will most likely remain minimal as well, and be restricted to within the Village's limits.

Western Monroe County

Wastewater collection and treatment services are currently available to the Cities of Milan and Petersburg and the Village of Dundee in western Monroe County. The service provided by these three systems is largely limited to the confines of the existing city and village boundaries, although recent expansions to the Dundee system have included areas of Dundee Township bordering the Village.

Both the City of Milan and the Dundee plant will be likely to continue to add sewer service as they reach various Act 425 transfer agreements with neighboring governments. Such developments could include medium- and high-density projects in neighboring Milan Township. As stated in the previous section, recent improvements to the Milan plant will be able to accommodate future sewer extensions. However, the City will most likely limit the amount of agreements that it will make, as much of the land in Milan Township is among the best farmland in the County. Therefore, any development will most likely occur adjacent to the City in an attempt to create a compact urban center and to discourage sprawl.

No major wastewater collection and treatment improvements are anticipated for the City of Petersburg. The community has an existing system that is capable of accommodating future growth before major capacity increases are necessary. It is conceivable that sewer lines may be extended from Petersburg into the adjacent

township during the time frame of this plan on an as-needed basis. Sanitary sewer lines should not, however, be extended very far into the adjacent township as this would result in the premature and unnecessary development of important farmland.

WATER

WATER SUPPLY CONSIDERATIONS

The availability of adequate supplies of fresh water is a critical factor influencing development and growth within a particular community. Water is an essential ingredient for a myriad of daily functions including drinking, cooking, bathing, fire fighting, waste disposal and industrial processing, among others. It will continue to influence development patterns through the timeframe of this plan.

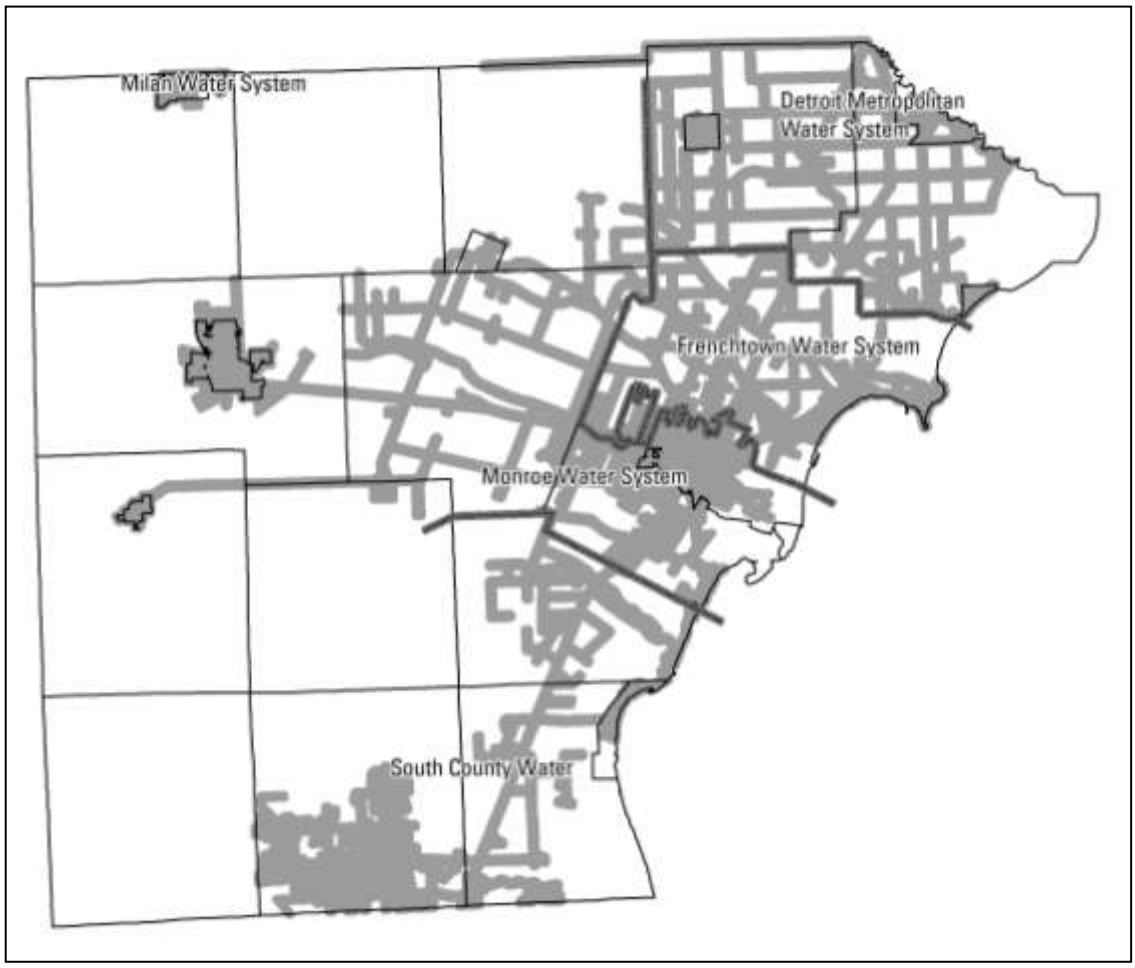
Water Sources

Monroe County residents obtain their water supply through either wells or through municipal supplies. Although a limited number of residents are supplied by hauled water, the source of the hauled water is from municipal systems. Municipal systems serving Monroe County obtain raw water from wells or from the Great Lakes, treat it and distribute it through underground water mains. Private wells serve individual homes outside of public water service areas. Private wells may also be considered as public water systems when they serve facilities such as apartments, mobile home parks, churches, schools, restaurants, campgrounds, places of employment, and similar uses. Water supplies are regulated under the state and federal Safe Drinking Water Acts and the Michigan Water Well Construction and Pump Installation Code and fall under the jurisdiction of the state Department of Environmental Quality and the county's Environmental Health Division.

Water Service Areas / Private Wells
source: Monroe County Planning Department

INVENTORY OF EXISTING WATER DISTRIBUTION SYSTEMS

Monroe County residents have access to several different sources of water. The major suppliers of water include the City of Monroe, Frenchtown Charter Township, the City of Toledo and the Detroit Metropolitan Water Board. The City of Monroe and Frenchtown Charter Township all receive water from the same source pumps, but treat, distribute and store it separately. Each of the County's water supply sources is identified below along with the geographic areas that they serve. The characteristics of each system are described below.



Monroe County Public Water Service Areas
source: Monroe County Planning Department

Service Area	System Capacity	Storage Capacity	Daily Water Usage
Monroe Urban Area	18 MGD[1]	7.5 MG	7.8 - 10.9 MGD
Frenchtown Township	8 MGD	4MG	2.1 - 3.9 MGD
South Monroe County	8 MGD*	4 MG	2.4 - 5.3 MGD
NE Monroe County (City of Detroit Water)	1.72 BGD[2]	370 MG	1.75 MGD
City of Milan	2 MGD	1 MG	1.2 MGD

(1) MGD - Million gallons per day (2) BGD - Billion gallons per day * allotment from Toledo

City of Monroe System

The Monroe Plant has been recognized as the oldest, continuously running facility in Michigan and has been viewed as a leader in its proactive response to maintaining a quality treatment facility. Most of the system is a self-supporting entity financed through water utility operating revenues. The City provides public water on the retail side to the entire city area, large portions of Monroe Township and Raisinville Township, as well as portions of Exeter Township and Ida Township and a small one square mile section of London Township.

On the bulk water side, the Monroe Plant also services the Village of Dundee and the City of Petersburg. This recent expansion of services was funded through bond revenues. The expansion of City of Monroe water facilities into Dundee has allowed that community to develop adjacent portions of Dundee Township as well, and has helped further the economic growth that this part of the County has had in recent years. In the Monroe area, the plant serves an estimated population of 40,000 persons with 15,000 individual connections. With the addition of Dundee and Petersburg, the total population served is now 53,000 persons.

Monroe's water supply is drawn from Lake Erie by a pump located off Pointe Aux Peaux Road in Frenchtown Township. The drawn water travels by gravity pumps to the Front Street plant. Treatment at the Monroe plant consists of sterilization, pre-treatment, sedimentation, pH control, filtration, taste and odor control and fluorination. The treatment plant has the capacity to provide 18 million gallons of water daily to residents, but the City can currently pump only a total of 15 million gallons daily. In 2009, the City is scheduled to upgrade its pumping capacity to the maximum treatment capacity of 18 gallons. Eight million gallons of the pumping station's ultimate capacity are reserved for Frenchtown Charter Township, with whom the City shares the pumping station. The average daily water usage for the plant is 7.8 MGD, with a maximum daily usage in 2005 of 10.9 MGD, so there remains much unused capacity. Therefore, there are no current plans to further upgrade the plant's capacity.

The plant's distribution system dates back to the 1800's. It transmits a supply of potable water through approximately 427 miles of various types and sizes of mains, valves, and hydrants to consumers at an economical rate. The City uses three half-million gallon, above-ground storage tanks: one in Monroe on Roessler Street, one near the Village of Maybee and another in Ida Township. In addition, there are two 3-million gallon underground reservoirs on the site of the plant. Thus, the total storage capacity for the plant is 7.5 million gallons. The water produced by the Monroe Plant has never been in violation of any Federal or State drinking water standard, and was the first plant in the State to implement many innovative technologies such as ozonation and zebra mussel control.

South Monroe County / City of Toledo System

Public water to the four south Monroe County communities of Bedford Township, Erie Township, LaSalle Township and the City of Luna Pier is provided by the City of Toledo via the South County water distribution system. Approximately 6,000 households in Bedford Township are served by this system, with more than 20,000 total connections in service. Water is pumped from both the Siletz River and from Mill Creek in the State of Ohio. The main pumping station for the South County system is located near the intersection of Lewis Avenue and Smith Road less than one-half mile from the Ohio state boundary. This pumping station has a capacity of 8 MGD. Average daily water usage for the system ranges from 2.4 MGD in the winter to around 5.3 MGD in the summer.

Four 500,000 gallon elevated storage tanks are located in the Township, in addition to a two million gallon reservoir located underneath the current pumping station. Chemical treatment, chlorination and odor removal occur within the City of Toledo, and chlorination occurs once again in Bedford Township before the water is pumped out into the County.

A second connection to the Toledo water distribution system came into operation in 2006. The design includes a pumping station capable of providing service to the entire system in the event of an emergency, a 2-million gallon reservoir, and any necessary balancing valves. The connection is at the intersection of Benore Road and Dixie Highway in Bedford Township. The South County system is also sharing the costs of a new repair and emergency interconnection with the City of Monroe's plant. With these improvements, the South County Water System will be able to accommodate development in the southern portion of Monroe County for years to come. However, the contract between South County Water and the City of Toledo ends in 2009 and it may become necessary to consider other options for a water source.

Detroit Metropolitan Water System

The Detroit Metropolitan Water System provides potable water for three different water systems in the County: Ash Township, Berlin Township, and the Village of South Rockwood. The Village of Carleton is serviced by the Ash Township water system, while the Village of Estral Beach is serviced by the Berlin Township system.

While the Village of South Rockwood receives its water directly from the Detroit Water and Sewer Department, Ash and Berlin Townships buy their water wholesale from the department and distribute it themselves. Ninety-nine percent of residents in Berlin Township have access to the City of Detroit's water system. Approximately 50% of Ash Township is served by this system, and all of the Village of South Rockwood is also served. The Villages of Carleton and Estral Beach are fully serviced by the Ash and Berlin Township systems respectively.

Average daily water use for the Ash Township system is approximately 1 MGD. In Berlin Township, usage is around .6 MGD, while in South Rockwood, daily usage is around .15 MGD. The City of Detroit water system, with a maximum capacity of 1.72 billion gallons a day, is large and can easily accommodate water usage in Monroe County.

As both Ash and Berlin Townships are estimated to increase in population in coming years, water usage will also likely increase in coming years. The City of Detroit now requires communities such as Ash and Berlin Township, who purchase water wholesale, to estimate their water usage on a yearly basis in order to better plan for efficient water distribution in Southeast Michigan.

Frenchtown Water System

The Frenchtown Charter Township Water Treatment Plant has been operating since 1995, and serves approximately 20,000 persons within the Township with 6,000 connections. At the time of the last County Plan update in 1985, the City of Monroe was supplying the Township with water. Frenchtown Charter Township uses a shared raw water intake with the City of Monroe from Lake Erie at the aforementioned Point Aux Peaux location that can pump 8 MGD for the Township.

Currently, the capacity of the treatment plant is 4 MGD. However, in 2006 the Township added a new plant addition that can treat another 4 MGD. While the old portion of the plant treats water conventionally, through settling, clarification and ozone treatments, the new portion of the plant uses a state-of-the-art membrane filter to treat water. With this new addition, the total treatment capacity of the Frenchtown Plant increased to 8 MGD to match the pumping capacity. The water system currently includes more than 70 miles of transmission mains and two 500,000 gallon elevated storage tanks. An additional 3 MGD of water storage is available on the site of the plant. This makes the total storage capacity of the plant 4 MGD.

Because of growing residential and commercial development within the township since 1995, demand for water in the Township has increased at a rate of 5.3% per year. The average water usage is now 2.1 MGD, although usage can reach a peak of 3.9 MGD during the summer months. For that reason, the Township Board decided to increase the plant's capacity to 8 million gallons per day. Most major township roads now have water lines. Newer water line extensions include South Stony Creek Road, as well as portions of Fix Road and Newport South Road. As the Township grows, future extensions are planned in the vicinity of North Dixie Highway to accommodate new residential development occurring in this area.

City of Milan

The City of Milan plant has a 2 MGD treatment capacity. The City of Milan drinking water plant currently produces an average of 1.2 MGD, or just over 390

million gallons of water per year, supplying the residents and businesses within the City of Milan. Storage tanks include two separate water towers that store 500,000 gallons of water each. Service also includes areas of Milan Township transferred to the City under Act 425 agreements. Without these agreements, the City is unwilling to extend water service beyond its municipal borders.

The City's water plant uses ground water pumped from inside the city limits as its source. Water is supplied by four wells and treated for iron removal before it enters the 27 miles of water main that make up the distribution system. The system also consists of five working well houses with average depths of 112 feet and an elevated water storage tank. According to the City, there is an abundance of ground water that is adequate to serve the City for many years in the future.

There are concerns with the quality of groundwater in Milan Township. First, there have been problems with the groundwater level within the Township. The area around the unincorporated village of Azalia has especially been impacted by this. The cause of the drop in groundwater levels is unknown, but it is suspected that it pertains to a combination of previous drought conditions as well as quarry de-watering activities within the Township.

Another problem is the high level of hydrogen sulfide in the water that exists in the southeast part of the Township, as well as in areas of townships adjacent to Milan Township. Trace amounts of hydrogen sulfide are not a public health threat, but at high levels, the chemical is poisonous. This could become a problem in the future as any growth in Milan Township will most likely occur in this area of the Township, as the west portions are of the Township will likely be retained as prime agricultural farmland. Because of this, if substantial concentrated development occurs in the Azalia area in the next twenty years, the Township will either have to negotiate a deal for water from an adjacent municipality (such as the City of Monroe or the City of Milan), or develop its own water treatment plant.

Water Demand

Water consumption standards vary considerably from one community to another depending largely on existing land development patterns and the type of non-residential land uses located in the community. Average daily water consumption in most communities normally ranges between 100 and 200 gallons per capita per day (gcpd).

Domestic water uses, including water for drinking, bathing, waste disposal and lawn sprinkling, account for a community's single largest water demand, averaging 43 percent of total demand. Industrial uses represent the second highest category, accounting for 25 percent of total demand. Typical industrial uses of water include heat exchange, cooling and cleaning. No direct relationship exists between the amount of water used for industrial purposes and the population size of a community. Commercial water uses account for approximately 19 percent of total water

consumption and include waste disposal, janitorial activities and air conditioning. Public uses, including water used in public buildings, street cleaning, etc. account for the remaining 13 percent of demand. Also included in this category is water lost through leaks, meter malfunctions, reservoir evaporation and unauthorized use.

The demand for water in a community is seldom constant. It fluctuates on a day-to-day basis as well as during the course of a 24-hour period. This is particularly true with respect to residential water demand. Reservoirs or storage tanks should be made available with enough water to meet the water needs of a community for one full day. This reserve capacity will also help maintain sufficient pressure and supply during peak periods.

Fire protection requirements also need to be considered during water supply and distribution planning. The requirements for fire protection affect both average water consumption and planned system capacity. Water pressure should be between 60 and 70 pounds per square inch to be sufficient for fire fighting purposes. Pump stations and looped water lines also help maintain adequate system pressures.

WATER RECOMMENDATIONS

A decision to extend public water lines to a previously unserved area is influenced by many of the same factors that influence the extension of sanitary sewer lines. Decisions on the extension of these two utilities are important for similar reasons also: 1) they influence growth patterns; and 2) they impact a community's finances. For these two reasons, it is important to establish some criteria that provide a reasonable basis for making decisions on where and when public water lines are extended. The following five criteria represent important factors that should be considered before public water lines are extended.

- Public health concerns (groundwater contamination)
- Insufficient water supply
- Sufficient population densities
- Fire protection
- Economic Development

In some instances, these factors alone may not provide sufficient justification to extend public water lines to an unserved area. Some water supply and/or water quality problems can be resolved through other, less costly techniques. To the extent that these other measures can be realistically implemented, they should be considered before public water lines are extended.

GROUNDWATER CONTAMINATION

Polluted groundwater supplies often necessitate the extension of public water supplies to a previously unserved area. With few exceptions, Monroe County is characterized by potable groundwater supplies that are largely free from contamination. While several small pockets of polluted groundwater do exist in the county, these areas are too far removed from existing public water service areas to realistically justify the extension of public water lines.

Many wells in the county supply water with a high sulfur content. Most of these wells are concentrated in a narrow area of land extending in a northeasterly direction from Petersburg to Carleton. While this water may be unappealing for aesthetic reasons, such as taste, color and smell, it does not present a public health problem.

Water with a high sulfur content or hard water problems alone do not always represent sufficient justification to extend public waterlines. Water characterized by these two problems can often be resolved through other, less costly measures including re-drilling the well, adding chlorination or water softening equipment, or having water hauled to the site. The Monroe County Health Department maintains strict standards for new well construction that are intended to prevent these problems from occurring.

Insufficient Groundwater Supplies

Insufficient supplies of groundwater represent another possible reason that may justify the extension of public water lines beyond existing service area boundaries. Before doing so, however, it should be conclusively demonstrated that potable water cannot be obtained by drilling a deeper well. Milan Township in particular has experienced a groundwater supply problem. Several dry holes have been documented in this township, primarily in the Azalia area, and residents are required to purchase water from licensed water haulers. This area is too far removed from existing public water service areas, however, to make extension of public water lines a realistic alternative.

Population Density

Population size and distribution of the population represent two important factors that should be considered before public water lines are extended. At some point during its growth, the population of a community may reach a level where it is no longer practical or desirable to rely on individual wells as the primary source of potable water for the community. Economies of scale may make a community-wide system a better option.

A public investment in public water lines is most appropriate when they are intended to serve a significant concentration of people. Extending water lines to serve one or two isolated establishments is obviously inefficient. This inefficiency

creates subsequent development pressures to help pay for the utility extensions thereby encouraging urban sprawl.

Fire Fighting

Having an adequate supply of water at sufficient pressure for fire fighting purposes is another reason that may justify the extension of water lines. There does not appear to be any major problem in Monroe County with either water supply or water pressure for fire fighting purposes.

Economic Development

The extension of public water lines is often justified on the basis of providing a catalyst for economic development activities. In some cases, a proposed extension may, in fact, be associated with the development of a new business or the expansion of an existing establishment. Increased economic development in a community is normally a good reason for extending public water lines. Before this is done, however, existing commercial or industrial parcels that are already served by public utilities should first be considered.

As was the case with the sanitary sewer service area, a sufficient amount of vacant land is available with access to public water to accommodate a considerable amount of development. It may be unrealistic to expect the boundaries of these service areas to remain unchanged over the next twenty years. Any extensions that do occur, however, should take the previously identified factors into consideration.

CITY OF MONROE SYSTEM

The 1985 plan did not foresee the eventual extension of the City's water service to the Village of Dundee and the City of Petersburg. At the time of the previous County Plan in 1985, the Pointe Aux Peaux location had a limited pumping capacity that restricted future development in the Monroe Urbanized Area. In the last 20 years, however, pumping capacity has increased greatly at Pointe Aux Peaux, and now the City of Monroe can adequately serve not only its population in the urbanized area, but can accommodate development in the Dundee and Petersburg area as well. Also, and perhaps more importantly, was the loss of water system customers due to, first, the closing of paper mills in Monroe, and second, the development of an independent Frenchtown water system.

The City is planning to complete an extension of its water system into LaSalle Township from the Monroe Township line south to Mortar Creek Road along LaPlaisance Road. This extension will not only provide City water to approximately 500 residences and businesses in the vicinity of this extension, but will also be used to construct an interconnection with the South County water system. This additional interconnect will give both the Monroe and South County systems additional emergency water in the case of an emergency or a zebra mussel infestation. In addition, within the next five years, the City plans to extend its water

lines along Telegraph Road south to Albain Road in order to service future developments in this area.

The City system has recently expanded further into Exeter Township. Areas of Exeter where service is now provided include Bitz, Doty, Ferder, Geierman, Scofield, Sumpter and Zink Roads. The State of Michigan determined this project 4th out of 47 projects eligible for a loan from the Drinking Water Revolving Fund, a program that provides low-interest loans to local communities. The Township has also proposed creating an additional water district in the north part of the Township. The Frenchtown Township would provide water service for this district, provided that the Township can procure another low-interest loan.

The City may not expand service into London Township for a while, but possible areas include the Plank Road/Ostrander Road intersection, which the Township hopes to develop into a small village center, as well as the Oakville-Waltz Road and Tuttle Hill Road intersection, another possible village center. However, it is not likely that London Township will be heavily developed in the near future, as development in the northern portions of the County appears to be concentrated in Ash and Berlin Townships at the moment.

SOUTH COUNTY SYSTEM

Public water is available to nearly the entire urbanized area of southern Monroe County including large portions of Bedford Township, Erie Township, LaSalle Township and the City of Luna Pier. Water lines were extended to these areas to accommodate the extensive urban growth that occurred in this portion of the county, particularly Bedford Township, during the last thirty years. While additional growth is likely in this area over the time frame encompassed by this plan, the rate of this growth should not necessitate the extension of public water lines far beyond the boundaries of existing service areas.

One extension being considered at the moment, however, is an extension north up Victory Road in Erie Township to Cousino Road in LaSalle Township. This extension would serve some developments along Victory Road, as well as a few residents in LaSalle Township.

Recent problems with groundwater quality issues in Whiteford Township, together with industrial and economic development issues and the expiration of South County's contract with the City of Toledo for is water source, is creating a potential for expanded water service, especially in the area of US-23 and Sterns Road.

NORTHEAST MONROE COUNTY/CITY OF DETROIT SYSTEM

A relatively large public water distribution system is available in this section of the County. Significant expansion of the existing system in Berlin Township does not appear to be likely, as sewer service already covers areas designated in the Town-

ship Master Plan for high-density residential and commercial uses. The only definite extension in the near future will be a continuation of the Newport Road water main west to the Ash Township line, as this area is designated for high-density residential uses. Improvements may be needed in terms of storage capacity for Berlin Township, however, as growth for the Township in the next twenty years is likely to be intense.

In Ash Township, the Detroit water system has added several miles of water mains in recent years. These include a main along Labo Road west to the Exeter Township line, a main along Sigler Road west to the Exeter Township line and east to Telegraph Road, and a main on Telegraph Road from Ready Road north to Carleton-Rockwood Road.

In future years, as Ash Township continues to grow due to its proximity to the downriver Detroit area, it is likely that the Township will extend a water main along the entire length of Telegraph Road, as it seeks to develop this area with commercial uses. Another possible extension is along Carleton-Rockwood Road east of the Village of Carleton to the Exeter Township line. As with Berlin Township, water storage capacity would most likely need to increase to accommodate this future development.

CITY OF MILAN SYSTEM

While some minor extensions of public water supplies from the City of Milan into the surrounding unincorporated Milan Township may occur over the next twenty years, no major extensions are anticipated, as the City adopted a policy of only supplying water for residents within the City itself. The US-23/Cone Road interchange is designated as commercial, but these areas will most likely need to use water from on-site sources because of the City's utilities policy.

Furthermore, much of the Township is designated as prime agricultural land and will most likely never be developed densely enough to require water service. However, areas immediately adjacent to the City of Milan may be developed with residential or commercial uses eventually. These areas would not require major water extensions, but would require minor extensions of the current water system located inside the city limits. Because of this, these areas may have to be transferred to City control through Act 425 agreements in order to acquire the necessary infrastructure in order to support such development.

FRENCHTOWN WATER SYSTEM

The Frenchtown Charter Township water mains already cover most of the Township, so there is little room for the plant to expand in the near future. The only undeveloped area in the Township that is designated for future development is the North Stony Creek Road/Grafton Road area west of Telegraph Road, in the extreme northern portion of the Township. All other areas not covered by water

service are designated as open space or agricultural in the Township Master Plan. Even with a planned expansion of service into northern Exeter Township, Frenchtown Township's plant will most likely have extra capacity for many years into the future.

ELECTRICITY & NATURAL GAS DISTRIBUTION SYSTEMS

Sanitary sewers and public water lines represent only two of the necessary utilities that are prerequisites to growth in a community. Electricity and natural gas are two equally important components necessary for this growth. Given this importance, the concluding section of this report briefly describes the availability of these utilities throughout Monroe County.

ELECTRICITY

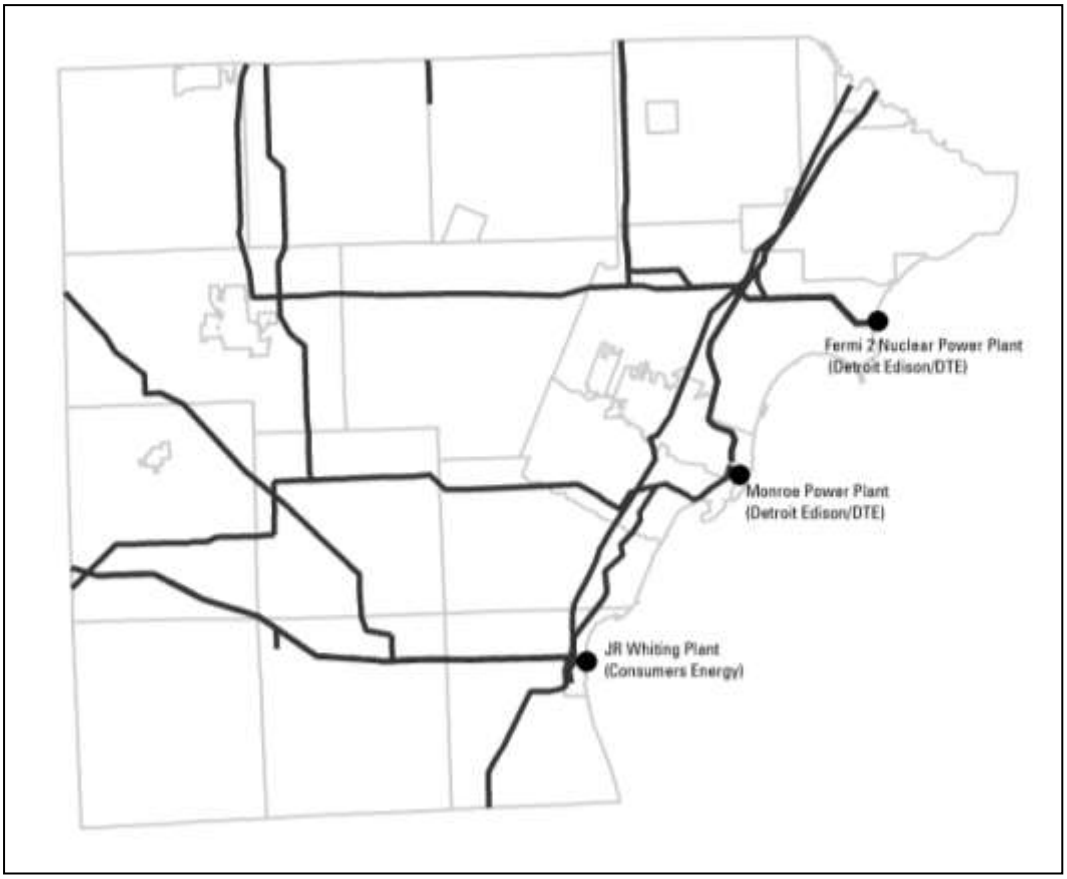
A typical electric power system consists of several important components that are necessary to transmit electricity to consumers. The first step in the process is the initial generation of electrical energy that occurs in a power plant. Transformers are then used to raise this electrical energy to the high potential required for economical passage through high transmission lines. Transformers are again used at substations to reduce this energy for transmission through secondary lines at the required voltage for customers.

Three companies provide electricity to Monroe County residents: DTE Energy, Consumers Energy and Midwest Energy Cooperative. DTE Energy serves over one-half of the total county area including that portion of the county generally north of Whiteford Township, Bedford Township and Monroe Township. Most of the remaining portion of the County is served by Consumers Energy. Midwest Energy Cooperative out of Adrian serves only a western portion of Whiteford Township.

DTE and Consumers utilities operate major electrical generating plants in the County along the Lake Erie shoreline. Detroit Edison operates the Monroe Power Plant and the Fermi II Nuclear Power Plant in the City of Monroe and Frenchtown Township respectively. Each company also operates and maintains several substations as well as an extensive network of transmission lines that cross the County.

The Monroe Power Plant began operation in 1971 and has a total electrical generating capacity of 3 million kilowatts. The plant consists of four units, each of which has the capacity to produce 750 megawatts when operating at full load. Total annual production is about 20 million megawatt hours, which places it among the top 3 plants in the nation in output. Approximately nine million tons of fuel are used annually to operate the facility. Air pollution control equipment now reduces the emission of nitrous oxide pollutants.

The Enrico Fermi 2 Nuclear Power Plant began official commercial operation in 1988. It has a generating capacity of 1,098 megawatts from its single reactor. During an April 2000 fueling and maintenance shutdown, the plant's high-pressure turbine was replaced by a more efficient model that increased output to about 1,160 megawatts.



Power Plants and Major Transmission Lines
source: Michigan Geographic Framework

Consumer's Energy operates the J.R. Whiting Power Plant, which is located in the City of Luna Pier. This plant was completed in 1953 and has largely been rebuilt through the years. The plant has an electrical generating capacity of 325 megawatts and provides power to customers in portions of Monroe County and Lenawee County as well as other locations through connections at the company's Jackson headquarters.

In September 2008, Detroit Edison filed an application with the Nuclear Regulatory Commission for a Combined Construction and Operating License for a new

reactor at the Fermi 2 site. The reactor would have a capacity of 1,520 megawatts. Review of the 17,000-page application could take up to four years, after which construction could take six years.

NATURAL GAS

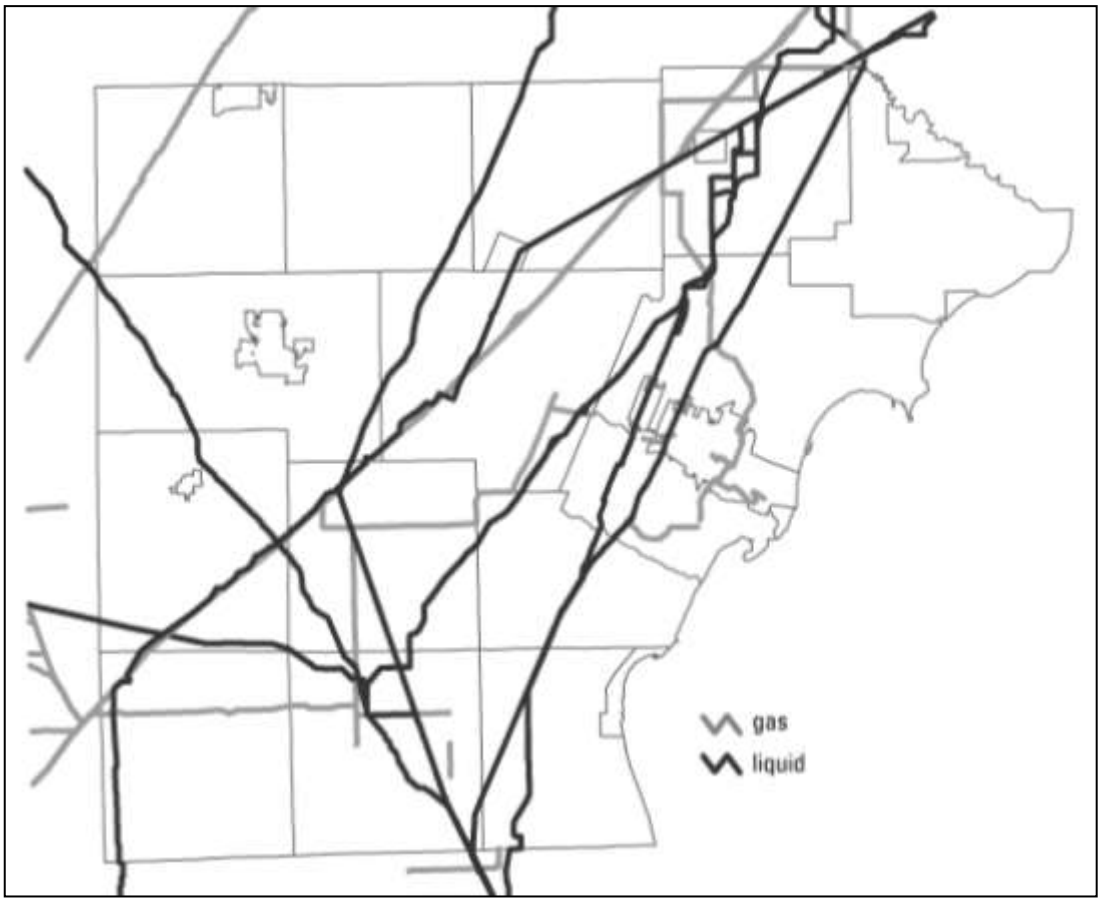
Gas is delivered to consumers mainly for heating purposes under uniform but comparatively low pressures. Gas lines can follow the topography, but are usually laid with a slight gradient to allow for the drainage of water caused by condensation.

Gas may be of two main types: Coal and coke-oven gases, which are usually locally produced and stored; and natural gas, which is transported considerable distances through high pressure lines. Other types of gases, such as water gas, producer gas and blast furnace gas, are produced and used in industrial installations.

In most areas, natural gas, not manufactured gas, is a primary source of energy. This is also the case in Monroe County where natural gas is provided by two main suppliers: Michigan Gas Utilities (MGU) and Michigan Consolidated Gas (a subsidiary of DTE). MGU supplies nearly the entire county with the exception of Milan Township and the northern portions of Ash, Berlin, and London Township, which are served by Michigan Consolidated. Consumers Energy also provides some service to residents of western Summerfield and Whiteford Townships.

With the rising costs of natural gas, homeowners are beginning to look into alternative heating sources for their homes. While sources like propane and wood have been around for years, other new sources include biomass (either in the form of biodiesel oil or corn pellets), solar energy and even geothermal heating sources. Most of these sources have the main advantage of being renewable, although they offer higher initial costs for residents to set up.

A complex system of pipelines, both for natural gas distribution and for liquid oil transport underlie Monroe County. The map below depicts the major pipelines, but as this information is subject to update and change, it cannot be considered a reliable source of pipeline locations. New pipeline corridors connecting to refineries in Detroit are currently under development.



Monroe County Pipelines
source: Pipeline and Hazardous Materials Safety Administration

ALTERNATIVE ENERGY POSSIBILITIES

In recent years, renewable alternative energy sources have been shown to be feasible means to produce electricity and heating for developments. Renewable energy sources do not use up the resources that coal, natural gas and even nuclear energy use. On the other hand, very few communities, including townships within Monroe County, have ordinances that address renewable energy sources. Below is a brief description of available renewable energy and how they could be utilized in Monroe County.

Wind energy systems use the wind to turn a set of aerodynamic blades attached to an electric generator or turbine. When the wind blows, the blades turn, spinning a shaft that creates electricity in a generator. Wind turbines that are being manufactured have power ratings ranging from 250 to 2,000,000 watts (2 MW).

Michigan is the 14th windiest state in the United States, and Monroe County is one of the windier counties in Michigan due to its location on Lake Erie. Therefore, wind farm developments could potentially play an important part in future

energy resources for the County. On the other hand, wind power has a disadvantage of causing noise for neighbors and, in some cases, killing wildlife flying into the turbines. Careful consideration would be necessary before a Township could create a wind power ordinance, but the environmental benefit that a wind farm could provide to a development would be significant.

Solar technologies directly harness energy from the sun. These technologies include photovoltaic systems that convert sunlight to electricity, solar hot water systems that heat water for swimming pools and buildings, and solar space heating systems that provide heat for buildings. In addition, passive solar designs provide heat for buildings and daylighting strategies use sunlight to reduce electricity used for lighting.

The U.S. Green Building Council through the Leadership in Energy and Environmental Design (LEED) program provides standards that could be applied both to individual buildings as well as to entire neighborhoods when it comes to renewable energy practices. In the future, townships should look at these standards when attracting new kind of development, and be willing to provide benefits such as tax incentives to developers proposing these kinds of developments.

The economic feasibility of most alternative energy sources is a subject of debate, as is the ability of wind or solar energy to provide the necessary base load currently demanded by users. However, various incentive programs and other stimuli can generate the critical mass to make these and other forms of alternative energy practical could be realized in the near future.

MONROE COUNTY COMPREHENSIVE PLAN

PART TWO – GOALS & OBJECTIVES/ FUTURE LAND USE PLAN

The Monroe County Comprehensive Plan sets forth the following goals and objectives which are seen as the guiding principals for future land use decisions, development of public works improvements, preservation of open space and natural resources, and the overall growth and development of the community.

OVERALL GOAL

Improve the quality of life in Monroe County by the wise allocation of our limited and unique resources in a sustainable manner.

LAND USE

ISSUES

The amount of land used for agriculture has been in decline, while the amount used for residential purposes has increased. The rate of increase for land devoted to residential uses has far exceeded the rate of growth for the population of the county or of the number of households.

Agricultural land is essential for food production, is an important element in a diverse economy, and does not require the same degree of public investment and resources as do urban land uses. The conversion of agricultural land to other uses is generally irreversible, and this conversion can impact the viability of adjacent agricultural uses.

Land well suited for industrial uses and for high technology related uses is relatively scarce and once it is converted to other uses its potential for economic development is often lost.

"Urban Sprawl," or the rapid conversion of open space to urban uses, often in an unplanned manner, has had the consequence of increased pressure on public utility systems, transportation systems, and other public services. In contrast, the redevelopment of "brownfield" sites and the encouragement of new growth within areas already containing adequate public infrastructure, has given increased vitality to existing urban centers.

The presence of historic sites, natural habitat, parks, flood plains, cemeteries, sinkholes, and other unique natural and cultural features helps to create a unique landscape and a unique community character which would be threatened if not protected.

GOAL – LAND USE

Maximize the economic and efficient use of land in order to enhance the quality of life in Monroe County.

Land is a limited resource. The importance of its economic, efficient and environmentally safe use is becoming increasingly critical. A healthy, safe and well-ordered environment should be encouraged for the overall well being of the community, and a variety of quality environmental settings should be made available.

OBJECTIVES – LAND USE

Promote planning cooperation between all units of government to assure the efficient use of public facilities, and easy access to work, recreation, and community services.

Lines of communication should be maintained between the County Planning Commission and planning commissions and legislative boards of local governmental units, adjacent counties and municipalities, and regional planning agencies. A spirit of mutual cooperation should pervade all such communications and joint efforts in order to attain common goals.

Discourage urban sprawl and the premature extension of public utilities such as water and sanitary sewers.

Public utilities should only be extended in accordance with county land use, housing and transportation plans. The allocation of land for urban development should be consistent with accepted growth projections and should take place in an orderly, contained and efficient manner.

Preserve unique natural and cultural resources.

Fragile natural resources such as prime agricultural land, woodlands, unique natural features, wetlands, and aquifer recharge areas should be preserved to the greatest extent possible. Historic and archeological sites, cemeteries, and public spaces are also irreplaceable. Land uses which encroach upon or endanger these valuable assets should be limited and contained to minimize the problem.

Protect the environment from hazardous influences.

The production, transportation, and disposal of materials, which are hazardous to human health or disruptive to the ecological balance of natural systems, should be controlled. Industrial areas should be located so as not to interfere with other land uses where minimal levels of air pollution and public safety hazards are desirable. The handling and disposal of solid waste materials should be done in accordance with the Monroe County Solid Waste Manage-

ment Plan. Particular care should be given within areas of known or suspected sinkholes and karst formations.

TRANSPORTATION

ISSUES

Public transportation serves limited portions of the County and does not provide a level of service that makes it an attractive option for meeting the daily transportation needs of most residents. Public transportation options connecting the County with regional destinations do not exist.

Improvements to surface roads in Monroe County depend on limited sources of funding, requiring careful planning and implementation.

Unplanned land use changes can create a need for improvements to the transportation system, resulting in unplanned public expenditures with limited public benefit.

Improvements to the transportation system can stimulate land use changes, which are not necessarily planned or appropriate.

Monroe County lacks a well planned network of bicycle and pedestrian facilities, despite an apparently strong demand for such a system.

The large number of rail lines in Monroe County creates a high potential for danger at grade crossings. Derailment and hazardous material releases also create potential conflicts with adjacent land uses.

Monroe's Custer Airport and Whiteford's Toledo Suburban Airport serve an important role in transportation and economic development, but also create a potential for land use conflict in the absence of wise planning and zoning decisions.

The Port of Monroe gives the County an economic development opportunity.

GOAL -TRANSPORTATION

Achieve a well-coordinated and efficient transportation system composed of various modes of travel with sufficient capacity to handle the necessary and desired movement of people and materials with a minimum of conflict with other land uses.

OBJECTIVES - TRANSPORTATION

Maintain a high level of involvement in the planning and coordination of the county and regional transportation system

Although planning for road improvements is an essential task, involvement in planning for public transit, bicycle transportation, rail systems, and air transportation are also important in achieving an efficient and integrated system.

Encourage a variety of safe, efficient, and well-coordinated travel modes.

- **Public transportation**
  - Encourage participation by local government and expansion of services to meet the daily needs of all county residents
  - Encourage regional systems of public transportation which would provide connections from Monroe to Detroit, Toledo, Detroit Metropolitan Airport and Ann Arbor
  - Maintain a high level of involvement with LETC and SMART
  - Seek the implementation of high speed passenger rail service in Monroe County
- **Road**
  - Maintain involvement with the urban area Federal Aid Committee and with the regional Transportation Advisory Committees to assure that Monroe County receives adequate funding for road improvements and that improvements are well planned and executed.
  - Improvements to existing roads and development of new roads should be designed to support existing conditions and planned growth, rather than serving to encourage growth in an unplanned manner.
  - New east-west routes connecting US-23 and I-75/275 should continue to be explored.
- **Rail**
  - The improvement and elimination of rail grade crossings should be a encouraged and a prioritization program should be developed.
  - The potential hazards of rail transportation should be considered when making land use decisions in areas in proximity to existing rail lines.
  - The public acquisition of abandoned or unused rail corridors should be pursued at every opportunity.

- **Air**
  - The presence of general aviation airports serving Monroe County plays an important role in the county's economic development and should be maintained at an equal or improved level of service.
  - Land use conflicts are inevitable, and strong land use controls are necessary to reduce conflict. Airport zoning and overlay districts should be used whenever practical.
- **Non-motorized**
  - Develop and implement a network of designated bicycle lanes and paths which connect major population centers within the county and connect Monroe County with adjacent regional networks.
  - Encourage local subdivision ordinances to require pedestrian facilities and connections to adjacent or planned pedestrian and bicycle improvements.
  - Explore the acquisition of rail and utility corridors and rights-of-way for use as alternative transportation routes.
- **Water**
  - Recognize the economic development opportunities afforded by the presence of the Port of Monroe and support future development and improvements to the facilities and the surrounding area.
  - Recognize the unique opportunities and economic impact afforded by the recreational use of Lake Erie, and maintain adequate facilities for boat launching, docking, and safety.

PUBLIC UTILITIES

ISSUES

Recent extensions of water lines have increased the potential for a more intensive level of development in primarily rural areas of the county.

Changes in Health Department regulations regarding on-site waste water disposal (elimination of the 5 acre minimum lot size restriction in areas of unsuitable soils) and well construction (hauled water systems as an acceptable alternative in areas with high levels of hydrogen sulfide in groundwater) have also made many rural areas of the county more attractive for development.

The creation of a new Frenchtown water utility has created competition between the City of Monroe and Frenchtown Township for rural water customers.

Improved waste water treatment technology has resulted in improved feasibility of smaller, package waste water treatment systems, which improves the feasibility of developing small communities in areas outside of existing urban service areas.

A variety of factors, including groundwater withdrawals and drought years, has resulted in a large number of dry wells and falling groundwater levels in specific areas of the county, increasing demand for public water service.

GOALS – PUBLIC UTILITIES

Existing public investment in municipal utility systems should be maximized before additional infrastructure is developed.

Specific conditions should be present to justify the development or expansion of wastewater treatment services

- Appropriate densities
- Public health problems
- Increased economic development activity

Criteria that should be considered before public water lines are extended

- Public health concerns (groundwater contamination)
- Insufficient water supply
- Sufficient population densities
- Fire protection
- Economic development

NATURAL RESOURCES

ISSUES

A significant portion of the county depends on groundwater as a source of drinking water. This resource is threatened by withdrawals, pollution, and naturally occurring substances. Of particular concern are extreme withdrawals by quarries and the related drop in groundwater levels, the presence of karst for-

mations which provide a direct conduit to aquifers, and the presence of high levels of hydrogen sulfide in specific areas of the county.

The network of rivers, streams, and drains in Monroe County provides habitat for wildlife, creates corridors which interconnect various open spaces and habitats, carries runoff and flood waters to Lake Erie, and provides recreational and aesthetic values. This resource is affected by land use changes, erosion and sedimentation, permitted and non-permitted discharges, and point and non-point source pollution.

Extractive operations in Monroe County contribute to the local economy and provide materials necessary for construction of buildings and roads. Impacts from these facilities include surface and groundwater impacts, noise, dust, vibration, and road damage.

Forested areas in Monroe County have important ecological functions, provide habitat for a variety of plants and animals, create recreational and aesthetic resources, provide areas for groundwater recharge and storage of floodwaters, provide raw materials for wood products, and add value to residential areas. These areas are threatened by land use decisions, poor management, insect and disease problems, exotic species and fragmentation.

Wetlands in Monroe County play vital ecological roles, provide areas for flood water storage, serve as habitat for diverse plants and animals, create recreational and aesthetic resources, and provide important water quality functions. Many of the original wetlands in Monroe County, including coastal wetlands, flood plain forests, and other inland wetlands have been lost. Land use changes, alteration of drainage patterns, filling, exotic species, and erosion and sedimentation are some of the threats to remaining wetlands.

The quality of air and water in Monroe County is affected by local activities and land use decisions but is also affected by activities in distant locations. Air and water quality are shared resources, the degradation of which affects the public health and the quality of life on a far reaching scale.

Solid waste management practices which reduce the volume of waste requiring disposal and which remove hazardous materials from the waste stream will result in a safer environment.

GOALS – NATURAL RESOURCES

The protection of environmental quality is essential to protect the public health, provide for productive natural habitat and proper ecological functions, and for recreational, economic and aesthetic values.

OBJECTIVES– NATURAL RESOURCES

Identify areas of the county which are essential to ground water recharge and which have high potential to contribute to ground water pollution and create the necessary controls and guidelines to protect the quantity and quality of groundwater resources.

- Continue participation in studies by the USGS, the Karst Study Group, the Monroe County Water Taskforce, Groundwater Education in Michigan and other groups and agencies involved with the study and protection of groundwater resources.
- Continue to monitor groundwater levels and fluctuations
- Continue to assess the impact of quarry dewatering and other large scale withdrawals on groundwater levels and institute programs to prevent depletion of groundwater resources
- Enact wellhead protection programs to protect public drinking supplies
- Identify groundwater recharge areas and encourage the implementation of land use controls and practices to preserve the function of these areas.
- Create an accurate inventory of karst features, conduct studies, conduct public education programs, and create the necessary physical improvements to prevent contamination of groundwater through these known connections.

Inventory existing wetlands, woodlands and other natural habitats and develop mechanisms to protect their functions and values.

- Encourage local wetland and woodland protection ordinances.
- Continue to review and comment on DEQ/Army Corps joint applications for the filling of wetlands and flood zones
- Participate in state and national efforts to prevent the spread of introduced, exotic species which destroy natural areas.
- Encourage land use practices which preserve natural areas as an integral part of larger developments.
- Develop a method of prioritizing the value of natural areas and encourage the public acquisition or long term preservation of particularly valuable or unique resources.
- Cooperate with the Michigan Natural Features Inventory in mapping the occurrences of endangered and threatened species and take efforts to preserve the remaining unique natural features in the County.

Improve the quality of surface water in Monroe County waterways.

- Maintain participation and membership in SEMCOG's water quality management planning activities
- Maintain participation and membership in the River Raisin Watershed Council and the Stony Creek Watershed Project.
- Maintain participation in the River Raisin Remedial Action Plan/Public Advisory Committee.
- Expand watershed-based planning activities to include the other waterways which drain into Lake Erie, including Plum Creek, Stony Creek, Swan Creek, Halfway Creek, etc.
- Participate in EPA Phase II storm water programs
- Strictly limit development and filling within FEMA flood hazard zones
- Encourage the use of stream buffers, agricultural programs (conservation tillage, manure management, pesticide procedures), stream channel improvements, rain gardens and innovative storm water management practices.

Improve air quality in Monroe County

- Maintain membership and participation in SEMCOG's air quality planning activities
- Maintain participation in OzoneAction! Programs
- Encourage programs which reduce toxic emissions from industrial sources, utilities and from internal combustion sources.

Improve programs which reduce the amount of solid waste requiring disposal.

- Continue a leadership role in solid waste management planning at the county level.
- Continue to provide support to the Monroe County Solid Waste Coordinator
- Encourage waste reduction programs, such as recycling, composting, reuse and source reduction
- Encourage the continuation and expansion of programs which collect and dispose of household hazardous waste, electronic waste, tires, and other special waste requiring special disposal procedures.

AGRICULTURE

ISSUES

Monroe County is losing agricultural land to other uses, primarily to residential development. Between 1990 and 2000, over 16,000 acres of farmland has been converted to other uses. Some possible reasons for this loss include: local township zoning and land use planning, changes in county and state regulations regarding wells and septic systems, extensions of public water supplies, decreasing farm profits, and demand for housing, particularly on large lots in rural areas.

Preservation of farmland has a variety of benefits, including:

- Farmland is a finite natural resource, and Monroe County has significant amounts of soils considered prime farmland soils and soils of local importance.
- Agriculture is an important sector of the economy, creating a substantial market value, and also creating jobs, both on the farm and in related industries.
- Locally produced food and farm products is the basis for a sustainable future for Monroe County.
- Farmland can improve environmental quality with regard to protecting groundwater recharge areas, providing flood water storage capacity, and creating wildlife habitat – which are values which are often destroyed by urban development.
- Farmland possesses aesthetic values which maintain a sense of place and rural character, thus adding value to surrounding non-farm uses and creating opportunities for tourism and for the appreciation of scenic, cultural and historic landscapes.
- Farming is part of Monroe County's heritage and identity and creates opportunities for young people to carry on a traditional way of life.
- Agricultural uses generally do not create a significant demand for public services and improvements relative to other land uses, especially in comparison to the revenue generated through taxes.

GOALS - AGRICULTURE

Preserve agricultural land and rural character, support the viability of agriculture and recognize the importance of agriculture to a healthy

and diverse economy, to the quality of the environment, and to the heritage and culture of the community.

OBJECTIVES - AGRICULTURE

Maintain agriculture as the dominant land use in Monroe County.

- Effective zoning and planning at the township level
- Use of preservation tools such as transfer of development rights, purchase of development rights, and preservation agreements

Avoid conflicts between urban development and agriculture.

- Create exclusive areas dedicated to agricultural uses
- Encourage the use of agricultural best management practices

Encourage new and expanded markets for locally produced agricultural products.

- Retain and attract processing plants and other agricultural support operations
- Support marketing strategies, value-added efforts, and agricultural related tourism

Reduce pressures to convert agricultural land to other uses

- Set aside adequate areas devoted to urban development
- Create incentives for redevelopment of brownfield sites and in-fill development as alternatives to conversion of farmland
- Carefully plan the extension of public utilities

Identify primary agricultural areas to focus preservation efforts, with an emphasis on areas which possess the following characteristics:

- Prime farmland soils and soils of local importance
- Large lots
- Land currently in agricultural use
- Land currently enrolled in Act 116 preservation agreements

RESIDENTIAL

ISSUES

There were over 9,300 more acres of land devoted to residential uses in Monroe County in 2000 than there were in 1990. During this time period 7,305 new residential units were added to the housing stock – an average of 1.27 acres of land for each new unit.

In 2007 there were 7,407 licensed mobile home sites in 29 mobile home parks in Monroe County. This equals about 12% of the total housing stock. This is a significantly higher proportion of mobile homes than the state (6.5%) or in southeast Michigan (3.6%).

Over 3,200 mobile home sites have been built since 1987.

According to the 2000 Census, 170 housing units lacked complete plumbing facilities and 161 lacked complete kitchen facilities. This indicates a general lack of sub-standard housing in the county. About 20% of the housing stock was built prior to 1940.

The 2001 Monroe County Housing Needs Assessment found a severe shortage of housing affordable to households with less than half of the area median income – approximately 13,000 households in 1997.

GOALS - RESIDENTIAL

Residential development in Monroe County should be designed to provide an appropriate mix of housing options for all members of the community, should be supported by the necessary public improvements, and should not conflict with the other land uses necessary to maintain a healthy economy and environment.

OBJECTIVES – RESIDENTIAL

Future residential development should be located in those areas of the county with the necessary public improvements to support growth, including water supply, sanitary sewers, schools and transportation.

- Maintain up-to-date information of the availability of public water and sewer service areas
- Increase participation in decisions on public utility extensions and transportation improvements

- Increase participation in decisions on construction of public improvements which support residential development, such as schools, fire halls, libraries, and parks
- Avoid extending public utilities in areas not planned for residential development, except for significant public health concerns
- Study the impact of utility extensions on future land use patterns and study the impact on the public costs created by new residential development

Future residential development should not be located in those areas of the county which are essential for the agricultural economy, for flood control, and for protection of water quality and the natural environment.

- Maintain up-to-date information on flood hazard zones, ground water recharge areas, and sensitive natural areas
- Explore the use of tools such as transfer of development rights and urban growth boundaries in order to clearly delineate suitable residential areas and protected open space and agricultural zones

Encourage residential development techniques which conserve land and which show design techniques that promote a sense of community.

- Create incentives for new development and infill development within the existing cities and villages of Monroe County
- Require new residential developments to provide amenities such as sidewalks, open space, interconnected bike paths, and other design features which create neighborhoods and communities that contribute to the quality of life
- Limit large lot rural development to selected portions of the county where this type of housing can be provided without destroying the rural character of the primary agricultural regions of the county
- Encourage the use of planned unit development, open space development, and traditional neighborhood development as techniques which conserve land and create cohesive neighborhoods

Provide for a diversity of housing options in order to meet the needs of the various ages, income levels, life styles, and other situations of the current and future community.

- Targets should be set for low and moderate income housing, manufactured housing, multiple family housing and elderly housing so that these choices are available in reasonable amounts.

- Support programs which encourage ownership of single family homes
- Support programs which provide incentives for the rehabilitation and restoration of older and historic homes

RECREATION AND OPEN SPACE

ISSUES

Outdoor recreation sites in Monroe County include a mix of State, County, and local facilities; privately owned parks, clubs, campgrounds, golf courses, marinas, and recreation centers; school playgrounds; and other unique historic and cultural sites. The County lacks regional parks, although the metropolitan Detroit and Toledo areas have regional parks within a reasonable distance.

The County of Monroe has 5 parks spread throughout the County which provide a variety of facilities and open spaces.

Access to Lake Erie and the River Raisin is available at selected locations, although the ability of the public to gain access to these bodies of water is fairly limited.

The County lacks an integrated network of pedestrian and bicycle paths, although the existing paths are heavily used and public surveys have shown a strong interest in additional facilities. Opportunities exist to connect Monroe County to a growing network of paths throughout the region.

GOALS AND OBJECTIVES

(from approved 2008 Monroe County Recreation Plan)

Improve Existing Parks

- provide recreational opportunities for all county residents regardless of race, sex, age or physical condition
- provide safe, clean, and enjoyable parks
- improve opportunities for winter recreation in County parks
- improve opportunities for water-based recreation in County parks
- improve opportunities for walking, biking, and other trail-based recreation in the County parks and work toward the development of a county-wide trail system which would connect the County parks with each other and with other points of interest

- improve natural habitat in County parks
- improve opportunities for natural resource based recreation in County parks

Encourage Use of County Parks

- provide diverse recreational opportunities
- develop informational campaign to promote awareness of Monroe County recreational opportunities
- make County parks fully accessible to persons with or without disabilities
- develop recreational programs within County parks and partner with community groups seeking recreational pursuits
- improve signs and entrances at all County parks where needed
- develop a schedule of nature walks and interpretive programs at county parks and other sites
- encourage volunteer efforts to use and improve the County parks
- promote the County parks as a site for large festivals or gatherings

Encourage Use of River Raisin

- provide canoe and kayak landings
- encourage volunteer efforts to use and improve the River Raisin
- develop interpretive water trail and guide booklet
- improve and restore wildlife habitat in coastal areas

Acquire Additional Park Facilities

- acquire access sites on Lake Erie, rivers, and/or ponds
- acquire or preserve linear parks and greenways for trails and conservation
- acquire woodlands, wetlands and other natural areas for preservation
- encourage preservation of open space and natural areas through the purchase of development rights, conservation easements, and means other than outright acquisition

Provide Necessary Funding and Manpower to Efficiently Run the Park System

- explore alternative organizational approaches to managing the park system
- hire additional maintenance staff, as needed
- continue to utilize public and private grant programs for funding park development

- investigate alternative sources of funding for park programs, including donations, bonds, and millages
- develop fees charged for special uses of parks

Improve Cooperation and Representation with Other Recreation Providers

- seek cooperative arrangements with other providers such as school districts, local park commissions, private recreational interests, etc.
- participate in state and regional recreation planning organizations (Michigan Recreation and Parks Assn. (MRPA); Southeast Michigan State, Regional and County Parks System (SPARCS); SEMCOG; TMACOG; Southeast Michigan Greenways Initiative; Huron Clinton Metroparks; Toledo Area Metroparks; Downriver Linked Greenways; Detroit Heritage River Water Trail; National Park Service Rivers, Trails, and Conservation Assistance Program; etc.)

ECONOMIC DEVELOPMENT

ISSUES

The number of jobs located in Monroe County (48,526 in 2000) is less than the Monroe County labor force (68,835 in 2000), resulting in a large number of county residents traveling to other counties or other states for employment.

Manufacturing is a major segment of the local economy, particularly manufacturing of automotive equipment. The lack of diversity in the local economy often leads to more extreme employment rates than at the state or national levels.

The retail and service segments of the economy have shown large increases and are projected to continue to increase.

Existing factors which support economic development in Monroe County include:

- Access to diverse transportation systems, including interstate highways and a network of Class A all-weather surface roads, railroads and rail yards, a port on the Great Lakes, a local airport, and proximity to an international airport (Detroit Metro) and air cargo airports (Willow Run, Toledo Express).
- The presence of public water and sewer service and the availability of reliable electrical and natural gas service

- Economic development agencies at the local, state and county levels
- A diverse labor pool with access to job training and development programs
- Proximity to other major population, manufacturing, and higher education centers (Toledo, Detroit, Ann Arbor)

There is a perception of untapped potential for retail trade and businesses related to tourism in Monroe County. The largest retail center in the County, the City of Monroe central business district, has lost many of its major retailers over the past few decades, while there has been the development of regional malls and strip commercial development in the surrounding townships. Few retail outlets in Monroe County have the ability to attract visitors from outside of Monroe County, with the recently developed Cabela's store in Dundee being a notable exception.

GOAL – ECONOMIC DEVELOPMENT

Provide a strong and balanced economy which meets the county's needs for employment opportunities, for goods, and for services, while being designed and located in a manner which is compatible with the physical environment.

OBJECTIVES – ECONOMIC DEVELOPMENT

Encourage the development of a diversified economic base to provide the population with a range of employment opportunities and to help protect the economy against the dependence on one or two basic industries.

- Update the Monroe County Comprehensive Economic Development Strategy (CEDS) on an annual basis. The CEDS qualifies local units of government to participate in funding programs available through the U.S. Economic Development Administration. Preparation of the CEDS also provides an opportunity for a periodic reassessment of economic development activities at the local level.
- Continue to cooperate and provide assistance to the existing economic development network, including the Monroe County Industrial Development Corporation, the Monroe County Community College, and the Monroe County Economic Development Corporation.
- Continue working with local units of government in their efforts to expand the local economic base. This assistance can include the development or revision of land use plans, and zoning ordinances so that they do not act as deterrents to economic developments.

Encourage the availability of an adequate number of economic development sites at appropriate locations throughout the county without over zoning for commercial or industrial purposes.

- Identify appropriate locations for commercial and industrial establishments considering the following criteria: Current use of the site, characteristics of the surrounding area, parcel shape and size, the availability of public utilities and traffic patterns.
- Maintain an economic development data base including information on demographics, the availability of public utilities, economic trends, aerial photography, property maps, land use maps, etc
- Consideration should be given to locating new industries in industrial parks and away from residential area or other areas where there is a potential for adverse land use impacts.
- Designated industrial sites should be located in areas served by public utilities, with easy access to major transportation routes.
- Appropriate market support and locational requirements should be considered with respect to neighborhood convenience shopping centers. Other factors that should be considered include accessibility to major highways, aesthetics and adequate parking.
- Strip commercial development should be discouraged with access limited to service roads.
- Recognize the impact that the "big box" type of commercial development has on the vitality of existing downtowns and commercial centers.
- Existing commercial centers in the existing cities and villages should be the highest priority for revitalization, improvement and expansion.

FUTURE LAND USE PLAN

PURPOSE

The Monroe County Future Land Use Map presents a vision for the future growth and development of the county in terms of the allocation of broad areas of land for specific types of uses. Some of the main purposes of this map include:

- Assisting Township and County Planning Commissions in reviewing township zoning change requests and in determining if such requests are consistent with the future plan.
- Assisting developers, residents, conservationists, economic development agencies, public utility authorities, educational interests, and others in providing guidance for selecting suitable locations for future uses that will promote land use patterns that are compatible, sustainable, efficient, and economical.
- Assuring for the future land use needs of the community by recommending that particular areas be reserved for specific uses, even if the demand for these uses is not yet present, and by recommending that existing land use patterns that are consistent with the plan be preserved in order to promote their long term viability.
- To serve as a model or a starting point for local land use planning efforts which would result in a system of cohesive and compatible local plans, as well as compatibility with the planning efforts of adjacent jurisdictions.

GUIDING PRINCIPLES

The following principles helped to guide the development of the future land use plan and served as a basis for making decisions regarding future land use patterns. These principles should also guide the plan's implementation and interpretations and updates of the plan.

- Monroe County will sustain its current population and is projected to increase moderately (8%) over the next twenty years. The challenge for local governments and the County Planning Commission is to provide suitable land for this development in logical and defined locations that maximize the use of existing governmental services and infrastructure.
- No single local government or the County can effectively manage Monroe County's land resources at the exclusion of other entities. This means

that the chief role of the Monroe County Planning Commission is to focus on cooperation, collaboration, coordination and communication.

- The County Planning Commission should provide a countywide plan for a pattern of future desired land use that creates a vision emphasizing distinct centers of urban land uses surrounded by an interconnected pattern of land desired for open space and farmland preservation. Vibrant and sustainable urban centers go hand in hand with a vibrant and sustainable system of agricultural and open space lands.
- The most desirable and efficient pattern of urban development for the County is compact development directed into and around communities with existing infrastructure and planned future infrastructure extensions.
- The most desirable pattern of farmland and open space preservation is based on the physical properties of the land and water resources, private and public land ownership patterns, and the presence of natural and cultural resources worthy of long-term preservation.
- The goal of improving the quality of life in Monroe County is achieved not only by an orderly pattern of future land use but also through the provision of employment and economic growth opportunities, convenient transportation within and between population centers, quality affordable housing choices, and cultural and social amenities which together enrich daily life experiences.
- Providing economic development opportunities in a changing economy will require the allocation of not only land resources and infrastructure, but an economic climate and a quality of life necessary to attract new investment. The limited sites that are well suited for either manufacturing or for new and innovative science and technology industries need to be identified and preserved before they are lost to other uses.
- Maintaining the infrastructure which supports our existing urban centers and economic development centers is as important, if not more important, than extending infrastructure to serve new or isolated development. The long term economic and environmental health of the county depends on a efficient and well maintained system of transportation, energy, water, sewer, solid waste, drainage, and communication.
- The County Planning Commission should serve as a coordinating, problem-solving and facilitative body for inter-jurisdictional planning problems including, extensions of infrastructure, connectivity between land use plans of adjoining local units of government, and other planning issues that transcend jurisdictional boundaries.

- The County Planning Commission should serve as the repository and clearinghouse of information and technical resources (including professional staff capacity) necessary for implementation of this plan by both local governments and the County Planning Commission.

METHOD

The Monroe County Future Land Use Map was developed using a multi-step process outlined below:

1. Identification and definition of the various uses to be included in the future land use map.

   The map consists of 8 broad land use categories: agricultural preservation, secondary agriculture, residential, commercial, industrial, industrial reserve, science and technology, and open space. These categories are intended to cover the wide range of land uses that are present or which could reasonably be expected to occur in Monroe County.

2. Analysis of physical and cultural resources as they impact land use decisions.

   Studies of such factors as infrastructure, soils, flood zones, natural features, and existing land use patterns were conducted as a tool to determine suitable locations for different types of land uses.

3. Development of suitability maps for various uses.

   Individual maps were created which were intended to depict the most suitable locations for each of the major land use categories. Various factors were mapped and overlain in order to find locations which had those combinations of factors which were determined to be best suited for specific land uses.

4. Combination of suitability maps into draft plan.

   The individual suitability maps were combined into a single map which depicted a rough draft of a future land use plan. Some areas of the county had two or more uses which were well suited for those locations, while other areas had one or less uses identified as being well suited. The draft map was also compared with local future land use plans to determine consistency of preliminary recommendations.

5. Refinement of draft plan, including public review and input.

   The draft map was carefully reviewed and revised and then was made the subject of a series of Planning Commission meetings and other public review sessions which led to further refinement and revisions.

FUTURE LAND USE PLAN – MAP CATEGORIES

Agricultural Preservation: Agricultural Preservation lands are areas specifically identified as being the best suited for long term preservation and use as protected agricultural production areas. The Agricultural Preservation areas are generally located in areas which contain USDA defined prime farmland soils or soils of local importance, are currently used as farmland and have been cleared, drained and otherwise been improved for agricultural production, and are in areas of large parcels with only minor amounts of residential or urban development. Agricultural Preservation lands should be limited to farming and food production, greenhouses, orchards, livestock, forestry, open space, and similar uses which would be compatible with and would help promote the exclusive agricultural nature of these areas. Only limited residential development should occur, primarily that development closely associated with farming. Commercial or industrial development which is closely associated with or supportive of the exclusive agricultural designation could be considered.

Secondary Agricultural: Secondary Agricultural areas are intended for continued agricultural production, but are considered as less well suited for intensive preservation efforts due to factors such as less productive soil conditions, existing land uses and land division patterns. These areas are generally associated with the Agricultural Preservation areas, but also are located near the county's urban centers. Uses similar to those recommended for the Agricultural Preservation areas are appropriate, although small farms, hobby farms, limited rural residential development, and other uses which do not require significant public investment in terms of infrastructure and services could be considered.

Residential: Residential areas are those locations which are recommended for neighborhood development and housing, as well as the types of uses which serve and are compatible with residential settings, such as public buildings, schools, houses of worship, local parks, and similar uses. Residential areas are recommended to be distinct centers, which, along with associated commercial areas, are in locations served by adequate infrastructure (roads, sewer, water, police, fire, schools, parks etc.), are associated with historic population centers, and provide a quality setting for a variety of housing choices.

Commercial: Commercial centers are the areas recommended for retail, services, offices, and the types of uses which provide for employment, commerce, and economic growth. The future land use plan recommends concentrated commercial development primarily in areas adjacent to existing, appropriately zoned commercial centers as opposed to long strips of commercial development along major roads. Although widely different commercial types are grouped together (walkable downtown business districts, regional shopping centers, highway commercial, marina commercial, etc.), almost all commercial uses should be on major thoroughfares, be served by public utilities, and should be located to

avoid harmful impacts on traffic patterns, adjacent land uses, and environmental quality.

Industrial: Industrial areas are designated as sites for manufacturing, processing, storing, transporting, generating power, and product distribution. These sites are important centers for employment and tax base, and as such are essential to a diverse and vibrant economy. Locations for industrial sites tend to be located in areas served by highways, primary roads, and rail lines, are served by public sewer and water, and are near existing industrial centers. In addition, quarries and landfills are identified as industrial uses, although the long term viability of these sites for their current use is generally limited, and proper reclamation will provide future opportunities for innovative re-use.

Industrial Reserve (overlay): Industrial Reserve is an overlay designation given to certain areas which, although lacking in all of the criteria which characterizes the primary industrial sites in the county, have potential to serve, in the future, as industrial centers. The Industrial Reserve areas identified are all near highway interchanges and rail lines, and are near existing public utility service areas. The intent of the overlay district is to indicate that although not currently well suited for industrial uses, it is important to retain the existing open space in these areas and to prevent their subdivision or conversion into other uses so there will be a reserve of land for economic development opportunities in the future.

Science and Technology: The Science and Technology areas are intended to provide for economic development uses which are in the "new economy" or emerging high-tech sectors related to life sciences, research, technology, alternative energy, advanced automotive and manufacturing, and similar types of uses. Although light manufacturing types of uses might be appropriate, the Science and Technology designation is more aimed at promoting Monroe County and the surrounding high-technology corridors along US-23 and I-275 which connect together the major universities, hospitals, corporate headquarters and research and development centers of the southeast Michigan and northwest Ohio region.

Open Space: Open Space areas represent areas to remain free from urban development due to their ecological importance, their limitations due to flooding or wetlands, or their cultural importance as parks, historic sites, cemeteries, or other public open spaces. Although somewhat fragmented geographically, many of the Open Space areas on the future land use map are interconnected through the flood plains and linear open space along the county's system of drains, streams, and rivers. Although ideally intended to serve as a refuge for natural features and wildlife, some other uses are compatible with the Open Space designation, such as certain types of forestry, outdoor recreation, agriculture, and similar uses.

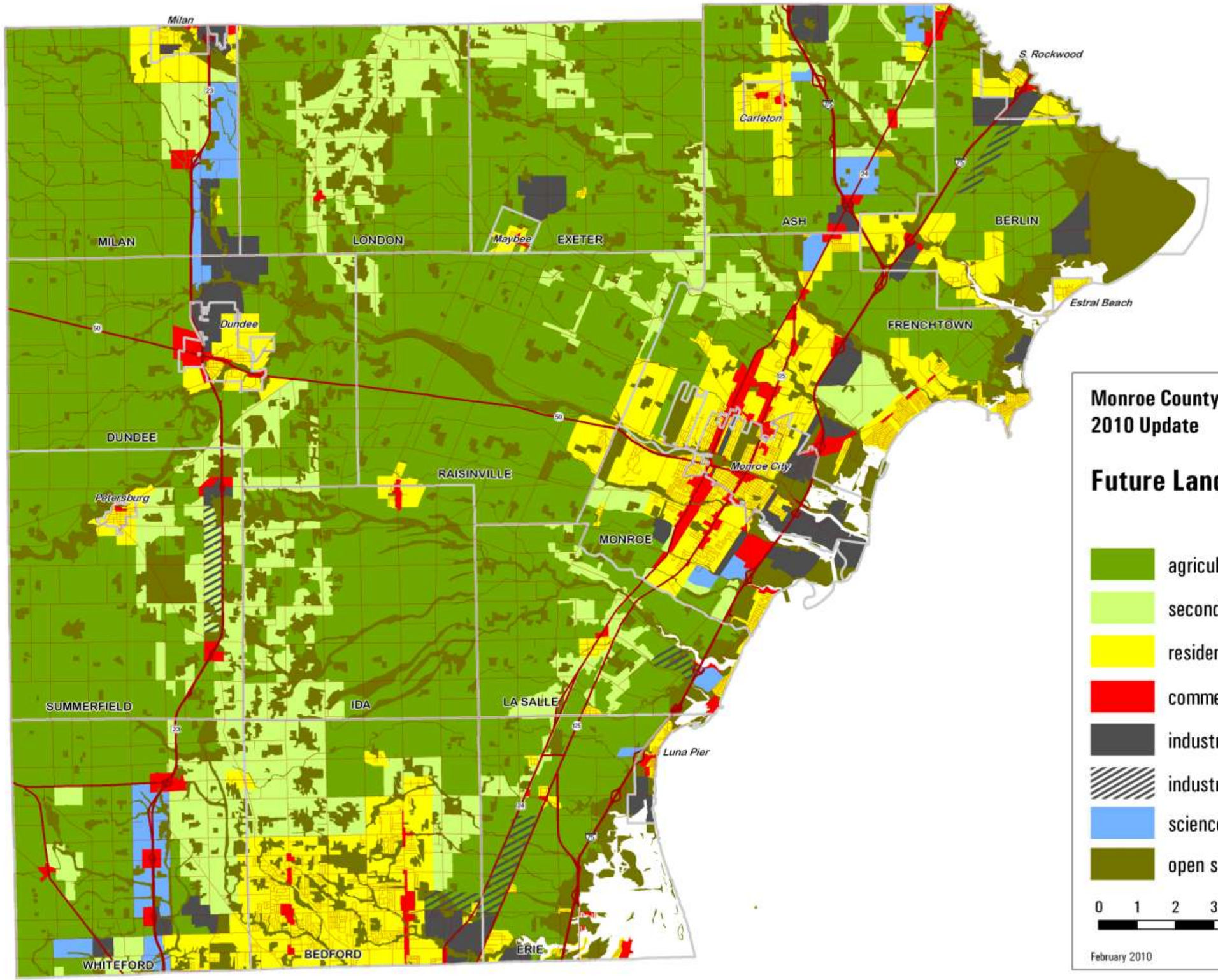
ADDITIONAL PLANS

Monroe County has a variety of officially adopted plans on specific concerns which have, for the most part, been developed to comply with the specific format requirements of outside agencies or state or federal programs. The following planning documents are county-wide or regional in scope and are incorporated by reference into the Monroe County Comprehensive Plan:

- Monroe County Coastal Zone Management Plan (2008) – prepared by the Monroe County Planning Department in accordance with the provisions of the Federal Coastal Zone Management Act of 1972 (P.S. 92-583) and the State of Michigan's Coastal Zone Management program.
- Monroe County Solid Waste Management Plan-1999 Update (2001) – prepared under the direction of a Solid Waste Planning Committee in compliance with Part 115 of the Michigan Natural Resources and Environmental Protection Act (PA 451 of 1994).
- River Raisin Watershed Management Plan (2007) – prepared under the direction of the River Raisin Watershed Council in compliance with the Federal Clean Water Act – Section 319 - Nonpoint Source Management Program.
- 2030 Regional Transportation Plan for Southeast Michigan (2004, updated 2008)– prepared by the Southeast Michigan Council of Governments in accordance with state and federal transportation planning and funding requirements, including the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005.
- Monroe County Capital Improvements Plan (2008) – updated annually under the direction of the Monroe County Planning Commission under authority of Section 65 of the Michigan Planning Enabling Act (PA 33 of 2008).
- Monroe County 5-Year Recreation Plan (2008) – prepared under the direction of the Monroe County Parks and Recreation Commission in accordance with the Michigan Department of Natural Resources guidelines by authority of parts 19, 703, and 716 of Act 451 of 1994.
- Monroe County Comprehensive Economic Development Strategy (2009) – prepared by the Monroe County CEDS Committee under the guidelines of the federal Economic Development Administration and the Public Works and Economic Development Act of 1965 (PWEDA) as reauthorized under PL 105-393.
- Monroe County Strategic Housing Plan (1998) – prepared by the Monroe County Planning Department in conjunction with the Monroe County Opportunity Program in accordance with the guidelines of the Michigan State Housing Development Authority.

MONROE COUNTY COMPREHENSIVE PLAN

FUTURE LAND USE MAP



Monroe County Comprehensive Plan - 2010 Update

Future Land Use Map

- agricultural preservation
- secondary agricultural
- residential
- commercial
- industrial
- industrial reserve
- science and technology
- open space

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February 2010