

OTSEGO COUNTY MASTER PLAN 2014

Otsego County, Michigan



Prepared by:
Master Plan Committee
Jim Hilgendorf, Committee Chairperson

Members
Paul Hartmann, Planning Commission Chairperson
Judy Jarecki, Planning Commission Vice Chairperson
Michael Mang, Planning Commission member

Adopted:

Planning Commission Adopted: March 16, 2015
Board of Commissioners Adopted: April 28, 2015

Assistance by:
Northeast Michigan Council for Government (NEMCOG)

Otsego County Master Plan 2014

April 28, 2015

The regular meeting of the Otsego County Board of Commissioners was held at the County Building, 225 West Main St., Room 100. The meeting was called to order at 9:30 a.m. by Chairman Ken Borton. Invocation by Commissioner Julie Powers-Gehman, followed by the Pledge of Allegiance led by Tim McGuire.

Roll Call:

Present: Julie Powers-Gehman, Paul Beachnau, Lee Olsen, Erma Backenstose, Richard Sumerix, Doug Johnson, Ken Borton, Bruce Brown.

Excused: Paul Liss.

Motion by Commissioner Richard Sumerix, to approve the regular minutes of April 14, 2015 with attachments. Ayes: Unanimous. Motion carried.

Consent Agenda:

Motion to approve the 9-1-1 fund budget amendment. Ayes: Unanimous. Motion carried. (see attached)

Motion to approve the Point and Pay Agreement. Ayes: Unanimous. Motion carried. (see attached)

Administrator's report:

John Burt reported on the Community Center; Courthouse plaza.

Motion by Commissioner Doug Johnson, to authorize the County Administrator to solicit bids for the Courthouse Plaza. Ayes: Unanimous. Motion carried.

Special Presentations:

Tim McGuire reported on the Michigan Association of Counties.

Department Head Report:

Vern Schlaud reported on the Land Use Services.

Committee Report:

Motion by Commissioner Paul Beachnau, to approve the Wolverine Power Escrow Agreement as presented. Ayes: Unanimous. Motion carried. (see attached)

Motion by Commissioner Julie Powers-Gehman, to approve a part-time seasonal clerk position for the Building Department at \$10.00 per hour for five (5) months at 20 hours per week with 100 additional hours available during the season for workload/coverage needs and add up to an additional 150 extra hours available for the regular part-time position to use as needed for workload/coverage needs, along with the associated budget amendment. Ayes: Unanimous. Motion carried. (see attached)

I HEREBY CERTIFY, this is a True and Correct Copy of the Record on file in the Office of the COUNTY CLERK, Otsego County, State of Michigan.


Otsego County Clerk

Date
6-15-15

Motion by Commissioner Erma Backenstose, to approve the amendments to the Otsego County Master Plan as presented. Ayes: Unanimous. Motion carried.

Motion by Commissioner Erma Backenstose, to move to delete the word 'non-profit' from section 7.2.3 as proposed per Article 7 RR/Recreation Residential, Section 7.2 permitted uses subject to special conditions to the Otsego County Zoning Ordinance. Ayes: Unanimous. Motion carried. (see attached)

Motion by Commissioner Lee Olsen, to approve the second amendment to the Emmet County Recycling agreement as presented. Ayes: Unanimous. Motion carried. (see attached)

City Liaison, Township and Village Representative:
Julie Powers-Gehman reported on the City meeting.

Correspondence: - None.

New Business:

Motion by Commissioner Richard Sumerix, to approve the April 21, 2015 Warrant in the amount of \$1,531,052.22. Ayes: Unanimous. Motion carried.

Motion by Commissioner Bruce Brown, to approve the April 28, 2015 Warrant in the amount of \$340,109.20. Ayes: Unanimous. Motion carried.

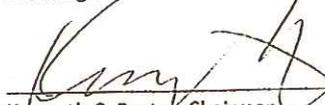
Public Comment:
Chairman Ken Borton opened up the meeting for public comment.

Board Remarks:

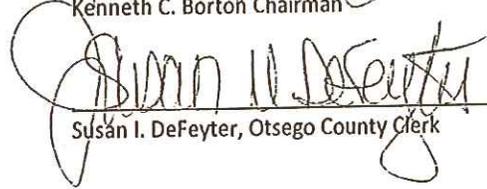
Commissioner Paul Beachnau reported on the Livingston Township meeting; City Council meeting; Gaylord Tourism Bureau luncheon May 6, 2015 at Treetops; State of the Community lunch May 12, 2015.

Commissioner Julie Powers-Gehman had no report.
Commissioner Lee Olsen had no report.
Commissioner Erma Backenstose had no report.
Commissioner Bruce Brown reported on the Sportsplex.
Commissioner Richard Sumerix had no report.
Commissioner Doug Johnson ~~had no report~~. Commented on Proposal 1.
Chairman Ken Borton attending the MAC Environmental Committee meeting.

Meeting adjourned at 10:38 a.m.



Kenneth C. Borton Chairman



Susan I. DeFeyter, Otsego County Clerk

**OTSEGO COUNTY
MASTER PLAN**

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Introduction

Foreword

Otsego County has engaged in formal land use planning for nearly a century. In 1939, the county issued its first master plan which established a land use policy to increase property values within the county. Nearly three (3) decades later, the county created a comprehensive plan to help guide growth, and a County Planning Commission was also established in 1966. Since that time, the county has engaged in comprehensive planning in 1981, 1997, 2007 and 2014.

In 1975, Otsego County enacted county-wide zoning after the nine (9) townships agreed to conduct planning and zoning together. Over the past four (4) decades, the zoning ordinance has undergone five (5) substantial revisions (1993, 1996, 2003, 2009, and 2014) and more than thirty (30) zoning map changes. Zoning is the principal means of land use control in Otsego County, and land use is regulated under the Otsego County Zoning Ordinance except within the City of Gaylord and the Village of Vanderbilt, both of which enforce their own zoning ordinances.

A master plan provides the foundation and vision for a zoning ordinance, and this master plan will help guide future updates of the Otsego County Zoning Ordinance as the community takes steps to implement their comprehensive plan.

Plan Methodology

Visioning Process

Upon review in 2014, the current Master Plan validity was maintained with Planning Commission updates to data.

In 2004, Otsego County, aided by a grant obtained from People and Land (PAL), retained R. Clark Associates, Inc. (RCAI) and Keith Charter to facilitate a series of visioning sessions throughout the county to establish a county vision which would serve as the foundation for revising the county's master plan. During the five (5) visioning sessions, community members were asked to think regionally as they discussed future growth issues and prioritized important development challenges. The initiatives and priorities brought forth through the visioning process served as a valuable resource for the current revision of the county's master plan.

To facilitate the visioning process, RCAI developed computer simulations of existing and future development scenarios to assist community members visualize potential development issues. The RCAI staff utilized an interactive polling process to obtain, as well as display, community members' responses to the various development scenarios. The final report entitled *One County, One Vision — A Report from the Community* incorporated data collected through the visioning sessions and a survey, as well as a comparison of existing county, township, village, and city master plans and zoning ordinances to the community's expressed vision for the future. The report became part of an inter-jurisdictional growth management initiative that supported the community's future development vision.

Partnerships for Change

In 2005, capitalizing on the visioning process, Otsego County joined with the Land Information Access Association (LIAA) through a Partnerships for Change grant to work toward the revision of the 1997 Otsego County Comprehensive Plan. During the summer, public work sessions were held to confirm the results of the visioning process, incorporate local planning documents into the process, and develop a list of planning questions to address. In response to questions generated at the public work session, Otsego County Planning and LIAA organized four (4) educational workshops held during fall 2005. At the first two (2) workshops, Mark Wyckoff, then President of the Planning and Zoning Center, provided information on small town character preservation and planning effective transportation. At the third workshop, Scott Kendzierski from the Northeast Michigan Community Health Agency and Rod Cortright of MSU-Extension co-presented on water quality, and at the fourth workshop, Rod Cortright presented on open space preservation. Through the workshops, citizens and local officials gained knowledge and resources on small town character preservation, effective transportation planning, water quality, and open space preservation which would enable them to make more informed planning decisions.

Fact Book

During winter 2005, Otsego County community leaders and LIAA planners compiled a draft Fact Book to provide citizens, the Otsego Planning Commission, and other public officials a factual basis for revising the county's master plan. The Draft Fact Book was presented to Otsego County on February 1, 2006 to be referenced during the establishment of countywide goals and objectives and the final production of a county master plan.

Master Planning

In spring 2006, the team of R. Clark Associates, Inc. and the Land Information Access Association were hired to assist the community in completing the most current revision of the county master plan. The consultant team hosted community meetings to gather extensive public input on the goals and objectives of the new master plan, assisted with the development and revision of future land use definitions, provided a framework for the townships to engage in the preliminary mapping, and guided the community in the creation of a new master plan which reflects the consensus for what residents envision Otsego County to be in twenty (20) years.

From Master Planning to Zoning Ordinances

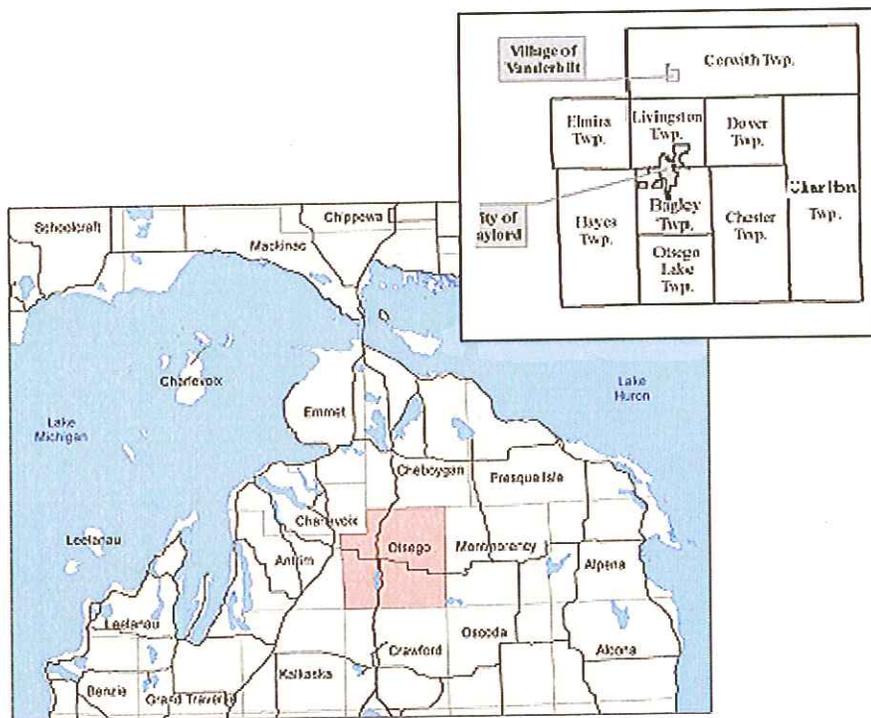
Inasmuch as a master plan provides direction for the future, a zoning ordinance establishes an enforceable framework for a jurisdiction's land use policy. It is essential that a community's zoning ordinance be updated to ensure that the direction of the master plan will be achieved. Thus, Otsego County's new master plan provides direction for revising the Otsego County Zoning Ordinance and future amendments to the Zoning Ordinance should conform to the community's goals and objectives contained within this plan.

Community Profile

Regional Context

Otsego County, situated in the north-central portion of Michigan’s Lower Peninsula, has a total land and water area of 337,415 acres. The county is comprised of nine townships, the Village of Vanderbilt, and the City of Gaylord, and Otsego County is bordered on the north by Cheboygan County, on the east by Montmorency County, on the south by Crawford County, and on the west by Charlevoix and Antrim Counties. Centrally located in the “tip of the mitt,” Otsego County is sixty (60) miles from Lake Michigan, fifty-five (55) miles from the Straits of Mackinac, and seventy (70) miles from Lake Huron.

Figure 1: Otsego County locator map



The northern Michigan County is predominantly rural with the City of Gaylord, the county seat, serving as the principal urban area. Downtown Gaylord’s Alpine theme fosters a distinctive small town atmosphere and has helped establish a community identity known throughout the state of Michigan. Similarly, the county’s natural environment in combination with an easily accessible geographic location along Interstate 75 (I-75) draws tourists from throughout the state and Midwest region. Otsego County is a four-season recreational center featuring golf, hunting, fishing, and winter related sports.

Environmental and Natural Features

Climate

Otsego County's climate is *humid continental*. The county does not experience the climate moderation typical of areas nearer to the Great Lakes; however, the lakes do contribute to a noticeable increase in cloudiness and snowfall during fall and winter months. People in Otsego County experience four seasons with an average summer temperature of 65.5°F and an average winter temperature of 19.5°F. Temperature data show the County to have had the following extremes: the highest recorded temperature of 105°F and the lowest recorded of 51°F below zero. On an average, ninety-three percent (93%) of the days between November to March are 32°F or below with twenty (20) days a year experiencing below zero temperatures. The average date of last freezing temperature in the spring is May 28 while the average date of first freezing temperature in fall is September 17. The freeze-free period, or growing season, averages one hundred twelve (112) days annually.

Precipitation is well distributed throughout the year with the growing season, April to September, receiving an average of 19.18 inches that is fifty-seven percent (57%) of the total annual average. The average annual snowfall for Gaylord is 145 inches. The total annual precipitation water equivalent is approximately 34 inches.

Summer months are generally sunny and dominated by moderately warm temperatures with an average of five (5) days exceeding 90°F. Precipitation during this period mainly comes in the form of afternoon showers and thunderstorms. Annually, thunderstorms occur on an average of twenty-five (25) days. Northern Michigan is located in the northeast fringe of the Midwest tornado belt. However, tornados occur infrequently which can be attributed to the cooling effect of Lake Michigan in the spring and early summer.

Winter months characteristically have cloudy skies and frequent snow flurries. The average seasonal snowfall is 143.3 inches with one hundred thirty-three (133) days per season receiving an inch or more of snowfall. The greatest daily snowfall of fifteen (15) inches was recorded November 7, 1971; the greatest seasonal total of 205.5 inches was recorded during the 1970-71 season. In recent winters, the annual snowfall has fallen below long term averages. See **Figure 2** for climate data in Otsego County for 1981-2010.

In many ways, the climate determines the physical character of Otsego County by supporting the growth of certain types of vegetation and contributing to the development of particular wildlife habitats. Climate also helps determine the area's agriculture capacity and the types of public recreation available. All of these factors contribute to the appearance and character of the county as well as the overall economy and economic development. In short, climate directly influences the way people feel about living, working, and playing in Otsego County.

Figure 2: Climate Data Otsego County 1981 - 2010

Year	Average Mean Temperature	Extreme Minimum Temperature	Extreme Maximum Temperature	Annual Precipitation (Inches)	ANNUAL Snowfall (inches)
1981	43.8	-30	94	29.08	121.5
1982	42.3	-32	92	36.07	138.7
1983	43.4	-27	95	40.39	128.0
1984	42.5	-31	88	35.65	100.1
1985	NA	NA	NA	NA	NA
1986	43.2	-22	91	42.70	125.5
1987	45.9	-14	93	32.39	126.5
1988	44.3	-13	95	41.82	182.5
1989	41.9	-15	91	32.51	198.9
1990	44.2	-17	85	40.34	150.4
1991	44.7	-15	94	40.04	130.5
1992	41.7	-14	88	33.34	162.0
1993	41.5	-14	91	36.82	126.5
1994	42.5	-23	92	37.07	114.7
1995	42.8	-16	94	45.73	195.0
1996	41.7	-30	90	32.76	171.5
1997	41.9	-20	90	32.80	158.4
1998	46.2	-12	89	34.26	129.5
1999	45.2	-13	91	33.38	108.5
2000	44.2	-10	87	29.91	147.4
2001	45.8	-6	95	35.29	129.8
2002	44.3	-10	90	31.44	158.5
2003	43.2	-21	93	32.21	144.6
2004	43.1	-15	87	40.59	189.3
2005	44.3	-16	92	33.91	148.0
2006	45.7	-2	96	33.67	156.5
2007	44.6	-13	91	34.60	163.0
2008	42.3	-9	90	35.87	166.5
2009	41.5	-14	94	32.40	119.1
2010	45.1	-9	92	28.47	64.0

Source: Midwest Regional Climate Center
 Site: Gaylord, MI

Topography

Otsego County's topography is the result of the glaciers during the Pleistocene Epoch which ended approximately 10,000 years ago. The county is dominated by hilly lands ranging in elevation from eight hundred (800) feet in the northeast to fourteen hundred (1400) feet in the central and southwest parts of the county. A narrow plain generally runs from Elmira, near the western county line, through Gaylord to the county's east and southeast boundaries. The hilly ridges south of Gaylord extend north south, whereas ridges north of Gaylord extend southwest northeast and southeast northwest, intersecting approximately six (6) miles north of Gaylord. Swampy lowlands and kettle lakes, characteristic of glaciated areas, are common throughout the county.

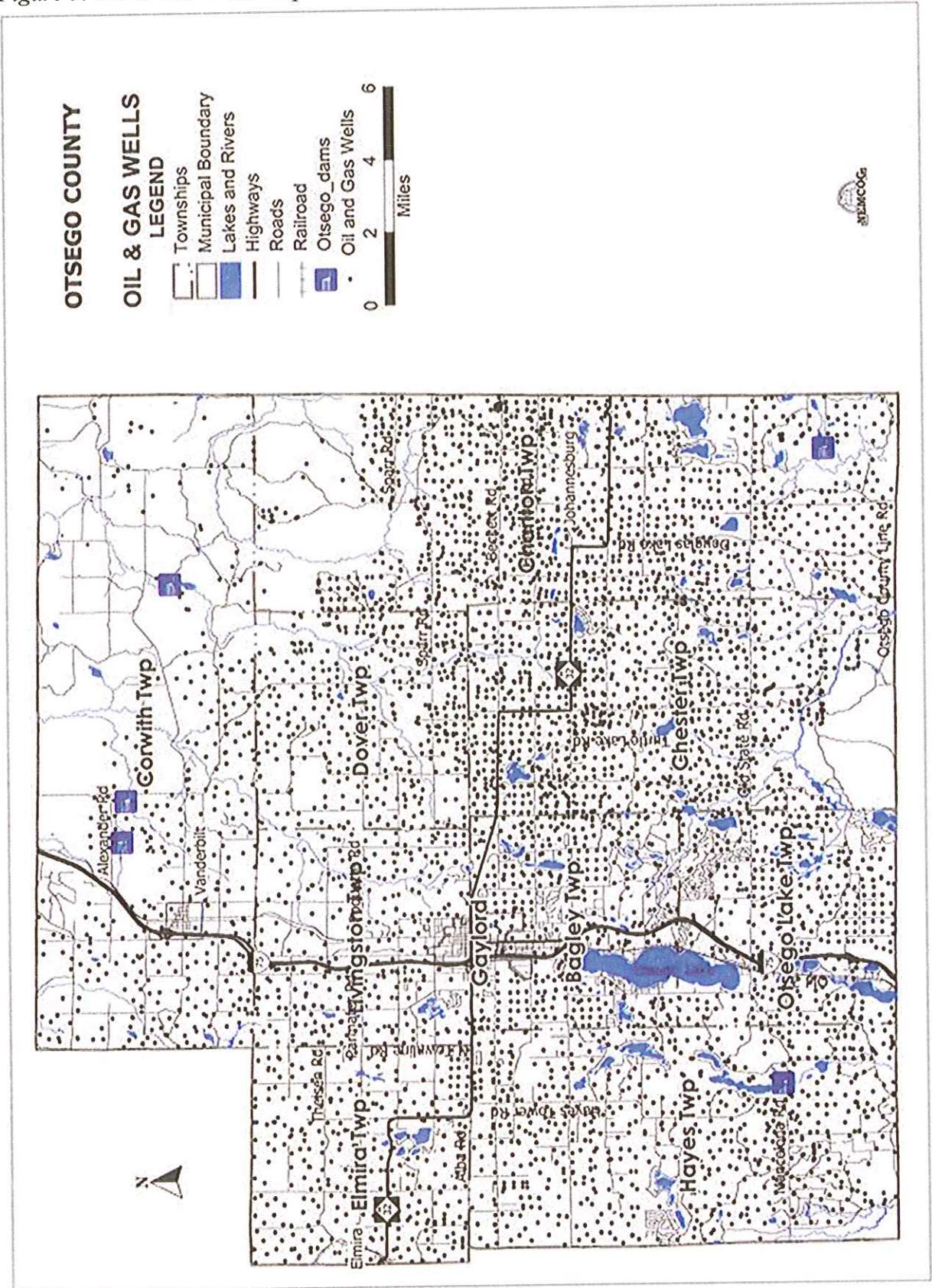
Geology and Soils

Geology

The surface geology of Michigan was shaped by the repeated advance and retreat of glaciers across the state more than 10,000 years ago. In the Otsego County area, the rubble left behind by the glaciers - the sand, gravel, rock and clay referred to as glacial drift - is well over four hundred feet thick. Corresponding with the prime agricultural areas of the county, an end moraine (where the edge of a glacier sat for a longer period and deposited lots of mixed debris) runs through Elmira Township southwest to northeast, then arcs across the county to the central eastern border. The glacial drift in the moraine area contains sand, gravel and some clay. Where it is thicker and more continuous, the clay provides a certain amount of protection for water wells that draw water from the drift below the clay layers. North of the end moraine, lie pockets of glacial till within an area of glacial outwash sand and gravel. Similar to the moraine, the till areas contain some clay mixed with the sand and gravels. The outwash areas are deep, continuous, sand and gravel, down to the bedrock. The entire county south of the moraine consists of glacial outwash sand and gravel. These outwash areas on either side of the moraine are highly permeable, highly vulnerable areas, allowing water or surface contaminants to easily travel downward into the aquifers used for drinking water throughout the county. As the glaciers retreated, some very large blocks of ice were left behind in the drift. When the blocks melted, holes - or kettles - were formed, creating depressions in the landscape which sometimes filled to become many of the lakes in Otsego County today.

Beneath the thick deposits of glacial drift lie bedrock formations. Geologically, Otsego County sits in the northern part of the Michigan basin, an ancient sea that disappeared 250 million years ago. Starting at the center of the basin (roughly in Clare), the youngest rock layers pinch out and expose (i.e., expose beneath the glacial drift) older rock layers as you move outward in concentric circles away from the center. The Coldwater Shale covers the southern part of Otsego County then pinches out. The Antrim Shale is the topmost bedrock layer in the northern half of the county. As is evident by the abundant wells throughout the county, natural gas and oil are being successfully extracted out of the bedrock in the area. Oil and gas wells have been less successful and are less abundant in areas where the Antrim shale is the topmost bedrock layer. See **Figure 3** for oil & gas well locations in Otsego County.

Figure 3: Oil & Gas Wells Map



Soils

In 2005, the U.S. Department of Agriculture's Natural Resource and Conservation Service (NRCS) formally released the Soil Survey of Otsego County, Michigan. This is the county's first modern soil survey providing detailed information about soil characteristics as determined by extensive sampling across the county and laboratory tests to determine grain-size distribution, plasticity, and compaction characteristics. As described in the Soil Survey:

The soil survey is an inventory and evaluation of the top eighty (80) inches of soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

Clearly, the Soil Survey is an important resource when making choices concerning land use change and development. It provides a thorough overview of the engineering characteristics of soils important in considering the location for buildings, on-site wastewater disposal systems, potential for agricultural production, and other key considerations in development decisions. By evaluating a soil map along with the characteristics of each soil type, we can better predict the distribution of limitations and opportunities presented by this important natural resource. The following summary of soil characteristics and concerns, however, cannot substitute for the continuing use of this important reference.

The U.S. Department of Agriculture's Soil Conservation Service has identified ten (10) separate soil associations in Otsego County. A soil association is a group of soils that commonly occur in proximity to one another. **Figure 4** groups soil associations in Otsego County by permeability classification.

According to available information, ninety percent (90%) of Otsego County is overlain by soils with moderate to rapid permeability. Therefore, the overwhelming majority of the land surfaces in the County have a high potential for ground water recharge. In the areas of rapid permeability, placement of septic systems and drain fields may result in ground or surface water contamination. This is due to rapid movement of liquids through the soil particles allowing for little or no cleansing of the effluent. The only areas of lower permeability (and therefore less ground water recharge potential) are located in the eastern portion of the County.

The Natural Resource Conservation Service completed a detailed soil survey of Otsego County. A digital or computerized version of the soil survey maps was acquired from the Michigan Center for Geographic Information. **Figure 5** is a color thematic map that classifies hydric soils and soil units with slopes eighteen percent (18%) and greater. Lower density and less intensive development should be directed to these areas without 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. The hydric soils (colored green on the map) are mainly located adjacent to streams and creeks. This connectivity of riparian wetlands and surface water features can be seen throughout the landscape.

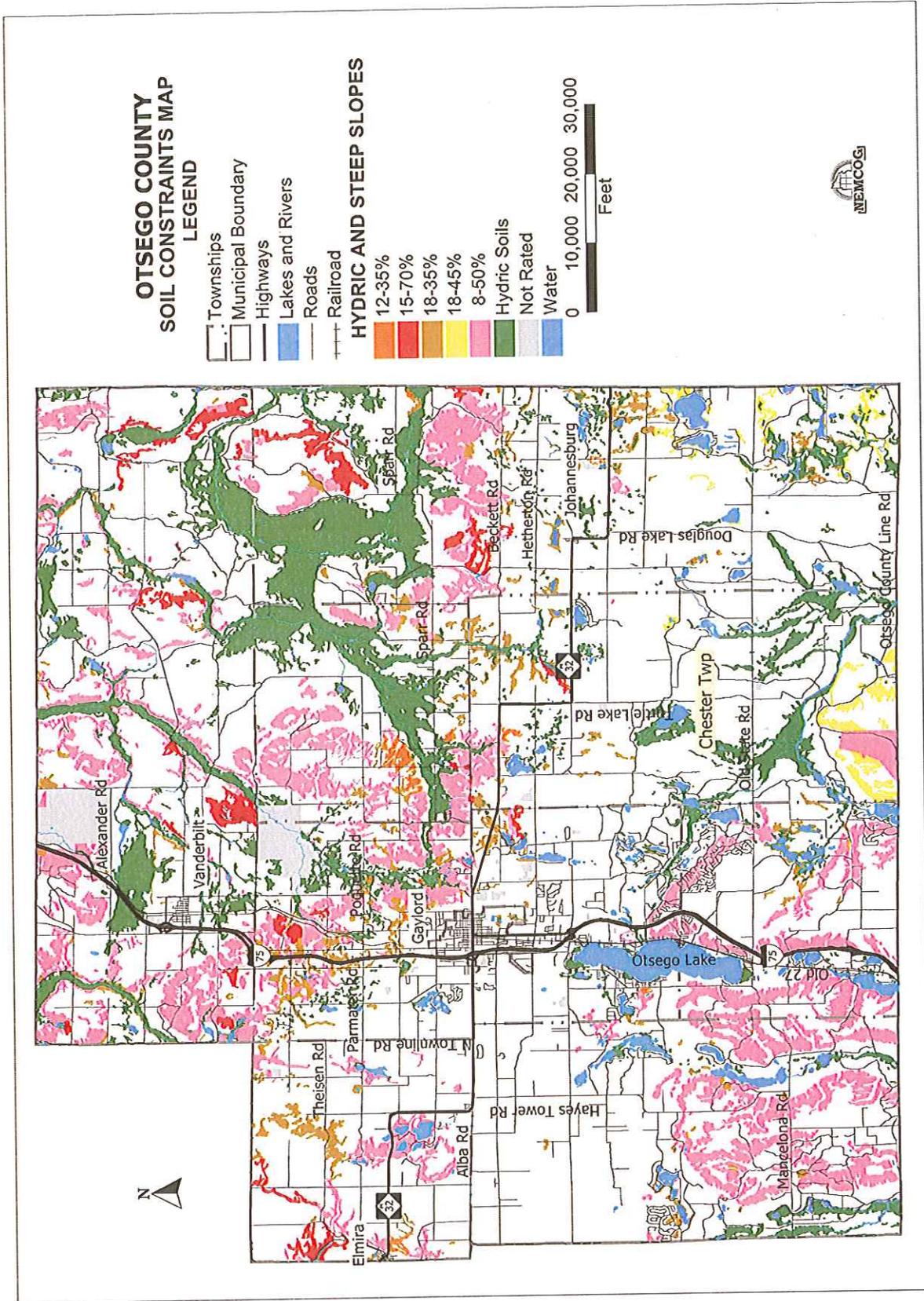
Figure 4
Otsego County Soil Permeability

SOIL ASSOCIATION	PERMEABILITY	ACRES	PERCENT
Rubicon-Grayling	*Rapid	105,000	
Kalkaska-East Lake-Mancelona	*Rapid	68,000	
Rubican-Graycalm-Montcalm	*Rapid	27,000	
Kalkaska-Blue Lake	*Rapid	27,000	
	SUB TOTAL	227,000	67%
Coventry-Karlin	*Moderate-Rapid	3,000	
Leelanau-Emmet-Kalkaska	*Moderate-Rapid	41,000	
Carbondale-Tawas-Roscommon	*Moderate-Rapid	34,000	
	SUB TOTAL	78,000	23%
Emmet-Leelanau	*Moderate-Moderately Rapid	17,000	
	SUB TOTAL	17,000	5%
Nester-Kawkawlin-Iosco	*Moderately Slow	7,000	
	SUB TOTAL	7,000	2%
Uby-Nester-Menominee	*Moderately Slow-Mod. Rapid	10,000	
	SUB TOTAL	10,000	3%
	GRAND TOTAL	339,000	100%

Source: U.S. Dept. of Ag., Natural Resource Conservation Service:
Rapid: 6-20 in./hr.; Mod-Rapid: 2-6 in./hr.; Moderate: 0.6-2 in./hr.; Mod-Slow: 0.2-0.6 in./hr

Hills and steeply rolling terrain may provide opportunities for spectacular views of the landscape. However, steeply sloped sites have severe building constraints and 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, re-vegetation, 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 Otsego County Soil Survey, areas with slopes eighteen percent (18%) and greater shown in red on the constraints map.

Figure 5: Soil Constraints Map



Soil Slope

The Soil Survey identifies the relative surface slope characteristics of soils across Otsego County. Slope is an important factor in estimating a location's limitations for such uses as construction and on-site wastewater disposal. Steep sloping soils are more subject to erosion and runoff situations. As depicted in Figure 2 in Appendix A, the slopes of soils vary considerably across Otsego County, consistent with many of the topographic features created by the departing glaciers thousands of years ago. While there are significant local variations, nearly fourteen percent (14%) of Otsego County (more than 47,700 acres) is covered by soils with slopes greater than twenty-five percent (25%), and slopes over twenty-five percent (25%) have significant limitations for development.

Prime Farmland

The NRCS has described certain soil types as prime farmland because they have the best combination of physical and chemical characteristics for the production of food, forage, fiber, and oilseed. Approximately 16,000 acres or nearly five percent (5%) of Otsego County's soils have a variation of these characteristics. As depicted in Figure 3 in Appendix A, most of these soils are in the central and southwestern areas of Otsego County. The Soil Survey also identifies soils of local importance to farming, including specialty crops. These soils cover about 69,000 acres or roughly twenty percent (20%) of the county, most notably in the west central and east central portions of Otsego County.

Prime Forestlands

The Northeast Michigan Prime Forestland Identification Project (NEMPFIP), a joint project of the U.S. Forest Service (USFS), Michigan Department of Natural Resources (MDNR), Northeast Michigan Council of Governments (NEMCOG), U.S. Soil Conservation Service (SCS) (now Natural Resources Conservation Service) and Huron Pines Resource Conservation and Development Area, identified and mapped soils meeting "National Prime" and "Locally Important" definitions. Seventeen and eight-tenths percent (17.8%) of the soils in Otsego County met the "Prime" definition. A local committee, using guidance from the Project, chose to include sixty-eight and four-tenth percent (68.4%) additionally of the county's soils in the "Locally Important" category. See Prime Forestlands Map 4 in Appendix A.

Soil Permeability

Another important characteristic of soils is permeability. Soil permeability is directly related to the structure of the soil and how it permits water or air to move through it. Highly permeable soils allow water to filter quickly through them down into the earth. This characteristic is beneficial when drainage is needed; however, highly permeable soils provide less filtration and absorption of fertilizers, nutrients, and other chemicals that water may carry. In Otsego County, most soils are highly permeable. As shown in Figure 5 in Appendix A, more than seventy-three percent (73%) of the county's land area is covered by soils that exhibit rapid permeability (over 245,908 acres). In fact, over ninety-six percent (96%) of the soils in Otsego County exhibit at least moderately rapid permeability (21.7 Ksaf or greater).

Forests

Otsego County is predominantly covered by forest. Outside the immediate Gaylord vicinity, forests are the dominant land cover feature – even within the farm belt. Although decreasing, forest acreage still accounts for nearly sixty-four percent (64%) of the total land area of the county, with 215,120 acres or three hundred thirty-six (336) square miles of forest.

Rivers, Streams, and Water Bodies

Introduction

Lakes and streams, as part of an ecological system and an area's aesthetic appeal, are an important feature to take into consideration when planning. This is particularly true in Otsego County, a county that has more than three hundred seventy (370) lakes and includes the headwaters of five (5) rivers.

The largest lake is Otsego Lake, located just south of the City of Gaylord. It has a surface area of approximately 1,970 acres. Other lakes in the county include Big Lake, Big Bear Lake, Big & Little Bradford Lakes, Buhl Lake, Crapo Lake, Dixon Lake, Douglas Lake, Five Lakes, Guthrie Lake, Hardwood Lake, Heart Lake, Lake Tecon, Lake Twenty Seven, Lynn Lake, Manuka Lake, Opal Lake, Pencil Lake, Pickerel Lake, Turtle Lake, and Wequas Lake.

The major rivers in the county include the Au Sable, Black, Manistee, Pigeon, and Sturgeon. The Au Sable Watershed is the largest and drains about thirty-eight percent (38%) of the county. A map of the Au Sable and other major watersheds is provided in Figure 6 in Appendix A.

Impacts to Lakes & Rivers¹

The lakes within Otsego County were formed more than 10,000 years ago, when the retreat of glaciers left low areas and blocks of ice which soon became lakes. Until the last century, these lakes have aged gradually. The natural rate of aging is influenced mainly by the biological and physical conditions of the watershed from which and through which the lake gains its water. As changes in land use occur within Otsego County, the rate of lake aging subsequently increases.

Nutrients, especially phosphorus and nitrogen, and sediments are the nonpoint source (NPS) pollutants that most influence lake characteristics. Excess nutrients can lead to an increase in vegetation, overall water quality deterioration, and negatively impact habitat and recreational uses of a water body. Likewise, sedimentation of lakes and streams can have a detrimental effect on fish and wildlife habitat and navigation.

The extent of NPS pollution affecting the surface waters of Otsego County has not been studied on a comprehensive basis. However, studies performed on Manuka Lake² and Otsego Lake³ revealed that these bodies of water were negatively impacted by excessive fertilizer, erosion, development, storm water run-off, and septic systems. These factors contributing to surface water degradation are reflective of general trends that are occurring throughout northern Michigan. Other trends effecting water quality in northern Michigan include loss of shoreline greenbelts and loss of wetlands. Otsego County's

greenbelt ordinance will help diminish any further loss of shoreline greenbelts while the wetland inventory will need to be monitored. A map showing the known existing wetlands in the county is included in Figure 7 in Appendix A.

The nonpoint source pollution impacts to Otsego County's watershed systems have been identified in past studies conducted by Northeast Michigan Council of Governments (NEMCOG) and the University of Michigan Biological Station. Similar to the county's lakes, the quality of rivers are generally being effected by erosion, lack of greenbelts, sediment, oil and gas wells, and commercial development. A more detailed description of NPS impacts to each watershed is provided in Appendix B.

Impacts to Groundwater⁴

Groundwater in Otsego County is a resource at risk. The native soils are generally quite sandy with a high capacity to absorb precipitation and quickly allow it to pass beyond the root zone to recharge groundwater.

The depth of groundwater within the county varies from a few feet to a few hundred feet. Typically near lakes, streams, and wetlands the depth of groundwater is much shallower, and groundwater can be found only a few feet below the soil surface. Consequently, many of the drinking water wells in Otsego County are also shallow, just deep enough to reach the uppermost region of the aquifer.

The geology of the area places Otsego County at risk of contamination, as seen in Figure 8 in Appendix A. For groundwater protection planning, it would be wise to assume that the entire county is highly vulnerable to contamination. A wide variety of contaminants have been discovered in the groundwater throughout the county, with new sites found each year.

The use of on-site septic systems in densely developed areas within Otsego County has generated several concerns. In densely developed areas that utilize on-site septic systems, nitrate levels in groundwater have increased. Groundwater is the sole source of drinking water in the county; the highly permeable soils in the area make this fresh drinking water supply extremely vulnerable to contamination. In regards to Otsego County's waste disposal practices, the comment has been made that the county is disposing of its waste in the same unconfined aquifer that is used for drinking water. It is critical, with the increasing population and resultant residential development, that local and state governments begin to address innovative technology as a means of reducing the risk of groundwater impacts from on-site septic systems. Old systems which are currently not up to code need to be upgraded to reduce the risks to groundwater. Benzie County, similar to Otsego County, has enacted an ordinance which requires on-site systems to be brought up to code at the time of home sale or within a ten (10) year time period. A copy of this ordinance is included in Appendix B of the Fact Book.

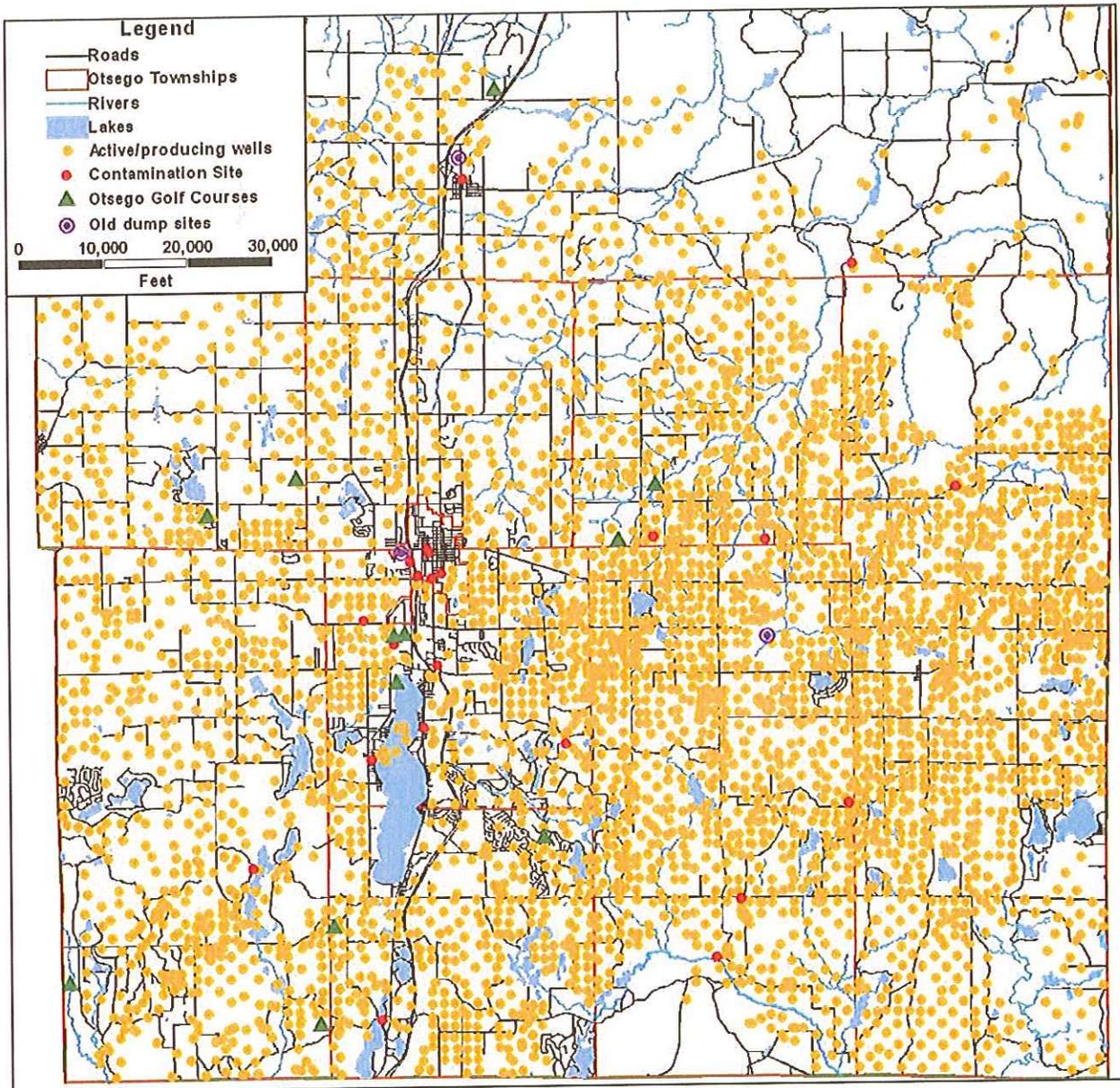
Many other land use activities have the potential to cause groundwater contamination. Land uses such as commercial, industrial, and municipal discharges; closed dumps; oil and gas drilling; production and disposal sites; bulk fuel storage facilities; businesses that utilize small quantities of hazardous materials; agriculture; and dense development in areas without sewers all put the county's water supply at risk.

An inventory of potential groundwater impacts has been conducted for Otsego County. The results of the inventory reveal that Otsego County has a total of one hundred eighteen (118) underground storage tanks (UST), eighteen (18) of which are known as leaking underground storage tanks (LUST), and there are 6,015 oil and gas sites, sixteen (16) golf courses, and three (3) old dumpsites within the county. **Figure 6** is a table listing contamination sites and pollutants discovered as of 2012 in Otsego County. **Figure 7** shows the locations of these known and potential contamination sites.

Figure 6 Contamination Sites in Otsego County, 2012				
Site ID	Score	Site Name and location	Pollutants	Status
69000006	22	Gaylord Repair Facility Grandview Street	E; B; T; X; TCE; PNAs	Interim Response
69000007	19	Gaylord WWTP End Of Center Ave & 7th St	Nitrate; Solid wastes	Inactive
69000008	35	Higgins Industries Vanderbilt 108 GARFIELD	TCE	Remedial Action In progress
69000010	12	Old Gaylord Dump Milbocker Rd	Domestic comm.	Inactive
69000012	20	Residential Well Johnson Rd	Cl; NA	No actions taken
69000013	20	Residential Wells 7800 Wilkerson at Becket Road	Cl, NA	Interim Response
69000014	23	Shell Oil Company Pigeon River State Forest	Cl	Evaluation conducted
69000015	29	Standard Products 594 Alpine Rd	TCE	Interim Response
69000016	23	Construction Board Manufact. 2212 Dickerson Rd	Nitrate	Interim Response
69000017	24	Chester Twp Hydrocarbon Spill Old State Rd	Benzene; Ethylbenzene; Xylenes	Interim Response
69000020	23	Northern Energy Inc. 238 South Indiana	Fuel oil; Petroleum; Gasoline	Interim Response
69000021	25	Northern Tank Truck Service	Cl; Brine/chlorides	Interim Response
69000022	19	Lake Tecon Property Hayes Tower	Fuel oil	Interim Response
69000024	13	Sparr Road Spill	Brine	Interim Response
69000033	29	West Otsego Lake Grocery 4800 West Otsego Lake Drive	1,2,4 TMB; 1,3,5 TMB; Benzene; Ethylbenzene; Naphthalene; Toluene; Xylenes	
69000036	27	Alpine Oil Bulk243 South Indiana	Ethylbenzene; Toluene; Xylenes	Inactive
69000080	27	3962 Wilkinson Road	1,1,2 TCA; Ag	Inactive
69000082	20	Main Street Bulk Fuel SE Corner of Main St. and S. Indiana Ave.	Se	Inactive

Source: State of Michigan Department of Environmental Quality 2012

Figure 7: Potential Contamination Sites (Created by the Northeast Michigan Council of Governments)



Furthermore, the Michigan Environmental Response Act (MERA), formerly known as Public Act 307 and now codified in Part 201 of NREPA Michigan Act 451, provides for the identification, risk assessment, and priority evaluation of environmental contamination sites in the state. On an annual basis, the Department of Natural Resources (DNR) identifies and evaluates known sites of environmental contamination for the purpose of assigning a priority for evaluation and response actions. Currently, there are twenty-one (21) identified MERA contamination sites in Otsego County, seven (7) of which are located within or in close proximity to the Gaylord Wellhead Protection Area, as shown in Figure 7. While all of the sites can adversely affect the county's groundwater, contamination sites located within the City of Gaylord's Wellhead Protection Areas should receive priority, as these sites are potential impacts to the drinking water supply for the city's three thousand residents.

Wetlands

Otsego County's wetlands (**Figure 8**) are unique ecosystems that serve as the transitional zone between upland and aquatic habitats. Wetlands within the County are found primarily along the water courses. Extensive wetland areas border the Au Sable, Black, Manistee, Pigeon and Sturgeon Rivers. Wetlands account for 2.15% of the land use within the County. The purity and clarity of lakes and streams is maintained and enhanced, in large part, by wetlands. Wetlands filter out nutrients and sediments, some of the most harmful pollutants associated with lakes and streams. Without wetlands these pollutants can cloud once clear waters and accelerate the growth of choking aquatic weeds. Care should be exercised to protect undeveloped waterfront properties that contain environmental limitations such as wetlands, floodplains, or soils poor for septic development.

To preserve the water quality of area lakes and streams and their associated property values, attempts must be made to preserve wetlands and other environmentally sensitive landscapes. This will insure that the quality of life and natural resources of the county remain its chief economic assets. The ecological functions that wetlands provide benefit numerous property owners. Conversely, land use alterations that disturb or alter wetland functions can create nuisances or cause damage to surrounding land owners (e.g., downstream flooding as a result of upstream wetland filling) as well as effecting broader public health issues (e.g., wetland loss can lead to water quality impairment of lakes and streams).

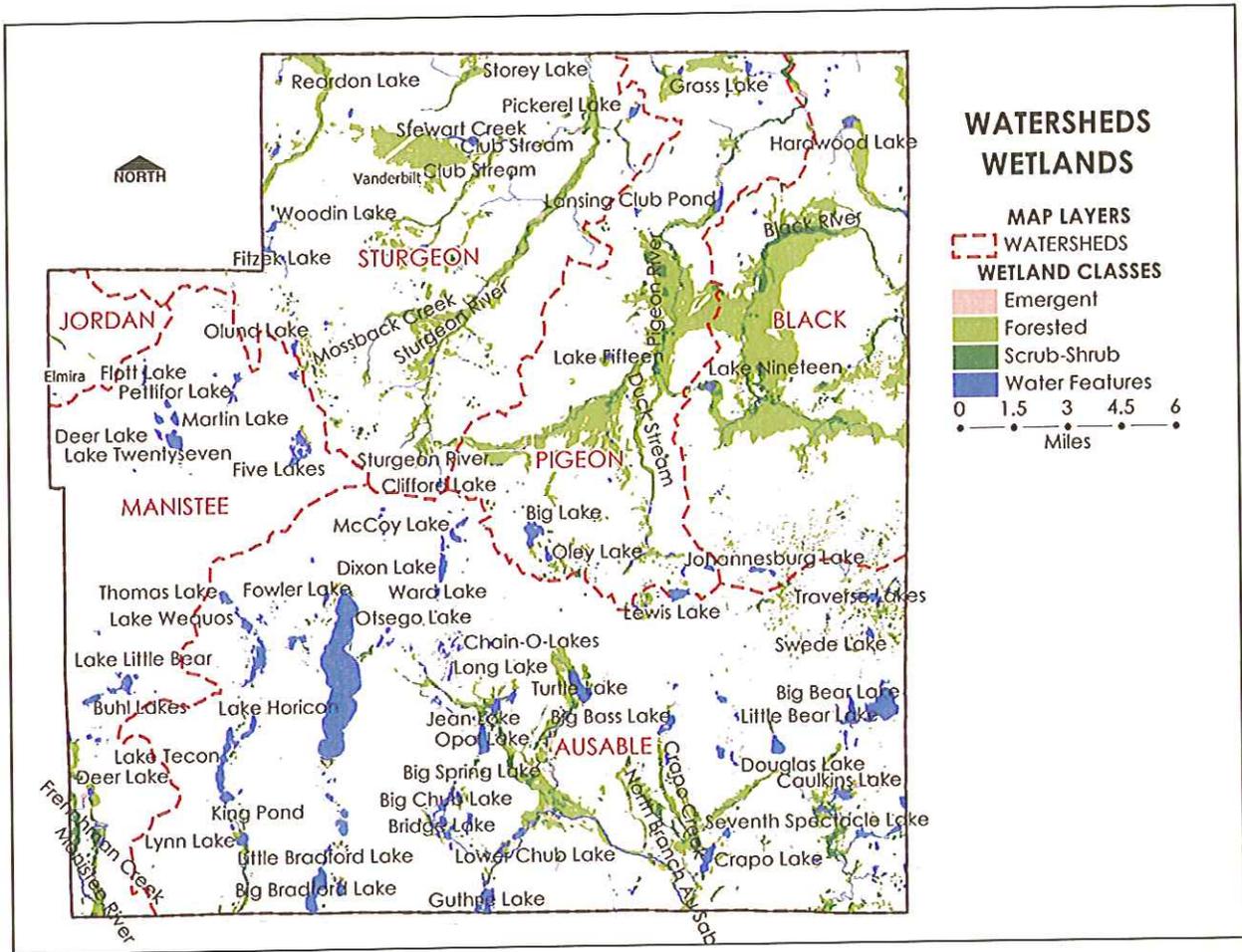
Population

Historic Trends and Current Numbers

Introduction

Over the past five (5) decades, Otsego County has experienced exceptionally high growth rates, yet the county remains predominantly rural. In conjunction with overall growth, another demographic trend that will likely require attention is the increasing proportion of seniors in the county. The aging of the county's population is reflective of a state wide trend expected to continue in coming years.

Figure 8: Otsego County Wetlands Map



Growth

The 2010 Census showed that Otsego County is the only county in Northeast Michigan to experience a population increase from 2000 to 2010. The 2010 Census reported that the population of Otsego County was 24,164 residents. Population of the county has increased by eight hundred sixty-three (863) people (3.7%) since 2000. The county population density is 45.9 persons per square mile, with seventy-three percent (73%) of the population concentrated in Gaylord, Bagley Township, Livingston Township, Hayes Township, and Otsego Lake Township (see Figure 9). If the land area and population of those areas are excluded, the average density for the remaining townships is nineteen (19) persons per square mile. The county population has more than quadrupled since 1930 (an increase of 18,610 people). The largest population increase was 43.9% recorded between 1970 and 1980.

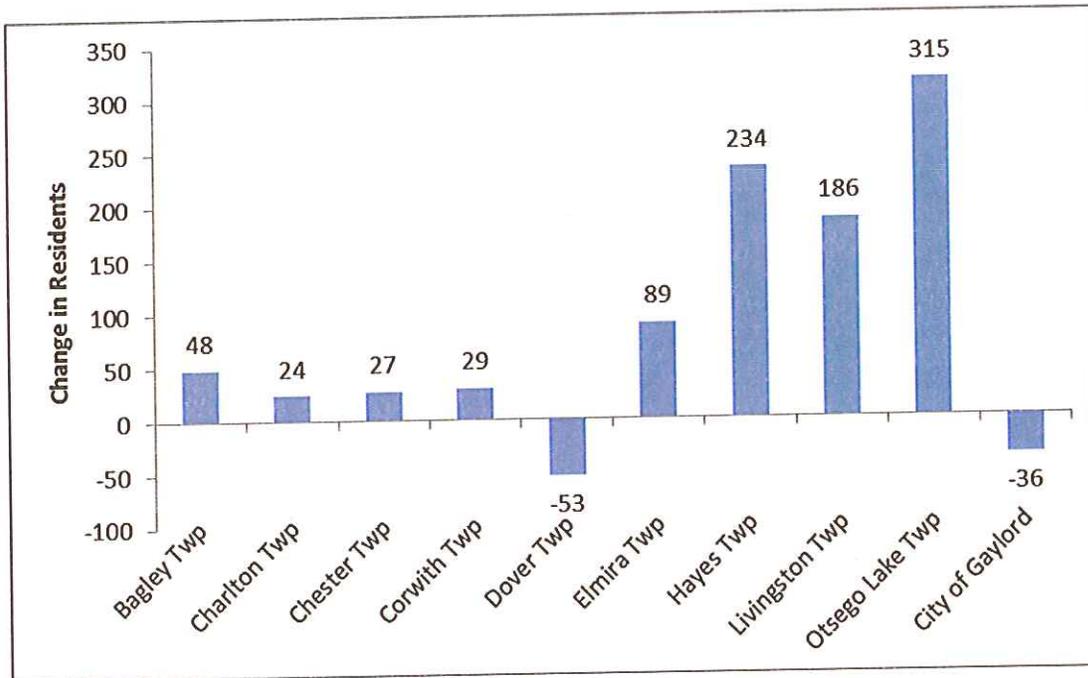
Between 1990 and 2000, the county experienced a thirty percent (30%) growth rate, a significantly higher growth rate than the overall state average of seven percent (7%). Otsego County ranked as the fifth fastest growing county in Michigan, and the county's growth rate exceeded that of neighboring counties. In terms of total people gained, Otsego County ranked 28th out of Michigan's eighty-three (83) counties for the 1990 through 2000 period. Otsego County has been experiencing significant growth rates

since 1940. The largest percentage of population increase occurred between 1960 and 1980. The population grew thirty-eight percent (38%) between 1960 and 1970 and 43.9% between 1970 and 1980.

Figure 9 Population For Otsego County & Municipalities, 2000-2010				
Municipality	2000 Population	2010 Population	Percent Change	Numeric Change
Otsego County	23,301	24,164	3.7%	863
Bagley Township	5,838	5,886	0.8%	48
Charlton Township	1,330	1,354	1.8%	24
Chester Township	1,265	1,292	2.1%	27
Corwith Township	1,719	1,748	1.7%	29
Dover Township	614	561	-8.6%	-53
Elmira Township	1,598	1,687	5.6%	89
Hayes Township	2,385	2,619	9.8%	234
Livingston Township	2,339	2,525	8.0%	186
Otsego Lake Township	2,532	2,847	12.4%	315
City of Gaylord	3,681	3,645	-1.0%	-36
Source: U.S. Bureau of the Census				
Note: Red text indicates decline and green text indicates increase				

Between 2000 and 2010, all of Otsego County’s jurisdictions, aside from Dover Township and the City of Gaylord, experienced a population increase. In pure numbers, the townships of Hayes, Livingston, and Otsego Lake gained the most people, as shown in **Figure 9**. This pattern is indicative of the broader Michigan trend of growth occurring outside of urban areas. Evidence of population concentrations around lakes in Otsego County is shown in Figure 9 in Appendix A. While some of the highest concentrations of people are still in the City of Gaylord, population concentrations are increasing in outlying areas as well. The highest concentrations of outlying growth appears directly outside of Gaylord in Bagley and Hayes townships and surrounding bodies of water such as Otsego Lake, Lake Louise, Little Bear Lake, Guthrie Lake, and Buhl Lake. **Figure 10** is a bar graph displaying population growth from 2000 to 2010 by jurisdiction in Otsego County.

Figure 10: Population Growth 2000-2010 by Jurisdiction



Age, Race, and Sex

Census figures from 2010 show that Otsego County's population was predominantly white (96.9%), equally distributed between males (49.2%) and females (50.8%) and increasing in age (Figure 11). The higher rate of growth among older age groups is consistent with the Michigan Department of Management and Budget's (MDMB) prediction that the older age population will grow at a faster rate than the younger age groups. Figure 12 illustrates this trend in Otsego County by showing the increasing percentage of older age groups since 1990.

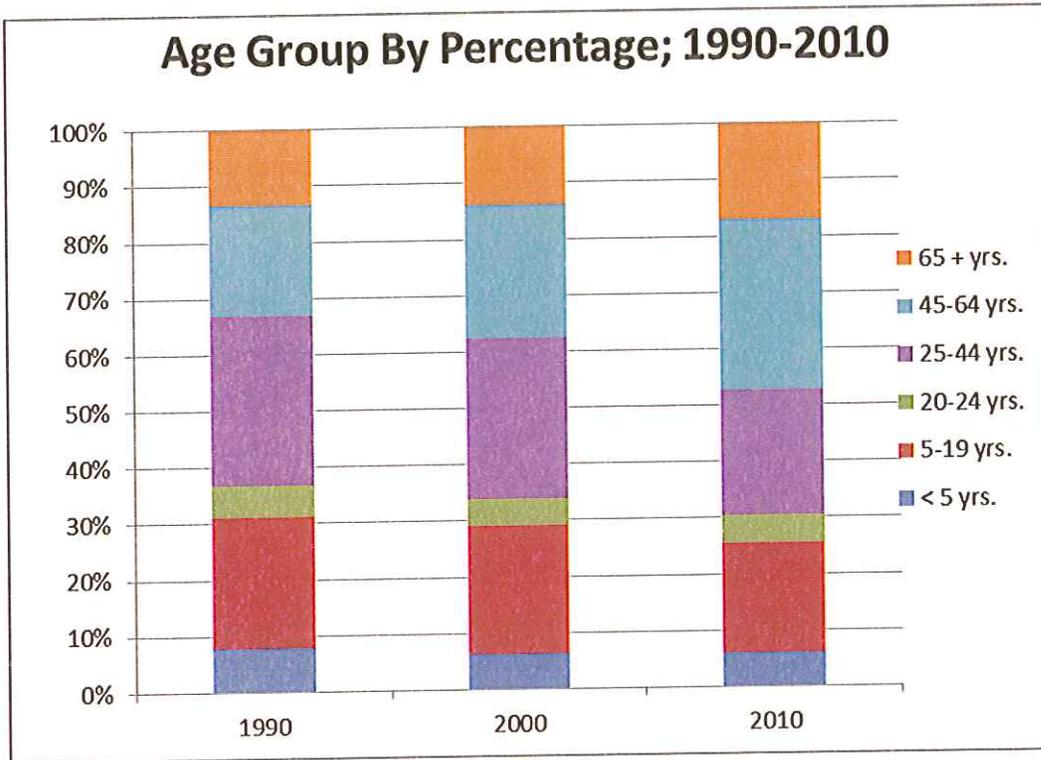
As the number of older people has increased, the median age for the county has also increased to about 43.5 years in 2010. Most communities in the county had a similar median age except for Charlton Township and Otsego Lake Township, which had a higher median age of about fifty (50), and the City of Gaylord which had a slightly lower median age at 39.3. Figure 13 illustrates variances in the age distribution of each Otsego County jurisdiction relative to their entire 2010 Census population.

Figure 11: Population by Age

Population	2000			2010			Percent Change
	Both Sexes	Male	Female	Both Sexes	Male	Female	
Under 5 years	1,445	738	707	1,417	694	723	-1.9
5 to 9 years	1,808	932	876	1,510	777	733	-16.5
10 to 14 years	1,855	907	948	1,573	775	798	-15.2
15 to 19 years	1,678	885	793	1,650	848	802	-1.7
20 to 24 years	1,078	550	528	1,201	590	611	11.4
25 to 29 years	1,243	610	633	1,135	564	571	-8.7
30 to 34 years	1,565	784	781	1,193	589	604	-23.8
35 to 39 years	1,902	933	969	1,377	658	719	-27.6
40 to 44 years	1,936	986	950	1,660	821	839	-14.3
45 to 49 years	1,726	863	863	1,899	942	957	10
50 to 54 years	1,474	728	746	1,984	1,027	957	34.6
55 to 59 years	1,236	606	630	1,835	913	922	48.5
60 to 64 years	1,154	591	563	1,616	812	804	40
65 to 69 years	974	487	487	1,259	592	667	29.3
70 to 74 years	907	444	463	1,030	491	539	13.6
75 to 79 years	639	288	351	745	354	391	16.6
80 to 84 years	361	139	222	601	259	342	66.5
85 years and over	320	97	223	479	187	292	49.7
Total Population	23,301	11,568	11,733	24,164	11,893	12,271	3.7

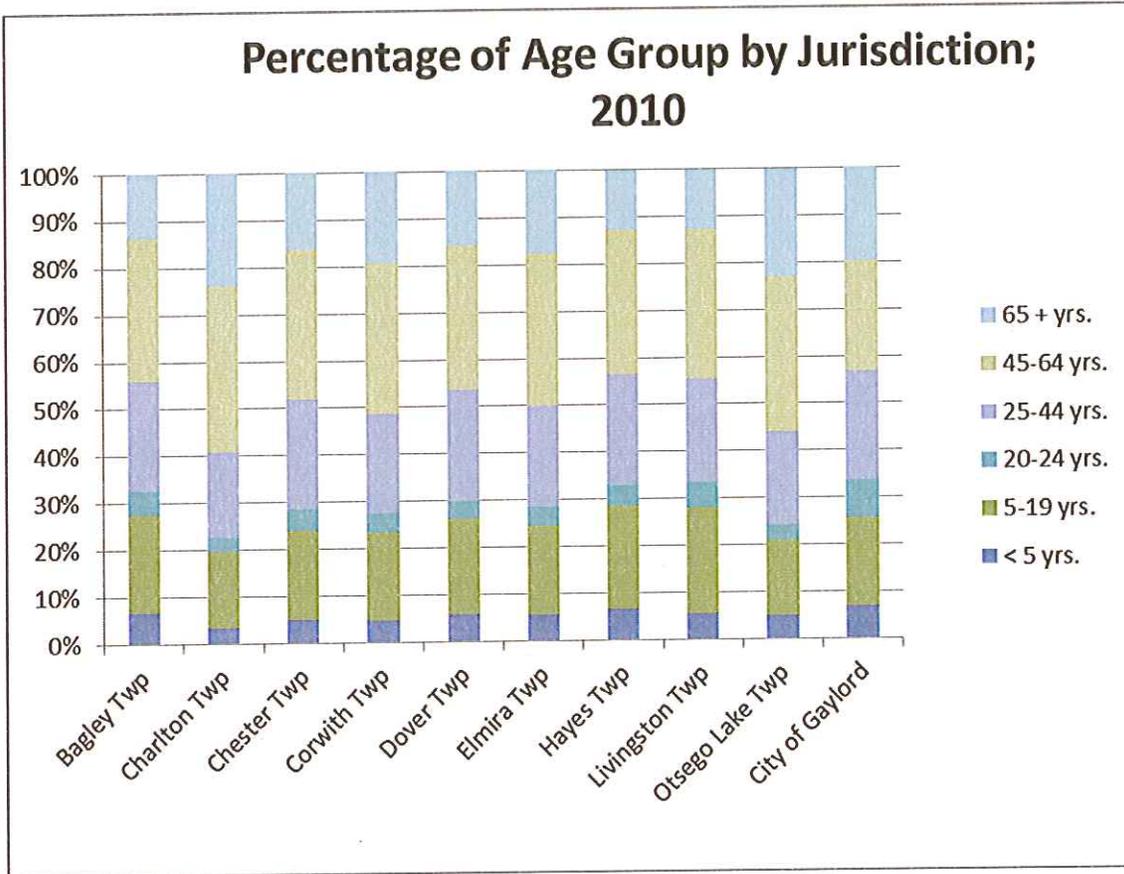
Source: U.S. Census Bureau, 2010

Figure 12: Age Group by Percentage; 1990-2010



The distribution of individuals in the younger (19 and under) and the older (65 and above) age groups is presented in **Figure 12** and **Figure 13**. The higher concentrations of people nineteen (19) years and younger live in the townships of Bagley, Dover, Hayes and Livingston. Similarly, higher numbers of people age sixty-five (65) and above live in the City of Gaylord and the townships of Charlton, Corwith, and Otsego Lake.

Figure 13: Percentage of Age Group by Jurisdiction, 2010



Based on recent trends, many of these townships will continue to grow in overall population and therefore increase the numbers of individuals included in the nineteen (19) years and younger and sixty-five (65) and older age groups. All age groups up to forty-four (44) years of age, except the twenty (20) to twenty-four (24) age group, has had a reduction in numbers from 2000 to 2010. According to the 2010 Census, Hayes and Livingston Townships have the highest percentage of school age children in the county. The City of Gaylord and Bagley Township have the greatest percentage of children aged four (4) and younger. Charlton and Otsego Lake Townships have the greatest percentage of residents who are sixty-five (65) years of age or older. The City of Gaylord has the lowest median age of all jurisdictions at 39.3 and Charlton Township has the highest median age at 50.7.

Seasonal Residents

In 2010, the Census reported that 27.5% of the housing units in the county were seasonal. Obtaining accurate numbers of seasonal residents and tourists is difficult. Because the decennial U.S. Census is conducted in April, the numbers only reflect those persons who live in the county on a year-round basis. An estimate of the number of county seasonal residents can be calculated by multiplying the number of county seasonal housing units (4,052) by the county's average number of persons per household (2.44), for a total of 9,886 persons (Figure 14). Seasonal residents, therefore, bring the total county residents to 34,050, compared to the actual 2010 Census figure of 24,164 persons. This figure

does not include those seasonal visitors or tourists staying in area motels, campgrounds or family homes. It is difficult to obtain accurate count of the number of the tourists who annually visit the county.

Figure 14: Estimated Seasonal Population, 2000-2010

Unit of Government	2000			2010		
	Seasonal Units	Potential Seasonal Residents	Percentage	Seasonal Units	Potential Seasonal Residents	Percentage
Bagley Twp	715	1,830	18.8	824	2,011	20.4
Charlton Twp	809	2,071	21.3	800	1952	19.7
Chester Twp	361	925	9.5	363	886	9.0
Corwith Twp	277	709	7.3	257	627	6.3
Dover Twp	106	271	2.8	107	261	2.6
Elmira Twp	115	294	3.0	119	290	2.9
Hayes Twp	418	1,070	11.0	505	1232	12.5
Livingston Twp	60	154	1.6	81	198	2.0
Otsego Lake Twp	886	2,268	23.3	950	2,318	23.5
Gaylord	46	118	1.2	46	112	1.1
Total	3,793	9,710	100	4,052	9,887	100

Source: U.S. Census Bureau, 2010

Education

School Enrollment

Between 1990 and 2000, school enrollment of individuals three (3) years and older in Otsego County increased by approximately 1,400 individuals (Figure 15). Between 2000 and 2012 enrollment in the same age group dropped by two hundred (200) individuals. The number of children enrolled in preprimary school more than doubled (1990-2000), while from 2000-2012, enrollment in preprimary schools reduced by over sixty percent (60%). While over one thousand (1000) additional students attended grades 1 – 12 from 1990-2000, two hundred forty-eight (248) less students attended grades 1 - 12 from 2000-2012. Recent trends shown in Figure 15 would suggest there will be greater need for post-secondary education in the county in the near future.

Figure 15: School Enrollment; 1990-2012

School Enrollment	1990		2000		2012	
	Number	Percent	Number	Percent	Number	Percent
Persons 3 yrs and older	4,340	100	5,748	100	5,548	100
Pre Primary School	374	8.6	714	12.4	278	5.0
Elementary or High School	3,463	79.8	4,500	78.3	4,254	76.7
College or Graduate School	503	11.6	534	9.3	1,016	18.3

Source: U.S. Census Bureau, 1990 & 2000, 2012 American Community Survey

Educational Attainment

The percentage of Otsego County residents twenty-five (25) years and older obtaining a high school degree or higher, increased from 79.5 to 85.5% between 1990 and 2000, and from 85.5 to 90.4% between 2000 and 2012 (**Figure 16**). Each category saw an increase in numbers with the exception of the Less than 9th Grade and the 9th to 12th Grade (no diploma) group, which declined by approximately three hundred (300) and just over five hundred (500) respectively. This decline is most likely a combination of the following: first, the decline of the older generation in the rural, northern Michigan county; second, people moving from Otsego County; and third, people who obtained their high school equivalency. Conversely, increases in the other groups can be attributed to both the result of greater school enrollment and retirees moving into the county.

Figure 16: Educational Attainment; 1990-2012

Educational Attainment	1990		2000		2012	
	Number	Percent	Number	Percent	Number	Percent
Population 25 yrs. +	11,358	100	15,468	100	16,816	100
Less than 9 th Grade	982	8.6	585	3.8	454	2.7
9 th to 12 th Grade, no diploma	1,352	11.9	1,665	10.8	1160	6.9
High School Graduate (includes equivalency)	4,619	40.7	5,629	36.4	6,424	38.2
Some College, No Degree	2,131	18.8	3,877	25.1	4,255	25.3
Associate Degree	714	6.3	1,021	6.6	1,345	8.0
Bachelor's Degree	1,056	9.3	1,849	12.0	2,169	12.9
Graduate or Professional Degree	504	4.4	842	5.4	1,009	6.0
Percent High School Graduate or Higher		79.5		85.5		90.4
Percent Bachelor's Degree or Higher		13.7		17.4		18.9

Source: U.S. Census Bureau, 1990 & 2000, American Community Survey 2012

Employment

As **Figure 17** demonstrates, Otsego County has one of the lowest unemployment rates in this portion of Michigan; however, the unemployment rate has increased since 2003. The closing of businesses such as Georgia Pacific and Kimball Electronics in 2006 and 2007 had a significant impact on the county. Although slightly higher, the county's unemployment rate closely reflects the State of Michigan's unemployment rate. Accordingly, Michigan and Otsego County have recorded their highest unemployment rates over recent years. Along with unemployment rates, overall poverty rates in Otsego County have increased, from 6.8% in 2000 to 12.3% in 2012. Even with the increase in poverty, 2012 statistics do reveal that Otsego County's rate of poverty is among the lowest of any county within this part of the state, as shown in **Figure 18**.

Figure 17: Percent Unemployment by Jurisdiction; 2003-2013

Unit of Government	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Antrim	8.5	8.0	7.6	7.7	7.9	9.4	14.9	15.5	12.5	10.9	11.2
Charlevoix	8.1	7.7	7.3	7.6	8.6	9.7	14.4	14.2	12.0	10.7	11.0
Cheboygan	10.1	9.5	9.0	9.7	10.1	11.2	13.6	13.9	12.0	11.6	11.8
Crawford	7.7	7.5	7.0	7.5	7.8	9.3	13.2	13.2	11.6	10.6	10.7
Emmet	7.7	8.0	7.8	8.4	8.8	9.8	14.0	14.0	12.4	11.3	11.5
Kalkaska	8.2	7.8	7.4	7.7	7.9	8.7	14.1	15.2	12.7	10.7	10.8
Montmorency	11.8	12.2	11.9	11.8	12.9	13.9	20.3	19.0	16.7	15.0	15.3
Otsego	8.2	7.6	6.9	8.1	9.1	10.0	14.3	14.8	12.3	10.9	11.1
Michigan	7.1	7.1	6.8	6.9	7.1	8.3	13.5	12.7	10.4	9.1	8.8

Source: Michigan Dept. of Technology, Management & Budget

Figure 18: Percent Poverty

Unit of Government	Percent All Ages	Percent Families with Related Children Under 18	Percent Persons 65 yrs. Old & Over
Antrim	16.0	21.5	6.0
Charlevoix	12.4	19.8	6.4
Cheboygan	18.0	27.3	7.4
Crawford	18.7	27.0	7.8
Emmet	10.9	11.8	7.3
Kalkaska	16.2	20.6	8.0
Montmorency	18.7	23.6	7.2
Otsego	12.3	14.1	8.8
Michigan	16.3	19.2	8.2

Source: American Community Survey; 2012

In 2012, Otsego County had the second lowest percentage of individuals living below the poverty line when compared to the seven (7) neighboring counties. For families with children living below the poverty line, Otsego County also had the second to lowest percentage.

Income

Information found in **Figure 19** demonstrates that Otsego County residents have among the highest average incomes in this part of Michigan. Income data (2012 figures) for the county and seven (7) surrounding counties indicate that Otsego County's per capita income of \$23,594 was the fourth highest, below Emmet, Charlevoix, and Antrim. At \$55,017, Otsego County had the third highest 2012 median family income behind Emmet and Charlevoix Counties. Although Otsego County's average income is higher than most of its neighboring counties, it is still lower than the statewide average.

Figure 19: Income by County & State

Unit of Government	Per Capita Income	Median Family Income
Antrim	\$24,054	\$51,468
Charlevoix	\$27,487	\$57,668
Cheboygan	\$23,276	\$45,209
Crawford	\$21,515	\$48,330
Emmet	\$29,857	\$63,486
Kalkaska	\$19,858	\$47,066
Montmorency	\$19,546	\$44,087
Otsego	\$23,594	\$55,017
Michigan	\$25,547	\$60,749

Source: American Community Survey; 2012

Average income figures for Otsego County’s municipalities show that most communities have incomes close to the county’s average. However, there is some variation between communities, as shown in **Figure 20**. For example, Charlton, Elmira, Livingston and Otsego Lake townships’ per capita income figures are higher than the Otsego County figure. Conversely, Corwith and Dover Township’s figures are significantly lower than the county’s.

Figure 20: Per Capita & Median Family Income by Jurisdiction

Jurisdiction	Per Capita Income	Median Family Income
Bagley Twp	\$20,739	\$55,697
Charlton Twp	\$25,775	\$48,224
Chester Twp	\$25,418	\$49,226
Corwith Twp	\$19,785	\$47,381
Dover Twp	\$16,968	\$46,500
Elmira Twp	\$25,468	\$64,375
Hayes Twp	\$21,392	\$64,844
Livingston Twp	\$28,730	\$61,786
Otsego Lake Twp	\$27,594	\$52,112
Gaylord	\$22,703	\$48,587
Otsego County	\$23,594	\$55,017

Source: American Community Survey; 2012

Density

In 2010, the population density in Otsego County was 45.9 people per square mile. Seventy-three percent (73%) of the population is concentrated in Gaylord, Bagley Township, Livingston Township, Hayes Township, and Otsego Lake Township (see **Figure 9**). If the land area and population of those areas are excluded, the average density for the remaining townships is nineteen (19) persons per square mile. The county population has more than quadrupled since 1930 (an increase of 18,610 people). The largest population increase was 43.9% recorded between 1970 and 1980.

Population Projections

Accurately predicting future population growth or decline can be challenging given the number of variables involved, such as economic trends and changing birth rates. However, population projections for Otsego County obtained through a variety of methods suggest that the county will continue to experience significant population increases in coming years.

Using a linear projection model based on historical census data, the estimated number of people living in Otsego County by the year 2030 will be 30,122. This is a conservative number since linear projections do not take into account fertility, mortality, and migration rates. The cohort-component method, which factors in these variables, was applied to 1990 census data by the Office of the State Demographer (OSD). Using this method, the OSD projected that 34,800 people will be living in Otsego County by 2020, a number higher than that obtained through the linear projection model. Through an exponential projection, which is based on the concept that a larger population grows faster than a smaller population, it is estimated that Otsego County will have a population of 46,521 by the year 2030.

While all three (3) projection models suggest an increase in population, the question remains as to how the county will grow. By 2030, the total population increase predicted ranges from 6,821 to 23,220 people, depending on the projection method used. If the high growth rates of recent years continue, the total population increase will likely be the larger number. Regardless, population increases will put added strain on existing county facilities, services, and utilities.

Housing and Economics

Introduction

Historically, Otsego County's economy centered largely on forestry and agriculture; however, with the growing popularity and affordability of the automobile in the early part of the twentieth century, the area began catering to the growing tourist trade. Even as the economy of the more rural portions of the county centered on agriculture, the 1962 completion of Interstate 75 (I-75) ensured this centrally located, easily accessible county would become a tourist destination for residents from the more populated regions of Lower Michigan.

Otsego County's economy today is a legacy of the county's economic history. The local economy is still dependent on its natural resources, whether it is for forestry, agriculture, tourism and recreation, or oil and gas extraction. Its rich natural resources, in combination with its central location, continue to make the county a desirable region.

Built Environment

Introduction

In order to plan for future growth, as well as evaluate redevelopment opportunities, a review of the existing housing is critical. Moreover, reviewing development patterns can

help Otsego County residents determine the suitability of future infrastructure construction, such as sewer installation and road maintenance in outlying areas.

Housing

Housing characteristics from the 2010 US Census are presented in **Figure 21**. The Census found 14,731 housing units with 9,756 units occupied and 4,975 units vacant. Bagley Township has the most housing units at 3,338 units, with Otsego Lake Township second at 2,300 units. Otsego County has a relatively high percentage of seasonal housing units with Charlton Township having over fifty-five percent (55%) of housing units considered seasonal. Communities with lakes, rivers and considerable private forestlands tend to have higher numbers of seasonal housing units. Communities with high numbers of seasonal housing present unique challenges when mitigating hazards. Given their geographic location structures are more vulnerable to wildfires and flooding hazards.

Figure 21: Housing Counts

Figure 21 Housing Counts and Occupancy Status in Otsego County; 2010						
Area Name	2010					
	Total	Occupied	Vacant	Percent Vacant	Seasonal	* Percent Seasonal
Otsego County	14,731	9,756	4,975	33.8	4,052	27.5
Bagley Township	3,338	2,305	1,033	30.9	824	24.7
Charlton Township	1,448	594	854	59.0	800	55.2
Chester Township	938	529	409	43.6	363	39.0
Corwith Township	1,091	734	357	32.7	257	23.6
Dover Township	365	216	149	40.8	107	29.3
Elmira Township	806	646	160	19.9	119	14.8
Hayes Township	1,547	966	581	37.6	505	32.6
Livingston Township	1,051	920	131	12.5	81	7.7
Otsego Lake Township	2,300	1,236	1,064	46.3	950	41.3
City of Gaylord	1,847	1,610	237	12.8	46	2.5
* Percent of total housing Source: US Census Bureau						

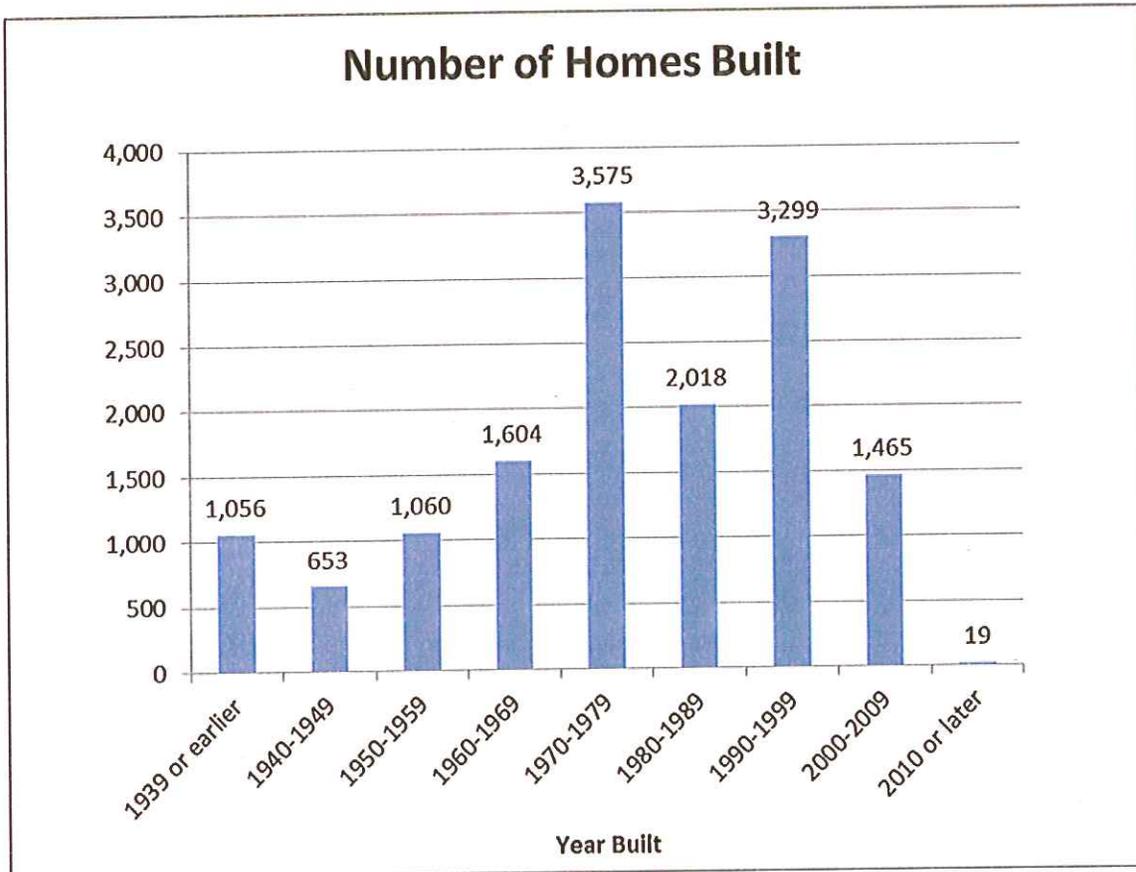
Figure 22 displays the number of homes built by decade in Otsego County. A large percentage of homes were built during the 1970's, indicating many homes are nearing forty (40) plus years old. Another large growth in homes built occurred in the 1990's.

In 2010, the vast majority (82%) of all housing units were detached homes. The next most common type of housing structure, which made up eleven percent (11%) of the total units, was the mobile home. Multiple unit dwellings comprised 5.8% of all housing structures and about one percent (1%) of housing structures were recreational vehicles (R.V.), boat, van or another type of vehicle.

Detailed data on housing unit condition is not available; however, Census data does indicate that the median average for rooms per house is 5.4 and nearly all of Otsego

County's housing structures had plumbing (32 Lacking) and kitchen facilities (23 Lacking) in 2012. Approximately, fifty-one percent (51%) of houses were heated by utility gas, while twenty-eight percent (28%) were heated using bottled, tank, or liquid propane gas. Other forms of heating sources included electricity, fuel oil, kerosene, or some other type of fuel.

Figure 22: Housing Structures by Year Built



Housing Density

In 2010, the housing density in Otsego County was approximately twenty-eight (28) units per square mile. Areas adjacent to the City of Gaylord, Otsego Lake, and the Interstate 75 (I-75) corridor in Livingston and Bagley townships had the highest housing density, ranging from twenty-five (25) to over two hundred and fifty (250) units per square mile. Conversely, areas with the lowest housing density at zero (0) to nine (9) units per square mile are in Corwith and Dover townships, as well as the northern half of Charlton Township, as shown in Figure 12 in Appendix A.

Housing Values and Housing Affordability

The median value for owner occupied units in 2012 was \$117,500, with most housing values between \$50,000 and \$99,999.

Sixty-five percent (65%) of owner occupied homes were mortgaged. The median monthly cost of a mortgage combined with other selected housing costs in Otsego County is \$1,101. The median monthly cost of a mortgage combined with other selected housing costs across the country was \$1,559. The U.S. Department of Housing and Urban

Development considers housing costs exceeding thirty percent (30%) of income as unaffordable. In 2012, 31.6% of owners' and 50.2% of renters' housing costs exceeded this level, suggesting that there is a need for more affordable housing options in Otsego County. These numbers are shown in **Figure 23** and **24**.

Figure 23: Selected Monthly Owner Costs as a Percentage of Household Income

Percentage of Household Income	Number	Percent of Total Households
Less than 20%	1,953	37.7
20-24.9%	834	16.1
25-29.9%	755	14.6
30-34.9%	504	9.7
35% or More	1,137	21.9
Not Computed	13	
Source: American Community Survey; 2012		

Figure 24: Gross Rent as a Percentage of Household Income

Percentage of Household Income	Number	Percent of Total Households
Less than 15%	281	16.4
15-19.9%	169	9.8
20-24.9%	155	9
25-29.9%	249	14.5
30-34.9%	228	13.3
35% or More	634	36.9
Not Computed	139	0.1
Source: American Community Survey; 2012		

Occupancy

Of Otsego County's 14,749 housing units, 9,807 or 66.5% were reported as occupied. Of these occupied units, 81.1% (7,952 units) were owner occupied and 18.9% (1,855 units) were renter occupied. In 2012, the average household size for owner occupied was 2.45, and 2.33 for renter occupied. This is slightly lower than the 2000 figure of 2.56, and the 2000 figure is significantly smaller than 1970's average of 3.37. As illustrated in Figures 14 and 15 in Appendix A, rental units are located in or around the City of Gaylord, while owner occupied units are dispersed throughout the county.

Employment by Industry

According to information from the State of Michigan, the labor force in Otsego County has been declining in numbers over the past several years. **Figure 25** shows the labor force, employment and unemployment for Otsego County between 2006 and 2013. The figure shows the increase in unemployment associated with the "great recession" which began the end of 2007. As can be seen, the unemployment began dropping in 2011 and continues to decline. **Figure 26** is an unemployment comparison of Otsego County, State of Michigan unemployment rates. This figure shows the spike in unemployment related to the recession. Note in 2009 Otsego County and Michigan's rates were considerably higher than the US. However, in 2010 the unemployment rate for Michigan as a whole fell quicker than Otsego County, a trend that continues.

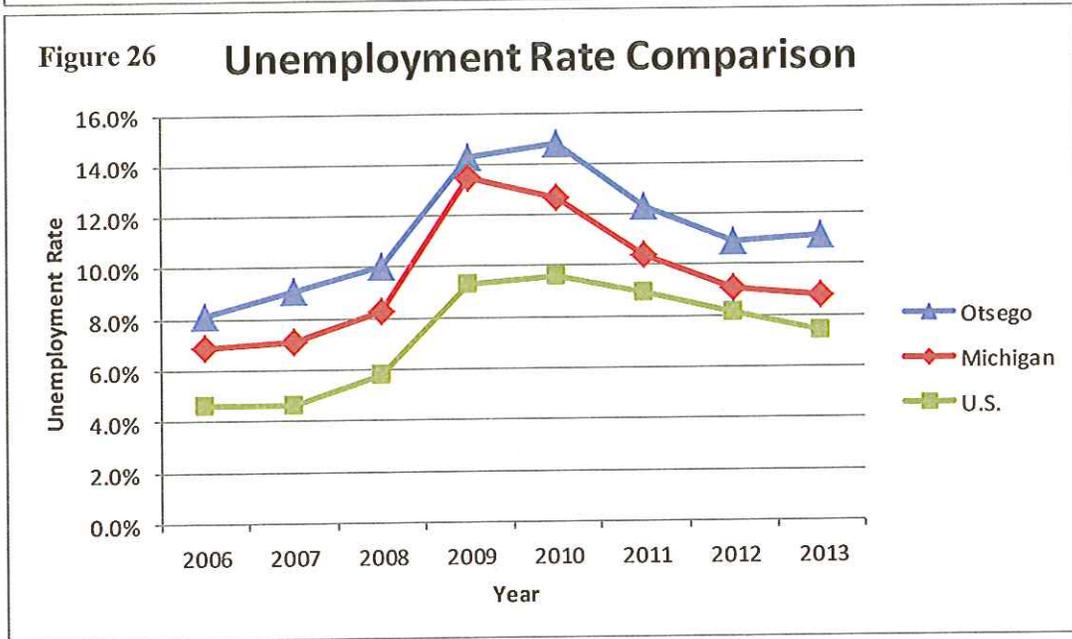
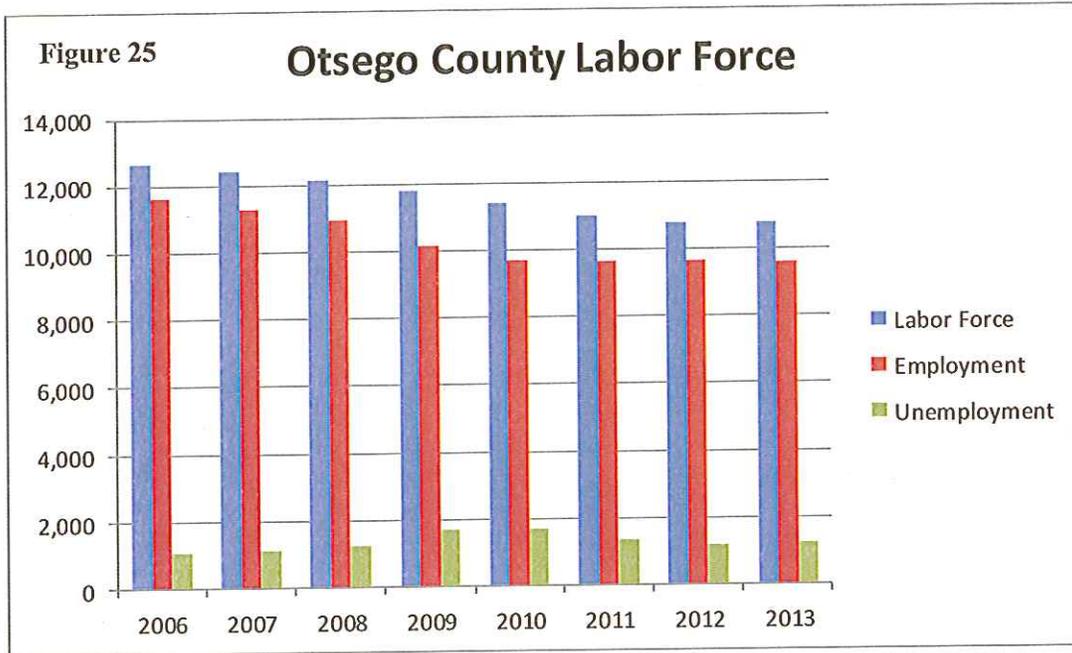
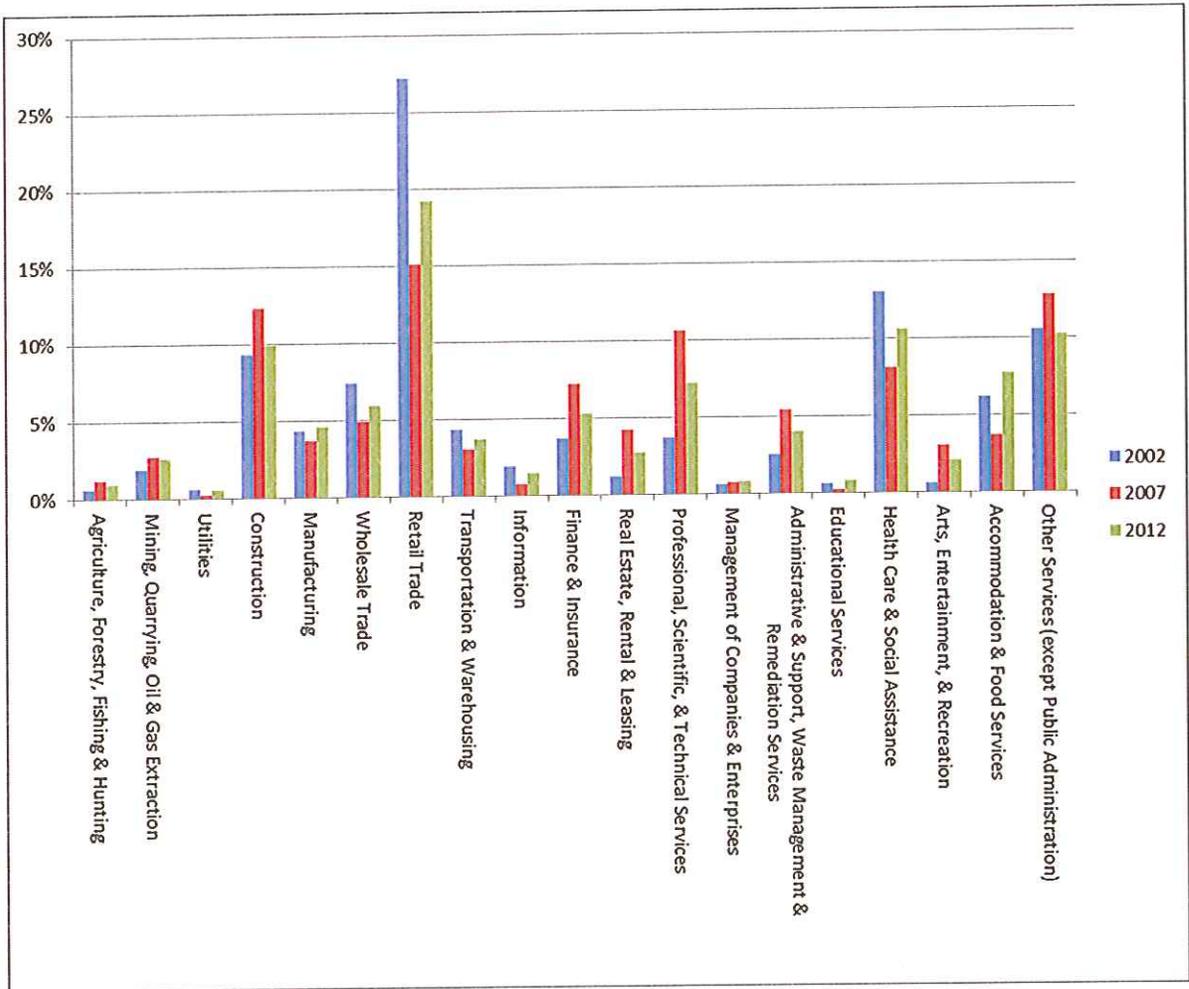


Figure 27: Percent Share of Employment by Sector



Since 2000, Otsego County – like communities across the nation – has been impacted by significant fluctuations in the national economy. Overall, employment by Otsego County companies has not experienced the same growth trend as seen in the previous two (2) decades; the trend in Otsego County is reflective of situation across the region.

Employers within County

Employment in Otsego County is concentrated in and around the City of Gaylord and the Village of Vanderbilt. In addition to these employment centers, there are several oil/gas service companies in Johannesburg and transportation related companies in Waters. **Figure 27** displays percentage employment by sector.

Transportation, Public Services, and Community Facilities

Introduction

Otsego County has a well developed transportation network, advanced public safety services, and educational systems supporting county residents and commercial activity. Other infrastructure within the county includes water and sewer facilities and wastewater treatment capacity for the entire City of Gaylord and some adjacent properties. The vast majority of Otsego County residents use the county's infrastructure, facilities, and services on a regular basis. As the county's population increases, the community will need to consider what additions and improvements might be necessary and where those changes should be made.

Transportation

Roadways

Otsego County's road network enables people to move efficiently to and from employment, shopping, and recreation sites, as well as provides a transportation network for the area business and industry. The major thoroughfares within the county are Interstate 75 (I-75) and Old 27 running north-south and M-32 running east-west. A map of the county's road network is provided in Figure 16 in Appendix A. Interstate 75 (I-75) provides access to both the southern portion of the state and to Michigan's Upper Peninsula. Four (4) interchanges within the county -- along Old 27 at Waters, north of Otsego Lake, M-32 in Gaylord, and Vanderbilt -- make the highway easily accessible for use by local residents, business and industry, and travelers. Old 27 -- a scenic, alternate north-south route through the central portion of the county -- connects Gaylord with Vanderbilt and Cheboygan County to the north and Otsego Lake, Waters, and Crawford County to the south. M-32 links Gaylord, Johannesburg, and Elmira; it also connects Otsego County with both Lake Michigan and Lake Huron shorelines as well as the major population centers of Traverse City and Alpena.

The county's secondary road system includes C-38 running east-west through the southern sections of the county, C-42 and C-44 through the center of the County, and C-48 connecting the northwest portion of Otsego County with Charlevoix County. Several other county maintained, paved roads link outlying sections of Otsego County with the major road network. In addition to these paved roads, an extensive system of dirt and gravel roads covers all portions of the county, providing access to the lakes and forest lands that serve as sites for residential and recreational activities, as well as oil and gas exploration and forestry activities.

Bus Service

Public transportation is provided by Indian Trails (nation-wide service) and the Otsego County Bus System. This is a dial-a-ride demand-response bus system, which provides transportation services throughout the county. There are regular operating hours, and special charters can be scheduled during off-hours.

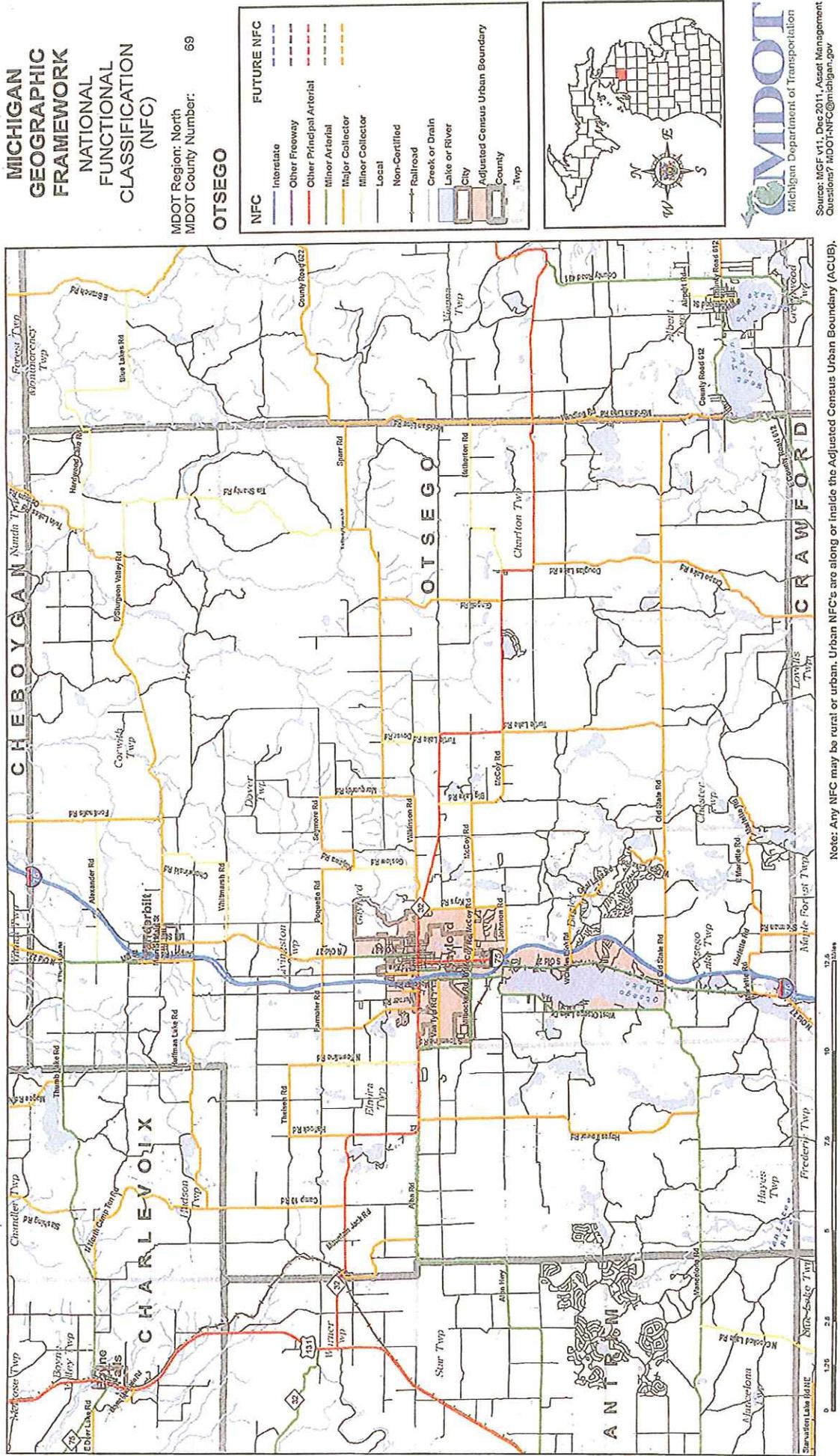
Air Service

Otsego County operates a general aviation airport located southwest of Gaylord. The airport provides services to support the needs of private and charter aircraft, including fuel, major and minor repairs to piston aircraft, and car rentals. Recently construction of a new airport terminal building was completed. While air charter service is available, there is currently no commercial passenger service to Gaylord. Otsego County residents and visitors must make commercial airline connections through neighboring cities such as Pellston, Alpena, or Traverse City.

Rail

Lake State Railroad provides rail freight service on rail lines leased from Detroit & Mackinac Railroad. In this part of northern Michigan, Lake State's service extends south from Gaylord through Grayling and West Branch to Bay City, at which point connections can be made via other rail lines to other destinations served by rail. Rail service is no longer available to Vanderbilt.

Figure 28: Otsego County MDOT Transportation Map



Public Facilities and Services

Law Enforcement:

The Otsego County Sheriff's Department, based in Gaylord, has the primary responsibility for patrolling all sections of the county outside of the City of Gaylord. Location: 124 S. Court St., Gaylord, MI 49735, Phone: (989) 732-3555. *The Gaylord Police Department* is concerned with law enforcement within the City of Gaylord. Location: 305 E. Main St., Gaylord, MI 49735, Phone: (989) 732-1777. *The Gaylord post of the Michigan State Police #73* works with these agencies in patrolling Interstate 75 and major county roads. The area served by the Gaylord Post includes all of Otsego, Montmorency, Cheboygan, Antrim and Oscoda Counties. Location: 563 S. Otsego Gaylord, MI 49735; Phone: (989) 732-5141. *Otsego County has a 911 Emergency Service Department*, which is located 580 S. Otsego Ave. Gaylord, MI 49735. *The Otsego County Jail*, located in Gaylord, provides lock-up facilities for use by these three (3) law enforcement agencies.

Emergency Medical Services

The Otsego County EMS/Rescue provides emergency medical services to all sections of the County. Location: 100 McLouth Gaylord, MI 49735; Phone: (989) 732-9085. Ambulance services available to the area include a mobile intensive care unit with air ambulance provided by North Flight. North Flight, based in Traverse City, can be activated by any medical authority including 911 dispatch centers, hospitals, physicians, police or fire departments, EMS providers, marine safety officers and park service personnel. North Flight EMS provides an integrated transport system for critically ill and injured patients that include:

- Helicopter services throughout Michigan's Lower Peninsula and eastern Upper Peninsula
- Fixed-wing services throughout the United States and Canada
- Ground ambulance services throughout Michigan
- Additional North Flight Services

Fire Services: Otsego County has six Fire Departments consisting of:

- *Charlton Township FD*, a volunteer fire department covering 181 square miles, and providing fire protection for approximately 800 residents. Mailing Address: PO Box 352, Johannesburg, MI 49751, Phone: (989) 732-6580.
- *Elmira-Warner FD*, a partially paid fire department covering 72 square miles, and providing fire protection for approximately 1,900 residents. Mailing Address: PO Box 67, Elmira, MI 49730, Phone: (231) 546-3699.
- *Otsego County FD*, a partially paid fire department covering 265 square miles, and providing fire protection for approximately 10,564 residents. Mailing Address: PO Box 954, Gaylord, MI 49735, Phone: (989) 732-7910.

- *Vanderbilt FD*, a partially paid fire department covering 108 square miles, and providing fire protection for approximately 2,000 residents. Mailing Address: 8039 Cheboygan St., Vanderbilt, MI 49795, Phone: (989) 983-4410.
- *Otsego Lake Township FD*, a partially paid fire department covering 50 square miles, and providing fire protection for approximately 2,000 residents. Mailing Address: PO Box 151, Water, MI 49797, Phone: (989) 732-1859.
- *DNR Gaylord Forest Area*, Mailing Address: 1732 W. M-32, Gaylord, MI 49735, Phone: (989) 732-3541.

Early Warning Systems

The County has established a Reverse 9-1-1 system to be used to contact people and businesses within the County in the event of an emergent situation.

Hospitals, Health Services, and Human Services

Otsego Memorial Hospital provides a wide range of medical services including emergency and extended care facilities, surgery and intensive care units, medical laboratory services, the Otsego Health Center and a walk-in clinic. Location: 825 N. Center St., Gaylord, MI 49735, Phone: (989) 732-1731. Additional health-related services are provided by Northwest Community Health, the County Family Independence Agency, and Northern Michigan Substance Abuse Services.

Figure 29: Otsego County Family Services Listing

A Guide For Family Services in Otsego County (and Adjacent Counties) Provided by Early On, Tapestry, and Great Parents/ Great Start COP	
(Telephone numbers are 989 area code unless otherwise indicated)	
All Emergencies	911
First Call for Help United Way	732-8929
Health Care	
Northwest Michigan Community Health Agency (Health Department)	(800) 432-4121
Children 's Special Health Care Services	
Newborn Home Visits	
Maternal Support Services	
Infant Support Services	
W.I.C.	
Immunization Clinics	
Family Planning	
HIV (AIDS Virus) Counseling & Testing	
Breast and Cervical Screening	
Dental Clinic (Medicaid)	
Hearing & Vision Screening	
Otsego Memorial Hospital	(800) 322-3664
Child Birth Classes	731-2112
Northern Michigan Hospital	(231) 348-4000
Health Access	(800) 248-6777
Hospice	732-2151
Michigan Poison Control	(800) 222-1222

Child Care	
C&FS Community Coordinated Child Care (4C)	(866) 424-4532
Department of Human Services (former Family Independence Agency)	732-1702
Educational Services/Preschool	
Cheboygan-Otsego-Presque Isle ESD	(231) 238-9394
Project Find	
Hearing & Speech Screenings	
Developmental Screenings	
Early On	Ext. 216
TAPESTRY Project and Great Parents Great Start (at COP-ESD)	800-348-4900
Head Start (All Information)	(800) 968-2226 ext. 219
Preschool 4 yr. olds	731-0648
M. S. U. Extension	731-0272
Otsego County Library Story Hour	732-5841
(Lewiston) Lamplighters community organization see their website	http://www.lamplightersnet.org/index.html
Counseling/Crisis Services	
Third Level Crisis Ctr. & Legal Aid (24hours) TDD/ Voice	(800) 442-7315
Northern Mich. Community Mental Health (ACCESS)	(800) 834-3393
Legal Services of Northern Michigan	(888) 347-5220 or 705-1067
Women's Resource Center, Gaylord Office	(989) 731-0918
Domestic Abuse Hotline	(800) 275-1995
Counseling / Children's Learning Center / Sexual Abuse	(231) 347-0067
Safe Home (24 hrs)	(231) 347-0082 or (800) 275-1995
Parenting	(800) 942-HELP (4357)
Catholic Human Services, Inc	(800) 506-3602 or 732-6761
Compass Services for Youth & Families	(800) 292-3003
Northern Mich. Substance Abuse	Toll Free (877) 255-6266
Birchwood Behavior Health Services	(800) 288-7242
Parent Help Line (24 hr.)	(800) 942-4357
Child Abuse & Neglect	
24 Hr. Hot Line (collect)	(800) 627-7031
Department of Human Services (former Family Independence Agency)	732-1702
Michigan State Police	732-5141
Otsego Co. Sheriff	732-3555
Family (Elderly) Violence Prevention (24 hr)	(800) 996-6228
Parent Helpline	942-4357
Shelter Services (Emergency Housing)	
Otsego County Housing Committee (Repairs)	732-6484
Friendship Shelter	732-5960
Department of Human Services (former Family Independence Agency)	732-1702
Otsego Co. Sheriff	732-3555
Salvation Army	731-5959
Women's Resource Center Safe House	(800) 275-1995
Food Assistance	
Department of Human Services (former Family Independence Agency)	732-1702
Salvation Army	731-5959
NWMCHA (WIC)	732-1794

Otsego County Master Plan 2014

NW Mich. Human Services Agency	(800) 443-2297
Friendship Shelter	732-5960
Local Churches	
Heating Assistance	
Assistance & Home Heating Referral	(800) 292-5650
Department of Human Services (former Family Independence Agency)	732-1 702
Salvation Army	731-5959
Clothing Assistance	
Salvation Army	731-5959
New Life Pregnancy Resource Center (maternity & baby clothing)	732-1626
Friendship Shelter	732-5960
Transportation	
Otsego County Bus System	732-6224
Financial Planning	
Otsego County M. S. U. Extension	731-0272
Debt Solutions	732-2260
Job Skills	
Mich. Employment Security Corn. (MESOC)	(231) 347-5150
Michigan Indian Employment & Training Services	(231) 347-9330
MOST Program (FIA)	732-1702
Michigan Works	732-3886
Special Needs	
Social Security Administration	(800) 772-1213
Easter Seal Society	(800) 292-2729
March of Dimes	(231) 947-2488
Blind Client Assistance	(800) 292-4200
Northern Michigan Community Mental Health: Community Support Services for Persons with Developmental Disabilities	732-6292
Michigan Commission for Blind	(800) 292-4200
Family Support Network of Michigan	(800) 359-3722
Citizens Alliance To Uphold Special Education (CAUSE)	(800) 221-9105
Shriners	(800) 237-5055
Ameritech Special Needs Center	(800) 244-4444
Ameritech Relay Center for TDD (Messages).	(800) 649-3777
Northland Library Branch for Blind & Physically Handicapped	356-1622 or (800) 446-1580
Michigan Protection & Advocacy Services Voice & TDD	(800) 288-5923
Self Help Support Group	(800) 777-5556
Fire Setter Evaluation (free)	354-3151
Dyslexia Resource Center	(231) 526-9282
National Organization-Rare Disorders	(800) 999-6673
Otsego County Library	723-5841

Utilities

The county's utility system includes the private suppliers of electric, natural gas, telephone, solid waste disposal and cable television services along with the publicly owned and operated Gaylord water and sewer systems. These suppliers (with the exception of the Gaylord systems) are faced with the task of providing services to a relatively low density, dispersed population.

Electric

The most widely distributed service is electricity provided by Consumers Power and Great Lakes Energy. Electrical service has expanded rapidly over the past ten (10) years. The expansion of electrical service customers is expected to continue to grow into the next century as Otsego County's population continues to grow and the business and industrial sector with it.

In October, 2014, Wolverine Power Cooperative of Cadillac, MI, proposed to construct a natural gas turbine power generation facility one (1) mile east of Elmira in Otsego County. Wolverine Power requested a "conditional rezoning" of one hundred sixty-eight (168) acres on M-32 in Elmira Township from AR/Agricultural Resource and B2/General Business to B3/Business and Light Manufacturing. The Elmira Township and Otsego County Planning Commissions approved the B3/Business/Light Manufacturing rezoning in November, 2014. B3 zoning allows power generation plants as a Permitted Use Subject to Special Conditions. The Otsego County Board of Commissioners gave final approval for this project on November 25, 2014.

The plant will include two (2) 216-megawatt generators, control and maintenance buildings and other infrastructure to support the "peaking plant" – defined as a facility to enhance the production of electricity for times of high demand from the electrical grid. Wolverine Power will limit the operation of the plant to no more than three thousand (3000) hours per year. The property acquired by Wolverine Power was somewhat unique in that it has two (2) thirty-six inch (36") diameter natural gas lines on the east end and existing power transmission overhead lines on the west end. It is scheduled to be completed in Spring 2016.

Telephone Service

Telephone land service is the other private utility found throughout the entire county. Service is presently provided by Frontier, CenturyTel, Pigeon, Charter Communications and AT&T. Wireless services are provided by Verizon and AT&T.

Gas Service

Natural gas is provided to portions of the county by the Michigan Consolidated Gas Company (MichCon). Gas is supplied by a pipeline that generally follows Interstate 75 (I-75), providing service to the Waters, Gaylord, and Vanderbilt areas. Bottled gas, provided by private suppliers, is widely used for heating and cooling in portions of the county located away from the natural gas line.

Water & Sewer

Gaylord's water and sewer system currently serves the City of Gaylord as well as developed areas immediately adjacent to the city especially to the north and east. Residents and business owners in the remainder of the County must rely on on-site private wells for domestic drinking water needs and private on-site septic systems for

wastewater disposal. Northwest Michigan Community Health Agency regulates and maintains a permitting system for private wells and septic systems. Gaylord Location: 95 Livingston Blvd, Gaylord, MI 49735, Phone: (989) 732-1794. **Figure 30 and Figure 31** show the locations of existing public water and sanitary sewer service areas.

Figure 30: Public Water Coverage

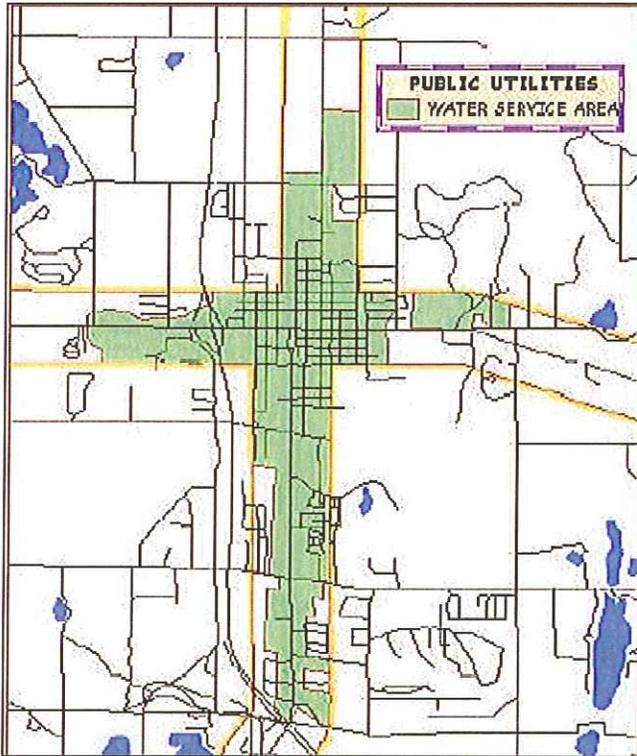
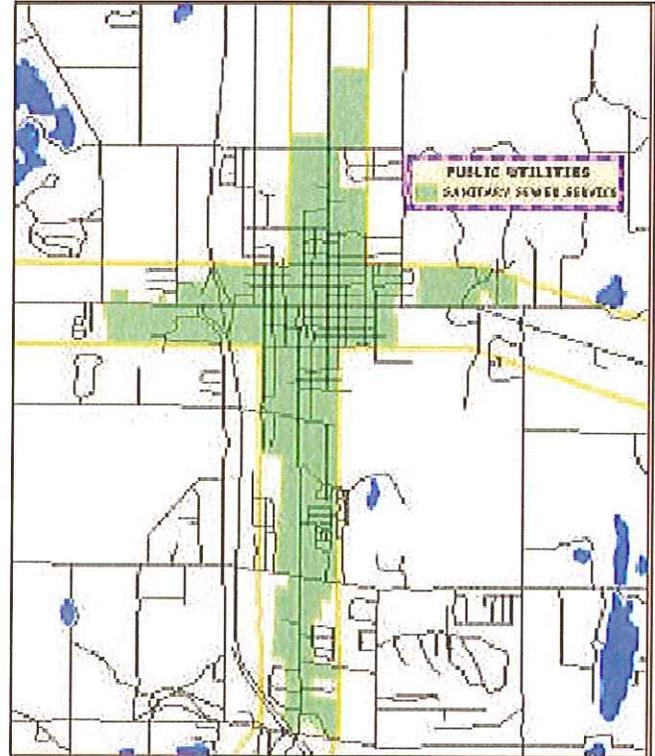


Figure 31: Sanitation System Coverage



Waste Management

Throughout Otsego County, trash pick-up and hauling is provided by several local independent haulers. There are also sites within the county where residents can deposit recyclables.

Local haulers transport waste to a landfill owned by Waste Management. The landfill serves Otsego County as well as other northern Michigan counties, and a Solid Waste Management Plan provides a framework for managing the facility. The landfill is located in northern Crawford County; however, a portion of the landfill's buffer zone is located in southern Otsego County. Waste Management is preparing to expand the facility however this does not include future expansion into Otsego County through the acquisition of additional acreage.

Recycling

In November of 2012, residents of Otsego County passed a three (3) year millage to fund a county wide recycling drop-off program and renewed it for another three (3) years in 2014. Otsego's drop-off program is dual-stream matching Emmet County's program. Otsego County has contracted with Emmet County to provide the hauling and processing of recyclable materials. After the collected materials have been sold to local markets,

Emmet County shares the profits with Otsego County, helping to keep recycling costs down. Along with the recycling program, Otsego County also offers an annual Household Hazardous Waste (HHW) drop-off event.

There are five (5) bin locations located throughout the county for convenient drop-off of recyclables. Recycling North is located at 621 Garfield St in Vanderbilt, just northeast of the Village Hall at the intersection of Garfield and Elm Streets. Recycling Central is located at 931 S. Otsego Ave., near the Discovery Center. Recycling South is located at 247 Old State Rd., across from Otsego Lake Township Cemetery. Recycling East is located at 2932 Rock Rd in Johannesburg, at the Charlton-Chester-Dover Transfer Station. Recycling West is located at 71 Hayes Tower Rd., just south of the Hayes Township Hall.

Educational Facilities

Schools

Otsego County residents are served by three (3) school districts plus several private parochial schools. The Johannesburg-Lewiston School District includes the southeast section of the county along with portions of Montmorency County. The Vanderbilt district includes the northern portion of the county along with sections of Charlevoix and Cheboygan Counties. The remainder of the County, including Elmira and portions of Antrim County, is served by the Gaylord Community Schools. St. Mary's school, located in Gaylord, provides private parochial school facilities for students in the first through twelfth grades. The Otsego Christian School, also located in Gaylord, is the other larger parochial school in the area. Two (2) other parochial schools serve the area: Calvary Baptist Academy and the Grace Baptist Christian School. Information on number of students receiving home schooling is not readily available.

Kirkland Gaylord M-TEC

The Kirkland Gaylord M-TEC (Michigan Technical Education Center) opened its doors in January, 2002 and is the northern site for Kirtland Community College. Kirtland is a provider of educational programs and services that prepare individuals for employment that is high in skill, wage and demand. The Governance Advisory Board, made up of local citizens, provide advice to the leadership of M-TEC and help maintain strong connections to employers and citizens in Otsego County.

M-TEC currently offers programs in cardiac sonography, electrical technology, heating, ventilation and air conditioning, mechatronics facilities and industrial technician, nursing assistant, paramedic and welding. M-TEC also offers general education courses designed for transferring to a university. The college provides training to current employees in area businesses and industries and has the ability to customize training.

M-TEC is fully accredited by the Higher Learning Commission, a national accrediting agency. The faculty and staff at M-TEC are available to help students of all ages meet their occupational and transfer needs.

The University Center Gaylord

As a community-owned facilitator of higher education, professional development and life-long learning for the region, much has been accomplished since the high-tech facility opened in January of 2002.

University Center Gaylord (UCG) partners with other colleges and universities to offer certificates and degrees that result in a skilled workforce for area businesses. Additional diverse resources of community education classes, summer programs for youth, high tech meeting rooms for regional businesses and organizations are available and help to accomplish the UCG mission.

Students can begin college with a community college partner and then transfer to one of the university partners or elsewhere. Students can also transfer their credits from other institutions and complete their degree at University Center Gaylord. Potential savings include cost of tuition, room and board and transportation by living at home and continuing to work. Students have access to the finest computer labs and instructional technology in Northern Michigan. UCG offers small class sizes in modern classrooms.

UCG also offers a student resource staff person for students who are unsure of a career or degree direction, or how to apply for financial aid.

As an approved testing site, UCG is a regional resource for test takers who no longer have to drive downstate or long distances for their required exams. As part of PearsonVUE, UCG provides all computer-based testing for GED to the general population and Department of Corrections in four (4) counties.

The UCG manages the broadband fiber network (UCMAN) delivering broadband to the schools, courts, county, city and high demand businesses and residences. Because of our geographic location, UCG has built a Data Center which provides server hosting and serves as a regional broadband distribution hub.

To learn more, visit www.ucgaylord.org or call (989) 705-3700.

Libraries

The Otsego County Library, established in 1982 under the authority of Public Act 138 of 1917, merged library services supported previously under contract by the City of Gaylord and the County of Otsego. The system is governed by a five (5) member Board of Trustees appointed by the Otsego County Commissioners. In 2003, the library received the Library Award of Excellence from the Library of Michigan, being recognized as the top library in the State of Michigan. In 2014, the Michigan Public Services Award was given to an Otsego County Library staff member for their excellent public service.

As opportunities for higher education in the county have grown, the Otsego County Library has expanded its role of assisting students of all ages with resources needed to meet educational objectives. Through participation in statewide networks, educators, students, businesses, and jobseekers have access to over 23 million print items and commercial databases not available through the general Internet.

Current library facilities were designed for a population of 20,000 and no longer meet the recommended Library of Michigan space standards. A feasibility study for library expansion is available for review and the Board of Trustees continues to pursue solutions to space needs.

Recreational and Cultural Facilities

Parks and Recreation

The Otsego County Parks and Recreation Commission (OCPR) was established under the authority of Public Act 261, as amended by Act 242, P.A. 1966. OCPR is an advisory group to the Otsego County Board of Commissioners, and the agency provides recommendations related to planning, acquisition, development, funding, operation, maintenance, and general administration of parks and recreation within the county. The OCPR meets the second Monday of every month.

In 2011, the OCPR inventoried Otsego County's recreational facilities and drafted a county recreational plan. For an inventory of recreational facilities in Otsego County, refer to the Otsego County Fact Book Appendix H. For more information on the recreational needs and priorities in Otsego County, refer to the Otsego County Community Recreation Plan (2012-2016).

Community Center (operated by the OCPR)

Open seven (7) days a week, the Community Center serves as the central site for many of Otsego County's community athletic events. Many of the adult athletic leagues and classes, as well as after school programs for area youth, take place at the Community Center. There is also a popular Parent-To-Tot Playgroup that is scheduled for during the regular school year. The facilities accommodate a wide range of sports activities, including gymnastics, basketball, volleyball, tennis, and other table games. The Community Center, moreover, serves as headquarters for many events.

OTSEGO COUNTY SPORTSPLEX

The Otsego County Sportsplex is a multipurpose recreational facility. There is an Operational Agreement between the County and the "Otsego County Sportsplex (Sportsplex)," a Michigan non-profit corporation, which allows the Sportsplex to operate and manage the facility. Pool activities include swimming lessons, water aerobics, water safety classes, lifeguard classes and a kayak club. Ice-rink activities include learn-to-skate classes, hockey leagues and curling. Other activities offered at the Sportsplex include a Summer Day Camp, fitness classes (yoga, zumba and karate), pickle ball and ping pong. The Sportsplex facility also includes the Energy Outlet, which is an outdoor playground and fitness area. The facility primarily serves residents of Otsego County. However, users come from all of northern lower. The Sportsplex is home to two (2) indoor pools, as well as an NHL size skating rink. The building is open seven (7) days a week and offers public skating and swimming hours throughout the week. An indoor walking track is available around the indoor rink.

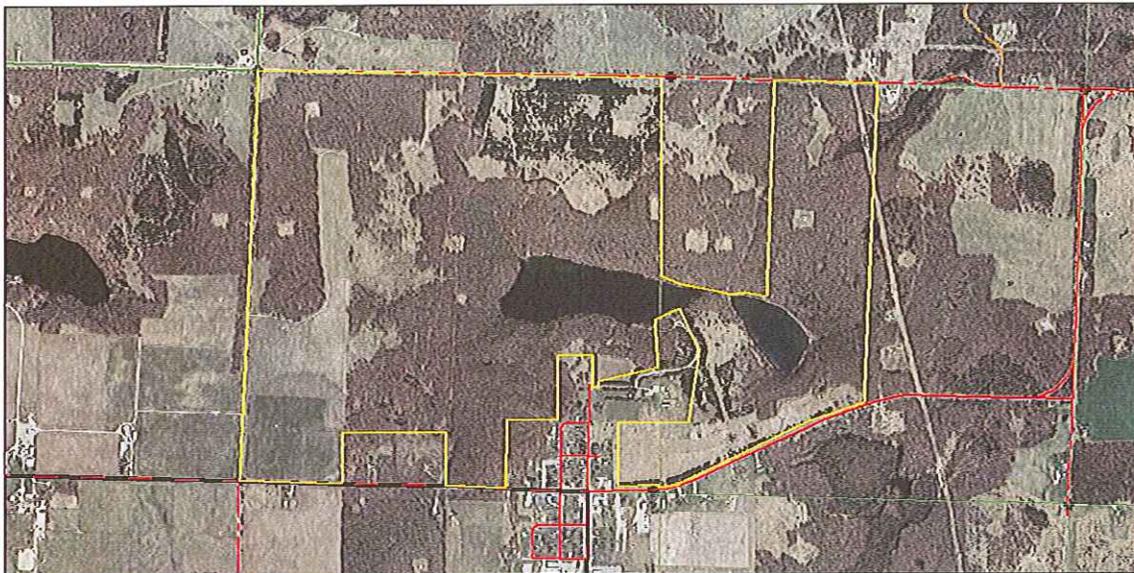
THE ENERGY OUTLET

The Energy Outlet is an expanded playground facility located next to the Otsego County Sportsplex. The Energy Outlet includes a quarter (¼) mile walking track, two (2) basketball courts, many exercise stations, swing set, climbing toys, as well as a large playscape activity center. Also included in this area is a large pavilion along with two (2) portable restrooms.

Louis M. Groen Nature Preserve

The Louis M. Groen Nature Preserve (Preserve) at Echo Valley Ranch has just been established and the property transferred to the OCPR. The Preserve consists of nearly eight hundred (800) acres of property located in Johannesburg, Michigan and is a significant natural feature located in Otsego County. The property contains Kujawa and Johannesburg Lakes, along with being the former home of both the Johannesburg Manufacturing Company as well as Echo Valley Ranch. The intent of the OCPR is to offer environmental/nature classes at the Preserve, along with hiking, mountain biking, cross country skiing, snowshoeing and horseback riding along the property's many trails. The nature preserve will serve residents of Otsego County and others from around the area. Otsego County will soon begin preparing the Louis M. Groen Nature Preserve Master Plan. A visioning committee will be utilized when creating this master plan and will provide input on how to develop the facilities. This separate document will provide detailed planning and visioning information for the property as a public asset. A trust fund is established for the operation and maintenance of this facility. There will be zero (0) cost to the OCPR and the County for this facility. Figure 32 depicts the current Groen Nature Preserve outlined in yellow.

Figure 32: Louis M Groen Nature Preserve



Land Use and Development Patterns

Current Land Uses

Introduction

The Planning Commission has decided not to update current land uses. The County felt there was not significant changes to warrant the additional costs.

To understand how development patterns have changed in Otsego County over the past three (3) decades, analyses of aerial photographs were conducted. The methodology for interpreting orthographic aerial photography includes several levels of land use categories. Note: these categories, however, do not correspond with those in the Land Use Definition section of this master plan.

OVERVIEW

Land in Otsego County can be categorized into six (6) major land use types: agriculture, forest, herbaceous/shrub, urban, water, and wetlands. The majority of the county is forestland (64%), with non-forested land a distant second (14%), as seen in **Figure 33**. Between 1994 and 2003, both forest and herbaceous/shrub land uses declined in the county, while urban land uses grew at a rate of sixty-four percent (64%), increasing by nearly twenty (20) square miles, to overtake agriculture as the third most prevalent land use. Agricultural land uses also increased, albeit slightly, during this period and account for 7.6 % of the land in Otsego County. Despite the slight increase in agricultural acreage, the county appears increasingly urbanized due in part to the dispersed nature of residential growth. Rural homesteads are being constructed throughout the county along county roads, altering the traditional country and natural views.

Figure 33: Land Use Change 1994 to 2003

<i>2003 Land Use</i>	<i>Acres</i>	<i>Percent</i>	<i>Percent Change From 1994</i>
Urban	32,059	9.5	64
Agriculture	25,542	7.6	8.8
Herbaceous/shrub	47,101	14	-4.3
Forest	215,120	63.9	-6.5
Water	7,236	2.1	2
Wetlands	9,634	2.9	32.5
Total	336,693	100	5.1

Between 1994 and 2003, more than 56,000 acres (over 88 square miles) of land in Otsego County was reclassified to a different major land use. In other words, 16.8% of the land in the county or one (1) out of every six (6) acres was categorized as a different land use after only ten (10) years. Herbaceous/shrub land is the most prone to conversion to another land use. In 1994, there were 49,228 acres of herbaceous/shrub land. By 2003, 29,762 acres of that land or sixty percent (60%) had been converted to a different land

use type. At the same time, 27,631 acres of other land use types became herbaceous/shrub land. The result was a decrease of 2,131 acres of herbaceous/shrub land in Otsego County. If these reclassifications are the result of actual conversions of land use types and these changes continue, the location of herbaceous/shrub land in the county could be quite different in ten (10) to twenty (20) years than found today and today's herbaceous/shrub lands could be another land use.

Land Use Change

Land and the use of land changes over time, an examination of maps derived from aerial photography and other data from 1978 (Figure 19 in Appendix A), 1994 (Figure 20 in Appendix A), and 2003 (Figure 21 in Appendix A) reveals how land uses changed in Otsego County from 1978 to 2003.

The 1978 data set was created by the Michigan Department of Natural Resources (MDNR) as part of its Michigan Resource Information System (MIRIS); the 1994 data set was created by the Northeast Michigan Council of Governments (NEMCOG) for use in the 1994 Comprehensive Plan for Otsego County; and the 2003 data set was created by the LIAA for use in the Fact Book and the revision of the Otsego County Master Plan. The land use classification system divides land into seven (7) major (i.e., level 1) categories as follows:

1. Urban/Built (residential, commercial, industrial, transportation, parks)
2. Agricultural (crop land, orchards, feedlots, permanent pasture)
3. Herbaceous/shrub (shrub land, scrub land)
4. Forest (deciduous, coniferous, mixed, clear cut)
5. Water (streams, lakes, reservoirs)
6. Wetlands (forested, herbaceous/shrub)
7. Barren (beach, dune, rock)

The seven (7) main categories are then further subdivided into 'level 2' subcategories (as shown in parenthesis above).

Figure 34: Otsego County Land Use Classification Summary

Level 1	Code	1978 Land Use		1994 Land Use		2003 Land Use	
		Acres	Percent	Acres	Percent	Acres	Percent
Urban	1	14,617.7	4.3	19,551.0	5.8	32,059.2	9.5
Agriculture	2	23,359.4	6.9	23,482.4	7.0	25,541.6	7.6
Herbaceous/shrub	3	51,605.3	15.3	49,228.2	14.6	47,101.5	14.0
Forest	4	232,641.8	69.1	230,069.5	68.3	215,120.0	63.9
Water	5	7,083.9	2.1	7,092.7	2.1	7,236.5	2.2
Wetlands	6	7,255.6	2.2	7,269.3	2.2	9,634.2	2.9
Total		336,563.6	100.0	336,693.0	100.0	336,693.0	100.0
Level 2	Code	Acres	Percent	Acres	Percent	Acres	Percent
Residential	11	8,757.3	2.6	10,421.6	3.1	18,475.9	5.5
Commercial/Gov	12	714.4	0.2	1,551.1	0.5	2,496.0	0.7
Industrial	13	297.8	0.1	986.1	0.3	653.8	0.2
Transport/Utility	14	2,334.4	0.7	2,298.3	0.7	3,012.3	0.9
Extractive	17	1,227.7	0.4	1,505.5	0.5	3,418.3	1.0
Rec/Cemetery	19	1,286.0	0.4	2,788.4	0.8	4,002.9	1.2
Cropland	21	20,231.6	6.0	20,486.0	6.1	23,316.8	6.9
Orchard/Fruit	22	38.1	0.0	24.3	0.0	6.8	0.0
Permanent Pasture	24	2,239.3	0.7	2,218.5	0.7	1,347.6	0.4
Other Agriculture	29	850.4	0.3	753.6	0.2	870.5	0.3
Herbaceous	31	35,103.9	10.4	33,147.9	9.9	18,584.5	5.5
Shrub	32	16,419.2	4.9	16,080.3	4.8	28,517.0	8.5
Other Openland	33	82.2	0.0				
Deciduous	41	171,683.6	51.0	169,052.7	50.2	130,640.1	38.8
Coniferous	42	60,958.2	18.1	61,016.8	18.1	56,319.9	16.7
Mixed Forest	43					28,037.3	8.3
Clearcut Forest	44					122.8	0.0
Lake	52	6,950.1	2.1	6,955.7	2.1	7,075.6	2.1
Reservoir	53	133.8	0.0	137.0	0.0	160.9	0.1
Forested Wetland	61	5,401.3	1.6	5,423.7	1.6	5,646.1	1.7
Non-Forested Wetland	62	1,854.3	0.6	1,845.6	0.6	3,988.1	1.2
Barren Beach/Bank	72	5.8	0.0				
Total		336,569.4	100.0	336,693.0	100.0	336,693.0	100.0

As demonstrated in Figure 34 forest (69%) and herbaceous/shrub open space (15%) covered more than eighty-four percent (84%) of Otsego County in 1978. Though acreage for both of these land uses had declined by 2003, the two (2) combined still made up nearly seventy-eight percent (78%) of the county (64% forest, 14% herbaceous/shrub open space). The other remaining major categories of land use have all increased in acreage, most notably urban, which more than doubled from 4.3% in 1978 to nearly ten percent (10%) in 2003. During this time period, residential (Code 11) and commercial (Code 12) acreage increased dramatically, more than doubling to over six percent (6%) of the county land area, while agricultural acreage remained relatively constant.

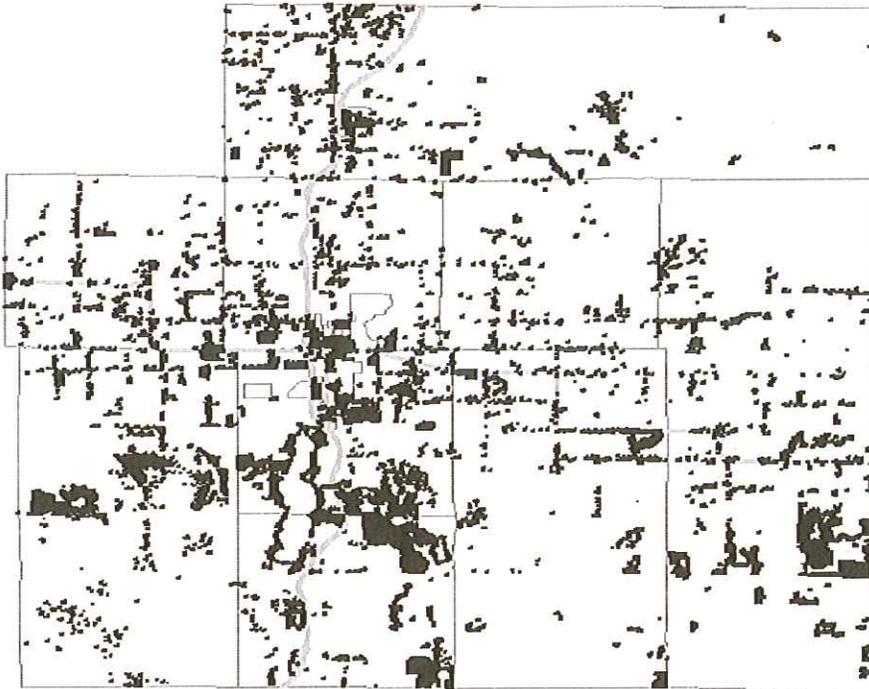
Land Uses

Urban Land Use

A significant land use trend in Otsego County is the continued increase in urban land use, accounting for over 32,000 acres of land in 2003 (50 square miles or 9.5% of the county). Residential makes up over half of the urban land use, and, as Figure 35 demonstrates,

residential land use is not contained neatly in compact areas surrounding Gaylord and other community centers. Instead, the residential land use is scattered throughout the county, predominantly around lakes, in remote planned housing developments, and on unplanned large rural lots along roads. Although **Figure 35** only displays two (2) highways, the locations of many county roads are plainly visible as highlighted by lines of rural residential development along those roads. To the casual observer driving through Otsego County, the area may seem more urban than it actually is as the residential development along the major roads interrupts views of forests and farm lands which still exist behind the residential lots. This is occurring throughout Otsego County and is evident in Elmira Township on Camp Ten Road, Corwith Township west of I-75, and Sparr Road and M-32 in the eastern half of the county.

Figure 35: Residential Areas



A factor which is a great determinate of how land is used is the amount of land which is in public ownership. **Figure 36** shows the breakdown of public and private lands in Otsego County. Unlike many of its neighboring counties (e.g., Crawford and Montmorency), the majority of land in Otsego County is in private ownership. Managing growth and development will help to direct more intense development into areas with adequate infrastructure and protect critical resource areas for future generations. Without some constraints on development, Otsego County could become a very urbanized community within the next few decades.

Michigan Resource Information System (MIRIS) land cover/use data was compiled by the Michigan Department of Natural Resources in the early 1980's using 1978 aerial photographs. In 1994, this computerized land cover/use information was updated using 1987 aerial photography and extensive field inspections. The MIRIS

land classification system was used for the update. Urban/built-up categories were mapped to greater detail than during the 1978 land cover/use inventory, which had a minimum type size of two and one-half (2.5) to five (5) acres. The smaller type size provides a better representation of various urban built-up categories.

One of the features that attract people to Otsego County is the rural character of the area. Data from a 1994 update of the 1978 MIRIS land cover/use inventory shows that sixty-eight percent (68%) of the County's 336,280 total acreage was forested with another seven percent (7%) in agriculture, fifteen percent (15%) non-forest, two percent (2%) wetlands and two percent (2%) water. Nearly six percent (6%) of the County's land was used for urban-type purposes in 1994 including commercial, industrial, institutional/recreational and residential.

The other 'urban' features that are prevalent throughout Otsego County are wellheads resulting from oil and gas exploration and extraction (**Figure 37**). Well heads are so prevalent in the county that in most areas, well heads are typically not more than half a mile apart.

Figure 36: Public and Private Lands in Otsego County

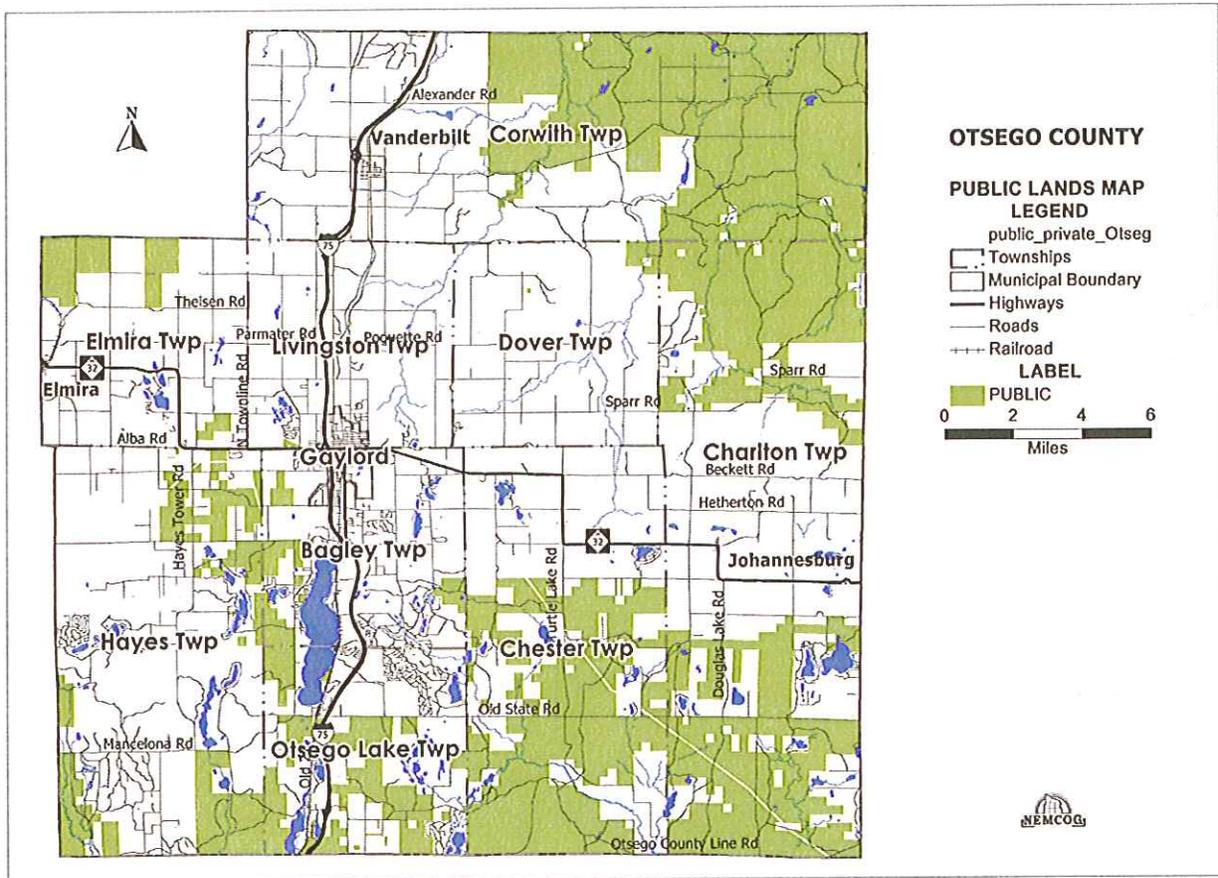
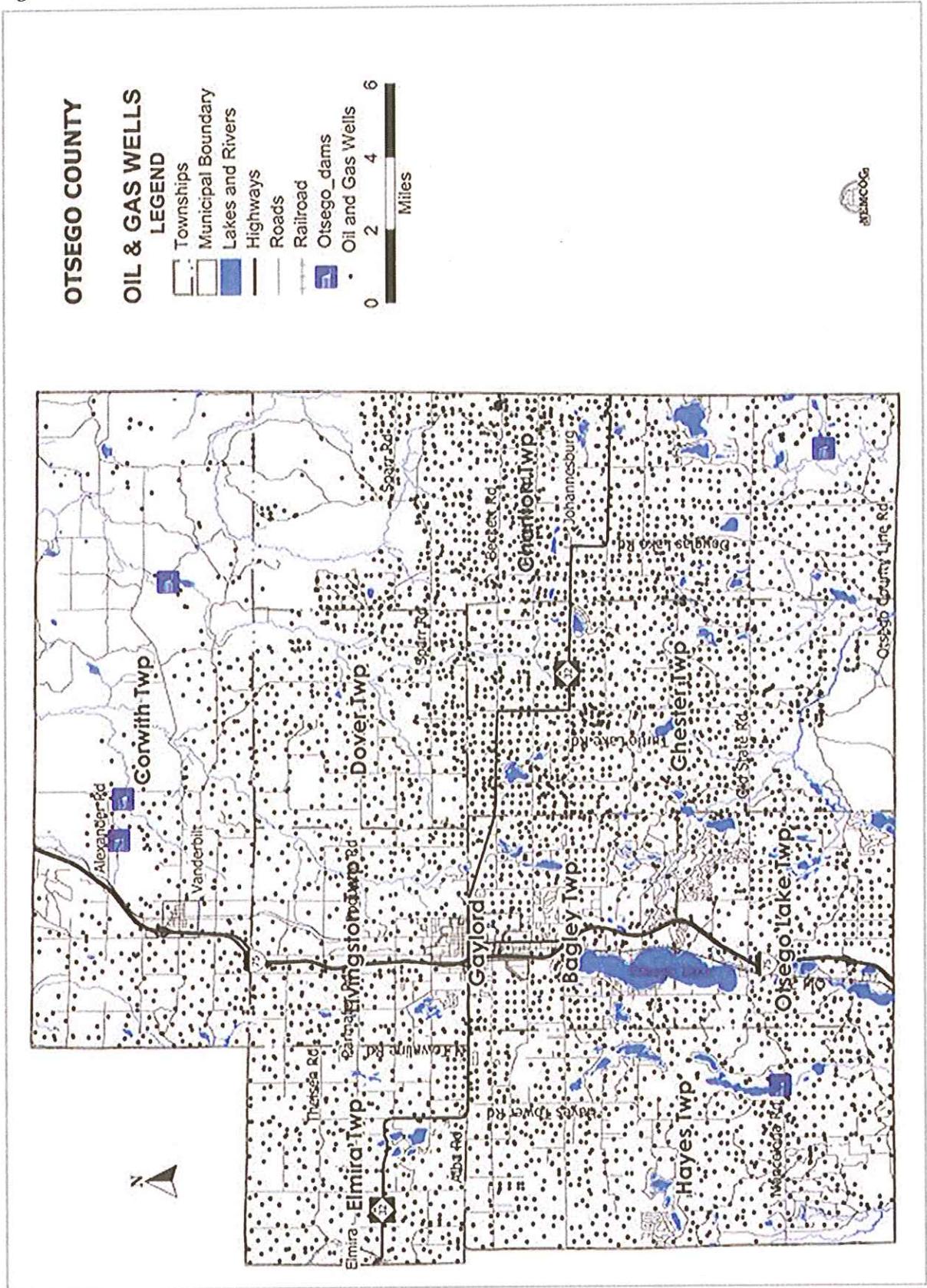


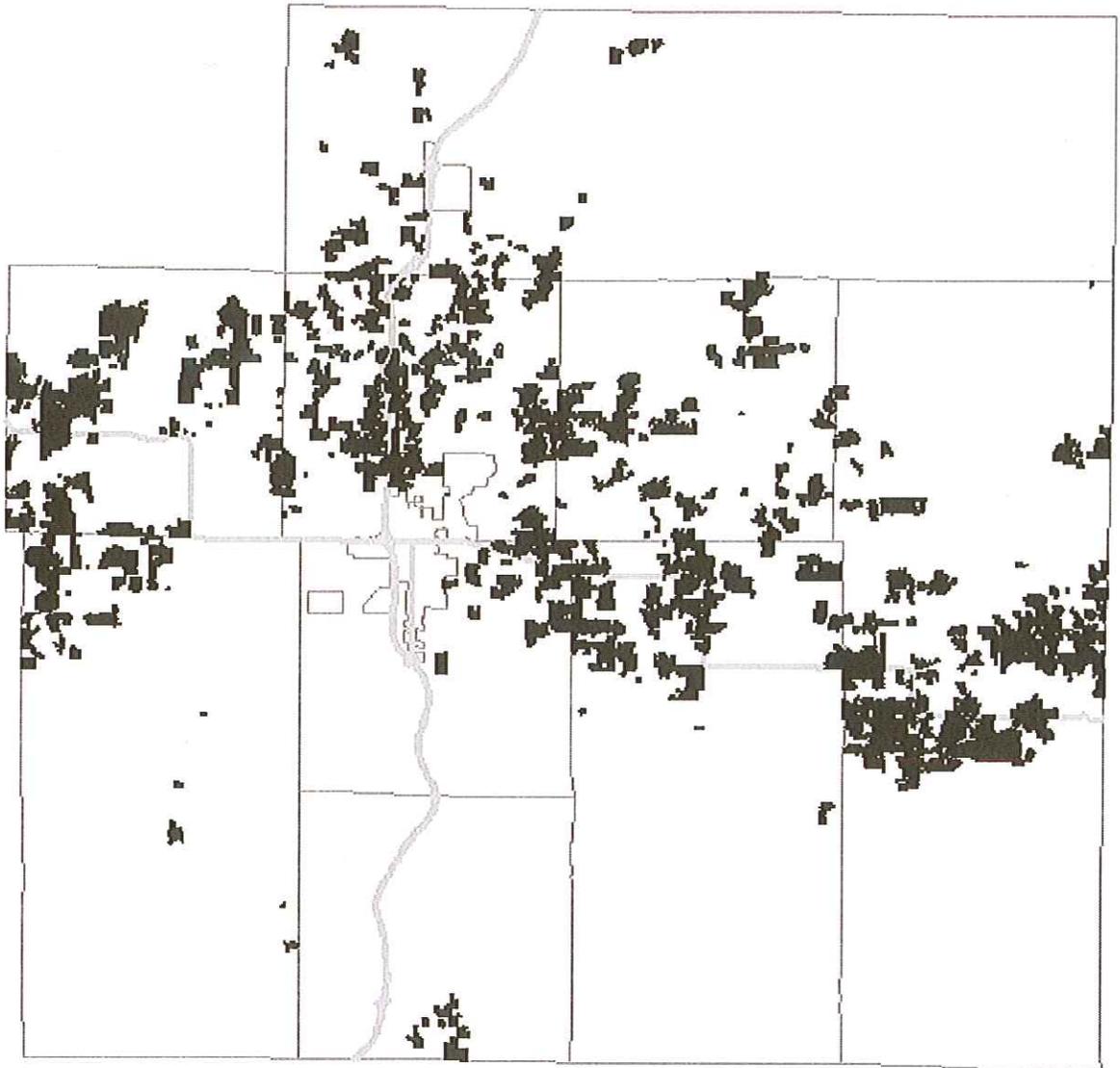
Figure 37: Oil & Gas Well Locations



Agricultural Land Use

While farm lands may be less visible in the county due to the expansion of residential land uses along rural roads, the total acreage dedicated to agriculture in Otsego County has increased slightly since 1994. In 2003, Otsego County had 25,541 acres (nearly 40 square miles) of agricultural lands, accounting for 7.6% of the county. As **Figure 38** demonstrates, active agriculture occurs in a wide band across the center of the county, roughly following M-32 east and west. Cropland (Code 21) is the predominant agricultural land use in the county.

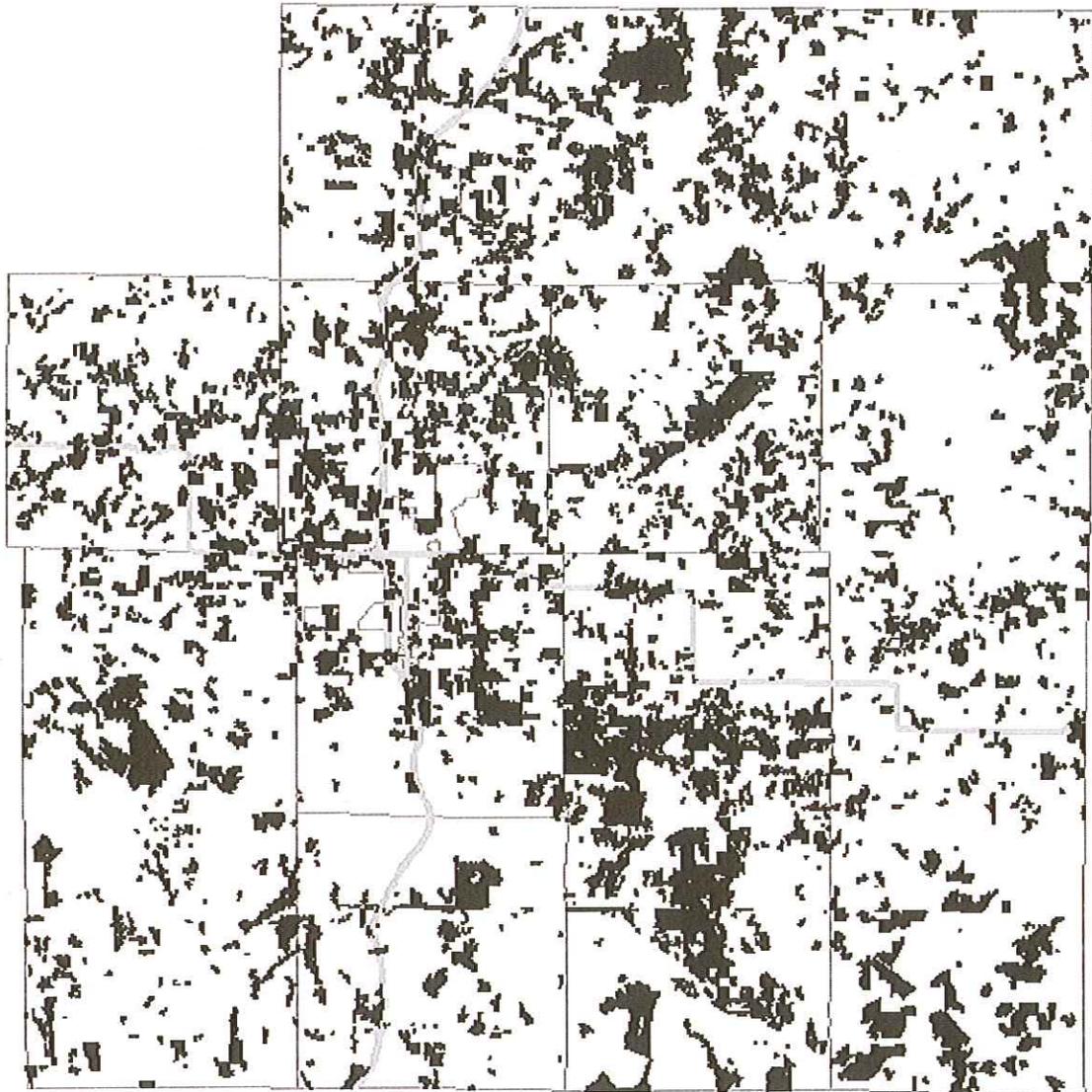
Figure 38: Agricultural Lands



Herbaceous/Shrub Land Use

Otsego County has 47,101 acres (73.6 square miles) of herbaceous/shrub land, accounting for fourteen percent (14%) of the land in the county. **Figure 39** shows a relatively even spread of herbaceous/shrub land throughout the county. Given the changes in herbaceous/shrub land to other land use types between 1994 to 2003, the conversion of current non-forested land to other land use types over the next decade is possible since these lands are easily converted to urban or agricultural uses, as well as they can be left to ‘grow’ in many cases from herbaceous to shrub to forest lands.

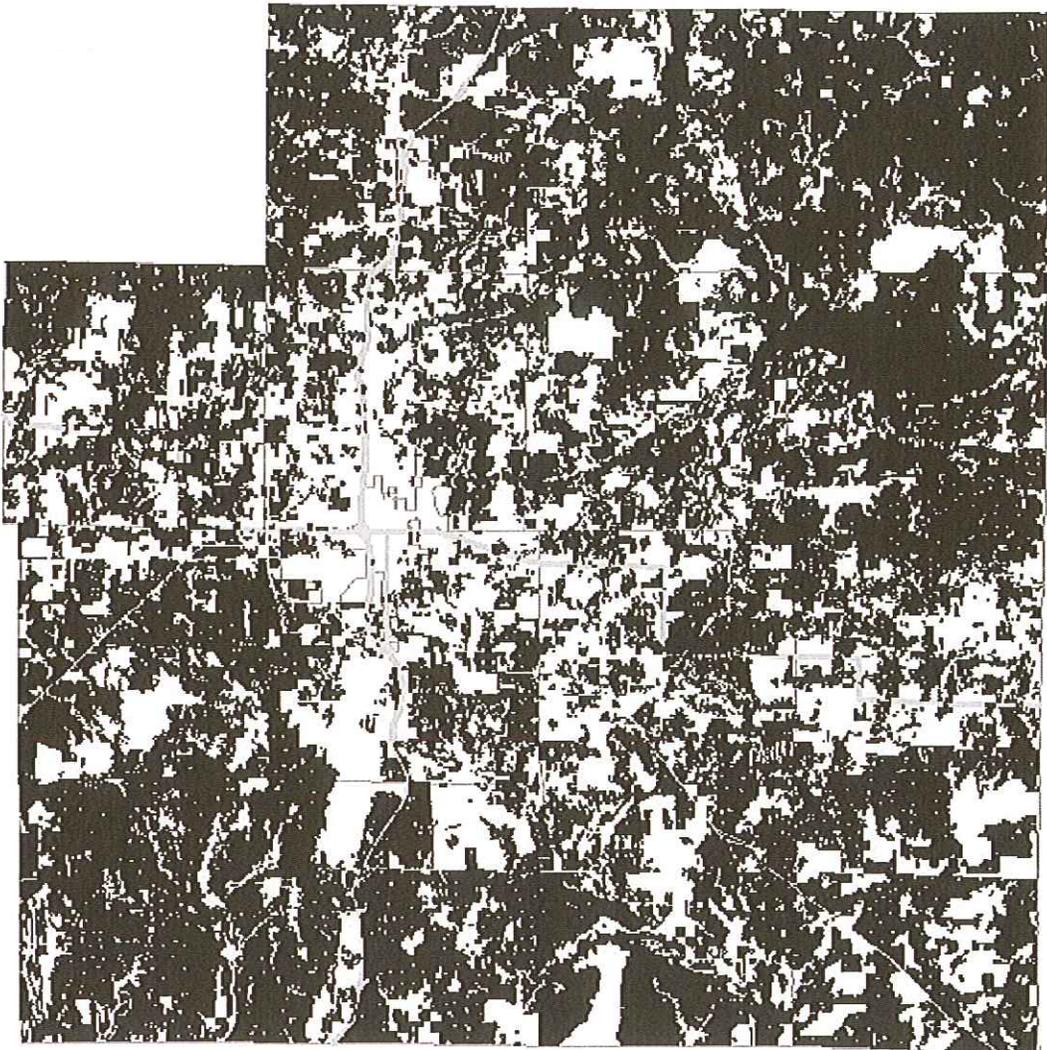
Figure 39: Herbaceous/Shrub Lands



Forests

Otsego County is predominantly forest. Outside the immediate Gaylord vicinity, forests are the dominant land use feature – even within the farm belt (**Figure 40**). Although the land use has experienced a slight decline, forest acreage still accounts for nearly sixty-four percent (64%) of the total land area of the county, with 215,120 acres (336 square miles) of forest. From 1994 to 2003, there was a net conversion of over 6,500 acres of forest to urban and agriculture land uses, over 5,200 acres to herbaceous/shrub, and over 2,400 acres to wetlands. Some of this change, however, may be attributed to interpretive changes as what was once classified as lowland forests is now classified as wetlands. Similarly, 25,752 acres of deciduous and coniferous forest were reclassified as mixed forest, a land use category that was not in use in 1979 or 1994.

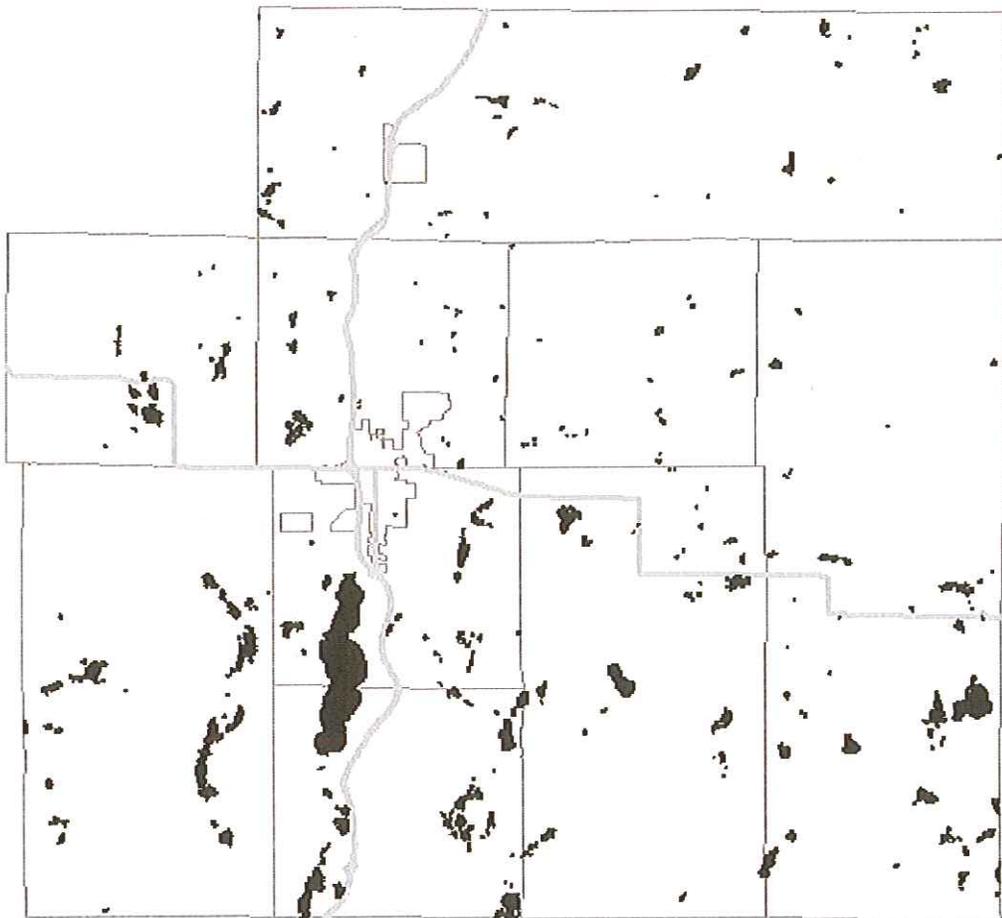
Figure 40: Forest Lands



Water

Otsego County is fortunate to contain many lakes, as evident in **Figure 41**. With the exception of Otsego Lake, the county's lakes are generally small – less than a square mile in size. Many of the lakes are surrounded by residential development. While the 2003 land use data shows an increase of 143.8 acres in the lakes category, the change can be attributed to the mapping of some smaller lakes (e.g., under 2 acres) and, in a few cases, where portions of the marshy-looking edge of a lake were re-mapped from wetlands to water. Otsego County is also the headwaters area to several important northern Michigan streams. Although these streams do not appear on the land use map, they are important water features within the county.

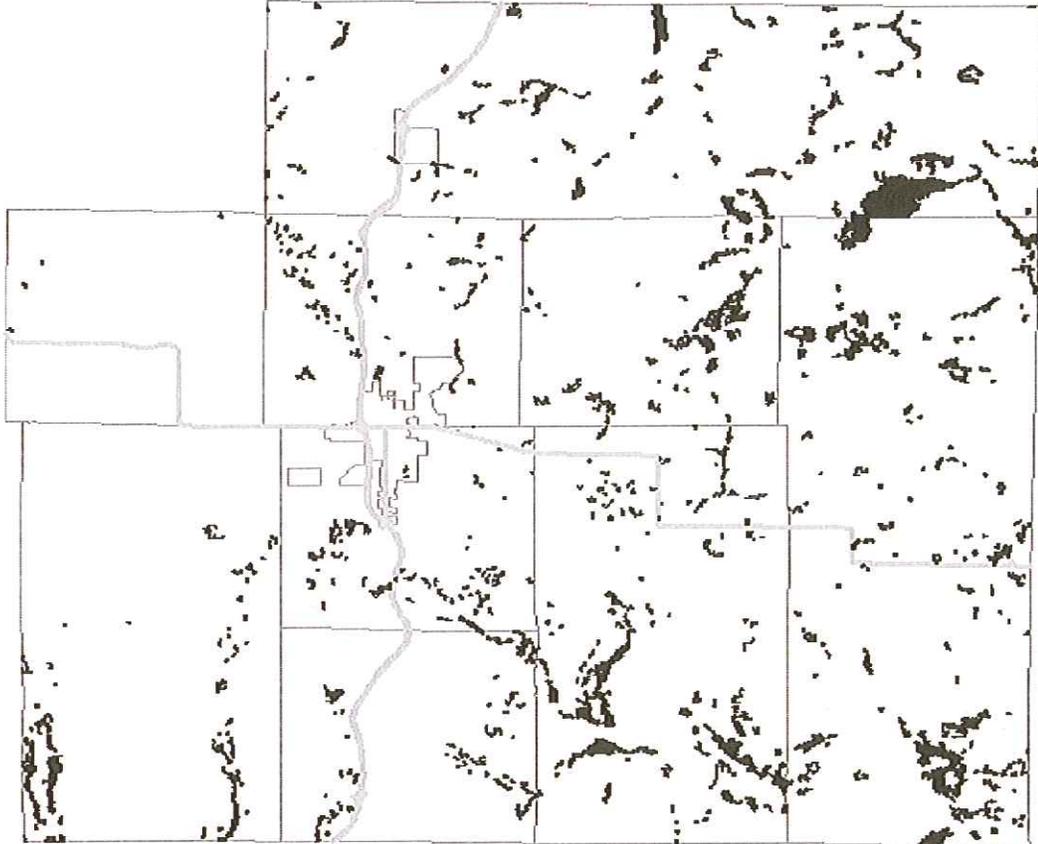
Figure 41: Lakes



Wetlands

In 2003, there were 9,634 acres (15 square miles) identified as wetlands in Otsego County, accounting for 2.86% of the total county area as seen in **Figure 42**. Other than Elmira Township and northern Hayes Township, these wetland areas are scattered throughout Otsego County, often in small isolated clusters or in lines along stream courses. These smaller wetland areas are vulnerable to conversion to adjacent land uses.

Figure 42: Wetlands



Barren Land

In the 1978 land use study, 5.8 acres of barren riverbank or beach were recorded; however, these lands were reclassified to another category by 1994, and no barren lands are recorded in the 2003 land use data set.

¹ Information for this section was provided by the Northeast Michigan Council of Governments (NEMCOG)

² University of Michigan Biological Station, 1980

³ University of Michigan Biological Station, 1979

⁴ Information for this section was provided by the Northeast Michigan Council of Governments (NEMCOG)

⁵ In the 2000 Decennial Census, the selected monthly owner costs are calculated from the sum of payment for mortgages, real estate taxes, various insurances, utilities, fuels, mobile home costs, and condominium fees.

Future Land Use Plan

Goals and Objectives

The following goals and objectives, which depict community members' intended vision for Otsego County, were developed and revised through a series of meetings held throughout fall 2006 and winter 2007. Dedicated county residents discussed topics until a general consensus was reached, and the goals and objectives provide a foundation for the future of Otsego County. Our goal as a community is to aggressively plan for the most reasonable and sustainable growth and support that growth with necessary infrastructure.

Agriculture & Forestry

Agriculture

1. Encourage and facilitate feasible options for continued agricultural uses of active prime farmland
2. Ensure that land designated for agricultural activities is accurately identified through the presence of prime soils or locally important agricultural soils and/or the land has been used historically for agricultural uses
 - a. Protect agricultural lands and open space through application of State legislation such as the Farmland and Open Space Preservation Act (Act P.A. 116)
 - b. Protect agricultural lands and open space through use of transfer of development right (TDRs), purchase of development rights (PDRs), and zoning
 - c. Protect agricultural lands and open space through information programs about conservation easement federal tax incentives and private foundation programs
 - d. Adopt land use planning and land use controls to ensure that existing urban and agriculture property can continue without conflict
 - e. Adopt policies and regulations that reasonable growth can be accommodated with minimal land use conflicts or negative environmental impacts
3. Research and share information on the economic role of Agriculture in Otsego County.
 - a. Educate the community on development options (e.g., planned unit development (PUD)), methods for redirecting development to already developed areas (e.g., infill, adaptive reuse, and Brownfield Redevelopment), and tools for land preservation (e.g., purchase and/or transfer of development rights programs). Come to consensus on which locations should be preserved
 - b. Educate public and officials regarding the difference between open space and agricultural land or uses
 - c. Action steps:
 - i. Survey farmers
 - ii. Hold community-wide education workshops to gain a deeper understanding of the current and future role of agriculture in Otsego County

iii. Hold community-wide workshops regarding land preservation tools, development options to protect and preserve area natural resources, including wetlands, forests and agricultural areas

4. Allow agricultural property owners to create smaller tracts of land for residential or farming purposes

Forestry

1. Promote re-forestation and sound forestry management practices in areas with suitable, productive soils

- a. Adopt policies for the retention and management of existing forest land
- b. Educate forest property owners on the benefits of forest management
- c. Soils mapping for prime forestry see **Figure 40** page 54

2. Research and share information on the economic role of Forestry in Otsego County.

- a. Educate the community on development options (e.g., planned unit development (PUD)), methods for redirecting development to already developed areas (e.g., infill, adaptive reuse, and Brownfield redevelopment), and tools for land preservation (e.g., purchase and/or transfer of development rights programs). Come to consensus on which locations should be preserved
- b. Educate public and officials regarding the difference between open space and forest land or uses
- c. Action steps:
 - i. Hold community wide education workshops to gain a deeper understanding of the current and future role of forestry in Otsego County
 - ii. Hold community-wide workshops regarding land preservation tools, development options to protect and preserve area natural resources, including wetlands, forests, and agricultural areas

Community Services

Transportation

1. Improve and maintain the transportation systems to reduce traffic congestion to accommodate the needs of residents, visitors, and commercial enterprises

- a. Educate elected officials, planning officials, and community members on transportation needs of Otsego County residents
- b. Review development policies that result in costly development patterns and isolation of pedestrians, and where the need for public services increases beyond that which the County is able to provide

2. Provide for an adequate transportation system that will facilitate balanced, orderly growth and ensure the safety and well-being of Otsego County residents

- a. Provide incentives for desirable, orderly industrial development in areas served by adequate transportation systems and services

- b. Establish areas for new residential and commercial development that are aesthetically pleasing that create a safe and efficient traffic circulation pattern and are coordinated with proposed improvements to transportation facilities
 - c. The design of new roadways should serve to connect the community by enhancing the existing transportation network
 - d. Address traffic circulation by improving access management, synchronizing traffic lights, repairing streets, and maintaining roadways
3. Provide and/or maintain safe and efficient routes in and through Otsego County while respecting the rural character
- a. Identify high growth areas where public services are likely to be of highest priority
 - b. Develop ordinances which encourage the shared use of commercial driveways and access roads and residential shared access. Limit the number and spacing of driveways, and encourage the use of frontage roads or service drives where appropriate
 - c. Review and update roadside landscaping requirements for new commercial and residential developments
 - d. Review and update the county sign ordinance to protect the natural beauty of scenic drives in the county
 - e. Encourage townships to implement billboard ordinances
 - f. Pursue the establishment/designation of additional scenic corridors to preserve the natural aesthetics of Otsego County
 - g. Encourage natural sound buffers to be established for new development along all transportation corridors to reduce noise
4. Work with state agencies to formulate solutions to long-term interstate, highway, and local transportation issues, including access to I-75 and M-32
- a. Work with county and state officials to determine appropriate locations and funding sources for additional I-75 crossings and interchanges
 - b. Work with the Michigan Department of Transportation to plan for vehicular and pedestrian safety at intersections and on roadways
 - c. Determine the feasibility of establishing truck routes around the City of Gaylord to minimize the use of portions of Main Street (M-32), as well as South Otsego and North Center Streets (Old US-27) by semi-trucks
 - d. Identify alternative routes for I-75/US-131 limited access connector
5. Work with Gaylord Regional Airport officials to anticipate and plan for expansion of commercial air passenger service to and from the Gaylord area; address planning issues that may develop in response to airport expansion
6. Work with the local railroad and state officials to plan and improve rail service to Otsego County
- a. Work to develop rail accessible sites for new businesses
 - b. Identify site for intermodal freight terminal

7. Review public transportation services and consider possible ways of making and/or maintaining public transportation as a viable alternative for county residents
 - a. Examine the ridership and possibility for the expansion of public transit to better serve the needs of Otsego County residents

8. Provide design guidelines for communities within Otsego County to promote a pedestrian, bicycle, and neighborhood electric vehicles oriented community
 - a. Participate in the development of multi-purpose trails and pathways to serve the community
 - b. Through site plan review and through communication with City and County road officials, encourage the construction of pedestrian and bike paths along major streets such as North Center, South Wisconsin, and North Ohio
 - c. Evaluate mixed-use town center zoning options

See Proposed Trail Systems Map 22 in Appendix A.

Utilities

1. Provide for the improvement and maintenance of public utilities to accommodate the needs of residents, visitors, and commercial enterprises
 - a. Identify desired high growth areas and those threatened with surface and subsurface contamination throughout the county where public service needs are likely to be of highest priority
 - b. Maintain interjurisdictional communication and seek cooperation to ensure space for wastewater treatment expansion; support continued and increased funding to ensure future wastewater treatment capacity based upon planned development and re-development
 - c. Work in conjunction with the various units of government to coordinate the distribution and use of utility systems while maintaining a level of service and quality desired by county residents
 - d. Study the impacts of establishing growth boundaries within the County
 - e. Enforce ordinances that require locating utilities underground on new and re-development projects
 - f. Encourage the adoption of wellhead protection plans for all municipal wells

2. Encourage appropriate, new development in areas consistent with proposed and projected improvements to public utilities
 - a. Direct development within and adjacent to the city, village, town centers, and areas served by privately owned systems to ensure that water and sewer infrastructure continues to be maintained and replaced in the most cost efficient manner possible
 - b. Utilize infill, adaptive reuse, and Brownfield development techniques/philosophies for development in areas with existing infrastructure facilities
 - c. Develop a Capital Improvement Plan that will aid in managing the rate, location, amount, and timing of growth within a utility service area
 - d. Plan for multi-family housing in areas served by adequate public utilities
 - e. Develop density limits for sensitive aquifer areas without public utilities

3. Encourage the use of green building techniques
4. Encourage the use of proactive storm water management practices
 - a. Support groundwater protection and stormwater management regulations in Otsego County's zoning ordinance, while encouraging the continued natural use of wetlands as ground water recharge, stormwater filtering and holding areas without degrading the wetland
 - b. Review storm water deficiencies within Otsego County and coordinate improvements to the storm water system with planned development and re-development
5. Improve Otsego County residents' access to communication technologies
 - a. Review ordinances for obstructions to communication technologies
6. Encourage the use of alternative sources of energy
 - a. Establish guidelines for the use of alternative energy sources that protect the rights of both those wishing to construct alternative energy sources and neighboring property owners
 - b. Establish methods to coordinate local jurisdictions' approach to alternative energy

Waste Management

1. Study the feasibility of establishing a county wide recycling and garbage pickup service
2. Encourage the provision of services in an efficient, environmentally respectful, fiscally responsible manner to meet the needs of the residents, property owners, business people and visitors
3. Conduct solid waste and landfill development planning on a county and regional basis
4. Educate elected and appointed officials and community members on landfill, sewer, and water expansion

Public Safety

1. Incorporate the needs of the local emergency services including fire, EMS, and law enforcement in county planning
 - a. Provide services in an efficient, environmentally respectful, and fiscally responsible manner to meet the needs of the residents, property owners, business people, and visitors
 - b. Promote a coordinated approach among local units of government regarding provision of public services
 - c. Maintain, improve, and/or replace facilities, programs, and systems consistent with the community's needs and ability to finance the improvements
2. Encourage the protection and maintain an awareness of ground water quality

Health Services

1. Encourage facilities for senior and special needs citizens, including a continuum of care facilities, and elder friendly housing within close proximity to neighborhood shopping facilities, pedestrian walkways, and parks and recreation facilities
2. Ensure that health facilities, programs, and systems are consistent with the community's needs and determine ways to finance expansion if necessary
 - a. Review the zoning for adult day care operations
 - b. Support hospitals, clinics, and other health-care facilities in their efforts keep pace with medical demands
 - c. Adopt policies to encourage and attract doctors, nurses, and health care professionals

Educational & Cultural

1. Encourage age-appropriate after-school/summer opportunities for area youth by utilizing senior groups, professional, volunteer, and faith-based organizations to provide supplemental educational services (e.g. tutoring and mentoring) and enrichment activities beneficial to the entire community
 - a. Develop and promote programs that enhance the imagination, creativity, and self-esteem of area youth
2. Explore the creation of additional civic events within the county for the enjoyment of residents and tourists
 - a. Promote programs and policies designed to develop and strengthen a sense of "community" throughout the county
3. Encourage development of childcare facilities in appropriate areas
4. Support educational and cultural services for residents
 - a. Maintain, improve, and/or replace facilities, programs, and systems consistent with the community's needs and ability to finance the improvements
5. Encourage the review of methods for improving Otsego County schools' cultural and educational facilities for today and as growth occurs
 - a. Work with area schools (e.g., public, private, and home) to cultivate parental and community involvement in primary and secondary education through establishment of programs for students to volunteer with local businesses and organizations and vice versa
 - b. Develop a communication plan for internal and external communication
 - c. Work with area schools to maintain and improve the implementation of the schools' strategic plans
 - d. Encourage area schools to develop strategic plans
6. Encourage the development of alternative educational opportunities
 - a. Maintain and build upon existing GED and literacy program
 - b. Develop community education and life-long learning programs

7. Encourage further development of the M-Tec/University Center. Encourage the establishment of additional education opportunities
8. Protect and enhance the cultural and historical assets of Otsego County
 - a. Work with existing organizations such as Otsego Historical Society and Gaylord Area Council of the Arts to identify and inventory the county's cultural and historical assets and resources
 - b. Encourage preservation of historic buildings and sites in Otsego County
 - c. Promote and increase public awareness of the county's cultural and historic sources as a means of enhancing the overall quality of life

Recreation

1. Facilitate the improvement of recreation in Otsego County
 - a. Complete an assessment of the availability, need, and impact of bike paths, county recreation facilities, cultural facilities, public access to waterways, snowmobile trails
 - b. Develop a comprehensive park system including mini-parks and neighborhood parks to meet the needs of existing and future Otsego County residents and visitors
 - c. Review the parks and recreation plans in existence countywide
 - d. Develop a well-maintained, coherent network of sidewalks, bike paths, pedestrian ways, open spaces, parks and playgrounds, and street design to encourage the creative design and re-design of neighborhoods to enhance desirability
 - e. Ensure the development of maintenance plans for all recreation facilities and parklands whether public or private
 - f. Coordinate planning efforts to address zoning and land use issues that impact upon those businesses and County services (such as parks, public restrooms, parking, etc.) that serve the needs of visitors to the County
 - g. Set aside suitable portions of land for neighborhood parks and road easements for pedestrian and bicycle paths
2. Develop a complete system of trails and pathways with safe access to businesses and services
 - a. Provide suitable portions of parks and road easements for non-motorized and motorized pathways
 - b. Determine what legal agreements, such as easements, exist and work to supplement with new agreements to allow for the establishment of non-motorized and motorized recreational trail and pathway connections to publicly owned, semi-public, parks, and conservation areas within the county
3. Promote sustainable tourist activities in specific areas while maintaining the attractiveness of the natural environment
4. Encourage the creation of additional recreational events within the county for the enjoyment of residents and tourists

Social Services

1. Encourage the development of quality housing for all income levels and lifestyles
 - a. Have an adequate supply of affordable housing
 - b. Allow for the availability of an adequate supply of low to moderate income family and senior citizen housing (rental and owner-occupied) that is located near community facilities and shopping areas
 - c. Adopt policies to encourage development of elder friendly housing
 - d. Engage social service agencies to coordinate more carefully with local landlords offering rentals to tenants receiving assistance
2. Encourage the implementation of the existing 10-Year Plan to End Homelessness in Otsego County. The plan can be reviewed at www.otsego.org/homelessness
 - a. Complete an evaluation of existing zoning ordinances to determine opportunities and limitations in meeting the objectives of the 10-Year Plan to End Homelessness
3. Encourage community programs that contribute to the welfare of our children

Economics & Housing

Commercial Centers

1. Support the focus and continuation of commercial Town Centers
 - a. Provide incentives to encourage small and unique business to locate to Town Centers
 - b. Promote existing business in the Town Centers
 - c. Define areas of logical commercial growth adjacent to commercial centers, which supports Town Center zoning
2. Ensure that the architecture, landscaping, and signage associated with commercial establishments are compatible with local character
 - a. Identify elements that contribute to local character
 - b. Review and update the county sign ordinance
 - c. Incorporate design and performance standards into the zoning ordinance that preserve and contribute to elements that define local character
 - d. Develop programs to help encourage business owners improve their existing landscaping and general property maintenance
 - e. Identify the structures in the business districts that are of historical significance; encourage, where feasible, the preservation and improvement of those sites
3. Improve blighted areas in the commercial districts
 - a. Facilitate the use of infill, adaptive reuse, and Brownfield development techniques/philosophies
4. Coordinate planning efforts with local units of government, Downtown Development Authorities, Chambers of Commerce, Convention and Tourism Bureaus, and other organizations

5. Encourage economically healthy and vibrant commercial districts
 - a. Provide opportunities for the establishment of commercial uses
 - b. Provide neighborhood commercial opportunities near high density residential development that relate to the needs of the neighborhoods
 - c. Work with local jurisdictions to support community activities and events
 - d. Allow for development and re-development that encourages utilization of local resources that reflect community pride and demonstrate local character
 - e. Improve vehicular access to commercial sites
 - f. Improve pedestrian and other non-motorized access to commercial sites
 - g. Promote the creation of design guidelines for pedestrian friendly commercial areas to encourage people to “park once and walk”

Economic Development

Support the continued focus that the economic health of Otsego County is enhanced by a great diversity of resources and activities. Some major contributors to our economic well-being include but are not limited to: Recreation, Tourism, Sales, Distribution, Light Manufacturing, Industrial, Oil and Gas, Agricultural, Retirement, Education and Health Care.

1. Recreation / Tourism:
 - a. Continue to support local and statewide efforts to promote Northern Michigan as a recreation and Tourism destination
2. Sales and Distribution:
 - a. Retain and expand existing base industry through a coordinated effort by local, regional and state economic development and workforce development professionals and others
 - b. Provide and utilize incentives to create new businesses in Otsego County
3. Light Manufacturing:
 - a. Investigate and Encourage methods of assisting local businesses to remain competitive, maintain a diverse employment base and promote living wage jobs
 - b. Identify and assess local barriers to the expansion and location of business in Otsego County
 - c. Build infrastructure to support and attract businesses while continuing community development
 - d. Market Otsego County to new businesses using cost effective location appropriate plan that targets businesses with potential to locate in Otsego County
 - e. Work with airport officials to improve customer service and provide an attractive gateway to corporate users. Encourage commercial air services and increase commercial freight shipping opportunities to the Gaylord Regional Airport
4. Industrial:
 - a. Assist location of new base industry into Otsego County by developing and providing location information including vacant site and building data, current wage data, demographics, location costs, municipal services, etc.
 - b. Provide for desirable, orderly industrial development in areas served by adequate transportation systems, utilities and services

- c. Promote the development of industrial parks rather than scattered single lot development
 - 5. Oil and Gas:
 - a. Support efforts for clean environmentally sound development of Otsego County's oil and gas industry
 - b. Develop scenarios to plan for potential impacts on local employment, tax revenues, and land use resulting from the departure of oil and gas companies
 - 6. Agriculture:
 - a. Support local efforts to preserve agricultural zoned properties
 - b. Support the development of farmer markets
 - c. Support local and statewide efforts on the development of bio-fuels
 - 7. Retirement:
 - a. Support Otsego County as a retirement destination
 - b. Support the development of facilities that promote both living and recreation opportunities for citizens of retirement age
 - 8. Education:
 - a. Support efforts to continue our education system as one of the best opportunities offered in the entire state
 - b. Support local efforts on the expansion of both the University Center and the M-TEC
 - c. Recognize that education is not only a community service, but is also a commodity to be produced, marketed and sold which as such, can expand both the economic and social base of the community
 - 9. Health Care:
 - a. Support efforts to maintain and enhance Otsego County's Health care facilities
2. Develop scenarios to plan for potential impacts on local employment, tax revenues, and land use resulting from the departure of oil and gas companies'

Housing

- 1. Encourage safe, sanitary, and well maintained housing that is income appropriate
 - a. Allow for a range of housing types to accommodate varying needs in household size and income level, as well as offer tools and options for the creation of mixed use neighborhoods
 - b. Participate with Michigan State Housing Development Authority (MSHDA) and other programs to rehabilitate substandard housing to provide needed moderately priced housing in the County
 - c. Allow for the development of high density apartments with easy access to restaurants, entertainment, and social activities
 - d. Allow for the development of houses interspersed with elementary schools, parks, and recreational facilities
 - e. Plan for multi-family housing in areas served by adequate public utilities and transportation
 - f. Designate areas appropriate for all types of residential development including single family, multi-family, condominium, mixed-use, low to moderate income rental complexes, and extended care facilities

2. Preserve and encourage the elements of residential neighborhoods which result in desirable living environments for permanent and seasonal residents
 - a. Preserve the integrity of existing residential neighborhoods by protecting them from intrusion of incompatible uses
 - b. Maintain and enhance guidelines for buffers between residential uses and other more intensive uses
 - c. Draft regulations for and encourage mixed use developments as a means of integrating residential, recreation, retail, and office uses
 - d. Promote the improvement and maintenance of the existing housing through rehabilitation programs
 - e. Allow for sidewalks, bike paths, pedestrian ways, open spaces, parks and playgrounds, and street design to encourage the creative design and re-design of neighborhoods in and around Town Centers that enhance desirability
 - f. Establish areas for new residential development and housing densities that will preserve or enhance the character of the area and will be consistent with proposed improvements to public utilities and transportation facilities
 - g. Review existing landscaping regulations for high density residential districts
 - h. Explore a rental property inspection and monitoring ordinance to ensure safe and sanitary housing for renters
 - i. Explore an incentive program for landlords offering single-family homes, two (2) to four (4) unit homes, and structures with more than four (4) units

Growth and Development

1. Coordinate development in Otsego County through updating and enforcing a clear, consistent zoning ordinance.
 - a. Encourage a fulltime enforcement officer
 - b. Perform master plan reviews on a five (5) year cycle

Natural Resources

1. Provide for the enhancement and protection of Otsego County's surface and ground water quality
 - a. Facilitate a land use pattern that protects the natural features and water resources of the area by evaluating type and density of proposed developments based on soil suitability, slope of land, potential for groundwater and surface water degradation and contamination, compatibility with adjacent land uses, and impacts to sensitive natural areas like wetlands, greenways and wildlife corridors
 - b. Work to control the density and type of residential and commercial development adjacent to lakes, ponds, streams, and wetlands
 - c. Review greenbelt criteria for areas immediately adjacent to surface water
 - d. Preserve and maintain greenbelt areas adjacent to lakes, ponds, streams, and wetlands through updating the zoning ordinance
 - e. Incorporate groundwater protection and stormwater management regulations in Otsego County, while encouraging the continued natural use of wetlands as ground water recharge, stormwater filtering, and holding areas without degrading the wetlands
 - f. Work cooperatively with responsible enforcement agencies to identify and remedy surface and ground water contamination, as well as prosecute offenders

- g. Make use of aquifer vulnerability maps and other information to assess potential water quality problems from proposed development
 - h. Participate in the development of multi-jurisdictional sewer systems to protect surface and ground water
 - i. Work with the Health Department of Northwest Michigan as well as other agencies to inform citizens of aquifer protection measures
 - j. Work, with other governmental units if necessary, to establish the ordinary high water levels for lakes
2. Ensure that development or re-development takes place in an environmentally sound manner by minimizing the potential for soil erosion
- a. Regulate developments on steeply sloped areas and require erosion control measures where construction is permitted. Require slope stabilization and revegetation on disturbed slopes or in extraction areas
 - b. Make use of Natural Resources Conservation Service Soil Survey maps and suitability tables for site review
 - c. Work cooperatively with the appropriate agencies
3. Protect, as much as possible, the existing natural environment
- a. Review the possible use of incentives for the preservation of wildlife corridors and maintenance of wildlife habitats
 - b. Facilitate the retention and management of existing forest lands through the use of Transfer of Development Rights (TDRs) programs, Purchase of Development Rights (PDRs) programs, other appropriate zoning measures, and supporting the efforts of the Otsego County Conservation District
 - c. Encourage developers to set aside or preserve more open space
 - d. Coordinate with agencies that monitor oil and gas wells and development to preserve our natural environment
 - e. Through various methods (zoning; transfer of development rights; purchase of development rights; site plan review; education; state, federal or private incentives), require approaches to land development that take natural features such as soils, hydrology, topography, and natural vegetation into account during site and building design and construction
 - f. Work with local, state, and federal agencies to help prevent the introduction or spread of noxious invasive species
 - g. Recognize the importance of open space for recreation, wildlife, scenic enhancement, and water quality to achieve open space, and develop zoning regulations to encourage open space
4. Encourage land use in a manner which recognizes the importance of forests to the overall character of the county and to the quality of life and economic well-being of its citizens. Recognize forests as sources of economic revenue, protectors of water quality, providers of recreation, and providers of habitat for wildlife
- a. Make use of the Prime Forestlands maps developed using national and local (county) criteria to identify high value timberlands and to balance density and type of development in these areas

- b. Encourage the management of the forests within the county under acceptable silviculture practices as a means to provide income, forest products, wildlife habitat, improved water quality, and recreation opportunities
- c. Protect forestlands and open space through education of property owners on State legislation such as the Farmland and Open Space Preservation Act (Act P.A. 116) and the Commercial Forest Act (Act P.A. 451) and other legislation
- d. Protect forestlands and open space through the use of transfer of development rights (TDRs) programs and purchase of development rights (PDRs) programs
- e. Protect forestlands and open space through information programs about federal tax incentives related to conservation easements
- f. Work cooperatively with the Otsego Conservation District, the Michigan Department of Natural Resources, and other appropriate agencies to enhance forest benefits for private forest owners
- g. Inform property owners on the use of wildland preservation techniques which could be available from non-profit foundations and organizations
- h. Allow natural resource based economic, educational, and recreational activity in areas zoned as natural environment or forestland

5. Recognize the importance of wildlife to the overall character of the county and to the quality of life and economic well-being of its citizens and encourage land uses which facilitate wildlife protection

- a. Consider special habitat enhancement practices where important wildlife resources exist due to either biological scarcity or economic importance

6. Recognize the unique roles of natural resources -- such as oil, gas, mineral, sand, gravel, and water -- in terms of location, scarcity, and state laws

- a. Review criteria in addition to state statute concerning visual, audio, temporal, and environmental standards to regulate extraction in the interest of Otsego County citizens

Town Centers (Mixed-Use)

Planning & Development

1. Develop zoning districts for small businesses and revitalize and expand residential neighborhoods to support the existing Town Centers of Elmira, Johannesburg, and Waters

- a. Encourage zoning requirements that preserve the “small town” feel by maintaining and/or creating walkable, pedestrian oriented central business districts in new or existing Town Centers with shared and on-street parking, minimal setbacks or build-to lines, pedestrian friendly streetscapes, and mixed residential/commercial uses

2. Work with the Town Centers to identify those structures and areas in Town Centers that are of historical significance; encourage the preservation and improvement of those sites

- a. Develop zoning to encourage architecture, landscaping, and signage associated with commercial establishments that is compatible with the desired Town Center character and sense of place
3. Guide new development in a manner that preserves community character and environmentally important resources yet meets the long-term needs of the community
 - a. Work with the Town Centers to identify and maintain patterns of roads, buildings, architectural styles, scale, and layout of individual buildings and neighborhoods that define the community's character and sense of place, as well as identify and address those issues that threaten desirable small town attributes
 - b. Incorporate design and performance standards into the zoning ordinance that preserve and enhance those elements that define small town character with special attention given to street design, required setbacks, and pedestrian orientation
 4. Encourage the opportunity for mixed-use development within and adjacent to the existing Town Centers thereby allowing expansion of the Town Centers. For example, a commerce park with businesses such as professional offices, automotive repair, etc. located off the main thoroughfare

Government

1. Work with the Town Centers to promote programs and policies designed to develop and strengthen a sense of "community" within the Town Centers

Commercial Land Uses

1. Work with the Town Centers to determine the infrastructure needs necessary for new commercial growth to be clustered in concentrated areas
 - a. Provide for a mix of commercial uses at planned locations which are aesthetically pleasing and create a safe and efficient traffic circulation pattern
 - b. Encourage the use of infill, adaptive reuse, and Brownfield development techniques/philosophies
 - c. Through zoning design standards encourage commercial cluster and mixed use zoning, especially in those areas not already developed for commercial uses, or those areas being re-developed for commercial uses
 - d. Work with the Town Centers to promote existing and encourage new businesses in Town Centers
2. Preserve and enhance those elements of Town Centers which contribute to small town atmosphere, economic vitality, and positive community character
 - a. Allow for neighborhood commercial opportunities near high density residential developments
 - b. Incorporate landscaping, architectural, parking, and other design standards into the zoning ordinance that will achieve commercial development which is aesthetically pleasing, environmentally sound, and preserves the economic vitality of commercial development
 - c. Assist with the creation of design guidelines for pedestrian friendly commercial areas to encourage people to "park once and walk" to shops

3. Provide reasonable opportunities for the establishment of commercial uses that meet the needs of area residents

Transportation

1. Provide design guidelines to promote walkable and bicycle friendly communities in Otsego County's Town Centers
2. Encourage the establishment of new residential development with densities that will be consistent with proposed improvements to public utilities and transportation facilities
3. Encourage a mix of commercial uses at planned locations which are aesthetically pleasing and create safe and efficient traffic patterns
4. Identify high growth areas both within and beyond community limits where public service needs are likely to be of highest priority

Residential & Housing

1. Encourage innovative design and a mixture of housing types in residential developments; residential buildings within each neighborhood should be compatible, and transitions should be provided where different types occur in close proximity
 - a. Encourage a range of housing types to accommodate varying needs in household size and type and that recognizes various income levels while maintaining compatibility with the character of existing residences in the area
 - b. Encourage the creative design and re-design of neighborhoods that enhance desirability by including sidewalks, bike paths, pedestrian ways, open spaces, parks, and playgrounds, and street design
 - c. Establish guidelines for buffers where appropriate
 - d. Establish areas for new residential development, and establish housing densities that will preserve or enhance the character of that area and will be consistent with proposed improvements to public utilities and transportation facilities

Urban Growth

1. Identify and maintain those attributes within the City of Gaylord and the surrounding area that contribute to small town character
 - a. Encourage the incorporation of design and performance standards into local zoning ordinances that preserve and contribute to those elements that define small town character
 - b. Place emphasis on street design, build-to-lines, and pedestrian orientation
 - c. Encourage the identification of structures and areas within the community that are of historical significance, and encourage the preservation and improvement of those sites through voluntary activities or the establishment of an historical district
 - d. Collaborate with the City of Gaylord in researching and identifying elements (road patterns, building types, architectural styles, scale and layout of individual buildings and neighborhoods, type of vegetation, etc.) which define the community character of Gaylord and adjacent areas

- e. Coordinate with groups and/or agencies in the development and implementation of programs and policies designed to develop and strengthen a sense of “community” within Gaylord and the adjacent areas
 - f. Encourage development and re-development that attracts visitors to the community, reflects community pride, and demonstrates a unified Alpine Theme in appropriate areas
2. Provide infrastructure that is appropriate for projected growth within the City of Gaylord and in the surrounding area
- a. Maintain communication between Planning Commissions and City Council to ensure space for wastewater treatment expansion
 - b. Work with the communities to create opportunities for continued and increased funding to ensure future wastewater treatment capacity based upon planned development and re-development
 - c. Work with the appropriate communities and agencies to study the developed alternate transportation routes for commercial traffic around the downtown and west M-32 corridor
 - d. Work with the City of Gaylord and surrounding communities to review storm water management and coordinate improvements to the storm water system with planned development and re-development
 - e. Work with the City of Gaylord to maintain public water and sanitary sewer services in agreed upon areas beyond city limits
 - f. Work with the City of Gaylord to identify high growth areas both within and beyond city limits where public services are needed
3. Continue to coordinate planning efforts among Bagley Township, Livingston Township, the City of Gaylord, and Otsego County
- a. Continue open communication and discussion of planning issues through the Gaylord Area Cooperative Planning Committee
 - b. Review land division policies that result in costly development patterns (including increasing the cost to provide public services) and pedestrian isolation
 - c. Explore the need to create a municipal services authority
 - d. Work with the City of Gaylord and Livingston and Bagley Townships to develop a joint Capital Improvements Plan that will aid in managing the rate, location, amount, and timing of growth within a utility service area
 - e. Identify “smart growth” techniques to incorporate into zoning ordinance language
 - f. Develop and maintain a shared mapping system to update maps needed for the area planning efforts
 - g. To coordinate growth, continue to support inter-municipal planning between the county, townships, villages, and city

Land Use Definitions

The Otsego County Master Plan establishes general patterns of land use to guide growth and development in the county over the next twenty (20) to thirty (30) years. The following paragraphs describe the future land use designations, as illustrated in the Future

Land Use Map (Page 81 in Appendix A). Each future land use category is intended to foster a distinct character. The future land use definitions and map are the result of an extensive public input process.

Introduction to the Agricultural, Environmental Preservation, and Forest

Land Use Categories

Throughout the process of updating the Otsego County Master Plan, there was extensive public input regarding the desire to see the overall rural character – notably the agricultural lands, environmentally sensitive areas, and extensive forest tracts – preserved while still allowing for a range of residential densities within the Agricultural, Environmental Preservation, and Forest land use categories. The large expanses of open space within Otsego County are one of the central features contributing to the quality of life for residents as well as serving as a significant draw for tourists and other visitors who help support the tourist industry, and through it, the economic well-being of the community. In some areas these lands are publicly owned but in most cases these lands are under private ownership.

Public lands, such as the Pigeon River Country State Forest (PRC) and other state forest Management Areas, are recognized as an investment by the State in lands that are held for the common use and enjoyment by the public. State lands provide significant economic benefit to Otsego County by providing a resource for the many forestry based businesses as well as providing a land base for outdoor recreationists who contribute to the many tourism based business in and around Otsego County. Large tracts of open, privately held lands also provide a significant economic benefit to the community as a whole. In some cases these private lands are open to public use, in other cases they provide a significant aesthetic benefit to all who live in or travel through our county. Where managed for forestry, agriculture or other profitable enterprise these lands represent a significant financial resource for their owners and the community as a whole. Therefore, preserving these large, open parcels of private land is in the interest of the county and its citizens. While all of these lands are undoubtedly a significant and valued resource to the county, those that are under private ownership also represent a considerable value to their owners. The interests of the individual property owner must be considered when evaluating options to encourage the preservation of these open lands. There are positive efforts that can be made to preserve these parcels.

Preserving large open spaces while simultaneously allowing reasonable residential development of these same properties requires the careful application of various land use tools and incentives in order to preserve the open character of the county it will be necessary to provide sufficient positive incentives to land owners and developers to incorporate preservation of open space and the continued AGRICULTURAL, ENVIRONMENTAL PROTECTION and FOREST use of substantial portions of the property. There are positive efforts that can be made to preserve these parcels. These positive efforts include, but are not limited to the following three (3) land use tools: 1. Zoning, 2. Transfer of Development Rights, and 3. Purchase of Development Rights.

Transfer of Development Rights (TDR) and Purchase of Development Rights (PDR) are both tools that would serve to both preserve these large privately held parcels while compensating the owner for the decreased development value resulting from development restrictions. The TDRs result in increased development density for the developed parcel while preserving other properties. Similarly, open space plan provisions can grant a developer increased gross density or other benefits in return for permanently preserving a significant portion of land as open space. Increase allowable maximum development density can be used to encourage these practices. Under the PDR tool certain specific sights to develop are purchased, usually by government or a land conservancy.

The viability and effectiveness of zoning provisions that encourage the use of TDR and PDR and other incentives to preserve open space should be reviewed on a regular basis. Positive measures that preserve open space without unreasonably discouraging investment in our community should be strongly encouraged.

Agriculture

The Agriculture land use category includes areas where land is used for or consistent with farming, livestock, and farming related businesses. This land use category includes, but is not limited to, grain, fiber, fruit, and vegetable production; livestock production; plant nurseries; Christmas tree production; as well as other plant and animal production. Most related activities, such as processing facilities and animal feed lots, are also allowed in this land use category with special consideration. Riding stables, commercial kennels, and veterinary clinics, animal grooming facilities, communications towers, wind turbine generation, and gas/oil production may be allowed where compatible with surrounding uses.

Environmental Preservation

The Environmental Preservation land use category's primary objective is to preserve the important natural resources and water quality of the county including, but not limited to, wetlands, forests, steep slopes, lakes, rivers, riparian areas, and wildlife corridors. Low-impact educational, recreational and agricultural activities are consistent with the objectives set forth by this land use category, and include but are not limited to, nature trails, hunting, fishing, and farming.

To prevent the fragmentation of environmentally sensitive lands in Otsego County, residential development should be limited while still allowing for a range of residential densities in the Environmental Preservation land use category.

Pigeon River Country Area

The Pigeon River County State Forest (PRC) is the largest tract of contiguous undeveloped state land in the lower peninsula of Michigan. Approximately fifteen percent (15%) of the land area of Otsego County is in the PRC. It is home to many types of wildlife, and is the heart of Michigan's elk range with three (3) of Michigan's finest trout streams, the Pigeon, Sturgeon, and Black rivers, flowing through it. The Pigeon has the added distinction of being a State designated Natural River. The management plan for the PRC, the Concept of Management, was updated in 2007. When the Concept was

first adopted by the DNR in 1973, it represented the collective wisdom of many individuals, representing many organizations and interest groups who shared a common purpose — to protect the Lower Peninsula’s last “Big Wild” from overuse and overdevelopment. 19th and early 20th century attitudes about treating natural resources as commodities, to exploit without restraint, have changed with the recognition that resources must be managed wisely if they are to be there for future generations.

The PRC deserves special attention because it is one of those increasingly rare places that humble a person with its scenic beauty and undeveloped landscape. However, it is not just the state forest that makes up the wild character and ecological diversity of Pigeon River Country. The surrounding mostly private lands play a very important role helping to maintain the wild character and providing corridors wildlife need to thrive. In 2001, a partnership of groups and individuals that call themselves the Pigeon River Habitat Initiative (PRHI) was formed. Local groups such as the Otsego County Conservation District, the Head Waters Land Conservancy, the Otsego Wildlife Legacy Society, the Headwaters Chapter of Trout Unlimited and the Pigeon River Country Association are partners in the PRHI. The mission of the PRHI is to work with private landowners in the PRC buffer lands to protect the wild character of the PRC and to provide corridors for wildlife.

A large part of the Pigeon River Country is in Otsego County. Recognizing the economic and social benefits it provides to our citizens, the PRC and the surrounding buffer zone lands in Otsego County deserve special consideration. Development and activities that are detrimental to sustaining wildlife populations or that degrade the wild character by creating significant noise, concentrating large groups of people, or lead to significant additional development should be discouraged. Special considerations should be afforded to this region through the use of an overlay zone. An overlay zone is an area of special development conditions that can be tailored to the protection of the unique characteristics of the Pigeon River Country Area. The boundary of the overlay zone and resulting ordinances should be developed so as to ensure the ecological and social integrity of the area. To do so they will likely need to include not just those lands within the current PRC State Forest boundaries but also those lands identified by the PRHI and others as being Prioritization Areas which deserve special consideration. It is suggested that more than one category of Overlay Zone may be needed to address the varying concerns of properties within and adjacent to the PRC. It is recognized that Otsego County, its citizenry and private land owners in these areas have a heightened responsibility to preserve and protect this unique area for future generations. As always, it is critical to appropriately balance the rights of private property owners with the need to regulate land use through zoning and other ordinances. The involvement of private property owners within the PRC area will be instrumental in the development of any new ordinance language. The need to protect this last “Big Wild” is a responsibility that must be carefully considered in this process.

Forest

The Forest land use category includes areas to be used primarily for silviculture practices as a means of providing forest products, wildlife habitat, and maintaining water quality, as well as opportunities for low impact farming and/or recreation. Low impact farming

and/or recreational opportunities may include, but is not limited to, farming, hunting, fishing, skiing, and hiking.

Recreation

The Recreation land use category includes areas to be used primarily for recreational activities by residents and tourists. Acceptable land uses in this category include, but are not limited to, parks, campgrounds, trails, golf courses, ski resorts, and recreational facilities. Residential homes may be allowed where compatible with surrounding uses. Residential densities within this land use category could range from one (1) unit per two (2) to five (5) acres. Where municipalities provide water and sewer service and/or other comparable form of water and sewer service with approval by the municipality and the District Health Department higher density may be allowed.

Residential

Low Density Residential

Low Density Residential development is primarily designed to accommodate large residential lots which provide privacy from neighbors and/or other developments by allowing a density ranging from one (1) dwelling unit per two (2) to five (5) acres. However, it may be encouraged to place residential parcels in a clustered format to preserve and protect environmentally sensitive areas, forests, and farm lands. Other uses which are consistent with this land use category would include parks and other recreational facilities. Since municipal water or sewer service will not be available in most areas, individual well and septic systems will need to be utilized and approved by the District Health Department.

Medium Density Residential

The Medium Density Residential land use category is primarily designed to accommodate existing and future single-family development in areas with an allowed density ranging from one (1) dwelling unit per one-half (0.5) to two (2) acres. Since municipal water or sewer service will not be available in most areas, individual well and septic systems will need to be utilized and approved by the District Health Department. In some instances, other forms of water and sewer services may be utilized upon approval by the municipality and District Health Department. Clustering residential development in these areas is an option to preserve environmentally sensitive areas, forests, and farm lands. This category is designed to include a wide range of residential densities and should provide as the transition between Low Density Residential and High Density Residential areas.

High Density Residential (Mixed Residential)

The High Density Residential land use category is designed to accommodate a variety of residential uses which may be developed to densities ranging from two (2) or more dwelling units per acre. These uses include single-family, two-family, and multiple-family dwellings. Single-family uses include site condominiums and manufactured housing. The multiple family uses facilitate the opportunity for apartments, condominiums, and rooming houses. High Density Residential areas will require

municipal water and sewer services and/or other comparable forms of water and sewer services with approval by the municipality and District Health Department. Introducing other land uses may be possible within High Density Residential areas through the use of land development tools found in the Otsego County Zoning Ordinance.

Residential Recreational

The Residential Recreational land use category is designed to accommodate existing and future single-family development on waterfront properties with an allowed density of one (1) unit per one (1) acre or as approved by the District Health Department. These areas may require municipal water and sewer services systems and/or other comparable forms of water and sewer services with approval by the municipality and District Health Department. Additional land uses may be possible in Residential Recreational areas through the use of land development tools found in the Otsego County Zoning Ordinance. Where municipalities provide water and sewer service and / or other comparable form of water and sewer service with approval by the municipality and the District Health Department higher density may be allowed.

Commercial

Retail / Business / Office (Mixed Use)

The Retail / Business / Office land use category includes areas with small-scale retail stores, businesses, personal services, professional offices, food services, lodging facilities, residential, and light-manufacturing. When adjacent to residential neighborhoods, these areas shall include buffering and screening techniques to maintain the integrity of the residential area and minimize any negative impacts. Appropriate pedestrian access from nearby residential neighborhoods and commercial areas shall also be provided whenever possible.

Large Commercial

The Large Commercial land use category includes areas designated for commercial developments larger than those typically found in the Retail / Business / Office land use category. Large Commercial uses are also primarily automobile dependent. Uses which are consistent with these areas include, but are not limited to, large retail service establishments (e.g. shopping centers / home improvement centers) or clusters of small retail and service businesses accompanied by large parking lots. These areas will require municipal water and sewer services and/or other comparable forms of water and sewer services with approval by the municipality and District Health Department.

Highway Interchange Commercial

The Highway Interchange Commercial land use category includes areas designated for commercial development which are primarily Interstate access dependent. This district primarily serves thru traffic and tourist needs. Uses that are consistent with these areas include, but are not limited to, gasoline stations, lodging facilities, entertainment facilities, restaurant facilities, and similar tourist related developments, as well as warehouses, storage buildings, wholesale facilities and other similar uses. The automobile dependent uses should ideally be located along roadways, with the other

larger Interstate dependent uses located behind and accessed by service drives. These areas may require municipal water and sewer services and/or other comparable forms of water and sewer services with approval by the municipality and District Health Department.

Industrial

The Industrial land use category is designated for, but not limited to, wholesale facilities, warehouses, manufacturing facilities, mechanical repair shops, and other similar industrial related uses. With appropriate buffering and screening, this category may be sited adjacent to compatible uses.

Urban Growth Area

The Urban Growth Area land use category consists of land adjacent to the incorporated municipalities of the county that are targeted for expansion to limit sprawl, promote infill and protect the ground water of Otsego County. All properties within the Urban Growth Area shall have or be planned to have infrastructure which includes, but is not limited to, sewer and water services and pedestrian connections. The Urban Growth Area is intended to be substantially developed of specific land use categories within its parameters before entertaining any proposed expansions of the designated boundary. Appropriate land uses within the Urban Growth Area include, Retail / Business / Office, Large Commercial, Highway Interchange, Commercial, Industrial, Medium Density Residential, High Density Residential (Mixed Residential) Recreation, and Governmental Institutional. Each of these uses shall have appropriate placement within the Urban Growth Area and / or appropriate buffering and screening to prevent conflicts between incompatible adjacent uses. As the Urban Growth Area is comprised of a variety of compatible uses, the Urban Growth Area is intended to be created through the use of an overlay district within the zoning ordinance.

Town Centers (Mixed Use)

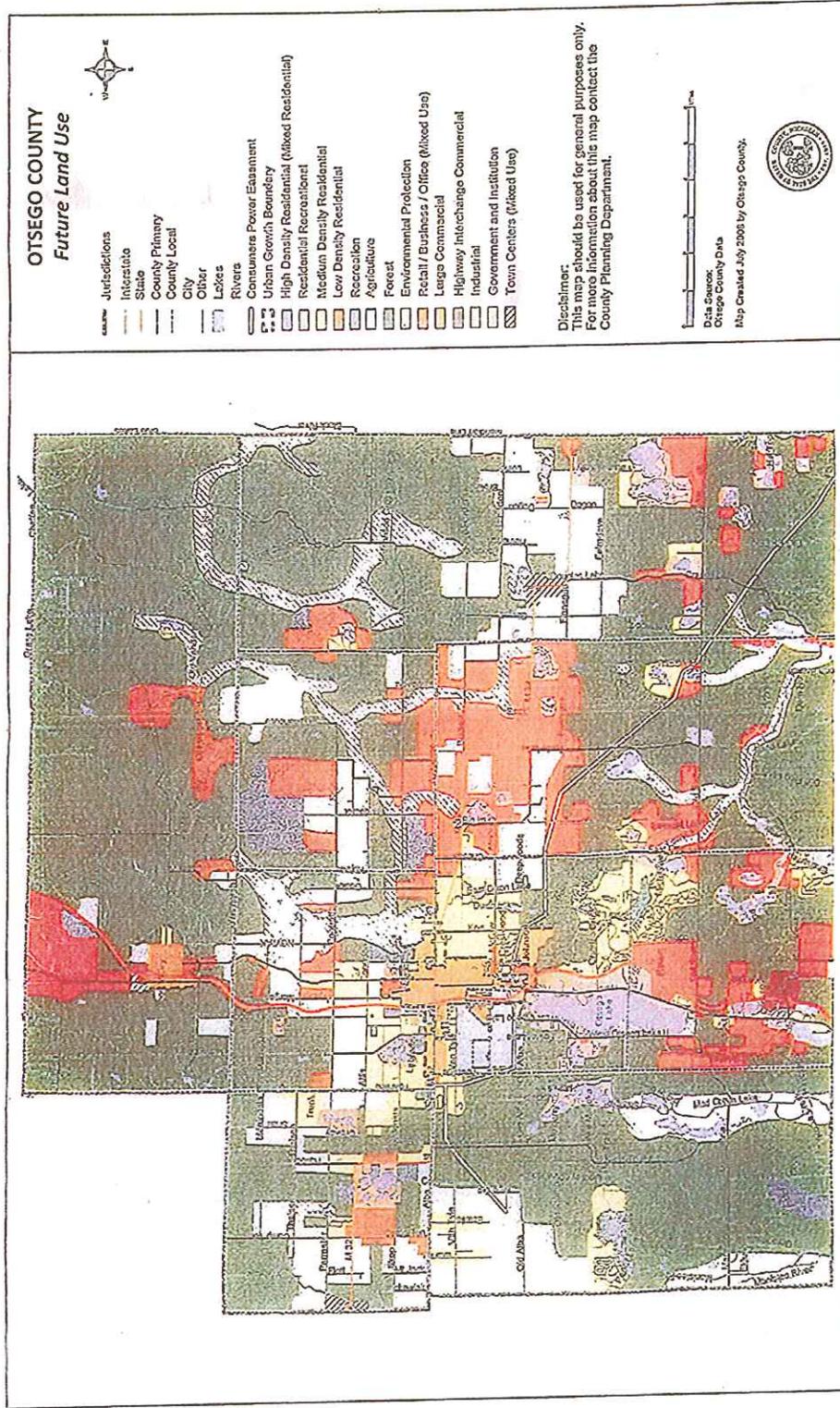
The Town Centers land use category is a predominately residential center supported by limited commercial and community services near the center. The commercial uses and community services should support day to day needs of residents, such as post offices, churches, schools, restaurants, taverns, gas stations, or other small shops catering to local needs and supporting adjacent resource uses. The commercial and residential uses are not clearly separated from each other and are compact to create a comfortable walking range (about a ½ mile radius). Overall, a Town Center is small, consists of high density development, and is readily distinguishable from surrounding undeveloped lands. Since municipal water and sewer service most commonly will not be available, individual well and septic systems and/or a satellite system (water and sewer) could be utilized with approval by a municipality and the District Health Department. If satellite systems are included in the development, they may be turned over to the municipality following construction. Maintenance of the satellite systems could be financed by user fees and/or special assessments.

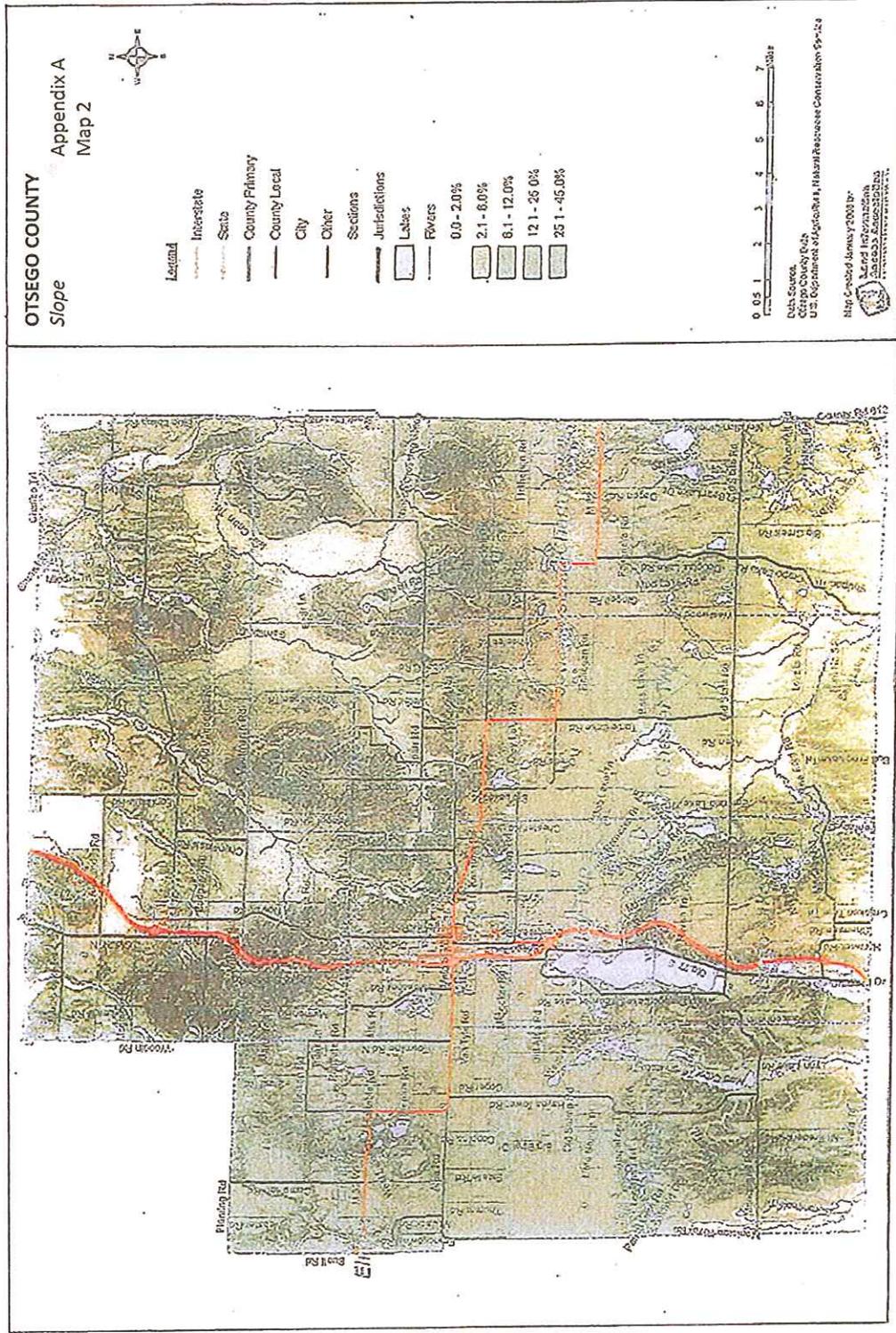
Government and Institutional

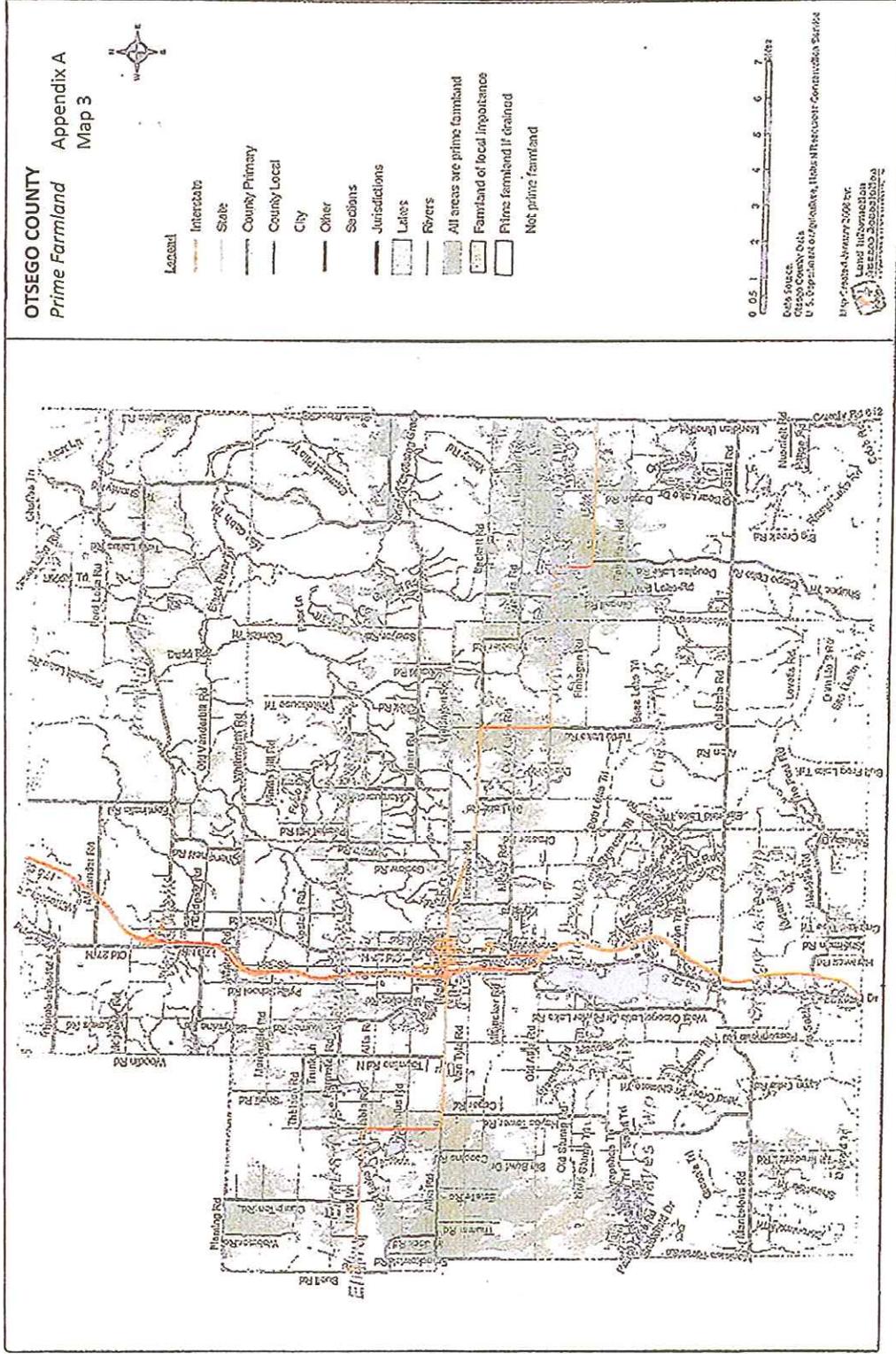
The Government and Institutional land use category is comprised of facilities owned by the federal, state, or local governments, as well as institutional facilities. Land uses in this category serve the public interest and include, but are not limited to, health care, educational, recreational, correctional, and military facilities; religious institutions; cemeteries; airports; and fairgrounds.

Appendix A

This appendix contains figures and maps referenced throughout the document. The format and/or size of these items prevented them from being inserted directly in to the document text.

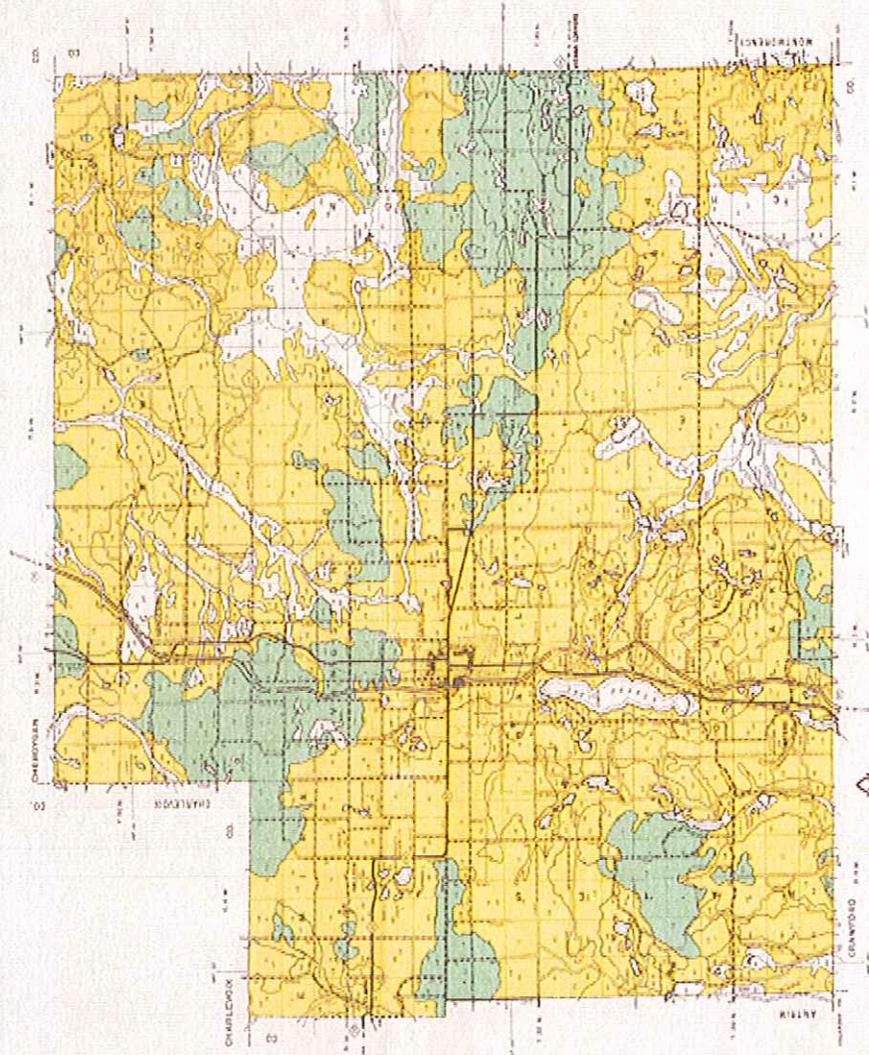






Prime Forest Lands Map Otsego County

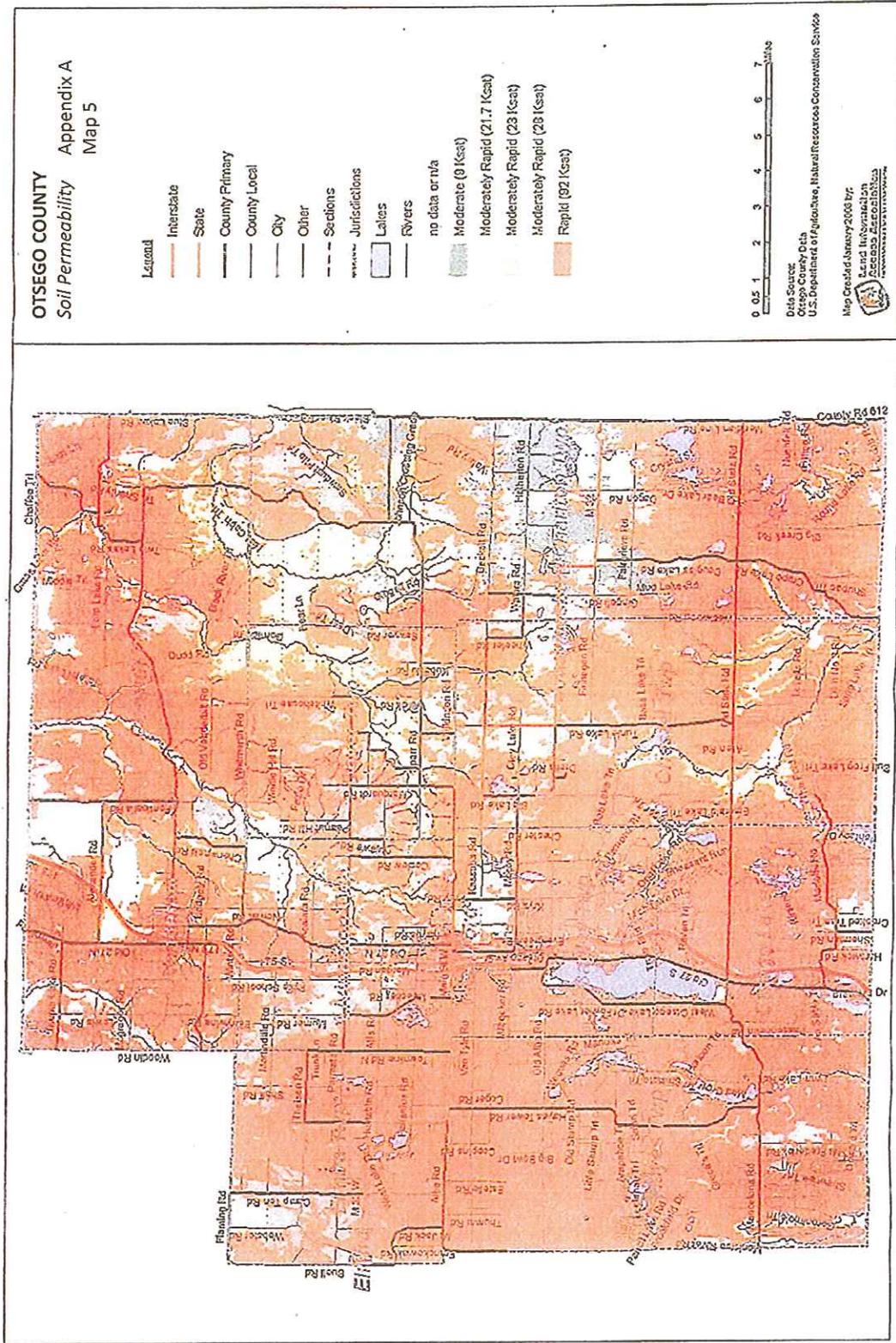
OTSEGO COUNTY
Prime Forestland
Appendix A
Map 4

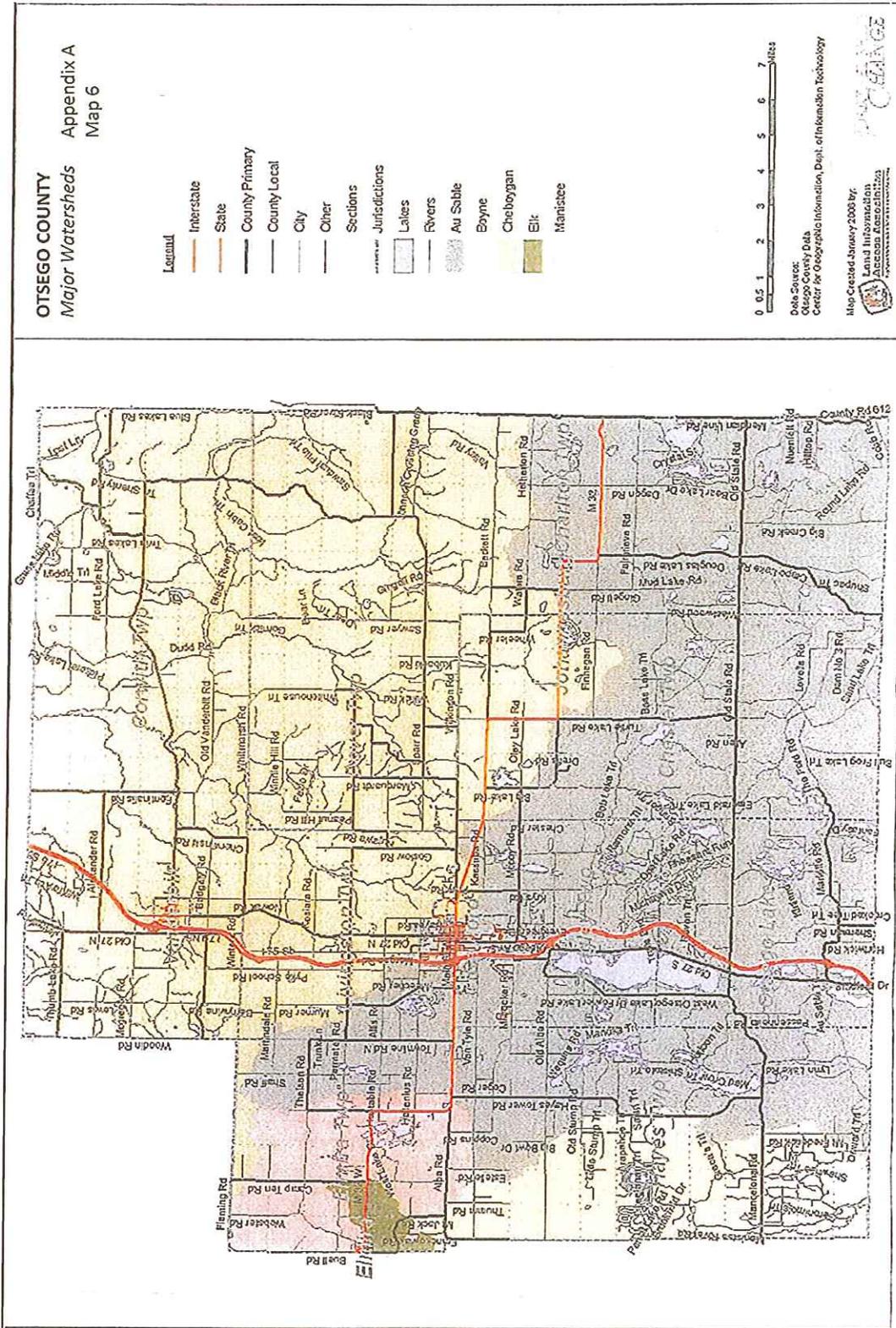


■ Nationally Important Timberland
■ Locally Important Timberland

Legend	Area (Acres)	Percentage of Total
Nationally Important Timberland	1,000	1.0%
Locally Important Timberland	10,000	10.0%
Other Forestland	90,000	90.0%
Total Forestland	101,000	100.0%

NORTHWEST MICHIGAN PRIME FORESTLANDS
 Project: Prime Forestland, Conservation and
 Planning
 Prepared by: [Firm Name]
 Date: 2014





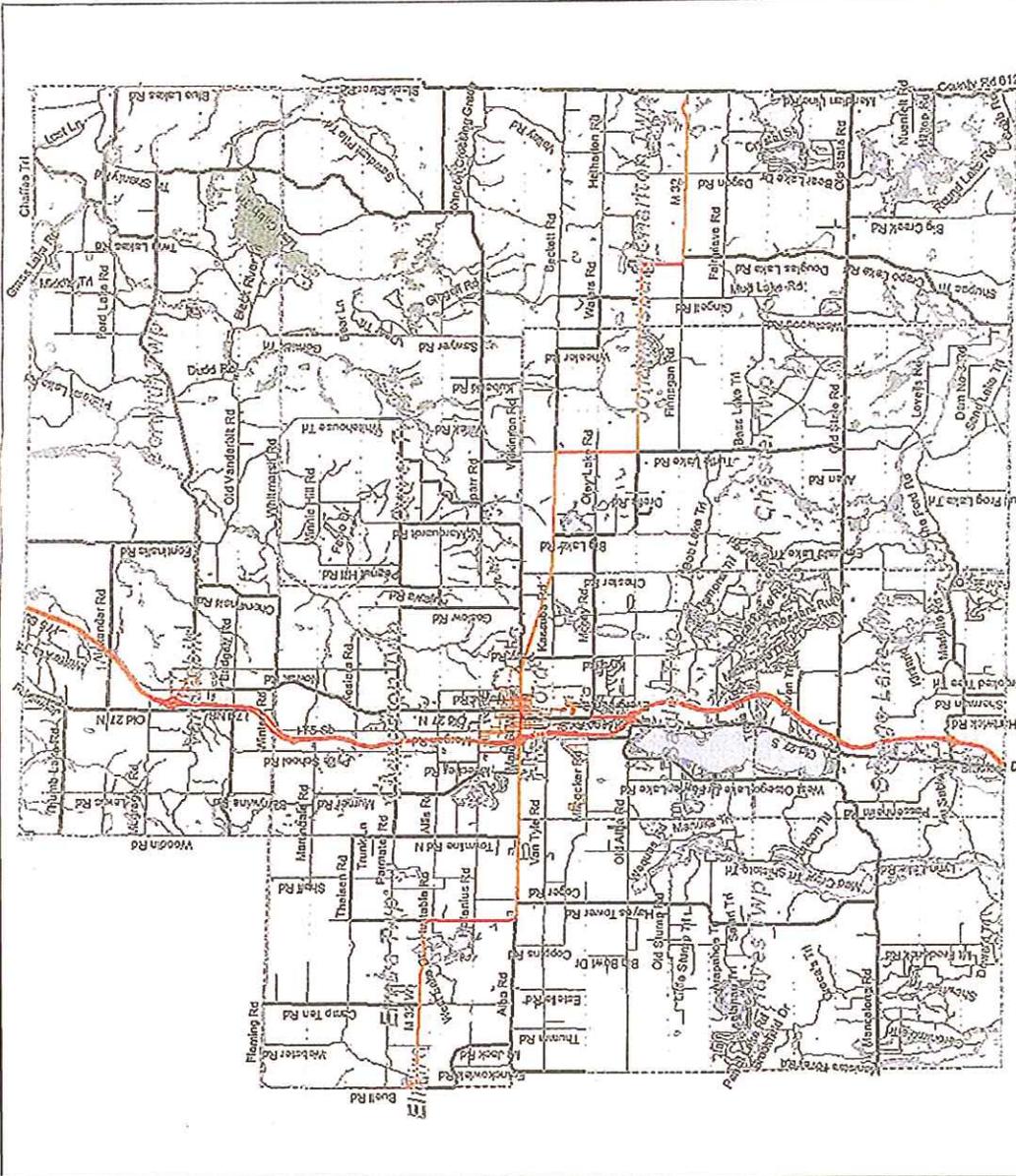
OTSEGO COUNTY
2003 Wetlands
 Appendix A
 Map 7

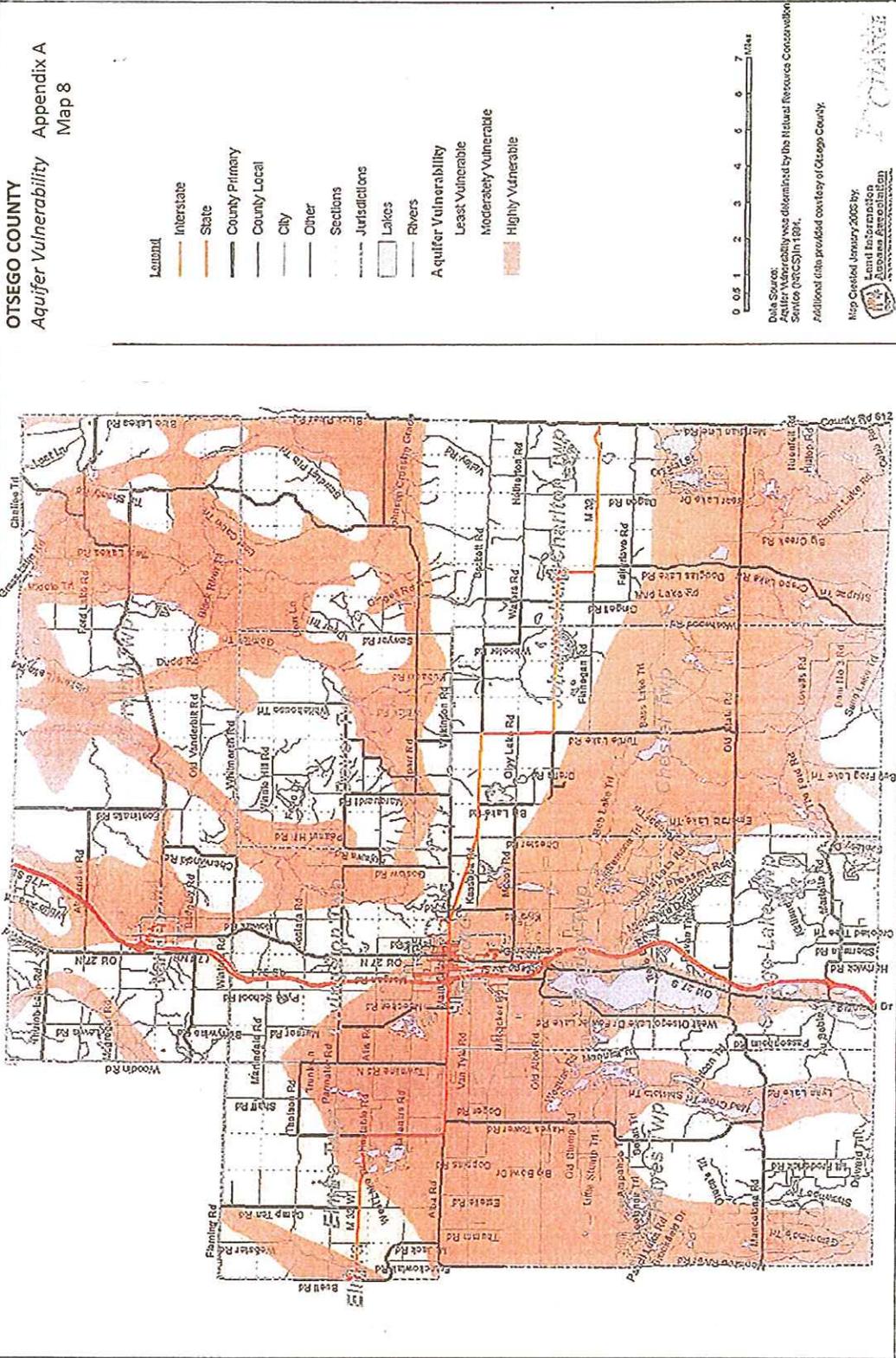
- Legend**
- Interstate
 - State
 - County Primary
 - County Local
 - City
 - Other
 - Sections
 - Jurisdictions
 - Lakes
 - Rivers
 - Wetlands

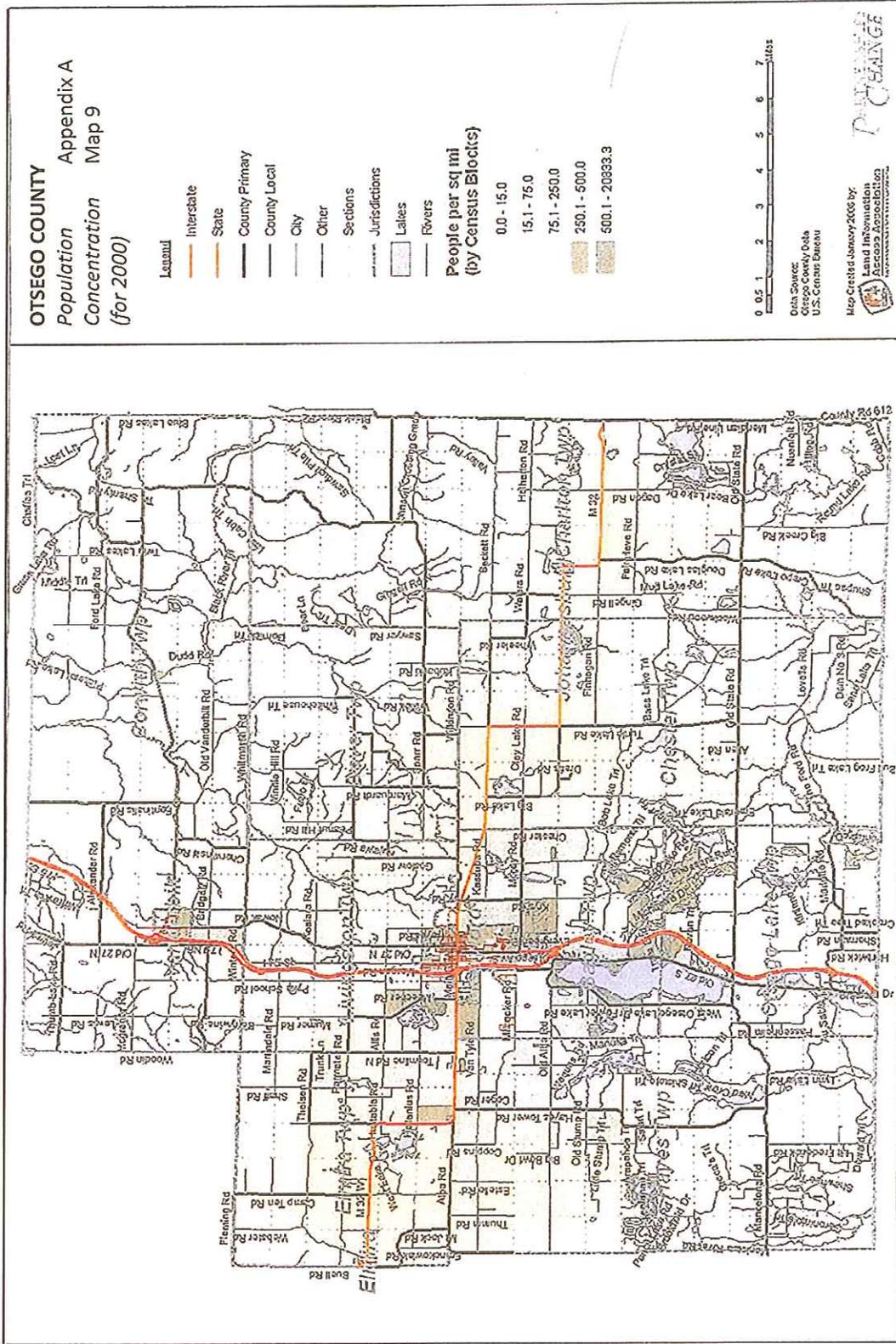


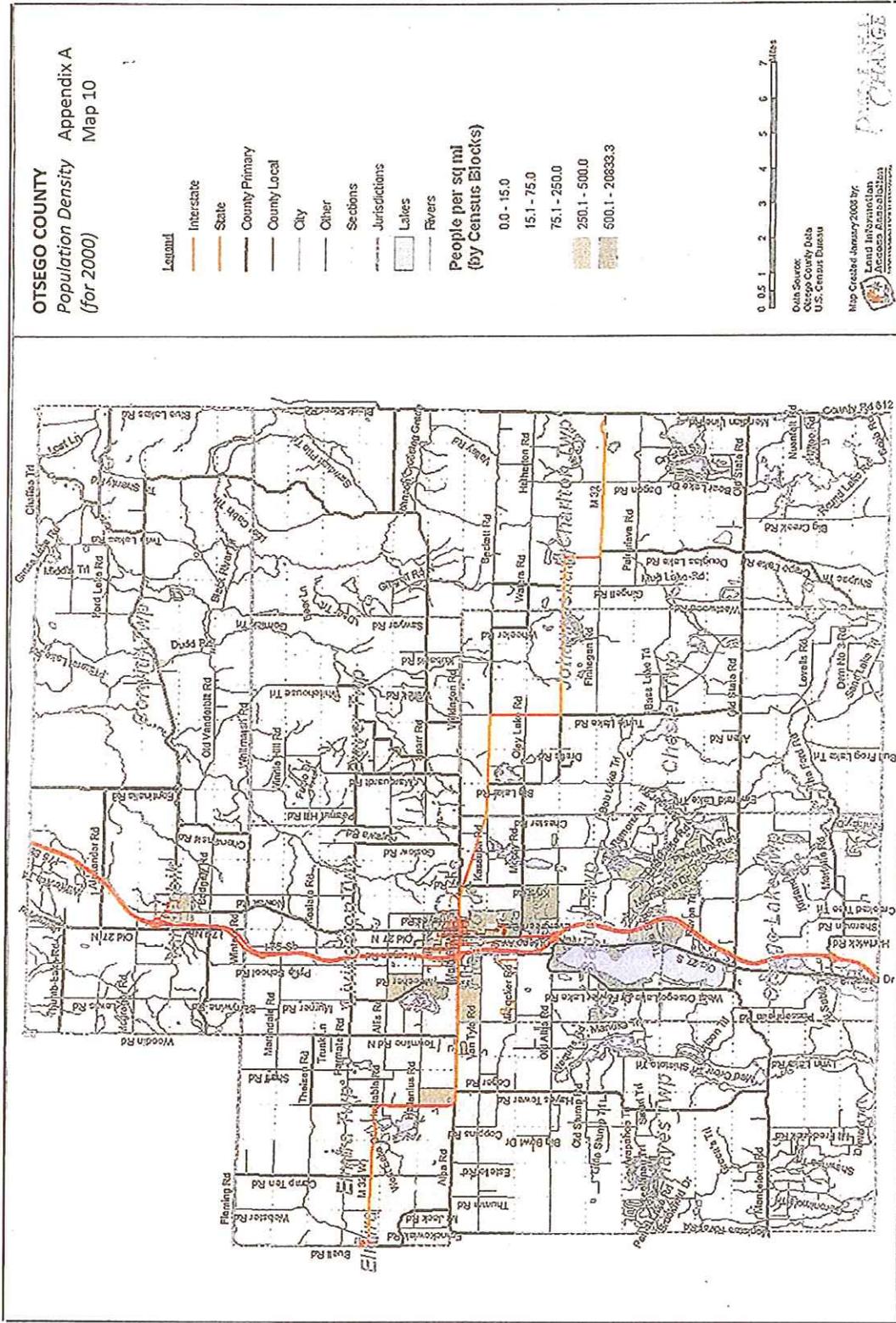
Data Source:
 Otsego County Data
 Center for Geographic Information, Dept. of Information Technology
 2003 Land Use Information provided by LMA

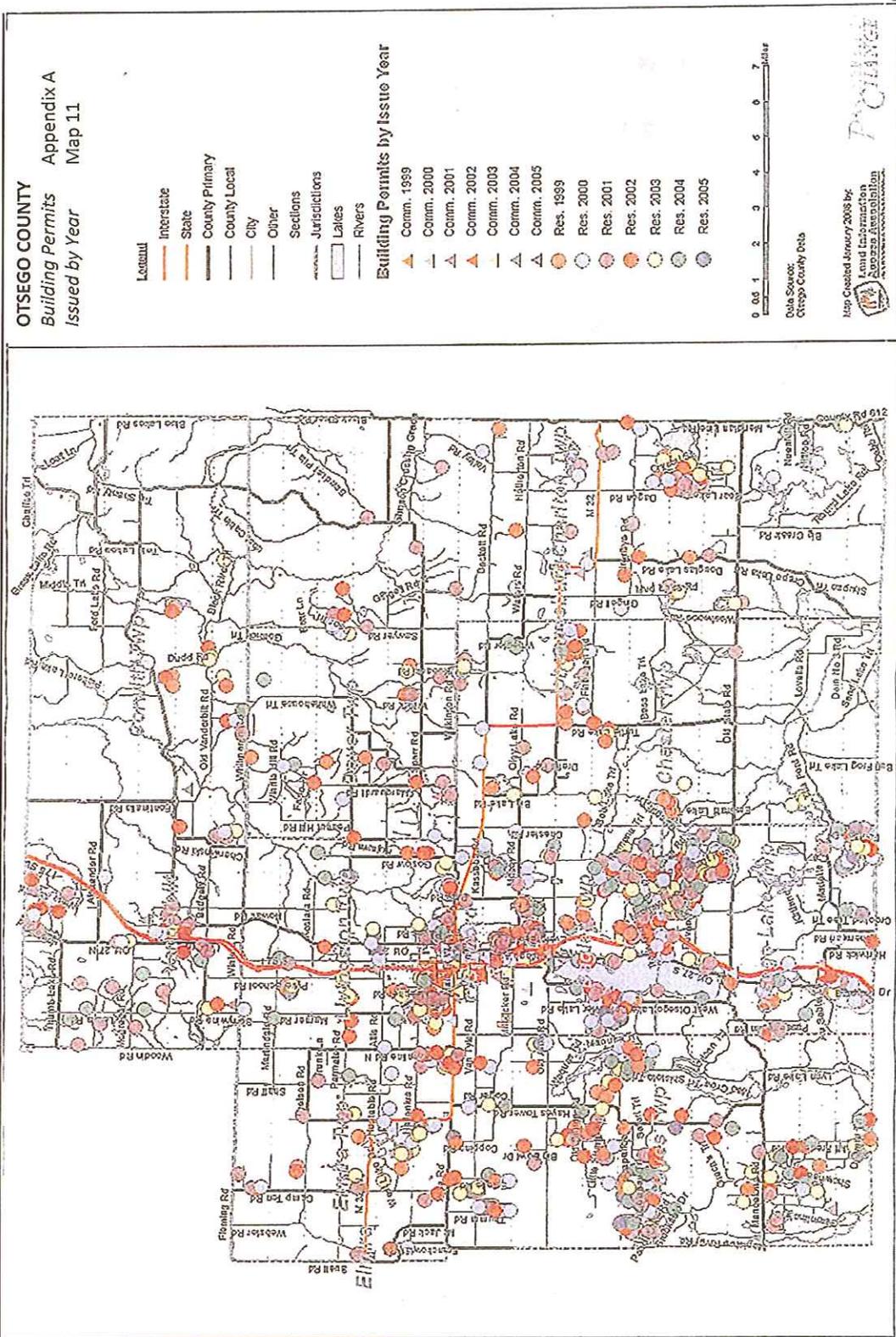
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 Access Association

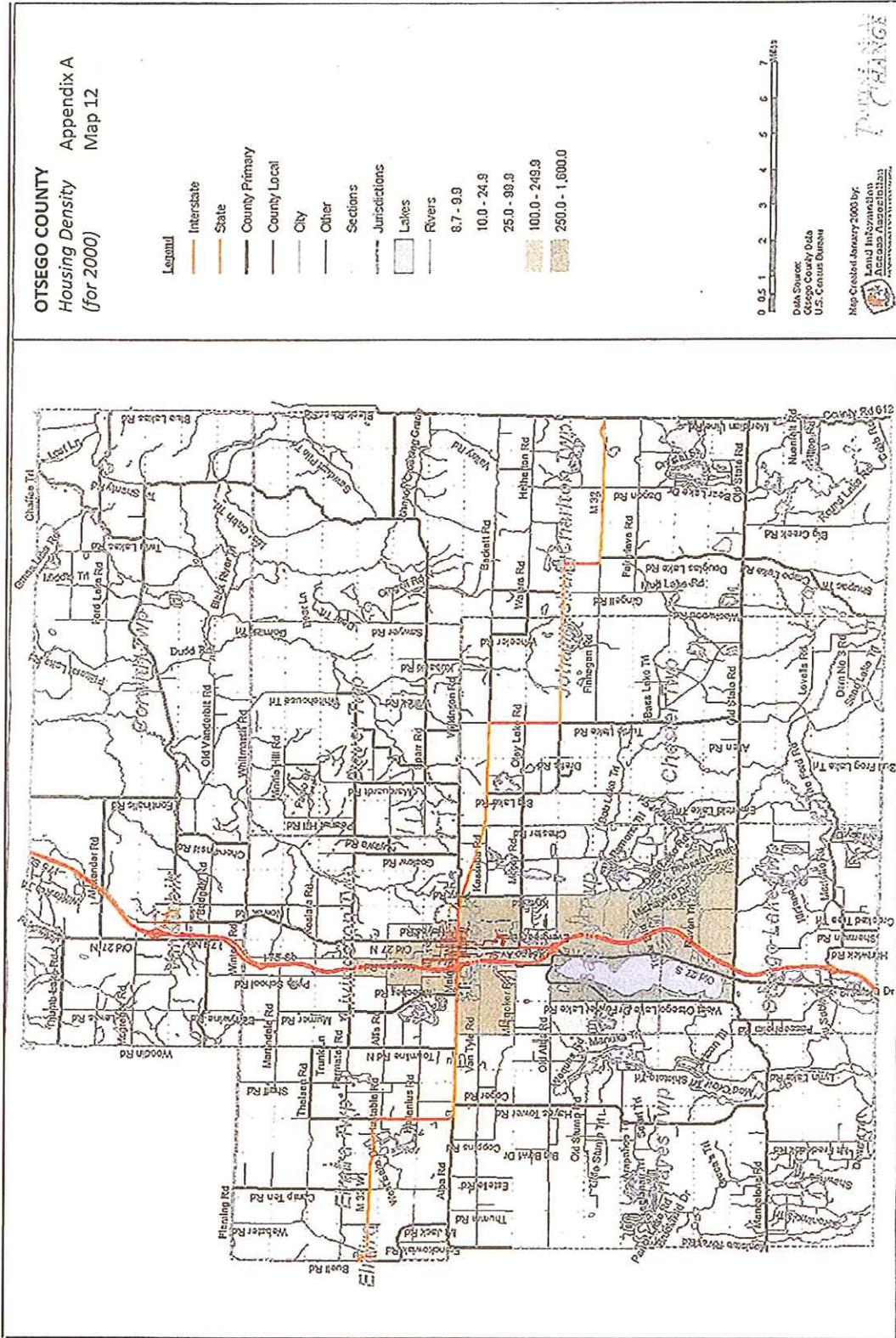


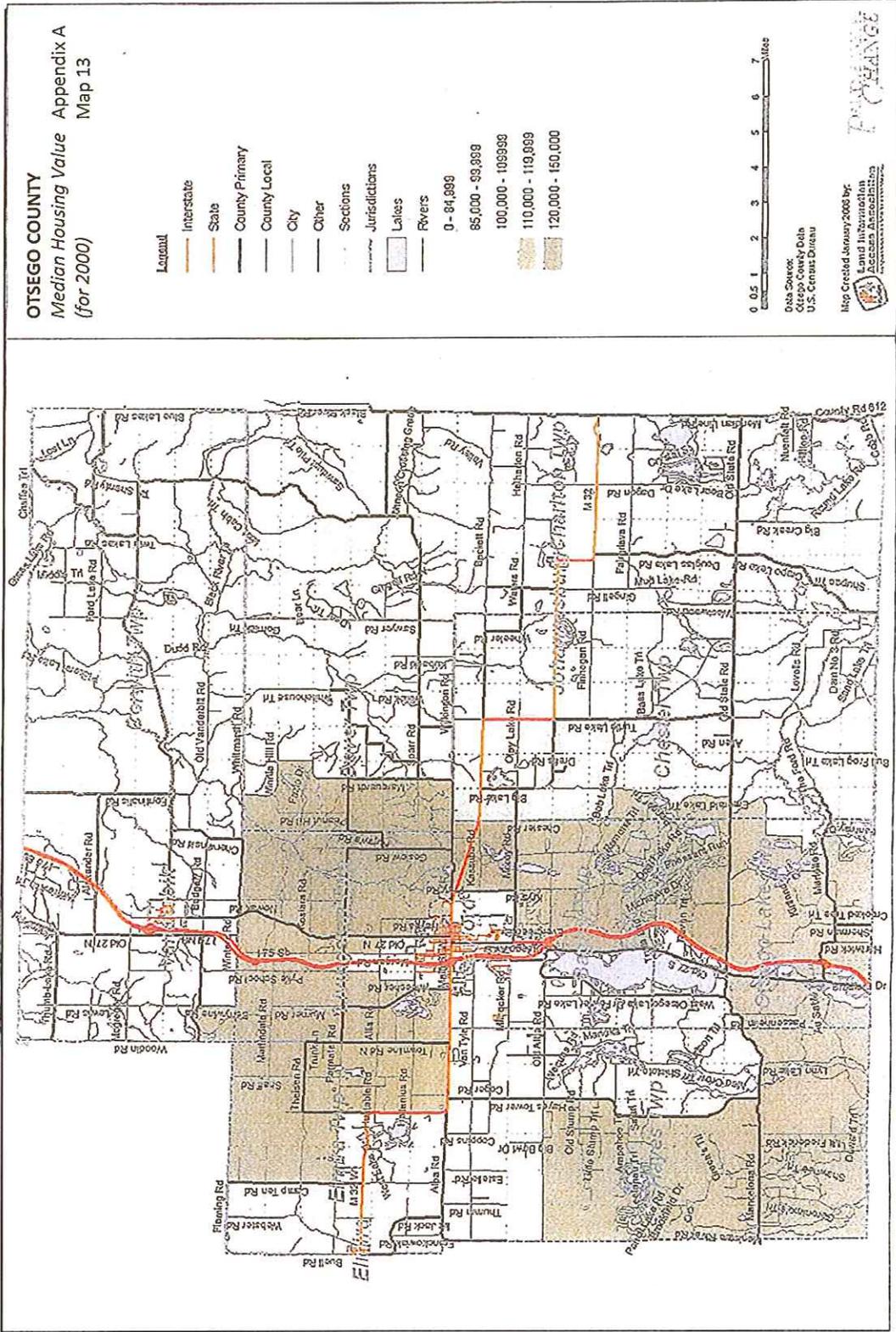


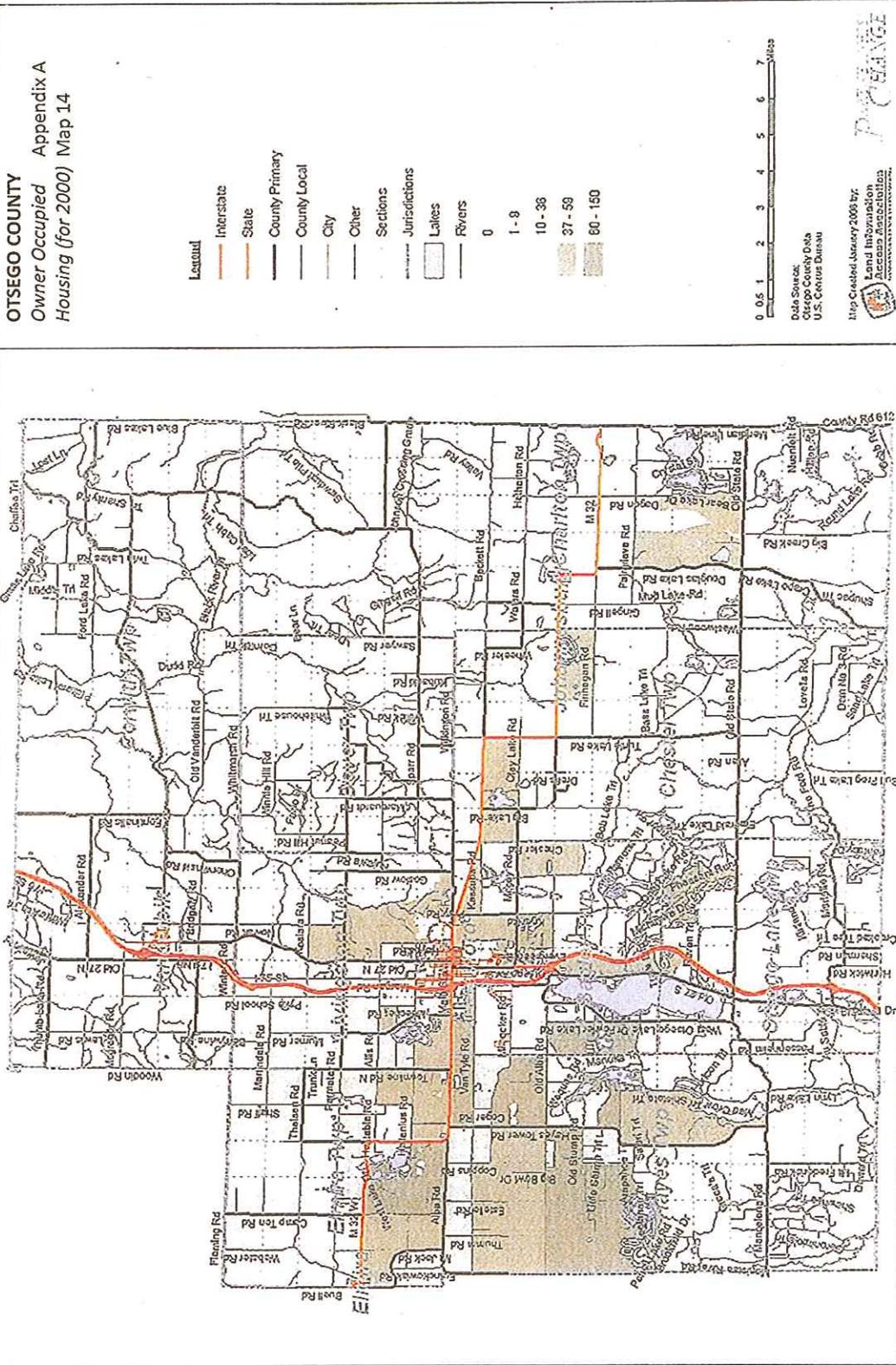












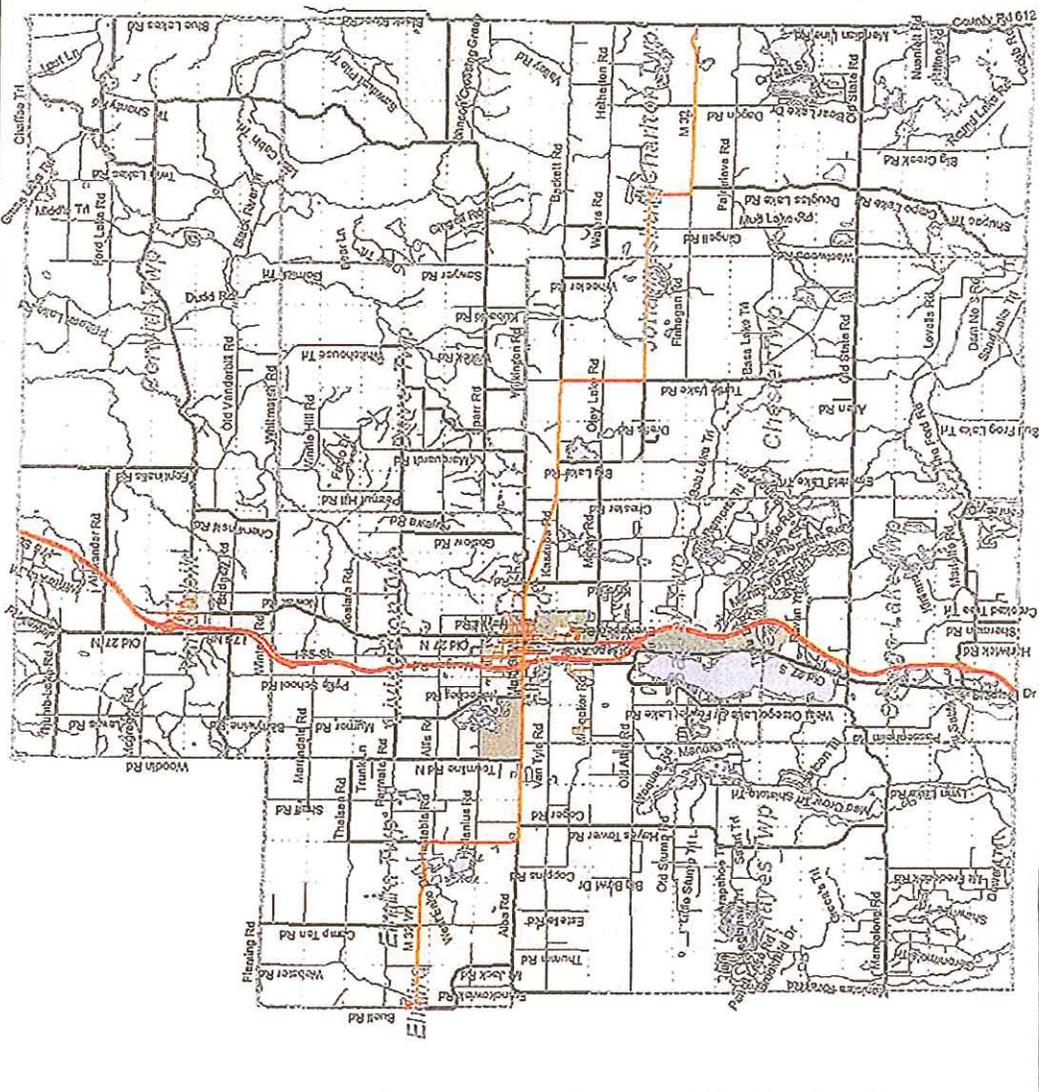
OTSEGO COUNTY
Renter Occupied Appendix A
Housing (for 2000) Map 15

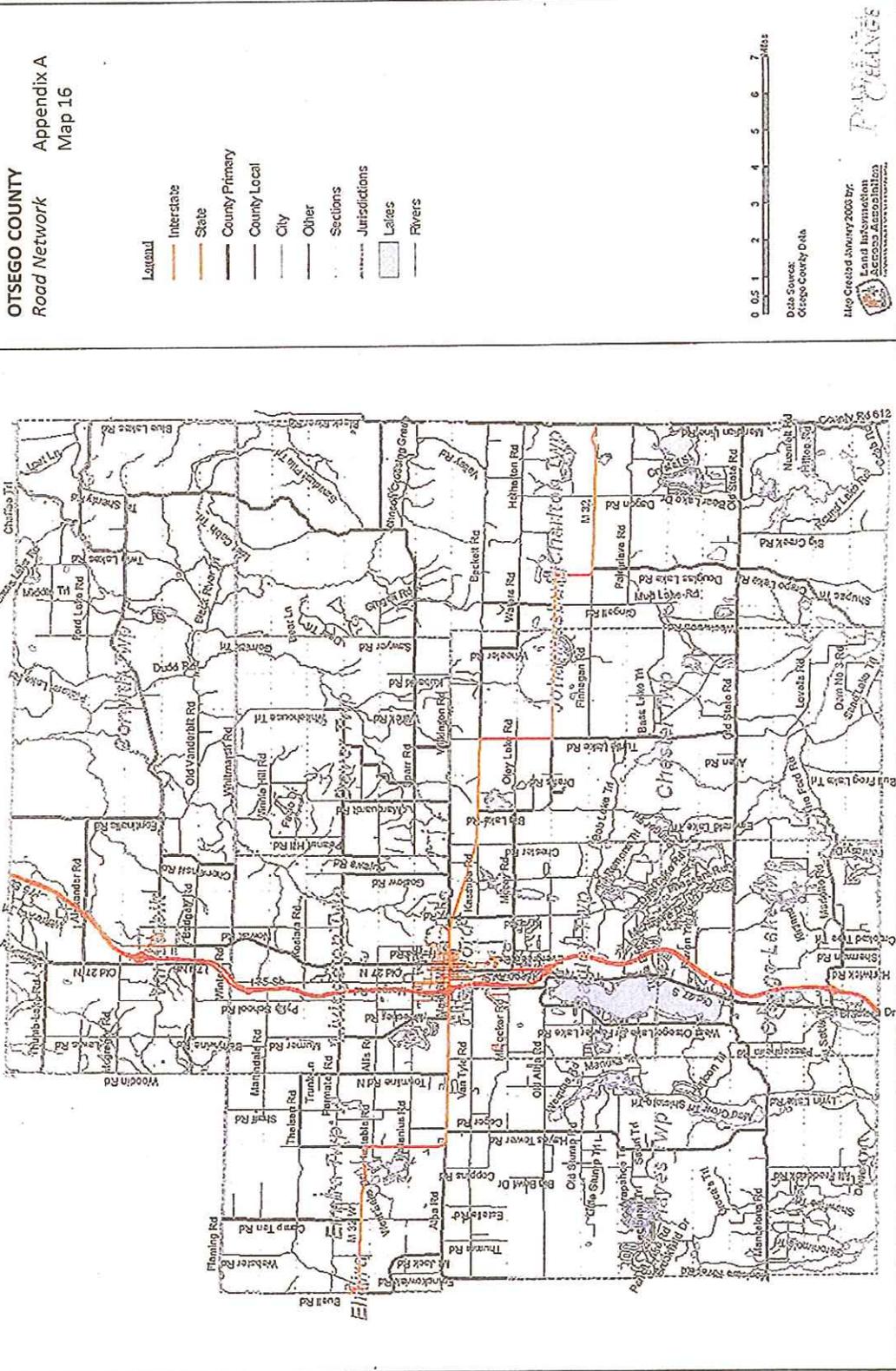
- Legend**
- Interstate
 - State
 - County Primary
 - County Local
 - City
 - Other
 - Sections
 - Jurisdictions
 - Lakes
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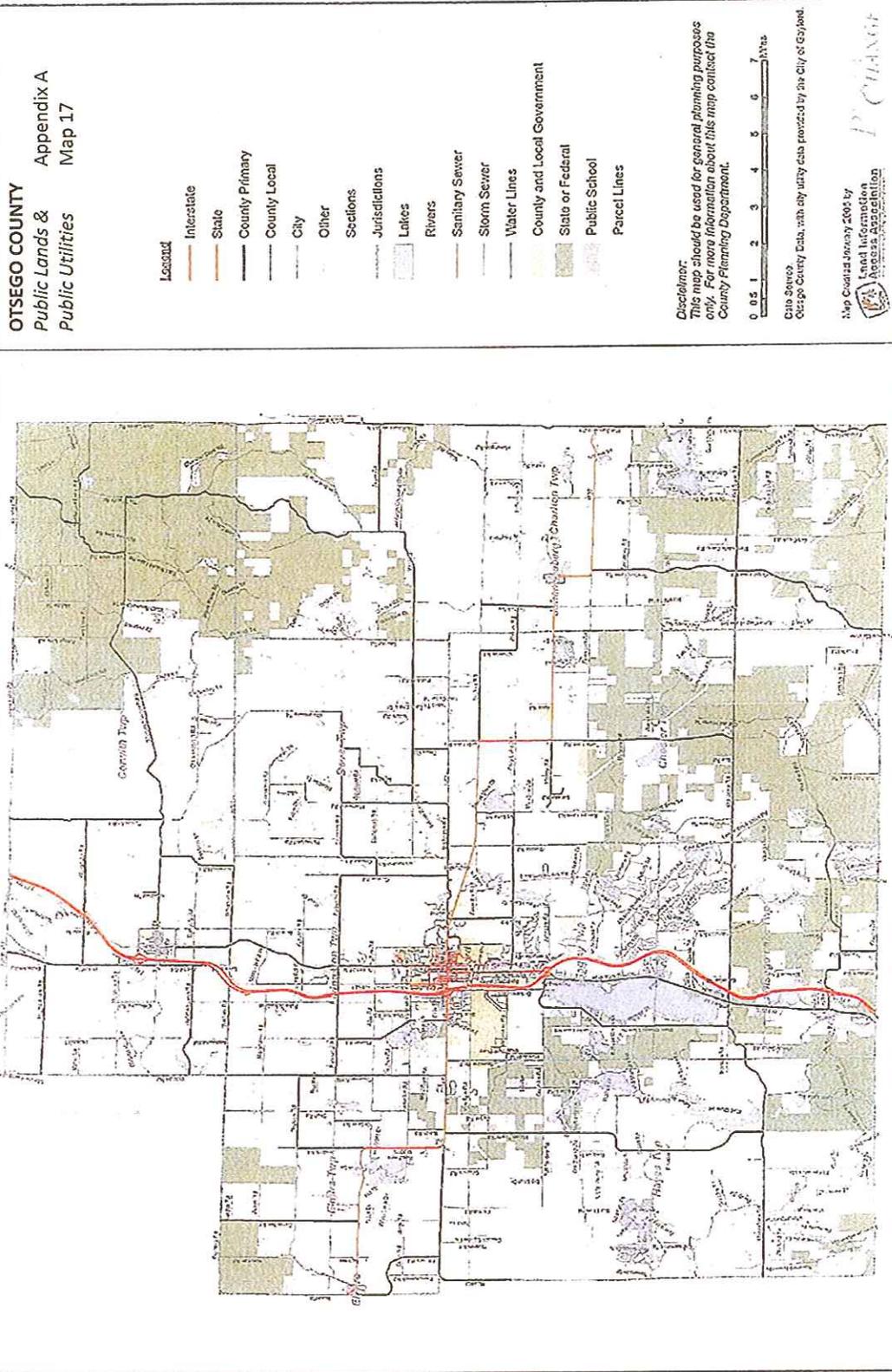


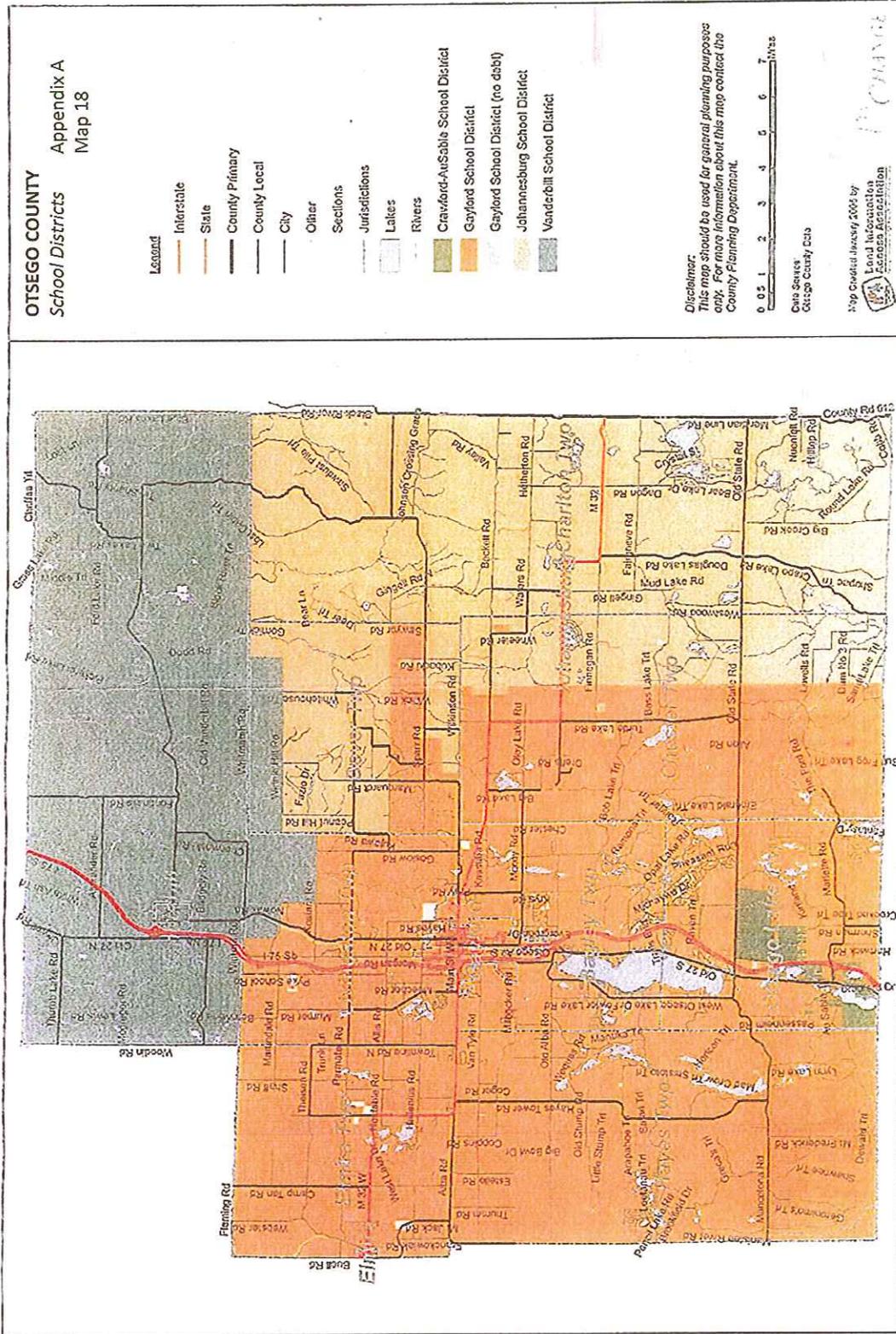
Data Source:
 Otsego County GIS
 U.S. Census Bureau

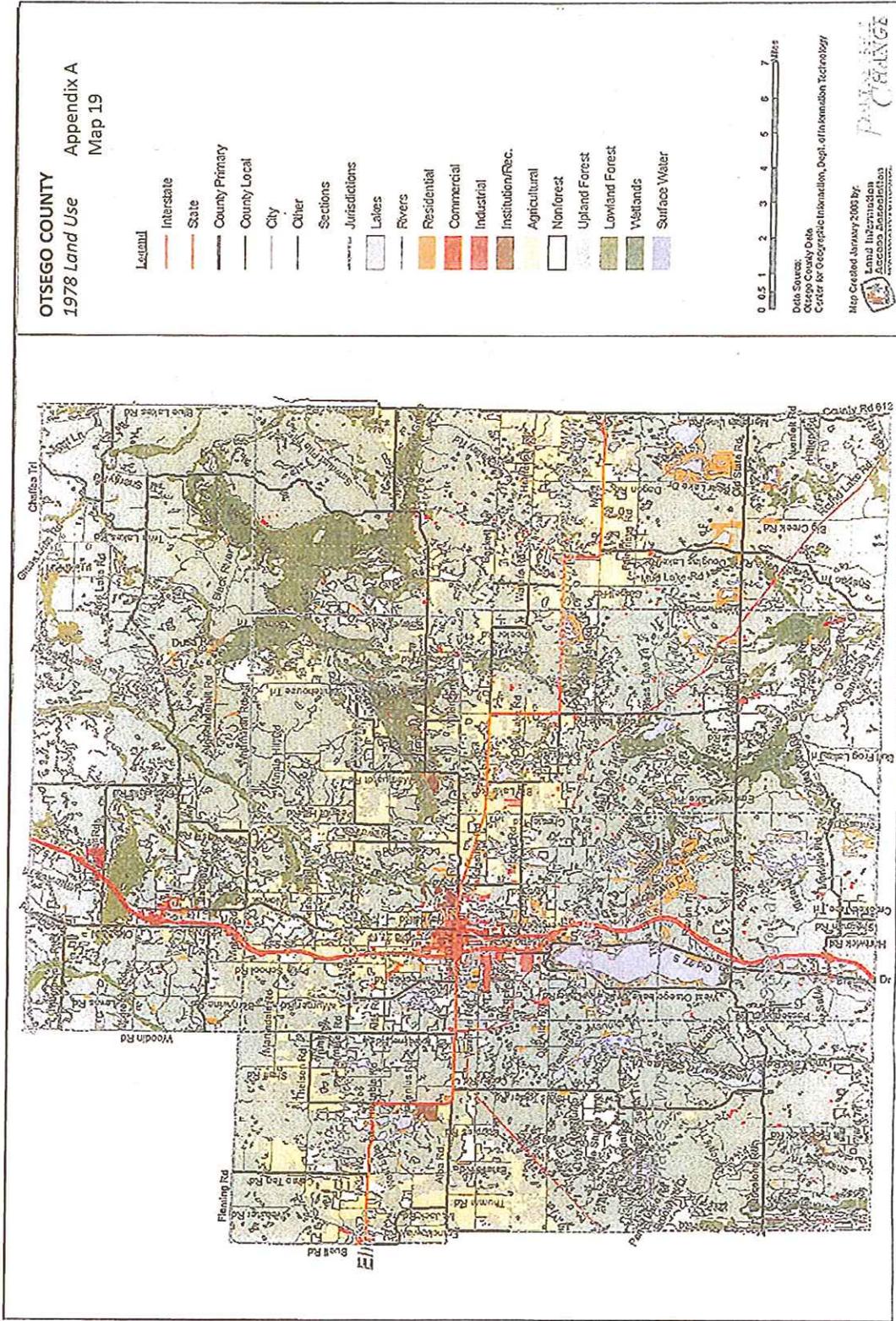
Map Created January 2008 by:
 Land Information
 Access Association
 www.landaccess.org

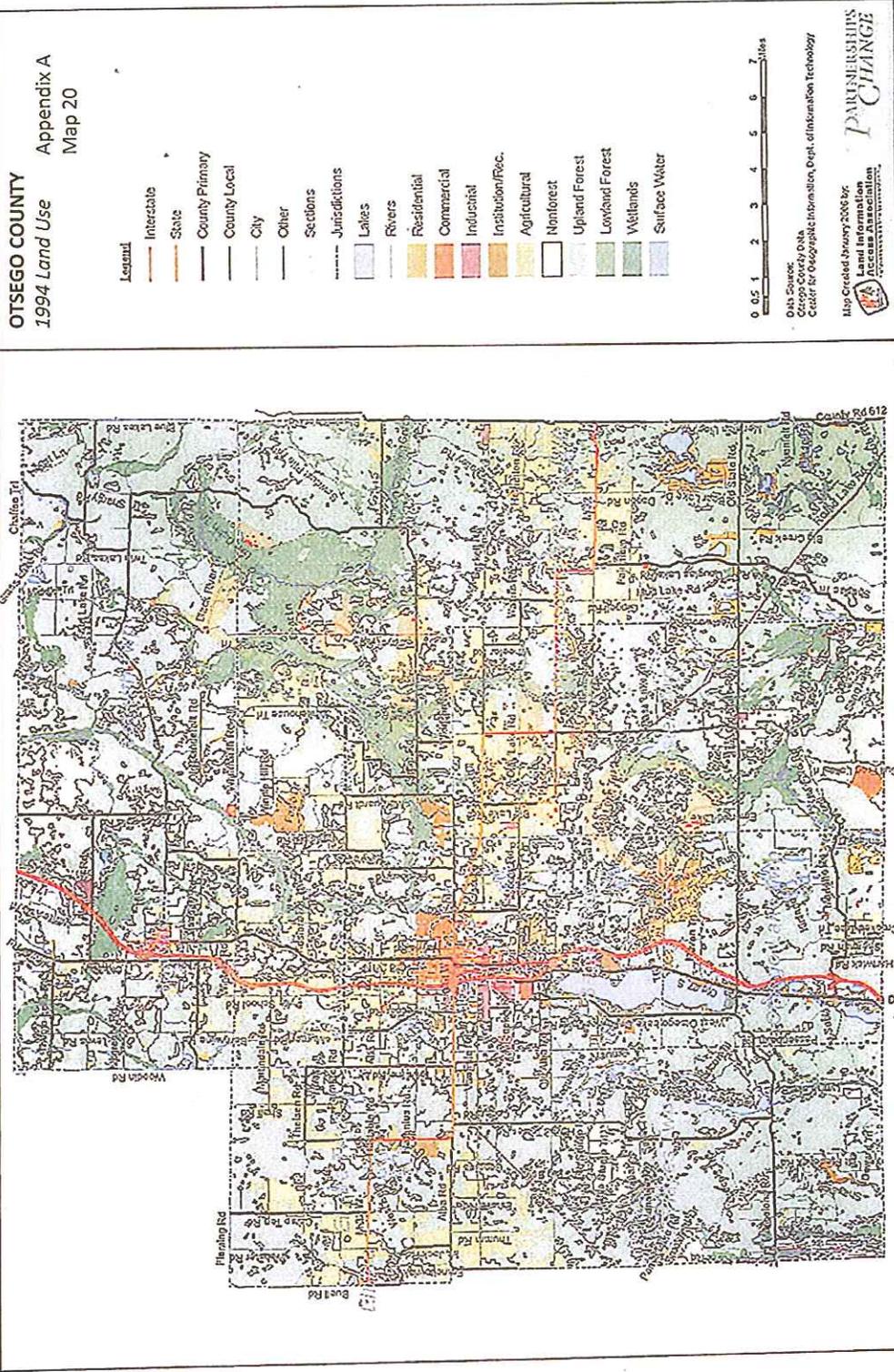


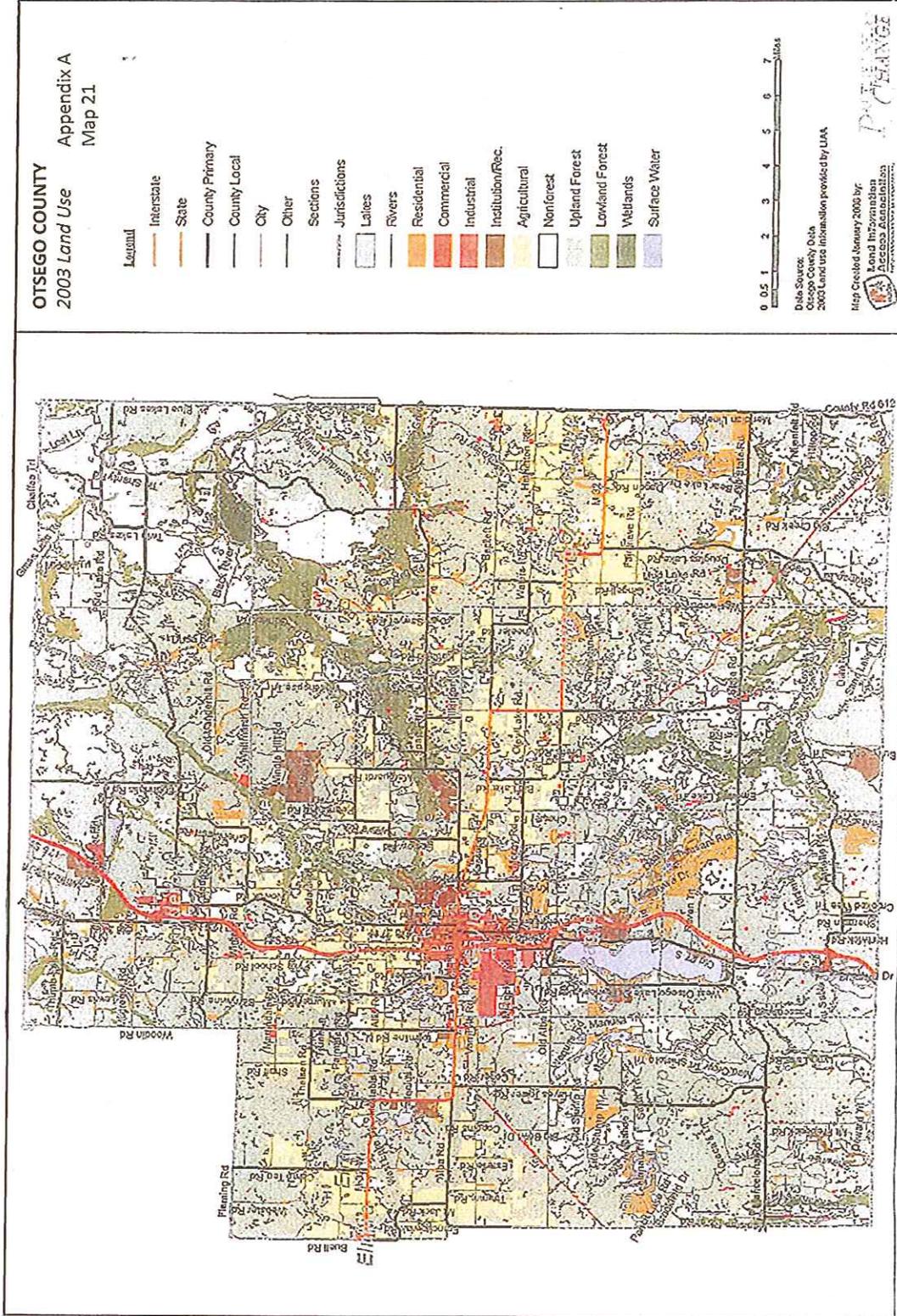


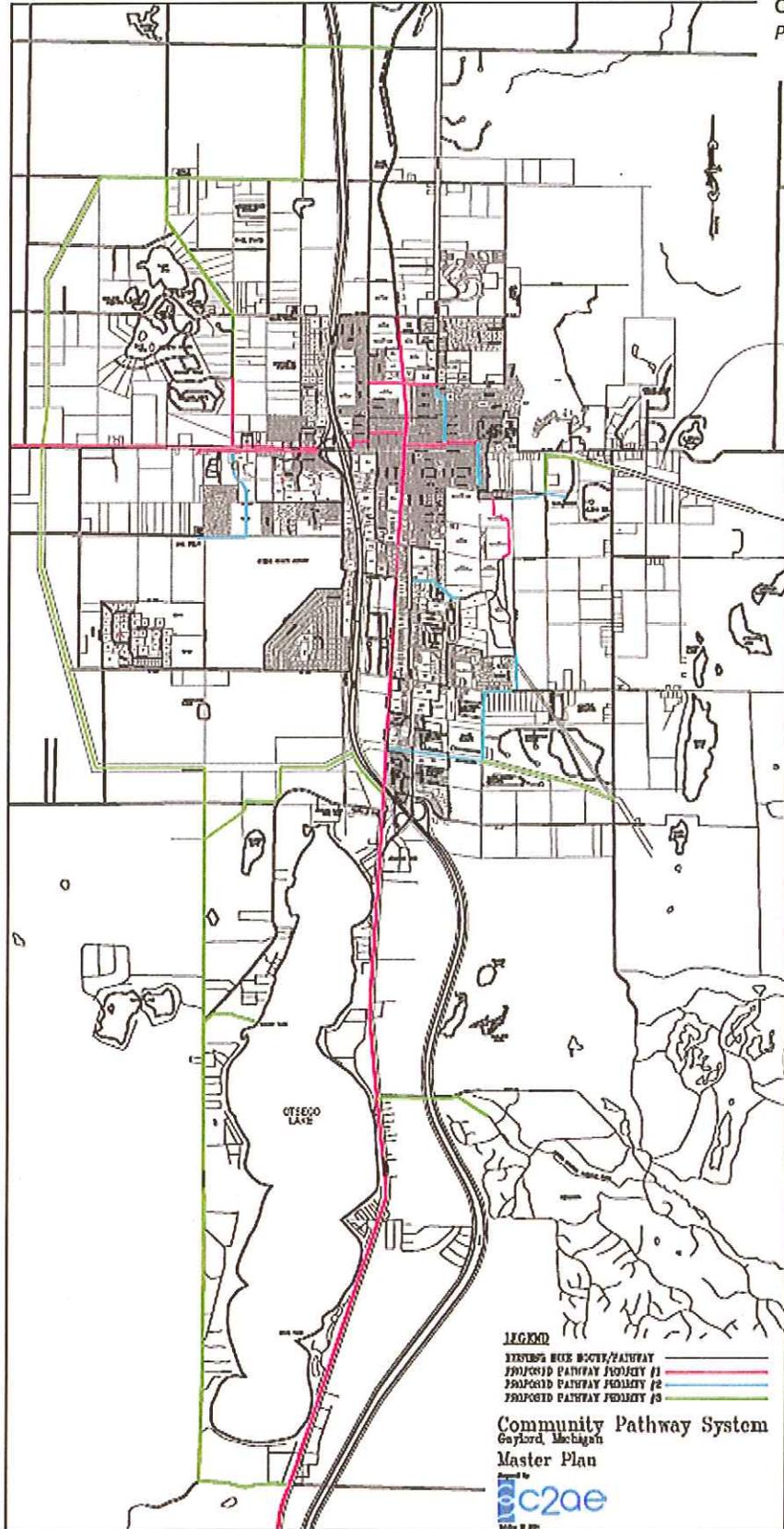












Appendix B

Nonpoint source pollution impacts to major watersheds

Black River Watershed:

The following road/stream crossing erosion sites were identified in 2002 Black Lake Watershed Nonpoint Source Management Plan:

- Gingell Road, Charlton Township
- Sparr Road, Charlton Township
- Johnson Crossing Road, Charlton Township
- Tin Shanty Road, Charlton Township
- Blue Lakes Road, Charlton Township

Pigeon River Watershed:

A water quality study of the Pigeon River in the summer of 1984 by Department of Natural Resources (DNR) staff stated that the river is classified as a cold water fishery with very high water quality. Impacts identified in the Mullet Lake Watershed Nonpoint Source Management Plan include:

- Erosion at road crossing of:
Marquardt Road at Pigeon River;
Sparr Road at Pigeon River and Duck Creek;
Whitehouse Road at Pigeon River
Stream bank erosion site located in the east part of Corwith Township in Section 17
- Lack of greenbelts and poor isolation distances at existing riverfront residences
- Prevalence of private ownership in headwaters (extremely sensitive area) and proximity to Gaylord may lead to land development practices adversely affecting the quality of the water resources.
- Close proximity of oil and gas wells
- Commercial development (golf course) impacts on headwaters

Sturgeon River Watershed:

The Sturgeon River is a high quality trout stream used extensively for recreational purposes. Impacts identified in the Mullet Lake Nonpoint Source Management are:

- Future development potential of the headwaters area due to present private ownership
- Erosion sites at road stream crossing and stream banks
- Runoff from Whitmarsh Road
- Agricultural concerns between Poquette and Whitmarsh Roads

Manistee River Watershed:

- Erosion site at Mancelona Road Crossing

Au Sable River Watershed:

- Sediment impacts due to two (2) traffic crossings of the North Branch of the Au Sable River

Resources & Documents-used to create the Otsego County Master Plan

Current Master Plan 2009

2010 United States Census

American Community Survey 2012

Michigan Department of Technology, Management & Budget

State of Michigan Department of Environmental Quality 2012

US Department of Agriculture

Northeast Michigan Council of Governments

Midwest Regional Climate Center

Elmira Township Master Plan 2013

Livingston Township Comprehensive Plan

Otsego Lake Township Master Plan 2006

Otsego Lake Township Strategic Plan Report

City of Gaylord Zoning Ordinance

I-75 Scenic Corridor Study

M-32 Old 27/I-75 Corridor Study

Otsego County 1997 Comprehensive Plan

Otsego County Hazard Mitigation Plan

Otsego County Zoning Ordinance

Fact Book

Michigan Department of Transportation/Otsego County Road Commission

Northeast Michigan Prime Forestlands Project 1982

C2AE-Architecture, Engineering, Planning