

Grayling Charter Township Master Plan- 2014



Distribution Draft

With Planning Assistance Provided By:

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GRAYLING CHARTER TOWNSHIP

2014 MASTER PLAN

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PART TWO: CRAWFORD COUNTY 2014 MASTER PLAN UPDATE

CHAPTER 1 INTRODUCTION

Purpose and Planning Process

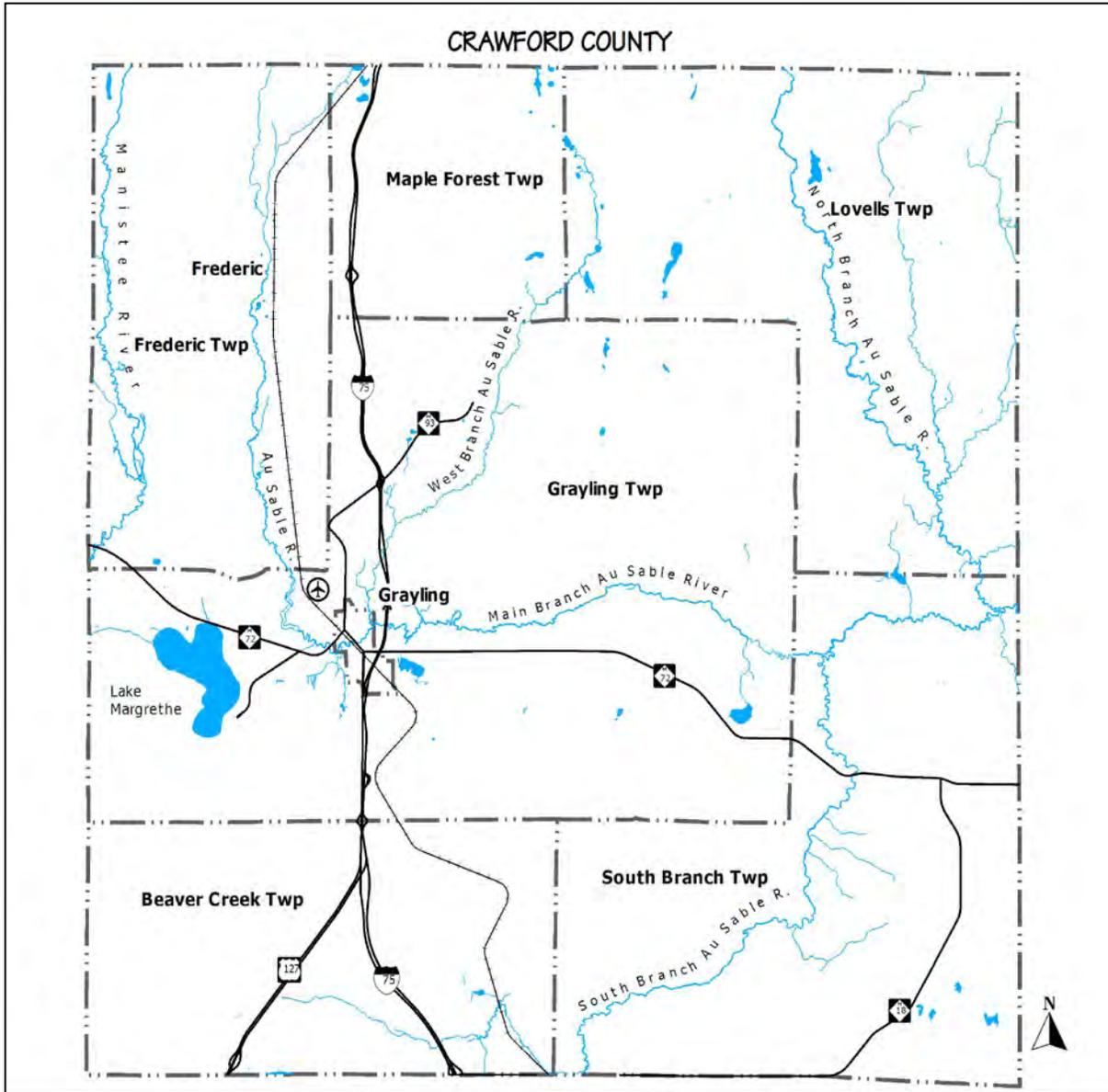
The purpose of the Grayling Charter Township Master Plan 2014 is to provide guidelines for future development, while protecting the natural resources and rural character of the Township. This plan utilizes the recently prepared Crawford County Master Plan for the much extensive background information including socio-economic data on the Township; description and mapping of natural resources; and inventory of existing community facilities. The County Master Plan information was reviewed by the Grayling Charter Township Planning Commission and supplemental Township level information, including updated existing land use mapping for the privately owned areas of the Township are provided. The background information was analyzed to identify important characteristics, changes and trends occurring in Grayling Charter Township. Community concerns were identified based on public input including numerous public meetings, previous planning efforts, and input from the Township Planning Commission. Goals and policies were updated to guide future development based on the background studies, key land use trends, community issues and public input. These goals, along with a detailed map of existing land use, provided the basis for the Future Land Use Map which specifies where the various types of future development ideally will be located in the Township. This plan also provides suggestions for implementation of the identified goals and policies. The guidance provided by this Master Plan will be utilized in reviewing, and updating, as needed, the Zoning Ordinance for Grayling Charter Township.

Location

Grayling Charter Township is located in the central portion of Crawford County, which is situated in the north-central region of Michigan's Lower Peninsula. Grayling Charter Township comprises 171.1 square miles of the County's 558 square miles of land area. Geographically, Grayling Charter Township consists of five government survey townships, T26N-R4W, T26N-R3W, T27N-R3W, T26N-R2W and T27N-R2W.

The Township is bounded on the north by Frederic, Maple Forest and Lovells Townships, on the east by Lovells and South Branch Townships, on the south by South Branch Township and Beaver Creek Townships and on the west by Kalkaska County, see Figure 1-1 for a location map.

Figure 1-1 Location Map



Planning and Zoning in Grayling Charter Township

Grayling Charter Township initially adopted a master plan in 1997, but the Township has administered a township zoning ordinance since initially adoption in 1982. Updated zoning ordinances supported by up-to-date Master Plans are considered the main tool Michigan communities have at their command to control land use patterns and development pressures. Since Grayling Charter Township administers a Township Zoning ordinance, it is advisable that the Township maintain an up-to-date Township level Master Plan to guide future development and provide an enhanced legal foundation for the Grayling Charter Township Zoning Ordinance.

A number of special land use issues are present today in Grayling Charter Township. The Michigan National Guard (Camp Grayling) utilizes more than 48,520 acres or 75.8 square miles of land in Grayling Charter Township for military maneuvers and training exercises. This amounts to 44.3 percent of the Township's total area. Vacation and seasonal home construction brings visitors along with the pressure for tourist and commercial development. Golf course construction in the two-county area of Crawford and Otsego has added growth pressures, as well. Certainly the water frontage available in the Township is also seen as prime for new residential development, both year-round and seasonal. In light of these growth and development possibilities, the Township needs to establish clear land use policies and development procedures through the comprehensive planning and zoning update process.

In recent years, local governments have taken a fresh look at the value of preserving a high-quality natural environment. Grayling Charter Township is fortunate to have an extensive and rich natural environment, including waterfront property along a major river tributary and several inland lakes, massive amounts of public forestlands and a pleasing rural setting. Through land use and zoning controls, the Township can preserve local property values and provide a high quality living environment for residents, while protecting valuable natural resources.

CHAPTER 2 Existing Land Use

Pattern of Land Divisions

As development occurs, larger tracts of land are generally broken down into smaller parcels. Therefore, studying the existing pattern of land divisions is one way to analyze the status of land use and development. Land division patterns for Grayling Charter Township are discussed below.

The three largest land owners in the Township are the Military Board (over 48,500 acres), followed by the State of Michigan with (over 23,300 acres), and the US Forest Service (over 7,900 acres). Figure 2-1 shows the public lands within Grayling Charter Township. These three entities have large areas of contiguous undeveloped land, and in the case of the State and Forest Service owned land much of the acreage is currently being maintained for recreation, conservation and educational purposes. Privately held tracts range significantly in size, with some private clubs having acreage from 440 to 1,800 acres, and other privately held properties range from small lots to parcels of 320 acre or greater, and are scattered throughout the interior of the Township.

There are subdivisions and small tracts scattered throughout the Township. Other small tract land divisions are occurring as small parcels along the roads are split from larger parcels. In terms of land division patterns, it is worth noting that some of the residential developments in Grayling Charter Township are being created as site condominiums rather than traditional subdivisions. A site condominium does not actually create lots by land division. Therefore, a site condominium project may continue to appear as a large, undivided tract (on parcel maps) when it has already been converted to relatively dense residential use.

Existing Land Use Statistics and Characteristics

According to the 2010 Census, Grayling Charter Township's land area is 171.1 square miles, and is essentially five geographic Townships in size.

The map of existing land use, shown as Figure 2-1, illustrates the distribution of land uses within the Township. Figure 2-2 graphically represents the percent of the township in each land use category. The existing land use map is a compilation of data provided by land use mapping provided by Northeast Michigan Council of Governments (NEMCOG) from the Crawford County Master Plan update and updated using recent digital aerial photography.

Public Lands Map Grayling Charter Township

Figure 2-1



August 2014

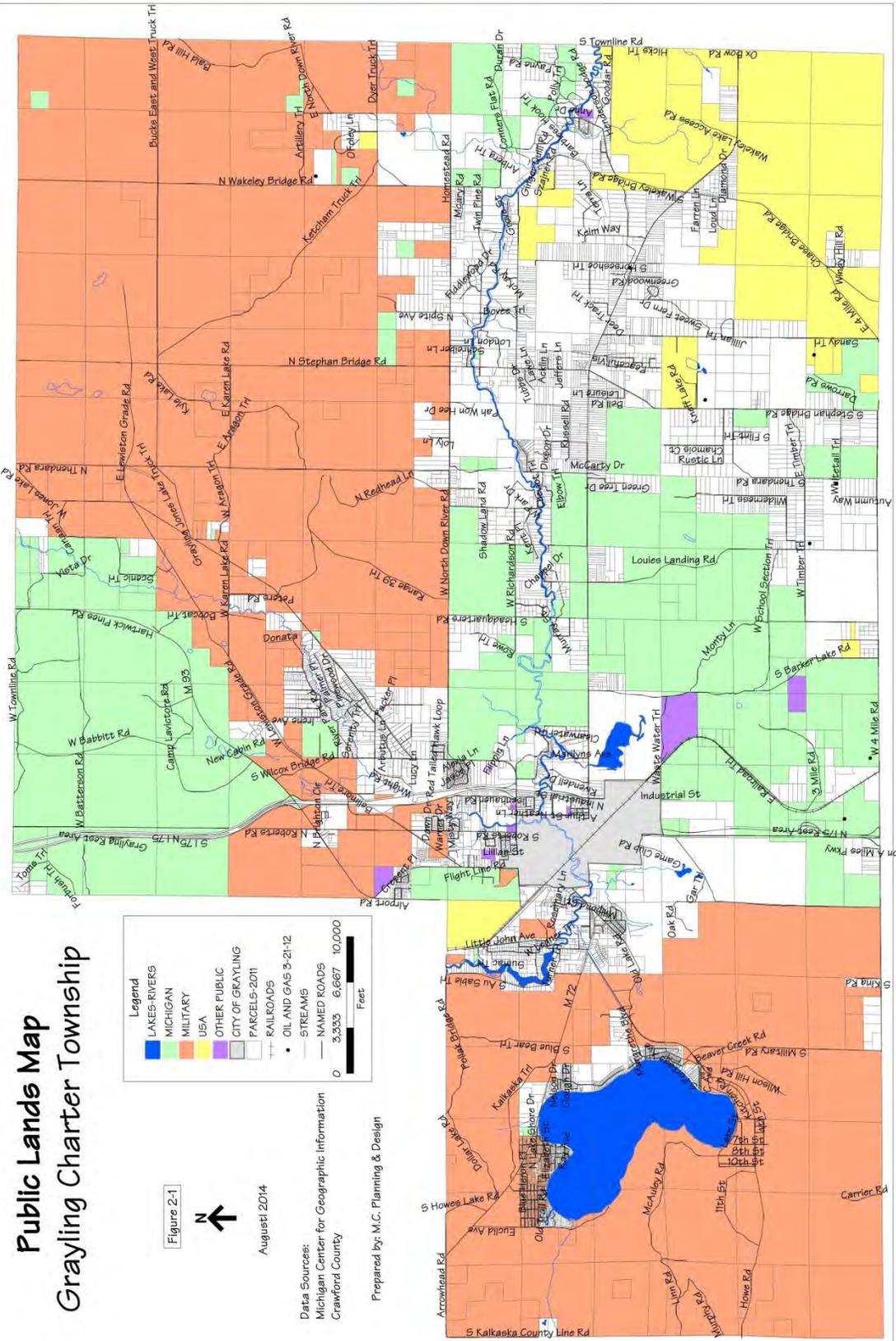
Data Sources:
Michigan Center for Geographic Information
Crawford County

Prepared by: M.C. Planning & Design

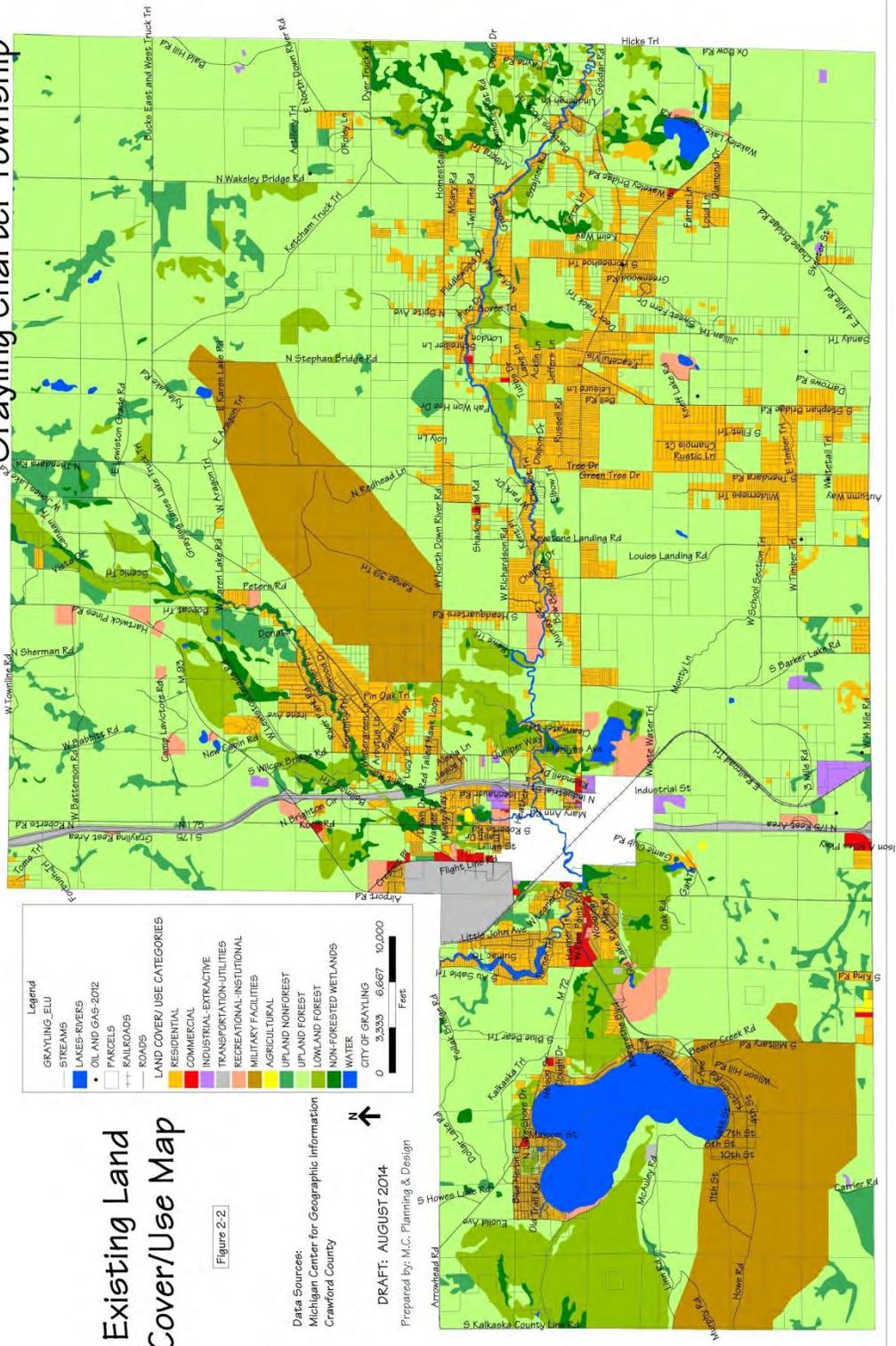
Legend

- LAKES-RIVERS
- MICHIGAN
- MILITARY
- USA
- OTHER PUBLIC
- CITY OF GRAYLING
- PARCELS-2011
- RAILROADS
- OIL AND GAS 3-21-12
- STREAMS
- NAMED ROADS

0 3,333 6,667 10,000
Fees



Grayling Charter Township



Existing Land Cover/Use Map

Figure 2-2

Table 2-1: Existing Land Use - 2014 Grayling Charter Township	
Land Use Category	Percent of Township
Upland Forest	62.8
Residential	11.0
Military	8.4
Lowland Forest	7.2
Non-Forest Upland	3.3
Non-Forest Wetland	3.3
Water	1.9
Transportation-Utilities	1.4
Recreation Institutional	1.1
Industrial-Extraction	0.3
Commercial	0.3
Agricultural	0.1
TOTAL	101.1
Source: Michigan Resource Information System, NEMCOG, Crawford County and MCP&D Map Updating.	
Note: Due to rounding, the total sum may not be 100%.	

Forests and Wetlands

Forests, which include upland hardwoods, conifers as well as lowland forests which combined account for 70 percent of Township land area in 2014. Heavily wooded areas are found throughout the Township, as can be seen in Figure 2-2. The Existing Land Use map distinguishes between upland forest and lowland forest, since some of the lowland forest areas may be forested wetlands. A comparison of Figures 2-1 and 2-2 shows that much of the forested land is owned by the Military Board, the State of Michigan or the US Forest Service.

The extensive areas of Jack Pine in Crawford County contribute significantly to the risk of wildfire in the County, as documented in the 2013 Crawford County Community Wildfire Protection Plan. Figure 2-3 is an excerpt from that plan which shows the wildfire risk areas for Grayling Charter Township.

Wetlands include land that has sufficient water at, or near, the surface to support wetland or aquatic vegetation. These areas are commonly referred to as swamps, marshes, or bogs. Wetland areas may also include land which supports lowland hardwoods and conifers. Wetland information was not verified by field inspection when these maps were compiled. Thus, the areas shown as wetlands by MIRIS may not actually meet State and Federal criteria for legally regulated wetlands.

Non-forested wetland areas comprise slightly more than three percent of the Township in 2014. Wetlands occur in scattered locations throughout the Township which have not been developed.

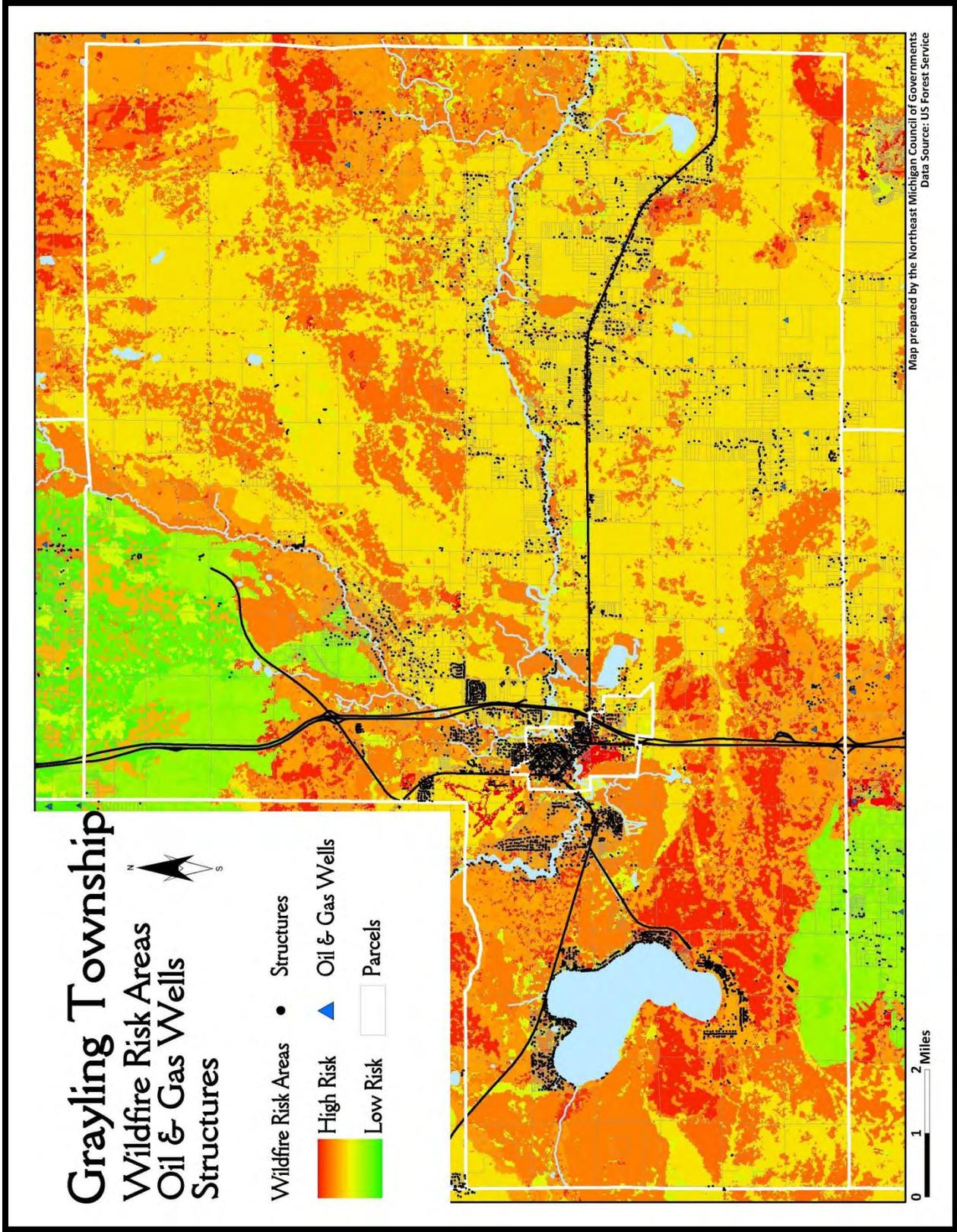


Figure 2-3 Wildfire Risk Areas, Crawford County Community Wildfire Protection Plan (used with permission)

Residential

As can be seen from Table 2-1, the amount of land being used for residential purposes was 11 percent of the township in 2014. The location and pattern of residential development within the Township is shown in Figure 2-2. Residential use has been clustered in a number of locations in the Township. Additionally, small tract land divisions continue to occur along many of the Township roads.

Military

The area mapped as Military land use category in Figure 2-2 is the area which is developed and/or actively used for military operations, thus this area is a subset of the land owned by the Military Board as shown in Figure 2-1. The military land category comprises 8.4 percent of the total land use/land cover in Grayling Charter Township as of 2014. Some of this area is available for public recreational use when maneuvers are not being conducted.

Nonforested Upland

The nonforested upland area is open land, typically open fields, barren areas or areas with low-growing vegetation that are not being managed for agricultural purposes. Slightly more than three percent of the Township is classified in this category.

Water

The water land category consisting of the lakes and rivers within the Township comprise 1.9 percent in the Township in 2014.

Transportation-Utilities

The transportation-utilities category makes up 1.4 percent of the Township, this is primarily comprised of the Grayling Army Airfield, as well as the rights-of-way associated with the I-75 corridor and the railroad.

Recreation and Institutional

Recreation and institutional lands currently comprise approximately one percent of Grayling Charter Township. This category maps the active recreation and institutional facilities, but does not reflect all the recreational opportunities available on the public lands. (see the Recreation Plan in the Crawford County Master Plan for additional recreation details). Churches, cemeteries and municipal facilities are included in the institutional portion of this category.

Industrial /Extractive

Table 2-1 shows a combined percent for industrial and extractive uses. As of 2014 this land category makes up less than one half of one percent of the Township. The locations of the industrial uses and extractive uses are shown in Figure 2-2.

Commercial

Table 2-1 shows that the amount of land developed as commercial in Grayling Charter Township is less than one half of one percent and as shown in Figure 2-2, the commercial uses are primarily

clustered in two general locations, 1) west of Grayling along M-72 and M-93; and 2) north of Grayling along Business 75/Old 27.

Agricultural

As shown in Table 2-1, agricultural lands occupy approximately one tenth of one percent of Township land area in 2014. As is illustrated in Figure 2-2, the active agricultural lands are located in a few small areas along the southern border of the Township and an area north of Grayling.

CHAPTER 3 Goals and Objectives

Goals and Objectives

In developing community goals and policies, it is important to analyze existing community characteristics, such as: social and economic features, environmental resources, available services and facilities, and existing land use. In addition to examining existing characteristics, another important tool in the development of community goals and policies is to identify community assets, problems and other issues to be addressed.

The majority of the goals and objectives of Grayling Charter Township are encompassed in those listed in Chapter 8 of the Crawford County Master Plan, and in the Recreation goals in Chapter 6 of the same plan, as provided in Appendix A. The following are supplemental Township level goals and objectives, which either are not addressed or did not receive the Township's desired level of emphasis in the Crawford County Master Plan section.

Land Use Goal

GOAL:

Maintain an ecologically sound balance between human activities and the environment to retain the Township's scenic and rural character.

OBJECTIVES:

- Maintain an up-to-date Zoning Ordinance consistent with the Township Master Plan.
- Guide new development to appropriate areas for new residential, commercial, and industrial land uses, consistent with the natural limitations of the land to maintain the Township's rural character.
- Encourage access management standards, open space and landscape requirements for new development, such as appropriate setbacks, retention of green space, buffer zones between differing land uses, screened parking areas, and roadside landscaping; and encourage the retention of open space and scenic vistas with PUD's, clustering, and conservation easements.
- Encourage development of a Kirtland Community College Health Sciences Campus and supporting businesses near the 4-Mile Road/ I-75 interchange.
- Acquire property from State of Michigan near 4-Mile Road/I-75 to promote additional business development consistent with the proposed KCC campus development.
- Maintain on-going and open dialog with the MDNR, MDEQ, EPA, US Forest Service, and Camp Grayling representatives to monitor future potential public land transfers.
- Maintain road end access sites for public use on rivers and lakes.

Infrastructure & Public Service Goal

GOAL:

Maintain and improve the Township facilities, programs and systems consistent with the community needs, and the ability to finance the improvements.

OBJECTIVES:

- Continue to support the local emergency services including the local Fire Departments.
- Continue road improvements consistent with the Townships priority list and funding ability.
- Participate in continuing county-wide comprehensive waste management efforts, with emphasis on recycling.
- Continue the operation of the Township compactor stations.
- Monitor and explore the needs for the expansion of water, sewer, septage disposal/treatment and natural gas services as more development occurs.
- Develop expanded utility infrastructure to serve the rural portion of the Township.
- Monitor any oil and gas exploration and/or extraction, as well as power generation activities proposed or active in the area. Promote on-going groundwater testing in such areas to assess any impacts to the water quality in order to protect the natural resources.
- Work with County Road Commission to pursue road upgrades to provide a Class A designated route utilizing 4-Mile Road to Military to provide an alternative truck route.
- Continue to pursue the expansion of high-speed communications throughout the Township.
- Establish and maintain on-going communication with adjacent Townships regarding planned projects in order to facilitate joint projects, such as road improvements where wider shoulders could facilitate a cooperative and coordinated bicycle connector route.

CHAPTER 4 Future Land Use

The Planning Commission reviewed the future land use classifications from the prior 1997 *City of Grayling and Grayling Township Master Plan* in consideration and analysis of several factors including: existing land use patterns, social and economic characteristics, environmental conditions, available community services and facilities, existing land division patterns, property ownership, existing zoning and community goals and objectives. Following Planning Commission's review, it was determined that much of the earlier future land use map and categories still apply for the Township. The most significant change in the future land use presented in this 2014 plan is a new 'Planned Mixed Use' future land use category.

The recommended future land use plan identifies locations for five general land use classifications: residential, commercial, planned mixed use, public/recreation-conservation and river protection. Figure 4-1, Future Land Use Map, illustrates the distribution of future land uses by category. Activities anticipated within each of these land use categories are discussed below. Additionally, it should be noted that the State's Land Division Act of 1996 requires a lot size width to length ratio not to exceed one to four (1:4) for any new land divisions, to avoid the problem of "bowling alley" lots.

Residential

Low Density Residential

Residential development is primarily designed to accommodate single-family dwellings on lot sizes typically one acre and larger. Many of the parcels are five to ten acres in size. Community uses such as parks, churches, schools, libraries, and cemeteries may also be allowed in this area. Home based businesses may also be compatible in these areas provided the residential character of the neighborhood is preserved.

The residential designation is intended to preserve existing residential development where land has already been subdivided into smaller lots and to expand specific areas for future residential growth. In addition to areas identified for residential development on the future land use map, this document recognizes that rural residential development has occurred and will continue to occur in certain locations within the public/recreation-conservation areas of the Township. A number of residential areas have been designated, and the locations are shown on the Future Land Use Map, Figure 4-1.

Medium Density Residential

Residential development is primarily designed to accommodate single-family and two-family dwellings on a range of lot sizes, typically one-half acre to one acre lots. Community uses such as parks, churches, schools, libraries, and cemeteries may also be allowed in this area if designed to be compatible with the residential setting. Home based businesses may also be compatible in these areas provided the residential character of the neighborhood is preserved.

High Density Residential

Residential development designed to accommodate single family and two-family residential dwellings on smaller lot sizes, typically one-half acre or less. Community uses such as parks, churches, schools, libraries, and cemeteries may also be allowed in this area. Home based businesses may also be compatible in these areas provided the residential character of the neighborhood is preserved.

The high density residential designation is intended to accommodate the existing residential development where land has already been subdivided into smaller lots and to expand specific areas for future residential growth. The high density residential areas are provided in proximity to the commercial areas of the Township and the City of Grayling, and an area at the north end of Lake Margrethe.

High Density Residential/Multi-family

The area designated for future multi-family high density residential is located between the City of Grayling and I-75, as shown on Figure 4-1. Higher density residential development is designated for this area, since the area could potentially be served by municipal services if needed.

Commercial

The primary commercial services areas in Grayling Charter Township are designated along M-72 west of the City of Grayling, along Old 27 north of Grayling and northeast of the city. The combination commercial areas provided by Grayling Charter Township and the City of Grayling meet most of the commercial needs of area residents. Additionally smaller areas are identified at the south end of Lake Margrethe and east of the city along M-72.

This future land use plan recognizes that a few existing commercial businesses in outlying areas are operating in areas surrounded by non-commercial uses. This plan further recognizes that these businesses provide important products and services to nearby residents. The plan recommendations in no way intend to infringe upon their continuance or expansion of services or facilities.

Recommended uses for commercial areas designated on the future land use map include: retail stores, business and personal services, professional offices, food service, lodging facilities and similar uses.

Planned Mixed Use

The primary planned mixed use area is designated south of the City of Grayling and in proximity to the I-75 highway corridor, see Figure 4-1. A portion of this land has recently transferred from the State of Michigan to Kirtland Community College for the purpose of developing a Health Science Campus and ancillary facilities in near I-75 and Four Mile Road. In an effort to support this campus development and maintain some flexibility to promote other compatible development in the area, Grayling Charter Township has designated this area for planned

mixed use. The mix of uses may include a variety of commercial and industrial uses, that will be well served by easy transportation access to I-75, and well as campus support businesses which could include businesses such as a bookstore, gas station, restaurant, limited campus related housing, and similar uses. Commercial and industrial activities compatible with a campus setting are also recommended in this area.

A second small area is designated for planned mixed use east of the City of Grayling and on the south side on M-72, as shown on Figure 4-1.

Uses established in these areas should be environmentally friendly, and a landscape buffer should be provided between the industrial use and any non-industrial adjacent property. It is anticipated that such development would be compatible with the Planned Industrial/Commercial District zoning, which will provide the needed Township review and oversight to ensure compatibility of development in this area.

Public/Conservation-Recreation

Forested land is the most predominant land use currently existing in the Township, and the future land use plan recommends the preservation of these areas as much as possible. The State of Michigan and Military Board owns much of the forested land. The Military Board owns more than 48,000 acres of land in Grayling Charter Township for military training activities by National Guard at Camp Grayling. Grayling Charter Township maintains a good working relationship with Camp Grayling, which allows much of the land to be used for public recreational purposes when the military is not engaged in training sessions. The Township continues to work with the National Guard to ensure the natural resources which make the area unique are protected from degradation.

In addition to the land used for military maneuvers, there are approximately 23,000 acres of state land, much of which is forested and available for recreational use, with trails and campgrounds available, see Chapter 6 of the Crawford County 2014 Master Plan Update, for details regarding recreational facilities and trails in the area.

In areas designated as public/conservation-recreation category, privately owned lands may be used for single-family residences (both year-round or seasonal), private camps, hunting camps, forest products harvesting, and recreational uses. The protection of forested land, wetlands and nonforested open space is critical to preserving the rural character of Grayling Charter Township.

River Protection

A river protection category is designated to promote and support the protection of water resources and adjacent riverfront land. This future land use category, as mapped in Figure 4-1, designates a buffer area of 400 feet from the river shoreline. The Natural Rivers environmental protection requirements in the Township Zoning Ordinance are designed to implement this portion of the Future Land Use plan, and should be reviewed and updated as necessary. Recommended protection requirements may include, but are not limited to: erosion protection measures on shorelines, protection of water views, water quality protection measures,

waterfront density or access controls. Areas included in this category are adjacent to designated streams, and rivers in the Township, as shown in Figure 4-1.

The State of Michigan has designated several waterways within the Au Sable River system as "Natural River" under the Natural River Act. The Department of Natural Resources administers the Act, and they recommend special Natural River District zoning regulations, which Grayling Charter Township has adopted in the Township Zoning Ordinance and administers locally.

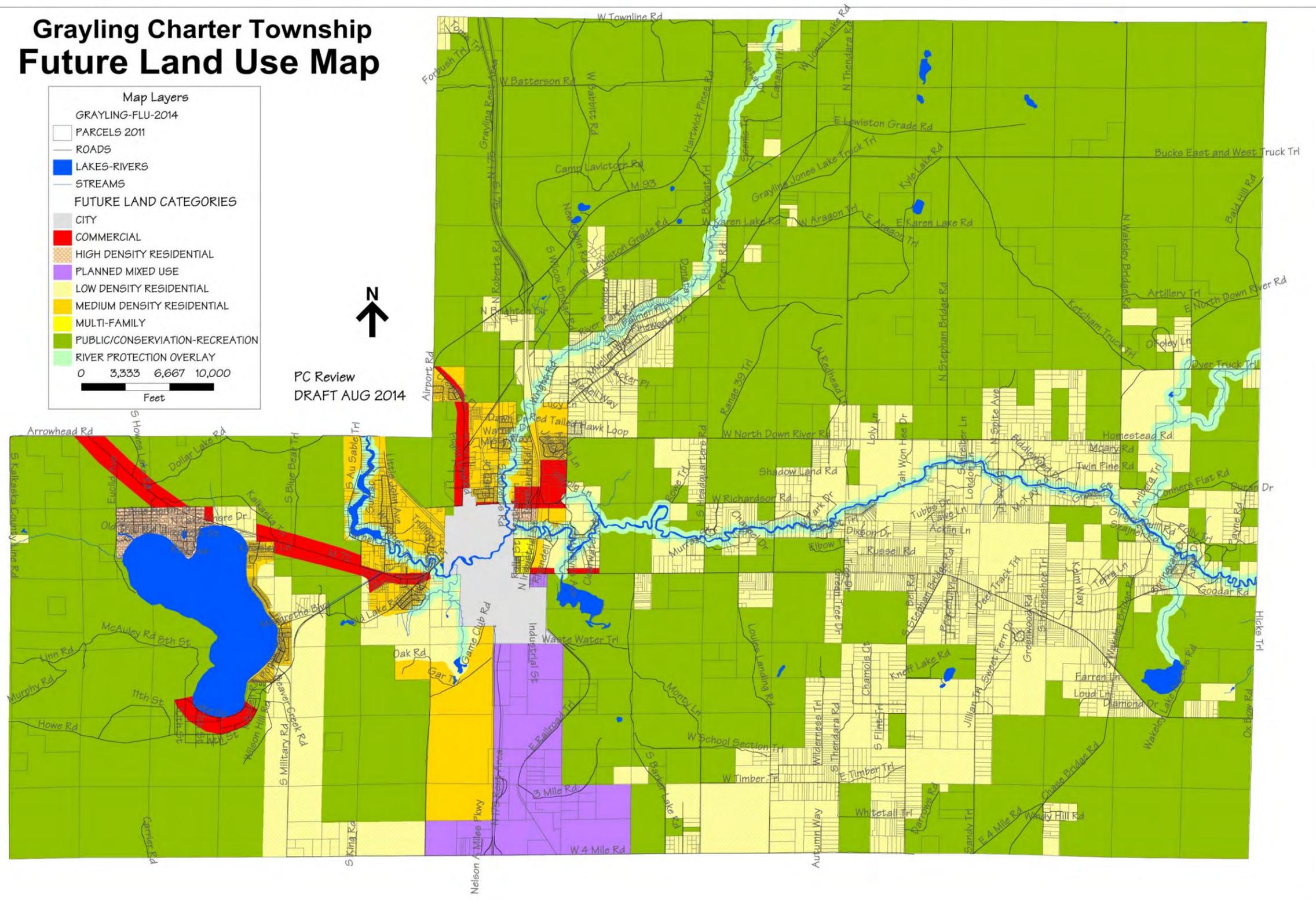
Grayling Charter Township Future Land Use Map

Map Layers
GRAYLING-FLU-2014

- PARCELS 2011
- ROADS
- LAKES-RIVERS
- STREAMS
- FUTURE LAND CATEGORIES
- CITY
- COMMERCIAL
- HIGH DENSITY RESIDENTIAL
- PLANNED MIXED USE
- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- MULTI-FAMILY
- PUBLIC/CONSERVIATION-RECREATION
- RIVER PROTECTION OVERLAY

0 3,333 6,667 10,000
Feet

PC Review
DRAFT AUG 2014



CHAPTER 5

Plan Adoption and Implementation

Draft Plan Circulated for Comments

The draft Grayling Charter Township Master Plan was transmitted to the Township Board for review and comment in September 2014. The Township Board approved the draft plan for distribution on September 17, 2014. Following the Board's approval for distribution the proposed plan was distributed to the adjacent Townships (Bear Lake, Beaver Creek, Frederic, Garfield, Lovells Maple Forest and South Branch), as well as to the City of Grayling and to Crawford and Kalkaska Counties on September 24, 2014 for review and comment. The comments were received from _____, and are provided below.

Public Hearing

A public hearing on the proposed Master Plan, for Grayling Charter Township as required by the Michigan Planning Enabling Act, as amended, was held on _____. The legally required public hearing notice was published in the _____ on _____ as well as on the Township website. A copy of the public hearing notice is reproduced at the end of this chapter. During the review period, the draft plan was available for review on the Township's website, at the Township office, or by contacting the Grayling Charter Township Clerk.

The purpose of the public hearing was to present the proposed Master Plan to accept comments from the public. In addition to the Planning Commission members, _____ Township Board members, and _____ residents and/or business owners of the township attended the public hearing. Minutes from the Public Hearing are provided at the end of this chapter.

The public hearing began with a brief explanation of the planning process. Plan development included several Planning Commission and steering committee workshop meetings, and public input sessions. During the hearing, maps of existing land use, color coded resource, and proposed future land use recommendations were presented.

Plan Adoption

At a Planning Commission meeting following the public hearing on _____, the Planning Commission discussed the comments received. The Planning Commission took action to formally adopt the Grayling Charter Township Master Plan - Update, including all the associated maps by resolution on _____.

Per the Michigan Planning Enabling Act, as amended, on _____, the Township Board asserted the right to approve or reject the plan. The Township Board formally adopted the plan on _____.

Legal Transmittals

Michigan planning law requires that the adopted Master Plan be transmitted to the Township Board, as well as to the adjacent Townships and the County Planning Commission. Copies of these transmittal letters appear at the end of this chapter.

Plan Implementation

A Master Plan is developed to provide a vision of the community's future. It is designed to serve as a tool for decision making on future development proposals. A Master Plan will also act as a guide for future public investment and service decisions, such as the local budget, grant applications, road standards development, community group activities, tax incentive decisions, and administration of utilities and services.

According to the Michigan Zoning Enabling Act, comprehensive planning is the legal basis for the development of a zoning ordinance. Section 203 of the Act states: "The zoning ordinance shall be based on a plan designed to promote the public health, safety and general welfare, to encourage the use of lands in accordance with their character and adaptability, to limit the improper use of land, to conserve natural resources and energy, to meet the needs of the state's residents for food, fiber, and other natural resources, places of residence, recreation, industry, trade, service, and other uses of land, to insure that uses of the land shall be situated in appropriate locations and relationships, to avoid the overcrowding of population; to provide adequate light and air; to lessen congestion of the public roads and streets, to reduce hazards to life and property; to facilitate adequate provision for a system of transportation, sewage disposal, safe and adequate water supply, education, recreation, and other public requirements, and to conserve the expenditure of funds for public improvements and services to conform with the most advantageous use of land resources, and properties."

Zoning

The Zoning Ordinance is the most important tool for implementing the Master Plan. Zoning is the authority to regulate private use of land by creating land use zones and applying development standards in various zoning districts. Grayling Charter Township is covered by the Grayling Charter Township Zoning Ordinance regulating land use activities.

In accordance with the Michigan Planning Enabling Act, Table 5-1, shows the relationship between the Future Land Use Categories as described in Chapter 4 and the zoning districts as described and regulated in the Grayling Charter Township Zoning Ordinance.

Table 5-1 Grayling Charter Township FUTURE LAND USE CATEGORIES AS RELATED TO ZONING DISTRICTS		
Future Land Use	Zoning District	
Public/Conservation-Recreation	DD	Deferred Development
Low Density Residential	R-F	Recreational-Forest
Medium Density Residential	R-1	S-F Residential
High Density	R-2	General Residential
High Density/Multi-family	R-3	Gen. Residential Association
Commercial	C-1	General Commercial
	C-2	Heavy Commercial
Planned Mixed Use	MU	General Commercial
		Heavy Commercial
		Industrial
Residential	PUD	Planned Unit Development
Commercial		
Commercial	C-1	General Commercial
	C-2	Heavy Commercial
Planned Mixed Use	PI/PC	Planned Industrial/Commercial
	C-1	General Commercial
	C-2	Heavy Commercial
	I	Industrial
River Protection	NRD	Natural River District

The first Zoning Ordinance was adopted in 1982. The current ordinance was adopted on 2010 and was last amended in _____. The Zoning Ordinance should now be reviewed to ensure the Ordinance is consistent with the goals and the Future Land Use as presented in this Master Plan. Grayling Charter Township intends to update the Zoning Ordinance consistent with the Township's vision for the future and provide development options to better meet the goals of this plan.

Grants and Capital Improvement Plan

The Master Plan and Recreation Plan can also be used as a guide for future public investment and service decisions, such as the local budget, grant applications and administration of utilities and services. Many communities find it beneficial to prioritize and budget for capital improvement projects, such as infrastructure improvements, park improvements, etc. A Capital Improvements Program (CIP) is one tool which is often used to establish a prioritized schedule for all anticipated capital improvement projects in the community. A CIP includes cost estimates and sources for financing for each project, therefore can serve as both a budgetary and policy document to aid in the implementation of a community's goals defined in the Master Plan.

Grayling Charter Township Notice of Public Hearing

Grayling Charter Township Planning Commission Public Hearing - Minutes

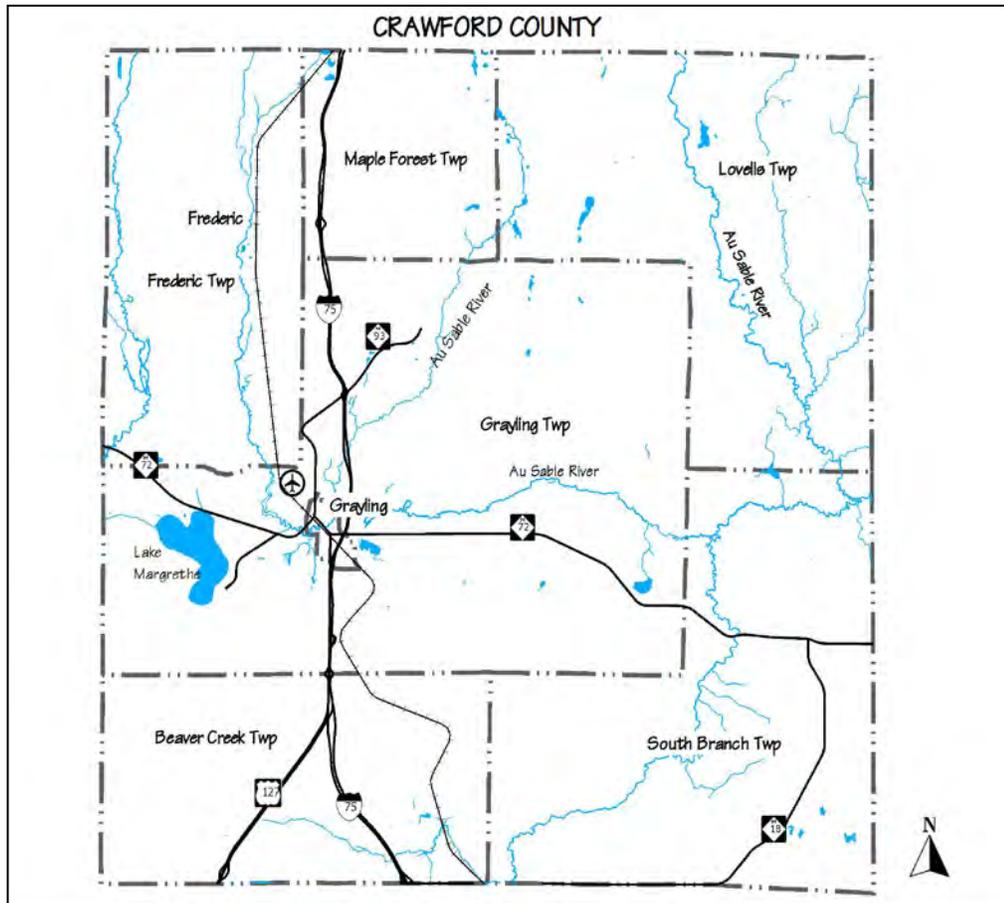
Grayling Charter Township Planning Commission Resolution

Grayling Charter Township Board Meeting Minutes

Grayling Charter Township Board Resolution

Copy of transmittal of adopted plan to adjacent Townships and Counties

Crawford County 2014 Master Plan Update



Post Public Hearing Draft –Sept. 2014

Public Hearing: 6pm, Wed June 4, 2014
Commissioner's Room, Crawford County Building,
200 W. Michigan Ave, Grayling.

Prepared by:
Crawford County Planning Commission

With Assistance from:
M. C. Planning & Design
In partnership with
Northeast Michigan Council of Governments

Crawford County
2014 Master Plan Update
Including Recreation Plan

Prepared by:
Crawford County Planning Commission:

Cris Jones, Chair
Rick Anderson
Bernie Feldhauser
Rick Harland
Brian Hulbert
William Johnson
Gary Newman
Erich Podjaske
Lee Riley

With Participation and Assistance from:
Justin Andre
Joe Duran

Adopted
Planning Commission: _____
County Board of Commissioners: _____

With Assistance from:
M.C. Planning & Design
In partnership with
Northeast Michigan Council of Governments

CRAWFORD COUNTY
MASTER PLAN UPDATE 2014

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Appendices [to be added later]

Chapter 1 - Introduction



Crawford County is located in the north central Lower Peninsula of Michigan. The county is composed of six townships: Grayling Township, Frederic Township, Maple Forest Township, Lovells Township, South Branch Township, and Beaver Creek Township. Also located in Crawford County is the City of Grayling, which is the county seat (**Figure 1.1**).

Crawford County is approximately 35 miles from Lake Michigan and approximately 55 miles from Lake Huron. It is bordered on the east by Oscoda County, on the south by Roscommon County, on the west by Kalkaska County, and on the north by Otsego County. Crawford County has a land area of 556 square miles and a population of 14,074. Its population density is 25.3 people per square mile.

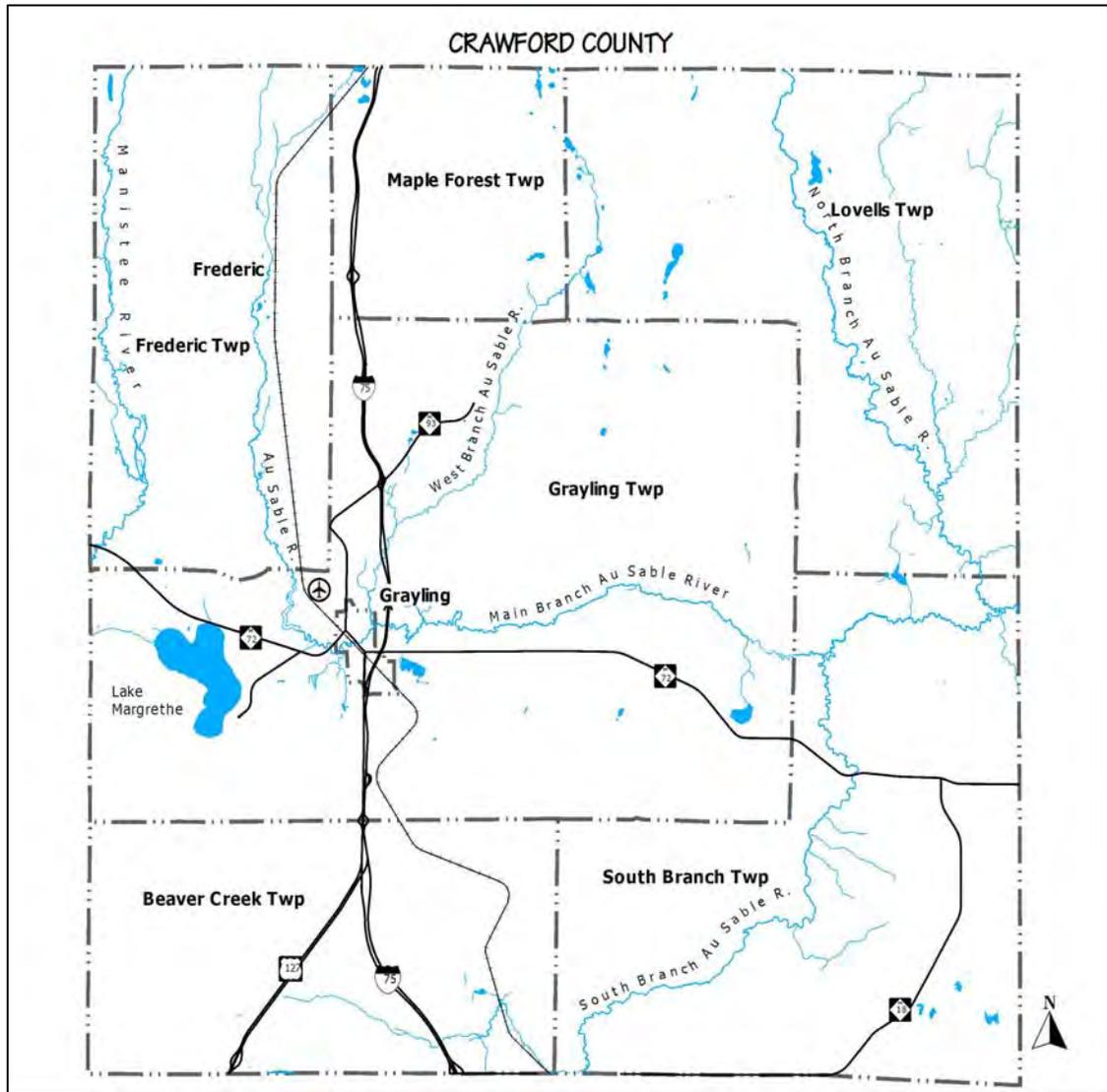


Figure 1.1

Purpose and Planning Process

The Crawford County Planning was formed under County Planning Act 282 of 1945, and under that law commenced updating the Master Plan. In 2008 the Michigan Planning Enabling Act, P.A. 33 of 2008, replaced the County Planning Act. In accordance the planning act a county may adopt, amend, and implement a master plan. The Michigan Planning Enabling Act states: *The general purpose of a master plan is to guide and accomplish, in the planning jurisdiction and its environs, development that satisfies all of the following criteria:*

- (a) *Is coordinated, adjusted, harmonious, efficient, and economical.*
- (b) *Considers the character of the planning jurisdiction and its suitability for particular uses, judged in terms of such factors as trends in land and population development.*
- (c) *Will, in accordance with present and future needs, best promote public health, safety, morals, order, convenience, prosperity, and general welfare.*
- (d) *Includes, among other things, promotion of or adequate provision for 1 or more of the following:*
 - (i) *A system of transportation to lessen congestion on streets.*
 - (ii) *Safety from fire and other dangers.*
 - (iii) *Light and air.*
 - (iv) *Healthful and convenient distribution of population.*
 - (v) *Good civic design and arrangement and wise and efficient expenditure of public funds.*
 - (vi) *Public utilities such as sewage disposal and water supply and other public improvements.*
 - (vii) *Recreation.*
 - (viii) *The use of resources in accordance with their character and adaptability.*

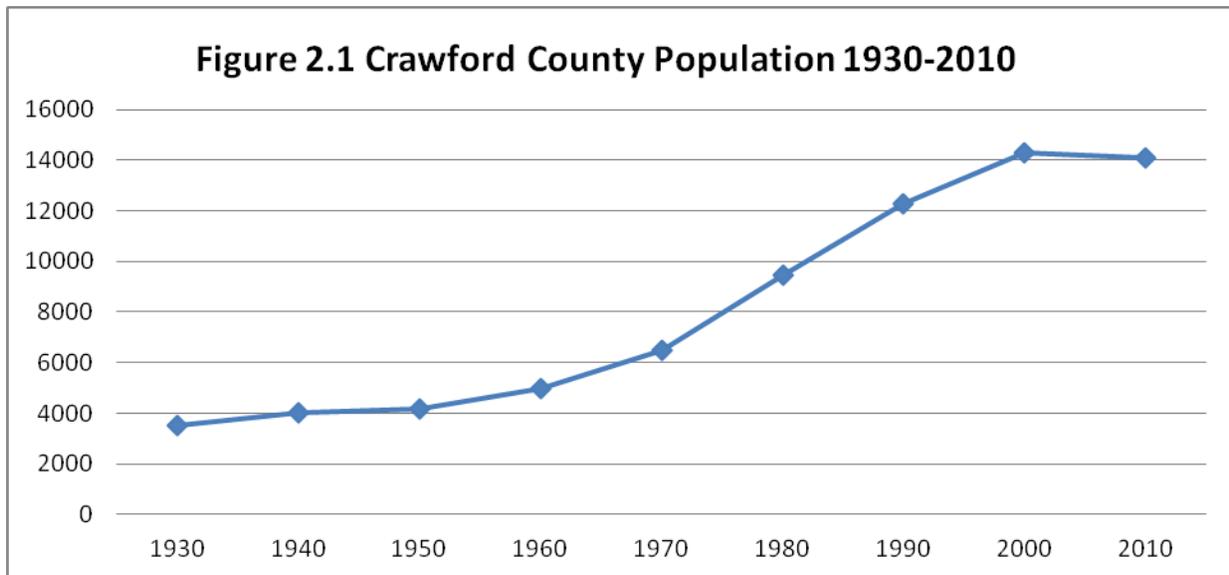
M.C. Planning & Design in Partnership with NEMCOG, assisted the Crawford County Planning Commission in preparing the 2014 Master Plan Update, which is based in large part on the 2009 Master Plan (prepared with assistance from NEMCOG). Since Crawford County no longer administers zoning in unincorporated areas of the county, this master plan does not address future land use in detail. Future land use planning is addressed at the township and city level in their respective master planning processes, and those local future land use maps are compiled and in this 2014 Master Plan Update. This plan presents background information on social and economic data, natural resources, existing community services and facilities, and existing land cover. The background information is used to identify important characteristics, changes and trends in County. Community zoning maps and future land use maps were stitched together to form composite maps that were reviewed and analyzed for consistency and boundary conflicts. As part of the 2014 Master Plan Update, a recreation plan component was incorporated. Both the County Planning Commission and the Grayling Recreation Authority sponsored public input sessions and additional public meetings during the planning process to solicit public input. Other community workshops and surveys were reviewed to gain an understanding of the issues and concerns of county residents, landowners and local officials. In addition, results of workshops conducted by several townships during their own master plan development and subsequent township goals and objectives were reviewed. Based on this information, the County Planning Commission developed and refined goals and recommendations. The final component involved an analysis of public lands that may be appropriate for transfer into private ownership, and would benefit the county and local communities.

Chapter 2 - Social and Economic Conditions

Population

The 2010 Census showed that Crawford County had population of 14,074, which equated to a 1.4% decline in population from the 2000 US Census. Prior to this, Crawford County had experienced 50-year trend of population gains. a steady growth in population until the latter part of the 2000's, as seen in **Figure 2.1**. Population is concentrated in the City of Grayling and Grayling Township area with other population centers located in South Branch, Beaver Creek and Frederic Townships.

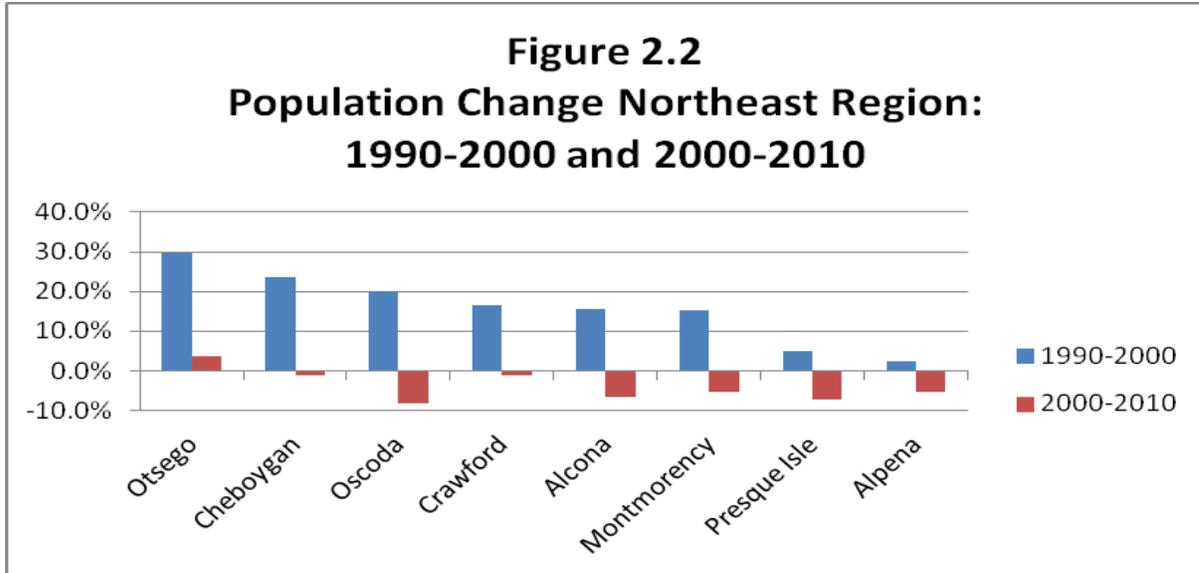
Further examination of the demographics shows Crawford County's population is aging at a higher rate than the State and Nation. Shifting population bases create new demands on community services and emergency response.



Source: U.S. Census Bureau

The population density for the County averages 25.3 persons per square mile, although 55 percent of the County population is located in Grayling Township or the City of Grayling.

Similar to the majority of the eight counties that make up the Northeast Region, Crawford experienced considerable population growth during the last decade. With the exception of Alpena and Presque Isle Counties, all the counties in the region between 1990 and 2000 experienced growth rates that ranged from 15 to 30 percent, but the population of Crawford County declined between 2000 and 2010. See **Figure 2.2** for a comparison of the population changes by county from 1990 to 2000, and from 2000 to 2010.



Source: U.S. Census Bureau

Population by Municipality

Beaver Creek, Lovells, Maple Forest and South Branch Townships experienced population growth over the past decade. The City of Grayling, Frederic and Grayling Townships experienced population declines and resulted in the county as a whole showing a population loss over the past decade. **Table 2.1** shows population trends for communities in the County.

Municipality	2000 Population	2010 Population	Percent Change	Numeric Change
Crawford County	14,273	14,074	-1.4%	-199
City of Grayling	1,952	1,884	-3.5%	-68
Beaver Creek Township	1,486	1,736	16.8%	250
Frederic Township	1,401	1,341	-4.3%	-60
Grayling Township	6,516	5,827	-10.5%	-689
Lovells Township	578	626	8.3%	48
Maple Forest Township	498	653	31.1%	155
South Branch Township	1,842	2,007	9.0%	165

Source: U.S. Bureau of the Census
 Note: Red text indicates decline and green text indicates increase

Seasonal Population

Obtaining accurate numbers of seasonal residents and tourists is difficult. Because the U.S. Census is conducted each decade in April, the numbers only reflect those persons who live in the county on a year-round basis. Tourism and annual events can provide large increases in population on any one weekend. The Weyerhaeuser AuSable River Canoe Marathon in July can attract as many as 50,000 people to area.

A rough estimate of the number of county seasonal residents can be calculated by multiplying the number of county seasonal housing units by the county's average number of persons per household. The 2010 Census showed that there were 4,535 seasonal housing units in the county and an average household size of 2.5 persons. Considering the additional influx of seasonal visitors or tourists staying in area motels, campgrounds, or family homes, a spike in population could increase the County population by more than 10,000 persons during certain times. These spikes in populations should be acknowledged when identifying hazard mitigation strategies.

Age Distribution

According to the 2010 Census, Crawford County's year round population was 14,074 persons. This figure represents a loss of 199 persons or 1.4 percent from the 2000 Census. Even with the loss, the age group of 45 years and older gained population, increasing by 1,571 persons (26% increase). However, the county experienced losses in age groups that represent young families. Youth age group (19 years and younger) lost 703 persons (18.4% decrease) and the adult age group (25-44 years of age) declined by 1,073 persons (28.3% loss). See **Figures 2.3** and **2.4**, and **Table 2.2**.

The median age of the County has increased from 34.7 years in 1990, to 40.6 years in 2000, and to 47.7 years in 2010. At the same time the State's median age increase from 32.5 to 38.9 years. The difference in median age between the County and State increased from 1990 to 2010 as the County's population make-up "ages" at the faster rate, **Figure 2.3**

In conclusion, shifts in the County's demographic make-up are changing the population structure. Long term trends in the increase in median age continue at the faster rate than the State of Michigan and US. The rate has increased with the down turn in the economy, as young families move to other areas for employment. An aging population needs access to social and medical services. The county's emergency response services will experience an increase in demands.

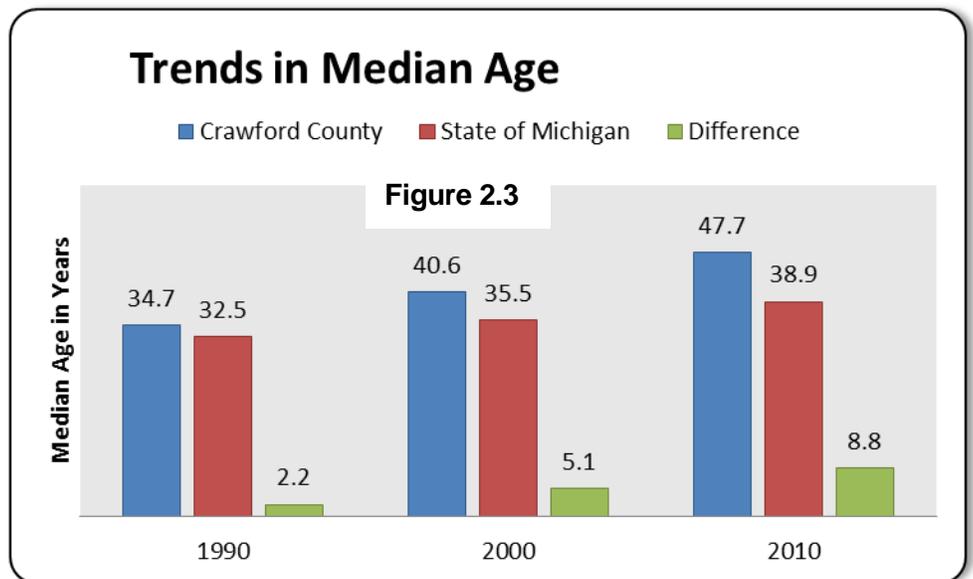


Figure 2.4

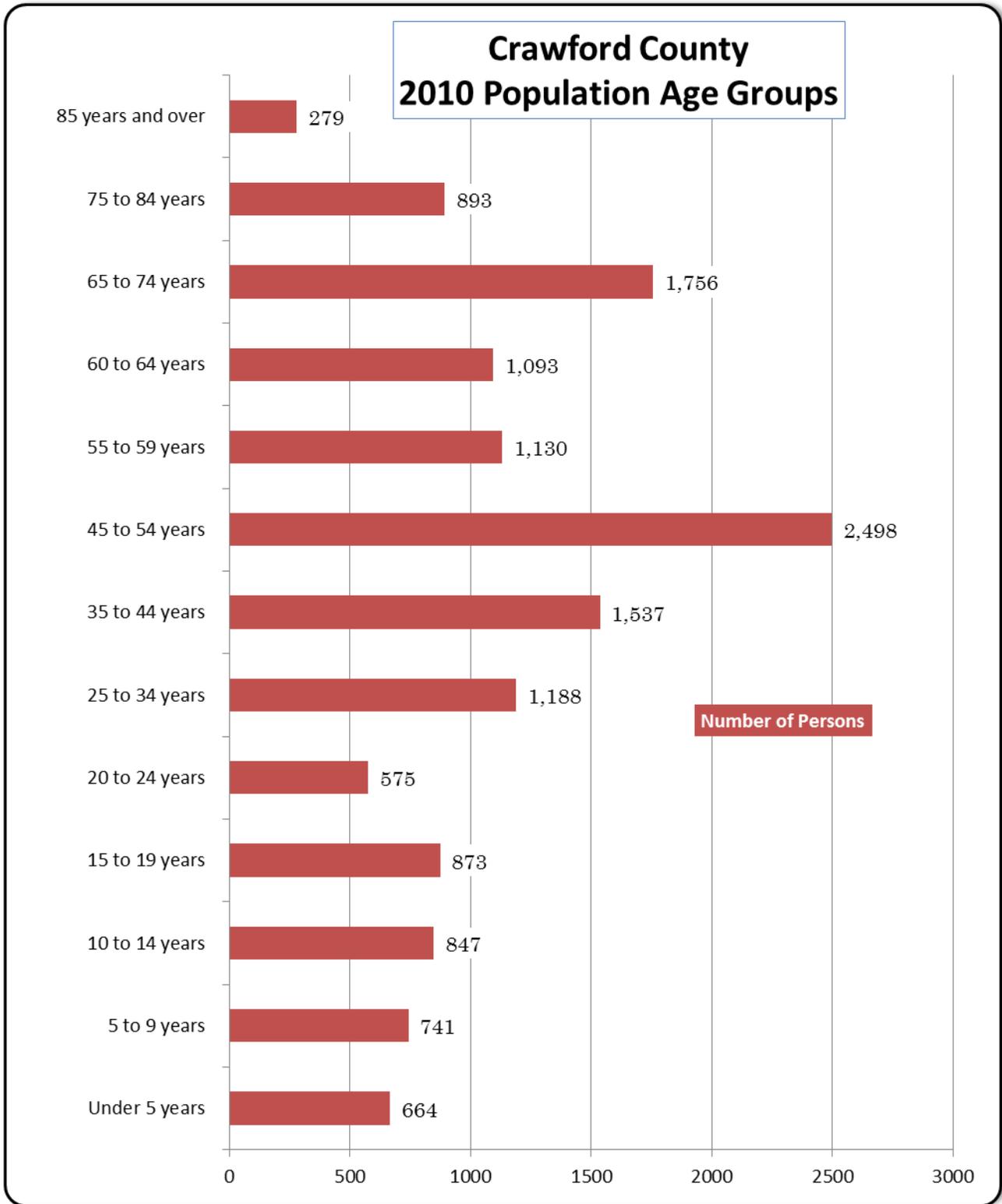


Table 2.2
Age Distribution By Municipality For Crawford County - 2010

MUNICIPALITY	< 5 Yrs.	%*	5-19 Yrs.	%*	20-24 Yrs.	%*	25-44 Yrs.	%*	45-64 Yrs.	%*	65 Yrs. & >	%*	Median Age
City of Grayling	124	6.6	385	20.4	118	6.3	450	23.9	417	22.1	390	20.8	38.6
Beaver Creek Township	67	3.9	330	19.0	67	3.9	317	18.3	601	34.7	354	20.3	47.8
Frederic Township	62	5.2	243	18.1	53	4.0	266	19.9	456	34.0	261	19.4	47.5
Grayling Charter Township	282	4.8	1019	17.5	241	4.1	1137	19.4	2009	34.6	1139	19.6	45.0
Lovells Township	14	2.2	63	10.0	14.0	2.2	71	11.4	258	41.2	206	32.9	57.5
Maple Forest Township	28	4.3	126	19.3	19	2.9	129	19.8	235	36.0	116	17.7	46.8
South Branch Township	87	4.3	295	14.7	63	3.1	355	17.7	745	37.1	462	23.0	50.8
Crawford Co.	664	4.7	2461	17.5	575	4.1	2725	19.3	4721	33.5	2928	20.8	47.7

*Figure shows the percentage each age grouping represents of the local unit's total population.
Source: U.S. Bureau of the Census

Race and Ethnic Composition

Information found below on **(Table 2.3)** shows that Crawford County has a very small minority population and that statistic has changed relatively little over the last several decades. The respondents were given the opportunity to choose more than one race category.

Table 2.3
Population By Race And Ethnicity For Crawford County 2010

	Number of Persons	% of Total Population
White	13,721	97.5%
African American	51	0.4%
American Indian	76	0.5%
Asian	52	0.4%
Pacific Islander	1	>0.1%
Other Race	17	0.1%
Two or More Races*	156	1.1%
Hispanic or Latino Origin**	182	1.3%
Total	14,074	100.0%

* Census 2010 - opportunity to choose more than one race category.

** Persons of Hispanic or Latino Origin may be of any race.

Source: U.S. Bureau of the Census

Education

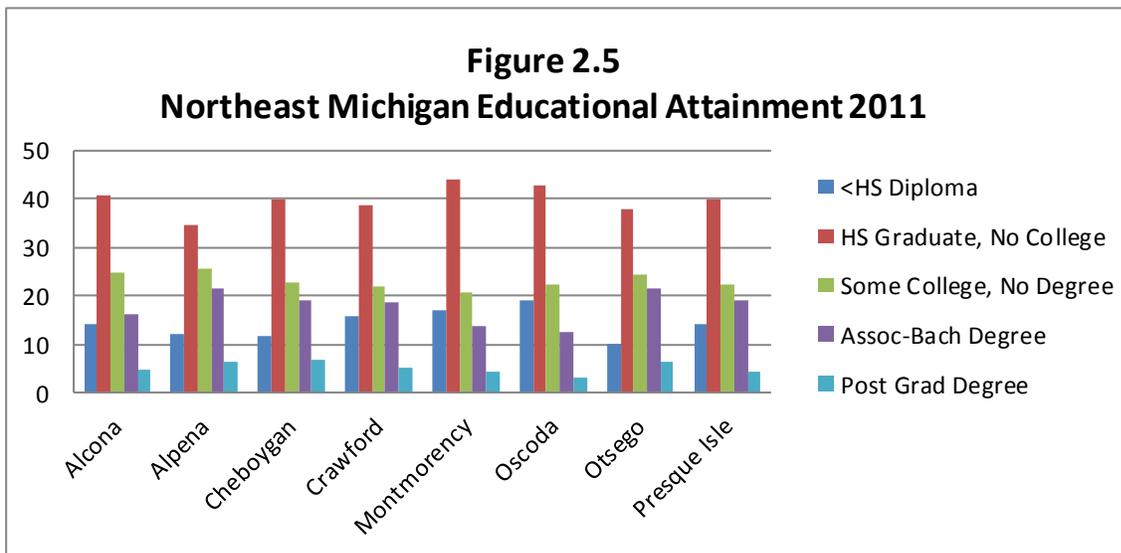
Since 1990, Crawford County has continued to make increases in educational attainment as shown by **Table 2.4**. The percent of people in Crawford County age 25 and older who have earned a high school diploma or higher has increased from 73.6 percent in 1990 to 84.4 percent in 2010. There were also significant increases in the number and percent of persons with associates, bachelors, graduate or professional degrees.

Degree	2000		2007-2011	
	Number	Percent	Number	Percent
Less than 9 th grade	436	4.4	341	3.3
9 th to 12 th no Diploma	1,457	14.8	1,290	12.4
High School Diploma	3,715	37.6	4,010	38.6
Some college no degree	2,342	23.7	2,288	22.0
Associates	643	6.5	915	8.8
Bachelors	845	8.6	1,041	10.0
Graduate or Professional	433	4.4	515	5.0

Source: U.S. Bureau of the Census 2000 and American Community Survey 2007-2011

Other encouraging news shown by the 2010 census the numbers of persons who only completed 9th to 12th grade and had no diploma and those who had less than a 9th grade have continued to decrease.

On a regional scale, post-secondary educational attainment is more likely to be found in the counties of Alpena, Cheboygan, Crawford and Otsego than in the other Northeast Michigan counties (**Figure 2.5**). This is not surprising, given the fact that community colleges are located in or very near these four counties. Access to four-year colleges and advanced training opportunities are also more readily available in these counties, as are jobs in the manufacturing sector. Some of these jobs require post-secondary education or training.



Persons age 25 years or over.

Source: American Community Survey 2007-2011

Both **Figure 2.6** and **Table 2.5** show the educational attainment of Crawford County and its individual municipalities as compared to the state and national level. Both Michigan and the U.S. have a higher percentage of people with a Bachelor's Degree or higher. There are comparable levels of people with some college experience in the county, state, and nation. On average, the percentage of people with only 9th – 12th grades or a high school education is greater in Crawford County and its municipalities than Michigan and the U.S. Of all the municipalities, Grayling Township appears to have the highest level of education attained. However, the overall education level is lower in the county than in the Michigan or the U.S.

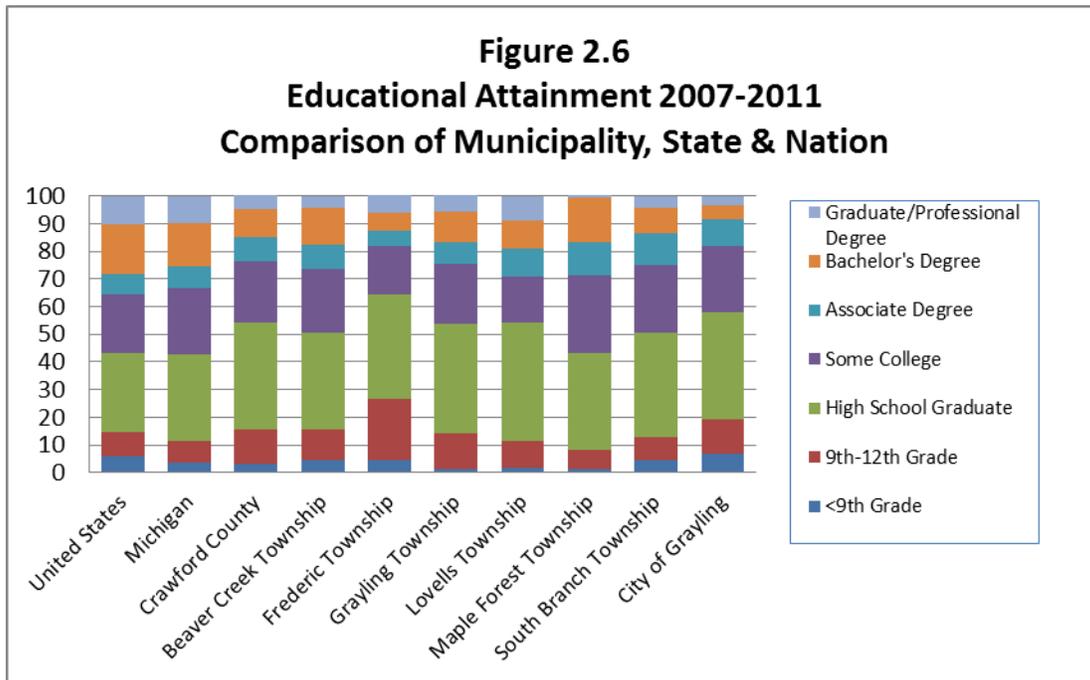


Table 2.5
Education Attainment – U.S., Michigan, Crawford County, and Municipalities

Governmental Unit	Less than 9th Grade	9th - 12th Grade	High School Graduate	Some College	Associate Degree	Bachelor's Degree	Graduate/ Professional Degree
United States	6.1	8.5	28.6	21.0	7.6	17.7	110.5
Michigan	3.5	8.1	31.1	23.8	8.2	15.6	9.7
Crawford County	3.3	12.4	38.6	22.0	8.8	10.0	5.0
Beaver Creek Township	4.7	11.0	34.9	23.0	8.8	13.4	4.1
Frederic Township	4.7	22.0	37.8	17.2	5.9	6.5	6.0
Grayling Township	1.2	12.8	39.9	21.6	7.9	11.1	5.6
Lovells Township	1.7	9.6	43.0	16.7	10.0	10.0	9.0
Maple Forest Township	1.5	6.5	35.0	28.2	12.1	16.2	0.6
South Branch Township	4.6	8.1	37.9	24.5	11.6	8.8	4.4
City of Grayling	6.8	12.4	38.9	23.8	9.6	5.0	3.4

Source: American Community Survey 2007-2011

Economic Overview

As with much of northern Michigan, Crawford County has long been an area of high poverty, low incomes, and unemployment. This problem is due largely to the lack of high paying, year-round employment for local residents. Although less obvious in Crawford County, Michigan's economic boom during the 1990s did bring positive economic results. The retail and service sectors have grown, particularly in health care and tourism related fields. Crawford County has become better known in the State as a recreation and retirement destination. Favorable land prices have helped draw new residents and seasonal visitors to the area. The County's high quality of life, including an abundant natural resource base, has helped sustain the local economy.

Income and Poverty

Income and poverty statistics for Crawford County show that, although median income in the county has increased by 28 percent, it is still considerably lower than the State. The gap has narrowed over the last few decades to less than 30 percent (**Table 2.6**). From 1990 to 2000, the poverty rate in Crawford County had modest declines in all categories (**Table 2.7**). The poverty rate for families with children had only a small reduction of 0.8 percent, while the rate for families with a female householder with no husband present dropped by 4.5 percent. The poverty rate of all individuals dropped by 1.9 percent. Unfortunately, with the economic downturn of the late 2000s, the percent of those living in poverty, as of 2010, rose for most of the categories as seen in **Table 2.7**

Year	Crawford County	Michigan
2000	\$37,056	\$53,457
2010	\$47,500	\$60,895

Source: American Community Survey 2007-2011

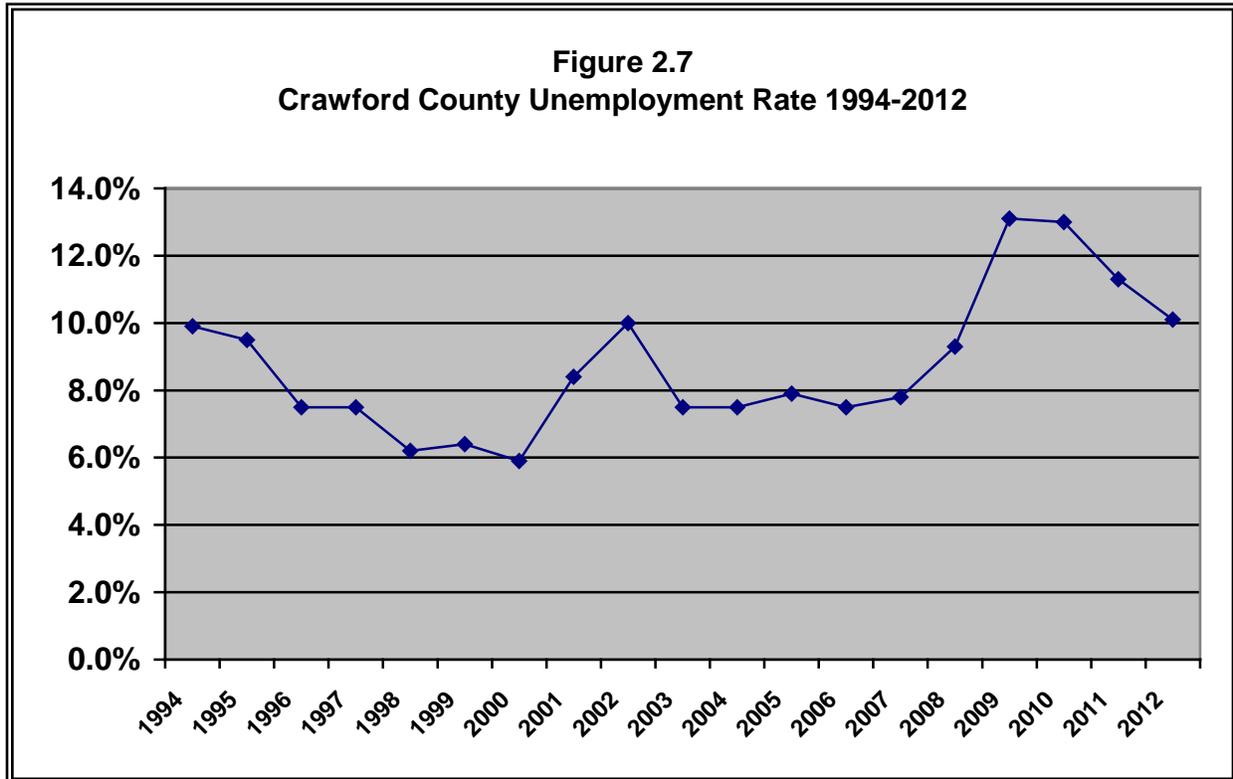
Category	1990	2000	2007-2011
	Percent	Percent	Percent
Individuals	14.6%	12.7%	17.0%
Families	10.8%	10.0%	12.1%
Families, no husband present	35.8%	31.3%	27.0%
Individuals 65+	11.8%	7.6%	8.7%

Source: U.S. Bureau of the Census and American Community Survey 2007-2011

Employment and Unemployment

Figure 2.7 shows that the county's unemployment rate is again increasing after a period of decline from 1994 to 2000. The unemployment rate peaked in 1994 at 9.9 percent and declined steadily until 1998. The rate remained more or less steady at about 6 percent until 2000. Between 2000 and 2002 the rate rose 2 percent, peaking at 8 percent unemployment rate. As was the case with the State and most of the Country, a slowing national economy exacerbated by the terrorist attack of September 11 were the primary causes for Crawford County's 1.1 and 1.2 percent rise in the unemployment rate for

this time period. These increases were the largest in nine years, and unemployment rose to its highest level since 1995. Following this period, the unemployment rate gradually fell to 6.7 percent by the year 2005. Current data indicates that the jobless rate increased to a recent annual average high of 13.4 percent in 2009, but the annual average rate had improved to 10.1 percent by 2013. Crawford County's unemployment rate has historically been 3 to 4 points higher than the State and has mirrored the State's trend.



Employment in Crawford County is most likely to be found in the retail sector, government or services. The top job producers in Crawford County are much the same as found in other Northeast Michigan counties: service sector (approximately 28%), followed by the government sector and retail employment at approximately 24 percent and 21 percent respectively. The county's percentage of jobs in the government sector is the highest percentage in that sector of any in Northeast Michigan (Alpena County, however, has a higher number of government jobs). The county's manufacturing sector is approximately 16 percent of the county's wage and salary employment and "other" employment makes up approximately 68 percent. The smallest sector of the county's economy is employment in mining and construction (less than 4% of the wage and salary employment).

Housing Stock

Over past decades, Crawford County has experienced a steady increase in number housing units, with a high percentage used as seasonal housing. New housing starts drastically dropped in 2008 with the down turn in the U.S. economy.

Housing characteristics from the 2010 US Census are presented in **Tables 2.9** and **2.10**. The Census identified 11,092 housing units with 6,016 units occupied and 5,076 units vacant within Crawford

County. Grayling Township has the most housing units at 4,289 units (39% of the county total). As in many areas of northern Michigan, Crawford County has a large percentage of seasonal housing units, nearly 41 percent. Frederic, Lovells, and South Branch Townships have percentages of seasonal housing units greater than 40 percent. The City of Grayling has a very low percentage of seasonal housing units (2.25%).

Over past decade, the number of residential housing units in the county increased by 10.5 percent (1,050 units) while the permanent population actually decreased by 1.4 percent (199 persons). **Table 2.9** shows that between 2000 and 2010, Crawford County's total number of persons per household decreased from 2.42 to 2.31 persons.

The percentage of the occupied housing units which are owner-occupied in Crawford County have remained stable over the last decade at approximately 82. Vacancy data is one measure of the availability of housing in a community. Sufficient housing stock, for both owner-occupied and renter-occupied, must be provided to accommodate an expanding population base. According to the Census, Crawford County's housing market vacancy rate was remarkably low in 1990 and 2000, but increased in 2010 (**Table 2.8**). Throughout the county, owner and renter vacancy rates increased between 2000 and 2010. In 2010 the greatest percent vacancy rate in the County was 13% in Frederic Township. Typical normal vacancy rates of owner-occupied housing are nationally about 5 percent. Crawford County's low percentage indicates a tight housing market and an inadequate supply of available units for new residents. This situation indicates that the demand for housing is not being met through the existing housing stock.

Housing characteristics by municipality are found in **Table 2.9**. As in many areas of northern Michigan, townships in Crawford County have a large percentage of seasonal housing units, particularly in Lovell Township where 67.1% (694 dwellings) are seasonal units. Other areas with high percentages of seasonal housing units are the Townships of South Branch (48%), Beaver Creek (40%), Maple Forest (39%), and Grayling (38%). The City of Grayling has a very low percentage of seasonal housing units (1.2%). Seasonal units are often located on rivers and lakes and can vary from excellent to substandard. Many lots platted in the 1920's or 1930's are substandard in size, have private wells and use outdated or inadequate wastewater practices.

Housing Characteristics	2000	2010	% Change
Total Housing Units	10,042	11,092	10.5%
Total Occupied Units	5,625	6,016	7.0%
Owner-Occupied (#)	4,655	4,937	6.1%
Owner-Occupied (%)	82.8%	82.1%	-0.8%
Renter-Occupied (#)	970	1,079	11.2%
Renter-Occupied (%)	17.2%	17.9%	4.1%
Total Vacant Units	4,417	5,076	14.9%
Seasonal Units	4,112	4,535	10.3%
Vacancy Rate:*			
Owner (%)	1.7%	3.4%	
Renter (%)	6.3%	10.1%	
Persons Per Household	2.45	2.31	-5.7%
*Includes units that are vacant, for sale or rent; does not include seasonal units			
Source: U.S. Bureau of the Census			

Municipality	Total* Units	Total Occupied	% Owner Occupied	% Renter Occupied	Total Vacant	% Seasonal*	Vacant % Owner	Vacant % Renter
Crawford County	11,092	6,016	82.1	17.9	5,076	40.9	3.4	10.1
City of Grayling	890	764	47.0	53.0	126	2.2	5.3	11.4
Beaver Creek Township	1,317	733	89.7	10.4	584	39.8	3.9	5.0
Frederic Township	1,231	576	85.9	14.1	655	47.6	2.7	13.3
Grayling Township	4,289	2,464	85.2	14.8	1,825	38.0	2.7	11.7
Lovells Township	1,034	315	91.4	8.6	719	67.1	5.9	0.0
Maple Forest Township	470	263	89.4	10.6	207	38.5	5.2	3.3
South Branch Township	1,861	901	89.2	10.8	960	48.4	2.9	3.9
*Total number of housing units for each municipality **Percent of total housing units used as seasonal housing Source: U.S. Bureau of the Census								

When analyzing the county's housing stock, it is important to look at the age of the housing units. Typically, after 30 years, homes are in need of upgrade, repair and/or replacement of major systems such as roofs, heating, plumbing and electrical. As illustrated in **(Table 2.10)**, 41.9 percent of all housing units in Crawford County were at least 30 years old and almost 20 percent of the housing units in the county that were built between 1970 and 1979 will be reaching 30 years old over the course of this decade. Nearly a quarter of the housing units in the county were constructed before 1959.

The American Community Survey (2007-2011) estimates that the large majority of homes in Crawford County (80.6%) are single family detached stick built structures. Mobile homes are a popular housing option in the county and are estimated to make up 15.3 percent of the housing units in the County. Multi-family dwellings are estimated to be 3.6 percent of the housing units and the remainder of the housing units (3.6%) is other housing options such as a boat, RV, or van.

Year Structure Built	Number	Percent
2005 or later	245	2.2
2000 to 2004	577	5.2
1990 to 1999	1,659	15.0
1980 to 1989	1,802	16.3
1970 to 1979	2,820	25.5
1960 to 1969	1,574	14.2
1950 to 1959	940	8.5
1940 to 1949	608	5.5
1939 or earlier	841	7.6
Total	11,066	100
Source: US Census Bureau, American Community Survey 2007-2011		

Chapter 3 - Community Services and Facilities

Public Water Supply

The Department of Environmental Quality (DEQ) has primary enforcement authority in Michigan for the Federal Safe Drinking Water Act under the Michigan Safe Drinking Water Act. The DEQ has regulatory oversight for all public water supplies including approximately 1,500 community and 11,000 non-community water supplies. The program also regulates drinking water well drilling for approximately 25,000 new domestic wells drilled each year. Michigan has over 1.12 million households served by private wells, more than any other state. Like most of northern Michigan, Crawford County's only source of drinking water is groundwater. Public water supply for the County is summarized below:

Private Wells: Most of Crawford County's land area is served by private wells and 2,645 of these wells supply water to County residents. If drinking water comes from a private well, the owner is responsible for the water's safety. EPA rules do not apply to private wells, but the agency recommends that well owners have their water tested annually.

Community Water Systems: Community water systems serve the population year-round, such as in private residences or businesses. There are five active community water systems active in Crawford County, serving a total of 2,776 persons. This figure includes the City of Grayling community system, which supplies drinking water to 1,952 City residents and is maintained by the City of Grayling Department of Public Works.

Non-Transient Non-Community Water Systems: Non-transient water systems serve the same population, but not year-round (for example, schools that have their own water system). There are fifteen such water systems active in Crawford County, serving a total of 1,986 persons.

Transient Non-Community Water Systems: Transient non-community water systems are systems that do not consistently serve the same population. Rest stops, campgrounds, gas stations, motels and convenience type stores not hooked into a community water supply would be included in this category. Most of the wells in the County that are not considered private wells fall into this group. Eighty such wells are found in the County, serving approximately 20,000 persons.

Sewage Disposal

The City of Grayling Department of Public Works provides sewer services to the City of Grayling. Residents and business owners in the remainder of the County must rely on private onsite septic systems for wastewater disposal. Currently there are 7,641 households and businesses using these private systems throughout the County. There are several septage haulers located in Crawford County. The method of disposal used by the haulers is land application. The District Health Department regulates and maintains a permitting system for private wells and septic systems, and is responsible for inspection of the septage-hauling operation.

A very limited portion of Beaver Creek Township on the North side of Higgins Lake, part of Camp Curnalia is served by sewer system operated by the Higgins Lake Utility Authority, which was completed in 2009. Currently the system serves 405 households, 9 of which are in Beaver

Creek Township. The system was designed with additional capacity to accommodate future expansion, including potential future connection by Higgins Lake State Park.

Solid Waste

Collection of residential and commercial solid waste in Crawford County is accomplished by commercial haulers and by individuals transporting their own waste to the landfill or one of the transfer stations located in many of the townships across the County. Private hauling companies provide residential and commercial service pick-up throughout the county, through private agreements with customers, as well as servicing the township transfer stations. Waste Management, Inc. operates the primary solid waste disposal facility for the County, located in Maple Forest Township. Waste Management and American Waste handle the bulk of solid waste disposal in Crawford County. It continues to be an on-going challenge to provide affordable solid waste disposal and provide recycling choices for individuals and businesses.

Recycling: Crawford County currently provides county-wide recycling services via a contract with Grayling Charter Township's Compacting/Recycle Center. A recycle council moderates all aspects of recycling in the County. The council membership consists of a representative from the City, County, each of the Townships and Camp Grayling. The council serves as an advisory board to County, City and each of the Townships within the County. Residents can recycle certain materials through the use of recycling stations at transfer stations located in the City of Grayling, as well as Beaver Creek, Frederic, Grayling Charter, Lovells, Maple Forest and South Branch Townships. Most of the recyclable materials are then transferred to Grayling Charter Township's Compacting/Recycle Center for processing. The Compacting/Recycle Center is located west of I-75 on North Down River Road. The recycle council is currently working with Camp Grayling in a continued effort to provide enhanced services and reduce overall costs.

Utility Services

Due to the large amount of public land and internal parcels (parcels in the center of a section that does not abut a public road), utility services are lacking in some areas of the County. Costs of providing telephone service to these isolated residences can be prohibitively high. Since these landowners must pay the cost of running the lines, some have chosen not to bear the expense, instead relying on cellular telephones.

Gas and Electricity Providers—MichCon provides natural gas service for the County; several sections in the northeast portion do not have natural gas service. Consumer Energy and Great Lakes Energy provide electricity to developed areas within the County. Three-phase service is throughout the County. Three-phase power is needed to support some types of commercial and industrial activities, particularly in businesses that operate heavy machinery or equipment.

Telephone and Internet Service— Frontier and AT&T provide telephone service to the largest geographic area of the County, although there are pockets of un-served areas in the county. Additionally, there are a variety of internet, wireless, and cellular telephone services available in Crawford County.

Schools and Libraries

Most of Crawford County is within the Crawford AuSable School District located on 1135 N. Old US 27, Grayling, MI 49738, Phone: (989) 344-3500. South Branch Township and a portion of Beaver Creek Township are located in the Roscommon Area Public School District located at 702 Lake

St., Roscommon, MI 48653, Phone: (989) 275-6600. **Table 3.1** provides a summary of school districts and schools servicing Crawford County.

Table 3.1 Crawford County Schools		
Crawford AuSable School District		
School Name	Address	Students and Staff
Grayling Elementary-AuSable Primary School Phone: (989) 344-3604	100 Michigan Ave. Grayling, MI 49738	Students: 712 Staff: 79
Grayling Middle School Phone: (989) 344-3558	500 Spruce St. Grayling, MI 49738	Students: 368 Staff: 43
Grayling High School-Adult Ed Phone: (989) 344-3508	1135 N. Old-27 Grayling, MI 49738	Students: 566 Staff: 55
Roscommon Area Public Schools		
School Name	Address	Students and Staff
Roscommon Elementary School (989) 275-6610	175 W. Sunset Dr. Roscommon, MI 48653	Students: 510 Staff: 43
Roscommon Middle School Phone: (989) 275-6640	299H W. Sunset Dr. Roscommon, MI 48653	Students: 428 Staff: 44
Roscommon High School Phone: (989) 275-6675	10600 Oakwood Dr. Roscommon, MI 48653	Students: 474 Staff: 41
Source: NEMCOG		

The area is served by Kirtland Community College, as well as the M-TEC and University Center in Gaylord for local post-secondary education.

The Devereau Memorial Crawford County Library system has four branches to serve the communities of Crawford County. The main branch of the library is located on Plum Street in the City of Grayling, and offers a wide variety of services and programs including internet service, inter-library loans, children's activities, specialized book sections. The three satellite branches include the Frederic Library, located on Manistee Street in the Frederic Township Governmental Offices and Community Center, the Beaver Creek Library located in Beaver Creek Township on South Grayling Road, and the Lovell Library located in Lovell Township on Twin Bridge Rd.

Public Safety

Law Enforcement

Crawford County has two local law enforcement agencies, the Sheriff Department, located at 200 W. Michigan Avenue in Grayling and the City of Grayling Police Department located at 1020 City Blvd. in Grayling. The County 911 system is co-located in the Sheriff Department as well as the Crawford County Jail. The County receives Michigan State Police support assigned to the Houghton Lake Post and the Kalkaska Detachment. There are troopers that are assigned to Crawford County that start and end their shifts at the Michigan State Police Crime Lab located on the I-75 business loop in Grayling. Camp Grayling will provide some law enforcement to Crawford County if needed.

Emergency Medical Services

Crawford County maintains Emergency Medical Services (EMS) throughout the county. Mobile Medical Response (MMR) units are located in Beaver Creek Township and the City of Grayling. Frederic and South Branch Townships maintain local Emergency Medical Services (EMS).

Fire Services

Crawford County has five community fire departments providing fire protection to all areas of the County. In addition, while Camp Grayling has no structural fire department, they do provide assistance with wildland firefighting.

There are a total of eight Fire Departments located in Crawford County consisting of:

Frederic Township FD, a combination partially paid and full-time fire department covering 108 square miles, and providing fire protection for approximately 1,994 persons. It is located on 6547 Frederic St., Frederic, MI. The Frederic FD provides fire and advanced life support (ALS) ambulance services to Frederic and Maple Forest Townships. The mailing address is PO Box 79, Frederic, MI 49733. Phone (989) 348-8190.

Grayling Department of Public Safety(DPS), a combination of partially paid and full-time firefighters covering 180 square miles, and providing fire protection for approximately 8,468. It is located on 1041 City Blvd., Grayling, MI. The mailing address is 1041 City Blvd., Grayling, MI 49738. Phone (989) 348-6319. Grayling DPS provides medical first response along with MMR and Station 1-Frederic EMS. Water sources are located at Pollack Bridge, Euclid Bridge/Portage Creek, Stephan Bridge, Wakeley Bridge, Wilcox Bridge, and Lake Margrethe ½ mile west of Danish Landing Rd.

Lovells Township FD, a volunteer fire department covering 108 square miles, and providing fire protection for approximately 626. It is located on 8405 Twin Bridge Rd., Grayling, MI. The mailing address is 8405 Twin Bridge Rd., Grayling, MI 49738. Phone (989) 348-9215. The Lovells Township FD provides fire and first responder services township- wide. The water sources are the lakes in the Township.

South Branch Township FD, a combination partially paid and full-time fire department covering 108 square miles, and providing fire protection for approximately 2000. It is located on 5245 N. M-18 Roscommon, MI. The mailing address is 5245 N. M-18, Roscommon, MI 48653. Phone (989) 275-4779. The Township also provides emergency medical ambulance service within the Fire Department.

Beaver Creek FD, a partially paid and full-time fire department covering 72 square miles, and providing fire protection for approximately 2000. It is located on 8972 S. Grayling Rd., Grayling, MI. The mailing address is 8972 S. Grayling Rd., Grayling, MI 49738. Phone (989) 275-8548. Mobile Medical Response operates in Crawford County with their primary station located in the City of Grayling and uses the Beaver Creek station as a full time satellite station.

Camp Grayling and Grayling Army Airfield: Fire suppression has been funded through the military. The Camp contracts with the Grayling Department of Public Safety for structural fire suppression and has a seasonal crew for first response on wildfire suppression on military property from March to November.

DNR Grayling Field Office is located on 1955 Hartwick Pines Rd., Grayling, MI 49738. Phone: (989) 348-6371. The northern two thirds of the county covered out of Grayling field office.

DNR Roscommon Field Office is located at 8717 North Roscommon Rd, Roscommon. The southern one third of the county is covered out of the Roscommon Field Office.

Medical Facilities

Crawford County has numerous health service establishments. Most of the facilities are located in or near the City of Grayling. The largest medical facility in Crawford County is Mercy Hospital Grayling, a 130 bed facility (90 acute care, 40 long term care) located on 110 Michigan Avenue in Grayling. Troop Medical Clinic located within Camp Grayling addresses troop related medical issues. The Clinic has minimal staff much of the year and is only fully staffed during troop training. Northern Lakes Community Mental Health of Traverse City provides support services to developmentally disabled persons as well as persons needing mental health services. District Health Department #10 is often able to fill health care needs of the community. The Crawford County Branch is located on 220 Meadows Drive in Grayling. Programs offered by the Health Department fall into three categories: home health care services, environmental health services and personal health services.

Recreation

The lakes, streams and woodlands of the area provide a venue for a variety of recreational activities. Recreation is an important economic factor for the region. See **Chapter 6-Recreation** for additional details

Chapter 4 - Natural Resources

The woodlands, open spaces, wildlife, water, and rolling hills are several key resource values that draw people to both recreate and live in the County. Abundant public lands offer access to thousands of acres of recreational lands for hunting, hiking, wildlife viewing and snowmobiling. Lakes, creeks and streams, especially the Manistee and Au Sable Rivers provide opportunities for fishing, boating and water sports. Special recreation areas such as the Mason Tract are additional draws to the County.

A rural landscape, abounding with views of forestlands and wetlands, typifies the community character of Crawford County. Forestlands are important to the local economy; recreational use and production of forest goods bring dollars into the Community. Many long time visitors decide to move to the area upon retirement. These renewable yet priceless resources warrant special considerations when planning for future growth.

The protection and wise use of these natural resources are central to maintaining a sustainable community. Along with planning for the built-up infrastructure like roads and utilities, a community needs to plan for the green infrastructure; the forests, wetlands, farmland and water. Development, without consideration of carrying capacity of the land, can have long term negative impacts on the resources. When planning for future growth, the community must identify environmental constraints, such as wetlands, steeply sloped areas, ecological corridors and ground water recharge zones. This chapter will analyze the physical environment to assist local officials in developing a desired future of the County. Natural resources addressed include climate, geology, topography, soils, water, vegetation and wildlife.

Climate

The climate is yet another reason why people are drawn to the area. Typical of northern Michigan, the distinct four seasons offer an ever-changing landscape. Long snowy, cold winters; and moderately warm summers are separated by a cool, green spring and a cool colorful fall. Located in the north central part of the northern lower peninsula, the County is approximately 35 miles inland from Lake Michigan and 55 miles inland from Lake Huron. Given this geographic location, with the exception of lake effect snowfall, the weather is not significantly influenced by the lake moderating effect of both Great Lakes.

Table 4.1 shows the average temperature and precipitation by month calculated over a 30-year period. Moderately warm temperatures dominate summers. The warmest days occur in the month of July and between the years of 1981-2010, there was an average of six days per year that exceeded the 90-degree mark. There were no temperatures over 100 degrees in the 30-year period and temperatures in the high 80's have occurred as early as April and as late as October. Normal temperatures for the area range from the high 70's to the low in the high 40's in the summer and from the high 20's to single digits in the winter. The following temperature extremes for the station in Crawford County are: maximum, 104 F, recorded July 11, 1936; minimum, -45 F, recorded February 3, 1898; warmest monthly mean, 75.5 F recorded in July of 1921; and coldest monthly mean, 4.4 F was recorded February 1904.

Temperature Averages (Degrees Fahrenheit)			Precipitation Averages (Inches)		
Period	Maximum	Min	Mean	Precipitation	Snow
January	25.8	7.9	16.8	1.71	30.1
February	28.8	8.0	18.4	1.30	20.7
March	38.8	15.4	27.1	1.72	14.7
April	53.4	28.8	41.1	2.77	4.6
May	66.0	39.3	52.7	3.27	0.8
June	75.8	49.2	62.5	3.69	0.0
July	79.8	53.9	66.8	3.58	0.0
August	77.6	51.9	64.7	3.68	0.0
September	69.5	43.7	56.6	3.75	0.0
October	56.0	33.9	45.0	3.77	3.4
November	42.4	25.3	33.8	2.61	12.6
December	30.5	15.6	23.1	1.76	26.5
Annually	53.7	31.1	42.4	33.62	108.0

Source: Midwestern Regional Climate Center, Champaign IL, Station 203391 Grayling MI

In the summer, precipitation comes mainly in the form of afternoon showers and thundershowers. Most precipitation occurs in the months of April-October, which received an average of 24.51 inches or 73 percent of the average annual total for the 1981-2010 period. During this same period the average wettest month was October that averaged 3.77 inches, while the average driest month was February which averaged 1.30 inches. The average seasonal snowfall was 108 inches.

During the 1971–2000 period, 123 days per season averaged one inch or more of snow on the ground, but varied greatly from season to season. The greatest one-day precipitation total was 5.02 inches, recorded August 8-9, 1965; greatest monthly total, 12.51 inches, recorded September 1986. The least monthly total, 0.00 inches, was recorded April 1889. Soil moisture replenishment during the fall and winter months plays an important role in the success of agriculture for this area. While drought occurs periodically, the Palmer Drought Index indicated drought conditions reached extreme severity only two percent of the time.

Based on the 1971-2000 period, the average date of the last freezing temperature in the spring was May 30, while the average date of the first freezing temperature in the fall was September 17. The freeze-free period, or growing season, averaged 110 days annually.

Geology

The rolling hills, river valleys, swamps and lakes were created by glacial activity as the last continental glacier left the landscape some 12,000 years ago. Beneath a thick mantle of the glacial deposits lays a foundation of layered sedimentary bedrock. This section will describe the glacial landforms or quaternary geology and the underlying bedrock geology.

Starting some 2 million years ago, during the Pleistocene era, continental glaciers formed in the Hudson Bay area. Several times, over this two million year period, the

massive sheets of ice built up and inched their way south across what is today Michigan. The massive ice sheets, more than one mile thick, advanced in a southerly direction, bulldozing their way across the landscape. The glacier pushed material in front of it, incorporated rocks and soil into the debris laden ice; and scraped, ground, and broke apart the sedimentary bedrock of the Michigan Basin.

Each advance and retreat of the continental glaciers took tens of thousands of years. This reoccurring process shaped and reshaped the land; obliterating and then creating hills, valleys, rivers and lakes, swamps and marshes. The last glacial period, called the Wisconsin era, created the landscape we know today. The glacier left behind boulders, rocks, cobble, sand, gravel, silt, clay and loam. In some areas the material was deposited in unsorted masses called till plains, ground moraines and end moraines. Water flowing from the melting glaciers also sorted materials, creating outwash channels, sand deltas, kames and eskers. Fine materials, captured in the fast moving glacial meltwater, settled to the bottom of expansive glacial lakes creating lacustrine clay and silt plains. **Figure 4.1** from "The Glacial Lakes around Michigan," by William R. Farrand, shows how glacial landforms were created.

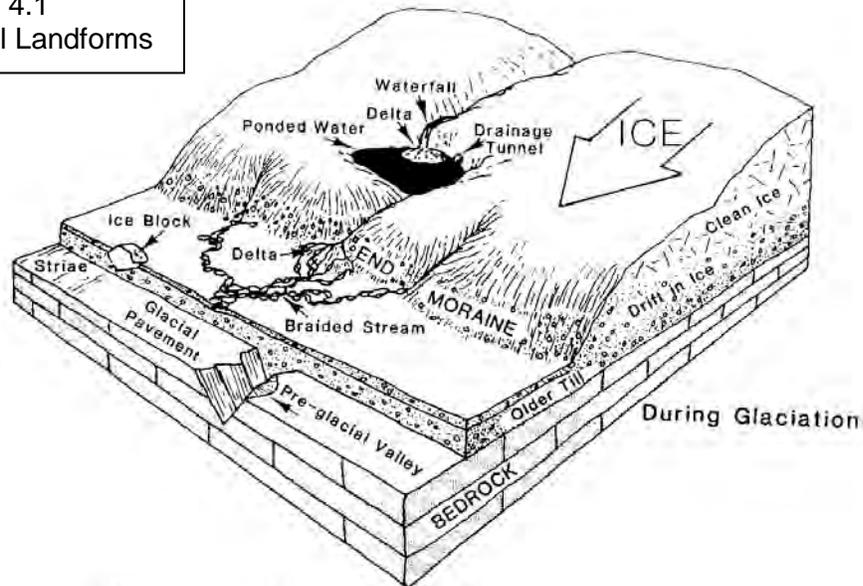
According to the USDA Crawford County Soil Survey, the county has three main physiographic regions. The northwestern and north-central parts of the County are characterized by a series of four high plateau-like remnant moraines that were dissected by glacial meltwater. The remnant moraine landforms have a north-south linear orientation and are referred to as the Grayling fingers. The second landform region is located in the central and northeastern parts of the county. These areas are characterized by nearly level to gently sloping outwash plains. The mainstream and north branch of the Au Sable River are located in this region. The streams have cut shallow valleys in the outwash materials. The third landform region, located in the south part of the County, consists of a nearly level to gently sloping plain that is interrupted by a series of high kame moraines. Much of the gently sloping plain is over washed with sand. The kame moraines have a general east-west orientation. Some of the highest elevations in the county are found on these kames. There are several small postglacial lake plains, dominated by loam and clay, in the County.

At the front of the massive retreating glaciers, large streams originated from the melting ice. The debris laden water carved through moraines creating wide drainageways and outwash channels. The Au Sable River and Manistee River further to the west are located in the glacial drainageways. These areas are dominated by sands and organic muck soils. As the continental glaciers melted, huge blocks of ice became separated from the retreating ice front. The ice blocks became embedded in the glacial debris deposited by the retreating glacier. The embedded ice blocks eventually melted and left depressions (kettle holes) which are today's inland lakes, associated wetlands and bogs.

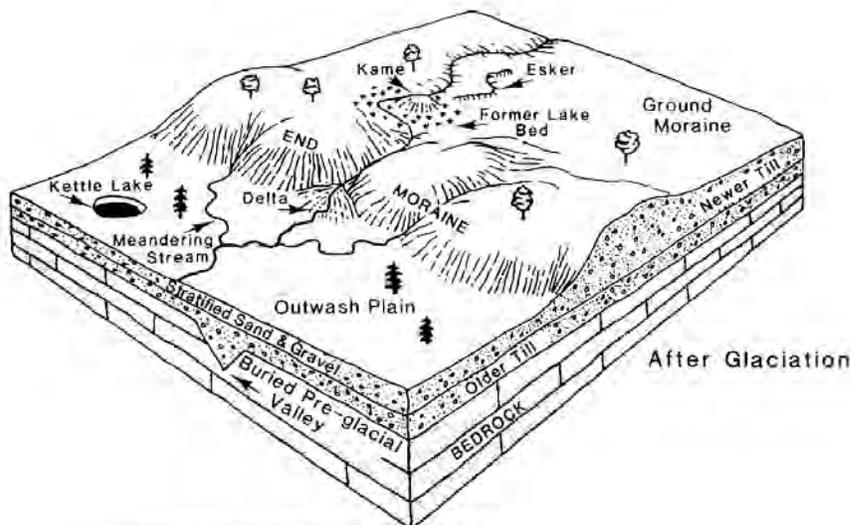
Beneath the glacial deposits, some 200 to 300 feet below the surface, is sedimentary bedrock that was created during the Late Mississippian ages of the Paleozoic Era. The bedrock was formed in ancient seas, which covered the area some 310- 345 million years ago. The shallow marine seas deposited layers of silt, clay, sediments, marine animals, plants, coral, and other calcareous materials. These deposits formed shale, sandstone and limestone bedrock. According to the 1987 Bedrock Geology of Northern Michigan map, prepared by the Geological Survey Division of the Michigan Department of Environmental Quality, the upper layer of bedrock is Coldwater shale. Other bedrock formations beneath the glacial overburden include the Michigan Formation and Marshall

Formation. Natural gas deposits have been discovered in the Michigan and Marshal formation. Recent proposals to explore for gas adjacent to the Mason Tract have caused concerns with many groups. Concerns are the proposed drilling and associated road widening, flow line/pipeline burying, and constructed facilities (if needed) would reduce the quality of the outdoor recreation experience of visitors to the Mason Tract. The US Forest Service completed an Environmental Assessment in the fall of 2004 and authorized drilling adjacent to the Tract. The authorization is being appealed.

Figure 4.1
Glacial Landforms



Features originating in a glacier front occur in a definite order.



Landforms of continental glaciation are unmistakable.

Topography

Most of the county is nearly level or gently rolling. Local differences in elevation are slight, in a few places exceeding 100 feet, although the hills and plateau-like ridges appear to rise above adjacent sand plains when viewed from a distance. Slopes of hilly land are both long and expansive or, where the relief is choppy, smooth and rounded. There are no steep slopes except along watercourses.

The northern part of the county consists of three broad highland plateaus, having a general north-south direction, three complementary broad sand valleys, and a wide sandy plain on the east. The central part, from eastern to western boundaries, is a wide level sand plain through which the AuSable River and its tributaries have cut valleys. Several detached swells or ridges, irregular in outline but having general east to west trends, characterize the southern part of the county. Here the general relief is gently rolling or moderately hilly. Level sand plain and swamps intervene between masses of higher land. The highest elevation, ranging from 1,300 to 1,480 feet above sea level, can be found on kame moraines in the southeastern parts of the county. The lowest elevation of 1,010 feet above sea level, noted on USGS quadrangle maps, is located in the eastern edge of the County where the main branch of the Au Sable River flows into Oscoda County.

Soils

The soils of Crawford County are generally sandy with low fertility and low moisture-holding capacity. Few loamy soils are found in the northwest portion of the county. Portions of the county have building limitations due to poor filtration of septic effluents. The two predominant soil associations in Crawford County are: *Grayling-Rubicon* (nearly level to undulating, well drained sandy soils on outwash plains); and *Grayling-Graycalm-Montcalm* (rolling to hilly, well-drained sandy soils, on uplands). Found in the northwest portion of the county are significant beds of a third association, *Kalkaska-Blue Lake* (sloping to steep, well-drained sandy soils, on the side of ridges and escarpment-like features enclosing upland valleys).

When planning for types and intensity of land uses, soil types and slopes are two important factors that determine the carrying capacity of land. The construction of roads, buildings and septic systems on steeply sloped areas or areas with organic and hydric soils require special design considerations. In addition, costs for developing these sensitive areas are greater than in less constrained parts of the landscape. If developed improperly, the impacts to natural resources can be far reaching.

The Natural Resource Conservation Service completed a detailed soil survey of Crawford County. A digital or computerized version of the soil survey maps was acquired from the Michigan Department of Natural Resources, MIRIS program. Using information contained within the published soil survey book, a series of maps are presented that depict hydric soils, steep slopes, soils with building limitations and soils with septic system limitations.

Hydric Soils and Steeply Sloped Areas

Figure 4.2 is a color thematic map that classifies hydric soils and soils on steep slopes. Lower density and less intensive development should be directed to these areas with severe building constraints. Hydric soils are saturated, flooded or ponded during part of the

growing season and are classified as poorly drained and very poorly drained. Hydric soils have poor potential for building site development and sanitary facilities. Wetness and frequent ponding are severe problems that are 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.

Less than ten percent of the County is mapped as hydric soils with a high potential for wetlands. The hydric soils are mainly located adjacent to streams and lakes. The largest concentrations are found in the central portions and northern portions of the community. Note the green areas or hydric soils are typically drained by creeks and streams that in turn empty in the major rivers. This connectivity of riparian wetlands and surface water features can be seen throughout the landscape.

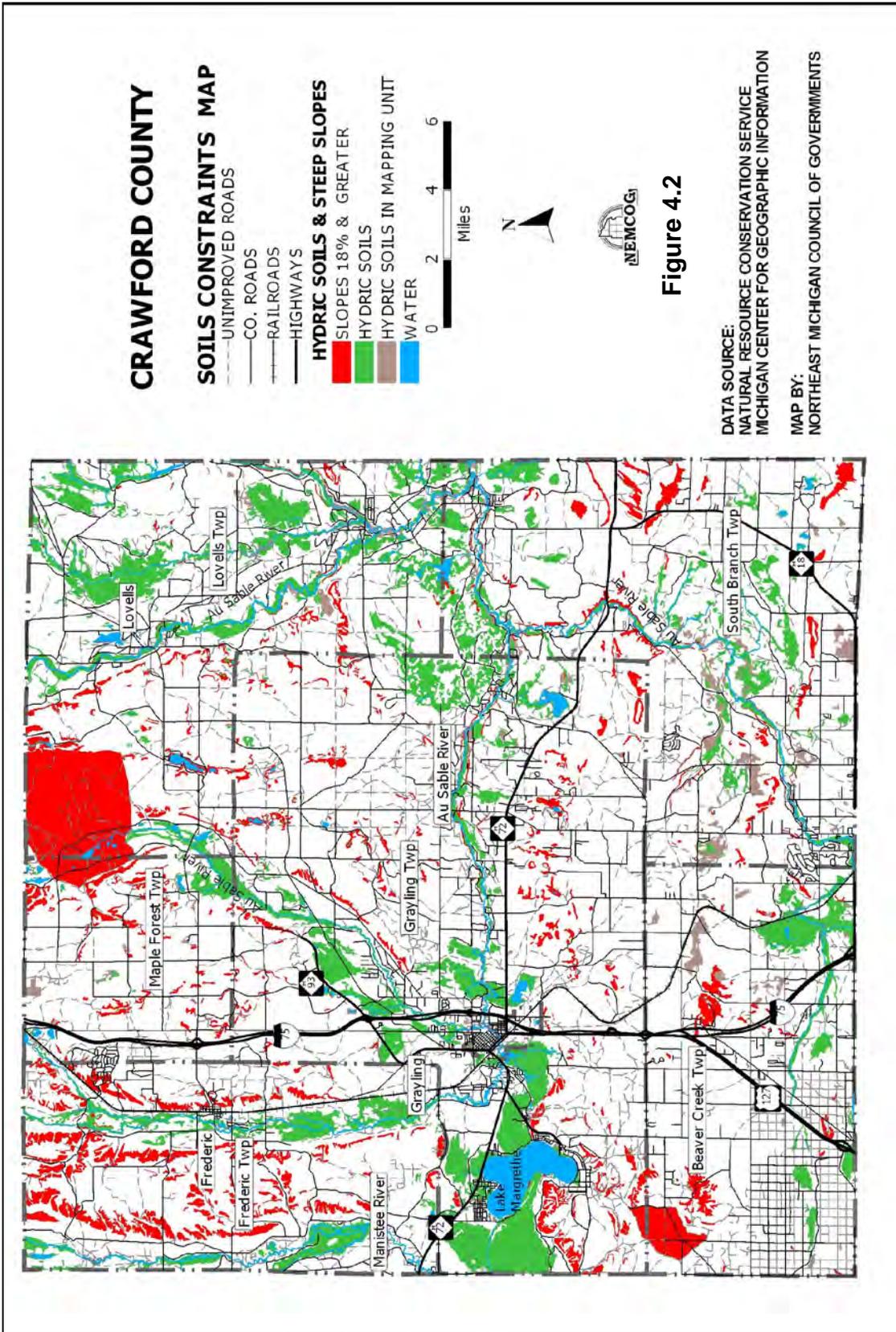
Hills and steeply rolling terrain may provide opportunities for spectacular views of the landscape. However, steeply sloped sites have severe building constraints, are more difficult and costly to develop. Maintenance costs tend to be higher on steeply sloped terrain. Special design standards such as erosion control measures, limiting size of disturbed areas, retaining natural vegetation, revegetation, slope stabilization and on-site retention of water run-off from impervious surfaces would all serve to minimize resource impacts. According to information presented in the Crawford County Soil Survey areas with slopes 18 percent and greater are minimal. Of greatest concern are steeply sloping hillsides adjacent waterways. Steeply slopes areas are depicted in red on **Figure 4.2**. Note the large area mapped as steep slopes in the northern part of the county. This anomaly is related to the bombing range of Camp Grayling.

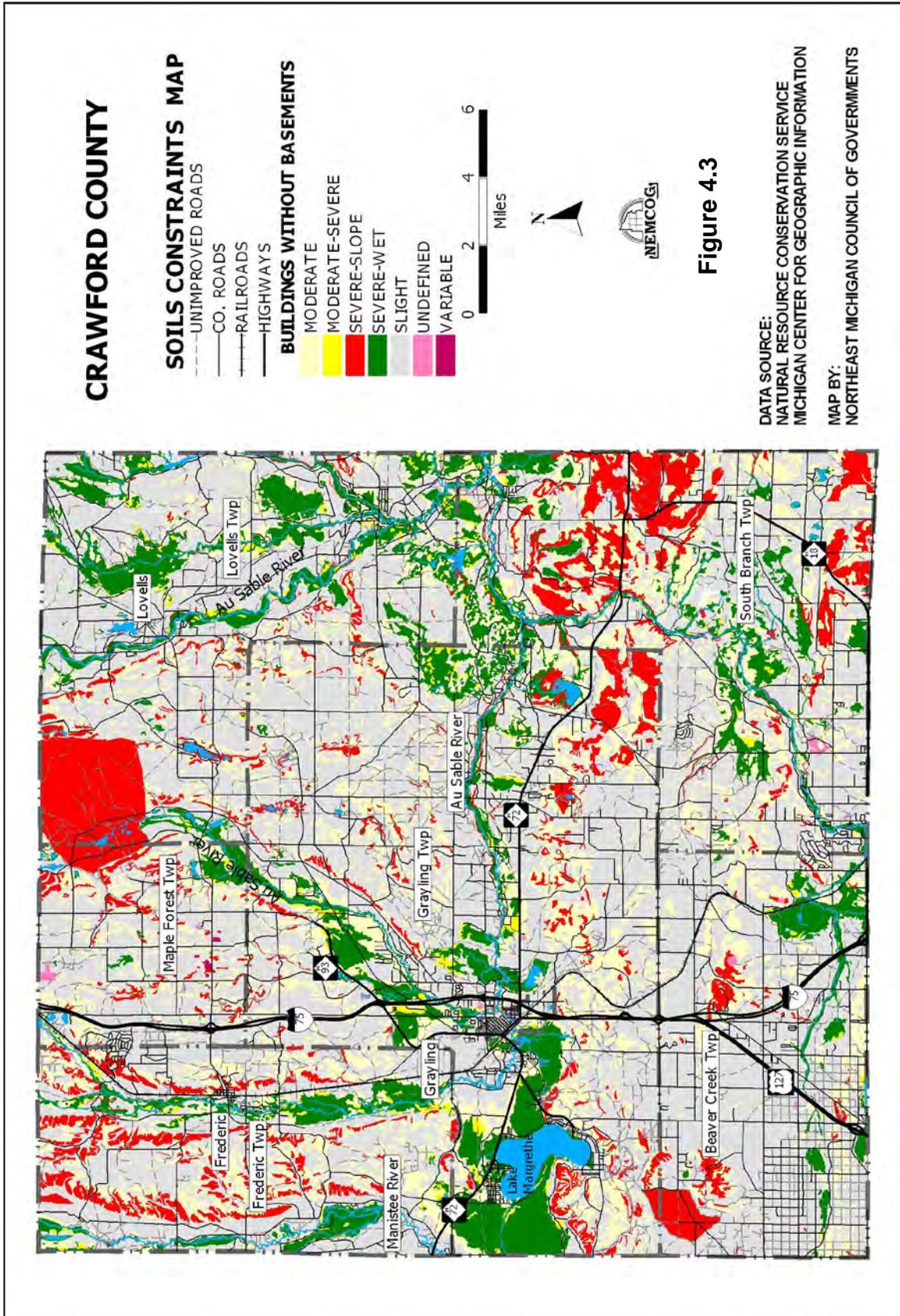
Building Site Development

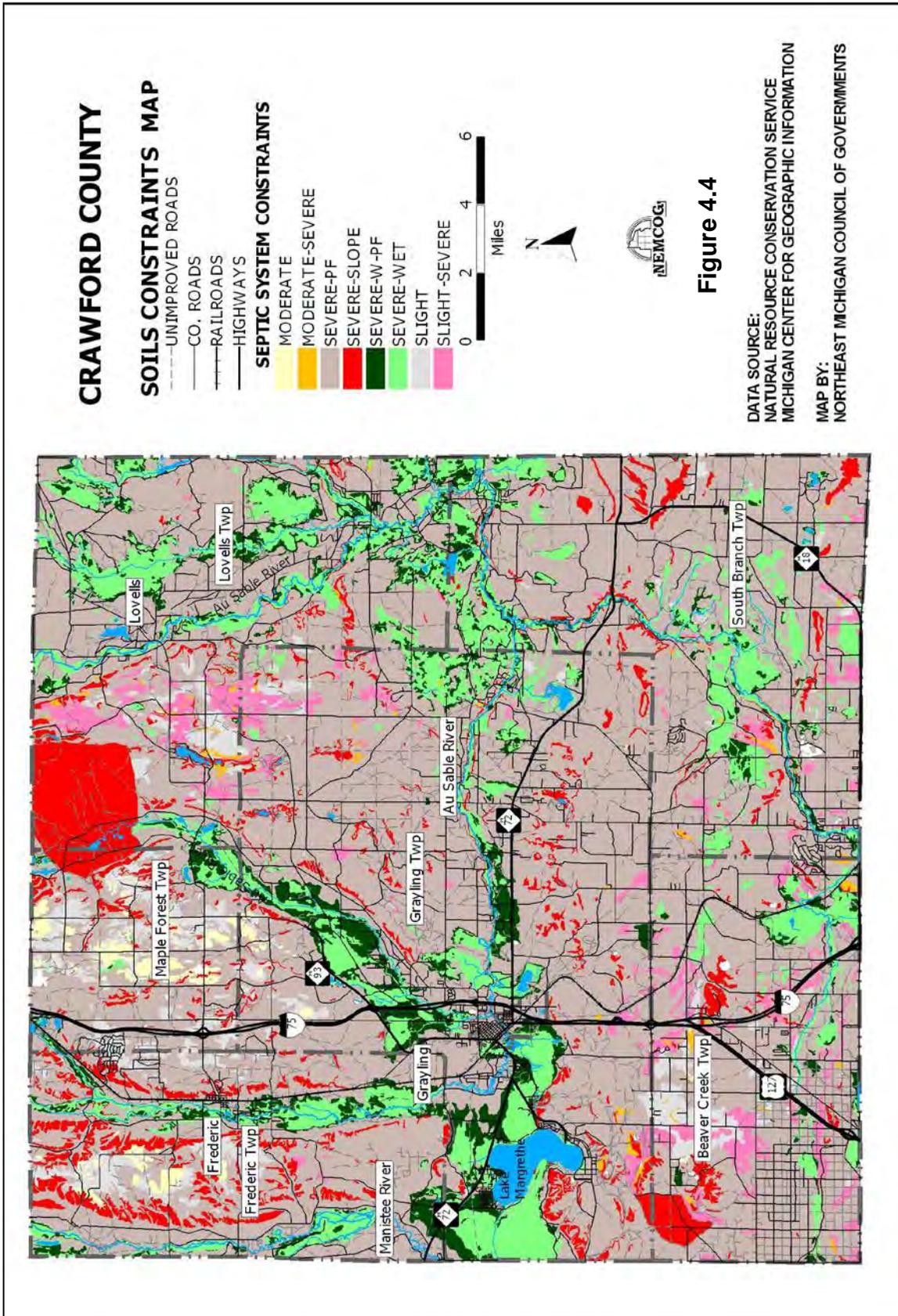
The USDA soil survey of Crawford County rates soils for various uses such as building site development and identifies the limiting factors such as steep slopes or high water table. The rating system is slight, moderate and severe limitations. Using the rating system developed by USDA, soil limitations for buildings without basements have been mapped and are displayed in **Figure 4.3**. Areas with well drained soils and slopes less than 10 percent tend to have slight limitations for building development. Areas with steep slopes, high water tables and organic soils have severe limitations. Lands with severe constraints are scattered throughout the County, but tend to be more prevalent near streams and in the northeast and southeast parts of the county. Due to the prevalence of sandy soils in Crawford County large areas have slight to moderate limitations for buildings.

Septic Systems

Using a computer mapping system soils maps have been color coded to show areas with slight to severe septic system limitations as defined by the USDA Natural Resource Conservation Service. Criteria include depth to water table, wetness, filtering capacity and ability to perc water. **Figure 4.4** is a septic system limitations map. Much of the County is classified as having severe limitations. Clearly the greatest limiting factor is the prevalence of sandy soils with severe limitations due to poor filtration of septic effluents. This is a critical issue when the water table is close to the surface or when high density development occurs. Limiting types and density of development or making public water and sewer available for high density development are likely the best options for protecting the groundwater resources.







Forestry

A large amount of land in Crawford County is in public ownership in the form of the Huron National Forest and the Au Sable State Forest. According to 2001 statistics from the U.S. Forest Service, Crawford County has a total land area of 364,347 acres. Forestland totals 324,274 acres (approximately 90 percent of the county's total land area). 36,183 acres are classified as nonforest, while 5,186 acres are classified as water (**Figure 4.5**).

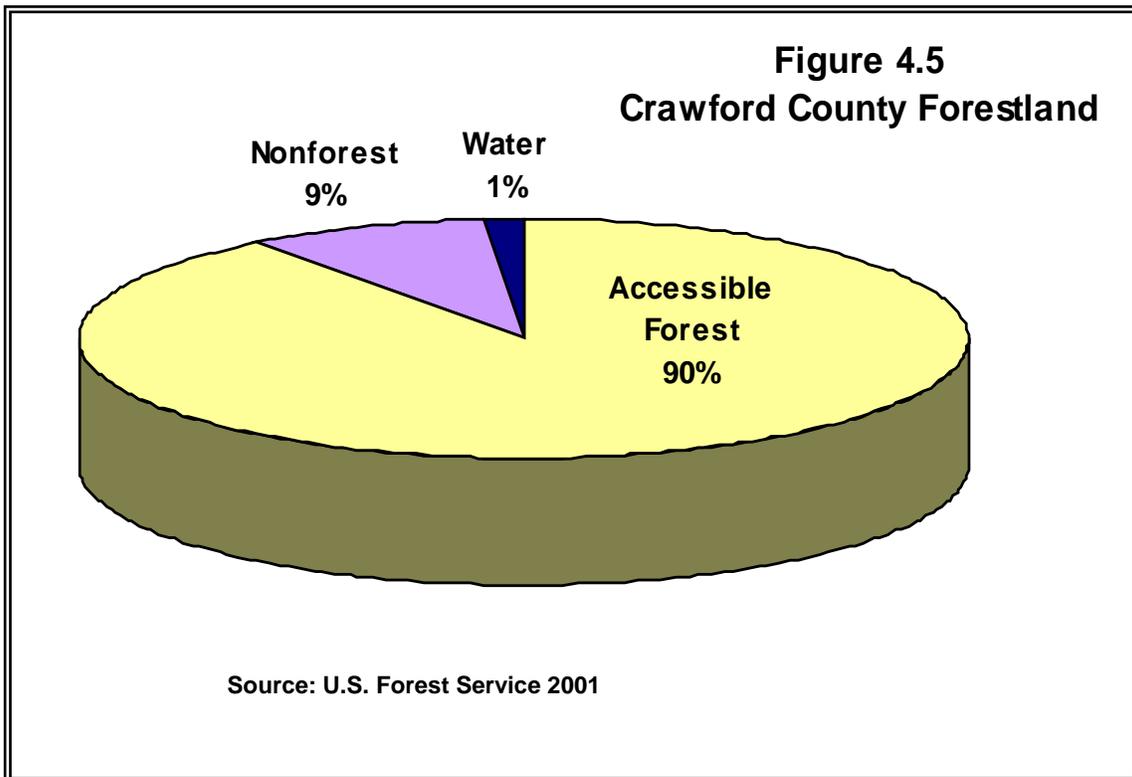


Table 4.2 shows that the major forest species found in the county are Jack Pine (27%), Oak/Hickory Group (23%) and Aspen (21%). The Maple/Beech/Birch Group totals 12 percent. A small amount of forestland is comprised of Black Spruce (6%), Balsam Fir (4%), and Red Pine (4%). Smaller acreage of Eastern White Pine, White Spruce, Northern White Cedar, White Pine/Red Oak/White Ash, and Paper Birch are also present. The abundance of Jack Pine and Oak forests dramatically increase the wildfire hazard for Crawford County. **Figure 4.6** shows forest types in the County. Note the predominance of pine and oak depicted on the 1978 MIRIS forest cover map. In addition, note the prevalence of northern hardwoods in Maple Forest Township and northern Frederic Township.

The majority of forestland in the county is in public ownership - 52 percent state owned and 16 percent federally owned (**Figure 4.7**). Most of these lands are managed under a multi-use concept, which is directed toward recreation. The use of military forestland is not geared toward commercial forest production. Some areas have been determined as refuge areas for the endangered Kirtland's Warbler. The next largest ownership class is in individual ownership 32 percent.

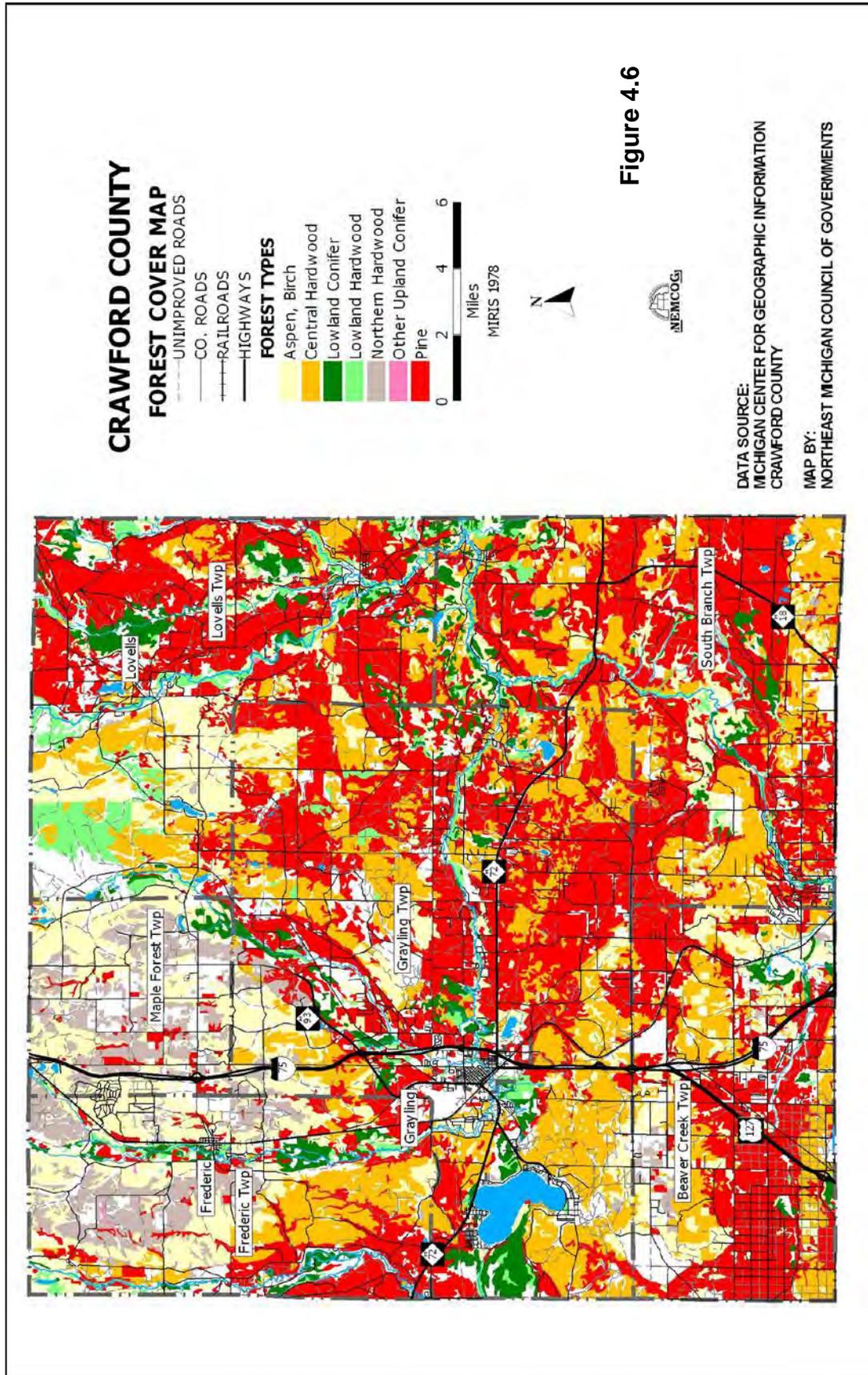


Figure 4.8 and **Table 4.3** show the breakdown of tree species by ownership group. The acreage of Jack Pine is fairly evenly split among federal, state, and private ownership. Species in the Oak/Hickory Group are predominantly in state and private ownership. Aspen and Maple/Beech/Birch are found mostly on state owned property.

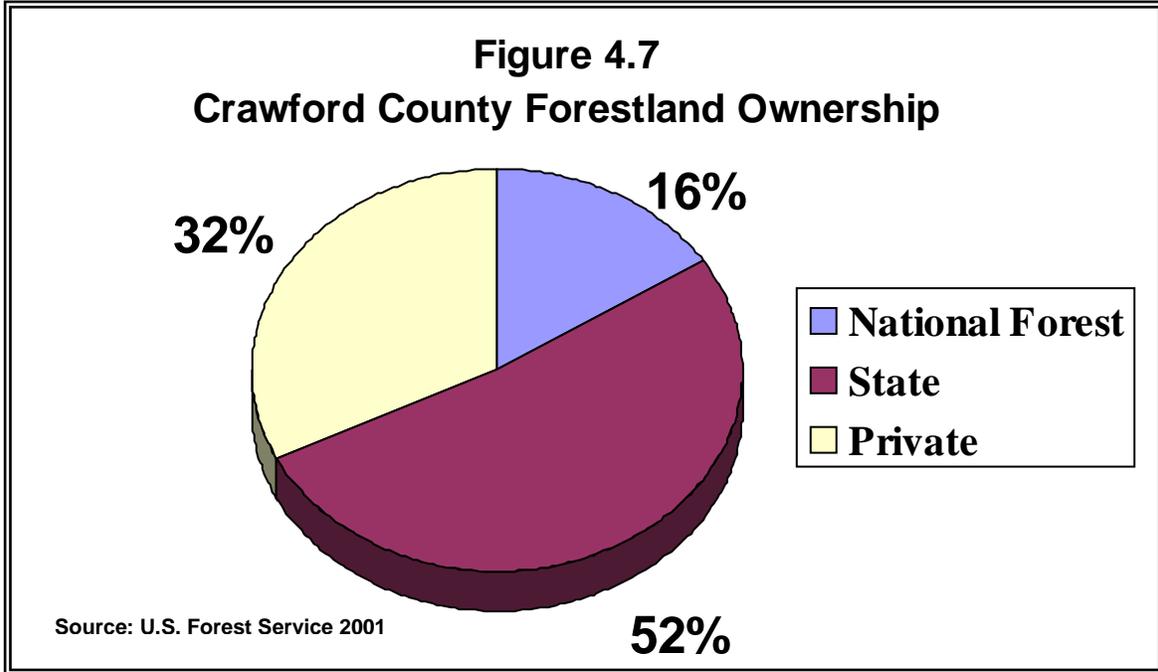


Table 4.2
Crawford County – Acres of Timberland by Forest & Ownership Type

	National Forest	State	Private	Total	Percent
Jack Pine	25936.6	39744.8	22953.5	88634.9	27.3%
Red Pine		11318.4		11318.4	3.5%
Eastern White Pine	1459.8			1459.8	0.5%
Balsam Fir	5839.0	1296.5	4382.2	11517.7	3.6%
White Spruce	1459.8			1459.8	0.5%
Black Spruce		10372.0	9169.0	19541.0	6.0%
Northern White Cedar			2593.0	2593.0	0.8%
Oak/Pine Group		1491.4		1491.4	0.5%
White Pine / Red Oak / White Ash			739.0	739.0	0.2%
Oak / Hickory Group	5839.0	32433.9	37194.1	75467.0	23.3%
Maple / Beech / Birch Group	4379.3	24908.3	10188.0	39475.6	12.2%
Aspen	6331.7	46127.0	15558.0	68016.7	21.0%
Paper Birch			1263.1	1263.1	0.4%
Non-stocked		1296.5		1296.5	0.4%
Total	51,245.2	168,988.8	104,039.9	324273.9	

Source: U.S. Forest Service 2001

Figure 4.8: Crawford County Timberland by Forest Type & Ownership

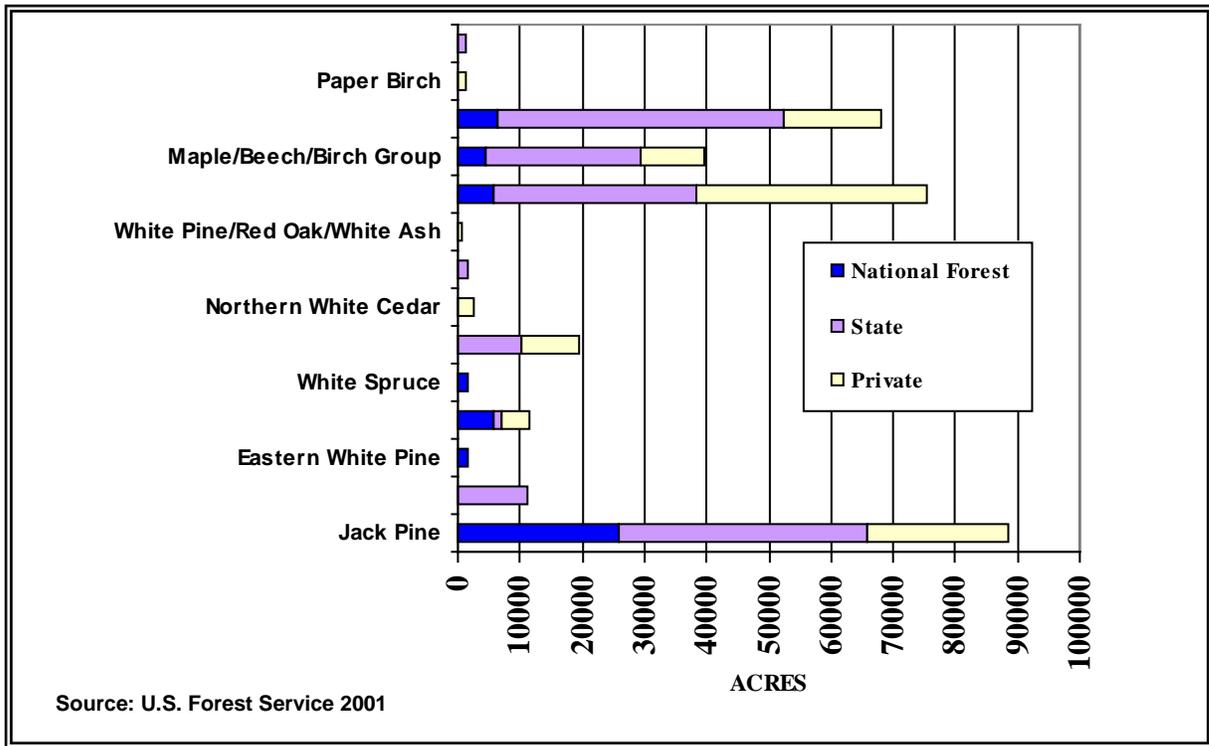


Table 4.3 shows the net volume of growing stock on timberland and the net volume of live trees on timberland by softwood/hardwood group. The Forest Service defines a growing stock tree as a live tree of a commercial species that meets specified standards of size, quality, and merchantability (excludes rough, rotten, and dead trees). Approximately 157.5 million cubic feet of softwoods (coniferous trees, usually evergreen, having needles or scale-like leaves) and 143.2 million cubic feet of hardwoods (broad-leaved and deciduous) make up the growing stock of Crawford County. There are

	Softwoods	Hardwoods	Total Volume
Cubic feet of growing stock by hardwood/softwood group	157,474,832.8	143,196,231.4	300,671,064.2
Cubic feet of live trees by hardwood/softwood group	163,515,556.7	154,123,700.2	317,639,256.8

Source: U.S Forest Service 2001

approximately 163.5 million cubic feet of softwood live trees and 154.1 million cubic feet of hardwood live trees in the county. **Table 4.4** shows the acreage of size classes and stocking class of total growing stock (the degree of occupancy of land by live trees) found in Crawford County. Thirty-eight percent of the forest acreage in the county is small diameter trees, while 28 percent are medium diameter and 32 percent are large diameter. Approximately 66 percent are medium to fully stocked. **Table 4.5** depicts annual growth and annual removals by major species group from 1980 to 1993. Average net annual growth exceeds removal for this period.

Table 4.4 Crawford County Timber Stock				
Area of Timberland By Stand Size Class (acres)				
Large Diameter	Medium Diameter	Small Diameter	Non-stocked	
104,904	93,866	124,207	1297	
32.4%	28.9%	38.3%	0.4%	
Stocking Class of Growing Stock Trees (acres)*				
Overstocked	Fully Stocked	Medium Stocked	Poorly Stocked	Non-stocked
64,504	109,548	103,970	45,577	674
19.9%	33.8%	32.1%	14.1%	0.2%

*An overstocked stand is defined as one in which stocking of live trees is 133% or more. Fully stocked stands are those in which stocking of live trees is 100 – 132.9%. Medium stocked stands are 60 - 99.9% stocked, poorly stocked stands have only 16.7 – 59.9% live trees stock, and a stand is considered non-stocked if live tree stock is less than 16.7%.

Source: U.S. Forest Service 2001

Table 4.5 Annual Growth & Removal					
Average Net Annual Growth 1980-1993	Growing Stock (1000 Cu. ft.)	Saw Timber (1000 Board ft.)	Average Net Annual Removal 1980-1993	Growing Stock (1000 cu. ft.)	Saw Timber (1000 Board ft.)
Pine	2,936	13,963	Pine	545	1,697
Other Softwoods	365	1,495	Other Softwoods	0	0
Soft Hardwoods	2,252	5,628	Soft Hardwoods	1,342	1,903
Hard Hardwoods	3,155	11,300	Hard Hardwoods	1,614	1,313
TOTAL	8,708	32,386	TOTAL	3,501	4,319

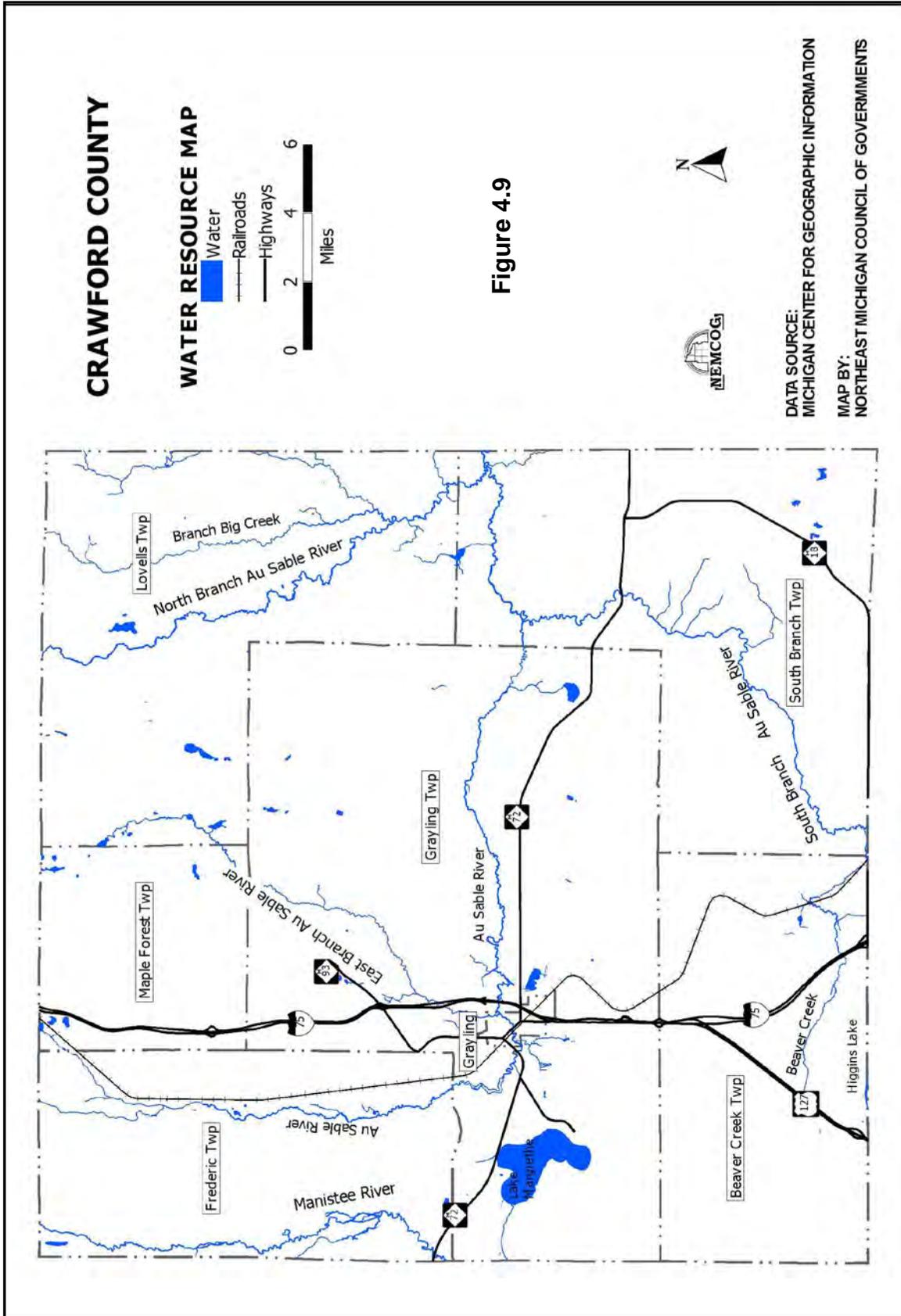
Source: U.S. Forest Service 1993

Groundwater Resources

Groundwater can be found in the deep glacial deposits of sand and gravel throughout the county. The availability of groundwater appears consistently good, ranging from 400 to 500 gallons per minute from wells ten inches in diameter. Ground water provides the only source of potable water for the county. Because of the deep sand and gravel underlying the county, the aquifer is quite vulnerable to contamination from surface and subsurface discharges.

Surface Water Resources

Crawford County has an abundance of lakes and streams (**Figure 4.9**). The county has a total of 53 lakes that are one acre or larger. The largest body of water in the county is Lake Margrethe, with a surface area of 1,928 acres, an average depth of 16 feet and a maximum depth of 65 feet. A portion of Higgins Lake (approximately 24 acres of surface water and one mile of shoreline) is located within the County. Seven lakes are over 100 acres. The large majority of the lakes are less than 50 acres in size. The county is predominantly within the Au Sable watershed. The Manistee River drains the western portion of the county. There are 45 miles of inland shoreline in Crawford County with approximately 25 miles open to the public. Almost all of the lakes and streams provide good fishing and many tourists come to the county to



fish. The lake is at the headwaters of the Manistee River watershed and is a popular recreational and tourist area in the county. Other significant lakes in the county include Shupac Lake, Shallengarger Lake and Jones Lakes. Smaller lakes are quite numerous. The lakes and streams in the county are popular tourist attractions and are heavily used in the summer and winter months. Canoeing and fishing are very popular on the rivers, with swimming and boating being popular on the larger lakes.

The Au Sable River watershed drains approximately 1,932 square miles within portions eight counties. The main branch enters the County in the northwest corner and flows out of the southeast corner. An eight mile stretch of the Main Branch of the Au Sable, east of Grayling, from Burton's Landing downstream to Wakely Bridge, is designated flies-only, no-kill water. This segment is known as "the Holy Water." The East Branch, North Branch and South Branch all flow into the Crawford County and empty into the main stream as it traverses the County. The Au Sable is rated as a "Blue-Ribbon" trout stream and is designated as a Michigan Natural River. Since 1947, the Au Sable River Canoe Marathon, a yearly 120 mile (190 km) pro-am canoe race, runs the river from Grayling to Oscoda.

The Upper Manistee River watershed drains 565 square miles and covers portions of five counties. The Upper Manistee River flows through the western edge of the County. The stretch of the River in Crawford County is supports an excellent trout fishery with fishing landmarks such as Deward, Cameron Bridge, and Goose Creek Camp. It is a state designated "Blue Ribbon Trout Stream" from Deward downstream through the County. The Au Sable River and Upper Manistee River are designated *Natural Rivers under the Michigan Natural Rivers Act (Part 305 N.R.P. Act (1994 PA 451))*. The Michigan Department of Natural Resources enacted natural rivers zoning ordinances for each river. The ordinances are administered by local communities in the County.

Fish and Wildlife

The predominance of forested land and surface water makes Crawford County the home to many species of fish and wildlife. The recreational opportunities linked with these resources are many. With over 3,000 acres of lakes and streams, the County has an abundance and variety of fish habitat. Many of the streams in Crawford County are suitable for trout fishing. Three branches of the AuSable River are designated Blue Ribbon Trout Streams. Brook, rainbow, and brown are established singly or in combination in these streams. Many of the deeper lakes in the County also contain trout, including Glory, Bright, Sandhill, and Kneff Lake. Other lakes in the County support populations of rock bass, yellow perch, blue gills, small mouth bass, large mouth bass, tiger muskie, northern pike, and walleye. Lake Margrethe, the largest lake in the County, has a wide variety of pan fish and sports fish. In 2006, the Department of Natural Resources established guidelines to develop a process to create quality fishing lakes by designation. Based on the newly developed criteria, Jones Lake has been placed into the 'Quality Lakes' designation.

Wildlife abundant in the County includes deer, rabbit, grouse and woodcock. Bear, coyote, bobcat, elk and turkey have small to moderate populations that are growing. Wildlife is a resource that brings in hunters and tourists. October and November bring thousands of hunters to the county for small game hunting, bear and bow season (deer), peaking sharply in mid-November with the opening day of deer (rifle) season.

Unfortunately, large deer populations, combined with indiscriminate feeding practices, were contributing factors to the spread of Bovine Tuberculosis (TB) across northern Michigan. TB is a serious disease caused by bacteria attacking the respiratory system. There are three main types of TB - human, avian, and bovine. Human TB is rarely transmitted to non-humans, and avian TB is typically restricted to birds. Bovine TB - also known as 'cattle TB' is the most infectious of the three, and is capable of infecting most mammals.

In addition to the 509 infected deer reported throughout the State, Michigan has found several other species to be infected with the disease, including four elk, and several coyotes, raccoons, black bear, bobcats, red fox and opossums. The disease has been confirmed in 33 cattle herds to date, but none during the last testing season. Two humans and one domestic house cat have also been diagnosed with the same unique strain of TB found in deer and cattle.

While 96% of the Bovine TB infected deer came from five counties in northern Michigan (Alpena, Alcona, Montmorency, Oscoda and Presque Isle), the impact of this disease has been nonetheless felt in Crawford County. As of the 2005 testing season, four deer and one coyote have tested positive for TB in the County.

The effort to eradicate the disease has led to an aggressive TB testing campaign and the creation of a 42 county surveillance area and a seven county Deer Management Unit (DMU) that is subject to special regulations. Hunters in the surveillance area are asked to submit deer heads for testing, in DMU 452 (the core area covering portions of the four counties directly east and northeast of Crawford County) testing was mandatory until 2002, but testing is now on a voluntary basis. While Crawford County had been included in the seven County DMU area in 2005, as of 2010 Crawford County was not included in the multi-county DMU (**see Figure 4.10**). The situation continues to be monitored and as of 2014 Crawford County is still excluded. Efforts to eradicate the disease has led to changes in deer feeding rules, quota increases, extension of the number of hunting days and the banning of new deer or elk farms. As the eradication effort continues, more changes in hunting and feeding rules can be expected.

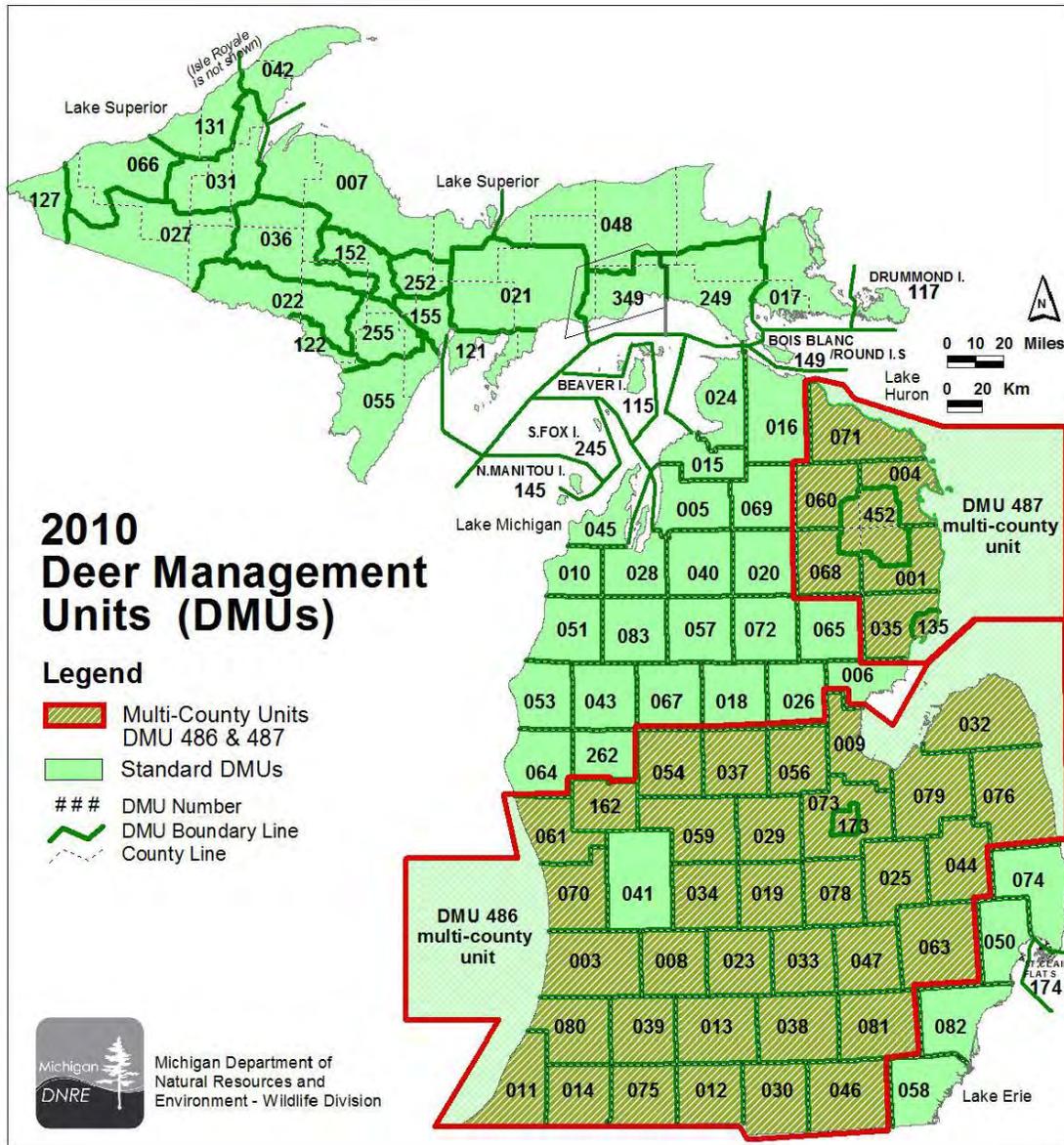
Endangered Species

Crawford County is also home to a number of different plants and animals that are threatened, endangered or is of special concern. **Table 4.6** presents the Endangered (E) or Threatened (T) plant and animal species of Crawford County, which are protected under the Endangered Species Act of the State of Michigan (Public Act 203 of 1974 as amended). This list also includes plant and animal species of Special Concern (SC). While not afforded legal protection under the act, many of these species are of concern because of declining or relict populations in the state. Should these species continue to decline, they would be recommended for Threatened or Endangered status. Protection of Special Concern species before they reach dangerously low population levels would prevent the need to list them in the future by maintaining adequate numbers of self-sustaining populations.

The primary summer nesting area of the very rare songbird, Kirtland's Warbler, is found in the immediate vicinity of Crawford and Roscommon counties. This Warbler winters in the Bahamas and migrates to northern Michigan nesting areas in young jack pine

forests. Bird watches from all over the world come to the area to view and study this scarce bird. Kirtland's Warbler habitat is young jack pine forests that are 5 to 20 years old. The habitat is managed by cutting older jack pine stands and replanting with millions of new seedlings each year. Protection of this habitat is critical to insure future preservation of the Kirtland's Warbler.

Figure 4.10



National Wetlands Inventory

A wetland is found where water is found, either on the surface or near the surface, at any time during the year. Poorly drained soils and water-loving vegetation also may be present. Wetlands are often referred to as marshes, swamps or bogs. Residents of Michigan are becoming increasingly more aware of the value of wetlands. Beyond their

aesthetic value, wetlands improve 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. Additionally, wetlands support wildlife, and wetland vegetation protects shorelines from erosion.

Table 4.6
Crawford County Threatened and Endangered Species

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS*	STATE STATUS**
<i>Accipiter gentilis</i>	Northern goshawk		SC
<i>Agoseris glauca</i>	Prairie or pale agoseris		T
<i>Alasmidonta viridis</i>	Slippershell		T
<i>Appalachia arcana</i>	Secretive Locust		SC
<i>Atrytonopsis hianna</i>	Dusted skipper		SC
<i>Botrychium mormo</i>	Goblin moonwort		T
<i>Brachionycha borealis</i>	Boreal brachionycha		SC
<i>Buteo lineatus</i>	Red-shouldered hawk		T
<i>Calypso bulbosa</i>	Calypso or fairy slipper		T
<i>Cirsium hillii</i>	Hill's thistle		SC
<i>Coregonus artedi</i>	Lake herring or cisco		T
<i>Dalibarda repens</i>	False violet		T
<i>Dencroica kirtlandii</i>	Kirtland's warbler	LE	E
<i>Emydoidea blandingii</i>	Blanding's turtle		SC
<i>Falcipectus canadensis</i>	Spruce grouse		SC
<i>Festuca Scabrella</i>	Rough fescue		T
<i>Gavia immer</i>	Common loon		T
<i>Glyptemys insculpta</i>	Wood turtle		SC
<i>Haliaeetus leucocephalus</i>	Bald eagle		SC
<i>Incisalia henrici</i>	Henry's elfin		T
<i>Juncua vaseyi</i>	Vasey's rush		T
<i>Lycopodiella subappressa</i>	Northern appressed clubmoss		SC
<i>Panax quinquefolius</i>	Ginseng		T
<i>Pandion haliaetus</i>	Osprey		SC
<i>Physella magnalacustris</i>	Great Lakes physa		SC
<i>Physella parkeri</i>	Broadshouder physa		T
<i>Prosapia ignipectus</i>	Red-legged spittlebug		SC
<i>Prunus alleghaniensis var davisii</i>	Alleghany or sloe plum		SC
<i>Pyygus wyandot</i>	Grizzed skipper		SC
<i>Scirpus clintonii</i>	Clinton's bulrush		SC
<i>Sistrurus catenatus</i>	Eastern massasauga	C	SC
<i>Solidago houghtoni</i>	Houghton's goldenrod	LT	T
<i>Sphaerium fabale</i>	River fingernail clam		SC
<i>Sporobolus heterolepis</i>	Prairie dropseed		SC
<i>Stagnicola contracta</i>	Deepwater pondsnail		E
<i>Stellaria crassifolia</i>	Fleshy stitchwort		E
<i>Viola novae-angliae</i>	New England violet		T

*LE= Listed endangered, C = Candidate, LT = Listed threatened

** E = Endangered, T = Threatened, SC = Special concern

Source: Michigan Natural Feature Inventory, Department of Natural Resources, Wildlife Division

Poorly drained, lowland areas support northern white cedar, tamarack, balsam fir, black spruce, eastern hemlock, white pine, balsam poplar, trembling aspen, paper birch, black ash, speckled alder and shrub willows. Northern white cedar dominates the wetland areas where there is good lateral water movement and the soils are high in organic content. Lowland forests are typically located adjacent to water features and function as riparian forests and water quality buffers. The network of lowland forests, associated with rivers and creeks, also function as wildlife corridors and are the backbone of large regional ecological corridors. Lowland forests adjacent to rivers and streams may be prone to flooding during the spring snowmelt, particularly when combined with heavy spring rains. Forested and non-forested wetlands are a finite resource in the County. Land use planning activities should focus on protecting and preserving these limited and critical resources.

The U.S. Fish and Wildlife Service developed national wetlands inventory program in the 1980's. Through this effort a national wetlands inventory map was compiled for Crawford County. The digital data was acquired from the Center for Geographic Information, State of Michigan, and used to compile **Figure 4.11**. The map depicts forested and non-forested wetlands.

Pre-Settlement Vegetation

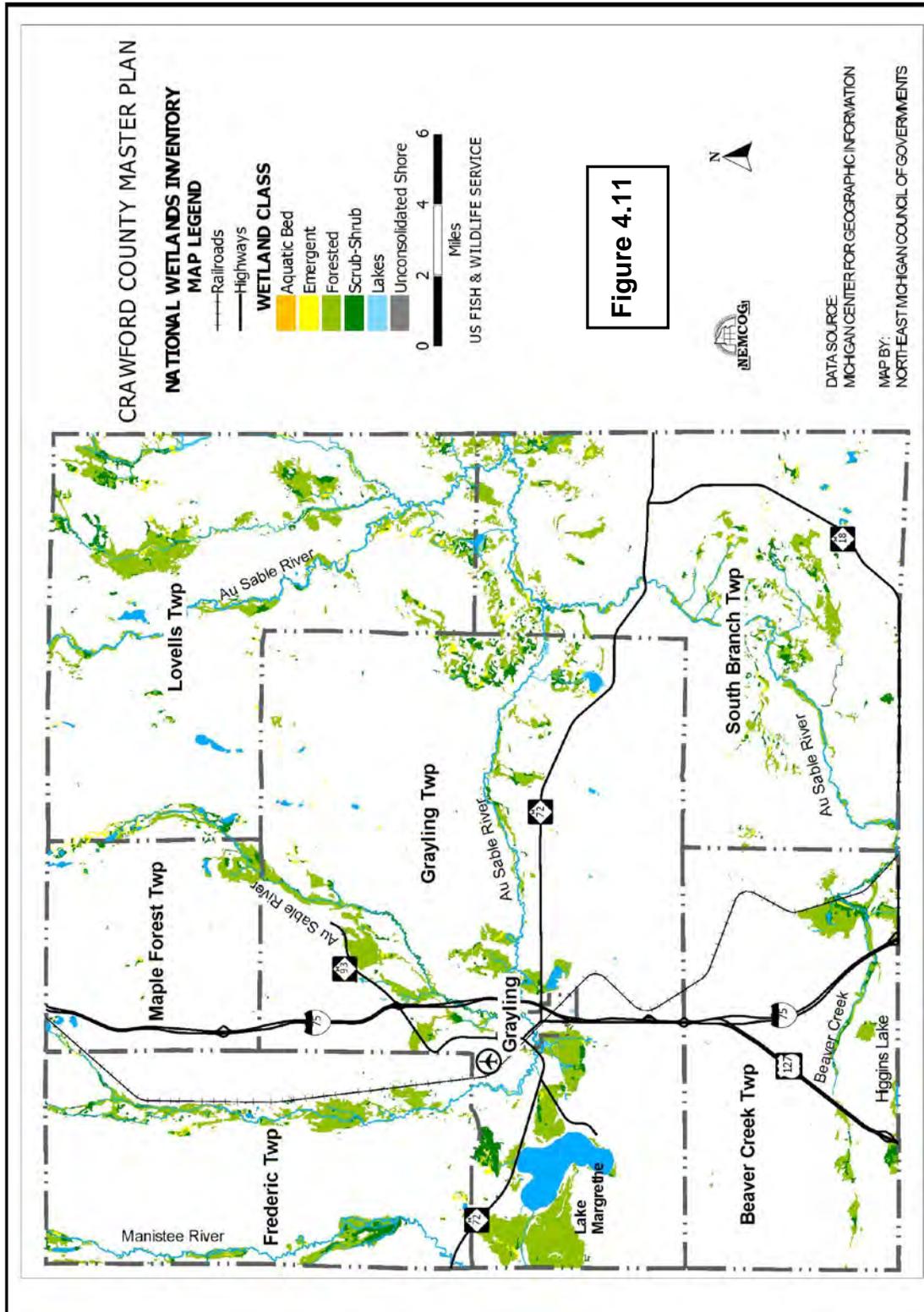
The Michigan Department of Natural Resources has compiled pre-settlement vegetation maps of counties in Michigan. The maps were generated from information contained in the first government land survey notes in the 1800's along with information such as current vegetation, land forms and soils, **Figure 4.12**. A review of the pre-settlement vegetation map of Crawford County shows extensive areas were covered with jack pine-red pine forest, pine barrens, and pine-oak barrens. This clearly shows a long history of wildfires in the area. The map delineates jack pine-red pine forest, white pine-red pine forest, pine barrens, pine-oak barrens, pine-oak forests, and northern hardwood forests. In the late 1800's extensive logging and subsequent wildfires altered the forest make-up, yet still today as noted on the 1978 forest vegetation map, jack pine covers large parts of the county. **Figure 4.13** shows historical vegetation and interpolated fire observations from General Land Office Survey Notes. This map again supports that jack pine and wildfires have long been a part of life in this part of the state. Today, the concern lies in residential development within these historic fire prone areas.

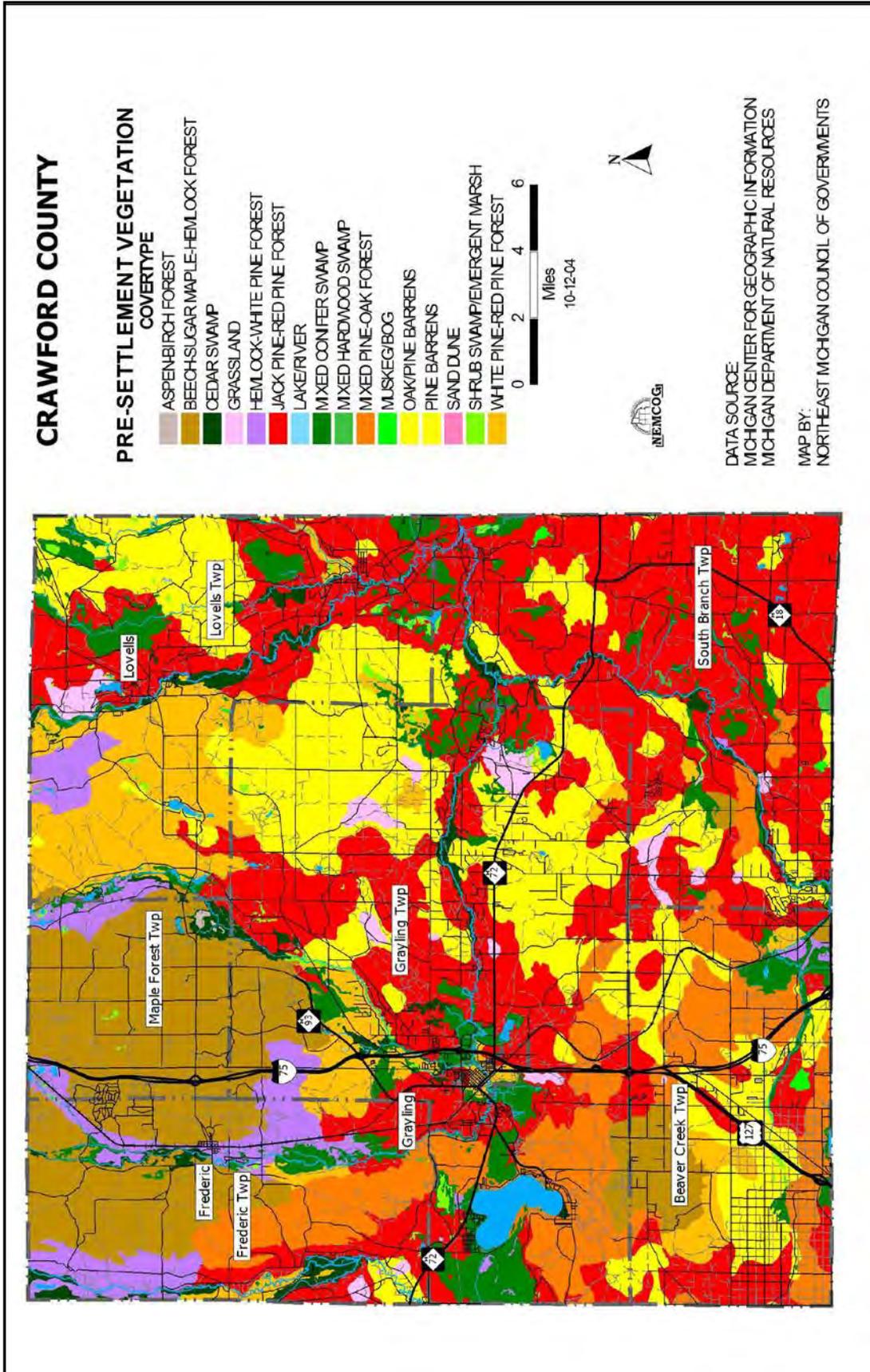
Sites of Environmental Contamination

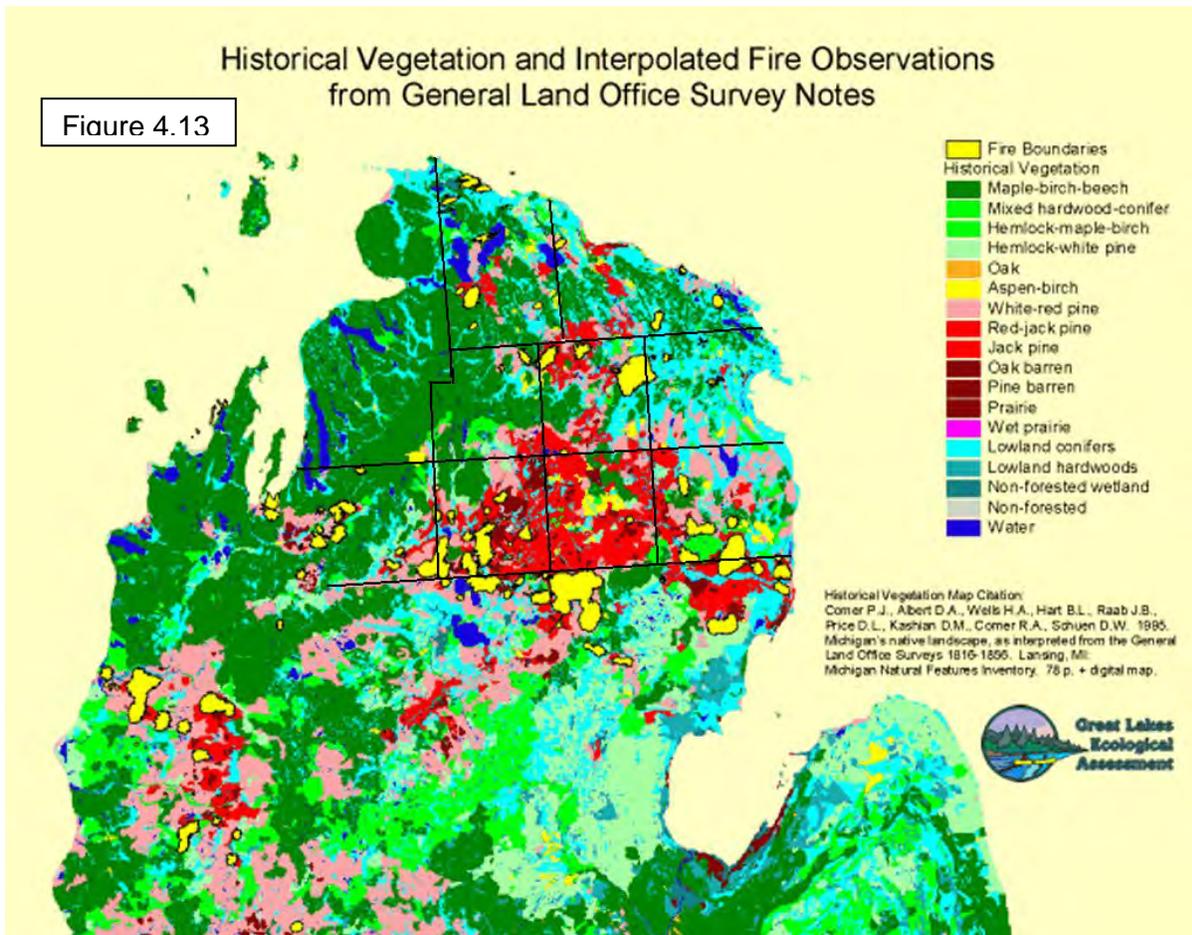
The Part 201 (Environmental Response) of Natural Resources and Environmental Protection Act (P.A. 451 of 1994), as amended, provides for the identification, evaluation and risk assessment of sites of environmental contamination in the State. The Environmental Response Division (ERD) is charged with administering this law. A site of environmental contamination, as identified by ERD, is "a location at which contamination of soil, ground water, surface water, air or other environmental resource is confirmed, or where there is potential for contamination of resources due to site conditions, site use or management practices". The agency publishes a list of environmentally contaminated sites by county showing the sites by name, pollutant(s) and site status (**Table 4.7**).

A Site Assessment Model (SAM) score is computed to assess the relative risk a site may pose and to help determine the aggressiveness of clean up efforts. SAM scores range

from 0 to 48 with 0 being the least contaminated and 48 the most contaminated. In some instances where the score is high and further contamination is possible, immediate response may be required. Conversely, a location where the score is low and the conditions of the site are not likely to change; no action may be the preferred course.







Surface Water and Air Discharge Permits

NPDES Permits

Anyone discharging, or proposing to discharge, waste or wastewater into the surface waters of the State is required to obtain a National Pollutant Discharge Elimination System (NPDES) permit. The NPDES program is intended to control direct discharge into the surface waters of the State by imposing effluent limits and other conditions necessary to meet State and federal requirements. The NPDES program regulates pollutants discharged directly into waterways from wastewater sources. According to the EPA Consolidated Database, as of February 2014 there are nine active NPDES permits issued in Crawford County.

Air Discharge Permits

There are four categories of review or permits in the state of Michigan for air discharges: Maximum Achievable Control Technology (MACT) determinations; New Source Review (NSR); Renewable Operating Permit (ROP); and Acid Rain Permits. MACT determinations are required under the Clean Air Act. The U.S. EPA is required to develop standards for industrial categories of "major" sources of hazardous air pollutants that require the application of MACT. This is done on a case-by-case basis by the Air

SITE ID & STATUS	LOCATION	SOURCE	POLLUTANT	SAM SCORE
20000002 Active	M-93	National Security	PCE , TCE	28
20000003 Active	Sherman Rd	Landfill	Benzene Iron, Vinyl Chloride , 4-methylphenol	24
20000004 Active	6636 AuSable St (Old 27)	Gasoline Service Station	BTEX 1,1 DCA Lead , 1,1,1 TCA PERC	30
20000007 Active	Rt #1, 7 Mile Rd	Pumps & Pumping Equipment	BTEX	31
20000008 No Action Taken	W. Kolka Creek	Oil drilling	Brine	20
20000009 Inactive	5453 M-18 Hwy	Gasoline Service Station	BTEX , 1,2 DCA	27
20000010 No Action Taken	123 Barbara St	Non-classifiable Establishments	BTEX	22
20000028 Monitoring Only	427 South Grayling Rd	Auto Dealer & Service Stations	Tetrachloroethylene, 1,2 Dichloroethylene, Trichloroethylene	17
20000049 Active	Industrial Dr	Sewerage Systems	Nitrate	24
20000058 Active	106 Jonassen	Private Households	Heating Oil , Ethylbenzene	14
20000060 Active	2459 Industrial Dr	Wood Preserving	Cr+6	20
20000064 Active	200 West Michigan Ave	Railroad Transportation	PNAs Dibenzofuran, 2-Methylnaphthalene	29
20000065 No Action Taken	Beech Terrace Dr	Private Households	Fuel Oil	20
20000066 State Project Terminated	308 Huron St (M-72)	Lumber & Wood Products	Benzo(a)pyrene, Fluoranthene, Phenanthrene	21
20000067 De-listed	1985 Dansk Ln	Private Household	Heating Oil, Phenanthrene	21
20000068 De-listed	1320 S. McMasters Bridge Rd	Hotels & Other Lodging Places	Heating Oil	15
20000071 Active	Camp Grayling	National Security	Lead , Zinc , Phenanthrene	33
20000073 Active	N. Down River Rd	Sporting & Athletic Goods	TMB; Benzene; Ethylbenzene; PCE; Toluene; Xylenes; n-Propylbenzene	31
20000074 Active	10360 W. Deward Rd	Pipelines	Ethylbenzene	22
20000075 Active	4364 N. Down River Rd	Fabricated Metal Products	PCE; TCE; cis-1,2 DCE	34
20000077	9439 East North Down River Rd	Gasoline Service Station	TMB; Benzene; Ethylbenzene; Naphthalene; Toluene; Xylenes	31
20000090 Inactive	4622 Young St	Lumber & Wood Products	TMB; Pb	27

Source: Department of Environmental Quality

Quality Division. NSR requires a person to obtain a permit prior to the installation of any potential source of air pollution unless the source is exempt from the permitting process. The ROP program is a national permitting system, administered by each state. Each major source of pollution is subject to the program. A "major source" is a facility that is capable of emitting more than certain amounts of air contaminants. Acid Rain Permits may be required for electric generating units which sell electricity to the grid and burn fossil fuel. **Table 4.8** lists the current Air Discharge (renewable operating permits) permits issued to businesses in Crawford County as of May 2014. Additionally, within Crawford County, only CMS Generation, Grayling Generating Station has submitted a

renewal application for a permit under the EPA Clean Air Interstate Rules regulations (CAIR)

Table 4.8 Air Discharge Permits in Crawford County, May 2014	
Company	Location
City Envl. Services of Waters	Frederic
Grayling Generating Station (CMS Generation)	Grayling
Jaguar Energy – Frederic 15 Gas Plant	Frederic
Weyerhaeuser Structurewood Plant	Grayling
Source: MDEQ Air Quality Division	

Summary

Review of the natural resources in Crawford County indicates the environment is currently in very good condition, however these resources are extremely sensitive to change. The environmental features of the county are an important asset to the area and need continued protection.

Chapter 5 – Land Use Characteristics

This chapter presents information on both the types and location of land uses on a countywide basis. The process identifies both urban built-up land uses such as residential and commercial, along with natural land cover types like forests and wetlands. As a result the final map presented in this chapter is a hybrid that combines land cover and land use.

Land Division Patterns

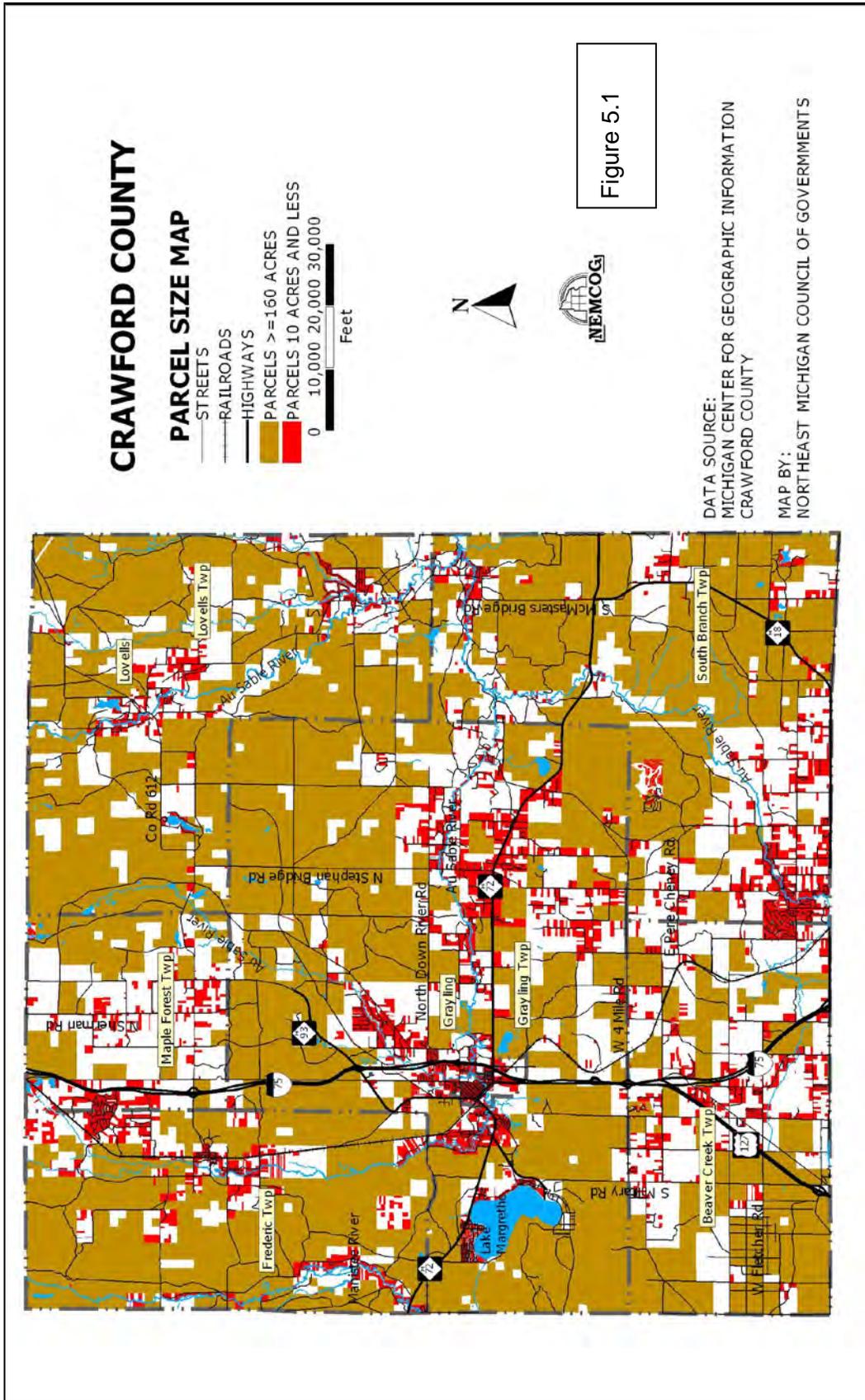
As development occurs, larger tracts of land are generally broken down into smaller parcels. Therefore, studying the existing pattern of land divisions is one way to analyze the status of land use and development. Most of the private ownership is in tracts that are 10 acres and smaller. Large tracts of private ownership, typically hunt/fish clubs, are scattered throughout the County. Subdivisions and small tracts are located near rivers, around lakes along major highways, within recreational developments and clustered around the community of Grayling. **Figure 5.1** shows the distribution of parcels 160 acres or larger, and parcels 10 acres or less.

A key factor that determines community character and the location of potential future development areas is the amount of land public ownership. **Table 5.1** and **Figure 5.2** show the breakdown of public land ownership in Crawford County. Excluding water, all public lands (including that owned by cities, townships, the county, as well as federal and state properties) make up over 70 percent of the county's total land area.

Public Lands	Acres	Percent
State of Michigan	116,614	32
Military	97,294	27
USA	41,433	12
Other Public	1,366	>1
Water	3,031	>1
Source: NEMCOG		

Land Use

One of the features that attract people to Crawford County is the rural character of the area. Data from 1992 satellite imagery shows that 86.3 percent of the County's 360,294 total acreage is forested, with another 7.1 percent non-forest. Agriculture, wetlands and surface water each claim an additional 1.1 percent (Table 5.1 and Figure 5.1). Just a little over three percent of the County's land is used for urban-type purposes, including commercial, industrial, recreational and residential (see **Table 5.2** and **Figure 5.3**)



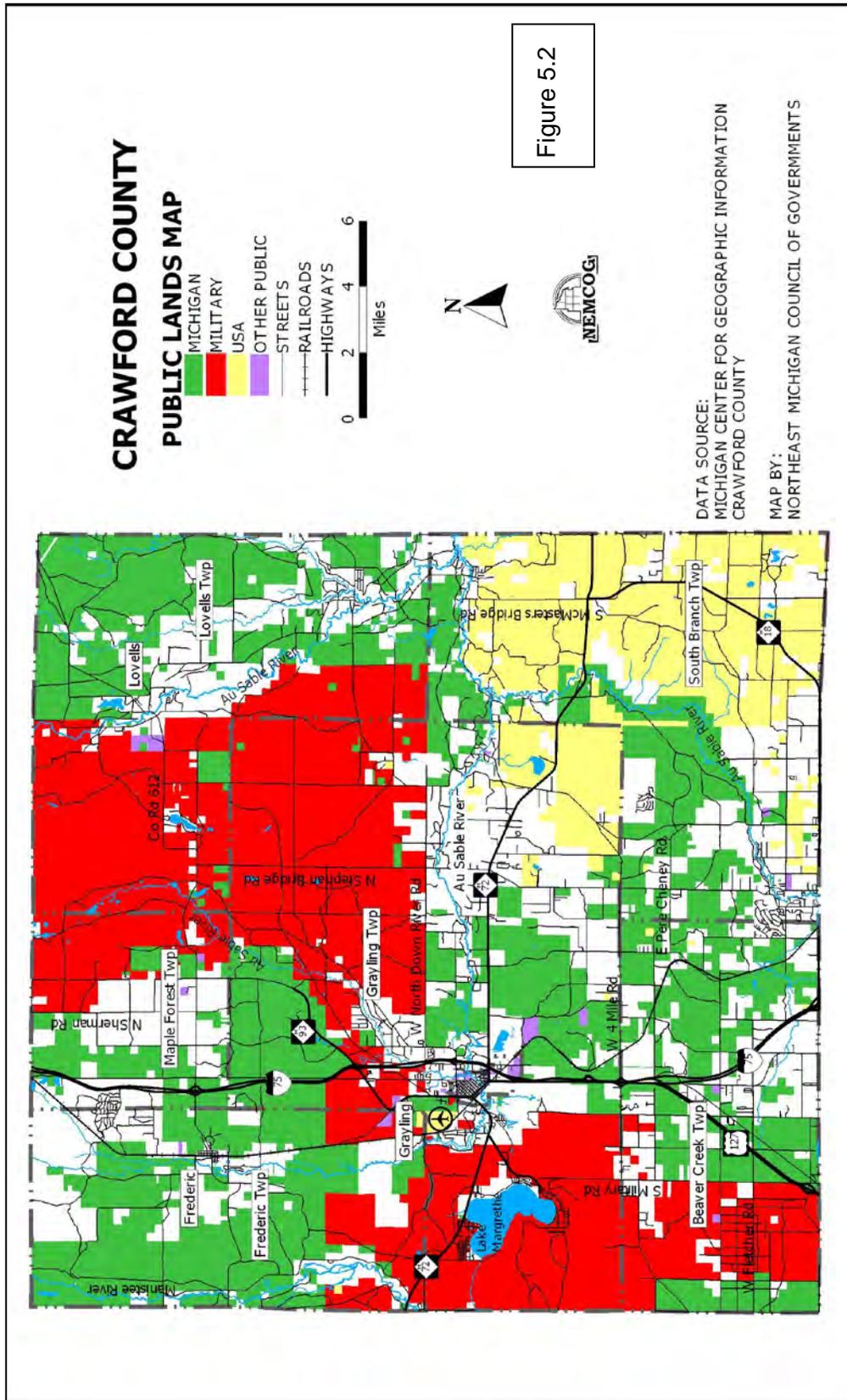


Figure 5.2

Data for the land/cover use inventory was taken from the Michigan Land Cover Dataset (MLCD), which was produced as part of the National Land Cover Dataset (NLCD). The NLCD was compiled from Landsat satellite imagery in 1992 as a cooperative effort between the U.S Geological Survey (USGS) and the U. S. Environmental Protection Agency (US EPA) to produce consistent land cover data for the US. It is important to note this approach utilizes lower resolution satellite imagery and computer generated image interpretation to compile the generalized land cover map. The approach did not involve field checking and manual boundary adjustments. Due to the scale, low density urban development and development in dense forestland was not delineated. The computer generated map offers a general view of land use in the county, adequate for general planning purposes. The computer generated land use for Crawford County consists of the following ten classes:

Land Use Type	Acres	Square Miles	% of Total Area
Agricultural	3,957	6.18	1.1%
Commercial/Industrial/Transportation	2,679	4.18	0.7%
Extractive/Transitional	8,278	12.93	2.3%
Lowland Forest	43,959	68.68	12.2%
Non-Forest Upland	25,719	40.18	7.1%
Recreational	460	0.71	0.13%
Residential	472	0.73	0.13%
Upland Forest	266,861	416.97	74.1%
Surface Water	4,005	6.25	1.1%
Wetlands	3,904	6.10	1.1%
Total	360,294	562.95	100%

Residential

According to the MLCD, 0.14 percent (472 acres) of the County's total land area was used for residential purposes in the early 1990s. As noted in Chapter 2, the number of housing units in the County increased over 15 percent between 1990 and 2000. This increase in housing units indicates a likely increased percentage of land in residential use. The most popular areas for residential development tend to be along the banks of the County's water resources. Residential usage is concentrated in and around the City of Grayling, Frederic Township, around the north and east shore of Lake Margrethe, along the Manistee River in Frederic Township, along the Au Sable River in Grayling Township and along the South Branch of the Au Sable River in South Branch Township. For the most part, residential development in the County consists of single-family dwellings. However, single family duplexes, multi-family units, condominiums, mobile homes and mobile home parks are also listed in this category.

Commercial/Industrial/Transportation

Commercial land uses include primary/central business districts, shopping center/malls, secondary/neighborhood business districts, including commercial strip development, as well as industrial development, transportation, oil and gas, communication and utility facilities, and all

highways. The MLCD identified 2,679 acres, or 0.7 percent of Crawford County's in this land use category. Commercial/Industrial facilities are found primarily in the City of Grayling and in Frederic Township, with expansion noted in areas along M-72, along I-75 and in Beaver Creek Township around the junction I-75 and US 27.

Extractive/Barren

This category includes quarries, strip mines and gravel pits as well as land in transition (forest clear cuts, transition between agriculture and forest lands, and changes due to natural causes such as fire or flooding). Areas of bare rock, sand or clay with little green vegetation are also included in this class, which makes up 2.3 percent (8278 acres) of Crawford's land area.

Recreational

Land devoted specifically to active or developed recreational purposes amounted to approximately 0.13 percent, or about 460 acres in Crawford County. Land uses included in this category are public parks and campgrounds, golf courses, schools, churches and public buildings. Note: Due to the extensive state-owned lands there is a tremendous amount of land available for recreation that is mapped as forested – see Chapter 6 for more recreation details.

Agricultural

With only 3,957 acres classified as farmland, agriculture operations make up a relatively small portion (1.1%) of the County's land use. The largest concentration and majority of the agricultural land use is located in Maple Forest Township with smaller areas located in Beaver Creek Township and South Branch Township. Agriculture land is used predominately as pastureland hay and growing crops such as beans, oats, and barley. A small amount of land is used for livestock such as cattle, milk cows and hogs.

Non-Forested Uplands

Non-forested land is defined as areas supporting early stage of plant succession consisting of plant communities characterized by grasses or shrubs. Non-forest land makes up 7.1 percent or 25,719 acres of the County's land area. Typical grass species are quack grass, Kentucky bluegrass, upland and lowland sedges, reed canary grass and clovers. Typical shrub species include blackberry and raspberry briars, dogwood, willow, sumac and tag alder. Also included in this category are the lands used by the National Guard at camp Grayling for artillery and bombing ranges.

Upland Forest

Upland forests make up 266,861 acres or 74.1 percent of the County's surface area. While some of this land may have been converted to other uses since 1990, it is still by far the largest single land cover/use in the County. The predominant species on much of these lands is jack pine but other species such as white, red, scotch pines, sugar and red maple, elm, beech, yellow birch, cherry, basswood, white ash, and aspen can also be found.

Lowland Forest

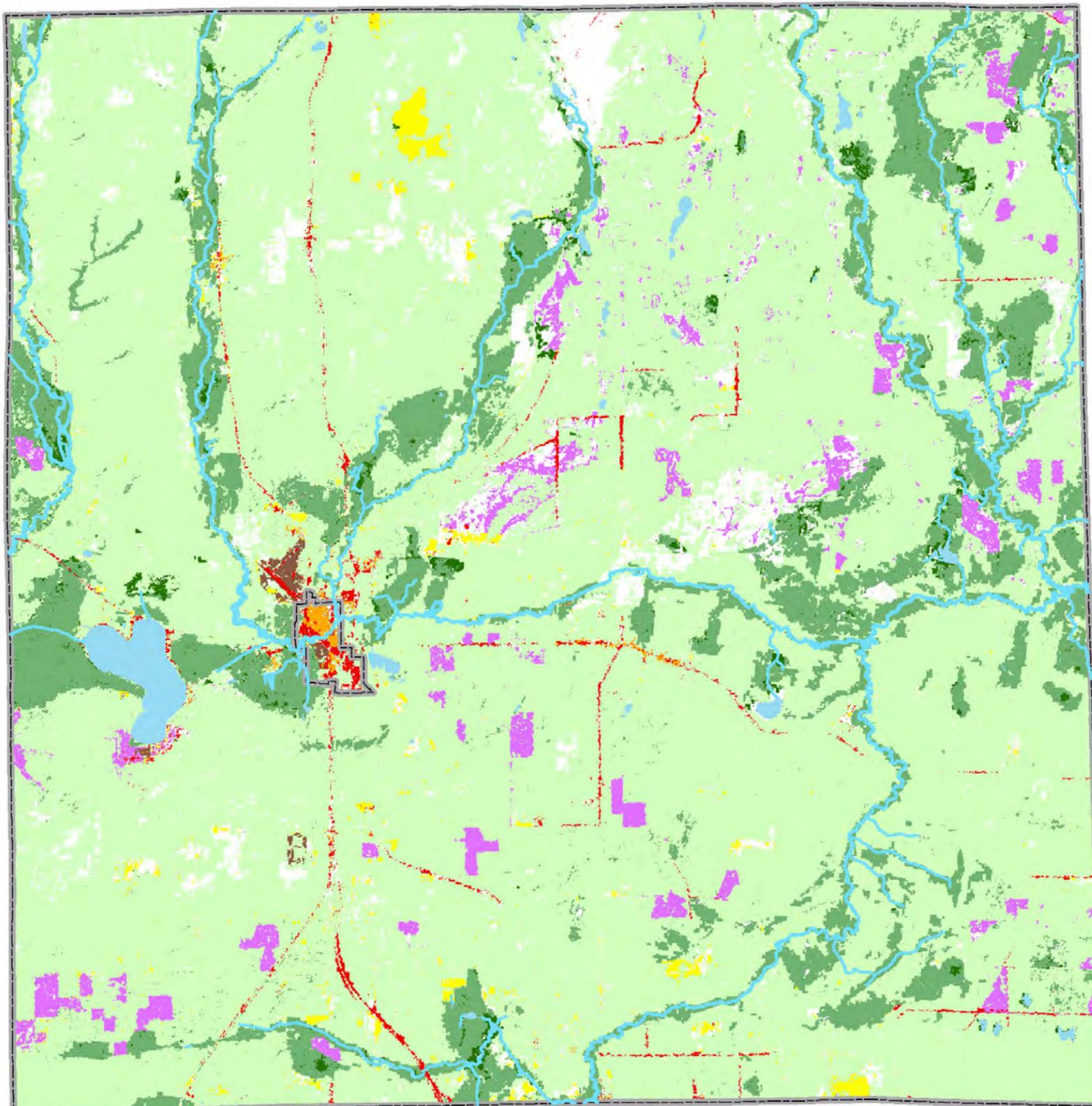
The County's land use inventory shows that 43,959 acres or 12.2 percent of the County's surface area consists of lowland forests. Lowland forests are defined as those containing ash, elm and soft maple, along with cottonwood and balsam poplar. Lowland conifers, such as cedar, tamarack, black and white spruce and balsam fir stands are also included. Lowland forests are mostly found close to the rivers and lakes in the county.

Wetlands

As can be noted from **Table 5.1**, 3,904 acres or 1.1 percent of the County's land area was identified as wetlands. Wetlands are those areas between terrestrial and aquatic systems where the water table is at, near, or above the land surface for a significant part of most years. The hydrologic regime is such that it permits the formation of hydric soils or it supports the growth of hydrophytic vegetation. Examples of wetlands include marshes, mudflats, wooded swamps and floating vegetation situated on the shallow margins of bays, lakes, rivers, ponds, streams. These wetland categories include shrub wetlands, fresh-water marshes, wet meadows, open bogs, emergent wetlands and aquatic bed wetlands.

Surface Water

Crawford County is home to many small lakes and several major rivers. Surface water makes up 1.1 percent (4,005 acres) of the County's land use types. The combination of wetlands types, lowland forests and surface water makes up a significant portion (14.6 percent) of the County's surface area. Therefore, protecting the county's water and wetland resources should be a major priority in land use planning.



- Residential
- Commercial
- Extractive/Transitional
- Recreational
- Agriculture
- Non-Forest Uplands
- Upland Forests
- Lowland Forests
- Wetlands
- Lakes
- Rivers
- Political Boundary

Crawford County 1992 Land Use

0 1 2 3 4 5
Miles



Digital data provided by the Center for Geographic Information, State of MI, and is intended for planning purposes only.



Map produced by the Northeast Michigan Council of Governments GIS Dept July 2006

Chapter 6 – Recreation

The recreational opportunities in Crawford County and the abundance of natural resources are vast, thus the County includes recreation as a key component in the Master Plan. This chapter with the support of the information in the other chapters of the Master Plan is intended to serve as a recreation plan for approval by the Michigan Department of Natural Resources for Crawford County, Beaver Creek Township, Grayling Township, Lovells Township, and South Branch Township. Frederic Township and Maple Forest Township are not specifically included as they recently updated their respective Township Master Plans, including recreation plans. The City of Grayling also maintains a separate recreation plan, thus is not specifically included in this recreation plan.

In past years, the County and Townships have provided recreation services and facilities to residents and visitors. The mix of County and Township owned facilities along with other publicly owned State Forest lands and campgrounds and privately owned recreation facilities offers a wide range of passive and active recreational opportunities. A description of these facilities is included in the recreation inventory, which follows. Crawford County and the respective Townships intends to continue providing recreation services to its residents and visitors, but also plans to make improvements at the existing facilities, including compliance with Americans with Disabilities Act (ADA) and Universal Design standards, to improve accessibility for all.

As recreation service providers, Crawford County including the Grayling Recreation Authority, and the Township recognizes the importance of planning for future recreation services and facilities. A major factor in the provision of any service is the question of how projects will be funded. One possible source of funding for recreation projects is through grants available from Michigan Department of Natural Resources (MDNR).

To become grant eligible for MDNR funding, a community must have an approved recreation plan. Components of a MDNR approved recreation plan include:

- Community Description
- Recreation Inventory
- Administrative Structure
- Description of the Planning Process
- Action Program
- Basis for the Action Program
- Plan Review and Adoption

Elements of the community description can be found in Chapters 1 and 2 of this Plan. A location map can be found in Chapter 1- Introduction, which shows the relationship between the Townships and the County as a whole. Chapter 2 provides background studies including socio-economic characteristics of the County and each of the Townships. Data on the natural environment, including resource inventory information is provided in Chapter 4 and existing land use patterns are discussed in Chapter 5. The remaining components of the recreation plan are covered in this chapter.

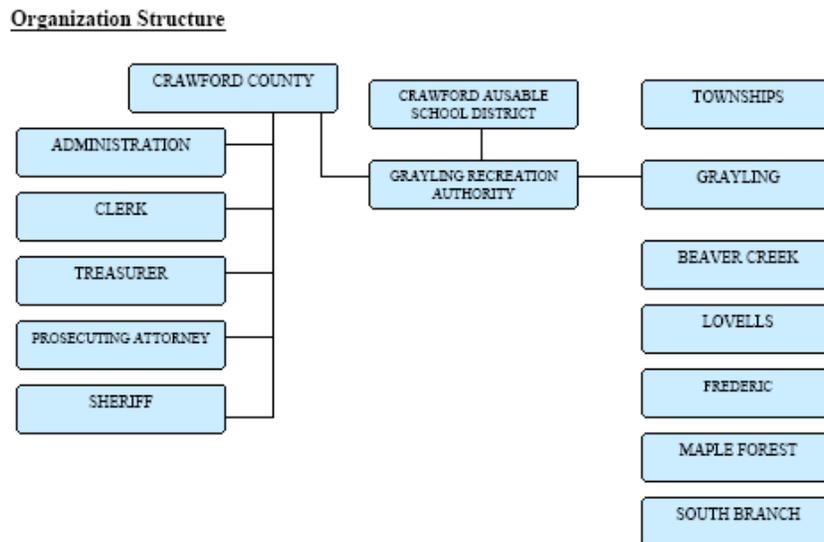
Administrative Structure

Crawford County

Crawford County Board of Commissioners operates under an administrative structure consisting of a Chair, Vice-Chair and board members. These positions are chosen by qualified voters of the county in at-large elections by districts held every other November. Bylaws adopted by the County determine the order of business and method of conducting regular county business. For most issues that require a vote for determination, a simply majority of commissioners present is required.

The county does have a recreational authority – the Grayling Recreation Authority (GRA). The Grayling Recreation Authority was created by local units of Crawford County government to facilitate parks and recreation services in Crawford County, to operate the Hanson Hills Recreation Area.

Crawford County Organizational Chart



Crawford County Parks & Recreation Staff

The County does not employ any parks and recreation staff. Duties related to recreation properties are assigned to existing staff.

Table 6.1

Crawford County Budget and Recreation Expenditures, 2011-2014			
Budget			
FY Ending ____	2011-2012	2012-2013	2013-2014
Recreation	\$2,500	\$58,984	\$200,000
Total County	\$5,298,406	\$5,278,424	\$5,380,122
Expenditures			
Recreation	\$2,500	\$58,984	TBD
Source: Crawford County 2011-2014			

Grayling Recreation Authority

The Grayling Recreation Authority (GRA) was created by the local units of Crawford County to address the recreational needs of the county. This body's primary function is to facilitate parks and recreation services in Crawford County and to operate Hanson Hills Recreation Area and Winter Sports Park. Hanson Hills has the unique distinction of being a State legislated recreational facility, created under P.A. 156 of 1917. The property is located in Grayling Township and is owned by the State of Michigan Department of Military Affairs. The lease to the Hanson Hills Recreation Area is renewed periodically with joint signatures from GRA and the Michigan National Guard. The property is leased to the Grayling Recreation Authority based on a renewable twenty (20) year lease. The current lease expires in 2026. The GRA is governed by a Board of Directors made up of appointed representatives from the County, Grayling Township and the Crawford AuSable School Board and appointed at-large members. The three at-large members are selected and approved by a majority vote of the six appointed members. The term length for at-large members is three years. Term lengths for the appointed members are determined by the appointing body.

GRA Parks & Recreation Staff

The GRA has full-time staff for administration, operation, service and maintenance of the Hanson Hills Recreation Area.

Funding for the GRA Budget

The GRA is currently funded by a county-wide millage. Apart from millage funds, other possible funding sources for recreational improvements in the county exist in grant opportunities with agencies such as the Michigan Department of Natural Resources, private foundations, community service organizations and community fund-raising groups.

Table 6.2

Grayling Recreation Authority Budget and Recreation Expenditures, 2011-2014			
Budget			
FY Ending Mar 31	2011-2012	2012-2013	2013-2014
Recreation	426,860.00	444,806.00	480,754.00
GRA Total Budget	426,860.00	444,806.00	480,754.00
Expenditures			
Recreation	399,827.00	422,032.00	455,224.00
Source: Grayling Recreation Authority 2011-2014			

Participating Townships: Beaver Creek, Grayling, Lovells, and South Branch

Each of the participating Townships operates under an administrative structure consisting of a Township Supervisor, Township Clerk, Township Treasurer and two Township Trustees. These positions are elected by registered voters of the Township. The elected offices for Township Supervisor, Clerk, Treasurer and Trustees are four year terms. Bylaws adopted by the Township Board determine the order of business and method of conducting regular township business. Meetings are conducted using *Robert's Rules of Order*. For issues that require a vote for making a determination, a simple majority of the Township Board present is required.

Parks and recreation facilities are under the direct control of the Township Board of Trustees. Each Township Board is directly responsible for creating the Recreation Plan.

Township Parks & Recreation Staff

Grayling Charter Township employs one part-time staff for maintenance of recreational facilities. Beaver Creek, Lovells and South Branch Townships do not employ staff for recreational activities. Township recreation is handled by the Township Board. Other individuals typically involved in recreational activities at the Township level include: Township Board Members, Township Planning Commission, other Township staff and volunteer groups.

Budgets

Table 6.3

Beaver Creek Township Budget and Recreation Expenditures, 2011-2014			
Budget			
<u>FY Ending June 30</u>	2011-2012	2012-2013	2013-2014
Recreation	0		
Total Township	419,330	408,605	418,989
Expenditures			
Recreation	0	0	0
Source: Beaver Creek Township Profit & Loss Budget Sheets, 2011-2014			

Table 6.4

Grayling Charter Township Budget and Recreation Expenditures, 2011-2014			
Budget			
<u>FY Ending Mar 31</u>	2011-2012	2012-2013	2013-2014
Recreation	1,125	11,500	0
Total Township	1,074,000	1,115,000	1,100,000
Expenditures			
Recreation	900	8,000	TBD
Source: Grayling Charter Township Profit & Loss Budget Sheets, 2011-2014			

Table 6.5

Lovells Township Budget and Recreation Expenditures, 2011-2014			
Budget			
FY Ending Mar 31	2011-2012	2012-2013	2013-2014
Recreation	0	0	0
Total Township	172,255	207,361	150,171
Expenditures			
Recreation	200	200	200
Source: Lovells Township General Budget Sheets, 2011-2014			

Table 6.6

South Branch Township Budget and Recreation Expenditures, 2011-2014			
Budget			
FY Ending Mar 31	2011-2012	2012-2013	2013-2014
Recreation	\$5000	\$1000	\$1000
Total Township	\$397,355	\$374,620	\$365,860
Expenditures			
Recreation	\$0	\$209	\$243
Source: South Branch Township Profit & Loss Budget Sheets, 2011-2014			

Relationships with Other Agencies

Numerous groups within the county are involved with the improvement and operation of the recreational facilities in Crawford County. The majority of these organizations are operated on a volunteer basis. The organizations and special interest groups that assisted to provide recreation opportunity in Crawford County are:

1. Trails Sub Committee
2. Grayling Sportsplex
3. Crawford Ausable Soccer
4. Redskins Football
5. Little League Baseball
6. Crawford Ausable Athletic Director
7. Grayling Parks and Recreation Committee
8. Archery
9. Wellington Farm Park
10. Canoeing
11. Grayling Senior Center
12. Cross Country Ski Trails
13. Grayling City Parks & Recreation
14. Bicycling
15. MSUE 4-H
16. Boy Scouts/Girl Scouts
17. Trout Fishing

Beaver Creek Township, Grayling Township, Lovells Township and South Branch Township are participating in the Crawford County Recreation Plan. The City of Grayling participated in the process, but has its own recreation plan. Frederic and Maple Forest Townships participated in the process, but they each have an approved, current Recreation Plan within their Master Plan. The Crawford AuSable School District is also actively participating in the Recreation Plan

The Recreation Plan Proposed pathway projects are consistent with the Northeast Michigan Regional Non-motorized Transportation Plan and Investment Strategy.

Status Report of all Grant-Assisted Parks and Recreation Facilities

The following is a summary of the grant assistance which has been received by Crawford County or one of the participating Townships. Post-completion certification reports for each of these projects are provided in Appendix ___.

<u>Crawford County</u>	
Project No. 26-00776	Project Year: 1976
Project Title: Wakely Bridge Access	
Project Status: Closed	Grant Amount: \$1,783.90
Element	
Picnic equipment	
Fencing	
Road Development	
Project Description: Fencing, picnic equipment, and LWCF sign	
Project No. BF91-295	Project Year: 1991
Project Title: Hanson Hills Recreation Area	
Project Status: Closed	Grant Amount: \$150,000.00
Element	
Mechanical Snow Making	
Ball Diamonds (2)	
Soccer Field	
Restroom Renovation	
Project Description: Develop additional recreational facilities.	
Project No. TF00-146	Project Year: 2000
Project Title: Grayling Fish Interpretive Center	
Project Status: Closed	Grant Amount: \$327,796.00
Element	Element
River Restoration	Fencing
Raceway Infrastructure	Landscaped Deck Overlook
ADA Accessible Trails	Stormwater Retention Basin
Interpretive Signage	Parking Lot
Buildings (Demolition/Construction) and restroom	
Children's Fishing Pond	
Project Description: Development of the Grayling Fish Interpretive Center, to include river restoration, raceway infrastructure, trails, signage, restroom, pond restoration, fencing, deck, fishing access and parking lot.	

Additionally, Crawford County has one active grant (#26-01713) for the development of little league fields at the County Sports Complex.

Beaver Creek Township

Project No. 26-01572

Project Year: 2001

Project Title: Beaver Creek Park Improvement Project

Project Status: Closed

Grant Amount: \$45,000.00

Element

Pavilion

Pave and expand parking

Non-motorized trail

Renovate Existing Pavillion

Project Description: Expanding parking and physical plant facilities as part of the continuing development of a 38-acre recreational park sponsored by Beaver Creek Township.

Grayling Charter Township

Project No. TF00-388

Project Year: 2000

Project Title: Nature Park by the Fish Hatchery

Project Status: Closed

Grant Amount: \$230,000.00

Element

Paving Road and parking

Water, Electric and Septic

Public Restrooms

Signage

Trail Development

Playground Equipment

Element

2 Fishing decks

Pavilion

Bridge over River

Landscaping

Project Description: Development of a new park which is located on the east branch of the AuSable River, including play equipment, walkways and fishing piers.

Lovells Township

Project No. 26-01104 F1

Project Year: 1980

Project Title: Douglas Park

Project Status: Closed

Grant Amount: \$11,816.57

Project Description:

Inventory of Existing Parks, Natural Areas and Recreation Facilities

The previous recreation plan inventory was used as a starting point for the following updated inventory, which was compiled with assistance from Crawford County, each of the participating Townships, Department of Natural Resources staff as well as the Recreation Stakeholders.

Public Recreational Properties – Crawford County

Table 6.7

CRAWFORD COUNTY & GRA RECREATIONAL FACILITIES				
Name	Classification	Description	Accessibility	Size
Hanson Hills Recreation Area	Large Urban Park	Large Park/Open Area that is located on State Land. Area is close to town, with bordering neighborhoods. Consists of Ski Lodge, Downhill Ski run, Nordic Ski trails, and Tubing Hill. Mt. Bike and Hiking Trail System. Includes Playground Area, Softball and Soccer Fields, Archery Facility, Disc Golf Course, Fishing Pond and Picnic Area.	2	277 Acres (Leased)
	Natural Resource Area			1500 Acres approx.
	Sports Complex			(Special Use Permit)
Grayling Fish Hatchery	Special Use	Fish Hatchery Located in town, Bordering numerous residential areas. Includes Trout fishing tanks, Museum building, Picnic Area.	3	50 Acres
Crawford County Sportsplex (fairgrounds)	Sports Complex	Concession stand and ball fields	2	30 acres
Wakeley Bridge Canoe Launch	Mini-Park	Canoe access	1	½ acre
Township Park		Park leased to Grayling Township on 99 year lease		

Public Recreational Properties – Townships and Chamber

Table 6.8

BEAVER CREEK TOWNSHIP				
Name	Classification	Description	Accessibility	Size
Beaver Creek Governmental Complex	Community Park	Community Center, playground, tennis courts, baseball and basketball courts, soccer field, ½ mile paved multi-use trail, pavilions, bathroom building	3	40 ac
FREDERIC TOWNSHIP				
Betty Sadjak Memorial Park	Community Park	Playground, picnic tables, basketball court, walking path and gazebo.	3	1 ac
Frederic Community Center/Twp Hall	Community Park	Meeting rooms, offices, kitchen, gymnasium, picnic area, playground/tot lot and multi-purpose fields	3	5 ac
GRAYLING TOWNSHIP				
Grayling Township Fish Hatchery Park	Natural Urban family recreational area	Located on AuSable River East Branch close to City of Grayling and Grayling Fish Hatchery. Large playground, picnic pavilion, hiking trails, disc golf course, swimming and fishing	2	20 ac on E side and 4 ac on W side of river
LOVELLS TOWNSHIP				
Douglas Park	Neighborhood Park	Children's playground, picnic pavilion, ball diamond, volleyball area, shuffle board court, museum	3	5.5 acres
MAPLE FOREST TOWNSHIP				
Maple Forest Township Hall	Neighborhood Park	Meeting Room with kitchen facilities	3	<1 ac
SOUTH BRANCH TOWNSHIP				
Township Hall	Neighborhood Park	Township Hall	3	5
OTHER RECREATIONAL FACILITIES IN CRAWFORD COUNTY				
Chamber of Commerce City Park	Neighborhood Park	Chamber office, parking, pavilion/picnic area, river access	3	3

State Parks, State and Federal Forest Campgrounds in Crawford County

Table 6.9

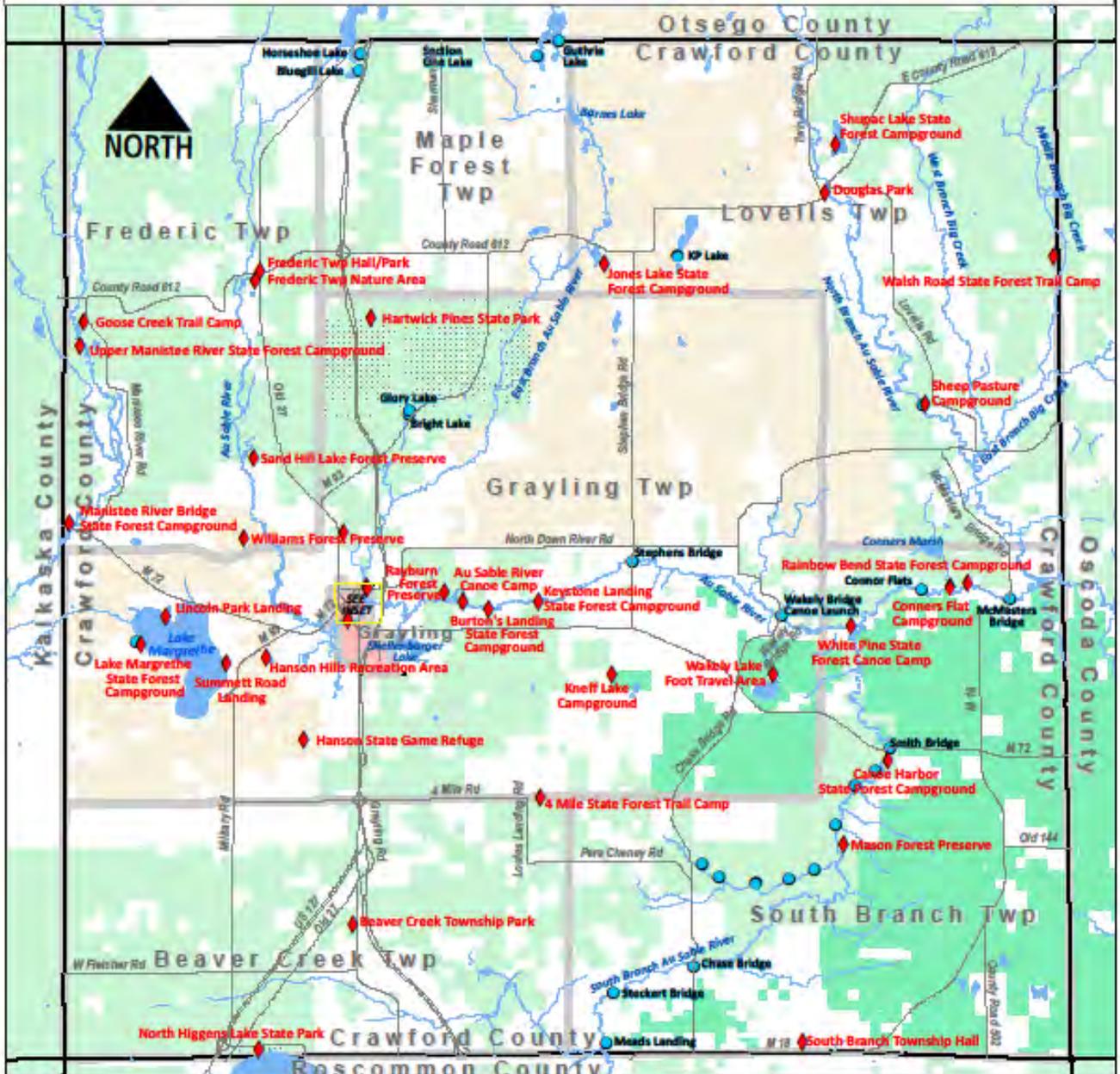
STATE & FEDERAL RECREATIONAL FACILITIES		
Facility	Amenities	Location
North Higgins Lake State Park	174 campsites, trailer station, cabins, boat access, fishing, trails, museum, pavilions, conference center	Section 36, southern edge of Beaver Creek Township
Goose Creek State Forest Campground and Trail Camp	9 campsites, canoeing, hiking, horseback riding, wildlife viewing, fishing large equestrian group camp area	5.5 miles west of Frederic, Frederic Township
Manistee River Bridge Campground	23 campsites, canoeing, fishing, canoe access	Section 31, Frederic Township
Upper Manistee River Campground	30 campsites, 10 walk-in sites, canoeing, fishing, group camp for canoeists	Section 7, Frederic Township
AuSable River Canoe Camp	13 campsites (5 are canoe access only) hiking, picnicking, fishing, wildlife viewing	Grayling Township, 5.5 miles east of Grayling
Burton's Landing Canoe Launch	12 campsites, canoeing, fishing	Section 10, Grayling Township
4 Mile State Forest Trail Camp	50 campsites, horse camp, horseback riding, boat launch, fishing, canoeing, hiking, wildlife viewing	9 miles southeast of Grayling, Grayling Township
Hartwick Pines	100 campsites, hiking, mountain bike trails, fishing, logging museum & camp, Interpretive Center	6 miles Northeast of Grayling, Grayling Township
Keystone Landing Campground	18 campsites, canoeing, fishing, canoe launch	Section 11, Grayling Township
Kneff Lake Campground	26 campsites, boating, fishing, swimming, picnicking	7 miles southeast of Grayling, Grayling Township
Lake Margrethe Forest Campground	37 campsites, boating, swimming, fishing, boat ramp reservations available	Section 17, Grayling Township
Wakeley Lake Area Federal Forest	4 walk-in campsites, limited fishing, trails	Section 23, 10 miles southeast of Grayling
Jones Lake State Forest Campground	42 campsites, boating, swimming, fishing, small-boat ramp	Section 31, Lovells Township
Shupac Lake Campground	30 campsites, boating, boat ramp, swimming, fishing	Section 18, Lovells Township
Canoe Harbor Campground	44 campsites, canoeing, fishing, group campsites (6)	Section 32, South Branch Township
Rainbow Bend Forest Campground	6 campsites, canoeing, fishing, canoe access, canoe group camping sites	Section 3, South Branch Township
Walsh Road Equestrian Campground	Horseback riding, large group use area available by permit only,(7) sites	SW1/4 of Lovells NE, off Walsh Rd. north of East Townline Road
White Pine State Forest Canoe Camp	Open area campsite, canoe access only, fishing, wildlife viewing	Section 7, South Branch Township

CRAWFORD COUNTY RECREATIONAL FACILITIES

- ◆ Recreational Facilities
 - Boat/Fishing Access Sites
- Public Lands**
- Huron National Forest
 - State of Michigan
 - State Park
 - State Military Land



NEMCOG
 Map created by the
 Northeast Michigan
 Council of Governments
 August 2008



Private Campgrounds in Crawford County

Table 6.10

PRIVATE RECREATIONAL CAMPGROUNDS		
Facility	Amenities	Location
River Park Campgrounds		Grayling Township
Timberly Village Campground & Mobile Home Park		City of Grayling
Happi Days Campground and Diner		Frederic, Frederic Township
The Trails Campground	63 Campsites	Frederic, Frederic Township
Yogi Bear's Jellystone Campground	218 Campsites	Grayling Township
Sno-Trac Village	60 campsites, 10 mobile homes, snowmobiling	Lovells, Lovells Township
Headwaters Camping and Cabins		Waters, Maple Forest Township
Whispering Pines	Campgrounds, Cabins and Showers	Frederic Township

Trails in Crawford County

Table 6.11

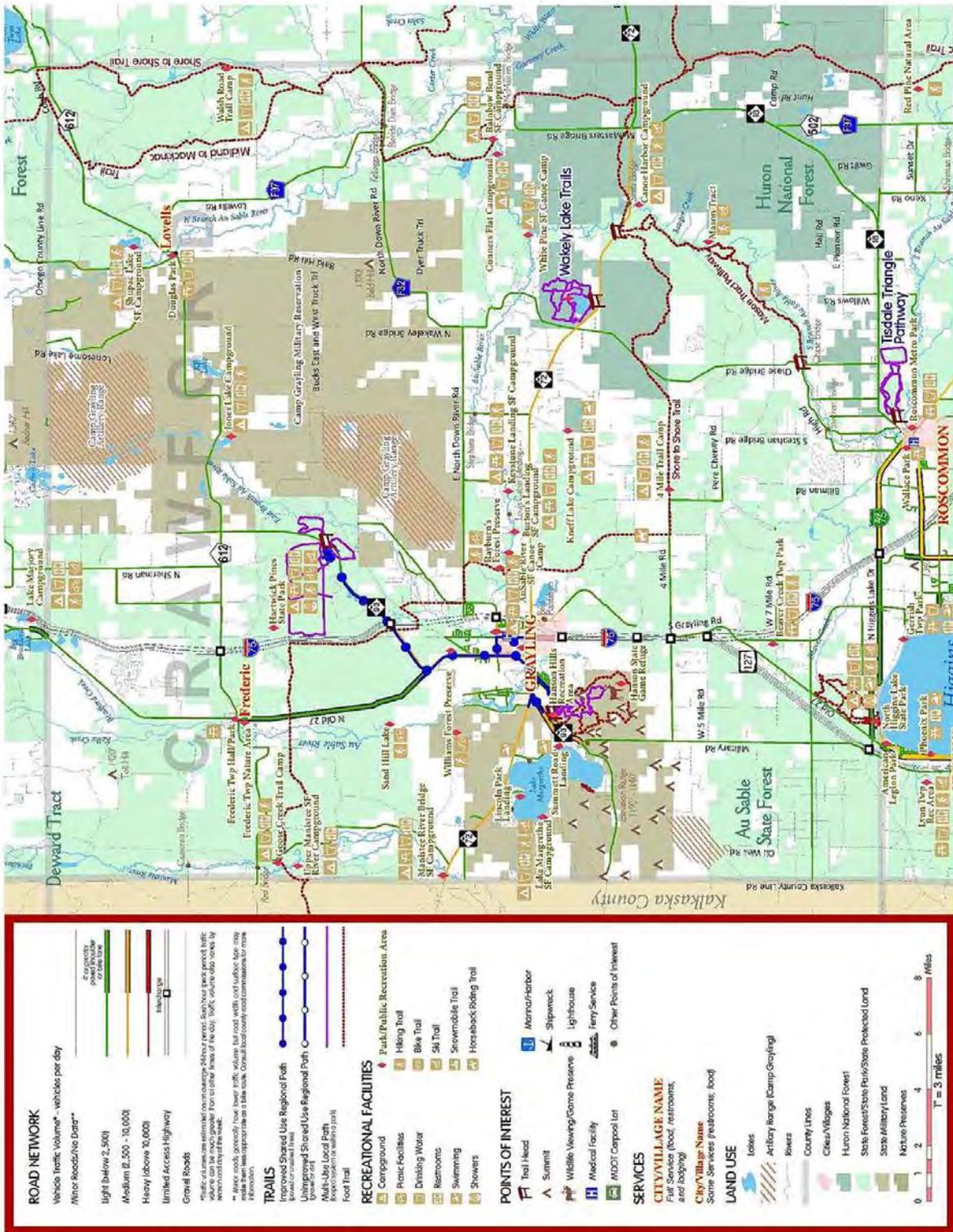
RECREATION TRAILS		
Trail	Description	Location
MULTI-USE TRAILS		
Mason Tract Trail	Point to point hiking and cross country skiing trail along the South Branch AuSable River	Between Chase Bridge and M-72, 14 miles east of Grayling
Michigan Shore to Shore Hiking and Riding Trail	Point to point trail hiking and riding trail from Lake Huron to Lake Michigan	Parallels M-72, South Branch Twp.
Midland to Mackinac Hiking Trail	Point to point hiking and backpacking trail that extends from Midland to Mackinac City	Parallels F97, South Branch Twp.
Hanson Hills Trails	Skiing, biking, hiking	Hanson Hills Recreation Area
Hartwick Pines	Skiing, biking, hiking	Hartwick Pines State Park
Grayling Non-motorized Pathway (<i>Grayling Bicycle Turnpike</i>)	Biking, walking, running	
Wakeley Lake Trail	Skiing, hiking	National Forest Service System

Trails

Table 6.11-cont'd

ORV TRAILS		
Cycle Conservation Club ORV Trail	Motorized off road vehicle trail	Pioneer Rd, to South of Hunters Trail in Beaver Creek Twp.
West Higgins ATV Trail	Motorized off road vehicle Trail	South of Hunters Trail in Beaver Creek Twp.
The Meadows ORV Trail	Motorized off road vehicle trail	Pioneer Road, South Branch Twp.
Frederic ORV Loop	Motorized off road vehicle Trail	Frederic Twp.
Frederic ORV Route	Motorized off road vehicle Trail	Batterson Road to M 93along N Old 27
SNOWMOBILE TRAILS		
Trail #4	Snowmobile Trail	Lovells Twp.
Trail #7	Snowmobile Trail	Frederic to Beaver Creek
Trail #9	Snowmobile Trail	Meridian Road at east boundary of South Branch Twp.
Trail # 47	Snowmobile Trail	Grayling to Lovells
Trail #79	Snowmobile Trail	M-72 to Kalkaska Co.
Trail #409	Snowmobile Trail	Lovells Twp. to Oscoda Co.
Trail #482	Snowmobile Trail	4 Mile Road to Grayling along I-75 Corridor
Trail #487	Snowmobile Trail	South east corner of Grayling Twp.
Trail #489	Snowmobile Trail	Beaver Creek Twp

Bike Trails (except Northeast Region Road and Trail Bicycle Guide-3rd edition—used with permission)



Boat/Fishing Access Sites in Crawford County

Table 6.12

Recreational Boat Access Sites in Crawford County		
Access site	Amenities	Location
Bluegill Lake	15 parking spaces, toilets	Maple Forest Township
Bright Lake	15 parking spaces, toilets, Fishing pier, Recreation Passport required	Hartwick Pines State Park
Chase Bridge	10 parking spaces, toilets	Chase Bridge Rd, South Branch Twp.
Conner Flats	6 parking spaces, toilets	Connors Flats Rd. Grayling SE
Glory Lake	15 parking spaces, toilets, fishing pier, Recreation Passport required	Hartwick Pines State Park
Guthrie Lake	3 parking spaces, toilets	Maple Forest Township
High Banks	15 parking spaces, toilets	
Horseshoe Lake	5 parking spaces	Maple Forest Township
KP Lake	5 parking spaces, toilets	KP Lake Rd, Lovells NW
Lake Margrethe	30 parking spaces Recreation Passport required	Via McIntyres Landing Rd, Grayling SW
McMasters Bridge	10 parking spaces, toilets	McMaster's Bridge Rd, South Branch Twp.
Meads Landing	10 parking spaces, toilets	Steckert Bridge Rd, South Branch Twp.
Section One Lake	4 parking spaces, toilets	Maple Forest Township
Sheep Pasture	20 parking spaces, toilets	Lovells Rd., Lovells SE
Smith Bridge	12 parking spaces, toilets	M-72 and Smiths Bridge Rd., South Branch Twp.
South Branch AuSable River Fishing Access	Multiple points of fishing access to the South Branch AuSable River	South Branch Rd, South Branch Township
Steckert Bridge	6 parking spaces, toilets	Steckert Bridge Rd, South Branch Twp.
Stephans Bridge	15 parking spaces, toilets	

Canoe Liveries in Crawford County

Table 6.13

Canoe Liveries	
Borcher's AuSable Canoeing	AuSable River, Grayling
Jim's Canoe Livery	Ausable River, Grayling
Long's Canoe Livery	Manistee River, Frederic Township
Penrod's	AuSable River, Grayling
Carlisle Canoe Livery	AuSable River, Grayling
Shel-Haven Canoe Rental	Manistee River, Frederic Township

Privately Owned Recreational Public Facilities

In addition to the above listed recreational opportunities, Crawford County is host to a number of other private recreational facilities including a bowling alley, boys and girls camps, golf courses, miniature golf, marina, shooting range and senior center. Crawford County also has numerous resorts, cabins and motels that are utilized by fishermen, hunters and other sports enthusiasts for overnight accommodations. Most of these facilities are located in and around the Grayling and Frederic area.

Regional Recreational Opportunities

The amounts and types of recreation opportunities, which are available in neighboring counties, are highly variable. All neighboring counties have an ample supply of state and/or federal lands, much of which can be used for recreational activities, including hunting, fishing, hiking, wildlife viewing, etc.

The closest neighboring community to the major population of Crawford County is Roscommon (Roscommon County). Roscommon has a variety of recreational facilities including a community recreation/fitness center. They also have an outdoor ice rink, a soccer field and tennis courts. Roscommon is approximately 15 miles from Grayling. Higgins Lake and Houghton Lake both provide recreational water opportunities.

To the north, Gaylord (Otsego County) has several recreational facilities that are open to the public. The Sportsplex offers an indoor ice rink and swimming pool. There are several ski lodges, groomed cross country ski trails, golf courses, a bowling alley and theatre complex. The travel distance from Gaylord to areas in Crawford County vary from about 20 minutes to close to one hour.

Oscoda County, to the east, is a very rural county with few recreational facilities beyond state and federal lands and campgrounds and the AuSable River. The area does offer a major golf/cross country ski resort. The travel distance from Crawford County to Oscoda County ranges from 30 minutes to more than one hour.

Kalkaska County is located to the west of Crawford County. Located within the City of Kalkaska are a variety of recreational opportunities. The area has a roller skating rink, an archery course and a sportsplex called "Kaliseum". They also have an assortment of sports teams such as Little League, soccer and softball. Kalkaska is a 30 minute drive from Grayling, but is over an hour from other portions of the county.

Planning Process

The planning process for the Master Plan and Recreation Plan update began in the fall of 2013, when it was decided that the Recreation Plan would be updated and incorporated into the Crawford County 2014 Master Plan update. The planning process included a series of meetings with the County Planning commission with representation from each of the Townships, the School District and the County Board of Commissioners. Additionally, a group of recreation stakeholders representing diverse cross-section of recreational interests were identified and involved to provide input throughout the process. Advertised public meetings for recreation input were held during the plan preparation process. Each township also provided input regarding recreation in their jurisdiction. A copy of the draft recreation section as well as the entire draft Master Plan were made available for public review and comment for over two months prior to a public hearing on June 4, 2014. Copies of the meeting notices, sign-in sheets and minutes are provided in Appendix ____.

[additional details to be added after public review period]

Goals and Objectives

In the review of past goals and recent input, the following overall goal and component goals were developed and apply at both the County level and the Township level.

Recreation and Public Lands Goal

GENERAL OVERALL GOAL:

Preserve and improve access to public lands and water, recreation trails, public parks and recreation facilities for the safe enjoyment by residents, visitors, and future generations.

ADDITIONAL COMPONENT GOALS:

- 1. Pursue improvements to recreational opportunities within Crawford County.***
- 2. Ensure public recreational facilities and activities are open and accessible to all.***
- 3. Work cooperatively with appropriate agencies and units of government to develop and maintain an extensive network of trails and the necessary support facilities for each, including hiking, biking, horseback riding, x-c skiing, snowmobiling, and ORV.***
- 4. Work cooperatively with appropriate agencies and units of government to establish and maintain access sites for canoe/kayak use and fishing access, and promote the local water trails.***
- 5. Work cooperatively to promote recreational opportunities in the area and the related economic benefits for the region, including providing support for the Trail Town initiative.***

Crawford County - Recreation Goals & Objectives

Goal 1. Renovate the Grayling Fish Hatchery Building and maintain the grounds.

Objectives:

- a. Procure the funding necessary to renovate the interior of the hatchery so that it can be used by and for the community.
- b. Maintain and improve the exterior of the building and the grounds as funding becomes available.
- c. Create and maintain a walking trail through the property and onward to M – 72 East.
- d. Replace the current foot bridge over the AuSable River as part of the walking path/trail.
- e. Develop the balance of the property in such a manner that allows for the natural beauty to be enjoyed by all through nature trails, parks, etc.
- f. Work with Huron Pines to develop a fish passage in order to reconnect 28 miles of the East Branch of the AuSable River for fish travel.

Goal 2. Develop the Crawford County Sports Complex so that it becomes a one-stop shopping for recreational sports in Crawford County.

Objectives:

- a. Build up to six additional soccer fields (two soccer fields have been completed) along the northern boundary of the property.
- b. Build a series of baseball/softball fields to accommodate all levels of little league activities.
- c. Design, build and maintain a network of roads throughout the complex that maximizes safe and efficient traffic flow patterns.
- d. Create the necessary parking areas so that all events may be effectively accommodated.
- e. Design and build a facility to handle all concession needs for any and all programs that are being held on the site.
- f. Design and build ADA accessible restrooms for the needs of all patrons on the site.
- g. Design and build a walking path system throughout the complex for access to various facilities and exercise.
- h. Conduct a feasibility study to establish the viability of a Crawford Community Center.

Goal 3. Develop, maintain and improve the Wakeley Landing Property.

Objectives:

- a. Maintain current access for canoeists and anglers on the property.
- b. Develop better opportunities throughout the property to accentuate the experience for canoeists and anglers.

Goal 4. Continue to expand on the non-motorized trail system within the County.

Objectives: Develop and build the following trails:

- a. Au Sable River Water/Bike Trail from Grayling to Oscoda
- b. Grayling Connector to North Higgins State Park thus connecting with Hartwick Pines
- c. Rayburn Property Loop North Down River Road/M-72 East
- d. Riverside Trail from Downtown to Fish Hatchery/Township Park
- e. West M-72, north side of M-72, to Old Dam Party Store then to AuSable Trail
- f. Walk-under for Downtown Bridge
- g. Extended shoulders from Frederic to Waters
- h. Connect Camp Grayling/M-93 to North Higgins State Park
- i. M-72 West to Manistee River Road to 612 and East to Frederic
- j. CR 612 East to F-97 south to North Down River Road
- k. Sherman Road North to Marlett Road west into Waters

- l. Extend shoulders on M-72 East to Wakeley Lake and Mason Tract
 - m. Separate trail extending from High School to Frederic
 - n. Extended shoulder on CR 612 from Frederic around to Hartwick Pines Entrance
 - o. Separate Bridge crossing I-75 servicing Hartwick Pines Trail segments
 - p. Trailhead parking at beginning of Grayling Bicycle Turnpike/North Down River
 - q. Extended shoulders on North Down River Road
 - r. Sidewalk connecting Ramada/Days Inn to Golf Course sidewalk
 - s. Separate pathway, McIntyre's Landing to M-93
 - t. Sidewalk connecting sports complex to city sidewalk system
- Goal 5. Work with the City of Grayling, Townships, Michigan DNR and the U.S. Forest Service to support implementation of the Trail Town Master Plan.

Objectives:

- a. Address all types of trail systems in the Trail Town Initiative including hiking trails, paved bike trails, off-road bike trails, ski trails, snowshoe trails, fat bike trails, ORV trails, snowmobile trails and water trails.
- b. Improve connectivity of all trail systems to the City of Grayling and other key areas of the County.
- c. Improve trail signage.
- d. Make information about Crawford County trails systems readily available.
- e. Address the issue of maintaining public walkways during the winter months.
- f. Promote the "trail-friendly" nature of the County.

Grayling Recreation Authority - Recreation Goals & Objectives

- Goal 1. Pursue improvements to recreational opportunities that are not currently available within the county.

Objectives

- a. Expand recreational facilities within Hanson Hill Recreation Area.
- b. Upgrade the winter sports equipment and facilities.
- c. Continue to maintain and enhance the physical appearance of the park.
- d. Continue to add to recreational trail system for all season activities.

- Goal 2. Ensure county sponsored recreational facilities and activities are open and accessible to all members of the public, regardless of age, race, handicap, etc.

Objectives

- a. New construction will meet barrier free accessibility requirements for parks.

- Goal 3. Facilitate parks and recreation services within Crawford County.

Objectives

- a. Lead update of the County-wide five year recreation plan.

Beaver Creek Township - Recreation Goals & Objectives

Goal 1. Pursue improvements to recreational opportunities that are not currently available within the township.

Objectives

- a. Expand recreational facilities within the township including adding new playground equipment.
- b. Construct pavilions on township park property.
- c. Add lighting to ball field at township hall property.
- d. Continue to maintain and enhance the physical appearance of the park.

Goal 2. Ensure township sponsored recreational facilities and activities are open and accessible to all members of the public, regardless of age, race, handicap, etc.

Objectives

- a. Construct shuffleboard court under pavilion to allow by all ages regardless of weather.
- b. New construction will meet barrier free accessibility requirements for parks.

Grayling Township - Recreation Goals & Objectives

Goal 1. Pursue improvements to recreational opportunities that are not currently available within the township.

Objectives

- a. Expand recreational facilities within the township.
- b. Construct two fishing and viewing decks.
- c. Provide additional benches and picnic tables.
- d. Expand disc golf course

Goal 2. Ensure township sponsored recreational facilities and activities are open and accessible to all members of the public, regardless of age, race, handicap, etc.

Objectives

- a. Construct fishing site to be handicap accessible.
- b. Paving the parking lot and trails will help make the park barrier free.
- c. New construction will meet barrier free accessibility requirements for parks.
- d. Discuss potential to establish a Township Park with boat launch and dockage on Lake Margrethe.

Lovells Township - Recreation Goals & Objectives

Goal 1. Pursue improvements to recreational opportunities that are not currently available within the township.

Objectives

- a. Expand recreational property within the township.
- b. Construct a concrete and dirt multi-purpose courts on township park property.
- c. Develop walking/jogging trail around Township Park.

Goal 2. Ensure township sponsored recreational facilities and activities are open and accessible to all members of the public, regardless of age, race, handicap, etc.

Objectives

- a. Encourage participation in township sponsored recreation activities.
- b. New construction will meet barrier free accessibility requirements for parks.

South Branch Township - Recreation Goals & Objectives

Goal 1. Maintain township trails (hiking, cross country skiing, snowmobile) and assure that canoe/fishing access sites are maintained in an appropriate manner.

Objectives

- a. Work with the DNR, USFS and the Friends of the Mason Tract to ensure the trails are adequately maintained by the appropriate governmental unit or volunteer group.
- b. Work with the DNR, USFS and the Friends of the Mason Tract to ensure that water and fishing access sites are adequately maintained.
- c. Work with the DNR and the Friends of the Mason Tract to improve Mason Tract signage through the installation of permanent maps at all points of interests.
- d. Work with the DNR and the Friends of the Mason Tract to continue winter cross country ski trail grooming on the Mason Tract trail system.
- e. Work with the DNR and the Friends of the Mason Tract to reroute the Thayer Creek loop of the Mason Tract trail system

Goal 2. Pursue improvements to recreational opportunities which are not currently available within the township.

Objectives

- a. Expand recreational facilities within the township.
- b. Construct a picnic area on township hall property.

Goal 3. Ensure township sponsored recreational facilities and activities are open and accessible to all members of the public, regardless of age, race, handicap, etc.

Objectives

- a. Work with the DNR and the Friends of the Mason Tract to Improve canoe/kayak ingress/egress at the Mason Tract Durant's Castle canoe landing.
- b. New construction will meet barrier free accessibility requirements for parks.

Action Program

The following action program is presented by jurisdiction including the proposed projects and rationale for each. These lists were developed by each jurisdiction in consideration of input received from the Recreation Stakeholders group and other public input received. The public input summaries are presented in Appendix ___.

CRAWFORD COUNTY CAPITAL IMPROVEMENTS SCHEDULE					Table 6.14
Project #	Year	Project	Est. Cost	Funding Source(s)	Priority
1	2009-20	Renovate the Fish Hatchery Building	\$1,500,000	DNR, Local & Private	High
2	2010-16	Replace foot bridge over the East Branch of the AuSable River behind the hospital	\$5,000	DNR, Local & Private	Low
3	2010-20	Construct Soccer Fields	\$50,000	DNR, Local & Private	Medium
4	2010-20	Construct Baseball/Softball fields	\$200,000	DNR, Local & Private	Medium
5	2010-25	Construct Paved Roads through sports complex	\$500,000	DNR, Local & Private	Medium
6	2010-25	Construct paved parking areas @ sports complex	\$250,000	DNR, Local & Private	Low
7	2010-20	Construct Concession Stand @ sports complex	\$25,000	DNR, Local & Private	Medium
8	2010-20	Construct Public Restrooms @ sports complex	\$50,000	DNR, Local & Private	High
9	2014-20	Construct walking path system @sports complex	\$100,000	DNR, Local & Private	Medium
10	2010-30	Au Sable River Water/Bike Trail from Grayling to Oscoda	Unknown	DNR, Local & Private	Medium
11	2010-30	Grayling Connector to North Higgins State Park thus connecting with Hartwick Pines	Unknown	DNR, Local & Private	Medium
12	2010-30	Rayburn Property Loop North Down River/M-72 East	Unknown	DNR, Local & Private	Medium
13	2010-30	Riverside Trail from Downtown to Fish Hatchery/Township Park	Unknown	DNR, Local & Private	Medium
14	2010-30	West M-72 north side of M-72 to Old Dam Party Store then to AuSable Trail	Unknown	DNR, Local & Private	Medium
15	2010-30	Walk-under for Downtown Bridge	Unknown	DNR, Local & Private	Medium
16	2010-30	Extended shoulders from Frederic to Waters	Unknown	DNR, Local & Private	Medium

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17	2010-30	Connect Camp Grayling/M-93 to North Higgins State Park	Unknown	DNR, Local & Private	Medium
18	2010-30	M-72 West to Manistee River Road to CR612 and East to Frederic	Unknown	DNR, Local & Private	Medium
19	2010-30	CR612 East to F97 south to North Down River Road	Unknown	DNR, Local & Private	Medium
20	2010-30	Sherman Road North to Marlett Road west into Waters	Unknown	DNR, Local & Private	Medium
21	2010-30	Extend shoulders on M-72 East to Wakeley Lake and Mason Tract	Unknown	DNR, Local & Private	Medium
22	2010-30	Separate trail extending from High School to Frederic	Unknown	DNR, Local & Private	Medium
23	2010-30	Extended shoulder on CR 612 from Frederic around to Hartwick Pines Entrance	Unknown	DNR, Local & Private	Medium
24	2010-30	Separate bridge crossing I-75 servicing Hartwick Pines Trail segments	Unknown	DNR, Local & Private	Medium
25	2010-30	Trailhead parking at beginning of Grayling Bicycle Turnpike/North Down River	Unknown	DNR, Local & Private	Medium
26	2010-30	Extended shoulders on North Down River Road	Unknown	DNR, Local & Private	Medium
27	2010-30	Sidewalk connecting Ramada/Days Inn to Golf Course sidewalk	Unknown	DNR, Local & Private	Medium
28	2010-30	Separate pathway, McIntyre's Landing to M-93	Unknown	DNR, Local & Private	Medium
29	2010-30	Sidewalk connecting sports complex to city sidewalk system	Unknown	DNR, Local & Private	Medium
30	2014-30	Improve connectivity of ORV and snowmobile trails to the City of Grayling and key points in the County	Unknown	DNR, Local & Private	Medium
31	2014-30	Improve trail signage for all trails (motorized, non-motorized, ski trails, snowshoe and water trails)	Unknown	DNR, Local & Private	High
32	2014-30	Improve trailhead amenities	Unknown	DNR, Local & Private	Medium
33	2014-16	Maintain public walkways during winter months	Unknown	Local, Private	High

Crawford County Rationale

Project #	Justification	Table 6.15
1	Completes a long standing project and allows a historical site to be used by the community	
2	Current bridge is in disrepair and needs to be replaced for safety reasons	
3	New soccer fields will provide a recreational asset to the community and align themselves in the same location as other recreational sports facilities	
4	New baseball/softball fields will provide a recreational asset to the community and align themselves in the same location as other recreational sports facilities	
5	Paved roadways will provide a more finished complex along with protecting the adjoining assets of the complex	
6	Paved roadways will provide a more finished complex along with protecting the adjoining assets of the complex	
7	One concession facility to serve all organizations and events would be efficient and economical	
8	Restrooms will be a priority with the amount of pedestrian traffic by participants and spectators visiting the sports complex	
9	Improve access to sports complex facilities and provide a safe environment for exercise	
10	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors	
11	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors	
12	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors	
13	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors	
14	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors	
15	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors	
16	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors	

17	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors
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25	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors
27	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors
28	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors
29	Improvement and expansion of the existing trail system only enhances our community to its residents and visitors
30	Improvement in access to local facilities and business to improve the trail-friendly nature of the County
31	Improvement in the user-friendly nature and safety of the County trail systems
32	Improvement in the user-friendly nature and safety of the County trail systems
33	Improve safety of public walkways during the winter months

Crawford County Basis for Action

Of the 360,000 acres in Crawford County, almost 70% of it is publicly owned. Many of the more than 14,000 people that live in this community do so because of the abundance of public land. Certainly, many of the visitors to Crawford County throughout the year are here for that very reason. It is for this purpose that the County must make the most of our recreational activities. The more the County improves its recreational activities for those that live here and those that visit, the more it will grow as a community, economically & culturally. Crawford County already boasts many hunting and fishing opportunities. However, for its size, the County also has excellent non-motorized trail opportunities to go along with canoeing, hiking, skiing, snowshoeing and biking excursions waiting to be experienced. There exists a county-wide voted millage to preserve and enhance the prospects of our recreational challenges.

Hatchery

The old Grayling Fish Hatchery has been a source of pride and nostalgia for many residents over the years. Deeded to the County under a public use deed, it was operated by the Grayling Recreational Authority as a fund raiser for many summers. Recently the Grayling Fish Hatchery operation was taken over by a private contractor under the agreement that it remain open to the public. Over the last ten years, grant dollars have been secured to reconstruct the raceways, enhance the grounds, create a children's fishing pond along with a storm water retention pond. The building has had its roof replaced, the cupola restored and the exterior completely painted. It is now in need of a complete interior restoration. Once complete, the building could be utilized by a public agency, community service agency or historical preservation group. It could also potentially be converted to a museum of area history. In any event, the once abandoned and dilapidated building would regain its past luster and become a center of community activity once again.

The fish hatchery grounds provide even more opportunities for trips through nature. There are occasional trails that follow the river up until the foot bridge. There are limitless opportunities to expand these trails on site and connect with other trails leading to various points of interest in the County. The fish hatchery grounds also have a dam to maintain water levels in the fish hatchery races. Construction of a fish ladder around the dam will reconnect 28 miles of the East Branch of the AuSable River to the lower river habitat.

Sports Complex

Years ago, this parcel was deeded to the County by the State in order to allow the community a place to hold its county fair. As time passed and interest waned in the fair, the property began to be used as a center for sporting events, such as football, mud bogs and equestrian activities. Although open and utilized by the community, the Crawford County Board of Commissioners has recognized the potential for this site to be a "one-stop-shopping" for community sporting events that are not sponsored by the public school system. The vision for this site would be to host the bulk of the community sporting leagues such as football, soccer, baseball, etc. as well as a place for safe walking/running. We believe, if designed well, the various groups could capitalize on the economies of scale that occur when the organizations share one large site.

Wakeley Landing

This is a relatively small parcel on the mainstream of the AuSable that is used frequently by canoeists and anglers alike. The County maintains this site in a somewhat rustic fashion but the site could easily be made to be more accommodating in the future for the benefit of all.

Motorized and Non-Motorized Trails

Crawford County currently enjoys a host of hiking, biking, cross country skiing, snowshoeing, ORV, snowmobile, and water trails. In addition the City of Grayling has sidewalks on virtually every city street that allows numerous people to walk wherever they would like in our community. That said, opportunities still exists for new trails and improvements to existing trail systems. The City of Grayling has developed a Trail Town Master Plan to further enhance these recreation resources. The Trail Town Initiative is intended to meet the needs of the trail users by providing: 1) physical amenities that support trail users such as signage, trail information, wide sidewalks, drinking fountains, and benches, and 2) business amenities to support day-trip and overnight trail users such as a bike shop, kayak outfitter, ice-cream shop, hotels and restaurants.

GRAYLING RECREATION AUTHORITY CAPITAL IMPROVEMENTS SCHEDULE				Table 6.16
Project #	Year	Project	Est. Cost	Funding Source(s)
1	2014	Nordic Trail Groomer/Snowmobile	15,000	Local, Private Foundation
2	2014	Snow Making Guns(Upgrades)	\$40,000	DNR, Local, Private Foundation
3	2014	Installation of Tubing Hill Lift, Electrical and Snowmaking	\$75,000	DNR, Local, Private Foundation
4	2014	Construction of Outdoor Pavilion (Little Smokey Site)	\$12,000	DNR, Local, Private Foundation
5	2014	Replacement of Fire Suppression System in Main Lodge Kitchen	\$7,000	DNR, Local, Private Foundation
6	2015	Industrial Mower	\$9,000	DNR, Local, Private Foundation
7	2015	Purchase of New/Used ¾ ton Truck with snowplow	\$15,000	DNR, Local, Private Foundation
8	2015	Winter Sports Rental Equipment	\$30,000	DNR, Local, Private Foundation
9	2016	Terrain Park Obstacles/Equipment	\$6,000	DNR, Local, Private Foundation
10	2016	PDGA and Pine Knoll Disc Golf Course Expansion	\$20,000	DNR, Local, Private Foundation

11	2017	Replacement of Siding, Windows and Doors on Main Lodge Facility	\$100,000	Local, Private Foundation
12	2017	Snowmobile (Ski Patrol)	\$12,000	DNR, Local, Private Foundation
13	2018	Lighted Ski/Walking Trail	\$10,000	DNR, Local, Private Foundation
14	2018	Lights for Softball Field	\$30,000	DNR, Local, Private Foundation
15	2019	Bridge to island and docks for pond	\$5,000	DNR, Local, Private Foundation
16	2019	Multi-Purpose Bathroom Facility	\$65,000	DNR, Local, Private Foundation
17	2019	Athletic Field Expansion	\$30,000	DNR, Local, Private Foundation
18	2019	Purchase of New/Used Downhill Groomer	\$80,000	DNR, Local, Private Foundation

Grayling Recreation Authority Rationale

Project #	Justification	Table 6.17
1	A snowmobile will increase the efficiency and labor spent on trail grooming.	
2	Additional Snowmaking guns will insure that ski runs have adequate amounts of snow coverage for the safety of the participants.	
3	The installation of a second lift and electrical and water for snowmaking capability will allow a greater volume of customers to enjoy tubing activities.	
4	A multi-purpose pavilion will allow for more public/family events and allow participants to have shelter from the elements.	
5	The installation of a Cooking Hood Fire Suppression System at Hanson Hills Recreation Area's Main Lodge Building, to prevent potential personal injury, and prevent loss or significant damage to kitchen equipment and/or Lodge Building.	
6	An industrial mower will allow for efficient mowing of grounds and athletic fields.	
7	The purchase of a new/used Plow Truck will allow for efficient snow removal processes and will help reduce costly repairs of older equipment.	
8	The availability of winter sports rental equipment is needed service to the customers.	
9	Terrain Park obstacles will allow participants a variety of different technical challenges and to practice freestyle skills.	
10	The expansion of Disc Golf Courses will allow for increased participation and provide an ideal tournament destination.	
11	The replacement of siding, windows and doors on the Main Lodge facility will help to increase the heating efficiency, outside aesthetics, decrease the cost of repairs/maintenance and detour nesting bats.	
12	A snowmobile will increase the efficiency and response time for the ski patrol.	
13	Lighting the Nordic ski trails and the walking trail will allow for night use by residents/visitors who cannot use them at other times.	
14	Lighting the Softball field will allow for league expansion.	
15	Bridge and docks will allow participants better access for fishing & recreational purposes.	
16	The construction of new outdoor bathroom will allow GRA to create a barrier free facility.	
17	The expansion of athletic fields will allow for more adult sports leagues and children's programs.	
18	The purchase of a new/used Downhill Groomer will allow for efficient Grooming Practices and will help to reduce costly repairs of older equipment.	

BEAVER CREEK TOWNSHIP CAPITAL IMPROVEMENTS SCHEDULE			Table 6.18
Project #	Project	Est. Cost	Funding Source (s)
1	Resurface Basket Ball and Tennis Courts	\$ 20,000	DNR, Donations
2	Replace Fence & Gate at Pere Cheney Cemetery	\$ {TBD}	DNR, Donations
3	Landscaping and transplanting trees	\$ 5,000	Volunteers, Local
4	Rebuild Baseball Field and add Irrigation well and system	\$ 35,000	DNR, Local, Private Donations

Beaver Creek Township Rationale

Project #	Justification	Table 6.19
1	The existing playground equipment has served the community well since it was installed in 1992 and is still in good condition with the exception of the Basket Ball and Tennis Courts. With the other improvements being made to the park, adding and updating the playgrounds now becomes one of the top priorities.	
2	The fence and gate at Pere Cheney Cemetery is very old, broken down and nearly non-existent. It needs to be replaced.	
3	Landscaping and the addition of transplanted trees would greatly enhance the park's appearance as we have lost our beautiful trees to oak wilt disease. Improvements of this nature could be incorporated with other projects; they could also be facilitated by volunteers similar to what we have experienced in the past.	
4	The Beaver Creek Park is located on the type of soil that does not retain water. In order to rebuild and maintain our baseball field, the addition of irrigation well and system would keep the park useable through the entire summer season. The Baseball field has been neglected for several years, due to lack of funding. The infield has turned to grass, the outfield to weeds, making it unusable.	

Beaver Creek Township Basis for Action

The above project list is not in any particular order, as far as priorities are concerned. The availability of funding, requests from all sources in the community and new ideas or needs not included in the list could change both the order and add new projects to the schedule. Additions are not our main priority we want to maintain the park and equipment we have.

There are 1,736 people living in Beaver Creek Township. The demographics of Beaver Creek Township indicate that a large majority (71.5%) of the Township exists as family households. While 187 households have children under the age of 18, there are 246 households that have individuals over the age of 65. Over half of the township residents are between the ages of 25-64. Also, there are estimated to be 432 disabled residents in Beaver Creek Township. Due to the large number of residents who are able to pursue active recreation as well as the high number of households with children and disabled persons, Beaver Creek Township must plan recreational facilities that will appeal to a wide variety of people. In addition, with the median income of the Township being \$44,185, recreation must be fairly affordable.

Beaver Creek Township has no staff for recreational activities. Township recreation is handled by the Township Board.

Due to the fact that there are more developed recreational facilities and more cultural opportunities in the nearby City of Grayling Beaver Creek Township intends to capitalize on its natural assets to fulfill the needs of the Township. Therefore, Beaver Creek Township intends to develop its outdoor recreation to suit the needs of differing age groups, income levels, and physical abilities of Township residents and visitors.

Township Hall and Park

Beaver Creek Township plans to make major improvements to its township park since this is the only recreational property that the township owns. Park improvements are important to the township. As funding is secured, the township's intent is to continue to make improvements so that it will offer all residents recreational opportunities.

The Township's plan for development include additional pavilions, new playground equipment, shuffleboard courts, additional pavilions, lighting, and paving, landscaping and additional trails and parking.

GRAYLING TOWNSHIP CAPITAL IMPROVEMENTS SCHEDULE					Table 6.20
Project #	Year	Project	Est. Cost	Funding Source(s)	Priority
1	2015	Install pedestrian bridge across river and extend trail to pedestrian and bicyclists to access the park away from the heavy traffic on North Down River Road.	\$12,000	Local	1
2	2016	Build two 12' X 40' decks on the east side of the river for fishing and sitting.	\$10,000	Local, DNR	2
3	2017	Provide more picnic tables, benches and trash containers along the hiking trails.	\$5,000	Local	3
4	2018	Pave entry road, parking lot and hiking trails	\$20,000	Local, DNR	4

Grayling Township Rationale

Project #	Justification	Table 6.21
1	North Down River Road is extremely busy and poses potential danger for residents to cross over into the park. This will make the park more accessible for young and old alike and encourage non-motorized travel.	
2	The decks will allow for ADA access for fishing and viewing of the river. All residents will benefit from the addition of the decks to enjoy the river.	
3	As the park trails become more utilized, it will be important to offer easy disposal of waste to help maintain the parks clean nature. The benches and tables will allow multi-generations to use the trail, while providing resting opportunities.	
4	Paving the parking lot and trails will make it easier for handicapped citizens to use the park. Paving the trails will also allow for the easier use of skates, rollerblades and bicycles. This will enable even more residents to enjoy the park.	

Grayling Township Basis for Action

There are 5,827 people living in Grayling Charter Township. The demographics of Grayling Charter Township indicate that a large majority (70.5%) of the Township exists as family households. While 623 households have children under the age of 18, there are 793 households that have individuals over the age of 65. Over half of the township residents are between the ages of 25-64. Also, there are estimated to be 1,060 disabled residents in Grayling Charter Township. Due to the large number of residents who are able to pursue active recreation as well as the high number of households with children and disabled persons, Grayling Charter Township must plan recreational facilities that will appeal to a wide variety of people. In addition, with the median income of the Township being \$42,231, recreation must be fairly affordable.

Grayling Township has one part-time staff for recreational activities. Township recreation is handled by the Township Board.

Due to the fact that there are more developed recreational facilities and more cultural opportunities in the nearby City of Grayling, Grayling Township intends to capitalize on its natural assets to fulfill the needs of the Township. Therefore, Grayling Township intends to develop its outdoor recreation to suit the needs of differing age groups, income levels, and physical abilities of Township residents and visitors.

Fish Hatchery Park Nature Park

Grayling Township plans to utilize this property to fill recreational gaps for all residents. The Township intends to develop the park property to include recreational opportunities for a variety of recreation activities and for all ages. To accommodate the increased usage, the parking lot will need to be improved. It is the townships desire to increase recreation opportunities at the park.

LOVELLS TOWNSHIP CAPITAL IMPROVEMENTS SCHEDULE				Table 6.22
Project #	Year	Project	Est. Cost	Funding Source(s)
1	15-19	Yearly maintenance	\$2,500 yearly	Township
2	15-16	Survey land	\$300	Township
3	15-16	Clear land and prepare for future installations	\$3,500	Township
4	15-16	Install drinking fountain, bike racks and benches	\$1,500	Township
5	15-16	Parking lot improvements	\$2,500	Township
6	16-17	Township sponsored recreation events	\$7,000	Township, Local, Private
7	16-17	Purchase fitness equipment	\$1000	Township
8	17-18	Multi-purpose hard surface court, basketball, etc	\$50,000	Township, Local, DNR, Private
9	17-18	Dirt/Sand court for Volleyball and horseshoes	\$4,000	Township, Local, Private
10	18-19	Field expansion for baseball, football and soccer.	\$3,500	Township, Local, DNR, Private
11	18-19	Trail/track encompassing facility	\$5,000	Township, Local, Private
12	17-19	Acquire land for future recreation development	TBD	Township, Local Foundations and DNR
13	15-19	Non-motorized trails to connect to recreation area and larger trail network	TBD	Township, Local Foundations, MDOT and DNR
14	16-19	Universally accessible River and Lake access sites for swimming, fishing and boat launch-exact locations under investigation	TBD	Township, Foundations and DNR
15	18-19	Community Center including indoor fitness equipment and potentially indoor pool	TBD	Township, Local Foundations, Private and DNR

Lovells Township Rationale

Project #	Justification	Table 6.23
1	Maintain facility on yearly basis.	
2	Have an exact map of acreage for future installations to make more recreational opportunities available to the citizens of the Township.	
3	Prepare land for future development of facility.	
4	Drinking fountain, bike racks and benches will make the facility more user-friendly for all the residents.	
5	Improve the parking facility and capacity for various uses.	

6	Encourage township participation and social activities.
7	Purchasing some sporting equipment will encourage increased use of the facilities and bike rack installation.
8	Constructions of a multi-use hard surfaced court will encourage multi-season recreation uses such as basketball, tennis, street hockey, rollerblading and ice skating for all ages.
9	Construction of a multi-use dirt court will encourage recreational uses such as volleyball, badminton, horse shoes and provide a backup court area to use to play if the hard surfaced court is in use.
10	Expansions of the current field will enable the field to be used for multi-purposes. This will encourage recreations of baseball, football and soccer.
11	Constructing a trail/track around the entire facility will serve as a facility boundary and can also encourage the recreations for a run/walk area.
12	In order to develop expand recreational opportunities in the Township, additional land will be ultimately be needed.
13	There is interest in providing non-motorized safe routes to recreational areas within the Township and also to connect to the expanding network of trails in Northern Michigan.
14	Many of the access sites on the rivers and lakes in the Township are challenging even for the spry, and given the median age of the Township residents of over 57 years of age it is increasingly important to provide access sites that utilize universal design principles to make these waterways accessible to all.
15	Given the length of winter in northern Michigan, and the above average median age, there is a strong desire to have a local indoor recreation facility. The Township Hall is scheduled for some of these uses on a limited basis, but due to meetings and hall rental fitness equipment must be hauled to and from the hall by the given groups.

Lovells Township Basis for Action

The above project list is not in any particular order, as far as priorities are concerned. The availability of funding, requests from all sources in the community and new ideas or needs not included in the list could change both the order and add new projects to the schedule.

There are 626 people living in Lovells Township. The demographics of Lovells Township indicate that a majority (59.4%) of the Township exists as family households. While 36 households have children under the age of 18, there are 147 households that have individuals over the age of 65. Just over half of the township residents are between the ages of 25-64. Also, there are estimated to be 151 disabled residents in Lovells Township. Due to the large number of residents who are able to pursue active recreation as well as the high number of households with children and disabled persons, Lovells Township must plan recreational facilities that will appeal to a wide variety of people. In addition, with the median income of the Township being \$35,769, recreation must be fairly affordable.

Due to the fact that there are more developed recreational facilities and more cultural opportunities in the nearby City of Grayling, Lovells Township intends to capitalize on its natural assets to fulfill the needs of the Township. Therefore, Lovells Township intends to develop its outdoor recreation to suit the needs of differing age groups, income levels, and physical abilities of Township residents and visitors.

Douglas Park

Lovells Township plans to utilize this property to fill recreational gaps for all residents by developing the park property to include recreational opportunities for a variety of recreation activities for all ages. The park is lacking drinking fountains, basketball, tennis, street hockey, rollerblading, shuffle board courts,

walking/jogging trails, volleyball and badminton courts. To accommodate the increased usage, the parking lot will need to be improved. It is the townships desire to increase recreation opportunities at the park.

SOUTH BRANCH TOWNSHIP CAPITAL IMPROVEMENTS SCHEDULE					Table 6.24
Project #	Year	Project	Est. Cost	Funding Source(s)	Priority
1.	2014-15	Construct township picnic area at the township hall property	\$5,000	Local, Private Donations	MED
2.	2014	Mason Tract Trail reroute (Thayer Creek Loop)	\$1,000	Local, DNR, Private Donations	HIGH
3.	Annually	Mason Tract Ski Trail Grooming	\$1,000	Local, DNR, Private Donations	HIGH
4.	2014-15	Permanent map installation at Mason Tract trail points of interests	\$2,000	Local, DNR, Private Donations	HIGH
5.	2014-15	Durant's Castle canoe landing (replace existing dock with landing to improve canoe ingress/egress)	\$20,000	Local, DNR, Private Donations	HIGH
6.	2014-15	Development of AuSable Water Trail	\$2000	DNR, USFS, Business Owners, Huron Pines	HIGH

South Branch Township Rationale

Project #	Justification	Table 6.25
1.	Provides a convenient picnic area for township residents.	
2.	Reroute required to avoid replacing a bridge that has a history of flooding due to beaver dams. All work to be done in conjunction with the MDNR.	
3.	Grooming has been suspended due to DNR funding issues. Grooming would be reinstated through a volunteer effort of the Friends of the Mason Tract Group.	
4.	Permanent maps at all points of interest will aid hikers, hunters, skiers, fishermen and canoers in finding their way. It will also enhance emergency rescues. All work to be done in conjunction with the MDNR.	
5.	Repair work needed to address a canoe/kayak ingress/egress issue that exists due to the wide range in water depth. All work to be done in conjunction with the MDNR.	
6.	Provides emergency management number and maps at locations along the AuSable South Branch and Main Branch.	

South Branch Township Basis for Action

There are 2,007 people living in South Branch Township. The demographics of South Branch Township indicate that a majority (68.1%) of the Township exists as family households. 189 households have children under the age of 18. Over half of the township residents are between the ages of 25-64. Also, there are estimated to be 266 disabled residents in South Branch Township. Due to the large number of residents who are able to pursue active recreation as well as the high number of households with children and disabled persons, South Branch Township must plan recreational facilities that will appeal to a wide variety of people. In addition, with the median income of the Township being \$49,180, recreation must be fairly affordable.

South Branch Township has no staff for recreational activities. Township recreation is handled by the Township Board.

Due to the fact that there are more developed recreational facilities and more cultural opportunities in the nearby City of Grayling, South Branch Township intends to capitalize on its natural assets to fulfill the needs of the Township. Therefore, South Branch Township intends to develop its outdoor recreation to suit the needs of differing age groups, income levels, and physical abilities of Township residents and visitors.

Township Hall Property

South Branch Township has very little in the way of developed recreational facilities such as parks, playgrounds, ball fields, etc. South Branch Township is interested in pursuing a careful expansion of recreational facilities within the township in order to better meet the needs of its residents. Constructing a public picnic area at this location will provide a convenient picnic area for Township residents.

Trails

South Branch Township plans to use the natural assets of this area in order to provide the public access to the natural amenities. The Township has excellent access to the main branch and the south branch of the AuSable River for outdoor recreational activities. Hiking, cross country ski and snowmobiles trails have already been established and are dependent upon the MDNR and the NFS to maintain. Therefore, the Township wishes to focus on assuring that the non-motorized trails systems are adequately maintained by the appropriate unit of Government. Consistent with this desire, South Branch Township has formed a Friends of the Mason Tract group through a Memorandum of Agreement with the MDNR. This group will facilitate maintenance and improvement of the Mason Tract through the involvement of volunteers. The Friends of the Mason Tract will also pursue arrangements to groom the Mason Tract trail for cross country skiing in the winter. All work will be done in conjunction with the MDNR.

Water Access

The township has plenty of access to the AuSable River. Durant's Castle canoe dock was replaced with a handicap accessible dock. However, canoe/kayak ingress/egress is an issue due the wide range in water levels. Replacement of the dock with a canoe landing is planned to address the ingress/egress issues. The AuSable Water Trail project will provide emergency management number and maps at key points along the river for use by canoers, kayakers, and fishermen. All work will be done in conjunction with the MDNR.

Chapter 7 – Status of Planning and Zoning

Introduction

Planning and Zoning are the principal tools that local communities have to manage growth, preserve community character, protect property values and enhance the economic viability of the area. Planning helps establish and focus the desired future of the community and zoning ordinances are used as one of the primary ways to implement the community master plan and achieve the goals of the community.

The purpose of this chapter is to present the status of planning and zoning in Crawford County. It is not the intention to compare the strengths and weaknesses of zoning regulations among the various zoning ordinances, but to give a general perspective on planning and zoning in the county.

Table 7.1 presents the status of planning in Crawford County. In the county, the City of Grayling and all the townships have adopted master plans. All of the communities administer their own zoning ordinance.

Table 7.1 Crawford County Planning and Zoning Status		
Municipality	Master Plan (year adopted)	Zoning Ordinance (year of last amendment)
Beaver Creek Township	2006	2014 (update in-progress)
Frederic Township	2014	2010
Grayling Township	1997*	2010
Lovells Township	2002	2012
Maple Forest Township	2013	2006
South Branch Township	2006	2013
City of Grayling	2008	2009
Crawford County	2009	-
*Grayling Township and the City of Grayling prepared a joint Master Plan in 1997. The City of Grayling has since adopted a new Master Plan.		

Community Future Land Use Plans

A key element of the community master plan is the future land use plan. This is the culmination of the planning process that entails an analysis of existing conditions, public input and goal setting, and finally establishing the community's desired future. The community-wide future land use plan includes a map that depicts where the community envisions types and densities of development. As well, the plan may address important resource areas to protect. Accompanying text describes future land use categories, compatible uses, incompatible uses and development densities. Special issue areas may include utility service areas, roads, open space development and waterfront development. The future land use plan is a policy document designed to guide land use decisions over a given planning horizon, usually 20 years. By comparison, the zoning ordinance and zoning map is a local law that regulates how property can be developed today. See Chapter 10 for a Crawford County composite future land use map, which combines the future land use maps from each of the local jurisdictions.

Generally communities place public lands into low intensity development categories such as forest recreation, resource conservation or public lands. Most townships have identified select areas of public land for private development such as residential, commercial or industrial. Grayling Township and Beaver Creek Township have identified the largest areas of public lands for private development mostly around the West 4 Mile Road interchange and between West 4 mile and M-72. Kirtland Community College is exploring the development of a Health Sciences Campus on former State property recently transferred to the community college, located north of West 4 Mile and east of I-75. If this project is built, this area may experience associated growth such as residential and commercial/retail.

Community Zoning

With South Branch Township adopting its own ordinance in March, 2008, all zoning is administered at the local level. Tables on the following pages summarize each community's zoning districts by showing minimum lot sizes, and general uses such as residential and commercial. In natural resource and agricultural districts most communities allow for minimum two acre lot sizes for residential. Maple Forest allows minimum 10 acre lot sizes in their Resource Conservation; South Branch Township allows a minimum 20 acre lot size in its resource conservation district, while Frederic Township allows for 20 acre minimum lots sizes in its Deferred Development. All of the communities recognize the natural rivers act for the Au Sable River and in the case of Frederic Township the Upper Manistee River.

Figure 7.1 is a composite zoning map for Crawford County. Areas colored yellow and orange are zoned for residential, areas colored red are commercial and purple areas are zoned for industrial.

Figure 7.1

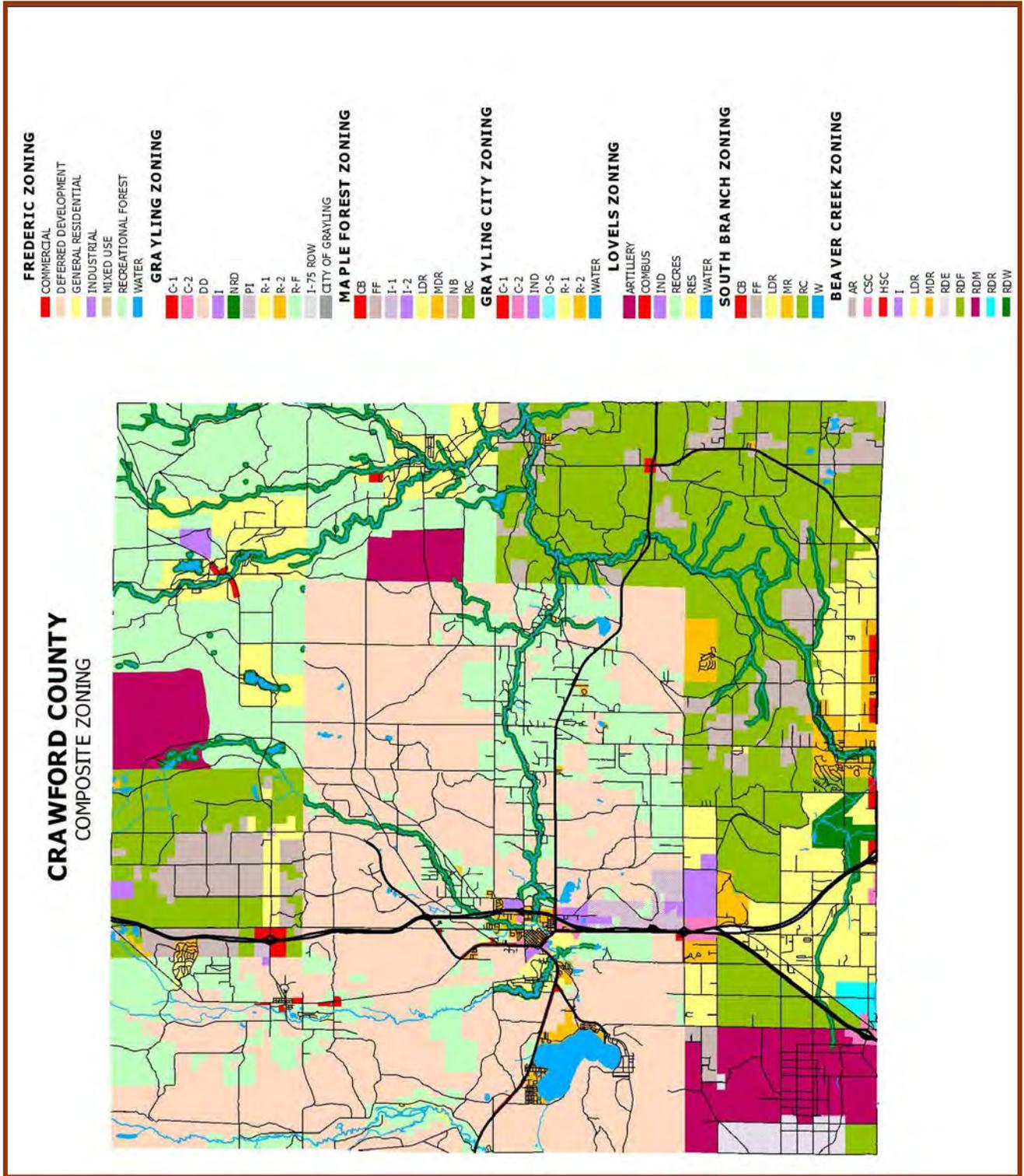


Table 7.2: Beaver Creek Township Zoning Information

District Name	District	Minimum Lot	Residential	Multi-Family	Commercial	Industrial	Agricultural
Resource Development	RD	20 acres Residential 2 acres	Yes	NA	Yes	NA	Yes
Agricultural Residential	AR	20 acres Residential 2 acres	Yes	NA	Yes	NA	Yes
Low Density Res.	LDR	20,000 sf 43,560 sf	Yes	NA	NA	NA	Yes
Medium Density Residential	MDR	10,000 sf 20,000 sf	Yes	Special Use	Special Use	NA	Yes
Community Services Comm.	CSC	10,000 sf 43,560 sf	NA	NA	Yes	NA	NA
Highway Service Commercial	HSC	10,000 sf 43,560 sf	NA	NA	Yes	NA	NA
Industrial	I	40,000 sf 2 acres	NA	NA	NA	Yes	NA
Planned Unit Development	PUD	LDR/MDR 20 ac. CSC/HSC/I 10 ac.	Yes	Yes	Yes	Yes	Yes
Mobile Home Parks	MH	10,000 sf 20,000 sf	Yes	Yes	Special Use	NA	Yes
Access Management Driveways Open Space in PUD Sign and billboard regulations Telecommunication towers							
Ordinance adoption/amendment date: 2008							

Table 7.3: Frederic Township Zoning Information

District Name	District	Minimum Lot	Residential	Multi-Family	Commercial	Industrial	Agricultural
General Residential	R	20,000 sf	Yes	Special Use	NA	NA	NA
Mixed Use	MU	20,000 sf	Yes	Special Use	Yes	NA	NA
Commercial	C	26,000 sf	NA	NA	Yes	NA	NA
Industrial	I	5 acres	NA	NA	NA	Yes	NA
Recreational-Forest	R-F	40,000 sf	Yes	Special Use	Limited Special Use	NA	Yes
Deferred Development	DD	20 acres		NA	NA	NA	Yes
AuSable River	ARD	50,000 sf	Yes	NA	NA	NA	NA
Manistee River	MR	80,000 sf	Yes	NA	NA	NA	NA
Landscaping PUD may be established in all districts except ARD and MRD Sign and billboard regulations Telecommunication towers Wind Turbine Generators							
Ordinance adoption/amendment date: 2010							

Table 7.4: Grayling Township Zoning Information

District Name	District	Minimum Lot	Residential	Multi-Family	Commercial	Industrial	Agricultural
Single-Family Res.	R-1	15,500 sf	Yes	NA	NA	NA	NA
General Residential	R- 2	12,000 sf	Yes	Special Use	NA	NA	NA
General Residential (Association)	R-3	40,000 sf					
General Commercial	C-1	12,000 sf	NA	NA	Yes	NA	NA
Heavy Commercial	C-2	30,000 sf	NA	NA	Yes	NA	NA
Industrial	I	30,000 sf	NA	NA	NA	Yes	NA
Recreational-Forest	R-F	2.5 acres	Yes	Special Use	Limited Special Use	NA	Yes
Deferred Development	DD	NA	NA	NA	NA	NA	Yes
Planned Unit Development		2.5 acres	Yes	yes	Yes	NA	Yes
Planned Industrial	PI	NA	NA	NA	NA	Yes	NA
Planned Commercial	PC	NA	NA	NA	Yes	NA	NA
Natural River District	NRD	80,000 sf	Yes	NA	NA	NA	NA
Access Management Airport Overlay Zone Landscaping Open Space requirements in PUD (40%) Planned Commercial – for property released from the State to serve the general and light commercial needs of the community. Planned Industrial – for property released from the State to serve the general industrial needs of the community. Sign and billboard regulations Telecommunication towers							
Ordinance adoption/amendment date: 2010							

Table 7.5: Lovells Township Zoning Information

District Name	District	Minimum Lot	Residential	Multi-Family	Commercial	Industrial	Agricultural
Greenbelt	GB	60,000 sf	Yes	NA	No new	No new	NA
Recreation & Residential	R-R	101,640 sf	Yes	Special Use	Limited Special Use	NA	Yes
Residential	R	14,000 sf	Yes	NA	NA	NA	NA
Commercial & Business	C-B	NA	Accessory Special Use	NA	Yes	NA	NA
Industrial	I	NA	NA	NA	NA	Yes	NA
Groundwater Protection in Industrial District PUD may be established in all districts except G-B Sign and billboard regulations Telecommunication towers							
Ordinance adoption/amendment date: 2012							

Table 7.6: Maple Forest Township Zoning Information

District Name	District	Minimum Lot	Residential	Multi-Family	Commercial	Industrial	Agricultural
Resource Conservation	RC	10 acres	Yes	NA	NA	NA	Yes
Farm Forest	FF	2 acres	Yes	NA	NA	NA	Yes
Low Density Residential	LDR	20,000 sf 1 acres	Yes	NA	NA	NA	Yes
Medium Density Residential	MDR	10,000 sf 20,000 sf	Yes	Special Use	NA	NA	NA
Neighborhood Business	NB	40,000 sf	Yes	NA	Yes	NA	NA
Commercial Business	CB	10,000 sf 1 acres	NA	NA	Yes	NA	NA
Light Industrial	I-1	40,000 sf 2 acres	NA	NA	NA	Yes	NA
Industrial	I-2	40,000 sf 2 acres	NA	NA	NA	Yes	NA
Stream Corridor Overlay	SCO	50,000 sf	Yes	NA	NA	NA	NA
Driveways and Private Roads Stormwater retention Groundwater Protection Landscaping Open Space requirements in PUD (25%) Sign and billboard regulations Telecommunication towers Wind Turbine Generators							
Ordinance adoption/amendment date: 2006							

Table 7.7: South Branch Township Zoning Information

District Name	District	Minimum Lot	Residential	Multi-Family	Commercial	Industrial	Agricultural
Low Density Residential	LDR	2 acres	Yes	NA	NA	NA	Yes
Mixed Residential	MR	20,000 sf	Yes	Special Use		NA	NA
Commercial Business	CB	1 acre	NA	NA	Yes	NA	NA
Industrial	I	2 acres	NA	NA	NA	Yes	NA
Farm Forest	FF	5 acres	Yes	NA	Limited Resource Based	NA	Yes
Resource Conservation	RC	20 acres	Yes	NA	NA	NA	Yes
Stream Corridor	SC	50,000 sf	Yes	NA	Only existing	NA	NA
Landscaping Stormwater Retention and Groundwater Protection Sign and billboard regulations Telecommunication towers Wind Turbine Generators Driveways and Private Roads PUD in LDR, MR, CB, I and FF, open space requirements (25%)							
Ordinance adoption/amendment date: 2013							

Table 7.8: City of Grayling Zoning Information							
District Name	District	Minimum Lot	Residential	Multi-Family	Commercial	Industrial	Agricultural
Single Family Residential	R-1	7,200 sf	Yes	NA	NA	NA	NA
Multiple Family	R-2	10,000 sf for first two units	Yes	Special Use	NA	NA	NA
Downtown Commercial	C-1	5,000 sf	Accessory Use	NA	Yes	NA	NA
Professional Office	C-2	7,200 sf	Yes	NA	Yes	NA	NA
Highway Commercial	C-3	20,000 sf	NA	NA	Yes	NA	NA
Industrial	I	30,000 sf	NA	NA	Limited	Yes	NA
Access Management Airport Overlay Zone Landscaping Sign Ordinance Telecommunication towers							
Ordinance adoption/amendment date: 2009							

Chapter 8 – Community Goals and Objectives

Introduction

This chapter of the County's Master Plan will set forth goals and recommendations. These are written to have a countywide perspective, though they do address common local issues. It is not the intention of the Crawford County Planning Commission for these goals to replace goals and objectives found in township or city master plans; but to bring forth a multi-jurisdictional approach to addressing common community needs and issues. It is hopeful these goals and recommendations will not only provide guidance to Crawford County government, but also encourage a coordinated approach to planning and zoning at a local level.

Surveys and Workshops

There have been a number of "Visioning" efforts completed in recent years. These include goal-setting workshops conducted by many communities as a part of their master planning process; a series of Focus Groups Sessions held by the Grayling Regional Chamber of Commerce in 2002; and two roundtable discussions held by the County Planning Commission (see Appendix A). All of these efforts were reviewed and used to develop goals and recommendations for the master plan.

There are a number of common themes that surface in all of the surveys and workshops.

- 1) People live in and visit Crawford County because of the abundant natural resources, which include forests, lakes, streams, clean air, wetlands, wildlife and fish.
- 2) People like the County because of its rural character and friendly atmosphere.
- 3) Development pressures are increasing. Growth needs to be managed to preserve the very reasons people live here. However, this should be done without over regulating landowners.
- 4) There is a need for ongoing education on land use planning geared at both the general public and local decision makers.
- 5) There is a lack of good paying jobs within the County. A coordinated effort, by communities and organizations, must continue and expand to improve the economic health of Crawford County.
- 6) Communities need to invest in the infrastructure such schools, roads, water and sewer, public facilities and parks, downtown business districts, public transit, industrial parks, and recreational trails.
- 7) There needs to be more commercial and retail opportunities for residents of the County.
- 8) There is a general consensus that, where appropriate, the transfer of public lands into private ownership would benefit the county and local communities.

During the 2014 Master Plan Update, the Planning Commission reviewed the past input and the above themes and determined that the input was still relevant. Based on the past input, additional input received during the update process as well as the information from the recently completed Crawford County Wildfire Protection Plan (2013), the Planning Commission prepared the following goals with supporting objectives and recommendations.

Wildfire Protection Goal

GOAL:

To protect human life and reduce property loss due to catastrophic wildland fires in Crawford County

OBJECTIVES & RECOMMENDATIONS:

- Encourage adequate fire prevention, fire-safe construction, and pre-suppression activities on private lands in Wildland Urban Interface areas (WUI) using Firewise Landscaping and Construction standards. The foundation of this objective will be building partnerships with the county, local units of governments, MDNR, USFS, MSUE and other interested organizations.
- Continue to assist and encourage communities within the county to participate in the Community's Wildfire Protection Plan.
- Fuel Management; manage forests to maintain fuel loads within the range of natural specific ecosystem variability in order to minimize adverse effect to ecological and socioeconomic values.
- Implement Firewise planning and zoning strategies at the local level. Implementation of action items under this objective are the responsibility of each individual community to incorporate into their planning and zoning. Furthermore, it is understood that each local unit of government will need to determine which action items will be acceptable and enforceable under their current program administration.
- Work to implement the recommendations of the Crawford County Wildfire Protection Plan (2013).

Natural Resource Goal

GOAL:

Preserve the natural environment by protecting groundwater, surface water, forests, wetlands, clean air, fisheries and wildlife.

OBJECTIVES & RECOMMENDATIONS:

- Work cooperatively with communities, agencies and organizations to develop studies and institute programs to address watershed, woodlands, wildlife and ecosystem management.
- County departments will continue to work cooperatively with local units of government to effectively administer and enforce county ordinances, such as soil erosion and sedimentation control.
- Encourage and support community organizations to identify critical resources, wildlife habitat, ecological corridors, scenic areas, vistas, and existing protected areas to more effectively work with local communities to implement strategies to protect such resources.
- Establish (or maintain) on-going open dialog with the Michigan Department of Natural Resources (DNR), US Forest Service, and Camp Grayling representatives to monitor future potential public land transfers.
- Promote or facilitate community educational forums on topics which could impact the locally important natural resources, such as hydrologic fracturing (fracking), large volume water withdrawal, threats from invasive species, purchase of development rights and conservation easements.
- Continue to monitor any fracking activity proposed and/or active in the area. Promote on-going groundwater testing in such areas to assess any impacts to the water quality in order to protect the natural resources.
- Work with DNR to pursue improvements to Hartwick Pines State Park and North Higgins Lake State Park.
- Provide assistance to local communities by providing or facilitating educational opportunities related to current planning & zoning topics.

Land Use Goal

GOAL:

Encourage a coordinated, locally administered approach to regulating land uses in order to protect the natural, social, cultural, and economic resources in each jurisdiction.

OBJECTIVES & RECOMMENDATIONS:

- Address cross-jurisdictional issues when reviewing and commenting on local (or adjacent) community master plans and zoning ordinances.
- Provide information and assistance to local communities to address current planning and zoning issues and foster improved communication.
- Support or facilitate land use education programs for county and local officials.
- Continue to fund and support the Crawford County Planning Commission to provide County level planning coordination and review services.
- Improve public awareness and effectiveness of the Crawford County Planning Commission through the coordination, facilitation, and promotion of local educational opportunities and assistance for local communities.
- Coordinate an annual joint meeting/awards luncheon to promote communication between local planning commissions and recognize outstanding local planning and zoning efforts.
- Explore opportunities for some common zoning provisions (for adoption locally) across the County.

Economic & Business Goals

GOAL:

Improve the competitiveness of the county's economy while enhancing the employment opportunities for residents and the profitability of businesses and industries.

Promote a varied business environment, and encourage retention, expansion and enhancement of business and industry to meet the needs of residents and tourists, while preserving the natural environment and rural character of the community.

OBJECTIVES & RECOMMENDATIONS:

- Work cooperatively with Kirtland Community College to promote the development of the Health Sciences Campus near the 4 Mile Road/I-75 interchange.
- Promote economic development opportunities in Crawford County and coordinate efforts with existing organizations.
- Continue to work with economic development organizations, local communities, and Chambers of Commerce to promote the area for natural resource based recreational tourism, and as a prime location to live, work and play!
- Promote Trail Town initiative county-wide to promote the area for the recreational trails: water, hiking, biking, skiing, snowmobiling and ORV.
- Work with Chambers of Commerce and local businesses to develop and/or promote a shop local program.
- Continue to pursue broad band and high speed internet services throughout the County.
- Work with local businesses and organizations, with support from regional and state organizations to enhance the economic prosperity of Crawford County.
- Encourage local communities to support existing commercial centers and direct new commercial development to locate in designated hubs and corridors.
- Recommend local communities incorporate sound planning and zoning techniques to support local commercial business, such as clustering, shared parking, access management and landscaping standards.

Infrastructure & Public Service Goals

GOAL:

Maintain and improve the transportation systems, community facilities, and programs consistent with the community needs, and the ability to finance the improvements.

Work cooperatively with Townships, the City of Grayling, and applicable agencies to implement strategies to improve the disaster preparedness of all communities within the County.

Improve access to medical and human services, as well a public safety services.

OBJECTIVES & RECOMMENDATIONS:

- Continue to work with MDOT to explore opportunities for a reconstructed I-75 interchange to improve access to and from Grayling.
- County Road Commission should continue work closely with communities to implement road improvements consistent with the priority list and funding ability and utilize Asset Management System to enhance planning for maintenance and improvements of the local road network.
- Continue to support the local emergency services through 911 emergency services.
- Monitor and explore the needs for water, sewer, and natural gas services as more development occurs.
- Pursue expansion of high-speed communications throughout the County.
- Establish and maintain on-going communication with local communities regarding planned projects in order to facilitate joint projects, such as road improvements where wider shoulders could facilitate a cooperative and coordinated bicycle connector route.
- Pursue the development of a comprehensive network of both non-motorized and motorized trails, including initially mapping & reviewing existing trails to promote opportunities to establish connections.

Residential Goal

GOAL:

Encourage a variety of suitable housing opportunities to meet the lifestyle needs of all, regardless of economic circumstances or age.

OBJECTIVES & RECOMMENDATIONS:

- Encourage communities to designate areas appropriate for all types of residential housing including single family, multi-family, condominium, low to moderate-income rental complexes, and extended care facilities, especially near community facilities and shopping areas.
- Continue to support and promote the Crawford County Housing Commission and Michigan State Housing Development Authority (MSHDA) programs to rehabilitate substandard housing and to provide needed moderately priced housing in the County.
- Encourage all communities to preserve the integrity of existing residential areas by protecting them from intrusion of incompatible uses.
- Explore allowing construction of an accessory structure prior to a dwelling in some zoning districts and share information with local units of governments.

Recreation and Public Lands Goal

GOAL:

Preserve and improve access to public lands and water, recreation trails, public parks and recreation facilities for the safe enjoyment by residents, visitors, and future generations.

ADDITIONAL COMPONENT GOALS:

1. Pursue improvements to recreational opportunities within Crawford County.
2. Ensure public recreational facilities and activities are open and accessible to all.
3. Work cooperatively with appropriate agencies and units of government to develop and maintain an extensive network of trails and the necessary support facilities for each, including hiking, biking, horseback riding, x-c skiing, snowmobiling, and ORV.
4. Work cooperatively with appropriate agencies and units of government to establish and maintain access sites for canoe/kayak use and fishing access, and promote the local water trails.
5. Work cooperatively to promote recreational opportunities in the area and the related economic benefits for the region, including providing support for the Trail Town initiative.

[see Chapter 6-Recreation for County and Township specific goals and objectives]

Chapter 9 – Public Lands Analysis

A key factor that determines community character and the location of potential future development areas is the amount of land public ownership. **Table 9.1** and **Figure 9.1** show the breakdown of public land ownership in Crawford County. Excluding water, all public lands (including that owned by cities, townships, the county, as well as federal and state properties) make up over 70 percent of the county's total land area. Communities have been successful in working with the State of Michigan to transfer public lands into private ownership for economic development.

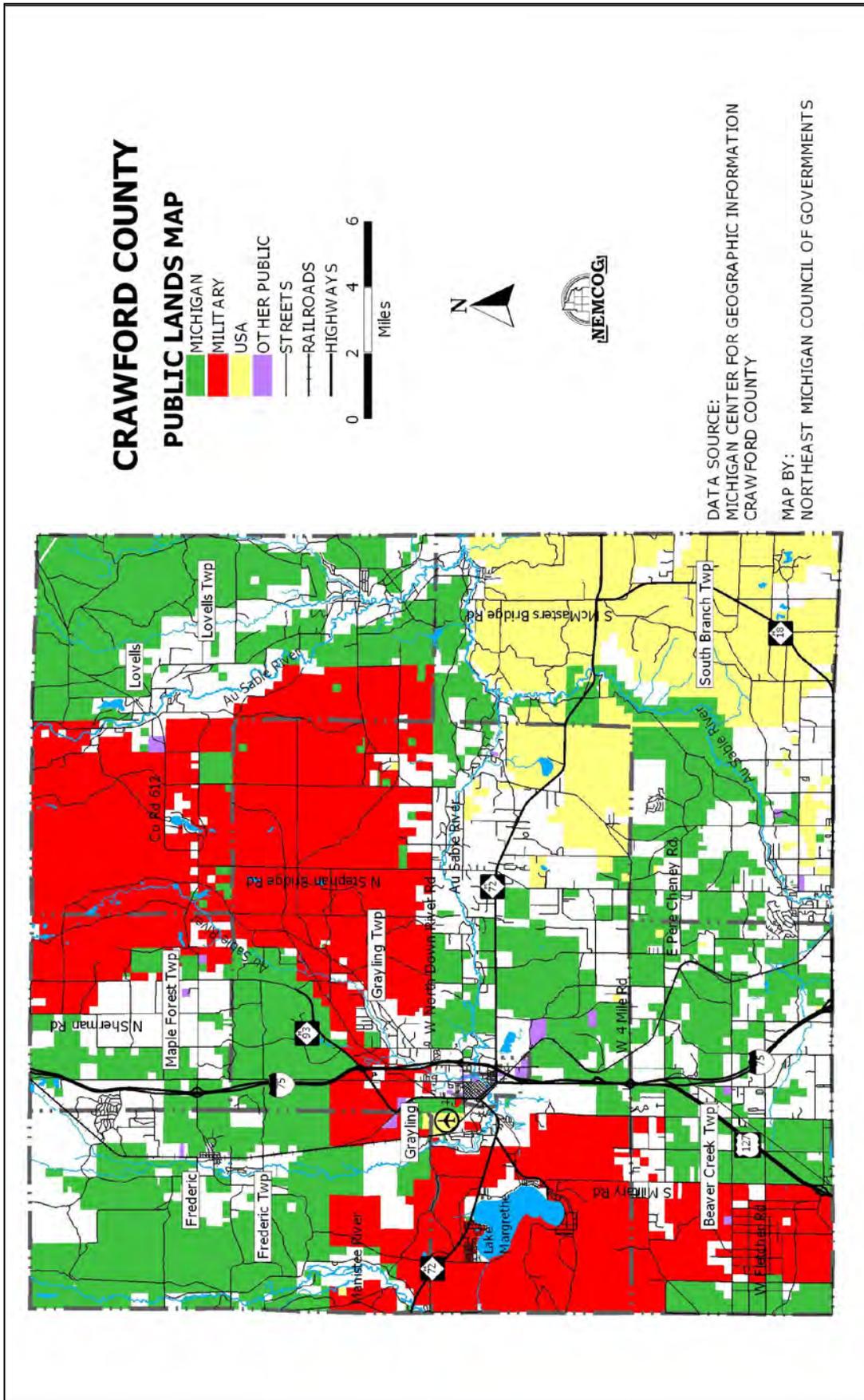
The Michigan Department of Natural Resources is in the process of completing a review of state-owned, the DNR administered lands. According to the DNR Web site, “The DNR is completing this land review to evaluate state-owned parcels located outside DNR project boundaries to determine if their natural resource and outdoor recreation values contribute significantly to the DNR’s mission. Completing this review will assist the DNR in consolidating state land ownership. This will also increase efficiency of management by reducing the cost of managing small, isolated parcels, especially those that do not have significant natural resource or recreation potential. The proceeds from the sale or exchange of such parcels will be used to acquire replacement land to consolidate state lands and increase recreation opportunities.” This section will identify state owned lands that communities would potentially be interested in having transferred into private ownership. Community master plans, zoning ordinances, long range community development proposals, in addition to local officials’ input, help guide this process.

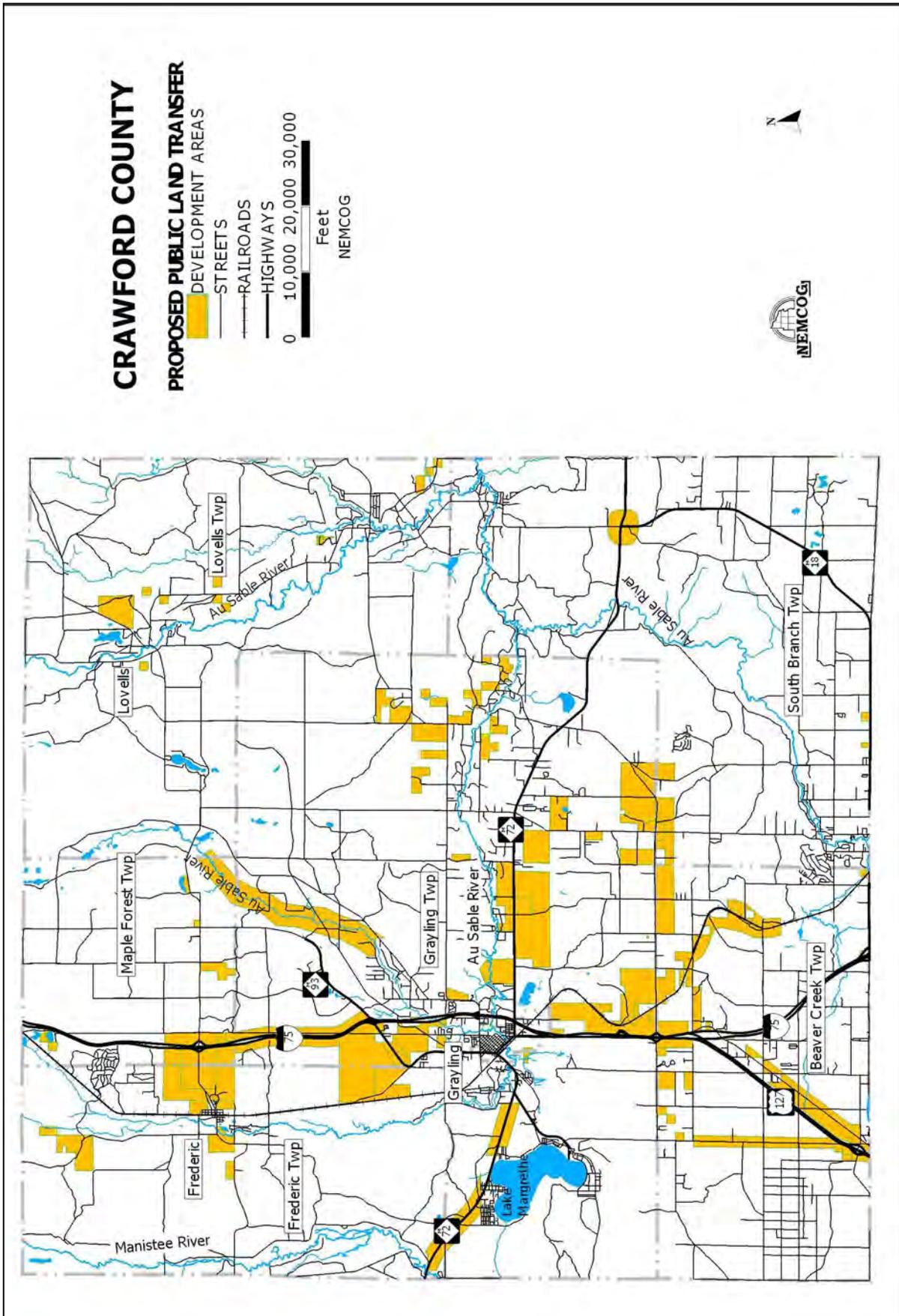
Public Lands	Acres	Percent
State of Michigan	116,614	32
Military	97,294	27
USA	41,433	12
Other Public	1,366	>1
Water	3,031	>1
Source: NEMCOG		

Figure 9.2 shows publicly owned lands that communities have identified for private economic development. The areas are mapped according to type of proposed development such as commercial or industrial. Areas were identified in master plans, zoning ordinances or other community planning activities.

Maple Forest Township has identified lands around the Frederic I-75 Interchange for future commercial and light industrial development. State owned lands in Section 6 adjacent to several small lakes have been identified for future residential development. In addition, state lands at the intersection of Co Rd. 612 and Hartwick Pines Road are identified for neighborhood business and lands bordering Bear Lake are identified for transfer to Township ownership for development of a park. Frederic Township identified lands in Sections 25 and 36 in T.28N.-R.4W. for industrial development.

The County Master Plan supports the transfer of State lands to private ownership to support development of residential, commercial and industrial uses in locations identified by the local communities. **Figure 9.2** depicts areas identified by communities as part of an outreach effort by the County Planning Commission. The intent is to depict land identified to date, but should not be construed as the only areas to be considered for future transfer to private ownership.





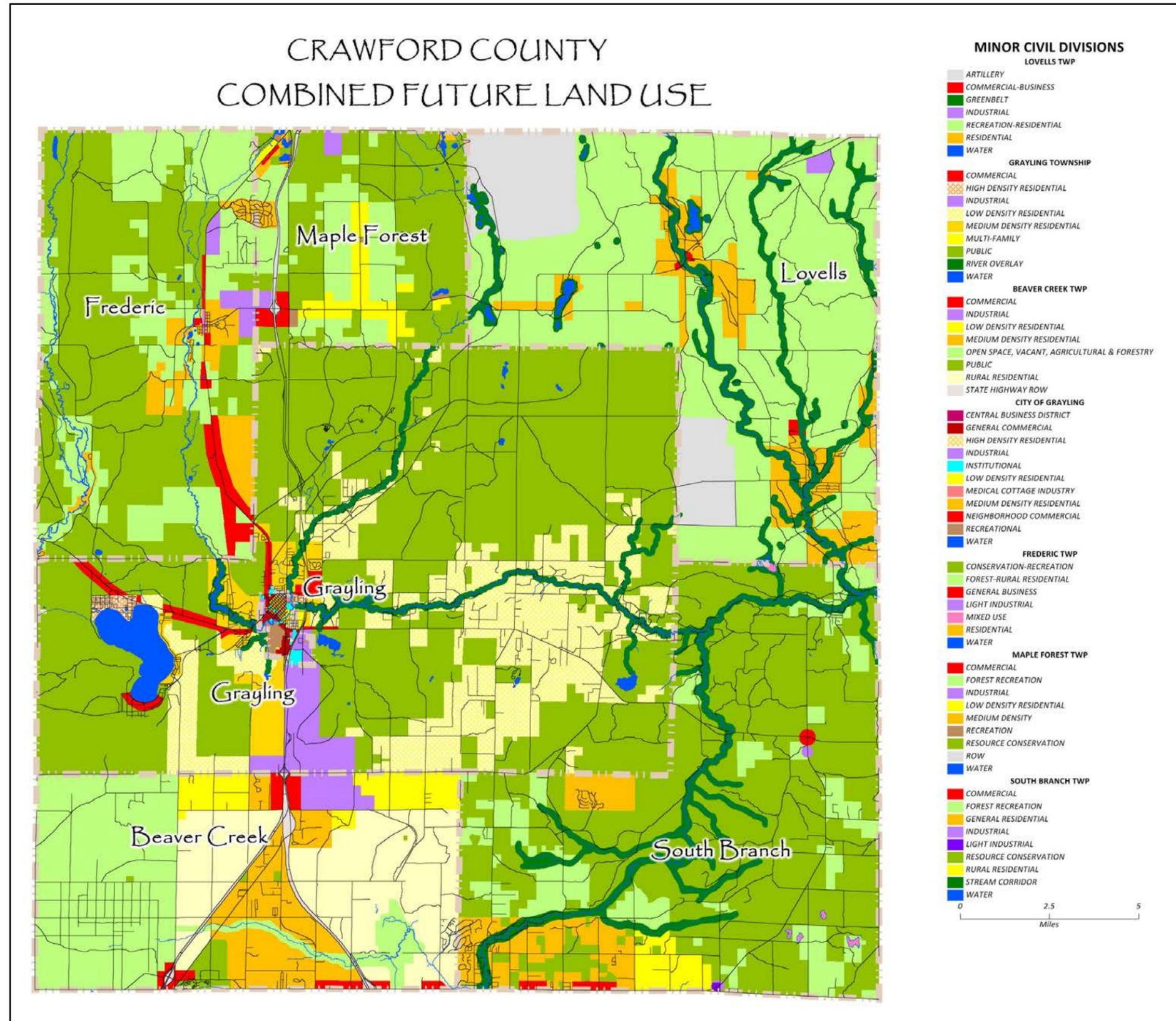
Chapter 10 – Future Land Use

The Crawford County Planning Commission serves as a coordinating and reviewing body regarding planning and zoning activities within the County with zoning ordinances adopted and administered by the local units of government. Thus this chapter compiles the future land use information from the most recently adopted master plans of the local units of government, and presents it in two map formats to more readily assess what is planned for the future of the entire County.

Figure 10.1 presents a Composite Future Land Use Map which combines the Future Land Use Maps for each of the Townships and the City of Grayling into a single map. As seen in the legend on the map, each jurisdiction has slight difference in the future land use categories and the number of categories.

Figure 10.2 presents a Generalized Future Land Use Map which is a revision of Figure 10.1 to map the future land uses across the County into the following ten broad future land use categories: Residential; Commercial/ Business/ Office; Industrial; Institutional; Rights-of-way (ROW); Recreation; Forest/ Recreation/ Residential; Stream Corridor; Public/ Conservation/ Open Space; and Water. A comparison of the generalized future land use categories and the categories utilized by each of the local units of government is presented in Table 10.1.

Due to the importance and prominence of public lands in Crawford County, as well as the risks of wildfire in this County, both are included for ease of reference in this chapter as Figures 10.3 and 10.4.



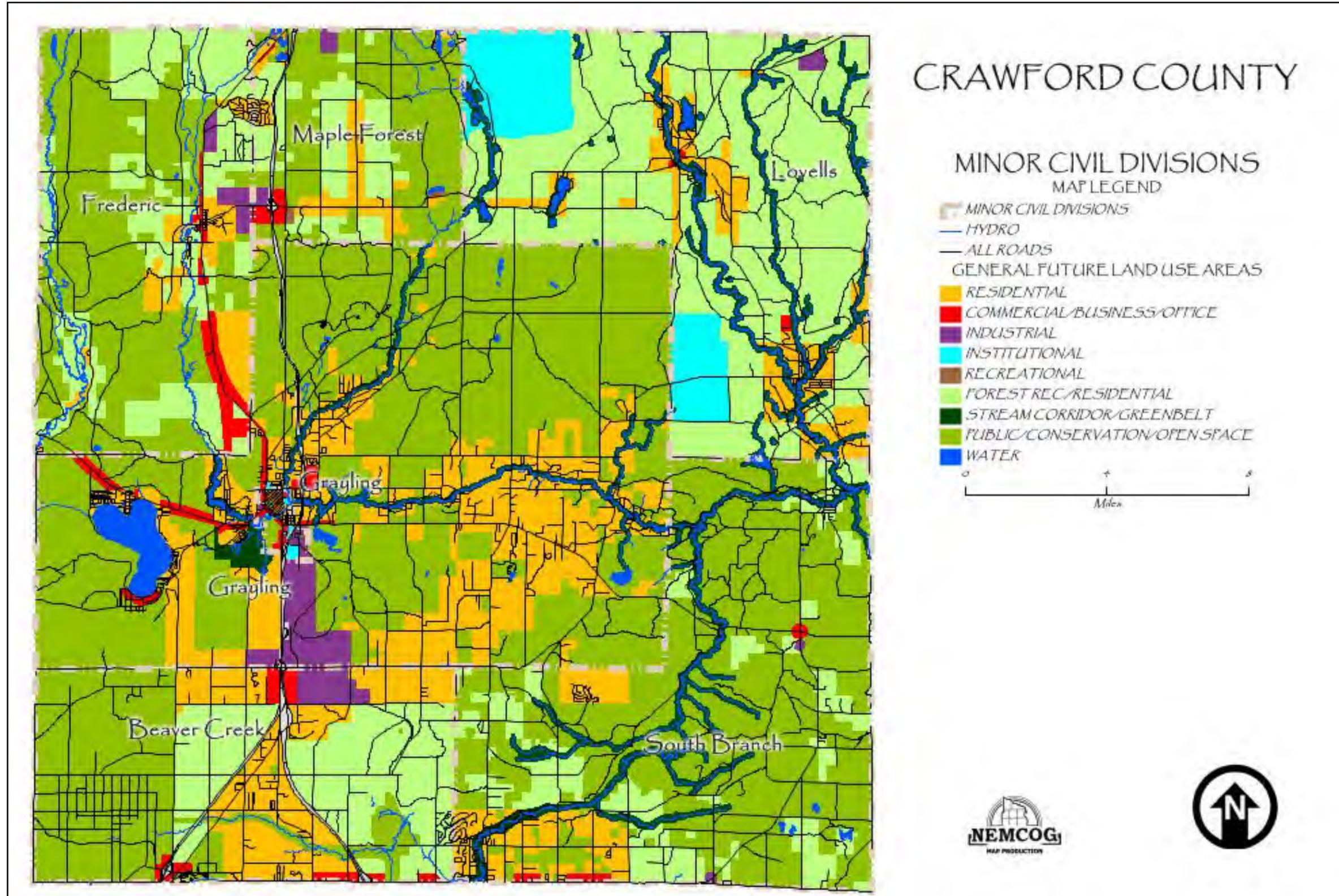
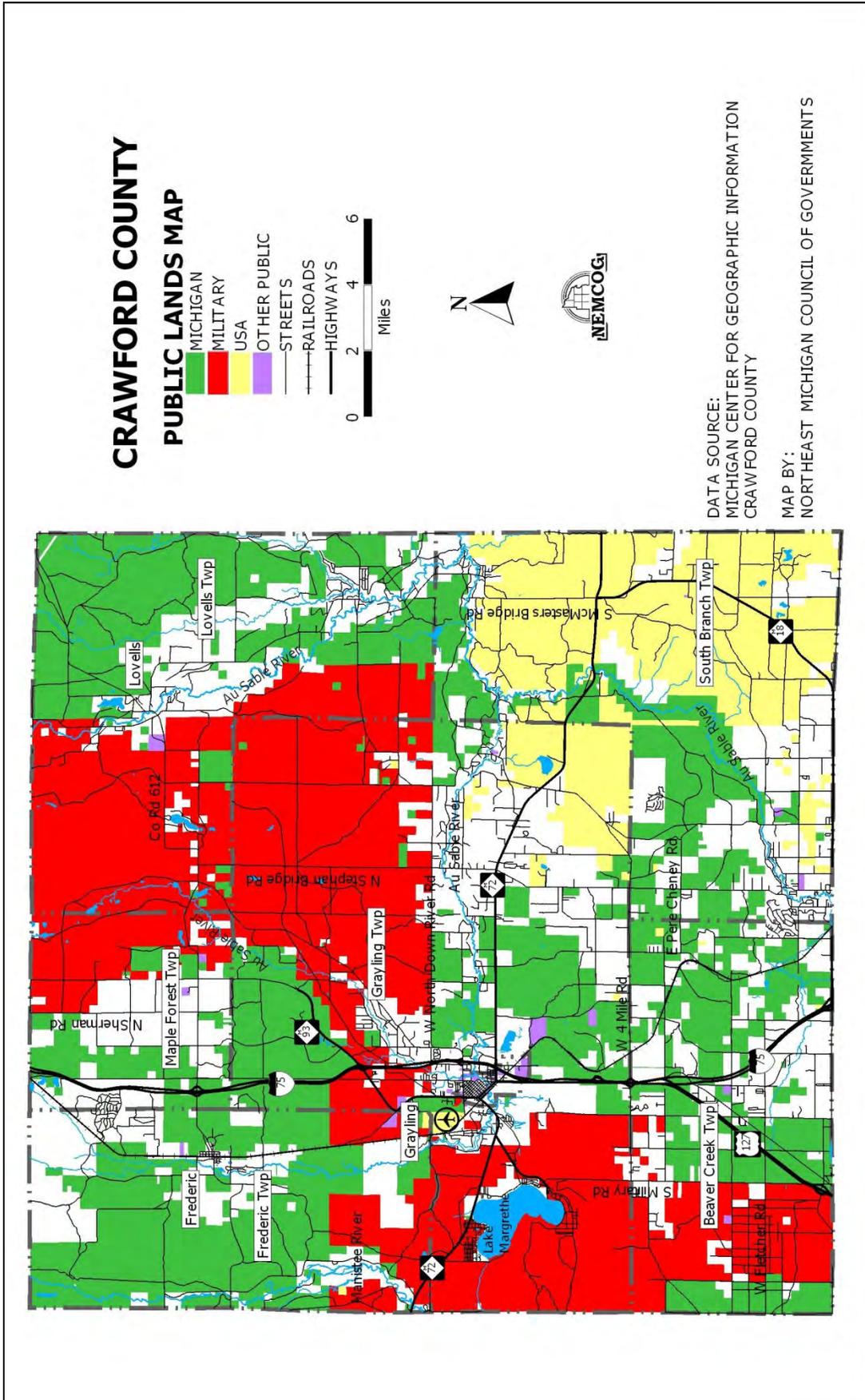


Table 10.1

Future Land Use Categories Comparison Table

Generalized FLU Categories	BEAVER CREEK TWP	CITY OF GRAYLING	FREDERIC TWP	GRAYLING TWP	LOVELLS TWP	MAPLE FOREST TWP	SOUTH BRANCH TWP
Residential	Low density Residential	High Density Residential	Residential	High Density Residential	Residential	Low Density Residential	General Residential
	Medium Density Residential	Low Density Residential		Low Density Residential		Medium Density Residential	Rural Residential
		Medium Density Residential		Medium Density Residential			
				Multi-Family			
Commercial/Business/Office	Commercial	General Business	General Business	Commercial	Commercial Business	Commercial	Commercial
		General Commercial	Mixed Use				
		Neighborhood Commercial					
		Medical Cottage Industry					
Industrial	Industrial	Industrial	Light Industrial	Planned Mixed Use	Industrial	Industrial	Industrial
							Light Industrial
Institutional		Institutional		City	Artillery		
Rights of Way	State Highway ROW					ROW	
Recreation		Recreational		Recreation		Recreation	
Forest Rec/Residential	Rural Residential		Forest-Rural Residential		Recreation Residential	Forest Recreation	Forest Recreation
Stream Corridor					Greenbelt		Stream Corridor
Public/Conservation/ Open Space	Open space, Vacant, Agric. & Forest		Conservation- Recreation	Public		Resource Conservation	Resource Conservation
	Public						
Water		Water	Water	Water	Water	Water	Water



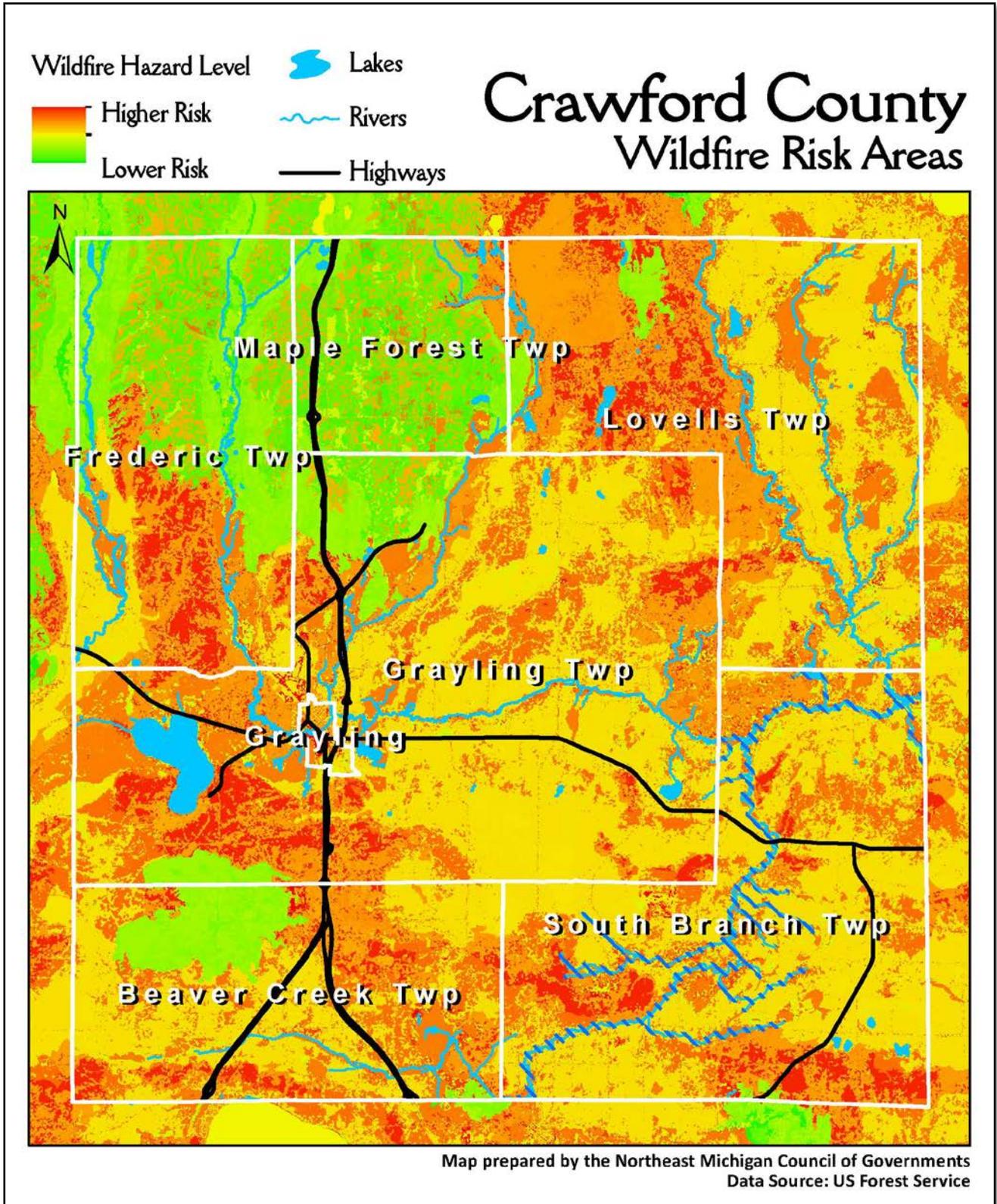


Figure 10.4

Chapter 11 – Plan Adoption

Public Notice

Pursuant to the Michigan Planning Enabling Act, (PA 33 of 2008, as amended), the Crawford County Planning Commission sent a written notice explaining that they intended to prepare a county master plan update. This notice requested the recipients' cooperation and comment on the plan. The notice was sent to the planning commissions (or if no planning commission to the legislative body) of each city, village or township located within or contiguous to Crawford County. It was also sent to all county planning commissions (or if no planning commission to the county board of commissioners) for each county located contiguous to Crawford county. It was sent to each public utility company and railroad company owning or operating a public utility or railroad within the county and to any government entity that registered its name and mailing address for this purpose with the county planning commission.

The Crawford County Planning Commission approved the draft "Crawford County 2014 Master Plan Update" for distribution at their _____ meeting. They forwarded the draft plan to the Crawford County Board of Commissioners. The Crawford County Board of Commissioners approved the draft plan for distribution at their _____ meeting. Copies of the draft plan were mailed to the required recipients on _____. A copy of the draft plan was also posted on the Crawford County web site. Articles concerning the draft were printed in the local press. Comments were taken on the draft plan up until the date of the formal public hearing.

A notice of the public hearing was printed in the Crawford County Avalanche newspaper on _____. The formal public hearing took place on _____.

[summary of comments to be inserted]

Plan Adoption

After considering comments made by the public through the public comment period and those made at the public hearing, the Crawford County Planning Commission approved the "Crawford County 2014 Master Plan Update" at their _____ meeting. The secretary of the Crawford County Planning Commission then forwarded the final plan to the Crawford County Board of Commissioners.

Legal Transmittals

Once the final plan was presented to the Crawford County Board of Commissioners at their _____ meeting, copies of the approved plan were mailed to all of the recipients as required by law.