

OTSEGO COUNTY MASTER PLAN



2009

June 9, 2009

The Regular meeting of the Otsego County Board of Commissioners was held in the County Building at 225 West Main Street, Room 100. The meeting was called to order at 9:30 a.m. by Chairman Glasser. Invocation by Chairman Glasser, followed by the Pledge of Allegiance led by Commissioner Bates.

Roll call:

Present: Bates, Beachnau, Brown, Glasser, Harkness, Hyde, Johnson, Liss.

Excused: Backenstose.

The regular minutes of May 26, 2009 with attachments were approved as presented.

The agenda was amended to add under new business item G) OCR-09-21 Rudi Edel recognition.

Consent Agenda:

Motion to approve the budget calendar as presented. Ayes: Unanimous. Motion carried. (see attached)

Motion to approve the family medical leave act policy update as presented. Ayes: Unanimous. Motion carried. (see attached)

Motion to approve the FY 2009 Contingency/Commissioners fund budget amendment as presented. Ayes: Unanimous. Motion carried. (see attached)

Motion to adopt OCR-09-18 2009/2010 CEDS Project list as presented.

Roll Call Vote:

Ayes: Bates, Beachnau, Brown, Glasser, Harkness, Hyde, Johnson, Liss.

Nays: None.

Excused: Backenstose.

Motion carried/Resolution adopted. (see attached)

Motion to adopt OCR-09-19 Trail Study Support as presented.

Roll Call Vote:

Ayes: Bates, Beachnau, Brown, Glasser, Harkness, Hyde, Johnson, Liss.

Nays: None.

Excused: Backenstose.

Motion carried/Resolution adopted. (see attached)

Motion to adopt OCR-09-20 Broadband Support as presented.

Roll Call Vote:

Ayes: Bates, Beachnau, Brown, Glasser, Harkness, Hyde, Johnson, Liss.

Nays: None.

Excused: Backenstose.

Motion carried/Resolution adopted. (see attached)

Administrator's Report:

John Burt reported on the Courthouse lawn; Court Street property closing; County infrastructure meeting June 15th at 8:30 a.m. in room 212; Justice and Public safety meeting June 16th at 10:00 a.m. room 100; Recycling Committee; Weapons policy.

Motion by Commissioner Harkness, to adopt the recycling survey as presented and distribute the recycling survey to the citizens of Otsego County. Ayes: Unanimous. Motion carried.

Department Head Reports:

Suzy DeFeyer gave her report to the Board.

Joe Ferrigan gave his report to the Board.

Elizabeth Haus reported on the Village; Village election to be held in September; Elkland Center mortgage paid off.

New Business:

Motion by Commissioner Hyde, to approve the June 2, 2009 Warrant in the amount of \$1,246,531.20 as presented. Ayes: Unanimous. Motion carried.

Motion by Commissioner Brown, to approve the June 9, 2009 Warrant in the amount of \$215,382.05 as presented. Ayes: Unanimous. Motion carried.

Motion by Commissioner Bates, to rescind section 17, including 17.1 and 17.2 from the Board bylaws. Motion tabled.

Motion by Commissioner Beachnau, to approve the update to the County Commissioner Compensation policy. Ayes: Unanimous. Motion carried. (see attached)

Motion to amend Board Bylaws was removed from the table. Ayes: Unanimous. Motion carried.

Motion by Commissioner Johnson, to approve the update to the Otsego County Violence Free Work Place Policy, and to exempt Kyle Legel and the Sheriff's Department from the Otsego County Violence Free Work Place Policy and the Otsego County Weapons Policy as it relates to carrying a firearms with a concealed weapons permit. Ayes: Unanimous. Motion carried. (see attached)

Motion by Commissioner Harkness, to approve the Government Payment Service contract renewal. A motion to amend above motion by Harkness to add "to the cardholder" in the last sentence paragraph 4 after the word fees. Vote on amendment-Unanimous. Vote on amended motion-Unanimous.

Motion by Commissioner Harkness, to approve the Otsego County 2009 Master Plan. Ayes: Unanimous. Motion carried.

Motion by Commissioner Liss, to adopt OCR-09-21 Recognizing Rudi Edel.

Roll Call Vote:

Ayes: Bates, Beachnau, Brown, Glasser, Harkness, Hyde, Johnson, Liss.

Nays: None.

Excused: Backenstose.

Motion carried/Resolution adopted. (see attached)

Public Comment:

Mary Jergenson reported that her office is closing, but will working out of her home.

Board Remarks:

Commissioner Harkness: Health Department meeting.

Commissioner Hyde: Wreath at the Memorial Day ceremony needs to be replaced.

Commissioner Johnson: Attended Heath Department meeting.
Parks and Recreation meeting.

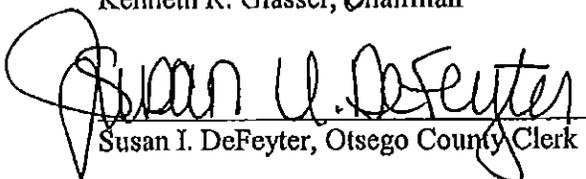
Commissioner Bates: Veteran's Day Ceremony.
City Council Meeting.

Commission Glasser: Bagley Township meeting.
Attended the graduation of the Leadership program.
Lake Restoration.

Meeting adjourned at 11:16 a.m. at the call of the Chair.



Kenneth R. Glasser, Chairman



Susan I. DeFeyter, Otsego County Clerk

OTSEGO COUNTY MASTER PLAN
VISION STATEMENT

Collectively Otsego County residents envision their rural, northern Michigan community to be a place where housing is affordable in attractive, safe neighborhoods. Students can attend neighborhood schools and participate in after-school activities that stimulate their minds and/or bodies. Residents have the possibility of meaningful employment opportunities locally and they can enjoy the regions' cultural and recreational activities after work. Through proactive planning and zoning enforcement, the aesthetic appeal and unique environmental quality of the county will be protected. Infill and adaptive-reuse developments will compliment the traditional feel of the pedestrian friendly downtown commercial areas. The option for clustered residential will help to preserve agricultural lands and open space. Landscaping provisions will enhance community streetscapes and add to the distinct characters of Gaylord, Vanderbilt, and the hamlets Town Centers. Otsego County desires to preserve its natural resources while protecting its residents' property rights. In doing so, Otsego County will remain an enjoyable place to residents and visitors alike.

Source: "One County, One Vision: A report from the community" – page 32
August 2004

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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 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, and 2007.

In 1975, Otsego County enacted county-wide zoning after the nine townships agreed to conduct planning and zoning together. Over the past four decades, the zoning ordinance has undergone two substantial revisions (1993 and 1996) and more than thirty zoning map changes. Zoning is the principle 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

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 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 educational workshops held during the fall of 2005. At the first two 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 a program on 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 better informed planning decisions.

Fact Book

During the 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 the 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 years.

From Master Planning to Zoning Ordinances

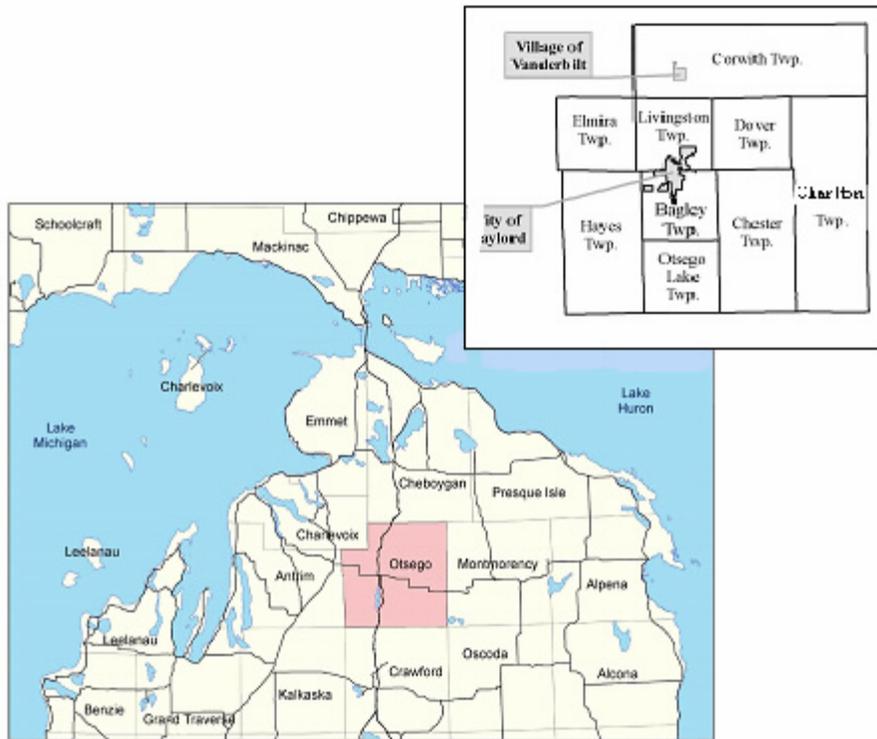
Inasmuch as a master plan provides direction for the future, a zoning ordinance establishes an enforceable framework for a jurisdiction's land use policy. It is essential that a community's zoning ordinance be updated to ensure that the direction of the master plan will be achieved. Thus, Otsego County's 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 (9) 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



This northern Michigan County is predominantly rural with the City of Gaylord, the county seat, serving as the principle 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). From 1971 to 2000, the county received on average 149 inches of snow during the winter months according to the Midwestern Regional Climate Center (MRCC). There are approximately 129 days during each year with at least 1 inch of snow on the ground. Based on the data provided by the MRCC, the growing season in Otsego County averages 139 days, about 90 percent of the time (in the Gaylord Area). The typical rainy months occur in the spring and fall (April and September) with a total average annual precipitation of 35 inches.

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.

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 800 feet in the northeast to 1,400 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

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 400 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 lay pockets of glacial till within an area

Otsego County 2009 Master Plan

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.

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 80" 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. (pg. 141)

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.

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 14 percent of Otsego County (more than 47,700 acres) is covered by soils with slopes greater than 25 percent, and slopes over 25 percent 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 5 percent 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 20 percent of the county, most notably in the west central and east central portions of Otsego County.

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 4 in Appendix A, more than 73 percent of the county's land area is covered by soils that exhibit rapid permeability (over 245,908 acres). In fact, over 96 percent of the soils in Otsego County exhibit at least moderately rapid permeability (21.7 Ksaf or greater).

Introduction

Rivers, Streams, and Water Bodies

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 370 lakes and includes the headwaters of five 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 38 percent of the

county. A map of the Au Sable and other major watersheds is provided in Figure 5 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 6 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,

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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.

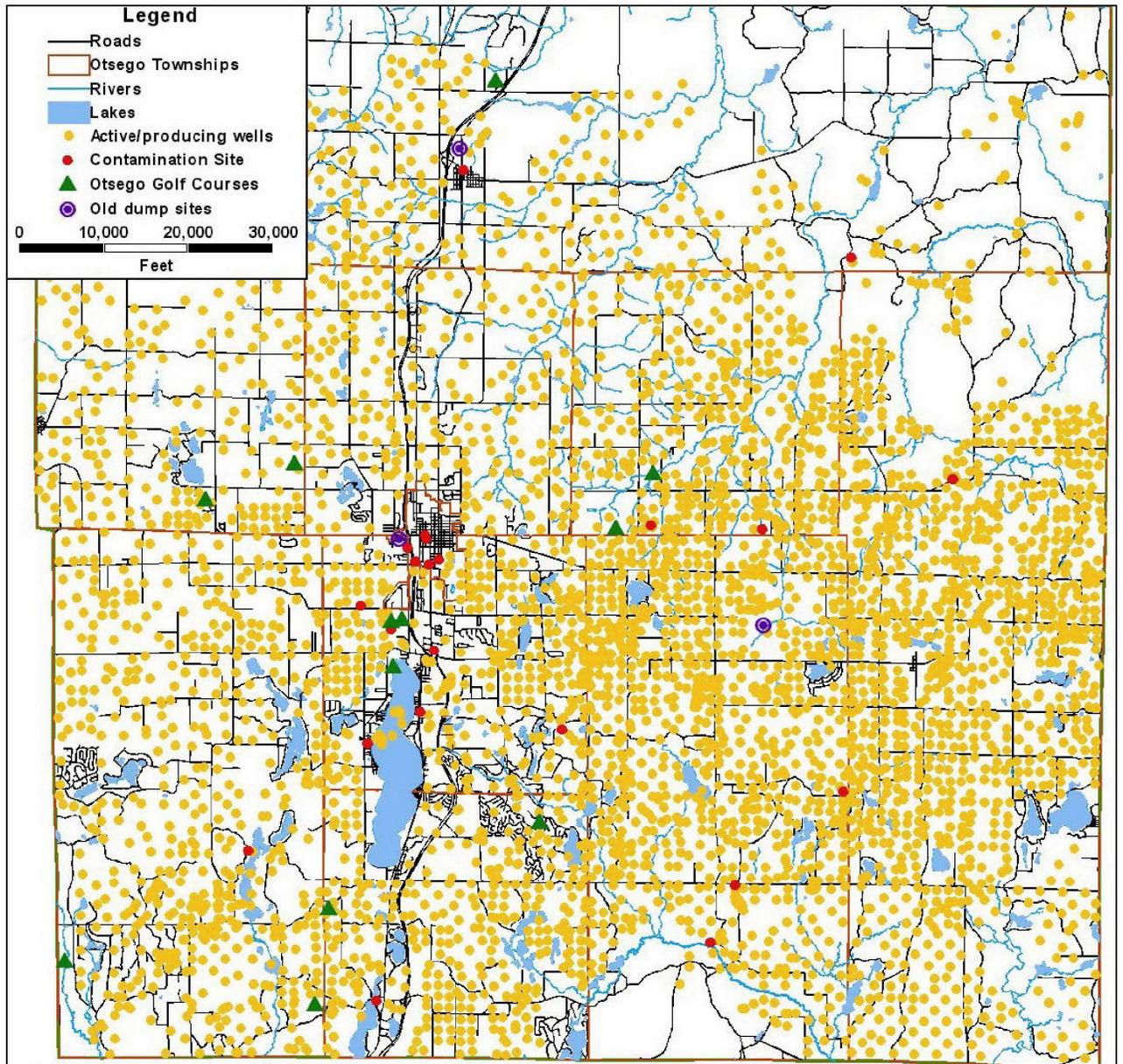
The geology of the area places Otsego County at risk of contamination, as seen in Figure 7 in Appendix A. For groundwater protection planning, it would be wise to assume that the entire county is highly vulnerable to contamination. A wide variety of contaminants have been discovered in the groundwater 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 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 215 underground storage tanks (UST), twenty-two (22) of which are known as leaking underground storage tanks (LUST), and there are 4,412 oil and gas sites, twelve (12) golf courses, and three (3) old dumpsites within the county. Figure 8 shows the locations of these known and potential contamination sites.

Figure 8: 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 8. While all of the sites can adversely affect the county's groundwater, contamination sites located within the City of Gaylord's Wellhead

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Protection Areas should receive priority, as these sites are potential impacts to the drinking water supply for the city's three thousand residents.

Wetlands

In 2003, there were 9,634 acres or fifteen (15) square miles identified as wetlands in Otsego County, accounting for 2.9 percent of the total county area. Other than Elmira Township and northern Hayes Township, these wetland areas are scattered throughout Otsego County, often in small isolated clusters or lines along stream courses. These smaller wetland areas are vulnerable to conversion to other land uses.

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 64 percent of the total land area of the county, with 215,120 acres or 336 square miles of forest. From 1994 to 2003, there was a net conversion of over 6,500 acres of forest to urban development and agriculture land uses, over 5,200 acres to nonforest, and over 2,400 acres to wetlands.

Population

Introduction

Historic Trends and Current Numbers

Over the past four 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.

Growth

In 2000, approximately 23,300 people resided in Otsego County, and the interim census estimated that another 1,212 people were added by 2004. Compared to other counties in the state, Otsego County is relatively rural. However, between 1990 and 2000, the county experienced a 30 percent growth rate, a significantly higher growth rate than the overall state average of 7 percent. 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 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 38 percent between 1960 and 1970 and 44 percent between 1970 and 1980, as shown in Figure 9; the greatest number of people was added to Otsego County's population during the last decade.

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Figure 9: Population Count Percent Change from 1900 to 2000

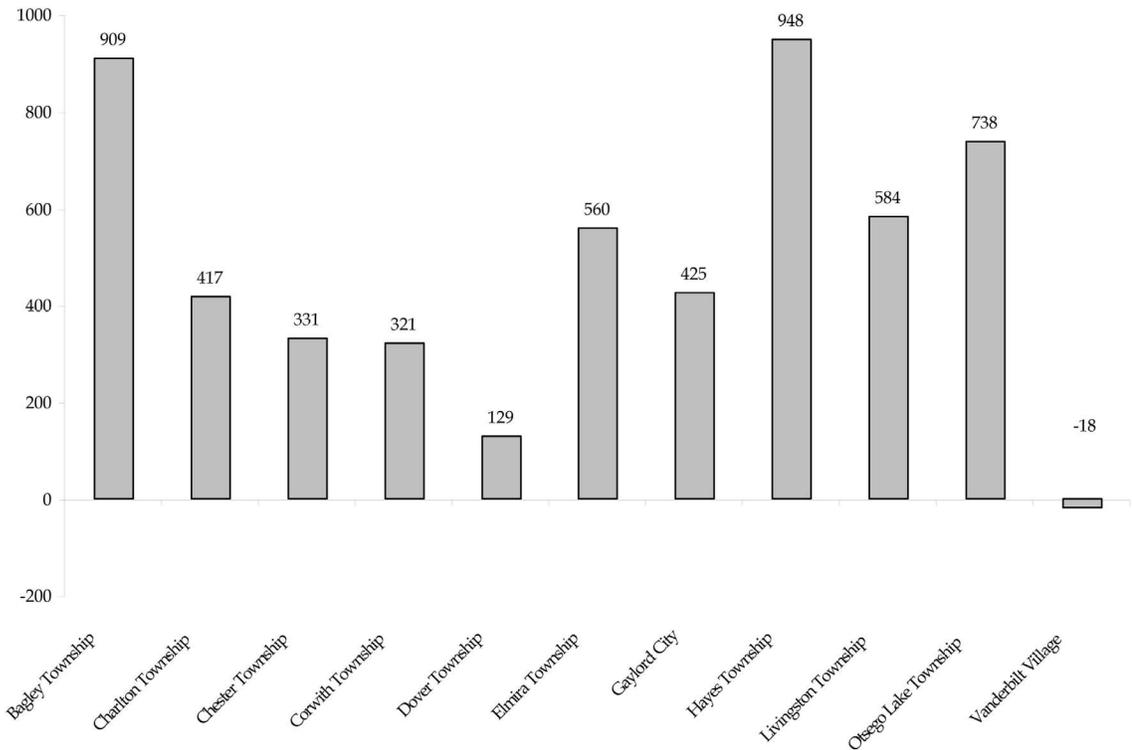
Jurisdiction	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
Bagley											
Township	1,325	1,420	1,375	284	376	724	1,186	2,294	4,106	4,929	5,838
Percent Change		7%	-3%	-79%	32%	93%	64%	93%	79%	20%	18%
Charlton											
Township	176	462	573	405	549	585	484	573	823	913	1330
Percent Change		163%	24%	-29%	36%	7%	-17%	18%	44%	11%	46%
Chester											
Township	325	323	395	343	344	302	317	332	661	934	1,265
Percent Change		-1%	22%	-13%	0%	-12%	5%	5%	99%	41%	35%
Corwith											
Township	1,090	1,085	960	282	349	356	430	604	788	811	1,132
Percent Change		0%	-12%	-71%	24%	2%	21%	40%	30%	3%	40%
Dover Township	354	598	486	266	319	289	253	317	432	485	614
Percent Change		69%	-19%	-45%	20%	-9%	-12%	25%	36%	12%	27%
Elmira											
Township	658	604	607	397	505	435	389	486	899	1038	1598
Percent Change		-8%	0%	-35%	27%	-14%	-11%	25%	85%	15%	54%
Gaylord City	N/A	N/A	N/A	1,627	2,055	2,271	2,568	3,012	3,011	3,256	3,681
Percent Change				26%	11%	13%	17%	0%	8%	13%	
Hayes Township	254	296	181	673	189	145	138	416	888	1,437	2,385
Percent Change		17%	-39%	272%	-72%	-23%	-5%	201%	113%	62%	66%
Livingston											
Township	1,506	1,361	1,351	591	612	713	929	1,396	1,703	1,755	2,339
Percent Change		-10%	-1%	-56%	4%	17%	30%	50%	22%	3%	33%
Otsego Lake											
Township	487	403	115	146	124	205	342	473	1,157	1,794	2,532
Percent Change		-17%	-71%	27%	-15%	65%	67%	38%	145%	55%	41%
Vanderbilt											
Village	N/A	N/A	N/A	456	405	410	509	522	525	605	587
Percent Change				-11%	1%	24%	3%	1%	15%	-3%	
Otsego County	6,175	6,552	6,043	5,470	5,827	6,435	7,545	10,425	14,993	17,957	23,301
Percent Change		6%	-8%	-9%	7%	10%	17%	38%	44%	20%	30%

Source: 2000 U.S. Census Data

Between 1990 and 2000, all of Otsego County’s jurisdictions, aside from the Village of Vanderbilt, experienced a population increase. In pure numbers, the townships of Hayes, Bagley, and Otsego Lake gained the most people, as shown in Figure 10. 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 11 in Appendix A. While some of the highest concentrations of people are still in the City of Gaylord and the Village of Vanderbilt, population concentrations are increasing in outlying areas as well. The highest concentrations of outlying growth appears directly outside of Gaylord in Bagley and Livingston townships and surrounding bodies of water such as Otsego Lake, Lake Louise, Little Bear Lake, Guthrie Lake, and Buhl Lake.

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Figure 10: Population Growth between 1990 and 2000 in Numbers by Jurisdiction



Age, Race, and Sex

Census figures from 2000 show that Otsego County's population was predominantly white (98 percent), equally distributed between males and females and increasing in age (Figure 12). 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 13 illustrates this trend in Otsego County by showing the increasing percentage of older age groups since 1970.

As the number of older people has increased, the median age for the county has also increased to about 38 years in 2000. 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 44, and Dover Township which had a slightly lower median age at 34. Figure 13 illustrates variances in the age distribution of each Otsego County jurisdiction relative to their entire 2000 Census population.

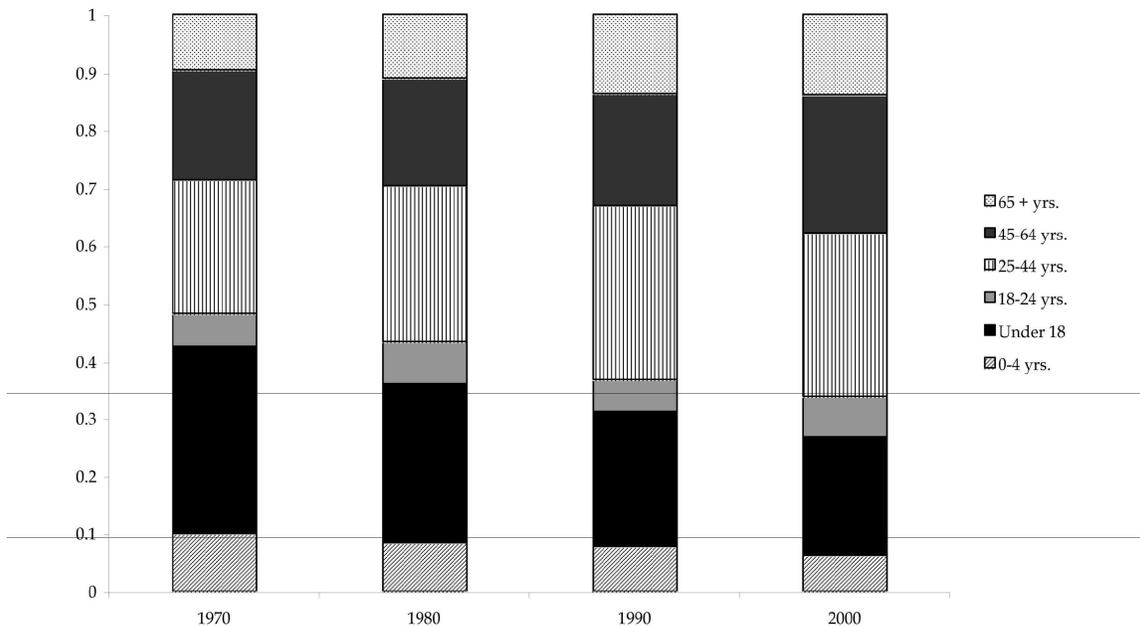
Otsego County 2009 Master Plan

Figure 12: Population by Age

Population	1990			2000			Percent Change from 1990 to 2000
	Both sexes	Male	Female	Both sexes	Male	Female	
Under 5 years	1,387	708	679	1,445	738	707	4.2
5 to 9 years	1,510	777	733	1,808	932	876	19.7
10 to 14 years	1,451	745	706	1,855	907	948	27.8
15 to 19 years	1,245	604	641	1,678	885	793	34.8
20 to 24 years	1,009	502	507	1,078	550	528	6.8
25 to 29 years	1,294	639	655	1,243	610	633	-3.9
30 to 34 years	1,469	732	737	1,565	784	781	6.5
35 to 39 years	1,438	709	729	1,902	933	969	32.3
40 to 44 years	1,226	625	601	1,936	986	950	57.9
45 to 49 years	977	478	499	1,726	863	863	76.7
50 to 54 years	803	403	400	1,474	728	746	83.6
55 to 59 years	783	384	399	1,236	606	630	57.9
60 to 64 years	932	447	485	1,154	591	563	23.8
65 to 69 years	824	407	417	974	487	487	18.2
70 to 74 years	639	308	331	907	444	463	41.9
75 to 79 years	426	183	243	639	288	351	50.0
80 to 84 years	313	111	202	361	139	222	15.3
85 years and over	231	61	170	320	97	223	38.5
Total population	17,957	8,823	9,134	23,301	11,568	11,733	29.8

Source: 1990 Summary Tape File 1 (STF 1), QT-P1A: Age and Sex for the Total Population: 1990, and 2000 Decennial Census Summary File 1 (SF 1), QT-P1: Age Groups and Sex: 2000

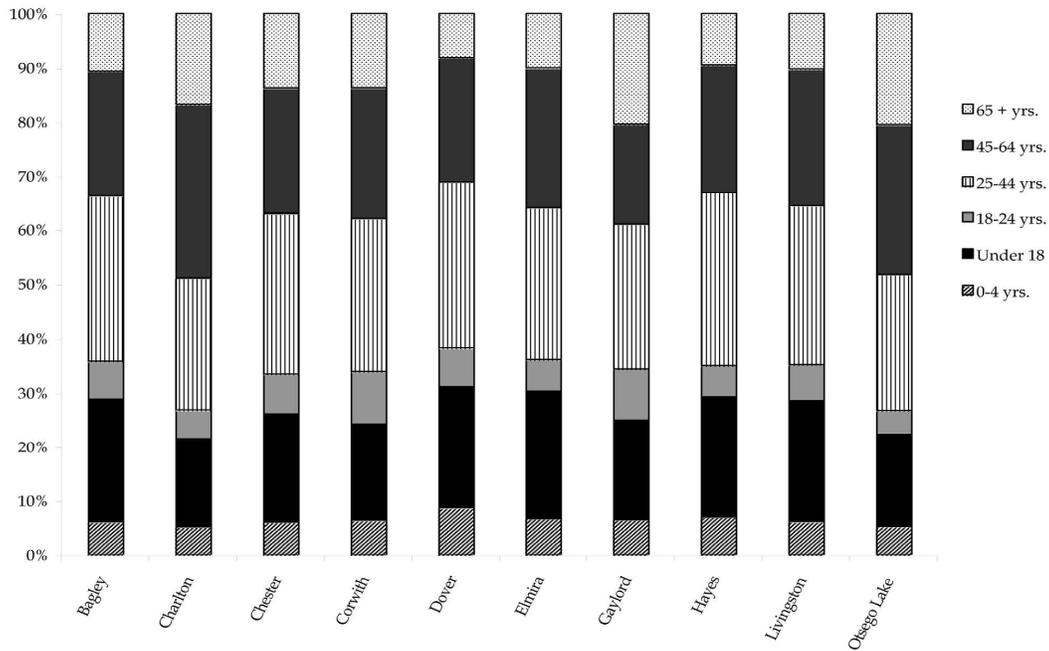
Figure 13: Age Group by Percentage, 1970-2000



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The distribution of individuals in the younger (18 and under) and the older (65 and above) age groups is presented in Figures 13 and 14. The higher concentrations of people 18 years and younger live in the City of Gaylord and townships that make up the west-central portion of the county (Livingston Township, Bagley Township, Elmira Township, and Hayes Township). Similarly, higher numbers of people age 65 and above live in Gaylord, the surrounding townships, as well as Elmira Township, Hayes Township, and Otsego Lake Township.

Figure 14: Percentage of Age Group by Jurisdiction in 2000



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 18 years and younger and 65 and older age groups. Between 1990 to 2000, Hayes Township and Dover Township experienced the greatest percentage increase in children in the school age range (5 to 18), while Charlton Township and Dover Township had the highest percentage increase of children age four and younger. Meanwhile, Elmira Township and Hayes Township experienced the greatest percentage increase in residents 65 years of age and older.

Seasonal Residents

Otsego County has a significant seasonal population. Although the exact number of seasonal residents is unknown, the U.S. Census does calculate the number of seasonal housing units in the county. A rough estimate of the seasonal residents can be calculated by multiplying the number of seasonal housing unit (3,802) by the average number of people per household in the county (2.56). Using this calculation, we can estimate that in 2000 there were roughly 9,733 seasonal residents in Otsego County.

This estimate does not include tourists. The potential number of seasonal residents adding to each jurisdiction is shown in Figure 15. According to this estimate, Otsego Lake Township, Charlton Township, Bagley Township, and Hayes Township are likely to experience the greatest population increases due to seasonal residents over the summer.

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Figure 15: Estimated Seasonal Population, 2000

<i>Unit of Government</i>	<i>Seasonal Units</i>	<i>Potential Seasonal Residents</i>	<i>Percentage</i>
Bagley Township	714.6	1,829.5	18.8
Charlton Township	808.8	2,070.5	21.3
Chester Township	361.2	924.6	9.5
Vanderbilt village	11.0	28.2	0.3
Corwith Township	276.9	708.9	7.3
Dover Township	106.0	271.2	2.8
Elmira Township	115.0	294.4	3.0
Gaylord city	45.9	117.6	1.2
Hayes Township	418.2	1,070.5	11.0
Livingston Township	60.0	153.6	1.6
Otsego Lake Township	886.2	2,268.5	23.3
Total	3,803.7	9,737.4	100.0

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 16). The number of children enrolled in preprimary school more than doubled, while over one thousand additional students attended grades 1 – 12. Given that population and projections for continued growth in Otsego County, area schools will likely experience increased enrollment and may need to explore whether schools have the capacity to accommodate additional students. Refer to the Population Projections section for additional information on expected population growth.

Figure 16: School Enrollment

<i>School Enrollment</i>	1990		2000	
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
Persons 3 years and over enrolled in school	4,340	100.0	5,748	100.0
Preprimary school	374	8.6	714	12.4
Elementary or high school (grades 1 -12)	3,463	79.8	4,500	78.3
College or graduate school	503	11.6	534	9.3

Source: 1990 Decennial Census, Summary Tape File 3 (STF 3) DP-2: Social Characteristics, 2000 Decennial Census, Summary Tape File 3 (SF 3) DP-2: Social Characteristics

Educational Attainment

The percentage of Otsego County residents, twenty-five (25) years and older who obtained a high school degree or higher, increased from 79.5 percent to 85.5 percent between 1990 and 2000 (Figure 17). Each category saw an increase in numbers with the exception of the Less than 9th grade group, which declined by approximately 300. 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 obtain 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 17: Educational Attainment

<i>Educational Attainment</i>	<i>1990</i>		<i>2000</i>	
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
Population 25 years and over	11,358	100.0	15,468	100
Less than 9th grade	982	8.6	585	3.8
9th to 12th grade, no diploma	1,352	11.9	1,665	10.8
High school graduate (includes equivalency)	4,619	40.7	5,629	36.4
Some college, no degree	2,131	18.8	3,877	25.1
Associate degree	714	6.3	1,021	6.6
Bachelor's degree	1,056	9.3	1,849	12
Graduate or professional degree	504	4.4	842	5.4
Percent high school graduate or higher	(X)	79.5	(X)	85.5
Percent bachelor's degree or higher	(X)	13.7	(X)	17.4

Source: 1990 Decennial Census, Summary Tape File 3 (STF 3) DP-2: Social Characteristics, 2000 Decennial Census, Summary Tape File 3 (SF 3) DP-2: Social Characteristics

Employment

As Figure 18 demonstrates, Otsego County has one of the lowest unemployment rates in this portion of Michigan; however, the unemployment rate has increased since 1999. 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. In contrast to unemployment rates, overall poverty rates in Otsego County have decreased, from 9.5 percent in 1990 to 6.8 percent in 2000. Additionally, 2000 poverty statistics 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 19.

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Figure 18: Percent Unemployment by Jurisdiction & Year

<i>Unit of Government</i>	1999	2000	2001	2002	2003	2004
Antrim	5.7	4.5	6.2	7	8.3	7.9
Charlevoix	4.7	4.4	5.8	7.1	8.1	7.8
Cheboygan	9.5	8.1	9.3	10.2	9.9	9.6
Crawford	5.9	4.6	5.4	6.8	7.5	7.5
Kalkaska	5.6	4.6	7.2	7.6	8.1	7.7
Montmorency	10.4	7.9	9.9	10.5	11.6	12
Otsego	4.2	4.1	5.8	7.3	8.1	7.7
Michigan	3.8	3.7	5.2	6.2	7.1	7.1

Source 2000 U.S. Census

Figure 19: Percent Poverty

<i>Unit of Government</i>	<i>Percent All Ages</i>	<i>Percent Families with Related Children Under 1</i>	<i>Percent Persons 65 yrs. Old & Over</i>
Antrim	9	10.3	6.5
Charlevoix	8	8.7	5.9
Cheboygan	12.2	15.1	7.1
Crawford	12.7	16	7.6
Emmet	7.4	6.5	7.8
Kalkaska	10.5	13.5	7
Montmorency	12.8	17.3	8.7
Otsego	6.8	6.7	7.1
Michigan	10.5	11.3	8.2

Source 2000 U.S. Census

In 2000, Otsego County had the lowest percentage of individuals living below the poverty line when compared to the six neighboring counties. For families with children living below the poverty line, Otsego County had the second to lowest percentage. The distribution of persons in poverty throughout the county is shown in Figure 20 in Appendix A.

Income

Information found in Figure 21 demonstrates that Otsego County residents have among the highest average incomes in this part of Michigan. Income data (1999 figures) for the county and six surrounding counties indicate that Otsego County’s per capita income of \$19,810 was the second highest, just below Charlevoix’s \$20,130. At \$40,876, Otsego County had the highest 1999 median family income compared with its neighboring counties. Although Otsego County’s average income is higher than most of its neighboring counties, it is still lower than the statewide average.

Figure 21: *Income by County & State*

<i>Unit of Government</i>	<i>Per Capita Income</i>	<i>Median Family Income</i>
Antrim	\$19,485	\$38,107
Charlevoix	\$20,130	\$39,788
Cheboygan	\$18,088	\$33,417
Crawford	\$16,903	\$33,364
Kalkaska	\$16,309	\$36,072
Montmorency	\$16,493	\$30,005
Otsego	\$19,810	\$40,876
Michigan	\$22,168	\$44,667

Source: 2000 U.S. Census Bureau

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 22. For example, Bagley, Charlton, Dover, Livingston and Otsego Lake townships’ per capita income figures are higher than the Otsego County figure. Conversely, Vanderbilt Village and Corwith Township per capita income figures are significantly lower than the county’s.

Figure 22: Per Capita & Median Family Income by Jurisdiction

<i>Jurisdiction</i>	<i>Per Capita Income</i>	<i>Median Family Income</i>
Otsego County	\$19,810	\$40,876
Bagley Twp.	\$21,116	\$44,205
Charlton Twp.	\$20,211	\$36,536
Chester Twp.	\$18,479	\$42,368
Corwith Twp.*	\$15,936	\$32,348
Vanderbilt Village*	\$11,973	\$27,969
Dover Twp.	\$22,739	\$45,000
Elmira Twp.	\$19,286	\$45,938
Gaylord City	\$17,313	\$28,770
Hayes Twp.	\$17,587	\$42,969
Livingston Twp.	\$21,798	\$51,293
Otsego Lake Twp.	\$23,350	\$44,351

*Data for Vanderbilt Village is included in Corwith Township numbers

Source 2000 U.S. Census

Density

In 2000, the population density in Otsego County was approximately forty-four (44) people per square mile, as shown in Figure 23 in Appendix A. Areas within the county with the highest population density include Bagley, Elmira, and Livingston townships, as well as the northern half of Hayes and western one-third of Corwith townships. Development in these townships can be attributed to their proximity to the City of Gaylord, the Village of Vanderbilt, and the M-32 and I-75 corridors. Moreover, townships with a significant amount of state or government owned land, such as Charlton, Chester, Corwith, and Otsego Lake townships, have areas with the lowest population density.

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 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 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

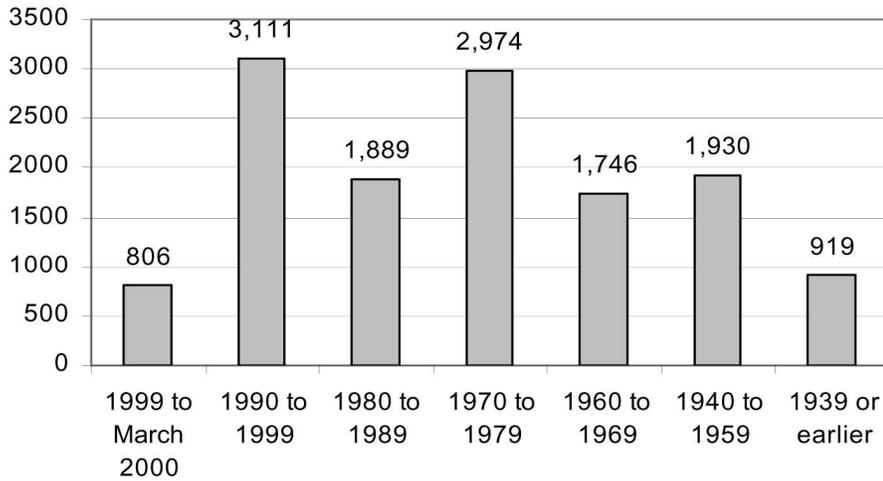
Introduction

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

In 2000, Otsego County had 13,375 housing units, as determined in the Decennial Census. The majority of these housing structures were built after 1969, with most of the growth occurring after 1990, as shown in Figure 24. A significant number of these recent homes were developed around lakes, as illustrated by Figure 25 in Appendix A, a map based on equalization data.

Figure 24: Housing Structure by Year Built



Source: 2000 U.S. Census Data,

In 2000, the vast majority (79 percent) of all housing units were detached homes. The next most common type of housing structure, which made up 11 percent of the total units, was the mobile home. Multiple unit dwellings comprised 7 percent of all housing structures and about 1 percent 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 five (5) and nearly all of Otsego County’s housing structures had plumbing and kitchen facilities in 2000. Approximately, 45 percent of houses were heated by utility gas, while 38 percent 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.

Housing Density

In 2000, the housing density in Otsego County was approximately twenty-five (25) units per square mile. Areas adjacent to the City of Gaylord, Otsego Lake, and the Interstate 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 26 in Appendix A.

Housing Values and Housing Affordability

The median value for owner occupied units in 2000 was \$102,500, with most housing values between \$50,000 and \$99,999. The higher valued homes are primarily located

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northeast of the City of Gaylord in Livingston and Dover townships as well as southeast of the City of Gaylord in Bagley Township, as shown in Figure 27 in Appendix A.

Seventy (70) percent of owner occupied homes were mortgaged. The median monthly cost of a mortgage combined with other selected housing costs across the county was \$819.50. The U.S. Department of Housing and Urban Development considers housing costs exceeding 30 percent of income as unaffordable. In 1999, about 17 percent of owners' housing costs and about 33 percent 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 Figures 28 and 29.

Figure 28: Selected Monthly Owner Costs as a Percentage of Household Income

<i>Percentage of Household Income</i>	<i>Number</i>	<i>Percent of Total Households</i>
Less than 15 percent	2,046	40.4
15 to 19 percent	990	19.5
20 to 24 percent	725	14.3
25 to 29 percent	436	8.6
30 to 34 percent	271	5.3
35 percent or more	575	11.3
Not computed	24	0.5
Total	5,067	100

Source: 2000 U.S. Decennial Census

Figure 29: Gross Rent as a Percentage of Household Income

<i>Percentage of Household Income</i>	<i>Number</i>	<i>Percent of Total Households</i>
Less than 15 percent	238	15.3
15 to 19 percent	232	14.9
20 to 24 percent	241	15.5
25 to 29 percent	225	14.5
30 to 34 percent	122	7.8
35 percent or more	396	25.4
Not computed	103	6.6
Total	1,557	100

Source: 2000 U.S. Decennial Census

Occupancy

Of Otsego County's 13,375 housing units, 8,995 or 67 percent were reported as occupied. Of these occupied units, 82 percent (7,351 units) were owner occupied and 18 percent (1,644 units) were renter occupied. In 2000, the average household size for these units was 2.56 (persons). This is slightly lower than the 1990 figure of 2.72, and the 2000 figure is significantly smaller than 1970's average of 3.37. As illustrated in Figures 30 and 31 in Appendix A, rental units are located in or around the City of Gaylord, while owner occupied units are dispersed throughout the county.

Commercial Buildings

As of 2006, there were eight vacant commercial/industrial buildings ranging from 7,000 to 25,000 square feet, totaling approximately 108,000 square feet. Three of the eight buildings have been on the market for over five years. There is an estimated 180,000 square feet of vacant commercial office and retail space, of which nearly 102,000 square feet is located in the Pine Ridge Plaza (former Wal-Mart site). Most of the vacant spaces range from 1,200 to 2,000 square feet and are part of new or redevelopment projects.

Economics & Jobs

Otsego County has experienced economic growth over the past three decades. The county's geographic location and its natural resources have helped drive the economic performance of Otsego County. While beneficial to the local economy, the tourist industry does not make up a disproportionately large portion of the county's economic base.

Employment by Industry

Shift-Share Analysis

Shift - share analysis breaks employment growth/decline into three areas: national growth effect, industry mix effect, and competitive effect. National growth effect is the portion of the growth/decline that can be attributed to the rate of growth throughout the nation. In other words, it is the change that would occur because Otsego County is part of the national economy. Industry mix reveals the growth/decline of a local industry based on the national growth/decline of that industry. This component separates out the variation in industries' growth rates and illustrates the significance of certain economic sectors on a local economy. The competitive effect is the segment of local growth/decline that can be attributed to unique local factors (local competitive advantage, natural resources, etc.).

Shift-Share Analysis Interpretation

A competitive local economy and national growth contributed to Otsego County's economic growth between 1979 and 2000. Over the past two decades, nearly 7,500 jobs were created in Otsego County and employment in the county increased by 96 percent, while during the same period employment in the State of Michigan only grew by 32.9 percent (Figure 32). Otsego County's relatively small size compared to Michigan's contributes to its larger growth effect.

Figure 32: Employment shifts in Otsego County, Michigan 1979 - 2000

Employment in Otsego County, Michigan						Shift Share Analysis, in percent			
Sector	Total 1979	Percent Share	Total 2000	Absolute Change	Growth Rate	Growth Effect	Mix Effect	Regional Shift	Sum
Farm employment	198	2.6	183	-15	-0.08	47.2	-64.5	9.7	-7.6
Ag. services, forestry, fishing and other three	27	0.3	171	144	5.33	47.2	97.0	389.1	533.3
Mining	555	7.2	699	144	0.26	47.2	-79.3	58.0	25.9
Construction	453	5.8	1,247	794	1.75	47.2	12.7	115.3	175.2
Manufacturing	1,213	15.6	2,016	803	0.66	47.2	-58.3	77.3	66.2
Transportation and public utilities	299	3.9	471	172	0.58	47.2	-0.7	11.0	57.5
Wholesale trade	210	2.7	888	678	3.23	47.2	-13.5	289.2	322.9
Retail trade	1,557	20.1	3,128	1,571	1.01	47.2	5.9	47.8	100.9
Finance, insurance, and real estate	495	6.4	757	262	0.53	47.2	7.3	-1.6	52.9
Services	1,587	20.5	4,244	2,657	1.67	47.2	72.8	47.4	167.4
Federal government, civilian	94	1.2	230	136	1.45	47.2	-49.2	146.7	144.7
Military	39	0.5	47	8	0.21	47.2	-61.6	34.9	20.5
State and local government	1,032	13.3	1,140	108	0.10	47.2	-9.1	-27.6	10.5
Total	7,759	100	15,221	7,462	0.96	47.2	-1.3	50.3	96.2

Employment in the United States of America					
Sector	Total 1979	Percent Share	Total 2000	Absolute Change	Growth Rate
Farm employment	3,764,000	3.3	3,113,000	-651,000	-0.17
Ag. services, forestry, fishing and other three	868,500	0.8	2,121,100	1,252,600	1.44
Mining	1,154,200	1.0	784,200	-370,000	-0.32
Construction	5,906,200	5.2	9,446,300	3,540,100	0.60
Manufacturing	21,498,000	19.0	19,114,800	-2,383,200	-0.11
Transportation and public utilities	5,627,400	5.0	8,244,400	2,617,000	0.47
Wholesale trade	5,672,600	5.0	7,584,100	1,911,500	0.34
Retail trade	17,780,500	15.7	27,222,300	9,441,800	0.53
Finance, insurance, and real estate	8,538,100	7.5	13,193,800	4,655,700	0.55
Services	24,082,600	21.3	52,990,800	28,908,200	1.20
Federal government, civilian	2,951,000	2.6	2,892,000	-59,000	-0.02
Military	2,425,000	2.1	2,075,000	-350,000	-0.14
State and local government	13,021,000	11.5	17,977,000	4,956,000	0.38
Total	113,289,100	100	166,758,800	53,469,700	0.47

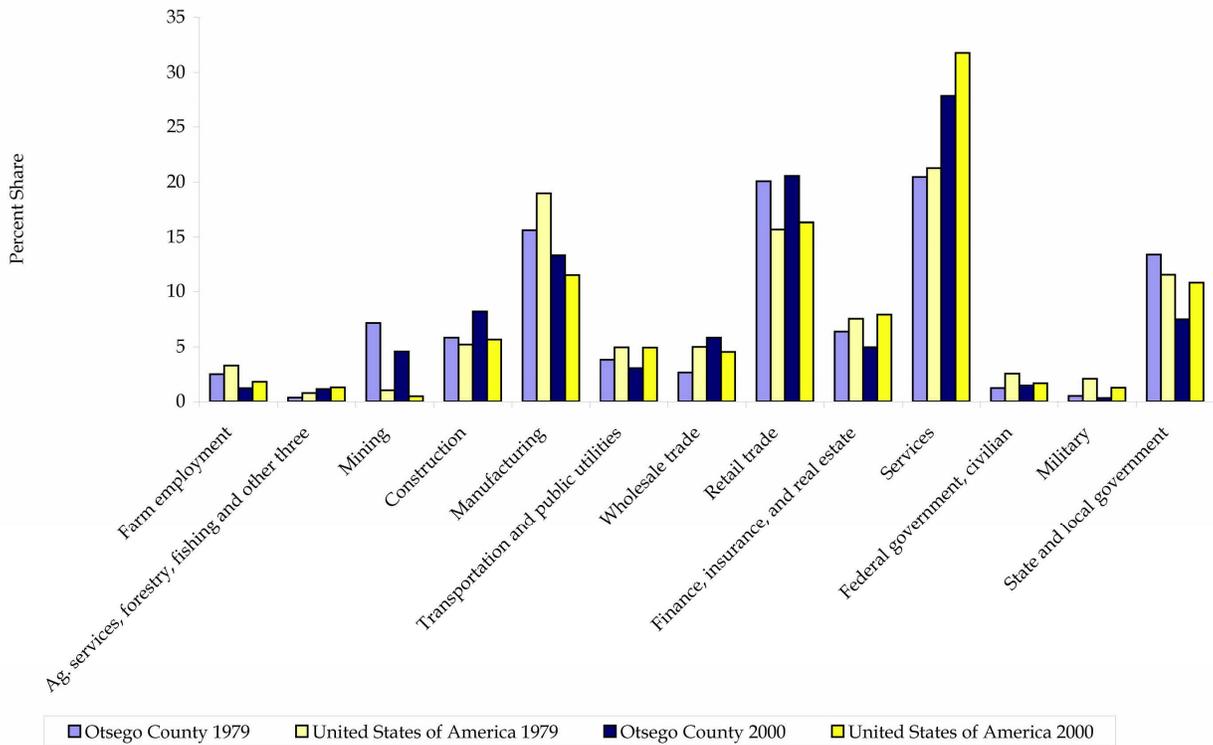
Regional Economic Information System
 Bureau of Economic Analysis
 Table CA25
 May 2003

For the most part economic growth in Otsego County has been the product of a strong national economy, with nearly half (47 percent) of the county's economic growth being attributed to national economic growth. Furthermore, Otsego County had an unfavorable industry mix for local economic growth in 1979. Much of its economy was based on sectors that have experienced substantial decline nationwide over the past decades. These include Farm employment (-64 percent), Mining (-79 percent), Manufacturing (-58 percent), Transportation and Public Utilities (-1 percent), Wholesale trade (-13 percent),

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Federal government – civilian (-49 percent), Military (-61 percent), and State and local government (-9 percent). Otsego County’s employment sectors, however, tended to perform better relative to their national counterparts which, in part, compensated for the county’s unfavorable industry mix (Figure 33). Sectors which performed exceptionally well locally include Agricultural services, Forestry, Fishing (389 percent), Construction (115 percent), Wholesale trade (289 percent), and Federal government – civilian (146 percent), while the Finance, Insurance, and Real estate (-1.6 percent) and State and local government (-27 percent) employment sectors did not perform better locally.

Figure 33: 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 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.

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 and Old 27 which run north-south and M-32 which run east-west. A map of the county's road network is provided in Figure 34 in Appendix A. Interstate 75 provides access to both the southern portion of the state and to Michigan's Upper Peninsula. Four 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 (nationwide 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. Car rental service is available. Recently construction of a new airport terminal building has been 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 or further north to the Mackinaw Bridge.

Public Facilities and Services

The public safety sector is made up of three (3) law enforcement units, 911 Emergency Service, five (5) fire departments, and a county -wide emergency medical service. Based in Gaylord, the Otsego County Sheriff's department is responsible for patrolling all sections of the county outside of the City of Gaylord. The Gaylord Police department provides law enforcement within the City of Gaylord. Michigan State Police stationed at Gaylord Post #73 collaborate with the Sheriff's Department and the Gaylord Police Department in patrolling Interstate 75 and major county roads. Across the street from the Gaylord State Police Post is the county's 911 Emergency Service Department. The Otsego County Jail which is located at the county court house in Gaylord provides lock-up facilities for use by these three law enforcement agencies.

Fire protection for Otsego County is provided by five (5) departments, each staffed by local volunteers. The departments are based in Elmira, Gaylord, Johannesburg, Vanderbilt, and Waters, and they serve the townships surrounding each location. In addition, the Department of Natural Resources District Office in Gaylord also maintains equipment for fighting forest fires that may occur in the area.

While the volunteer departments have adequate equipment and manpower to serve the needs of the existing county population, plans should be developed to address replacement of aging equipment. Furthermore, the outlying portions of the county, particularly the sparsely populated northeast corner, have a relatively high response time.

Although this is typical of a low density, rural area, as residential development increases in sections of the county distant from current fire fighting facilities, a determination of how to provide adequate protection for new areas will need some consideration. Options include adding new facilities to the county's fire system or improving access to the developing areas from existing facilities. If new growth were to occur around established population centers, however, the major requirement for increased fire protection would involve additions to the equipment and manpower available to existing centers.

Hospitals, Health Services, and Human Services

The Otsego County EMS/Rescue provides emergency services throughout the county, while Otsego Memorial Hospital LTCU offers a wide range of primary care medical services. These include emergency services, surgery, extended care facilities, intensive care units, medical laboratory services, the Otsego Health Center, and a walk-in clinic. Northwest Community Health, the county Family Independence Agency, and Northern Michigan Substance Abuse Services offer additional health-related services to Otsego County residents. Furthermore, agencies throughout the county offer a variety of social services, such as treatment, counseling, housing, food, employment services, educational services, and legal services. For a listing of these social services, compiled by the Northeast Michigan Council of Governments, refer to the Otsego County Fact Book Appendix F.

Utilities

The county's utility system includes private suppliers of electric, natural gas; communications, solid waste disposal and cable television services, as well as both publicly and privately owned and operated water and sewer systems. With the exception of the Gaylord system, suppliers provide services to a relatively low density, dispersed population.

Natural gas is provided to portions of the county by DTE Energy. Gas is supplied by a pipeline which generally follows Interstate 75, providing service to the Waters, Gaylord, and Vanderbilt areas. While expansion of service to locations adjacent to the existing service area is possible, the cost of extending lines makes service beyond the existing service area unlikely. Bottled gas, provided by private suppliers, is widely used for heating and cooling in portions of Otsego County located away from the natural gas line. Alternate energy sources are currently minimally available in Otsego County.

Gaylord's water, storm, and sewer systems currently serves the City of Gaylord as well as developed areas immediately adjacent to the city, notably those areas north and east of the city. Figure 35 in Appendix A displays this system. Outside these areas, Otsego County residents and business owners rely on private, on-site wells for 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.

Areas surrounding many of Otsego County's major lakes have been extensively developed, and this has created challenges for maintaining water quality. As more

residential and commercial development occurs in proximity to the City of Gaylord, extension of the existing water and sewer systems may need to be explored.

Waste Management

Throughout Otsego County, several local independent haulers provide trash pick-up and hauling services. There are also sites within the county where residents can deposit recyclables in addition to street-side recycling pick-up within the City of Gaylord.

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.

Educational Facilities

Schools

Several public school districts and several private parochial schools, as well as the Grace Baptist College serve Otsego County residents. The Johannesburg-Lewiston School District includes the southeast section of the county along with portions of Montmorency County. The Crawford Ausable School District touches a portion of the southern part of the county. The Vanderbilt School District includes the northern portion of the county along with sections of Charlevoix and Cheboygan Counties. The Gaylord Community Schools and the Educational Service District serve the remainder of the county, including Elmira and portions of Antrim County. St. Mary's school, located in Gaylord, provides private, parochial school facilities for students in first through twelfth grades. The Otsego Christian School, also located in the Gaylord area, is the next largest parochial school in the area. Other parochial schools, which serve the area, include: Calvary Baptist Academy and Grace Baptist Christian School. Figure 36 in Appendix A depicts Otsego County's school district boundaries.

M-TEC

M-TEC at Gaylord is one of eighteen technical education centers located throughout the State of Michigan. Kirtland Community College opened the M-TEC doors in January 2002 with the mission of providing educational programs and services to individuals preparing for employment in high skills, high wage, and high demand occupations. The Governance Advisory Board, made up of citizens of the county, provide advice to the leadership of M-TEC and help maintain strong connections to employers and citizens in Otsego County.

M-TEC currently offers courses in carpentry, electrical technology, heating and ventilation and air conditioning, industrial maintenance, industrial processes, welding, outdoor power equipment, and nursing. The college has formed a partnership with a private technical school who offers a program in cardiovascular sonography. The courses

in the construction trades programs are scheduled in a flexible format that allows students to attend at times that work best for them. The college provides training to current employees in area businesses and industries. The programs offered are varied and tailored to meet the specific needs of employed workers. 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 needs.

The University Center at Gaylord

As stated in its vision, the University Center at Gaylord is a higher education collaborative, non-profit corporation, which facilitates and delivers a wide range of higher education services and training to the citizens of rural, northern Michigan. It is a partnership of accredited colleges and universities, industry, public schools, and citizens.

The University Center is a state-of-the-art facility offering students an opportunity to earn Associate, Bachelor, and Master Degrees or receive advanced technical training in a variety of areas from the Technical Training Center. The University Center's college partners include: Central Michigan University, Davenport University, Madonna University, Michigan State University, North Central Michigan College, Spring Arbor University, and Ferris State University.

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. A five (5) member Board of Trustees appointed by the Otsego County Commissioners governs the system. In 2007, the library received Quality Measures Certification from the Library of Michigan for meeting requirements for quality library service through the central library in Gaylord and branches in Johannesburg and Vanderbilt.

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

Otsego County's 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 2005, 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 (2006-2010).

Community Center (operated by the OCPR)

Open seven 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. The facilities accommodate a wide range of sports activities, including aerobics, basketball, volleyball, tennis, and other table games. The Community Center, moreover, serves as headquarters for events such as the Alpenfest Run, Winterfest Run, and Gus Macker.

OTSEGO COUNTY SPORTSPLEX

The Otsego County Sportsplex is a multipurpose recreational facility. 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) baseball 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.

Land Use and Development Patterns

Current Land Uses

Introduction

To understand how development patterns have changed in Otsego County over the past three 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 major land use types: agriculture, forest, herbaceous/shrub, urban, water, and wetlands. The majority of the county is forest land (64 percent), with non-forested land a distant second (14 percent), as seen in Figure 37. Between 1994 and 2003, both forest and herbaceous/shrub land uses declined in the county, while urban land uses grew at a rate of 64 percent, 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 percent 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 37: 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 percent of the land in the county or one out of every six acres was categorized as a different land use after only ten 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 60 percent 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 to twenty 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 38 in Appendix A), 1994 (Figure 39 in Appendix A), and 2003 (Figure 40 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

Otsego County 2009 Master Plan

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 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 main categories are then further subdivided into ‘level 2’ subcategories (as shown in parenthesis above).

Figure 41: 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 41 forest (69 percent) and herbaceous/shrub open space (15 percent) covered more than 84 percent of Otsego County in 1978. Though acreage for both of these land uses had declined by 2003, combined the two still made up nearly 78 percent of the county (64 percent forest, 14 percent 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 percent in 1978 to nearly 10 percent in 2003. During this time period, residential (Code 11) and commercial (Code 12) acreage increased dramatically, more than doubling to over six (6) percent of the county land area, while agricultural acreage remained relatively constant.

Land Uses

Urban Land Use

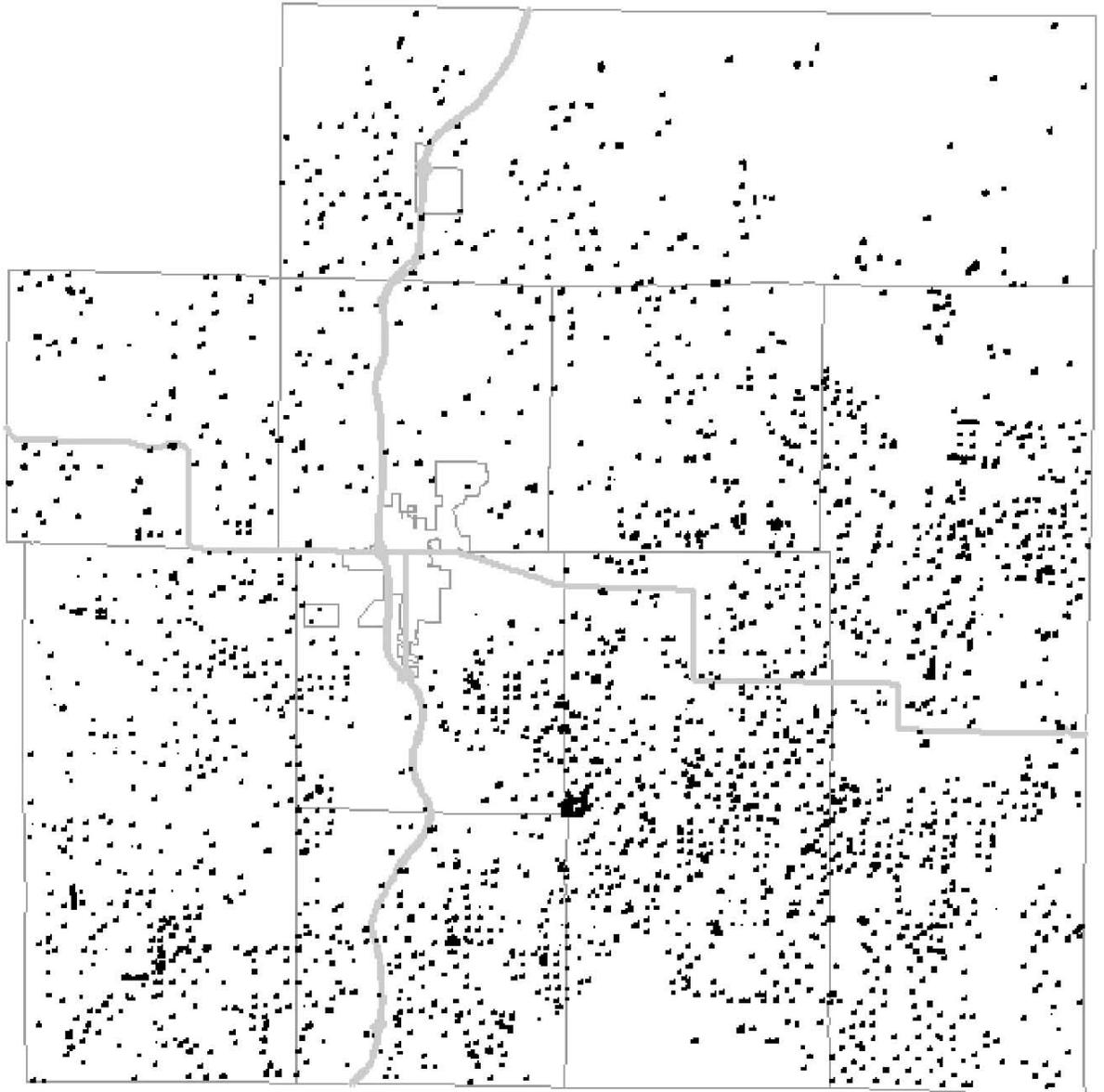
A significant land use trend in Otsego County is the continued increase in urban land use, accounting for over 32,000 acres of land in 2003 (50 square miles or 9.5 percent of the county). Residential makes up over half of the urban land use, and, as Figure 42 demonstrates, residential land use is not 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 42 only displays two 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 42: Residential Areas



The other ‘urban’ features that are prevalent throughout Otsego County are wellheads resulting from oil and gas exploration and extraction (Figure 43). Well heads are so prevalent in the county that in most areas well heads are typically not more than one - half a mile apart.

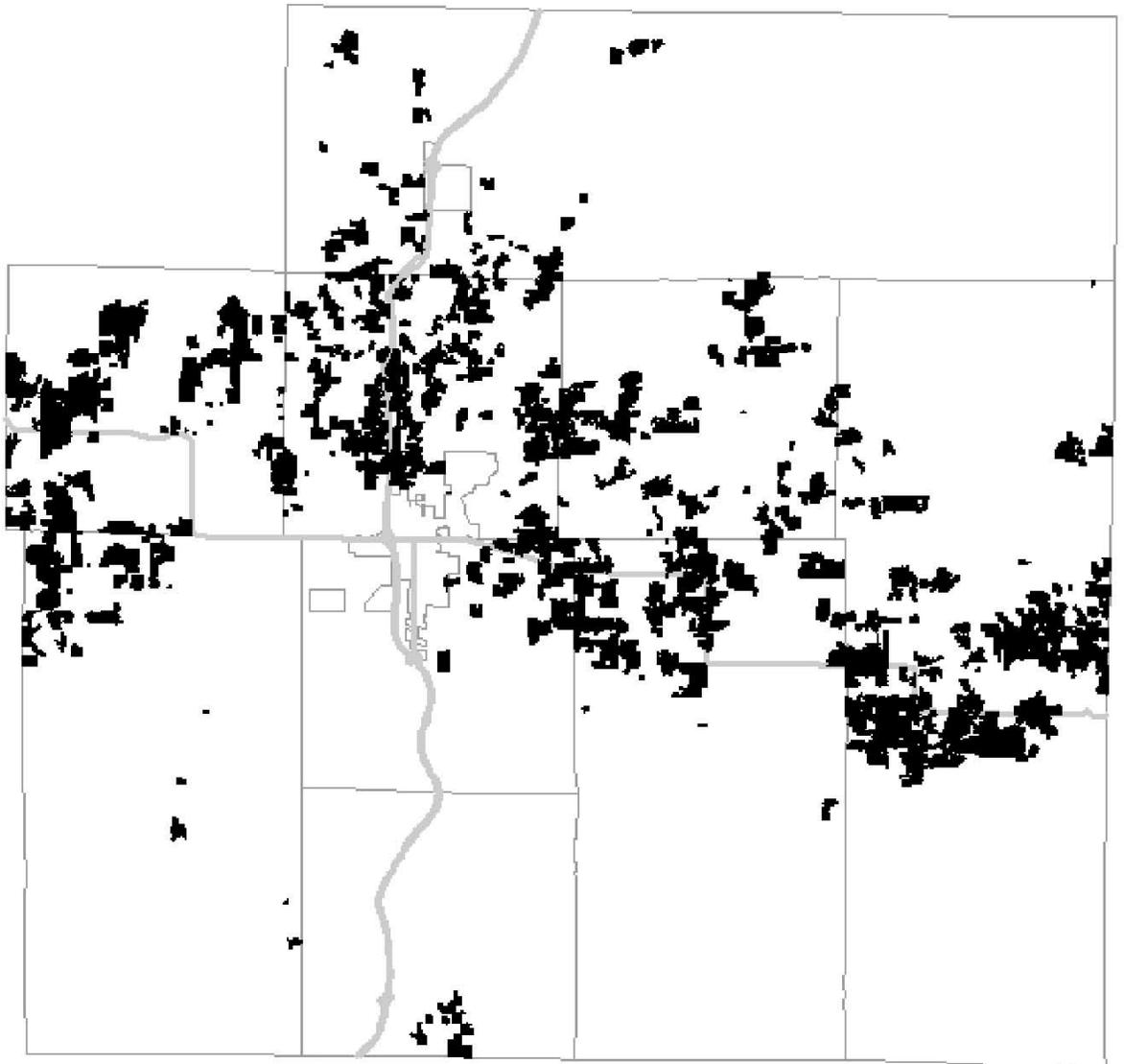
Figure 43: Wellhead Locations



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 percent of the county. As Figure 44 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.

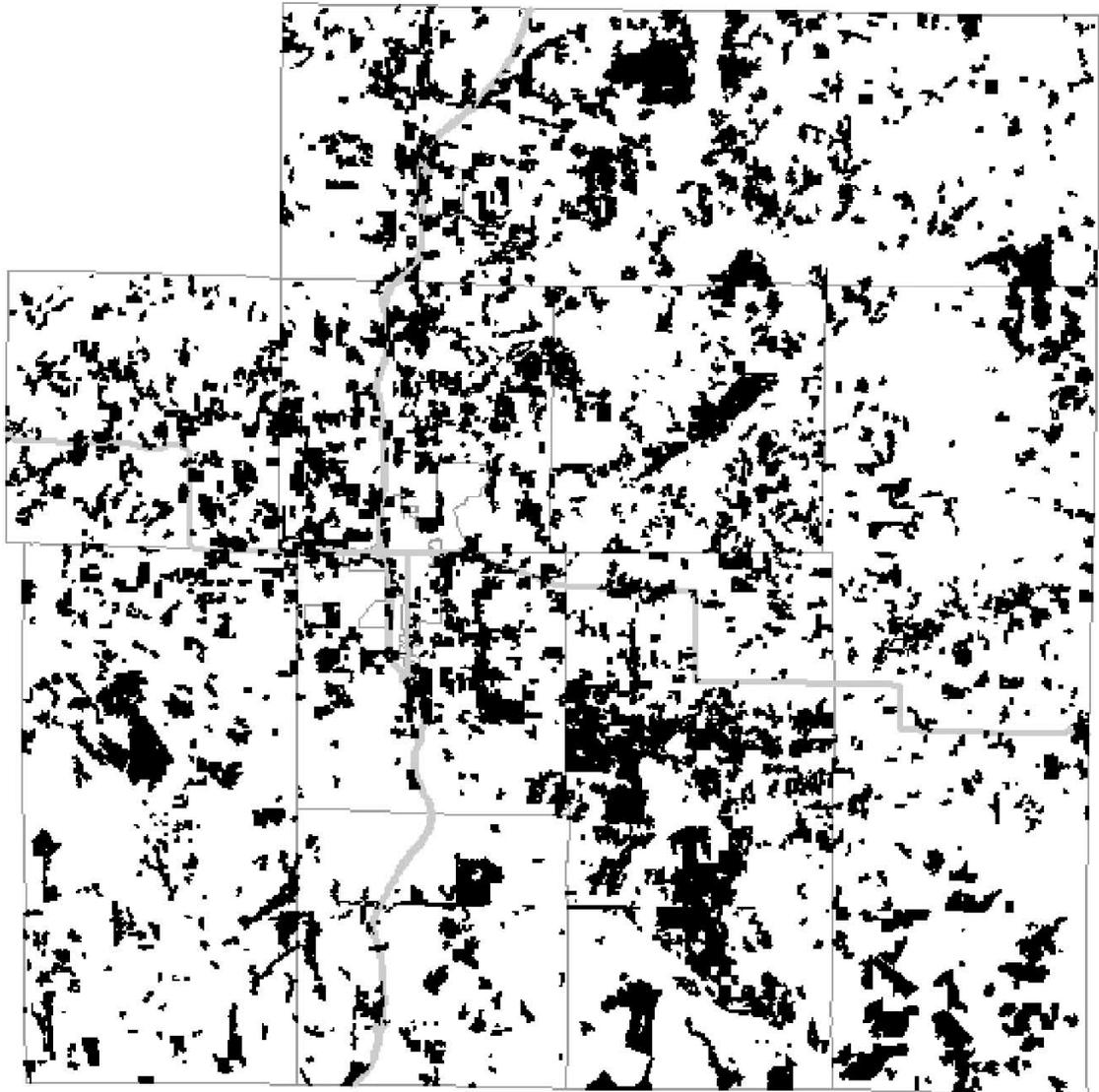
Figure 44: Agricultural Lands



Herbaceous/Shrub Land Use

Otsego County has 47,101 acres (73.6 square miles) of herbaceous/shrub land, accounting for 14 percent of the land in the county. Figure 45 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.

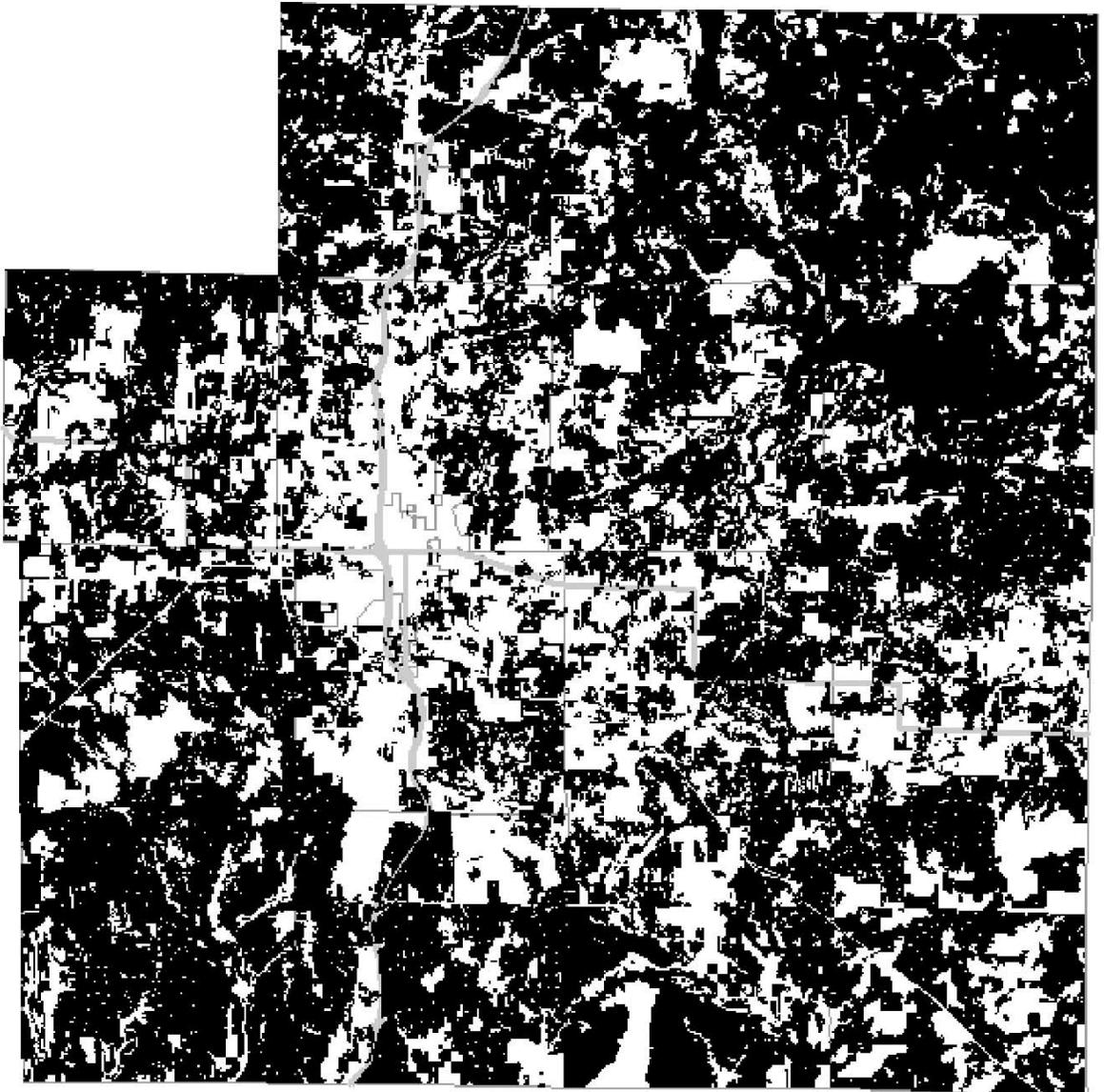
Figure 45: Herbaceous/Shrub Lands



Forests

Otsego County is predominantly forest. Outside the immediate Gaylord vicinity, forests are the dominant land use feature – even within the farm belt (Figure 46). Although the land use has experienced a slight decline, forest acreage still accounts for nearly 64 percent 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.

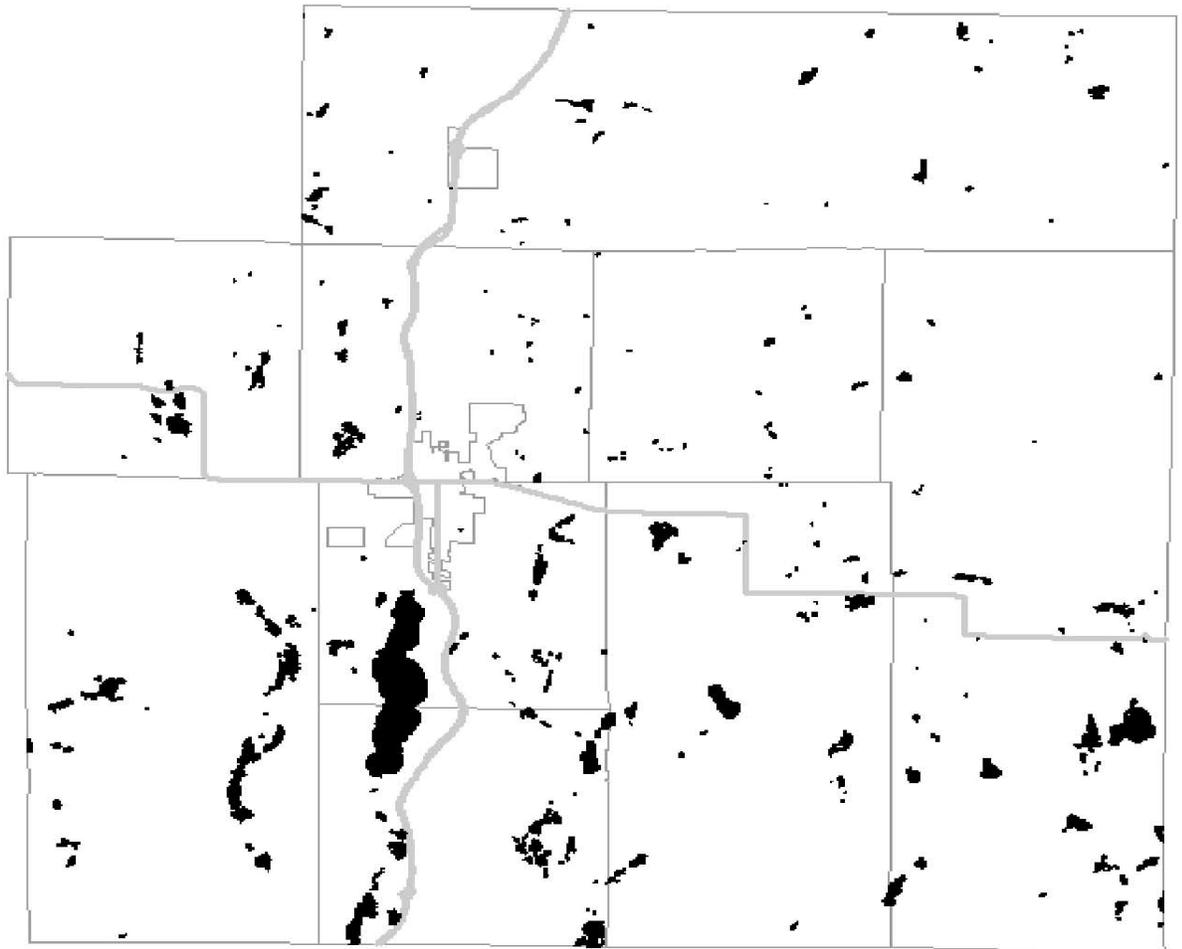
Figure 46: Forest Lands



Water

Otsego County is fortunate to contain many lakes, as evident in Figure 47. 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 two 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.

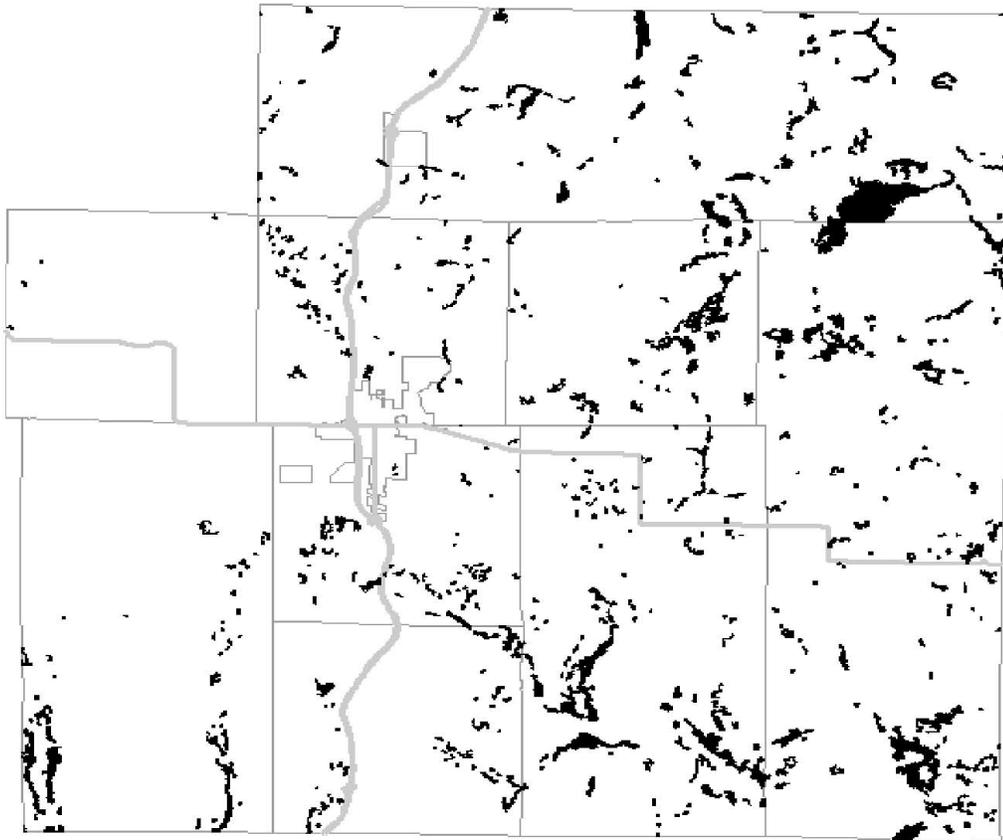
Figure 47: Lakes



Wetlands

In 2003, there were 9,634 acres (15 square miles) identified as wetlands in Otsego County, accounting for 2.86 percent of the total county area as seen in Figure 48. 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 48: 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 24 page 84
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

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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 use of 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

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- 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

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 communication between jurisdictions 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 storm water management regulations in Otsego County's zoning ordinance, while encouraging the continued natural use of wetlands as ground water recharge, storm water 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

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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

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- 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

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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 wild land 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

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- 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

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- 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

Otsego County 2009 Master Plan

- 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

Otsego County 2009 Master Plan

- 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 to thirty years. The following paragraphs describe the future land use designations, as illustrated in the Future Land Use Map (Figure 49). 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

Otsego County 2009 Master Plan

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 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 rights 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 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. Three of Michigan's finest trout streams, the Pigeon, Sturgeon, and Black rivers, flow 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 unit per (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.

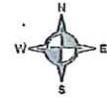
Government and Institutional

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.

Otsego County Future Land Use



- Jurisdictions
- Interstate
- State
- County Primary
- County Local
- City
- Other
- Lakes
- Rivers
- Consumers Power Easement
- Urban Growth Boundary
- High Density Residential (Mixed Residential)
- Residential Recreational
- Medium Density Residential
- Low Density Residential
- Recreation
- Agriculture
- Forest
- Environmental Protection
- Retail / Business / Office (Mixed Use)
- Large Commercial
- Highway Interchange Commercial
- Industrial
- Government and Institution
- Town Centers (Mixed Use)

Disclaimer:
This map should be used for general purposes only.
For more information about this map contact the
County Planning Department.



Data Source:
Otsego County Data

Map Created July 2008 by Otsego County.





Otsego County Slope

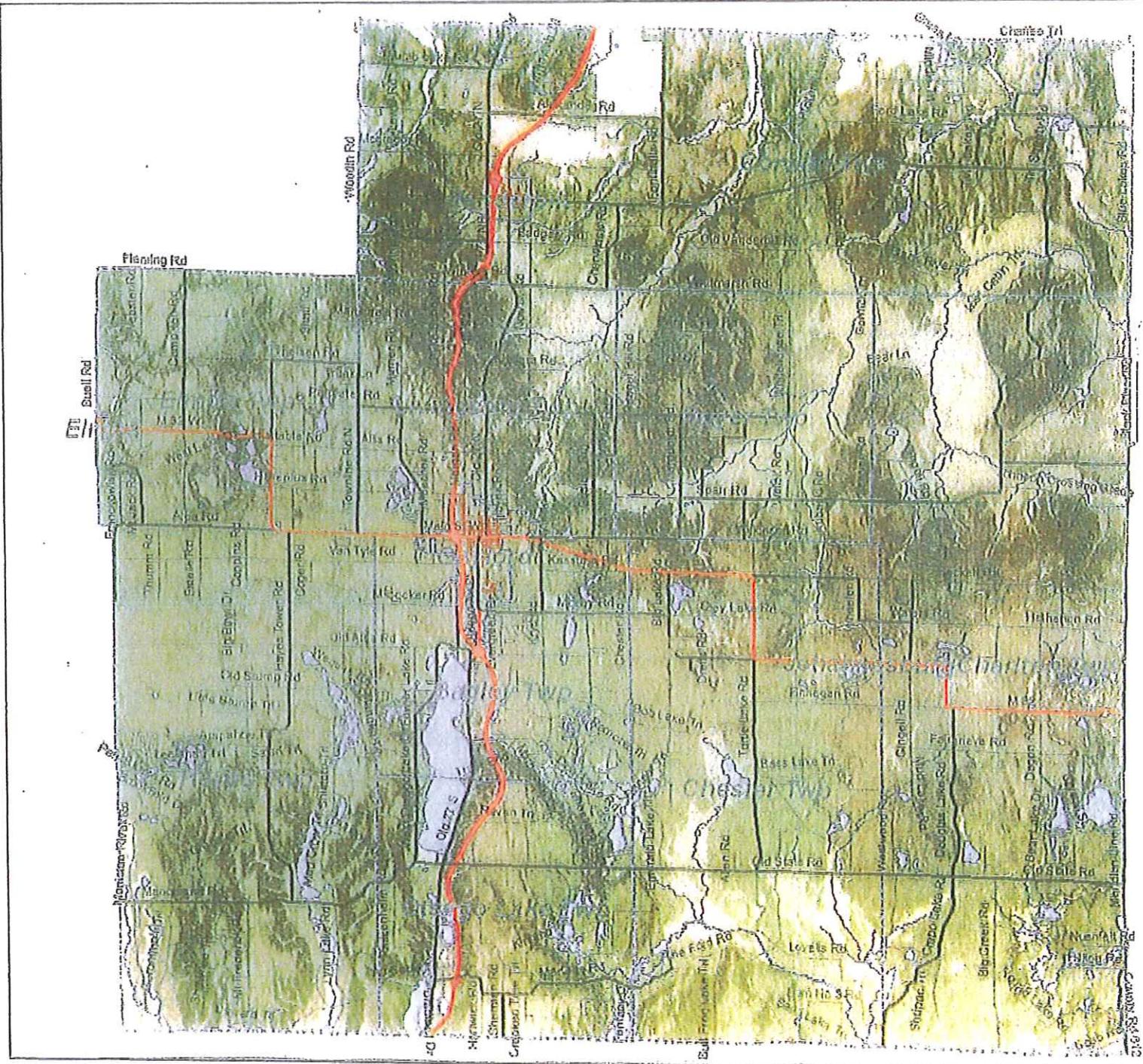
Legend

- Interstate
- State
- County Primary
- County Local
- City
- Other
- Sections
- Jurisdictions
- Lakes
- Rivers
- 0.0 - 2.0%
- 2.1 - 6.0%
- 6.1 - 12.0%
- 12.1 - 25.0%
- 25.1 - 45.0%



Data Source:
 Otsego County Data
 U.S. Department of Agriculture, Natural Resource Conservation Service

Map Created January 2008 by:
 Land Information
 Access Association





Otsego County Prime Farmland

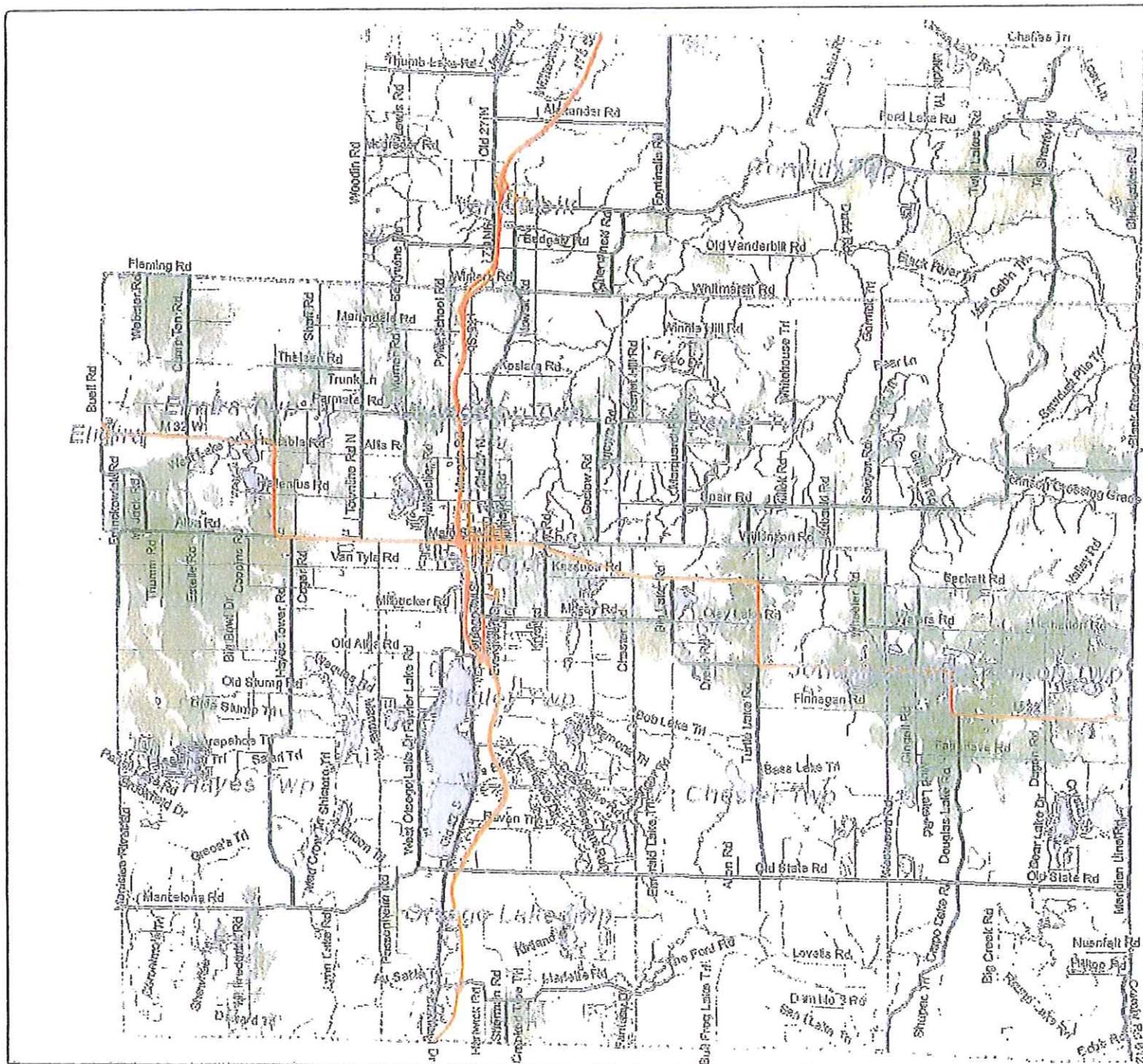
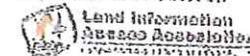
Legend

- Interstate
- State
- County Primary
- County Local
- City
- Other
- Sections
- Jurisdictions
- Lakes
- Rivers
- All areas are prime farmland
- Farmland of local importance
- Prime farmland if drained
- Not prime farmland

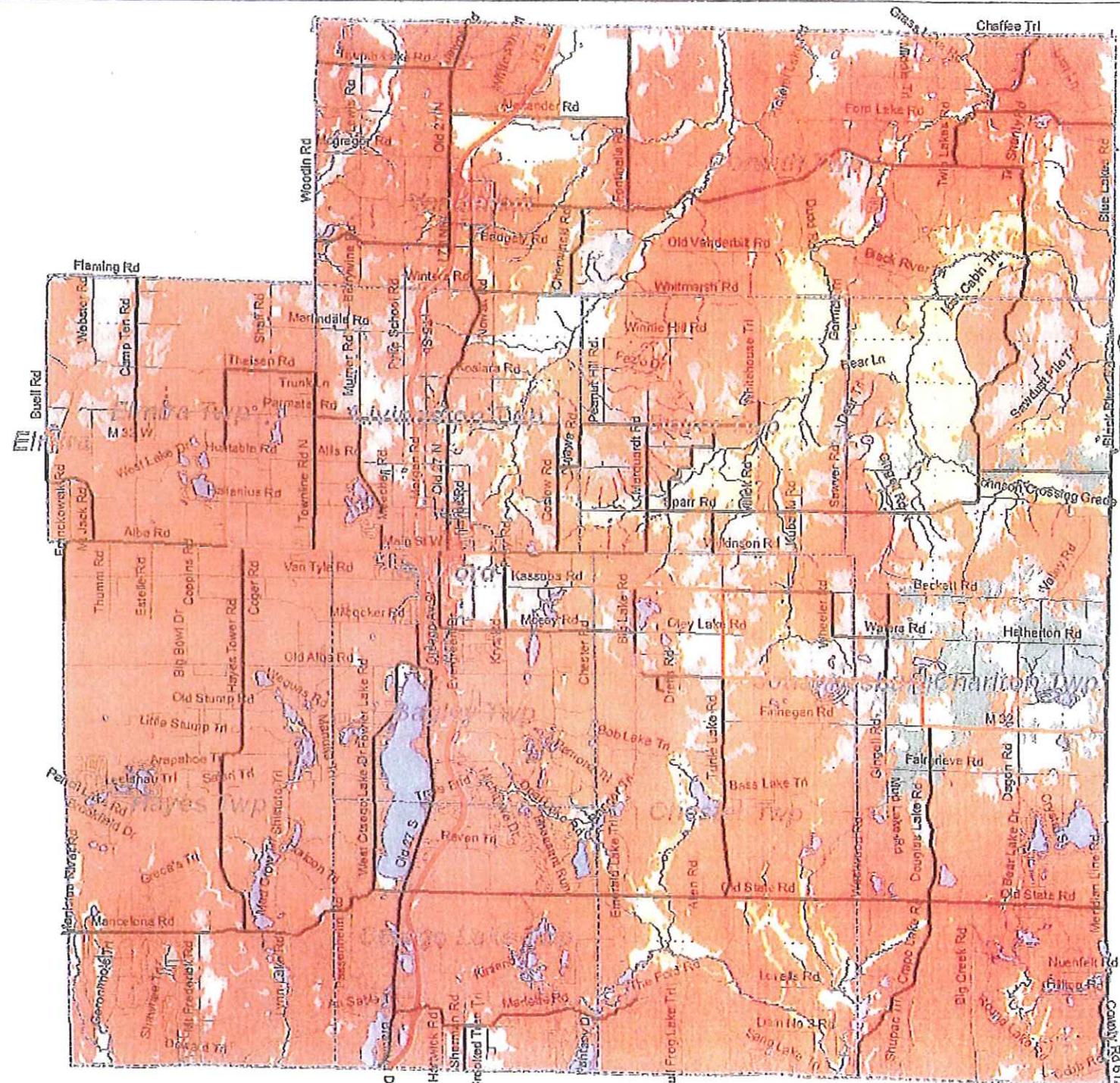


Data Source:
Otsego County Data
U. S. Department of Agriculture, Natural Resources Conservation Service

Map Created January 2008 by:



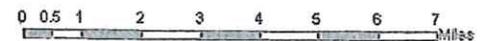
Otsego County Soil Permeability



Legend

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

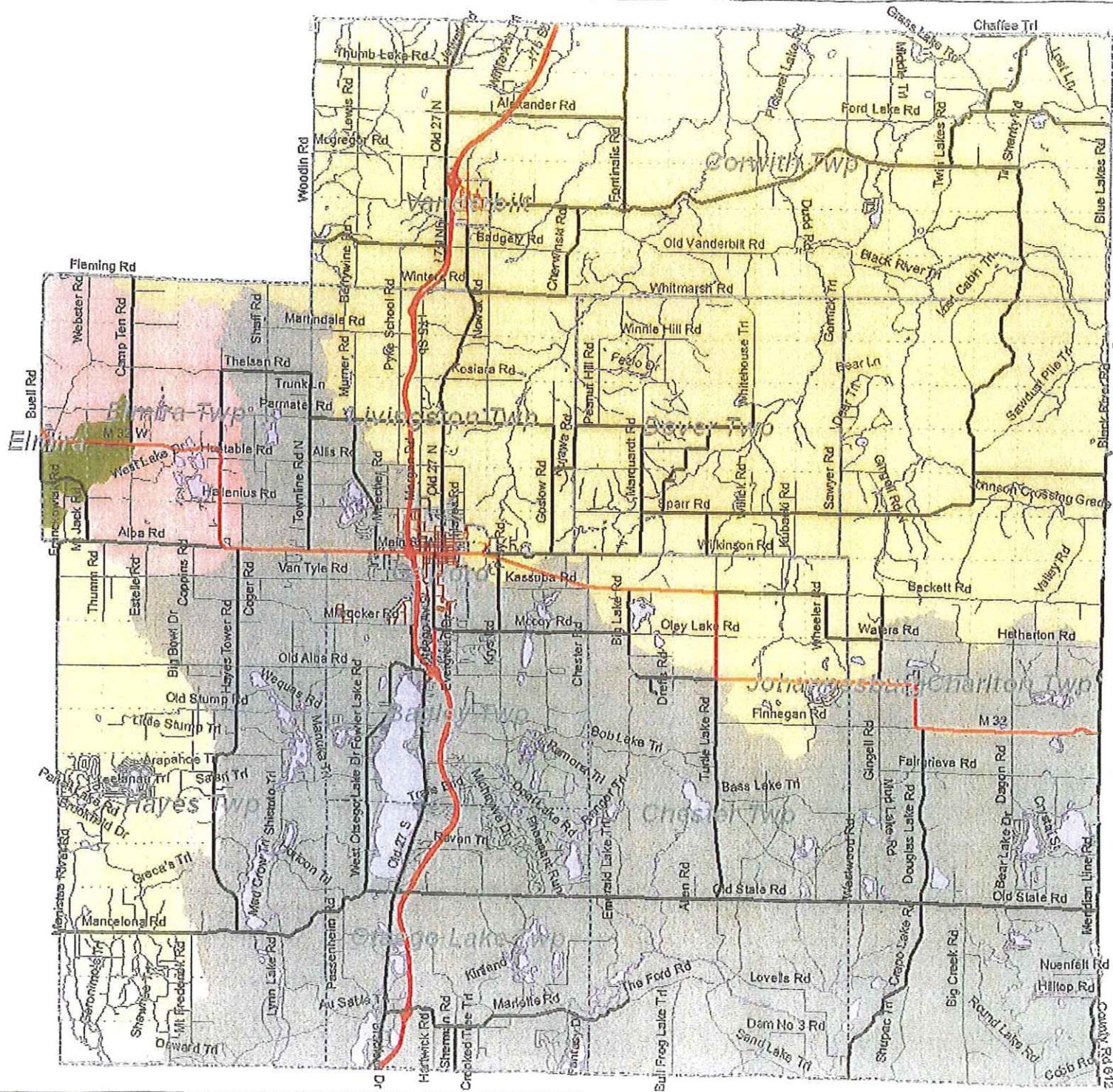
- no data or n/a
- Moderate (9 Ksat)
- Moderately Rapid (21.7 Ksat)
- Moderately Rapid (23 Ksat)
- Moderately Rapid (28 Ksat)
- Rapid (92 Ksat)



Data Source:
Otsego County Data
U.S. Department of Agriculture, Natural Resources Conservation Service

Map Created January 2008 by:
**Land Information
Access Association**

Otsego County
Major Watersheds

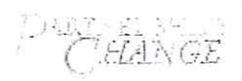


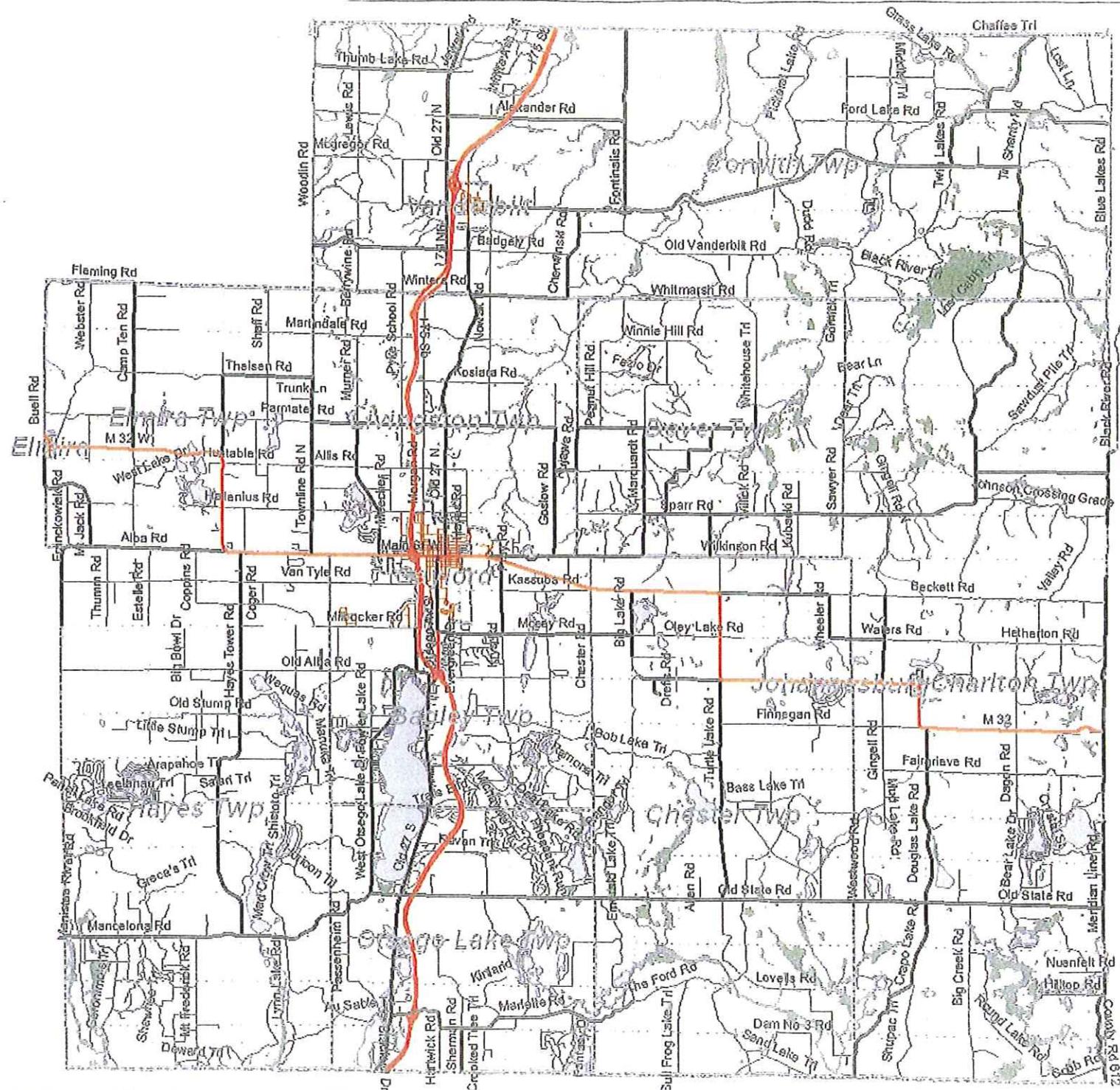
- Legend**
- Interstate
 - State
 - County Primary
 - County Local
 - City
 - Other
 - Sections
 - Jurisdictions
 - Lakes
 - Rivers
 - Au Sable
 - Boyne
 - Cheboygan
 - Elk
 - Manistee



Data Source:
Otsego County Data
Center for Geographic Information, Dept. of Information Technology

Map Created January 2006 by:
**Land Information
Access Association**





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

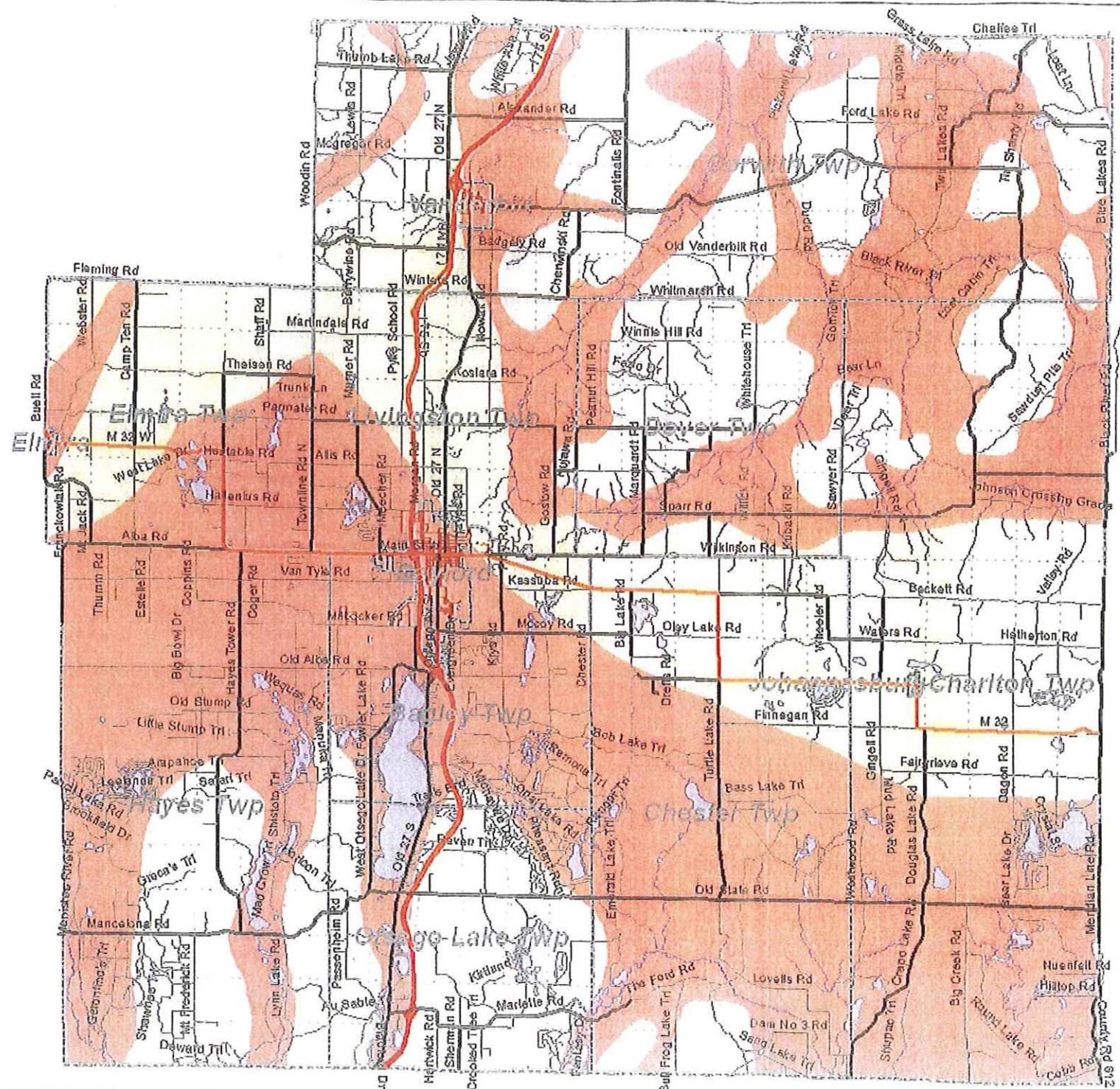


Data Source:
Otsego County Data
Center for Geographic Information, Dept. of Information Technology
2003 Land use information provided by LIAA

Map Created January 2006 by:
 Land Information Access Association

THE LAND IS CHANGING

Otsego County
Aquifer Vulnerability



Legend

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

Aquifer Vulnerability

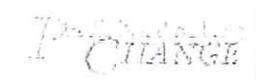
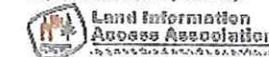
- Least Vulnerable
- Moderately Vulnerable
- Highly Vulnerable



Data Source:
Aquifer Vulnerability was determined by the Natural Resource Conservation Service (NRCS) in 1994.

Additional data provided courtesy of Otsego County.

Map Created January 2006 by:





Otsego County Population Concentration (for 2000)

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

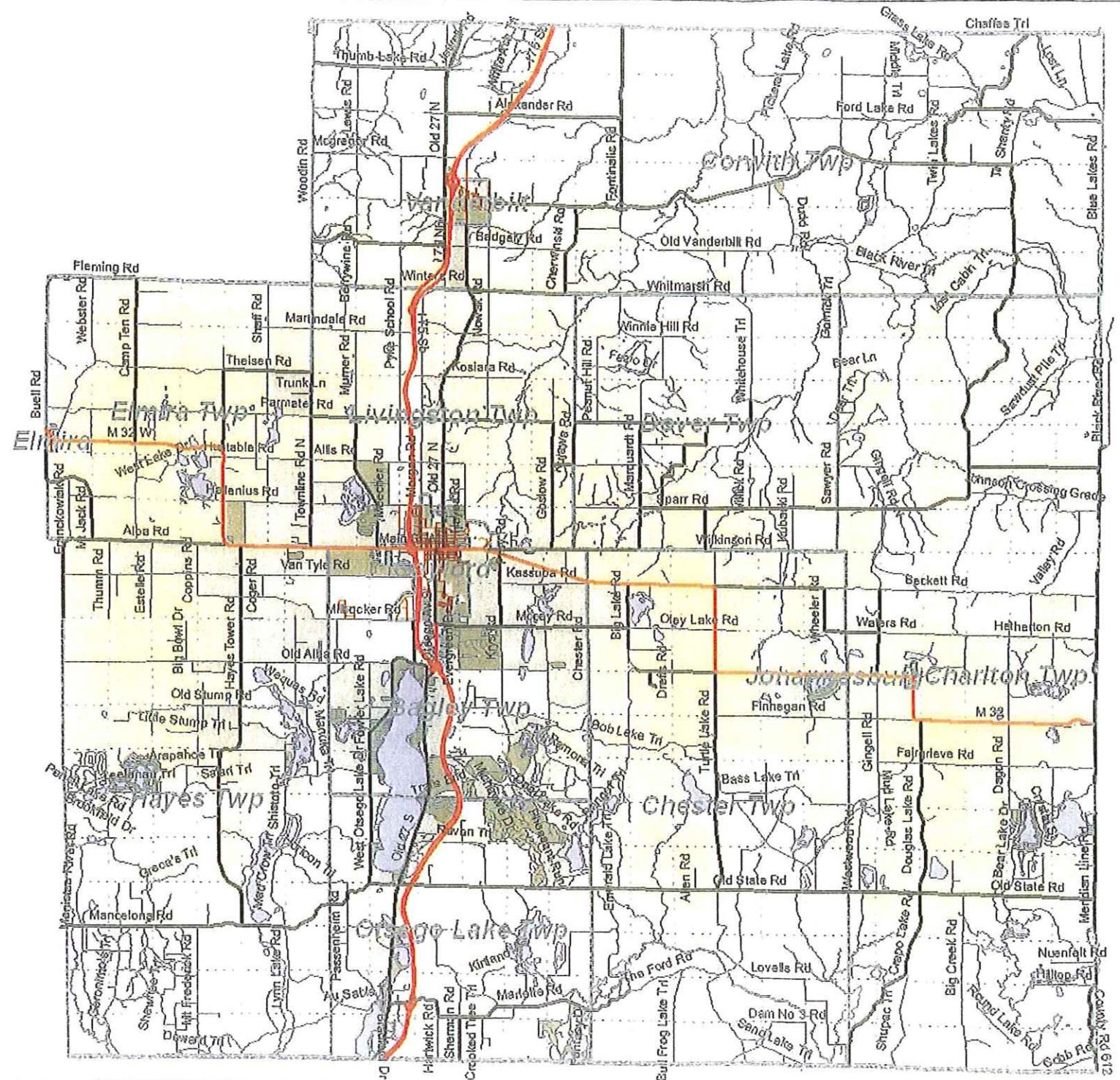
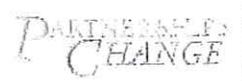
**People per sq mi
(by Census Blocks)**

- 0.0 - 15.0
- 15.1 - 75.0
- 75.1 - 250.0
- 250.1 - 500.0
- 500.1 - 20933.3

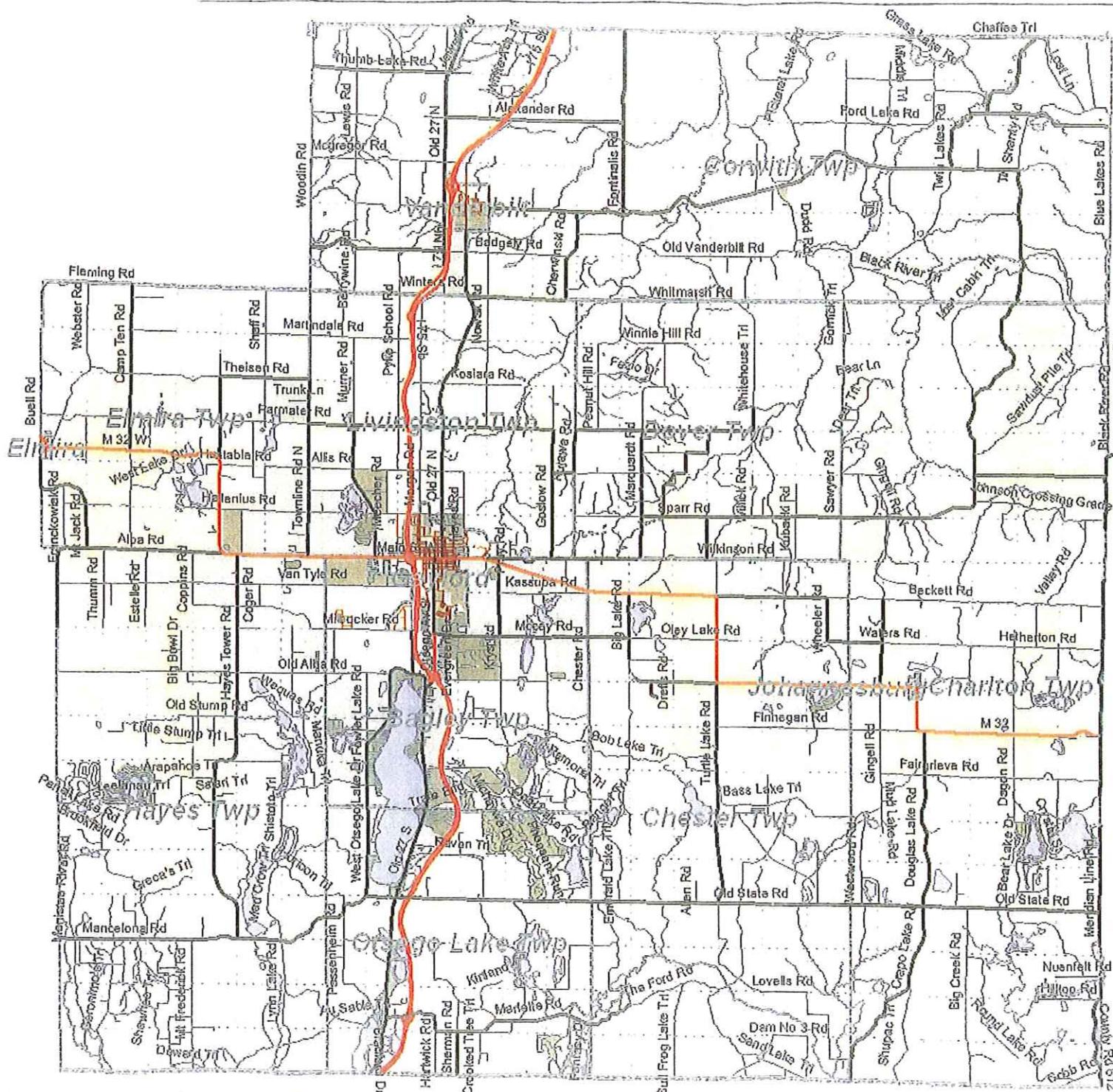


Data Source:
Otsego County Data
U.S. Census Bureau

Map Created January 2006 by:
 Land Information
Access Association



Otsego County
Population Density
(for 2000)



Legend

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

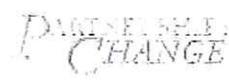
People per sq mi
(by Census Blocks)

- 0.0 - 15.0
- 15.1 - 75.0
- 75.1 - 250.0
- 250.1 - 500.0
- 500.1 - 20833.3

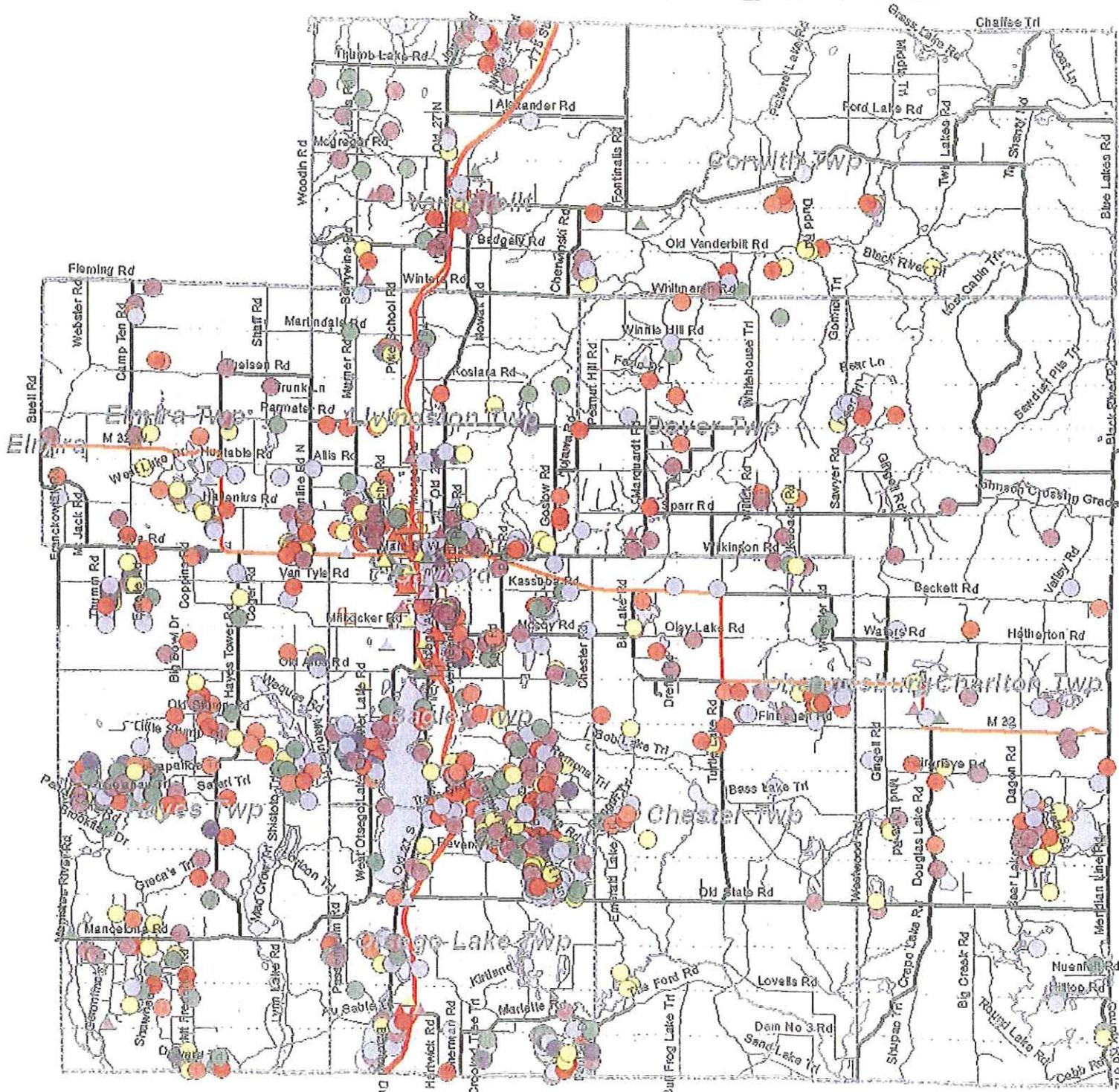


Data Sources:
Otsego County Data
U.S. Census Bureau

Map Created January 2008 by:
Land Information
Access Association



Otsego County Building Permits Issued by Year



Legend

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

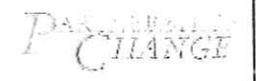
Building Permits by Issue Year

- Comm. 1999
- Comm. 2000
- Comm. 2001
- Comm. 2002
- Comm. 2003
- Comm. 2004
- Comm. 2005
- Res. 1999
- Res. 2000
- Res. 2001
- Res. 2002
- Res. 2003
- Res. 2004
- Res. 2005

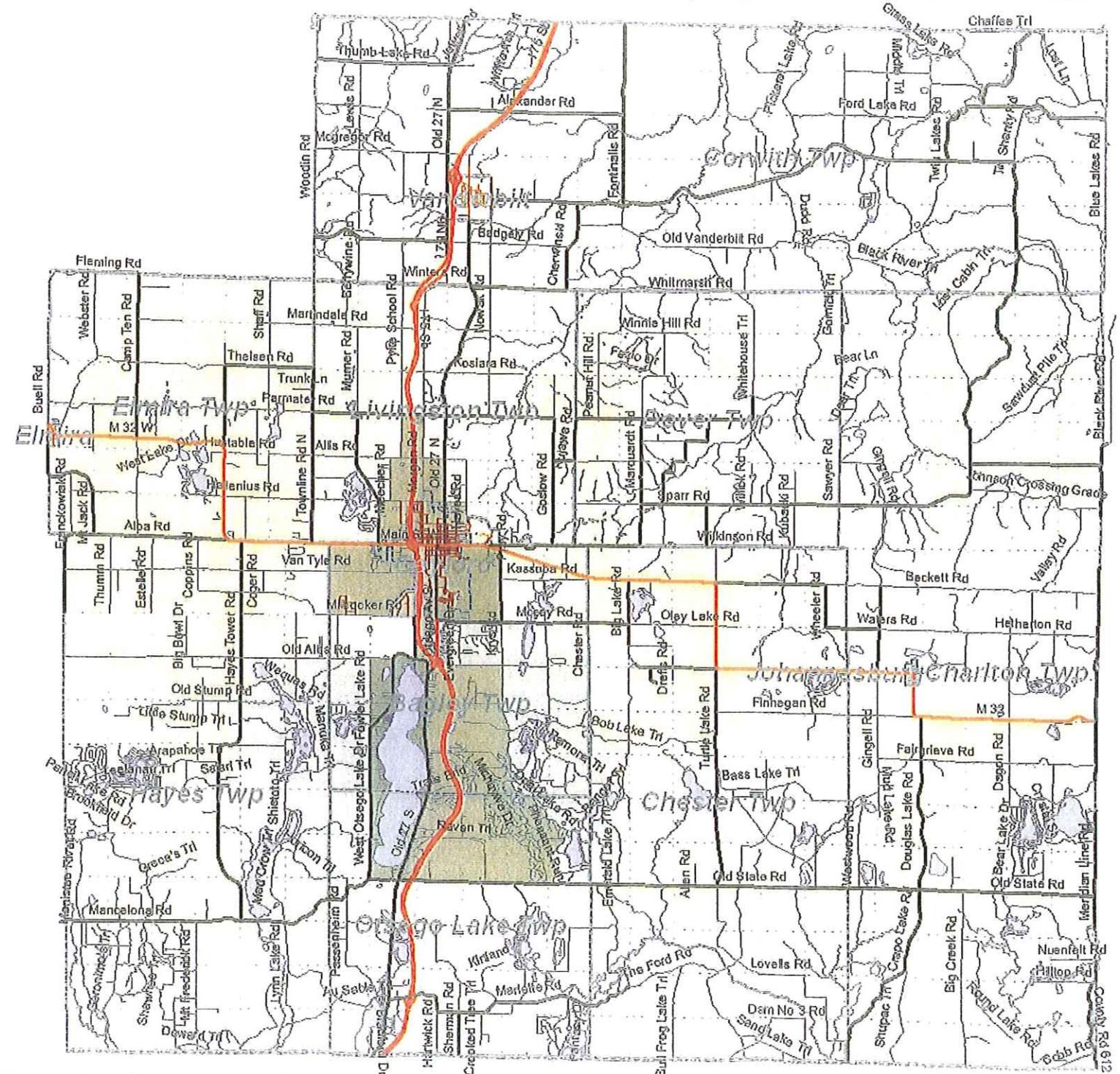


Data Source:
Otsego County Data

Map Created January 2008 by
**Land Information
Access Association**



Otsego County
Housing Density
(for 2000)

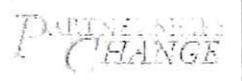


- Legend**
- Interstate
 - State
 - County Primary
 - County Local
 - City
 - Other
 - Sections
 - Jurisdictions
 - Lakes
 - Rivers
 - 8.7 - 9.9
 - 10.0 - 24.9
 - 25.0 - 99.9
 - 100.0 - 249.9
 - 250.0 - 1,600.0

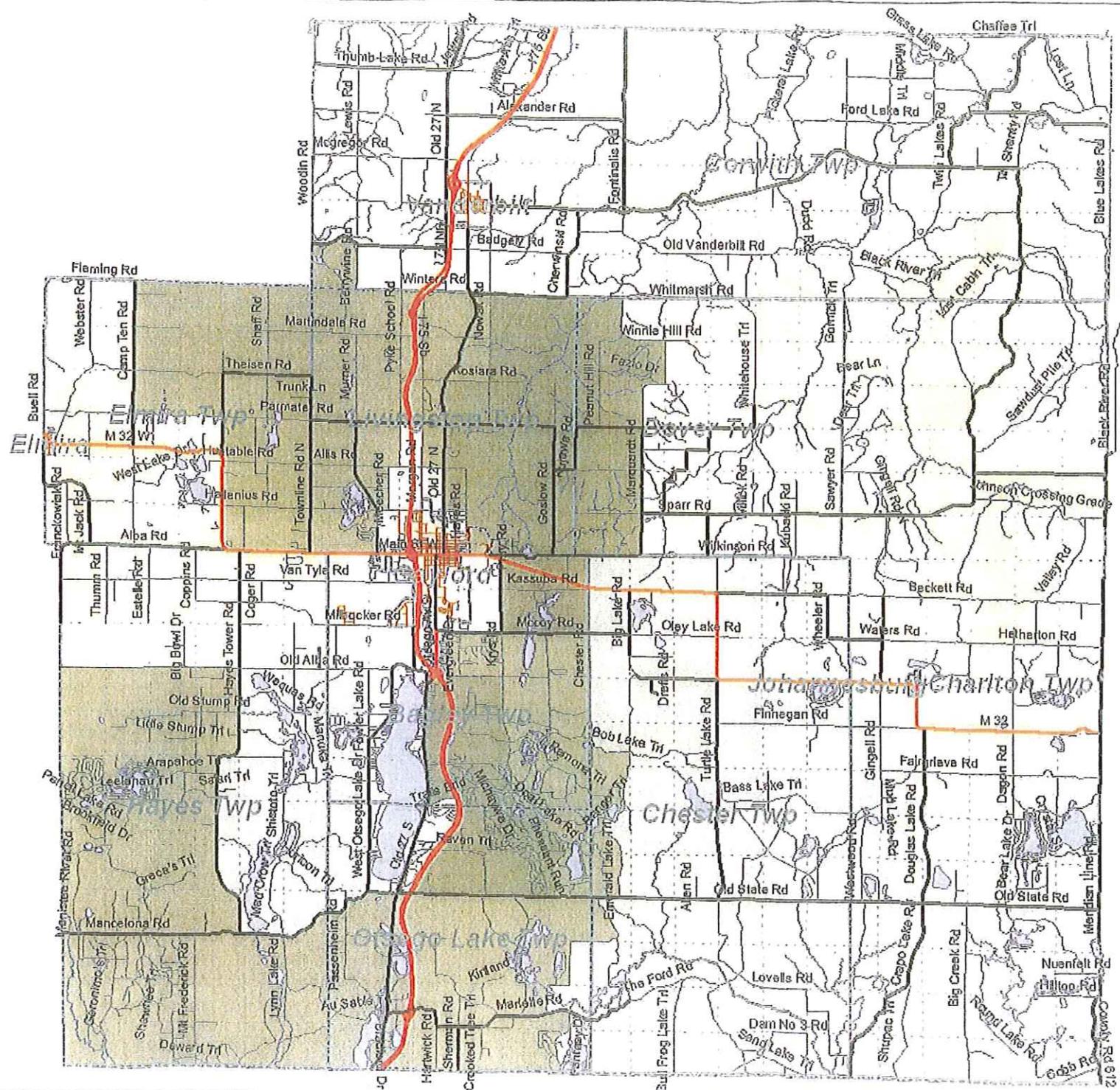


Data Source:
Otsego County Data
U.S. Census Bureau

Map Created January 2008 by:
**Land Information
Access Association**



Otsego County
Median Housing Value
(for 2000)

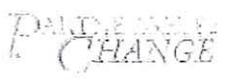


- Legend**
- Interstate
 - State
 - County Primary
 - County Local
 - City
 - Other
 - Sections
 - Jurisdictions
 - Lakes
 - Rivers
 - 0 - 84,999
 - 85,000 - 99,999
 - 100,000 - 109,999
 - 110,000 - 119,999
 - 120,000 - 150,000



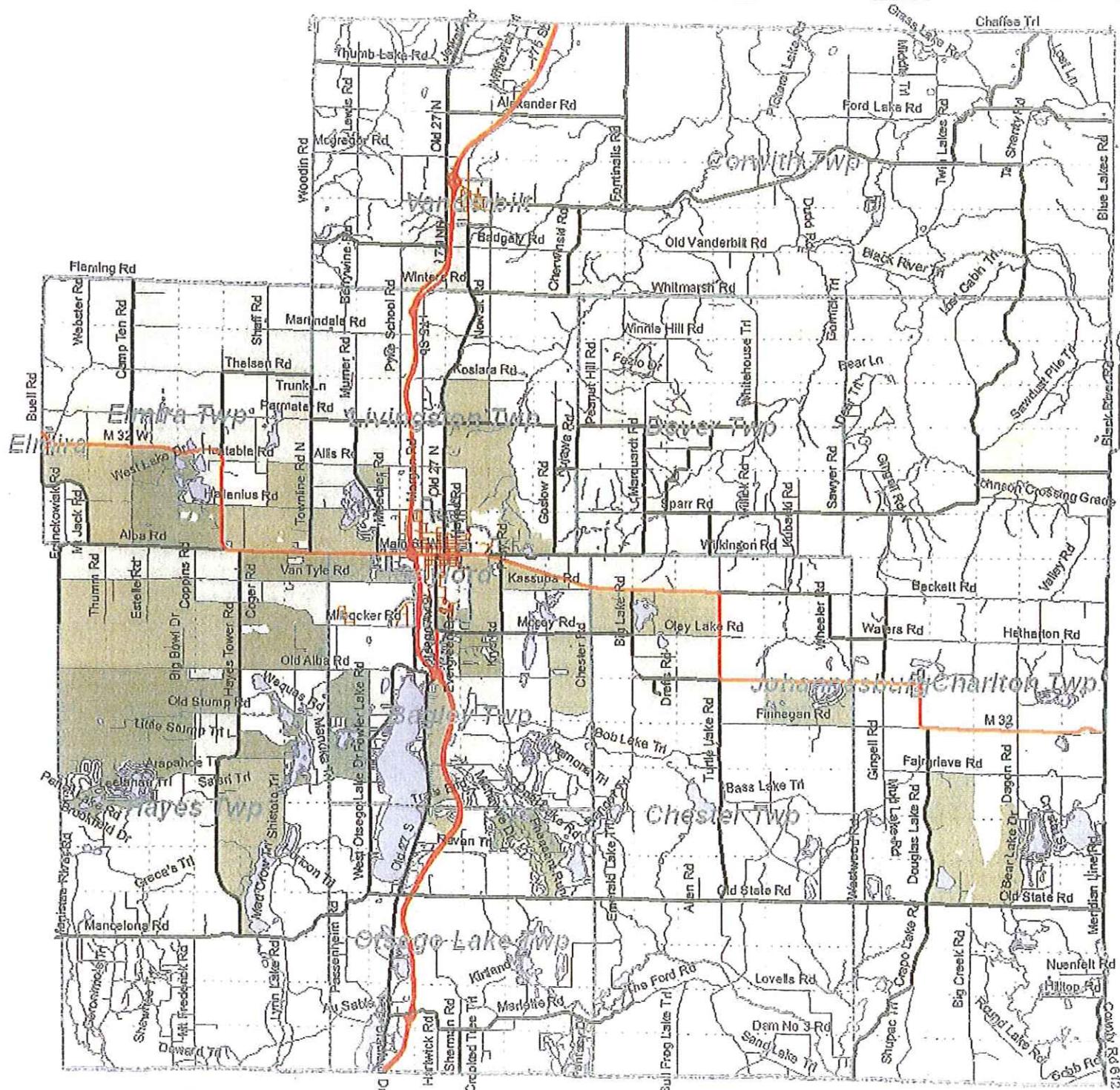
Data Source:
Otsego County Data
U.S. Census Bureau

Map Created January 2008 by:
Land Information
Access Association





Otsego County
Owner Occupied
Housing
(for 2000)



Legend

- Interstate
- State
- County Primary
- County Local
- City
- Other
- Sections
- Jurisdictions
- Lakes
- Rivers
- 0
- 1 - 9
- 10 - 36
- 37 - 59
- 60 - 150



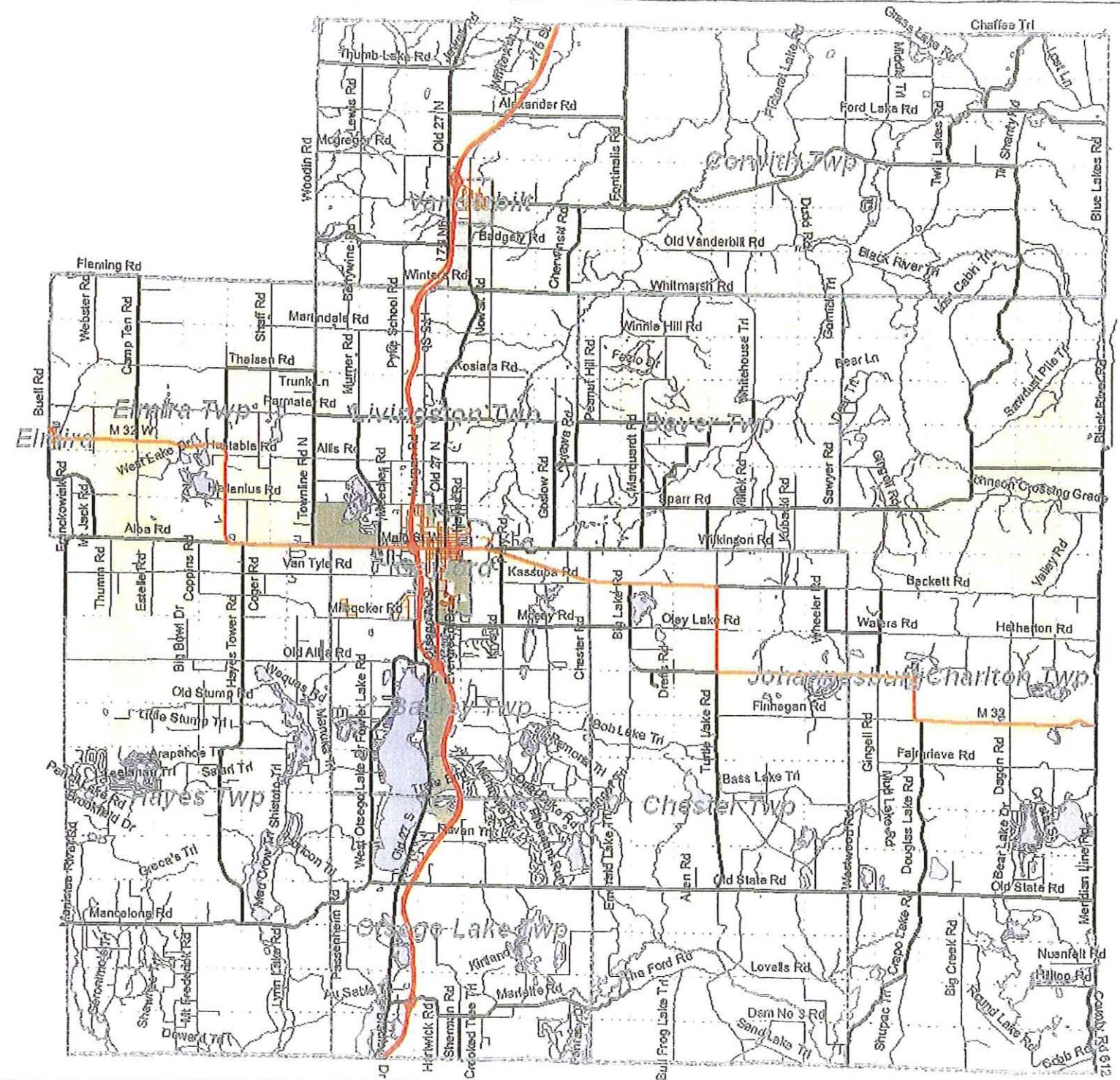
Data Source:
Otsego County Data
U.S. Census Bureau

Map Created January 2005 by:
 Land Information
Access Association

Partners in
CHANGE



Otsego County
Renter Occupied
Housing
(for 2000)



- Legend**
- Interstate
 - State
 - County Primary
 - County Local
 - City
 - Other
 - Sections
 - Jurisdictions
 - Lakes
 - Rivers
 - 0
 - 1 - 4
 - 5 - 19
 - 20 - 29
 - 30 - 130



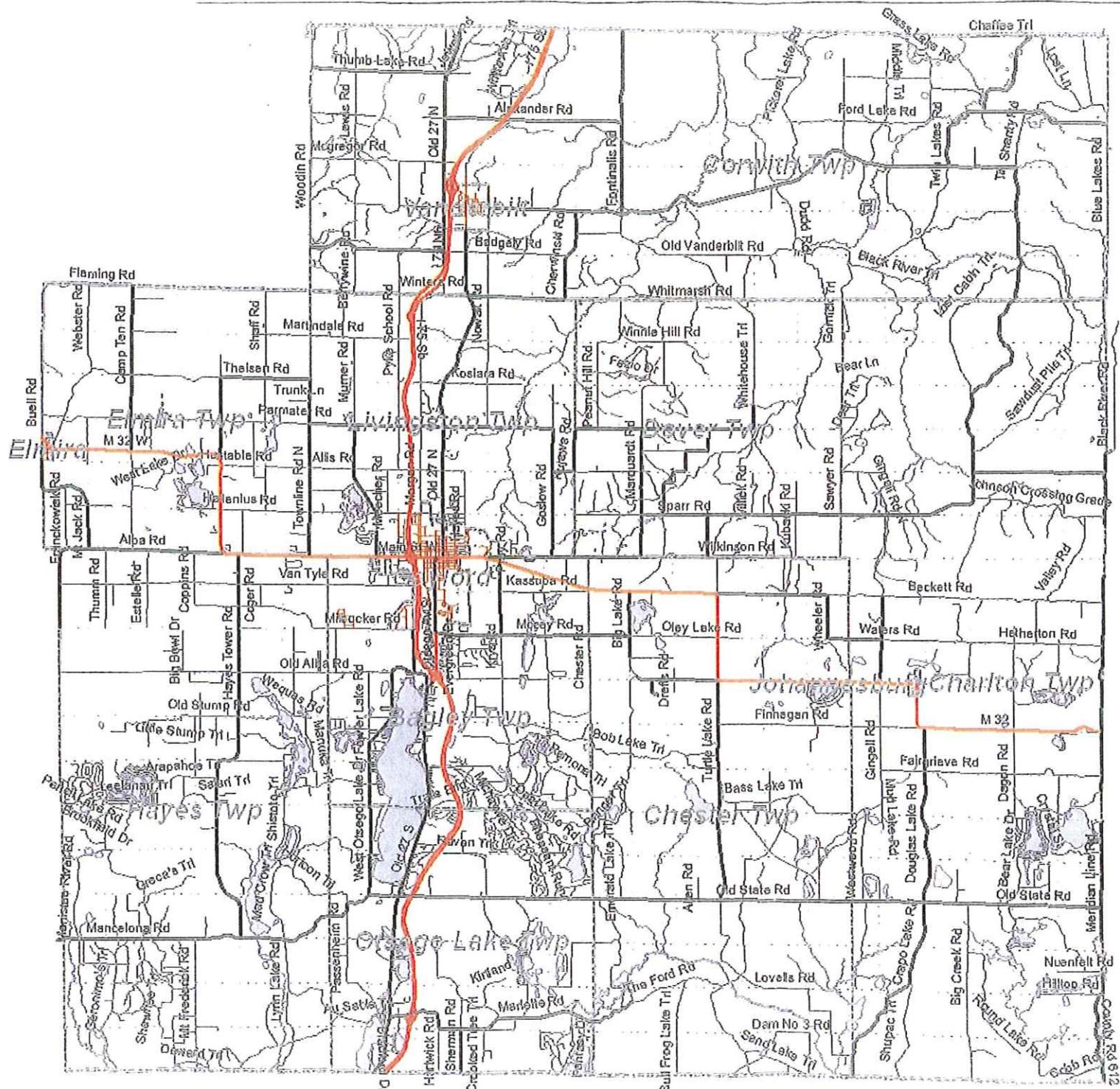
Data Source:
Otsego County Data
U.S. Census Bureau

Map Created January 2008 by:
 Land Information
Access Association

*Partners for
CHANGE*



Otsego County Road Network

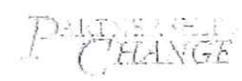


- Legend**
- Interstate
 - State
 - County Primary
 - County Local
 - City
 - Other
 - Sections
 - Jurisdictions
 - Lakes
 - Rivers



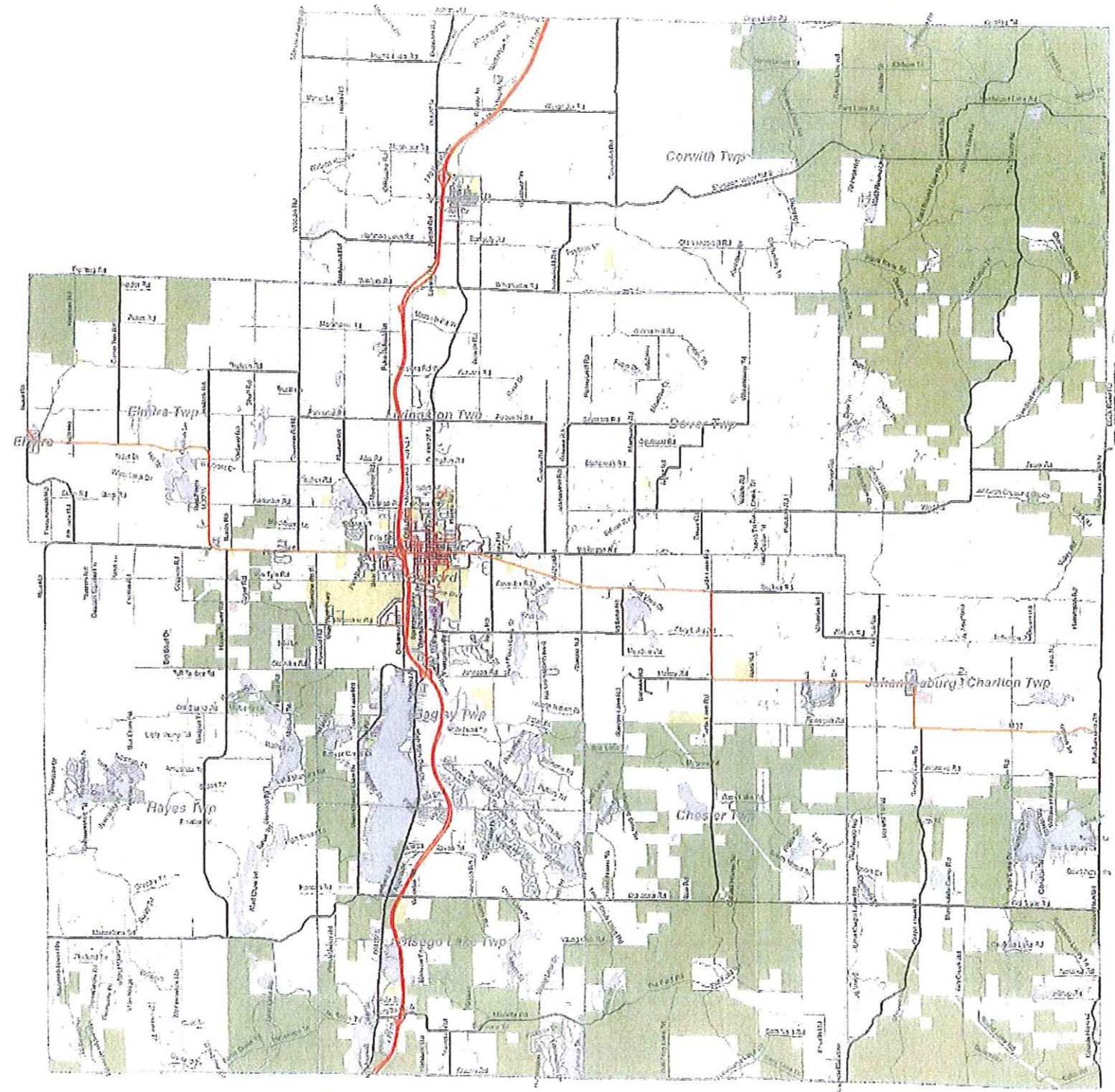
Data Source:
Otsego County Data

Map Created January 2006 by:
**Land Information
Access Association**





Otsego County Public Lands & Public Utilities



Legend

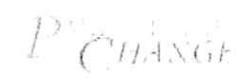
- Interstate
- State
- County Primary
- County Local
- City
- Other
- Sections
- Jurisdictions
- Lakes
- Rivers
- Sanitary Sewer
- Storm Sewer
- Water Lines
- County and Local Government
- State or Federal
- Public School
- Parcel Lines

Disclaimer:
This map should be used for general planning purposes only. For more information about this map contact the County Planning Department.

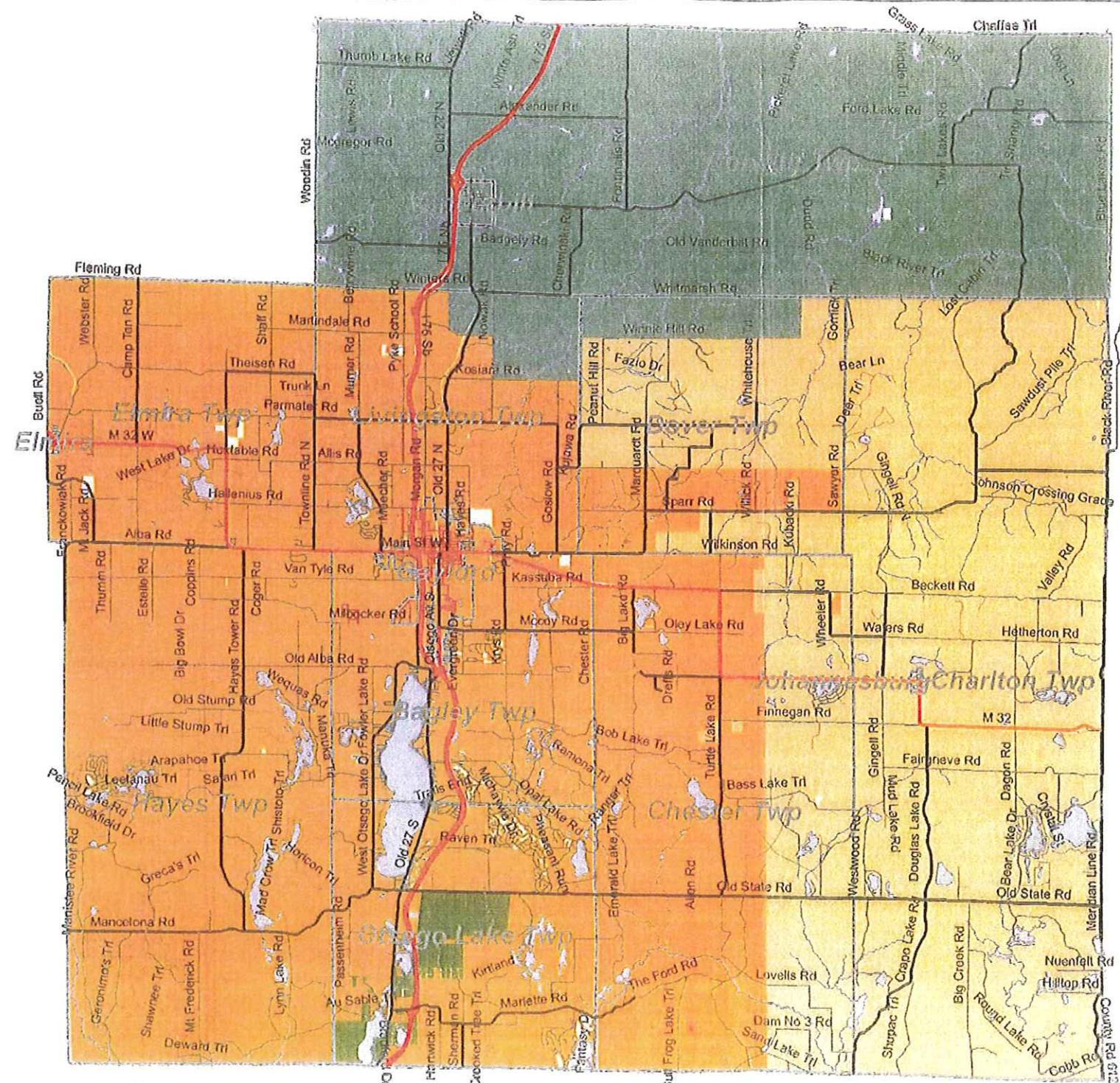


Date Source:
Otsego County Data, with city utility data provided by the City of Caylton.

Map Created January 2005 by
**Land Information
Access Association**



Otsego County School Districts



Legend

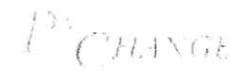
- Interstate
- State
- County Primary
- County Local
- City
- Other
- Sections
- Jurisdictions
- Lakes
- Rivers
- Crawford-AuSable School District
- Gaylord School District
- Gaylord School District (no debt)
- Johannesburg School District
- Vanderbilt School District

Disclaimer:
This map should be used for general planning purposes only. For more information about this map contact the County Planning Department.

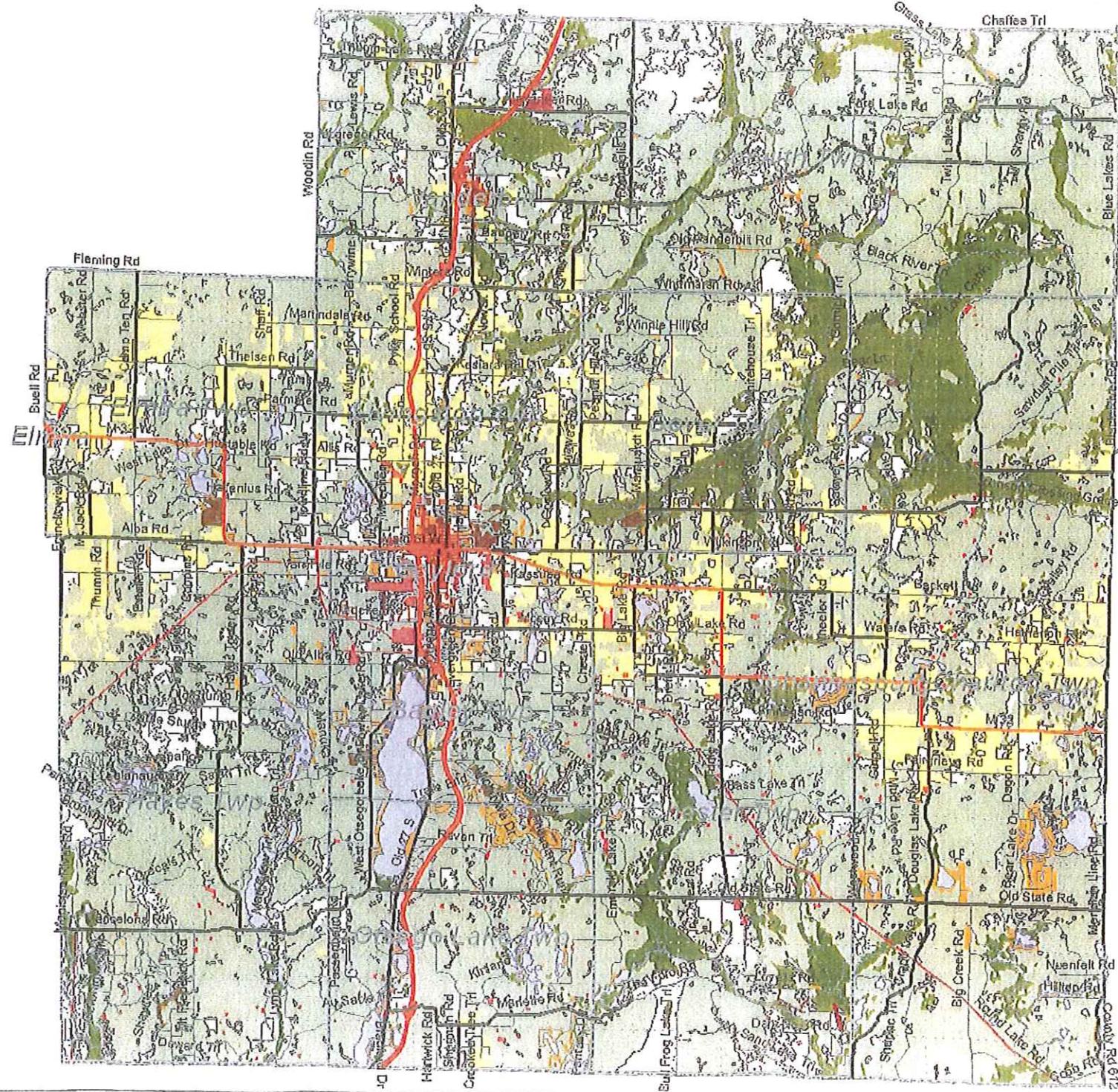


Date Source:
Otsego County Data

Map Created January 2005 by
Land Information
Access Association



Otsego County 1978 Land Use

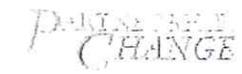


- Legend**
- Interstate
 - State
 - County Primary
 - County Local
 - City
 - Other
 - Sections
 - Jurisdictions
 - Lakes
 - Rivers
 - Residential
 - Commercial
 - Industrial
 - Institution/Rec.
 - Agricultural
 - Nonforest
 - Upland Forest
 - Lowland Forest
 - Wetlands
 - Surface Water



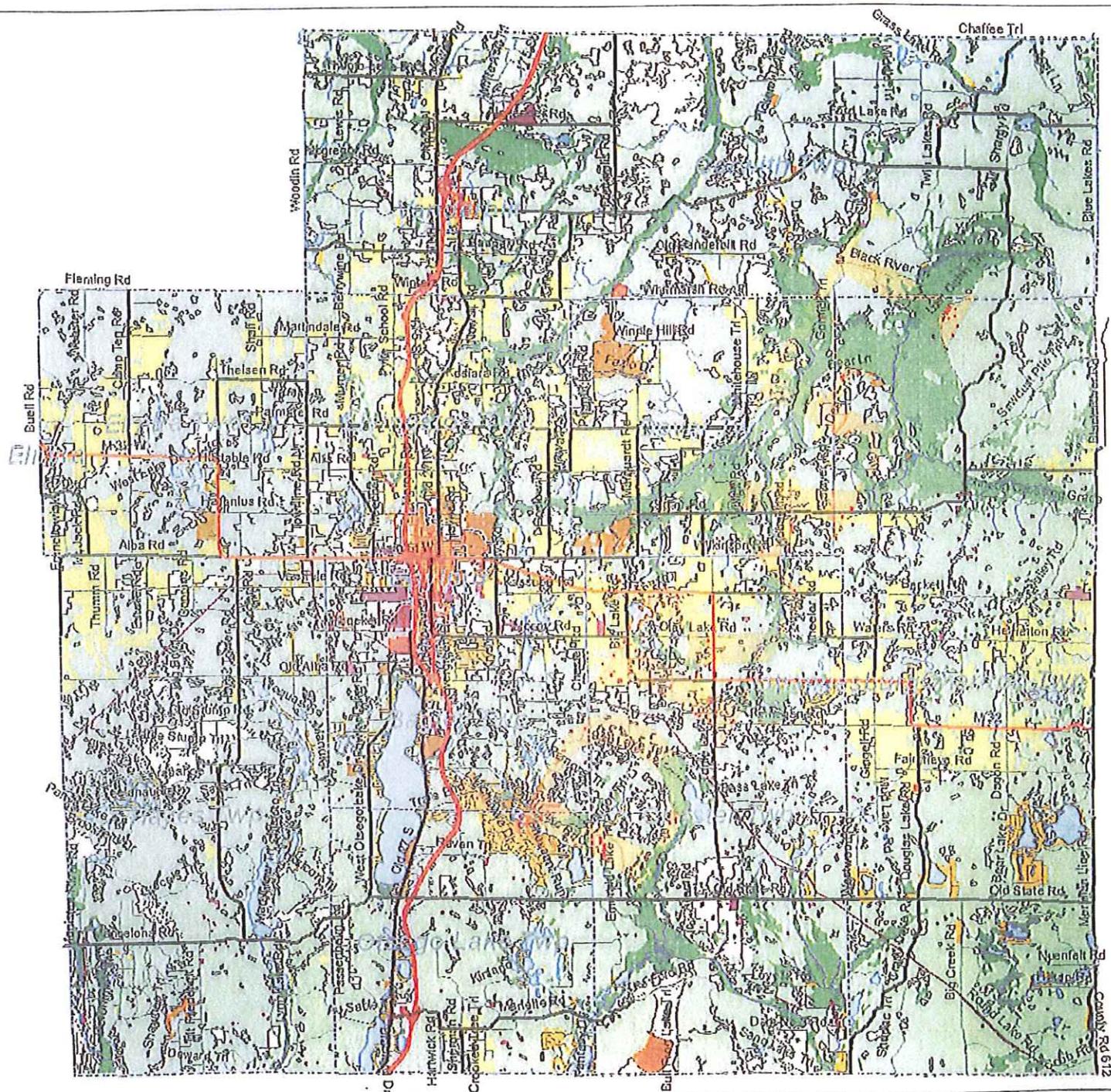
Data Source:
Otsego County Data
Center for Geographic Information, Dept. of Information Technology

Map Created January 2006 by:
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Access Association**





Otsego County 1994 Land Use



Legend

- Interstate
- State
- County Primary
- County Local
- City
- Other
- Sections
- Jurisdictions
- Lakes
- Rivers
- Residential
- Commercial
- Industrial
- Institution/Rec.
- Agricultural
- Nonforest
- Upland Forest
- Lowland Forest
- Wetlands
- Surface Water

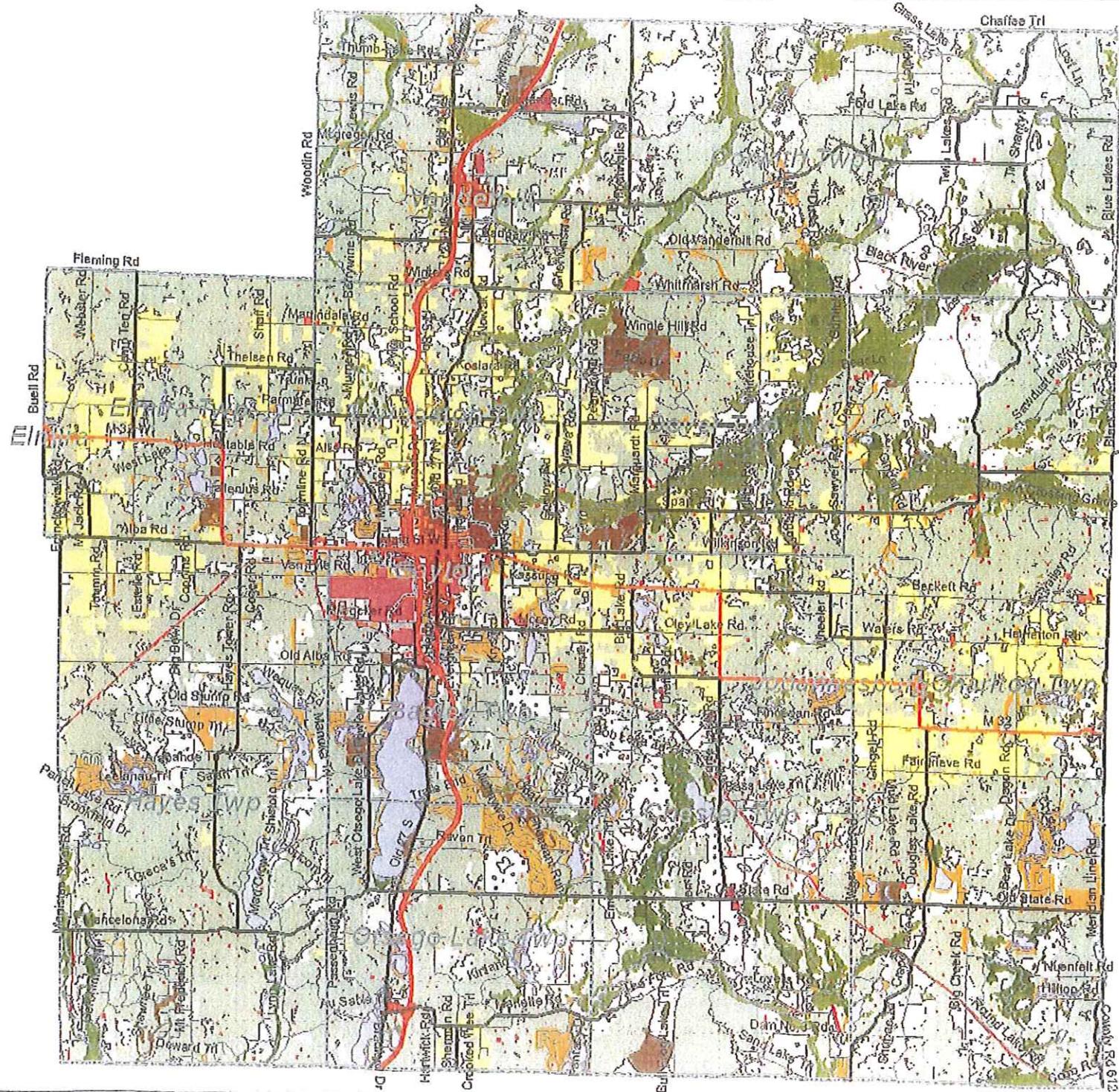


Data Source:
Otsego County Data
Center for Geographic Information, Dept. of Information Technology

Map Created January 2006 by:
**Land Information
Access Association**



Otsego County
2003 Land Use



Legend

- Interstate
- State
- County Primary
- County Local
- City
- Other
- Sections
- Jurisdictions
- Lakes
- Rivers
- Residential
- Commercial
- Industrial
- Institution/Rec.
- Agricultural
- Nonforest
- Upland Forest
- Lowland Forest
- Wetlands
- Surface Water



Data Sources:
Otsego County Data
2003 Land use information provided by LIAA

Map Created January 2006 by:
 Land Information Access Association

PAUL HENNING
CHANGE

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 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 streambanks.
- 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 traffic crossings of the North Branch of the Au Sable River.

Resources & Documents that were used to create the Otsego County Master Plan

Draft Master Plan - November 2007

Elmira Township Draft Master Plan

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