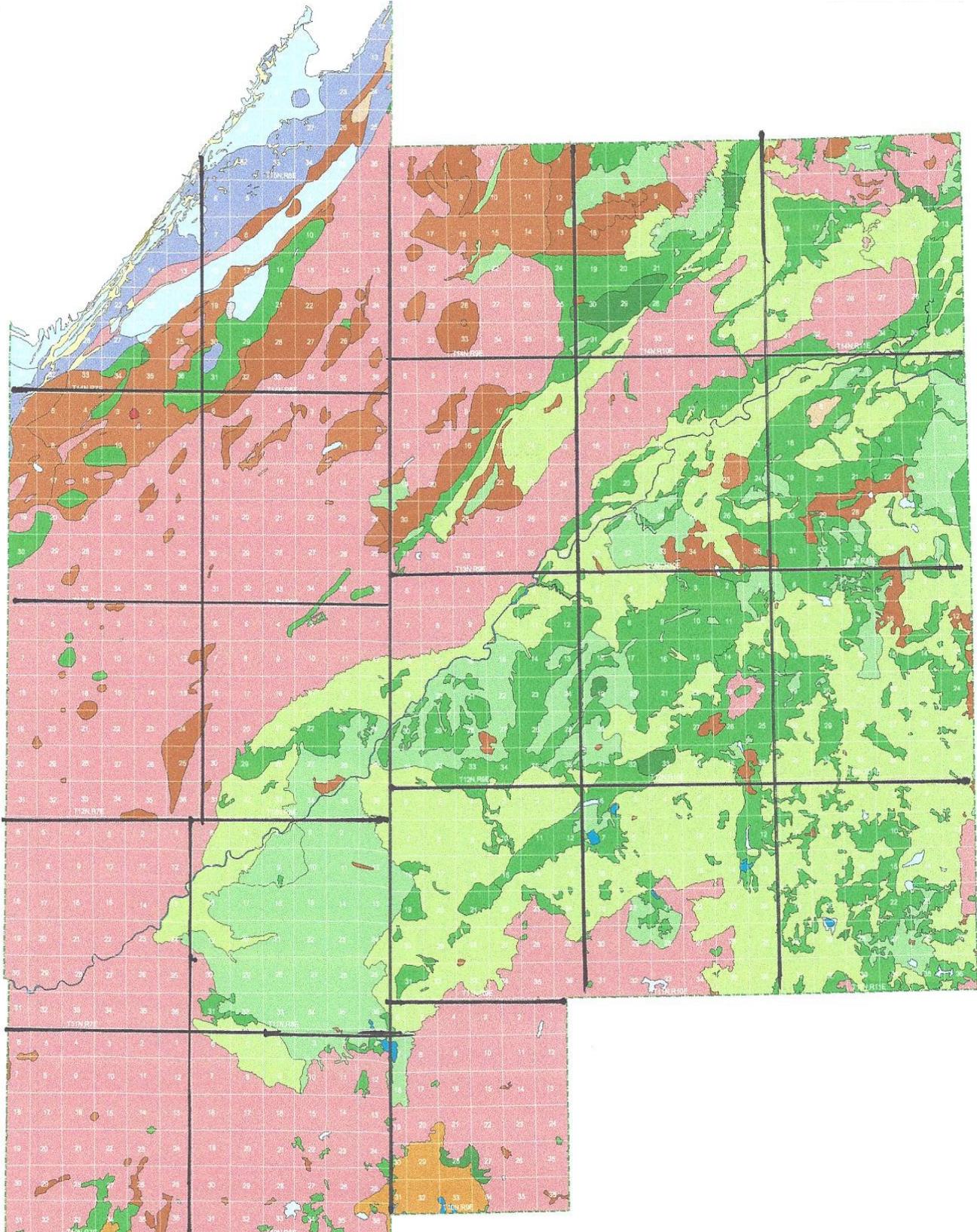


TUSCOLA COUNTY GENERAL DEVELOPMENT PLAN



COVER LEGEND

Presettlement Vegetation of Tuscola County, Michigan

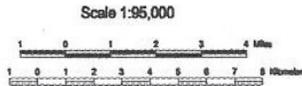
An Interpretation of the General Land Office Surveys

By P. J. Comer and D. A. Albert
Michigan Natural Features Inventory
1997

SOURCE: Comer, P.J., D.A. Albert, H.A. Wells, B.L. Hart, J.B. Reab,
D.L. Price, D.M. Kashian, R.A. Comer, D.W. Schuen (Map Interpretation),
M.B. Austin, T.R. Laibbrandt, K.M. Koroock, L. Prange-Gingroy, J.G. Spitzley,
C.J. Dalain, L.J. Springer, (Digital Map Production), 1995.
Michigan's Presettlement Vegetation, as Interpreted from the General
Land Office Surveys 1816-1858.
Michigan Natural Features Inventory, Lansing, MI. Digital Map.



MICHIGAN STATE
UNIVERSITY
EXTENSION



Map Projection: Lambert Conformal Conic



- ✓ ASPEN-BIRCH FOREST
- ✓ BEECH-SUGAR MAPLE FOREST
- ✓ BEECH-SUGAR MAPLE-HEMLOCK FOREST
- ✓ BLACK ASH SWAMP
- ✓ BLACK OAK BARREN
- ✓ CEDAR SWAMP
- GRASSLAND
- ✓ HEMLOCK-WHITE PINE FOREST
- ✓ HEMLOCK-YELLOW BIRCH FOREST
- JACK PINE-RED PINE FOREST
- ✓ LAKE/RIVER
- ✓ MIXED CONIFER SWAMP
- ✓ MIXED HARDWOOD SWAMP
- MIXED OAK FOREST
- ✓ MIXED OAK SAVANNA
- MIXED PINE-OAK FOREST
- ✓ MUSKEG/BOG
- ✓ OAK-HICKORY FOREST
- ✓ OAK-PINE BARREN
- PINE BARREN
- ✓ SAND DUNE
- ✓ SHRUB SWAMP/EMERGENT MARSH
- ✓ SPRUCE-FIR-CEDAR FOREST
- WET PRAIRIE
- ✓ WHITE PINE-MIXED HARDWOOD FOREST
- ✓ WHITE PINE-RED PINE FOREST
- WHITE PINE-WHITE OAK FOREST

✓ = LAND COVER TYPE PRESENT ON THIS MAP

TUSCOLA COUNTY GENERAL DEVELOPMENT PLAN

**Tuscola County, Michigan
125 W. Lincoln St
Caro, MI 48723
989.672.3700**

**Prepared by:
Tuscola County
Planning Commission**

**Effective Date
May 1, 2013**

TUSCOLA COUNTY, MICHIGAN

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Roger Allen, District 1
Thomas Bardwell, District 2
Christine Trish, District 3
Craig Kirkpatrick, District 4
Matthew Bierlein, District 5
Michael Hoagland, County Controller
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Jerald Peterson, Bd. of Comm. Rep.

CERTIFICATE

I hereby certify that the following General Development Plan was duly adopted by the Board of Commissioners of Tuscola County, Michigan, at a regular meeting of said Board held on April 9, 2013. Said meeting was conducted and public notice provided pursuant to and in compliance with the Open Meeting Act. Minutes of said meeting were prepared and are available from the County Clerk.

The vote for adoption was Approved.

Date of Notice of Intent: March 23, 2012
Date of Public Hearing: April 3, 2013
Date of Recommendation by County Planning Commission: April 3, 2013
Date of Adoption by County Board of Commissioners: April 9, 2013
Effective Date: May 1, 2013

Jodi Fetting County Clerk
Jodi Fetting, County Clerk 4/9/13

Interactive Table of Contents

- 1.0 INTRODUCTION
 - 1.1 Regional Setting
 - 1.2 Authority to Plan
 - 1.3 Planning Approach
 - 1.4 Plan Organization
- 2.0 PLANNING GOALS AND POLICIES
 - 2.1 Planning Determinants
 - 2.2 Tuscola County Goals
- 3.0 CAPITAL IMPROVEMENTS PROGRAM
 - 3.1 Need for a CIP
 - 3.2 CIP Process
 - 3.3 Suggested Ingredients For a Program Plan
- 4.0 PLANNING: STATUS AND CONSIDERATIONS
 - 4.1 Existing Land Use Assessment
 - 4.2 Plan Development
 - 4.2.1 Community Assessment Team (CAT)
 - 4.2.2 Local Master plans
 - 4.2.3 Community Profile
 - 4.2.4 Land Assessment
 - 4.3 The General Development Plan
 - 4.4 Tuscola County Citizens Vision For A Better Future
- 5.0 TUSCOLA COUNTY PROFILE
 - 5.1 History of Tuscola County
 - 5.2 Physical Profile
 - 5.2.1 Climate
 - 5.2.2 Geology
 - 5.2.3 Topography
 - 5.2.4 Soil Conditions
 - 5.2.5 Soil Moisture Characteristics
 - 5.2.6 Wetlands
 - 5.2.7 Water Resources
 - 5.2.8 Woodlands
 - 5.2.9 Farmland
 - 5.3 Socioeconomic Profile
 - 5.3.1 Household Characteristics
 - 5.3.2 Income and Education
 - 5.3.3 Housing
 - 5.3.4 State Equalized Value
 - 5.3.5 Economy
 - 5.4 Transportation Profile
 - 5.5 Community Facilities Profile
 - 5.6 Existing Land Use
 - 5.6.1 Methodology
 - 5.6.2 Land Use Analysis

6.0 FARMLAND AND OPEN SPACE PRESERVATION

6.1 Required Farmland components for a Comprehensive Land Use Plan

6.2 Purpose

6.3 Tying it together in Tuscola County

6.4 Highlights of the CAT report concerning farmland and open space preservation

6.5 Why Farmland and Open Space Should Be Preserved In The Community

6.6 Mapping for Farmland and Open Space Preservation

6.6.1 Mapping

6.6.2 Why Areas were selected

6.7 How the community can Preserve Farmland And Open Space

6.7.1 Supporting Infrastructure:

6.7.2 Agriculture as a Target Industry:

6.8 Agricultural Land Preservation Programs

6.8.1 State of Michigan Programs – Agricultural Land Preservation Programs

6.8.2 The Federal Program – The Farm and Ranch Land Protection Program (FRPP)

6.9 Local Planning And Zoning Tools

6.10 The Agriculture Vision:

APPENDIX

Tuscola County Economic Development Corporation

Thumb Area Tourism Council

Caro Community Hospital

Hills and Dales Community Hospital

The Lighthouse

Tuscola Area Airport

TABLE OF CONTENTS

<u>SUBJECT</u>	<u>Page No.</u>
1.0 Introduction	1-1
1.1 Regional Setting	1-1
1.2 Authority to Plan.....	1-1
1.3 Planning Approach	1-2
1.4 Plan Organization.	1-2
2.0 Planning Goals and Policies.....	2-1
2.1 Planning Determinants.....	2-1
2.2 Tuscola County Goals	2-1
3.0 Capital Improvement Program	3-1
3.1 Need for a CIP	3-1
3.2 CIP Process	3-2
3.3 Challenges	3-4
4.0 Planning: Status and Considerations	4-1
4.1 Existing Land Use Assessment.....	4-2
4.2 Plan Development.....	4-2
4.2.1 Community Assessment Team (CAT)	4-2
4.2.2 Local Master Plans	4-3
4.2.3 Community Profile	4-3
4.2.4 Land Assessment.....	4-5
4.3 The General Development Plan	4-9
4.4 Tuscola County Citizens Vision for a Better Future	4-14
5.0 County Profile	5-1
5.1 History of Tuscola County	5-1
5.2 Physical Profile	5-6
5.2.1 Climate	5-6
5.2.2 Geology	5-6
5.2.3 Topography.....	5-8
5.2.4 Soil Conditions	5-8
5.2.5 Soil Moisture Characteristics	5-14
5.2.6 Wetlands	5-14
5.2.7 Water Resources	5-14
5.2.8 Woodland	5-18
5.2.9 Farmland	5-21

<u>Subject</u>	<u>Page No.</u>
5.3 Socioeconomic Profile	5-26
5.3.1 Household Characteristics.....	5-28
5.3.2 Income and Education	5-28
5.3.3 Housing	5-30
5.3.4 State Equalized Value	5-30
5.3.5 Economy	5-35
5.4 Transportation Profile	5-36
5.5 Community Facilities Profile.....	5-38
5.6 Existing Land Use	5-48
5.6.1 Methodology	5-48
5.6.2 Land Use Analysis	5-48
6.0 Farmland and Open Space Preservation	6-1
6.1 Required Farmland components for a Comprehensive land Use Plan	6-1
6.2 Purpose	6-2
6.3 Tying it together in Tuscola County	6-2
6.4 Highlights of the CAT report concerning farmland and open space preservation ...	6-3
6.5 Why Farmland and Open space Should be Preserved in the Community	6-3
6.6 Mapping for Farmland and Open space Preservation.....	6-4
6.6.1 Map Criteria	6-4
6.6.2 Description of How and Why Areas were selected	6-4
6.7 How the Community can Preserve Farmland And Open Space	6-6
6.7.1 How the community can Preserve Farmland and Open Space.....	6-6
6.7.2 Supporting Infrastructure	6-7
6.7.3 Agriculture as a Target Industry	6-7
6.8 Agricultural Land Preservation Programs	6-8
6.8.1 State of Michigan Programs	6-8
6.8.2 The Federal Program	6-9
6.9 Local Tools for the Preservation of Farmland and Open Space	6-10
6.10 The Agriculture Vision	6-11
APPENDIX	A
Economic Development -Cooperation	A-1
Thumb Area Tourism Council	A-5
Caro Community Hospital	A-9
Hills and Dales Community Hospital	A-12
The Lighthouse	A-14
Tuscola Area Airport	A-16

TABLE**Page No.**

1. Existing Land Use Acreage	4-2
2. Future Land Use Acreage	4-5
3. Buildings of Historic Significance in Tuscola County	5-3
4. Summary of Woodland Cover Types by Township	5-20
5. PA 116 Agreements	5-22
6. Agricultural Snapshot	5-23
7. Agricultural Contributions to Government Revenues	5-24
8. Population Trends, 2000-2005	5-26
9. Socio-Population Snapshot	5-27
10. Persons per Household, Trends and Projections	5-28
11. Family, Household Per Capital Income, Poverty Status- 2000	5-29
12. Type of Housing Structures - 2000	5-31
13. Housing Occupancy Characteristics - 2000	5-32
14. Age of Structures – 2000	5-33
15. Distribution of State Equalized Values (SEV)	5-34
16. Higher Education, Tuscola County - 2001	5-39
17. Libraries, Tuscola County - 2001	5-39
18. Educational Institutions	5-40

MAP NO.**Page No.**

1. Geographic Location	1-0
2. Planning Determinates	2-0
3. Carrying Capacity	4-4
4. Future Land Use Composition	4-6
5. General Development Plan	4-8
6. Buildings of Historic Significance	5-4
7. Topography	5-9
8. Soil Association	5-10
9. Soil Conditions	5-15
10. Water Resources	5-16
11. Woodlands	5-19
12. Transportation Network	5-37
13. Schools Districts	5-42
14. Recreational Facilities	5-44
15. Existing Land Use	5-46
16. Farmland and Open Space Preservation Areas	6-5

Figure No.**Page No.**

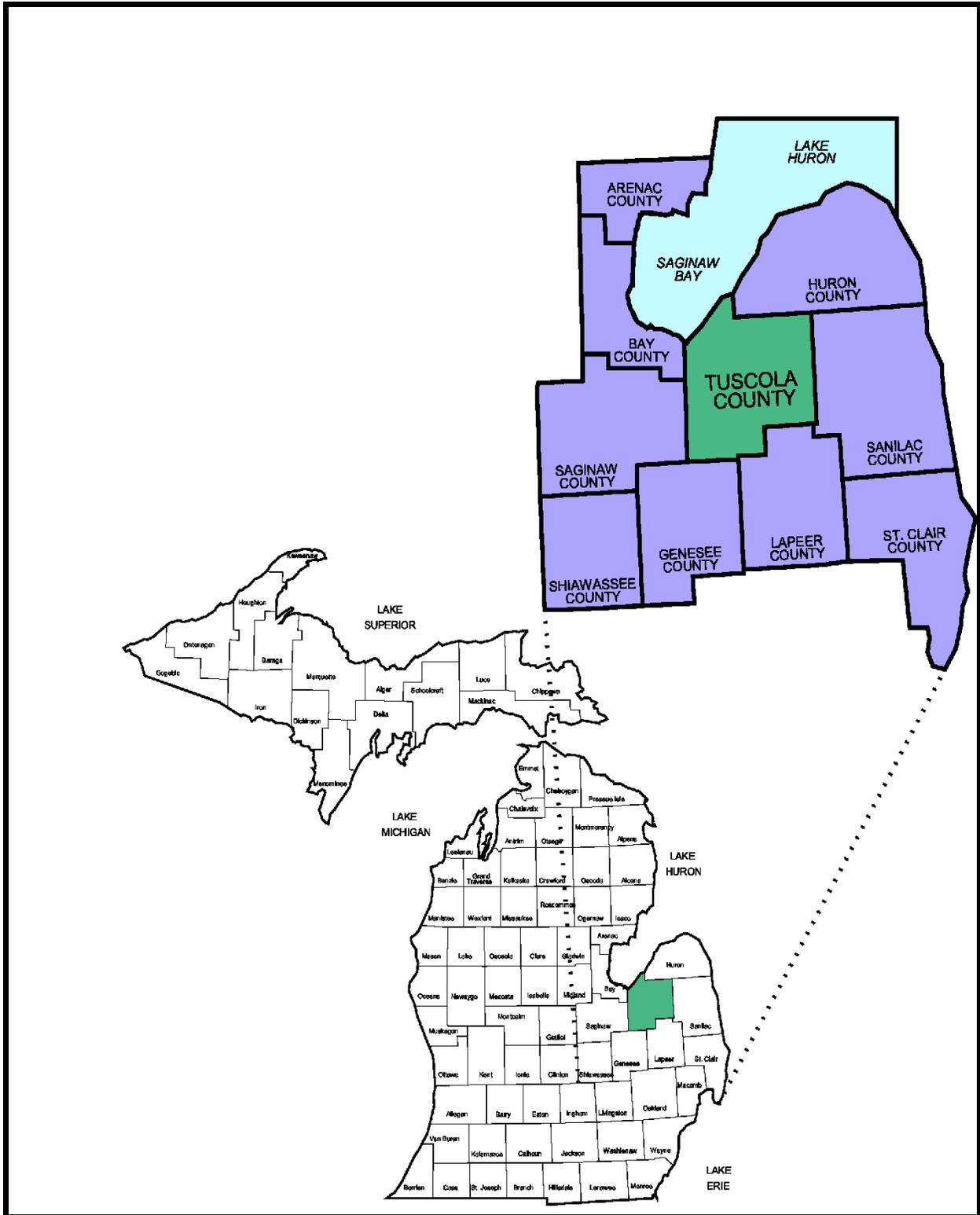
1. Indian Trails	5-0
2. Cass River Basin	5-17

CHAPTER 1

INTRODUCTION

GEOGRAPHIC LOCATION

MAP 1



1.1 Regional Setting

Tuscola County is located at the western edge of the “Thumb” area of Michigan’s Lower Peninsula. The County has a year 2010 population of 55,729 and covers an area of over 800 square miles. The surrounding counties are Bay and Saginaw to the west, Huron to the north, Sanilac to the east, and Genesee and Lapeer to the south. The County has a 20-mile stretch of shoreline along Saginaw Bay at its northwest border. **Map 1** shows the geographic location of the County.

The County contains 34 units of local government: one city, ten villages and 23 townships. The County has remained predominantly rural thus far, with extensive agriculture and small communities. Family farms predominantly characterize agriculture in the County. Due to its close proximity to the population centers of Bay City, Flint and Saginaw, and excellent access provided by I-75, M-15, M-24, M-46 and M-53, the County is expected to change in the future.

1.2 Authority to Plan

The Tuscola County Planning Commission has prepared this development plan under the authority of the Michigan Planning Enabling Act, Public Act 33 of 2008 as amended. Section 37 states:

- (1) The county board of commissioners may designate the county planning commission as the metropolitan county planning commission. A county planning commission so designated shall perform metropolitan and regional planning whenever necessary or desirable. The metropolitan county planning commission may engage in comprehensive planning including but not limited to the following:
 - (a) Preparation, as a guide for long-range development, of general physical plans with respect to the pattern and intensity of land use and the provision of public facilities, together with long-range fiscal plans for such development.
 - (b) Programming of capital improvements based on relative urgency, together with definitive financing plans for the improvements to be constructed in the earlier years of the program.
 - (c) Coordination of all related plans of local governmental agencies within the metropolitan area or region.
 - (d) Intergovernmental coordination of all related planning activities among the state and local governmental agencies within the metropolitan area or region.
- (2) In addition to the powers conferred by other provisions of this act, a metropolitan county planning commission may apply for, receive, and accept grants from any local, regional, state, or federal governmental agency and agree to and comply with the terms and conditions of such grants. A metropolitan county planning commission may do any and all things necessary or desirable to secure the financial aid or cooperation of a regional, state, or federal governmental agency in carrying out its functions, when approved by a 2/3 vote of the county board of commissioners.

The Tuscola County Planning Commission has amended this General Development Plan under the authority to plan requirements as set forth by the MICHIGAN ZONING ENABLING ACT, Act 110 of 2006 as amended, specifically article III, effective July 1, 2006.

1.3 Planning Approach

This plan is the culmination of the third phase of a planning program that began in 1996. The long-range planning program was initiated for the purpose of updating the first General Development Plan, adopted in 1974. The first phase of the 1996 program led to the adoption of a Vision and Policy Plan in January 1998. The second phase was the General Development Plan of 2002.

The Tuscola County General Development Plan of 2008 was developed using the principal that it should be based upon a “bottom-up” rather than “top-down” approach. In other words, the Plan would be based upon the following assumptions:

- a. The most effective planning and land use controls are accomplished at the local level;
- b. Build upon the strength of all local planning efforts to date in the County; and
- c. The County Plan is designed to strengthen local planning.

1.4 Plan Organization

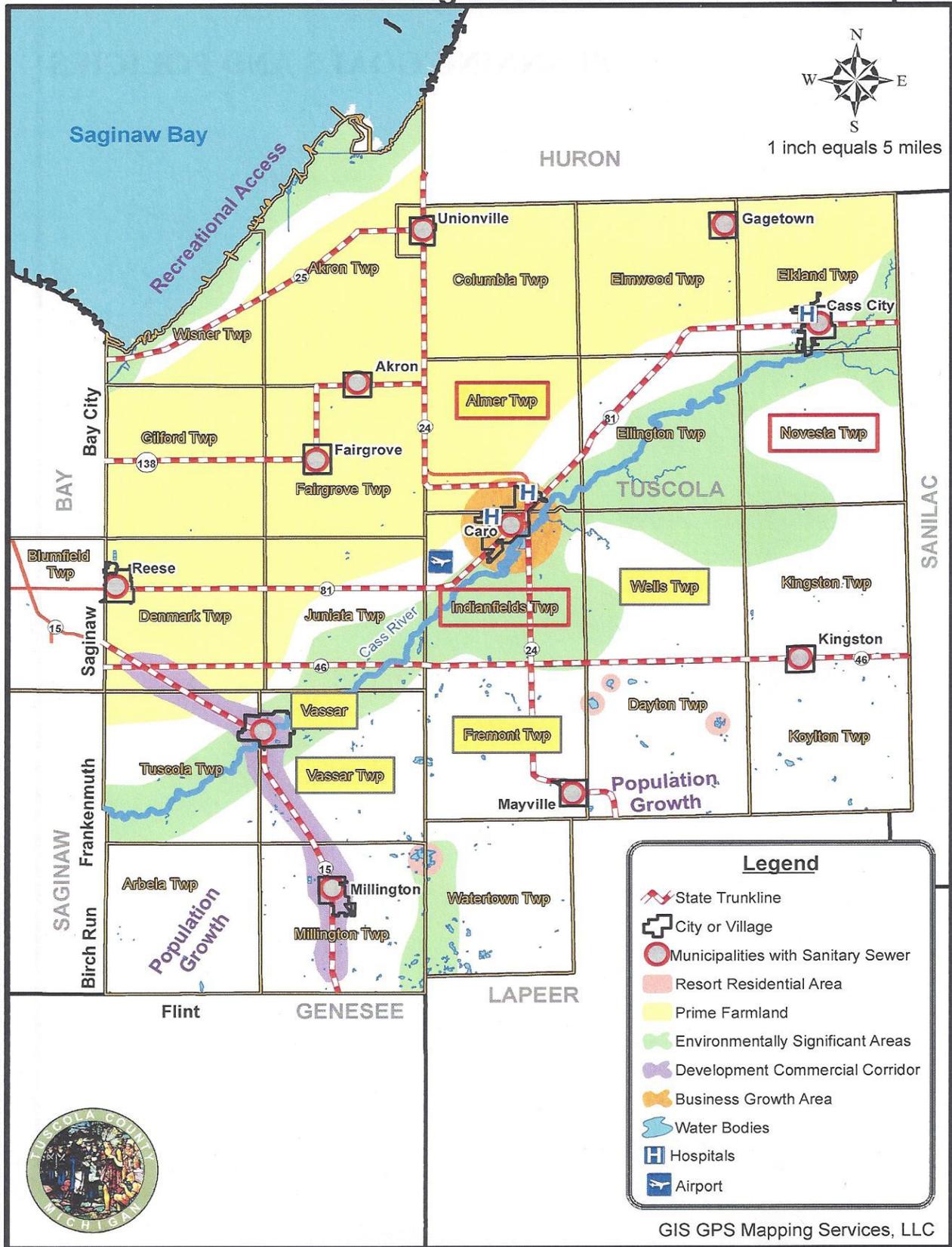
The Plan is organized into five major sections.

- ♣ Section One provides introductory information, including the regional setting for Tuscola County, legal authority for the County to plan, and purpose of the Plan.
- ♣ Section Two provides county-wide planning goals and policies that form a basis for the Plan.
- ♣ Section Three provides recommendations for developing a Capital Improvements Program.
- ♣ Section Four provides a review of the current status of planning at all levels of government in and around Tuscola County and other considerations.
- ♣ Section Five provides the County Profile.

CHAPTER 2
PLANNING GOALS AND POLICIES

PLANNING DETERMINANTS

MAP 2



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2.0 PLANNING GOALS AND POLICIES

2.1 Planning Determinants

Map 2 reveals planning determinants. Planning determinants are major “shapers” of the future land use pattern:

The preservation of prime farmland north of the Cass River.

- ♣ Tourism industry growth associated with new Saginaw Bay shoreline access, the Cass River, bordering state hunting lands, and resort residential areas surrounding inland lakes.
- ♣ County receipt of new population and residential growth from the south extending along the M-24 and M-15 corridors.
- ♣ Continued expansion of Caro as the County focal point of business growth, along with M-15 as a developing commercial corridor.
- ♣ Continued County reliance on employment and shopping opportunities found in Bay City, Saginaw, Birch Run, Frankenmuth, and Flint.
- ♣ Maintenance of a rural development pattern because of limited public sanitary sewer systems.
- ♣ Capitalizing on current County assets such as the Caro Municipal Airport and healthcare facilities.

2.2 Tuscola County Goals

A revised “*Tuscola County Goals and Policy Plan*” was completed in January 2008 and reviewed and amended in 2012. The following is a summary of that Plan:

General Goals and Policies

The Tuscola County General Development Plan will serve to establish a decision-making framework for the coordinated development of the County. To achieve a fiscally, socially and environmentally responsible land use pattern consistent with local and county objectives.

1. All land use and development shall be based on PA 110 of 2006 as revised, PA 33 of 2008, Michigan’s Planning Enabling Act of 2008 and Schindler’s Land Use Series Checklist.
 - A. Land Use policies shall ensure the continued health, safety and general welfare of the residents of Tuscola County
 - (1) through Master Plans and zoning,
 - (2) education and training seminars.
 - B. Land uses shall be grouped in a well balance pattern of land uses that
 - (1) are in proper relationship to each other,
 - (2) meet present and future community needs,
 - (3) provide efficient, economical and environmentally practical land use.
 - C. Redevelopment will be encouraged, consistent with other County goals supporting orderly planning and well-organized land use.

-
2. Positive elements of the Tuscola County general environment will be maintained and preserved, keeping Tuscola County a desirable place to live by,
 - A. Assisting local units of government to comply with PA 110 and PA 33 and other legal requirements.
 - B. Reviewing and addressing the local units Master Plans, zoning, and ordinance changes.
 - C. Suggestions and pointing out legal requirements.
 - D. Insuring that growth is managed not inhibited.
 - E. Assuring availability and adequacy of but not limited to:
 - (1) public safety.
 - (2) public utilities.
 - (3) streets, community facilities and other requirements.

Planning and Zoning Goal:

The County Planning Commission will promote consistent and coordinated decision-making on all land use issues by county and local units of governments that are consistent with Federal and State agencies and guidelines.

The County will take the lead in helping local communities to prepare plans and regulations.

The Tuscola County Planning Commission will...

1. Take a leadership role in providing local units government with the planning and zoning data and techniques they need to properly deal with development or land use issues.

Action:

- A. Assign members of the Tuscola Planning Commission to local units of government to assist coordination of their Master Plan and Zoning Ordinance.
 - (1) Each member introduces themselves to the local units assigned to them
 - (2) Each member gives the local units contact numbers for information or questions
 - (3) Each member attends meetings of local units of government on a bi-annual basis to maintain and open lines of communication
 - (4) Each members reports the results of their contact with their assigned units of government at the monthly meeting.
 - B. Review assignments on a yearly basis
2. Promote consistent and coordinated decision-making on all land use issues by all Federal, State, and County agencies; as well as all local units of government.
 3. Work with all local units of government to improve communication on land use and development matters of interest or concern to all County Residents and provide a recognized and respected forum for discussions on issues of common concern.

Action:

- A. The Commission will send out semi-annual, or as needed, newsletters
The newsletters will include information on new laws, zoning, educational updates, and other relevant information regarding planning and zoning.
- B. Commission members will visit municipalities for information purposes.
 - (1) Members will give new information to municipalities as needed
 - (2) Members will be available for questions.
The member will give answers that day or research the information and review the information with the municipalities in a timely manner.

-
- C. Encourage all local units of government to prepare or update land use plans and provide data, information or technical assistance for these master plans, where possible or when requested.
 - (1) Members will give handouts to the municipalities as needed for information gathering on preparing and updating land use plans.
 - (2) Members will send out reminder notices to municipalities for Master Plan updates.
 - D. Study the feasibility of implementing a geographic information system within the County capable of meeting the needs of County departments and local units of government.
 - (1) Members will research other adjacent County systems
 - (2) Gather data regarding GIS systems
 - E. Establish a strategic program that will identify specific organizations, processes and a structure responsible for implementing the various plan proposals contained within this document.
3. Update website for criteria documents for Master Plans and Zoning as changes in legislation occur.

As a result of County initiatives for enhanced training and education, improved communication and a sharing of information, up-to-date local Master Land Use Plans and Zoning Ordinances will be utilized throughout the County.

Implementation Strategies:

1. **Shape** the Tuscola County General Development Plan so that it is in part a traditional “county master plan,” but also a “Tuscola County Planning Guidebook,” providing tools, techniques, and references that both the County Planning Commission and local planning commissions can utilize on a routine basis in conducting everyday business.
2. **Prepare** an annual strategic plan for non-capital tasks, to be undertaken by the Planning Commission, including such items as (1) grant writing, (2) zoning ordinance or zoning technique updates, (3) county-wide/regional training programs, (4) other community “outreach” efforts.
3. **Utilize** community task forces for the study and planning that will be required to implement future plan proposals.

The State of Michigan recently passed new laws amending the existing planning laws for municipalities and townships in order to promote intergovernmental cooperation and joint planning among neighboring communities. Adopted on January 9, 2002, Public Act 263 of 2001 (which amends the Township Planning Act) and Public Act 265 of 2001 (which amends the Municipal Planning Act) created new guidelines for preparing and adopting a master plan. Highlights of the new laws are given below.

At the beginning of the Master Planning process, a community must send a notice to adjacent communities and to the County informing them that they are intending to prepare a Master Plan. Once the community has prepared a draft plan, that plan must be sent to all of the neighboring communities and county for review and comment. It is the duty of the County to decide whether the proposed Plan is consistent with Plans of adjacent communities and the County Plan. This period of review and comment by the communities and County will take no more than 95 days. After the review and comment period is over, the community preparing the Master Plan must hold a public hearing for adoption.

The new planning acts also give more responsibilities to the local governing body in the Master Planning process. The local governing body has the opportunity to review and comment on the draft plan and must approve its distribution to adjacent communities and the County. The intent is to ensure that the governing body is in general agreement with the plan before it is sent out for comment.

Another noteworthy change in the Master Planning process is that **ALL COMMUNITIES ARE TO REVIEW THEIR MASTER PLANS EVERY FIVE YEARS** to determine whether their plan should be continued, amended, or revised.

CHAPTER 3

CAPITAL IMPROVEMENT PROGRAM

3.0 CAPITAL IMPROVEMENTS PROGRAM

A capital expenditure can be defined as any outlay that produces benefits in periods beyond the current accounting period. Examples include buildings, bridges, motor vehicles, computers and other high cost (typically \$5,000 or more) items. A Capital Improvements Program (CIP) establishes a formal mechanism for consideration and implementation of capital expenditures within prevailing constraints covering a period of six (6) years, with the first year representing the current capital budget.

3.1 Need for a CIP

There are many reasons for having a CIP.

- There are strong equity advantages. Projects may be paid during the life of the project; thus, all users (existing and future populations) pay for the project.
- Capital budgets can help to stabilize the tax rates when individual projects are larger relative to the tax base of the host municipality.
- In a single year budget, there usually is a bias against big-ticket items. A multi-year CIP can, therefore, improve the chances for a more reasoned response to a demand for public facilities and improvements.
- A CIP is a valuable financial management tool. It can help to regularize construction activity, avoid bunching of debt and to balance spending with the resources that are available.
- A CIP is a valuable administrative tool and can help to avoid mismanagement of programs and funds (i.e., paving a street one year only to tear it up the next year to construct a sewer).
- A CIP can allow improvement proposals to be tested against set policies and/or goals, objectives and plans of the community. In fact, cities, villages and townships having an adopted Master Plan under authority of the Municipal Planning Act (PA 285 of 1931, as amended) must annually prepare a CIP. Section 9 of PA 285 reads, in part:

For the purpose of furthering the desirable future development of the municipality under the master plan the city planning commission, after the commission shall have adopted a master plan, shall prepare coordinated and comprehensive programs of public structures and improvements. The commission shall annually prepare such a program for the ensuing 6 years, which program shall show those public structures and improvements, in the general order of their priority, which in the commission's judgment will be needed or desirable and can be undertaken within the 6-year period. The above comprehensive coordinated programs shall be based upon the requirements of the community for all types of public improvements, and, to that end, each agency or department of such municipality concerned with such improvements shall upon request furnish the commission with lists, plans and estimates of time and cost of public structures and improvements within the purview of such department.

3.2 CIP Process

A seven (7) step process is used in preparing a CIP.

Step 1: Identify Alternative Fiscal Resources

Funding can come from a variety of sources. These include the following:

Current revenue (pay-as-you-go from current revenues such as general taxation, fees, service charges, or special funds).

Reserve funds (surplus funds, depreciation reserves, or sale of capital assets).

General obligation bonds.

Revenue bonds.

Lease-purchase.

Authorities and special districts.

Special assessments/Business Development Districts

Tax increment financing.

State and federal grants are also available to fund capital projects.

Step 2: Solicit Projects from Department Heads

Project requests should be collected using a Project Request Form. Such requests should identify, at a minimum, the following information for each requested project:

- Cost estimates.
- Funding source.
- Project description.
- Priority of project.

Projects should evolve from Program Plans prepared by department heads. It should be more than a schedule of projects. It should be drafted based upon stated policies, criteria, standards and priorities.

Step 3: Prioritize Projects

It is important to rank competing projects, given limited resources (financial, administrative capacity to implement, etc.) that are available.

Projects may be segregated by project type.

- ♣ Essential projects.
- ♣ Desirable projects.
- ♣ Acceptable projects.
- ♣ Deferrable projects.
- ♣ Projects which contribute to public safety, prevents hazards, satisfies a critical need, or would be of benefit but not essential.

Provides protection of life, maintains public health, conserves natural resources, or replaces obsolete facilities and/or items.

Step 4: Conduct Financial Analysis of Prioritized Projects Based Upon Community's Capability of funding.

Data collected in Step 3 is next compared to the results in step 1 to determine if funding capability exists.

3.3 Suggested Ingredients For a Program Plan

1. Inventory of Facilities.

There should be a comprehensive inventory of the facilities in the program area. Include only those facilities that meet the CIP definition of a capital improvement. At a minimum, this inventory should identify basic data on the location and size of all the facilities. Additional information should include:

- ♣ date of the original construction, or the latest major rehabilitation
- ♣ condition (see below)
- ♣ capacity
- ♣ an estimate of its value
- ♣ type of material from which facility is constructed

2. Evaluation of Condition.

An assessment of needs, based on the condition of the facility, should be prepared. Information that may be helpful includes:

- ♣ frequency of repair
- ♣ breaks in service/down time
- ♣ time since last major repair/rehabilitation or original construction
- ♣ reduction in capacity, percentage of capacity available for use
- ♣ increase in unit operating costs or repair costs

3. Indicate Standards Used in Assessing Need.

Often the assessment of need is based on technical standards. The standards may be established by national, regional, technical, professional, or trade associations. Some standards may result from formal evaluations by such associations (e.g., to achieve or retain accreditation). The standards may be simply recognized practice, such as "good engineering practice," or accepted industry standards.

4. Repair/Replacement Schedule.

The facilities listed in the inventory should be on a schedule for repair or replacement. How many facilities are beyond the repair/replacement period recommended in technical (or locally developed) standards? What are the procedures and major policies by which you determine priorities for the program plan? the CIP?

5. Need for New (or Substantially Expanded) Facilities.

For proposed new or substantially expanded facilities, indicate the location, size, and capacity of the facility. There should be an analysis of the current demand and projected change in the demand for the facilities. For proposed new or substantially expanded facilities, what alternatives are available? Some state-federal programs require an alternatives analysis.

Step 5: Review Capital Improvements to Ensure Projects are Consistent with Community Development Objectives

This step can be deflected to the governing Planning Commission.

Step 6: Conduct Public Information Meeting

It is important that projects be exposed to public scrutiny to gauge the level of support and to identify any errors made up to Step 6.

Step 7: Project Comparison

Information collected in Steps 3-6 is then used to compare projects. Often, an Evaluation Form is used. The survey projects are then assembled into a Schedule of Revenue Expenditure. All information is then assembled into a CIP report and submitted to the legislative body. In turn, the legislative body adopts a Capital Budget covering only the ensuing year.

3.4 Challenges

The following “lessons learned” should be considered when developing a CIP.

Process and implementation steps should be done on an annual basis.

Process and implementation steps normally take a 4-6 month period.

Developing a balance between meeting community’s needs and its ability to fund is difficult.

Usually needs exceed ability to fund.

Selecting an appropriate level of public participation. Key is, however, to include public review prior to formal submittal to the legislative body.

CHAPTER 4
PLANNING:
STATUS AND
CONSIDERATIONS

4.0 PLANNING: STATUS AND CONSIDERATIONS

The following guiding principals are used in the formulation of the 2013Plan:

- The Plan is a visual representation of the County’s expectations for future local development. Important characteristics of this Plan are:
 - ♣ Maintain agricultural use north of Cass River
 - ♣ Encourage compact growth around existing communities
 - ♣ Protect environmental resources
 - ♣ Allow new development based upon the carrying capacity of land
 - ♣ Promote economic development in proximity to urbanized areas
 - ♣ Promote high-density residential development in emerging growth areas
 - ♣ Capitalize on the strengths and assets of the County while seeking ways to overcome its’ limitations
- ♣ The Plan provides a broad framework for land development within the County. It is expected that a finer grain of planning will occur within each local unit of government that respects the overall integrity of the County Plan.
- ♣ The Plan is generalized in nature as a means to coordinate (not dictate) the planning activities between units of government, to respond to changing conditions and trends, and to guide development within communities that have not yet completed local planning programs.
- 4. The Plan is based upon the premise that it must accommodate all reasonable land uses, including those that may have regional impact. In that regard, general site recommendations for industrial land, senior housing campuses and manufactured housing have been made.
- 5. The Zoning Enabling Act, P.A. 110 of 2006, for cities, villages, townships and counties provides that zoning ordinances shall be made “in accordance with a plan.” Moreover, courts have set aside zoning regulations where the zoning regulations are not related to any lawful or adequate plan or where the plan has been destroyed through inconsistent use or development. (See for example, Troy Campus v. Troy, 132 Mich. App 441 (1984).) Thus, the Plan provides a legal foundation for land development code preparation.
- 6. Plan preparation encourages private investment by reducing risk associated with an uncoordinated development pattern. The County Plan has been prepared based upon the tenet of planned growth to insure compatibility between land uses.
- 7. Environmental issues do not respect political boundaries, thus, the County Plan is directed toward protecting and conserving important natural assets.
- 8. The Plan has been prepared to direct governmental actions by better defining areas in need of public investment for roads, economic development activities, etc.

4.1 Existing Land Use Assessment

The rational application of the planning process for the County is possible only when there is a basic understanding of existing conditions and relationships between land uses. The Existing Land serves as a basis for the future goals and recommendations of the County.

EXISTING LAND USE ACREAGE

TABLE 1

Land Use Category	Acres (approximate)	Percent
1. Agriculture	344,200	66.2
2. Residential	8,000	1.5
3. Commercial	600	0.1
4. Industrial	400	0.1
5. Open Pit/Extractive	3,700	0.7
6. Public/Semi-Public	1,200	0.2
7. Recreation	600	0.1
8. Vacant	159,900	30.8
9. Water Bodies	1,400	0.3
Totals	520,000	100.0

4.2. Plan Development

Tuscola County communities are actively involved in shaping their future through local planning.

4.2.1 Community Assessment Team (CAT)

EXECUTIVE SUMMARY

This report is based on observations made by the Community Assessment Team (CAT) during its visit to Tuscola County in December 2005. The CAT process began with an application from members of the community to MSU Extension. The application described the community's situation and listed questions that community members wanted the CAT to address. The CAT advisory committee then reviewed the application. The CAT then sent a small delegation to meet with the application committee to clarify questions raised in the application and recruited team members with skills appropriate to the community's needs. The full CAT visit involved two days of input gathering from a variety of small and large meetings with residents and tours of the community. The team then analyzed, debated and categorized the information to produce a preliminary verbal report to the community. Finally, the team reflected on its preliminary recommendations and wrote the final report (this document). The community is invited to receive a follow-up visit

about six months after the issuance of this report. The full report is available and accessible at the following web site: <http://web1.msue.msu.edu/cdnr/tuscolacatreport.pdf>.

The major focus of Tuscola County's application and subsequent questions was ways to improve and enhance its economic development. In general, the team found that Tuscola County is doing an excellent job with traditional approaches to economic development and recommends that these activities continue. In addition to the current economic development tools and strategies, new methods for re-energizing the economic development base have emerged in recent years. Such new methods include but are not limited to entrepreneurship, intergovernmental cooperation and enhancing quality of life. Quality of life issues should not be overlooked—they are an important factor for rebuilding, sustaining and maintaining an economically viable and vibrant community. A more inclusive approach can help Tuscola County achieve its economic development goals while strengthening other, non-economic aspects of the community.

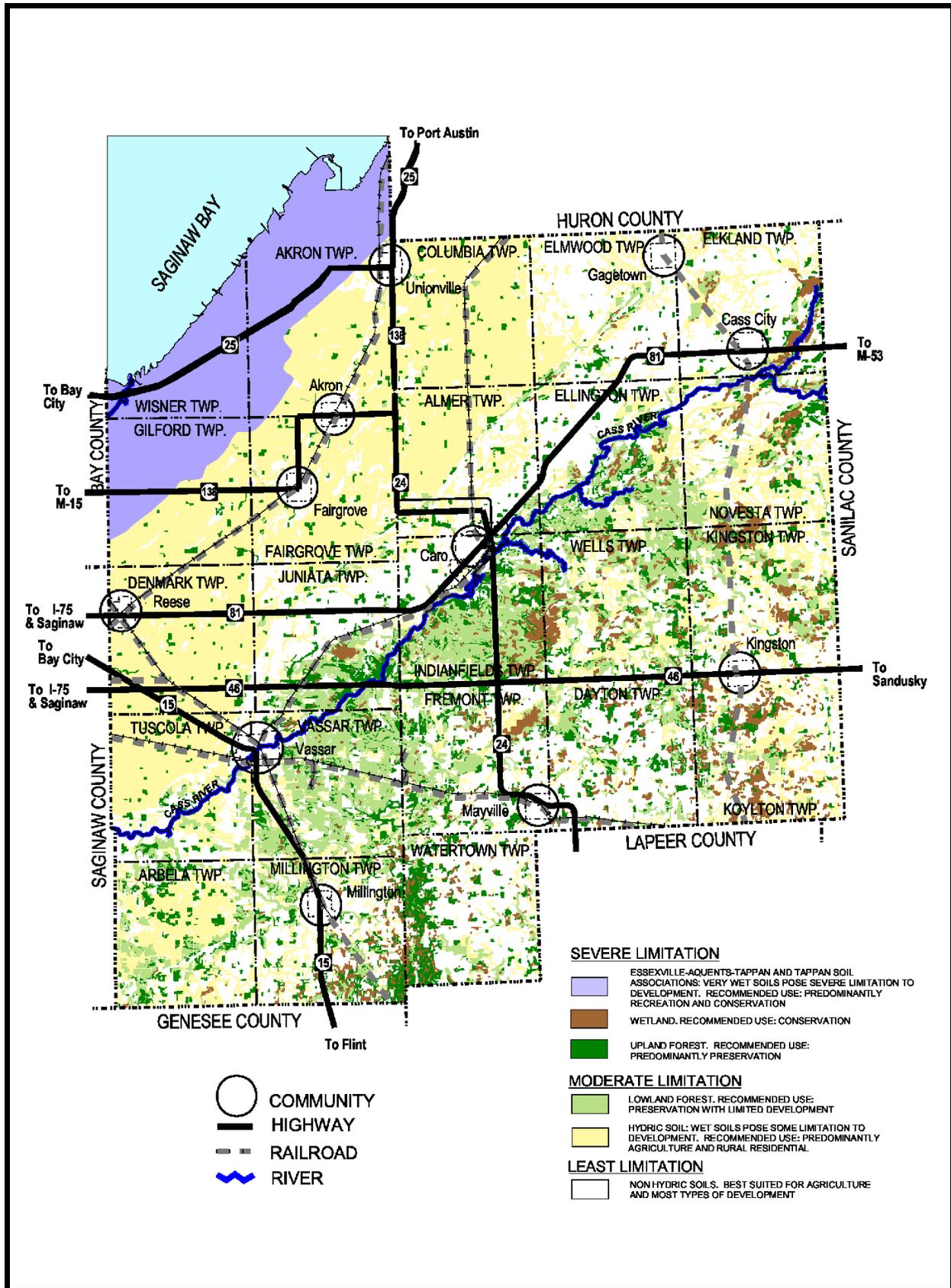
During the CAT visit, it was repeatedly affirmed that the major economic development arm for Tuscola County is the Tuscola County Economic Development Corporation (EDC). The CAT recommends that the Tuscola County Economic Development Corporation Board of Directors provide leadership for the overall guidance and direction for implementation and evaluation of the recommendations contained in this document. During the visit, it was evident as well that numerous public and private entities should be invited to partner with the Tuscola County Economic Development Corporation in its quest to implement and evaluate the recommendations contained in this strategic master plan. Potential partners include but are not limited to the Tuscola County Board of Commissioners, MSU Extension—Tuscola County, the Tuscola County Farm Bureau, the Human Development Commission, the Tuscola County Community Foundation, the Tuscola County Planning Commission, the Thumb Area Tourism Council, all local units of government (township, village and city), Tuscola 2011, Inc., Lead Tuscola, the Tuscola Technology Center, the Tuscola Intermediate School District and all school districts serving Tuscola County, the chambers of commerce, local economic development corporations, downtown development authorities, the Tuscola Area Airport Authority, the Michigan Small Business and Technology Development Center, Rural Partners of Michigan, the East Central Michigan Planning and Development Regional Commission, U.S. Department of Agriculture Rural Development, the Michigan Department of Agriculture, the Michigan Department of Natural Resources, the Michigan Department of Environmental Quality, the Michigan Economic Development Corporation, Travel Michigan, financial institutions, real estate professionals, Tuscola Trails, Davenport University, Baker College, other institutions of higher education serving Tuscola County, and community-based and faith-based organizations.

4.2.2 Local Master plans

In 2008, nineteen of the thirty-four jurisdictions (56%) had master plans. As of 2013, twenty-eight (82%) have completed their plans. Of all the master plans in the County, only two are old. Significantly, all of the City and Villages that have plans have new plans. Those available were, in great part, the basis for the county plan.

4.2.3 Community Profile

In addition, the characteristics and resources of the people themselves play an important part in the determination of a community's future. Those factors, found in Chapter 5, "County Profile", played a big part in the creating this plan.



4.2.4 Land Assessment

Future land use and development is determined in part by soil type and the general geography of the county. These impact the planning and zoning choices available to the townships and the county as a whole. The carrying capacity of the land is shown on Map 3, pg. 4-4.

The plan recommends six broad land use categories. **Table 2** shows the approximate acreage for each land use category. **FUTURE LAND USE ACREAGE TUSCOLA COUNTY TABLE 2**

Land Use Category	Acres	Percent
1. Agricultural	250,000	48.5
1-A. Prime Agricultural	140,000	26.9
1-B. Agricultural Estate	110,000	21.2
2. Residential	150,000	29.1
♣ Country Residential	110,000	21.2
♣ Rural Residential	20,000	3.8
2-C. Resort Residential	20,000	3.8
3. Urban Service Area	18,000	3.5
3-A. Tier I Urban Service Area	10,000	1.9
3-B Tier II Urban Service Area	8,000	1.6
Business Corridor	5,000	1.0
Industrial	2,000	0.4
6. Recreation and Conservation	90,000	17.5
Total	515,000	100.0

Map 4, (pg 4-6) Land Use Composite, shows the Land Use Map recommendations as prepared in each community's Master Plan. Because the land use maps were unique to each community, with different land use categories, the maps were generalized in order to fit into six broad land use categories that applied to the entire county. The six land use categories shown on the map are as follows:

- Agricultural/Rural Residential/Conservation
- Low-density Residential
- Low-Density Residential
- High-Density Residential
- Commercial/Office
- Industrial
- Public/Semi-public/Recreation

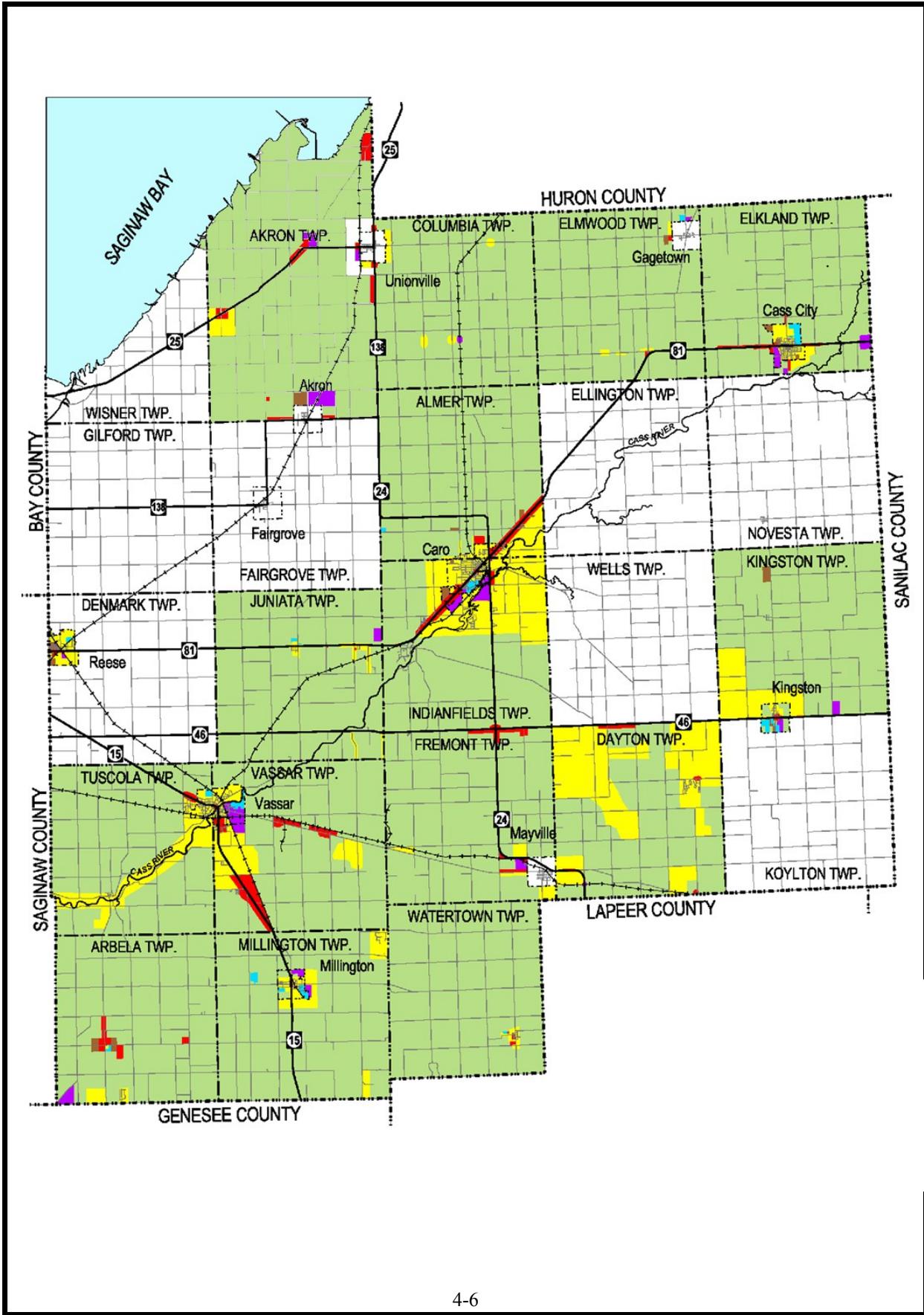
The Agricultural/Rural Residential/Conservation category includes all lands proposed for agricultural and related uses, very low density, single-family homes intermixed with agricultural uses, and other uses as open space and natural resource conservation.

The Low Density Residential category includes lands primarily designated for single-family or two-family homes in an urban or suburban setting.

The High Density Residential category includes lands proposed to be used for multiple-family uses such as condominiums and apartments.

FUTURE LAND USE COMPOSITION

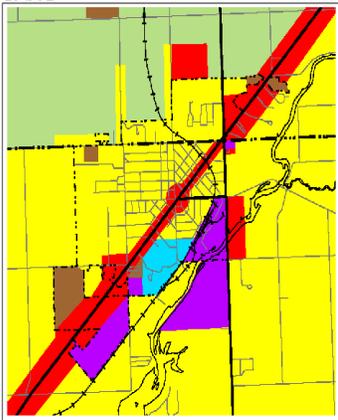
MAP 4



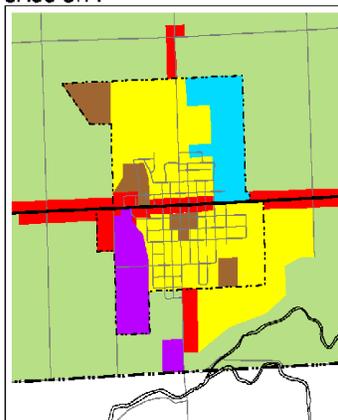
Future Land Use – Inserts

Map 4

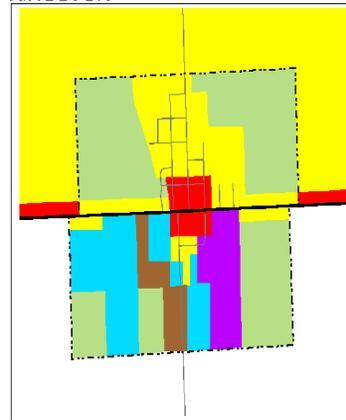
CARO



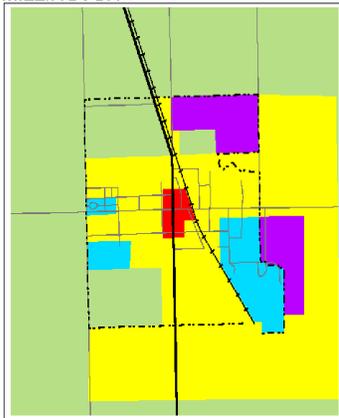
CASS CITY



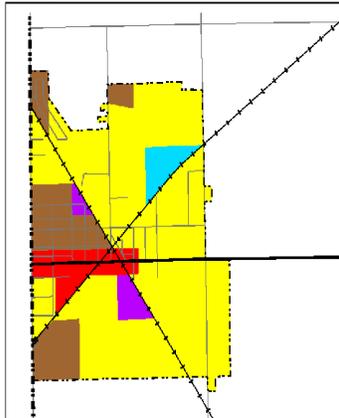
KINGSTON



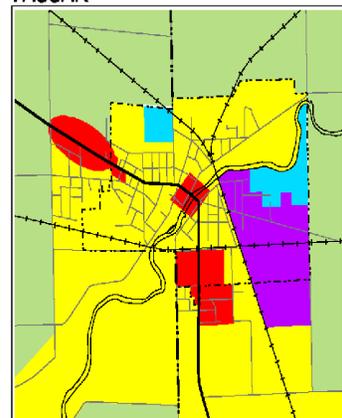
MILLINGTON



REESE

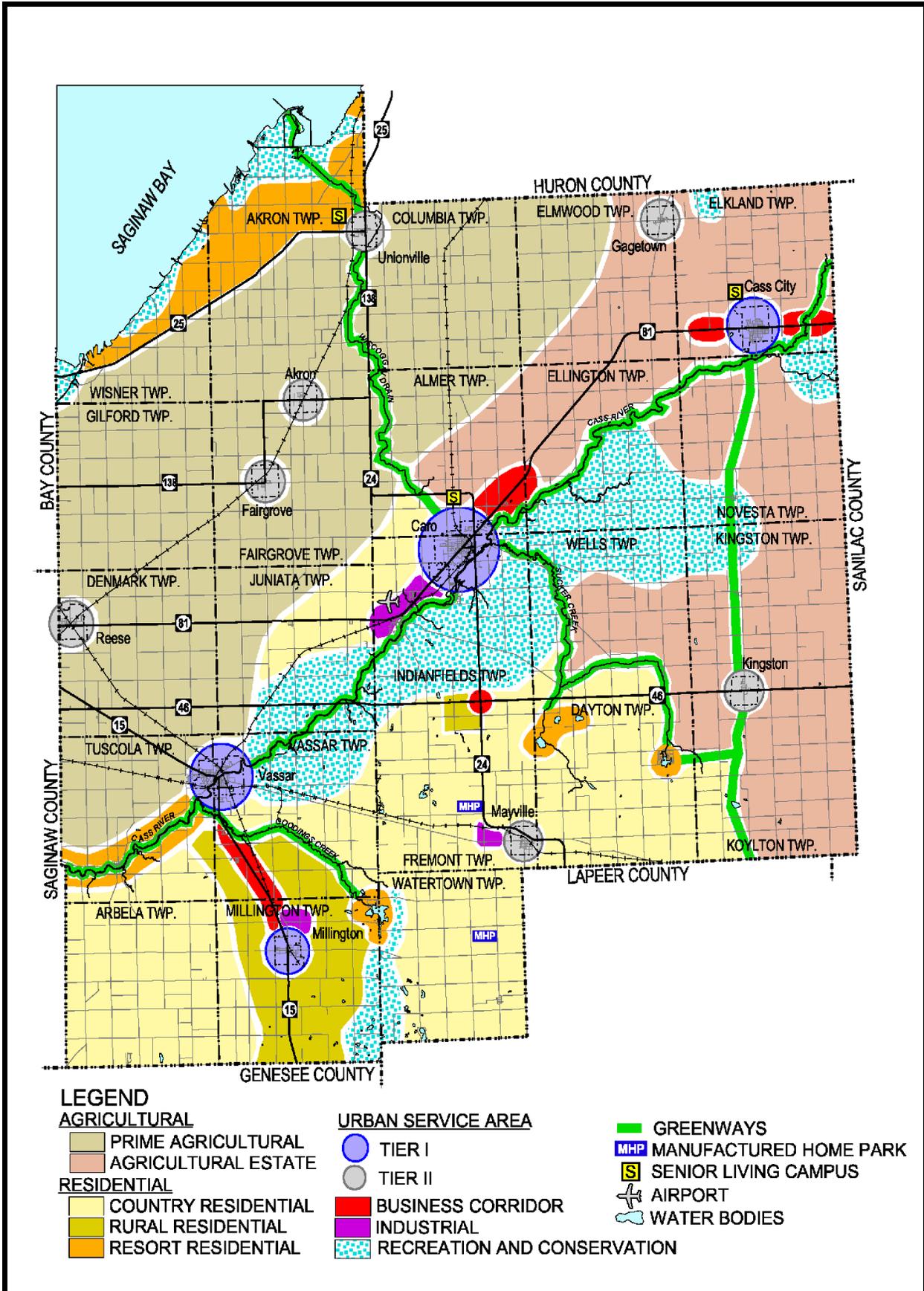


VASSAR



LEGEND

- | | |
|--|---|
|  AGRICULTURAL/RURAL |  INDUSTRIAL |
|  RESIDENTIAL/CONSERVATION |  PUBLIC/SEMI-PUBLIC/RECREATION |
|  LOW DENSITY RESIDENTIAL |  FUTURE LAND USE INFORMATION UNAVAILABLE |
|  HIGH DENSITY RESIDENTIAL | |
|  COMMERCIAL/OFFICE | |



LEGEND

AGRICULTURAL

- PRIME AGRICULTURAL
- AGRICULTURAL ESTATE

RESIDENTIAL

- COUNTRY RESIDENTIAL
- RURAL RESIDENTIAL
- RESORT RESIDENTIAL

URBAN SERVICE AREA

- TIER I
- TIER II
- BUSINESS CORRIDOR
- INDUSTRIAL
- RECREATION AND CONSERVATION

- GREENWAYS
- MHP MANUFACTURED HOME PARK
- SENIOR LIVING CAMPUS
- AIRPORT
- WATER BODIES

The Commercial/Office category includes all types of commercial uses including general commercial spaces, central business districts, and offices. The Industrial category includes all lands proposed for industrial purposes, such as warehousing and manufacturing establishments.

The Public/Semi-Public/Recreation category includes uses such as schools, public institutions, and parks.

4.3 The General Development Plan

Map 5 (pg. 4-8) is the result of the comprehensive study made of those various factors that make up Tuscola County and which will determine its future.

4.3.1 The General Development Plan's Components

1. Agricultural

Agriculture is Tuscola County's greatest resource. At present, two-thirds of the County land is actively used for agricultural uses. The Plan recognizes this by designating the largest future land use category as agriculture. In total, agriculture should account for 250,000 acres or 48.5% of the County.

1-A. Prime Agriculture.

The Northwest portion of the County is designated as Prime Agriculture. It covers 140,000 acres or 26.9% of the County. This area includes the most productive soils in the County and should be retained for agricultural purposes. Recommended principal uses are:

- ♣ Farms under active cultivation
- ♣ Farmsteads and accessory structures
- ♣ Agriculture-related industries
- ♣ Single-family homes on a minimum one-acre lot, which are part of a larger parent parcel, with the number of buildable divisions allowed being correlated to the parent parcel size. No one-acre lot subdivisions would be allowed.

1-B. Agricultural Estate.

The Agricultural Estate district covers the northeast portion of the County and accounts for 110,000 acres or 21.2% of the County. This area also contains rich productive soils that should be preserved as much as possible. Recommended uses are:

- ♣ Agriculture and related uses
- ♣ Single-family homes on minimum 10-acre lots.
- ♣ Complementary uses such as churches, schools and parks.

2. Residential

To provide for the existing and future population needs and to offer a wide variety of housing choices, the Plan allocates 150,000 acres or 29.1% of the County for residential purposes. Much of the residential use covers the south-central portion of the County.

2-A. Country Residential.

County Residential is the largest residential category in Tuscola County and covers 110,000 acres or 21.2% of the County. Recommended uses are:

- Single-family homes on minimum two-acre lots.
- Complementary uses such as churches, schools and parks.

2-B. Rural Residential.

A total of 20,000 acres (3.8%) is designated for Rural Residential. This district offers the largest choice by housing types in the County outside the designated Urban Service Areas. It covers an area along the M -15 corridor, between Vassar and Tuscola County-Genesee County Line and a small area in the vicinity of the M-46 and M-24 intersection. Due to its proximity to Birch Run and Frankenmuth and growth pressure along M-15 from the south, this area is expected to experience the greatest growth potential in the County. This district will expect to be served by public utilities. Recommended uses are:

- Single-family homes on a minimum one-quarter acre lot
- Duplexes on a minimum one-quarter acre lot
- Townhouses between seven to 10 units per acre
- Garden apartments between 10 to 15 units per acre

It should be noted that Public Act 288 of 1967, as amended, requires lots be a minimum of 1 acre in size unless public water and sewer are available or health department approval of an on-site water supply and septic is given.

2-C. Resort Residential.

Tuscola County is very fortunate to have access to several water bodies. It has a 20-mile long shoreline on Saginaw Bay, Cass River that traverses the entire County from northeast to southwest, and a network of several lakes in its southern portion. To capitalize on this unique asset, the Plan recommends a water-oriented district, named Resort Residential.

The 20,000 acre district is spread along various locations: along Saginaw Bay, along Cass River, between Tuscola County-Saginaw County Line, and around Cat Lake, Harmon Lake, Evergreen Lake and Shay Lake in Dayton Township, and Murphy Lake in Millington and Watertown Townships.

All new development in this district will be subject to strict regulations required for the protection of environmental features of the site. Features to be protected are surface and underground water resources, soil erosion, wetland, woodland, and any other feature present at the site. Tuscola County Health Department will regulate the minimum lot size for the purpose of septic tank field. The following uses are recommended:

- ♣ Single-family homes
- ♣ Seasonal homes
- ♣ Tourism commercial
- ♣ Parks and marinas

3. Urban Service Area

Tuscola County has one city and 10 villages within its border. All of these communities serve as a center of commerce, services and housing for their surrounding areas. To promote compact growth, protect agricultural and environmentally sensitive land, and to provide public amenities in a most cost-effective manner, the Plan recommends that all of these 11 communities be designated as Urban Service Areas (USA).

Most of the new urban growth, including residential, commercial and industrial, should be encouraged to locate within these centers. Each center would contain a central business district, with its unique character, surrounded by all other uses. Each center would expand in response to market demands, provided public utilities can be extended in a cost-effective manner.

Tier I – Urban Service Area

- ♣ Full service
- ♣ Regional market
- ♣ Employment and services
- ♣ Destination
- ♣ Critical mass
- ♣ Multiple centers of commerce

Tier II – Urban Service Area

- ♣ Local market area
- ♣ Limited commerce and services

4. Business Corridor

As the County continues to grow, businesses will likely want to locate all over the County in response to market demands. In order to promote compact growth and preserve the rural character of Tuscola County, the Plan recommends against this kind of haphazard commercial growth. Most of the local and regional retail and service establishments should locate within the designated Urban Service Areas. Highway-oriented businesses should be located in the designated Business Corridors and be subject to specific design controls and access management standards.

Each corridor should be approximately 600 feet deep on each side of the road. Each corridor is based upon its location on a high traffic route to provide maximum visibility or its proximity to a large population, or high growth area. The Plan recommends the following corridors:

- Along M -81, west of Cass City
- Along M-81, northeast of Caro
- Along M-15, between Vassar and Millington
- At the intersection of M-46 and M-24

Recommended uses are:

- Highway oriented commercial such as auto dealers, service stations, and fast food restaurants.
- Heavy commercial such as lumberyards, lawn and garden centers, “big box” retailers, heavy equipment sales and service, and contractor establishments.
- Offices such as bank and credit union branch offices and real estate offices.

5. Industrial

One of the major goals for the County is to attract new industry to provide job opportunities for the local population and increase tax revenues for governmental units. Many of the new industries will locate within the existing Urban Service Centers. However, in order to provide cost-effective public utilities and sites in close proximity to the labor pool, the Plan recommends the following four new industrial areas:

- ♣ Along M-81 southwest of Caro and in close proximity to the Caro Municipal Airport
- ♣ Along M-24, west of Mayville
- ♣ Along M-15, north of Millington
- ♣ South of M-81 in the southwest corner of Cass City

Recommended uses are:

- ♣ Agricultural related industry such as food processing, energy production, agriculture research and agricultural products distribution
- ♣ Warehousing
- ♣ Light industry void of nuisances

6.0 Recreation and Conservation

Tuscola County is rich in water and other environmental resources. With proper planning and resource management, the County can become a major regional destination for recreational opportunities and a leader in resource conservation. The Plan recommends a large portion of the County (90,000 acres, 17.3%) as Recreation and Conservation District. Recommended uses for the district are:

- Single family homes on a minimum 10-acre lot
- Golf courses
- Parks
- Water-related facilities
- State land (approximately 30,000 acres)
- Environmentally sensitive areas

The district also includes a network of greenways. Greenways are designed for walking, hiking, bicycling, snowmobiling or other recreational purposes. All greenways in the County are proposed along water channels and abandoned railroad right-of-ways.

7.0 Other Uses

Senior Living Campus. To meet the needs of the quickly aging population of the County, the Plan recommends the development of Senior Living Campuses at the following three locations:

Northwest of Unionville

- Northwest of Cass City
- North of Caro

Manufactured Home Park. To provide for affordable housing or for an alternative choice in housing, the Plan supports the development of a manufactured housing community along M24, north of Mayville, and in Watertown Township, an area projected to be subject to continued in-migration of new residents during the next 20 years.

4.4 Tuscola County Citizens Vision For A Better Future

Community Development Vision:

The residents of Tuscola County visualize a thriving industrial base that capitalizes on local community development, training opportunities, and a vital agricultural base that will lead economic expansion.

Agriculture Vision:

The Community visualizes a Tuscola County that has maintained its rich agricultural heritage, retained its best farms and farmlands, provided ag-industry markets for local, regional, and global suppliers, and balanced farm retention goals with the need to accommodate growth.

Communities Vision:

The area residents visualize a Tuscola County where the municipalities each have their own character and identity and experience a rebirth and expansion of business, entertainment opportunities and tourism, as well as growth or revitalization of neighborhoods.

Intergovernmental Vision:

The resident of Tuscola County visualize intergovernmental co-operation among our townships, city, and the surrounding counties for the mutual benefit of all, be it a strengthened standing with the federal and state governments to gain funding or better relationships within the county.

Transportation Vision:

The citizens within Tuscola County visualize an improved and integrated transportation system that includes a top-quality roadway network, county-wide recognition and support for an appropriate form of public transportation, an expanded airport and an active, vital rail system.

Environmental Vision:

The residents visualize a Tuscola County that has implemented various initiatives intended to protect and promote local valuable and unique environmental resources, including protection of flood plain areas, improved soil erosion practices, guidelines for river and lake shoreline development, and protection of local groundwater supplies from contamination.

Recreation and Tourism Vision:

Young and old alike envision a Tuscola County that has improved recreational facilities for all its residents and has developed a regional expansion and promotion of its tourism sector.

Future Vision:

The residents of Tuscola County visualize a community that has a direction and purpose for its actions, a vision for its future, and has become a better place for all its citizens.

CHAPTER 5
COUNTY PROFILE

Indian Trails (Before Tipsico)

Figure 1



Native Americans set up camps along creeks and rivers in the Thumb of Michigan thousands of years before the first settlers came.

5.0 TUSCOLA COUNTY PROFILE

5.1 History of Tuscola County

Tuscola County is located in Michigan's unique Thumb Region. The name Tuscola was one made up by the Indian Agent and ethnographer, Henry R. Schoolcraft. There are several early histories of the County that claim the name was of Indian origin, but more precise scholarship credits the name, Tuscola, to the inventiveness of Mr. Schoolcraft.

The first recorded people were Ojibwa (Chippewa) Indians, who came prior to 1400 A.D. Exactly when, will probably never be known. An Indian trail system serving the region has been identified. (See red colored trails in **Figure 1**)

The first white settlers to the County came from western New York. Ebenezer Davis started the first settlement in 1835 in the present township of Tuscola. Further settlement continued during the next two years. However, between 1838 and 1850, the growth was small. A period of general growth began again in 1850 with the opening of a lumber operation by Messrs., North and Edmunds in present day Vassar. This operation started a long and rich history of lumbering in the County. The Cass River, which empties into the Saginaw Bay, for many years served as a great highway for logs. In the 1800s, Tuscola produced the world famous Cork Pine. By 1864, the County was producing 40 million feet of logs. Log production peaked to 100.5 million feet by 1873.

The civil history of the County began on April 1, 1840, when the State legislature carved away a portion of Sanilac County to create Tuscola County. The new County was attached to Saginaw County for judicial and representative purposes until 1850, when on March 2, 1850, through an act of State legislature; Tuscola County was organized as an independent County. The first general election was held on November 5, 1850. A total of 83 votes were cast to elect the first Board of County Canvassers. John H. Richardson was chosen as the secretary and chairman of the Board. Later, the first Board of Supervisors was elected and held its first meeting in Vassar on January 24, 1851. Mr. Richardson was the only member of this Board and served as Acting Supervisor.

Tuscola County has a long and controversial history of selecting the County seat. Vassar was fixed as the County seat until 1860. After six years of uncertainty, the County seat was moved in 1866 to a more central location in Centerville. Centerville was later renamed Caro and has since remained as the County seat. The present County Courthouse building was built in 1873 but it became inadequate by 1925.



Chief Jacob Tipsico was a respected Native American who was known throughout Tuscola County and beyond. He aided and was a friend to the early settlers.

OLD TIP-SI-CO WAS KNOWN IN TUSCOLA

Great Indian Athlete now in Poverty is Remembered as a Wonderful Indian Character

An exchange relates an account of the present condition of the well known Indian, old Tip-si-co, which is exceedingly interesting to many residents of the county, who figured in the pioneer history of the days when Indians were plentiful. The old indian, who is now spending his old age near Mt. Pleasant in very meagre circumstances, if not in actual poverty, was a familiar figure all over the Thumb within the memory of some of our old residents. His reputation as an athlete was widespread and the accounts told of his wonderful feats, are well sustained by the facts as witnessed by those who often saw him. Tip-si-co weighed 225 lbs. and still was not more than exactly proportioned according to his stature. He was muscular every inch, tall and straight, and his strength made him a veritable Sampson.

In running, jumping, and wrestling he was a phenomenon. In standing broad jump, his record was 14-1/2 feet forward and 13-1/2 backward; standing high jump, 5 ft., 10 inches; running high jump 8 feet. In a short run, he made 22 rods in 8 seconds and could make 25 feet in a running broad jump. But some of his most remarkable feats were the long journeys across the country in fast time. He often made the 60 mile trip from Mt. Pleasant to Saginaw in a single day on foot and in long distances took delight in beating out travelers who went on horse back. A story is related by one of our old residents of how Tip-si-co used to go hunting deer without any weapon except his fleet feet and strong arms. He would take a trail and run down the game, taking it alive. On one occasion in this vicinity, he captured two deer in this way on a single hunt. The first one he tied down with a strong bark rope on the spot. When he overtook the second, he made it fast, he returned to the first to find that dogs had followed and nearly killed the animal.

The old Indian now ekes out a slim livelihood selling pictures of himself having, like many of his fellows, lost the property which once came to him from the hands of the Government.

Source: Tuscola Co. Courier, Feb., 1906

Between 1925 and 1932 the present art deco building was built on this site. By 1980 it was recognized that the County needed more space. An attempt to solve this problem, by adding an addition to the present building, was turned down by County voters in 1998.

The original County wealth was found in the lumber resource that dominated the area before 1881. The forest fires of 1871 and 1881 allowed the next phase of County wealth to be exposed. The land under those incinerated trees contained some of the finest agricultural land in the country, especially that land north and west of the Cass River. The land south and east of the Cass River is more varied. Sandy, droughty soils have primarily been returned to forested land managed by the MDNR. Rolling hills with sandy loam and loam soils originally were used for dairy and beef cattle farms. Other acres with flatter topography and favorable soils occurring together were farmed for crops. The timber of the uplands along the Cass River and south of Caro provided the initial wealth that drove the economy and society of Tuscola County.

This wealth was used in the latter part of the 19th century to drain the area to the north of the river, changing it from an area of swamps and low ridges to the most productive area of the County.

Once the agricultural potential of the County was known, cash crops of wheat, corn, oats, and beans became staples. By 1899, a new crop of sugar beets had been introduced to Tuscola County, a gift from our German settlers. The sugar industry found the soil, climate and conditions right for growing beets. Several sugar processing plants were built in the Thumb area. Caro's plant, built in 1899, is currently the oldest operating sugar beet processing plant in the country.

For those townships in the southern and eastern portion of the County where cash-crop farming was not feasible, dairy and pasturage continue to add agricultural input.

Historic Buildings.

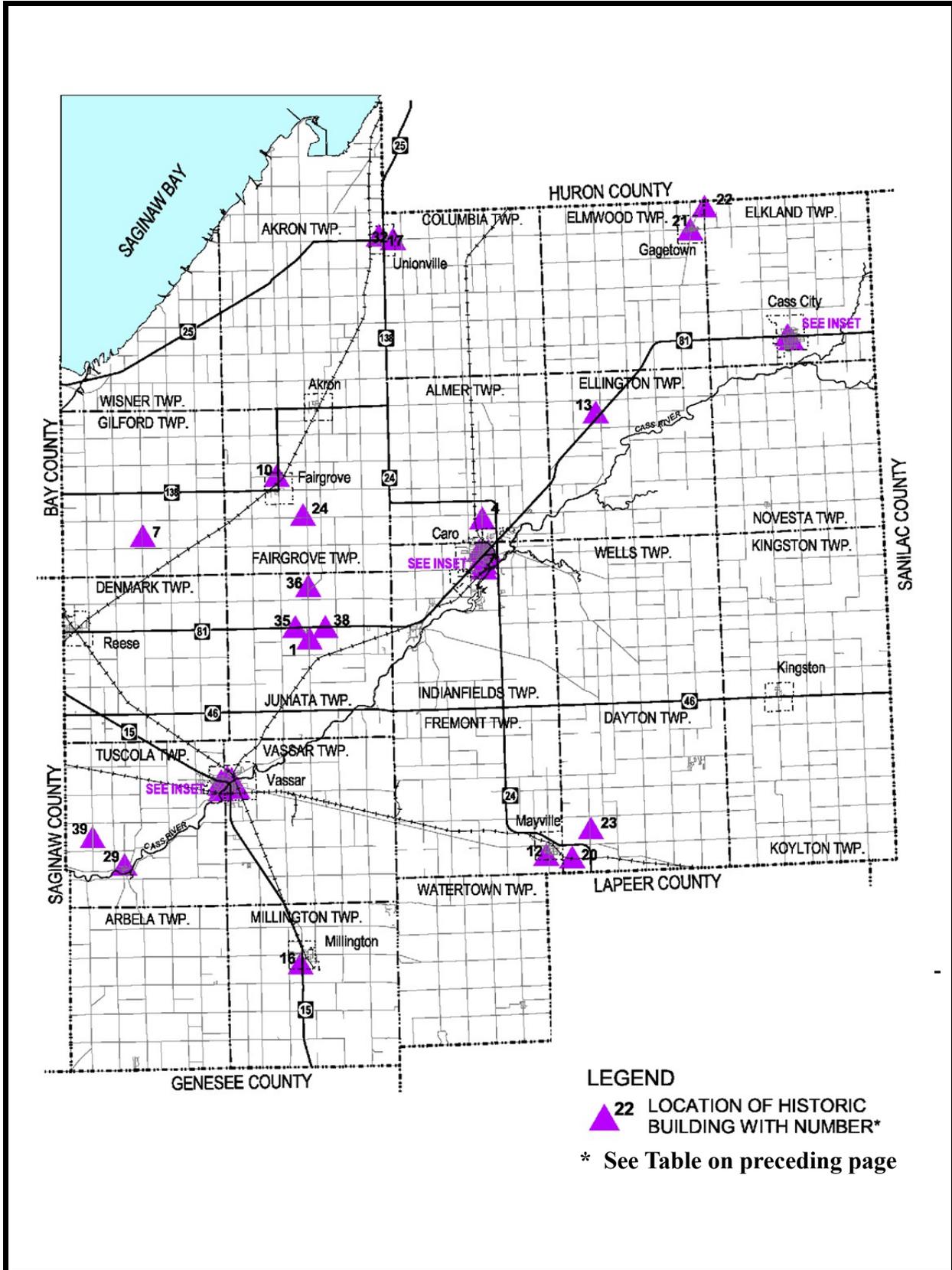
Because of its rich history, Tuscola County is the location for numerous buildings that are listed on the State and National Registers of Historic Buildings. According to the State Historic Preservation Office, there are 39 buildings in Tuscola County that are listed on the State and/or National Register (**Table 3, Map 6**, pg. 5-4). Each of these places has had a unique spot in the history of the County over the last 200 years.

All of the 39 buildings are registered on the State Register of Historic Buildings; eleven (28%) of these are also on the National Register. Twenty-six (69%) buildings are located in the city or villages; and thirteen (31%) are located in townships. Communities with the largest concentration of historic buildings are: City of Vassar, 12; Village of Caro, 7; and Juniata Township, 4.

*** BUILDINGS OF HISTORIC SIGNIFICANCE**

TABLE 3

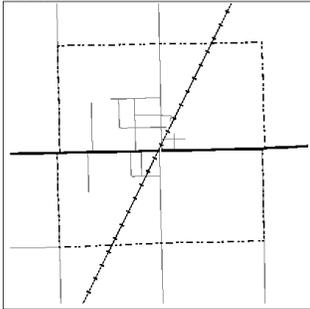
	Name	Location	State/National Historic Register Designation
1.	Richard C. Burtis House	Juniata Township	St.1973; Na:1975
2.	Caro Masonic Temple	Caro	State: 1986
3.	William H. Carson House	Caro	State: 1977
4.	Clark, Dorus, Healy Farm House	Almer Township	State: 1996
5.	Elkland Township Hall	Cass City	State: 1979
6.	First United Methodist Church of Vassar	Vassar	State: 1974
7.	Gilford United Methodist Church	Gilford Township	State: 1989
8.	Hotel Columbia	Vassar	St: 1989; Na: 1992
9.	Hotel Montague	Caro	National: 1991
10.	William Kirk Home	Fairgrove Twsp	State: 1974
11.	J.C. Laing House	Cass City	State: 1974
12.	A.B. Markham House	Mayville	State: 1974
13.	I.J.B. McKenney House	Ellington Twsp	State: 1990
14.	McKinley School	Vassar	St: 1971; Na: 1972
15.	Miller Grist Mill	Vassar	State: 1974
16.	Millington Bank Building	Millington	St: 1996; Na: 1996
17.	Moravian Church	Unionville	State: 1974
18.	Townsend North House	Vassar	St: 1974; Na: 19
19.	Peninsular Sugar Company	Caro	State: 1974
20.	Depot	Dayton Township	St: 1987
21.	Purdy Bank Building	Gagetown	St: 1974
22.	The Purdy Barn (Octagon Barn)	Elkland Township	State: 1977
23.	William Randall House	Dayton Township	St: 1973; Na: 1976
24.	Mathias Ringle House	Fairgrove	State: 1974
25.	Seventh Day Adventist Church	Vassar	State: 1974
26.	Silas A. Lane House	Vassar	State: 1972
27.	Smith House	Vassar	St: 1971; Na: 1972
28.	Trinity Episcopal Church	Caro	St: 1974; Na: 1975
29.	Tuscola Community Church	Tuscola Township	State: 1974
30.	Tuscola County Courthouse	Caro	St: 1982; Na: 1996
31.	Tuscola County Fairgrounds	Caro	State: 1981
32.	Old Unionville High School Building	Unionville	State: 1974
33.	Vassar Pioneer Times (Bank) Building	Vassar	State: 1974
34.	Vassar Theater	Vassar	State: 1988
35.	Watrous General Store	Juniata Township	St: 1973; Na: 1974
35.	R.S. Weaver House	Juniata Township	State: 1974
37.	Wightman Building	Vassar	State: 1997
38.	Daniel G. Wilder House	Juniata Township	State: 1974
39.	Hart Jr., Lovira & Esther Maria Parker Farm	Tuscola	Na .2004



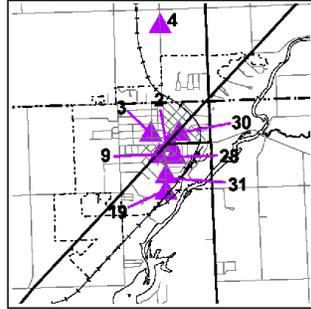
BUILDINGS OF HISTORICAL SIGNIFICANCE

MAP 6

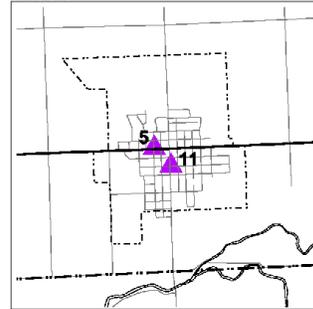
AKRON



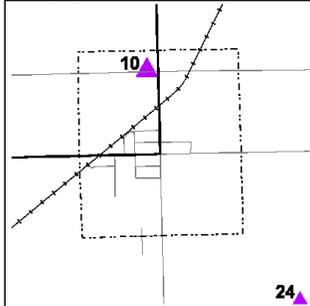
CARO



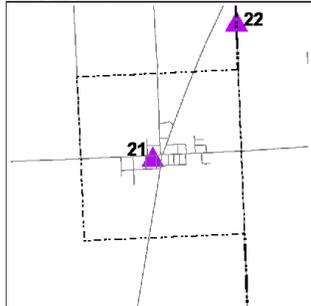
CASS CITY



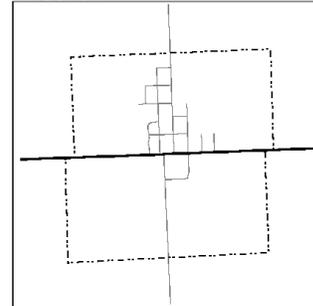
FAIRGROVE



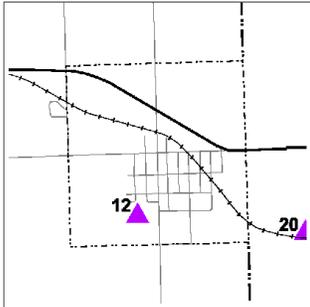
GAGETOWN



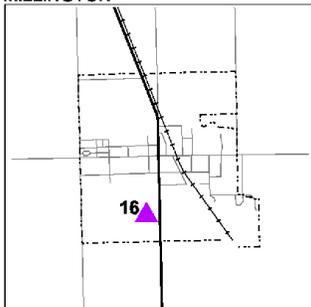
KINGSTON



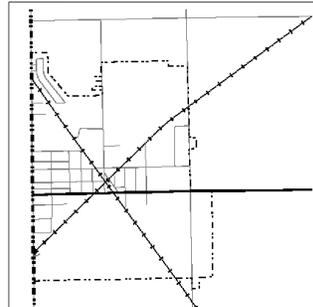
MAYVILLE



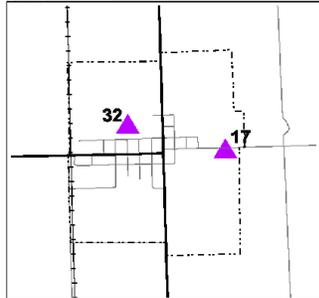
MILLINGTON



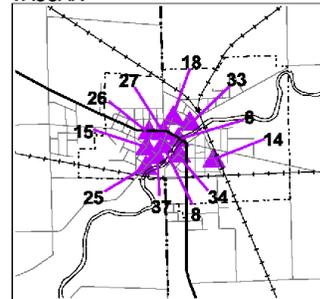
REESE



UNIONVILLE



VASSAR



5.2 Physical Profile

The development of land can significantly impact, and in turn be impacted by the natural environment. Thus, when preparing a future land use plan, it is important to determine the extent of environmentally sensitive areas within the community.

Environmentally sensitive areas are lands whose destruction or disturbance will immediately affect the life of a community by either: 1) creating hazards such as flooding or slope erosion; 2) destroying important public resources such as groundwater supplies and surface water bodies; or 3) wasting productive lands and non-renewable resources such as prime farmland. Each of these affects is detrimental to the general welfare of a community and may result in an economic loss.

The purpose of this section is twofold. First, it identifies the areas in the County that are most suitable for development; specifically, those areas that will minimize development costs and provide amenities without adversely impacting existing natural systems. Second, it identifies land that should be conserved in its natural state and land most suitable for agricultural, open space or recreation purposes.

Geology, soils, topography, vegetation, and water resources are among the most important natural features that will impact land use. Descriptions of these features follow.

5.2.1 Climate

A climate summary allows residents of Tuscola County to better understand the environment affecting their daily lives. Weather data has been collected and summarized in Caro from 1961 through 1990 by the Midwest Climate Center. The average summer temperature is 68.5 degrees Fahrenheit while the average winter temperature is 23.5 degrees Fahrenheit. The average annual precipitation is 29.85 inches. September tends to be the wettest month, averaging 4.08 inches, while February is often the driest, averaging 1.11 inches. Annual snowfall accumulation tends to be mild, about 36.5 inches on average, with the month of January recording the most snowfall at 10.2 inches on average.

Understanding the nature of the growing season is important for many residents who depend on the agricultural industry for their economic well-being. Over a 30-year period (1961–1990), the growing season had a median value of 120 days between the final frost in the spring and the first frost in the fall. While most seasons averaged about 147 days, accounting for 90% of the total, 10% of the seasons averaged 103 days. Ninety percent of the time the final frost occurred on or prior to May 7th while the first frost most frequently occurred on or after October 8th.

5.2.2 Geology

The geology of Tuscola County will be described in terms of surface geology or quaternary geology (materials deposited by continental glaciers) and bedrock geology (sedimentary rocks and underlying deposits).

The Quaternary Geology Map of Southern Michigan, provided by the University of Michigan, displays how the features of glacial deposition affect the landscape today. As the glaciers receded, melt water was laden with fine soil particles, which eventually settled to the bottom and are called

Lacustrine deposits. Glacial melt water streams also deposited fine sands and loams often associated with the presence of **Lacustrine** material. The northeastern, north central, and central parts of the County are dominated by this type of soil material.

The next soil type is found along a line extending through Unionville, Akron, Gilford, and Reese characterizing an area affected by an end moraine of medium-textured till. End moraines were created by the melting of the ice sheet as it advanced or retreated. The debris-laden ice deposited large amounts of material along this area due to the glacier edge melting as fast as it advanced from the polar ice cap.

Another ground moraine feature is characterized as fine-textured glacial till. It is found along a line extending from Cass City, Elmwood, Caro, and Vassar. The thickness of these deposits varies locally from 30 to 90 feet in depth. Soils tend to be dominated by clay with textures mixed with loam and silt.

Located along the present Saginaw Bay shoreline and discontinuously along a diagonal line from the east central to the southwestern part of the County are dune sands. This well-sorted, fine to medium sand is composed mainly of quartz. These areas can be subject to wind erosion where vegetation is disturbed, especially along present day coasts.

The southern part of the County is chiefly composed of end moraines of medium-texture till. It is mostly loam and silt-loam in texture and may also contain small areas of outwash material (deposits made by running water from the glaciers). Thickness of these layers varies locally, but tend to be 60 to 90 feet in depth.

The sub-surface geology of Tuscola County is primarily bedrock that was laid down during the Pennsylvanian and Mississippian ages of the Paleozoic Era about 300 and 330 million years ago respectively. Bedrock is covered by glacial deposits and generally, depending upon the thickness of the deposits, is located at a depth 40 to 300 feet below the surface. The bedrock was formed by ancient seas, which covered the area some 250 to 600 million years ago. During the time the bedrock was forming, these seas began to withdraw from the area leaving sediments from deltas as the land drained.

The seas re-advanced and finally receded at last creating the Michigan formation on the eastern half of the County. The shallow marine seas deposited layers of silt, clay, sediments, marine animals, plants, coral, and other calcareous materials. These deposits formed sandstone, shale, coal and limestone bedrock.

The earlier Pennsylvanian age influenced the bedrock in northern and western Tuscola County. The Saginaw Formation, developed during this age, is marked by shale, clay, and limestone deposits. Geologists have determined that large wetland areas formed where the shallow seas finally receded. The wetland forest decay was minimal due to the presence of stagnant water. This allowed large carbon deposits to form and produce coal. As a result, Tuscola County was one of many counties in southern Michigan to be mined from the 1830s until the late 1940s.

5.2.3 Topography

The topography of Tuscola County is largely influenced by glacial action as described in the previous section. Elevations range from a low of 581 feet above sea level along the Saginaw Bay shoreline to a high of 950 feet along a ridge moraine in the southeast corner of the County.

The northwestern portion of the County is a nearly level lake plain, northwest of a line generally between Reese and Gageton. A glacial moraine marks a ridgeline running northeast-southwest, which bisects the County evenly into northwest and southeast portions and runs generally parallel to the Cass River (**Map 7**). The ridgeline elevations range from 800 feet in the northeast corner, to 750 feet in the southwest corner. All water in the northwest portion of the County drains into the Saginaw Bay.

The southeastern portion includes areas of nearly level to rolling outwash plains. Another ridgeline is formed in the southeast corner, running parallel to the first ridgeline, generally between Kingston and the south borderline between Millington and Watertown Townships. Elevations of this ridge range between 800 feet in the northeast to 950 feet in the southwest.

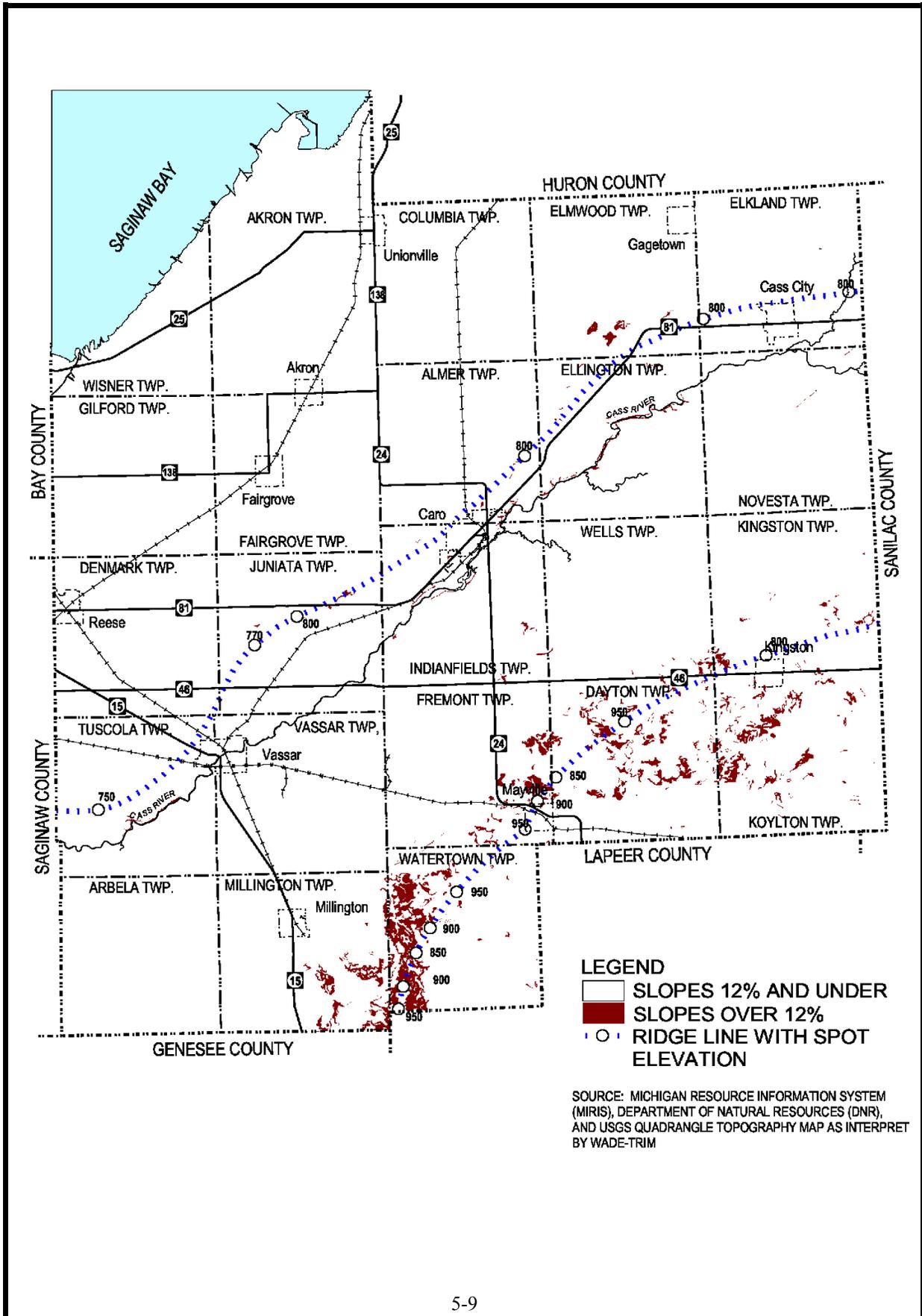
Map 7 also illustrates slopes in the County greater than 12%. Most of these slopes are located in the southeastern corner of the County, along the ridgeline. Typically slopes greater than 12% pose some restrictions to development.

5.2.4 Soil Conditions

Soil characteristics help to define the land capacity to support certain types of land uses. Soils most suitable for development purposes are well drained and are not subject to a high water table. Adequate drainage is important to minimizing storm water impacts and the efficient operation of septic drain fields. Adequate depth to the water table is necessary to prevent groundwater contamination from septic systems. A high water table also limits the construction of basements. Though civil engineering techniques can be employed to improve drainage and maintain adequate separation from the water table, such techniques can be expensive to construct and maintain.

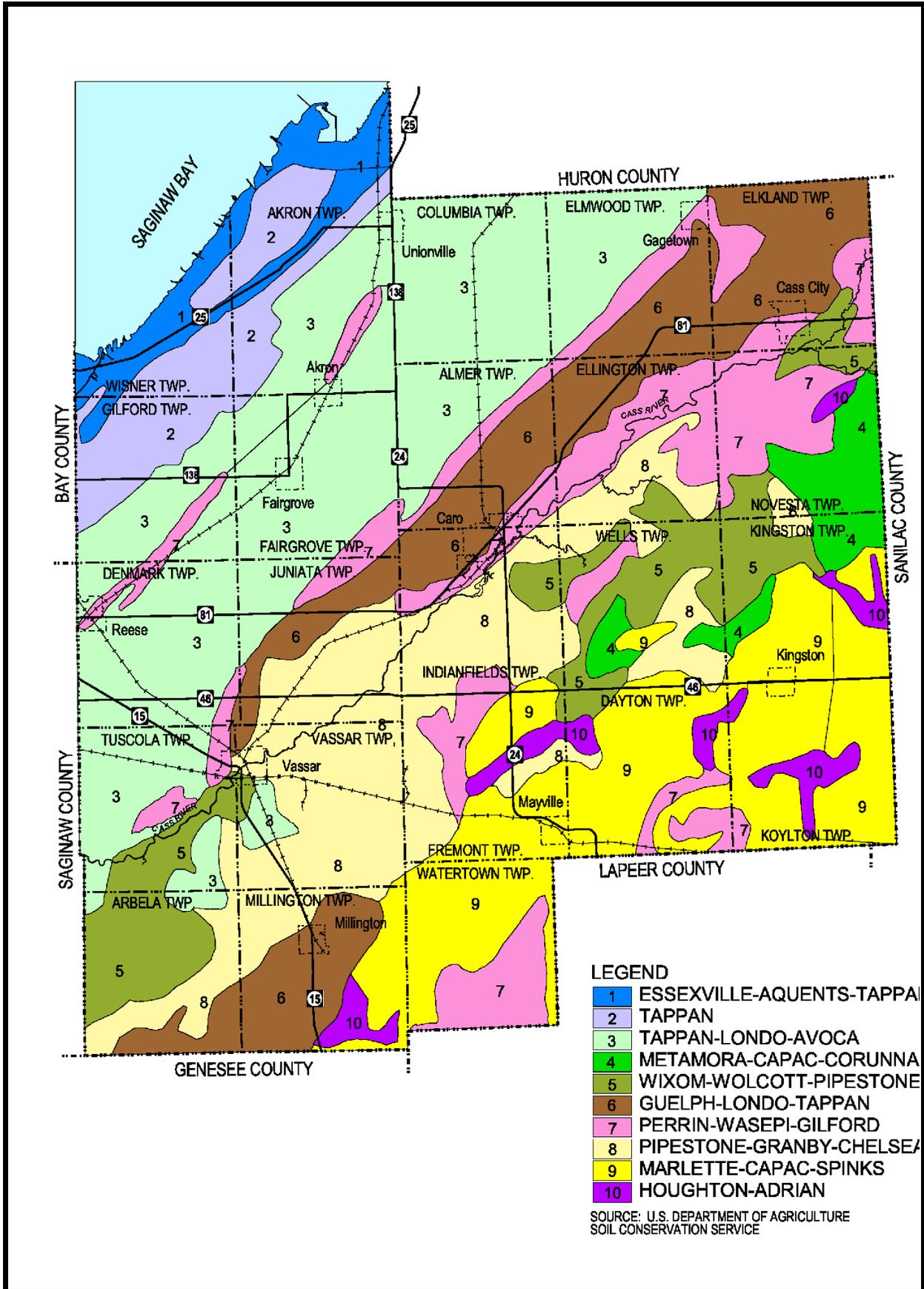
Soils play an important role in the food supply system. The Natural Resource Conservation Service identifies soils that are well or uniquely suited to crop production. When making land use decisions, it is important to consider the value of certain soils for agricultural purposes. Once land is converted from agricultural uses to urban uses, the soils are permanently altered and their ability to support agricultural production is greatly diminished, if not destroyed. The agriculture industry is important to the local economy. Planners and public officials should carefully consider any development proposal that threatens this non-renewable resource.

According to the General Soils Map provided by the Natural Resources Conservation Service, there are ten soil associations within Tuscola County (**Map 8**, pg 5-10). The map is not designed for site-specific applications. Rather, it can be used to compare land suitability for large areas. Each association is composed of several soil series. Each series has a distinctive pattern of major soil types, relief, and drainage characteristics. A series making up one association may occur in another, but in a different pattern and/or combination. The associations within Tuscola County include the following:



SOIL ASSOCIATION

MAP 8



1. Essexville-Aquents-Tappan Association

This group composes about four percent of the county and is all poorly drained. Poorly drained soils are defined by the Tuscola County Soil Survey as soils that remove water so slowly that the soil is saturated for extended periods during the growing season, often marked by standing water. This can result from one or all of the following: a high water table, the slow movement of water through the soil (seepage), and/or nearly continuous rainfall.

2. Tappan Association

Soils in this class make up 5% of the land area within the County. The Tappan series makes up 80% of the class and is recognized by its dark gray, calcareous loam surface layer about 11 inches thick. Soils comprising the other 20% are composed of four other series, which are characterized as poorly drained. This land is most suitable for cultivating crops including corn, wheat, beans, and sugar beets. Building development is severely hindered due to wetness and ponding in low areas.

3. Tappan-Londo-Avoaca Association

Soils within this group compose 25% of the County land area. The Tappan series accounts for 50% of the group. It is poorly drained and can usually be found on low, broad flats and in drainage ways. The Londo soils are somewhat poorly drained. Somewhat poorly drained soils are defined as water being removed from the soil slowly enough so that the soil is wet for significant periods during the growing season. Like poorly drained soils, attributing factors include a shallow water table, extended periods of continuous rainfall, seepage, or a combination of all. Distinguished by its dark, grayish-brown loam surface layer, Londo soils tend to be about ten inches thick.

Avoca soils are somewhat poorly drained containing dark brown loamy fine sand about 11 inches thick. The Londo and Avoca groups can be found on flats and on low ridges or knolls. Most areas under this class are well suited for cultivated crops. However wetness, compaction, and wind erosion are major agricultural limitations. The soils described are poorly suited for sanitary facilities and building site developments.

4. Metamora-Capac-Corunna Association

This group only composes 3% of the County. Each series comprises 18%, 22%, and 30% respectively, with 30% of soils in several other classes. Metamora soils are nearly level and gently undulating. Recognized by its very dark grayish brown sandy loam qualities, it is somewhat poorly drained.

Capac soils are similar to Metamora in slope and drainage character. Corunna soils are nearly level and poorly drained. They have a very dark grayish brown surface layer composed of sandy loam about ten inches in thickness. Those in the mixed classes are somewhat poorly drained. Cultivated crop suitability is good yet removing excess water during wet periods is a major management concern. Suitability of the major soils is poor for both sanitary and building facilities with wetness being a major limitation.

5. Wixom-Wolcott-Pipestone Association

This association makes up eight percent of the County. The class is composed of 30% Wixom, 25% Wolcott, and 15% Pipestone Series. The Wixom and Pipestone are typically found on broad flats and on low ridges. Wixom soils are found on nearly level and gently undulating slopes and are somewhat poorly drained. The soils of the Wolcott soil group are normally found in low, broad areas, depressions, and drainage ways. They are very poorly drained. Very poorly drained soils are defined by free water remaining at or on the surface during most of the growing season. Pipestone soils are nearly level and gently undulating and are somewhat poorly drained.

The other 30% of the soils are well combined with the somewhat poorly drained Capac and the poorly drained Belleville soils. Cultivated cropland tends to be the primary use of this class with wetness being the key challenge to overcome. The major soils are poorly suited to sanitary facilities due to poor filtration, slow percolation, and ponding. Building development is precluded due to wetness.

6. Guelph-Londo-Tappan Association

Covering 12% of the County, this class is composed chiefly of Guelph series soils (60%). This series is nearly level to rolling and are moderately well drained or well drained. Soils with well-drained qualities allow water to be absorbed readily during most periods. Moderately well drained soils tend to absorb water slowly during some periods, yet are only wet for short periods during the growing season. Measures should be considered to overcome potential water erosion and slopes. However, building limitations are moderate for basements and moderate for septic absorption fields (greater for sloping areas).

Londo soils (20% of group) are nearly level and somewhat poorly drained as earlier described. Tappan soils (10% of group) are nearly level and poorly drained as mentioned before. The wetness of the Londo and Tappan is the primary concern for farming. Both are poorly suited for sanitary facilities and building site development due to poor drainage. Guelph soils are rated fair to poor for these uses with permeability and slope being a concern during site-specific analysis.

7. Perrin-Wasepi-Gilford Association

This association covers 10% of the County land area. Perrin soils (35% of class) are nearly level and gently undulating. They tend to be moderately well drained. Measures to prevent wind erosion, water erosion, and seasonal drought should be considered. Wasepi (30% of class) are generally found on the lower side of slopes and on ridges. They are nearly level and somewhat poorly drained. Gilford (10% of class) are nearly level and very poorly drained.

The rest of the class (25%) is mixed with the well-drained Spinks and Boyer soils, and the Londo, Metamora, Tappan, and Wixom soils that are poorly drained. Most areas of this association are used as woodland and cropland. Some sand and gravel extractive operations are present as well. Cultivated crop suitability is fair with corn, beans, and wheat often comprising the main crops. Building development on Perrin soils is fair to poor due to local wetness conditions. The other major classes preclude development due to poor drainage. All major soil series are severely limited for sanitary facilities, as poor filtration and wetness are typical.

8. Pipestone-Granby-Chelsea Association

These series compose about 16% of the County. Pipestone (40%) soils tend to be somewhat poorly drained, as mentioned earlier. Granby soils (20%) are found on nearly level slopes and are typically poorly drained. This type can be visually identified by its black, loamy fine sand about 11 inches thick. The Chelsea (16%) series is found on nearly level to gently rolling slopes and is generally well drained. Its surface layer tends to be composed of dark, gray-brown fine sand about five inches thick.

The other series or minor extent (24%) are somewhat poorly drained Wixom and very poorly drained Wolcott soils. Most areas of this association are used for cultivated crops, pasture, or woodland. While the wetness of the Granby and Pipestone soils is the main farming limitation, the whole class is fairly suited for cultivation. Wind erosion, organic matter content, and seasonal drought are added management concerns. While the Chelsea soils are well suited for building development, the other soil series are poorly suited. Sanitary facilities are limited with the poor filtering and wet characteristics of all the major soil groups involved.

9. Marlette-Capac-Spinks Association

This soil association comprises 15% of the County. It is composed of the Marlette (42%), Capac (15%), and Spinks (12%) soil series. While the Marlette and Spinks are often located on high ridges and knolls and in broad, undulating areas, the Capac is normally found in lower areas. Marlette soils tend to be well drained and are found on steep to undulating slopes. The surface layer is dark grayish brown composed of sandy loam. This series has only slight limitations for building yet has severe restrictions on sanitary uses due to slow percolation. It is also subject to water erosion.

Capac soils were earlier described and are somewhat poorly drained. Methods for removing excess water are often needed. Spinks tends to be well drained with a fine, loamy-sand surface layer about seven inches thick. Control measures to prevent soil blowing should be considered. Septic absorption varies from fair to very poor, depending on the site.

The other minor extents or other soil groups (31%) combine the well-drained Boyer and Metea soils, which are found on slopes similar to the Marlette and Spinks. Also, the poorly drained Metamora, Wixom, and Wolcott soils are present and often found on low, broad flats, and in depressions of drainage ways. Wetness, slope, water erosion, and wind erosion are farming management concerns. Building limitations include greater slopes, often shallow depth to the water table, and poor permeability. Generally, this association is suitable for cultivated crops, pasture, or woodlands.

10. Houghton-Adrian Association

Comprising 2% of the County's land area, this group is found in bogs and depressions located on flood plains. The Houghton series makes up 30% of the group characterized by black muck extending to a depth of 51 inches. The Adrian series composes 30% made up of a shallow muck of only 11 inches. The rest of the class (40%) is a mixture of poorly drained Marlette, Capac, Pipestone, and Wolcott soils. Most areas of this association are used as woodlands or wildlife habitat. The major soil series are generally unsuited to cultivated crops, sanitary facilities, and building development due to frequent ponding.

5.2.5 Soil Moisture Characteristics

About 43.8% of the County is classified as hydric soils. These soils are defined as soils that are saturated, flooded, or pond during part of the growing season and are classified as poorly drained and very poorly drained. Hydric soils generally have poor potential for building site development and sanitary facilities. Wetness and frequent ponding are severe problems that can be difficult and costly to overcome. Sites with high water tables may be classified as wetlands and a wetlands permit would be required to develop these areas. **Map 9** exhibits the soils classified as hydric by the Natural Resources Conservation Service.

Non-hydric soils are defined as being well drained or moderately well drained. These types tend to show wetness or flooding only after significant periods of rainfall or during the seasonal spring thaw.

5.2.6 Wetlands

The MIRIS land use and land cover information provides spatial reference to the wetland areas in Tuscola County (**Map 10**, pg. 5-16). These areas make up 3.7% of the total land area of the County. Wetlands are unique and diverse ecosystems where water is found, either on the surface or near the surface, at various times of the year. These areas often contain very poorly drained soils, which support water-loving vegetation.

Residents of Michigan are becoming increasingly more aware of the value of wetlands, also referred to as marshes, swamps, or bogs. Beyond their aesthetic value, wetlands protect the water quality of lakes and streams by filtering polluting nutrients, organic chemicals, and toxic heavy metals. Wetlands are closely related to high groundwater tables and serve to discharge or recharge aquifers. Wetlands support wildlife and wetland vegetation and protect shorelines from erosion.

Several state wildlife areas are located in wetland areas providing managed game and habitat for waterfowl and other wildlife. Fish Point State Wildlife Area located along most of the Saginaw Bay shoreline in the County attracts many outdoor enthusiasts. The Deford, Tuscola, Cass City, and Vassar State Game Areas are also examples of wildlife habitat available to the public in central Tuscola County.

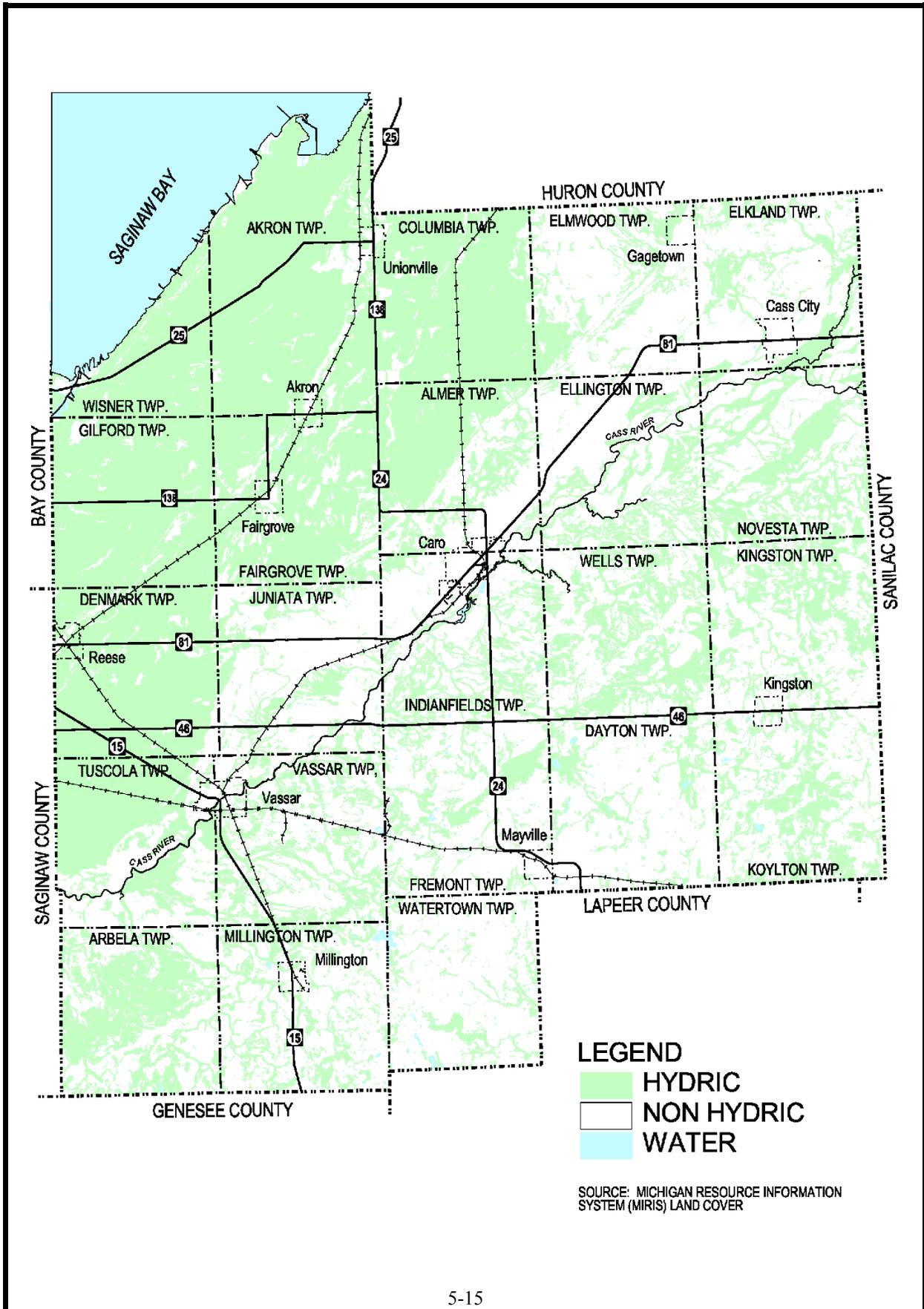
Michigan's Wetland Protection Act defines wetlands as "land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support wetland vegetation or aquatic life and is commonly referred to as a bog, swamp or marsh." The Act further specifies State jurisdiction over certain wetlands depending upon their proximity to a lake, stream, pond, or Great Lake, and/or having a direct hydrological relationship with it. Wetlands, which meet the statute criteria, are considered regulated and require a permit before draining, filling, dredging or constructing upon.

5.2.7 Water Resources

Both groundwater and surface water are vital resources within Tuscola County. The primary watersheds in the County include the Saginaw Bay Watershed and the Cass River Watershed. The waterways are important scenic and recreation resources. Equally important are groundwater resources, as most County residents must rely on individual wells for drinking water. It is, therefore, important that all water resources be protected and managed in a manner, which would ensure their quality.

SOIL CONDITIONS

MAP 9



Groundwater

Important factors in the evaluation of groundwater are the quantity and quality of the water. The geologic and hydrologic features of the County provide residents with sufficient water quantities. However, potable water availability in certain areas is limited.

According to the Tuscola County Health Department, there are two areas in the County facing water quality problems. The first is located in the Townships of Wisner, northern Gilford, and northern Akron. Here, concentrations of natural brine from the subsurface rock are high. As a result, many municipalities in these areas are drawing water from the Saginaw Bay instead of groundwater wells.

The second area is located in the extreme eastern and northeastern portions of the County where a geological formation (Marshal Sandstone) has natural arsenic associations. The Villages of Gagetown and Cass City are within this area. The water from the municipal wells is regularly tested and is within acceptable tolerances for safety. However, local wells in this area should be tested to ensure arsenic concentrations are within safe levels. In 2007, the Village of Cass City completed construction of an arsenic treatment facility that exceeds federal requirements for removal of arsenic from their water.

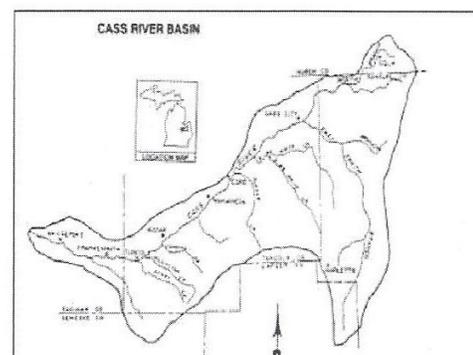
The rest of the county is fortunate to have an adequate groundwater resource generally within 100 feet of the surface. The vulnerability of drinking water aquifers to surface contamination is moderate to relatively safe in the County. However, this discussion is limited to general planning purposes and not site-specific analysis. Local site reviews are always necessary when assessing the vulnerability of a particular location.

A review of the Aquifer Vulnerability to Surface Contamination on a Michigan Map prepared by the Center for Remote Sensing and Department of Geography at Michigan State University shows a range of vulnerability classifications. Over 50% of the County is classified as moderate and slow permeable soils over the least sensitive drift lithology. Groundwater and potential contaminants do not move as quickly through these finer soils, sandy loam and sandy clay loam, as they do through coarse sandy soils. In addition, the Tuscola County Health Department describes the aquifer in most of the County as located between an impermeable clay layer and above an impermeable bedrock (shale) layer. This would provide added protection should a point source pollutant be released. However, two areas in the County are at a greater risk. The first is along the immediate lakeshore where the soils become sandier. This increases the risk of contamination, as the sand is highly permeable. This is also true along the glacial moraine ridge (noted earlier) where the permeability is also high.

Surface Water

As mentioned earlier, the County is located within two major watersheds, the Cass River and the Saginaw Bay. A major regional water resource, the Cass River runs 55 miles through the center of the County, flowing from the northeast to the southwest. The extent of the Cass River Basin and watershed is shown in Figure 2. In total, the watershed drains 890 square miles in five counties.

Figure 2



The Cass River is a part of the Saginaw River system connecting, via the Shiawassee River, to the Saginaw River, which then empties into the Saginaw Bay.

The glacial moraine ridge, earlier described, divides the Saginaw Bay and Cass River watersheds. Surface water flowing north of the ridge is part of the Saginaw Bay watershed, whereas water flow south of the ridge enters the Cass River watershed.

The County Drain Commissioner is charged with the responsibility of maintaining the County drains. The maintenance costs for the county drains are assessed to landowners in each drainage district. Dredging and straightening existing creeks created the drains and digging drainage ditches through natural drainage ways or low areas. The purpose for creating county drains and private farm drains is to improve soil drainage by increasing the flow of water from the landscape. Drainage tile systems have been buried in most farm fields and connect to the drainage ditches to further improve soil and growing conditions. These drainage systems also enable the County Road Commission to construct and to maintain the existing County road network. Since a substantial number of soils tend to be poorly drained in the County, these improvements allow for adequate water removal enabling current land uses to continue.

There are only a few lakes in the County, primarily located in the southern townships. They were formed in depressions left by irregular glacial melting and scouring as the glacial ice sheets advanced and retreated. Water quality of these lakes has been acceptable for all types of recreation for many years. **Map 10**, (page 5-16) shows the locations of county drains and other bodies of water in Tuscola County.

5.2.8 Woodlands

Woodland information for Tuscola County is derived from the Michigan Resource Information System (MIRIS) land use/cover information (**Map 11**).

Approximately 18% of Tuscola County is wooded. The predominant woodland type is lowland woodland, which covers 10.9% of the County. Lowland tree species include red maple, silver maple, green ash, cottonwood, elm and basswood. These species tend to grow on poorly drained soils with high water tables.

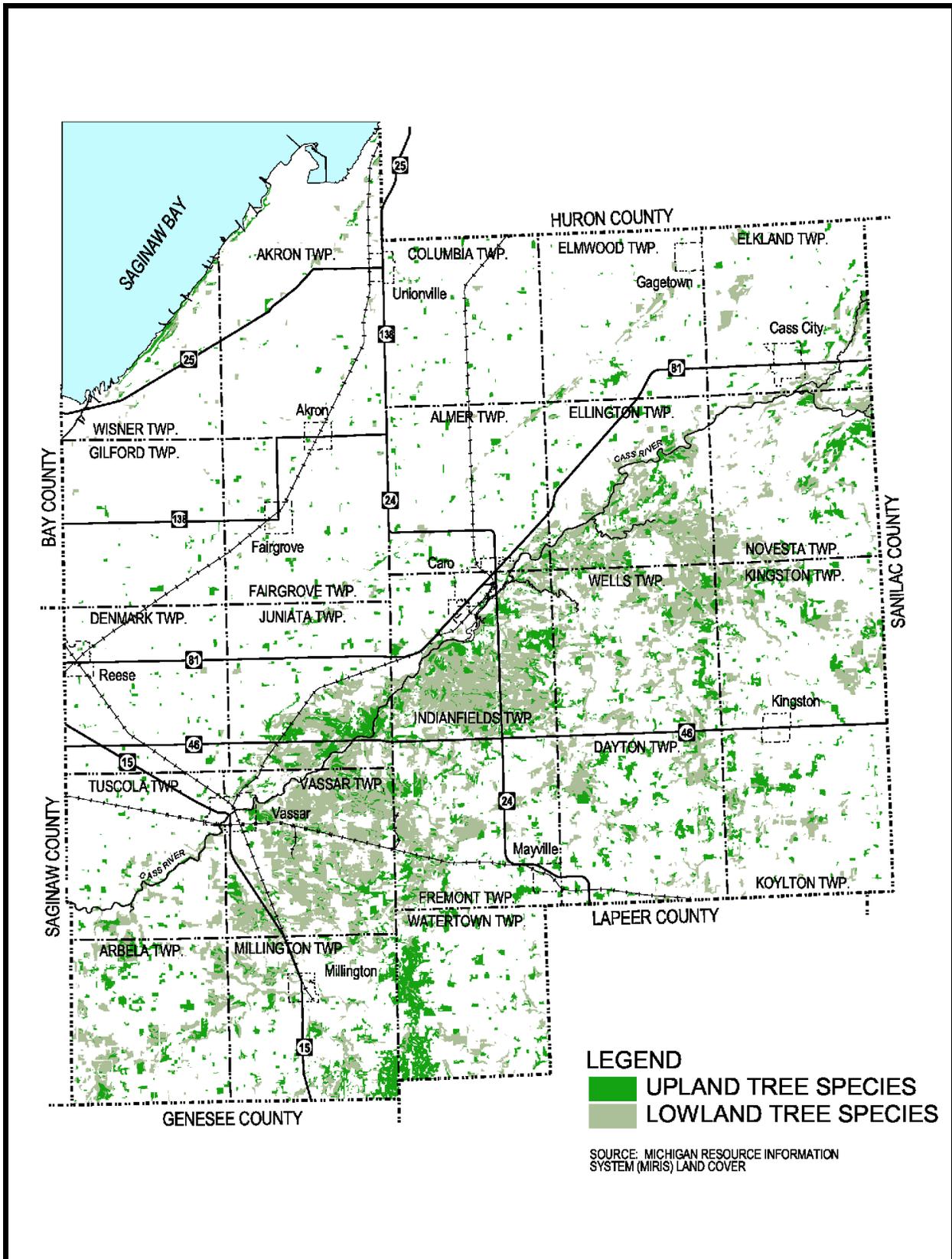
Upland tree species cover 7.4% of the County. The upland trees include aspen-white birch, northern hardwoods (sugar/red maple, American beech, cherry, and basswood) and pine (jack, white and red). **Table 4** (pg. 5-20) summarizes the woodland cover types by township.

Woodland areas are complex ecological systems and consequently, provide multiple benefits to the environment and its wildlife and human inhabitants. Woodlands also reduce air pollutants by absorbing certain air borne particles. In addition to providing wildlife habitat, woodland vegetation moderates the effects of winds and temperatures while stabilizing and enriching the soil. For human inhabitants, woodland areas offer scenic contrasts within the landscape and with the changing of the seasons. Woodlands act as buffers from noise on heavily traveled roads. Primary non-preservation uses of woodlands are the production of forest products and woodland recreation.

Recreation activities include small and large game hunting. Wildlife species include deer, turkey, rabbit, and ruffed grouse.

WOODLANDS

MAP 11



SUMMARY OF WOODLAND COVER TYPES BY TOWNSHIP TABLE 4

Township	Upland Tree Acreage	% Of Township	Lowland Tree Acreage	% Of Township	Wetland Acreage	% Of Township
Akron	588	1.8%	546	1.7%	1,277	4.0%
Almer	1,051	4.8%	714	3.3%	46	0.2%
Arbela	2,333	10.4%	2,996	13.4%	125	0.6%
Columbia	608	2.6%	83	0.4%	0	0.0%
Dayton	2,413	10.5%	2,338	10.2%	1,217	5.3%
Denmark	474	2.1%	111	0.5%	0	0.0%
Elkland	946	4.3%	1,350	6.1%	1,026	4.6%
Ellington	2,256	9.4%	5,493	22.9%	648	2.7%
Elmwood	615	2.6%	609	2.6%	172	0.7%
Fairgrove	620	2.7%	291	1.3%	3	0.0%
Fremont	2,562	11.3%	3,867	17.1%	1,027	4.5%
Gilford	368	1.7%	54	0.2%	23	0.1%
Indianfields	3,465	16.6%	7,532	36.0%	1,334	6.4%
Juniata	2,599	11.3%	3,221	14.0%	392	1.7%
Kingston	1,877	8.3%	3,003	13.3%	1,882	8.3%
Koylton	1,474	6.4%	1,268	5.5%	2,982	13.0%
Millington	2,782	12.2%	2,515	11.0%	1,339	5.9%
Novesta	1,482	6.5%	2,920	12.7%	1,328	5.8%
Tuscola	996	4.9%	1,626	8.0%	0	0.0%
Vassar	2,649	11.4%	9,091	39.1%	337	1.5%
Watertown	3,400	15.0%	1,225	5.4%	1,047	4.6%
Wells	2,494	11.9%	5,216	24.9%	1,722	8.2%
Wisner	461	3.7%	363	2.9%	1,046	8.4%
Summary	38,513	7.4%	56,432	10.9%	18,973	3.7%

Source: Michigan Resource Information System (M IRIS)

5.2.9 Farmland

Tuscola County's most valued natural resource is its highly productive soil. Farming began in the early 1850's with 13 working farms and today has grown to include over 320,000 acres of land. The County is one of the top agricultural areas in the State, according to the Tuscola County Soil Survey. Wise utilization of this valuable resource, emphasizing proper management practices, will sustain this economic base for future years.

The United States Department of Agriculture (USDA) has classified a large portion of the County's arable land as prime farmland. This land is best suited for food, feed, forage, fiber, and oilseed crops. Generally, prime farmland produces the highest yield with minimal inputs of energy and economic resources. Farming the land in these already viable areas result in the least amount of impact to the remainder of the Country.

The USDA Soil Survey indicates nearly two-thirds of County land is prime farmland. Officials at the USDA Farm Service Agency use the General Soils Map (**Map 8**, pg. 5-11) to display the general location of land most suitable for agriculture. Soil associations one through five are rated the best locations for prime farmland followed by six through eight as reasonable, depending on the locality. Nine is less preferred due to being well drained and ten is least preferred due to very poor drainage qualities.

It is important to note that the inclusion of poorly drained or very poorly drained lands into the prime category is done only where improvements like drains or flood controls are in place. Artificial improvements to these areas are in place across most of the County.

In 1983 the Soil Conservation Service determined 359,000 acres, 69% of the total land area, were being farmed. According to the 1992 Census of Commerce, 324,111 acres were being farmed in the County that accounts for about 62% of the total land area. It is important to note that the loss is not entirely a result of land converted to urban or industrial uses. The Farm Service Agency states that one reason for the decline was lower prices for commodities at the market. Therefore land that could be in production is currently not utilized.

However, the loss of prime farmland to other uses does place pressure on marginal lands. These lands are not as productive due to a greater susceptibility to erosion, drought, and/or difficulty in cultivation.

Public Act 116 offers tax incentives for farmers who agree not to sell their land for non-agricultural uses. This contractual agreement lasts for ten years. Numerous farmlands in the County operate under the PA 116 agreement as shown in **Table 5** (pg 5-22).

Table 6 (pg. 5-23) is an agricultural Snapshot of Tuscola County while an analysis of the contribution of agricultural land to government revenues is presented in **Table 7** (pg. 5-24).

PA 116 AGREEMENTS**TABLE 5**

Farmland Development Rights Agreements Tuscola County as of 1/27/2012		
Township	Number of Agreements	Acres
Akron	400	26,147
Almer	189	13,203
Arbela	92	6,523
Columbia	338	19,884
Dayton	34	2,493
Denmark	261	17,591
Elkland	127	9,501
Ellington	77	6,121
Elmwood	211	13,775
Fairgrove	307	18,827
Fremont	13	996
Gilford	322	19,999
Indianfields	13	940
Juniata	121	9,714
Kingston	87	6,009
Koylton	34	2,697
Millington	46	3,951
Novesta	72	4,403
Tuscola	161	11,712
Vassar	9	649
Watertown	33	2,187
Wells	29	1,865
Wisner	140	8,376
Total Tuscola County	3,116	207,563
Avg. acreage per Township		9,024

Source: Farmland * Open Space Preservation Environmental Stewardship Division
Michigan Department of Agriculture

AGRICULTURE IN TUSCOLA COUNTY

TABLE 6

Average size of farms: 260 acres

Average value of agricultural products sold per farm: \$72599

Average value of crops sold per acre for harvested cropland: \$269.63

The value of nursery, greenhouse, floriculture, and sod as a percentage of the total market value of agricultural products sold: 0.89%

The value of livestock, poultry, and their products as a percentage of the total market value of agricultural products sold: 22.39%

Average total farm production expenses per farm: \$70204

Harvested cropland as a percentage of land in farms: 80.47%

Irrigated harvested cropland as a percentage of land in farms: 2.14%

Average market value of all machinery and equipment per farm: \$107161

The percentage of farms operated by a family or individual: 88.31%

Average age of principal farm operators: 53 years

Average number of cattle and calves per 100 acres of all land in farms: 5.41

Milk cows as a percentage of all cattle and calves: 26.31%

Corn for grain: 77,400 harvested acres

All wheat for grain: 29,600 harvested acres

Soybeans for beans: 72,700 harvested acres

Sugarbeets for sugar: 19,400 acres

Vegetables: 2230 harvested acres

Land in orchards: 197 acres

2011 Contribution of Tuscola County to Government Revenues TABLE 7

Taxable Value	Purpose	Millage	Estimated Property Tax Revenue
\$1,381,323,002	State Education Tax	6.0000	\$8,169,574.03
\$1,381,323,002	General Operating (S07)	3.9141	\$5,406,636.36
\$1,381,323,002	Bridge/Streets	0.4807	\$638,012.29
\$1,381,323,002	Senior Citizens	0.1989	\$274,745.14
\$1,381,323,002	Medical Care	0.2500	\$345,330.75
\$1,381,323,002	Road Patrol	0.8953	\$1,236,698.40
\$1,381,323,002	Primary Road Improvements	0.9657	\$1,333,943.60
\$1,381,323,002	Mosquito Abatement	0.6316	\$872,443.60
\$1,381,323,002	Recycling	0.1483	\$204,850.20
\$1,381,323,002	Medical Care Debt	1.0000	\$1,381,323.00
\$1,381,323,002	Total County extra voted millage	4.5780	\$11,750,091.57
\$58,698,140	Akron Twp	6.2218	\$365,208.09
\$55,492,923	Almer Twp	2.4551	\$136,240.68
\$67,456,142	Arbela Twp	2.3651	\$159,540.52
\$45,241,643	Columbia Twp	6.3957	\$289,351.98
\$47,018,829	Dayton Twp	2.2845	\$107,414.51
\$88,028,580	Denmark Twp	2.4516	\$215,828.47
\$85,698,646	Elkland Twp	1.6468	\$141,128.53
\$34,166,950	Ellington Twp	4.8109	\$164,373.78
\$37,803,026	Elmwood Twp	4.2679	\$161,339.53
\$50,034,366	Fairgrove Twp	3.6263	\$181,439.62
\$71,394,667	Fremont Twp	1.3761	\$98,246.20
\$39,290,729	Gilford Twp	4.8563	\$190,807.57
\$62,160,656	Indianfields Twp	2.3722	\$147,457.51
\$42,402,390	Juniata Twp	4.4588	\$189,063.78
\$32,442,120	Kingston Twp	3.4263	\$111,068.84
\$39,742,887	Koylton Twp	3.3158	\$131,779.46
\$103,463,428	Millington Twp	2.2256	\$230,268.21
\$31,414,294	Novesta Twp	2.3963	\$75,278.07
\$63,991,480	Tuscola Twp	1.5265	\$97,682.99
\$77,340,705	Vassar Twp	1.0000	\$77,340.71
\$47,177,175	Watertown Twp	1.1985	\$56,541.84
\$38,587,598	Wells Twp	3.2047	\$123,661.68
\$23,377,479	Wisner Twp	5.1592	\$120,609.09
\$91,661,539	City of Caro	16.1643	\$1,481,644.61
\$47,238,835	City of Vassar	17.0000	\$803,060.20

2011 Contribution of Tuscola County to Government Revenues TABLE 7

Taxable Value	Purpose	Millage	Estimated Property Tax Revenue
\$20,643,884	O-G School	0.0000	\$78,057.82
\$15,971,717	Frankenmuth School	3.3200	\$76,712.61
\$16,664,631	Marlette School	0.0000	\$32,685.17
\$113,259,841	Akron-Fairgrove School	3.6000	\$650,345.84
\$266,349,298	Caro School	4.2000	\$2,730,116.32
\$156,632,093	Cass City School	3.6850	\$1,204,616.94
\$81,999,480	Kingston School	6.1500	\$827,175.28
\$132,425,400	Mayville School	5.1500	\$1,259,422.67
\$196,549,004	Millington School	3.7400	\$1,355,788.49
\$93,150,304	Reese School	4.7500	\$696,641.23
\$85,239,321	USA School	7.0000	\$758,183.79
\$202,438,029	Vassar School	2.5500	\$1,339,106.26
1,328,042,770	Tuscola ISD	4.2409	\$5,632,096.58
6,695,611	Village of Akron	12.8912	\$86,314.46
48,939,920	Village of Cass City	18.1387	\$887,706.53
8,472,239	Village of Fairgrove	12.0440	\$102,039.65
5,154,111	Village of Gagetown	21.6036	\$111,347.35
5,422,480	Village of Kingston	15.9153	\$85,300.40
\$16,059,087	Village of Mayville	12.7312	\$204,451.45
\$20,113,041	Village of Millington	14.0888	\$283,368.61
\$28,530,096	Village of Reese	11.0000	\$313,831.06
\$8,123,346	Village of Unionville	14.0412	\$114,061.53

***Does not include property used for farming but not classified agricultural for assessment purposes.

5.3 Socioeconomic Profile

Getting a better understanding of the County through socioeconomic data is an important component of the comprehensive planning process. A good socioeconomic profile will include information on population, housing, and economy. These aspects of the County have direct impacts and influences on future land use decisions. **Table 8** shows the population trend for the townships during the last decade, while **Table 9** gives an overall picture of the County today.

POPULATION TRENDS 2005-2010 **TABLE 8**

Place	2005 Population	2010 Population	Percent Change 2005-2010*
City			
1. Caro (Almer & Indianfields Twps.)	4,193	4,229	-1.08
2. Vassar	2,776	2,697	-2.85
Village			
3. Akron (Akron & Fairgrove Twps.)	292	252	-13.70
4. Cass City (Elkland Twp.)	2,606	2,428	-6.83
5. Fairgrove (Fairgrove Twp.)	619	563	-9.05
6. Gagetown (Elmwood Twp.)	384	388	1.04
7. Kingston (Kingston & Koylton Twps.)	442	385	-12.90
8. Mayville (Fremont Twp.)	1,034	750	-27.47
9. Millington (Millington Twp.)	1,115	1,072	-3.86
10. Reese (Denmark Twp.)	1,365	1,448	6.08
11. Unionville (Columbia Twp.)	594	508	-14.48
Township*			
12. Akron	1,609	1,503	-6.59
13. Almer	2,151	2,115	-1.67
14. Arbela	3,338	3,070	-8.03
15. Columbia	1,433	1,284	-10.40
16. Dayton	1,879	1,848	-1.65
17. Denmark	3,258	3,068	-5.83
18. Elkland	3,645	3,528	-3.21
19. Ellington	1,336	1,332	-0.30
20. Elmwood	1,235	1,207	-2.27
21. Fairgrove	1,759	1,579	-10.23
22. Fremont	3,568	3,312	-7.17
23. Gilford	875	741	-15.31
24. Indianfields	3,192	2,805	-12.12
25. Juniata	1,701	1,567	-7.88
26. Kingston	1,640	1,574	-4.02
27. Koylton	1,607	1,585	-1.37
28. Millington	4,432	4,354	-1.76
29. Novesta	1,635	1,491	-8.81
30. Tuscola	2,151	2,082	-3.21
31. Vassar	4,403	4,093	-7.04
32. Watertown	2,242	2,202	-1.78
33. Wells	1,776	1,773	-0.17
34. Wisner	757	690	-8.85
Tuscola County	58,428	55,729	-4.62

*Township population includes Village population. Source: U.S. Bureau of Census

TUSCOLA COUNTY 2010 SOCIO-POPULATION SNAPSHOT**TABLE 9**

<u>Population</u>	Tuscola	Michigan
Population: 2010	55,729	9,876,187
Population: Percent change from 2000 to 2010	-4.4%	-0.6%
Persons 5 years and under	3,128	592,571
Persons 18 years and under	14,560	2,340,656
Persons 65 years and older	8,831	1,362,914
Female persons	27,783	5,026,979
Male persons	27,946	4,849,208
Households: 2010		3,872,508
Persons per household: 2010	2.52	2.53
 <u>Race/Ethnicity</u>		
White persons	53,578	7,792,312
Persons of Hispanic or Latino origin	1,571	434,552
Black persons	634	1,402,419
American Indian and Alaska Native persons	268	59,257
Asian persons	160	237,029
 <u>Demographic</u>		
Persons living in same house in 06 and 10: 5 years old +	87.4%	85.5%
Foreign born persons: 2006-2010	.9%	5.9%
Language other than English spoken in home: 10: 5 years old+	3%	8.9%
High school graduates, 25 years and older:2006- 2010	84.8%	88.0%
Bachelor's degree or higher, 25 years and older: 2006-2010	12.4%	25.0%
Mean travel time to work; in minutes: 2006-2010	28.8	23.7
 <u>Housing</u>		
Housing units	24,451	4,532,233
Occupied Housing Units	21,590	3,806,621
Home ownership rate: 2006-2010	83.2	74.2
Housing units in multi-unit structures: 2006-2010	2,005	815,802
Median value owner-occupied housing units: 2006-2010	\$112,200	\$144,200
 <u>Income</u>		
Median household income: 2006-2010	\$42,198	\$48,432
Per capita money income: 2006-2010	\$19,937	\$25,135
Persons below poverty: 2006-2010	8,805	1,461,676
 <u>Geography</u>		
Land Area: (square miles)	803.13	56,538.90
Persons per square mile: 2010 (mean avg)	69.4	174.8

5.3.1 Household Characteristics

For Tuscola County as a whole, married couple families make up 56.5% of the households, as compared to 48.0% married couple families for the state of Michigan. The highest percentage (69.6 %) is found in Tuscola Township, while the lowest percentage (41.6 %) of married couple family households is recorded for the City of Caro. Single females head up 9.9% of Tuscola County family households. The highest percentage (35.1 %) of single person households is found in the City of Caro, and the lowest percentage (16.2 %) is found in Vassar Township.

Table 10 shows the persons per household trends for Tuscola County from 1970 to 2010, as well as projections to the year 2020. As Shown in the table, the persons per household numbers have declined in the past 30 years and are expected to decline further in the next 20 years.

PERSONS PER HOUSEHOLD PROJECTIONS 1970 –2020 TABLE 10

Year	Persons Per Household
1970	3.41
1980	3.05
1990	2.79
2000	2.65
2010	2.64
2020*	2.62
Percent Change, 1970 – 2020	-23.2%

*Persons per Household projection derived from Woods & Poole Economics, Inc. Source: U.S. Census Reports, 1970-2000. Woods & Poole Economics, Inc. 2001 Data Pamphlet.

5.3.2 Income and Education

Average income statistics, as depicted in **Table 11**, compare family income, household income and per capita income, as well as percentage of families living below the poverty level in 2010. County income statistics in almost all categories are substantially lower than averages for the State.

The lowest (less than \$18,000) per capita incomes are found in the townships of Dayton, Indianfields and Vassar. The highest (more than \$23,000) per capita income is found in the township of Denmark. It is noted that village and city data from the Federeal Government is incomplete at this time.

As of the 2010 Census, 83.9% of Tuscola County's residents over age 25 had a high school diploma or higher, as compared to 88.4% for the State of Michigan.

In Tuscola County, 8.8% of the population over age 25 had a bachelors degree or higher, as compared to 15.5% for the State.

INCOME AND POVERTY STATUS - 2010 **TABLE 11**

Place	Family Income	Household Income	Per Capita Income	% of Families Below Poverty Level
City				
1. Caro	46,711	39,677	16,300	27.5
2. Vassar	56,508	49,169	17,980	17.9
Village				
3. Akron (Akron & Fairgrove Twps.) *	47,915	33,957	18,571	18.5
4. Cass City (Elkland Twp.) *	54,053	46,981	19,226	16.0
5. Fairgrove (Fairgrove Twp.) *	46,953	41,122	16,723	10.6
6. Gagetown (Elmwood Twp.) *	116,001	40,195	15,288	22.5
7. Kingston (Kingston & Koylton Twp.) *	40,182	39,408	13,809	38.5
8. Mayville (Freemont Twp.) *	67,461	53,574	20,054	12.8
9. Millington (Millington Twp.) *	48,391	42,184	17,920	16.1
10. Reese (Denmark Twp.) *	61,415	52,074	23,925	8.0
11. Unionville (Columbia Twp.) *	66,638	55,510	19,745	2.4
Township*				
12. Akron	59,851	48,664	20,177	8.7
13. Almer	66,478	55,678	22,972	8.5
14. Arbela	60,358	52,630	19,812	11.0
15. Columbia	61,164	53,408	19,662	5.0
16. Dayton	50,771	45,156	17,817	15.8
17. Denmark	61,595	53,567	23,316	10.2
18. Elkland	54,304	47,856	19,209	15.2
19. Ellington	57,293	51,574	20,352	10.6
20. Elmwood	55,334	48,770	19,917	9.0
21. Fairgrove	54,303	48,297	19,715	11.4
22. Fremont	64,473	54,438	20,790	4.9
23. Gilford	69,988	65,963	21,792	3.5
24. Indianfields	51,467	44,310	17,229	20.8
25. Juniata	55,823	52,860	20,928	14.3
26. Kingston	55,069	51,491	18,757	17.6
27. Koylton	54,078	51,249	18,061	14.6
28. Millington	65,616	58,762	21,643	6.3
29. Novesta	58,027	55,421	21,995	12.2
30. Tuscola	66,434	59,177	22,654	3.1
31. Vassar	47,616	45,387	17,681	16.0
32. Watertown	59,349	54,030	20,277	7.0
33. Wells	54,510	49,711	19,234	10.9
34. Wisner	54,423	51,906	22,941	9.4
Tuscola County	61,290	56,591	19,470	12.8
State of Michigan	73,373	61,921	24,435	11.3

5.3.3 Housing

Of the 24,420 housing units in Tuscola County at the time of the 2010 Census, 80.5% were single-family units, 4.3% were 2-4 unit structures, 2.5% were 5-9 unit structures, and .8% were more than 10 unit structures (**Table 12**). Mobile homes accounted for 11.2% of County dwelling units. The greatest proportion (93.6%) of single-family units was found in Gilford Township, and the least (63.3%) in the village of Reese. Mobile homes were most prevalent in Vassar Township, and the least in the Villages of Akron and Mayville and Tuscola Township.

Approximately three-fourths of Tuscola County's housing is owner occupied, as shown in **Table 13** (pg. 5-32). The highest rate (85.9%) of owner occupied housing is found in Arbela Township, and the lowest (53.0%) in the City of Caro.

When analyzing the age of the County's housing (**Table 14**, pg. 5-33), it was noted that the majority (51.6%) were built between 1940 and 1979. Approximately fifteen percent of the County's housing is comprised of homes built earlier than 1940. The village of Mayville, Columbia and Gilford Townships had more than 40% of the homes built earlier than 1940 while The village of Kingston had more than 50) older than 1940.

TYPE OF HOUSING STRUCTURES – 2010

TABLE 12

Place	1 Unit Structures		2-4 Unit Structures		5-9 Unit Structures		10+ Unit Structures		Mobile Homes		Total Units
	#	%	#	%	#	%	#	%	#	%	#
City											
1. Caro	1185	58.8	334	16.6	199	9.9	216	10.7	79	3.3	2013
2. Vassar	819	69.2	145	12.3	141	11.9	49	4.1	30	2.5	1184
Village											
3. Akron (Akron/Fairgrove)	172	86.9	26	13.1	0		0		0		198
4. Cass City (Elkland Twp.)	841	75.1	128	11.4	37	3.5	38	3.4	75	6.7	1119
5. Fairgrove (Fairgrove Twp.)	191	88.0	12	5.5	0		0		14	6.5	217
6. Gagetown (Elmwood Twp.)	139	76.8	12	6.6	2	1.1	10	5.5	18	9.9	181
7. Kingston (Kingston/Koylton)	154	76.6	3	1.5	27	13.4	10	5.0	7	3.5	201
8. Mayville (Fremont Twp.)	318	72.8	65	14.8	49	1.2	5	1.1	0		437
9. Millington (Millington Twp.)	382	79.7	25	5.2	49	10.2	14	4.2	9	1.9	479
10. Reese (Denmark Twp.)	503	63.3	46	5.8	83	10.5	18	2.3	144	18.1	794
11. Unionville (Columbia Twp.)	235	920	9	3.4	9	3.4	0		8	3.1	261
Township*											
12. Akron	689	92	29	3.9	0		0		31	4.1	749
13. Almer***	974	70.1	43	3.1	147	10.6	61	4.4	151	10.9	1389
14. Arbela	1034	83.7	0		0		0		195	15.9	1229
15. Columbia	562	91.9	9	1.5	9	1.5	0		12	2.1	592
16. Dayton	796	84.2	21	2.2	0		0		128	13.5	945
17. Denmark	1063	72.8	46	3.1	83	5.8	18	1.2	250	17.1	1460
18. Elkland	1199	80.3	128	8.5	37	2.5	38	2.5	92	6.2	1494
19. Ellington	423	82.6	0		0		0		89	17.4	512
20. Elmwood	474	86.3	12	2.2	2	.4	10	1.8	47	8.6	548
21. Fairgrove	659	93.3	16	2.3	0		0		31	4.4	706
22. Fremont	1208	81.6	65	4.3	49	3.3	5	0.3	172	11.5	1499
23. Gilford	381	93.6	9	2.2	0		0		17	4.2	407
24. Indianfields***	1679	66.7	298	11.8	52	2.1	142	5.7	348	13.8	2519
25. Juniata	589	83.6	15	2.1	0		0		101	14.3	705
26. Kingston	537	77.9	18	2.7	27	3.9	10	1.5	97	14.1	689
27. Koylton	632	82.6	0		0		0		130	17.0	765
28. Millington	1624	89.9	25	1.3	49	2.7	14	.8	93	5.2	1805
29. Novesta	613	87.6	4	0.6	0		0		83	11.9	700
30. Tuscola	743	92.2	50	6.2	6	0.7	0		7	0.9	806
31. Vassar	1243	71.5	106	6.1	0		0		390	22.4	1739
32. Watertown	814	89.6	0		16	1.8	0		78	8.6	908
33. Wells	590	82.7	0		0		0		124	17.3	718
34. Wisner	316	89.8	0		0		0		36	10.2	352
Tuscola County	19668	80.5	1039	4.3	618	2.5	207	0.8	2732	11.2	24420

*Township numbers include Village numbers.

**Specified housing units include only one-family houses on less than ten acres without a commercial establishment or medical office on the property Source: U.S. Bureau of the Census 2006-2010 Community Survey-5 year Estimate

*** Includes part of the City of Caro

HOUSING OCCUPANCY CHARACTERISTICS – 2010 TABLE 13

Place	Owner Occupied		Renter Occupied		Vacant % of Total		Total #
	#	%	#	%	#	%	
City							
1. Caro	1054	53.0	723	36.4	210	10.6	1987
2. Vassar	711	71.4	285	28.6	188	18.9	996
Village							
3. Akron (Akron/Fairgrove)	123	67.6	37	20.3	22	12.1	182
4. Cass City (Elkland Twp.)	771	65.5	253	21.5	153	13.0	1177
5. Fairgrove (Fairgrove Twp.)	179	69.6	46	17.9	32	12.5	257
6. Gagetown (Elmwood Twp.)	103	60.2	47	27.5	21	12.3	171
7. Kingston (Kingston/Koylton)	110	61.1	53	29.4	17	9.4	180
8. Mayville (Fremont Twp.)	261	60.4	108	25.0	63	14.6	432
9. Millington (Millington Twp.)	279	60.1	141	30.4	44	9.5	464
10. Reese (Denmark Twp.)	487	70.6	148	21.4	55	8.0	690
11. Unionville (Columbia Twp.)	187	79.2	31	13.1	18	7.6	236
Township*							
12. Akron	480	78.9	128	21.1	141	18.8	749
13. Almer***	975	70.2	267	19.2	147	10.6	1389
14. Arbela	1056	85.9	123	10.0	50	4.1	1229
15. Columbia	477	80.6	45	7.6	70	11.8	592
16. Dayton	610	64.6	116	12.3	219	23.2	945
17. Denmark	1110	76.0	238	16.3	112	7.7	1460
18. Elkland	1117	74.8	252	16.9	12	0.8	1494
19. Ellington	413	80.7	54	10.5	45	8.8	512
20. Elmwood	380	69.3	88	16.1	80	14.6	548
21. Fairgrove	525	74.4	114	16.1	67	9.5	706
22. Fremont	1064	71.0	212	14.1	223	14.9	1499
23. Gilford	318	78.1	36	8.8	53	13.0	407
24. Indianfields***	1566	62.2	741	29.4	212	8.4	2519
25. Juniata	547	77.6	99	14.0	59	8.4	705
26. Kingston	505	73.3	104	15.1	80	11.6	689
27. Koylton	588	76.9	79	10.3	98	12.8	765
28. Millington	1429	79.2	189	10.5	187	10.4	1805
29. Novesta	537	76.7	65	9.3	98	14.0	700
30. Tuscola	625	77.5	72	8.9	109	13.5	806
31. Vassar	1475	84.8	168	9.7	96	5.5	1739
32. Watertown	699	77.0	70	7.7	130	14.3	908
33. Wells	572	79.7	81	11.3	65	9.1	718
34. Wisner	296	84.1	17	4.8	39	11.1	352
Tuscola County	18135	74.3	3652	15.0	2633	10.8	24420

*Township numbers include Village numbers.

**Specified housing units include only one-family houses on less than ten acres without a commercial establishment or medical office on the property Source: U.S. Bureau of the Census 2006-2010 Community Survey – 5 yr. Est.

AGE OF STRUCTURES - 2000

TABLE 14

Place	Year Built 1980 – 2010	Year Built 1940 – 1979	Year Built 1939 or Earlier
City	%	%	%
1. Caro	20.5	62.6	17.0
2. Vassar	22.4	46.9	30.6
Village			
3. Akron (Akron/Fairgrove)	3.0	61.6	38.4
4. Cass City (Elkland Twp.)	24.6	47.8	27.5
5. Fairgrove (Fairgrove Twp.)	12.5	49.8	37.8
6. Gagetown (Elmwood Twp.)	15.4	50.2	34.3
7. Kingston (Kingston/Koylton)	11.0	35.7	53.2
8. Mayville (Fremont Twp.)	14.0	42.8	43.2
9. Millington (Millington Twp.)	20.0	46.4	33.6
10. Reese (Denmark Twp.)	26.9	59.0	14.1
11. Unionville (Columbia Twp.)	9.2	60.6	30.3
Township*			
12. Akron	13.1	46.9	39.9
13. Almer***	31.0	58.9	10.1
14. Arbela	29.8	58.8	11.3
15. Columbia	12.0	45.4	42.6
16. Dayton	26.9	54.9	27.8
17. Denmark	21.7	55.0	23.4
18. Elkland	22.2	48.7	29.3
19. Ellington	41.2	40.2	18.6
20. Elmwood	34.7	41.4	23.9
21. Fairgrove	14.0	48.5	37.4
22. Fremont	41.3	38.0	20.7
23. Gilford	21.9	37.1	41.0
24. Indianfields***	22.7	60.4	16.9
25. Juniata	33.8	45.6	20.7
26. Kingston	28.7	42.1	28.4
27. Koylton	44.6	40.2	15.3
28. Millington	34.0	48.1	17.9
29. Novesta	36.0	31.0	33.0
30. Tuscola	18.2	49.8	32.0
31. Vassar	42.1	52.9	4.9
32. Watertown	27.0	44.3	28.6
33. Wells	44.7	42.0	13.3
34. Wisner	19.3	57.6	23.0
Tuscola County	28.9	51.6	15.5

*Township numbers include Village numbers.

**Specified housing units include only one-family houses on less than ten acres without a commercial establishment or medical office on the property Source: U.S. Bureau of the Census

DISTRIBUTION OF STATE EQUALIZED VALUES - 2007 TABLE 15

Place	Ag.	Comm.	Ind.	Ind. Resid.	Cutover	Personal	Total	% Co.
City								
1. Caro		35,592,100	8,108,400	49,663,100			93,363,600	5.7
2. Vassar	91,600	8,905,400	3,419,300	42,135,400	0	8,641,700	63,193,400	3.23
Village								
3. Akron	*	*	*	*	*	*	*	*
4. Cass City	*	*	*	*	*	*	*	*
5. Fairgrove	*	*	*	*	*	*	*	*
6. Gagetown	*	*	*	*	*	*	*	*
7. Kingston	*	*	*	*	*	*	*	*
8. Mayville	*	*	*	*	*	*	*	*
9. Millington	*	*	*	*	*	*	*	*
10. Reese	*	*	*	*	*	*	*	*
11. Unionville	*	*	*	*	*	*	*	*
Township*								
12. Akron	49,440,500	1,182,700		24,457,000			75,080,200	4.6
13. Almer	29,684,400	6,976,000		30,342,502			67,002,902	4.1
14. Arbela	25,051,157	1,094,400	316,250	51,455,689			77,917,496	4.8
15. Columbia	39,018,600	1,065,700	170,100	15,259,900			55,514,300	3.4
16. Dayton	23,919,500	529,600		38,542,200			62,991,100	3.9
17. Denmark	40,877,300	7,036,500	1,634,000	51,768,400			101,316,200	6.2
18. Elkland	29,614,700	12,536,600	2,949,900	48,268,600			93,369,800	5.7
19. Ellington	19,276,000	779,300		25,040,500			45,095,800	2.8
20. Elmwood	33,749,600	917,700	240,900	17,825,700			52,733,900	3.2
21. Fairgrove	36,176,500	1,047,000	43,900	22,920,500			60,187,900	3.7
22. Fremont	15,028,800	6,453,400	501,200	57,188,500			79,171,900	4.8
23. Gilford	40,732,000	59,900	393,500	10,376,400			51,561,800	3.2
24. Indianfields	4,854,700	6,360,600	1,632,500	46,978,200			59,826,100	3.7
25. Juniata	20,618,000	599,800	44,400	30,823,600			52,085,800	3.2
26. Kingston	21,366,918	472,675		26,167,660			48,007,253	2.9
27. Koylton	20,986,400	661,000		33,182,800			54,830,200	3.4
28. Millington	20,571,200	9,186,100	2,129,700	89,595,900			121,482,900	7.4
29. Novesta	21,081,800	494,800		19,917,100			41,493,700	2.5
30. Tuscola	32,080,300	3,577,500	385,300	41,320,600			77,363,700	4.7
31. Vassar	6,523,000	3,093,000	791,500	74,956,800			85,364,300	5.2
32. Watertown	18,509,000	312,800	1,411,800	38,148,600			58,382,200	3.6
33. Wells	17,835,900	235,900	203,900	31,169,346			49,445,046	3.0
34. Wisner	19,141,856	516,700		10,953,910			30,612,466	1.2
Tuscola	586,216,713	109,167,675	23,440,350	916,610,507			1,635,435,263	100

5.3.4 State Equalized Value

Other characteristics of County property values and the local economy can be obtained by analysis of the State Equalized Value (SEV) figures. By law the SEV, which constitutes a community's tax base, is equal to approximately one-half of the true market value of real property and certain taxable personal properties.

Table 15 shows the distribution of value among the different SEV categories for 2011, comparing the City, Townships, and Tuscola County. The majority of the County's taxable property falls under the residential category (more than one-half), followed by the agricultural category (nearly one-third). Commercial and industrial properties combined are less than eight percent of the County's total SEV.

5.3.5 Economy

The earliest white settlers, starting in 1835, were attracted to Tuscola County for its rich lumber resources. The lumber industry flourished during the second half of the 19th century as the main source of employment and income in the County. As the trees were harvested and not replanted, the lumbering industry began to decline at the turn of the 20th century. Agriculture took over as the main economic base of the County.

As a rural community, Tuscola County has only 27 principal employers with 100 or more employees. The four industrial parks in the county are: Caro Industrial Park at 73 acres; Cass City Industrial Park at 60 acres; the Millington Industrial Park at 60 acres; and the 23-acre Vassar Industrial Park.

Among the principal employers, health care is the largest industry, employing 1,673 persons at seven locations. This is followed by the manufacturing segment with 1,598 employees at eight locations, and education with 1,596 employees in eight school districts.

Due to its central location, status as the seat of County Government, and rank as the most populous local community in the County, the City of Caro is home for 14 of the 29 principal employers. The two largest employers are also located in Caro.

5.4 Transportation Profile

The County is easily accessible from I-75, which runs north-south, 10 miles west of the County. Close interstate proximity provides convenient access to many of the large mid-western population centers. Many large cities are within one-half day driving distance from the county, including:

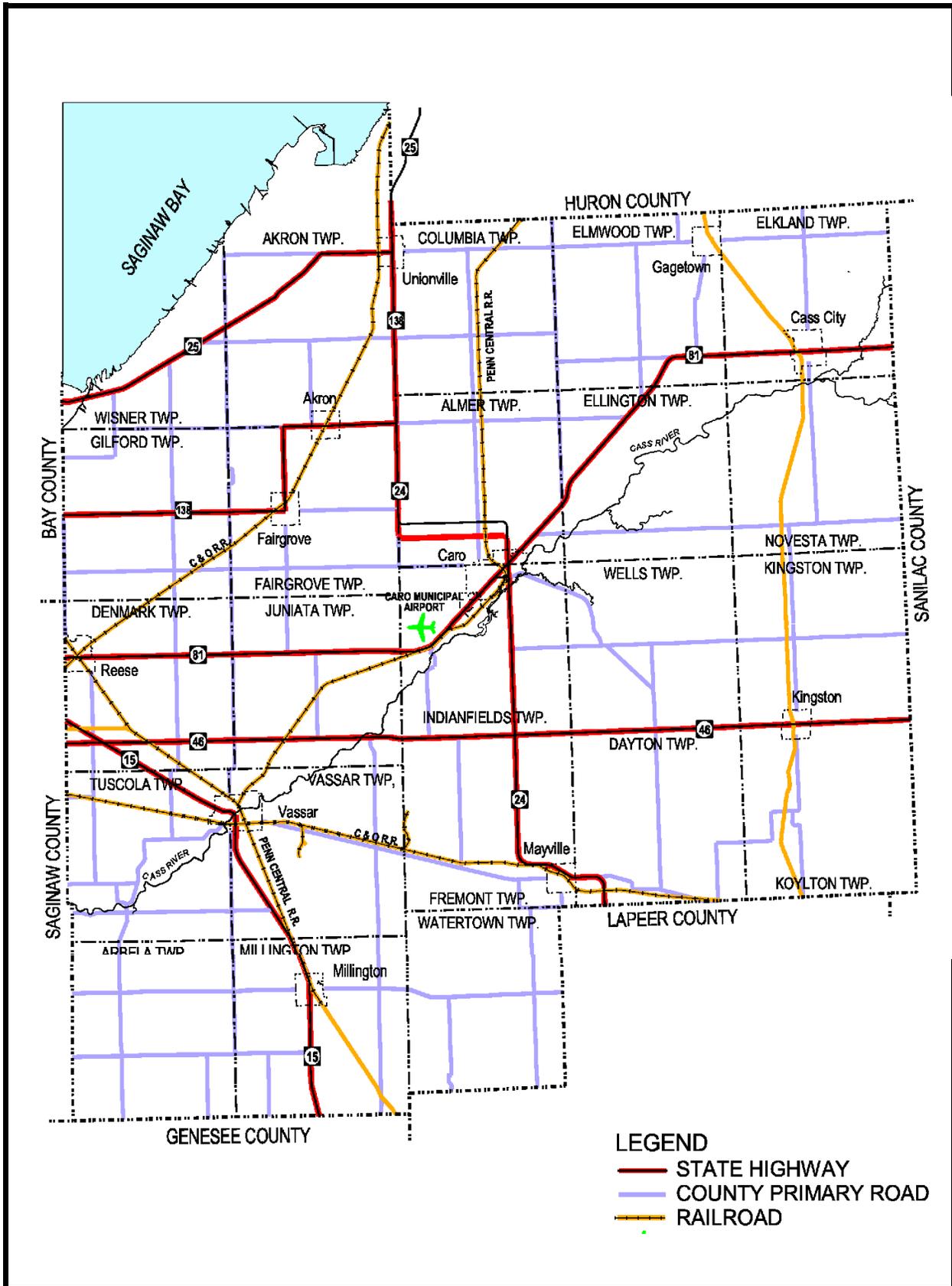
<u>City</u>	<u>Miles</u>
Chicago	330
Cleveland	240
Detroit	90
Grand Rapids	135
Indianapolis	340
Lansing	90

Six State trunklines, M-15, M-24, M-25, M-46, M-81 and M-138, provide convenient access to all portions of the County and easy access to all parts of Michigan. (**Map 12**). M-15 and M-25 provide direct access to Bay City, M-46 and M-81 to Saginaw, M-15 to Flint, and M-15 and M-24 to the Detroit metropolitan area. Three Airports also serve the area; the Caro Municipal Airport located just outside of Caro, and just an hour away, MBS International in Freeland and Bishop International in Flint. Rail Freight lines also bisect the County.

Public transportation is available to residents in the Townships of Almer and Indianfields, and the Village of Caro through the Caro Thumbody Express. Initiated in 1984 by the Human Development Commission, the Caro Thumbody Express operates eight handicapped accessible busses. The bus service also offers rides to Saginaw two days a week.

TRANSPORTATION NETWORK

MAP 12



5.5 Community Facilities Profile

Tuscola County boasts 2 Hospitals, Hills and Dales General Hospital in Cass City, and Caro Community Hospital in Caro, plus many 24-hour clinics. In addition 3 skilled nursing Facilities, The Tuscola County Medical Care Facility in Caro, Tender Care in Cass City, and Fisher Convalescent Home in Mayville are available. Specialized facilities such as The Lighthouse serving as a neurological rehabilitation center provide additional care. A large number of Adult Foster Care and Senior Housing facilities also serve the community.

Educational Facilities

The wealth of any community is of course its children. Tuscola County provides top rated educational systems through out the area for its youngsters. Tables 16, 17, and 18 (pg 5-39 to 5-41) **Map 13** (pg. 5-42) and outline some of the facilities available.

Recreational Facilities

Map 14 (pg. 5-44) locates State and County owned recreation facilities in Tuscola County. These include eight State Game Areas, one County Park, and two roadside parks in the County.

Vanderbilt County Park and Campground is the only county park in Tuscola County. It was closed down for a few years due to lack of funding. An attempt to keep the park open wasn't successful because at that time the park could not generate sufficient funds to operate on its own.

In November of 2006 a Bus Tour sponsored by Farm Bureau Land Use Committee got key people in Tuscola County, from the Board of Commissioners, the Planning Commission, MSU ext. personnel and concerned citizens to participate. The northern portion of Tuscola County, along with the twenty-mile Saginaw Bay shoreline was the focus of the bus tour. The tour encompassed the marinas in the area and the centerpiece of the trip, Vanderbilt Park. A taskforce was formed and in seven months the park was reopened for camping and public use. A nature trail is in the process of being constructed by the Conservation Group to be used as an educational tool.

Vanderbilt Park has already received a tree grant from DTE with which the Conservation Group will plant the trees that will be needed in the park and oversee other uses of the tree grant. They are the best qualified for this task. There will also be a tie-in with the "Tip of the Thumb Heritage Water Trail" for canoes and kayaks to lay over.

With the reopening of Vanderbilt Park, the Tuscola Parks and Recreation Commission was formed to care for the recreation needs of its citizens and the tourist that will come to Tuscola County for a visit.

HIGHER EDUCATION**TABLE 16**

Name	Location	Enrollment	Degrees Offered
1. Baker College	Cass City	394	Associate, Bachelor
2. Howard's Beauty Academy	Caro	85	----

LIBRARIES**TABLE 17**

Name	Location	Type
Bullard-Sanford Memorial Library	Vassar	District
Caro Area District Library	Caro	District
Columbia Township Library	Unionville	Local
Fairgrove District Library	Fairgrove	District
Jacqueline E. Opperman Memorial Library (Kingston High School Library)	Kingston	District
Mayville District Public Library	Mayville	District
Millington Township Library	Millington	Local
Rawson Memorial Library	Cass City	District
Unity District Library	Reese	District
Watertown Township Library	Fostoria	Local

EDUCATIONAL INSTITUTIONS**TABLE18**

Name	Location	Enrollment
Tuscola Intermediate School District	Caro	--
Tuscola Technology Center	Caro	800
Highland Pines School	Caro	197
Public Schools		
Akron-Fairgrove Schools	Fairgrove	276
Akron-Fairgrove Jr. / Sr. High School	Fairgrove	--
Akron-Fairgrove Elementary School	Akron	--
Caro Community Schools	Caro	1833
Caro High School	Caro	--
Caro Middle School	Caro	--
Frank E. Schall Elementary School	Caro	--
Ben H. McComb Elementary School	Caro	--
Caro Alternative Education Learning Center	Caro	--
Cass City Public Schools	Cass City	1122
Cass City High School	Cass City	--
Cass City Middle School	Cass City	--
Cambell Elementary School	Cass City	--
Cass City Early Childhood Education Center	Cass City	--
Kingston Community Schools	Kingston	629
Kingston High School	Kingston	--
Kingston Elementary School	Kingston	--
Mayville Community Schools	Mayville	778
Mayville High School	Mayville	--
Mayville Middle School	Mayville	--
Mayville Elementary School	Mayville	--

EDUCATIONAL INSTITUTIONS (CON'T)

TABLE 18

Name	Location	Enrollment
Millington Community Schools	Millington	1,427
Millington High School	Millington	--
Meachum Junior High School	Millington	--
Treva B. Kirk Later-Elementary School	Millington	--
S. M. Glaza Elementary School	Millington	--
Owendale-Gagetown Area Schools	Gagetown	227
Gagetown Elementary School	Gagetown	--
Owen-Gage High School	Owendale	--
Reese Public Schools	Reese	913
Reese High School	Reese	--
Reese Middle School	Reese	--
Reese Elementary School	Reese	--
Unionville-Sebewaing Area Schools	Sebewaing	819
USA High School	Sebewaing	--
USA Middle School	Sebewaing	--
USA Elementary School	Unionville	--
Vassar Public Schools	Vassar	1,397
Vassar Senior High School	Vassar	--
Vassar Junior High School	Vassar	--
Central Elementary School	Vassar	--
Townsend North Elementary School	Vassar	--
Vassar Alternative Education Pioneer Work and Learn Center	Vassar	--
Total		9,194
Non-Public Schools		886
Bethany Christian School	Decker	
Christ the King Lutheran School	Sebewaing}	
Christ the King Lutheran School	Unionville}	
Deford Christian Academy	Deford	
Juniata Christian School	Vassar	
New Salem Lutheran School	Sebewaing	
St. Elizabeth Catholic School	Reese	
St. Luke's Lutheran School	Vassar	
St. Michael's Lutheran School	Richville	
St. Paul Lutheran School	Millington	
Thumb Amish Parochial School	Cass City	
Trinity Lutheran School	Reese	

PUBLIC SCHOOL LISTING**AKRON-FAIRGROVE SCHOOLS**

AKRON-FAIRGROVE ELEMENTARY SCHOOL
AKRON-FAIRGROVE JR/SR HIGH SCHOOL

CARO COMMUNITY SCHOOLS

CARO ALTERNATIVE EDUCATION
CARO HIGH SCHOOL
CARO MIDDLE SCHOOL
FRANK E. SCHALL ELEM. SCHOOL
McCOMB ELEMENTARY SCHOOL

CASS CITY PUBLIC SCHOOLS

CAMPBELL ELEMENTARY SCHOOL
CASS CITY HIGH SCHOOL
CASS CITY MIDDLE SCHOOL
DEFORD ELEMENTARY SCHOOL

FRANKENMUTH SCHOOL DISTRICT

E.F. RITTMUELLER MIDDLE SCHOOL
FRANKENMUTH HIGH SCHOOL
LORENZ C. LIST SCHOOL

KINGSTON COMMUNITY SCHOOLS

KINGSTON ALTERNATIVE ED. CENTER
KINGSTON ELEMENTARY SCHOOL
KINGSTON HIGH SCHOOL

OWENDALE-GAGETOWN AREA SCHOOLS

GAGETOWN ELEMENTARY SCHOOL
OWEN-GAGE HIGH SCHOOL

MARLETTE COMMUNITY SCHOOLS

BEA McDONALD SCHOOL
MARLETTE HIGH SCHOOL
MARLETTE MIDDLE SCHOOL

MAYVILLE COMMUNITY SCHOOLS

MAYVILLE COMMUNITY HIGH SCHOOL
MAYVILLE ELEMENTARY SCHOOL
MAYVILLE MIDDLE SCHOOL

MILLINGTON COMMUNITY SCHOOLS

GLAZA ELEMENTARY SCHOOL
KIRK ELEMENTARY SCHOOL
MEACHUM JUNIOR HIGH SCHOOL
MILLINGTON HIGH SCHOOL

REESE PUBLIC SCHOOLS

REESE ELEMENTARY SCHOOL
REESE HIGH SCHOOL
REESE MIDDLE SCHOOL

UNIONVILLE-SEBEWAING AREA SCHOOLS

SEBEWAING MIDDLE SCHOOL
UNIONVILLE ELEMENTARY SCHOOL
UNIONVILLE-SEBEWAING HIGH SCHOOL

VASSAR PUBLIC SCHOOLS

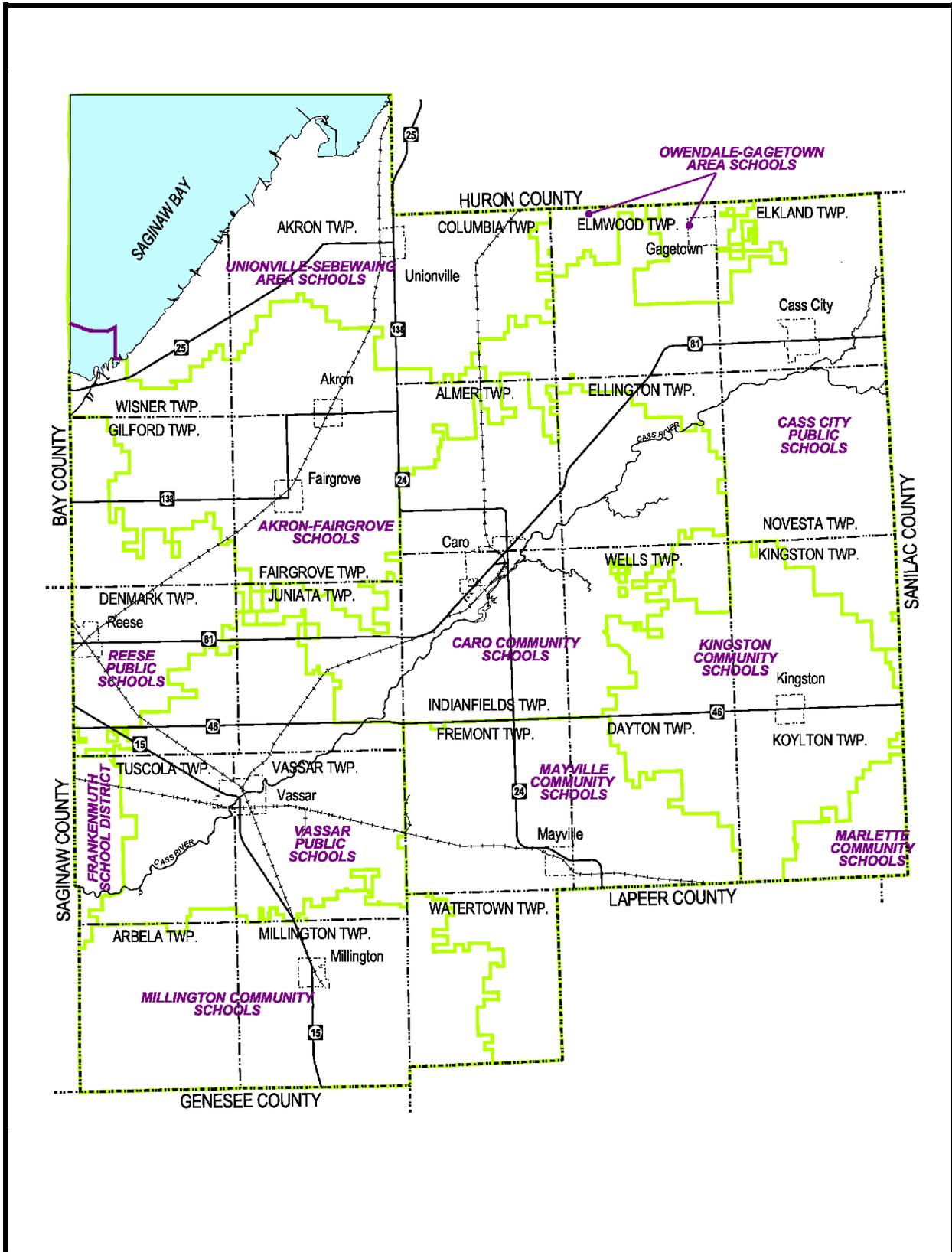
CENTRAL SCHOOL
PIONEER WORK & LEARN CENTER
TOWNSEND NORTH SCHOOL
VASSAR JUNIOR HIGH SCHOOL
VASSAR SENIOR HIGH SCHOOL

NON-PUBLIC SCHOOL LISTING

CHRIST THE KING LUTHERAN SCHOOL - SEBEWAING
CHRIST THE KING LUTHERAN SCHOOL - UNIONVILLE
DEFORD CHRISTIAN ACADEMY - DEFORD
JUNIATA CHRISTIAN SCHOOL - VASSAR
MINISTRY OF THE WORD - UNIONVILLE
NEW SALEM LUTHERAN SCHOOL - SEBEWAING
ST. ELIZABETH CATHOLIC SCHOOL - REESE
ST. LUKE'S LUTHERAN SCHOOL - VASSAR
ST. MICHAEL'S LUTHERAN SCHOOL - RICHVILLE
ST. PAUL LUTHERAN SCHOOL - MILLINGTON
TRINITY LUTHERAN SCHOOL - REESE

SCHOOL DISTRICTS

MAP 13

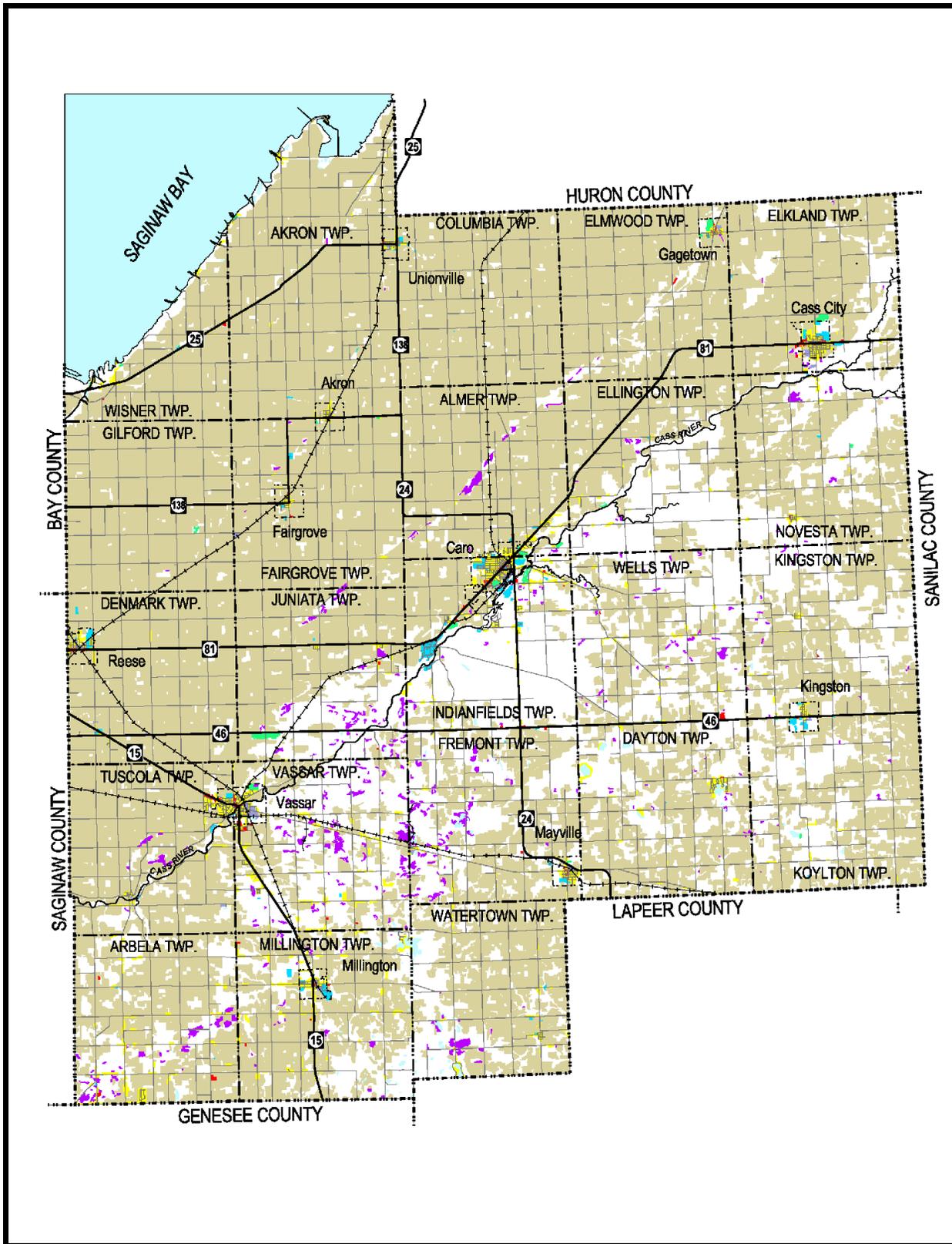


RECREATION FACILITY LISTING

1. VANDERBILT COUNTY PARK
2. CLARK ROADSIDE PARK (MDOT)
3. ENOS ROADSIDE PARK (MDOT)
4. RIVERFRONT PARK
5. HARPER PARK
6. AKRON COMMUNITY PARK
7. COUNTY FAIRGROUNDS/BEITH PARK
8. CHIPPEWA LANDING PARK
9. ATWOOD PARK
10. CASS CITY RECREATION PARK
11. CEDAR WOOD PARK
12. RAILWAY LINEAR PARK
13. MULBERRY PARK
14. GAGETOWN PARK
15. MEMORIAL PARK (KINGSTON)
16. BODEIS PARK
17. OHMER PARK
18. MEMORIAL PARK (REESE)
19. REESE COMMUNITY PARK
20. UNIONVILLE VILLAGE PARK
21. KEMP MEMORIAL PARK
22. DARBEE FARMS PARK
23. INDIANFIELDS TOWNSHIP PARK
24. ARTHUR LATHUM PARK
25. TUSCOLA TOWNSHIP PARK

EXISTING LAND USE

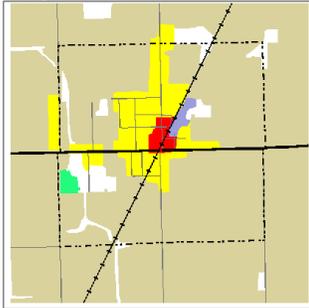
MAP 15



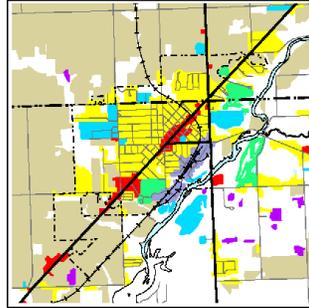
EXISTING LAND USE

MAP 15

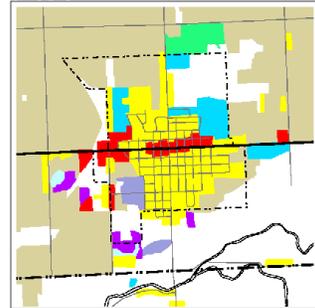
AKRON



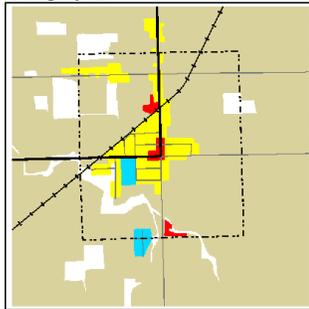
CARO



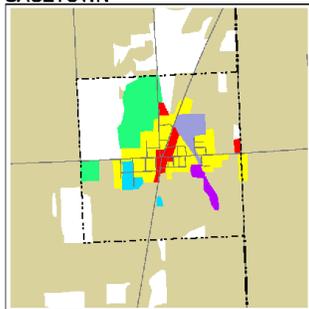
CASS CITY



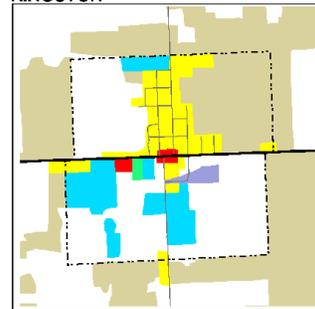
FAIRGROVE



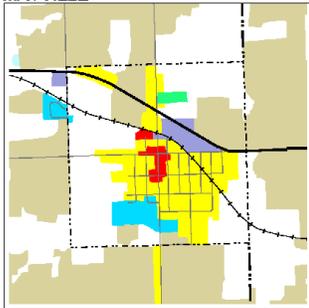
GAGETOWN



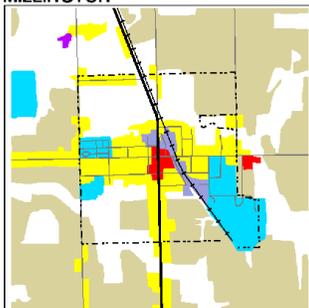
KINGSTON



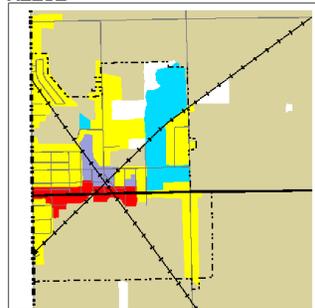
MAYVILLE



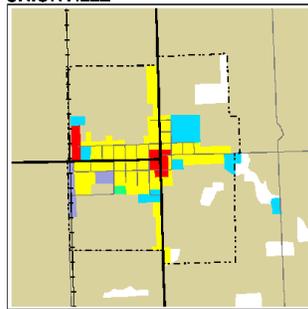
MILLINGTON



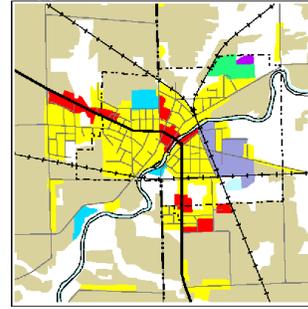
REESE



UNIONVILLE



VASSAR



LEGEND

- | | |
|---|--|
|  AGRICULTURAL |  PUBLIC/SEMI-PUBLIC |
|  RESIDENTIAL |  RECREATION |
|  COMMERCIAL |  VACANT |
|  INDUSTRIAL |  WATER BODIES |
|  OPEN PIT/EXTRACTIVE | |

5.6 Existing Land Use

5.6.1 Methodology

The Existing Land Use Map (**Map 15**, pg 5-46) was prepared utilizing information from the MDNR's Michigan Resource Information System (MIRIS) for Tuscola County. The land use data shown on the map is intended for general planning purposes, and should not be used for site-specific uses. The land use data from the MDNR was updated by Wade-Trim through review of existing land use maps of individual municipalities.

5.6.2 Land Use Analysis

By far, the largest land use in the County is agricultural (66.2%). The agricultural category includes such uses as croplands, orchards, tree farms, and confined feeding operations. Aside from the heavily wooded areas south of the Cass River, agricultural uses can be found spread throughout the County. In 1992, the number of farms in Tuscola County totaled 1,128, a decline from 1,207 in 1987 and 1,483 in 1982. The average farm size in 1992 was 287 acres, which grew from 272 in 1987 and 232 in 1982 but by 2007 had dropped to 260 acres.

The second largest land use category in Tuscola County is Vacant (30.8%). The vacant category includes all undeveloped lands and open space lands in the County. Much of the vacant lands in the County contain heavy woodlands or wetlands. The vacant lands are most concentrated in the central portion of the County south of the Cass River.

Residential uses, which include single-family, two-family, multifamily, and mobile homes, comprise approximately 8,000 acres or 1.5% of the County. The residential uses are primarily concentrated within the eleven municipalities of Tuscola County.

The other six land use categories shown on the map comprise less than 2% of Tuscola County. These land use categories are as follows:

- Commercial (0.1%). Uses include offices, general commercial establishments and central business districts.
- Industrial (0.1%). Individual industrial establishments and industrial parks are included in this category.
- Open Pit/Extractive (0.7%). This category includes all mineral extraction activities and open pits.
- Public/Semi-Public (0.2%). Uses include schools, public institutions, cemeteries, and utilities.
- Recreation (0.1%). All parks and other outdoor recreation facilities are included in this category.
- Water Bodies (0.3%).

CHAPTER 6

FARMLAND AND OPEN SPACE PRESERVATION

6.0 FARMLAND AND OPEN SPACE PRESERVATION

The Agriculture Vision:

The Community visualizes a Tuscola County that has maintained its rich agricultural heritage, retained its best farms and farmlands, provided ag-industry markets for both local and regional suppliers, and balanced farm retention goals with the need to accommodate growth.

6.1 Required Farmland components for a Comprehensive Land Use Plan

The local unit of government has a **comprehensive land use plan** that has been adopted within the last 10 years and reviewed and/or updated within the last 5 years. [See Part 362 of the Natural Resources and Environmental Protection Act (MCL 324.36201 to 324.36207), and The Planning Act PA33 of 2008]. The comprehensive land use plan must contain an agricultural preservation component, consisting of:

The areas intended for agricultural preservation are clearly depicted on the future land use map. A description of how and why the preservation area was selected.

Goals for farmland preservation.

Language indicating why farmland should be preserved in the community (cost of services studies, economic benefit to the community etc.)

Text describing the strategies intended to be used in order to preserve the agricultural land, including Purchase of Development Rights (PDR) but should include other techniques.

** The local unit of government may also be covered by a regional plan that has the agricultural preservation component described above, unless local unit of government has a PDR ordinance, then the comprehensive plan that is approved must be the plan on which the zoning ordinance is based.

6.2 Purpose

Agriculture is an important part of the County's economy. In addition to jobs and contributing food and fiber production to society, agriculture preserves our heritage, provides a buffer between our unique landscapes and adds value to the quality of life for County residents.

6.3 Tying it together in Tuscola County

Residents recognize the importance of agricultural land not only for its addition to the County's economic viability, but also for the beauty and sense of place that it provides. As farmland diminishes wildlife habitats are lost, the potential for locally grown food declines and fragmented development occurs.

A report based on observations made by the Community Assessment Team (CAT) during its visit to Tuscola County in December of 2006 supplied the basic information reflecting the community members concerns regarding, among other things, pertinent agricultural and open space issues facing our citizens.

The CAT process began with an application from members of the community to MSU Extension. The application described the community's situation and listed questions that community members wanted the CAT to address. The application was reviewed by the CAT advisory committee. The CAT then sent a small delegation to meet with the application committee to clarify questions raised in the application and recruited team members with skills appropriate to the community's needs. The full CAT visit involved two days of input and gathering from a variety of small and large meetings with residents and tours of the community. The team then analyzed, debated and categorized the information to produce a preliminary verbal report to the community. The full report is available and accessible at the following web site: <http://web1.msue.msu.edu/cdnr/tuscolacatreport.pdf>.

6.4 Highlights of the CAT report concerning farmland and open space preservation

VALUE-ADDED AGRICULTURE

Utilize an asset-mapping exercise to identify current agricultural assets and potential alternative value-added agriculture opportunities.

Explore alternatives to sugar beet production, given current market and trade uncertainty.

Capitalize on alternative energy opportunities.

Explore opportunities to diversify agricultural production and processing.

LAND USE AND HOUSING

- ♣ Use existing cross-jurisdictional cooperation agreements as models for other collaborative opportunities for intergovernmental cooperation within the county.
- ♣ Ensure zoning ordinances are consistent and up-to-date with the Tuscola County General Development Plan.
- ♣ Continue aggressive use of land use development tools, such as brownfield remediation, to encourage redevelopment of underutilized sites in the county.
- ♣ Increase stewardship of the agricultural and natural resources within the county, especially water and soil conservation.
- ♣ Explore mechanisms to increase the variety of housing options available to current and future county residents at various stages of life.

6.5 Why Farmland and Open Space Should Be Preserved In The Community

Conditions & Trends as reflected in the National Agricultural Statistics Service (NASS) 2002 Census of Agriculture County Profile for Tuscola County Michigan

The County has a relatively strong agricultural economy despite a continued decline in active agriculture operations and a reduction in supporting infrastructure. In 2002, Tuscola County's farm economy ranked 14th out of 83 Michigan counties. County farms were ranked 21st in livestock, poultry, and their products while ranking 12th in crops. These rankings speak to the importance of Tuscola County's agricultural sector in the region and in Michigan. Over the past 10 years, agricultural operations have decreased dramatically due to economic conditions and development pressures:

- Between 1997 and 2002, Tuscola County has lost 7,956 acres, or an average of 2 percent of its total farmland. The total farmland acreage for Tuscola County in 2002 was 335,542 acres. Between 1997 and 2002 (latest agricultural census available), the number of active farms has decreased by 1%). In looking at the locations where agricultural lands have been converted to other uses, conversion is not only occurring in the urban and suburban fringe areas, but also throughout the County.

Despite the recent loss of farmland, Tuscola County remains a viable agricultural County. A critical mass of farmland for a local County farm economy is described as:

- 75,000 acres of farmland; or
- \$40 million annually of agricultural production of marketable products sold.

Tuscola County currently meets both of these two criteria as shown in the National Agricultural Statistics Service (NASS) 2002 Census of Agriculture County Profile:

- 335,542 acres of farmland
- \$93.8 million in market value of agricultural products sold

6.6 Mapping for Farmland and Open Space Preservation

6.6.1 Mapping

The Farmland and Open Space Preservation Map on the following page illustrates lands that meet **one** of the following criteria:

- ♣ Contain Class I and II Soils, non-irrigated capability suitable for most field crops, which are the best soils available for farming in Tuscola County.
- ♣ Areas within local units of government’s master plans that are designated as “Agriculture” or “Open Space” in their respective future land use plans.
- ♣ Have been selected by their respective communities as being vital to the agricultural economy of the area.

6.6.2 Why Areas were selected

A Description of How and Why various Agricultural Preservation Areas were selected:

1. The soils are rated by the USDA Natural Resources Conservation Service as Class II that are the highest soils for crop production in Tuscola County.
2. The USDA Natural Resources Conservation Service also classifies most of the area as “Prime or Unique Farmland”
3. Many large parcels of land (20 acres or more) are located within the designated area.
4. The land is classified as active agricultural land according to the latest East Central Michigan Planning and Development Regional Commission (ECMP&DR) land use inventory.
5. Selected areas are designated as either “Agricultural/Open Space Preservation” or “Agriculture” within local unit master plans.
6. The designated land is located outside of current, sewer service areas
7. The land selected is located outside of all Potential Activity Centers.

GOAL for Farmland and Open Space Preservation :

To encourage and support programs that enhance the viability of Tuscola County’s agricultural sector.

Farmland and Open Space Areas Map 16



T:\Tuscola\Tuscola_County\2008_Planning_Report\Farmland_OpenSource_Preservation\Farmland_Preservation.mxd Date: 10/30/2008

OBJECTIVE 1 : Encourage and support programs that will maintain the viability of agriculture through new and expanding markets for locally grown products.

Recommendation 1.1 New Market Opportunities

Develop a collaborative effort between Tuscola County, MSU Extension, UM Business School, local governments, surrounding counties, state government, and agricultural organizations to find new market opportunities for Tuscola County and the region’s agricultural sector. Opportunities include, but are not limited to, ethanol production, direct producer-to-consumer marketing of farm products, local food distribution network, grain elevators and livestock markets.

Recommendation 1.2 New Market Zoning

Provide Educational Resources for the development of local zoning ordinance language that allows small agri-business activities, such as processing, in agricultural zoning districts to add value to the products generated on Tuscola County farms.

Recommendation 1.3 New Market Education

Support existing programs that encourage and educate producers on new entrepreneurial opportunities in the agricultural sector, including:

- ♣ Direct marketing to consumers (includes “community supported agriculture”).
- ♣ Adding value to the food (packaging, agri-entertainment, agri-tourism).
- ♣ Promote the use of by-products from Agricultural commodities.
- ♣ Niche marketing of farm products (ethnic foods, organic foods, specialty farm products).

6.7 How the community can Preserve Farmland And Open Space

New Agriculture Markets:

Tuscola County’s agricultural sector is changing. While the County has experienced a loss of farmland and its supporting infrastructure, new markets for agricultural products such as corn, wheat, oats, sugar beets, dry beans, and pickles provide opportunities for local farmers to be successful. A segment of the agricultural community has chosen organic farming with the potential for new market opportunities at a local, national and international level. Tuscola County desires to encourage new markets that could create additional employment in the community.

Tuscola County commodity producers have the availability of selling their products to the local Michigan Ethanol plant and according to MSU extension it is projected that a large percent of all the combined grain production in the nearby counties will be sold to this ethanol plant providing an economic opportunity to the agricultural sector.

Agricultural producers also grow sugar beets for processing at the local farmer owned Michigan Sugar Factory. The processing and marketing of locally grown dry beans is done in a neighboring county, farmer-owned plant, that utilized a large vacant commercial building. Agricultural by-products from these and other commodities also supply some raw materials for value added industries within the community.

There has been an expansion of producers selling farm products directly to consumers. A number of these opportunities are being made available by word-of-mouth marketing. This direct producer-to-consumer delivery minimizes costs for both the producer and the consumer, and increases profits for the producer. For produce and nursery producers, many farmers’ markets exist in the area that allow producers to sell many of their products. A number of produce-oriented farms include hobby and family entertainment aspects of their operations. These include farms that allow customers on their property for “u-pick” operations as well as hayrides, pumpkin patches, etc. These operations are providing multifaceted products and services to the growing urban market.

6.7.1 Supporting Infrastructure:

Farm economies, like all sectors of an economy, do not cease at county boundaries. Goods and services, and those seeking those goods and services commonly cross county boundaries to conduct business. Data from regional telephone directories reveal that while the total number of agricultural support businesses has declined in Tuscola County and the neighboring counties of Bay, Genesee, Huron, Lapeer, Saginaw, and Sanilac, there still remains a significant base of agricultural support businesses and markets.

A number of organizations exist in Tuscola County. The purpose of these organizations is to provide an opportunity for consumers to purchase the rights to food before it is available on the market. A newsletter provides the announcement and availability of the produce. Growers come together in this effort to promote their products to consumers.

6.7.2 Agriculture as a Target Industry:

The Tuscola County General Development Plan contains an extensive discussion of the agricultural economy, Section 5.2.9 (pgs. 5-21 to 5-25). The Tuscola County Citizens Vision for a Better Future Section 4.4 (pg 4-14) provides economic development goals and objectives for the community by maintaining the viability of the agricultural sector through development and support of new and enhanced markets for locally grown food. The accompanying recommendations identify efforts to build social capital among an alliance of stakeholders, elevate locally grown food as a target industry with supporting infrastructure requirements, educate the public on the value of a localized food system and “jump-start” the locally grown food economy by identifying and promoting markets in the short term.

OBJECTIVE 2

Encourage and support agricultural operations through federal and state farmland preservation programs.

Recommendation 2.1 Farmland Preservation Funding

Encourage landowners to apply for state and federal programs and encourage local governments to identify funding methods for farmland preservation including the following methods:

Public

- Purchase of Development Rights Program
- Transfer of Development Rights (through non-contiguous PUDs and Joint Planning Commissions between 2 or more local governments)
- Purchase and Leaseback Program
- Land Swap

Private

- Land Trusts
- Land Donations/Reserved Life Estates
- Land Swaps

Recommendation 2.2 PDR and Farmland Preservation

For the Purchase of Development Rights program at the state, county, or local unit of government level, Tuscola County will use the Farmlands and Open Space Preservation Areas (Map 16) , found on page 6-5 of this element, as a guide for farmland preservation programs. This map reflects the possible lands in Tuscola County that should be preserved.

Recommendation 2.3 Model PDR/TDR Ordinances

The county has developed a Purchase of Development Rights Ordinance and may develop in the future a Transfer of Development Rights Ordinance for local communities in Tuscola County.

6.8 Agricultural Land Preservation Programs

6.8.1 State of Michigan Programs – Agricultural Land Preservation Programs

The State of Michigan programs available to farmers, landowners, townships, local governments and counties include:

Farmland Development Rights (PA116) Agreements

A Farmland Development Rights Agreement is a temporary restriction on the land between the State and a landowner, voluntarily entered into by a landowner, preserving their land for agriculture in exchange for certain tax benefits and exemptions for various special assessments. The 2008 statistical information from the Michigan Department of Agriculture Land Use Division, verified nearly 3000 active PA 116 contracts involving slightly more than 200,000 farmland acres and enrolled for a minimum of 10 years exist within Tuscola county.

Purchase of Development Rights

Purchase of Development Rights (PDR) is a permanent restriction on the land between the state and a landowner. The restriction is voluntarily entered into by a landowner, preserving their land for agriculture in exchange for a cash payment for those rights. Currently this program is being restructured. At the present time the state has no provisions for funding this program.

6.8.2 The Federal Program – The Farm and Ranch Land Protection Program (FRPP)

The Farm and Ranch Lands Protection Program (FRPP) is a voluntary program that helps farmers and ranchers keep their land in agriculture. The program provides matching funds to State, Tribal, or local governments and non-governmental organizations with existing farm and ranch land protection programs to purchase conservation easements. From 1996 through 2007, FRPP has enrolled over 533,000 acres in cooperation with more than 400 entities in 49 states.

The U.S. Department of Agriculture’s (USDA) Natural Resources Conservation Service (NRCS) manages this program.

Legislative Changes: FRPP was amended in the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill). This new legislation expanded the purpose of the Farm and Ranch Lands Protection Program from “protecting topsoil” to “protecting agricultural use and related conservation values of the land.”

The program now allows for long term agreements with cooperating entities. Such agreements may be 5 years in duration for certified entities and 3 years for eligible entities that are not certified. The 2008 Farm bill defines a “certified entity” as an eligible entity with a proven record of acquiring and monitoring conservation easements.

Entities may submit proposals to protect farm and ranch lands throughout the term of the agreement and changes the authority of the Secretary of Agriculture from purchasing conservation easements to facilitating the purchase of conservation easements.

It also establishes that the Secretary may require a contingent right of enforcement in the conservation easement deed, but that the contingent right does not imply the acquisition is subject to Federal standards and procedures for land acquisition.

*Information taken from: Helping People Help the Land – May 2008

*For more information and updates about the FRPP go to
<http://www.nrcs.usda.gov/programs/frpp>.

OBJECTIVE 3

Encourage and support local planning and zoning tools, along with state and federal policies that promote the viability of the county’s and region’s agricultural sector.

Recommendation 3.1 Local Agricultural Ordinances

Assist in the development of local PDR ordinances and encourage the use of consistent land use and zoning tools at the township level.

Recommendation 3.2 Agricultural Enabling Legislation

Advocate changes at the state level to promote farming including dedicated funding for PDR, agricultural tax incentives, taxing agricultural land for its use versus potential use, local revenue sources and land division act reform.

Recommendation 3.3 Agricultural Impact Statement

Encourage local units of government to consider impacts on agricultural operations during the land use and development decision-making process by using the Farm Land and Open Space Preservation Area Map (pg. 6-5) as a guide for farmland and open space preservation programs.

6.9 Local Planning And Zoning Tools

Local planning and zoning tools for the preservation of farmland and open space.

Currently, many of the townships in Tuscola County are in the process of developing a farmland and open space component or element in their local master plan and/or zoning ordinance and look to the County for guidance in developing sound preservation strategies. Zoning techniques available to support the preservation of farmland and open space include:

- ♣ Sliding Scale Zoning.
- ♣ Quarter/Quarter Zoning.
- ♣ Large Lot Zoning (greater than 20 acre minimum lot size).
- ♣ Cluster development and planned unit development with appropriate design standards to provide open space buffer between residential and agricultural use.
- ♣ Voluntary Agricultural Security Areas (enables agricultural operators to have large blocks of land dedicated to farming operations).

Many effective and necessary farmland preservation tools exist in other states that are not available to County and local governments in Michigan. In order to complement and support an effective agricultural preservation program, several policy changes require advocacy at the state and federal levels including:

- ♣ Changes in the state tax structure to utilize a use-value taxing system.
- ♣ Enabling legislation that allows local jurisdictions and counties to use alternative sources of funding for purchase of development rights programs (i.e. sales taxes, excise taxes, impact fees, real estate transfer taxes, etc).
- ♣ Enabling legislation for local agricultural security area programs.
- ♣ Dedicated funding of the State Purchase of Development Rights matching grant program.
- ♣ Changes in the Land Division Act that will minimize the impact of lot splits on farmland preservation efforts.

6.10 The Agriculture Vision:

The Community visualizes a Tuscola County that has maintained its rich agricultural heritage, retained its best farms and farmlands, provided ag-industry markets for both local and regional suppliers, and balanced farm retention goals with the need to accommodate growth.

The Tuscola County Planning Commission will...

1. Continue to play a leadership role in providing information to local units of government and residents on techniques and tools to effectively deal with agricultural preservation and rural character maintenance.
2. Identify and promote the protection of the best or unique agricultural parcels in the County from non-agricultural use.
3. Promote efforts to improve soil erosion practices throughout the County, as a way of slowing soil loss.
4. Address the issue of uncontrolled lot splits and subdivision development.
5. Assess the current needs of the local agricultural economy, encourage and promote programs or policies to address those needs in conjunction with all applicable stakeholders (individuals and organizations)..

Implementation:

1. Seek in-state assistance from Michigan State University Cooperative Extension Office and the Michigan Department of Agriculture for preparation of a market study that will provide assistance to the local or regional agricultural sector on possible future markets for local products.
2. Provide an extensive self-help component for local planning commissions and elected boards on alternative agricultural preservation and zoning techniques.
3. Prepare a map that identifies both prime and unique agricultural lands in Tuscola County with the assistance of the Soil Conservation Service, MSU Cooperative Extension Office, and the local municipalities.
4. Promote the use of PA 116 in Tuscola County and provide assistance to State legislators and staff regarding better alternatives to PA 116 or opportunities to improve the current legislation.
5. Research and implement the designation of “right to farm” areas within Tuscola County that offer protection to existing agricultural operations and educating the public on the meaning of “entering into a right to farm area”.

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APPENDIX

PROGRESS THROUGH COOPERATION WORKS IN TUSCOLA COUNTY

Tuscola County Economic Development Corporation

The Tuscola County Economic Development Corporation is working to make Tuscola County a better place to live, work and play. Our agency supports people, small businesses, and the local economy. This comes true by helping place helpful resources in the hands of entrepreneurs with viable business ideas, dreams, and the ambition to make it work. The EDC does not operate under a large budget for advertising, the staff and board members rely on many people in Tuscola County.

The Tuscola County EDC is an independent corporation governed under the cooperation of all of the supporting local units of government. The major financial support for the EDC is the local municipal governments. The EDC board members are selected by the EDC board with the acceptance of the county commissioners. The support of local municipalities and Tuscola County businesses from all parts of the County allows the EDC to give feet to the EDC's motto of "Progress Through Cooperation".

The men and women that serve on the EDC board have a true passion for the economic future of Tuscola County. These board members appointed by the Tuscola County Board of Commissioners have dedicated many hours to attend board meetings and special events. The board has assembled a capable professional staff that along with the board members has been more than willing to help on any job development projects. This is not to just participate in an economic development project, but to see it through to completion.

Some of the services provided by the Tuscola County Economic Development Corporation include retention calls that are informational visits to businesses and industries within Tuscola County to inform them of the economic incentive programs available and find out if they are having any problems with either state or local government.

The Tuscola County Economic Development Corporation has prepared a Directory of Industrial Services and Products as well as a Survey of Wages and Benefits and a listing of Available Industrial Sites and Buildings.

The EDC accesses a variety of public sector resources through the Small Business Administration, the Michigan Economic Development Corporation, the Small Business & Technology Development Center and the Thumb Area Michigan Works. These resources assist business and industry in their capital needs include:

- CI. Tax Abatement
- CII. Small Business Administration Loans
- CIII. Michigan Community Development Block Grant
- CIV. Michigan Economic Development Job Training Program
- CV. Michigan Works-Tool Chest Voucher
- CVI. EDC's Revolving Loan Fund

The EDC's Revolving Loan Fund is intended to supplement conventional financing and under no circumstances replace it. Financing is available when an entrepreneur with a business plan accompanied with a viable business idea is unable to meet the terms and conditions of conventional capital sources. The Fund's goal is for the business owner to make a reasonable rate of return on investment, or an adequate flow of cash. Businesses relocating or located within Tuscola County are eligible provided that conventional financing is not available.

The ability to create permanent and part-time jobs in the County is an important factor in this process. The retention of local jobs will be considered where new technology or upgraded equipment must be purchased to maintain state of the art facilities. The Revolving Loan Fund may be used in support of commercial financing, if all other criteria are met. The Fund may also be considered for projects, which are part of an overall development program adopted by a local community for the purpose of strengthening the community's economy.

The Tuscola County Economic Development Corporation promotes the revitalization of Brownfield sites and helps serve the county by communicating with business prospects the area's Renaissance Zones and the County's attractiveness for business growth. The Tuscola County EDC is proud to promote Downtown Development Authority programs. – Serves as the business office in helping the airport in being a catalyst for Tuscola County business growth.

The Tuscola County EDC is the Tuscola County Small Business & Technology Development Center provides free small business counseling to people starting or expanding a business, and sponsors a series of small business workshops each summer.

The EDC works in conjunction with Thumb Area Michigan Works, as a local procurement office. The office is a contact point for information Tuscola and Huron County businesses of the Michigan Job Bank/Talent Bank. This service to the employer helps find qualified employees free of charge.

The Tuscola County Economic Development Corporation is working to improve the public's knowledge of Tuscola County's available resource using various communication tools. The further marketing of EDC services and the many successes the Economic Development Corporation will be targeted to the key EDC stakeholders in Tuscola County. This goal helps make the EDC work for a better future for Tuscola County.

Enhancing the quality of life in Tuscola County is an important aspect of the EDC's vision and mission. The EDC develops strong bonds to the local municipalities, schools and local libraries to help achieve a better quality of life. The EDC believes the key to quality of life is to develop jobs, economic development and a future for the citizens of Tuscola County.

Our organization will encourage any effort that supports the spirit of entrepreneurship. The EDC believes that this gives community's the ability to flourish by giving entrepreneurs the tools to successfully build enterprises that make a measurable impact on the well-being of all. This type of economic growth will come by the EDC identifying the needs of business enterprise and developing the resources in the local area that will meet the measurable goals of specific businesses.

The Tuscola County EDC is willing to share, develop, and utilize viewpoints, knowledge, and experiences of the citizens of Tuscola County. This is an understanding of the EDC that our agency functions as a learning organization. This means that the EDC will take an active role in educating the public in our mission to retain and create jobs for the citizens of Tuscola County through the promotion of the entrepreneurial spirit. Our organization fosters, and assists new and existing businesses and entrepreneurs in starting, expanding and growing their businesses. Our organization will promote learning, teaching, and the development of business models that will serve all economic development interests.

Our organization develops a network with an interest in nurturing relationships that produce jobs in Tuscola County. This comes by having expectations of continuous improvement of the various factors that make entrepreneurs, business owners, and consumers strive for a better quality of life for everyone in Tuscola County.

The Tuscola County EDC is partnering with the Mid-Michigan Innovation Team through Saginaw Valley State University in the regional Workforce Innovation Regional Economic Development Program “WIRED”. The Mobile Business Resource Center is available to the public through Tuscola County’s library system and a rotation will take place on a regular basis. These resources will help those who are interested in being entrepreneurs go through the business building process step by step. These entrepreneurs have the capability to explore business ideas and prepare a plan of action that will bring about a potential success story. This program is about creating new markets in the local area, starting development that taps into a market, and developing new industries.

The Tuscola County Economic Development Corporation has worked with the Michigan Economic Development Corporation to assist Tuscola County communities in the past with Community Development Block Grant projects in these projects:

♣	\$440,000	Millington Water treatment facility upgrade	(November 2006)
♣	\$150,000	Mayville Village arsenic treatment plant	(October 2006)
♣	\$ 45,000	Cass City Village, sidewalk improvements	(May 2006)
♣	\$575,988	Millington Village, lagoon relining	(July 2005)
♣	\$150,500	Millington Village, lift station/lagoon	(December 2004)
♣	\$340,000	Caro Village, downtown parking project	(August 2002)
♣	<u>\$478,683</u>	Caro Village, Michigan Ethanol, LLC	(December 2001)
	\$2,180,171	Total	

Substantial amount of industrial property left behind by past manufacturing activities has led to an underutilization of facilities that may with the property environmental stewardship produce jobs and development for the local area. Tuscola County will target sites in the Northwestern Waterfront District the M-81 Corridor and the M-15 Corridor. The Tuscola County EDC acts also as the Tuscola County Brownfield Redevelopment Authority will use two \$200,000 grants disbursed by the United States Environmental Protection Agency to assess hazardous substances and the assessment of petroleum substances.

The Brownfield Redevelopment Authority will use U.S. Environmental Protection Agency funds to conduct Phase I and Phase II environmental assessments, remedial planning and design and community outreach at brownfield properties. Funds will help the Authority determine potential risks to the health of local citizens and to plan the cleanup of sites that will lessen risks and promote economic development in these areas. The grant to accomplish these activities plans to complete a community –wide GIS inventory of all brownfield sites and develop priorities based on criteria to maximize the use of U.S. EPA resources. Some resources will be used as future seed money for leveraging additional brownfields grants for further assessment, remediation and acquisition.

The major focus of the Tuscola County's application and subsequent questions was ways to improve and enhance economic community development. In general, Tuscola County is doing an excellent job with traditional approaches to economic development. The Tuscola County EDC implements new methods developed by the Community Assessment Team. These include entrepreneurship, intergovernmental cooperation and an emphasis on enhancing the local area's quality of life.

The Tuscola County Economic Development Corporation over our history continues to partner with communities and by working together builds on Tuscola County's opportunities and accomplishments. The Tuscola County EDC is willing in the years to come to continue servicing the business community in helping create and retain jobs for Tuscola County. This is an effort worth waging and an effort that will secure jobs and investment for Tuscola County citizens.

Thumb Area Tourism Council



www.thumbtourism.org • 157 N. State Street • Caro, MI 48723

THUMB AREA TOURISM COUNCIL TUSCOLA COUNTY PLANNING COMMISSION GENERAL DEVELOPMENT PLAN JANUARY 2013

OVERVIEW

The Thumb Area Tourism Council, Inc. (TATC), is a nonprofit corporation created to promote Tuscola County and the Thumb area. TATC began with the vision to increase visibility of the tourism industry within Tuscola County and the adjacent counties that make up the Thumb area by developing a central tourism resource and Destination Marketing Organization (DMO).

TATC's objective is to promote the Thumb area as a travel destination rich in natural scenic beauty, strong cultural heritage, outdoor recreation, and other community activities and events. Promotional efforts include local, regional and statewide marketing efforts. TATC believes that these promotional efforts will lead to a rise in economic development for the area with the influx of visitors and potential new residents.

Creating this central source of information took considerable planning and time. The process began in mid-2004 with a meeting between Chuck Frost, Executive Director for TATC, and Jim McLoskey, Director for the Tuscola County Economic Development Corporation. From that meeting, things began to take shape:

- Received sponsorship from Tuscola 2011, Inc.
- Received a grant from USDA Rural Development
- Registered TATC as a nonprofit, corporation with the State of Michigan (2005)
- Received support from the Tuscola County Board of Commissioners
- Met with the Economic Development Directors from Huron and Sanilac counties
- Met with the MSU Extension Directors from Huron, Sanilac and Tuscola counties
- Met with Senator Jim Barcia and State Representatives Terry Brown (Tuscola & Huron) and John Espinoza (Sanilac)
- Received Web site development assistance from the Tuscola Technology Center
- Became an established Destination Marketing Organization with Travel Michigan

Chuck Frost, TATC Executive Director;
State Representative Terry Brown; and
Kris McArdle, TATC Marketing Director



CURRENT ACTIVITIES

TATC recently engaged the services of a Caro area Web site developer to begin active integration of the static TATC Web site with an interactive database of area businesses. Based on initial feedback from supporters and in order to take advantage of the Web traffic for the 2007 summer tourism season, TATC decided to launch the Web site in stages rather than wait for total completion. The site can be found at www.thumbtourism.org.

During this initial stage, Web visitors will have access to a listing of approximately 1,500 businesses from across the Thumb region. These businesses are categorized in a way that makes it easy for visitors to find what they are looking for in their area of interest. As an example, if someone wants to find a golf course in the area, just one click is all that is needed to find a list of courses; and for lodging or area attractions, it takes only two clicks for a listing. All businesses (of appropriate nature) may have their name and location included in the database for FREE.

A membership program has been designed to allow businesses to expand their visibility on the Web site. The program consists of four-tiers and provides additional marketing opportunities for members, including the publication of their full contact information, a link to their Web site (if available), and advertisements. The clear advantage for TATC members is that Web visitors are looking for specific information, which is provided on the site with a direct link to the business. This convenient and easy access will provide greater exposure to area businesses at a cost they can afford.

Early on it was evident that there was a demand for this type of resource center, which has become even more prevalent based on the number of hits the site has received during the initial months of operation. In May, the site saw 10,074 hits; followed by 68,639 hits in June; and over 35,000 hits alone in the first week of July.

Additionally, since the site's launch, we have received e-mails and phone calls from visitors requesting specific information about the area. These requests have come from other counties within Michigan and from surrounding states; such as, Ohio and Indiana, and as far away as California!



Snapshot of the Web Site's Home Page

CONT. CURRENT ACTIVITIES

Besides the startup of the Web site, TATC has been actively working with other organizations to promote Tuscola County's offerings, and to explore additional promotional efforts and learn what trends are developing. TATC played an active role in revitalizing Vanderbilt County Park and Campground, including the development of marketing collateral being handled by TATC's Marketing Director. In addition, TATC has been involved in bringing the Huron County water trail group together with Tuscola County's trail group with a key emphasis on establishing Vanderbilt County Park and Campground as an entry way/exit for Thumb shoreline kayakers.



Chuck Frost, TATC Executive Director, Kris McArdle, TATC Marketing Director, and local officials, state dignitaries and Task Force members celebrate official ribbon cutting May 26, 2007, at Vanderbilt County Park and Campground Season Grand Opener.

Plus, TATC participated in a special spring workshop for Thumb area charter boat operators presented by Michigan Sea Grant. The focus of the presentation was on the changes taking place in the surrounding waters and how regional promotion can help operators attract more tourists to their businesses.

Most recently, TATC has been working with the DEQ and Travel Michigan to explore the development of a six-county initiative to use Saginaw Bay as a common tourism destination. TATC's Marketing Director was also appointed to the Tuscola County Parks and Recreation Committee.

Furthermore, TATC played an active role in a number of other projects with respect to the development and promotion of Tuscola County, including:

- ♣ Acted as the tourism representative for the Tuscola County CAT meetings
- ♣ Coordinated a tri-county SWOT analysis with the Economic Development Directors and the MSU Extension Directors from Huron, Sanilac and Tuscola counties
- ♣ Represented Tuscola County in the development of a regional arts brochure
- ♣ Supported the Village of Caro's grant application to MSHDA for Blueprint for Michigan Downtowns program

FUTURE GOALS

TATC's immediate goal is to complete the development of the Web site while updating the businesses included in the database. Next, a calendar of events will be made available on the site, which will help visitors schedule a vacation or weekend trip based around a family-friendly activity. This will bring more visibility to the events in our area, increasing attendance and improving their financial stability. Another feature in development is a map of the Thumb that will allow the business database to be accessed by clicking on a specific area of Tuscola County. This will allow a potential visitor to see what businesses/services are available in the area as they prepare to visit.

As with all businesses, TATC will require funding to achieve its goals. One of the ways we propose to fund our activities is to encourage businesses and organizations to become paid members/supporters of TATC.



TATC welcomes the Village of Cass City as first member to join and take advantage of the visibility created by the Web site.

Above and beyond all this, our ultimate goal is to promote the “hidden gems” in our area and to ensure that Tuscola County is included in more regional and statewide promotional efforts.

Caro Community Hospital



With high hopes and a dedication to service, Caro Community Hospital (CCH) began operations in 1927. Like most community hospitals of the era, it was located in a quiet neighborhood in a sturdy, wooden home that served its patients well. When, in 1962, community leaders felt it was time for Caro to move forward, a modern, new hospital was built and the course was set for the coming era of fantastic growth.

Within ten years, more space was needed and an entire new wing was added to the hospital. This expansion allowed for more patient rooms as well as space for meetings, study, and other hospital business. Patient usage continued to increase during this era and for the next several years; in 1996, another new wing was added to the hospital, this time creating a permanent home for both Nuclear Medicine and CAT-Scan services.

During this approximate period, the character of CCH service began to reflect a change that had been coming for some time. Now, as out-patient services began to represent more and more of the hospital's revenues, more specialty doctors were recruited to the area and many more diagnostic and testing procedures were added to CCH's service array. In the next few years, CCH Health Services was established to provide a permanent base for specialty physicians to provide their services to CCH patients. The Caro Medical Clinic, under the guidance of Dr. Richard Touma, came into affiliation with Caro Community Hospital, and Hill Medical Center housed the hospital's Physical Therapy Department, Fiscal Department, and a Family Practice physician.

In 2003, Caro Community Hospital undertook its most ambitious expansion project to date. Under the direction of a core group of dedicated amateur fundraisers, and with the support of local financial institutions, an entirely new Patient Services wing was added to the facade of the hospital, thereby increasing both square footage and available services for CCH customers.

Caro Community Hospital was an important cornerstone in the community from its very earliest days, and has become even more so in the 21st century. A good part of the reason for this is that the CCH administration has focused on improvement, which this report will summarize in six distinct categories: 1) Physicians; 2) Patient Services; 3) Technology; 4) Staffing and Payroll; 5) Infrastructure; and 6) Revenue.

- 1) Caro Community Hospital is fortunate to be staffed by nearly 50 physicians, each of whom brings a different specialty to the area. Most of these physicians conduct office visits at CCH Health Services in Caro, and many provide surgery at CCH. Their specialties include: Cardiology, Colon and Rectal Surgery, Dermatology, Ear/Nose/Throat and Facial Plastic Surgery, Family Practice, General Practice, General Surgery, Hematology, Internal Medicine, Neurology, Neurosurgery, Oncology, Ophthalmology, Oral/Maxillofacial Surgery, Orthopedics, Pathology, Pediatrics, Physical Medicine, Podiatry, Radiation Oncology, Radiology, Rheumatology, and Urology. Three of these physicians are employed full-time by the hospital in order to comprehensively provide their services: Richard A. Moyer, D.O., Orthopedics; Gary L. Rudder, M.D., Radiology; and Richard Touma, D.O., Family Practice.

2) Patient Services have expanded dramatically in recent years at Caro Community Hospital, and now include: CCH Auxiliary; Bone Density Testing, CAT-Scan, Cardiopulmonary, Dietitian, EEGs, EKGs, 24-Hour Emergency Department, Laboratory, Mammography, Nuclear Medicine, Nuclear Stress testing, Orthopedics, Pharmacy, Physical Therapy, Pulmonary Function, Radiology, Sleep Clinic, Social Service, Speech Therapy, Stress Testing, Surgery Department, and Ultrasound. New services are constantly being evaluated, as is expansion of existing services.

3) The technology leap has been crucial to Caro Community Hospital's progress all along, but especially in more recent years as digital equipment, computers, and highly-skilled staff members have become available. In the past two years alone, CCH has added a Multi-Slice Spiral CAT-Scan unit, Nuclear Medicine Gamma Camera, and Siemens Radiography (X-Ray) and Fluoroscopy equipment. Advances have also taken place in Ultrasound, Echocardiogram, Mammography, Bone Density, EKG, Surgery, Physical Therapy, Laboratory, Cardiopulmonary, and many other areas of service.

4) The Caro Community Hospital staff is probably the most skilled, best-educated and certified, and highly dedicated that it has ever been. Modern medicine, modern certification procedures, and the intricacy of modern medical equipment all require this to be true. The payroll at CCH reflects this fact, as well as intense competition for quality employees. Currently, some 180 full-time, part-time, and on-call employees serve the community at CCH, with an annual payroll exceeding \$5 million.

5) Infrastructure - Caro Community Hospital's main campus on Hooper Street is now larger, more comfortable, and more conducive to quality care than ever. The 2003 expansion provided additional lobby and waiting areas for laboratory patients and general hospital use, along with private registration rooms, gift shop, chapel, vastly expanded laboratory and emergency rooms, consultation room, Board of Trustees meeting room, public rest rooms, and more. Continuously remodeled and updated elsewhere, the main campus offers a convenient, easy-access site for patients and plenty of amenities for their families and friends.

Caro Medical Clinic, an affiliate of CCH, features the family practice of Dr. Richard Touma and associates, and offers a familiar and "homey" atmosphere with multiple exam rooms, ample parking, and easy access to the greater Caro area.

CCH Health Services in Caro houses the hospital's specialty physicians, and offers convenient appointments, plenty of parking, comfortable waiting room, ample exam rooms, and an attractive exterior which helps enhance the neighborhood at the intersection of M-24 and Frank streets.

Hill Medical Center, at the corner of Gilford and Hooper in Caro, houses CCH's Fiscal Office and the hospital's Physical Therapy Department. Hill Medical offers plenty of parking, easy access to town and country, comfortable waiting areas, privacy when needed, and a growing arsenal of state-of-the-art therapy equipment.

6) Caro Community Hospital's annual gross revenue for 2007 is projected at \$18 million. After expenses and applying mandatory allowances, CCH will likely net a modest profit which will support continuing hospital operations. Caro Community Hospital's presence in the community is an economic engine which helps to drive the local economy. Its annual payroll of some \$5 million represents tremendous buying power on the part of our staff, especially when considering the normally accepted turnover rate of four to seven times for each dollar. In addition, CCH as a business itself spends some \$5 million in the greater local area, purchasing needed products and services. Furthermore, the presence of the hospital stimulates growth in other areas, such as pharmacies, durable medical equipment providers, and doctors' offices. All of these entities

employ people, contribute payrolls to the local economy, and purchase products and services themselves.

Caro Community Hospital looks to the future with hope. The CCH Endowment Foundation continues to grow and to develop new ways of providing support for equipment purchases for the hospital; the CCH Auxiliary does the same. New physicians are being recruited continuously. New services, a relatively new designation as a "Critical Access Hospital", and continuing fiscal responsibility are all expected to enhance the bottom line. New developments in teleradiology, updated equipment in X-ray and Laboratory, and the potential for further expansion in Phase II of CCH's growth plan, are all exciting possibilities that are being evaluated right now.

Finally, there continues to be a steely determination shared by Caro Community Hospital's Staff, Administration, and Board of Trustees to continue moving forward to serve the community as an independent, full-service, quality hospital for all the people of Caro and the greater Tuscola County area!

Caro Community Hospital

	2001	2002	2003	2004	2005	2006
Gross Patient Revenues	16,478,170	16,781,580	18,100,271	17,916,702	17,316,902	17,284,241
Net Revenue	11,154,254	11,193,709	11,337,231	11,039,909	11,248,956	12,141,856
Salaries & Wages	4,999,438	4,942,531	5,229,253	5,220,337	4,905,246	5,102,654
Benefits	1,108,168	1,328,272	1,696,437	1,514,346	1,667,184	1,815,024

Hills and Dales Community Hospital

4675 Hill Street
Cass City, MI 48726



(989) 872-21
www.hillsanddales.co

Hills & Dales General Hospital, Inc., is a non-profit subsidiary corporation of Hills & Dales HealthCare Corporation. Articles of Incorporation were filed with the MI Corporation and Securities Commission on January 14, 1960. The new hospital opened in August of 1960 with a bed capacity of 57 and six active physicians on staff. The purpose of the corporation is to construct, complete, equip, maintain and administer a health care facility for the care and treatment of the population it serves, continuously improving patient health outcomes.

The Vision of the Hospital is to be the Premier Critical Access Hospital in Michiga

The Mission is to be the Provider of Choice and the Employer of Choice in our Primary Markets.

Today, Hills & Dales General Hospital is a well-equipped, modern, 25-bed community hospital offering a wide range of services to the residents of Tuscola, Huron, and Sanila counties. We have state-of-the-art technology and a highly trained and competent physician and support staff.

Our Medical Staff includes 41 Staff Physicians encompassing the areas of Family Practice, Internal Medicine, Pediatrics, General Surgery, Physiatry, Radiology, Pathology, Ophthalmology, ENT, Cardiology, Emergency Medicine, and Occupational Medicine.

With 275 employees we are one of the major employers in the county. Our licensed staff includes:

- Allied Health – Physician Assistants and Nurse Anesthetists.
- Nursing – All Registered Nurses are ACLS (Advanced Cardiac Life Support) and many are PALS (Pediatric Advanced Life Support).
- Ancillary Departments – Staff are certified such as Radiology, Mammography, Nuclear Medicine, etc. in their areas. We have received the Governor’s Award several years in a row for excellence in patient care.
- Education – We have Certified Diabetic Education with a full-time Dietician to serve the needs of our patients.
- Employees enjoy delectables made by our own Chef Jerod and his staff. They offer catering for any of your needs as well.

We have off-site services provided in Cass City, Caro, Kingston, and Ubley. Our Home Care serves all three counties as well. Rehabilitation, offered in Cass City and Caro serves patients in at least 5 counties.

“Then. Now & Always”

Hills & Dales has seen several additions and renovations since its inception. Our most recent and largest was initiated in January 2006 and completed in May 2007.

The expansion included an addition of 19,000 square feet. In the addition we opened a new state-of-the-art surgical suite with all new technology for it, nine pre and post anesthesia beds, a fully equipped state-of-the-art lab, much needed office space and multiple conference rooms for employees and the community. In addition, the project upgraded our Emergency Room, Registration, and Diagnostic Imaging areas, which includes a state-of-the-art 64-slice CT Scanner. It is the only one of its kind in the Thumb area of Michigan. With this scanner we are able to diagnose heart disease at a very early stage using non-invasive methods. Also new to our diagnostics is a new Bone Densitometry machine that provides screening diagnostics for Osteoporosis.

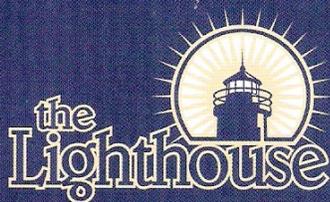
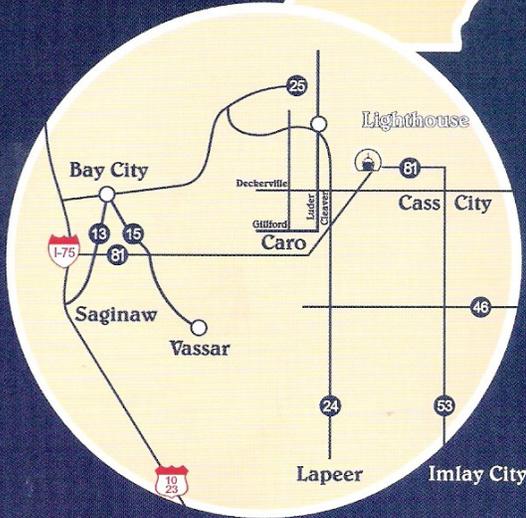
Hills & Dales General Hospital continues to be committed to providing a broad range of needed services and state-of-the-art diagnostic services to the residents of Tuscola, Huron, and Sanilac counties and to continually communicate with the residents in our service area. Part of that commitment includes providing a website that offers individuals needed information about Hills & Dales General Hospital. Your input and suggestions are encouraged. www.hdghmi.org

We are honored and privileged to be here for you when you or a member of your family has a healthcare need.

Hills & Dales General Hospital
2007 Year-End Financial Data

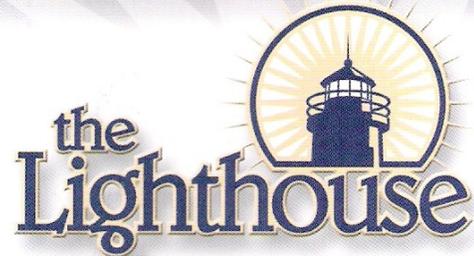
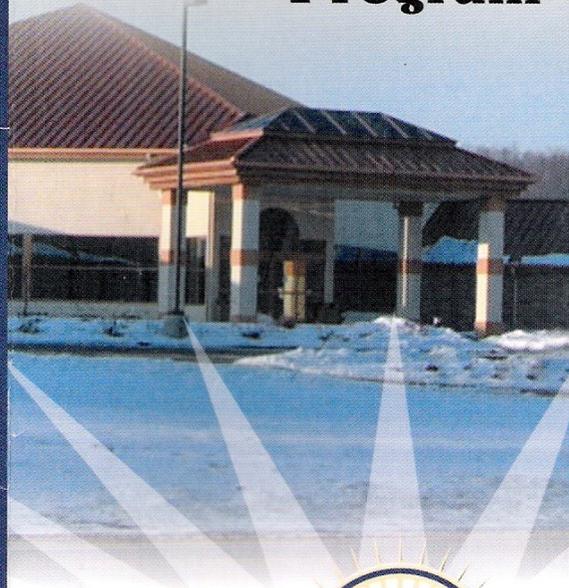
Gross Patient Revenues	24,338,363
Net Revenue	17,748,717
Salaries & Wages	8,740,245
Benefits	2,540,386

2 miles East of Caro on M-31



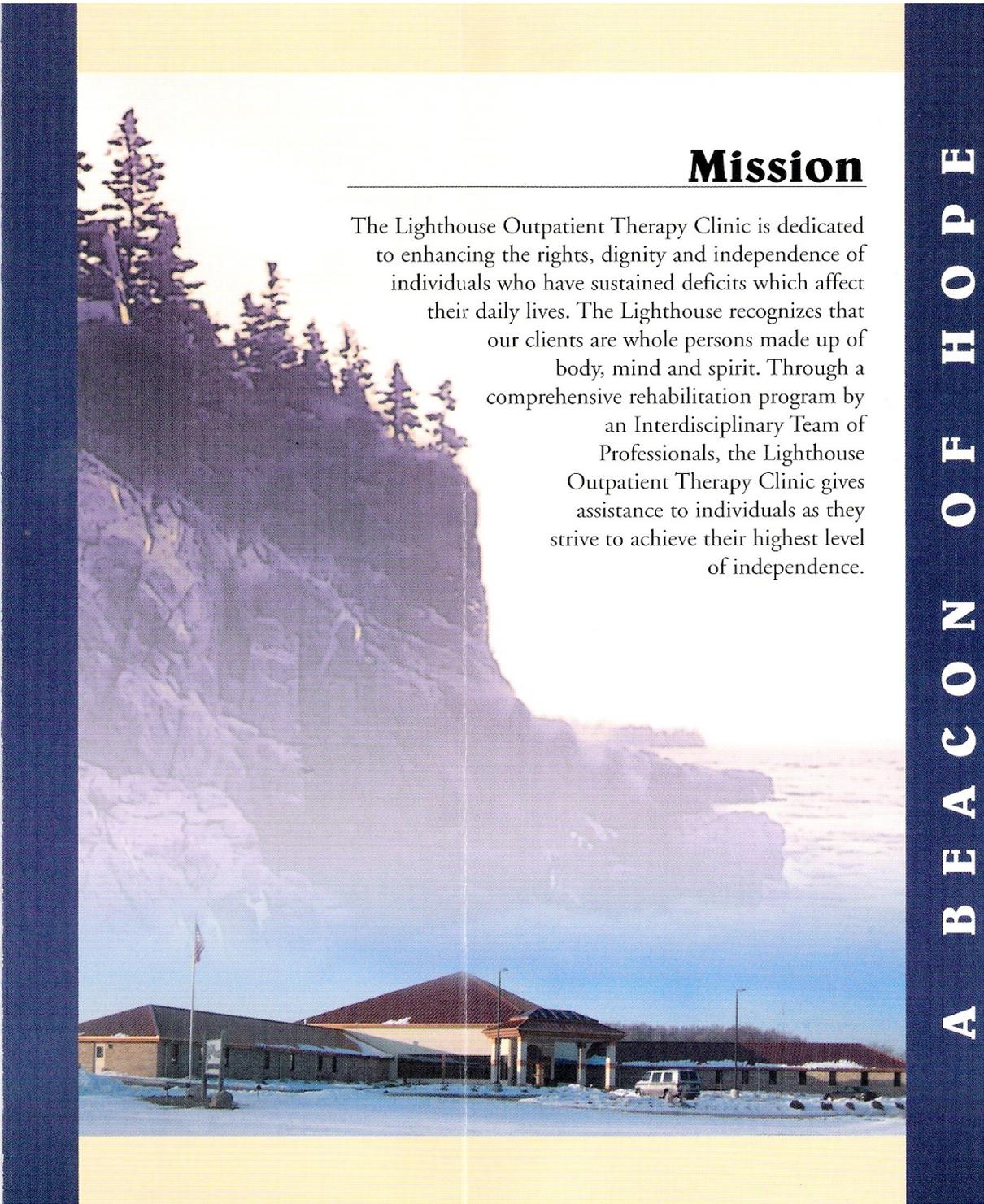
P.O. Box 289
1655 E. Caro Road
Caro, Michigan 48723
(989) 673-2500
www.lighthouse rehab.com

Outpatient Rehabilitation Program



(989) 673-2500





Mission

The Lighthouse Outpatient Therapy Clinic is dedicated to enhancing the rights, dignity and independence of individuals who have sustained deficits which affect their daily lives. The Lighthouse recognizes that our clients are whole persons made up of body, mind and spirit. Through a comprehensive rehabilitation program by an Interdisciplinary Team of Professionals, the Lighthouse Outpatient Therapy Clinic gives assistance to individuals as they strive to achieve their highest level of independence.

A B E A C O N O F H O P E



Tuscola Area Airport

Tuscola Area Airport Authority Flying & Growing Close to Home

The Tuscola Area Airport near Caro is one of the fastest growing General Aviation airports of its size in the entire State of Michigan. The Tuscola Area Airport is one of the few airports in Michigan owned and operated by the Airport Authority. Recently, the Airport Authority has added a new member with the City of Vassar joining the Authority. The Airport Authority board meets on the third Thursday of each month.

More than 34 businesses utilize airport services on a regular basis. This spurs growth in the area and if not for the airport many businesses would not have locations in Tuscola County. The Airport is servicing the area and playing a major role in being an economic development tool. The benefit of a local airport that services the transportation needs of business is to have the infrastructure in place for enterprises to expand and better service their customers.

A future project of the Airport Authority is a Crosswind Runway. This capital improvement to the airport will make more of a contribution to the business community and the local citizens. This project especially helps the airport and future economic development by increasing air traffic and improving safety. The Airport Authority develops future plans that will transform present airport facilities into assets to the flying public that are customer-driven and need based. The \$7.2 million dollar project will help create plus 200 full-time private sector jobs in Tuscola County over the next 2 years with the important factor to retain plus 400 jobs. The Airport Authority insurance company gives the airport the information that risk management requirements state that a 5,000 foot runway is essential for jets to land at an airport more safely.

The Crosswind Runway is to be built in two phases, which is contingent upon funding being available. The runway designed to be 5,000 feet long will allow more safety for business aircraft using the airport. This is vital in giving the Tuscola Area Airport the infrastructure to increase air traffic by having year-round all season access to the airport. This important and visionary investment in a Crosswind Runway helps develop a synergy for the area that will not effects airport operations, but gives the area a more able tool for capital investment in Tuscola County and the Thumb Area.

The Tuscola Area Airport is the only airport located in Tuscola County. 52 planes based at the airport of pilots from the local area that generate revenue streams for businesses in Tuscola County by purchasing goods, services, and making capital expenditures in developing local business. These pilots enjoy the convenience of the airport location, as the facility services these fuel and hangar users. The Airport Authority has upgraded the hangar capacity substantially and keeps a waiting list of pilots. The airport even needs more hangar infrastructure in the future to meet the demand of the pilots hoping to utilize airport services even more.

This is key for Tuscola County which is experiencing the turbulence in the changing global economy where servicing the customer's needs is paramount for job creation and job retention. The population of Tuscola County continues to grow according to U.S. Census Bureau (2000 – 2003). The growth in population and the utilization of the airport is evidenced by two additional governmental municipalities considering joining the Airport Authority.

The Michigan Ethanol project now named Poet Biorefining produced around \$55 million in capital investment when the ethanol processing plant located in Tuscola County. If not for the Tuscola Area Airport easy access to the Caro Industrial Park, the Michigan Ethanol LLC investors would have looked elsewhere for a location in November of 2002. It is important to have infrastructure and services that will create a value for businesses. This factor is part of the complex decision regarding the continued capital investment by existing businesses and businesses looking for a new location.

The Airport Authority currently has 7 local municipalities as members of the Authority. These include Almer Township, the Village of Cass City, Ellington Township, Indianfields Township, Elkland Township, the City of Vassar and the Village of Caro. The City of Vassar is a new member and plays an important role as all the members in helping the Tuscola Area Airport grow and thrive.

The Airport Authority has been involved in many capital improvement projects totaling nearly \$3 million since 1993. A master plan was developed regarding the future growth of the airport. The various projects include runway rehabilitation, township road realignment, taxiway improvements, the purchase of new fuel tanks, and purchase of state land for expansion, newer parking lots and a new administration building. The clearing of trees project was completed for the safety of the pilots, and the installation of an automated weather observation system gives pilots the latest weather information for navigating their aircraft safer.

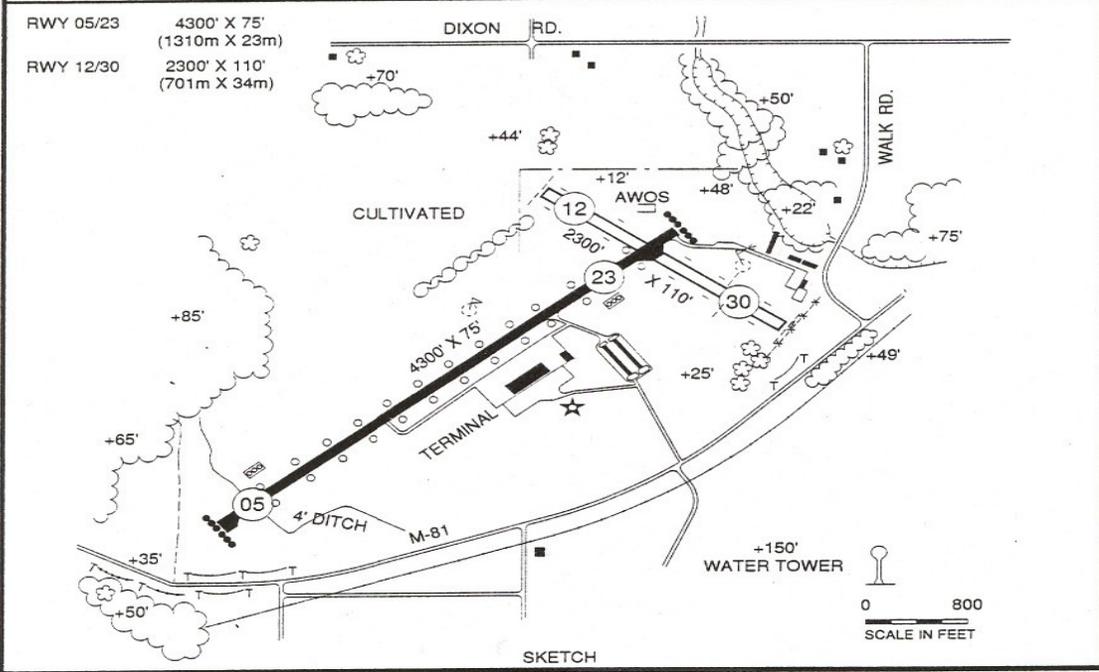
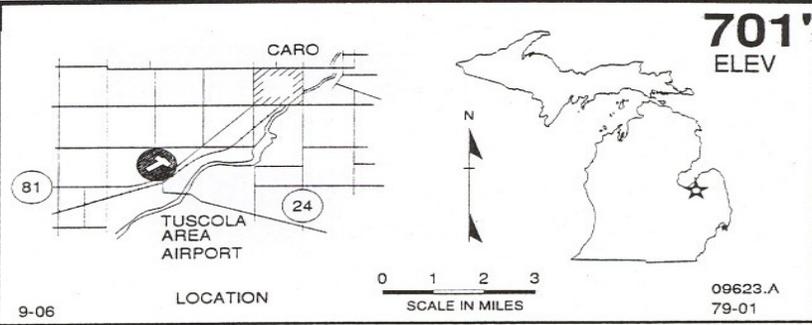
All of these improvements were the vision of the Airport Authority with the goal to make the airport safe and pilot friendly with the whole community in mind, so to provide a strong user friendly and value-added resource to the area.

If additional information is needed, please call Assistant Board Secretary Jim McLoskey at 989-673-2849.

CARO, TUSCOLA AREA ARPT (CFS)

C

FREQ	
AWOS	119.275
CTAF/U	123.0
SAGILNAW APP/DEP (R)	120.95
GCO	121.725



RWY LENGTH BEYOND DISPLACED THR
 05/ — * 12/ —
 23/ — * 30/ 1730'

COORDINATES
 43° 27.55' N
 083° 26.70' W
License:
 General Utility

FM CITY: 2.8 mi SW
LGT: ROTG BCN, MIRL, PAPI, REIL—STD
 PCL CTAF
MGR: Eric M. Engler
PH: 989-673-4301
 989-872-3614 (Mgr Res)
FBO: Engler Flying Sved 989-673-4301
ATND: All day, ireg hr

NAV AIDS: IAP, 112.9 (MBS) 102° 27.9 NM to fld.
FUEL: 100LL, JET A*
RPR: Major A&P
WX: FSS LAN 800-992-7433;
 AWOS 989-672-4182
SNW RMVL: 05/23
TRNSP: Dial-A-Ride, limo by prior arngmt
MEALS: 1.0 mi, in town
RON: 2.5 mi, cc

- Deer on & invof arpt.
- Admin bldg access—depress V, then simultaneous III-II, then I.
- *For fuel if mgr unavbl ph 989-673-2849
- Ag ops.

BUSINESSES THAT USE TUSCOLA AREA AIRPORT

	
Tuscola Area Airport Authority 157 N. State Street Caro, MI 48723 989-673-2849 989-673-2517 Fax	
1	Ag-Spraying, Inc.
2	Astech, Inc.
3	Bierlein Construction
4	Caro Aviation
5	Caro Community Hospital
6	Countryside Storage
7	Covenant Health Care
8	DLS Farms
9	Durolast Roofing
10	Engler Flying Service
11	Engineered Tools Corporation
12	Hayward Aviation-Bits n Bytes Technology
13	J&D Implement
14	Kappen Properties
15	LaBudde Group
16	Laurie Farms
17	Marshall Distributing
18	Michigan Ethanol
19	Michigan State Police
20	Michigan Sugar Company
21	Millennium Industries
22	Riverview Auto
23	St. Mary's Health Care
24	Scientific Retail Systems
25	Sealin' Hatch-Ken Lynch
26	Superior Air - UPS
27	TI Automotive
28	Tuscola County Advertiser-Edwards Publishing
29	Walbro Engine Management
30	Waterman Tool
31	Wilson Stamping
32	Vaughn Flying Services
33	Worth Construction
34	United Parcel Service