

Manitowoc County

20-Year Comprehensive Plan



Volume I: County Plan
Volume II: Manitowoc County Resources



Prepared by:
Bay-Lake Regional Planning Commission

**MANITOWOC COUNTY
20-YEAR COMPREHENSIVE PLAN**

***VOLUME I: COUNTY PLAN
VOLUME II: MANITOWOC COUNTY RESOURCES***

Prepared by:

Bay-Lake Regional Planning Commission
441 South Jackson Street
Green Bay, WI 54301
(920) 448-2820



December 15, 2009

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Cover photography provided by the Economic Development Corporation of Manitowoc County, S.S. Badger, and Ron Hoerth.

MANITOWOC COUNTY WISCONSIN

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COUNTY CLERK: Jamie Aulik
CORPORATION COUNSEL Steven Rollins

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COUNTY BOARD VICE CHAIRPERSONS: Kevin Behnke – 1st
Edward Rappe – 2nd

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Joe Janowski
Tony Heyroth
Jim VanLanen
Melvin Waack
Edward Spurney
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MANITOWOC COUNTY WISCONSIN

The *Manitowoc County 20-Year Comprehensive Plan* was prepared by the Bay-Lake Regional Planning Commission at the direction of the Manitowoc County Planning and Park Commission, with assistance from the Manitowoc County Planning Advisory Committee (MCPAC), and support from various Manitowoc County departments.



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**ORDINANCE ADOPTING COMPREHENSIVE PLAN
(Smart Growth)**

TO THE MANITOWOC COUNTY BOARD OF SUPERVISORS:

1 WHEREAS, Manitowoc County approved a contract on June 21, 2007 for a project under
2 which the Bay-Lake Regional Planning Commission would prepare a multi-jurisdictional
3 Comprehensive Plan for Manitowoc County pursuant to Wis. Stat. § 66.1001; and
4

5 WHEREAS, the project included public participation at every stage in the preparation of the
6 Comprehensive Plan, provided for wide distribution of the proposed elements of the Comprehensive
7 Plan, provided an opportunity for written comments from the public, and provided for the county to
8 respond to those comments; and
9

10 WHEREAS, the Planning and Park Commission, after providing the required notice, held a
11 public hearing seeking public comment on the proposed MANITOWOC COUNTY 20-YEAR
12 COMPREHENSIVE PLAN, consisting of Volume I: County Plan and Volume II: Manitowoc County
13 Resources, on December 7, 2009; and
14

15 WHEREAS, the Planning and Park Commission has provided the County Board with a copy
16 of the Comprehensive Plan and recommends that the County Board adopt the Comprehensive Plan;
17 and
18

19 WHEREAS, the County Board has carefully reviewed the recommendation of the Planning
20 and Park Commission and has determined that all procedural requirements and notice have been
21 satisfied; and
22

23 WHEREAS, the County Board has given due consideration to the following plan elements that
24 are required by statute: issues and opportunities; housing; transportation; utilities and community
25 facilities; agricultural, natural, and cultural resources; economic development; intergovernmental
26 cooperation; land use; and implementation; and
27

28 WHEREAS, the County Board has determined that the Comprehensive Plan will provide
29 guidance for the coordinated and harmonious development of Manitowoc County; will best promote
30 the public health, safety, morals, order, prosperity, and general welfare; and will provide for
31 economy and efficiency in the development process;
32

33 NOW, THEREFORE, the county board of supervisors of the county of Manitowoc does ordain
34 as follows:
35

36 Manitowoc County Code Chapter 29, Comprehensive Plan, is adopted to read as follows:
37

38 29.01. Authority. This ordinance is adopted pursuant to Wis. Stat. § 66.1001.
39

40 29.02. Comprehensive Plan Adopted. The Manitowoc County 20-Year Comprehensive Plan
41 dated December 7, 2009 is hereby adopted and may be referred to as the Comprehensive Plan.
42

43 29.03. Delivery. The County Clerk shall send a copy of the Comprehensive Plan to each of
44 the following:
45

- 46 (1) Every governmental body that is located in whole or in part within the boundaries
47 of Manitowoc County;
48
49 (2) The clerk of every local governmental unit that is adjacent to Manitowoc County;
50
51 (3) The Wisconsin Land Council;
52
53 (4) The Wisconsin Department of Administration;
54
55 (5) The Bay-Lake Regional Planning Commission; and
56
57 (6) Each public library that serves Manitowoc County.
58

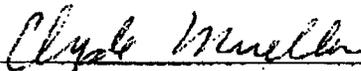
59 29.04. Severability. The provisions of this ordinance and the Comprehensive Plan are
60 severable. If any part of this ordinance or the Comprehensive Plan is found to be invalid, unlawful,
61 or unenforceable, that finding will not affect the validity, lawfulness, or enforceability of the
62 remainder of this ordinance or the Comprehensive Plan, and the remainder of this ordinance and the
63 Comprehensive Plan shall remain in full force and effect.
64

65 29.05 Relation to Other Ordinances. If a provision of any other ordinance is in conflict with
66 a provision of this ordinance or the Comprehensive Plan, the provisions of this ordinance and the
67 Comprehensive Plan are controlling.
68

69 This ordinance is effective December 31, 2009.

Dated this 15th day of December 2009.

Respectfully submitted by the
Planning and Park Commission

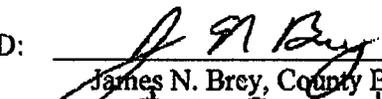

Clyde Mueller, Chair

FISCAL IMPACT: Indeterminable.

FISCAL NOTE: Reviewed and approved by Comptroller. 

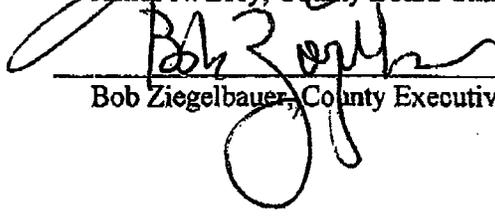
LEGAL NOTE: Reviewed and approved as to form by Corporation Counsel. SR

COUNTERSIGNED:


James N. Brey, County Board Chair

12-15-09
Date

APPROVED:


Bob Ziegelbauer, County Executive

12/17/09
Date

Manitowoc Voting System
Vote Summary Report
12-15-2009

All Reports
Report , 4 , 1/2 Majority Based on Attendance

4. Ordinance Adopting Comprehensive Plan (Smart Growth).

Seat	Dist	Attn	Name	Aye	Nay	Abs
1	15	*	Wagner, Catherine E.	[X]	[]	[]
2	11	*	Janowski, Joe	[X]	[]	[]
3	3	*	Bundy, Kathie	[X]	[]	[]
4	18	*	Muench, Mary	[X]	[]	[]
5	17	*	Maresh, Susie	[X]	[]	[]
6	8	*	Tittl, Paul	[X]	[]	[]
7	21	*	Gerroll, Rick	[X]	[]	[]
8	20	*	Heyroth, Tony	[X]	[]	[]
9	2	*	Schmidt, Kevin	[X]	[]	[]
10	7	*	Vogt, Norbert A.	[X]	[]	[]
11	14	*	Konen, Faye	[X]	[]	[]
12	12	*	Behnke, Kevin	[X]	[]	[]
13	16	*	Schneider, Andrew	[X]	[]	[]
14	1	*	Rappe, Edward C.	[X]	[]	[]
15	5	*	Dufek, Gregory	[X]	[]	[]
16	23	*	Henrickson, Rick	[X]	[]	[]
17	10	*	Markwardt, Don	[X]	[]	[]
18	9	*	Panosh, Joseph	[X]	[]	[]
19	6	*	Hansen, Paul B.	[X]	[]	[]
20	19	*	Korinek, Dave	[X]	[]	[]
21	25	*	Gauger, David E.	[X]	[]	[]
22	24	*	Diedrich, A.	[X]	[]	[]
23	22	*	Bauknecht, Michael	[X]	[]	[]
24	13	*	Mueller, Clyde	[X]	[]	[]
30	4	Chair	Brey, James N.	[X]	[]	[]

Pass

On this 15 day of December 2009 by a vote of:
Aye = 25 Nay = 0 Abs = 0 Present = 0

Attest:

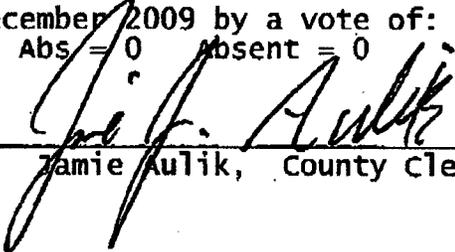

Jamie Aulik, County Clerk

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Volume I

County Plan

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Manitowoc County 20-Year Vision Statement

“In 2030 Manitowoc County is envisioned as a progressive area of East Central Wisconsin, promoting its lakeshore identity while being keenly aware of its diverse heritage and the preservation of individual property rights.

Rural communities maintain a strong agricultural tradition, while new housing and business developments, along with innovative industries, are constructed in areas that provide exceptional services and the skilled workforce to support them. This diversity of use, coupled with forward thinking policies, results in the preservation of farmland, natural resources, and rural character.

The cities, villages, and towns maintain a working relationship with each other, providing quality amenities to enjoy a relaxed, healthy, and active lifestyle that supports a vital and diverse economy, while recognizing the rich agricultural, industrial, and maritime heritage of the county.”

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**CHAPTER 1:
INTRODUCTION**

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PURPOSE OF THE COMPREHENSIVE PLAN

The *Manitowoc County 20-Year Comprehensive Plan* is a legal document that provides the policy framework for which county officials will refer to when making future land use decisions. This county plan was prepared to address future development and preservation concerns that may have an impact on the county over the next 20 years. The purpose of the plan is to identify strategies to efficiently meet the growing needs of the county through transportation improvements, provision of public services, housing development, and economic development; all while taking private property rights into account. Methods to preserve the county's vast agricultural land, natural features, and woodlands are also discussed.

The Future Land Use Plan identifies areas throughout Manitowoc County for preferred land use activities, and is the desired goal to be achieved through the implementation of this county comprehensive plan. The 20-Year Land Use Plan map (Map 3.1), along with the county's development/preservation strategies, shall be used in conjunction with the adopted community comprehensive plans, Manitowoc County's zoning ordinances, local land use ordinances, supporting planning materials, and other implementation tools, to make informed land use decisions in Manitowoc County over the next 20 years.

State Planning Legislation

As outlined in the Comprehensive Planning legislation, s.66.1001, Wis. Stats., the *Manitowoc County 20-Year Comprehensive Plan* addresses the required nine (9) plan elements.

- Issues and Opportunities
- Intergovernmental Cooperation
- Implementation
- Agriculture, Natural, and Cultural Resources
- Housing
- Economic Development
- Transportation
- Utilities and Community Facilities
- Land Use

Comprehensive planning legislation (s.66.1001, Wis. Stats.) further states:

“Beginning on January 1, 2010, if a local governmental unit engages in any of the following actions, those actions shall be consistent with that local governmental unit's comprehensive plan:

- (a) Official mapping established or amended under s. 62.23 (6).
- (b) Local subdivision regulation under s. 236.45 or 236.46.
- (c) County zoning ordinances enacted or amended under s. 59.69.
- (d) City or village zoning ordinances enacted or amended under s. 62.23 (7).
- (e) Town zoning ordinances enacted or amended under s. 60.61 or 60.62.
- (f) Zoning of shorelands or wetlands in shorelands under s. 59.692, 61.351 or 62.231.”

HOW TO USE THIS PLAN

The *Manitowoc County 20-Year Comprehensive Plan* is made up of two volumes containing a total of 10 chapters. **Volume I – County Plan** consists of Chapters 1 through 4 along with an appendices section for the county’s plan. **Volume II – Manitowoc County Resources** contains Chapters 5 through 10 along with an appendices section for countywide resources.

Volume I: County Plan: This volume describes how Manitowoc County envisions itself developing over the next 20 years. It includes information on land use issues, recommended county development/preservation opportunities and strategies, land use projections, a 20-Year Land Use Plan (future land use map), and a plan implementation guide.

Chapter 1: Introduction - contains an overview of the purpose of the plan; state planning legislation; plan development process; and the county’s planning vision statement.

Chapter 2: Issues and Opportunities - provides a brief summary of background information and data compiled at the county level in chapters 5 through 10; identifies land use issues and conflicts, along with recommended county development/preservation opportunities and strategies (goals and objectives); and projects future land use allocations for residential, commercial, industrial, and agricultural activities.

Chapter 3: Future Land Use Plan - illustrates the county’s recommendations for future land uses through a 20-Year Land Use Plan.

Chapter 4: Implementation – discusses intergovernmental cooperation programs to facilitate joint planning and decision making processes with other government units; and contains a guide to implement the county’s comprehensive plan by prioritizing projects and identifying stakeholders.

Appendices: County Plan - Contains county public participation materials; nominal group results; intergovernmental cooperation workshop results; and other relevant input and materials generated or gathered during the plan development process.

Volume II: Manitowoc County Resources: This volume contains countywide background information and data that served as a basis in the creation of the county’s development strategies and 20-Year Land Use Plan.

Chapter 5: Natural, Agricultural, and Cultural Resources - provides a detailed description of the county’s unique features that comprise its physical landscape.

Chapter 6: Population and Housing - presents countywide historic demographic information along with future population and housing projections.

Chapter 7: Economic Development – highlights labor force statistics; economic composition; and provides an analysis of existing and future economic conditions for the local communities and Manitowoc County.

Chapter 8: Transportation - describes the county’s existing multi-modal transportation system.

Chapter 9: Utilities and Community Facilities - inventories all local and countywide utilities and facilities including schools and emergency services.

Chapter 10: Land Use Controls and Inventory – provides a detailed inventory of existing land uses for Manitowoc County.

Appendices: Manitowoc County Resources - Contains a countywide inventory of natural resources information; a detailed list of available housing, economic development, and transportation financial and technical resources; existing countywide land use inventory; a glossary of definitions; and other relevant input and materials generated or gathered during the plan development process.

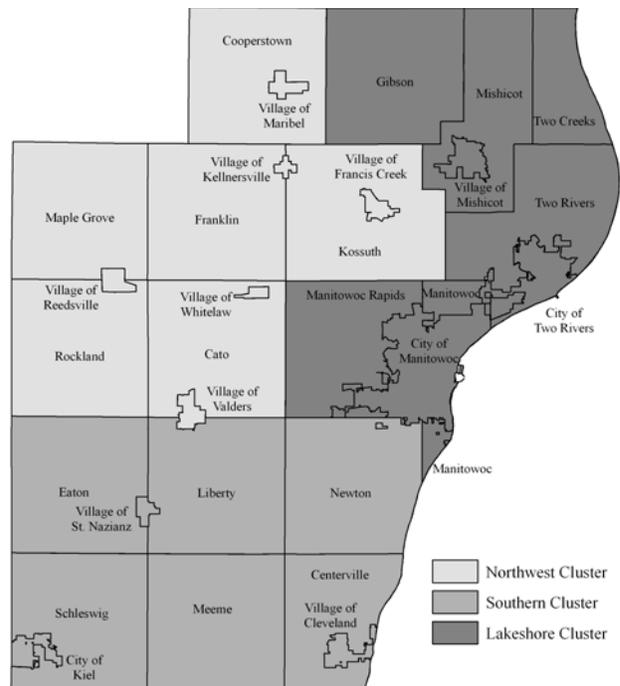
PLAN DEVELOPMENT PROCESS

Manitowoc County along with 20 of its communities developed comprehensive plans utilizing a *three phase* multi-jurisdictional planning process:

First Phase: Inventorying countywide background information to be used for completion of the local and county plans

- Collection and presentation of countywide background data.
- Manitowoc County Planning Advisory Committee (MCPAC) provided edits and other input on countywide background data.
- Conducted three (3) Open Houses. One in each of the county’s three Planning Clusters (Southern, Lakeshore, and Northwest). These Open Houses allowed the public to review countywide background materials, ask questions, and provide feedback.
- Created the preliminary *Volume II: Manitowoc County Resources* document to assist with the completion of the local and county comprehensive plans.

Manitowoc County Planning Clusters



Second Phase: Completion and adoption of the local comprehensive plans and adoption of *Volume II: Manitowoc County Resources*.

- Commenced work on the 20 local comprehensive plans.
- Developed local vision statements along with the land use goals, objectives, and policies by using results from the various issue identification workshops and background data in *Volume II: Manitowoc County Resources*.

- Created a preliminary 20-Year Land Use Plan and preferred land use strategy to guide future growth, development, and conservation within the communities over the next 20 years.
- Public review and Final Open Houses conducted to present the *local comprehensive plans along with Volume II: Manitowoc County Resources* to the citizens of the community as well as nearby municipalities and government organizations for their feedback.
- Local Plan Commissions and governing bodies finalize and adopt community comprehensive plans.
- Manitowoc County Planning and Park Commission and Manitowoc County Board finalize *Volume II: Manitowoc County Resources* document.

Third Phase: Completion and adoption of the *Manitowoc County 20-Year Comprehensive Plan*

- Manitowoc County Planning and Park Commission and MCPAC utilize the background information and data gathered in the first phase, along with the adopted local comprehensive plans completed during the second phase, to create a 20-Year Land Use Plan for Manitowoc County.

Public Participation Process

Public Participation Plan

A major element of the county's comprehensive planning process is gathering input from citizens and land owners. In accordance with s. 66.1001(4), Wis. Stats., the Manitowoc County approved "Procedures for Public Participation for Adoption or Amendment of the Manitowoc County Comprehensive Plan". A copy of these written procedures is included in Appendix A of *Volume I: County Plan*.

The county held public meetings monthly to review background data, finalize each plan element, and create the 20-Year Land Use Plan. In addition to these planning meetings, issue identification exercises (i.e., Nominal Group, Economic Strengths, Weaknesses, Opportunities, and Threats (S.W.O.T.), and Intergovernmental Cooperation workshops) and open houses were used to gather extra input from the public.

Nominal Group Exercises

As part of the county's plan development process, four (4) Nominal Group Exercises were held to identify a number of current and potential concerns that may need to be addressed within the comprehensive plan. These issue identification discussions were held with the county MCPAC and in each of the three (3) planning clusters. The MCPAC exercise was held on August 29, 2007, the Northwest Planning Cluster and Southern Planning Cluster exercises were held on October 24, 2007; while the Lakeshore Planning Cluster meeting took place on October 30, 2007. A complete list of responses from each of the four meetings is provided as Appendix B of *Volume I: Manitowoc County Plan*. The top issues given for the MCPAC and each planning cluster are listed below:

Manitowoc County Planning Advisory Committee (MCPAC)

- Ensuring development protects property owner rights and value for adjacent and neighboring properties (i.e. how a landfill would impact surrounding residents)
- Keeping young adults in the county - provide employment opportunities

- Provide education that industries are looking for – particularly vocational
- Maintain agricultural areas where agriculture is still evident
- Better land development in downtown Manitowoc

Northwest

- Mandate city redevelopment authority – stop inside from dying so they don't have to spread out
- Preserve agriculture
- Discussion of implementing transfer of development right
- Transfer authority to approve mega farms from county to towns/villages – proper land to livestock unit ratio
- Develop long range plan for sewer and water between communities

Southern

- Protect agricultural land
- Preservation of natural resources for future use such as: mineral deposits, lakes, ground and surface water
- Concern that property rights be maintained
- Buffer agricultural areas with environmental and water resources
- Ag. land surrounding community needs to be thoughtfully developed, maintaining as much cropland as possible

Lakeshore

- Develop high-tech jobs in area to keep youth around
- Promote dev. (e.g. economic, industrial – large communities, commercial in small communities, etc.)
- Develop high density/high tax base along waterfronts
- Preservation of farmland
- Retain urban center and rural character

Visioning Exercise

The purpose of the visioning exercise is to gather ideas on what Manitowoc County may look like in 20-years. The following question was posed to the MCPAC members, “Imagine if you left Manitowoc County for 10-20 years and then returned. What would you hope to see?” A complete list of responses is included as Appendix C of *Volume I: County Plan*. The following are some of the more consistent themes from the exercise:

- Clean lakes, streams, and groundwater
- Clean air
- Farmland preservation
- Concentrated development, clustering of homes
- Maintained rural character
- Diverse businesses
- Clean industries
- Develop industry in specific areas
- Efficient and affordable public facilities and services

- Good emergency services
- Alternative energy sources
- Diversified and quality housing
- Well-designed and maintained transportation network
- Wide variety of recreational opportunities
- Develop/expansion of trails

Manitowoc County 20-Year Vision Statement

Manitowoc County’s 20-Year vision regarding development and preservation is based on the results from the visioning exercise conducted with the MCPAC, in conjunction with the adopted community Vision Statements. The features illustrated on the Manitowoc County seal were also utilized to link the county’s significant attributes into the 20-Year Vision Statement. A description of the county seal is found in Chapter 1 of the Manitowoc County Code. It states:

“A first, innermost gold ring with black icons clockwise from the honor point of an anchor representing the county’s maritime history and three five-pointed stars representing the county’s cities, villages, and towns and counter-clockwise from the nombril point of a stalk of corn representing the county’s agricultural prominence and three cogs representing the county’s manufacturing excellence.”



Utilizing the abovementioned tools, Manitowoc County’s 20-Year Vision Statement reads as follows:

“In 2030 Manitowoc County is envisioned as a progressive area of East Central Wisconsin, promoting its lakeshore identity while being keenly aware of its diverse heritage and the preservation of individual property rights.

Rural communities maintain a strong agricultural tradition, while new housing and business developments, along with innovative industries, are constructed in areas that provide exceptional services and the skilled workforce to support them. This diversity of use, coupled with forward thinking policies, results in the preservation of farmland, natural resources, and rural character.

The cities, villages, and towns maintain a working relationship with each other, providing quality amenities to enjoy a relaxed, healthy, and active lifestyle that supports a vital and diverse economy, while recognizing the rich agricultural, industrial, and maritime heritage of the county.”

Economic S.W.O.T. Workshop

Strategic planning for economic development requires identification of Manitowoc County’s strengths and limitations through a thorough evaluation of the four aforementioned economic components. An analysis of Manitowoc County’s economic Strengths, Weaknesses, Opportunities, and Threats (S.W.O.T.) provides a broad overview of where the county is currently and what its economic health may be in the future. If Manitowoc County is to develop and maintain a vibrant and diversified economic foundation, the county needs to maximize its strengths, offset its weaknesses, take advantage of its opportunities, and minimize its threats.

On March 26, 2008 individuals representing the Manitowoc County Planning Advisory Committee (MCPAC), local community and county officials, business leaders, and key civic and non-profit organizations participated in an economic S.W.O.T. workshop. The complete results of the S.W.O.T. workshop can be found in Appendix D of *Volume I: County Plan*. The following illustrates the top economic S.W.O.T. issues according to MCPAC participants which were broken into four groups.

Strengths: Strengths are existing resources and capabilities that can be used as a basis for developing a successful growth plan. The top strengths as voted on by the group are:

Group 1	Group 2	Group3	Group 4
<ul style="list-style-type: none"> Economical/low cost of living Exec. Schools/ education system 	<ul style="list-style-type: none"> Access to Lake Michigan water Fertile land and good climate for agriculture 	<ul style="list-style-type: none"> Mainly agriculture and undeveloped Good water source – ground and surface (Lake Michigan) 	<ul style="list-style-type: none"> School systems solid (K-14) Access to interstate

Weaknesses: A weakness is a limitation or the absence of certain strengths that may prevent the county from achieving its objectives. The top weaknesses as voted on by the participants include:

Group 1	Group 2	Group3	Group 4
<ul style="list-style-type: none"> Loss of Jobs Loss of population 	<ul style="list-style-type: none"> Lack of population mass leading to many business bypassing county “Drive-through” community 	<ul style="list-style-type: none"> Air quality Climate 	<ul style="list-style-type: none"> High County Taxes Declining road system

Opportunities: An opportunity is any favorable situation or resource that could enhance economic development. The following are the top opportunities as voted on by the group:

Group 1	Group 2	Group3	Group 4
<ul style="list-style-type: none"> More nuclear plants Access to I43 	<ul style="list-style-type: none"> Good quality of life can attract new residents Prime energy production sites (including green energy) 	<ul style="list-style-type: none"> Education system Lake Michigan 	<ul style="list-style-type: none"> Resources for additional nuclear power Shipping - port

Threats: Threats are potential obstacles the county faces concerning economic development. The top threats as voted on by the group include:

Group 1	Group 2	Group3	Group 4
<ul style="list-style-type: none"> • “Not in my backyard” (nuclear / windmill) • Aging populations / loss job 	<ul style="list-style-type: none"> • Industrial leaving for other countries due to low wages in those countries • Tax structure resulting in lower shared revenue from state 	<ul style="list-style-type: none"> • Air quality • Aging population 	<ul style="list-style-type: none"> • Increased energy prices • Declining economy

The results of the economic development S.W.O.T. workshop were instrumental in drafting the economic development strategies found in Chapter 2 of *Volume I: County Plan*.

Intergovernmental Cooperation Workshop

Three (3) Intergovernmental Cooperation Workshops were conducted during the month of April 2009. The goal of the workshops was to gather input on any positive working relationships; current land use issues or conflicts; and potential solutions or resolutions to address and remediate the identified land use issues and conflicts. A comprehensive list of positive working relationships, current or future land use issues and conflicts, and potential resolutions are provided as Appendix E of *Volume I: County Plan*. Representatives from each of the communities within the planning cluster were invited to attend the workshops, along with neighboring municipalities, school districts, civic and recreational clubs, Manitowoc County staff, Wisconsin Department of Natural Resources, Wisconsin Department of Transportation, and other entities and departments that have an interest in and/or direct impact on the implementation of the county’s comprehensive plan.

Open Houses

Four (4) “Open Houses” were conducted during the county planning process to present background information (i.e., *Volume II: Manitowoc County Resources*) and plan recommendations (i.e., *Volume I: County Plan*) to the public. Open houses were held at each of the three (3) planning clusters, while one (1) was conducted at the conclusion of the planning process prior to the Manitowoc County Planning and Park Commission meeting for recommendation to the Manitowoc County Board. Each of the Open Houses allowed residents and other interested individuals the opportunity to review and comment on the county’s completed draft plan.

CHAPTER 2: ISSUES AND OPPORTUNITIES

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INTRODUCTION

This chapter provides a brief history and general description of Manitowoc County. Furthermore this portion of *Volume I: County Plan* provides a listing of current land use issues and possible development/preservation opportunities' that the county took into account when establishing planning policies and implementation strategies. There are also some brief descriptions of the county's demographic, economic, and land use trends. For a complete inventory of the county's background information, data, and maps, please refer to *Volume II: Manitowoc County Resources*.

HISTORY AND DESCRIPTION

Manitowoc County History

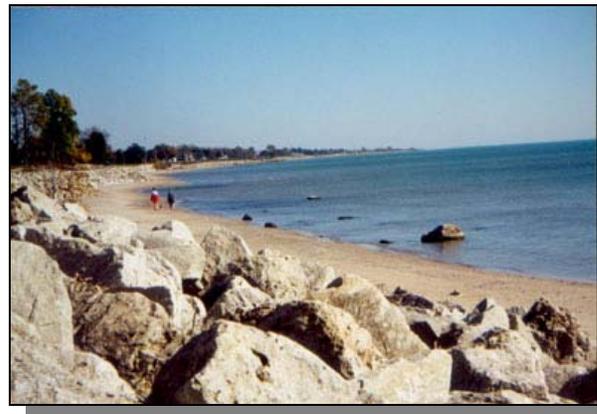
Manitowoc County is named for the Chippewa word “munedoo-owk” meaning “place of the good spirit.” Native Americans occupied what is now Manitowoc County since very early times. In the seventeenth century the French laid claim to Manitowoc. They then passed it to Great Britain in 1763 as a result of the Seven Years' War. In the late eighteenth century many people of Bohemian, French, German, Irish, Norwegian and Polish descent settled in the area.

Manitowoc was officially founded in 1836. In 1839, the county government was formed and the first courthouse followed a year later. Early county commissioners authorized the first roads to connect the farms and settlements of the area.

Manitowoc County Description

Manitowoc County is located in East Central Wisconsin encompassing an area of approximately 590 square miles, or approximately 380,000 acres. As of the 2000 Census, the county had a total population of 82,887 residents.

Manitowoc County provides the aesthetics of Lake Michigan along with picturesque farmlands, parks, and natural and cultural features. The county has a total of 30 municipalities that is comprised of 18 towns, nine (9) villages, and the cities of Manitowoc, Two Rivers, and Kiel. Brown and Kewaunee Counties serve as Manitowoc County's northern border; Calumet County is its western border; Sheboygan County is its southern border; and Lake Michigan makes up the county's entire eastern border.



Source: Bay-Lake RPC

Map 2.1 provides a general location of Manitowoc County in Wisconsin, and Map 2.2 highlights the planning area.

County Land Use Inventory



According to the 2008 land use inventory (Table 2.1), over 85 percent of Manitowoc County’s 380,000 acres is classified as undeveloped, while existing development covers over 14 percent of the county. Together, residential development and the transportation network comprise nearly two-thirds of the developed land uses in the county.

Table 2.1: 2008 Manitowoc County Land Use

Land Use Type	Total (Acres)	Developed Land (Percent)	Total Land (Percent)
DEVELOPED			
Residential	17,474.3	32.39	4.58
Single Family	16,485.0	30.56	4.32
Two Family	275.9	0.51	0.07
Multi-Family	317.8	0.59	0.08
Mobile Homes	324.3	0.60	0.09
Vacant Residential	71.3	0.13	0.02
Commercial	1,730.3	3.21	0.45
Industrial	3,493.4	6.48	0.92
Transportation	17,086.4	31.67	4.48
Communications/Utilities	632.3	1.17	0.17
Institutional/Governmental	1,611.0	2.99	0.42
Recreational	5,481.7	10.16	1.44
Agricultural Structures	6,436.6	11.93	1.69
Total Developed Acres	53,945.9	100.00	14.14
UNDEVELOPED			
Croplands/Pasture	213,956.4	65.33	56.09
Woodlands	77,313.9	23.61	20.27
Other Natural Areas	31,464.8	9.61	8.25
Water Features	4,790.8	1.46	1.26
Total Undeveloped Acres	327,525.9	100.00	85.86
TOTAL LAND AREA	381,471.9		100.00

Source: Bay-Lake Regional Planning Commission, 2009.

Also refer to Chapter 10 of *Volume II: Manitowoc County Resources* for more information regarding Manitowoc County’s land use inventory calculations and to view the 2008 land use inventory on Map 10.2. Appendix E of *Volume II: Manitowoc County Resources* also provides a detailed listing of the county’s 2008 land use inventory.

PAST PLANNING EFFORTS

Prior to the adoption of the *Manitowoc County 20-Year Comprehensive Plan*, the county had prepared a number of countywide plans and studies that will assist with the implementation of the comprehensive plan and provide a basis for further planning efforts and projects. In addition, a summary of Manitowoc County's land use ordinances has been compiled in Chapter 4: Implementation of *Volume I: County Plan*.

Manitowoc County Agricultural Preservation Plan: The *Manitowoc County Agricultural Preservation Plan* was updated in 2005 with attention given to land use changes resulting in urban growth and in farmland reduction, to alterations in facilities and services and to trends in the County's agricultural production. Several categories were established in the plan to accomplish the goal of preserving farmland and planned urban growth.

Manitowoc County Park and Recreation Plan: This plan was prepared and adopted by Manitowoc County to help guide the recreation programs of the county and various local units of government and to assure these governmental units a period of eligibility in which to participate in various grants and aid programs.

LAND USE ISSUES AND OPPORTUNITIES

As Manitowoc County continues to plan for future development, it is important to recognize that there exist several combinations of land use that traditionally cause some degree of conflict. This section of the county plan identifies a variety of existing land use issues or conflicts within the county that would likely have an impact on the overall wellbeing of the county.

Identified below are the issues of concern, by land use category, along with development/preservation opportunities and possibilities that should be considered within the Future Land Use Plan strategy and the implementation methods outlined in the local and county comprehensive plans. Many of the following issues and opportunities were discussion items at the various workshops (i.e., nominal groups, economic SWOT, intergovernmental cooperation) conducted at Manitowoc County (MCPAC), planning cluster, and local meetings.

Natural, Agricultural, and Cultural Resources

Manitowoc County contains a variety of attributes that contribute to the natural landscape of the County. Protecting the county's mix of unique geologic features, diverse environmental aspects, vast agricultural lands, and various historic and cultural resources is important for Manitowoc County and its communities. By identifying these key features for protection, while balancing them with economic development, and social activities, Manitowoc County can better understand and prepare for sustainable growth.

Issues

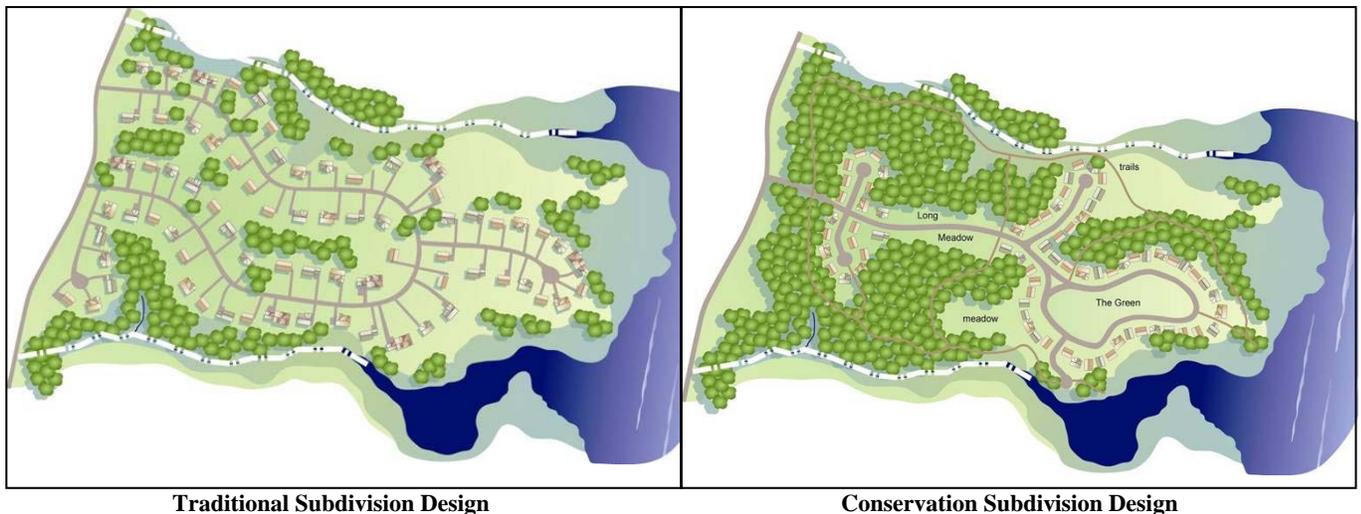
- Impairment of waterways such as streams, rivers, creeks, and lakes that fall within the ten sub-watersheds which are part of the three watershed basins that flow directly into the larger Lake Michigan Basin.
- Fragmentation of existing woodlands that comprise 21 percent of the County's total land.
- Development pressure on the approximately 214,000 acres of agricultural land utilized by farmers in the county.

- The consolidation of smaller farming operations into large corporate businesses may pose both an economic opportunity and an environmental challenge.
- Destruction of natural features such as the 50,637 acres of wetlands and habitats due to development pressure.
- Alteration or demolition of historically sites, buildings, markers, etc. that are not listed on the National Register or not being preserved by a local historical organization.
- Geologic features (e.g., sinkholes and other karst) are important components in determining where development should be located and to protect the groundwater.
- Concerns about surface water and groundwater contamination.
- Contaminated lakeshore beaches.
- The continued intense development, first and second tier, adjacent to lakes, rivers, and streams.
- Air quality concerns in the area.
- Land spreading of municipal and industrial waste.
- Terrestrial and aquatic invasive species.

Opportunities

- Promote the use of conservation easements with property owners to protect environmentally sensitive areas and agricultural land.
- Consider cluster/conservation developments (Figure 2.1) that will minimize land use impacts while accommodating development and maintaining green space and other natural features.

Figure 2.1: Subdivision Designs



Source: Arendt, R. G. 1996. Conservation design for subdivisions.

- Protect open space, woodlands, and agricultural land through the enforcement of various ordinances.
- Investigate the future use of Purchase of Development Rights (PDR) and Transfer of Development Rights (TDR) within the county.
- Promote best practices of stormwater management techniques to protect surface and ground water resources.
- Consider the need to establish stormwater controls, sanitary districts, etc. in areas that are lacking public utilities and where intense developments could potentially impact surrounding land uses and environmental features.
- There are several existing non-metallic mining operations with possible expansions during the planning period. The swift and sound remediation of old, exhausted non-metallic mining operations and the enforcement efforts to comply remediation plans of current mining sites will make these past land uses available for another use.
- Protection of scenic views, historical sites and structures, and other cultural resources that have significance to the county.

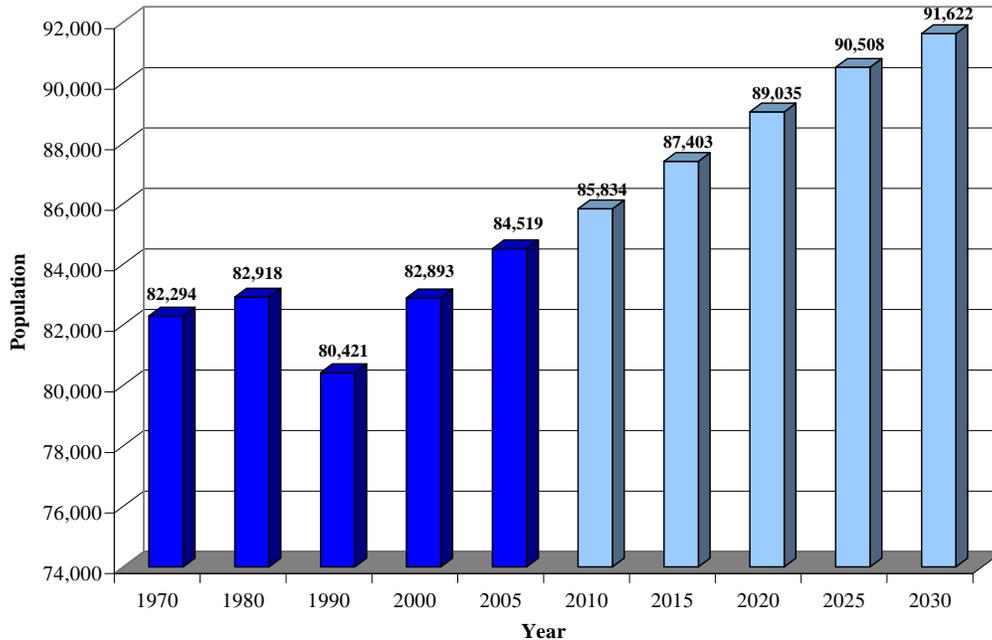
Population

Population is an important factor to the development of a community. The change in population can have a number of impacts on a community. Population projections are an important factor in assessing a community's future needs such as housing, community facilities, transportation, and other facilities. Projections can also be used to forecast future community and county expenditures, revenues, tax receipts, and services. By projecting future population growth over a 20-year planning period, it will enable Manitowoc County to better understand and prepare for its future growth.

Issues

- Historically, Manitowoc County has experienced a fluctuation in population from 1970 to 2000 (Figure 2.2).
- Increasing aging population would require more public services.
- As population increases so to will the need for additional public services and facilities.
- Young adults tend to leave the county usually seeking more diverse employment opportunities.
- The Wisconsin Department of Administration projects a steady growth for Manitowoc during the 20-year planning period (Figure 2.2).

Figure 2.2: Population Trends and Projections, 1970-2030



Source: U.S. Bureau of the Census, Census of Population and Housing, 1970 - 2000; WDOA Final Household Projections for Wisconsin Counties, 2000 – 2030, 2008; and Bay-Lake Regional Planning Commission, 2008.

Opportunities

- Focus growth in areas served by existing infrastructure or areas where infrastructure could be easily extended.
- Promote senior housing opportunities.
- Expand existing senior services.
- An increase in population also potentially means an increase in revenue for the county.

Housing

Manitowoc County has a total of 34,651 housing units according to the 2000 U.S. Census. Single-family units are 72 percent of the housing stock in the county. A community that provides safe, decent, and affordable housing for its residents creates opportunities to retain people and create jobs. It is important that Manitowoc County work with communities to provide sufficient and adequate housing that is in good condition to support its current and future population.

Issues

- Urban sprawl.
- There is limited affordable housing in the rural areas to address changing demographics.
- There are limited housing choices for seniors and special needs in rural communities.
- Aging housing units, especially in urban areas.
- Continued residential development is predicted in the rural communities, which could result in the loss of valuable agricultural lands, private woodlands, and open spaces.
- Conflicts between agricultural and non-agricultural land uses.

Opportunities

- Zone for harmonious residential development centered on rural character.
- Promote and encourage housing for seniors and special needs population.
- Promote senior housing in areas that have existing infrastructures and services available such as health, shopping and recreational needs.
- Promote affordable housing.
- Consider adaptive reuse of existing structures.

Economic Development

Manufacturing is currently the largest employing industry sector in the county by contributing over \$520 million, or nearly 40 percent of the total income provided by the industries in the county. Agriculture is the primary economic activity in many of the towns in the county.

According to the 2000 U.S. Census, approximately 80 percent of the 42,406 employed Manitowoc County residents work within the county. About 8,566 working county residents are employed outside of Manitowoc County, whereas 3,880 workers from other counties travel to Manitowoc County for their jobs.

Issues

- Loss of jobs and shrinking labor force.
- Loss of major manufacturing companies.
- Industry leaving for other countries.
- Lack of high tech jobs.
- Aging population and youth leaving.

Opportunities

- Promote mixed-use nodes in areas of the county that already have commercial development.
- Access to rail, harbor, and Interstate Highway 43.
- Utilize Lake Michigan for increased tourism industry.
- Utilization of the three post-secondary institutions (Silver Lake College, Lakeshore Technical College and University of Wisconsin-Manitowoc) for workforce training opportunities.
- Re-use of brownfield industrial sites.
- Promote green/clean industry.

Transportation

The transportation system in Manitowoc County is comprised of approximately 1,502 miles of county and local streets and roads, Manitowoc County Airport, two (2) harbors, numerous marinas, and various motorized and non-motorized travel services. It is important that Manitowoc County work with communities to provide safe and efficient transportation options that will continue to serve the county's current and future population.

Issues

- Manitowoc County has jurisdiction over, and responsibility for, approximately 285 miles of highway.
- Limited non-motorized amenities such as trails in rural areas.
- Limited use of the Canadian National rail line.
- Poor road conditions in some rural communities.

Opportunities

- Manitowoc County Airport is owned and operated by the Manitowoc County Highway Department. It consists of 482 acres and has 30 hangers as of 2000.
- Update comprehensive plans that relate to the development of bicycle, pedestrian or recreational trails.
- More utilization of the Canadian National rail line.
- Continued utilization of I-43 as a transportation corridor.

Public Facilities and Services

Manitowoc County strives to provide its citizens with adequate and quality services and facilities. Being able to provide citizens with facilities and services such as fire and police protection, sewer, water, health, educational, and recreational facilities will only encourage growth and economic stability.

Issues

- Changing public service to meet the demands of a diverse and growing population.
- Limited police protection service in the rural areas.
- Limited recreational trails in many of the towns. If there are trails, no connectivity with surrounding municipalities.
- Nuclear power plant lifespan.
- Decrease of storage locations of county maintenance vehicles cause poor services and high cost to some rural communities.

Opportunities

- Utilization of the Central Brown County Water Authority (CBCWA) water pipeline.
- Promote mixed-use development in areas that already have infrastructure to support future development.
- More shared service and agreements with neighboring communities.
- Utilization of the three post-secondary institutions (Silver Lake College, Lakeshore Technical College and University of Wisconsin-Manitowoc) in the county.
- Development of alternative energy sources. (e.g., wind, bio, geothermal, etc.).

- The development/maintenance of recreational facilities, such as trails and parks will be important considerations as the county’s population continues to grow.
- Explore the possibility of partnering with surrounding jurisdictions to link existing and future recreational facilities.
- Improved communication between schools and communities and future needs of both entities regarding services, infrastructure, recreational facilities, etc.
- Improved communication between communities regarding development patterns along municipal borders and the extra-territorial planning areas.

DEVELOPMENT CONSIDERATIONS

Anticipated Growth Patterns

Economic, demographic, environmental, and other elements make communities unique from each other. Forces such a government policies and cultural practices drive development patterns of a community. With development, comes the cost of providing efficient and adequate public facilities such as transportation networks, water and sewer infrastructure, schools, and recreation amenities and services. It is important for Manitowoc County to identify influencing factors and emerging trends, and to use the information to help the county grow and develop during this 20-year planning period.

- There will be a steady growth in population throughout the 20-year planning period the larger percentage of new residents residing in the City of Manitowoc or incorporated communities.
- Additional commercial businesses will locate along the major transportation routes and heavily traveled intersections to take advantage of highway traffic.
- It is an anticipated there will be more densely built sub-divisions that preserve open space and agriculture lands.
- The most concentrated residential and commercial development taking place outside of the incorporated communities will be located in the sanitary districts.
- There will be a continued trend toward larger agricultural operations.
- There is expected fragmentation and parceling of larger tracts of land into smaller lots.
- Development will likely incorporate environmental corridors, woodlands, and open space lands into designs.
- The need for public infrastructure and services will continue to grow as the county’s population increases and ages.
- Largest growth areas (i.e., cities and villages) will continue development patterns (e.g., redevelopment, orderly concentrated growth, acquisition of land, etc.) as demonstrated during the past 10-20 years.
- There will continue to be low density, scattered development in non-sewered rural areas throughout the county.
- Lands within a ½ mile of Lake Michigan and near Interstate 43 will likely experience residential development pressure.

Land Supply

Manitowoc County encompasses over 381,000 acres. As found in the 2008 land use inventory, 54,000 acres, or over 14 percent, of the land is already developed. The county's proximity to larger Metro areas (e.g., Green Bay, Fox Valley, etc.); its transportation system; quality communities, services, and schools; and valuable natural features make Manitowoc a desirable location to live, visit, recreate, and/or operate a small business. Given these factors, an increasing number of people are projected to live in Manitowoc County in the coming years according to the Wisconsin Department of Administration. It is estimated another 7,779 acres would be developed for residential, commercial, and industrial uses over the next 20 years (Table 2.2).

With its abundant mineral resources, Manitowoc County will continue to experience a number of operating non-metallic mining facilities throughout the planning period. Exhausted mines will be reclaimed and developed for another land use such as recreation or residential. Lake Michigan along with the county's lakes, rivers, and streams provide diverse recreational opportunities for both residents and visitors to the area. The county's 12 incorporated communities and several small mixed-use neighborhoods offer the opportunity for redevelopment for increased tax generation. There is also sufficient land for properly located commercial and light industrial development along main transportation routes and within areas adjacent to incorporated municipalities where services can cost effectively be extended.

As shown on the list of land uses (Table 2.1), nearly 86 percent, or over 327,000 acres of the county, is undeveloped. Portions of the undeveloped land consist of the county's various water features, environmentally sensitive areas, and land that is under public ownership. However, the county does have ample room for future development without compromising natural features.

Land Price

As the surrounding Metro areas become more densely developed, the rural portions of Manitowoc County will become increasingly desirable to individuals/families. As a result, the value of these lands will likely increase. The land located within desirable business locations, such as those within sanitary districts, adjacent to the incorporated communities, and along major transportation corridors, will retain a higher value because of its development options. Therefore, land values in commercial/light industrial designated areas on the 20-Year Land Use Plan will remain fairly competitive during this planning period. The lack of overall utilities, municipal water and sewer primarily will limit some types of development that could occur within the towns.

The long-term value of limited natural resources (woodlands, lakeshore, river frontage, and open space) will continue to be strong because of their desirable appeal for building of full-time and seasonal homes and for recreational purposes.

LAND USE PROJECTIONS

Five Year Incremental Land Use Projections

Wisconsin Statutes require Comprehensive Plans to include projections in five-year increments for future residential, commercial, industrial and agricultural land uses over the 20-year planning period. The Manitowoc County future land use projections can be viewed in Table 2.2.

Residential Projections

The county's future residential land use acreage was projected utilizing the following methodology:

- The county's projected housing, based on the WDOA housing projections for each of the county's municipalities.
- Manitowoc County's housing unit distribution based on the 2000 Census. Seventy-three (73) percent of the occupied housing units are located in the cities and villages, while the remaining 27 percent are found in the towns.
- An average lot size per dwelling unit based on the housing density recommendations of the municipalities' adopted comprehensive plans.
 - Cities/Villages - an average lot size of 1/3 acre per dwelling unit.
 - Towns - an average lot size of three (3) acres per dwelling unit.

Note: The projections are for single family homes and do not account for multiple family and apartment complexes which have greater residential densities.

Commercial Projections

To calculate commercial land use projections, the ratio of residential acreage to commercial acreage (*residential : commercial*) was compared by parcel in the incorporated communities (*4:1*) and the towns (*29:1*) based on the 2008 land use inventory.

Industrial Projections

Industrial lands are projected in the same manner as the commercial lands. By using the ratio of residential acreage to industrial acreage (*residential : industrial*) by parcel in the cities/villages (*4:1*) and the towns (*63:1*) based on the 2008 land use inventory.

Table 2.2: Five-Year Incremental Land Use Projections, 2005-2030

RESIDENTIAL						
Year	Towns		Cities/Villages		County Total	
	Acres	Total	Acres	Total	Acres	Total
2005	1,034.4	1,034.4	310.7	310.7	1,345.1	1,345.1
2010	971.2	2,005.6	291.8	602.5	1,262.9	2,608.1
2015	1,004.4	3,010.0	301.7	904.2	1,306.1	3,914.2
2020	896.7	3,906.6	269.4	1,173.6	1,166.0	5,080.2
2025	724.1	4,630.8	217.5	1,391.1	941.7	6,021.9
2030	554.9	5,185.6	166.7	1,557.8	721.5	6,743.4
COMMERCIAL						
Year	Towns		Cities/Villages		County Total	
	Acres	Total	Acres	Total	Acres	Total
2005	35.4	35.4	74.3	74.3	109.7	109.7
2010	33.2	68.6	69.8	144.1	103.0	212.7
2015	34.4	102.9	72.2	216.3	106.5	319.3
2020	30.7	133.6	64.4	280.8	95.1	414.4
2025	24.8	158.4	52.0	332.8	76.8	491.2
2030	19.0	177.3	39.9	372.7	58.9	550.0
INDUSTRIAL						
Year	Towns		Cities/Villages		County Total	
	Acres	Total	Acres	Total	Acres	Total
2005	16.3	16.3	80.5	80.5	96.8	96.8
2010	15.3	31.6	75.6	156.1	90.9	187.7
2015	15.8	47.4	78.2	234.3	94.0	281.7
2020	14.1	61.5	69.8	304.0	83.9	365.6
2025	11.4	72.9	56.4	360.4	67.8	433.3
2030	8.7	81.7	43.2	403.6	51.9	485.2

Source: Bay-Lake Regional Planning Commission, 2009.

Agricultural Projections

The Wisconsin Agricultural Statistical Service indicates that since the year 2000, Manitowoc County is seeing the diversion of approximately 236 acres of agriculture land to another land use each year. With a projected 7,779 acres of land needed for residential, commercial, and industrial development during this 20-year planning period, a percentage of that acreage total will be taken out of current agriculture production and existing open space and woodlands. With nearly 214,000 acres of agricultural and pasture lands identified in the 2008 land use inventory, Manitowoc County is making a determined effort to preserve as many of the open spaces as possible over the next 20 years by enforcing countywide land use controls; encouraging development to locate in areas where it is economically feasible to do so; and directing dense developments to the incorporated communities. To ensure existing and future agriculture operations have the ability and incentive to continue, Manitowoc County intends to preserve their more productive and larger tracts of agriculture land through the guidance of land use recommendations and implementation of the development strategies contained in this comprehensive plan.

LAND USE GOALS

PLANNING

Goal: To utilize the Manitowoc County 20-year Comprehensive Plan as a guide when making future land use decisions to ensure development occurs in a planned and coordinated manner, while considering private property rights.

Objective: Utilize this 20-year comprehensive plan to best reflect the long term interests of Manitowoc County residents.

Policies:

- Consult this 20-year comprehensive plan before making any decisions regarding land use changes and ordinances.
- Establish, maintain, and enforce county land use ordinances with local communities that are designed to uniformly address land use issues throughout Manitowoc County.
- Encourage cooperation and communication between Manitowoc County, local communities, and neighboring jurisdictions in implementing this 20-year plan.
- Provide plan updates to local and neighboring communities as required.
- Encourage educational workshops for local communities to promote an understanding of land use regulations, such as rezones, conditional uses, and land divisions.
- Support towns to better address land use development within extraterritorial planning areas.
- Work with local communities when reviewing and considering updates to the local comprehensive plan.

Objective: The Planning and Park Commission, at the direction of the County Board of Supervisors, is responsible for reviewing and updating this comprehensive plan.

Policies:

- Maintain maps relevant to the implementation of the comprehensive plan and to monitor land use changes within the county.
- Continue to support planning initiatives undertaken within Manitowoc County.
- Review the comprehensive plan on an annual basis and update as necessary with plan updates scheduled at a minimum of every five years.
- Ensure the public is informed and involved when considering updates and revisions to the county's comprehensive plan.

LAND USE

Goal: To support a balanced mix of land uses in Manitowoc County that afford opportunities for efficient development patterns, economic development, sustainable natural resources, and improved quality of life; while recognizing its agricultural base and considering private property rights.

Objective: Reference the recommendations of the county's future development strategy along with the future development strategy of local community plans before any land use decisions are made to ensure future development fits within the context and framework of the 20-Year Land Use Plans.

Policies:

- Encourage development to locate in areas with existing or planned public facilities while preserving the rural features of the county.
- Support a variety of land uses so as to allow for a mix of housing unit types and employment opportunities.
- Ensure that rural development is sensitive to the needs for rural preservation and the protection of environmental areas.
- Promote the highest and best land uses along the interstate interchanges and exists. Long range concept plans should be developed for these areas, detailing consistent land uses, along with standards for landscaping, architectural design, and general layout.

NATURAL RESOURCES

Goal: To provide for the best use and management of the county's natural resources and for the protection of environmental features.

Objective: Development should be located in a manner that preserves important environmental resources, agricultural lands, woodlands, open space, scenic beauty, and high quality ground and surface water resources.

Policies:

- Ensure that development proposals are consistent with the protection of environmental features and the maintenance of the county's overall environmental quality.
- Promote cooperative efforts with local communities as well as state and federal agencies to improve understanding of natural resource location, type, and importance.
- Maintain a current environmental corridor map as well as other resource maps as reference tools in implementing the county's 20-Year Land Use Plan.
- Maintain familiarity with local, county, state, and federal natural resources regulations.

- Work cooperatively with WDNR, US Army Corps of Engineers, and USDA to ensure continued and consistent protection and enhancement of environmentally sensitive areas.
- Preserve open space, agricultural lands, woodlands and the rural character of Manitowoc County by:
 - Identifying and encouraging the conservation of significant agricultural land.
 - Developing and implementing rural development regulations through a combination of techniques, including: cluster development provisions, conservation easements, land trusts, or the purchase of development rights.
- Continue the development and enforcement of zoning regulations, erosion control regulations, stormwater and best management practices that preserve and protect wetlands, floodplains, natural areas, and other environmentally sensitive areas from the adverse effects of development.

Objective: Preserve, enhance, and promote the quality of the lakes, rivers, and streams of Manitowoc County.

Policies:

- Work cooperatively with local communities, local associations, state and federal agencies to ensure protection and improvement of surface water resources.
- Support educational efforts that promote sustainable land use practices within the watersheds.
- Participate in efforts to maintain the natural beauty and integrity of the Lake Michigan shoreline.
- Work cooperatively with local communities as well as state and federal agencies to address known and potential contamination problems and to pursue additional protection and remediation measures.
- Cooperatively work with federal, state, county agencies and other non-governmental organizations for control of non-native invasive species.
- Encourage developments to identify any environmental constraints and plan environmental features into site plans.

Objective: Preserve, enhance, and promote the quantity and improve the quality of Manitowoc County groundwater resources.

Policies:

- Support studies that monitor the number of wells being constructed, closed, and measure the level of general water quality within Manitowoc County.
- Promote and support the development of wellhead protection plans and ordinances that prohibit uses with the potential to contaminate municipal wells.
- Undertake a countywide analysis of existing land uses to identify potential sources of surface and groundwater pollution.

- Work cooperatively with local communities as well as state and federal agencies to address known, existing, and potential contamination problems and to pursue additional protection and remediation measures.
- Support efforts to identify what and where certain agricultural practices are occurring in the county (e.g., pesticide application, manure spreading, industrial waste spreading, etc.).
- Work with UW-Extension to provide information and education regarding Best Management Practices, water testing, and other measures local communities and property owners can implement to improve water quality.
- Support communities in the maintenance of existing sanitary districts and in the establishment of sanitary districts in more densely developing areas.
- When making land use decisions, karst features should be taken into consideration in order to ensure protection of the area’s groundwater.
- Be aware of the county’s sinkholes as important components in determining where development should be located and to protect the county’s drinking water supply. Also keep in mind the “special well casing depth areas” that have been established by the WDNR in several towns (Map 5.1 of *Volume II: Manitowoc County Resources*).

Objective: Preserve and enhance the woodland resources within Manitowoc County.

Policies:

- Recognize the economic, ecological, and social benefits of public and private woodlands.
- Encourage the sound management of the county’s woodlands resource through cooperative planning that conserves biological diversity, minimizes the threat of invasive species, minimizes recreational use conflicts, and enhances the urban forests.
- Support and promote efforts that provide information on recreational use of state forest lands.
- Cooperatively work with federal, state, county agencies and other non-governmental organizations for control of non-native invasive species (e.g., emerald ash borer, phragmites, etc).

Objective: Identify Manitowoc County’s non-metallic mineral resources and plan for their use accordingly.

Policies:

- Work cooperatively with local communities and state agencies to minimize the impacts of mining operations, ensure the timely reclamation of abandoned mining operations, enforce the non-metallic mining reclamation ordinance (Chapter 21 of the Manitowoc County Code), and enforce Chapter 8 of the Manitowoc County Code.

- Promote efforts to provide information and education regarding non-metallic resources and the extraction of these resources.
- Work to enhance communications between non-metallic resource owners, mining operators, local communities, and residents.
- Maintain a database of reclaimed, active, and potential mining locations.
- Assist local communities seeking land use options for reclaimed mining locations.

Objective: Protect air quality.

Policies:

- Promote and support efforts to educate citizens, land owners, and visitors regarding their actions impacting air quality. Refer to Wisconsin’s Air Quality program for more details.
- Work cooperatively with local communities as well as state and federal agencies to address unauthorized open burning, especially the burning of materials that release toxic substances.

CULTURAL RESOURCES

Goal: Identify and protect the significant archeological, architectural, cultural, and historical resources of Manitowoc County for the benefit of its residents and visitors.

Objective: Preserve and promote the historical and cultural resources that contribute to the identity and character of Manitowoc County.

Policies:

- Work with local communities and other agencies and organizations to identify historic resources for consideration in future planning and development projects.
- Support efforts by local communities, organizations, and other entities to rehab, preserve, and promote historic sites, buildings, and cultural resources located within Manitowoc County.
- Support efforts to ensure known cemeteries, human burials, and archeological sites are protected from development activities.
- Support efforts, events, and activities that promote cultural heritage.
- Encourage local awareness and recognition of historic properties through open house tours, local landmark signs, driving tours, and brochures featuring local landmarks with brief histories of buildings and sites.

AGRICULTURAL RESOURCES

Goal: To maintain, promote, and enhance Manitowoc County’s vast agricultural resources through preservation and sustainability efforts.

Objective: Maintain contiguous agricultural tracts and open spaces to promote and enhance the county’s strong agriculture economy.

Policies:

- Continue to monitor compliance with soil conservation standards of the Farmland Preservation Program and consider updates to the Manitowoc County Farmland Preservation Plan as necessary.
- Identify areas with prime agricultural soils that are most vulnerable to conversion to non-farm land uses.
- Support coordinated efforts that identify the needs of local agricultural operators and ways of retaining and improving their farming operations through integration and nutrient management practices.
- Continue to promote farmland preservation initiatives such as the Working Lands Initiative, through educational programs and workshops.
- Support and promote coordinated efforts with UW-Extension, DATCP, Center for Land Use Education, etc. to provide educational and technical materials to aid preservation and promotion of the county’s agriculture industry.
- Work with state and federal regulatory agencies on the siting of large scale farming operations and provide assistance to local communities in the implementation of those regulations.

Objective: Minimize the potential for conflicts between agricultural and non-agricultural land uses.

Policies:

- Promote tools and incentives that protect prime agricultural soils and agricultural operations from non-agricultural land uses.
- Work with state transportation officials to include agricultural uses when considering transportation updates.
- Provide information to homebuyers regarding rural living and what to expect when living in an agricultural community (e.g. odors, hours of operation, slow moving vehicles)
- Support efforts that promote the use of sound agricultural and soil conservation methods to minimize surface and groundwater contamination and soil erosion.
- Promote the importance of water quality through farming practices.

HOUSING

Goal: *To encourage and maintain an adequate supply of safe and affordable housing that provides a choice of location, style, and cost for the county’s current and future population.*

Objective: Promote initiatives that provide a range of housing choices to meet the needs of all income levels, age groups, and persons with special needs.

Policies:

- Promote the availability of assisted living and elder care facilities while continually monitoring the housing needs of the aging population.

- Encourage the development of planned residential neighborhoods within the primary growth areas which offer a variety of housing types.
- Advocate for the maintenance, preservation, and rehabilitation of the existing housing stock.
- Continue to evaluate land use controls that may negatively impact the availability of affordable housing.

Objective: Promote housing developments that are environmentally conscience and have minimal negative impacts on surrounding land uses.

Policies:

- Consider cluster/conservation developments that will minimize land use impacts while accommodating development and maintaining green space and other natural features.
- Continue to evaluate land use ordinances regulating residential development to ensure that impacts to natural resources or existing land uses are minimized.
- Ensure that the scale and density of new development is compatible with adjacent land uses, and with available or planned public facilities.
- Support opportunities for multi-family, group housing, and other high density residential development within existing neighborhoods with established sewer and water services.

Objective: Identify and utilize government agencies, local neighborhood associations, non-profit agencies, and private sector industries to implement these housing recommendations.

Policies:

- Support coordinated efforts with Lakeshore CAP and other agencies to provide educational materials and information on financial programs, home repairs, and home modifications.
- Continue to monitor the availability of state and federal programs for the development or redevelopment of low to moderate-income housing or housing rehabilitation.

ECONOMIC DEVELOPMENT

Goal: To promote an environment in Manitowoc County that attracts employers and investment in order to expand the tax base and provide quality employment opportunities.

Objective: Maintain a coordinated network of procedures, processes, and principles conducive for businesses growth.

Policies:

- Work with local communities and organizations and regional economic development entities on efforts and initiatives that are designed to take advantage of the economic conditions and opportunities available to Manitowoc County.
- Review and update the economic development strategies, programs, and investments annually to ensure they sufficiently address the ever changing

economic conditions and opportunities and are consistent with the county’s comprehensive plan.

- Monitor the changes to, and application of, county land use ordinances to ensure they promote and do not inhibit appropriate business development.
- Seek to establish appropriate measures to promote the county’s agriculture industry, such as the Farmland Preservation Plan, and the incorporation other programs like the Working Lands Initiative that encourage the expansion and diversification of agricultural businesses.
- Support efforts undertaken by the university, technical college, local school districts, and workforce agencies to help ensure Manitowoc County has a skilled workforce for employers to utilize.
- Work to maintain and expand the number of mutual aid (i.e., road maintenance) and partnership agreements (Economic Development Corporation of Manitowoc County) to better maximize the resources available to support business development activities.
- Redevelop brownfield (idle, existing) industrial sites.

Objective: Improve the infrastructure needed to sustain current and future businesses.

Policies:

- Implement the goals within the county that address the human and capital investments as well as the long-range planning initiatives needed to maintain a quality road system.
- Support infrastructure development activities and initiatives that further promote economic investment in Manitowoc County.

Objective: Increase the number of quality jobs and tax base through business retention, development, expansion, and recruitment activities of employers and skilled employees.

Policies:

- Monitor the content and application of county land use ordinances to ensure they do not deter potential employers from moving to Manitowoc County.
- Support the usage of economic development grants, programs, or tax incentives at all governmental levels as methods to improve economic development opportunities in Manitowoc County.
- Assist local communities in the inventorying of underutilized sites and to support redevelopment of those areas for a better land use.
- Utilize local and regional economic development entities to monitor the health and prosperity of existing businesses.
- Work with local, regional, state, and federal officials to identify and implement initiatives to further promote the economic viability of the county’s agricultural resources.

- Market the county’s economic assets through multiple media options, such as internet, print, brochures, and booklets.
- Support efforts to recruit workers to the county that connect job seekers to skilled manufacturing jobs.
- Participate in training initiatives that focus on retraining and the upgrading of the skills currently held by the county’s workforce.
- Partner with businesses and communities in the identification and integration of green energy and energy saving techniques.
- Promote quality home-based businesses that would not significantly increase noise, traffic, odors, or lighting, or otherwise negatively impact the surrounding land uses. Refer to Chapter 8 of the Manitowoc County Code for regulations on home-based businesses.
- Encourage young people to stay in or return to Manitowoc County.

Objective: Increase the amount of tourism revenue Manitowoc County receives annually.

- Support the programs and projects of organizations in their efforts to preserve and promote the county’s historical and cultural features and assets.
- Continue to promote marine-related facilities and the recreation/sport activities associated with Lake Michigan.
- Work with local communities to identify and better promote the historical and cultural resources they have available to increase tourist traffic.
- Partner with local, regional, and state economic development and tourism entities, such as the Wisconsin Department of Tourism to enhance promotion of the county’s economic assets.
- Implement the strategies developed within the Manitowoc County Park and Recreation Plan to further promote the county’s natural resources.
- Partner with local civic organizations and clubs and communities in their attempts to maintain, improve, and promote trails, parks, and recreational areas to further advance the county’s tourism industry.
- Support efforts to establish businesses that promote tourism within Manitowoc County.

TRANSPORTATION

Goal: *Maintain and support the development of a safe and efficient transportation system.*

Objective: Coordinate efforts with local communities, Wisconsin Department of Transportation (WisDOT) and other entities to maintain a safe, efficient, and accessible countywide transportation system.

Policies:

- Plan and coordinate land use development and transportation improvements at the local level and with other jurisdictions at the regional level.

- Work with applicable entities to continue to improve the county's transportation network that includes the harbors, airport, rail lines, and road system.
- Continue working with the Wisconsin Department of Transportation to ensure safe and efficient access to all Interstate/U.S./State Highways and all arterial and collector streets and roads in the county.
- Communicate with WisDOT to address problem areas within the county's transportation network, i.e. intersections, bridges, weight restrictions, current design features, and signage.
- Promote developments that minimize direct access to state and county trunk highways to the greatest extent possible in order to improve traffic safety and to maintain the efficiency of highways.
- Continue to assess alternatives to improve travel to and from the County.
- Monitor transportation improvements in adjacent jurisdictions and assess the potential impacts on Manitowoc County.
- Encourage development patterns which promote and encourage alternative modes of transportation, thereby reducing pollution, traffic congestion, and energy consumption.
- Reduce trip generations by encouraging mixed use developments.
- Work with local communities on their assessment of road pavement conditions and other maintenance needs.
- Consider working with the Wisconsin Department of Transportation and the Bay-Lake Regional Planning Commission to develop and maintain a long-range maintenance and improvement program for highways and roads.
- Continue to work with the Manitowoc County Traffic Safety Commission and the Wisconsin Department of Transportation to provide an ongoing assessment of highway safety and efficiency.
- Work with local communities on the development of land use regulations that can impact transportation routes or safety such as driveway or culvert ordinances.
- Maintain and expand the number of mutual aid agreements that will maximize resources and enhance the county's overall transportation network.
- Promote multi-modal means of transportation that complement the existing transportation network.
- Future land use decisions for properties along the rail lines should not comprise the ability of the railroad companies to expand services to meet future needs of the area.
- Support maintenance and continued operation of the Manitowoc County Airport.
- Recommend the development of a bicycle facilities plan that identifies future connections to existing facilities and to the other important destination points in

the county, including, but not limited to, Point Beach State Forest, county and municipal parks, recreational areas, and schools.

- Provide assistance to local municipalities as they plan for future development within their communities through review of site design plans, establishment of official maps, and the implementation of their comprehensive plans.
- Work to expand transportation accessibility options for the county’s elderly and disabled residents.
- Promote alternative means of travel, such as mass transit and inter-modal facilities (e.g., Lake Michigan Carferry service), to reduce automotive dependency, increase accessibility, and improve air quality.
- Work with local municipalities to identify where farm/nonfarm road use conflicts exist and implement measures to minimize conflict.

Objective: Maintain consistent funding for maintenance and enhancement of the Manitowoc County transportation network.

Policies:

- Continue to seek adequate and consistent sources of revenue to fund needed transportation improvements and enhancements through state and federal programs and initiatives.
- Work with local and regional economic and planning entities to prepare highway corridor studies that would take full advantage of the adjacent properties without compromising transportation routes or natural features.

UTILITIES AND COMMUNITY FACILITIES

Goal: Establish effective and efficient public facilities and service delivery systems to serve the existing and anticipated needs of future development.

Objective: Maintain county facilities and services that adequately serve the present and future needs of the county.

Policies:

- Encourage the development of public facilities within the growth areas as identified in the 20-Year Land Use Plan.
- Develop a Master Community Facilities Plan to assess the County’s current and future public service needs which provides a plan for addressing the needs in an efficient and cost effective manner.
- Establish public facility standards to use in determining needs associated with existing population as well as anticipated development to insure the adequate provisions of services.
- Encourage the development of joint facilities in conjunction with surrounding jurisdictions.
- Utilize the Capital Improvements Program and Public facility standards to prioritize and program the development of public facilities.

- Work to integrate energy savings practices to reduce the costs for county operations.
- Annually assess the need to add, revise, expand, or discontinue services offered to the public through internal and external analysis and review.
- Engage the Manitowoc County Board of Supervisors on an ongoing basis in discussions on ways to improve the services offered by the county.
- Continue to provide high-quality law enforcement and emergency services through the addition of equipment and training.
- Review and update county plans, such as the Multi-Hazards Mitigation Plan, Farmland Preservation Plan, Park and Recreation Plan, etc. that look to proactively address the long-term needs of the county.
- Review and adopt county ordinances that will provide a guideline on future development types and location in order to not compromise existing land uses or natural features.

Objective: Expand intergovernmental cooperation activities to better serve the public.

Policies:

- Promote cost sharing and mutual aid agreements with local and adjacent communities and counties to enhance services provided in the region.
- Coordinate with local communities as well as state and federal agencies to provide disaster preparedness, response, and recovery in an efficient manner.
- Work cooperatively with the school districts to advocate and support actions by the state to provide adequate funding of public education capital and operational expenses.
- Support education initiatives through workforce development or institutions of higher education that seek to improve the education and skill levels of county residents.
- Participate in countywide discussions with local communities and school districts on the best methods to extend communication infrastructure, like broadband, throughout the county.
- Identify how energy efficiency processes, technology, and equipment can be appropriately integrated into public operations.

PARKS AND RECREATION

Goal: To take full advantage of the county's natural features, cultural features, and diverse communities to expand recreational opportunities for residents and to draw more visitors to Manitowoc County.

Objective: Maintain a quality park and recreational system for all county residents and visitors.

Policies:

- Prepare and update as necessary the Manitowoc County Park and Recreation Plan and other plans that address maintenance and improvements of public park and recreation facilities, including the County Expo.
- Support cooperative planning and maintenance efforts between the county, school districts, and local communities to ensure Manitowoc County parks and recreational facilities meet future needs.
- Evaluate park and recreational facilities and programs annually to ensure they coincide with the recreational needs of county residents.
- Continue to promote marine-related facilities and the recreation/sport activities associated with Lake Michigan.
- Continue to promote Manitowoc County parks and County Expo activities, along with Point Beach State Forest, Devil’s River State Trail, Ice Age National Scenic Trail and other local trails (e.g., Mariners Trail, Rawley Point Trail).
- Monitor the application of county zoning ordinances and easement rights to limit the likelihood of land use conflicts adjacent to county-owned properties.
- Work to ensure there are adequate public access points to all public features, such as the state forest, lakes, rivers, and Lake Michigan.
- Consider access for the disabled, elderly and very young when planning/designing/coordinating and constructing any new recreation projects, including parking, trails, etc.

Objective: Maintain consistent funding for maintenance and enhancement of all Manitowoc County parks and recreational facilities and programs.

Policies:

- Continue to seek adequate and consistent sources of revenue to fund needed maintenance, enhancement, and development of park and recreational facilities.
- Explore possible funding resources from agencies (e.g., WDNR, Coastal Management, Bay-Lake RPC, etc.) for park upgrades or future recreation development.
- Support efforts of local clubs and organizations to enforce trail use rules and trail maintenance.
- Support efforts that minimize conflicts between motorized and non-motorized recreational uses.
- Continue to promote use of the Manitowoc County website, recreational maps, and other resources to maximize awareness of recreational opportunities and limitations.
- Assist local communities to develop a recreational plan that enhances their respective park and recreational facilities.

INTERGOVERNMENTAL COOPERATION

Goal: To utilize the adopted comprehensive plans as a means to enhance internal and external communication processes between Manitowoc County, local communities, neighboring municipalities, and state and federal offices concerning land use matters.

Objective: Promote cooperation between local and neighboring communities, organizations, and agencies.

Policies:

- Work cooperatively with surrounding communities to minimize conflicts in preferred land uses along municipal boundaries.
- Participate in meetings and planning activities that may impact the implementation of the county comprehensive plan.
- Work with local communities and other agencies to mutually address issues of concern regarding development/preservation issues that span across jurisdictional boundaries.
- Work with local communities to adopt tools to further implement their comprehensive plans.
- Continue to utilize “mutual aid agreements” as a cost effective means to provide services.
- Support local civic groups such as sportsmen’s, snowmobile, and other clubs in their efforts to preserve and expand recreational opportunities for residents and visitors.
- Maintain active membership in the Wisconsin Counties Association (WCA) as a critical resource for information on issues that will impact the county.

CHAPTER 3: FUTURE LAND USE PLAN

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INTRODUCTION

This portion of the *Manitowoc County 20-Year Comprehensive Plan* highlights the county's future land use recommendations, known as the 20-Year Land Use Plan. The county's future land use plan details land use needs, along with a basic strategy and physical plan to guide the location, density and intensity of land development in Manitowoc County over the next 20 years. Information contained in *Volume II: Manitowoc County Resources*, along with adopted community comprehensive plans, were major components in the development of the county's 20-Year Land Use Plan.

PLANNING CRITERIA

Planning criteria are developed in order to give the county a sense in which to base their land use recommendations. The criteria used by Manitowoc County when developing the 20-Year Land Use Plan were based upon values identified by the State of Wisconsin, existing trends and issues, along with citizen responses of various workshops that were conducted during the planning process.

State Planning Criteria

The following State criteria are based upon Smart Growth criteria encouraged within comprehensive plans:

- Promotion of the redevelopment of lands with existing infrastructure and public services and the maintenance and rehabilitation of existing residential, commercial and industrial structures.
- Encouragement of neighborhood designs that support a range of transportation choices.
- Protection of natural areas, including wetlands, wildlife habitats, lakes, woodlands, open spaces and groundwater resources.
- Protection of economically productive areas, including farmland and forests.
- Encouragement of land uses, densities and regulations that promote efficient development patterns and relatively low municipal, state governmental and utility costs.
- Preservation of cultural, historic and archaeological sites.
- Encouragement of coordination and cooperation among nearby units of government.
- Building of community identity by revitalizing main streets and enforcing design standards.
- Providing an adequate supply of affordable housing for individuals of all income levels throughout each community.
- Providing adequate infrastructure and public services and an adequate supply of developable land to meet existing and future market demand for residential, commercial and industrial uses.
- Promoting the expansion or stabilization of the current economic base and the creation of a range of employment opportunities at the state, regional and local levels.
- Balancing individual property rights with community interests and goals.
- Planning and development of land uses that create or preserve varied and unique urban and rural communities.

- Providing an integrated, efficient and economical transportation system that affords mobility, convenience and safety and that meets the needs of all citizens, including transit-dependent and disabled citizens.

20-YEAR LAND USE PLAN

The Manitowoc County 20-Year Land Use Plan was developed based on the information contained in:

1. *Volume II: Manitowoc County Resources*;
2. recommended development strategies of the city/village/town comprehensive plans;
3. the goals and objectives found in Chapter 2 (Issues and Opportunities) of *Volume I: County Plan*; and
4. results from the visioning survey, nominal group exercises, economic S.W.O.T. exercise, intergovernmental cooperation workshops, Open Houses, and other public input received during the planning process.

The data contained in the abovementioned sections of the plan were major components in both the development of the 20-Year Land Use Plan Map (Map 3.1) and the following Recommended Development Strategy for the county's 20-year planning period.

Recommended Development Strategy

This section of the plan details the suggested development strategy for the county's 20-year planning period. The future land use classifications associated with the Manitowoc County plan best represent the common themes for development and preservation of the adopted community comprehensive plans within the county.

The following classifications are based on a composite of the county's local plans, and generalized to meet the best interest of the county's future growth.

Note: All categories are not represented on Map 3.1. However, future development strategies for each are discussed in this chapter. Manitowoc County's future land use classifications include:

- Urban Transition
- Rural Community Activity Center
- Rural Residential
- Corridor Mixed Use
- Shoreland Development
- Governmental/Institutional/Utilities
- Transportation Facilities
- Parks and Recreation
- Agricultural
- Woodlands/Natural Areas
- Existing Nonmetallic Mining
- Environmental Corridors Overlay



It is important to note that during the review, consideration, and implementation of the county land use recommendations outlined below, Manitowoc County will take into consideration the land use recommendations established by the local communities before any decisions or additional recommendations are made at the county level.

Urban Transition

By identifying where development and population growth has occurred in the past in addition to considering existing and future infrastructure and services, certain areas of the county are ideal for future community development, providing a mix of both residential and economic development opportunities. The Urban Transition land use category identifies these ideal areas within the county where high to medium density development is expected to occur within the next 20 years. Portions of these areas are expected to be annexed by the cities and villages which would provide public infrastructure and services. Encouraging development in these designated areas will limit sprawling, suburban-type, low-density development throughout the rural areas.



Future developments in the Urban Transition areas identified on the Manitowoc County 20-Year Land Use Plan should be in accordance with the detailed future land use plan of the local jurisdictions.

Residential Development

Based on local planning strategies, the Urban Transition areas are recommended locations for a variety of housing types, including affordable housing for residents of all income levels, encouraging cluster development and increased densities.

Recommendations

1. Lands are encouraged to develop at relatively high density with the possibility of infill developments and rehabilitation of existing structures.
2. A variety of housing types including single family, multi-family and apartments is encouraged while being consistent with the residential development strategy of the municipality's future land use plan.
3. Future developments should correspond to surrounding land uses according to scale and density to avoid incompatibilities and to minimize potential negative impacts in existing neighborhoods.

Commercial Development

Commercial land use within the Urban Transition classification is expected to be concentrated in and around the cities and villages, particularly along the arterial roads and collector roads. These areas have available infrastructure and provide for good accessibility and are highly visible.

Recommendations

1. When commercial development is proposed, the county and local communities must closely monitor the capacities of the infrastructure and community services that accommodate the new development.
2. Infill commercial development is recommended to take advantage of existing infrastructure and adjacent complimentary land uses.
3. Encourage revitalizing downtown commercial areas in the cities and villages.
4. Future highway commercial sites should accommodate the needs of current residents as well as serving the needs of transient customers.

5. Promote the highest and best land uses along the interstate interchanges and exists. Long range concept plans should be developed for these areas, detailing consistent land uses, along with standards for landscaping, architectural design, and general layout.
6. Work with local jurisdictions to promote tourist related businesses.
7. With home-based businesses envisioned to remain a large segment of the county's economic development base, county and local officials should monitor the operations of approved home-based businesses to ensure they are not comprising or conflicting with adjacent land uses.

Industrial Development

Industrial development is expected to be concentrated primarily in the various industrial parks along with larger, well established sites that are located in a number of the cities and villages, or Urban Transition classification of the county's future plan. These sites provide adequate services and infrastructure to support the industrial operations and limit land use conflicts with neighboring properties.

Recommendations

1. Infrastructure and county facilities should be monitored to address issues that would prohibit expansion or location of new industrial and/or light industrial development in Manitowoc County.
2. Manitowoc County should promote the establishment of TIF (Tax Incremental Finance) Districts as a financial tool to attract businesses.

Rural Community Activity Center

This future land use classification identifies land on designated road intersections which serve as nodal crossroads for the surrounding rural community and may contain any of the following uses: church, fire station, small post office, school, or other similar institutional uses. Sanitary districts may also serve several of these communities or could service these communities in the future.



Future developments in the Rural Community Activity Center areas identified on the Manitowoc County 20-Year Land Use Plan should be in accordance with the detailed future land use plan of the local jurisdictions.

As a means to retain a sense of place in the rural areas, protecting the character and viability of the rural community centers is important. These communities will continue to be the focal areas for social activities in the rural areas. The heritage of these communities should also be respected and preserved.

These areas should encourage new developments to occur in neighborhood or village-like patterns consistent with the existing character and intensity, while discouraging large lot development within or at their fringes. The compact nature of these developments allows for the preservation of the surrounding agricultural lands and valuable natural resources.

Rural Community Activity Centers:

- *Branch*
- *Clarks Mills*
- *Collins*
- *Newton*
- *Rockwood*
- *Tisch Mills*

Commercial/Industrial Development

Existing commercial uses are accepted as part of the development pattern within these designated areas of the county, and will be allowed to expand as needed and as appropriate to the surrounding development context. Industrial uses will generally be those that are related to and dependent on agriculture or natural resources (i.e., mining) and are accepted as part of the existing, historical framework of development. Home occupations and family commercial enterprises will likely continue as low density commercial activities in the rural portions of the county in relation to individual homes and home sites, provided they do not adversely affect the surrounding land uses. More intensive commercial and industrial uses should be guided toward the Urban Cores/Urban Transition areas which contain the adequate public services and utilities.

Rural Residential

The county recognizes that planning for rural areas must also take into account that some residential development will continue to occur. Rural areas in the county are presently characterized by a balance between the natural environment and human uses with low density residential dwellings, farms, woodlands, mining areas, outdoor recreation and other open space activities. The Rural Residential category identifies areas of the county which is appropriate for low intensity and low-density residential development with on-site septic systems. In an effort to minimize the future impacts of residential development in the rural area, the County has identified several locations that have the potential to promote clustering provisions.

Overall, in order to minimize the impact of this development on both agriculture and public facilities, this 20-year land use plan recommends the majority of new development be directed to the Rural Community Activity Centers or the cities or villages in or around Manitowoc County.



Future developments in the Rural Residential areas identified on the Manitowoc County 20-Year Land Use Plan should be in accordance with the detailed future land use plan of the local jurisdictions.

Corridor Mixed Use

The Corridor Mixed Use category identifies areas that may be appropriate for retail and other commercial uses along major highway corridors. Planned developments at the STH 310 / USH 10 interchange and STH 310 corridor are offered good accessibility and are highly visible.

Recommendations

1. Future developments in the Corridor Mixed Use areas identified on the Manitowoc County 20-Year Land Use Plan should be in accordance with the detailed future land use plan of the local jurisdictions.
2. Work with the Wisconsin Department of Transportation (WisDOT) regarding access controls for lands that abut STH 310. Recommended access options for designated sites along STH 310 / USH 10 would be the creation of frontage roads or joint driveways, if approved by WisDOT.
3. Promote the highest and best land uses along the interstate interchanges and exists. Long range concept plans should be developed for these interchange areas detailing consistent land uses, along with development standards for landscaping, architectural design, and general layout.

4. Businesses locating within the Corridor Mixed Use category should be compatible with the character of the surrounding land uses and be environmentally friendly.
5. Encourage a visually appealing corridor by considering standards for building design, signage, and landscaping of future commercial establishments.
6. The County and local jurisdictions should closely monitor the capacities of the infrastructure and community services that accommodate new commercial/industrial development and weigh the future costs to benefits.

Shoreland Development

The Shoreland Development category consists primarily of single family and limited types of multi-family housing directly on the shoreline of a water feature, as well as second tier development. A number of the county's lakes along with areas along Lake Michigan have already experienced considerable development. Additional growth in these areas is placing additional pressure on the natural environment which is, or may lead to poor water quality, loss of wildlife habitat, and a diminished quality of living on these significant natural features.

Recommendations

1. Future developments in the Shoreland Development areas identified on the Manitowoc County 20-Year Land Use Plan should be in accordance with the detailed future land use plan of the local jurisdictions.
2. Any additional development in the shoreland zone must be in compliance with the Manitowoc County Shoreland Zoning Ordinance and any adopted local ordinances in order to provide a layer of protection from future development along the shorelands.
3. Second tier development within the shoreland zone should be properly planned to minimize conflicts and the impact to water resources.
4. Shoreland development plans should identify and maintain public access points as well as consider additional public access to the water resource.

Governmental/Institutional/Utilities

The Governmental/Institutional/Utilities category of the county's 20-Year Land Use Plan is designed to highlight the importance of providing adequate facilities to support residential, industrial, and commercial development in a manner that does not compromise existing services. This classification encompasses county government buildings, power generation, water and sewer systems, solid waste facilities, education facilities, and police and emergency operations.

The transition development pattern from urbanized areas promoted by this county comprehensive plan will allow the municipalities and Manitowoc County to provide for long-term development needs, while achieving a more cost-effective and efficient provision of infrastructure and public facilities.

Recommendations:

1. As development pressures grow, the county and its municipalities will continue to monitor the capacities of the existing utilities and services (e.g., sanitary districts, emergency, etc.) to ensure that the services provided are effective and efficient.

2. Monitor any changes to energy generation facilities (e.g., nuclear, wind, etc.) and evaluate any possible impacts to the surrounding area.
3. Be involved with the long-range plans of the school districts serving the county to be informed on future projects such as new facilities, improvements to existing structures, sharing of facilities, curriculum changes, etc.
4. The county should work with local jurisdictions and surrounding counties to address a variety of issues in the future including, wind towers and electric generation facilities, as well as stormwater, source water supply (Lake Michigan or groundwater), and sanitary systems.
5. Consider renewable energy options where feasible.
6. Future developments in the Governmental/Institutional/Utilities areas identified on the Manitowoc County 20-Year Land Use Plan should be in accordance with the detailed future land use plan of the local jurisdictions.

Transportation Facilities

The Transportation category identifies the existing and future transportation network, airport, rail lines, and other transportation facilities found in Manitowoc County.

The transportation classification identifies the network of roads including the extensive county trunk highway system; State highways 32/57, 42, 67, 147 and 310; U.S. highways 10 and 151; and Interstate highway 43. The rail corridors are also identified on Map 3.1.

Mobility, efficiency and safety continue to be important concerns for the county's transportation system. The county will continue to monitor the mobility needs through appropriate land use decisions and an efficient transportation system with local and regional roads.

The 20-year land use vision of this Manitowoc County plan is intended to encourage shorter trips and alternative modes of travel (i.e., pedestrian, bicycle, in addition to automobiles) within the Urban Transition areas.

Improvements to roadways connecting to the various surrounding urban communities may be necessary to accommodate current demands and the additional traffic generated as the communities grow and as developments continue in the rural portions of the county.

Recommendations:

1. Future developments in Transportation identified on the Manitowoc County 20-Year Land Use Plan should be in accordance with the detailed future land use plan of the local jurisdictions.
2. Promote land use patterns that support safe and efficient travel for county residents, businesses, and commuters.
3. Discuss pedestrian and bicycle safety issues with local jurisdictions.
4. Explore traffic calming techniques at troublesome intersections.
5. Monitor the condition of roads and maintain them as needed utilizing the PASER (Pavement Surface Evaluation and Rating) program.
6. Work with the appropriate agencies and communities to maintain the airport, rail lines, and harbors.

7. Recreational paths and trails, such as snowmobile trails, should have proper signage and intersection controls to ensure safe crossing and interaction with vehicles.

Parks and Recreation

Parks and recreation facilities are important elements that contribute to the county's identity and livability. These sites consist of public or quasi-public uses including State and County owned facilities, trails, recreational and passive natural lands, as well as private recreational features such as research forests, sportsmen's clubs, and golf courses.

As the population grows, so do the recreation and open space needs of the citizens. The intent of this designation is to maintain and promote the county recreational facilities and open spaces to ensure the population is served with adequate park and recreation facilities.

Recommendations:

1. Review recommendations in the county's Park and Outdoor Recreation Plan for maintenance/updating suggestions, creation of new or expansion of existing recreational facilities, etc.
2. Continue upgrading facilities to meet the needs of citizens with special needs along with providing opportunities for all ages of the population. Ensure that the recreational facilities are properly maintained and are compliant with the Americans with Disabilities Act (ADA) safety regulations.
3. Utilize natural areas and environmental corridors as recreational sites.
4. County-owned access points on water features should be maintained and improved as needed.
5. Continue to promote water-based facilities and the recreation/sport activities associated with Lake Michigan.
6. Continue to promote Manitowoc County park and recreation activities, along with the Devil's River State Trail and Ice Age National Scenic Trail.
7. Explore the possibility of partnering with surrounding counties and towns to link existing or planned trails with any trails or other recreation facilities proposed in Manitowoc County.
8. Explore possible funding resources from agencies (e.g., WDNR, Coastal Management, Bay-Lake RPC, etc.) for park upgrades or future recreation development.
9. Future developments in the Parks and Recreation category identified on the Manitowoc County 20-Year Land Use Plan should be in accordance with the detailed future land use plans of the local jurisdictions.

Agricultural

The purpose of the Agricultural designation is to provide for the continued viability of farming and agricultural uses, the raising of livestock, the conservation of agricultural land, and to maintain and promote the rural character of these farmlands into the future.

Since agriculture contributes significantly to the economic health and vitality of Manitowoc County, the county has made a strong commitment to preservation of rural areas. As a result, the county should work with its local jurisdictions to explore new development approaches.

Recommendations:

1. Developments will likely continue in a linear pattern along the local road network, however methods should be used by local jurisdictions to maintain the aesthetic appeal of the county's views.
2. Future developments in the Agricultural designation identified on the Manitowoc County 20-Year Land Use Plan should be in accordance with the detailed future land use plan of the local jurisdictions.
3. Investigate the future use of Purchase of Development Rights (PDR) and Transfer of Development Rights (TDR) within the county.
4. Decisions to allow residential development in areas identified for agricultural uses should be limited and decisions to approve or deny should be based on sound land use planning criteria in order to preserve natural areas, viewsheds, open spaces, and areas deemed important for the county.
5. Adequate buffers are encouraged between farming and non-farming operations in order to lessen conflict.
6. Consider the impacts of the large-scale farming operations and changes to the rural landscape.
7. It is important for agricultural lands to continue to be under the best management practices for agricultural activities.

Woodlands/Natural Areas

The Woodlands/Natural Areas land use classification consists of existing private/public woodlands and open space areas found throughout Manitowoc County. Woodlands are a valuable natural resource, providing a host of benefits. Trees filter air and water, serve as buffers between land uses, provide wildlife habitat and areas for passive recreation.



It is important to note that during the review, consideration, and implementation of the county land use recommendations outlined for Woodlands/Natural Areas, Manitowoc County will take into consideration the land use recommendations established by the local communities before any decisions or additional recommendations are made at the county level.

The Woodlands/Natural Areas classification in the county's 20-Year plan is intended to maintain and preserve the woodlands, open spaces and other natural amenities within Manitowoc County.

Recommendations:

1. Encourage the replacement of woodlands (reforestation). Efforts to replenish the woodlands that are removed would be beneficial to the natural makeup of the area. Benefits include maintaining/improving wildlife habitat and recreation opportunities, restoration of clean water resources, erosion prevention, etc.
2. Promote efforts to retain woodlands on development sites to the greatest extent possible through the use of low impact development techniques.

3. Encourage the sound management of the county's woodlands resource through cooperative planning that conserves biological diversity, minimizes the threat of invasive species, minimizes recreational use conflicts, and enhances the urban forests.
4. Discourage the fragmentation of large contiguous woodland areas.

Nonmetallic Mining

The Nonmetallic Mining designation identifies active sites and those areas where mineral resources are likely to be mined in the future. The intent of this designation is to continue utilizing the mineral resources found in the county to supply materials for the economic development of the region and to help minimize any conflicts with surrounding land uses.

Prior to the end of mining operations, reclamation plans must be developed to address site stabilization and the subsequent use of the site. Plans for reclamation of these sites must be a cooperative effort to ensure that reclamation, restoration and/or stabilization plans are compatible with surrounding land uses, address monitoring, maintenance requirements, and address the concerns of the community.

Environmental Corridors Overlay

Manitowoc County recognizes that natural resources are important attributes that are desired by residents and visitors. With the county's mixture of wetlands, floodplains, and inland lakes, to the various rivers and streams emptying into Lake Michigan, the County's natural resources are important land use components that contribute to the quality of life of residents. These features also provide wildlife habitat, enhance the appearance of communities, improve natural processes such as flood control, water retention or groundwater recharge and provide outdoor recreation opportunities.

One of the primary goals of the Manitowoc County 20-Year Land Use Plan is to manage development in a manner that ensures compatibility with identified natural features, while minimizing the potential for long-term adverse impacts on the environment. The county's future land use plan identifies four (4) elements referred to jointly as environmental corridors:

- WDNR wetlands,
- 100-year floodplains as defined by the Federal Emergency Management Agency (FEMA),
- Steep slopes of 12 percent or greater, and
- 75-foot water setback for buildings from all navigable waterways as defined by the Manitowoc County Shoreland Zoning Ordinance.



It is important to note that local communities' comprehensive plans may have additional standards for the abovementioned environmental corridor features.

Together, these elements represent the areas of the county that are most sensitive to development. These features provide limitations to development and are generally regulated by either the federal, state, or county government. The corridors are illustrated as an overlay on the county's 20-Year Land Use Plan (Map 3.1) and should be utilized as a reference to aid in their protection.

Recommendations:

1. Development is encouraged to be directed away from environmental corridors as much as possible - or have them sensitively designed within developments, possibly for

recreational uses, which will help minimize the negative effects on water resources, wildlife habitats and the overall character of the county.

2. Work with local jurisdictions regarding lands along the Lake Michigan shoreline to be planned in a manner that maintains the visual and environmental integrity of these areas.
3. Whether it is for a safe drinking water supply, or for recreational or aesthetic purposes, it is important that Manitowoc County protect the quality and quantity of its surface and ground water resources.
4. When making land use decisions, karst features (e.g., sinkholes) should be taken into consideration in order to ensure protection of the area’s groundwater



It is important to note that during the review, consideration, and implementation of the county land use recommendations outlined for Environmental Corridors, Manitowoc County will take into consideration the land use recommendations established by the local communities before any decisions or additional recommendations are made at the county level.

IDENTIFIED SMART GROWTH AREAS

According to s. 16.965, Wis. Stats., a “smart growth area” is “an area that will enable the development and redevelopment of lands within existing infrastructure and municipal, state and utility services, where practicable, or that will encourage efficient development patterns that are both contiguous to existing development and at densities which have relatively low utility and municipal and state governmental costs.”

- Development within the extraterritorial planning areas of the incorporated communities where infrastructure can be cost effectively extended to meet the increase in growth.
- Development within the identified sanitary districts where infrastructure and compatible land uses already exist.
- Reclamation of former and current nonmetallic mining sites for future recreational opportunities or other feasible developments.

Table 3.1 contains a summary of the year 2030 projected land uses, along with their approximate acreage totals, as shown on the Manitowoc County 20-Year Land Use Plan (Map 3.1). It is important to note these future land uses are illustrated by general location and are to be used as a point of reference when making land use decisions.

Table 3.1: 20-Year Land Use Plan Acreage Allocations

20-Year Land Use Plan Category	2030 Acres*
Urban Transition	33,400
Rural Community Activity Center	590
Rural Residential	4,611
Corridor Mixed Use	1,145
Shoreland Development	2,596
Governmental/Institutional/Utilities	1,007
Transportation Facilities	13,077
Park and Recreation	9,886
Agricultural	195,906
Woodlands/Natural Areas	88,710
Existing Nonmetallic Mining	1,872
Water Features	4,158
Incorporated Communities	24,513
Total	381,472

*Note: acreages in Table 3.1 associated with the 20-Year Land Use Plan Categories are for the unincorporated areas of the county only. The acreages do not include any land uses within the cities or villages, which account for 24,513 acres on Map 3.1.

Source: Bay-Lake Regional Planning Commission, 2009.

CHAPTER 4: IMPLEMENTATION

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INTRODUCTION

This chapter discusses intergovernmental cooperation with Manitowoc County, its local jurisdictions, and other government entities. This portion of the county plan also outlines a variety of actions and activities necessary to implement the development strategies and vision of the *Manitowoc County 20-Year Comprehensive Plan*. In an effort to keep this plan up-to-date with changing conditions, this section also includes a process for amending/updating the comprehensive plan, along with a mechanism to measure the county's progress of accomplishing its development goals.

RESPONSIBILITIES OF LOCAL OFFICIALS

The Manitowoc County Planning and Park Commission has the primary responsibility of implementing the *Manitowoc County 20-Year Comprehensive Plan*. The Planning and Park Commission will work with the county Planning and Zoning staff during the implementation of the county's comprehensive plan as well as any future updates to the document. Elected officials and county staff need to be familiar with the plan's land use recommendations, development strategies, 20-Year Land Use Plan, and vision statement, since much of the rationale needed to make future land use decisions will be based on this information. The county will also reference the community comprehensive plans for any changes that have occurred in the local future land use strategies.

The *Manitowoc County 20-Year Comprehensive Plan* shall be consulted before changes are made to land uses and county ordinances to ensure they are consistent with the comprehensive plan. If a decision needs to be made that is inconsistent with the county's future development strategy, the comprehensive plan must be amended to reflect this change in policy before it can take effect.

INTERGOVERNMENTAL COOPERATION

This portion of the chapter examines the working relationships various entities and governmental units have with one another and how these relationships may impact the capability of the county and local communities to implement their comprehensive plans. An inventory was conducted of existing intergovernmental agreements, shared resources, and consolidated services between Manitowoc County, local municipalities, surrounding communities and counties, school districts, service providers, civic and recreation groups, regional planning commission, sanitary districts, and state and federal governments.

This chapter also stresses the importance of the county working cooperatively with its local jurisdictions by identifying existing or potential conflicts, communicating visions and coordinating plans, goals and objectives. These joint efforts assist the county in resolving issues of mutual interest and promoting consistency between plans.

Existing Intergovernmental Activities

Manitowoc County Municipalities

The county has a total of 30 municipalities comprised of 18 towns, nine (9) villages and three (3) cities.

- Town of Cato
- Town of Centerville
- Town of Cooperstown
- Town of Eaton
- Town of Franklin
- Town of Gibson
- Town of Kossuth
- Town of Liberty
- Town of Manitowoc
- Town of Manitowoc Rapids
- Town of Maple Grove
- Town of Meeme
- Town of Mishicot
- Town of Newton
- Town of Rockland
- Town of Schleswig
- Town of Two Creeks
- Town of Two Rivers
- Village of Cleveland
- Village of Francis Creek
- Village of Kellnersville
- Village of Maribel
- Village of Mishicot
- Village of Reedsville
- Village of St. Nazianz
- Village of Valders
- Village of Whitelaw
- City of Kiel
- City of Manitowoc
- City of Two Rivers

Relationships

The county has a good working relationship with its local jurisdictions and neighboring counties. Manitowoc County maintains countywide zoning in nearly all of the unincorporated areas. The towns of Centerville, Franklin, and Newton administer their own zoning ordinances. All unincorporated areas are under the county shoreland/floodplain zoning. Manitowoc County also maintains a Land Division Ordinance.

Several towns have adopted local ordinances to address specific issues within their municipal boundaries. These local ordinances are either more restrictive than the county ordinances, or address a local issue of concern for which there is no county regulation.

The cities and villages within Manitowoc County enforce their own zoning and have jurisdiction over municipal services. As a result, the county has a more limited relationship with these communities than with the towns.

Manitowoc County includes its communities in the *Manitowoc County Multi-Hazards Mitigation Plan* as well as the *Manitowoc County Farmland Preservation Plan*, and the *Manitowoc County Comprehensive Outdoor Recreation Plan*.

Siting Public Facilities

Most county administrative offices are located within or near the City of Manitowoc. The Manitowoc County Parks Department maintains five major parks and three special purpose parks. The county also maintains accesses for boating and fishing on numerous water features and operates the Devil's River State Trail, while providing maintenance at Point Beach and Fischer Creek Conservation Area.

Sharing Public Services

The towns have mutual aid agreements with the Manitowoc County Sheriff's Department for police protection, the Manitowoc County Highway Department for infrastructure upgrades and maintenance, and solid waste for collection of recycling materials. Several of the incorporated communities defer to the county's Shoreland Ordinance and have signed mutual aid agreements with the county for police, road services, and management of solid waste. Manitowoc County

owns property throughout the county including the incorporated communities (e.g., County Expo Center in the City of Manitowoc), which requires additional mutual assistance.

School Districts

There are 12 public school districts serving the residents of Manitowoc County (see Chapter 9 of *Volume II: Manitowoc County Resources*). In addition, a number of private schools provide alternative learning environments. Manitowoc County is part of the Northeast Wisconsin Technical College (NWTC) and Lakeshore Technical College (LTC) districts of the Wisconsin Technical College System. The LTC campus is located in the Village of Cleveland. University of Wisconsin-Manitowoc and Silver Lake College are other higher education institutions located in Manitowoc County.

Relationship

The relationship Manitowoc County and the local communities have with the public school districts is considered positive and open. The county and the individual municipalities can provide input on school facilities, future development projects, etc.

Siting School Facilities

The siting of new school facilities, such as athletic fields, school forests, off-sight classrooms, and buildings is mainly conducted by the school districts. Manitowoc County has little input on the siting of these facilities; however, local communities have been involved in those plans to avoid duplication and costs, evaluate recreational facilities, and promote mutual planning on future development and development trends.

Sharing School Facilities

The county has no formal agreement with the school districts for shared use of school facilities. Some of the local communities maintain an understanding with the school district to allow school buildings and recreational facilities to be used by the general public at little or no cost.

Region

Manitowoc County is a member of the Bay-Lake Regional Planning Commission. The Commission's annual work program includes economic development, natural resources, transportation, and community planning. Through a historically positive working relationship, the Commission has facilitated the preparation of a variety of local and regional plans, reports and studies that relate directly to planning within Manitowoc County.

Manitowoc County is part of the Northeast Wisconsin Technical College (NWTC) and Lakeshore Technical College (LTC) districts of The Wisconsin Technical College System. NWTC works with local communities and school districts to secure space and facilities for classes.

State

The county's relationship with the State of Wisconsin involves many topics. Ongoing positive relationships have been maintained with transportation (WisDOT), natural resources (WDNR), Health and Services, Emergency Management, and Administration. Local communities deal most often with WisDOT and the WDNR. Their relationships with these state agencies have been generally positive.

INVENTORY OF PLANS AND AGREEMENTS

Cooperative Boundary Plan

Section 66.0301 of Wisconsin Statutes allows municipalities to enter into agreements that foster intergovernmental cooperation regarding developments and other planning issues including the siting and financing of projects that cross municipal boundaries. A Cooperative Boundary Plan is any combination of cities, villages, towns, county, school district, sanitary district, regional planning commission, etc. that may determine the boundary lines between themselves under a cooperative plan approved by the Wisconsin Department of Administration (WDOA). The cooperative plan must be made with the general purpose of guiding and accomplishing a coordinated, adjusted, and harmonious development of the territory covered by the plan which will, in accordance with existing and future needs, best promote public health, safety, morals, order, convenience, prosperity or general welfare. Cooperative boundary plans cover at least a 10-year period. Additionally, cooperative boundary agreements are a tool to promote service sharing between local units of government.

Mutual Aid Agreements

Local governments can enter into agreements with neighboring governmental entities for the performance of any and all functions which the parties to the agreement are authorized to perform. Several communities have entered into mutual aid agreements with neighboring municipalities as well as Manitowoc County to provide services to their residents. Many of the mutual aid agreements involve emergency services (police, fire, and rescue) and to maintain roads and infrastructure.

Extraterritorial Authorities

Extraterritorial Subdivision regulation

Under Section 236.10 of the Statutes, a city or village may review, and approve or reject, subdivision plats located within its extraterritorial area if it has adopted a subdivision ordinance or an official map. Section 236.02 of the Statutes defines the extraterritorial plat review jurisdiction as the unincorporated area within three (3) miles of the corporate limits of a city of the first, second, or third class, or within 1.5 miles of the corporate limits of a city of the fourth class or a village.

Since Manitowoc and Two Rivers are cities of the third class (i.e., population of 10,000 to 39,000 residents) the scope of their jurisdiction extends three (3) miles from their city boundary. The extraterritorial area for the villages and City of Kiel are limited to 1.5 miles beyond their boundaries.

Extraterritorial Zoning

Under Section 62.23 (7a) of the Statutes, a city or village may enact an extraterritorial zoning ordinance and map for adjoining unincorporated areas lying within its extraterritorial area. The limits of extraterritorial zoning are the same as those specified in the extraterritorial subdivision regulation. However, extraterritorial zoning requires a joint procedure between the town and the villages and/or cities to develop and enact an extraterritorial zoning ordinance and map.

Currently, extraterritorial zoning is not being administered between any jurisdictions within Manitowoc County.

Annexation

Wisconsin law does not allow cities and villages to annex property without the consent of landowners. While they can reject annexation petitions, often the only time property owners in unincorporated areas petition for annexation is when they have problems with septic systems or wells that pose health and environmental concerns. As a result, territory is often annexed into cities and villages in a rather haphazard manner, resulting in odd municipal boundaries. This in turn can negatively affect service delivery.

On the other hand, towns do not have much control over annexation either, which is commonly initiated by individual property owners as they want to develop at urban densities and thus, need public utilities. The loss of existing residents and businesses or undeveloped land through annexation often results in an overall loss of population and/or tax base in the towns. It is likely that annexation issues will occur in the future as the incorporated communities expand to provide municipal services to growing areas along their borders. It may be possible to minimize border conflicts through use of cooperative boundary agreements and other mechanisms aimed at coordination of development along jurisdictional borders.

Inventory of Existing or Potential Conflicts and Possible Resolutions

Three (3) Intergovernmental Cooperation Workshops, one in each of the three planning clusters, were held in April 2009 to gather input on current positive working relationships; existing or potential land use conflicts; and to identify potential solutions to these conflicts. Representatives from each of the communities within the planning cluster were invited to attend the workshop, along with neighboring municipalities, school districts, civic and recreational clubs, Manitowoc County staff, Wisconsin Department of Natural Resources, Wisconsin Department of Transportation, and other entities and departments that may have an interest in or direct impact on the implementation of comprehensive plans in Manitowoc County. The results of the three (3) Intergovernmental Cooperation Workshops are displayed in Appendix E of *Volume I: County Plan*.

IMPLEMENTATION OF LOCAL LAND USE CONTROLS

Zoning

Manitowoc County General Zoning Ordinance

Manitowoc County has zoning jurisdiction within nearly all unincorporated communities of the county under Chapter 8 of the Manitowoc County Code (the towns of Centerville, Franklin, and Newton administer their own zoning ordinances). Manitowoc County maintains and administers the general zoning ordinance to regulate and restrict the locations, construction and use of buildings, structures, and the use of land in the county. It provides for the public health, safety and general welfare of the unincorporated areas of Manitowoc County. General zoning utilizes a system of districts designated for different uses based on land suitability, infrastructure, avoidance of conflict with nearby uses, protection of environmental features, economic factors, and other local factors.

Refer to *Chapter 8: General Zoning* of the Manitowoc County Code for detailed information on zoning districts, regulations, restrictions, permitted uses, and zoning maps.

- The comprehensive plan's preferred land uses need to be compared to the existing zoning map to determine compatibility within existing districts. The Planning and Park Commission, along with other county staff, should work closely with local communities to make informed joint decisions on re-zones and the application of conditional uses. It is not the intent of the zoning map to become a direct reflection of the comprehensive plan because the 20-Year Land Use Plan provides a look at future land uses while zoning addresses present day.

Official Mapping

Under §62.23(6), the City Council/Village Board/Town Board (under village powers) "...may by ordinance or resolution adopt an official map showing the streets, highways, parkways, parks and playgrounds laid out, adopted and established by law." Once an area is identified on an official map, no building permit may be issued for that site, unless the map is amended.

The official map serves several important functions:

1. It helps assure that when the city/village/town acquires lands for streets, or other uses, it will be at a lower vacant land price;
2. It establishes future streets that subdividers and approving municipalities must adhere to unless the map is amended; and,
3. It makes potential buyers of land aware that land has been designated for public use.

The adoption and use of an official map may be an important consideration in the future for several of the local communities experiencing a large amount of concentrated development. Towns located within extraterritorial planning areas of incorporated communities may also want to evaluate the need to create an official map with its incorporated neighbor through joint planning to ensure development occurs in an organized and efficient manner. Manitowoc County may offer their support during preparation of an official map to help ensure development does not comprise surrounding natural features, agriculture lands, or county operations.

Shoreland/Floodplain Ordinance

The Manitowoc County Shoreland/Floodplain Zoning regulates development and establishes zoning standards for use of shorelands, floodplains, shoreland-wetlands of navigable waters, and designated conservancy areas in the unincorporated areas of Manitowoc County

Areas regulated by the Manitowoc County Shoreland/Floodplain Ordinance include:

1. **Floodplains**: include all lands in the County designated as floodway and floodfringe on the Federal Insurance Administration (FIA) Flood Maps, as well as the general floodplain as designated on the Manitowoc County General Floodplain and Conservancy Zoning Map.
2. **Shorelands**: include all lands in the County which are within 1,000 feet of a navigable lake, pond, or flowage or within 300 feet of a navigable river or stream or to the landward side of the floodplain, whichever distance is greater. Navigable waters shall be as defined in Wis. Stats. 281.31 and shall include all lakes, ponds, and flowages shown in blue and all rivers and streams shown in solid blue on U.S.G.S. Quadrangle Maps.
3. **Shoreland-Wetlands**: includes all wetlands, designated on the Wisconsin Wetland Inventory Maps dated May 10, 1989, within the shorelands as identified in Chapter 9 of the Manitowoc County Code.

4. Other conservancy areas: include all lands in the county which are designated as conservancy on the Manitowoc County General Floodplain and Conservancy Zoning Map.



For more information about Shoreland/Floodplain zoning in Manitowoc County refer to *Chapter 9: Shoreland/Floodplain Zoning* of the Manitowoc County Code.

Land Division / Subdivision Ordinance

A land division/subdivision ordinance, as authorized by s. 236, Wis. Stats., regulates the division of raw land into lots for the purpose of sale or building development. The land division/subdivision ordinance is related to the general zoning ordinance as it regulates the type of development that takes place on a parcel and the land division/subdivision ordinance regulates how the parcel is created and made ready for development.

Manitowoc County administers a Subdivision Ordinance for the unincorporated areas of the county. Refer to *Chapter 12 Subdivision Regulations* of the Manitowoc County Code for more details.

Other Ordinances and Regulations

Other tools to implement the comprehensive plan may include the development/support of additional Manitowoc County regulations such as:

- Building/Housing Codes
- Blighted Building Ordinance
- Landscape Ordinances
- Design Review Ordinances
- Erosion and Stormwater Control Ordinances
- Historic Preservation Ordinances

COMPREHENSIVE PLAN INTERNAL CONSISTENCY

The comprehensive plan elements and their respective development strategies should maintain consistency to ensure land use decisions are based on current conditions. In an effort to keep the plan’s uniformity, the County Planning and Park Commission and elected officials should conduct periodic reviews of the county’s vision statement and development strategies, along with the 20-Year Land Use Plan text and mapping.

Since the Manitowoc County plan was developed to coincide with the comprehensive plan strategies of the county’s municipalities. The county should also work cooperatively with the local jurisdictions to ensure all land use ordinances and maps are updated to limit inconsistencies with the local comprehensive plans.

UPDATING THE COMPREHENSIVE PLAN

This comprehensive plan shall be amended/updated following §66.1001 (4)(b) and the county’s adopted written procedures for fostering public participation. It is recommended that the county’s comprehensive plan be reviewed/updated by the County Planning and Park Commission based on the following schedule:

- **Annually**
 - Review the vision statement and future development strategies;

- Identify updates to the Wisconsin Department of Administration (WDOA) population and housing estimates, and U.S. Census data;
 - Review implementation priorities and relevance of the development strategies;
 - Update any changes to 20-Year Land Use Plan text or map;
 - Ensure consistency with new or revised ordinances proposed by Manitowoc County
- **Five Years**
 - Review U.S. Census data, WDOA population and housing projections – update *Volume II: Manitowoc County Resources* as needed;
 - Identify substantial changes over the past five years and any potential impacts to the county in the near future. This helps monitor outcomes of implemented development strategies and identifies any possible needs for the 10-year update;
 - Be aware of updates or completion of other local, county, or regional plans.
 - **Ten Years** - required comprehensive plan update per Wisconsin Statute 66.1001(2)(i). Amend the plan as needed based on changing conditions.
 - Conduct a review of the county’s vision statement, 20-Year Land Use Plan development strategies and map, land use recommendations, and local comprehensive plans.
 - Update the population, housing, and economic data, along with other relevant planning information inventoried in *Volume II: Manitowoc County Resources*.
 - Review ordinances and other controls for consistency.

IMPLEMENTATION WORK PLAN

County officials should establish a general process and timetable for addressing the development strategies that will ultimately lead to implementing the comprehensive plan and to assist local communities in the implementation of their plans. The steps to prioritize the development strategies should include the following:

1. To ensure the comprehensive plan remains current, review of the plan should be a standing agenda item for at least two Planning and Park Commission meetings and a minimum of one County Board meeting per year.
2. The review of the comprehensive plan should include an assessment of the county’s land use control tools (e.g., ordinances and regulations) listed previously in this chapter. The Planning and Park Commission members and county staff should review and update as needed the county zoning standards to address the land use designations detailed in *Volume I: County Plan* and the locally adopted comprehensive plans.
3. Planning and Park Commission members and county staff should identify priority objectives and policies that need to be addressed within the first 12-24 months. These priority strategies will lead to the implementation of additional policies in subsequent years.
4. Planning and Park Commission members and county staff should identify key stakeholders and collaborators to assist in the implementation of the development strategies. A list of some of those entities is provided at the end of this chapter.

5. The priority objectives and policies should be separated based on topic such as housing, economic development, transportation, parks and recreation. The separation of policies by topic will allow for the delegation of projects to other entities.
6. The implementation schedule should be evaluated and revised on an annual basis. Planning and Park Commission members and county staff will need to monitor the Inventory and Trends highlighted *Volume II: Manitowoc County Resources* to ensure the development strategies address the changes in local demographics and to the regional economic environment.
7. Manitowoc County has many tools available for the implementation of the stated development strategies over the 20-year planning period. There are comprehensive lists of financial and technical resources to implement many of the strategies listed for the housing, economic development, and transportation elements of the plan in *Volume II: Manitowoc County Resources*.

Stakeholders

Local Cities, Villages, and Towns

Adjacent Counties and Towns

Civic and Recreation Clubs

Local Sanitary Districts

Local School Districts

Bay-Lake Regional Planning Commission

United States Department of Agriculture, Natural Resources Conservation Service

Wisconsin Department of Administration

Wisconsin Department of Agriculture, Trade, and Consumer Protection

Wisconsin Department of Natural Resources

Wisconsin Department of Transportation

VOLUME I - APPENDIX A
PROCEDURES FOR PUBLIC PARTICIPATION

PROCEDURES FOR PUBLIC PARTICIPATION OF THE MANITOWOC COUNTY COMPREHENSIVE PLAN

Introduction

In order for the public to be kept continually informed during the development of the Manitowoc County Comprehensive Plan, and to meet the requirements of Wisconsin’s “Smart Growth Law” (Ch. 66.1001 (4)(a) Wis. Stats.), Manitowoc County has prepared the following public participation plan.

Objectives of the Multi-Jurisdictional Planning Process

This document is designed to facilitate community involvement by promoting stakeholders to express ideas, opinions, and expertise throughout the planning process. Subsequently, Manitowoc County will achieve the following objectives throughout the development and adoption of the Manitowoc County Comprehensive Plan:

- Address multiple levels of public participation through public information, public education, public input, public interaction and public partnership.
- Employ public participation strategies set forth, in order to provide for diverse public participation opportunities throughout Manitowoc County, assuring a publicly supported County Comprehensive Plan.
- Maximize intergovernmental cooperation through a joint planning effort.
- Address needs, issues and priorities for all community stakeholders.
- Discuss, address, and resolve conflict between planning participants.
- Promote public participation utilized to create comprehensive plans that meet the requirements of 66.1001 Wis. Stats. for local communities and Manitowoc County.

Public Participation Guidelines

Throughout the planning process Manitowoc County will utilize strategies outlined in this plan to foster public participation. The County will encourage a wide degree of public involvement to produce a plan that truly reflects the ideas, desires, and objectives of county stakeholders. All meetings throughout the planning process will be open to the public, noticed in accordance with state open meetings law, and include a timeframe and means of obtaining public comment.

Direct mailings, news releases, displays, exhibits, a county website, and use of additional mass media will be used to create/increase public awareness of the comprehensive planning process and participation opportunities. Public education will provide citizens with objective information to assist them in understanding issues and various alternatives for addressing the issues. Public Input will be critical in assessing the needs of Manitowoc County and will assist in assessing alternatives developed to address identified needs. Input will be collected throughout the planning process utilizing surveys, emails, focus groups, web page, interactive open houses and public meetings. Throughout the planning process focus will be placed on maintaining public interaction. Visioning exercises, nominal group workshops, S.W.O.T analysis, intergovernmental cooperation workshops; in addition to utilizing the web page for feedback, “one-on-one” staff contacts (as needed) will promote “active” interaction with the public. The

highest level of participation will be the public partnership, in which local plan commissions and planning clusters are able to work together in the development of ideas that Manitowoc County will strive to implement.

Means of Public Participation Efforts

Passive and active means of public participation will create public awareness through education and interaction with Manitowoc County residents, property owners, business owners, special interest groups, and community organizations throughout the planning process.

Passive Public Participation Efforts

Passive public participation efforts will provide the public with information on: the requirements of comprehensive planning law and other regulations that affect land use, the Manitowoc County planning process, and public participation sessions and plan progress. The following are detailed (passive) public participation efforts:

- **Manitowoc County Website**

Throughout the planning process residents will be encouraged to log onto the County's website to obtain information on the comprehensive planning process. All agendas, minutes, public notices, draft chapters, fact sheets, newsletters, schedules and surveys associated with the comprehensive plan will be posted on the website. The county website can be found at www.co.manitowoc.wi.us and will be updated as significant plan progress is made. Public access to the internet is available at each of the public libraries throughout the county.

- **Email Updates**

Summaries of plan progress will be provided by email to members of the Manitowoc County Planning Advisory Committee, Local Plan Commissions (Northwest, Lakeshore and Southern Clusters), and Local officials. Citizens, property owners and additional stakeholders may register to receive email updates by emailing planning@co.manitowoc.wi.us.

- **Fact Sheets and Newsletters**

Fact sheets and newsletters will be utilized to inform citizens about the Manitowoc County comprehensive planning process, plan issues, plan progress, and scheduled public participation sessions. These publications may be found at the Manitowoc County Courthouse, area libraries, post offices, municipal halls, and other community locations deemed appropriate. These publications will serve as a source of information for those citizens that do not visit the County Website on a regular basis or do not have internet access.

- **Plan Information Displays**

Meeting notices, draft chapters and other upcoming public participation sessions will be available for review at each municipal (town, village, city) hall and other locations deemed appropriate. Planning displays may be placed at the Manitowoc County Courthouse and at libraries throughout the county and other locations deemed appropriate. These displays will contain information about the plan and upcoming public participation sessions.

- **Press Releases**
Press releases regarding the comprehensive planning process and progress will be provided to local communities, area newspapers, radio stations and those community groups that prepare and distribute local newsletters.
- **Presentations to Local Groups**
The Manitowoc County Planning Advisory Committee will work with stakeholder (local non-profits, local governments, community groups, and business groups) interested in the development of the Manitowoc County comprehensive plan. Presentations will be made to County government and advisory committees throughout the planning process.
- **Written Comments**
Written comments from the public may be submitted to the Manitowoc County Planning Advisory Committee or planning staff at any time during the planning process at:

Manitowoc County Planning and Park Commission,
4319 Expo Drive, PO Box 610,
Manitowoc, WI 54221
Written comments may also be submitted by email to planning@co.manitowoc.wi.us

Active Public Participation Efforts

Active public participation efforts are involvement oriented (active), as opposed to the informative or policy nature of passive participation. The following are detailed (active) public participation efforts:

- **Nominal Group Workshops**
An ideas workshop (Nominal Group) will be conducted at the local, cluster and county levels. These workshops will be conducted to identify key issues within the local jurisdictions and at the cluster level.
- **Visioning Workshops**
Workshops will be conducted at the cluster level to assist vision development at the local, cluster and county levels. These workshops will utilize the outcome of the nominal group workshops and be conducted early in the planning process.
- **Strengths, Weaknesses, Opportunities and Threats Analysis**
S.W.O.T workshops will be conducted at the cluster and county levels to identify economic strengths, weaknesses, opportunities and threats.
- **Intergovernmental Cooperation Workshops**
Workshops will be conducted at the cluster level to discuss the planning process, and identify cross boundary issues for local jurisdictions, as well as, the three planning clusters created as part of this planning process. Cooperation between local governments is essential to the planning process and future plan implementation.

- **Open Houses**

A minimum of two (2) “Open Houses” will be held during the development of the comprehensive plan to present information regarding the comprehensive plan/s and obtain public comment. The first of these open houses shall be held at the midpoint of the planning process and focus on presenting the background information and results of completed workshops. The second open house shall be held near the end of the planning process to present a draft plan to the public prior to the required public hearing. The open houses shall be noticed in the local newspapers and other sources as identified. In addition, the open houses will be noticed and posted in locations in each jurisdiction. The open house will provide the public with an opportunity to review and comment on work that has been accomplished by the Planning Team. The Lakeshore, northwestern, and southern clusters will each conduct open houses.

Planning Committees

All Planning meetings will be open to the public and will provide opportunity for public comment. Meeting minutes are available on the Manitowoc County website at www.co.manitowoc.wi.us under the comprehensive planning link or at the Manitowoc County Planning and Park Commission.

- **Planning and Park Commission**

The Manitowoc County Planning and Park Commission will serve as the recommending body to the County Board of Supervisors regarding comprehensive planning. This seven member committee will be updated throughout the planning process by the Planning Team and Manitowoc County Planning Advisory Committee.

- **Manitowoc County Planning Advisory Committee**

The Planning Advisory Committee will actively participate in preparation of the County Comprehensive Plan and will recommend a comprehensive plan to the Planning and Park Commission to adopt by supporting resolution to the County Board. The Planning Advisory Committee consists of two representatives from each jurisdiction (local planning commissions) in the county, representatives from County departments engaging in land use decisions, and state agencies offering land use expertise.

- **Conflict Resolving Body**

The County Advisory Planning Committee will serve as the conflict resolving body. This committee will develop and implement a conflict resolution procedure at the onset of the planning process.

Planning Clusters

As part of the planning process, community planning clusters have been created. Utilizing these clusters will reduce the number of meetings held by consultants, therefore reducing plan costs. The use of a cluster based planning approach allows for multi-jurisdiction throughout the planning process. Please see Figure A for Planning Cluster Map.

Public Participation Timeline

Public participation activities identified within this plan will be utilized throughout the planning process. Public participation will continue to be a part of Manitowoc County planning long after the plans have been adopted. Refer to the Manitowoc County Website for the latest information on the Manitowoc County Comprehensive Planning Process, www.co.manitowoc.wi.us or Contact the Manitowoc County Planning and Park Commission at planning@co.manitowoc.wi.us.



VOLUME I - APPENDIX B
NOMINAL GROUP RESULTS

Manitowoc County Nominal Group

MCPAC Results

August 29, 2007

Group 1

5	Ensuring development protects property owner rights and value for adjacent and neighboring properties (i.e. how a landfill would impact surrounding residents)
5	Keeping young adults in the county - provide employment opportunities
5	Provide education that industries are looking for – particularly vocational
2	Allow purchase of ag. lands – stop other uses from competing (i.e. recreation outbidding ag.)
2	As development increases keep heavily used roads adequate (i.e. county roads) to allow high traffic while keeping impact to local roads low – allow farmers to use local roads and not complete with lots of traffic
2	Promote alternative energy resources – production and utilization
1	Controlling farm waste
1	Promoting Maribel Caves and building (and conserve)
1	Work with DNR to have more logical decision making – make user friendly
	Better coordination of road construction and county level – better information on what is going on
	Control of air space – windmills and towers
	Development fits the needs of the community – have a vision for future
	Ice Age Trail development should be a priority in planning process
	Need businesses to locate in rural areas
	Ordinance/promotion from county to clean-up abandoned homes and farms

Group 2

5	Maintain agricultural areas where agric. is still evident
4	Better land development in downtown Manitowoc
4	Orderly growth outward from existing development
3	Better control of land use
2	Improved communication between government units
2	Protect groundwater – controls for agriculture, mining, etc.
1	Large-scale agricultural impacts
1	Maintain public access to Lake Michigan
1	More cluster development
1	Need more industry
	Better roads – upgrade existing
	Clean rivers
	Control geese and turkeys
	Encourage recycling and garbage pickup i.e. compliance
	Encourage the maintenance and upkeep of existing homes
	How to provide services to dispersed residential development

	Investing too much money into airport
	Keep commercial and industrial near main highways to protect town infrastructure
	Maintain ½ mile buffer between residential and large scale agriculture
	Maintain county park system and waterways
	Maintain green space along West Twin River
	Maintain rural character in the country
	More commercial and industrial on north side of Manitowoc
	More community centers for the elderly
	Planned utility expansions
	Preserve and enhance trailways (biking/walking)
	Siting of tall structures (cellular, wind mills, etc.)
	Stormwater ponds to meet permit requirements

Group 3

7	Promote county quality of life and maintain it
4	Keep pure ag. areas for ag. use. Ag. soils
4	Villages or rural areas should create industrial/business park areas
3	Cities and villages should promote a county level development plan that promotes more cluster development
2	County-wide economic strategies. Communities need to work together and not against
2	Develop I-43 Corridor using the highest and best uses
2	Strive to be a green county. Be sustainable
1	Refocus tax redistribution that is based on town tax base and not population
	Analyze baby boomer statistics and see what services and jobs are needed
	Business/residential should be separated
	Continue/start historical preservation of buildings, sites and local history
	Create recreational opportunities in the county – trails, parks, etc.
	Improve nutrient management controls
	Invasive plant control and water invasive species
	Lakeshore land should be preserved for public use
	Locate extractive uses in proper land use locations
	Look at efficiency of police, fire and public services
	Maintain excellent transportation network – easy to get around county!
	Monitor potential nuclear power plant plans
	Place recreational opportunities in areas that do not have them. ex. safe harbor

Group 4

4	Concerns about mega-farms
4	Preserve natural areas and rural character
3	Concerns about surface water and groundwater contamination
3	Promote more high-end industry in county
2	Control urban sprawl
2	Economic growth needs to increase
2	Reverse “brain drain” in the county
1	Heavy trucks are destroying pavements
1	Improve (and properly fund) infrastructure
1	Maintain existing manufacturing
1	Preserve historic sites and buildings
	Advocate for cluster development
	Concern about declining groundwater levels
	Establish reasonable requirements for control of air quality
	Expand and promote recycling
	Have reasonable setbacks from the road for homes
	Improve electric utility access
	Increase state highway aids to keep up with maintenance
	Less frequent testing required of water utilities (3 mos. instead of monthly)
	Limit population growth
	Minimum lot size of 10,000 sq. feet for residences/urban development
	Need for a county-wide trail network
	Preserve migratory bird habitat in county.
	Residential small business development is too sporadic
	Town roads in northern part of county need improvements/better maintenance
	Zoning districts vary greatly among municipalities

Group 5

5	Roads system and maintenance (north and south roads besides 43)
5	Shared services
3	Land use zoning ag. (preserve)
2	Minimum parcel size
1	Agriculture issues – better storage
1	Continue care for elderly
1	County weed control enforcement
1	Low income housing/affordable
1	Manufacturing housing
1	Parks/nature trail (ice age trail)/rec. areas
1	Purchase of dev. rights
1	Respect property rights
1	Stormwater and run-off
	Alt. energy sources
	Clean lakeshore beaches

	Clear laws to understand/enforce
	Commercial dev. identification/management
	Good school system
	Hwy. 10 expansion
	Not too restricted on natural areas
	Pop./retention
	Preserve historical sites
	Redevelopment of eco. area - vacant
	Water quality

MCPAC Nominal Group - All Worksheet Responses

Group 1

- More growth of all kinds, i.e. make it more user friendly
- Less interference with DNR, i.e. to be more logical and accessible with decisions
- Dislike when roadwork is being done on one artery while another artery for getting around the construction is also all torn up-it seems logistics is not a major concern
- Control of airspace eg. height of windmills or towers
- Positive-rural clean country atmosphere
- Concern-use of land which will lower the value of neighbors land eg. large pig operation, power lines, factory
- Currently our road systems allow reasonable access to Green Bay, Fox Valley, and Manitowoc-this should be maintained without increasing commute time
- Large industry and commercial use should be directed to developed areas in order to maintain rural setting
- Keeping young adults employed in our area/county
- Water quality
- Can agriculture grow without a lot of complaints?
- Do we want tourism in our rural county?
- Are we fulfilling educational needs of our county especially vocational programs?
- Is there proper elderly care especially in rural areas?
- Is there sufficient recreational opportunities?
- Is there sufficient hunting opportunities?
- What are we doing to keep good agricultural land in ag.?
- Are there sufficient dollars in our rural county or are we losing out to non-ag. dollars to purchase land?
- How can we bring more industry or employment to our rural areas?
- Preserve forest land or just land
- Agricultural community has to do their best in protecting and doing a proper job with their operations in all aspects
- Maribel Caves building and park area. Caves for tourism
- County is not expanding much in population
- Need businesses to locate in rural areas-villages
- New homes should not be put in the middle of ag. land.
- Better building setback rules to avoid future road changes
- Preservation of woodlots needed but not every new home needs to have surrounding 20 acres of land in trees
- Expansion of public buses especially with more elderly moving into citys
- Need for manufacturing based businesses
- Need to maintain rural settings
- Need to control waste from farming
- Promote tourism within the community
- Improve highway and road maintenance

- Promote alternative energy resources
- Provide/promote activities for youths
- Improve snow removal primarily on city streets
- Development as a neighborhood/community issue vs. a property right-gravel pit, industrial, large dairy
- Imbalance of property rights due right to farm law-i.e. restriction of nuisance law suits
- Development (residential, commercial, industrial) and its affects on local agricultural traffic patterns
- Springs – a unique feature south cty – threatened by high dairy water draw
- Develop Ice Age Trail
- In comparison with our existing town’s structure, what formula/mix of land allocation would best represent your vision for the towns over the next 10 years?

Group 2

- Maintenance of agriculture; consider large scale ag. development in conjunction with residential development
- Siting of towers, windmills and other tall structures
- Issuance of rights-of-way for pipelines, powerlines, highways, etc.
- Availability of land for agricultural use
- Identification of transportation corridors
- Providing public services considering various types of development-residential, commercial, industrial
- Extraterritorial controls by municipalities
- The rural character of areas should be maintained
- Eliminate junk yard eye sores and in rural communities
- Be sensitive to rural areas not conducive to residential building
- Keep commercial and industrial sites close to main highways to protect road infrastructure
- Enhance the areas parks and recreational opportunities
- Maintain agricultural areas where agricultural growth is evident
- Plan for additional housing growth where agriculture isn’t as active as in past decades
- Encourage maintenance and updating of existing housing in the area
- Encourage preservation of historic areas
- Maintain green space along the West Twin River
- Clean roadside-well maintained roads
- Quality of life should be maintained
- Our roads are starting to decline; heavy traffic is taking its toll
- In our towns we need more small businesses that employ 10-50 people
- We need more community centers for the aging
- Preserve natural areas/resources
- Better control of land use/rezone parameters
- Identify natural resources and plan usage and development
- Improve communications between governmental units
- Preserve farmland
- Protection of groundwater/control building, farm activities/mining activities

- Plan utility expansions
- Provide Stormwater ponds for permit requirements
- Preserve farmland
- Develop riverfront with commercial and industrial shipping
- Redevelop downtown Manitowoc with mixed residential/commercial – unique restaurants and products
- Grow industrial park
- Grow Harbor Town
- Preserve beaches for public use
- Preserve park lands
- Preserve and enhance trailways
- Preserve clean, manicured look of all res. Areas
- Provide access control to ensure safe efficient traffic control, minimize conflicts
- Should maintain county park system and waterways (preserve)
- Need to have more commercial and industrial development on the north side of Manitowoc
- More residential developments with bigger lot sizes
- I am concerned that we invest too much money in the airport
- I would like to see more private industry utilities developed in the area
- I would like to see more county services shared like snow plowing and fire rescue
- I would like to see better land use in the downtown Manitowoc area
- Residential ½ mi. from agricultural or agri. ½ mi. from residential
- Need more control on wildlife (turkey, geese)
- Need more commercial and industrial dev. in vacant build.
- Direct pop. to villages in each township keep ag. free
- Could use more commercial development
- Preserve “rustic” roads-preserve historic areas
- Need industry-mfg.
- Need senior apts. in rural areas
- Would like to see population areas adjacent to existing villages, towns rather than helter/skelter all over

Group 3

- Define areas for commercial or business development in rural areas, in villages, etc. (areas outside of cities-businesses other than farming)
- Look at groundwater issues
- Possibly manage urban sprawl-create pure ag. zones
- Combine fire protection services
- Preserve open space along lakeshore for public use-not all residential
- Placement of large farms – protecting our streams and lakes-but allowing the farms to grow
- City and village residential growth-rather than a lot of farmland being cut up for individual residents
- Keep agriculture in agriculture
- Wind turbines installation locations
- Residential development control in rural township
- Traffic control at busy intersections

- Control of development in natural areas
- Preservation and/or restoration of waterway shorelines
- Improve economic growth in all areas
- Help all communities preserve and/or restore historic areas
- Development of countywide natural trail/hiking biking path to highlight unique land features (i.e. waterways, etc.) (possibly to be continued into surrounding counties)
- Utilize the lakeshore better to help promote more tourism to the area
- Possible combination of community resources
- Clean/friendly community
- Promote county-wide economic development front, don't compete against ourselves, don't eat our own
- Strive to expand local companies
- Strive to become a "green county", sustainability – address alternative fuels, wind turbines, etc.
- Promote the county as a great place to live and work – quality of life
- Develop the I-43 corridor orderly, promoting the highest and best uses along the corridor. Strive for quality development along the corridor and interchanges with high design standards
- Protect Lake Michigan which is a major reason Manitowoc County is a great place to live
- Encourage the further expansion of Mariners Trail, Rawleys Point Trail and Rockwood/Denmark Rec. Trail – create a trail from the northern and southern county lines
- Analyze demographics with special attention to the baby boom. What are the affects of the baby boom in regards to the labor force, schools, future needs
- Maintain rural community. Preserve agriculture
- Prevent building/housing on rich producing soil
- Develop areas for residential in specific patterns
- Monitor run off of fertilizers more closely
- Excellent roads and signage; ease of travel
- Good parks and recreation areas throughout Manitowoc County
- Need for industrial/manufacturing companies to provide employment
- Do all towns need commercial areas?
- County is doing a good job controlling growth in rural areas
- County needs additional or alternative electrical power
- County should keep open space and control natural areas

Group 4

- Better/increased use of Manitowoc port facilities
- Need more commercial development – industry
- Economic growth appears to have stagnated
- Utilize lakeshore for scenic and recreational purposes
- Contamination of Lake Michigan and tributary streams eg. increased number of beach closings. Adverse affect on recreational use.
- More stringent requirements for roadways that are used by 18-wheelers or larger vehicles; wider roads-stronger road base
- Enforce speed limits
- Improve infrastructures

- Provide funding opportunities to improve wetlands and clean lakes and waterways
- Establish reasonable requirements for control of air quality
- Improving electric utility supply access – ATC Transmission rebuild (public utilities)
- Maintain existing manufacturing and promote growth
- Promote more industry-possibly high end (technology or pharmaceutical)
- Limit population growth – set maximum #/goal
- Location of new houses (distances to road) setback
- Large farm being good neighbors
- Good road system
- Expand recycling and promote it
- Expand industrial base (but in ind. parks)
- Maintain our parks and recreational areas
- Promote growth (but keep in mind big not always better)
- Development of wildlife areas
- Preserve the open spaces
- Declining groundwater levels
- Lack of employment for opportunities for recent college graduates (brain drain)
- Rural cluster developments
- Migratory bird path
- Production agriculture leaves a large footprint on the land
- Mega farms
- Sprawl (control of)
- Preservation of lakeshores
- Containing run-off at ag. fields
- Attracting/retaining industry
- County-wide trail systems
- Preserve natural areas and rural character
- Residential and small business development is too sporadic
- Extra territorial jurisdictions are not administered consistently by all municipalities (plat reviews)
- Need to develop elect. Utilities: nuclear/wind/methane
- Highway aids do not keep pace with maintenance cost-degradation
- Too many vacant residences (excess sales inventory)
- Zoning districts differs greatly between municipalities
- Groundwater prot.
- Maribel Rd. should be repaved. It's an accident waiting to happen because of water in tire traffic area. North to Brown Cty line from Maribel village limits speed limit should be reduced from I43 west to village limits.
- 80 acres of land purchased by DNR needs improvements; trees planting

Group 5

- Land use – zoning
- Keep our cty parks maintained and improved
- Keep our ag land-not let a lot of small cluster housing
- Avoid duplication of services

- Coordinate costs-insurance, police protection, etc. jointly
- Preserve historic sites and/or buildings
- Property rights
- Parks and recreational trails
- Make laws as clear as possible
- Make zoning laws consistent to all property owners
- The comprehensive plan needs to have definite rules that can be implemented-not too vague
- When maintaining rural and natural areas, take care not to be over restrictive
- The co. could do better weed control enforcement
- Clean up the beaches
- Keep rural landscape
- Require larger setbacks on new manure storage facilities from property lines and homes and roads
- Water quality in lakes needs to improve
- Pre plan for potential expansion of Hwy 10-possible 4-lane
- PDA's payment for development rights
- Housing availability for all income levels
- Alternative energy options-wind, solar, geothermal
- Manufactured housing
- Minimum parcel size issue
- North/south roads
- Commercial develop-? want, more, less, where
- Allowing residential growth while preserving rural setting
- Protecting current natural resources
- Establishing land use guidelines that are not too restrictive to agricultural growth
- Consistent land use and re-zoning rules within the county (ie between townships)
- Establishing areas of commercial/industrial economic growth
- Promotion of or utilization of environmental easements as a tool to protect our natural areas
- Unification/cooperation between townships and the county to combine services at a lower cost for items like snow-plowing, ditch trimming, bidding of chip sealing, blacktopping, etc.
- Clean up and maintenance of lakeshore waters
- Development of natural points of interest ie. Maribel Caves
- More commercial development ie. Festival Foods
- Continue to maintain roads at county level and help with local roads
- Continue to provide for elderly and those in need
- Continue to develop the nature trail starting at the northern part of the county
- Monitor rural development-organizational not more control
- Potential for open space-parks
- Road systems and maintenance
- True enforcement of plans developed
- Economics of joining town governmental bodies
- Management/enforcement of larger farms
- Stormwater issues and enforcement
- Maintaining residential areas strictly as such
- Population loss-retention

Manitowoc County Lakeshore Planning Cluster

Nominal Group Results

October 30, 2007

Flip Chart Rankings/Results

Votes	Group 1
11	Develop high-tech jobs in area to keep youth around
6	Develop high density/high tax base along waterfronts
5	Preservation of farmland
5	Maintain, retain existing jobs and create new jobs
4	Remediate major brownfields
4	Conversion of ag. land into non-productive uses – land trusts
3	Combining public services – need more
2	Evaluate the economic impact of merging Manitowoc and Two Rivers
2	Development of I-43 Cty JJ for commercial growth
2	County expo. needs to be relocated to rural area to make room for more development
2	Return downtown traffic corridors to 2-way traffic
2	Cleaner air and water should be major concern
1	Commercial/expansion should be pre-planned institutional
1	Home ownership affordability
1	Clean up waterways – make more affective
1	More development that makes fuel out of garbage
1	Large scale ag. should be integrated with residential green space and transportation corridors
1	Restructure tax base statutes – distribution not based on population, but on industry
1	Assist an expanding energy infrastructure generation and transmission
1	Promote safe harbor development along Lake Michigan
	Aging labor market needs to be addressed to sustain future business growth and development
	Preserve public views and access to Lake Michigan
	Greater housing density in new subdivisions
	Retain migrant workers – valuable asset to farmers
	Development of economic incubators for business start-ups – encourage business innovation
	Improve opportunities for higher education
	Extending wastewater treatment systems
	Defeat NR115
	Encourage adaptive reuse of old buildings and upper floors of commercial properties
	Encourage friendly industries to locate in communities

Votes

Group 2

7	Promote dev. (e.g. economic, industrial – large communities, commercial in small communities, etc.)
5	Retain urban center and rural character
5	Maintain rivers and lakefront
4	Protect water resources in basin
3	Limit CRP on natural areas
3	Right to farm
2	Maintain status quo on growth
2	Maintain agriculture land
2	Prevent contamination of surface and groundwater
2	Concerns of mega farm
2	Provide community facilities and services
1	Maintain identity of town
1	System to handle sewer and water
1	Promote cluster housing development
1	Improve industrial base
1	Sustainability energy sources
1	Standardize school/education in county
1	Encourage highest and best dev. uses of interstate (interchanges)
1	Upgrade Hwy 10 east/west corridor
1	Promote cleanup of rivers (ex. East Twin River Creeks)
1	Promote area's high quality of life
1	Strengthen traditional downtown business districts (eg. Two Rivers/Manitowoc)
	Promote green energy
	Prevent the decline of older neighborhoods (eg. Two Rivers, Manitowoc)
	Expand recreational facilities (eg. trails, interconnected)
	Affordable housing for low income and elderly near available resources
	Retain/attract workers and baby boomers

Total Worksheet Responses

- Identify areas of Lake Michigan shoreline appropriate for development/areas for preservation
- Need more residential opportunities downtown
- Remediate/develop brownfields: 1512 Washington Street (Mirror); Peninsula north of 10th St. Bridge
- Establish municipal wind ordinance/policies
- Need more “white collar” businesses
- Develop metropolitan plan for providing services
- Return downtown traffic corridors to two-way traffic
- Assure work ready/skilled workforce for employers
- Grow while continuing small town/city environment
- Find funding solutions for provision of municipal service
- I-43/JJ (Waldo) develop commercial
- Rural development-cluster developments
- Employment opportunities
- Roads-maintenance development
- Character of the area to attract new residents
- Affordability of housing
- Home ownership affordability
- Municipal utility ownership
- Quality of education
- Availability of recreation land
- Government understanding its importance (or role) to attract new residents and businesses
- Need job creation (new jobs)
- Retain existing jobs
- Maintain community attractiveness to retain young people
- Lakeshore beach areas preserved
- Jobs – new and old
- Waterways cleaner and more attractive
- Downtown interests need better organizing to set directions for future
- Take better advantage of I-43 as economic engine. Control the growth.
- Development of downtown vacant lands
- Encourage riverfront revitalization along with enhanced pedestrian access
- Continue to provide government financial support for economic development projects
- Overcome market “size” shortfalls to enhance community business mix
- Energize Manitowoc County as an economic development player instead of side line occupant
- Aging labor market needs to be addressed to sustain future business growth and development
- Manitowoc and Two Rivers need to continue to strengthen economic bonds as they are major economic drivers in county
- A culture to encourage business innovation needs to be developed
- Sensitive “water” development
- Energy concerns-modify development codes to permit examination of alternative energy (i.e. wind farms)

- County Expo needs to be relocated into rural area to make room for more retail development
- Magnolia Avenue needs to be installed to open up more areas for development north of Waldo Blvd.
- Continue to work to grow manufacturing along with jobs featuring living wages
- Encourage adaptive re-use of older buildings and upper floors of commercial properties
- Tax equity arrangement needs to be created to stabilize Manty and Two Rivers economic development activities on a more neutral basis
- Business mix of community needs to be more diversified
- Calumet Ave. and Washington Street need beautification
- Continue to grow Manitowoc Public Utilities. A huge asset.
- Restructure tax sharing statutes based on assessed value (industry) rather than population
- Control land use based on zoning (limit zoning changes)
- Preserve lakeshore structure and use
- Control industrial and commercial development based on land use plan and zoning
- Ensure maintenance of public roads
- Ensure high traffic intersections are lighted
- Housing development must follow zoning and land use
- Promote parks and recreation with adjacent property in mind
- Promote safe harbor development along Lake Michigan shoreline
- Preserve agricultural use of land as zoned
- Promote public wastewater treatment extensions where appropriate to preserve groundwater and surface water
- Preserve wetlands for wildlife habitat
- Preserve lakeshore by controlling invasive species
- Monitor land use and residential development
- Traffic flow around the cities of Manitowoc and Two Rivers
- Elimination of Stormwater retention law(s)
- Development of economic incubators for business startups
- Elimination of duplicate services
- Combining of public health and safety agencies – i.e. combined police and fire services for Manitowoc & Two Rivers; combined municipal services – light, water, etc.
- Downtown redevelopment in Manitowoc
- Plan for the “meeting” of city and agricultural uses
- Complete Mariners Trail to Silver Creek Park
- Should Manitowoc and Two Rivers be merged into one community?
- What positive steps can be taken to maintain air quality?
- Will encouraging river homestead development improve the downtown and if so how can it be encouraged?
- Local performing arts groups and activities should be encouraged to make our community more attractive
- Industrial park reduces the feeling of community and requires transportation by vehicle, how can we encourage industry to locate in local areas where workers can walk to work?
- High end restaurants are needed for business entertaining
- More connected bike paths would encourage a healthier lifestyle

- Parking requirements reduce the ability for industries to locate in existing neighborhoods
- RR property at 10th Street Bridge hinders development of other property in the surrounding area
- Woodland Dunes should be protected and enhanced, made part of the communities park type use
- Preserve agricultural spaces
- Preserve Lake Michigan shoreline public spaces
- Re-invent downtown Manitowoc to remain vital instead of declining imp.
- Continue development of industrial park
- Preserve park and recreation space
- Preserve historic areas
- Develop museums to educate and capitalize on rich history of area
- Continue investment in road system – prevent., maint. area vs. reconstruct
- Develop housing and assisted living facilities/communities/services for aging population
- Develop commercial/entertainment for youth
- Develop interconnected trail system for peds separate from vehicles
- Re-develop brownfields
- Affordable housing
- Some commercial development in the northern party of city and town – I43/JJ
- Maintain county parks by using community development (involvement)
- Preserve some strong areas of agriculture
- Work closely with utilities to expand and protect environment
- Preserve (safe) groundwater
- Preserve shoreline from erosion and overdevelopment
- Improve outer limits of downtown Manitowoc around 15th & Wash.
- Promote local retail on city/county website
- Maintain historic areas present and future
- Preserve inland lakes by working closely with DNR
- Have local colleges help in community projects –use these resources
- Use community churches to maintain parks and trails
- Large scale agricultural operations need to be accommodated/integrated with other growth aspects such as residential development and “green space” acquisitions
- Public services need to be considered as residential development outside incorporated area continue
- Rural nature of much of the county should be preserved
- Educational opportunities need to at least continue, better to improve them
- Extraterritorial considerations and impacts of/on communities
- More farm land
- Make fuel out of garbage
- Make the lakes better for fishing
- Expand residential housing opportunities and tax base – single family, waterfront, multifamily, condos/conversion of “other” buildings to housing
- Stop NR115 expanded stormwater permitting
- Expand commercial that services locals and possibly act as a regional retail cluster
- Assist in business expansion and start up of industry
- Provide adequate financing for existing infrastructure (bridges, highways). Upgrade Hwy 310

- Assist developers in providing all types of housing prices and needs
- Expand population of workforce for Manitowoc County businesses
- Delve into an up and coming business cluster like energy (wind, nuclear)
- Assist in expanding the energy “infrastructure” Generation and Transmission
- Local municipalities provide “things to do” for youth through elderly
- Catalog, develop and market significant historic attributes of Manitowoc County
- Map out areas where existing ag is strong and expand on it (dairy to cheese feed lots?)
- Wiser road layouts to maximize number of homes in subdivisions
- Prioritize environmental issues for sake of future generations
- Revamp entire bus system (big buses with few riders)
- Take action as a community (communities) to preserve Lake Michigan. Prevent sewage dumping by large cities
- Ag.-Preserve the prime ag. land for farming.
- Resd. and housing – Keep housing in cluster areas. Do not drop 1 house in middle of 40
- Commercial and Ind. – build along state and city highways
- Trans. – keep roads in good shape and right away clean
- Population–Growth–keep in housing cluster and within the extraterritorial area of the village
- Utilities – ensure room for growth of utility to supply constant power
- Community facility – provide new town meeting hall for larger meetings and rental to groups
- Park and recreation – Provide areas to local river for fishing, canoeing, and other rec. sports. Also provide access to Ice Age Trail
- Historic – At this time we need to keep the cemeteries up
- (Limit) growth here with support. Town cost – not
- Industrial posturing - no more
- Rural areas - maintain existing
- Right to farm – maintain existing
- But limit on farm size
- No wind mills
- Maintain status quo
- Being able to maintain a town identity (stop absorption of city annexing)
- Being identified as agriculture being the main business
- Providing natural areas – green space – park, etc.
- Preserving marshes/wetlands/woods/forests
- Providing designated areas and/or identifying such for residential growth in the community
- Residential growth in-to some outlying areas is feasible because of the particular topography of the land, (more suited to building than for productive ag. usage, hill, field size, etc.)
- Determine an industrial are – and areas for small businesses
- To much unorganized development (residential). Industrial – need to preserve farmland, too much is lost already due to too much land going into CRP or natural areas. Transportation system in area is more than adequate. Too much wildlife some do to urbanization and also too many natural areas. Ex: CRP Woodland Dunes.
- Keep development of residential areas in existing residential areas
- Promote tourism on Lake Michigan
- Preserve existing natural resource areas

- Clean pollution in Silver Creek (clean garbage out of creek)
- Keep manufacturing expansion in existing manufacturing areas
- Promote alternate energy utilization
- Build more single family homes (limit apartment and duplex development)
- Take steps to prevent groundwater and surface water contamination
- Provide local incentives for energy consumption reductions (residential and commercial)
- Improve road maintenance
- Our lakeshore should be enhanced
- Declining housing sales industry
- Redevelop river corridors
- Retain urban/rural dichotomy; avoid sprawl
- Preserve public access to rivers and Lake Michigan
- Diversify employment base
- Strengthen and expand traditional downtown
- Prevent decline of older residential neighborhoods
- Need more residential development
- Upgrade highways/310 corridor, lakeshore to Fox Valley
- Achieve moderate population growth
- Halt decline in school age population
- More value added processing of ag. products
- Reroute STH 310 within Two Rivers
- Redevelop vacant ind. sites
- Employ cons. subdivs. For new res. dev.
- Transportation – improve routes to Two Rivers (STH 310?)
- Commercial (industrial) Economics – promote development. Consider what the future is for development (what will it take to keep industry here/not leave areas or U.S.)
- Preserve/enhance lakeshore area/waterways. Enhance recreational facility? Provide area attractions?
- Overall: make Two Rivers a desirable place to work and live
- Protect groundwater – stop water pollution
- Maintain quality roads
- Protect Lake Michigan from pollution, invasive species, etc.
- Promote business development in rural communities
- Like rural atmosphere
- Like close proximity to shopping and retail stores
- Restrict housing in prime ag. areas
- Encourage the highest and best developments along the interstate corridor especially interchanges
- Protect Lake Michigan resources, discourage the loss of Lake Michigan to entities outside the lake basin
- Expand recreational trails, interconnect existing and future trails
- Prevent/discourage the movement of invasive species
- Encourage sustainable development and communities in the cluster
- Continue the marketing of quality of life items in the region

- Demographics need to be analyzed – baby boom how does it affect labor market and services
- Mega farms
- Preservation of natural resources
- Control urban sprawl
- Affordable housing for young and elderly
- Preserve open land
- Rural character – road improvements
- Object to cookie cutter syndrome
- Better control of wildlife – too much wildlife pollution
- Increase industry in
- Maintain natural growth along West Twin Rivers
- Spreading of animal waste
- Utilities wind mills
- Utilities new plants

Manitowoc County Northwest Planning Cluster Nominal Group Results

October 24, 2007

Flip Chart Rankings/Results

Votes	Group 1
9	Mandate city redevelopment authority – stop inside from dying so they don't have to spread out
7	Transfer authority to approve mega farms from county to towns/villages – proper land to livestock unit ratio
6	Develop long range plan for sewer and water b/t communities
6	Maintain roads <u>county-wide</u>
5	Keep commercial development in appropriate places
4	Preserve wildlife areas
4	Maintain quality of river systems
2	Restrict land development acres
2	Keep development around existing sanitary district
2	Establish fee based annexation laws – pay to annex (similar to TIF)
2	Put a wide enough buffer around mega farms
1	Development of recreation trails to coincide w/ village/town parks
1	Attract young people to promote future growth
	Maintain clean water
	Have plan in place to deal with electric companies/wind turbines/other energy sources
	Encourage development around inland lakes – keep out of farmlands
	Protect private land owners rights

Votes	Group 2
9	Preserve agriculture
8	Discussion of implementing transfer of development right
6	Control annexation
5	Protect private ownership rights
5	Rezone non prime agriculture land
4	Control cluster development
4	Keep youth in community
3	Ground water protection
3	Alternative Energy
2	Maintain good roadway
2	Restructure extra-territorial law
1	Curtail any new development
1	Control use of ground water
1	Protection of ground water
	Cleaner water quality
	No future land use plan for cluster communities
	Better use of DNR land
	Plan for trails

Total Worksheet Responses

- Business in our community
- Young adults in our community
- Private land owner rights
- Bring businesses into Reedsville
- Attract young people to area
- Waterway preservation
- Become “green”
- Maintain roadways
- Encourage inner city population growth – thus reducing ag land reductions
- Reduce size of land acreages that land developers can acquire
- Environmental; clean water
- Need light industry
- Retirement housing
- Contain the mega-farms w/ wide buffers
- Utilize the R.R.
- Improve the parks/parkland
- Preserve farmland
- More recreation facilities
- Stop urban sprawl
- Mandate city redevelopment authority
- More restaurants (good ones)
- Establish new city annexation laws
- Limit annexation to once every 50 years
- Establish annexation fees
- Control agriculture runoff
- Land loch by agriculture
- Preserve agriculture land thru zoning
- Have a plan in place regarding electric lines – wind turbines, etc.
- Stop city and village expansion
- Preserve wildlife areas
- Residential – stay within approve area
- Housing – have people keep up property
- Keep Maribel clean
- Private rule
- Sub-dividing zone parcels
- Comprehensive zoning format
- Rezoning of non ag lands (other than prime)
- Preserve individual property rights
- Keep individuals from leaving neighbors property value
- Ground water usage
- Preserve farmland

- Develop growth areas
- Promote natural resources
- Water protection
- Nothing that has long range plan R.R. roads
- Respect property rights
- Clean water quality
- Keep large farm land base
- Plan for trails
- Rezone non ag land Poorer land
- Maintain agriculture where it is now
- Cleaner water quality
- Preserve Ag land
- Preserve agricultural land
- Annexation control
- Why hasn't Transfer of Development rights been promoted
- Don't build any more homes till all the homes are sold so more land is preserved
- Benefit ag land stay in ag – tax benefits
- Keep youth in communities
- Alternatives energy – wind-sun
- Property owner rights – what businesses can put up around me
- Protect private ownership rights
- Map prime farmland, secondary farmland and poor farmland
- Clearly identify possible growth area and size of lots

Manitowoc County Southern Planning Cluster

Nominal Group Results

October 24, 2007

Flip Chart Rankings/Results

Group 1

8	Protect ag. land
6	Preservation of natural resources for future use such as: mineral deposits, lakes, ground and surface water
4	Agriculture/suburban/residential interface
3	Promote feasible land development through zoning plans
3	Need more commercial development and industrial development
3	Eliminate run down structures
3	Preserve undeveloped lakes and forests from future development
2	Continue residential development growth for all income levels
2	Look at law enforcement efficiency – cost of fees
2	Minimize conflict with ag. and res. uses
1	Revise annexation laws to allow for infrastructure to be outside city/village limits
1	Realistic future planning for sewer systems
1	Who is going to pay for infrastructure? Ex. subdivision or industrial developers should provide
1	Provide funding for improvement of structures
1	Promote cluster development near village/city
1	Deal with property owner rights
	See a community center
	Promote small business
	Control runoff – water or nutrient
	No spot zoning
	Add more roads

Group 2

5	Concern that property rights be maintained
5	Buffer agricultural areas with environmental and water resources
5	Ag. land surrounding community needs to be thoughtfully developed, maintaining as much cropland as possible
5	Discuss purchasing of development rights
4	Promote sustainable economic development at home to keep graduates in the area
3	Preserve parks, recreational and “green” natural areas
3	Maintain a strong educational system
2	Restrict new homes to growth areas, as per land use plan
2	Blighted property in St. Nazianz needs action
1	Monitor rezonings from agricultural to residential zoning
1	Promote conservation subdivision/cluster development
1	Environmental protection and promote hazard mitigation planning
1	Better separation of residential and agricultural land uses
1	Concern about deep well irrigation systems affecting springs and groundwater
1	Develop economic incentives for small- to medium- sized industries, including TIF development
1	Develop walking/biking trails
1	Keep industry in/near incorporated areas and major highways
	Promote more residential/subdivision growth in Village of St. Nazianz
	Improve local roads to handle heavier loads
	Upgrade aging utilities and infrastructure (water, sewer, etc.)
	Improve north-south roads in this part of the county
	Minimize need to notify neighbors before making improvements to one’s property

Total Worksheet Responses

- Preserve farmland
- Conserve open space
- Maintain rural centers
- Concentrate growth in properly zoned areas
- No spot zoning
- Promote commercial development near proper infrastructure
- Minimize conflict between agriculture use and residential use
- Maintain rural character
- Preserve environmental sensitive areas
- Encourage home based business
- Create a sense of community (parks, trails)
- There is a big attraction for rural home development on land that is feasible let's promote this
- There is a big need for commercial and industrial development in Manitowoc – we need to attract these businesses to our area
- Our townships here each unique features – working together we can achieve greater environmental benefits that would attract ever more expansion – we have the resources
- Promote small business
- Preserve as much farmland as possible
- Housing for the elderly
- Agriculture – protection from too much land taken out
- Like the area due to its keeping a rural aspect
- Keeping the population in area that are able to supply the needs without too much change or expense
- Agriculture (mainly a farming community – Eaton). Landscape should remain as it has been for many years. Once changed, it will never return, too many townships have allowed over development never considering the surrounding areas. Too many townships have used only a short term plan in its housing development. Let's consider the environment and not only short term revenue fixes.
- JFK Prep – how to get rid of
- Would like to see more residential land in village
- Need more commercial development
- Would like to see a community center
- More efficient police services
- Control water runoff
- See better separation of residential and industrial properties
- Stop forest fragmentation
- Preserve undeveloped lakes, streams, forest
- Preserve ag. lands
- Keep commercial and industries near already developed areas
- Use cluster housing near villages
- Maintain public access to lakes and parks

- Keep houses near roadways
- Allow for agricultural growth (ie. expanding dairies)
- Improve or maintain water quantity in lakes and streams
- We need some businesses for jobs. We could use some industrial plants.
- Residential: housing for all income levels
- Job creation
- Need some commercial development
- Agricultural/suburban/residential interface
- Preserve the character of the area – forests, rolling terrain, lakes
- Roads – n/s thru routes, heavier loads
- Lakes: maintain water quality/property owner rights
- City/town/village interface
- Clean waterways – watershed
- Smaller farm lots
- Need industrial jobs
- Realistic zone/planning – land use
- Rural convenience stores
- Sewer system
- Road upgrade
- Land for housing needs
- Unused building addressed – eyesores
- Upgrade police-fire coverage
- How to eliminate old (buildings) – JFK prep.
- Expand our commercial – industrial areas – more jobs
- Increase residential property at a controllable rate for the community
- Steer agricultural expansion away from future residential areas
- Control excessive runoff water from rain-snow melt
- As the village gets a character, lot sizes be a minimum of 10,000 sq. feet. Commercial and residential uses should be separated for clustered
- Environmental aesthetics should be required to protect neighboring, residential areas. Example – landscaping “screens”
- Traffic controls be enforced. Street widths for new development should be a minimum 60’.
- Annexation laws should be revised to promote proper growth of cities and villages, eg. petition of 51 percent of land proposed for annexation and allow provisions to extend city/village utilities and have “inside” and “outside” rates that would encourage “requests” to annex
- Subdivision regulation should require street paving and all infrastructures to accommodate any subdivision to be developed
- Funding sources be made available to improve public buildings
- Creation of agricultural preservation areas/preservation of ag. land
- Residential growth in select areas
- Preservation of natural areas (Camp Sinawa, Pigeon Lake) and resources (groundwater gravel/sand) for future generations

- Improve cooperation between townships and county/town to minimize equipment investments, duplicate services and maximize buying/bidding opportunities for road repair/maintenance
- Improve consistency of land use/zoning rules between townships
- Create county-wide ordinances for outdoor wood furnaces, wind mills (commercial)
- Increase of residential growth
- Improvement of local law enforcement (efficiency)/cost vs. returned
- Possibility of outsourcing garbage/recyclables
- Possibility of constructing a community center/village hall
- Residential areas need to be maintained and improved
- Parks and recreation areas need to be preserved and maintained
- Housing for elderly needs to be improved and maintained
- Wastewater facilities need to be improved
- Emissions from wastewater treatment need to be improved
- Commercial development needs to be a priority along with industrial development
- Agricultural land surrounding community need to be thoughtfully developed, maintaining as much cropland as possible
- Natural areas maintain
- Ag. areas maintain where the better land is
- Improve some N & S roads
- Encourage several homes to use the same well where possible
- Encourage housing where the poor farmland is
- Commercial around cities and villages
- Restoration/improvement/development of “JFK Prep” property
- Maintain/preserve camps (Sinawa/Rokilio) and lakes
- Need more commercial specifically small business to medium business size development
- Need more residential growth
- Develop walking trail/biking trail
- More small business development
- Former JFK property – blighted in need of positive development
- Need for more residential subdivisions
- Upgrade of aging water and sewer mains in older areas of village
- Cluster development to minimize environmental and resource impacts
- (5 ac.) Smaller residential lot sizes in rural areas
- Buffer agricultural areas at critical environ. and water resources
- Develop economic benefits for small to medium industry to attract and increase commercial development
- Develop walking/biking paths for increased rural recreation
- Minimize transportation to new growth areas
- Preserve historical areas
- Partner with utilities to develop new resources for energy future supply
- Develop conservation cluster housing – zoning townships
- Preserve green areas – parks – woodlands
- Preserve ag. land
- Develop more walking trails – bike trails

- Designate industrial development areas
- Environment – improved
- Population – control
- Park and recreation – maintained
- Agriculture – but cover liquid manure ASAP!!!
- Historic areas – maintained – housing – growth
- Growing sustainable economy
- Population growth that will mirror economic growth
- Quality residential housing in designated growth areas
- Improve and preserve natural resources
- Growth manufacturing base
- Excellent infrastructure
- Have viable comprehensive plan that is followed
- Maintain strong educational system
- Rezoning land from A1 to A3
- Ensuring for future development for next generations i.e. (as population ages how do we promote new growth)
- To allow future growth to support economics (taxes)
- Cluster homes near villages away from ag.
- Preserve forest land, water resources and quality
- Discuss purchase of development rights
- Keep industrial near villages and/or major roads
- Communication between government agencies (shared service)
- Have areas of residential and areas kept in agriculture
- Keep good farmland as farmland
- Don't want to get permission from neighbors to improve land
- Restrict new homes to growth areas as per land use plan
- Form an exclusive ag. district
- Promote local recycling
- Improve local roads to handle heavier loads
- Develop a long range plan to have a local park/rec. area
- Promote town hall for more community activities
- Better roads
- Preserve farmland
- Control development land so it's in proper area

VOLUME I - APPENDIX C
VISIONING RESULTS

VISIONING SURVEY

This is your chance to realistically describe Manitowoc County as you would like to see it in the year 2030.

Imagine if you left Manitowoc County for 10-20 years and then returned. What would you hope to see?

Please provide input under each of the categories listed below based on what you would visualize as their future status within Manitowoc County.

*** The use of bullet phrases is recommended – e.g., “Clean Industry”, “Good Roads”, etc. ***

Natural Resources/Cultural & Historic Resources

- Better maintained rivers, streams, lakes
- Improved fish population
- Purchase more land for public use
- Enforce polluting (run off) into cty. lakes
- 80 acres of state land Town of Cooperstown plant in trees
- A clean Harpt Lake
- A clean Tuma Lake
- A clean Devils River
- No agriculture run-off
- Clean river
- Lake Michigan fish safe to eat
- Lake Michigan safe to swim in
- Fewer cormorants
- Fewer seagulls
- Protection of ground water quality
- Contamination levels in Great Lakes decreasing
- Clean air
- Diversion of water from Great Lakes prohibited
- Woods/water/wildlife
- Outdoor activities
- Groundwater protection
- Stormwater/runoff management
- Preserve small farms
- Respect property rights
- Preserve old buildings
- Clean air
- Clean groundwater
- Clean surface water
- Clean streams

- Maintain existing natural resource land
- Keep litter out of ditches
- Eliminate burning barrels
- Increase recreational opportunities
- Maintain Ice Age Trail
- Non-polluted East Twin River
- Clean waterways
- Preserve historical and structurally significant buildings
- Maintain forested land in lieu of housing
- Preserve wildlife areas
- Cleaner Manitowoc River
- Expanded recreation trail
- More renewable energy – wind towers, solar
- More flowering-trees and shrubs in boulevards-downtown streets
- Clean, fresh air
- Clean, fresh lake and drinking water
- Enhanced zoo with greater diversity, i.e. N.E.W. Zoo
- Aquarium
- Expand Woodland Dunes to include natural history museum
- Reduced dependence (zero dependence?) on fossil fuels
- Preserve Camp vits as nature area for hiking, animal watching, etc.
- Mariners Trail to Cleveland
- Trails to Lower Cato Falls
- Trails to Maribel Caves
- Develop river areas
- Expansion of historic district and properties
- Active private renovation of historic private residences
- Clearly delineated historic/cultural walking tours and trails
- Enhanced government support to expand museum funding and facilities to make them more regional attractions
- Promote and maintain shorelands and air quality
- Protect waterways
- Restrict development of agricultural land
- Preserve Lake Michigan shoreline
- Maintain surface and groundwater quality
- Upgrade parks
- Maintain natural areas
- Vibrant historic downtown Manitowoc
- RAAR-West Museum
- Maritime Museum
- Capitol Civic Center
- Numerous bars/restaurants – nautical theme
- Great Lakes aquarium with museum ded. to education preservation of species
- Improved boat landings and water quality

- Cleaner industry and air
- Expand Pine Crest and other museums
- Groundwater protection
- Maribel Caves expansion
- Return some DNR land to private ownership and promote forestry programs
- Return land to tax roll
- Clean rivers and lakes
- Clean beaches that can be used
- Water clean up
- More county river pollution controls
- Pine Crest historical grounds enlarged
- Clean polluted waterways
- Use abandoned malls
- Plant trees
- Support museums
- Preserve existing wetlands
- Maintain existing parks
- Rural walk ways
- Preserve natural areas
- Preserve lakes
- Farmland preservation
- Non-polluted lakes
- Non-polluted rivers and streams
- Clean air
- Preserve natural areas
- Preserve wetlands
- Increase and maintain existing parks
- Develop biking and walking trails
- Watershed protection (Manitowoc Co's most valuable resource)
- Environmental corridors
- Environmental landscaping-protect surface waters, stream corridors, floodplains, drainage, wetlands, groundwater, wellheads
- Reserving open/conservation spaces including wetlands, woodlands and riverfront
- Park areas or open spaces at subdivisions
- Dual use pedestrian and bike trails
- Maintain air/odor, land and water quality
- Storm water management, run-off, erosion and non-point pollution
- Contaminated site remediation
- Developmental impacts on wildlife habitat (threatened and endangered species)
- Redevelop high traffic impacts
- Limit rock mining by requiring reclamation plans
- Clean lakes
- Good standards of land
- Viable downtown Manitowoc City

- Capitol Civic Center
- Expand Maritime Museum
- Strong educational system both high school, college, tech. schools
- Clean rivers
- Clean Lake MI shoreline
- Courthouse restored
- Pigeon Lake
- Camp Sinawa
- Future mineral deposit extraction
- Groundwater protection – wellhead capping; waste application to land
- Clean ditches
- Good roads
- Safe corner and road entrance
- Streams and lakes kept clean
- Keep and preserve county, state parks
- Keep all lake with public access

Land Planning & Development (i.e., zoning, lot sizes, densities, clustering, etc.)

- Old unused barns removed
- Old unusable buildings removed
- Inspect existing scrap dealers for ground pollution
- Set size of acres to build in urban development
- No development on small woodlots
- Development in clusters with green space and smaller lots
- Some kind of directive about how much land area can be covered by concrete/black top
- Curtail urban sprawl
- Rural needs to remain rural
- Empty store fronts Manitowoc
- Economic reasons for ag. to stay ag.
- Blighted town Town Manitowoc
- Decisions made for economic reasons not political reasons
- Open areas
- Rural character
- Adaptive reuse of older
- Good public facilities
- Uniform county zoning, unified devel. code
- Limits on extraterritorial auth.
- Some open spaces
- Tax incentives-preserve farm land-glacial lakes
- Smaller lot sizes
- Subdivisions in outlying areas
- Commercial development in TIF

- 100 x 150
- Control zoning on lakeshore to limit rental of residential properties as “resorts”
- At least 5 acres per house in country
- Minimal developments
- No trailer parks
- Control weeks on vacant lots
- Lot sizes should be small and clustered
- Develop greenways
- Develop parks
- Revitalization of existing urban areas
- Traditional perpendicular road layouts
- More local government control
- Maintain prime ag land
- Non-fragmentation of ag land
- Development on non-ag land
- Preserve wetlands
- No mobile home parks
- Grow in village extraterritorial area
- More condensed growth, clustering
- Highest and best use development at interstate interchanges
- More residential units in downtowns; encourage office/professional uses in downtown
- Halt sprawl
- Enhance/foster/increase green space
- Encourage/promote green building techniques
- Emulate green campus of Sweden’s Overtornea (solar chimneys, green roofs, solar energy, symbiotic development) when developing neighborhoods/bus. park, etc.
- Zone neighborhoods to again be neighborhoods not just housing clusters with small grocers, etc.
- Keep lake front and river public
- Vibrant downtown
- Beltway around Manitowoc and Two Rivers
- Merge services to regional services
- Continued enhancements of Manitowoc Public Utilities in terms of providing reliable and stable future water and electric utility rates
- Continue to evolve quality of life to encourage high tech/high income developments
- Development of pedestrian-friendly districts
- Conversion of outdated industrial and commercial facilities into townhouse/condominium campuses featuring zero lot line development
- Revitalized downtown Manitowoc with restaurants and specialty shops
- No longer a 9-5 downtown. Encourage commercial/community life after dark
- Encourage adaptive reuse of single purpose structures ie. churches and schools
- Former sites of dead malls north of downtown are revitalized into planned communities featuring residential, commercial and professional/medical facilities
- Continue to maintain public infrastructure through controlled and regular investments

- Quality riverfront redevelopment including commercial, residential and natural amenities focused on pedestrian friendliness ie. decorative stone pathways and walking paths
- A Manitowoc riverwalk development featuring docks and other landscaping and improvements
- An aggressive, pro-active Manitowoc County that itself has a vision for its future, and the gumption to implement that vision
- Adopt and amend as necessary a comprehensive plan for land use
- Encourage community involvement. Develop local ordinances to implement plan goals
- Update zoning to be consistent
- Maintain zoning and land use advisory committees
- Resolved wind turbine siting rules
- Greater
 - Farmland preservation
 - Expand near cities and villages
 - Allow rural development where appropriate
 - Forest cropland programs
 - Regulate mega farms/manure etc
 - Farmland = farm land; keep exclusively for farming
 - 5 acre lot sizes
 - Tree conservation programs
 - Rural land sites acreage uniform
 - 1 acre, 2 acre or 25 acre building sites
 - No industry in residential
 - No new bars in residential
 - Consistent zoning-lot sizes for city – for rural areas
 - Allow areas for development
 - Develop growth areas
 - Lot size 2 ½ acres
 - Town zoning
 - Long term growth plan
 - Preserve farmland
 - Town subdivision plan
 - Cluster development
 - Need for development areas
 - Smaller lots-main roads
 - Cluster development
 - Great densities in rural
 - Clustering
 - Diversify the economy
 - Cluster zoning and innovative zoning techniques for high quality development
 - Provide recreational open space needs of urban/school/civic groups efficiently
 - Erosion and storm water control
 - Protect economically productive areas of farmland and forests

- Encouragement of land uses, densities and regulations that promote efficient development patterns and relatively low municipal, state governmental and utility costs
- Community design standards – development guidelines for appearance and size of buildings, signs and man-made structures – protection of riverfront viewsheds created by changes in elevation or stream or riverbeds for aesthetic appeal
- Historic preservation
- Landscaping and lighting
- Communication tower limits/consolidations
- Mining reclamation for environmental and community protections
- Provide safe access to all services and facilities
- Zoning plan that is followed
- Zoning allows growth and maintains agriculture
- Identify growth areas that would include increased densities
- Homes that add value/NO trailer parks
- Distance of residence from road
- Lot sizes
- Need growth areas
- Zoning
- Keeping in respect to what we had set it up
- Keep the country for farming
- Farmland stays farmland

Commerce & Industry

- Advertise our community to industry by website or literature
- Industry with a living wage
- NO WalMart
- Need industry to provide jobs; good paying jobs needed to support payment of taxes
- Thriving empl. base
- Diverse industrial activity
- Re-use of brownfields
- Young educated-return-community
- Bio-green
- Lifestyle
- Information technology
- Cty administrator to meet needs of county
- Clean manufacturing
- Attract business clusters in close proximity to each other
- Keep manufacturing in industrial parks
- Keep businesses near I-43
- Mostly “A” zoning in country
- Minimize urban sprawl
- Develop industry in specific areas

- Not located on residential roadways
- Not heavy industrial development
- Allow and facilitate home based industry
- Allow and facilitate light commercial
- Chamber of Commerce that promotes the area
- Continued development of industrial parks
- Cooperation among all county jurisdictions
- Insurance
- Medical
- Data processing
- Quality manufacturing
- Encourage development projects that provide living wages, and other benefits to community
- Encourage new business to the area to enhance diversity and tax base
- Encourage retention, and improve the match between companies and jobs, and labor market
- Reduce focus on job creation, and encourage more productivity and efficiency
- Ethical accountability for businesses
- Do not support commercial or business development at loss of farmland
- Support light commercial and retail in designated areas
- Promote low or no emissions power sources
- Opportunity high tech jobs
- White collar employment
- Active chamber on river
- 2 active ferry services
- Sunset lake river cruises/entertainment
- Full use of Peninsula for industry
- Restored RR riverfront property to commercial residential use
- Expo grounds developed to host entertainment of large scale and agric. fairs and other uses like Detroit's Auto Show and huge building expos and energy/sustainability expos
- Promote green/clean industry
- More manufacturing type jobs
- Green energy
- Use water power (hydro electrical)
- Forestry industry
- Aquaculture
- Recycle animal waste from mega-farms
- Control gravel pit/mining operations
- Promote recycling
- An increase in industry jobs
- More service facilities in smaller villages
- Cluster industry
- Bring manufacturing to area
- Rural convenient stores
- Industrial growth
- Clean industries

- Residential areas
- Separate from industrial areas
- Through zoning
- Increase small and midsize manufacturing, service and technology business development
- Attract new industry (manufacturing and service)
- Promote high quality private industrial parks
- Increase high quality retail development
- Better utilize vacant and underutilized properties
- Growing industrial base
- Strong job growth
- Strong ag base
- Good highway system
- Maintain agricultural areas
- Farms-when is big too big?
- Growth of TIF district's and incorporation into rural economy
- Help to get business in area
- More high tech job
- High tech jobs

Community Services (i.e., schools, utilities, community facilities, emergency services)

- Well trained/equipped medical facilities
- Schools up to needs
- Good emergency services
- School
- Emergency services
- Senior care center acc. to store, church, etc.
- Ensuring adequate access for emergency vehicles
- Movement towards a "green" economy
- Geothermal heating/cooling
- Salvation Army
- Use of Lake MI currents to produce electricity
- Leading hospitals with leading health care
- Support current businesses in community
- Foster economic development partnerships-participate in
- Business park development for small to midsize industrial and manufacturing growth
- Expanded public and parochial schools, colleges and universities
- Efficient police, fire, emergency response, and judicial services-coordinate municipalities and agency services with neighbors
- Efficient and affordable public facilities and services with "level of services standards"
- Sanitary sewer systems effectively serving regional and new urban development
- Efficient/consolidated telecommunications-telephone, wireless, cable, and electrical services

- Sanitary sewer, water distribution and storage, storm water handling, street networks, utility districts, solid waste disposal
- Environmental services for recreation and parks, and conservation
- Social services including education, public building, and library service
- Child care and health care services
- Provide a quality education system
- Provide better cell communication systems
- More community parks
- Wind power
- Police
- Public water systems
- Update rural emergency service
- Rural sewer system development
- Rural police increase presence
- Reliable day care centers
- We have above acreage community services. Keep these in force
- Green utilities
- Consolidate local fire department and ambulance services
- Better country sheriff department
- Protection for rural areas
- Wireless service for economical rural areas
- Computer and t.v.
- Hospitals high quality
- Opportunity for wireless in the “country” without paying an arm and a leg!
- Thriving downtown
- Retail as other cities
- Maintain a well informed community population by use of available technology
- Have plan in place for providing cost effective community services
- Well maintained county services
- Well established child and elder care facilities
- Consolidated community resources
- Enhanced per pupil investment in public schools
- Diversity and tolerance of non-traditional lifestyles
- Increase wireless/broadband accessibility
- Expanded tech training
- Promote local government’s continued investment in people, infrastructure and quality of life
- Expansion of medical facilities to make Manitowoc a regional center for diverse array of medical services
- Merge police, fire and other protective services within the county
- Merge school districts
- Windmills in lake
- Consolidated county buildings
- Consolidate services ie. volunteer fire departments in rural areas
- Expand nuclear plants, extend licenses

- Coordinate school year schedules for year
- Low crime rate
- Maintain higher education facilities, LTC and UW-Manitowoc
- Good law enforcement, speedier response, more EMS
- Strong local school systems
- Maintain and improve recreation areas, parks and playgrounds
- More mandated recycling, reduce landfills
- Countywide “911” service
- Sewer
- Water
- Less money on services rarely need such as SWAT teams and specialized rescue teams
- Maintain health center
- Gas station
- Grocery store
- Library
- Village hall
- New fire station
- Bring back satellite hwy department buildings; satellite ambulance service in outlying areas
- Consolidated fire protection
- Consolidated school systems (joint districts in outlying areas)
- Improved UW system
- Adequate utilities – capacity/cost
- Sharing of services to reduce cost to tax payer/not to increase taxes by adding additional administrative costs
- Revenue sharing between rural and urban areas
- Surveillance for snowmobile etc
- Rural areas need more police services
- Trade schools that are not all on one location
- Increase city police in northern part of county
- Cut budgets in our local university extensions
- County owned health care center
- Schools with all up to date teachers, equipment, books
- Schools without money problems
- Affordable water-sewer rates
- Well maintained and managed sewer-water systems
- Wind farm’s located around the county

Housing

- Affordable building lots
- Don’t let home for the elderly go private
- Standard required for house upkeep
- Multi-family housing/rural areas
- Affordable (median income)

- Mix of single family and apartments
- More small country farmettes-refurbished
- Good, low income, affordable housing and park areas
- Two family homes
- Elderly care
- Veteran's home and service center
- Square footage based on family size to minimize heating fuel and building materials
- Building codes
- More single family homes
- Affordable
- Rural area for single and duplex
- Multifamily and apartments in cities
- Promote energy efficiency
- Require use of recycled materials
- Consider/accommodate an aging population
- Discourage rural housing on quality farming areas
- Greenhouses – solar chimneys, sky lights, solar power in cooperation w/MPU, green roofs
- Homes with annex to care for elders
- Combined small specialty shops and restaurants, and residences
- Encourage senior housing in downtown Manitowoc
- Upper floors of commercial building renovated and occupied into residential and commercial spaces
- Promote housing redevelopment projects that build a LEED and Energy Star standards
- Promote environmentally cost effective housing
- Zone for harmonious residential development around rural character
- Encourage preservation of open space, natural areas in relationship to resd. Areas
- Less spot development
- Condense development
- Retirees req. single story accessibility
- Gen-X'ers req. upscale lofts/condos, 4 bedrooms
- Livable houses
- Get rid of eye sores
- Neat housing
- Cooperative plan to clean-up eyesores
- Rural retirement housing with garden activity for residents
- Little better updating in our rural mobile home parks
- More affordable apartments
- Tax credit for improving property
- Better senior housing
- Single family
- Duplexes
- Develop cluster development for towns
- Develop conservation subdivision for towns
- Tax credit for property improvements
- New housing in areas within convenience of services

- Affordable housing-encourage housing diversity including low and assisted family
- Variety housing types, single, duplexes, multi-family and condo unit housing
- Identify development capacity of land for intended urban areas
- Property maintenance codes for older housing with housing rehabilitation programs
- Acres needed for housing-increases projected by trend
- Specialized residential facilities for elderly at high service areas
- No subdivisions outside of sewer districts
- Rural developments must be 2 acres or more
- Limit new housing on highly developed lakes
- Where should growth be?
- Maximum house density before central WWTP services is required
- No trailer parks
- Houses in areas in respect to rural aspect
- Senior housing close to churches/stores

Transportation/Roads & Highways

- Keeping our roads well maintained
- Well taken care of roads and highways
- Pursuing cooperative road services with the county or other townships
- Improved highways
- Encourage innovative transportation
- New roads only to accommodate increased development
- New development on existing or proposed transit corridors
- Minimize impact of new transportation projects on existing neighborhoods, businesses, and natural resources
- Require development to provide off-street parking and loading facilities
- Truck traffic and routes in close proximity to federal, county, state roads, rail and manufacturing
- School bus transportation
- Implement bike lanes for local traffic
- Utilize rail freight above water freight
- Improved state and federal transit system
- All roads safe for traveling
- Walkways along highways
- North and South roads
- More North and South Cty roads
- Better roads
- Improve secondary roads
- Rural walkway along roads
- Better road signage
- We are doing a good job updating our roads
- Safe roads
- Better east/west corridors

- Public transportation systems include rural areas
- Scenic roads
- Snow removal
- Road signage
- Good clean roads
- More transportation less dependent on oil
- Bus routes that provide county-wide access to Milwaukee/Green Bay and Chicago commuters, vacationers
- Maintain roadways
- East/west highway
- Convenient and safe road system in county
- Maintain and improve existing road system
- More reliance of bicycles and less reliance of vehicle travel
- Public street construction utilizing recycled produces and more energy efficient lighting
- Bicycle parking areas
- Beltway around Manitowoc and Two Rives
- Roundabouts
- Public transportation/rail
- Continued improvement of Hwy 10
- Improved timing of signal lights
- Mass transit to large metro areas
- Bike and scooter pathways on roads, safety
- Maintain paved roads
- Maintain bridges
- More park and ride places
- More public, expand public transportation
- Roads sized for ag equipment
- Well maintained roads
- Visible road signs
- Yellow lines on hills
- Bike lanes
- Increase sidewalks
- Larger police force that is supported by citation fees
- Improve all
- Increase usability of LRIP funding
- Shared services
- Efficient services
- Safer chip seal – road edges
- Well maintained
- Commercial air traffic
- Logical use of I43 corridor
- Attention to people disregarding stop signs
- Repair rural roads
- Restructure speed limits

- Eliminate all billboards
- Hwy 10 4-lane
- Hwy 151 4-lane
- I43 well maintained
- County highways – smooth

Agriculture/Farming

- Large farms well managed
- Large farms with enclosed digesters producing methane for electrical generation
- Set rules and regulations on mega farms
- Regulate waste spread on agriculture land
- Stop the manure runoff
- Stop mega farms
- No manure spills
- Enough acres per cow for manure hauling
- Law designating a time limit to incorporate manure into ground!
- Limit mega farms; more manure less area for spreading
- Ag diversity (not just dairy) use restrictions
- Manure pit – setbacks extended
- Respect farmers rights
- Less erosion
- Profitable family farms
- Ag/bio-industries
- Control runoff
- Small farms and old out buildings in village – gone
- Make a high priority
- No factory farms
- Control waste
- Save agricultural land from development
- Have ample room for small farms
- Infrastructure maintained to support ag
- Good practices to address environmental issues
- Neat, well kept-up appearances
- Self sustaining for energy use
- More organic farming
- Protect farmland
- Improve water quality of farm run-off
- Restrict mega-farms
- Embrace/encourage sustainable/organic agriculture without pesticides/herbicides
- Foster growth of locally raised produce and its local consumption
- Robust participation in community supported agriculture
- Promote use of heirloom seeds and discourage genetically modified seeds

- Maintain ag character of the county
- Development of year-round farmers' market via redevelopment of a large vacant building
- Maintain right to farm
- Preserve prime farmland
- Prevent farmland fragmentation
- Large farm operations must apply for conditional use permit
- Monitor quality of facilities
- Opportunities family farms
- Farm equipment that's road worthy
- Upgrade falling/unusable barns
- More farms
- Farmland preservation
- Regulate manure storage and handling
- Develop aquaculture
- Reclaim animal waste
- Control rural development
- Farm safety instruction
- Farm equipment on highways
- Real control over the dairy farm size of herds
- Pollution must be controlled and will
- Allow farmers to section off lots
- Control, inspect manure pits
- Mega farms
- Hobby farms
- Preserve farmland through smaller residential home sites
- Incorporate liquid manure within 24 hr period
- Support predominately family owned farms
- Comprehensive solid and organic waste management
- Maintain air/odor, land and watershed quality
- Encourage innovations of agricultural resources for energy
- Protect floodland, natural drainways and wetlands
- Stormwater run-off management
- Enforce environmental corridors for natural resource protection
- Strong ag base
- Creation of agricultural zones to ensure growth areas
- Preserved are just for farming
- Up-to-date science in farming
- Well managed-environmentally
- Farming zones-limited housing

Recreation

- Bike, walking, snowmobile trails
- Areas for people to spend their time off
- Use of waste from hunting
- Environmental easements
- Bike paths
- Walking trails
- Preserve cultural, historical and archeological sites
- Dual use pedestrian and bike trails
- Reserve open/conservation spaces including wetlands, woodlands and riverfront
- Increase recreational/tourism interests in the areas
- Increase cultural/historical activities in the area
- Maintain and improve all county parks
- No more
- More county parks
- Recreation trails
- Public swimming
- Utilize community parks
- Maintain existing facilities
- Develop more ski and snowmobile trails
- We have many areas of recreation – just contain and keep them up
- Beaches clean and lake
- Outdoor movie theatre
- Cross country skiing at county parks
- Scenic river trips/areas
- Campgrounds
- Economical boat launch ramps for Lake Michigan
- Bike trails
- ATV trails
- Water park
- Numerous pocket parks thru residential neighborhoods
- Walking trails interconnected web thru-out the city
- Rec trails-cycling/ATV
- Maintain small lakes
- Multiple safe harbor locations on Lake Michigan shoreline
- Continue to develop environmental and ecologically-oriented facilities
- Enhanced access to lake and riverfront areas
- Encourage bike riding with more designated paths and safe areas to ride. Locate bike racks in public areas across the city
- Wildlife sanctuary. Encourage deer to congregate so it becomes an attraction like cranes in the river. Some countries with a particular problem like deer have created a natural sanctuary by feeding the animals to keep them (i.e. deer/monkeys from damaging gardens) farms. It's a huge attraction. Monkey Mountain (Japan). Deer Village (Nara, Japan)
- Expanded recreation trails

- Protect in-land and Lake Michigan lakes from invasive species
- Protect water quality
- Available for aging population
- Promote use of fitness facilities
- Expand existing parks
- More and improved trails for all uses, walking, horses, ATVs
- Public boat launches well maintained
- Public land not sold off
- User funding should determine use and development
- More stuff for youth to do
- Better park equipment
- Larger park
- More state funded projects for rural development
- More rural trails
- Water quality (improve)
- Hike/bike trails
- Access to surface waters
- Will not support the economic growth desired on its own
- Provide an ATV trail
- More launches on Lake Michigan
- County parks open to hunting
- Keep existing cty parks
- County parks open for hunting
- More biking – walking trails
- Clean-large parks

VOLUME I - APPENDIX D
ECONOMIC S.W.O.T. RESULTS

Manitowoc County Economic S.W.O.T. MCPAC Results

As part of the Manitowoc County Multi-jurisdictional planning project, the Manitowoc County Planning Advisory Committee (MCPAC) held an Economic SWOT workshop on March 26, 2008 to gather input regarding economic development in the county.

Economic factors internal to the county include strengths (**S**) or weaknesses (**W**), and those external to the county include opportunities (**O**) or threats (**T**). Such an analysis of the economic setting is referred to as a **SWOT analysis**. Gathering this information is helpful in evaluating Manitowoc County's economic resources and capabilities with the competitive and growing environments in the region. The following issues identified during the economic SWOT workshop will help the county to promote its strengths, minimize weaknesses, take full advantage of the opportunities and lessen potential threats.

STRENGTHS

Strengths are existing resources and capabilities that can be used as a basis for developing a successful growth plan.

GROUP 1

SCORE STRENGTHS

6	Economical/low cost of living
6	Exc. schools/education system
5	Good transportation, water access, interstate
5	Skilled labor force
3	Lake Michigan
3	No county sales tax
2	Good labor force but need job to stay in area
2	Work ethic
1	Strong manufacture
-	Cheap housing
-	Land and open space
-	Strong recreation

GROUP 2

SCORE STRENGTHS

6	Access to Lake Michigan water
6	Fertile land and good climate for agriculture
3	Area not prone to major natural disasters
2	Adequate electric power availability
2	Recreational opportunities/tourism potential
1	Close to several major markets
1	Fine eating establishments
1	Low housing costs/affordable housing
1	Natural areas/parks/open space
1	Skilled workforce; strong work ethic
1	Strong educational system/opportunities (K-University)
-	Low crime rates
-	Quality health care
-	Railroads
-	Variety of churches

GROUP 3

SCORE STRENGTHS

- 6 Mainly agriculture and undeveloped
- 5 Good water source – ground and surface (Lake Michigan)
- 3 Scenic lands – recreation – tourism
- 2 Diversified work force
- 2 Infrastructure
- 2 Low cost of living
- 1 Good law enforcement
- 1 I-43
- Diversified service industry
- Good business trends

GROUP 4

SCORE STRENGTHS

- 6 School systems solid (K-14)
- 5 Access to interstate
- 3 Availability of utilities
- 3 Strong work ethic
- 2 Availability of G.L. water
- 2 Strong farming community
- 1 Good mix of natural resources – water, wood, etc.
- 1 Low crime
- 1 Well-educated workforce
- Ample housing available
- EDC
- Expandable RR system
- High standard of living
- Large corporations
- Low poverty
- Park systems are good
- Recreational resources
- Water and sewer system updated

WEAKNESSES

A weakness is a limitation or the absence of certain strengths that keep the county from achieving its objectives.

GROUP 1

SCORE WEAKNESSES

- 6 Loss of jobs
- 6 Loss of population
- 4 High property tax
- 3 County enforcement inconsistent (law enforcement)
- 3 Limited number of white collar jobs
- 2 Cell, internet, wireless and cable access limited
- 2 Lack of a strong redevelopment authority
- 2 Many level of inconsistency
- 1 Distance to major areas
- Sanitary and sewer system

GROUP 2

SCORE WEAKNESSES

- 5 Lack of population mass leading to many businesses bypassing county
- 4 “Drive-through” community
- 3 Aging population
- 2 Conservative area
- 2 Liberal area
- 2 Loss of manufacturing base-could locate in less urban portions of county
- 1 High cost of services/lack of efficiencies
- 1 Unclear direction for development
- Lack of good east/west road connections
- Low educational attainment-those who do pursue higher education often leave area

GROUP 3

SCORE WEAKNESSES

- 4 Air quality
- 4 Climate
- 4 Very conservative
- 3 More government intracommunication
- 2 Lack of Stormwater runoff authority
- 2 Limited financial opportunities
- 1 Lake Michigan – no expansion to east
- 1 Lake Michigan’s invasive species
- Runoff

GROUP 4

SCORE WEAKNESSES

- 7 High county taxes
- 5 Declining road system
- 3 Lack of white collar jobs
- 3 Not enough industry to retain young people
- 3 Touch conservative
- 1 Air quality
- 1 Heavy dependence on ag.
- 1 Limited raw material availability for manufacturing
- Limited electricity

OPPORTUNITIES

An opportunity is any favorable situation or resource that could enhance economic development.

GROUP 1

SCORE OPPORTUNITIES

- 13 More nuclear plants
- 6 Access to I43
- 5 Biking/walking/trail development
- 5 Lakefront development
- 3 Tourism
- 2 Develop wind farms
- 2 Small communities with family values
- 1 Lake and rail access

- 1 New technology to support bigger dairy farms
- Redevelopment authority
- Use existing county parks year round

GROUP 2

SCORE OPPORTUNITIES

- 5 Good quality of life can attract new residents
- 5 Prime energy production sites (including green energy)
- 4 Potential to coordinate with educational centers for workforce training opportunities (especially LTC)
- 2 Strong UW extension and 4-H programs
- 1 Regional water distribution opportunities (within LM watershed)
- 1 Use MCPAC to clarify zones for development
- Housing opportunities along Lake Michigan
- Talented builders

GROUP 3

SCORE OPPORTUNITIES

- 5 Education system
- 5 Lake Michigan
- 4 Road system is good
- 2 Not a large population
- 1 Recreation
- 1 Sale of lake water
- Reasonable tax base

GROUP 4

SCORE OPPORTUNITIES

- 5 Resources for additional nuclear power
- 5 Shipping – port
- 4 LTC
- 2 Alternative energy – ag. and manufacturing
- 1 I-43
- 1 Increased utilization of public trans.
- 2-year converted to 4-year
- Additional tourism
- High speed train to Chicago

THREATS

Threats are potential obstacles the county faces concerning economic development.

GROUP 1

SCORE THREATS

- 8 “Not in my backyard” (nuclear/windmill)
- 6 Aging population/loss job
- 5 Vacant housing/industrial/commercial property
- 4 NAFTA/Free trade
- 3 Poor air quality
- 2 High taxes in all level
- 2 Mortgage foreclosure

- 1 Declining school population
- Cold weather
- Shrinking labor force

GROUP 2

SCORE THREATS

- 6 Industry leaving for other countries due to low wages in those countries
- 5 Tax structure resulting in lower shared revenue from state
- 3 Not respecting individual land rights
- 3 Unfunded mandates from federal and state governments (i.e. Stormwater mgmt.)
- 3 Youth leaving the area
- 1 Low density residential development causing lack of farmland
- Flight to areas with nicer year-round climates
- Rising fuel costs affecting transport of manufacturing goods from area

GROUP 3

SCORE THREATS

- 5 Air quality
- 3 Aging population
- 3 Agric. commodity input costs
- 3 Lack of high tech jobs
- 3 Youth leaving
- 2 Urban sprawl – loss of farmland
- 1 Animal disease outbreak
- Animal welfare efforts
- Lake Michigan compact re: runoff scenarios

GROUP 4

SCORE THREATS

- 5 Increased energy prices
- 4 Declining economy
- 3 Brain drain
- 2 Aging housing units
- 2 Groundwater contamination
- 2 Health insurance
- 2 Industry leaving
- 1 Additional restrictive regulations
- 1 Aging and declining population
- 1 High state taxes
- 1 Shifting economy from industry to tourism
- Loss of rural
- Substance abuse

VOLUME I - APPENDIX E
INTERGOVERNMENTAL COOPERATION RESULTS

Manitowoc County Lakeshore Planning Cluster **Intergovernmental Cooperation Results**

The intergovernmental workshop for the Manitowoc County Lakeshore Planning Cluster was held on April 15, 2009 at Manitowoc City Hall. The results from this workshop area as follows:

Flip Chart Results

Land Use Issues and Conflicts/Positive Working Relationships

- Limit growth to preserve rural farming and natural resources
- Town of Manitowoc has a good cost sharing arrangement with county regarding snow removal, road maintenance/reconstruction. Town of Manitowoc also contracts with Town of Two Rivers for snow removal and some road repair
- Towns sharing of ambulance service with City of Manitowoc
- First responders are positive
- Mishicot Ambulance service includes village and several towns
- T. Two Rivers and C. Two Rivers share snow removal duties on boundaries
- Woodland Road maintenance involves four jurisdictions
- T. Gibson does not have fire Dept.- contracts with Maribel, Mishicot, Tisch Mills
- County Hazmat group is good
- Good cooperation working with Manitowoc city planning staff within 3 mile extraterritorial area
- Wind Turbine issues
- WDNR has good working relationships with local governments
- Pooled resources for elections
- Shared road repair equipment between Towns of Mishicot and Two Creeks, and Village of Mishicot
- Need to coordinate with WisDot where commercial development is planned along State Highways and at interchanges
- Opportunity for communities to tap into the Manitowoc-Brown County water pipeline
- Good cooperation in putting together Mariner's Trail
- Village of Mishicot sewer lines lead into Two Rivers as part of Manitowoc-Two Rivers Sewer Service Area
- C. Manitowoc has good cooperation with various county agencies (highway dept. / Aging and Disability Resource Center) and with C. Two Rivers (Maritime Metro Transit support)
- Joint service in area of waste management/recycling between Towns of Two Creeks and Mishicot
- Emergency agreements between agencies and jurisdictions (mutual aid agreements, etc.)
- Cities of Manitowoc and Two Rivers have signed on with Brown County for mutual aid agreement in case of large emergencies
- Find sources of discharge into Lake Michigan and other water bodies – everyone must do their fair share to control this.
- Waste Storage at Point Beach Nuclear Plan

Potential Resolutions

- Consolidate purchase of items that all jurisdictions need (road salt, fuel, etc.)
- Revise zoning in towns to implement their plans as Manitowoc Co. Planning maintains zoning for 15 of the 18 towns in the county
- Improved communication between county and local jurisdictions
- Plans need to be reviewed and updated periodically to be kept current
- Need regional cooperation in area of stormwater management
- Continued positive sharing agreements and mutual aid

Total Worksheet Responses

Land Use Issues and Conflicts/Positive Working Relationships

- Reciprocal agreements fire and police services is positive
- City and county partnered GIS internet mapping system is positive
- Construction of Manitowoc Public Utilities Water Tower in County Industrial Park is a positive
- City of Manitowoc engineering/DPW and County DPW intergovernmental award presented by Chamber of Commerce
- Multi-Jurisdictional Comprehensive Planning Project – 21 Municipalities involved in project
- Shared facility use arrangements – City of Manitowoc and Manitowoc Public School District cooperate in use of gym and park space and time is positive
- Joint dispatch countywide is positive
- The merging of City Health Dept. with County Health Dept. 13 years ago is positive
- Cities of Two Rivers and Manitowoc Joint Tourism Promotions, “Port Cities” marketing campaign is positive
- Wind Turbine Ordinances are a conflict
- Support/Funding Economic Development Corporation-EDC is a conflict
- Construction of Mariner’s Trail is positive
- Long range plans for expo grounds are a conflict
- Joint Transit system (MMT)
- Expo Fair Grounds are county owned – C. Manitowoc sees enormous potential for development and especially wants to relocate the race track – its noisy, dusty, and a detriment to development.
- Rural Transportation (especially for aging/disabled) is lacking – county ADA resources are strained – City of Manitowoc is also fiscally constrained and cannot provide any additional funding.
- Hazmat group is positive
- Metro Drug is positive
- Expo is a positive and negative
- Location of Dirt track and expo grounds (relocation?)
- Urban Sprawl problem
- Wind Turbine locations
- Snow plowing at borders is positive
- Road maintenance / reconstruction is positive
- Roundabout issues
- Location of major arterials in the county to support other jurisdictions
- Run-off from farms
- Tax discrepancies/differences
- Merging of City of Manitowoc and Two Rivers
- Desire to limit growth so as to preserve rural farming and natural resources
- Limit odor issues with big farms
- Fire department mutual aid is criticism and not effective
- Shared waste disposal / recycling being applied between the T. of Two Creeks and Mishicot has been very cost beneficial

- Cooperate equipment sharing for road repair
- Emergency warning system countywide
- Good working relationship with county to do our road work (T. Manitowoc)
- Adequate spacing between highway interchanges and new development (preserve infrastructure) with good access management.
- Proper street planning with adjacent units of government plan when possible for boundary agreements relating to annexation around cities and villages.
- Communities should contact WisDOT for commercial developments along STH's, be proactive rather than reactive. The proposed land use map shows commercial development along STH 310. WisDOT has 84.25 access controls along much of STH 310.
- Plan for future schools inside communities (Two Rivers example)
- Any need for park and ride lots in Manitowoc County
- Any need for additional intercity transportation
- Any need for additional recreation trails
- When possible, promote infill development rather than at the edge of communities.
- Shared poll place and voting equipment to enhance proper voting.
- County 911 system – fire, ambulance, police and dispatch working together to provide protection
- Need for bridge and culvert replacements
- Need better maintenance of roadside ditches in early spring and fall
- Use of proper erosion controls
- Agreements with county/town highway depts. in various projects requiring heavy equipment (trucks, gravel)
- Mishicot ambulance service between Town of Two Rivers, Town of Two Creeks, Town of Gibson and Mishicot is good.
- Fire fighting agreements is positive
- Snow plowing agreements - good
- Emergency agreements for disasters, any fire in the State Forest, any nuclear accident at the nuclear plant
- Road maintenance and resurfacing
- Fire Dept. mutual aid
- Snow removal agreements with City of Two Rivers and Town of Manitowoc
- Ambulance – T. Two Rivers, T. Two Creeks, Mishicot, Gibson
- Mutual aid with Kew. Fire Dept. (Point Beach)
- Share equipment with T. Town Creeks
- Mariners Trail- County, Manitowoc and Two Rivers worked together to build and maintain. People are enjoying trail use, great for recreation, no need for ordinances, rules agreed with city group, both cities work with friends groups, maintenance
- Sewer – Mishicot is positive
- Shared ambulance service is a positive
- A potential conflict over the next 20 years could involve the land application of municipal and industrial sludge. (Land application is usually the preferred method of sludge disposal, for economic reasons). Farm land that is adequately separated from houses, wells and business establishments is usually required for this activity; but the amount of such land in the county could slightly decrease over the next 20 years.

Possible Resolutions

- Boundary agreement cities of Manitowoc and Two Rivers
- Continue transit service Manty/TR
- Continue mutual aid Manty/TR
- Continue joint tourism Manty/TR
- Possible sharing of water in the future
- Excellent working relationship between City of Manitowoc and county hwy has developed – continued fostering of this partnership is needed as money becomes even tougher to find.
- City of Manitowoc is in process of developing a close working relationship with county aging and disabled resource center thru the mobility mgmt. efforts. We will be working to implement a volunteer driver program to increase service to elderly and disabled while decreasing costs thru a renegotiated “assist-to-transport” agreement. Additional efforts to implement a “single-point-of-contact”: for transportation service will help streamline efforts at lower cost
- Right to farm is a prime vehicle in supporting the desire to limit growth so as to preserve farming and natural resources
- Support from the county on concerns with long-term storage of dry (spent) fuel from the power plant
- Support from the county on road maintenance as a result of traffic in and out of the Point Beach Nuclear Plant
- Support from the county on enforcing abandoned vehicle limits at any one location.
- Need to correctly review/apply rules on farm issues.
- Some communities/county do a great job sharing information for zoning changes on new development along state highways
- Use official mapping powers to plan a future street plan prior to development opportunities
- Continue work to implement county bicycle plan
- An agreement that has been the result of positive working relationships is to “transfer” the use privileges for sludge applications sites (i.e. farm land) from one WDNR permittee to another when desired. This has historically helped communities like the City of Manitowoc to find the farm land that they need.
- At least three resolutions seem possible. (1) Towns should not enact ordinances that completely prohibit the land application of sludge. (2) Existing farm land should be kept adequately isolated from new residential and commercial development, whenever practicable. (3) The sludge treatment processes used at municipal wastewater treatment facilities could be upgraded to produce an “exceptional quality sludge” as defined in NR 204 Wisc. Admin. Code, thereby providing more flexibility with where the sludge is allowed to be land applied. However, these upgrades could be very expensive so are probably not desirable at this time.

Manitowoc County Northwest Planning Cluster

Intergovernmental Cooperation Results

April 13, 2009

The intergovernmental cooperation workshop for the Manitowoc County Northwest Planning Cluster was held on April 13, 2009 at the Reedsville Village Hall. The results from this workshop are as follows:

Land Use Issues and Conflicts/Positive Working Relationships

- Keep lines of communication open between Town of Rockland and Village of Reedsville.
- Insure water quality (surface water and groundwater).
- To work with the county and the state to promote recreational, trails, including biking/walking trails.
- Potential business developments could cause conflicts with neighboring towns.
- Fire, ambulance, mutual aid, and first responder agreements with towns.
- County highway agreements.
- School district and Village of Reedsville enjoy a good relationship.
- Town of Kossuth has a cost sharing agreements with Village of Francis for recycling center operation (could serve as model for elsewhere in county)
- Have consistency at county level regarding special well drilling districts (mapping) and regarding karst features (such as sinkholes)
- Expansion of Ridgeville Landfill in Town of Franklin and its ability to accept PCB sediments.
- Conflicts between larger dairy operations and their neighbors (noise, odor, road damage, etc.)
- Land spreading of wastes leading to groundwater contamination due to local geology.
- High competition for land (increasing prices).
- Houses with failing septic systems should be held accountable for groundwater contamination.
- Consolidation should be given to a countywide wastewater treatment plant.
- Local Road Improvement Program (LRIP) has been successful for local roads; institute a similar program for parks and recreational facilities.
- Ambulance service may be a problem in the future. (new ambulance service, suite expensive) V. Maribel/T. Cooperstown.
- County snow plowing is damaging county roads in the village and is also costly to the village (also raised by other villages) Lost of satellite site has negatively impacting maintenance and removal of snow.
- Need for shared services between V. Maribel and T. Cooperstown.
- Does T. Maple Grove need a subdivision ordinance?
- Observed minimal industrial development planned for V. Reedsville and surrounding towns/industrial development might be appropriate for USH 10 Corridor.
- Recreational trail should connect Reedsville and Brillion.
- Industrial waste spreading (need to control this).
- Snow removal agreements (existing) are good.
- Communication with DNR in the permitting process for industrial waste (need better communication).
- Address homeowners that don't have their wells up to code.

Potential Resolutions:

- Communication
- Merge all of the local plans into one cohesive planning document.
- Need more cooperative agreements between municipalities. (some communities have equipment, others don't)
- County has a livestock siting permitting process with criteria, and is ahead of other counties in this area.
- Enforcement
- Manitowoc County needs to go back to having periodical local official meetings, this time with solutions to common problems (milestones with deliverables, etc.)
- Towns need to meet together periodically at the sub-committee level.
- Cooperate with Brown County and check their restrictions on individual waste storage and spreading.
- DNR should control amount of land spreading (industrial/animal waste/septic) in areas involving karst topography.
- Manitowoc County departments are helpful with land and water resources issues.

Total Worksheet Responses

Issues

- There could be improvement between various town, county, and state agencies concerning wetlands. It would be helpful if officials who are meeting or talking with landowners mention that the WI Wetland Inventory maps are not entirely accurate and DNR should be consulted if there are low areas and any development is planned. We have a new website that helps landowners determine if wetlands are present at: <http://dnr.wi.gov/wetlands/locating.html> (.) It would be helpful to all officials and land owners if everyone is more educated about wetlands and realize that the DNR regulates all wetland, regardless if they are shown on maps or not.
- Clarks Mills Sanitary District (we just deal with the town of Cato)
- May need a large industrial development area in the Reedsville Area.
- Recreation trail would be nice between Reedsville and Brillion.
- Industrial waste spreading (control)
- Reviewing neighboring ordinances
- Snow removal agreements (good)
- Communication with the DNR and the permit process for industrial waste
- Work with Manitowoc County over land issues
- Individual land owner rights
- Zoning issues with the county
- Ambulance Services are in question being taken over by Brown County. Rising cost per capita.
- Road maintenance issues with the county.
- Share garbage/recycling pickup.
- Shared recycling facilities with town and villages
- Shared sewer and water facilities
- Ground water quality
- Restrict well drilling zones (mapping)

- All users of water must be held accountable
- Establish multi use (Devils River St. Trail) recreational trails (open to all types)
- Snow plow service in the Township is poor!
- Fire agreements with other towns.
- First responders agreement with other towns
- Ambulance agreement with Valders
- County Highway Dept. provides materials
- School provide busing for private schools
- School has healthy relationship with village (vise/versa).
- Potential business development could cause conflict with township-surrounding the industrial park.
- Communication with individual town.
- Water quality – nitrate problems in past.
- Continue good communication with the village of Reedsville.
- Work with County and State to get recreational trails (will connect different municipal locations)
- Water quality (surface and ground water)
- Promote an industrial park with tax incentive.
- Work with County and State levels to design a public park and recreational area.
- County wide mutual aid with fire departments is positive.
- Expansion of the Ridgeview Landfill with all the opposition from the local municipalities is negative. Also the ability of the landfill to accept PCB's.
- Unfunded state mandates
- Shared waste water treatment facilities not evaluated
- Manitowoc ERS is shared
- Assistance with emergency planning.
- Manitowoc County LRIP process for roads.
- Lack of county funding for Park and Recreation to “suburbs”
- Lack of vision for villages as “suburbs”
- Mutual aid programs
- Property owners’ rights – will land owners have a set of guidelines showing homes will not be allowed in any area, unless it is in the rural residential area on Map?

Solutions

- Have officials (such as DNR) listen to the local municipalities before decision are made.
- Consistent mapping of shallow bedrock (sinkholes) throughout County.
- Map all special well drilling areas in County.
- Realign fire protection areas – shared resources or consolidation of services.
- Consider contracting equip and services with other towns and village for road maintenance.
- Public School District should be entertained particularly with declining enrollment and revenue caps. Parochial schools have already completed this 10 years ago.
- Recyclables and garbage pick up should be done with neighboring township, etc to keep cost down.
- More intergovernmental cooperation between city, county and villages.
- Communication of future plans both ways – County – Villages

- State and County provide incentives to Villages for development.
- Provide joint resources for parks and recreation like LRIP.
- Ordinances? Sub-division? Adopt county ordinances or develop our own? As a cluster or as an individual town.
- Cooperate with Brown County and check their restriction on industrial waste, storage and spreading (winter).
- Other town ordinances are complete or to the point (such as winter spreading on karst soil features).
- Manitowoc County Departments are helpful with land and water resources issues. If better ideas are found, use them.
- DNR could control amounts of land spreading on karst areas.
- Correct or add to the existing county zoning ordinance.

Manitowoc County Southern Planning Cluster

Intergovernmental Cooperation Results

April 22, 2009

The intergovernmental cooperation workshop for the Manitowoc County Southern Planning Cluster was held on April 22, 2009, at the Eaton Town Hall. The results from this workshop are as follows:

Land Use Issues and Conflicts/Positive Working Relationships:

- Stormwater.
- Future sewer systems and their planning need to be addressed.
- Issues with the City of Kiel (extraterritorial zoning and/or subdivision review policies).
- Parts of the Cedar Lake area are not in the Cedar Lake sanitary district; Town of Schleswig officials are concerned about flows into Cedar Lake (the sanitary district controls lake levels). Similar issues exist in the unincorporated village of Rockville.
- Manitowoc County needs to better communicate with the town of origin on rezoning issues, and needs to better conform to the town's specific rezoning recommendation.
- Need more formalized agreements with neighboring jurisdictions on issues (such as procedures for road maintenance on a town boundary, etc.).
- The Wisconsin Department of Natural Resources (DNR) needs to more clearly define the term "navigable waterway."
- Wisconsin DNR issues with the testing of water in the Village of St. Nazianz.
- Are local emergency management/mutual aid agreements necessary?
- Some towns in the Southern Planning Cluster feel that they are "double paying" for police protection from the Manitowoc County Sheriff's Department.
- People new to building in the country and not knowing the difference between good and bad farming practices.
- Lack of acknowledgement of parts of Manitowoc County outside Manitowoc and Two Rivers; lack of acknowledgement of the southwestern part of the county.
- Inadequate shared revenues and transportation aids for local governments.
- Lack of sharing equipment among local governments.
- Need better compensation for state-owned lands *or* sell off these lands to increase the local tax base.
- Towns need to obtain compensation for the impacts of gravel extraction on town roads and other facilities.

Potential Resolutions:

- Shared equipment.
- Election coordination (a model being the cooperative relationship in handling elections between the Village of Valders and the Town of Liberty).
- When the state takes properties off the local tax rolls (as occurs when public lands are acquired), compensate local units of government with increased shared revenues.

- Formulate a cooperative boundary agreement between the Town of Schleswig and the City of Kiel.
- Local governments could take advantage of county or state fleet programs, especially in emergencies.
- Produce a video and/or booklet detailing what to expect with “country living” for new residents of towns in the Southern Planning Cluster.
- Building permits could have disclaimers indicating what to expect with country living.

Total Worksheet Responses

Land Use Issues and Conflicts/Positive Working Relationships:

- Stormwater.
- Boundary roads.
- Shared fire (services).
- Gravel pit – extraction compensation.
- Local emergency management mutual aid agreement.
- Local court system – enforcement.
- Equipment sharing.
- Constable sharing.
- Meeme – 5 fire departments.
- Cooperative agreement with Centerville for plowing snow on some roads.
- Mutual agreement with 5 fire departments.
- Election coordination between Valders and Liberty.
- Snow plowing agreement with adjoining towns.
- Agreements with local fire departments.
- Police patrols.
- Kiel border issue.
- Sewer system.
- Written agreement with adjoining towns on County Line Road and Town Line Road (as it pertains to road maintenance, snow removal, etc.).
- Development of a plan with the City of Kiel to minimize expansion into the Town of Schleswig (Intergovernmental Cooperation Plan).

Potential Resolutions:

- Police protection in Liberty.
- Shared revenue in Liberty.
- Transportation funding.
- Communication with (Manitowoc County) Planning and Park (Commission).



Volume II

Manitowoc County Resources

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CHAPTER 5 :
NATURAL, AGRICULTURAL, AND CULTURAL RESOURCES

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INTRODUCTION

This section provides an inventory of the existing natural, agricultural, and cultural resource features found in Manitowoc County. These physical characteristics of the county are important, as they are major determinants of future development options.

As development occurs, it is important to understand the location of the natural, agricultural, and cultural resources and how they relate to one another, as this will help limit unnecessary public expenditure and minimize potential negative impacts to these features.

NATURAL RESOURCES

Natural resources are materials that occur in nature, such as water, air, land, trees, animals, plants, soil, and minerals that are essential or useful to humans. Some are replaceable and others are not. Nonrenewable resources (e.g., coal, oil, natural gas, and minerals) are not replaceable once they have been consumed. Renewable resources (e.g., trees, animals, water, and wind) can be replaced.

Natural resources are important because of their natural beauty, wildlife habitat, and recreational opportunities. People depend on natural resources to provide a clean and abundant supply of groundwater; assure good air quality; and provide natural landscapes that are essential to a healthy and diverse biological community. Despite their importance, several natural resources face significant threats due to a growing population with increasing demands. Habitat loss and fragmentation, threats to water quality, and changes in climate are just several of the possible impacts of current and projected development patterns.

The following text describes the types and locations of Manitowoc County's many natural resources, and briefly discusses the importance of them when planning for future growth of the county.

Climate

The climate of Manitowoc County is classified as continental, meaning there is an extreme disparity between summer and winter temperatures including cold, snowy winters and warm summers with periods of hot, humid conditions. The average annual temperature is 47.5 degrees Fahrenheit with the coldest month being January (17° F) and the warmest month being July (70° F). A narrow belt adjacent to Lake Michigan has a modified continental climate. Lake Michigan's influence is strongest during spring, summer and fall. The lag in lake water temperature delays the coming of the spring and extends mild temperatures into late fall. Residents of this narrow belt enjoy relatively cool summers compared to the hot summer temperatures further inland.

The annual precipitation for Manitowoc County is 40.51 inches. Over 55 percent of this amount falls from May through September, with June traditionally being the wettest month. The growing season for most crops also occurs from May through September. Overall, the varied climate is favorable for agricultural purposes and suitable for a number of outdoor activities ranging from biking and camping to snowmobiling.

Geology

The geology of the Manitowoc County surface is the result of the last two glaciation sub-stages that occurred approximately 11,000 years ago. The geology that lies beneath the county has important implications for land use.

Bedrock type, soil composition and depth to bedrock can have an impact on:

- excavation;
- foundations;
- location and effectiveness of site wastewater treatment systems;
- residential and industrial development locations;
- cost effectiveness of construction and maintenance of highways and streets;
- the natural infiltration of surface waters;
- groundwater recharge;
- groundwater susceptibility to contaminants;
- manure application;
- nutrient management;
- animal feedlot/livestock facility siting; and
- lagoon siting

Bedrock

The bedrock underlying Manitowoc County is made up of three distinct types that slope from west to east toward Lake Michigan. These bedrocks include Niagara dolomitic limestone, shales and dolomites, and sandstones. Underneath these three bedrock formations lay crystalline rocks.

The Wisconsin Geological and National History Survey indicates that the bedrock in portions of Manitowoc County also has deep karst potential. *Karst* features (Figure 5.1) such as caves and sinkholes are the result of small pre-existing fractures in the Dolomite bedrock being slowly dissolved overtime by slightly acidic water.

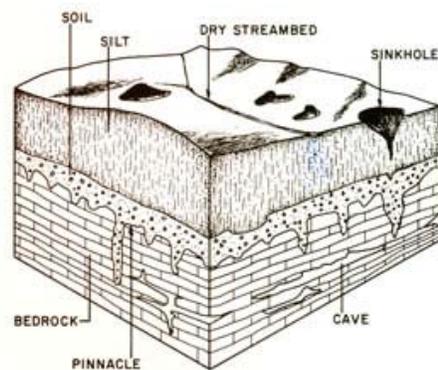


One excellent example of karst features in Manitowoc County is the *Cherney Maribel Caves County Park*, which contains several small caves and openings in the Dolomite rock layers.



Sinkholes are also significant features found in Manitowoc County (Map 5.1). Sinkholes are depressions in the land surface that form due to enough bedrock being dissolved / eroded from underground, and the subsequent collapse of overlying soil and rock.

Figure 5.1: Karst Geology



Source: www.dnr.mo.gov

When making land use decisions, karst features should be taken into consideration in order to ensure protection of the area's groundwater. A primary concern regarding karst is that these features provide a direct pathway for surface water to move into the subsurface. This increases the probability of a higher concentration of

contaminants being transported directly into the groundwater supply rather than being filtered by overlying soil.

Glacial

Glacial deposits consist of both till and glaciofluvial sediment. Till consists of clay, sand, gravel and boulders intermingled in any proportion, while glaciofluvial deposits consist of coarse to medium-grained sand and gravel with numerous cobbles, boulders and portions of till. Manitowoc County is covered primarily by clayey till, with glaciofluvial sediments comprised of lake silt and clay, located in areas adjacent to major water features.



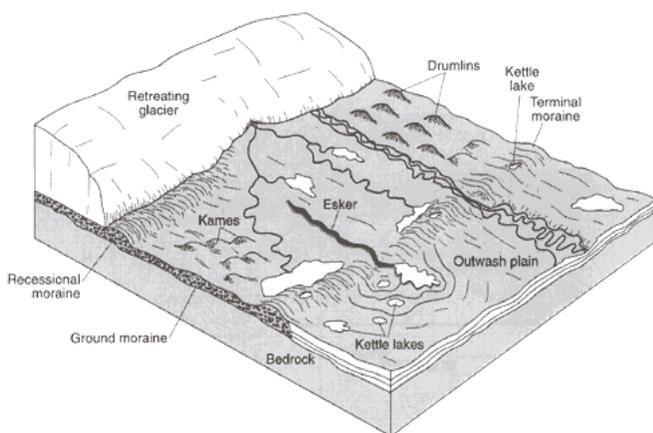
The depth of glacial deposits varies throughout the county, averaging 70-100 feet. Deposits are fairly deep in the southern and eastern parts of the county, but may only be one foot or less above the bedrock in other areas.



Several physical features (Figure 5.2) are evident throughout Manitowoc County as a result of glacial events. These features include, but are not limited to the following:

- *Kettle moraine*, a belt of irregular hills, glacial lakes, and wet depressions that formed along the junction of two glacial lobes. Kettle moraine is located mostly in southwestern Manitowoc County. Walla Hi County Park in the Town of Schleswig provides an excellent example of a kettle moraine landscape.
- A round cone-shaped hill, called a *Moulin kame* by geologists, is located just south of USH 151 in the Town of Eaton.
- Noticeable glacial *ridges and eskers* can also be found in portions of the Town of Maple Grove, north of the Village of Reedsville. A long narrow esker of more than four miles winds through the Maple Grove swamp west of CTH W.
- *Two Creeks Buried Forest* is a rare glacial feature found in the Town of Two Creeks on the shores of Lake Michigan. A forest that grew during a frigid climate between the glacial periods was buried beneath layers of glacial till. The buried forest is evident on a steep bluff where wave action and erosion have exposed the long-buried branches, logs, and stumps of various trees that are radiocarbon-dated at 11,850 years old.
- *Ice Age National Scenic Trail* is a 1,000 mile footpath entirely within Wisconsin. The purpose of the trail is to tell the story of the Ice Age and continental glaciation. The portion of the trail that passes through Manitowoc County is illustrated on Map 9.5.

Figure 5.2: Glacial Features



Source: hypography.com

Topography

The topography of Manitowoc County consists of gently rolling glacial deposits. Most of the western portion of the county contains generally flat stretches of open land with gentle rolling hills that gradually descend to the east. An area of rolling terrain occurs from the northwest corner of the county in the Town of Cooperstown stretching to the Town of Schleswig in the southwest corner of the county. The eastern portion of the county is characterized by river valleys that contain steep slopes and hills that drain toward Lake Michigan.



Map 5.2 illustrates the areas of steep slope (i.e., slope 12 percent or greater) based on soils characteristics within Manitowoc County.



The highest point in Manitowoc County is 1,047 feet above sea level, which is in the Town of Schleswig. This is 567 feet above Lake Michigan. The elevations of the county are displayed on Map 5.3.

Steep slopes are more susceptible to soil erosion, and may require special building and construction restraints (e.g., retaining walls or major grading efforts) to remove the area of steep slope.

Soils

The Natural Resources Conservation Service (NRCS) provides a detailed study of all soils in Manitowoc County in the *Soil Survey of Calumet and Manitowoc County, Wisconsin*, which was conducted between 1971 through 1975. The soil survey provides information on the suitability and limitations of soils for a variety of natural resource and engineering uses. Listed below are descriptions of the general soil types within Manitowoc County.

Soils Description

Soils are grouped into general soil associations that have similar patterns of relief and drainage. These associations typically consist of one or more major soils and some minor soils. Manitowoc County contains 11 diverse soil associations that are divided into six general categories.

- *soils that formed in glacial till;*
- *soils that formed in lacustrine deposits;*
- *soils that formed in glacial drift;*
- *soils that are underlain by outwash deposits;*
- *organic soils; and*
- *soils that are underlain by dolomite*

Soil Limitations

There exist certain limitations for various soil types because of their composition and properties. Before development can take place, an evaluation of the soil's composition and property should be conducted for development suitability.

The *Soil Survey of Calumet and Manitowoc County, Wisconsin* provides information on the limitations of each type of soil for private on-site wastewater treatment systems (POWTS) and building site development including the construction of dwellings with basements. These limitations are based on soil properties, site features and observed performance of the soils.

There are three (3) classes of limitations:

- *Severe limitations* mean soil properties or site features are so unfavorable or so difficult to overcome that special designs may be required which would result in a significant increase in construction costs or possibly costly ongoing maintenance.
- *Moderate limitations* mean soil properties or site features are not favorable for the indicated use, and may require special planning, design, or maintenance to overcome or minimize these limitations.
- *Slight limitations* mean soil properties and site features are generally favorable for the indicated use and limitations are minor and therefore can be easily overcome.

As a way to mitigate these limitations, COMM 83 allows new technologies for private on-site wastewater treatment systems. Additional housing and greater population densities may be a result of the COMM 83 code. This, in turn, heightens the need for undertaking land use planning and drafting controls to address the potential impacts on the environment associated with expanding development.

For more information regarding soil descriptions and limitations, refer to the *Soil Survey of Calumet and Manitowoc County, Wisconsin*.

COMM 83

COMM 83 health and safety code gives property owners not being served by municipal sewer, or within a sanitary district, the opportunity and flexibility to meet environmental performance standards with several private sewage treatment technologies. For detailed information about Comm 83 refer to the Wisconsin Administrative Code, Chapter Comm 83, or visit www.legis.state.wi.us/rsb/code.ht

Nonmetallic Mineral Resources

Limestone, sand, gravel, and clay are the primary minerals in Manitowoc County according to the *Soil Survey of Calumet and Manitowoc County, Wisconsin*. These minerals are needed for making bricks, constructing the sub-base for roads, and contain the primary components in concrete for the building of foundations, basement walls, and sidewalks.

As Manitowoc County and other surrounding areas experience continued growth and development, the demand for sand, gravel and crushed stone will increase. While, there are several mining sites within the county that presently extract sand gravel and/or crushed stone, the *Soil Survey of Calumet and Manitowoc Counties, Wisconsin* also identifies soils that would be the best sources for nonmetallic mineral resources. These soils should be evaluated and conserved for future mining consideration.

Nonmetallic Mining Reclamation (NR 135)

The purpose of the nonmetallic mining reclamation plan is to achieve acceptable final site reclamation to an approved post-mining land use in compliance with the uniform reclamation standards. This results in environmental protection, reduced erosion and sedimentation, desired post-mining land uses, creation of effective plant and animal communities, and an increase in land values and tax revenues.

Nonmetallic Mining Reclamation Program (NR 135)

NR 135 requires that active (un-reclaimed) areas of a mine site be stabilized and reclaimed to the specifications of the county’s approved nonmetallic mine reclamation plan.

For information regarding reclamation of nonmetallic mining sites in Manitowoc County, refer to Chapter 21: Nonmetallic Mining Operations in the Manitowoc County Code.

Water Resources

Watersheds

Manitowoc County consists of ten subwatersheds which are part of three watershed basins (Map 5.4). All of the following watersheds drain indirectly into Lake Michigan or one of the county's major rivers.

Lakeshore Basin

- Branch River Watershed
- East Twin River Watershed
- Lower Manitowoc River Watershed
- North Branch Manitowoc River Watershed
- Sevenmile/Silver Creek Watershed
- South Branch Manitowoc River Watershed
- West Twin Watershed

Lower Fox River Basin

- East River Watershed

Sheboygan Basin

- Pigeon River Watershed
- Sheboygan River Watershed

Priority Watershed

As a way to protect the state's watersheds from nonpoint source pollution (e.g., contaminated runoff from farming, construction, and mining), the Wisconsin Nonpoint Source Water Pollution Abatement Program (NPS Program) was created in 1978 by the State Legislature, and is managed by the WDNR. This program selected priority watersheds based on numerous factors, including but not limited to, the potential for unique species to respond positively to nonpoint source controls and sensitivity to phosphorus loading.



The Pigeon River watershed is the one remaining nonpoint source priority watershed project in progress.

It is important to evaluate any new developments and land activities to determine their potential impacts on the applicable watershed. Many of these activities may not occur in the county; however, the activities undertaken upstream in adjacent communities can adversely impact the water quality in the area and pose a threat to the environment, economy and health of the county and its communities.

Surface Water

The surface waters in Manitowoc County primarily flow southeast to Lake Michigan. The surface waters of the county provide quality habitat for waterfowl and wildlife as well as recreational opportunities.



Along with Lake Michigan, which borders Manitowoc County's entire eastern edge, the county contains 56 named lakes covering approximately 1,308 acres and 45 unnamed lakes totaling approximately 202 acres. There are also 25 rivers and streams that meander throughout Manitowoc County.

Table 5.1 lists the Manitowoc County lakes and ponds greater than 20 surface acres along with the major rivers and tributaries, while Map 5.5 illustrates the location of these surface water features. A complete list of lakes and ponds located in Manitowoc County is found in Appendix A of *Volume II: Manitowoc County Resources*.

Table 5.1: Surface Water, Manitowoc County

Map 5.5 Number	Lakes and Ponds (Greater than 20 Acres)	Rivers and Streams	
		Name	
1	Bullhead Lake	Branch River	Mud Creek
2	Carstens Lake	Calvin Creek	Pigeon River
3	Cedar Lake	Cedar Creek	Pine Creek
4	Clarks Mills Pond	Centerville Creek	Point Creek
5	English Lake	Devils River	Silver Creek
6	Harpt Lake (Herman)	East Twin River	Sheboygan River
7	Hartlaub Lake (Hartab)	Fischer Creek	Tisch Mills Creek
8	Horseshoe Lake	Francis Creek	West Twin River
9	Long Lake (Big Long)	Jambo Creek	
10	Millhome Flowage	Johnson Creek	
11	Mud Lake (Hartmans)	Kriwanek's Creek	
12	Pigeon Lake	Little Manitowoc River	
13	Rockville Flowage	Manitowoc River	
14	Shoto Lake	Manitowoc River South Branch	
15	Silver Lake	Meeme River	
16	Wilke Lake	Millhome Creek	
17	Lake Michigan	Molash Creek	

Source: Wisconsin Department of Natural Resources, Wisconsin Lake Book, 2005 Revision; "Surface Water Resources of Manitowoc County" Wisconsin Conservation Department, 1968; Bay-Lake Regional Planning Commission, 2009.



Branch River and Millhome Creek are classified as *Exceptional Resource Waters* per NR 102.11 of the Wisconsin Administrative Code. "Exceptional Resource Waters" exhibit excellent water quality, high recreational and aesthetic value, and high quality fishing, but they may be impacted by nonpoint sources of pollution.

Wisconsin's Impaired Waters

Section 303(d) of the Federal Clean Water Act requires each state to periodically submit to the U.S. Environmental Protection Agency (EPA) a list of impaired waters. Impaired waters are those that are not meeting the state's water quality standards.

See Appendix A of *Volume II: Manitowoc County Resources* for a listing of impaired waters in Manitowoc County.

Lakes Classification

In 1999, lakes and rivers were classified in Manitowoc County by authority of NR191.01 (Lake Protection and Classification Grants) for their level of development and future building potential. This assessment was based on the level of development on a lake including both numbers and density. Potential future development was also assessed including factors such as percent of buildable shoreline, septic suitability and current zoning.

The Lakes Classification system grouped lakes and rivers into similar management strategies to provide County Planning and Zoning Department and town government with the tools to develop effective zoning regulation and land use protection. The classification system grouped county

lakes and rivers into three categories: 1) Natural Waters, 2) Semi Developed Waters, and 3) Developed Waters

For more information regarding Lakes Classification, refer to the *Surface Water Resources of Manitowoc County* document or contact the Manitowoc County Soil and Water Conservation Department.

Shorelands

Shorelands are land areas within the following distances from the ordinary high water mark of navigable waters:

- 1,000 feet from a lake, pond or flowage; and
- 300 feet from a river or stream or to the landward side of the floodplain, whichever distance is greater.

Shorelands are viewed as valuable environmental resources both in rural and urbanized areas. As a result, the State of Wisconsin requires counties and incorporated communities to adopt shoreland/floodplain regulations to address the problems associated with development in shoreland and floodplain areas.

The authority to enact and enforce shoreland and other zoning provisions is set forth in Chapter 59.692 of the *Wisconsin Statutes* and Chapters NR 115,116, and 117 of the *Wisconsin Administrative Code*.

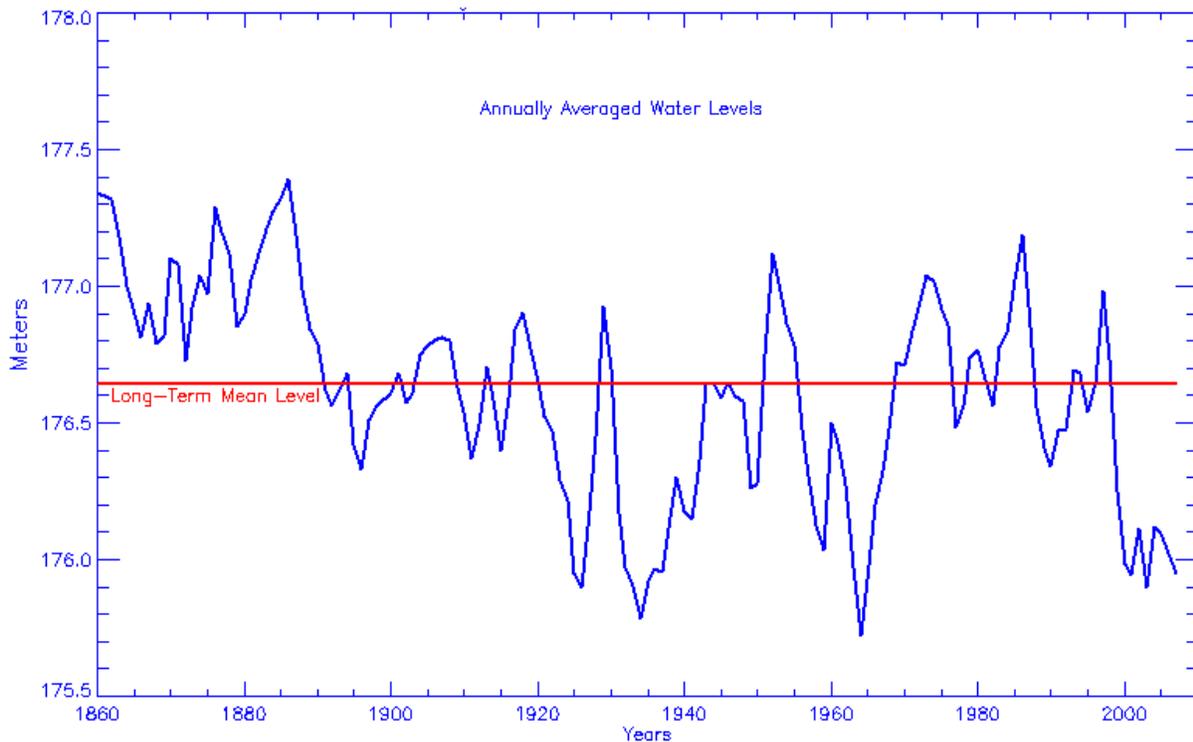
For more information regarding county regulations of shorelands, refer to Chapter 9 of the *Manitowoc County Code*, entitled “Shoreland/Floodplain Zoning,” or see Chapter 10 of *Volume II: Manitowoc County Resources*.

Lake Michigan Levels

Lake Michigan levels correspond with changes in the water it is supplied, with the major driving forces being precipitation and evaporation. Figure 5.3 displays the levels of Lake Michigan-Huron (*Note: the lakes are normally referred to as two separate lakes. Hydrologically, however, they are a single body of water*). Lake Michigan-Huron levels are constantly monitored at numerous locations including nearby Kewaunee County. Continuous water level data for all of the Great Lakes monitoring sites is listed online at <http://glakesonline.nos.noaa.gov/monitor.html>.

According to the National Oceanic and Atmospheric Administration (NOAA), Lakes Michigan and Huron’s record low water levels coincided with climatic events such as the Dust Bowl of the 1930’s, a multi-continental severe drought of 1964 (the record low for the two lakes), and the most recent and strongest El Niño on record of 1997. In 2007, Lake Michigan came within five inches of meeting the record low set in 1964. The lakes reached record highs in both 1886 and 1986.

Figure 5.3: Lake Michigan–Huron Annually Averaged Water Levels, 1860-2007



Source: National Oceanic and Atmospheric Administration (NOAA), 2008.

According to the U.S. Army Corps of Engineers, due to above average snowfall and prolonged ice cover on the lakes, Lake Michigan's water level the summer of 2008 should be five to eight inches higher than the summer of 2007, however the lake level remains 15 inches below its long-term average.

Low lake levels impact commercial navigation, recreational boating, marinas, beaches, fishing, and lakeshore properties. Lake carriers that transport raw cargo are forced into carrying fewer goods, sending prices higher; while marinas need to dredge boat slips, channels, and harbors which is also very costly.

The fluctuating lake levels over the years (Figure 5.3) may be part of a 30-year cycle, so although lake levels are presently low, we may see high lake levels in the future. High water levels could cause flooding and erosion, not only impacting properties along the lake shoreline, but also those properties along the rivers that provide water to the lakes.

Coastal Resources

The Lake Michigan coastline offers a variety of natural resources (e.g., bluffs, beaches, wetlands, etc.); living resources (i.e., flora and fauna and unique habitats of the coast); and cultural resources (e.g., history, recreation, and agriculture). It is important to protect these valuable assets in order to help maintain and improve community health and safety, aesthetics, and economic viability (e.g., tourism, clean parks and beaches, and recreational fishing).

Coastal development can affect the shape and use of the shoreline. Several issues to consider when planning include: shoreline/bluff erosion, impacts to coastal wetlands, fluctuating lake



Manitowoc County contains approximately 35 miles of Lake Michigan shoreline.

levels, increased nonpoint pollution, economic impacts, wildlife habitats, and the unique historic and archeological resources of the area.

In an effort to address bluff erosion and stability in the coastal communities along Lake Michigan, a study entitled *Lake Michigan Shoreline Recession and Bluff Stability in Northeastern Wisconsin* was prepared in 1996. Refer to the study for more information regarding findings along the Lake Michigan shoreline in Manitowoc County and other coastal communities.

Floodplains

Floodplains (Figure 5.4) are normally defined as those areas, excluding the stream channel, subject to inundation by the 100-year recurrence interval flood event. This event has a one percent chance of occurring in any given year.

Floodplains, as identified by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), provide for:

- storm water retention;
- groundwater recharge;
- waterfowl and wildlife habitat;
- recreational resource; and
- flood and erosion control

Section 87.30(1) of the *Wisconsin Statutes* and Chapter NR 116 of the *Wisconsin Administrative Code* requires counties, cities and villages to adopt floodplain zoning ordinances to address the problems associated with development in floodplain areas. Any development adjacent to or within a designated floodplain should be discouraged, if not strictly prohibited.

Refer to Chapter 9 of the *Manitowoc County Code*, entitled “Shoreland/Floodplain Zoning,” for more information regarding county floodplain regulations.

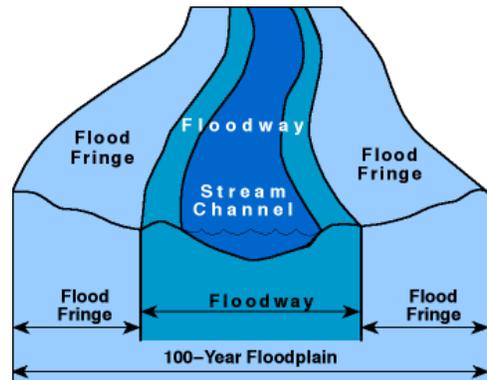


The floodplains within Manitowoc County are illustrated on Map 5.6.

Wetlands

According to the WDNR, wetlands are areas where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophilic vegetation. Other common names for wetlands are swamps, bogs, and marshes.

Figure 5.4: Floodplain



Source: www.dnr.state.oh.us

Wetlands...

- provide scenic open spaces;
- act as natural pollution filters for lakes, streams and drinking water;
- act as groundwater discharge areas, and retain floodwaters; and
- provide valuable and irreplaceable habitat for many plants and animals.



Map 5.7 illustrates Manitowoc County’s 50,637 acres of WDNR inventoried wetlands covering an area of two acres or more.

Manitowoc also contains six Significant Coastal Wetlands as designated by the WDNR. These coastal wetland sites along Lake Michigan are often rich in species diversity and provide critical habitat for migratory and nesting birds, spawning fish, and rare plants. Further information about the Significant Coastal Wetland project can be found on the WDNR (<http://dnr.wi.gov/wetlands/cw>).

- Significant Coastal Wetlands**
- Cleveland Hardwood Swamp
 - Fischer-Centerville Creeks Area
 - Point Creek
 - Silver-Calvin Creeks
 - Little Manitowoc River
 - Point Beach Area

Because of their importance, there are strict regulations regarding wetlands. Wisconsin Administrative Codes fall under the jurisdiction of the WDNR, and mandate that shoreland wetlands be protected in both the rural and urban areas of the state. Wetlands not in the shoreland zone are protected from development by the federal government through Section 404 of the Clean Water Act and Chapter NR 103 of the *Wisconsin Administrative Code*. It should be noted that all wetlands, no matter how small, are subject to WDNR and possible federal regulations, if they meet the state definition.

Groundwater

Groundwater is the water that occupies spaces between soil particles and rocks located below the earth’s surface. Groundwater, lakes, and rivers are all connected as water commonly flows between them. Groundwater is also connected to the surface of the land by rain and melted snow, which carry substances from the surface down to the groundwater and nearby wells.

- Communities using Groundwater for their Municipal Water System**
- Village of Cleveland
 - Village of Kellnersville
 - City of Kiel
 - Village of Maribel
 - Village of Mishicot
 - Village of Reedsville
 - Village of St. Nazianz
 - Village of Valders
 - Village of Whitelaw
 - City of Manitowoc (1% groundwater, 99% surface water)

Groundwater is stored in porous and permeable strata, more commonly known as aquifers. In Manitowoc County, groundwater source comes from three aquifers:

- Sandstone aquifer;
- Niagara aquifer; and
- Water table aquifer

Nearly all water used by Manitowoc County municipalities and homes comes from groundwater. All rural communities on private wells, along with nine incorporated communities with municipal water systems, get their drinking water exclusively from groundwater.

Groundwater Management

In order to provide protection for groundwater resources, the WDNR has adopted maximum contaminant level (MCL) standards that apply to all public water supplies in the state. The standards regulate concentrations of pollutants in public water supplies (NR 809) and nitrate removal from public drinking water (NR 122). Wisconsin’s Groundwater Standards Law (NR 160), also has standards for landfills, hazardous wastes, spills, wastewater, septic tanks, salt storage, fertilizer storage, pesticides, and underground storage tanks to follow, while Chapters NR 140, 141, and 142 of the *Wisconsin Administrative Code* regulate groundwater quality, groundwater monitoring, well requirements and water management and conservation.

As development continues, it is important to ensure protection of groundwater within the county from construction or agricultural runoff events that can lead to contamination of private wells, fish kills, and polluted surface waters.

Wellhead Protection Planning

Wellhead protection plans can be an effective method of protecting groundwater quality and quantity. These plans are developed to achieve groundwater pollution prevention measures within public water supply wellhead areas.

Communities with Wellhead Protection Plans

- Village of Cleveland
- Village of St. Nazianz
- Village of Reedsville
- Village of Valders
- Village of Whitelaw
- City of Kiel
- City of Manitowoc

Special Well Casing Pipe Depth Areas

As a way to improve the quality of drinking water in several areas of the county, the WDNR has established “special well casing pipe depth areas” in portions of the towns of Franklin, Kossuth, Cooperstown, and Cato (Map 5.1). All new private wells drilled in these designated areas of the county are required to meet stringent standards for well construction, grouting, and disinfection for various reasons.



The Town of Franklin special casing area was established because of potential chemical contamination (i.e., Volatile organic compounds (VOC’s)) from the Lemberger Landfill site.



The Town of Kossuth special casing area was established because of karst topography including sinkholes and other shallow bedrock features resulting in bacterial contamination and high nitrates.



The special casing area in the Town of Cooperstown was established as a result of bacterial contamination due to manure spreading.



In the Town of Cato, the special casing area that covers the northern portion of the town is associated with the area established in the Town of Franklin due to the Lemberger Landfill site. The other special casing area in the Town of Cato was established as a result of bacterial contamination due to manure spreading.

The goals of “special well casing pipe depth areas” are to:

- allow for the construction of wells that will withdraw groundwater from aquifers that contain water with low concentrations of arsenic,

- specify the use of well construction methods that eliminate the introduction of oxidants in the aquifer systems, and
- specify grouting methods that provide a dense, competent and impermeable annular space seal for the casing pipe.

Each of the special well casing pipe depth areas found in Manitowoc County contain different requirements for new well construction. For more information on the various requirements of these four areas, contact the WDNR.

Runoff/Stormwater Management

Runoff refers to water from precipitation (stormwater), irrigation, or other sources (e.g., overwatering of lawns) that moves over and through the ground. As the water flows over these impervious surfaces it picks up and carries away natural and man-made pollutants, eventually depositing them into lakes, rivers, wetlands, coastal waters and groundwater supplies.

In October 2002, the State of Wisconsin established Run-off Management Administrative Rules to address uncontrolled run-off from urban and rural land use activities. These administrative rules establish a variety of best management practices, performance standards, regulations, and permit requirements that farms, cities and construction sites are required to follow as a way to reduce polluted runoff.

The following are the eight rules written by the WDNR and one rule written by the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) that are intended to reduce the effects of runoff:

NR 120	Priority Watershed and Priority Lake Program
NR 151	Runoff Management (Performance Standards and Prohibitions)
NR 152	Model Ordinances for Construction Site Erosion Control and Post-Construction Storm Water Management
NR 153	Targeted Runoff Management Grant Program
NR 154	Best Management Practices and Cost-Share Conditions
NR 155	Urban Nonpoint Source Water Pollution Abatement and Storm Water Management Grant Program
NR 216	Storm Water Discharge Permits
NR 243	Animal Feeding Operations
ATCP 50	Soil and Water Resource Management Program

It is important that these requirements are addressed through local planning activities by promoting and utilizing best management practices to control storm water. These practices will help to preserve the quality of the groundwater supply, protect surface waters from pollution, and safeguard significant aquatic habitats. For more information regarding best management practices and nonpoint source pollution control, visit the WDNR's runoff management website (<http://www.dnr.state.wi.us/runoff>).

Controlling Runoff and Protecting Groundwater and Surface Water Resources:

Manitowoc County has adopted a number of ordinances to control runoff and protect ground and surface water features.

Animal Waste Management Ordinance

Agricultural Shoreland Management Ordinance

Animal Waste Storage Ordinance

Livestock Siting Ordinance

These ordinances contain a number of regulations and restrictions related to manure storage, manure spreading activities in proximity to lakes, streams, wells, sinkholes and tile surface inlets, winter manure spreading, nutrient management, etc. More information on these Manitowoc County ordinances can be viewed at <http://www.manitowocounty.com/department/documentcountycode.asp?id=8>.

Land Spreading Activities

Agricultural fields are used for disposal of various wastes in addition to livestock manure. These wastes consist of septage from septic and holding tanks, digested sludge from municipal waste water treatment plants, industrial byproducts such as whey from cheese factories and waste from vegetable processing. These materials are spread as a means of disposal but also to utilize the nutrients which may be present in the waste. The Department of Natural Resources Watershed Management Program regulates these activities through the following Administrative Codes:

- Septage - Administrative Code: NR 113
- Domestic Sewage Sludge (Municipal) - Administrative Code: NR 204
- Industrial Liquid Waste, By-Product Solids, and Sludges - Administrative Code: NR 214

The authority to create these rules is based in Wisconsin State Statute. NR 204 and NR 214 are based on State Statute Chapter 283. NR 113 is based on Chapter 281. Sections 281.48 (5p) and 283.82 of the Wisconsin Statutes have language that prohibits a city, village, town, or county from superseding state authority to regulate these activities. Section 281.48 (5m) also contains a provision for a county to take over the regulation of septage.

For more information on landspreading activities, visit the WDNR's website at (<http://www.dnr.state.wi.us/org/water/wm/ww/>)

Woodlands

Approximately 21 percent of the non-urban land in Manitowoc County is considered woodlands. Woodlands provide aesthetic views, wildlife habitat, and offer multiple recreational choices to residents in county. Woodlands also maintain watershed cover, provide shade, serve as a windbreak, help reduce soil erosion, act as a noise barrier, and screen unsightly developments.



Map 5.8 illustrates the woodlands in Manitowoc County.

Wildlife Habitat

Wildlife habitat can be defined as areas that provide the arrangement of food, water, cover and space required to meet the biological needs of an animal. Different wildlife species have different requirements and these requirements vary over the course of a year. Also, different plants provide fruit and food in different seasons.

Maintaining a variety of habitats while providing connectivity of natural landscapes generally benefits diverse wildlife and maintains fundamental ecological processes and services. Woodlands, wetlands, floodplains and water features provide habitat for many species of wildlife such as white-tailed deer, turkey, grouse, rabbits, gray squirrel, and chipmunks. The inland surface waters also provide habitat for fish and migratory fowl that frequent the area.

Rare, Threatened, and Endangered Species

According to the Wisconsin DNR Natural Heritage Inventory, Manitowoc County is occupied by many rare, threatened, and endangered species of animals, plants, and natural communities (Appendix A of *Volume II: Manitowoc County Resources*). Many of the species found in Manitowoc County are considered rare because their populations and habitat are declining throughout their range. These species are of aesthetic, ecological, cultural, educational, historical, medicinal, recreational, and/or scientific importance to the land and people. For more information, refer to the Wisconsin DNR website: <http://dnr.wi.gov/org/land/er/nhi/>.

Invasive Species

Manitowoc County along with much of the country is, or will need to deal with invasive species from other regions and countries. These non-native plants, animals, and disease-producing organisms displace native species, disrupt ecosystems, and have a negative economic and environmental impact on agriculture and woodlands, along with recreational activities such as fishing, boating, and hiking.



Some invasive species impacting Manitowoc County include:

- Terrestrial: gypsy moths, earthworms, purple loosestrife, garlic mustard, and emerald ash borer. The emerald ash borer was first documented in Wisconsin in August 2008. Manitowoc County's southern hardwood tree area is especially susceptible to it.
- Aquatic: zebra and quagga mussels, sea lamprey, rusty crayfish, round goby, and Eurasian milfoil.

Invasive species can spread rapidly and aggressively since they lack the predators and competitors from their place of origin. Controlling invasive species is difficult, and they are often impossible to get rid of. Many people aid in spreading invasive species, but they can also help keep them from spreading. For more information on identifying and controlling invasive species, visit the WDNR online at <http://dnr.wi.gov/invasives>.

Significant Natural Features

A number of sites located within Manitowoc County may be considered significant natural features and designated as one or more of the following:

WDNR State Natural Areas

This program was established to designate sites that are in natural or near natural condition for scientific research, the teaching of conservation biology, and preservation of their natural values and genetic diversity for the future. These areas are not intended for intensive recreation use.

State Wildlife and Fishery Areas

State wildlife and fishery areas are lands that have been acquired by the WDNR in order to preserve wild lands and game for people interested in the outdoors. These lands are important for protection of wildlife habitat, while also keeping them open for public use.

Significant Coastal Wetlands

Significant coastal wetlands on the shoreline of Lake Michigan form a complex arrangement of ecosystems supporting a diversity of natural features. The Natural Heritage Inventory Program of the WDNR has inventoried these wetlands for the Great Lakes in Wisconsin in a report titled, *A Data Compilation and Assessment of Coastal Wetlands of Wisconsin's Great Lakes*.

Land Legacy Places

The WDNR has identified these places that will play a critical role in meeting Wisconsin's conservation and outdoor recreation needs over the next 50 years in order to effectively plan for potential future conservation needs within the state.

Natural Areas Inventory (NAI)

The Scientific Areas Preservation Council (SAPC) defined the NAI sites as “tract[s] of land or water so little modified by man’s activity or sufficiently recovered that they contain intact native plant and animal communities believed to be representative of the pre-settlement landscape.”

Contact the WDNR (<http://dnr.wi.gov>) for more information regarding these significant natural feature designations.



Table 5.2 is a list of the significant natural features in Manitowoc County along with their designation(s), while Map 5.9 illustrates the locations of these features within the county.

Table 5.2: Significant Natural Features, Manitowoc County

Map 5.9 Number	Significant Natural Feature	Designation				
		State Natural Area	State Wildlife and Fishery Area	Significant Coastal Wetland	Land Legacy Place	Natural Area Inventory
1	Camp Vits					X
2	Cherney Maribel Caves	X				
3	Cleveland Hardwood Swamp			X	X	
4	Collins Marsh Wildlife Area		X			
5	Ficher-Centerville Creeks Area			X		
6	Fischer Creek				X	
7	Glomski Lake					X
8	Kiel Marsh Wildlife Area		X			
9	Lakeshore Technical College Maple Woods					X
10	Little Manitowoc River			X		
11	Little Mud Lake					X
12	Manitowoc-Branch River				X	
13	Millhome Woods				X	
14	Point Beach and Dunes			X	X	
15	Point Beach Ridges	X				X
16	Point Creek			X	X	
17	Silver-Calvin Creek			X		
18	Sugarbush Woods					X
19	Twin River Marsh					X
20	Twin Rivers				X	
21	Two Creeks Buried Forest	X				X
22	VanderBloemen Bog	X				
23	Wet Mesic Woods					X
24	Weyers Lake					X
25	Wilderness Ridge	X				X
26	Woodland Dunes	X				X

Source: Wisconsin Department of Natural Resources, 2007; Bay-Lake Regional Planning Commission, 2009.

Environmental Corridors

Environmental corridors are areas on the landscape that contain and connect natural areas, green space and scenic, historic, scientific, recreational, and cultural resources. It is important to understand that environmental corridors provide many ecological and human-valued services such as improved water quality, protection of natural resources, groundwater recharge, recreation areas and stormwater management. The corridors are strictly an advisory tool that can be utilized in various community planning efforts as a way to promote preservation of areas with environmental significance.



Map 5.10 illustrates the environmental corridors of Manitowoc County as defined by the Bay-Lake Regional Planning Commission (BLRPC). These features were mapped using the Commission’s Geographic Information Systems (GIS) and include:

- WDNR wetlands;
- 100-year FEMA floodplains;
- Slopes 12 percent or greater; and
- 75-foot lake and river setback

Other features that communities may consider as part of their environmental corridors could include: unique and isolated woodland areas, scenic viewsheds, unique geologic features, wetland mitigation sites and exceptional wildlife habitats.

Parks and Open Space

Various natural settings in the county are utilized as recreational sites by the public. Manitowoc County maintains eight parks and recreation facilities along with 14 lake accesses throughout the county, while the State of Wisconsin maintains the Point Beach State Forest.



Table 5.3 lists the Point Beach State Forest along with the Manitowoc County parks and recreation areas. Appendix A of *Volume II: Manitowoc County Resources* lists all state, county, and municipal parks located in the county.

For more detailed information on each of the following parks and open space areas located in the county, refer to Chapter 9 of *Volume II: Manitowoc County Resources*.

Table 5.3: Parks, Manitowoc County

Park Name	Geographic Location	Ownership
Cherney Maribel Caves	Town of Cooperstown	County
Fischer Creek	Town of Centerville	County
Horseshoe Lake	Town of Meeme	County
Long Lake	Town of Rockland	County
Lower Cato Falls	Town of Cato	County
Point Beach State Forest	Town of Two Rivers	State
Point Creek	Town of Centerville	County
Silver Lake	Town of Manitowoc Rapids	County
Walla Hi	Town of Schleswig	County

Source: Manitowoc County, 2007; Bay-Lake Regional Planning Commission, 2009.

Air Quality Issues

The legal authority for federal programs regarding air pollution control is based on the 1990 Clean Air Act Amendments. One of the amendments included expanded and modified provisions concerning the attainment of National Ambient Air Quality Standards (NAAQS). According to the U.S. Environmental Protection Agency (EPA), areas that do not meet the EPA’s 8-hour ozone NAAQS standard of 0.08 parts per million are classified as “nonattainment” areas. Manitowoc County, along with several other lakeshore counties, is identified as a nonattainment area.

By law, nonattainment areas may be subject to certain requirements to reduce ozone-forming pollution and requires states to submit plans for reducing the levels of ozone. Several methods to meet the ozone standard may include stricter controls on emissions by industrial sources, transportation emissions, etc.

Designed to protect the public from breathing unsafe air, the EPA’s 8-hour ozone standard could have an impact on economic development efforts for Manitowoc County communities. The ozone reducing regulations identified in the state’s plan may end up requiring existing and future businesses to pay for installing and maintaining equipment to limit pollution emissions rather than focusing on expanding their operations to create jobs.

AGRICULTURAL RESOURCES

According to UW-Extension, Manitowoc County farmers own and operate agricultural resources on 257,111 acres of land, or 68 percent of all the land in the county. This includes pastures, cropland, and tree farms.

Prime Agricultural Soils

The USDA, Natural Resources Conservation Service (NRCS), defines prime agricultural soils as lands that have the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops, with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion.

According to the NRCS, there are three classes of prime agricultural soils that cover Manitowoc County (see inset on right). Since agriculture plays an important role in the economic, cultural and social structure of Manitowoc County, it will be important to preserve these areas against future development. Once agricultural land is disturbed or replaced by another land use, it cannot be effectively returned to agricultural production.



Map 5.11 illustrates the 131,777 acres in Manitowoc County that are classified as Prime Farmland based on the NRCS soil types.

Farm Numbers and Types

Table 5.4 lists the types of farms that exist in Manitowoc County according to the 2002 Census of Agriculture which was conducted by the United States Department of Agriculture (USDA) National Agricultural Statistics Service. This table illustrates the number of farms that were operating in 2002 by type, as well as the number of animals, or acres of land, that could be attributed to each particular farm type.

Three Classes of Prime Agricultural Soils in Manitowoc County

Prime farmland is considered land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. It has the combination of soil properties, growing season and moisture supply needed to produce sustained high yields of crops in an economic manner if it is treated and managed according to acceptable farming methods.

Farmland of statewide importance is land not identified as prime farmland on a nationwide basis but is important in Wisconsin for the production of various food, feed, fiber and forage crops.

Prime farmland only where drained are areas where soils have wetness limitations, but can be or are used effectively for agricultural production with installation of a tile drainage system.

Table 5.4: Farm Numbers and Types in Manitowoc County, 2002

Livestock and Poultry		
Type	Number of Farms	Total Animals
Milk cows	372	42,462
Beef cows	156	1,552
Horses and Ponies	233	1,254
Hogs and pigs	39	NA
Sheep and lambs	42	1,573
Broilers and other poultry	18	NA
Goats (milk and angora)	18	544
Harvested Crops		
Type	Number of Farms	Total Acreage
Forage*	411	48,117
Corn for grain	464	37,629
Corn for silage or greenchop	441	28,267
Soybeans	303	21,041
Oats	315	8,510
Vegetables harvested for sale	92	4,664
Wheat	329	12,869

*Land used for all hay and all haylage, grass silage, and greenchop.

Source: USDA National Agricultural Statistics Service, Census of Agriculture, 2002; Bay-Lake Regional Planning Commission, 2009.

Throughout Manitowoc County dairy farms have traditionally been the primary livestock operations. According to the *2006 Wisconsin Agricultural Statistics*:



In 1997 the county contained 551 dairy farms housing 44,000 milk cows, whereas in 2005 Manitowoc County had 340 dairy farms housing 44,500 milk cows. This is a decrease in the number of dairy farms, but an increase in the number of milk cows.



In 2005, there were approximately 75 cows per square mile, meaning Manitowoc County had the third heaviest concentration of cows in Wisconsin.



Also in 2005, Manitowoc County ranked fourth in the State in total milk produced.

Concentrated Animal Feeding Operations (CAFO)

Over the past ten years, Wisconsin has become home to an increasing number of Concentrated Animal Feeding Operations (CAFOs). In order to ensure proper management of animal waste from these facilities, WDNR requires that CAFOs have a Wisconsin Pollutant Discharge Elimination System (WPDES) CAFO permit. These permits are designed to ensure that operations use proper planning, construction, and manure management to protect water quality from adverse impacts.

According to WDNR a **CAFO** is any livestock or poultry operation with 1,000 or more animal units.



As of May 2008, there were six CAFO permittees located in Manitowoc County.



In addition, Manitowoc County has established standards and procedures for the issuance of licenses for new and expanded livestock facilities with 750 or more animal units. Refer to *Chapter 28: Livestock Facility Licensing* of the Manitowoc County Code.

Trends in Agriculture

The 2002 Census of Agriculture indicates that the total number of farms has declined in Manitowoc County from 1,487 in 1997 to 1,469 in 2002. The average size of a farm in the county in 1997 was 179 acres. By 2002, the average farm size decreased slightly to 175 acres.

Harvested cropland in Manitowoc County also dropped 8,456 acres (three percent) from 1997 to 2002. The reduction in harvested croplands may be an indicator of the development pressures within the county.

The amount of agricultural land sold over a period of time is a good indicator of how much development has taken place. Table 5.5 indicates that 10,110 acres of agricultural land was sold between 2002 and 2006 in Manitowoc County.

Table 5.5: Manitowoc County Agricultural Land Sales, 2002-2006

Year	Acres Continuing as Agriculture Land	Average Cost per Acre	Acres Diverted from Agriculture Land	Average Cost per Acre	Total Acres Sold
2002	2,454	\$2,227	604	\$3,740	3,058
2003	1,291	\$1,996	286	\$3,560	1,577
2004	2,158	\$2,982	118	\$7,373	2,276
2005	1,795	\$3,251	84	\$6,000	1,879
2006	1,320	\$3,556	NA	NA	1,320
Total	9,018	\$2,773	1,092	\$5,132	10,110

Note: Agricultural land sold are land sales without building and improvements

Note: All 2006 agricultural land sales remained in agriculture

Source: Wisconsin Agricultural Statistical Service, 2002 - 2006.

According to Table 5.5, the amount of agricultural land sold and preserved as agricultural land has remained higher than the amount of land that was converted to non-agricultural uses.



Approximately 11 percent of the 10,110 acres of agricultural land sold in the county between 2002 and 2006 was converted to non-agricultural uses.

Agricultural lands which were diverted from agricultural uses after they were sold, drew a higher market value than those that continued to be used for agricultural purposes,



The value of each acre diverted from agriculture to non-agriculture use has risen from \$3,740 per acre in 2002 to \$6,000 per acre in 2005. Farmers seeking to sell their land in the future may be influenced by this trend, leading to a greater conversion of agricultural land to non-agricultural uses.

The cost of developing productive agricultural lands needs to be considered. For instance, farmlands provide revenues to local governments and require very few services. Conversely, residential land uses may cost communities more to provide services than is gained through local property tax base increases. This is evident in areas of widespread development as road maintenance, school transportation, police service and fire protection will likely increase the overall cost of services throughout the entire community.

As growth continues in the county, communities should plan for concentrated development in rural areas to help keep the cost of services down and assist with the preservation of Manitowoc County's valuable farmlands and rural landscape.

Environmental Impacts of Agriculture

The landscape of Manitowoc County is interspersed with water features, wetlands, steep slopes and other natural features. With the integration of agricultural and natural resources in the county, farming activities can cause harm to the environment.

Soil erosion from farm fields and surface runoff of crop nutrients and agricultural chemicals can impact the quality of streams, rivers, lakes and underground aquifers, ultimately impacting drinking water supplies. Specific crop rotations, livestock and tillage practices all affect the amount of soil erosion and nutrient losses.

To help decrease environmental impacts of agricultural activities, farm operators are encouraged to work with local land conservation departments to identify and implement specific resource conservation practices to better protect the environmental features in and around farms. Agricultural lands and in areas not cropped (e.g., woodlots and stream corridors) have a positive impact on a community. These lands provide balanced habitat for wildlife and waterfowl, in addition to providing open space lands.

Discovery Farms Project (UW-Extension)

The Discovery Farms Program conducts research on working farming operations to identify and implement the most economical practices to the environmental regulations placed on farming operations.

The Manitowoc County Discovery Farms Project consists of the Saxon Homestead Farm. The farm was selected to participate in a five to seven year research project to monitor the effects of different Best Management Practices on water quality. The University of Wisconsin with the UW-Extension and US Geological Survey will work with the farm through 2009 to find the most economical and effective ways of complying with environmental regulations while continuing its agricultural operations.



For additional information on the Manitowoc County Discovery Farms Project, please contact the Manitowoc County UW-Extension.

Economic Impacts of Agriculture

Agriculture is an important element to Manitowoc County's economy. It includes hundreds of family-owned farms as well as agriculture related businesses and industries that provide equipment, services and other products farmers need to process, market and deliver food to consumers. The production, sales and processing of Manitowoc County's farm products generate employment, economic activity, income and tax revenue.



According to UW-Extension, agriculture in Manitowoc County provides jobs to 6,061 county residents and contributes \$826 million in economic activity. Furthermore, economic activity associated with Manitowoc County's farms and agriculture-related businesses generates over \$18 million in local and state taxes.

For more information on Manitowoc County's agricultural industry, refer to the Economic Development element (Chapter 7 of *Volume II: Manitowoc County Resources*).

CULTURAL RESOURCES

Manitowoc County has many historical, cultural, and archeological resources. These resources represent what a community in the county has developed into today. These resources are what a community values from the past, cherishes presently, and plans to preserve for future generation to use and enjoy.

Historical, cultural, and archeological resources are typically sites, structures, features and/or objects. These resources are of some importance to a culture or community for scientific, aesthetic, traditional, educational, religious, archaeological, architectural or historic reasons.

Historic and Archeological Sites

Many of Manitowoc County's historical and archeological sites are on the National Register of Historic Places. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. Properties listed in the Register include districts, sites, buildings, structures and objects that are significant in American history, architecture, archeology, engineering and culture.



Table 5.6 is a listing of the State and National Register of historic sites within Manitowoc County, while Map 5.12 illustrates their approximate locations in the county.

Table 5.6: State and National Register of Historic Places, Manitowoc County

Map 5.12 Number	Historic Name (known as...)	Municipality	Location
1	Central Park Historic District	City of Two Rivers	Bounded by 19th St., Adams St., 16th St. and Jefferson St.
2	Eighth Street Historic District	City of Manitowoc	Bounded by Buffalo St., 8th and 7th Sts., Hancock St., and 10th, 9th and Quay Sts.
3	Francis Hinton (steamer)	City of Manitowoc	Lake Michigan
4	Frenchside Fishing Village (Two Rivers Fishing Village Historic District)	City of Two Rivers	21st, Jackson, East, 17th, Harbor, and Rogers Sts.
5	Green Bay Road Bridge (Mill Street Bridge)	Town of Manitowoc Rapids	Mill St. at Manitowoc Road
6	Carl Gottlieb Heins House	City of Kiel	Fremont St.
7	Island Village Site	Town of Eaton	N/A
8	Loreto Shrine Chapel	Village of St. Nazianz	Off of CTH A
9	Lutze Housebarn	Town of Centerville	S. Union Rd.
10	Manitowoc County Courthouse	City of Manitowoc	8th and Washington Sts.
11	Rawley Point Light Station (Twin River Point Light Station)	Town of Two Rivers	Point Beach State Forest
12	Rock Mill	Town of Cooperstown	Off USH 141
13	"Rouse Simmons" Shipwreck	Town of Two Creeks	6 miles off Point Beach, Lake Michigan
14	Saint Luke's Church Complex	City of Two Rivers	Jefferson St.
15	Sexton's House	City of Manitowoc	Revere Dr.
16	St. Gregory's Church	Village of St. Nazianz	Church St.
17	St. Mary's Convent	Village of St. Nazianz	S. 2nd Ave.
18	Two Rivers Post Office	City of Two Rivers	18th St.
19	USS COBIA (submarine)	City of Manitowoc	S. 8th St.
20	Joseph Vilas Jr. House (Vilas-Rahr House)	City of Manitowoc	N. 8th St.

Source: National Register of Historic Places, 2007; Bay-Lake Regional Planning Commission, 2009.

There are other structures of historic significance in the county that are not on the National Register but are listed in the Wisconsin Architecture and History Inventory (AHI). The AHI

inventory consists of churches, hotels, historic homes, historic markers, etc. There is a possibility that several structures or sites may not be listed, and some of the listed structures may have been torn down. A comprehensive listing of AHI sites in Manitowoc County can be found on the Wisconsin Historical Society website (<http://www.wisconsinhistory.org/ahi>).

Preservation of historical and archeological sites located within the county can be important in retaining the character of the area. These sites help to educate the public about the history of the county while also providing tourism and recreation opportunities.

CHAPTER 6 : POPULATION AND HOUSING

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INTRODUCTION

This section provides detailed population and housing data for Manitowoc County and its municipalities. The county’s population characteristics are instrumental in tracking past growth patterns in addition to predicting future population trends. Over time, these population figures directly influence Manitowoc County’s housing, education system, community and recreational facility capacities, and its future economic development opportunities.

The housing portion of this chapter provides an assessment of the current housing stock, structural, and occupancy characteristics. Details on future housing demands based on demographic projections for the county is also provided.

POPULATION CHARACTERISTICS

Historical Population Trends

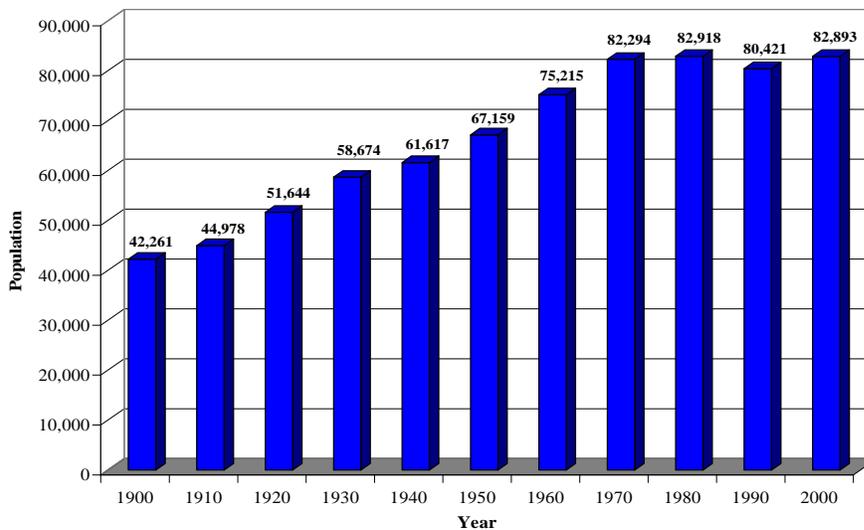
During the past century, Manitowoc County’s population increased by 96 percent or 40,632 persons. The county’s population increased every decade with the exception of a slight decline between 1980 and 1990.



The largest period of population increase in the county occurred between 1910 and 1920 with an increase of 14.8 percent.

Figure 6.1 illustrates Manitowoc County’s population change between the years of 1900 and 2000, while Table 6.1 displays the county’s population trends as well as the changes observed for Wisconsin during the same period. Historical population trends for all Manitowoc County communities can be found in Appendix B of *Volume II: Manitowoc County Resources*.

Figure 6.1: Historical Population Levels, Manitowoc County, 1900-2000



Source: U.S. Bureau of the Census, General Population Characteristics 1840-1970, Bay-Lake Regional Planning Commission, December 1975; Census 2000; and Bay-Lake Regional Planning Commission, 2009.

Table 6.1: Historical Population Levels, Manitowoc County and State of Wisconsin, 1900-2000

Year	Manitowoc County	% Change From Previous Decade	Wisconsin	% Change From Previous Decade
1900	42,261	-	2,069,042	-
1910	44,978	6.4	2,333,860	12.8
1920	51,644	14.8	2,632,067	12.8
1930	58,674	13.6	2,939,006	11.7
1940	61,617	5.0	3,137,587	6.8
1950	67,159	9.0	3,434,575	9.5
1960	75,215	12.0	3,951,777	15.1
1970	82,294	9.4	4,417,731	11.8
1980	82,918	0.8	4,705,642	6.5
1990	80,421	-3.0	4,891,769	4.0
2000	82,893	3.1	5,363,715	9.6

Source: U.S. Bureau of the Census, General Population Characteristics 1840-1970, Bay-Lake Regional Planning Commission, December 1975; Census 2000; and Bay-Lake Regional Planning Commission, 2009.

Seasonal Population

The estimated seasonal population for Manitowoc County is determined by entering year 2000 Census figures into the following formula:

$$(Seasonal\ Housing\ Units * Persons\ per\ Household) = Estimated\ Seasonal\ Population$$

$$(518\ seasonal\ housing\ units) * (2.49\ persons\ per\ household) = 1,290\ seasonal\ county\ residents$$



The estimated seasonal populations for Manitowoc County and State of Wisconsin in 2000 are shown in Table 6.2.

Table 6.2: Estimated Seasonal Population, Manitowoc County and State of Wisconsin, 2000

	Manitowoc County	Wisconsin
Population	82,887	5,363,675
Persons Per Household	2.49	2.50
Total Seasonal Housing Units*	518	142,313
Estimated Seasonal Population**	1,290	355,783

* Seasonal housing includes seasonal, recreational, or occasional use units, but does not include other vacant

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing and Bay-Lake Regional Planning Commission, 2009.

Age and Sex Distribution

School Age, Working Age, and Retirement Age

Table 6.3 divides the population of Manitowoc County into three age groups: school age (5-17), working age (16-64), and retirement age (65+). Similar information for each of the communities in Manitowoc County can be found in Appendix B of *Volume II: Manitowoc County Resources*.



The working age group accounted for nearly 78 percent of the county’s total population in 2000. When considering an average retirement age of 65 years and subtracting that group from the working age group, the figure drops to 62 percent.



In 2000, approximately 20 percent of the county’s total population was school age (5-17), while the retirement age group (65+) consisted of 16 percent of the county’s population.

Table 6.3: Population by Age Groups and Sex, Manitowoc County, 2000

Age Groups	Total	Male	Female	Percent	Wisconsin Percent
School Age					
5-11	8,248	4,193	4,055	10.0	10.1
12-14	3,977	2,028	1,949	4.8	4.5
15-17	4,030	2,030	2,000	4.9	4.5
Working and Voting Age					
16+	64,453	31,614	32,839	77.8	77.5
16-64	51,450	26,320	25,130	62.1	64.4
18+	61,786	30,273	31,513	74.5	74.5
18-64	48,783	24,979	23,804	58.9	61.4
Retirement Age					
65+	13,003	5,294	7,709	15.7	13.1
Total Population	82,887	41,060	41,827		5,363,715

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing, STF 1A, General Profile and Table P012; and Bay-Lake Regional Planning Commission, 2009.

Population Pyramids

Figure 6.2 illustrates Manitowoc County’s detailed population changes through population pyramids that compare age groups between males and females from 1980 to 2000. Manitowoc County’s population has experienced several shifts in its age distribution during this time span, generally showing a trend towards older age groups. Several indicators of the county’s aging population include:



The number of individuals ages 19 and under steadily declined from 1980 to 2000. In 1980, these combined age groups comprised 34 percent of the total population. Twenty years later, that percentage reduced to 28 percent.

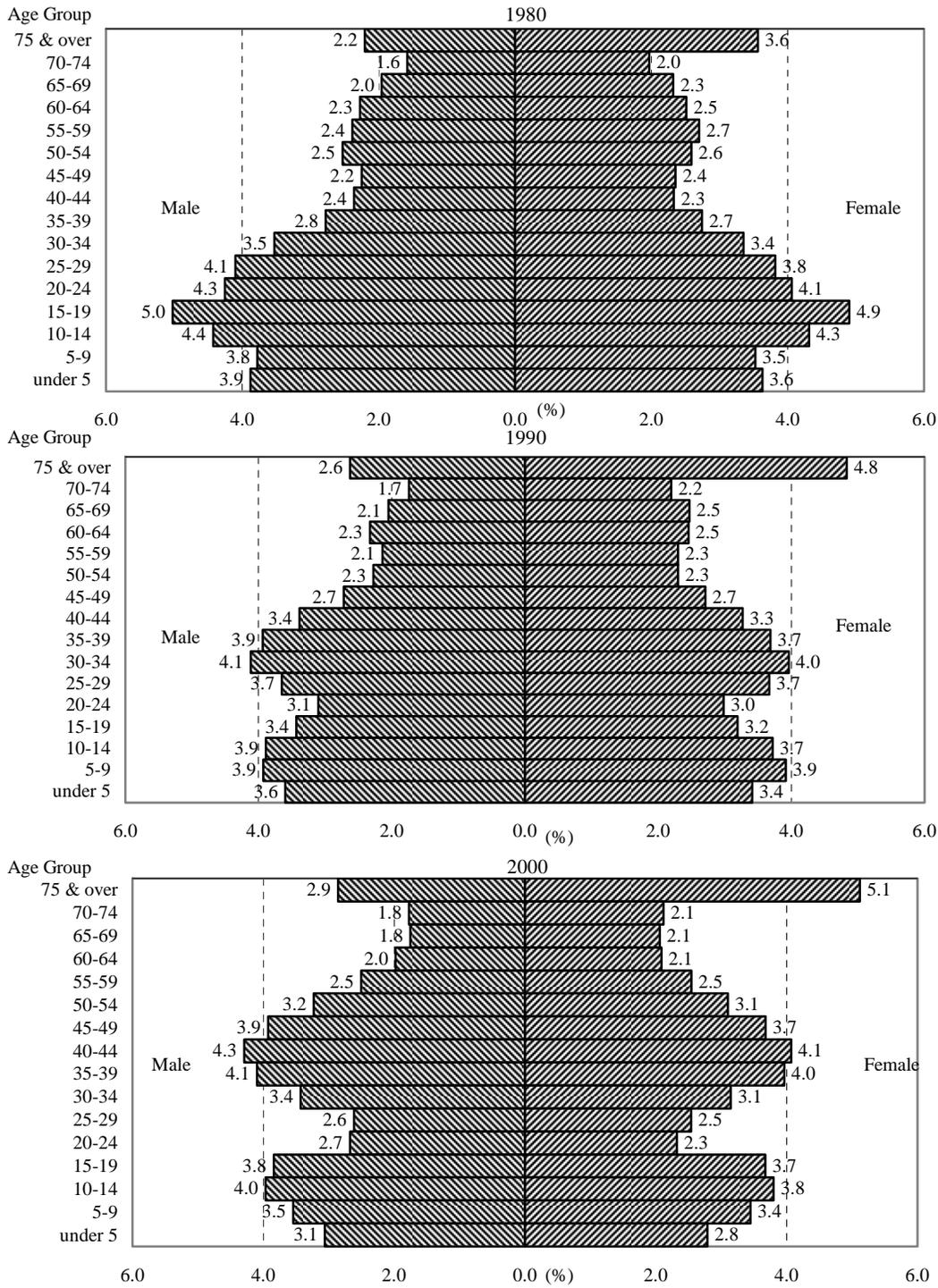


The number of individuals between the ages of 35 and 54 steadily increased. In 1980, 19 percent of the county’s population was comprised of individuals in this age group. However, by 2000, this group represented 30 percent of the total population.



The ratio of males to females in the county has been relatively equal from 1980 to 2000; however the number of females age 75 and over has consistently been higher than the number of males in the same age group.

Figure 6.2: Manitowoc County Population Pyramids, 1980-2000



Source: U.S. Bureau of the Census, 1980 Census of Population and Housing, STF 1A, Table 10; 1990 Census of Population and Housing, STF 1A, Table P012; 2000 Census of Population and Housing SF-1; and Bay-Lake Regional Planning Commission, 2009.

Median Age

The trend of an increasing median age needs to be considered when planning for the future needs of the county. An aging population generally demands additional community and specialized services such as housing, transportation, and care facilities for retirees and the elderly. Table 6.4 displays the gradual increase of median age for Manitowoc County and the State of Wisconsin from 1970 to 2000.

Table 6.4: Median Age, Manitowoc County and State of Wisconsin, 1970-2000

Geographic Location	1970	1980	1990	2000
Manitowoc County	27.8	33.0	36.2	38.6
Wisconsin	27.2	29.4	32.9	36.0

Source: U.S. Bureau of the Census, Census of Population, General Population Characteristics, Wisconsin, 1970, Tables 33, 35; 1980 Table 14; 1990 STF 1A, General Profile; Census 2000 and Bay-Lake Regional Planning Commission, 2009.



Median age information for each community within Manitowoc County can be found in Appendix B of *Volume II: Manitowoc County Resources*.

Population Projections

Population projections are an important factor in assessing the impacts upon the area’s housing stock, as well as future need for housing, community facilities, transportation, and other facilities. They can also be used to forecast future community and county expenditures, revenues, and tax receipts.

In 2008, the Wisconsin Department of Administration (WDOA) Demographic Services Center prepared population projections to the year 2030 for each community and county in the State by utilizing a formula that calculates the annual population change over three varying time spans.



According to the WDOA formula, Manitowoc County is projected to have a population of 91,622 by 2030. This represents an increase of 8,729 persons, or 10.5 percent, from the 2000 Census count of 82,893 persons.

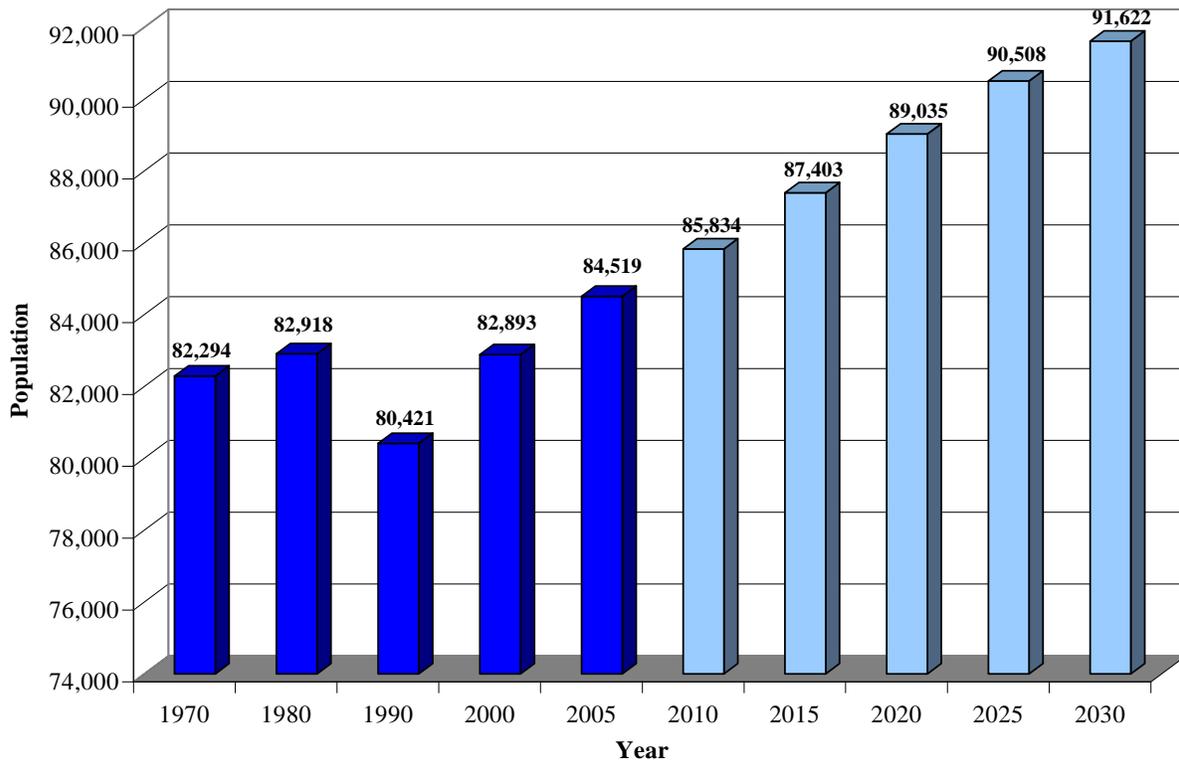
Table 6.5 identifies and Figure 6.3 displays the 2000 Census count and WDOA population projections for Manitowoc County. WDOA projections for all communities within Manitowoc County can be found in Appendix B of *Volume II: Manitowoc County Resources*.

Table 6.5: Population Projections, Manitowoc County and State of Wisconsin, 2005-2030

Geographic Location	2000 Census Population	WDOA Population Projections						# Change 2000-2030	% Change 2000-2030
		2005	2010	2015	2020	2025	2030		
Manitowoc County	82,893	84,519	85,834	87,403	89,035	90,508	91,622	8,729	10.5
Wisconsin	5,363,675	5,589,920	5,772,370	5,988,420	6,202,810	6,390,900	6,541,180	1,177,505	22.0

Source: U.S. Bureau of the Census, Census of Population and Housing, 2000; Wisconsin Department of Administration, Official Population Projections, 2008; and Bay-Lake Regional Planning Commission, 2009.

Figure 6.3: Population Trends and Projections, Manitowoc County, 1970-2030



Source: U.S. Bureau of the Census, Census of Population and Housing, 1970-2000; Wisconsin Department of Administration, Official Population Projections, 2008; Bay-Lake Regional Planning Commission, 2009.

HOUSING CHARACTERISTICS

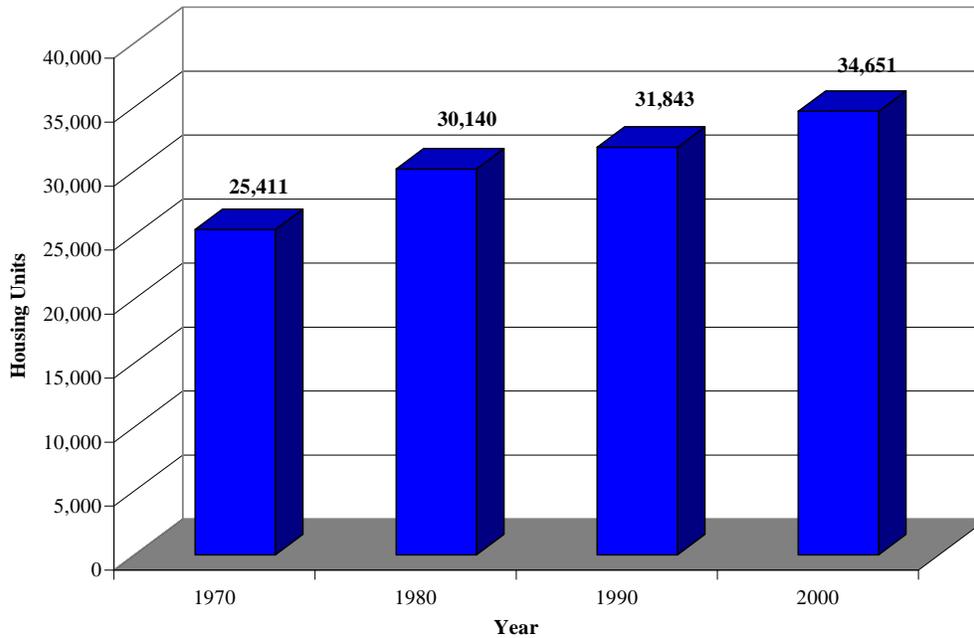
Total Housing Unit Levels by Decade

Total housing units for Manitowoc County between 1970 and 2000 are displayed in Figure 6.4 and Table 6.6. Total housing units between 1970 and 2000 for all communities within Manitowoc County can be found in Appendix B of *Volume II: Manitowoc County Resources*.



Between 1970 and 2000, the total number of housing units in Manitowoc County increased by 36 percent, with the largest growth occurring between 1970 and 1980 when 4,729 units were added.

Figure 6.4: Historic Housing Unit Levels, Manitowoc County, 1970-2000



Source: U.S Bureau of the Census, 1970 Census of Population and Housing, Series 100, Table 2; 1980 Census of Population and Housing, Table 45; 1990 Census of Population and Housing, STF 1A; State of Wisconsin Demographic Services Center, Table DP-1; and Bay-Lake Regional Planning Commission, 2009.

Table 6.6: Total Housing Units, Manitowoc County and State of Wisconsin, 1970-2000

Geographic Location	Year				Percent Change			
	1970	1980	1990	2000	1970-1980	1980-1990	1990-2000	1970-2000
Manitowoc County	25,411	30,140	31,843	34,651	18.6	5.7	8.8	36.4
Wisconsin	1,472,466	1,863,897	2,055,774	2,321,144	26.6	10.3	12.9	57.6

Source: U.S. Bureau of the Census, 1970 Census of Population and Housing, Series 100, Table 2; 1980 Census of Population and Housing, Table 45; 1990 Census of Population and Housing, STF 1A; Census 2000; and Bay-Lake Regional Planning Commission, 2009.

Housing Types - Units in Structure

According to the 2000 Census, one unit detached structures comprised nearly 72 percent of the total housing types in Manitowoc County (Table 6.7). Two units structure was the second largest housing type found in the county, accounting for 11 percent of the total housing units.

Table 6.7: Units in Structure, Manitowoc County and State of Wisconsin, 2000

Units	Manitowoc County		Wisconsin	
	Number	Percent	Number	Percent
1 unit, detached	24,890	71.8	1,531,612	66.0
1 unit, attached	683	2.0	77,795	3.4
2 units	3,831	11.1	190,889	8.2
3 or 4 units	1,083	3.1	91,047	3.9
5 to 9 units	830	2.4	106,680	4.6
10 to 19 units	684	2.0	75,456	3.3
20 or more units	1,259	3.6	143,497	6.2
Mobile home	1,383	4.0	101,465	4.4
Other	8	0.0	2,703	0.1
Total	34,651	100.0	2,321,144	100.0

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing, SF-1; and Bay-Lake Regional Planning Commission, 2009.

Housing Occupancy and Tenure

Housing occupancy and tenure for Manitowoc County and the State of Wisconsin are shown in Table 6.8. Similar figures for all communities in the county can be found in Appendix B of *Volume II: Manitowoc County Resources*.



Of Manitowoc County’s 32,721 occupied housing units, 24,856 were owner-occupied while 7,865 were renter-occupied.



There were a total of 1,930 vacant units in the county which includes 518 units used for seasonal, recreational, or occasional purposes.

Table 6.8: Housing Occupancy and Tenure, Manitowoc County and State of Wisconsin, 2000

Geographic Location	Occupied			Vacant			Total Units	Percent Occupied	Percent Vacant
	Owner	Renter	Total	Seasonal, Recreational or Occasional Use	Other	Total			
Manitowoc County	24,856	7,865	32,721	518	1,412	1,930	34,651	94.4	5.6
Wisconsin	1,426,361	658,183	2,084,544	142,313	94,287	236,600	2,321,144	89.8	10.2

Source: U.S. Bureau of the Census, and Bay-Lake Regional Planning Commission, 2009.

Household Relationship

The 2000 Census indicates that 81,449 of the people in Manitowoc County live in households, while the remaining 1,438 individuals reside in group quarters (e.g., jails, nursing homes college dormitories, military quarters, etc.). Table 6.9 details the household type where Manitowoc County’s population lives.

Table 6.9: Household Type and Relationship, Manitowoc County and State of Wisconsin, 2000

Relationship	Manitowoc County		State of Wisconsin	
	Number	Percent	Number	Percent
In Households	81,449	98.3	5,207,717	97.1
Householder	32,721	39.5	2,084,544	38.9
Spouse	18,683	22.5	1,108,597	20.7
Child	25,122	30.3	1,577,549	29.4
Other Relative	1,749	2.1	158,295	3.0
Non Relative	3,174	3.8	278,732	5.2
In Group Quarters	1,438	1.7	155,958	2.9
Institutionalized	874	1.1	79,073	1.5
Noninstitutionalized	564	0.7	76,885	1.4
Total Persons	82,887	100.0	5,363,675	100.0

Source: U.S. Bureau of the Census, and Bay-Lake Regional Planning Commission, 2009.

Age of Housing

The age of housing stock identifies important issues such as amenities, size, and overall condition. Table 6.10 illustrates the Manitowoc County housing units, by year structure built.



Approximately 33 percent of the housing structures in Manitowoc County were built prior to 1940.



Between 1940 and 1990, an average of 3,690 housing units was added each decade. Structures added over this 50 year span account for approximately 53 percent of the housing structures in the county.



Between 1990 and March 2000, a total of 4,623 units were constructed that accounted for about 13 percent of the county's housing structures.

Table 6.10: Housing Units by Year Structure Built, Manitowoc County and State of Wisconsin, 2000

Year Structure Built	Manitowoc County		Wisconsin	
	Number	Percent	Number	Percent
1999 to March 2000	548	1.6	50,735	2.2
1995 to 1998	2,090	6.0	170,219	7.3
1990 to 1994	1,985	5.7	168,838	7.3
1980 to 1989	2,588	7.5	249,789	10.8
1970 to 1979	5,053	14.6	391,349	16.9
1960 to 1969	3,516	10.1	276,188	11.9
1940 to 1959	7,291	21.0	470,862	20.3
1939 or earlier	11,580	33.4	543,164	23.4
Total	34,651	100	2,321,144	100.0

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing, SF- 3; and Bay-Lake Regional Planning Commission, 2009.

Condition of Housing Stock

According to the Department of Commerce, the definition of a substandard unit is: *A housing unit which is in need of major repair or replacement in three or more of the following areas: roof, electrical, heating, plumbing, foundation/structure (including interior walls/floors/ceilings), siding, doors/windows and well/septic or water/sewer laterals.*



A large number of housing units built prior to 1960 may be an indicator of the overall condition of the housing stock in Manitowoc County. There are a total of 18,871 housing units built prior to 1960. According to the 2000 census, 252 housing units lack complete plumbing and kitchen facilities which indicate that these housing units are substandard.

Housing Values

It is important to provide a range of housing values to meet the needs of people of different income levels. A mix housing development should be considered to provide support for the economic growth in the county.

Table 6.11 illustrates the housing values of specified owner-occupied in Manitowoc County.



In 2000, the majority of Manitowoc County’s housing units (nearly 53 percent) were valued between \$50,000 and \$99,999. The median value of specified owner-occupied housing units was nearly \$91,000.

Table 6.11: Values of Specified Owner-Occupied Housing Units, Manitowoc County and State of Wisconsin, 2000

Value*	Manitowoc County		Wisconsin	
	Number	Percent	Number	Percent
Less than \$50,000	1,434	7.3	73,450	6.5
\$50,000 to \$99,999	10,440	52.9	396,893	35.4
\$100,000 to \$149,999	5,040	25.5	343,993	30.6
\$150,000 to \$199,999	1,765	8.9	173,519	15.5
\$200,000 to \$299,999	811	4.1	95,163	8.5
\$300,000 to \$499,999	200	1.0	30,507	2.7
\$500,000 to \$999,999	41	0.2	7,353	0.7
\$1,000,000 or more	22	0.1	1,589	0.1
Total Units	19,753	100.0	1,122,467	100.0
Median Value	\$90,900		\$112,200	

*Note: Census housing values may not be the actual assessed values; they are based on what the homeowner perceives the housing unit is worth.

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing, SF-3; and Bay-Lake Regional Planning Commission, 2009.

Housing Costs - Rents and Mortgage

Providing affordable housing which meets the needs of current and future Manitowoc County residents is an important element of planning. Housing number, type, and location greatly impacts the economic development, transportation, utilities, natural features, and various other aspects of a community.

According to the U.S. Department of Housing and Urban Development (HUD), **housing affordability** is defined as paying no more than 30 percent of household income for housing.

Rent and Income Comparison



According to the 2000 Census, the median gross rent for renter-occupied housing units in Manitowoc County was \$433.



1,877 renters out of 7,665 specified renter-occupied housing units paid more than 30 percent of their 1999 household income in gross rent. These 24 percent of renters are considered to be living in non-affordable housing.

Owner Costs and Income Comparison



For owner-occupied housing units with a mortgage in 1999, the median monthly owner cost in the county was \$860. For owner-occupied units without a mortgage, the median monthly cost was \$283.



The 2000 census indicates that 2,837 owners out of 19,753 specified owner-occupied housing units paid more than 30 percent of their 1999 income for monthly owner costs. This 14 percent of owners are considered to be living in non-affordable housing.

Housing Projections

Projected Occupied Housing Units

Three methods were used to determine possible housing projections to the year 2030 for Manitowoc County. Methods one and two used the year 2000 “occupied housing” count of 32,723 units as a base figure. Method three used the January 2008 WDOA household projections. Table 6.12 and Figure 6.5 illustrate the three household projections for Manitowoc County. The WDOA household projections for each community in Manitowoc County are listed in Appendix B of *Volume II: Manitowoc County Resources*.



Growth Trend - Using the census “occupied” housing counts from 1970 to 2000, a “growth trend” was created to the year 2030. The projection indicated the county would have a total of 41,940 total occupied housing units in 2030, or an increase of 9,217 occupied housing units from the 2000 Census.



Linear Trend - A “linear trend” to the year 2030 also utilizes the census “occupied” housing counts from 1970 to 2000. This method indicated Manitowoc County would have 39,604 total occupied housing units or an increase of 6,881 occupied housing units by 2030.



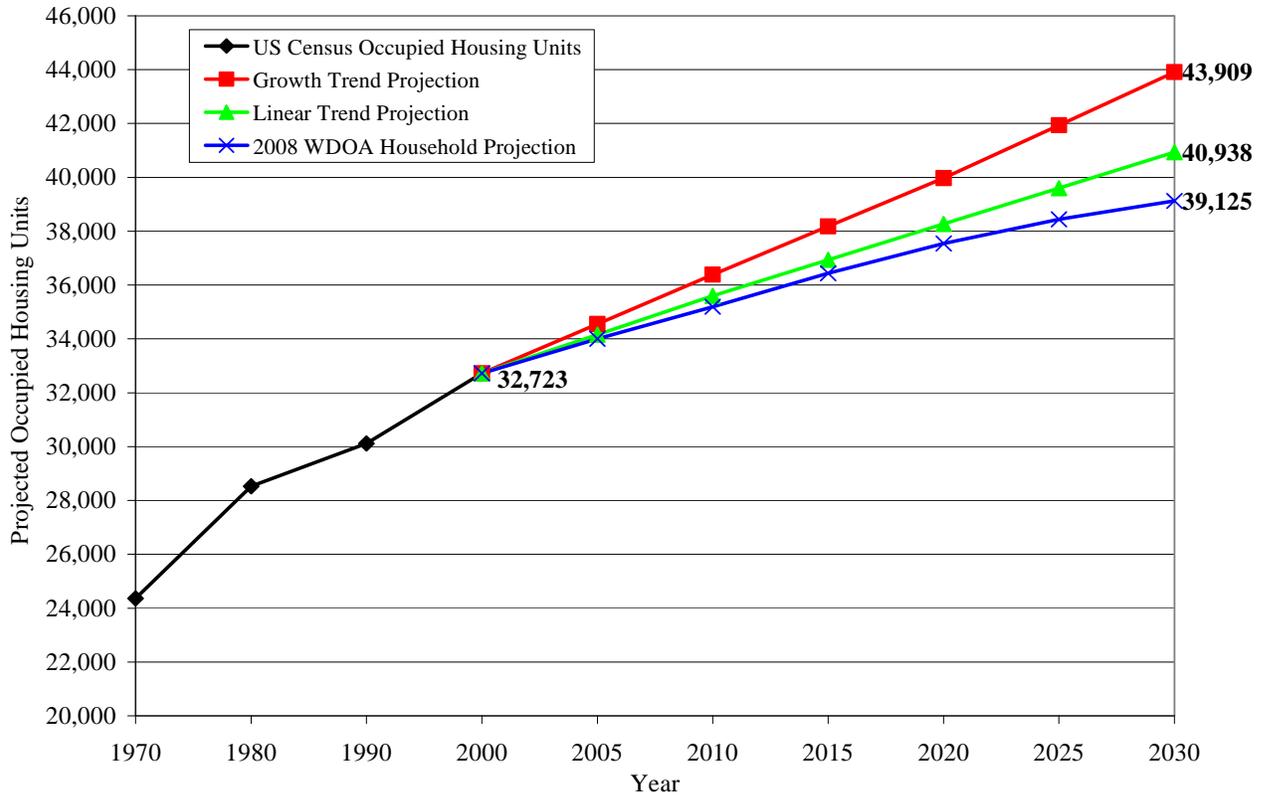
2008 WDOA Household Projections - In 2008, the Wisconsin Department of Administration, Demographic Services Center prepared WDOA Household Projections for Wisconsin Municipalities to the year 2030. This projection indicates an increase of 5,560 occupied housing units by 2030.

Table 6.12: Occupied Housing Unit Trends & Projections 1970-2030

Manitowoc County	1970	1980	1990	2000	2005	2010	2015	2020	2025	2030
US Census Occupied Housing Units	24,357	28,525	30,112	32,723						
Growth Trend Projection				32,723	34,554	36,384	38,177	39,970	41,940	43,909
Linear Trend Projection				32,723	34,162	35,601	36,935	38,269	39,604	40,938
2008 WDOA Household Projection				32,723	34,000	35,199	36,439	37,546	38,440	39,125

Source: Wisconsin Department of Administration, 2008 and Bay-Lake Regional Planning Commission, 2009.

Figure 6.5: Occupied Housing Unit Trends & Projections, 1970-2030



Source: U.S. Bureau of the Census, 1970 Census of Population and Housing, Series 100, Table 2; 1980 Census of Population and Housing, Table 45; 1990 Census of Population and Housing, STF 1A; 2000 Census of Population and Housing, Table DP-1; Wisconsin Department of Administration Final Household Projections for Wisconsin Municipalities, 2000 – 2030, January 2008 ; and Bay-Lake Regional Planning Commission, 2009.

Subsidized and Special Needs Housing

Housing for seniors and special needs population are concentrated in the urbanized area such as the cities of Manitowoc and Two Rivers. However, the county does provide services for seniors and special needs population through the Manitowoc County Aging and Disability Resource Center.



In the county, agencies such as Lakeshore CAP and Manitowoc County Habitat for Humanity help locate, finance, and develop housing for persons with various physical and mental disabilities or other special needs.



State and federal agencies that help individuals or families with housing needs include the Wisconsin Housing and Economic Development Authority (WHEDA), U.S. Department of Housing and Urban Development, and USDA Rural Development.

Appendix B of *Volume II: Manitowoc County Resources* provides more information on available housing programs and organizations.

Housing Development Environment

Manitowoc County has plenty of land for housing development; however, each community within the county needs to plan appropriately to provide for orderly growth while supplying services to its residents. Communities located in rural areas have limited public utilities and services, however many other features in Manitowoc County can offer current and future residents the opportunity to live, work, and raise a family.



Manitowoc County has a scenic landscape that is comprised of farm fields, rolling hills, and majestic bluffs overlooking miles of Lake Michigan shoreline.



The county also contains a quality road system which is complemented by Interstate Highway 43, providing good access to major surrounding metropolitan areas.

CHAPTER 7 : ECONOMIC DEVELOPMENT

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INTRODUCTION

The economic development element provides an assessment of the county's labor force and economic base. The county's labor force characteristics include information on educational attainment, unemployment rates, and industry and employment forecasts. A review of the county's economic base consists of revenues by industry, location quotient analysis, and an analysis of community finances. This chapter also contains a summary of the county's economic strengths and weaknesses with respect to attracting and retaining businesses, and whether or not there is sufficient land and sites available for such businesses and industries.

The purpose of this inventory is to establish a set of strategies consisting of a set of goals, objectives, policies, and programs; to promote the retention and expansion of Manitowoc County's economy. These strategies (located in Chapter 2) work in conjunction with the General Plan Designs and land use recommendations detailed in Chapter 3 of the Manitowoc County and local comprehensive plans.

ECONOMIC DEVELOPMENT COMPONENTS

For Manitowoc County to maintain a strong, growing economy, economic development activities must function as a part of the entire socio-economic environment. This is accomplished through the development of strategies linked to four primary economic development components: 1) *infrastructure development*; 2) *business development*; 3) *workforce development*; and 4) *community cash flow*. These components in-turn consist of several individual elements that influence the quality and effectiveness of economic development within the county.

Infrastructure Development

Infrastructure provided by both government and private business is backbone for the production and delivery of goods and services. Examples include:

- Utilities (e.g., water, sanitary and storm sewer, gas, electric, natural gas)
- Transportation (e.g., roads, parking lots, airports, ports, rail, signage, sidewalks, trails)
- Social (e.g., schools, hospitals, libraries, emergency)
- Communications (e.g., telephone, radio, television, computer, satellite, cellular)

Business Development

Business development refers to business retention, expansion, attraction, and start-up activities.

- *A business retention and expansion* program should identify and monitor existing and changing needs of core industry employers. It is important to appropriately remove or offset any obstacles that restrict growth of existing businesses. Most often, business retention activities include establishment of workforce development programs, increasing access to technology, and providing valuable information critical to making business decisions.
- *Business attraction* activities are designed to encourage businesses looking to expand or relocate in Manitowoc County. Given the competitive economic development climate, a well

defined marketing plan is critical in successfully attracting businesses to the county. The plan should promote the unique qualities of the county, local economic development initiatives, as well as highlights from the general business climate, key quality of life elements, skill level of the workforce, incentives, available green sites and buildings, and existing infrastructure.

- *Entrepreneurship and new business development* helps grow and diversify the county's economic base. Building an effective support system for promising businesses is an important responsibility of the county's economic development responsibilities.

Workforce Development

Manitowoc County needs a highly skilled and educated workforce to stay competitive, keep existing businesses strong, retain young people in the county, and raise the area's income and general standard of living. Workforce development programs are primarily provided through partnerships with local development organizations, job centers, school districts, and institutions of higher education. Occasionally, local employers will provide instructors and equipment for use in these training programs. Companies have found it more economical to share training resources and facilities with other employers than to conduct training programs internally. The result is a better working relationship among those businesses participating in such collaborative training programs.

Community Cash Flow

As Manitowoc County pursues new dollars coming into the county, it can look at two primary sources: money brought in by individuals, and money brought in by organizations, businesses and governments.

- New dollars brought in by individuals consist of earned income (wages and salary) and transfer income (government payments and investment dividends).
- New dollars brought in by entities or institutions cover a wide range of sources to include tourism revenue, aids for roads and human services, shared revenue, and government contracts or grants.

LABOR FORCE CHARACTERISTICS

A key component to economic development is the quality and quantity of the area's labor force. This section focuses on several characteristics of the county's labor force including information on education levels; incomes; the types of occupations in which individuals are employed; the types of business in which people are working; commuting patterns; unemployment rates; labor participation rates; and a review of how these characteristics influence the region's employment forecast.

Educational Attainment

The education levels attained by the county's residents are often a good indicator of the type and quality of jobs and the general standard of living found locally. Table 7.1 illustrates the levels of educational attainment for individuals age 25 and over in Manitowoc County. Educational attainment for persons age 25 and over in all Manitowoc County communities can be found in Appendix C of *Volume II: Manitowoc County Resources*.



The percentage of individuals who have at a minimum a high school diploma in Manitowoc County is 43 percent, which is significantly better than the State average of nearly 35 percent.



Approximately 23 percent of Manitowoc County’s residents have an education degree higher than high school (i.e., Associate degree or higher).

Table 7.1: Educational Attainment (Age 25 and Over), Manitowoc County and State of Wisconsin, 2000

Education Level	Manitowoc County		Wisconsin	
	Number	Percent	Number	Percent
Less than 9th Grade	3,697	6.7	186,125	5.4
9th to 12th grade, no diploma	4,865	8.8	332,292	9.6
High school graduate (includes equivalency)	23,853	43.0	1,201,813	34.6
Some college, no degree	10,359	18.7	715,664	20.6
Associate degree	4,099	7.4	260,711	7.5
Bachelor's degree	6,273	11.3	530,268	15.3
Graduate or professional degree	2,306	4.2	249,005	7.2
Percent high school graduate or higher		84.6		85.1
Percent bachelor's degree or higher		15.5		22.4

Source: U.S. Bureau of the Census, 2000 Census, DP-2; and Bay-Lake Regional Planning Commission, 2009.

Median Household Income

The median household income is a good indicator of the general economic well-being of all households in the county.

Table 7.2 provides a comparison of median household incomes for Manitowoc County and the State of Wisconsin for 1989 and 1999. Median household incomes for all Manitowoc County communities can be found in Appendix C of *Volume II: Manitowoc County Resources*.



The 1999 median household income for Manitowoc County was \$43,286 compared to \$27,467 in 1989. This represents an encouraging 58 percent increase for the county during that ten year time span.



The county’s median income of \$43,286 in 1999 is comparable with the State’s median income of \$43,791 for the same year.

Table 7.2: Median Household Income, Manitowoc County and State of Wisconsin, 1989 and 1999

Location	1989	1999	Percent Change
Manitowoc County	27,467	43,286	57.6
Wisconsin	29,442	43,791	48.7

Source: U.S. Bureau of the Census, 1990 Census of Population and Housing, STF 3A Table P080A; U.S. Bureau of the Census, 2000, DP-3; and Bay-Lake Regional Planning Commission, 2009.

Occupation

Table 7.3 lists the employed persons by occupational classification for Manitowoc County in 2000. Employed persons by occupation for all Manitowoc County communities can also be found in Appendix C of *Volume II: Manitowoc County Resources*. The employment opportunities for many of the county's residents are located within the communities that comprise the Green Bay Metropolitan Area.



In 2000, the majority of Manitowoc County residents were employed in production, transportation, and material moving occupations (30 percent); or management, professional and related service fields (24 percent). The county's large public school systems, Manitowoc County, hospitals, and several larger manufacturers may explain why 58 percent of the county's residents work in occupations within the management, professional, service and sales fields.

Table 7.3: Employed Persons by Occupation, Manitowoc County and State of Wisconsin, 2000

Occupation	Manitowoc County		Wisconsin	
	Number	Percent	Number	Percent
Management, professional, and related	10,448	24.3	857,205	31.3
Service	5,793	13.5	383,619	14.0
Sales and office	8,880	20.7	690,360	25.2
Farming, fishing, and forestry	820	1.9	25,725	0.9
Construction, extraction, and maintenance	4,264	9.9	237,086	8.7
Production, transportation, and material moving	12,748	29.7	540,930	19.8
Total	42,953	100.0	2,734,925	100

Source: U.S. Bureau of the Census, 2000 Census, DP-3; and Bay-Lake Regional Planning Commission, 2009.

Industry

Table 7.4 and Figure 7.1 illustrate employment by major industry group for Manitowoc County.



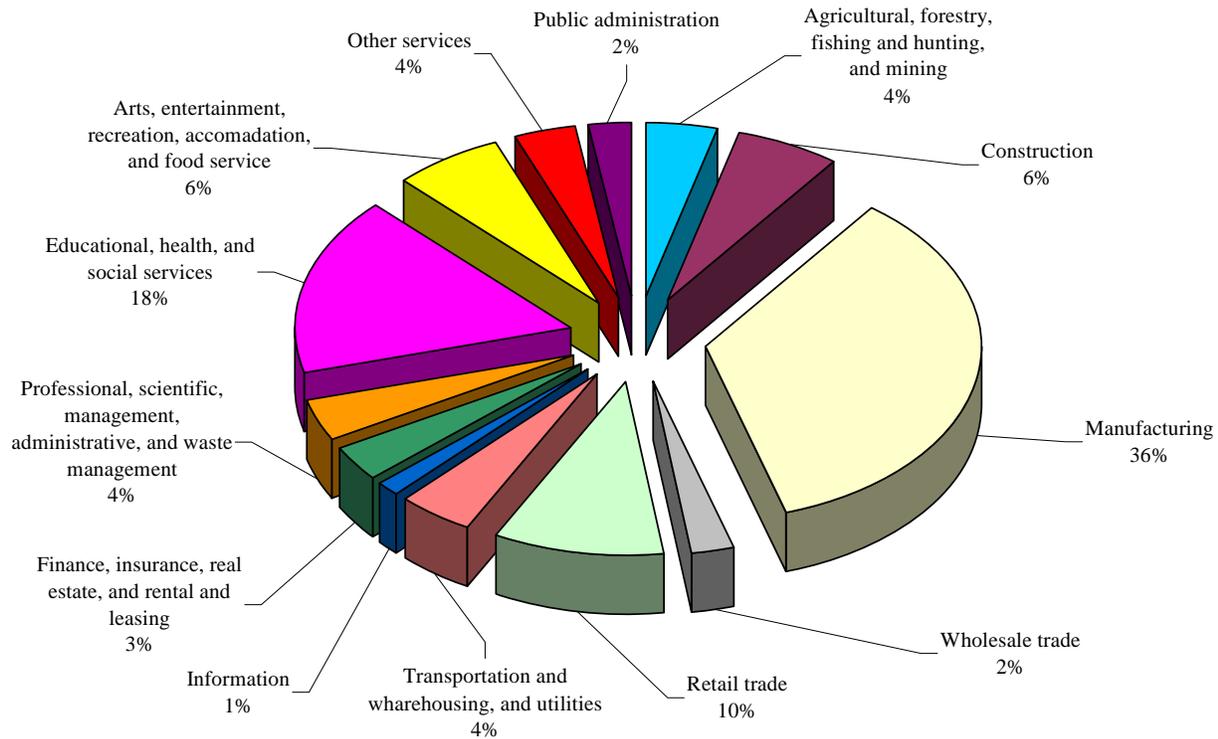
In 2000, 35 percent of employed county residents worked in manufacturing followed by educational, health and social services at 17 percent.

Table 7.4: Employed Persons by Industry Group, Manitowoc County and State of Wisconsin, 2000

Industry	Manitowoc County		Wisconsin	
	Number	Percent	Number	Percent
Agricultural, forestry, fishing and hunting, and mining	1,814	4.2	75,418	2.8
Construction	2,566	6.0	161,625	5.9
Manufacturing	15,123	35.2	606,845	22.2
Wholesale trade	1,052	2.4	87,979	3.2
Retail trade	4,287	10.0	317,881	11.6
Transportation and warehousing, and utilities	1,910	4.4	123,657	4.5
Information	618	1.4	60,142	2.2
Finance, insurance, real estate, and rental and leasing	1,392	3.2	168,060	6.1
Professional, scientific, management, administrative, and waste management	1,642	3.8	179,503	6.6
Educational, health, and social services	7,209	16.8	548,111	20.0
Arts, entertainment, recreation, accomadation, and food service	2,714	6.3	198,528	7.3
Other services (except public administration)	1,594	3.7	111,028	4.1
Public administration	1,032	2.4	96,148	3.5
Total	42,953	100.0	2,734,925	100.0

Source: U.S. Bureau of the Census, 2000 Census, DP-3; and Bay-Lake Regional Planning Commission, 2009.

Figure 7.1: Percent Employment by Industry Group, Manitowoc County, 2000



Source: U.S. Bureau of the Census, 2000 Census, DP-3; and Bay-Lake RPC, 2009.

Commuting Patterns

Identifying and tracking commuting patterns is a labor market concept that refers to worker flows between municipalities and/or counties. These commuting patterns highlight the counties that have a strong economic base and are able to attract workers from surrounding communities and counties. Conversely, it demonstrates which areas lack local employment opportunities for their residents, or perhaps serve as “bedroom” communities with more affordable housing options in comparison to other locations.

-  In 2000, approximately 80 percent (33,840) of the 42,406 employed Manitowoc County residents worked within Manitowoc County (Table 7.5).
-  In the same year, 8,566 working residents of Manitowoc County commuted out of the county for work, whereas 3,880 workers from other counties traveled into Manitowoc County to work. The result is a net loss of 4,686 Manitowoc County working age residents to other counties for employment.
-  7,219 Manitowoc County residents traveled to the neighboring counties of Sheboygan, Calumet, and Brown for work. In comparison, only 2,730 individuals from those same areas traveled to Manitowoc County for employment.

Table 7.5: County-to-County Worker* Flow, Manitowoc County, 2000

County	County Residents Commute to	County Workers Commute from	Net Commute
Sheboygan	3,676	1,199	-2,477
Calumet	1,968	713	-1,255
Brown	1,575	818	-757
Kewaunee	292	427	135
Outagamie	281	100	-181
Winnebago	136	21	-115
Milwaukee	129	75	-54
Fond du Lac	73	79	6
Elsewhere	436	448	12
Total	8,566	3,880	-4,686
Work w/in Manitowoc	33,840		

*Workers 16 years old and older
 Source: U.S. Census Bureau, 2000; WDOA; BLRPC, 2009.

Unemployment Rate

The unemployment rate is the proportion of the civilian labor force that is currently unemployed and actively seeking employment. Persons not employed and not looking for work are not counted as part of the labor force; therefore, they are not counted as unemployed. Table 7.6 and Figure 7.2 highlight the changers in Manitowoc County’s civilian labor force since 1998. Variations in the number of persons in the labor force are the result of many factors including, shifts in the age and sex characteristics of the population; the proportion of citizens age 16 and over working or seeking employment; and seasonal occupations.

Companies looking to expand operations frequently inquire about areas with higher unemployment rates, or excess labor, from which to draw labor. One of the major criteria

companies use in selecting an area in which to locate is the amount of available labor that is already skilled, or has the potential for obtaining the skills employers are seeking for their particular operations.



Based on WDOA population estimates, the civilian labor force comprised 54 percent of Manitowoc County’s population in 1998 and 53 percent in 2008.



Between 1998 and 2008 the county’s unemployment rate amongst the civilian labor force averaged 4.9 percent. The county’s unemployment rate of 3.2 percent in 2000 was the lowest during this time span, whereas the 2003 unemployment rate of 6.9 percent was the highest during this time period (Figure 7.2). The closing of the Mirro Plant in the City of Manitowoc had a significant impact not only on the county’s unemployment rate, but also the continued decline in the civilian workforce.



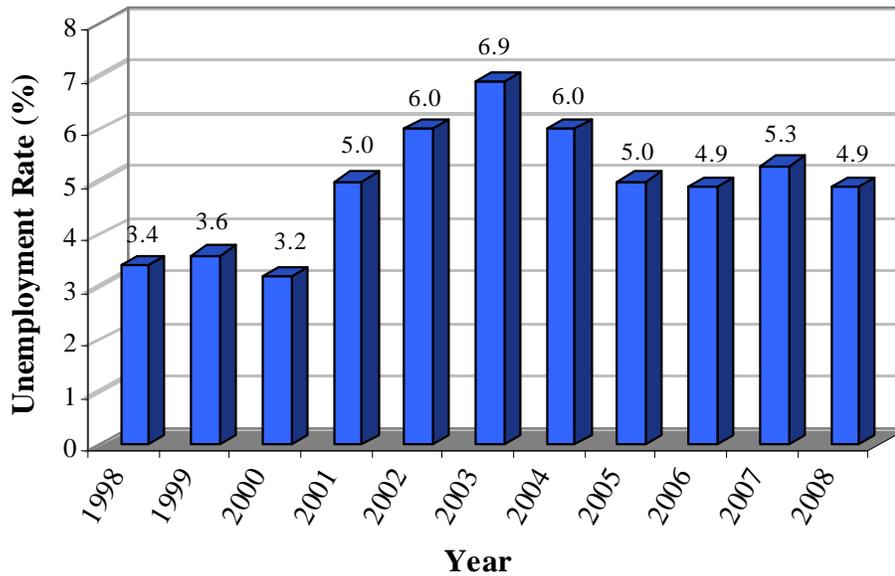
The number of employed Manitowoc County residents declined by 1,811 workers from 1998 and 2008, as individuals sought employment in neighboring communities after the closing or downsizing of some of the county’s larger employers.

Table 7.6: Average Civilian Labor Force Estimates, Manitowoc County, 1998-2008

Year	Total Civilian Labor Force	Employed	Unemployed	% Civilian Labor Force Unemployed
1998	45,778	44,226	1,552	3.4
1999	44,926	43,324	1,602	3.6
2000	47,189	45,674	1,515	3.2
2001	47,541	45,149	2,392	5.0
2002	46,232	43,443	2,789	6.0
2003	46,692	43,488	3,204	6.9
2004	45,631	42,882	2,749	6.0
2005	45,395	43,138	2,257	5.0
2006	45,519	43,267	2,252	4.9
2007	46,110	43,657	2,453	5.3
2008	44,603	42,415	2,188	4.9

Source: Wisconsin Department of Workforce Development, Civilian Labor Force Estimates, for years cited; and Bay-Lake Regional Planning Commission, 2009.

Figure 7.2: Unemployment Rate, Manitowoc County, 1998-2008



Source: Wisconsin Department of Workforce Development, Civilian Labor Force Estimate, 1998-2008; and Bay-Lake Regional Planning Commission, 2009.

Labor Participation Rate

According to the Wisconsin Department of Workforce Development, approximately 69 percent of Manitowoc County's population, age 16 and older, were in the labor force as of 2005. This percentage is referred to as the labor force participation rate (LFPR). The LFPR is a strong economic measure that is sometimes a better indicator of the area's labor market health than its unemployment rate. Manitowoc's LFPR of 69 percent was just below Wisconsin's LFPR of 70 percent, but higher than the national rate of 67 percent.

As outlined in the Population and Housing element (Chapter 6), Manitowoc County currently has a slightly older than average population in comparison to the State of Wisconsin. This is projected to continue as individuals age 65 and over comprise a larger percentage of the population, while the younger portion of the population decreases proportionately. From a labor market perspective, the implications of a declining labor force participation rate, due to a growing and aging population, points to future labor shortages in certain industries and occupations.

Industry and Employment Forecast

Industry and employment projections have been developed from the year 2002 to 2012 for the ten county Bay Area Workforce Development district which consists of Brown, Door, Florence, Kewaunee, Manitowoc, Marinette, Menominee, Oconto, Shawano, and Sheboygan counties. According to the Wisconsin Department of Workforce Development:

- Overall total non-farm employment in the region will increase by 12 percent or 35,980 new jobs.

- Manufacturing is currently the largest employing industry sector in the region and will remain the largest industry sector through 2012. Although manufacturing jobs will continue to increase, the rate of increase will slow down.
- Occupations in manufacturing are expected to move away from general labor positions to more semi-skilled and skilled operator and technician jobs. This is due primarily to production processes that have integrated more efficient technology.
- The education and health services sector is projected to show the largest numeric employment growth by adding 12,620 jobs from 2002 to 2012.
- Goods producing industry sectors such as construction, mining, natural resources, and manufacturing will decline slightly, from 31 percent total employment to 29 percent by 2012.
- The leisure and hospitality industry will demonstrate strong growth by adding nearly 3,600 new jobs by 2012.

Local Employment Forecast

- From 1990 to 2000, the manufacturing and the educational, health, and social services industries continued to have the largest share of employment for residents of Manitowoc County as seen in Table 7.4. This county trend does follow the regional trend, and is expected to continue for the next several years.
- According to the Wisconsin Department of Workforce Development, there are a number of occupations that will be in greater demand by the year 2012. They include:
 - Teachers
 - Waiters and Waitresses
 - Machinists
 - Welders, Cutters, Solderers, and Brazers
 - Registered Nurses
 - Nursing Aids, Orderlies, and Attendants
 - Truck Drivers



Lakeshore Technical College, University of Wisconsin-Manitowoc, Silver Lake College, and other area institutions of higher education will be instrumental in educating the area’s workforce for these growing fields.

ECONOMIC BASE

Revenues by Industry

Table 7.7 and Figure 7.3 provide an overview of how much each industry contributes to the overall Manitowoc County economy. Please note, agriculture is mentioned later in this section.

Manufacturing continues to be one of the primary industries for the county’s economy by contributing over \$520 million, or nearly 40 percent, of the total income provided by all seven industry classifications. The transportation and utilities industry grew a healthy 407 percent during this 20 year time period. Overall, income from all industries rose a robust 167 percent from 1980 to 2000, indicating the local economy is strong and growing.

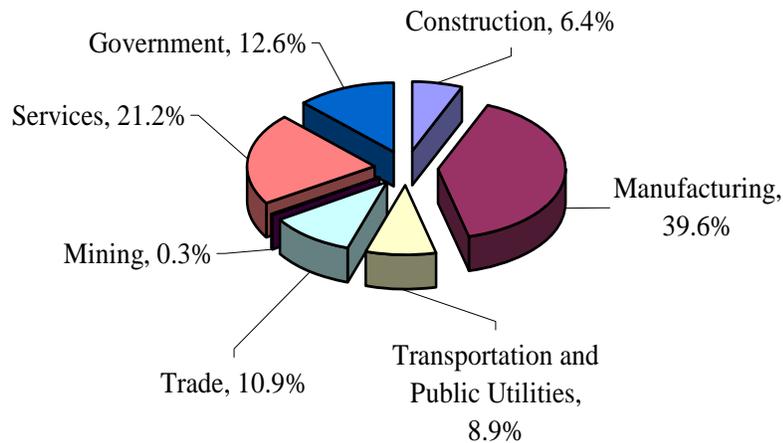
Table 7.7: Income by Industry Type*, Manitowoc County, 1980-2000

Area	1980	1990	2000	Percent Change
Mining	\$2,940	\$3,202	\$4,671	58.9
Construction	\$25,872	\$45,240	\$84,297	225.8
Manufacturing	\$246,597	\$342,584	\$520,726	111.2
Transportation and Public Utilities	\$22,992	\$50,599	\$116,549	406.9
Trade	\$68,557	\$99,349	\$143,059	108.7
Services	\$74,229	\$147,118	\$278,286	274.9
Government	\$51,230	\$104,665	\$165,749	223.5
Total	\$492,417	\$792,757	\$1,313,337	166.7

*Figures Provided in Thousands

Source: Wisconsin Department of Commerce 2009.

Figure 7.3: Percent Revenue by Industry Type, Manitowoc County, 2000



Source: Wisconsin Department of Commerce 2009.

Agriculture

According to a 2004 UW-Extension report entitled, *Manitowoc County Agriculture: Value and Economic Impact*, agriculture:

- Provided jobs for 6,061 county residents, or 13 percent, of the county’s entire workforce.
- Contributed \$836 million, or 17 percent of the county’s total economic activity, and nearly 10 percent of the county’s total income. Of this \$836 million, \$592 million is the result of the sale of all farm and value-added products, \$199 million in business to business purchases, and \$46 million in the spending of earnings of those in agriculture related occupations.
- Paid nearly \$19 million in taxes (not including all property taxes paid to local schools).

The county’s milk producers and dairy industry contribute over \$444 million to the county’s economy. The on-farm production and sale of milk accounts for \$124 million, whereas milk processing accounts for an additional \$319 million. Currently, there are six plants processing dairy products in Manitowoc County.

The production of landscape trees and plants, as well as landscape and grounds maintenance, are rapidly growing segments of Manitowoc County's agricultural industry. Horticulture generates over \$7 million in county economic activity, and provides for 166 full-time and many seasonal jobs.

Tourism

Situated on Lake Michigan, Manitowoc County is strategically located adjacent to one of Wisconsin's most valuable recreational and economic assets. The county has plenty to offer everyone – the outdoor enthusiast, people interested in cultural/historical attractions, and those individuals seeking unique shopping venues. Businesses that cater to tourism such as motels, campgrounds, bed and breakfast's, and retail stores, are expanding services to meet the diverse needs of the thousands of people who come to the county to take advantage of the walking and biking trails, various parks, historic sites, and other area attractions.



Source: www.mchistsoc.org

The following information was taken from the Wisconsin Department of Tourism's 2006 Tourism Economic Impact Study conducted by Davidson-Peterson Associates, Inc. The statistics gathered from the three survey components were analyzed, averaged, and applied county by county using standard economic modeling.

- In 2006, Manitowoc County ranked 26th in the state for traveler spending down from 25th in 2004.
- Travelers spent an estimated \$132 million in Manitowoc County in 2006, up from \$127 million in 2005.
- Sixteen percent of all expenditures were made in the winter, which amounted to \$21 million; 20 percent were made in the spring (\$26 million); 37 percent in the summer (\$49 million) and 27 percent in the fall (\$36 million).
- It is estimated that employees earned \$65 million in wages generated from tourist spending.
- Traveler spending in 2006 supported 3,097 full-time equivalent jobs, up from 2,980 in 2005.
- Local revenues (property taxes, sales taxes, lodging taxes, etc.) collected as a result of travelers amounted to an estimated \$5.4 million in 2006, which was a slight increase of \$200,000 from the \$5.2 million calculated for 2005.
- Travelers generated just over \$14 million in state revenues (lodging, sales and meal taxes, etc.).
- In 1994, travelers spent \$78 million in Manitowoc County. By 2006, travelers spent \$132 million, representing an increase of 71 percent.

Major Employers

Manitowoc County boasts a variety of large employers from both the public and private sectors. Residents of Manitowoc County have a number of employment opportunities both within the county, and in the adjacent Sheboygan and Green Bay Metropolitan Areas.

-  Public sector employers include two school districts, Manitowoc County, and the cities of Manitowoc and Two Rivers.
-  Holy Family Memorial and Manitowoc Crane Group are the two largest private employers employing over 1,000 people (Table 7.8). Private sector employment comes from a number of different sectors including manufacturing, health care, and food processing.



Source: www.1-s-.com/maitowoc_888.html

Table 7.8: Top Ten Employers, Manitowoc County, 2008

Establishment	Product or Service	Location	Employment
Holy Family Memorial	Healthcare	City of Manitowoc	1000+
Manitowoc Crane Group	Manufacturing	City of Manitowoc	1000+
Manitowoc Public Schools	Education	City of Manitowoc	500-999
Florida Power & Light Company	Utilities	Town of Two Rivers	500-999
Thermo Fisher	Manufacturing	City of Two Rivers	500-999
Lakeside Foods	Food Manufacturing	City of Manitowoc	500-999
Federal Mogul Powertrain Systems	Manufacturing	City of Manitowoc	500-999
Manitowoc County	Government	City of Manitowoc	250-499
Parker Hannifin	Manufacturing	City of Manitowoc	250-499
Aurora Medical Center of Manitowoc	Healthcare	City of Manitowoc	250-499

Source: Wisconsin’s Worknet, 2008.

Employment by Economic Division

To envision Manitowoc County’s future economy requires an understanding of its present economic base. The Economic Base Analysis technique divides the economy into basic and non-basic sectors.

Basic Sector is made up of local businesses that export all, or nearly all of its production, and are dependent on external factors. Manufacturing and local resource-oriented firms depend principally upon non-local factors and usually export their goods.

Non-basic Sector is comprised of those firms that depend largely upon local business conditions.

Location Quotient Analysis

In order to strengthen and grow the county's overall economy, it is important to develop and enhance the basic sector. To conduct a Location Quotient (LQ) Analysis, there are nine basic economic divisions that are used:

Four goods-producing sectors: agriculture, forestry and fishing; mining; construction; and manufacturing.

Five services-producing sectors: transportation and public utilities; wholesale trade; retail trade; finance, insurance and real estate; and services.

The LQ technique is used to identify the basic and non-basic sectors of a local economy. LQs highlight how the balance of employment in a local economy, compares to the balance in employment in the region as a whole. The proportion of jobs in each local industrial sector is measured, as a ratio, against its corresponding sector at the regional level. The analysis uses the United States as the standard for comparison with the county's economy (Table 7.9).

When the location quotient for a particular industry increases over time, this suggests that the county's economy in that sector is getting closer to reaching and exceeding local demands. Having a strong basic sector of employment will further strengthen and diversify Manitowoc County's economy.



The most notable changes in the county's economy since 1990 are the declines in manufacturing, federal and civilian government, and construction; and the increases in employment in agriculture, forestry, fishing, retail trade, and services. Overall, Manitowoc County's economy is quite diversified providing a number of different employment opportunities for its residents.

If the LQ is less than 1.0, all employment is considered non-basic, therefore that industry is not meeting local demand and implies that the goods or services of that sector are being "imported" into the locale from somewhere outside the region.

An LQ equal to 1.0 suggests that the local employment is exactly sufficient to meet the local demand for a given good or service, employment is still considered non-basic.

An LQ greater than 1.0 suggests that local employment produces more goods and services than the local economy can use; therefore these goods and services are exported to non-local areas, which makes them basic sector employment.

Table 7.9: Employment by Industry Group, Manitowoc County and United States, Location Quotient Analysis, Manitowoc County, 1990-2000

Item	Manitowoc County		United States		Percent Change 1990-2000		Manitowoc County Location Quotient	
	1990	2000	1990	2000	Manitowoc	U.S.	1990	2000
Total full-time and part-time employment	41,618	45,714	139,380,900	166,758,800	9.8	19.6		
Farm employment	2,401	2,123	3,153,000	3,113,000	-11.6	-1.3	2.55	2.49
Nonfarm employment	39,217	43,591	136,227,900	163,645,800	11.2	20.1	0.96	0.97
Private employment	34,988	38,874	114,995,900	140,701,800	11.1	22.4	1.02	1.01
Ag. Services, forestry, fishing & other	346	464	1,454,000	2,121,100	34.1	45.9	0.80	0.80
Mining	131	106	1,044,100	784,200	-19.1	-24.9	0.42	0.49
Construction	1,571	2,208	7,261,800	9,446,300	40.5	30.1	0.72	0.85
Manufacturing	12,703	13,693	19,694,200	19,114,800	7.8	-2.9	2.16	2.61
Transportation and public utilities	1,581	2,229	6,550,600	8,244,400	41.0	25.9	0.81	0.99
Wholesale trade	1,308	1,449	6,720,500	7,584,100	10.8	12.9	0.65	0.70
Retail trade	7,015	7,098	22,885,500	27,222,300	1.2	18.9	1.03	0.95
Finance, insurance and real estate	1,433	1,894	10,714,600	13,193,800	32.2	23.1	0.45	0.52
Services	8,900	9,733	38,670,600	52,990,800	9.4	37.0	0.77	0.67
Government and government enterprises	4,229	4,717	21,232,000	22,944,000	11.5	8.1	0.67	0.75
Federal, civilian	205	225	3,233,000	2,892,000	9.8	-10.5	0.21	0.28
Military	408	293	2,718,000	2,075,000	-28.2	-23.7	0.50	0.52
State and local	3,616	4,199	15,281,000	17,977,000	16.1	17.6	0.79	0.85
State	214	182	4,404,000	4,949,000	-15.0	12.4	0.16	0.13
Local	3,402	4,017	10,877,000	13,028,000	18.1	19.8	1.05	1.12

Source: U.S. Department of Commerce, Bureau of Economic Analysis, REIS 1969-2000; and Bay-Lake Regional Planning Commission, 2009.

Threshold Analysis

Export Base (“Basic Employment”)

In 2000, three “basic employment areas” within the Manitowoc County economy were considered exporters: manufacturing; farm employment, and local government. These sectors produce more goods, and services than the local economy can use and export excess goods to other areas.

Non-Export Base (“Non-Basic Employment”)

Several industries stand out with lower LQs: services; mining; finance, insurance, and real estate, and state and federal government. These industries are not meeting local demand for given goods or services, and therefore import those needed services from other counties.

County Finances

Table 7.10 and Table 7.11 illustrate a history of the taxes levied and collected in Manitowoc County.



From 2000 to 2007, the county’s full value increased by 41 percent or nearly \$1.5 billion. The total property tax also increased \$22.6 million or 29 percent for the same period.

Table 7.10: Comparative Tax Appropriations, Manitowoc County, 2000-2007

Year Levied	Full Value	Total Property Tax	State Tax Credit	Full Value Rate		Taxing Jurisdiction Share				
				Gross	Effective	School	Vocational	County	Local	Other
2000	\$3,593,645,600	\$78,807,197	\$5,250,905	0.02192	0.02046	\$32,897,451	\$5,850,582	\$20,857,127	\$16,527,071	\$2,674,964
2001	\$3,929,312,200	\$84,476,296	\$5,205,047	0.02149	0.02017	\$34,741,228	\$6,385,487	\$22,489,173	\$17,521,647	\$3,338,763
2002	\$4,138,233,300	\$89,040,116	\$5,227,959	0.02151	0.02025	\$36,117,819	\$6,649,870	\$24,353,486	\$18,366,939	\$3,552,006
2003	\$4,321,880,200	\$92,206,370	\$5,234,672	0.02133	0.02120	\$37,786,422	\$6,871,097	\$25,011,915	\$18,460,360	\$4,076,580
2004	\$4,447,460,000	\$95,654,191	\$5,228,629	0.02150	0.02033	\$40,003,990	\$6,928,978	\$25,756,507	\$18,790,276	\$4,174,442
2005	\$4,600,011,700	\$95,924,548	\$5,188,179	0.02085	0.01972	\$38,425,558	\$6,900,696	\$26,465,626	\$19,592,000	\$4,540,672
2006	\$4,867,411,100	\$97,372,848	\$6,432,436	0.02000	0.01868	\$38,068,569	\$7,035,191	\$26,920,541	\$20,401,971	\$4,946,572
2007	\$5,079,420,500	\$101,463,887	\$7,029,281	0.01997	0.01859	\$40,042,197	\$7,187,019	\$27,347,209	\$21,534,242	\$5,353,221

Source: Wisconsin Department of Revenue, City, Village and Town Taxes, for years cited; and Bay-Lake Regional Planning Commission, 2009.

The ability to finance development and infrastructure projects is calculated by general obligation debt capacity. The aggregate amount of indebtedness, including existing indebtedness of any municipality, shall not exceed five percent of the value of the taxable property located in the municipality.



Manitowoc County’s debt as of December 31, 2007, was \$23,535,000, well within its legal margin of \$230,436,025. The county’s existing debt has dropped \$8.2 million from 2002 to 2007, while the full value increased by 23 percent rate over this time period.

According to the Wisconsin Department of Revenue, the **Full Value** is the estimated value of all taxable property.

Manitowoc County is maintaining a manageable debt; as a result, the county has access to considerable financing for future projects to include emergency infrastructure or facilities improvements.

Table 7.11: Public Indebtedness, Manitowoc County, 2000-2007

Year	Full Value	Debt Limit*	Existing Debt	Debt Margin
2000	\$3,593,645,600	\$179,682,280	\$20,495,000	\$159,187,280
2001	\$3,929,312,200	\$196,465,610	\$24,455,000	\$172,010,610
2002	\$4,138,233,300	\$206,911,665	\$31,725,000	\$175,186,665
2003	\$4,321,880,200	\$216,094,010	\$34,810,000	\$181,284,010
2004	\$4,447,460,000	\$222,373,000	\$29,895,000	\$192,478,000
2005	\$4,600,011,700	\$230,000,585	\$27,943,270	\$202,057,315
2006	\$4,867,411,100	\$243,370,555	\$26,123,755	\$217,246,800
2007	\$5,079,420,500	\$253,971,025	\$23,535,000	\$230,436,025

*Debt Limit equals five percent of the full value.

Source: Wisconsin Department of Revenue, Bureau of Local Finance Assistance, Equalized Value and Debt Limit Value, for years cited; and Bay-Lake Regional Planning Commission, 2009.

SITES FOR BUSINESS AND INDUSTRIAL DEVELOPMENT

Existing Site Inventory and Analysis

As detailed on the county’s 2008 land use inventory map (Map 10.2), Manitowoc County contained 1,730 acres of commercial land and an additional 3,493 acres of industrial land (extractive or mining sites account for 2,115 acres of the industrial land in the county).

Industrial / Business Park Listing

- I-43 Industrial Park, City of Manitowoc
- Columbus Drive Industrial Park, City of Two Rivers
- Pernickety Business Park, City of Kiel
- Rockville Industrial Park, City of Kiel
- Woodland Drive Industrial Park, City of Two Rivers
- Reedsville Industrial Park, Village of Reedsville
- St. Nazianz Industrial Park, Village of St. Nazianz
- Cleveland Business Park, Village of Cleveland
- Valders Business Park, Village of Valders

Evaluation of Environmentally Contaminated Sites for Commercial and Industrial Uses

According to the Wisconsin Department of Natural Resources (WDNR), there have been 1,073 environmental incidences in Manitowoc County since 1980. These incidences include:

- Abandoned Containers
- Leaking Underground Storage Tank (LUST)
- Environmental Repair (ERP)
- SPILLS
- General Property Information (GP)

The type of incident dictates whether subject matter falls under the jurisdiction of the Wisconsin Department of Agriculture, Trade, and Consumer Protection; Wisconsin Department of Commerce; or the Wisconsin Department of Natural Resources either in their Waste Management Division or the Remediation or Redevelopment Division.

As of November 2007, 58 environmental incidences in Manitowoc County are classified as open, while the status report of 1,015 incidents are either closed, were no longer in need of remediation, or were conditionally closed. A majority of the open cases are LUST's, or a site that has been identified as having some level of contaminated soil or groundwater. Community officials should understand the type and location of these incidences within their municipalities. These areas may be prime locations for redevelopment.

Refer to the Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the WDNR website (<http://dnr.wi.gov/org/aw/rr/brrts/index.htm>) for further details on environmental incident types and status reports.

ECONOMIC DEVELOPMENT PROGRAMS

There are several programs available on each government level that could potentially help build economic development capacity through infrastructure expansion and offer businesses the resources necessary to develop and grow. See Appendix C of *Volume II: Manitowoc County Resources* for a list of several economic development programs and resources.

CHAPTER 8 : TRANSPORTATION

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INTRODUCTION

This portion of *Volume II: Manitowoc County Resources* identifies the existing transportation facilities that serve Manitowoc County and its municipalities. This inventory describes the various modal elements that make up the county's transportation system which includes the county's street and highway system; public transit systems; elderly and disabled transportation services; intercity bus services; bicycle transportation; rail service; air service; and harbors and marinas. The detailed description of the street and highway system includes the functional classification of roads within the county; traffic counts; traffic flow capacity; traffic crashes; access controls; and park and ride lots.

Documented in this chapter is also an inventory and analysis of applicable transportation plans, including county functional and jurisdictional studies; transportation corridor plans; airport plans; railroad plans; bicycle plans; pedestrian plans; transit plans; and any other special transportation plans. In addition, there is a comparison of the local plans to the existing transportation plans developed at the state, regional, and county level. Attached as Appendix D of *Volume II: Manitowoc County Resources*, is a comprehensive list of federal and state programs that offer financial and/or technical assistance to the county and local communities to maintain, expand, or enhance their transportation systems.

INVENTORY OF TRANSPORTATION FACILITIES

Streets and Highways

There are over 1,502 miles of county and local streets and roads in Manitowoc County. Of these, over 285 miles (19 percent) are under county jurisdiction, while over 1,217 miles (81 percent) are under local/municipal jurisdiction. The county and local transportation system is complemented by Interstate 43, U.S. Highways 10 and 151, and State Highways 32/57, 42, 67, 147, and 310; which provide access to other communities in the region and the state.

There are several basic considerations useful in assessing the existing street and highway system within Manitowoc County. These considerations include functional classification; annual average daily traffic; and an evaluation of the system's capability to handle present and projected future traffic volumes. In addition, vehicle crash data are useful in determining problem areas pertinent to road safety. This information can provide an indication of the street and highway improvements that may be needed during the planning period.

Functional Classification of Streets and Highways

Streets and highways, which are the principal component of the traffic circulation system, can be divided into three categories: arterial, collector, and local facilities. The three categories of streets and highways are determined by the function that the street or highway in question serves in relation to traffic patterns, land use, land access needs, and traffic volumes.



Appendix D of *Volume II: Manitowoc County Resources* identifies the criteria that are used to determine the functional classification of the street and highway system for the Manitowoc and Two Rivers Urban Areas and for portions of the towns classified as "rural".



Map 8.1 illustrates the functional classification of streets and highways in rural portions of Manitowoc County.

Arterial Facilities

The function of an arterial facility is to move traffic over medium to long distances, often between regions as well as between major economic centers, quickly, safely and efficiently. Arterial facilities are further categorized into either “principal” or “minor” arterial facilities based on traffic volumes, land use service and other criteria. Since the cities of Manitowoc and Two Rivers are located in federally recognized urban areas, arterial facilities are also further classified as “urban” and “rural” arterial facilities in Manitowoc County.



Rural principal arterial routes in Manitowoc County include Interstate 43, U.S. Highway 10, and State Highways 32/57. Examples of rural minor arterial routes in Manitowoc County include State Highways 42, 67, 147, and 310, as well as U.S. Highway 151.



Urban principal arterials in the Manitowoc Urban Area include portions of U.S. Highway 10 (8th and 10th Streets and Waldo Boulevard), U.S. Highway 151 (Calumet Avenue/Washington Street), and State Highway 42 northeast of Waldo Boulevard and Rapids Road between U.S. Highways 10 and 151. The Manitowoc Urban Area also contains a vast number of urban minor arterials.



Urban principal arterials in the Two Rivers Urban Area include portions of State Highways 42, 147 and 310. There are also a large number of urban minor arterials in the Two Rivers Urban Area.

Collector Facilities

The primary function of streets and highways classified as “collectors” is to provide general “area to area” routes for local traffic. Collector facilities take (“collect”) traffic from the local streets and highways (and the land based activities supported by the local streets and highways) and provide relatively fast and efficient routes to farm markets, agricultural service centers and larger urban areas. With an overall socioeconomic trend that is characterized by the decline of small and medium agricultural concerns, and a significant increase in the number of rural single-family residential properties, collector facilities generally serve the same function but with different trip purposes. Collector facilities serve to distribute traffic between local and arterial facilities, between home and the work place, home and the place of worship, home and school, and between the home and those places where business and commerce are conducted.



Collector facilities in the areas of Manitowoc County outside of the Manitowoc and Two Rivers Urban Areas are known as “rural collectors.” Rural collectors are divided into rural major and minor collectors. Rural major collectors include portions of County Highways A, B, BB, C, CR, J, JJ, K, LS, NN, Q, R, T, V, VV, W, X, XX, and Z. Rural minor collectors include portions of County Highways CS, F, G, J, K, M, O, Q, S, U, V, X, and Y; as well as a small number of town roads with higher traffic volumes.



Collector facilities in the Manitowoc and Two Rivers Urban Areas are known as “urban collectors.” Some examples of “urban collectors” in the Manitowoc Urban Area include

portions of Viebahn Street, South 30th Street and South 35th Street on Manitowoc's south side, and include portions of Michigan Avenue (between County Highways Q and R) and Albert Drive (between County Highways B and DD) on Manitowoc's north side. Examples of "urban collectors" in the Two Rivers Urban Area include portions of Columbus Street, Roosevelt Avenue, 12th Street and County Highway O.

Local Facilities

The primary and most important function of local roads and streets is to provide direct access to adjacent lands. Local roads and streets are constructed to serve individual parcels of land and properties. They also tend to serve the ends of most trips within the urban and rural areas of the county. All roads not classified as arterial or collector facilities within the county are classified as local streets.

Local Mileage Certification

Manitowoc County and any local government that increased or decreased the mileage of its streets or highways are required to file a certified plat with WisDOT by December 15 of each year. Local governments that have no changes in total local street and highway miles are required to file a certified plat or a certified statement that no mileage increases or decreases have occurred. In addition, Manitowoc County and each of its communities are required to provide WisDOT with a numeric based evaluation of the pavement condition of each segment of street and highway in each municipality every two years.



Table 8.1 lists each town, village, and city within Manitowoc County and the street and highway mileage under county or municipal jurisdiction by function. Over 40 miles, or 2.7 percent, of Manitowoc County's 1,502 miles of transportation facilities are arterials, while over 312 miles (20.8 percent) of these facilities are collectors, and over 1,150 (76.5 percent) miles of these facilities are local streets and roads. Table 8.1 does not include the functional classification of state trunk highways (including Interstate and U.S. marked highways).

Table 8.1: Street and Highway Miles by Functional Classification and Jurisdiction, Manitowoc County, 2007

Local Jurisdiction	Gross Miles	County Miles	Municipal Miles	County Jurisdiction			Municipal Jurisdiction		
				Arterial	Collector	Local	Arterial	Collector	Local
Town of Cato	82.47	16.81	65.66		16.17	0.64			65.66
Town of Centerville	51.77	13.81	37.96		13.81			1.01	36.95
Town of Cooperstown	79.05	17.71	61.34		17.71				61.34
Town of Eaton	54.90	8.07	46.83		8.07				46.83
Town of Franklin	85.24	20.05	65.19		18.74	1.31			65.19
Town of Gibson	74.31	14.63	59.68		14.63			0.91	58.77
Town of Kossuth	88.68	23.70	64.98		23.70			0.50	64.48
Town of Liberty	74.02	13.84	60.18		13.84			2.14	58.04
Town of Manitowoc	18.93	6.98	11.95	2.45	4.53			1.00	10.95
Town of Manitowoc Rapids	62.38	10.99	51.39	0.96	10.03			0.81	50.58
Town of Maple Grove	76.88	13.86	63.02		13.86			1.05	61.97
Town of Meeme	72.36	20.72	51.64		20.72				51.64
Town of Mishicot	61.75	8.93	52.82		8.93			1.34	51.48
Town of Newton	82.11	18.77	63.34		16.26	2.51		0.85	62.49
Town of Rockland	66.49	13.51	52.98		13.51			1.29	51.69
Town of Schleswig	68.60	12.52	56.08	0.17	12.35			3.37	52.71
Town of Two Creeks	27.17	1.89	25.28		1.89				25.28
Town of Two Rivers	57.73	16.10	41.63	1.06	15.04		0.36		41.27
Village of Cleveland	16.02	4.17	11.85		4.17			0.56	11.29
Village of Francis Creek	7.27	2.90	4.37		2.90				4.37
Village of Kellnersville	2.94	2.01	0.93		2.01				0.93
Village of Maribel	4.09	2.92	1.17		2.92				1.17
Village of Mishicot	11.18	2.35	8.83		2.35			0.83	8.00
Village of Reedsville	9.39	0.43	8.96		0.43			1.82	7.14
Village of St. Nazianz	6.98	2.08	4.90		2.08			0.18	4.72
Village of Valders	7.72	1.69	6.03		1.69			1.12	4.91
Village of Whitelaw	3.52	0.30	3.22		0.18	0.12			3.22
City of Kiel	20.19	1.18	19.01	0.80	0.38			0.98	18.03
City of Manitowoc	169.93	10.90	159.03	7.25	3.65		21.07	19.70	118.26
City of Two Rivers	58.66	1.70	56.96	1.13	0.57		4.90	5.61	46.45
Total Mileage	1,502.73	285.52	1,217.21	13.82	267.12	4.58	26.33	45.07	1,145.81

Note: This table does not include the functional classification of state trunk highways (including Interstate and U.S. marked highways). Most state trunk highways are functionally classified as principal arterials.

Source: Wisconsin Department of Transportation, Wisconsin Information System for Local Roads (WISLR), 2007; and Bay-Lake Regional Planning Commission, 2009.

Traffic Counts

An analysis of past and present traffic volumes is beneficial in determining the traffic conditions in a community. Traffic volumes are usually presented as an Annual Average Daily Traffic (AADT) figure, and are calculated for a particular intersection or segment of roadway. In the past, the Wisconsin Department of Transportation, as part of its traffic count program, provided highway traffic volumes from selected highways and roads for all state communities on a rotating basis by providing these counts once every three years. For Manitowoc County, traffic volumes were last counted in 2005, with counts also taken in 1996, 1999, and 2002. The daily traffic counts are taken for 48 hours, and are reported as a 24 hour average weekday count for a specific data collection period.

Beginning in 2006, principal arterials and minor arterials over 5,000 AADT will be counted by WisDOT every three years. Minor arterials under 5,000 AADT and collectors over 5,000 AADT will be counted every six years. Collectors under 5,000 AADT are to be counted every ten years. Special counts can be requested for highways where significant projects are planned.



Table 8.2 lists the average annual daily traffic counts for Interstate Highway 43 in Manitowoc County for 2002 and 2005. Table 8.2 indicates that all segments of Interstate Highway 43 in Manitowoc County increased in traffic between 2002 and 2005.

Table 8.2: Annual Average Daily Traffic, Interstate Highway 43, Manitowoc County, 2002 and 2005

Count Location	Number		Percentage	
	2002 ^{1,2}	2005 ^{1,2}	Difference 2002 - 2005	Difference 2002 - 2005
North of STH 147/CTH Z	18,300	19,200	900	4.92%
CTH K to STH 147/CTH K	15,900	17,400	1,500	9.43%
CTH V to CTH K	17,000	18,100	1,100	6.47%
USH 10 West/STH 310 to CTH V	17,500	18,700	1,200	6.86%
CTH JJ/USH 10 East/STH 42 North to USH 10 West/STH 310	17,400	21,300	3,900	22.41%
USH 151/STH 42 South to CTH JJ/USH 10 East/STH 42 North	19,600	21,500	1,900	9.69%
CTH C to USH 151/STH 42 South	20,700	21,000	300	1.45%
CTH XX to CTH C	21,900	23,600	1,700	7.76%

Notes:

⁽¹⁾ Annual average daily traffic volumes were collected at interchange ramps in 2002, but not in 2005.

⁽²⁾ Directional traffic counts were collected for Interstate Highway 43 in 2002, but only total counts were collected in 2005.

Source: Wisconsin Department of Transportation, Wisconsin Highway Traffic Volume Data, 2002 and 2005; and Bay-Lake Regional Planning Commission, 2008.



Table 8.3 lists the average annual daily traffic counts for all other U.S. and State highways within Manitowoc County for 2002 and 2005. These facilities include U.S. Highways 10 and 151, as well as State Trunk Highways 32/57, 42, 67, 147 and 310. Traffic on Manitowoc County's U.S. and state highways fluctuated between 2002 and 2005, including decreases in observed traffic volumes along several highways in cities and larger villages.

Table 8.3: Annual Average Daily Traffic, U.S. and State Trunk Highways, Manitowoc County, 2002 and 2005

Count Location	2002	2005	Number Difference 2002 - 2005	Percentage Difference 2002 - 2005
U.S. Highway 10				
Between N. 8th St. and N. 10th St., City of Manitowoc	19,100	15,700	(3,400)	-17.80%
Between N. 12th St. and Menasha Ave., City of Manitowoc	16,100	13,700	(2,400)	-14.91%
Between Menasha Ave. and N. 18th St./CTH Q, City of Manitowoc	15,900	12,200	(3,700)	-23.27%
East of North 21st St., City of Manitowoc	13,600	11,700	(1,900)	-13.97%
Between N. 23rd St. and N. 21st St., City of Manitowoc	13,500	11,000	(2,500)	-18.52%
West End of USH 10 Viaduct, City of Manitowoc	13,300	12,100	(1,200)	-9.02%
East of Rapids Rd., City of Manitowoc	12,500	10,500	(2,000)	-16.00%
IH 43 to Rapids Road	6,200	6,500	300	4.84%
West of IH 43	4,200	4,400	200	4.76%
East of CTH T	6,700	6,600	(100)	-1.49%
At CTH S, Village of Whitelaw	7,600	7,600	0	0.00%
East of CTH J	5,400	6,200	800	14.81%
West of CTH J	5,400	5,800	400	7.41%
Between CTH W and CTH G	5,600	5,600	0	0.00%
State Highways 32/57				
West of STH 32/57 Split	6,600	7,500	900	13.64%
East of Kiel/STH 67	7,400	7,300	(100)	-1.35%
West of STH 67, City of Kiel	3,600	3,700	100	2.78%
At Sheboygan River Bridge, City of Kiel	4,500	4,200	(300)	-6.67%
East of STH 149, City of Kiel	5,800	5,200	(600)	-10.34%
East of CTH AA/Calumet County Line, City of Kiel	3,100	2,900	(200)	-6.45%
State Highway 42				
South of CTH X	1,900	2,000	100	5.26%
South of CTH C	2,000	1,900	(100)	-5.00%
South of USH 151	4,500	4,400	(100)	-2.22%
East of North 8th St., City of Manitowoc	11,600	9,900	(1,700)	-14.66%
Between Johnston Dr. and Reed Ave., City of Manitowoc	16,800	15,600	(1,200)	-7.14%
Between Reed Ave. and CTH DD, City of Manitowoc	18,100	16,300	(1,800)	-9.94%
Between CTH DD and Woodland Dr., City of Manitowoc	19,000	16,700	(2,300)	-12.11%
West of Columbus St., City of Two Rivers	14,900	14,500	(400)	-2.68%
East of Columbus St., City of Two Rivers	14,300	13,600	(700)	-4.90%
East of Roosevelt Ave., City of Two Rivers	13,700	12,300	(1,400)	-10.22%
West of Washington St., City of Two Rivers	9,700	8,500	(1,200)	-12.37%
At West Twin River Bridge, City of Two Rivers	12,400	10,100	(2,300)	-18.55%
South of STH 310/16th St., City of Two Rivers	11,400	9,100	(2,300)	-20.18%
South of STH 147/22nd St., City of Two Rivers	9,500	8,200	(1,300)	-13.68%
East of Washington St., City of Two Rivers	10,700	10,100	(600)	-5.61%
At East Twin River Bridge, City of Two Rivers	11,100	10,500	(600)	-5.41%
At Intersection of 22nd St. and Lincoln Ave., City of Two Rivers	8,400	8,200	(200)	-2.38%
North of 30th St., City of Two Rivers	4,500	4,900	400	8.89%
North of CTH V	3,800	3,200	(600)	-15.79%
State Highway 67				
South of STH 32/STH 57, City of Kiel	3,600	3,000	(600)	-16.67%
North of STH 32/STH 57, City of Kiel	7,800	6,900	(900)	-11.54%
Between Sheboygan River and CTH AA, City of Kiel	7,700	7,500	(200)	-2.60%
North of CTH AA, City of Kiel	5,700	4,800	(900)	-15.79%
North of CTH X	3,000	2,900	(100)	-3.33%

(Table 8.3 continued on next page)

Table 8.3 (continued): Annual Average Daily Traffic, U.S. and State Trunk Highways, Manitowoc County, 2002 and 2005

Count Location	2002	2005	Number Difference 2002 - 2005	Percentage Difference 2002 - 2005
State Highway 147				
West of Washington St., City of Two Rivers	6,300	5,900	(400)	-6.35%
Forest Ave. Northwest of 22nd St., City of Two Rivers	11,400	9,300	(2,100)	-18.42%
Forest Ave. Southeast of Tannery Rd., City of Two Rivers	9,900	8,900	(1,000)	-10.10%
Between Tannery Rd. and 34th St., City of Two Rivers	6,800	6,500	(300)	-4.41%
Southeast of CTH VV, City of Two Rivers	5,000	4,500	(500)	-10.00%
Southeast of CTH V, Village of Mishicot	3,200	3,000	(200)	-6.25%
Northwest of CTH B, Village of Mishicot	3,600	2,900	(700)	-19.44%
East of IH 43	3,100	3,100	0	0.00%
U.S. Highway 151				
Between S. 8th St. and S. 9th St., City of Manitowoc	10,400	10,200	(200)	-1.92%
Between S. 9th St. and S. 10th St., City of Manitowoc	11,200	10,300	(900)	-8.04%
Between S. 10th St. and S. 11th St., City of Manitowoc	12,000	10,400	(1,600)	-13.33%
Between S. 14th St. and S. 16th St., City of Manitowoc	14,300	10,700	(3,600)	-25.17%
Between S. 20th St. and S. 21st St., City of Manitowoc	15,300	11,400	(3,900)	-25.49%
Between S. 24th St. and S. 25th St., City of Manitowoc	16,800	12,800	(4,000)	-23.81%
Southwest of S. 26th St., City of Manitowoc	22,400	17,700	(4,700)	-20.98%
Between S. 30th St. and S. 35th St., City of Manitowoc	19,200	17,600	(1,600)	-8.33%
Between S. 35th St. and S. 39th St./Division St., City of Manitowoc	19,900	16,700	(3,200)	-16.08%
Between S. 39th St./Division St. and CTH CR/Dewey St., City of Manitowoc	14,600	13,500	(1,100)	-7.53%
Between CTH CR/Dewey St. and CTH R/Rapids Rd., City of Manitowoc	18,100	16,100	(2,000)	-11.05%
Between CTH R/Rapids Rd. and IH 43, City of Manitowoc	19,800	20,100	300	1.52%
Between IH 43 and STH 42, City of Manitowoc	13,100	13,300	200	1.53%
West of STH 42, City of Manitowoc	5,800	6,800	1,000	17.24%
East of CTH S	4,400	4,500	100	2.27%
East of CTH A	3,400	3,500	100	2.94%
East of STH 67	3,100	3,200	100	3.23%
State Highway 310				
West of Washington St., City of Two Rivers	5,000	3,100	(1,900)	-38.00%
At West Twin River Bridge, City of Two Rivers	11,500	9,800	(1,700)	-14.78%
Between Hawthorne St. and Madison St., City of Two Rivers	4,400	3,800	(600)	-13.64%
Northwest of 14th St., City of Two Rivers	3,900	3,300	(600)	-15.38%
West of Columbus St., City of Two Rivers	4,400	4,500	100	2.27%
East of Johnston Dr.	4,700	4,800	100	2.13%
East of CTH Q	8,200	8,500	300	3.66%
East of CTH R/Rapids Rd.	8,900	8,400	(500)	-5.62%

Source: Wisconsin Department of Transportation, *Wisconsin Highway Traffic Volume Data*, 2002 and 2005; and Bay-Lake Regional Planning Commission, 2008.



Of the 31 county trunk highways located in Manitowoc County, only 10 had traffic counts that were measured in 2002 and 2005, and only five (5) of these were counted in more than one location (Table 8.4). Total traffic volumes in both 2002 and 2005 are within the capacities of these highways to handle the traffic, and steep increases and decreases are often the result of local conditions at the time of the traffic volume count.

Table 8.4: Annual Average Daily Traffic, Select County Trunk Highways, Manitowoc County, 2002 and 2005

Count Location	2002	2005	Number Difference 2002 - 2005	Percentage Difference 2002 - 2005
County Highway A				
North of County Highway X	1,800	1,700	(100)	-5.56%
County Highway B				
North of Magnolia Dr., City of Manitowoc	5,400	5,800	400	7.41%
South of CTH VV/Shoto	6,000	6,200	200	3.33%
County Highway P				
Menasha Ave. Northwest of Waldo Blvd., City of Manitowoc	2,900	2,500	(400)	-13.79%
West of CTH Q, City of Manitowoc	5,600	5,500	(100)	-1.79%
Between N. 21st. St. and N. 23rd St., City of Manitowoc	5,600	5,700	100	1.79%
East of CTH R/Rapids Rd., City of Manitowoc	4,500	3,900	(600)	-13.33%
County Highway Q				
North of USH 10/STH 42/Waldo Blvd., City of Manitowoc	5,800	5,200	(600)	-10.34%
South of CTH P/Menasha Ave., City of Manitowoc	5,600	4,700	(900)	-16.07%
County Highway R				
North of USH 151, City of Manitowoc	7,800	7,100	(700)	-8.97%
At Manitowoc River Bridge, City of Manitowoc	10,600	11,200	600	5.66%
South of USH 10/STH 42/Waldo Blvd., City of Manitowoc	13,500	12,300	(1,200)	-8.89%
Between USH 10/STH 42/Waldo Blvd., and Wildwood Dr., City of Manitowoc	8,900	8,600	(300)	-3.37%
Between Wildwood Dr. and Fleetwood Dr., City of Manitowoc	8,000	7,200	(800)	-10.00%
South of CTH P/Menasha Ave., City of Manitowoc	7,000	6,000	(1,000)	-14.29%
South of CTH P/Homestead Rd., City of Manitowoc	8,100	6,100	(2,000)	-24.69%
County Highway AA				
West of STH 67, City of Kiel	6,200	7,300	1,100	17.74%
East of STH 32/57, City of Kiel	5,400	5,400	0	0.00%
County Highway CR				
Between Dewey St. and CTH CL/Viebahn St	4,000	3,800	(200)	-5.00%
County Highway DD				
North of STH 42/Memorial Dr.	2,500	2,100	(400)	-16.00%
County Highway JJ				
West of IH 43	3,100	3,800	700	22.58%
County Highway VV				
East of STH 147	2,700	2,900	200	7.41%

Source: Wisconsin Department of Transportation, *Wisconsin Highway Traffic Volume Data*, 2002 and 2005; and Bay-Lake Regional Planning Commission, 2008.

Traffic Flow Capacity

Table 8.5 details the maximum level of traffic that roads are designed and engineered to accommodate. Volume-to-capacity ratios used for this measurement are determined by the Peak Hourly Traffic (PHT), regardless of traffic distribution by direction. The maximum capacity values presented in Table 8.5 should be considered the average maximum volume on various types of roads under ideal conditions.

Table 8.5: Uninterrupted Traffic Flow Capacities Under Ideal Conditions

Highway Type	Capacity Peak Hour Traffic
Multi-Lane and Divided Highways	2,000 vehicles per lane
Two-Lane, Two-Way Highways	2,000 vehicles both lanes
Three-Lane, Two-Way Highways	4,000 vehicles all lanes

Source: Highway Capacity Manual (3rd Edition), Transportation Research Board, 1985; and Bay-Lake Regional Planning Commission, 2008.



Based on Table 8.5, the maximum total capacity of Interstate 43 under ideal conditions is 2,000 vehicles per hour per lane. The maximum total capacity of most county highways and nearly all town roads under ideal conditions is 2,000 vehicles per hour in both lanes.

At present, there are no known roads or road segments located within Manitowoc County that have approached their design capacity as listed in Table 8.5.

Traffic Crashes

Vehicle crash reports filed with local police departments, Manitowoc County Sheriff’s Department, and the Wisconsin Department of Transportation provide the detail of the time, location, type and severity of the crash that has occurred. These reports are often excellent indicators of problems with road alignments, roadway construction, and geometric design of the road. The number, location and severity of accidents can often indicate problem areas (in terms of traffic safety) which may be alleviated through a variety of measures including alterations in the street geometry, enlargement of the intersection turning radii, placement of more prominent signs, relocation of access drives and speed changes.



Table 8.6 analyzes motor vehicle crashes in Manitowoc County for calendar years 2004 through 2006 by crash severity. The vast majority of crashes from 2004 through 2006 (3,875 of 5,471, or nearly 71 percent) were property damage only crashes.

Table 8.6: Motor Vehicle Crashes in Manitowoc County, 2004-2006

Year	Total Crashes	Fatality Crashes	Persons Killed	Injury Crashes	Persons Injured	Property Damage Crashes
2004	1,872	8	9	518	721	1,346
2005	1,865	11	11	525	742	1,329
2006	1,734	6	6	528	724	1,200
Total	5,471	25	26	1,571	2,187	3,875

Source: Wisconsin Department of Transportation (for all years listed); and Bay-Lake Regional Planning Commission, 2008.

Table 8.7 analyzes intersection and non-intersection crashes by highway jurisdiction in Manitowoc County for calendar years 2004 through 2006. Intersection crashes often may be indicators of a problem with the sight triangle at the intersection (visibility), location and visibility of signs, and/or the geometric configuration of the roadway itself.



The majority of crashes (nearly 46 percent) in the county were on local streets and roads; approximately 31 percent of crashes in the county occurred on U.S. and state highways; over 15 percent of crashes in the county were on county highways; and the remaining eight (8) percent of the crashes in the county were on Interstate Highway 43. It should be noted that the number of crashes on local streets and roads may be over-reported, since many of these facilities are also county highways but were coded as local facilities.

Table 8.7: Intersection and Non-Intersection Crashes by Highway Jurisdiction in Manitowoc County, 2004-2006

Crash Location	Total Crashes	Intersection Crashes	Non-Intersection Crashes
Interstate Highway 43	458	39	419
U.S. and State Highways	1,685	806	879
County Highways	832	117	715
Local Streets and Roads	2,496	1,014	1,482
Total	5,471	1,976	3,495

Note: The number of crashes on local streets and roads may be over-reported, since many of these facilities are also county highways but were coded as local facilities.

Source: Wisconsin Department of Transportation (for all years listed); and Bay-Lake Regional Planning Commission, 2008.

Access Controls

Access to the State Highway system is managed in several ways. It can be managed through the purchase of access controls, through statutory authority to limit access, and through the driveway permitting process. Currently, the following highways have restricted access through either purchased controls or statutory controls:

- State Highway 42 (in the Cities of Manitowoc and Two Rivers);
- State Highway 67 (from the City of Kiel to U.S. Highway 151);
- State Highway 310;
- U.S. Highway 151 (from the Village of Valders to the City of Manitowoc);
- U.S. Highway 10; and
- Interstate Highway 43.

The following actions along State and U.S. Highways require an access permit:

- Changing the type of land use of a driveway (e.g., residential to commercial);
- Physically modifying the existing driveway (e.g., paving, widening);
- Relocating a driveway;
- Removing a driveway; and
- Constructing a new driveway.

In addition, state statutes allow counties, cities, and villages through an adopted ordinance to control access on county highways that have traffic counts in excess of 1,000 vehicles daily.

Park and Ride Lots

Situated at various locations along major transportation routes, park and ride lots can be used to form carpools and vanpools and, in some major metropolitan areas, catch a ride on a commuter bus. There are numerous park and ride lots located throughout the state, and all of them are wheelchair accessible. In Manitowoc County, park and ride lots simply offer free parking.



There are five (5) park and ride lots in Manitowoc County (Map 8.1):

- Interstate 43/County Highway C exit (Exit 144, Town of Newton): Lighted asphalt lot with parking for 15 vehicles.
- Interstate 43/U.S. Highway 151 exit (Exit 149, City of Manitowoc), access via frontage road south of U.S. Highway 151: Asphalt lot with parking for 75 vehicles. This parking lot is served by Maritime Metro Transit.
- Interstate 43/U.S. Highway 10 East and State Highway 42 exit (Exit 152, west of the City of Manitowoc), access via Michigan Avenue: Lighted asphalt lot with parking for 13 vehicles.
- Interstate 43/U.S. Highway 10 West and State Highway 310 exit (Exit 154, west of the City of Two Rivers), access via Wagon Wheel Road: Lighted asphalt lot with parking for 93 vehicles.
- Interstate 43/County Highway Z and State Highway 147 exit (Exit 164, east of the Village of Maribel), access east of County Highway R: Lighted gravel lot with parking for 20 vehicles.

Transit

The Maritime Metro Transit System (MMT) is the only urban transit operation serving Manitowoc County. MMT is a publicly owned and operated fixed route transit system serving the cities of Manitowoc and Two Rivers.

MMT is a department of the City of Manitowoc and is funded by federal, state, local municipality, and farebox funding sources. MMT provided more than 290,000 rides in 2007, and ridership was expected to surpass 300,000 in 2008.



Hours of service on most routes are between 5:00 a.m. and 8:00 p.m. on weekdays and between 9:00 a.m. and 4:00 p.m. on Saturdays. There is no service on Sundays or on major holidays.

MMT has six (6) fixed routes as follows:

- **Route 1** provides service on an hourly basis between the cities of Manitowoc and Two Rivers. This route does not connect at the downtown Manitowoc transfer point, but connects with Route 2 at the Meadow Links Transfer Point on Johnston Drive. Much of the core of the City of Two Rivers is served by Route 1, including downtown Two Rivers and the northwest and east sides of the city.
- **Route 2** provides service every ½ hour to the northeast side of the City of Manitowoc.
- **Route 3** provides service every ½ hour to the west side of the City of Manitowoc. Routes 2 and 3 interface with each other.
- **Route 4** provides service every ½ hour to the mostly residential southeastern part of the City of Manitowoc.
- **Route 5** provides service every ½ hour to the southwestern portion of the City of Manitowoc.

- **Route 6** provides service every ½ hour to the northwest part of the City of Manitowoc.

Passenger facilities include about ten passenger shelters at locations where there are frequent passenger boardings, as well as the Intermodal Transfer Center in downtown Manitowoc.

MMT has a contract with Assist-to-Transport to provide ADA paratransit service in the MMT service area. The ADA service area is defined as ¾ of one mile around each of the six (6) MMT fixed routes.

Elderly and Disabled Transportation

Elderly and disabled transportation systems refer to those programs that provide rides through scheduled bus services, volunteer programs with private vehicles, etc. The Manitowoc County Aging and Disability Resource Center (ADRC) is the manager of the Section 85.21 elderly and disabled transportation program.

The Manitowoc County ADRC works with several transportation providers in coordinating elderly and disabled transportation in the county. These providers include: Maritime Metro Transit, Assist-to-Transport, and volunteer escort services coordinated by the Manitowoc County ADRC. In addition, several taxi, charter bus and accessible transportation services are available within the county.

The *Public Transit – Human Services Transportation Coordination Plan* also assists with elderly and disabled transportation in the county.

Intercity Bus Transportation

Intercity bus service via Indian Trails Bus Lines is available from the City of Manitowoc, with service provided to Milwaukee and Green Bay. The Indian Trails station serving Manitowoc is located at the Shell station at 1701 South 41st Street, in close proximity to the Interstate 43 interchange with U.S. Highway 151. One northbound bus and one southbound bus serve the Manitowoc area, with the northbound bus leaving each day for Green Bay and points north, and the southbound bus leaving each day for Sheboygan, Milwaukee, and Chicago.

It appears that Jefferson Bus Lines will also come into this market in mid July of 2008. The route proposed by Jefferson Bus Lines would connect Minneapolis-St. Paul to Green Bay, then Green Bay to Milwaukee.

In addition, the Sheboygan Parking and Transit Utility (Sheboygan Transit) was awarded Congestion Mitigation and Air Quality (CMAQ) funds to provide more frequent intercity bus service between Green Bay and Milwaukee, including the Manitowoc and Sheboygan areas. Sheboygan Transit will select a private operator to run the service which, hopefully, will begin operating in early 2009.

Bicycle Transportation

Currently, the county has a limited number of facilities (e.g., signed and unsigned shared roadways, shared use paths and bicycle lanes) to serve bicyclists. In spite of having limited facilities, the county's local street and road system can and does safely and efficiently serve the needs of bicyclists in cases where traffic levels remain low to moderate.



Manitowoc County bicycle facilities include:

- **Shared Roadways (No Bikeway Designation)**

In the City of Manitowoc, a paved road shoulder utilized by bicyclists and pedestrians is located on the east side of Memorial Drive, along the Elks Lodge Golf Course. This is a bituminous paved shoulder that is approximately three feet wide. The shoulder begins at the intersection of Waldo Boulevard, and proceeds north approximately ¼ mile to its intersection with Johnston Drive.

- **Signed Shared Roadways**

There is only one known publicly defined and signed bicycle route in Manitowoc County. This signed shared roadway is along North 11th Street and North 10th Street between Waldo Boulevard and York Street in the City of Manitowoc.

- **Shared Use Paths**

Manitowoc County has no shared use paths located within street rights-of-way, nor are they located in rural areas of the county. However, the Mariner's Trail is an off-street shared use path. This shared use trail begins in downtown Manitowoc, runs along Maritime and Memorial Drives into the City of Two Rivers, where it connects with the Rawley Point Recreational Trail. Bicyclists can then utilize the Rawley Point Trail to arrive at Point Beach State Forest.

Point Beach State Forest is home to the Red Pine Trail, which is four miles in length. The Red Pine Trail was developed in 1993 by the Wisconsin Department of Natural Resources (DNR). Another trail is being planned which will begin at the Point Beach State Forest headquarters and will link the Red Pine Trail to the City of Two Rivers.

- **Bicycle Lanes**

Currently, there are no bicycle lanes located in Manitowoc County.

- **Bicycle Facilities in Progress**

The Manitowoc County Highway Department received a Congestion Mitigation and Air Quality (CMAQ) grant from WisDOT to “design and construct 3.7 miles of five foot bike lanes and 1.36 miles of off-road shared use path along County Highway Q from Magnolia Avenue to the Devil’s River State Trail crossing on Shoto Road.”

Manitowoc County received Wisconsin DNR Stewardship funding in 2006 to develop the Devil’s River State Trail along an abandoned railroad corridor from the Manitowoc County / Brown County line, south to Rockwood Road in the Town of Kossuth.

State Assessment of Bicycle Routes in Manitowoc County

The *Wisconsin Bicycle Transportation Plan 2020* assessed conditions for bicycling in Manitowoc County.

The Wisconsin State Bike Map classifies state and county highways throughout the state in terms of bicycling conditions. The map also identifies bicycle trails and mountain bike facilities, and provides contacts for local bicycle route information. Town roads are not rated for their bicycling conditions, but are identified with their road names and surface type. Each county map in the *Wisconsin Bicycle Transportation Plan 2020* highlights the most favorable bicycling conditions while presenting the full range of roadways, from narrow town roads to U.S. Highways. This approach enables cyclists of all abilities to select their own routes to meet their individual transportation and recreational needs.

Refer to the *Wisconsin Bicycle Transportation Plan 2020* for a listing of roads in Manitowoc County that are classified as having the best conditions, having moderate conditions, or having undesirable conditions for bicycle travel. Also reference the *Wisconsin State Bike Map* which identifies “local roads with higher traffic volumes” that may not offer suitable conditions for bicycle travel.

Rail Service

Over the last several years, the amount of Wisconsin track miles owned and operated by railroads has declined, due in large part to the consolidation of railroad operators and the subsequent elimination of duplicate routes. Four Class I railroads now own approximately 80 percent of the rail lines within Wisconsin. The Canadian National, Escanaba and Lake Superior and Union Pacific Railroads are the dominant rail lines in northeastern Wisconsin.



In Manitowoc County, the dominant rail line is the Canadian National (CN). One CN line connects Manitowoc and Valders to the Appleton/Neenah/Menasha area. A second CN line connects Rockwood and Manitowoc to Cleveland, with further connections to the south via the Union Pacific Railroad. A third CN line connects Kiel to New Holstein, Chilton, Hilbert and the Appleton/Neenah/Menasha area. A Wisconsin and Southern Railroad (WSOR) line connects Kiel to Elkhart Lake, Plymouth, Waldo, Adell, Random Lake and Saukville, which connects to a CN line to the south which travels to the Milwaukee area. The WSOR came into the market between Kiel and Saukville when the CN intended to no longer provide service on the Kiel to Saukville rail line. The CN also abandoned service between Rockwood and Denmark, which was turned into a “rails to trails” bicycle and pedestrian facility known as the Devil’s River State Trail.

Rail connections to the Appleton/Neenah/Menasha area connect to destinations in Wisconsin and adjacent states to the north, west and south.

Air Service

The inventory of air transportation systems and facilities includes both public airports that service the region and also the private or semi-public airport facilities that service private commercial and recreational interests.

Regional Airports

Residents of Manitowoc County are provided with two (2) regional airports for commercial passenger and air freight service: General Mitchell International Airport in Milwaukee, and Austin Straubel International Airport in metropolitan Green Bay.

General Mitchell International Airport

General Mitchell International Airport (MKE) is a medium-hub airport owned and operated by Milwaukee County. Mitchell's thirteen airlines offer roughly 235 daily departures (plus 235 daily arrivals). About 90 cities are served nonstop or direct from General Mitchell International Airport, which is the largest airport in Wisconsin.

Austin Straubel International Airport

Austin Straubel International Airport (GRB) is located in the Village of Ashwaubenon in Brown County. The airport is owned and operated by Brown County. Austin Straubel International Airport is a full service regional connector that currently provides direct service flights on six airlines to eight cities, including Chicago, Cincinnati, Detroit, Las Vegas, Marquette, Milwaukee, Minneapolis-St. Paul, and Phoenix. Austin Straubel is the third largest airport in Wisconsin.



Manitowoc County Airport

(Note: Much of the information provided regarding the Manitowoc County Airport is courtesy of Curt Drumm, President of Lakeshore Aviation, and has been condensed).

The Manitowoc County Airport was founded in 1927. The airport was operated by the City of Manitowoc until 1975, at which time title and operations were purchased by Manitowoc County. Manitowoc County has operated the airport ever since, most currently under the direction of the Manitowoc County Highway Department, which oversees all daily operations, financial planning and airport/runway development and maintenance. It is one of 132 public use airports in Wisconsin. The airport has two runways, the longest of which is 5,002 feet long. The secondary runway is 3,343 feet long. Both runways are 100 feet in width. The airport is served by several instrument approaches and high intensity lighting systems, allowing landing in reduced visibility and inclement weather.

As of March 2008, the airport covered 482 acres and had 30 hangars. All hangars are privately owned, but are built on county-owned property under long-term land leases. These hangars vary greatly in size. The airport has tremendous potential (and land available) for expansion for additional hangars, industrial aviation-related development, and for potential runway extension. Over 70 airplanes of various types are based at the airport, including jets, multi-engine aircraft, seaplanes and single-engine aircraft. The airport has reported over 38,000 takeoff and landing operations annually.

A recent economic impact study prepared by the WisDOT Bureau of Aeronautics indicated that in 2000, activity at the airport generated a total estimated economic impact of \$5.5 million in economic output (sales), supported 89 full-time equivalent jobs, and contributed \$3.9 million in personal income to the county.

Commercial operations at the airport are managed by the Fixed Base Operator (FBO), Lakeshore Aviation. Under a long-term contract with the county, Lakeshore Aviation provides general aviation services, including: aviation fuel, aircraft parking, hangars (including hangar leasing and sales), a passenger terminal and lounge, flight weather briefing, flight training, aircraft rental, aircraft maintenance, aerial tours and sightseeing, and aircraft charters. Lakeshore Aviation owns a variety of single- and multi-engine aircraft, and employs eight staff. All parking at the Manitowoc County airport is free of charge.

Interesting facts about the Manitowoc County Airport include: (1) the airport has an importer of light sport airplanes on the airport grounds; (2) the airport is home to an active local EAA chapter; and (3) the airport hosts an annual air show.

The Manitowoc County Airport is classified as a Transport/Corporate (T/C) Airport. According to the WisDOT Bureau of Aeronautics, T/C class airports “are intended to serve corporate jets, small passenger and cargo jet aircraft used in regional service and small airplanes (piston or turboprop) used in commuter air service. These aircraft have a gross takeoff weight of less than 60,000 pounds, with approach speeds below 141 knots and wingspans of less than 118 feet.” The WisDOT Bureau of Aeronautics also notes that T/C class airports in Wisconsin “normally have a primary runway length of 4,800 to 6,000 feet.” Although Manitowoc was served by commercial air carriers in the past, none is currently serving the area, due primarily to deregulation of the airline industry, cutbacks in federal subsidies, and the nearby location of other larger airports which do currently offer commercial service.

Access to the airport is best achieved by taking County Highway P/Menasha Avenue from the east or the west to Freedom Way, where the airport is located. Airport users coming from the west can use U.S. Highway 10 and County Highway R/Rapids Road to get to County Highway P and Freedom Way. Airport users coming from the east (Cities of Manitowoc and Two Rivers) can take Waldo Boulevard to Menasha Avenue to get to Freedom Way and the airport.

Private Recreational Airports

There are also several privately owned airstrips located within Manitowoc County providing general small craft services and/or recreational flights to the public. These small, private airport facilities offer minimal services, and are generally utilized by recreational fliers. Private recreational airports are generally characterized by short (2,000 to 3,000 foot) turf covered runways which can accommodate small single engine and light twin engine aircraft.

Private airport facilities are required to obtain a certificate of approval or permit from the Wisconsin Department of Transportation’s Bureau of Aeronautics. The permit is issued if the Department determines that the location of the proposed airport is compatible with existing and planned transportation facilities in the area. Generally, permits are granted provided that the proposed air strip is located such that approaching and departing aircraft clear all public roads, highways, railroads, waterways or other traverse ways by a height which complies with applicable federal standards. The permit is issued upon satisfactory review of the application by WisDOT, the county, the local jurisdiction in which the proposed facility would be located, and by the applicable regional planning commission.

Manitowoc County airstrips recorded in WisDOT files in 1990 that have not been abandoned or deactivated included: Wind Haven in Collins; Larrabee Airport in Larrabee; Mueller Farm Vintage Area in Mishicot; Flying Dollar Ranch in Maribel, and Triple S Ranch in Whitelaw. In

addition, helipads were recorded for hospitals serving the Manitowoc-Two Rivers area. It is important to note that the last tabular records of these airstrips were documented in 1990, and circumstances may have changed since then.

Harbors and Marinas

The source of this information is the *Port, Harbor and Recreational Marina Study for the Bay-Lake Region* produced by the Bay-Lake Regional Planning Commission in 2004.

Manitowoc Harbor

Manitowoc Harbor consists of an entrance channel, an outer harbor of approximately 78 acres formed by a north and south breakwater, and an inner harbor extending from the mouth of the Manitowoc River to just downstream of the second rail bridge, adjacent to the Burger Boat Company. Project depth in the inner harbor is 22 feet, in the outer harbor within the channel is 23 feet, and in the entrance channel beyond the harbor is 25 feet.

Harbor Channel

A dredged entrance channel leads from deep water in Lake Michigan between converging breakwaters through Manitowoc Harbor to the mouth of the Manitowoc River, and then upstream for about 1.7 miles to a point about 200 feet below the railroad bridge. In May 2003, U.S. Army Corps of Engineers surveys indicate that the controlling depths were 20.4 feet at mid-channel in the entrance and through Manitowoc Harbor to the mouth of the river, then 20.2 feet to the first railroad bridge, then 16.9 feet at mid-channel to the second railroad bridge, and finally 5.7 feet at the head of the project. It should be noted that work after 2003 led to the harbor channel having a depth of 18 feet to Burger Boat.

A small-boat basin, entered through an opening in the north breakwater, is about a quarter mile above the Manitowoc Breakwater Light. The east side of the entrance is protected by a short jetty, marked at its outer end by a light. The ends of the breakwater are marked by a light and a day beacon. In May 2002, the controlling depths were 6.3 feet (10.4 feet at mid-channel) in the entrance, then depths of 8 to 10 feet were in the basin and channel east of the docking piers, except for lesser depths at the extreme north end of the channel.

Manitowoc Shoal, on the south side of the approach to the harbor, has its minimum depth of 14 feet about 0.65 miles southeast of the Manitowoc Breakwater Light. The northeast side of the shoal area is marked by a buoy. A shoal with a minimum depth of 14 feet is about 1.2 miles southeast of the breakwater light.

Industrial and Commercial Uses

Major industrial and commercial users of the Manitowoc Harbor include; Anheuser-Busch Inc., Burger Boat Company, the Manitowoc Company, Medusa Cement Company, the Canadian National Railroad, Chessie System Railroad ferries, the Consumer Steel Company, and the C. Reiss Coal Company.

The Lake Michigan Carferry (i.e., S.S. Badger) carries passengers and autos, and operates from the east side of the slip at the mouth of the Manitowoc River. The ferry operates between Manitowoc and Ludington, Michigan.

Water Related Recreational Uses

The Manitowoc Marina is located at the mouth of the Manitowoc River. The marina has 250 permanent slips and 30 transient slips available. Transient berths, electricity, water, ice, gasoline, diesel fuel, a marine railway with lift capacity of 35 tons for vessels up to 70 feet for hull and engine repairs, sewage pump-out facilities and a launching ramp are available on the north side of the river mouth.

The maximum boat size that the marina can accommodate is 100 feet, and the average water depth is 10 feet. Other facilities include six launch ramps, a lift, dock attendant, a store, gas and diesel fuel, electricity, pump out, dry storage, chartered fishing and sailing.

Two Rivers Harbor

The harbor at Two Rivers consists of an outer harbor formed by two parallel piers, an inner harbor basin at the confluence of the East and West Twin Rivers, and a channel one half mile in length extending from the basin upstream in the East Twin River to the 22nd Street Bridge.

The city's central business district is adjacent to the harbor area. Other uses include a commercial fishing village, heavy industrial uses, and recreational boating facilities. Major uses of the harbor include charter and commercial fishermen, recreational boaters and fishermen that use the government pier for fishing purposes.

Harbor Channel

A dredged entrance channel leads northwest from deep water in Lake Michigan between parallel piers to a harbor basin at the confluence of the East Twin River and the West Twin River and then leads upstream in the East Twin River for about a half mile to the 22nd Street Bridge. The outer ends of the piers are marked by lights, and the rivers are partially marked by private buoys; the buoys are unnumbered, and are shifted to mark the best water.

In September 2001, the controlling depths were 8.9 feet (11.0 feet at mid-channel) in the entrance channel and between the piers to the basin, then 14 to 16 feet in the basin, then 5.0 feet (6.5 feet at mid-channel) in the East Twin River to about 20th Street, then 3.3 feet to the head of the project at about the 22nd Street bridge.

The West Twin River has depths of about 9 feet in the south part of the channel from the basin to the Washington Street Bridge. The nominal head of navigation on the East Twin River is three miles from the mouth, while the nominal head of navigation on the West Twin River is seven miles from the mouth. The navigable depth of both rivers is not more than four feet. Only small recreational craft operate on these rivers above the dredged channels.

Industrial and Commercial Uses

The major commercial user of the Two Rivers Harbor is the Susie Q Fish Company, which maintains fifteen commercial boats in the Rogers Street Fishing Village on the east bank of the East Twin River between the 17th Street Bridge and the 22nd Street Bridge. There is a city-owned dock that has been used for the unloading of petroleum products and caustic soda located just downstream of the Washington Street Bridge on the west bank of the East Twin River. A pipeline from the dock connects with a 212,000 barrel petroleum storage facility located upstream on the West Twin River. Schwarz Marine Company, a boat builder, is located upstream of the 22nd Street Bridge on the north bank of the East Twin River.

Water Related Recreational Uses

A marina on the south side of the West Twin River provides transient berths, gasoline, diesel fuel, water, ice, electricity, sewage pump-out, marine supplies, and a launching ramp. A 40-ton crane is available for engine and electronic repairs.

In 2002, there were approximately 280 berthing facilities and 17 boat launch ramps available in the City of Two Rivers. Of these, 269 berthing facilities and launch ramps were private. Some 201 of the private berthing facilities were located on the West Twin River and the remaining 68 berthing facilities were located on the East Twin River. Approximately 92 spaces are located within the limits of the federal navigation project.

Smaller Recreational Marinas in Manitowoc County***Seagull Marina and Campgrounds***

Seagull Marina is located along the West Twin River in the City of Two Rivers. The marina has 30 permanent slips and 20 transient slips. The maximum boat size that the marina can accommodate is 38 feet. The average water depth is 10 feet. Other facilities include a ramp, a nearby lift, ships store, gas, electricity, pump out, and dry storage. Charter fishing companies and campgrounds are located within the marina.

Stop and Dock Marina

This marina is located along the West Twin River in the City of Two Rivers. The marina has 40 permanent slips and five transient slips. The maximum boat size that the marina can accommodate is 30 feet. The average water depth is three feet. Other facilities include a ramp, a nearby lift, electricity, pump out, dry winter storage, a picnic area and recreational vehicle parking.

Twin Cities Marine, Inc

This marina is located along the West Twin River in the City of Two Rivers. The marina has 25 permanent slips and five transient slips. The maximum boat size that the marina can accommodate is 26 feet. The average water depth is 12 feet. Other facilities include a ramp, a nearby lift, nearby gas, ships store, electricity, pump out, and dry and winter storage. There is an indoor marina onsite.

Sims Marina

This marina is located along the West Twin River in the City of Two Rivers. The marina has 20 permanent slips and six transient slips. The marina offers dockage facilities for boats up to 28 feet. The average water depth is six feet. Other facilities include a ramp, a nearby lift, nearby gas and diesel fuel, electricity, and a fish cleaning area. This marina also has a campground.

Harbor Assistance Program

The Harbor Assistance Program (HAP) was designed to “assist harbor communities along the Great Lakes and Mississippi River in maintaining and improving waterborne commerce.” The Wisconsin Department of Transportation has indicated that eligible “port projects typically include dock restoration, mooring structure replacement, dredging, and the construction of facilities to hold dredged material.” Grant applications are accepted twice a year, and “there are

23 ports in the state (including Manitowoc) that are potentially eligible for funding through the HAP.”

WisDOT has established the following eligibility guidelines for the HAP program:

- The project must benefit facilities that are used for cargo transfer, ship building, commercial fishing or regular ferry service;
- The applicant must be a local unit of government or a private owner of a harbor facility;
- The project must pass a rigorous benefit-cost analysis; and
- The project must have been identified in a current Three-Year Harbor Development Plan.

The Manitowoc Harbor has secured HAP funding three times from 1980 through 2006: over \$38,000 in 1982 for dredging for a channel extension; over \$2.8 million in 2003 for dock wall construction; and nearly \$1.2 million in 2006 (jointly with Burger Boat) for launch well construction.

Commercial Trucking

Commercial trucking terminals exist in the cities of Kiel, Manitowoc and Two Rivers, as well as in the Town of Newton.

INVENTORY OF APPLICABLE TRANSPORTATION PLANS AND PROGRAMS

The following section of this chapter presents information on existing state, regional, county, and local transportation related plans that apply to Manitowoc County.

Wisconsin State Highway Plan

The *Wisconsin State Highway Plan 2020* states that, “Wisconsin's State Trunk Highway system, consisting of approximately 11,800 miles of roads, is aging and deteriorating at the same time traffic congestion is increasing.” In response to this critical issue, WisDOT, in partnership with its stakeholders, developed the State Highway Plan 2020, a 21-year strategic plan which considers the highway system's current condition, analyzes future uses, assesses financial constraints and outlines strategies to address Wisconsin's preservation, traffic movement and safety needs. The plan will be updated every six years to reflect changing transportation technologies, travel demand and economic conditions in Wisconsin.

The Wisconsin State Highway Plan 2020 addresses three key elements or issues of concern relative to the State Highway System:

- Preserving the system by improving or replacing aging pavements and bridges;
- Facilitating movement of people and goods through an efficiently designed system, and with programs that reduce traffic congestion; and
- Improving highway safety through combined strategies of engineering, education and enforcement.

Connections 2030

Connections 2030 will be the statewide long-range transportation plan with a horizon year of 2030. *Connections 2030* will address all modes of transportation – roadways, air, water, rail, bicycle, pedestrian, and transit – and ways to make the individual modes work better as an integrated transportation system.

Connections 2030 will be a policy-based plan. The policy recommendations include a series of action steps to be accomplished within two to four years, five to ten years, or more than ten years into the future. WisDOT may also identify critical priorities that metropolitan planning organizations (MPOs) must maintain if funding were to decrease during the timeframe covered by the plan.

While the final plan will include statewide policy recommendations, some of these recommendations may differ by specific corridors in the state. *Connections 2030* will also include recommendations on such issues as economic development, land use, transportation finance and the environment. The goal of *Connections 2030* is to provide a plan that can aid policy makers in future transportation decisions.

Six-Year Highway Improvement Program

The Wisconsin Department of Transportation develops a *Six-Year Highway Improvement Program* which addresses the *rehabilitation* of Wisconsin’s state highways. Rehabilitation falls into three major categories (resurfacing, reconditioning and reconstruction) giving it the often used abbreviation “3-R Program.”

Resurfacing entails provision of a new surface for a better ride and extended pavement life;

Reconditioning entails addition of safety features, such as wider lanes or softening of curves and steep grades; and

Reconstruction entails complete replacement of worn roads, including the road base and rebuilding roads to modern standards.



WisDOT Northeast Region staff has indicated that within the current Six-Year Program (covering the period from 2008 through 2013), the following projects will occur. Note that WisDOT staff has also indicated that “the six-year highway improvement schedules may change.”

U.S. Highway 10

- Madison Street from 10th Street to 8th Street, City of Manitowoc: urban reconstruction (2008).
- 8th Street from Madison Street to Washington Street, City of Manitowoc: urban reconstruction with traffic calming (2008).
- Branch River to County Highway R: rubblize and overlay the existing concrete pavement, including pavement repair and overlay of ramps. Provides a five foot paved shoulder to Wagon Wheel Road (2008).
- Interstate Highway 43 to Rapids Road: pavement maintenance – concrete joint repair on the ramps at the Interstate Highway 43/U.S. Highway 10 interchange (2008).
- Branch River Bridge and Approaches: bridge replacement (2010 – 2013).

- Within village limits of Village of Reedsville: reconstruction to an urban section (2010 – 2013).

State Highway 42

- Lincoln Avenue from 22nd Street to 35th Place, City of Two Rivers: urban reconstruction with storm sewer repair/replacement (2010 – 2013).
- Sheboygan County line to U.S. Highway 151: reconditioning, plus provide a three foot paved shoulder (2010 – 2013).

Interstate Highway 43

- At State Highway 147, County Highway K and County Highway V Interchanges: concrete joint repair and inlet repair of ramps and on Interstate 43 between ramp terminals (2008).
- From North Junction of U.S. Highway 10 to State Highway 96 in Brown County: resurfacing of northbound and southbound lanes (2010 – 2013).

State Highway 67

- State Highways 32/57 to U.S. Highway 151: resurfacing and reconditioning, plus widen shoulders to accommodate bikes to County Highway X (2008 - 2009).

State Highway 147

- County Highway B/Village of Mishicot to Interstate Highway 43: patch joints as needed and diamond grind; spot repair of the asphaltic shoulders as needed (2010 – 2013).
- City of Two Rivers to Village of Maribel: concrete repair and overlay from County Highway VV to Mishicot. Concrete repair in driving and parking lanes and grinding in driving lanes only in portion of the Village of Mishicot east of County Highway B. Mill and overlay in driving lanes only in portion of the Village of Mishicot west of County Highway B. Other work from west of Mishicot to the Village of Maribel. (2010 – 2013).

U.S. Highway 151

- County Highway A to the east village limits of Valders: resurfacing (2010 – 2013).
- I-Tec Drive to State Highway 42: reconstruction with increase from two to four lanes (2010 – 2013).

State Highway 310

- County Highway R to Columbus Street: resurfacing (2009).
- Hawthorne and 14th Streets in the City of Two Rivers: reconstruction and resurfacing (2010 – 2013).
- County Highway R Intersection: mill and resurface; investigate traffic calming and intersection modifications (2009).
- County Highway Q Intersection: mill and resurface; investigate traffic calming and intersection modifications (2009).
- County Highway B Intersection: mill and resurface; investigate traffic calming and intersection modifications (2010 - 2013).

Local Projects

- County Highway T Bridge and Approaches, Town of Cooperstown, Devils River: remove and replace the existing structure with a new structure on the same alignment with improvements to the approach vertical geometrics (2009).
- Valley Drive Bridge and Approaches, Town of Manitowoc Rapids, Silver Creek: remove and replace the existing structure with a new structure on the same alignment with minimal approach work (2009).
- Newton Road Bridge and Approaches, Town of Newton, Point Creek: remove and replace the existing structure with a new structure on the same alignment with minimal approach work; consider channel change work in the vicinity of the structure to maintain structural integrity (2009).
- 17th Street Bridge and Approaches, City of Two Rivers, East Twin River: bridge replacement and preservation (2010 – 2013).

State Airport Plan

The *Wisconsin State Airport System Plan 2020* (SASP 2020) provides a framework for the preservation and enhancement of the system of public-use airports adequate to meet the current and future aviation needs of Wisconsin. The plan determines the number, location, and type of aviation facilities required to adequately serve the state's aviation needs over the 21-year planning period from 2000 through 2020.

State Highway Corridor Plans

WisDOT is partnering with the City of Two Rivers to study how a future four-lane extension of State Highway 310 should access the City of Two Rivers.

Maritime Metro Transit Development Program

The Maritime Metro Transit Development Program (TDP) was completed by the Bay-Lake Regional Planning Commission in 2002. The period covered by the TDP was 2003 through 2007. The *Maritime Metro TDP* involved an “alternatives analysis” process that involved examination of several alternative configurations for the future of this transit operation which serves the cities of Manitowoc and Two Rivers. Key recommendations from the Maritime Metro TDP included extension of transit service on weekday evenings and on Saturday afternoons (2004), as well as reconfiguration of Maritime Metro Transit's bus routes (2006). The Recommended Plan chapter of the TDP also included a financial plan, a fare policy, recommended capital improvements, marketing recommendations, a monitoring program, land use planning recommendations, contingency measures, other recommendations, and an implementation strategy.

The Bay-Lake Regional Planning Commission will be working with Maritime Metro Transit staff in the completion of a TDP Update for 2010 through 2014.

Public Transit – Human Services Transportation Coordination Plan for Manitowoc County

In 2006, Manitowoc County Aging and Disability Resource Center (ADRC), with assistance from the Bay-Lake Regional Planning Commission, developed the *Public Transit – Human Services Transportation Coordination Plan*. These plans are required under federal law for counties to receive federal funding under three programs: 1) the Section 5310 capital program, 2) the Job Access Reverse Commute (JARC) program, and 3) the New Freedom program.

The Bay-Lake Regional Planning Commission also assisted the Manitowoc County ADRC in amending its *Public Transit – Human Services Transportation Coordination Plan* in 2007, along with an update to the plan over the summer of 2008; this new plan will cover a five year period.

State Pedestrian Plan

The *Wisconsin Pedestrian Policy Plan 2020* outlines statewide and local measures to increase walking and to promote pedestrian comfort and safety. The plan provides a policy framework addressing pedestrian issues and clarifies WisDOT’s role in meeting pedestrians’ needs. It establishes actions and policies to better integrate pedestrian facilities into the transportation system over the next twenty years.

The state plan also provides recommendations to assist local officials in meeting their communities’ pedestrian transportation responsibilities. The plan outlines specific design guidance for local officials found in WisDOT’s Facilities Development Manual (FDM); state funding for local pedestrian projects provided primarily through the General Transportation Aids (GTA) Program; and safety and education program funding provided by WisDOT to local agencies.

Ice Age Trail Plan

The Bay-Lake Regional Planning Commission collaborated with the Wisconsin Department of Natural Resources, the National Park Service and the Ice Age Park and Trail Foundation to produce the *Ice Age National Scenic Trail Corridor Plan for Kewaunee, Manitowoc and Sheboygan Counties, Wisconsin*; this plan was completed in late 2006.



According to the plan’s Executive Summary, “the proposed corridor in Manitowoc County is approximately 65 miles in length,” and “the corridor includes the Cities of Manitowoc and Two Rivers, as well as the Villages of St. Nazianz and Valders.”

Additional information concerning the Ice Age Trail Plan can be found in the plan document on the WDNR website (http://www.dnr.state.wi.us/master_planning/lmiat), as well as in Chapter 9 of *Volume II: Manitowoc County Resources*.

State, Regional and Local Bicycle Plans

State Bicycle Plan

The *Wisconsin Bicycle Transportation Plan 2020* has as its two primary goals:

- Increase levels of bicycling throughout Wisconsin, doubling the number of trips made by bicycles by the year 2010 (with additional increases achieved by 2020); and

- Reduce crashes involving bicyclists and motor vehicles by at least 10 percent by the year 2010 (with additional decreases achieved by 2020).

Recommended actions include 1) developing local bicycle transportation plans; 2) providing suitable space for bicyclists when designing roadway projects; 3) following accepted bikeway guidance and standards; and 4) routinely considering bicyclists when developing roadway projects.



The Wisconsin Department of Transportation produced a set of maps that identified bicycle conditions on major routes and roads for Manitowoc County. The maps assessed and identified bicycling conditions, planned state highway priority corridors and key linkages between major destination points. Refer to the *Wisconsin Bicycle Transportation Plan 2020* for an analysis of the bicycling conditions for Manitowoc County.

Regional Bicycle Plan

The *Bicycle Facility Transportation Plan for the Bay-Lake Region* completed in 2002 identified a system of connecting routes and needed improvements connecting all municipalities and major destination points throughout the eight-county region, including Manitowoc County.



The regional plan proposes transportation facility improvements (paving road shoulders to a usual width of five feet) to provide safe and efficient travel paths between communities located within Manitowoc County and the adjoining communities in adjacent counties. The Regional Bicycle Plan mostly recommends paving road shoulders (five feet in width) on several U.S., state and county highway segments in Manitowoc County, as well as a limited number of local road segments in the county with significant traffic. The Regional Bicycle Plan also recommends “adding a separated multipurpose trail within the right-of-way along the entire length of U.S. Highway 10 from Interstate 43 west to Appleton.”

City of Manitowoc Bicycle Facilities Plan

The *City of Manitowoc Bicycle Facilities Plan* developed in 1995 includes goals and objectives; an inventory of bicycle facilities and plans; potential bicycle traffic generation sites; bicycle facility design guidelines; motor vehicle traffic conditions; and bicycle facility and system recommendations.

FUNDING AND TECHNICAL ASSISTANCE PROGRAMS

There are a number of Wisconsin Department of Transportation (WisDOT) programs that provide technical and financial support for the operation, maintenance and planning of the county’s transportation systems. Attached in Appendix D of *Volume II: Manitowoc County Resources*, is a list of federal and state programs that offer financial and/or technical assistance to the county and local communities to maintain, expand, or enhance their transportation systems.

General Transportation Aids

The county and local municipal jurisdictional responsibilities to the local road system include maintenance, repair, and reconstruction of streets and roads as required. The cost of constructing,

maintaining and operating the county highway and local road systems is defrayed through the provision of General Transportation Aids. General Transportation Aids are distributed to all Wisconsin municipalities through a highway aids formula administered by the Wisconsin Department of Transportation. Under the formula, local aid is distributed either as a share of eligible highway-related expenditures incurred by the municipality or on a per-mile basis, whichever is higher.

Eligible expenditures generally include all road construction and maintenance within the right-of-way, as well as a percentage of eligible law enforcement, street lighting maintenance and construction, and storm sewer construction. The share of cost rate is determined by the available funding and the average costs reported by the municipality. Each municipality's share of costs is determined by multiplying the six-year average costs by the percentage rate.

The 2008 flat rate has been set at \$1,956 per mile (this will increase to \$2,015 per mile in 2009). Transportation Aids for local units of government and for counties are derived primarily from motor fuel taxes and vehicle registration fees.

CHAPTER 9 : UTILITIES AND COMMUNITY FACILITIES

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INTRODUCTION

This chapter provides an inventory of the location, use, and capacity of existing utilities and community facilities in Manitowoc County. Public utilities and community facilities are important infrastructure needed to support a healthy, safe, and sustainable environment for individuals to live, work, and raise a family.

The availability, quality, and level of service are all contributing factors that attract and retain families and businesses in a community. These services include sanitary sewer service, storm water management, water supply, solid waste disposal, on-site wastewater treatment technologies, recycling facilities, parks, telecommunications facilities, power-generating plants and transmission lines, cemeteries, health care facilities, child care facilities and other public facilities, such as police, fire and rescue facilities, libraries, schools and other governmental facilities.

ELECTED OFFICIALS AND COMMITTEES

Manitowoc County Board of Supervisors

Manitowoc County is governed by an elected Board of Supervisors that represent 25 Supervisory Districts. These districts cover the county's eighteen towns, nine villages, and three cities. All Supervisors serve a two-year term.

The County Board of Supervisors oversees many services provided by Manitowoc County. The Board of Supervisors has the responsibility of adopting and enforcing policies; establishing an operating budget; overseeing human resources; generating revenues through grants, taxes, and fees; making land use decisions through zoning; and ensuring services meet defined levels and quality. Much of this work is accomplish through committees comprised of Supervisors and supported by county staff.

Manitowoc County Committees

- Executive
- Finance
- Grievance
- Health Care Center
- Highway
- Natural Resources and Education
- Personnel
- Public Safety
- Public Works
- Special Health Care Center Study

UTILITIES INVENTORY AND ANALYSIS

Electric Service

Wisconsin Public Service (WPS) and We Energies supply the majority of power to Manitowoc County communities; serving residential, farm, commercial and industrial customers. Electricity is generated by the Manitowoc Power Plant found in the City of Manitowoc and Point Beach Nuclear Plant located in the Town of Two Creeks. However, most of the power from the Point Beach facility is distributed to the Green Bay area and communities along the Lake Michigan shoreline of



Point Beach Nuclear Plant
Source: www.nucleartourist.com

Southeastern Wisconsin. As a result a number of power plants located in surrounding areas, including the Kewaunee Power Station in Kewaunee County and Pulliam Power Plant located in Green Bay, supply a great deal of power to customers in Manitowoc County.

The cities of Manitowoc and Kiel are members of Great Lakes Utility (GLU). The purpose of GLU is to give its member communities the flexibility to arrange for their own power supply as the electric market evolves. The GLU organization deals with a variety of activities such as coordination of bulk power programs, the purchasing and selling of power to and from its members and others, and ownership of power facilities.

The City of Two Rivers purchases its electric necessities from Wisconsin Public Power Inc. (WPPI). Two Rivers Water and Light then distributes the power to its customers.

Transmission Lines

Electric power for the county is transmitted along high voltage electric transmission lines owned and operated by the American Transmission Company (ATC). Major transmission lines within Manitowoc County include several 345 kilovolts (kV) lines and 138 kV lines that originate from the Point Beach Nuclear Plant and Kewaunee Power Station. Smaller 69-kV lines also distribute power throughout Manitowoc County. Most of these lines originate from the Manitowoc Power Plant.



Map 9.1 illustrates the location of the various transmission lines that distribute power to customers of the county.

Natural Gas

The main natural gas pipeline corridor found in the county is owned by El Paso Corporation / ANR Pipeline Company (ANR). The line enters the county from the south and leads into the City of Two Rivers. Smaller feeder lines from the major pipeline supply natural gas to the various local distributors including WPS, which provides natural gas service to the county's communities.

Renewable Energy Sources

Renewable Energy Sources are sources that are essentially inexhaustible. Such sources include water, solar, wind and biomass (e.g., wood, waste, geothermal, wind, photovoltaic, and solar thermal energy).



The Lakeshore Technical College Wind Generation Facility located in the Village of Cleveland.



Biomass, in addition to coal, petroleum coke, natural gas, and oil is used in the Manitowoc Public Utilities (MPU) power generating station. Biomass materials include paper pellets, cork, and wood charcoal. The MPU facility is certified by the Public Service Commission of Wisconsin as a renewable energy provider.

Telecommunication Facilities

Telecommunications facilities include such services as broadcasting, two-way radio, fixed point microwave, commercial satellite, cellular radio, etc.

Local, long distance, and cellular telephone services are offered through a variety of providers. Telecommunication towers can be found throughout Manitowoc County.

A number of companies provide dialup internet, while special lines are also located in the county for accessing high-speed internet including T1, DSL and cable, but are only accessible to several of the county's communities.

Cable television is provided to the incorporated communities and portions of the towns. Various satellite dish providers are also available for enhanced television viewing. Satellite providers can also offer broad band solutions.

Water Supply

Municipal water systems serve the majority of residential, commercial and industrial users in 11 communities within Manitowoc County.



Nine (9) of the public water systems are supplied from groundwater through community wells including the villages of Cleveland, Kellnersville, Maribel, Mishicot, Reedsville, St. Nazianz, Valders, and Whitelaw, along with the City of Kiel.



The cities of Manitowoc and Two Rivers utilize Lake Michigan for their public water supply needs.

Each community's water system should be sufficient to meet the everyday demands of the customer in addition to demands for higher volumes, as would be the case for fire protection. Future expansion needs for each community's public water service areas will be dependant upon storage capacity and density of homes that could be accommodated using the existing systems of the community.

The Village of Francis Creek and 18 towns within the county not serviced by public systems have individual or shared wells that are owned and maintained by the property owner(s).

MPU Potable Water System

Manitowoc Public Utilities (MPU) utilizes state-of-the-art Microfiltration Membrane technology to treat Lake Michigan water to the residents of the City of Manitowoc and Central Brown County Water Authority (CBCWA). The current treatment capacity is approximately 35 million gallons per day (MGD). Microfiltration provides a physical barrier to water borne pathogens such as Cryptosporidium and Giardia. MPU also has two high-quality Ranney Collector groundwater wells with a capacity of 14 MGD to partially supplement the surface water treatment plant.

Central Brown County Water Authority Pipeline

In 2004, The City of Manitowoc, MPU, and the Central Brown County Water Authority (CBCWA) signed an agreement to provide MPU-treated Lake Michigan water to the community members of the CBCWA, including the villages of Allouez, Bellevue and Howard, the City of De Pere, and the towns of Lawrence and Ledgeview. The CBCWA communities are provided Lake Michigan water through this 65-mile water pipeline originating from the City of Manitowoc (Map 9.1). These Green Bay suburbs purchase the water from the City of

Manitowoc. Other communities near the pipeline corridor may also have the opportunity to connect to this water system.

Sanitary Sewer Service

Wastewater Treatment Facilities

Wastewater in the urbanized and developed rural areas of Manitowoc County is treated by municipal wastewater treatment facilities. The sanitary sewer systems collect, pump, treat, and dispose of sewage discharged from residences, office buildings, factories, and other buildings.

Sewer Districts

A sewer district is an independent special district which provides wastewater collection, treatment, and disposal services to residents and businesses in a pre-determined geographic area. Users are assessed a tax that is collected bi-annually by the district to cover costs associated with the facilities.

The following sanitary districts serve communities in Manitowoc County:

- Clark Mills Sanitary District
- Kossuth Sanitary District #2 (Rockwood)
- Liberty Sanitary District #1 (Pigeon Lake)
- Rockland Sanitary District #1 (Collins)

Several areas in the county also have established sanitary districts, but have yet to install the infrastructure to make them operational.

- Manitowoc Rapids Sanitary Districts 1 & 2
- Schleswig Sanitary Districts 1 & 2
- Silver Creek Sanitary District
- Silver Lake Sanitary District
- Two Rivers Sanitary District

Sewer Service Area

A Sewer Service Area (SSA) identifies established lands where sewer services are intended to be made available during a 20-year planning period. The SSA is delineated using the 20-year population projection, an acceptable residential population density, and a forecast of non-residential development (e.g. commercial and industrial growth) which would result in acreage demand and allocation. Delineating a service boundary is critical in designing sewage collection and treatment facilities to serve existing and future residents of the SSA in the most cost effective and environmentally sound manner.



The Manitowoc-Two Rivers Sewer Service Area (SSA) Plan, which encompasses both cities along with the Village of Mishicot, is the only SSA plan in Manitowoc County.

Communities with Municipal Wastewater Treatment Systems

- City of Manitowoc
- City of Two Rivers
- City of Kiel
- Village of Cleveland
- Village of Francis Creek
- Village of Kellnersville
- Village of Maribel
- Village of Mishicot
- Village of Reedsville
- Village of St. Nazianz
- Village of Valders
- Village of Whitelaw

Private Onsite Wastewater Treatment Systems

Private onsite wastewater treatment systems (POWTS), also known as “septic systems”, employ biological and mechanical processes to remove the viruses, bacteria, and other contaminants contained in the wastewater discharged from a dwelling or public building. The most common POWTS are conventional seepage trenches; mound systems; and at-grade systems. Holding tanks are also regulated as a POWTS.

Storm Sewer

The primary purpose of the storm sewer system is to drain excess rainfall, prevent flooding and provide drainage for roads and adjacent properties. A storm sewer is a system designed to carry the rainfall runoff and other drainage, but not sewage. The runoff is carried in underground pipes or open ditches and discharges (untreated) into streams or other surface water bodies.

Municipal storm sewer systems are found primarily in the incorporated communities and consist of curbed streets, gutters, and a variety of pipeline. In the majority of the rural areas of the county, storm water drains through a series of maintained ditches and culverts.

COMMUNITY FACILITIES INVENTORY, AND ASSESSMENT

Administrative Facilities

Manitowoc County Administration Office Building and Courthouse

The county’s administration building is located at 1110 South 9th Street. The facility houses the County Administrative Coordinator, Personnel, and Public Works.

The Manitowoc County Courthouse is located at 1010 South 8th Street. It houses the County Clerk, Circuit Court Judge, Family Court, District Attorney, Child Support, Register in Probate, Corporation Counsel, Register of Deeds, and County Treasurer.



Manitowoc County Courthouse

Other County Facilities

- Manitowoc County Office Complex, 4319 Expo Drive
- Manitowoc County Sheriff’s Department, 1025 South 9th Street
- Manitowoc County Expo, 4921 Expo Drive
- Manitowoc County Courthouse Annex Building, 823 Washington Street
- Manitowoc County Health Care Center, 2021 S. Alverno Road
- Manitowoc County Highway Commission, 3500 State Hwy 310
- Manitowoc Human Services Department, 926 S. 8th Street
- Manitowoc County Materials Recycling Facility, 3000 Basswood Road

Solid Waste Disposal & Recycling Facilities

A majority of communities in the county have either curbside pickup of refuse or maintain drop-off sites. Waste is collected and disposed of through public works departments, private haulers,

or residents transport the refuse themselves. The waste is taken to the Ridgeview Landfill in the Town of Franklin.

Recycling is regulated under Chapter 287 of the Wisconsin Statutes. Enacted in 1990, the Recycling Law effectively made recycling a mandatory activity by prohibiting certain materials from being disposed in landfills within the state.

Each municipality within Manitowoc County is responsible for implementing a recycling program. Several communities in the county have curb side pickup, while the majority of the towns maintain or share drop-off sites to provide residents a nearby facility to dispose of their recyclables. The recyclables are then taken to the nearest recycling center by private haulers or by the communities' public works department. Refer to the Manitowoc County website (Public Works-Recycling Center) for a listing of local drop-off site locations and hours.



Manitowoc County Recycling Center

The Manitowoc Recycling Center at 3000 Basswood Road in the Town of Manitowoc Rapids maintains a residential recycling drop-off area that is intended for use by all county residents. There is no trash or garbage drop off at this location.

Manitowoc County Recycling Center also oversees two compost sites, the Basswood Compost Site and the Woodland Compost Site (4191 Woodland Drive in Two Rivers), to serve Manitowoc County residents.

Road Maintenance

The Manitowoc County Highway Department, located at 3500 Hwy 310 in the Town of Kossuth, is responsible for maintaining the County and State Trunk Highway System for safety and convenience of people traveling through Manitowoc County. The department provides road, winter, and construction maintenance for State and County Trunk Highways throughout the county.

- County road maintenance includes: patching, crack sealing, wedging/rut filling, milling, grinding bumps, traffic control, surveillance, repairing joints, punchouts/blowups, drainage, safety appurtenances, seal coating, shoulder maintenance, mowing, roadside vegetation control, bridge inspection and repair, signing, pavement marking, litter pickup, culvert replacement, and concrete pavement repair.
- Winter road maintenance includes: plowing and blowing snow, application of salt, sand and chlorides, and drift prevention.
- County road construction includes: reconstructing or asphaltting 18-21 miles of the 287 miles of highway each year. Rehabilitating the highway system every 15 years.

Facility Maintenance

The Manitowoc County Courthouse Maintenance Department maintains the courthouse complex and grounds. Services of the department include: preventative maintenance, repairing, remodeling, light construction, cleaning and grounds maintenance.

Some of the individual communities also have their own equipment, or contract with businesses, to perform services such as grass cutting, seal coating, gravel and other maintenance on their community facilities.

Postal Services

Postal services for Manitowoc County residents and businesses are provided by U.S. Post Offices and private parcel carriers (UPS, DHL, FedEx, etc.). Listed below are the U.S. Post Offices that serve Manitowoc County communities.

- Village of Cleveland
- Village of Mishicot
- Village of Kellnersville
- Village of Francis Creek
- City of Kiel
- City of Manitowoc (3)
- Village of Maribel
- Town of Newton
- Collins (Town of Rockland)
- Village of Reedsville
- Village of St. Nazianz
- City of Sheboygan
- City of Two Rivers
- Village of Valders
- Village of Whitelaw
- City of Chilton
- City of Brillion
- Village of Elkhart Lake
- City of New Holstein

Protective and Emergency Services

Law Enforcement and Protection

The Manitowoc County Sheriff Department is located within the City of Manitowoc at 1025 South 9th Street. The sheriff’s department provides 24-hour emergency assistance to a majority of the communities of the county. The county operates a county-wide 911 emergency dispatch system located in the Communications Center of the Manitowoc County Jail. Assistance is also provided to the fire departments, rescue squads, and city and village police departments in the county.

The following communities in Manitowoc County maintain their own Police Departments:

- *City of Manitowoc Police Department*, 910 Jay Street, City of Manitowoc
- *Cleveland Police Department*, 1150 W. Washington Avenue, Village of Cleveland
- *Kiel Police Department*, 621 Sixth Street, City of Kiel
- *Mishicot Police Department*, 511 East Main Street, Village of Mishicot
- *Reedsville Police Department*, 217 Menasha, Village of Reedsville
- *St. Nazianz Police Department*, 218 W. Main Street, Village of St. Nazianz
- *Two Rivers Police Department*, 1717 East Park Street, City of Two Rivers
- *Valders Police Department*, 207 Liberty Street, Village of Valders

Fire Station/Protection

Fire protection for Manitowoc County residents is provided by 25 local fire departments. Table 9.1 lists the fire departments, while their service areas are illustrated on Map 9.2.

Table 9.1: Fire Departments Serving Manitowoc County

Map 9.2 Number	Fire Department	Location
1	Ada Fire Department	W3984 Highway 32 Hwy, Elkhart Lake
2	Branch Fire & Rescue	8124 Village Dr, Whitelaw
3	Brillion Fire Department	130 Calumet St, Brillion
4	City of Manitowoc Fire Department	911 Franklin Street, Manitowoc
5	City of Two Rivers Fire Department	2122 Monroe Street, Two Rivers
6	Cleveland Fire Department	1274 W Washington Avenue, Cleveland
7	Collins Fire Department	901 Milwaukee St, Collins
8	Francis Creek Fire Volunteer Department	310 Norwood Dr, Francis Creek
9	Howards Grove Fire Department	1013 S Wisconsin Dr, Howards Grove
10	Kellnersville Fire Station	807 Main St, Whitelaw
11	Kiel Fire/Town of Schleswig Department	99 E. Fremont St, Kiel
12	Maribel Fire Department	15127 North Maribel Rd, Maribel
13	Menchalville Fire Department	3999 Highway H Rd, Reedsville
14	Mishicot Fire Department	214 S. Main St, Mishicot
15	Newton Fire Department	6528 Carstens Lake Rd, Manitowoc
16	Reedsville Fire Department	100 Industrial Dr, Reedsville
17	Rockwood Fire Department	5401 County Road R, Manitowoc
18	Silver Creek Fire Department	6510 Hwy 151, Manitowoc
19	St. Nazianz Fire Department	202 N. 4th Ave, St. Nazianz
20	Tisch Mills Fire Department	110 N County Hwy B, Tisch Mills
21	Town of Two Rivers Fire Department	County Hwy B, Shoto
22	Two Creeks Fire Department	5128 E Tapawingo Rd, Two Rivers
23	Valders Fire Department	103 Eisenhower St, Valders
24	Wayside Volunteer Fire Department	8257 Hwy W, Greenleaf
25	Whitelaw Fire Department	330 E Menasha Ave, Whitelaw



Source: Bay-Lake Regional Planning Commission, 2008.

Each department maintains mutual aid agreements with neighboring departments to ensure there is adequate response and coverage during large fire events. Also, each of the departments looks to continually upgrade equipment such as radios, hoses, turn-out gear, imaging devices, and pagers to meet state standards.

Insurance Service Office (ISO) - Public Protection Classification (PPC)

The adequacy of fire protection within a fire protection district is evaluated by the Insurance Service Office (ISO). ISO collects information on municipal fire-protection efforts in communities throughout the United States. In each of those communities, ISO analyzes the relevant data using their Fire Suppression Rating Schedule (FSRS) and assigns a Public Protection Classification (PPC) - a number from 1 to 10. Class 1 represents the best protection, and Class 10 indicates that the area’s fire protection does not meet ISO's minimum criteria.

ISO helps communities evaluate their public fire-protection services. The program provides an objective, countrywide standard that helps fire departments in planning and budgeting for facilities, equipment, and training. Throughout the United States, insurers of homes and business property use ISO's Public Protection Classifications in calculating premiums.

EMS/Ambulance

All areas of the county are covered by six municipal based EMS/ambulance service providers in or adjacent to Manitowoc County.



Map 9.3 displays the service areas of each of the EMS/ambulance providers covering Manitowoc County.

- EMS/Ambulance Providers*
- Kiel Fire Department Ambulance Service
 - Manitowoc Rescue
 - Mishicot Area Ambulance Service
 - Two Rivers Fire Department
 - Valders Fire Department Ambulance Service
 - Viking Community Rescue Squad Inc.

First Responders

There are a number of First Responders throughout Manitowoc County that consist of firefighters and other volunteers that are certified for patient care. Many of the First Responders in outlying areas are supplied with an emergency response kit to provide care prior to the rescue squad arriving. Below is a list of First Responders in Manitowoc County.

- Branch First Responders
- Cleveland First Responders
- Collins First Responders
- Francis Creek First Responders
- Kellnersville First Responders
- Newton First Responders
- Reedsville First Responders
- Silver Creek First Responders
- St. Nazianz First Responders

Manitowoc County Emergency Management

Manitowoc County Emergency Management directs and supports response agencies and departments within Manitowoc County in the event of a major technological or natural emergency. Emergency Management provides organized analysis, planning, decision making and assignment of available resources to mitigate (lessen the effect of or prevent), prepare for, respond to and recover from the effects of all hazards.

Education

Manitowoc County is located within 12 public school districts as illustrated on Map 9.4. The following six school districts maintain facilities located within Manitowoc County:

Kiel Area School District

- Kiel High School , 210 Raider Heights, Kiel
- Kiel Middle School 502 Paine Street, Kiel
- Meeme LEADS, 12121 County XX, Newton
- Zielanis Elementary School, 1010 Adams Street, Kiel
- Kiel’s Integrated Electronic Learning Charter School, 416 Paine Street, Kiel

Manitowoc Public School District

- Franklin Elementary, 800 S. 35th Street
- Jackson Elementary, 1201 N. 18th Street
- Jefferson Elementary, 1415 Division Street
- Lincoln Senior High, 1433 S. 8th Street
- Madison Elementary, 701 N. 4th Street
- Monroe Elementary, 2502 S. 14th Street
- Stangel Elementary School, 1002 E. Cedar Avenue
- Washington Junior High, 2101 Division Street
- Wilson Junior High, 1201 N 18th Street



Manitowoc Lincoln Senior High
Source: www.education-world.com

Mishicot School District

- O.H. Schultz Elementary School, 510 Woodlawn Drive
- Mishicot Middle School, 660 Washington Street
- Mishicot High School, 660 Washington Street Po Box 280

Reedsville School District

- Reedsville Elementary, 350 South Park Street
- Reedsville Middle School, 350 South Park Street
- Reedsville High School, 340 Manitowoc Street

Valders Area School District

- Valders Elementary School, 331 West Wilson Street
- Valders Middle School, 138 Jefferson Street
- Valders High School, 201 West Street

Two Rivers Public Schools

- Koenig Joseph Elementary School (Preschool), 3505 Glenwood
- Magee J F Elementary School, 3502 Glenwood Street
- Case C.C. Elementary School, 1322-33rd Street
- Koenig Joseph Elementary School, 114 Lowell Street
- L B. Clarke Middle School, 4608 Bellevue Place
- Two Rivers High School, 4519 Lincoln Avenue



Two Rivers High School
www.twriverseconomicdevelopment.org

There are also 27 private school facilities found within Manitowoc County that provide education opportunities to residents of the area including Manitowoc Lutheran High School and Roncalli High School, both of which are located in the City of Manitowoc.

The additional six school districts also covering Manitowoc County with facilities located in their respective communities include:

- Brillion Public School District
- Chilton Public Schools
- Denmark School District
- Howards Grove School District
- Kewaunee School District
- Sheboygan Area School District

Post-Secondary Institution

Manitowoc County has three post-secondary institutions to offer its residents and surrounding communities. These institutions include:

- *Silver Lake College*, 2406 S. Alverno Road, Manitowoc
- *Lakeshore Technical College*, 1290 North Avenue, Cleveland
- *University of Wisconsin-Manitowoc*, 705 Viebahn, Manitowoc



Other higher education institutions located in nearby counties include UW-Sheboygan and Lakeland College in Sheboygan and UW-Green Bay.

Library

Manitowoc County residents utilize library services provided through the Manitowoc-Calumet Library System (MCLS). The library system is part of the overall seventeen public library systems in covering Wisconsin. The public libraries located in Manitowoc County include:

- *Kiel Public Library*, 511 Third Street, City of Kiel
- *Lester Public Library*, 1001 Adams Street, City of Two Rivers
- *Manitowoc Public Library*, 707 Quay Street, City of Manitowoc

In addition to these public libraries, there are numerous school, church, health science, academic, and business libraries located throughout the county.

Health Care Facilities

Residents of the county are able to utilize the *Holy Family Memorial Medical Center* located at 2300 Western Avenue in the City of Manitowoc, or the *Aurora Medical Center* situated at 5000 Memorial Drive in the City of Two Rivers for their medical needs.

Additional healthcare centers and clinics are also available within many of the communities in Manitowoc County. Several chiropractic, dental, and vision practitioners are also located within the county.



Holy Family Memorial Medical Center
Source: www.manitowocchamber.com/

Child Care Facilities

Child care is a significant consideration for families and employers alike, since it is becoming the norm that both parents are part of the workforce and more families are headed by a single parent.



There are a total of 61 licensed/certified childcare facilities in Manitowoc County, most of which are privately owned. Twenty-nine facilities are classified as family (up to 8 enrolled), 30 facilities classified as group (9 or more enrolled), and 2 are classified as Day Camps (4 or more children under age 7 in an outdoor setting).

Information detailing each childcare facility's classification, hours, days of operation, and capacity is available through the Wisconsin Department of Health and Family Services website.

In addition, residents also utilize in-home/private unlicensed childcare facilities located throughout the county and surrounding areas.

Adult Care Facilities

Manitowoc County contains several adult care facilities including nursing homes, Adult Family Homes (AFH), Community Based Residential Facilities (CBRF), and assisted rental housing.

- *AFHs* are facilities where three or four adults who are not related to the operator reside and receive care, treatment or services that are above the level of room and board and that may include up to seven hours per week of nursing care per resident.
- *CBRFs* are facilities where five or more unrelated people live together in a community setting. Services provided include room and board, supervision, support services, and may include up to three hours of nursing care per week.
- A *nursing home* is a place of residence for people who require constant medical care, at a lower level than a hospital. Usually the residents are elderly, but the term can apply to places of care for the mentally or physically ill.



An October 2007 Wisconsin Department of Health and Family Services inventory indicated Manitowoc County contained 10 AFHs, 30 CBRFs, and six nursing homes. In addition, Manitowoc County contains an Adult Dare Care Program.

Cemeteries

According to *Cemetery Locations in Wisconsin, 3rd Edition*, there are a combined total of 101 known cemeteries located within Manitowoc County. Some smaller family cemeteries can be difficult to identify and may not be included in this inventory. In addition, cemeteries in communities adjacent to Manitowoc County are also utilized for burials.

Parks and Recreation

The Manitowoc County Parks Department maintains five major parks and three special purpose parks. These parks contain a number of amenities in addition to various passive and active recreational opportunities.

Point Beach State Forest

According to the WDNR, Point Beach offers 6 miles of Lake Michigan shoreline, with dunes, a lighthouse, camping (127 sites), and hiking, biking, skiing, nature, and snowmobile trails.

Killsnake Wildlife Area

According to the WDNR, Killsnake Wildlife Area is located in both southwestern Manitowoc and southeastern Calumet counties. The property is approximately 7,000 acres with a desired goal of 9,106 acres. The area consists of prairie grasslands, uplands with large wetland-grassland complex, bottomland hardwood forest, a small area of cedar swamp, a small area of tamarack and bog, agricultural landscape, small areas of upland forest and over 50 small wetland restorations.

Collins Marsh Wildlife Area

According to the WDNR, Collins Marsh Wildlife Area is a 4,200 acre property located approximately 12 miles west of the City of Manitowoc and 2 miles south of Reedsville. The area is comprised mostly of marsh, wetlands, grasslands, and bottomland hardwood forest.



The county and state park and recreation facilities are illustrated on Map 9.5.

Other Manitowoc County Recreation Facilities



Accesses for boating and fishing are located on Bullhead, Carstens, Cedar, English, Gass, Harpt, Hartlaub, Pigeon, Shoe, Spring, Tuma, Long Lake, and Wilke lakes, in addition to the Manitowoc River and West Twin River.



Two (2) county/state owned beaches exist at Point Beach State Park and Fischer Creek Conservation Area (Map 9.5).

Manitowoc County Ice Center

Located at 4931 Expo Drive in the City of Manitowoc, the Manitowoc County Ice Center offers a recreational skating facility, in addition to hosting concerts, dances, and other community events.



Manitowoc County Ice Center
Source: www.mcicenter.org

**Park Facilities
in Manitowoc County**

County Facilities

- Cherney Maribel Caves
- Fischer Creek
- Horseshoe Lake
- Long Lake
- Lower Cato Falls
- Point Creek
- Silver Lake
- Walla Hi

State Facilities

- Point Beach State Forest
- Killsnake Wildlife Area
- Collins Marsh Wildlife Area

Manitowoc County Expo

The Manitowoc County Expo Center is the home of the Manitowoc County Fair and hosts other events including horse shows, motorcycle shows, monthly flea markets and weekly bingo. The Expo Center is located at 4921 Expo Drive in the City of Manitowoc.

Local Parks

The incorporated communities along with many of the towns operate their own park and recreation systems. Local parks located throughout the county provide a wide range of recreational activities. Amenities offered at some of the local parks include, but are not limited to, picnic areas, ball diamonds, soccer and football fields, swimming pools, tennis courts, and playground areas. Appendix A of *Volume II: Manitowoc County Resources* lists all municipal parks along with state and county parks located in Manitowoc County.

Marinas

- *Manitowoc Marina*, 425 Maritime Drive, Manitowoc
- *Seagull Marina*, 1400 Lake Street, Two Rivers
- *Twin Cities Marina*, 1600 12th Street, Two Rivers

Golf Courses

- *Autumn Ridge Golf*, Valders (18 holes)
- *Badger Creek Golf Course*, New Holstein (18 holes)
- *Branch River Country Club*, Cato (Private 18 holes)
- *Eastwin Valley Golf Course*, Two Rivers (Par 3 course)
- *Elk Club Golf Course*, Manitowoc (Private 9 holes)
- *Emerald Hills Golf Course*, Two Rivers (9 holes)
- *Fairview Golf Course*, Two Rivers (9 holes)
- *Fox Hills Resort*, Mishicot (45 holes)
- *Meadow Links Golf Course*, Manitowoc (18 holes)
- *Seven Lakes Golf Course*, Cato (Par 3 course)
- *Wander Springs Golf Course*, Greenleaf (27 holes)



Manitowoc Marina
Source: www.manitowoc.org



Ice Age Scenic Trail

The Ice Age Trail is a National and State scenic trail that passes through 30 counties in Wisconsin. The portion of the trail that passes through Manitowoc County is illustrated on Map 9.5. The purpose of the trail is to tell the story of the Ice Age and continental glaciation along a scenic footpath.

Devil's River State Trail

The Devil's River Trail is the former rail grade that was converted into a "rails-to-trails" bicycle and pedestrian facility. This county-operated 14-mile trail runs from the community of Rockwood in the Town of Kossuth to the Village of Denmark in Brown County.

Manitowoc Mariners Trail

The Manitowoc Mariners Trail is a 5.5 mile paved trail connecting the cities of Manitowoc and Two Rivers. The trail is located along the shore of Lake Michigan and is utilized for hiking, biking, walking, or jogging. The Mariners Trail is considered to be the longest continuous scenic view of Lake Michigan in the state.

Rawley Point Recreational Trail

The Rawley Point Recreational Trail connects the City of Two Rivers with Point Beach State Forest. This six (6) mile trail consists of a hard-packed limestone base and winds through pine and hemlock forests, dunes and fields to the historic Rawley Point Lighthouse at Point Beach State Park.

Snowmobile Trails

There is a total of 262 miles of snowmobile trails in Manitowoc County. Of the 262 miles, 245 miles are State funded. Currently, there are nine snowmobile clubs who are members of the Manitowoc County Snowmobile Alliance.

- Cleveland Snow Hawks, Cleveland
- Collins Paradise Sno-Riders, Collins
- Denmark Norsemen, Denmark
- Inland Snow-Blazers, Whitelaw
- Kettle Range Snow Riders, Mishicot
- Lakeshore Snowmobile Club, Manitowoc
- Louis Corners Sno-Birds, Kiel
- Newton Sno-Sports, Newton
- Viking Sno-Riders, Valders

CHAPTER 10 : LAND USE CONTROLS AND INVENTORY

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INTRODUCTION

This chapter of *Volume II: Manitowoc County Resources* provides descriptions of the county's land use controls (e.g., development plans, zoning ordinances, etc.) along with a countywide land use inventory conducted in 2008.

The land use inventory identified type, location, and acreage associated with the land uses found throughout Manitowoc County. The county's land use map (Map 10.2) illustrates current development patterns and allows Manitowoc County and local units of government to better determine where lands are most suitable for future growth.

EXISTING LAND USE CONTROLS

This section inventories and discusses controls and regulations that may affect or restrict the use of land within Manitowoc County. These controls should be reviewed periodically to ensure that they assist with the implementation of the future development plans of the county and the communities under county regulations, while also taking private property rights into consideration.

Planning Documents

Comprehensive Plans

This is the first comprehensive plan for Manitowoc County. Every community within the county maintains a comprehensive plan that identifies local growth/preservation strategies over a 20-year planning cycle. The local plans were referenced to collect ideas for the development of the Manitowoc County comprehensive plan, to ensure consistency between comprehensive plans, and to help avoid conflicts in future land use decisions.

Manitowoc County Agricultural Preservation Plan

In 1977, Wisconsin's Farmland Preservation Act became law. The purpose of the law is to help local governments preserve farmland through local planning and zoning and by providing tax relief to farmers who participate.

The *Manitowoc County Agricultural Preservation Plan* was updated in 2005 with attention given to land use changes resulting in urban growth and in farmland reduction, to alterations in facilities and services and to trends in the County's agricultural production. Several categories were established in the plan to accomplish the goal of preserving farmland and planned urban growth. These categories include:

Agricultural Preservation Area - The agricultural lands are areas which should be maintained in agricultural use. These areas include soils with high productivity potential, lands which have historically been in agricultural production and woodlands and wetlands which are an integral part of the farm operation.

While lands within the *Manitowoc County Agricultural Preservation Plan* are classified as "Agricultural Preservation Areas", it does not necessarily mean that these areas are considered prime agricultural land.

Conservancy Area - Includes public property, floodplains, wetlands and woodlands areas. Conservancy areas should be protected as development occurs by minimizing the loss of productive lands and natural vegetation to the extent possible.

Rural Non-Farm Development - Rural non-farm areas include unincorporated villages, existing concentrations of rural non-farm housing outside of unincorporated villages and areas proposed to be developed with rural non-farm uses.

Urban Service Area - Urban Service Areas are those areas adjacent to communities which are presently served with public water and/or sanitary sewer utilities.

Environmental Overlay Area - The Environmental Overlay Area are areas that should not be developed at urban densities due to shoreline conservation, flooding, wetland conservation, wildlife habitats, unique aesthetic feature, etc. However some lands within the “Environmental Overlay Area” may be suitable for low density development.

Refer to the Manitowoc County Agricultural Preservation Plan for a more detailed explanation of categories to determine which areas are eligible for tax credits. Map 10.1 illustrates the agricultural preservation categories within Manitowoc County.

Park and Outdoor Recreation Plan

Manitowoc County has an adopted Park and Recreation Plan which meets the eligibility requirements for participation in Federal Land and Water Conservation Fund (LAWCON) grant program. LAWCON provides grants to assist in the provision of outdoor recreation facilities.

It is important for the town to have identified their planning initiatives within this park plan in order for park and recreation projects to be eligible for federal funding assistance.

Manitowoc County All Hazards Mitigation Plan

The county All Hazards plan evaluates the county’s potential exposure to natural hazards and identifies appropriate and effective mitigation strategies. Consistent with the Code of Federal Regulations (44 CFR Part 201.6), the county focused on natural hazards, although man-made hazards are listed and briefly addressed in the hazards plan. The plan will assist Manitowoc County emergency personnel in identifying areas of risk, assessing the magnitude of the risk, and developing strategies for reducing this risk. Through this process, the county can address issues related to incompatible land uses; the identification and protection of critical facilities; and the reduction of community and taxpayer costs associated with natural disaster relief and rescue efforts. Completion of the All Hazards plan also makes Manitowoc County eligible to apply for future disaster relief and mitigation project funds to implement some of the recommended mitigation strategies.

Land Use Regulations

Manitowoc County General Zoning Ordinance

Manitowoc County maintains and administers a zoning ordinance under *Chapter 8: General Zoning* of the Manitowoc County Code. The zoning ordinance covers a majority of the unincorporated areas of the county. The towns of Centerville, Franklin, and Newton, along with the cities and villages within the county administer their own zoning ordinances.

Manitowoc County maintains and administers the general zoning ordinance for the purpose of promoting the public health, safety, and general welfare of the unincorporated areas of the county. The ordinance regulates and restricts the locations, construction and use of buildings, structures, and the use of land in the county through established zoning districts. The zoning districts help to avoid land use conflicts, protect environmental features, promote economic development, and also assist in the accomplishment of land use objectives identified by a comprehensive plan. Please refer to the Manitowoc County General Zoning Ordinance for more detailed information on zoning districts, regulations, restrictions, permitted uses, and zoning maps.

Land use related actions and regulations identified under s. 66.1001, Wis. Stats., are required to be consistent with an adopted comprehensive plan. As a result, the county zoning ordinances shall be reviewed and updated where necessary to ensure consistency with the adopted comprehensive plan(s) and any subsequent updates to the plan(s).

Manitowoc County Land Division/Subdivision Ordinance

Wis. Stat. s 236.45 enables counties with an established planning agency to adopt ordinances governing subdivisions or other division of land. The county administers a subdivision ordinance under *Chapter 12: Subdivision Regulations* of the Manitowoc County Code.

The ordinance regulates subdivisions within the unincorporated area of Manitowoc County. The county's ordinance defines subdivision as a division of a lot, parcel, or tract of land by the owner thereof or his agent for the purpose of sale or of building development, where:

- The act of division creates five (5) or more parcels or building sites of 1.5 acres each or less in area; or
- Five (5) or more parcels or building sites of 1.5 acres each or less in area are created by successive divisions within a period of five (5) years.

The county subdivision ordinance also regulates any division of land other than a subdivision and condominiums (if such condominiums result in a subdivision or lot split as defined within the subdivision ordinance).

Please refer to the Manitowoc County *Subdivision Regulations* for further information.

Manitowoc County Shoreland / Floodplain Ordinance

The intent of the Manitowoc County Shoreland/Floodplain Ordinance is to further the maintenance of safe and healthful conditions for human habitation; aid in the prevention and control of water pollution; protect spawning beds, fish, and aquatic life; minimize erosion sedimentation caused by filling, grading, lagooning, dredging, ditching, or excavation; control building sites, placement of structures, and land uses; preserve shore cover and natural beauty; protect stream channels from encroachment; provide for the movement and storage of flood waters; which, in effect, further the promotion of public health, safety, and general welfare.

The floodplain provisions of this ordinance have been established to reduce the hazard of floods to life and property.

The Manitowoc County Shoreland/Floodplain Zoning regulates development and establishes zoning standards for use of the following areas in the unincorporated areas of the county:

1. **Floodplains:** include all lands in the County designated as floodway and floodfringe on the Federal Insurance Administration (FIA) Flood Maps, as well as the general floodplain as designated on the Manitowoc County General Floodplain and Conservancy Zoning Map.
2. **Shorelands:** include all lands in the County which are within 1,000 feet of a navigable lake, pond, or flowage or within 300 feet of a navigable river or stream or to the landward side of the floodplain, whichever distance is greater. Navigable waters shall be as defined in Wis. Stats. 281.31 and shall include all lakes, ponds, and flowages shown in blue and all rivers and streams shown in solid blue on U.S.G.S. Quadrangle Maps.
3. **Shoreland-Wetlands:** includes all wetlands, designated on the Wisconsin Wetland Inventory Maps dated May 10, 1989, within the shorelands as identified in Chapter 9 of the Manitowoc County Code.
4. **Other conservancy areas:** include all lands in the county which are designated as conservancy on the Manitowoc County General Floodplain and Conservancy Zoning Map.

For more information about Shoreland/Floodplain zoning in Manitowoc County refer to *Chapter 9: Shoreland/Floodplain Zoning* of the Manitowoc County Code.

CURRENT LAND USE INVENTORY

Land Use Categories

The 2008 Manitowoc County land use inventory used a standard land use classification system that identifies the type and location of the county's various land uses. The land use inventory is not parcel-based. The three Wisconsin regional planning commissions that border Lake Michigan and Lake Superior (Bay-Lake RPC, Southeastern Wisconsin RPC, and Northwestern Wisconsin RPC) adopted the land use classification system in June 1975 for land use inventories conducted in conjunction with the Coastal Zone Management Development Program. A list of the detailed land use codes can be found in Appendix E of *Volume II: Manitowoc County Resources*.

The following list of land use categories is based on a methodology created by the Regional Planning Commissions for conducting land use inventories only. This list is *not* intended to create specific definitions for regulatory purposes.

Residential--Use of land for non-transient-occupant dwelling units, both transportable and permanent structures. The residential category is divided into the following subcategories: *Single Family, Two Family, Multi-Family, Mobile Home, and Group Quarters*.

Commercial--Use of land for retail sales or trade of goods and/or services, including enclosed participatory sports, lodging, and commercial headquarters.

Industrial--Use of land for fabrication of products, for wholesaling of products, for long-term storage of products, or transformation of materials.

Nonmetallic Mining--Use of land for the extraction, preparation, or onsite processing of mineral aggregates or nonmetallic minerals obtained from the site.

Transportation--Use of land for corridors for the movement of people or materials, including related terminals and parking facilities. This land use includes motor vehicle, air, marine, rail, and non-motorized-related transportation.

Communication/Utilities--Use of land for generation, processing, and/or transmission of electronic communication or of water, electricity, petroleum or other transmittable products, and for the disposal, waste processing and/or recycling of byproducts.

Institutional/Governmental Facilities--Use of land for public and private facilities for education, health, or assembly; for cemeteries and related facilities; and for all government facilities used for administration or safety except public utilities and areas of outdoor recreation.

Outdoor Recreation--Use of land for out-of-doors sport and general recreation facilities, for camping or picnicking facilities, for nature exhibits, and for the preservation or protection of historical and other cultural amenities.

Agriculture/Silviculture--Use of land for growth or husbandry of plants and animals and their products and for associated facilities such as sheds, silos and other farm structures. This category also includes the cropland and pasture areas primarily used for the cultivation of plants in addition to grasses for grazing.

Natural Areas--Use of land for water areas; land used primarily in a natural state for their natural functions including wetlands, grasslands and prairies, and woodlands; land undergoing change from natural areas to another land use; and conservancy areas.

Other Natural Areas--Use of land for wetlands, grassland/prairies, and woodlands not categorized elsewhere.

Water--Use of land for open water areas, including natural and impounded lakes and streams.

Planning Area

According to the 2008 land use inventory, Manitowoc County encompasses a total area of nearly 590 square miles, equating to approximately 380,000 acres. As summarized in Table 10.1 the majority of the county is classified as undeveloped, while existing development covers over 14 percent of the county. Together, residential development and the transportation network comprise nearly two-thirds of the developed land uses in the county. The county's land use is illustrated on Map 10.2. Manitowoc County's detailed land use calculations are shown in Appendix E of *Volume II: Manitowoc County Resources*.

Table 10.1: 2008 Manitowoc County Land Use

Land Use Type	Total (Acres)	Developed Land (Percent)	Total Land (Percent)
DEVELOPED			
Residential	17,474.3	32.39	4.58
Single Family	16,485.0	30.56	4.32
Two Family	275.9	0.51	0.07
Multi-Family	317.8	0.59	0.08
Mobile Homes	324.3	0.60	0.09
Vacant Residential	71.3	0.13	0.02
Commercial	1,730.3	3.21	0.45
Industrial	3,493.4	6.48	0.92
Transportation	17,086.4	31.67	4.48
Communications/Utilities	632.3	1.17	0.17
Institutional/Governmental	1,611.0	2.99	0.42
Recreational	5,481.7	10.16	1.44
Agricultural Structures	6,436.6	11.93	1.69
Total Developed Acres	53,945.9	100.00	14.14
UNDEVELOPED			
Croplands/Pasture	213,956.4	65.33	56.09
Woodlands	77,313.9	23.61	20.27
Other Natural Areas	31,464.8	9.61	8.25
Water Features	4,790.8	1.46	1.26
Total Undeveloped Acres	327,525.9	100.00	85.86
TOTAL LAND AREA	381,471.9		100.00

Source: Bay-Lake Regional Planning Commission, 2009.

VOLUME II - APPENDIX A
NATURAL, AGRICULTURAL, AND CULTURAL RESOURCES

Manitowoc County Surface Water Features

The following is an inventory of surface water features in Manitowoc County conducted by the Wisconsin Department of Natural Resources in 2005.

Manitowoc County Lakes and Ponds			
Name	Acres	Name	Acres
Bergene Lake	2	Mott Lake (Motts)	7
Boot Lake	11	Mud Lake (Hartmans)	62
Bullhead Lake	67	Neumeyer Lake	3
Carstens Lake	21	North Lutzke Lake	2
Cedar Lake	142	Oschwald Lake	8
Centerville Flowage	8	Peterson Lake	4
Clarks Mills Pond	43	Pigeon Lake	86
Eaton Twin Lake, North	6	Prueder Lake (Praeder)	9
Eaton Twin Lake, South	7	Quarry Lake	1
English Lake	49	Ranger Lake	4
Fenske Lake	4	Rockville Flowage	110
Gass Lake	6	Schisel Lake	14
Glomski Lake	9	Scout Lake	7
Graf Lake (Long, Munedowk)	8	Shoe Lake	9
Grosshuesch Lake	3	Shoto Lake	55
Harpt Lake (Herman)	31	Silver Lake	69
Hartlaub Lake (Hartab)	34	South Lutzke Lake	3
Hemptions Lake	10	Spring Lake (Getchaw)	8
Horseshoe Lake	22	Spring Pond	1
Inch Lake	4	Steinthal Lake	2
Karstaedt Lake	4	Sy Lake	15
Kasbaum Lake	9	Teek Lake (Mueller)	5
Kellners Lake	15	Tuma Lake (Ording)	14
Lindeman Lake	2	Vetting Lake	5
Little Pigeon Lake	6	Waack Lake	1
Little Sy Lake	4	West Lake	5
Long Lake (Big Long)	120	Weyers Lake	6
Millhome Flowage	51	Wilke Lake	95

Manitowoc County Rivers and Streams	
Branch River	Manitowoc River South Branch
Calvin Creek	Meeme River
Cedar Creek	Millhome Creek
Centerville Creek	Molash Creek
Devils River	Mud Creek
East Twin River	Pigeon River
Fischer Creek	Pine Creek
Francis Creek	Point Creek
Jambo Creek	Silver Creek
Johnson Creek	Sheboygan River
Kriwanek's Creek	Tisch Mills Creek
Little Manitowoc River	West Twin River
Manitowoc River	

Source: Wisconsin Department of Natural Resources, Wisconsin Lake Book, 2005 Revision; "Surface Water Resources of Manitowoc County" Wisconsin Conservation Department, 1968; Bay-Lake Regional Planning Commission, 2009.

Wisconsin's Impaired Waters of Manitowoc County

Section 303(d) of the Federal Clean Water Act requires each state to periodically submit to the U.S. Environmental Protection Agency (EPA) a list of impaired waters (i.e., not meeting the state's water quality standards). Impaired waters are classified into three categories.

Category 5a: Impaired Waters without approved Total Maximum Daily Loads (TMDLs), excluding those with impairments caused by atmospheric deposition of mercury.

- Branch River in Manitowoc County
- East Twin river upstream to first dam
- Fischer park Beaches – Lake Michigan
- Hika Park Bay – Lake Michigan
- Manitowoc River (mouth to confluence with North Branch)
- Manitowoc River
- Memorial Drive Wayside Beach
- Point Beach State Park Beach – Lake Michigan
- Red Arrow Park Beach – Lake Michigan
- Two Rivers Harbor
- Unnamed tributary (Osman Trib) to Meeme River
- Warm Water Beach

Category 5b: Waters impaired by atmospheric Deposition of Mercury

- Bullhead lake

Category 5c: Waters with approved TMDLs

- Silver Lake

Manitowoc County

Rare Species and Natural Communities List

The following list includes Manitowoc County's endangered resources (rare, threatened, or endangered species and high-quality natural communities) that have been recorded in the Wisconsin Natural Heritage Inventory (NHI), September 2005.

WATER (AQUATIC) OCCURRENCES

ANIMALS

- Elktoe
- Osprey
- Bloater
- Ellipse
- Monkeyface
- Redside Dace
- Piping Plover
- Redfin Shiner
- A Side-swimmer
- A Side-swimmer
- Lake Chubsucker
- Banded Killifish
- Great Blue Heron
- Greater Redhorse
- Northern Harrier
- Blanding's Turtle
- Wilson's Phalarope
- Red-shouldered Hawk
- Slippershell Mussel
- Four-toed Salamander
- Beach-dune Tiger Beetle
- Blanchard's Cricket Frog
- Black-crowned Night-heron
- Yellow-bellied Flycatcher

PLANTS

- Swamp-pink
- Shore Sedge
- Seaside Crowfoot
- Many-headed Sedge
- American Sea-rocket
- White Adder's-mouth
- Showy Lady's-slipper
- Variegated Horsetail
- Sticky False-asphodel
- Common Bog Arrow-grass
- Slender Bog Arrow-grass
- Slim-stem Small-reedgrass
- Northern Yellow Lady's-slipper

NATURAL COMMUNITIES

- Open Bog
- Emergent Marsh
- Hardwood Swamp
- Lake--Hard Bog
- Lake--Soft Bog
- Floodplain Forest
- Clay Seepage Bluff
- Interdunal Wetland
- Northern Wet Forest
- Northern Sedge Meadow
- Southern Sedge Meadow
- Lake--Deep, Hard, Seepage
- Northern Wet-mesic Forest
- Great Lakes Ridge and Swale

LAND (TERRESTRIAL) OCCURRENCES

ANIMALS

- Barn Owl
- Dickcissel
- Pigmy Shrew
- Black Striate
- A Noctuid Moth
- Hooded Warbler
- Tapered Vertigo
- Bat Hibernaculum
- Cerulean Warbler
- Cherrystone Drop
- Upland Sandpiper
- Henslow's Sparrow
- Acadian Flycatcher
- Western Meadowlark
- Grasshopper Sparrow
- Phyllira Tiger Moth
- Red-headed Woodpecker
- Northern Ringneck Snake
- Transparent Vitrine Snail
- Black-throated Blue Warbler
- Midwest Pleistocene Vertigo

PLANTS

- Twinleaf
- Glade Fern
- Thickspike
- Cuckooflower
- Dune Thistle
- Snow Trillium
- Sand Reedgrass
- Seaside Spurge
- Dragon Wormwood
- Long-spur Violet
- Pale Beardtongue
- Sand Dune Willow
- American Gromwell
- Climbing Fumitory
- Bird's-eye Primrose
- Clustered Broomrape
- Indian Cucumber-root

NATURAL COMMUNITIES

- Moist Cliff
- Great Lakes Dune
- Great Lakes Beach
- Northern Mesic Forest
- Southern Mesic Forest
- Northern Dry-mesic Forest
- Southern Dry-mesic Forest

Manitowoc County Park Facilities

The following is an inventory of the public park facilities found in Manitowoc County municipalities.

Town of Cato	
<ul style="list-style-type: none"> • Lower Cato Falls Park 	
Town of Centerville	
<ul style="list-style-type: none"> • Fischer Creek Conservation Area • Point Creek Conservation Area 	
Town of Cooperstown	
<ul style="list-style-type: none"> • Cherney Maribel Caves 	
Town of Manitowoc Rapids	
<ul style="list-style-type: none"> • Branch Firefighters Park • Silver Lake Park 	
Town of Meeme	
<ul style="list-style-type: none"> • Horseshoe Lake 	
Town of Newton	
<ul style="list-style-type: none"> • English Lake Park • Carstens Lake Park • Hartlaub Lake Park 	<ul style="list-style-type: none"> • Gass Lake Park • Newton Fireman's Park
Town of Rockland	
<ul style="list-style-type: none"> • Collins Firemen's Park • Collins Lions Park • Collins Marsh Wildlife Area and Nature Center • Long Lake Park 	
Town of Schleswig	
<ul style="list-style-type: none"> • Walla Hi Park 	
Town of Two Rivers	
<ul style="list-style-type: none"> • Woodland Dunes Nature Center • Point Beach State Forest 	
Village of Cleveland	
<ul style="list-style-type: none"> • Hika Park • Veteran's Park • Dairyland Park 	
Village of Francis Creek	
<ul style="list-style-type: none"> • Pla-Mor Park 	
Village of Kellnersville	
<ul style="list-style-type: none"> • Kellnersville Betterment Association (KBA) Park • Kellnersville Village Park 	

Village of Maribel

- Maribel Village Park

Village of Mishicot

- Mishicot Village Park

Village of Reedsville

- Bubolz Park
- Firefighter’s Park
- American Legion Gosz-Novak Post 199 Memorial Park

Village of St. Nazianz

- Oswald Park

Village of Valders

- Valders Memorial Park
- Melody Lane Mini Park

Village of Whitelaw

- Whitelaw Community Park

City of Kiel

- | | |
|------------------------|--------------------------|
| • Belitz Park | • Kiwanis Park |
| • Big Rock Park | • Lions Park |
| • Boy Scout Park | • Sission Park |
| • City Park | • Triangle Park |
| • Conley Park | • Veterans Memorial Park |
| • Hingiss Park | • Waack Park |
| • Karls Sports Terrace | |

City of Manitowoc

- | | |
|-----------------------|----------------------------|
| • Camp Vits | • Mariner's Landing |
| • Citizen Park | • Municipal Baseball Field |
| • Dale Street Park | • Pulaski Park |
| • Dewey Street Park | • Red Arrow Park |
| • Fleetwood Park | • Rheaume Park |
| • Halvorsen Park | • River Heights Park |
| • Henry Schuette Park | • Riverview Drive Park |
| • Indian Creek Park | • Riverview Northside Park |
| • Lakeview Park | • Silver Creek Park |
| • Lincoln Park | • Union Park |
| • Lincolnshire Park | • Westfield Park |
| • Manitou Park | • Washington Park |

City of Two Rivers

- | | |
|------------------|----------------------------------|
| • Central Park | • Taylor Park |
| • Lakeshore Park | • Vet's Park |
| • Neshotah Park | • Vietnam Veterans Memorial Park |
| • Paddlers Park | • Walsh Field |
| • Picnic Hill | • Washington Park |
| • Riverside Park | • Zander Park |

VOLUME II - APPENDIX B
POPULATION AND HOUSING RESOURCES

Manitowoc County Detailed Population and Housing

Table B.1: Historical Population Levels, Manitowoc County Municipalities, 1900-2000

Geographic Location	U.S. Census										
	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
Town of Cato	1,743	1,909	1,967	1,825	1,783	1,789	1,513	1,581	1,653	1,503	1,616
Town of Centerville	1,443	1,440	1,407	1,320	1,313	1,473	817	784	796	685	713
Town of Cooperstown	1,500	1,423	1,400	1,282	1,239	1,304	1,308	1,094	1,249	1,320	1,389
Town of Eaton	1,317	1,300	1,209	1,095	1,112	1,345	716	741	764	761	761
Town of Franklin	1,781	1,623	1,551	1,515	1,520	1,429	1,384	1,488	1,372	1,325	1,293
Town of Gibson	1,498	1,311	1,250	1,193	1,156	1,177	1,154	1,323	1,416	1,445	1,352
Town of Kossuth	1,799	1,798	1,939	1,894	1,905	1,953	2,131	1,966	2,097	1,951	2,033
Town of Liberty	1,383	1,431	1,506	1,166	1,270	1,093	966	1,089	1,170	1,218	1,287
Town of Manitowoc	762	870	1,161	405	558	719	1,001	1,258	1,177	937	1,073
Town of Manitowoc Rapids	1,717	2,092	1,952	1,811	2,433	3,007	3,106	3,552	3,186	2,579	2,520
Town of Maple Grove	1,214	1,151	1,079	967	966	905	882	910	962	888	852
Town of Meeme	1,482	1,504	1,435	1,442	1,393	1,353	1,367	1,480	1,535	1,516	1,538
Town of Mishicot	1,578	1,534	1,489	1,349	1,473	1,746	1,296	1,743	1,334	1,344	1,409
Town of Newton	1,770	1,578	1,515	1,459	1,503	1,670	1,940	2,256	2,332	2,242	2,241
Town of Rockland	1,676	1,255	1,227	1,151	1,122	1,023	935	971	936	911	896
Town of Schleswig	1,385	1,388	1,129	1,179	1,170	1,231	1,220	1,542	1,633	1,641	1,900
Town of Two Creeks	632	575	535	489	525	488	458	580	489	466	551
Town of Two Rivers	1,087	1,125	1,034	1,350	1,452	2,494	2,110	2,806	2,663	2,147	1,912
Village of Cleveland (1958)	---	---	---	---	---	---	687	761	1,270	1,398	1,361
Village of Francis Creek (1960)	---	---	---	---	---	---	---	492	589	562	681
Village of Kellnersville (1971)	---	---	---	---	---	---	---	---	369	350	374
Village of Maribel (1963)	---	---	---	---	---	---	---	316	363	372	284
Village of Mishicot (1950)	---	---	---	---	---	---	762	938	1,503	1,296	1,422
Village of Reedsville (1892)	---	550	571	617	729	691	830	994	1,134	1,182	1,187
Village of St. Nazianz (1956)	---	---	---	---	---	---	669	718	738	693	749
Village of Valders (1919)	---	---	---	504	580	560	622	821	984	905	948
Village of Whitelaw (1958)	---	---	---	---	---	---	420	557	649	700	730
City of Kiel [#] (1920)	924	1,244	1,420	1,615	1,709	1,868	2,253	2,550	2,654	2,534	3,129
City of Manitowoc (1870)	11,786	13,027	17,563	22,963	24,404	27,598	32,275	33,430	32,547	32,520	34,053
City of Two Rivers (1878)	3,784	4,850	7,305	10,083	10,302	10,243	12,393	13,553	13,354	13,030	12,639
Manitowoc County	42,261	44,978	51,644	58,674	61,617	67,159	75,215	82,294	82,918	80,421	82,893
Wisconsin	2,069,042	2,333,860	2,632,067	2,939,006	3,137,587	3,434,575	3,951,777	4,417,731	4,705,642	4,891,769	5,363,675

(---) = Year incorporated

Includes city population of Manitowoc County and Calumet County

Source: U.S. Bureau of the Census, General Population Characteristics 1840-1970, Bay-Lake Regional Planning Commission, December 1975; Census 2000; and Bay-Lake Regional Planning Commission, 2009.

Table B.2: Population by Age Groups, Manitowoc County Municipalities, 2000

Geographic Location	School Age						Working and Voting Age						Retirement Age		Total Population		
	5-11		12-14		15-17		16+		16-64		18+		18-64			65+	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Town of Cato	173	11	93	6	92	6	1,220	75	1,055	65	1,162	72	997	62	165	10	1,616
Town of Centerville	74	10	49	7	45	6	534	75	447	63	503	71	416	58	87	12	713
Town of Cooperstown	161	11	86	6	85	6	1,043	74	936	67	986	70	879	63	107	8	1,403
Town of Eaton	77	10	41	5	44	6	587	77	511	67	554	73	478	63	76	10	761
Town of Franklin	137	11	69	5	77	6	983	76	860	67	933	72	810	63	123	10	1,293
Town of Gibson	158	12	83	6	65	5	1,005	74	890	66	966	71	851	63	115	9	1,352
Town of Kossuth	212	10	113	6	113	6	1,560	77	1,348	66	1,487	73	1,275	63	212	10	2,033
Town of Liberty	136	11	78	6	78	6	980	76	824	64	931	72	775	60	156	12	1,287
Town of Manitowoc	105	10	49	5	48	4	861	80	709	66	833	78	681	63	152	14	1,073
Town of Manitowoc Rapids	223	9	114	5	142	6	2,046	81	1,542	61	1,954	78	1,450	58	504	20	2,520
Town of Maple Grove	109	13	47	6	50	6	628	74	553	65	596	70	521	61	75	9	852
Town of Meeme	176	11	82	5	77	5	1,165	76	961	62	1,113	72	909	59	204	13	1,538
Town of Mishicot	159	11	101	7	90	6	1,028	73	898	64	971	69	841	60	130	9	1,409
Town of Newton	224	10	96	4	141	6	1,761	79	1,493	67	1,667	74	1,399	62	268	12	2,241
Town of Rockland	95	11	50	6	45	5	687	77	602	67	659	74	574	64	85	9	896
Town of Schleswig	193	10	119	6	107	6	1,445	76	1,224	64	1,378	73	1,157	61	221	12	1,900
Town of Two Creeks	75	14	38	7	31	6	396	72	327	59	371	67	302	55	69	13	551
Town of Two Rivers	157	8	93	5	92	5	1,554	81	1,306	68	1,498	78	1,250	65	248	13	1,912
Village of Cleveland	110	8	68	5	70	5	1,057	78	903	66	1,017	75	863	63	154	11	1,361
Village of Francis Creek	84	12	32	5	24	4	511	75	419	62	493	72	401	59	92	14	681
Village of Kellnersville	40	11	16	4	19	5	289	77	223	60	274	73	208	56	66	18	374
Village of Maribel	25	9	15	6	15	6	195	74	161	61	185	70	151	57	34	13	264
Village of Mishicot	150	11	79	6	56	4	1,108	78	859	60	1,068	75	819	58	249	18	1,422
Village of Reedsville	109	9	58	5	51	4	936	79	746	63	900	76	710	60	190	16	1,187
Village of St. Nazianz	87	12	36	5	22	3	554	74	442	59	538	72	426	57	112	15	749
Village of Valders	111	12	37	4	48	5	711	75	592	62	674	71	555	59	119	13	948
Village of Whitelaw	81	11	27	4	34	5	564	77	471	65	539	74	446	61	93	13	730
City of Kiel	336	11	154	5	137	4	2,381	76	1,876	60	2,289	73	1,784	57	505	16	3,129
City of Manitowoc	3,141	9	1,465	4	1,511	4	26,835	79	20,571	60	25,839	76	19,575	57	6,264	18	34,053
City of Two Rivers	1,330	11	589	5	621	5	9,829	78	7,701	61	9,408	74	7,280	58	2,128	17	12,639
Manitowoc County	8,248	10	3,977	5	4,030	5	64,453	78	51,450	62	61,786	75	48,783	59	13,003	16	82,887
State of Wisconsin	541,735	10	241,367	5	241,367	5	4,156,879	78	3,454,232	64	3,995,968	75	3,293,321	61	702,647	13	5,363,715

Source: U.S. Bureau of the Census, 2000 Census of Population and Housing, STF 1a, General Profile and Table P012; and Bay-Lake Regional Planning Commission, 2009.

Table B.3: Median Age, Manitowoc County Municipalities, 1970-2000

Geographic Location	1970	1980	1990	2000
Town of Cato	19.9	23.8	30.8	35.7
Town of Centerville	25.6	28.9	32.9	38.4
Town of Cooperstown	23.0	25.9	31.5	37.2
Town of Eaton	23.1	28.0	32.6	36.6
Town of Franklin	23.1	24.6	30.4	37.8
Town of Gibson	23.0	25.4	30.7	37.3
Town of Kossuth	24.9	27.4	33.6	38.4
Town of Liberty	21.6	26.3	32.3	39.0
Town of Manitowoc	24.1	29.3	37.2	40.9
Town of Manitowoc Rapids	30.9	32.4	37.8	43.7
Town of Maple Grove	21.0	24.6	28.8	34.7
Town of Meeme	21.9	26.2	31.0	37.0
Town of Mishicot	21.5	26.3	31.3	35.5
Town of Newton	23.5	28.7	33.4	39.2
Town of Rockland	24.4	26.2	30.4	36.2
Town of Schleswig	24.5	28.2	33.9	38.8
Town of Two Creeks	24.3	29.6	31.5	36.5
Town of Two Rivers	22.7	27.0	30.0	42.6
Village of Cleveland	26.6	26.1	31.4	36.8
Village of Francis Creek	27.8	30.2	34.1	35.2
Village of Kellnersville	---	26.8	34.2	35.3
Village of Maribel	29.8	26.6	31.3	35.5
Village of Mishicot	25.8	27.8	36.3	39.1
Village of Reedsville	28.3	28.9	32.6	37.0
Village of St. Nazianz	28.1	28.3	33.3	34.6
Village of Valders	25.1	28.1	32.2	32.7
Village of Whitelaw	25.3	28.3	31.9	36.0
City of Kiel	29.0	30.6	35.6	36.0
City of Manitowoc	30.9	33.0	36.2	38.6
City of Two Rivers	28.8	30.8	35.3	38.2
Manitowoc County	27.8	30.2	34.6	38.3
Wisconsin	27.2	29.4	32.9	36.0

Source: U.S. Bureau of the Census, Census of Population, General Population Characteristics, Wisconsin, 1970, Tables 33, 35; 1980 Table 14; 1990 STF 1A, General Profile; Census 2000 and Bay-Lake Regional Planning Commission, 2009.

Table B.4: WDOA Population Projections, Manitowoc County Municipalities, 2000-2030

Geographic Location	US Census 2000	WDOA Population Projections						# Change 2000-2030	% Change 2000-2030
		2005	2010	2015	2020	2025	2030		
Town of Cato	1,616	1,665	1,703	1,746	1,790	1,832	1,865	249	15.4
Town of Centerville	713	726	728	733	738	741	743	30	4.2
Town of Cooperstown	1,389	1,399	1,424	1,452	1,481	1,509	1,529	140	10.1
Town of Eaton	761	798	819	841	864	886	905	144	18.9
Town of Franklin	1,293	1,318	1,326	1,338	1,351	1,362	1,367	74	5.7
Town of Gibson	1,352	1,433	1,463	1,497	1,531	1,564	1,590	238	17.6
Town of Kossuth	2,033	2,104	2,149	2,200	2,254	2,304	2,344	311	15.3
Town of Liberty	1,287	1,351	1,402	1,457	1,514	1,568	1,615	328	25.5
Town of Manitowoc	1,073	1,138	1,183	1,224	1,266	1,306	1,340	267	24.9
Town of Manitowoc Rapids	2,520	2,531	2,484	2,415	2,346	2,272	2,189	-331	-13.1
Town of Maple Grove	852	866	864	864	863	862	857	5	0.6
Town of Meeme	1,538	1,545	1,554	1,567	1,583	1,594	1,599	61	4.0
Town of Mishicot	1,409	1,445	1,474	1,507	1,541	1,573	1,599	190	13.5
Town of Newton	2,241	2,320	2,354	2,397	2,440	2,479	2,508	267	11.9
Town of Rockland	896	938	957	978	1,001	1,022	1,039	143	16.0
Town of Schleswig	1,900	2,042	2,166	2,288	2,413	2,534	2,646	746	39.3
Town of Two Creeks	551	552	567	584	601	617	631	80	14.5
Town of Two Rivers	1,912	1,915	1,888	1,836	1,784	1,728	1,665	-247	-12.9
Village of Cleveland	1,361	1,416	1,452	1,492	1,534	1,573	1,605	244	17.9
Village of Francis Creek	681	695	723	753	784	813	840	159	23.3
Village of Kellnersville	374	362	360	358	357	354	351	-23	-6.1
Village of Maribel	284	282	274	266	258	251	241	-43	-15.1
Village of Mishicot	1,422	1,449	1,479	1,513	1,548	1,581	1,607	185	13.0
Village of Reedsville	1,187	1,186	1,192	1,201	1,211	1,218	1,222	35	2.9
Village of St. Nazianz	749	741	745	752	759	763	766	17	2.3
Village of Valders	948	994	1,022	1,053	1,086	1,116	1,142	194	20.5
Village of Whitelaw	730	741	756	775	793	810	825	95	13.0
City of Kiel	3,129	3,268	3,436	3,625	3,816	4,002	4,172	1,043	33.3
City of Manitowoc	34,053	34,722	35,409	36,240	37,101	37,895	38,538	4,485	13.2
City of Two Rivers	12,639	12,577	12,481	12,451	12,427	12,379	12,282	-357	-2.8
Manitowoc County	82,893	84,519	85,834	87,403	89,035	90,508	91,622	8,729	10.5
Wisconsin	5,363,675	5,589,920	5,772,370	5,988,420	6,202,810	6,390,900	6,541,180	1,177,505	22.0

Source: U.S. Bureau of the Census, Census of Population and Housing, 1980-2000; Wisconsin Department of Administration, for years cited; Wisconsin Department of Administration, Official Population Projections, 2008; and Bay-Lake Regional Planning Commission, 2009.

Table B.5: Total Housing Units, Manitowoc County Municipalities, 1970-2000

Geographic Location	Year				Percent Change			
	1970	1980	1990	2000	1970-80	1980-90	1990-2000	1970-2000
Town of Cato	364	461	505	571	26.6	9.5	13.1	56.9
Town of Centerville	212	265	243	285	25.0	-8.3	17.3	34.4
Town of Cooperstown	280	352	418	486	25.7	18.8	16.3	73.6
Town of Eaton	184	242	272	306	31.5	12.4	12.5	66.3
Town of Franklin	383	399	443	491	4.2	11.0	10.8	28.2
Town of Gibson	359	443	478	495	23.4	7.9	3.6	37.9
Town of Kossuth	526	676	703	795	28.5	4.0	13.1	51.1
Town of Liberty	282	431	446	498	52.8	3.5	11.7	76.6
Town of Manitowoc	350	385	354	442	10.0	-8.1	24.9	26.3
Town of Manitowoc Rapids	805	933	798	822	15.9	-14.5	3.0	2.1
Town of Maple Grove	233	272	291	307	16.7	7.0	5.5	31.8
Town of Meeme	370	462	508	558	24.9	10.0	9.8	50.8
Town of Mishicot	441	408	449	489	-7.5	10.0	8.9	10.9
Town of Newton	644	783	805	850	21.6	2.8	5.6	32.0
Town of Rockland	299	360	378	336	20.4	5.0	-11.1	12.4
Town of Schleswig	584	709	779	871	21.4	9.9	11.8	49.1
Town of Two Creeks	161	164	166	202	1.9	1.2	21.7	25.5
Town of Two Rivers	757	838	770	766	10.7	-8.1	-0.5	1.2
Village of Cleveland	243	444	503	578	82.7	13.3	14.9	137.9
Village of Francis Creek	140	205	229	280	46.4	11.7	22.3	100.0
Village of Kellnersville	N/A	131	140	168	N/A	6.9	20.0	28.2*
Village of Maribel	97	125	125	105	28.9	0.0	-16.0	8.2
Village of Mishicot	282	500	503	614	77.3	0.6	22.1	117.7
Village of Reedsville	340	434	463	502	27.6	6.7	8.4	47.6
Village of St. Nazianz	188	262	275	302	39.4	5.0	9.8	60.6
Village of Valders	241	339	352	387	40.7	3.8	9.9	60.6
Village of Whitelaw	164	216	249	284	31.7	15.3	14.1	73.2
City of Kiel	830	1,003	1,051	1,349	20.8	4.8	28.4	62.5
City of Manitowoc	11,231	12,870	13,728	15,007	14.6	6.7	9.3	33.6
City of Two Rivers	4,421	5,000	5,414	5,547	13.1	8.3	2.5	25.5
Manitowoc County	25,411	30,140	31,843	34,651	18.6	5.7	8.8	36.4
Wisconsin	1,472,466	1,863,897	2,055,774	2,321,144	26.6	10.3	12.9	57.6

* Percent change for Village of Kellnersville is 1980 to 2000.

Source: U.S. Bureau of the Census, 1970, Series 100, Table 2; 1980 Census of Population and Housing, STF 1A, Table 4; 1990 Census of Population and Housing, STF 1A; 2000 Census; WDOA Revised Census Counts, 2000 and 2003; and Bay-Lake Regional Planning Commission, 2009.

Table B.6: Housing Occupancy and Tenure, Manitowoc County Municipalities, 2000

Geographic Location	Occupied			Vacant			Total Units	Percent Occupied	Percent Vacant
	Owner	Renter	Total	Seasonal, Recreational or Occasional Use	Other	Total			
Town of Cato	490	58	548	10	13	23	571	96.0	4.0
Town of Centerville	214	25	239	18	5	23	262	91.2	8.8
Town of Cooperstown	435	39	474	3	12	15	489	96.9	3.1
Town of Eaton	248	22	270	8	10	18	288	93.8	6.3
Town of Franklin	434	35	469	6	16	22	491	95.5	4.5
Town of Gibson	423	48	471	12	12	24	495	95.2	4.8
Town of Kossuth	683	69	752	21	22	43	795	94.6	5.4
Town of Liberty	420	36	456	39	3	42	498	91.6	8.4
Town of Manitowoc	358	62	420	6	16	22	442	95.0	5.0
Town of Manitowoc Rapids	763	46	809	2	11	13	822	98.4	1.6
Town of Maple Grove	261	26	287	11	10	21	308	93.2	6.8
Town of Meeme	490	41	531	18	9	27	558	95.2	4.8
Town of Mishicot	434	40	474	4	11	15	489	96.9	3.1
Town of Newton	719	76	795	30	25	55	850	93.5	6.5
Town of Rockland	279	29	308	17	11	28	336	91.7	8.3
Town of Schleswig	628	69	697	156	18	174	871	80.0	20.0
Town of Two Creeks	157	27	184	10	8	18	202	91.1	8.9
Town of Two Rivers	683	51	734	14	18	32	766	95.8	4.2
Village of Cleveland	450	86	536	17	25	42	578	92.7	7.3
Village of Francis Creek	205	61	266	0	14	14	280	95.0	5.0
Village of Kellnersville	115	42	157	0	11	11	168	93.5	6.5
Village of Maribel	75	24	99	0	1	1	100	99.0	1.0
Village of Mishicot	437	145	582	6	26	32	614	94.8	5.2
Village of Reedsville	342	129	471	0	31	31	502	93.8	6.2
Village of St. Nazianz	233	63	296	2	4	6	302	98.0	2.0
Village of Valders	283	92	375	0	12	12	387	96.9	3.1
Village of Whitelaw	235	43	278	0	6	6	284	97.9	2.1
City of Kiel	926	361	1,287	6	56	62	1,349	95.4	4.6
City of Manitowoc	9,626	4,609	14,235	58	714	772	15,007	94.9	5.1
City of Two Rivers	3,810	1,411	5,221	44	282	326	5,547	94.1	5.9
Manitowoc County	24,856	7,865	32,721	518	1,412	1,930	34,651	94.4	5.6
Wisconsin	1,426,361	658,183	2,084,544	142,313	94,287	236,600	2,321,144	89.8	10.2

Source: U.S. Bureau of the Census, 2000 and Bay-Lake Regional Planning Commission, 2009.

Table B.7: WDOA Occupied Housing Unit Projections, Manitowoc County Municipalities, 2005-2030

Geographic Location	2000 US Census Total Occupied Housing Units	WDOA Projected Occupied Housing Units					
		2005	2010	2015	2020	2025	2030
Town of Cato	548	574	598	624	647	667	682
Town of Centerville	239	247	253	259	264	266	269
Town of Cooperstown	471	482	500	519	535	549	559
Town of Eaton	270	288	301	314	327	337	346
Town of Franklin	469	486	498	511	522	530	535
Town of Gibson	471	508	528	549	568	585	597
Town of Kossuth	752	791	824	857	888	914	935
Town of Liberty	456	487	515	544	571	596	617
Town of Manitowoc	420	453	480	505	528	548	566
Town of Manitowoc Rapids	809	833	834	824	810	790	765
Town of Maple Grove	287	297	302	307	310	312	311
Town of Meeme	531	542	556	570	582	590	595
Town of Mishicot	474	494	514	534	552	568	580
Town of Newton	795	837	866	896	922	944	960
Town of Rockland	308	328	341	354	367	377	385
Town of Schleswig	697	762	823	884	943	997	1,047
Town of Two Creeks	184	187	196	205	214	221	227
Town of Two Rivers	734	747	751	743	730	712	689
Village of Cleveland	536	567	593	619	644	665	682
Village of Francis Creek	266	276	293	310	326	341	354
Village of Kellnersville	157	154	157	158	160	159	159
Village of Maribel	104	105	104	103	101	99	95
Village of Mishicot	582	603	627	652	675	694	709
Village of Reedsville	471	478	490	502	512	519	523
Village of St. Nazianz	296	301	309	317	323	327	330
Village of Valders	375	400	419	439	458	474	487
Village of Whitelaw	278	287	298	311	322	331	339
City of Kiel	1,287	1,367	1,465	1,571	1,672	1,766	1,851
City of Manitowoc	14,235	14,838	15,422	16,042	16,606	17,079	17,462
City of Two Rivers	5,221	5,281	5,342	5,416	5,467	5,483	5,469
Manitowoc County	32,723	34,000	35,199	36,439	37,546	38,440	39,125

Source: Wisconsin Department of Administration, 2008 and Bay-Lake Regional Planning Commission, 2009.

Manitowoc County Housing Programs and Resources

There are a number of housing programs and tools available to assist Manitowoc County officials in obtaining and maintaining the desired housing environment they wish to provide their residents. An important first step in the successful utilization of those resources is ongoing education of citizens and local officials regarding the contents of the Housing Chapter of this comprehensive plan and on the importance of providing quality and affordable housing for all Manitowoc County residents. Elected and appointed county officials, as well as the citizens, need to understand the strong correlation between quality housing and the economic development, natural/cultural resources, land use, community facilities and transportation components of the county.

The following is a list of programs and resources available to implement the housing strategies found in Chapter 1 of the local and county comprehensive plans. Some local implementation tools that may compliment this list of programs and resources are Manitowoc County's zoning ordinances and enforcement regulations.

Local and Regional Programs

Manitowoc County Aging Resource Center focuses their services to enable older citizens in the county to find and make use of the resources in their communities, helping them experience aging with self-sufficiency, security, and dignity. Their list of available services include Alzheimer's support, housing counseling, nutrition program, transportation, information, assistance, and benefit specialist.

Manitowoc County Department of Human Services provides a variety of housing related assistance to residents of the county to include refugee assistance, information on independent living services, and energy assistance.

Lakeshore Community Action Program's mission is to promote economic self-sufficiency and well-being of low-income persons through advocacy, community education, and resource development in Door, Kewaunee, Manitowoc, and Sheboygan Counties. Primary housing services include:

- Provide emergency service to low income people to meet basic human needs of food and shelter; and
- Promote and develop affordable rental housing and home ownership opportunities for low-income persons through direct services, advocacy and community education regarding the housing needs of the low-income community. These services include Affordable Rental Housing; Rental Housing Development; Home Buyer Program; and Individual Development Accounts (IDA). www.lakeshorecap.org

Tax Increment Financing (TIF). TIF is a tool available to cities and villages in Wisconsin under section 66.1105 of the Wisconsin Statutes for redeveloping blighted areas. TIF can be used to cover costs of public works or improvements including costs for demolition, land assembly, public improvements, and new buildings. Under TIF, new private development creates higher property values, thus creating a greater tax base (the tax increment). This increment, or a portion of the increment, is set aside for reinvestment in the area. Tax increment financing could be used to assist in the building or rehabilitation of affordable housing for middle- and lower-income households.

State Programs

Wisconsin Department of Commerce Bureau of Housing (BOH) helps expand local affordable housing and supports services to people without housing. The fifteen federal and state programs managed by the Bureau aid elderly persons, people with disabilities, low and moderate income residents, and the homeless population. The Bureau works closely with local governments and non-profit housing organizations to deliver financial and technical housing assistance and to strengthen the capabilities of housing organizations. More than \$40 million is distributed annually to improve the supply of affordable housing for Wisconsin residents. The bureau:

- administers federal housing funds such as Home Investment Partnerships, (HOME) and CDBG;
- administers a variety of programs for persons with Special Needs (Homeless);
- provides state housing funds through local housing organizations;
- coordinates housing assistance programs with those of other state and local housing agencies; and
- develops state housing policy and provides housing information and technical assistance.
www.commerce.wi.gov/housing

The Wisconsin Housing and Economic Development Administration (WHEDA) also manages several federal housing programs. One program, the Low Income Housing Tax Credit Program, encourages housing development by providing private investors with income tax credits when they invest in low income housing development. Tax credits are allocated to housing projects on a competitive basis.

Information about WHEDA programs can be obtained by telephoning (800) 362-2761 or by visiting its web site at www.wheda.state.wi.us.

Wisconsin Historical Society's Division of Historic Preservation administers a 25-percent state income tax credit for repair or rehabilitation of historic homes. The tax credit is available to owner-occupants of non-income-producing historic residences. The property must be listed in, or eligible for, the State or National Register, or be determined to contribute to a State or National Register historic district. Eligible activities are limited to exterior work, rehabilitation or structural, electrical, mechanical, and plumbing systems.
www.wisconsinhistory.org/hp/architecture/tax_credit.asp

Wisconsin Department of Veterans Affairs makes available a variety of home acquisition and improvement programs for qualifying veterans and their dependents. These programs include the Home Purchase Program, Home Improvement Loan Program (HILP) may be used for additions, garage construction, repairs and remodeling (i.e., replace a roof, install new windows, a new furnace or a central air conditioning system) of a veteran's residence; and Primary Mortgage Loan (PML), that is different from the USDVA Home Loan Guaranty Program.
www.homeloans.va.gov

The Energy Assistance Bureau, within the Wisconsin Division of Energy, provides services to Wisconsin qualified residential households with energy assistance and weatherization needs. The Wisconsin Home Energy Assistance Program (WHEAP) administers the federally funded Low Income Home Energy Assistance Program (LIHEAP) and Public Benefits Energy Assistance Program. LIHEAP and its related services help over 100,000 Wisconsin households annually. In addition to regular heating and electric assistance, specialized services include

emergency fuel assistance, counseling for energy conservation and energy budgets, pro-active co payment plans, and emergency furnace repair and replacement. Services are provided locally through county social services offices, Tribal governments, private non-profit or other government agencies. www.heat.state.wi.us

Federal Programs

U.S. Department of Agriculture -Rural Development offers subsidized direct loans and non-subsidized guaranteed loan funds for the purchase and construction of homes by households in qualified rural areas of the state. The community must be of 20,000 or less, and there are special programs for Native Americans. Rural Development also provides low-interest mortgage loans for single family, owner-occupied residential home repair in rural areas. Some grants are available for very low-income elderly households. It provides funding through the 504 and the Housing Preservation Grant programs. www.rurdev.usda.gov/wi/programs/rhs/

U.S. Department of Housing and Urban Development provides vital public services through its nationally administered programs. It oversees the Federal Housing Administration (FHA), the largest mortgage insurer in the world, as well as regulates the housing industry business. The mission of the Office of Housing is to:

- Contribute to building and preserving healthy neighborhoods and communities;
- Maintain and expand homeownership, rental housing and healthcare opportunities;
- Stabilize credit markets in times of economic disruption;
- Operate with a high degree of public and fiscal accountability; and
- Recognize and value its customers, staff, constituents and partners.

Within the Office of Housing are three business areas:

1. HUD's Single Family programs include mortgage insurance on loans to purchase new or existing homes, condominiums, manufactured housing, houses needing rehabilitation, and for reverse equity mortgages to elderly homeowners.
2. HUD's Multifamily programs provide mortgage insurance to HUD-approved lenders to facilitate the construction, substantial rehabilitation, purchase and refinancing of multifamily housing projects, and healthcare facilities.
3. HUD's Regulatory programs are designed to assist homeowners and homebuyers to regulate real estate transactions. www.hud.gov

US Department of Veterans Affairs offers a number of programs and services for veterans and their dependents. In the area of housing, the department has several grants and loans available. Many of the programs are made available through the State Department of Veterans Affairs or local veteran's affairs offices. www.va.gov

National and Regional Not for Profit Organizations

Habitat for Humanity has local affiliates and is responsible for raising funds, recruiting volunteers, identifying project sites and constructing owner-occupied housing for the benefit of participating low-income families. Their goal is to eliminate inadequate and poverty housing throughout the world. www.habitat.org

Movin' Out, Inc. creates opportunities for people with disabilities and their families to purchase and maintain their own homes, in housing and neighborhoods that are safe, affordable, accessible, and integrated. Movin' Out, Inc. is a housing organization providing information and

assistance, housing counseling, and gap financing for purchase and rehabilitation to Wisconsin households with a member who has a permanent disability. www.Movin-out.org.

Tomorrow's Home Foundation was created in 2000 for several purposes:

- Assist disabled persons in the purchase of a manufactured or modular home via a downpayment assistance grant;
- Provide emergency assistance grants designed to provide critical repairs so that individuals and families can stay in their manufactured or mobile home;
- create a method and mode for disposing of old, uninhabitable mobile homes that were blighting the countryside; and
- educate the manufactured and modular housing industry.

As a public charity, the Foundation provides a way to give back to the community for industry members and a method to assist populations that are underserved by other programs. For example, many other charitable and public service agencies do not provide housing assistance to persons in mobile home parks. The Tomorrow's Home Foundation fills this void.

www.tomorrowshomefoundation.org

WiFrontDoorHousing is a web-based community service that is intended to better connect providers of housing and housing services to renters who are looking for these types of housing opportunities. Their goal is to provide access to up-to-date housing information with user-friendly tools. These tools are customized for each of our user groups: renters, landlords, property managers, and the housing agency staff that help people find and keep housing. www.wifrontdoor.org

Rural Housing, Inc. was created in 1970 by the Rural Electrical Cooperatives as a statewide non-profit. Over the years, they have had federal, state, and private funding. They have served hundreds of rural communities and non-profit organizations with technical assistance, grant applications and advice. They have assisted thousands of low-income families with information, funds to repair their septs and wells, assistances for rent, and funds to purchase homes or stay in their homes. Millions of dollars have been leveraged for the very low-income rural residents of Wisconsin to:

- Assist low-income families obtain adequate, safe and sanitary housing;
- Help low-income households acquire appropriate water and wastewater services;
- Enable small communities and local organizations to more effectively address the needs of those with substandard shelter;
- Demonstrate new services and new approaches to address rural housing problems; and
- Alert the public and private sectors about the housing, water, and community development needs of low-income rural residents. www.wisconsinruralhousing.org

The Wisconsin Partnership for Housing Development works with local governments as consultants to help them understand their housing needs and find solutions, and as technical advisors that work under contract to HUD to help local governments design new housing programs or create local housing partnerships. Putting together the right combination of people and resources is essential to finding effective approaches to local or regional housing problems. We have experience in working with neighborhoods, villages, cities, counties and metropolitan areas, as well as grassroots community leaders and those most directly affected by poor housing and declining neighborhoods. www.wphd.org

Catholic Charities agencies strengthen their communities by empowering the people within them. They help families and individuals overcome tragedy, poverty, and other life challenges. Every agency is unique. They share a common goal of providing the services and programs that their particular community needs the most. Over 220,000 compassionate volunteers, staff, and board members comprise the driving force behind the Catholic Charities network. Their commitment goes beyond meeting peoples' daily needs. They build hopeful futures by helping people take control of their lives. www.catholiccharitiesinfo.org

NeighborWorks[®] America is comprised of local organizations and Neighborhood Housing Services of America, which has successfully built healthy communities since 1978. Together, with national and local partners, NeighborWorks creates new opportunities for residents while improving communities. NeighborWorks America is national nonprofit organization created by Congress to provide financial support, technical assistance, and training for community-based revitalization efforts. www.nw.org

VOLUME II - APPENDIX C
ECONOMIC DEVELOPMENT RESOURCES

MANITOWOC COUNTY

DETAILED ECONOMIC DEVELOPMENT TABLES

Figure C.1: Median Household Income, Manitowoc County Municipalities, 1989 and 1999

Geographic Location	1989	1999	Percent Change
Town of Cato	\$31,507	\$53,462	69.7
Town of Centerville	\$30,625	\$58,750	91.8
Town of Cooperstown	\$32,895	\$58,177	76.9
Town of Eaton	\$31,310	\$52,054	66.3
Town of Franklin	\$31,016	\$50,000	61.2
Town of Gibson	\$32,566	\$48,438	48.7
Town of Kossuth	\$32,135	\$55,114	71.5
Town of Liberty	\$33,864	\$56,169	65.9
Town of Manitowoc	\$34,444	\$54,265	57.5
Town of Manitowoc Rapids	\$33,320	\$56,548	69.7
Town of Maple Grove	\$32,566	\$51,071	56.8
Town of Meeme	\$34,783	\$55,139	58.5
Town of Mishicot	\$31,439	\$51,083	62.5
Town of Newton	\$34,340	\$54,359	58.3
Town of Rockland	\$34,219	\$53,500	56.3
Town of Schleswig	\$33,810	\$52,841	56.3
Town of Two Creeks	\$32,750	\$45,625	39.3
Town of Two Rivers	\$34,722	\$55,759	60.6
Village of Cleveland	\$34,600	\$50,739	46.6
Village of Francis Creek	\$30,179	\$43,542	44.3
Village of Kellnersville	\$25,000	\$32,167	28.7
Village of Maribel	\$25,313	\$45,938	81.5
Village of Mishicot	\$29,609	\$43,083	45.5
Village of Reedsville	\$26,207	\$41,300	57.6
Village of St. Nazianz	\$28,864	\$40,139	39.1
Village of Valders	\$32,188	\$45,167	40.3
Village of Whitelaw	\$25,804	\$51,029	97.8
City of Kiel	\$30,245	\$45,595	50.8
City of Manitowoc	\$24,202	\$38,203	57.9
City of Two Rivers	\$25,710	\$39,701	54.4
Manitowoc County	\$27,467	\$43,286	57.6
State of Wisconsin	\$29,442	\$43,791	48.7

Source: U.S. Bureau of the Census, 1990 Census of Population and Housing, STF 3A Table P080A; U.S. Bureau of the Census, 2000, DP-3; and Bay-Lake Regional Planning Commission, 2009.

Figure C.2: Educational Attainment (Age 25 and Over), Manitowoc County Municipalities, 2000

Geographic Location	Less than 9th Grade		9th to 12th grade, no diploma		High school graduate (includes equivalency)		Some college, no degree		Associate degree		Bachelor's degree		Graduate or professional degree	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Town of Cato	64	6.0	75	7.0	514	47.9	168	15.7	84	7.8	138	12.9	30	2.8
Town of Centerville	38	8.3	32	7.0	212	46.1	83	18.0	38	8.3	37	8.0	20	4.3
Town of Cooperstown	38	4.1	64	6.9	411	44.4	180	19.4	90	9.7	99	10.7	44	4.8
Town of Eaton	41	7.9	41	7.9	260	50.0	82	15.8	34	6.5	60	11.5	2	0.4
Town of Franklin	67	7.9	77	9.0	414	48.6	178	20.9	50	5.9	47	5.5	18	2.1
Town of Gibson	53	6.1	89	10.3	430	49.8	128	14.8	60	6.9	86	10.0	18	2.1
Town of Kossuth	69	5.0	107	7.8	652	47.3	235	17.0	121	8.8	159	11.5	36	2.6
Town of Liberty	36	4.1	59	6.7	383	43.8	199	22.7	81	9.3	96	11.0	2.1	2.4
Town of Manitowoc	44	5.5	51	6.4	343	42.8	165	20.6	59	7.4	80	10.0	59	7.4
Town of Manitowoc Rapids	139	7.8	83	4.7	644	36.1	262	14.7	136	7.6	301	16.9	219	12.3
Town of Maple Grove	21	4.1	60	11.7	267	52.3	81	15.9	30	5.9	45	8.8	7	1.4
Town of Meeme	104	10.5	88	8.9	405	40.9	195	19.7	93	9.4	85	8.6	21	2.1
Town of Mishicot	38	4.3	93	10.6	419	47.8	160	18.3	69	7.9	70	8.0	27	3.1
Town of Newton	102	6.8	112	7.5	666	44.5	266	17.8	140	9.3	149	9.9	63	4.2
Town of Rockland	35	6.0	64	11.0	316	54.3	77	13.2	33	5.7	49	8.4	8	1.4
Town of Schlewig	86	6.7	105	8.1	618	47.9	237	18.4	73	5.7	124	9.6	47	3.6
Town of Two Creeks	17	4.9	39	11.3	183	52.9	61	17.6	17	4.9	22	6.4	7	2.0
Town of Two Rivers	76	5.5	124	9.0	646	46.6	245	17.7	103	7.4	116	8.4	75	5.4
Village of Cleveland	77	8.4	68	7.5	321	35.2	173	19.0	75	8.2	154	16.9	44	4.8
Village of Francis Creek	33	8.2	22	5.4	207	51.2	78	19.3	29	7.2	28	6.9	7	1.7
Village of Kellnersville	27	10.4	24	9.3	123	47.5	47	18.1	18	6.9	17	6.6	3	1.2
Village of Maribel	6	3.9	12	7.9	76	50.0	29	19.1	4	2.6	20	13.2	5	3.3
Village of Mishicot	90	9.0	63	6.3	461	46.3	193	19.4	78	7.8	69	6.9	41	4.1
Village of Reedsville	86	10.5	67	8.2	378	46.3	145	17.7	28	3.4	86	10.5	27	3.3
Village of St. Nazianz	15	3.5	55	12.9	201	47.2	82	19.2	28	6.6	32	7.5	13	3.1
Village of Valdars	26	4.5	32	5.6	257	44.6	98	17.0	72	12.5	71	12.3	20	3.5
Village of Whitelaw	41	9.0	27	5.9	221	48.3	69	15.1	44	9.6	48	10.5	8	1.7
City of Kiel	208	9.1	183	8.0	969	42.4	384	16.8	212	9.3	236	10.3	92	4.0
City of Manitowoc	1,608	7.0	2,163	9.4	9,303	40.6	4,387	19.1	1,555	6.8	2,934	12.8	990	4.3
City of Two Rivers	453	5.4	814	9.6	3,688	43.6	1,702	20.1	645	7.6	821	9.7	334	3.9
Manitowoc County	3,697	6.7	4,865	8.8	23,853	43.0	10,359	18.7	4,099	7.4	6,273	11.3	2,306	4.2
State of Wisconsin	186,125	5.4	332,292	9.6	1,201,813	34.6	715,664	20.6	260,711	7.5	530,268	15.3	249,005	7.2

Source: U.S. Bureau of the Census, 2000, DP-2; Bay-Lake Regional Planning Commission, 2009.

Figure C.3: Employed Persons by Occupation, Manitowoc County Municipalities, 2000

Geographic Location	Management, professional, and related		Service		Sales and office		Farming, fishing, and forestry		Construction, extraction, and maintenance		Production, transportation, and material moving	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Town of Cato	245	25.2	104	10.7	172	17.7	45	4.6	143	14.7	263	27.1
Town of Centerville	102	25.6	52	13.1	57	14.3	34	8.5	41	10.3	112	28.1
Town of Cooperstown	231	28.4	102	12.5	170	20.9	32	3.9	91	11.2	187	23.0
Town of Eaton	112	23.9	52	11.1	73	15.6	27	5.8	52	11.1	152	32.5
Town of Franklin	170	23.9	75	10.5	113	15.9	25	3.5	117	16.4	212	29.8
Town of Gibson	171	24.5	59	8.4	139	19.9	33	4.7	94	13.4	203	29.0
Town of Kossuth	314	27.4	108	9.4	205	17.9	42	3.7	137	12.0	338	29.5
Town of Liberty	202	27.2	112	15.1	176	23.7	20	2.7	88	11.8	146	19.6
Town of Manitowoc	182	30.0	74	12.2	125	20.6	9	1.5	58	9.6	159	26.2
Town of Manitowoc Rapids	406	32.1	122	9.6	241	19.0	66	5.2	150	11.8	281	22.2
Town of Maple Grove	109	22.4	40	8.2	91	18.7	24	4.9	50	10.3	172	35.4
Town of Meeme	193	22.2	93	10.7	181	20.8	41	4.7	95	10.9	266	30.6
Town of Mishicot	164	21.6	105	13.8	137	18.1	26	3.4	89	11.7	238	31.4
Town of Newton	367	27.1	144	10.6	257	19.0	53	3.9	188	13.9	346	25.5
Town of Rockland	135	26.4	48	9.4	61	11.9	18	3.5	60	11.7	190	37.1
Town of Schlewig	241	22.7	99	9.3	216	20.4	19	1.8	111	10.5	374	35.3
Town of Two Creeks	69	25.8	23	8.6	41	15.4	14	5.2	29	10.9	91	34.1
Town of Two Rivers	307	27.8	131	11.9	196	17.8	36	3.3	116	10.5	318	28.8
Village of Cleveland	204	26.1	77	9.8	165	21.1	19	2.4	74	9.5	243	31.1
Village of Francis Creek	68	19.0	54	15.1	86	24.1	13	3.6	39	10.9	97	27.2
Village of Kellnersville	46	22.3	32	15.5	23	11.2	2	1.0	24	11.7	79	38.3
Village of Maribel	29	21.8	27	20.3	37	27.8	7	5.3	14	10.5	19	14.3
Village of Mishicot	182	24.5	133	17.9	146	19.7	10	1.3	80	10.8	191	25.7
Village of Reedsville	144	22.0	91	13.9	91	13.9	7	1.1	71	10.8	251	38.3
Village of St. Nazianz	52	17.1	43	14.1	69	22.7	15	4.9	36	11.8	89	29.3
Village of Valdars	129	25.9	68	13.6	92	18.4	6	1.2	39	7.8	165	33.1
Village of Whitelaw	71	17.6	46	11.4	70	17.4	10	2.5	72	17.9	134	33.3
City of Kiel	448	24.3	224	12.2	416	22.6	37	2.0	121	6.6	596	32.4
City of Manitowoc	4,011	24.0	2,639	15.8	3,866	23.1	96	0.6	1,450	8.7	4,640	27.8
City of Two Rivers	1,357	21.6	862	13.8	1,194	19.0	36	0.6	549	8.8	2,271	36.2
Manitowoc County	10,448	24.3	5,793	13.5	8,880	20.7	820	1.9	4,264	9.9	12,748	29.7
State of Wisconsin	857,205	31.3	383,619	14.0	690,360	25.2	25,725	0.9	237,086	8.7	540,930	19.8

Source: U.S. Bureau of the Census, 2000, DP-3; Bay-Lake Regional Planning Commission, 2009

Manitowoc County

Economic Development Programs and Resources

This section briefly explains some of the many programs and resources available to Manitowoc County and its local communities to help grow their local economies. This list provides resources to extend or upgrade existing infrastructure or to create additional jobs through business development, recruitment, and expansion efforts. For more information on the listed resources below, please contact the Economic Development Corporation of Manitowoc County at www.edcmc.org.

County and Local

County Economic Development Officials/Contacts

Manitowoc County established a non-profit countywide economic development corporation (EDC) to serve as the catalyst for economic development and tourism promotion in the county. The EDC focuses on job creation, job retention, and the overall economic well-being of the county. The organization also promotes existing businesses, offers a marketing outlet for the county, and promotes events that are unique to the county that will benefit the area economically. Manitowoc County is served by the Economic Development Corporation of Manitowoc County located in the City of Manitowoc. (Source: www.edcmc.org)

Regional

The Bay-Lake Regional Planning Commission (BLRPC)

The Bay-Lake Regional Planning Commission serves as an economic development district for the US Department of Commerce-Economic Development Administration. The BLRPC also provides technical assistance to local ED organizations and offers grant writing and administration services for various state and federal funding sources.

(Source: www.baylakerpc.org)

Northeast Wisconsin Regional Economic Partnership (NEWREP)

All eight counties of the BLRPC are part of Commerce's *Eastern Wisconsin Technology Zone*. The program provides income tax incentives for high-tech development in the region. The zone is designed to enhance the region's attractiveness to high-tech businesses and workers, build on the success of the biotechnology and manufacturing companies in the region, attract auxiliary companies, and help existing companies increase productivity. (Source: www.northeastwisconsin.org)

New North, Inc.

New North, Inc. is a public-private partnership comprised of the 18-county area of Northeast Wisconsin. This regional economic development organization's primary goal is to market this part of Wisconsin to expand economic opportunities.

(Source: www.thenewnorth.com)

Small Business Development Centers (SBDC)

SBDCs are located within the eleven 4-year universities. The SBDCs counselors offer advice, training, and resources to promote entrepreneurship and small business growth. Programs focus on minority entrepreneurship, startup business solutions, and established business solutions.

Specific programs include business plan reviews and one-to-one business counseling. (Source: www.wisconsinsbdc.org)

SCORE

SCORE is a more than 11,500 member volunteer association sponsored by the U.S. Small Business Administration. It matches volunteer business-management counselors with present and prospective small business owners in need of expert advice. SCORE has experts in virtually every area of business management. Local SCORE chapters offer workshops and no cost one-to-one counseling. (Source: www.sba.gov)

Community Action Agencies

The purpose of **Community Action Agencies (CAA)**, as stated in the Economic Opportunity Act (EOA of 1964), is to stimulate a better focusing of all available local, state, private and federal resources upon the goal of enabling low-income families, and low-income individuals of all ages in all geographic areas, to attain the skills, knowledge, and motivations, and secure the opportunities needed, for them to become fully self-sufficient. The local CAA serving Manitowoc County is **Lakeshore CAP, Inc.** located in the City of Manitowoc. It operate a variety of programs including their operation of Head Start, weatherization, housing, employment and training programs, family development, economic development, commodity distribution, senior and youth services, and many other valuable programs. In addition to providing direct services, CAAs often serve as program sponsors or grantees overseeing, although not necessarily directly operating programs. (Source: www.lakeshorecap.org)

Utilities

Area utilities offer economic development assistance to communities and businesses in a number of ways to include the development of business plans, making available grants and loans, providing loan guarantees, and facilitating educational forums. Area utilities include:

- **Wisconsin Public Service Corporation** (www.wisconsinpublicservice.com),
- **Alliant Energy** (www.alliantenergy.com),
- **Rural Energy Cooperatives** (www.meuw.org), and
- **SBC** (www.sbc.com).

State

Wisconsin Department of Commerce

The federally funded **Community Development Block Grant (CDBG)** program can be used for housing, economic development and public facility improvements. The program is designed to assist economically distressed smaller communities with improvements to such things as utilities and streets, fire stations, community centers, and housing rehabilitation, as well as many other improvements needed by a community. The **CDBG-Economic Development (ED)** program assists large businesses that will invest substantial private funds and create approximately 100 jobs as they expand or relocate in Wisconsin. Funds are awarded to a community, which then loans the funds to a business. The **Major Economic Development (MED) Program** is designed to assist businesses that will invest private funds and create jobs as they expand in or relocate to Wisconsin. The **Rural Economic Development (RED) Program** provides working capital or fixed asset financing for businesses with fewer that 50 employees.

Specifically, the **CDBG-Public Facilities for Economic Development (PFED)** program is designed to assist communities with expanding or upgrading their infrastructure to accommodate businesses that have made a firm commitment to create jobs and invest in the community. The **CDBG-Public Facilities (PF)** component helps eligible local governments upgrade community facilities, infrastructure, and utilities for the benefit of low- to moderate-income residents. The **Main Street Program** offers a variety of resources to include façade grants and technical and financial assistance to stimulate the revitalization of their respective areas. The **Brownfields Initiative** provides grants to persons, businesses, local development organizations, and municipalities for environmental remediation activities for brownfield sites where the owner is unknown, cannot be located or cannot meet the cleanup costs. The **Community-Based Economic Development Program (CBED)** is designed to promote local business development in economically-distressed areas. The program awards grants to community-based organizations for development and business assistance projects and to municipalities for economic development planning. The program helps community-based organizations plan, build, and create business and technology-based incubators, and can also capitalize an incubator tenant revolving-loan program. The **CDBG-Blight Elimination and Brownfield Redevelopment Program (BEBR)** can help small communities obtain money for environmental assessments and to remediate brownfields. The **CDBG-Emergency Grant Program** can help small communities repair or replace infrastructure that has suffered damages as a result of catastrophic events.

Community Development Zone (CDZ) designation is a tax credit program for businesses planning to expand, relocate or start in the designated area or community. *CDZs in the BLRPC district include the cities of Green Bay, Sturgeon Bay, Two Rivers, and Manitowoc; and the counties of Florence, Marinette, and Oconto.* These tax credits are to be applied against a company's Wisconsin income tax liability. These credits are based on the number of new jobs that a company creates, and the wage level and benefit package that are offered to the employees. The **Enterprise Development Zone (EDZ)** program provides tax incentives to new or expanding businesses whose projects will affect distressed areas. Based on the economic impact of a proposed business project, the Department of Commerce will be able to designate an enterprise development zone. A zone is "site specific" and applies to only one business.

To compliment the bricks and mortar component of Commerce, there is funding specifically earmarked for employee training. Eligible businesses looking to train a significant number of its current or incoming workforce can apply for and receive a direct grant from Commerce for **Customized Labor Training (CLT)**. Companies with a few employees seeking training are eligible for the **Business Employees Skills Training (BEST)** program. The focus of both programs is on the training or retraining of employees to incorporate new technologies or manufacturing processes.

Commerce provides financial resources to encourage the development of small businesses. Potential entrepreneurs can access an **Early Planning Grant (EPG)** of up to \$3,000 to obtain professional services necessary to evaluate the feasibility of a proposed start-up or expansion or develop a business plan. The **Entrepreneurial Training Grant Program (ETG)** is a comprehensive course designed to provide hands-on assistance in the writing of a business plan. The technical assistance can be provided by the *Small Business Development Center (SBDC) at UW-Green Bay* or the regional *Service Core of Retired Executives (SCORE)* office.

Other programs offered by Commerce include: the **Employee Ownership Assistance Loan Program (EOP)** can help a group of employees purchase a business by providing individual awards up to \$15,000 for feasibility studies or professional assistance. The business under consideration must have expressed its intent to downsize or close. **Industrial Revenue Bonds (IRB)** are municipal bonds whose proceeds are loaned to private persons or to businesses to finance capital investment projects. All Wisconsin municipalities, cities, villages, and town are authorized to issue IRBs. The **Technology Development Fund (TDF)** program helps Wisconsin businesses research and develop technological innovations that have the potential to provide significant economic benefit to the state. The **Technology Development Loan (TDL)** program helps Wisconsin businesses develop technological innovations that have the potential to provide significant economic benefit to the state. This program is designed to help businesses commercialize new technology.

The **Minority Business Development (MBD) Loan Program** provides low interest loans to assist minority-owned companies with land and equipment purchase, working capital, and construction. The **Wisconsin Trade Project Program** can help small export-ready firms participate in international trade shows. The **Milk Volume Production (MVP) Loan Program** enables farmers to increase milk production by offering loan interest loans to purchase additional dairy cattle. The **Dairy 20/20 Early Planning Grant Program** covers third party services to assist the applicant with start-up, modernization, or expansion of a dairy operation. (Source: www.commerce.state.wi.us)

Wisconsin Department of Transportation

The **Transportation Economic Assistance (TEA)** grants provide up to 50% of costs to governing bodies, private businesses, and consortiums for road, rail, harbor, and airport projects that help attract employers to Wisconsin, or encourage business and industry to remain and expand in the state. Grants up to \$1 million are available for transportation improvements that are essential for an economic development project. The amount of DOT provided funding is dependent on the number of jobs being created or retained. The 50% local match portion can come from a combination of local, federal, state, or in-kind services.

In 1979, the **Harbor Assistance Program (HAP)** was created to assist harbor communities along the Great Lakes and Mississippi River in maintaining and improving waterborne commerce. Port projects typically include dock reconstruction, mooring structure replacement, dredging, and construction of facilities to hold dredged materials. The **Freight Rail Infrastructure Improvement program (FRIP)** and **Freight Rail Preservation program (FRPP)** were created to maintain and improve rail services throughout Wisconsin.

The **State Infrastructure Bank (SIB) program**, similar to a private bank, offers a range of loans and credit options to help finance eligible surface transportation projects. The money can be used in conjunction with other programs. SIBs offer Wisconsin the ability to undertake transportation projects that would otherwise go unfunded or experience substantial delays. Communities can borrow the money to provide needed transportation infrastructure improvements to help preserve, promote, and encourage economic development and/or promote transportation efficiency, safety, or mobility. The Wisconsin SIB program is a revolving loan program providing capital for transportation projects from loan repayments and interest earned from money remaining in the bank. Eligible projects include constructing or widening a road linking an intermodal facility and providing better access to commercial and industrial sites.

WisDOT charges 2 percent interest on the loan principal, with projects amortized up to 25 years. Eligible applicants are local units of government, Amtrak Railroad, private non-profit organizations, and Transit Commissions. (Source: www.dot.wisconsin.gov)

Wisconsin Department of Tourism

Funding is available for local communities and regions to design their own marketing effort. The most popular and utilized program is the **Joint Marketing Grant (JEM)**. The grants are to assist in paying for the costs associated with developing a stronger advertising and public relations campaign to promote tourism. (Source: <http://agency.travelwisconsin.com/Programs/programs/shtm>)

Wisconsin Department of Agriculture, Trade, and Consumer Protection

Financial resources are provided to help grow and diversify the state's agriculture industry. The **Agricultural Development and Diversification (ADD)** grant is awarded to projects that may create new opportunities within agriculture through new value-added products, new market research, new production or marketing techniques, or alternative crops or enterprises. Maximum grants are \$50,000. Eligible applicants are individuals, associations, agri-businesses, and industry groups. (Source: <http://datcp.state.wi.us>)

Wisconsin Department of Administration

Wisconsin Coastal Management Program was established in 1978 under the Federal Coastal Zone Management Act. Coastal management is defined as achieving a balance between natural resource preservation and economic development along our Great Lakes coasts. All counties adjacent to Lakes Superior and Michigan are eligible to receive funds. Coastal Management Grants are available for coastal land acquisition, wetland protection and habitat restoration, non-point source pollution control, coastal resources and community planning, Great Lakes education, and public access and historic preservation. (Source: www.doa.state.wi.us)

Wisconsin Department of Natural Resources

Brownfields, Green Space, and Public Facilities grants help local governments clean-up brownfield sites intended for long-term public benefit, including green spaces, development of recreational areas or other uses by local governments. A city, village, town, county, redevelopment authority, community development authority, or housing authority is eligible to apply for funds. Eligible costs include remedial action plans and/or costs to develop a Remedial Action Plan. No grant may exceed \$200,000. The match requirement (20-50 percent) is determined by the amount of the grant. Site access and completed Phase I and II Environmental Site Assessments are required to receive a grant. Application deadline has been each year in January. (Source: www.dnr.wi.gov/org/caer/cfa/cfindex.html)

Wisconsin Housing and Economic Development Authority (WHEDA)

WHEDA is responsible for a number of housing and economic development functions. It works with local and state economic development professionals, businesses, and lending institutions to help an individual expand or modernize a farm or business. **Loan Guarantees, direct loans, New Market Tax Credits, and interest rate subsidies** are utilized within a financial package to help ensure the project has the best chance for long term success. (Source: www.wheda.com)

Other state resources include: *Impact Seven, Inc.*, is one of more recognizable statewide organizations that provide micro-loans for small business start-ups and expansions. (Source: www.impactseven.org) The *Wisconsin Women's Business Initiative Corporation (WWBIC)* also provides micro-loans to predominately women, people of color, and those of lower incomes.

(Source: www.wwbic.com) The *Wisconsin Business Development Finance Corporation* provides financial assistance and resources to business and lenders throughout the state. (Source: www.wbd.org) The **Wisconsin Innovation Network (WIN)** is one of the priority areas of the *Wisconsin Technology Council*. WIN is a community-based economic development organization dedicated to fostering innovation and entrepreneurship. (Source: www.wisconsintechcouncil.com)

Federal

US Department of Commerce, Economic Development Administration (EDA)

EDA was established to work with states and regional planning commissions (economic development districts) to generate new jobs, retain existing jobs, and stimulate industrial and commercial growth in economically distressed areas and regions of the United States. The purpose of its program investments is to provide economically distressed communities with a source of funding for planning, infrastructure development, and business financing that will induce private investment in the types of business activities that contribute to long-term economic stability and growth. EDA's investments are strategically targeted to increase local competitiveness and strengthen the local and regional economic base. There are a number of investment programs offered by EDA.

The Public Works Program to empower distressed communities to revitalize, expand, and upgrade their physical infrastructure to attract new industry, encourage business expansion, diversify local economies, and generate or retain long-term, private sector jobs and investment. **Economic Adjustment Assistance Program** assists state and local interests to design and implement strategies to adjust or bring about change to an economy. The program focuses on areas that have experienced or are under threat of serious structural damage to the underlying economic base. **The Research and Technical Assistance Program** supports research of leading edge, world class economic development practices as well as funds information dissemination efforts. **The Technical Assistance Program** helps fill the knowledge and information gaps that may prevent leaders in the public and nonprofit sectors in distressed areas from making optimal decisions on local economic development issues. **EDA's Partnership Planning Programs** help support local organizations (Economic Development Districts, Indian Tribes, and other eligible areas) with their long-term planning efforts and their outreach to the economic development community on EDA's programs and policies. (Source: www.eda.gov)

US Department of Housing and Urban Development

CDBG Entitlement Communities Grants are annual grants given on a formula basis to entitled cities, including the City of Green Bay, and counties to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons. Entitlement communities develop their own programs and funding priorities. Focus is on serving low- and moderate-income persons, and prevention and elimination of blight. Eligible activities include relocation and demolition; construction of public facilities; and assistance to profit-motivated businesses to carryout economic development and job creation/retention activities. To receive its annual CDBG entitlement grant, a grantee must develop and submit to HUD its Consolidated Plan.

Economic Development Initiative (EDI) provides grants to local governments to enhance both the security of loans guaranteed through Section 108 Loan Program and the feasibility of the economic development and revitalization projects they finance. EDI has been the catalyst in the

expanded use of loans through the Section 108 Program by decreasing the level of risk to their CDBG funds or by paying for some of the project costs. There are congressionally earmarked and competitive BDI grants. Competitive EDI grants can be only be used in projects also assisted by the Section 108 Loan Program. Eligible activities include property acquisition, rehabilitation of public owned property, and economic development activities.

Brownfields Economic Development Initiative (BEDI) is a key competitive grant program HUD administers to stimulate and promote economic and community development. BEDI is designed to assist cities with the redevelopment of abandoned, idled, and underused industrial and commercial facilities where expansion and redevelopment is burdened by real or potential environmental contamination. The purpose of the BEDI program is to spur the return of brownfields to productive economic use through financial assistance to public entities in the redevelopment of brownfields, and enhance the security or improve the viability of a project financed with Section 108- guaranteed loan authority. Therefore, BEDI grants must be used in conjunction with a new Section 108-guaranteed loan commitment.

Section 108 Loan Guarantee Program is a loan guarantee provision of the CDBG program. It provides communities with a source of financing for economic development, housing rehabilitation, public facilities, and large-scale physical development projects. Eligible applicants include entitlement communities. Activities eligible for Section 8 financing include economic development activities eligible under CDBG, acquisition of real property, rehabilitation of public property, installation of public facilities. As an entitlement community, Green Bay may apply for up to five times the latest approved CDBG entitlement amount minus any outstanding Section 108 commitments and/or principal balances of Section 108. The principal security for the loan guarantee is a pledge by the applicant public entity of its current and future CDBG funds. The maximum repayment period for a Section 8 loan is twenty years. (Source: www.hud.gov)

USDA Rural Development

The office offers a variety of funding options for many types of business ventures to include agriculture, manufacturing, processing, services, commercial, and retail. Rural Development is also instrumental in providing much needed financial resources to communities for infrastructure improvements and expansions primarily for waste water and water treatment facilities. They have direct and guaranteed loans for businesses and communities in addition to a number of grants.

The **Rural Business Opportunity Grant Program** provides technical assistance, training, and planning activities that improve economic conditions in rural areas of 50,000 people or less. A maximum of \$1.5 million per grant is authorized. **Rural Utilities Service (RUS) Grant Program** is designed to promote economic development and/or job creation projects including, but not limited to: project feasibility studies, start-up costs, incubator projects, and other reasonable expenses. Grants can be provided to rural communities through RUS borrowers to be used for revolving loan funds for community facilities and infrastructure, and for assistance in conjunction with rural economic development loans.

Rural Business Enterprise Grants Program (RBEG) to public bodies, private nonprofit corporations, and federally-recognized Indian Tribal groups to finance and facilitate development of small and emerging private business enterprises located in areas outside the boundary of a City, or unincorporated areas of 50,000 or more and its immediately adjacent urbanized or urbanizing area. The small, or emerging business to be assisted must have less than

50 new employees, less than \$1 million in gross annual revenues, have or will utilize technological innovations and commercialization of new products and/or processes to be eligible for assistance. Funds can be used for a variety of things including, but not limited to: construction of buildings and plants, equipment, access streets and roads, parking areas, utility and service extensions, and a variety of other costs.

The Intermediary Relending Program money is lent to private non-profit organizations, any state or local government, an Indian Tribe, or a cooperative that is relented to by the intermediary to the ultimate recipients. The ultimate recipient must not be able to receive financing at reasonable rates or terms. (Source: www.rurdev.usda.gov/wi/programs/index.htm)

US Department of Commerce National Oceanic and Atmospheric Administration (NOAA) Coastal Zone Management Program (CZMP) assists local and state governments in managing and revitalizing coastal areas for mixed-use development. The competing goals of commercial and industrial development, tourism, environmental protection, transportation and recreation are discussed in coastal management plans. The CZMP seeks to maintain the economic welfare of coastal communities and ecosystems through intergovernmental cooperation. The CZMP supports states through financial contributions, technical advice, participation in state and local forums, and through mediation. Wisconsin CZMP programs currently protect wetland ecosystems, reduce non-point pollution sources, reduce erosion and assist in meeting state and regional coastal goals. (Source: www.coastalmanagement.noaa.gov/programs)

US Environmental Protection Agency

Brownfields Assessment and Cleanup Cooperative Agreements objectives are to provide funding to inventory, characterize, assess, and conduct planning and community involvement related to brownfield sites; to capitalize a RLF fund; and to carry out cleanup activities at brownfield sites that are owned by the grant recipient. Eligibility for the assessment, RLF, and cleanup grants includes a general purpose unit of local government. This is a competitive grant program. There are separate guidelines for each of the three areas. Grant amounts are based on size and type of contamination, ranging from \$200,000 to \$350,000. (Source: www.epa.gov/brownfields/pilot/htm)

US Department of the Interior - National Park Service

Land and Water Conservation Fund (LWCF) is a visionary and bipartisan program, established by Congress in 1964 to create parks and open spaces, protect wilderness, wetlands, and refuges, preserve wildlife habitat, and enhance recreational opportunities. States receive individual allocations of LWCF grant funds based on a national formula. Then states initiate a statewide competition for the amount available to award via matching grants. (Source: www.nps.gov/nrcr/programs/lwcf)

Small Business Administration (SBA)

The **SBA** provides financial, business counseling and training, and business advocacy to foster the development and success of small businesses. Financial assistance comes in the form of loans and grant programs including the 7(a) Loan Guarantee, Prequalification Loan, 7(m) Micro Loan, CDC/504 Loan, CAPLines Program, and 8(a) Business Development Program. (Source: www.sba.gov/wi/WI_FINANCING.htm)

VOLUME II - APPENDIX D
TRANSPORTATION RESOURCES

Figure D.1: Functional Classification Criteria for Streets and Highways in Urban Areas

URBAN PRINCIPAL ARTERIALS						
System Continuity (Rural - Urban Interface)		Basic Criteria Must meet Land Use Service or Spacing plus Traffic Volume or Parenthetical Current ADT Alone			Mileage Percent of System Range	
A rural minor arterial remains an urban minor arterial until it meets one of the following:		Land Use Service	Spacing	Current ADT*		
Current ADT Alone	Intersects with an Urban Arterial plus Current ADT					
≥15,000	≥9,000	A principal arterial should be within one mile of the following land uses: a. Main central business district of the urban area b. Type 1 and 2 airports c. Regional shopping centers d. Major colleges and universities e. Community and regional parks f. Industrial parks g. Large stadia, arenas, or civic centers	Maximum: 1 mile in central business district; 3 to 5 miles in other parts of urbanized area	≥9,000 (≥30,000)	5.0% to 10.0%	
*The roadway or highway segment must be a minimum of a mile long.						

URBAN MINOR ARTERIALS						
Basic Criteria					Supplemental Criteria	Mileage Percent of System Range
System Continuity (Rural - Urban Interface)		Must meet Land Use Service or Spacing plus Traffic Volume or Parenthetical Current ADT Alone			Must meet two of the criteria below plus 90% of Current ADT	
A collector remains an urban collector until it meets one of the following:						
Current ADT Alone	Intersects with an Urban Collector or Arterial plus Current ADT	Land Use Service	Spacing	Current ADT*		
≥9,000	≥4,500	<p>A minor arterial should be within a half mile of the following land uses:</p> <ul style="list-style-type: none"> a. Central business districts of each satellite community b. Type 3, 4 and 5 airports c. Community shopping centers d. Junior or community colleges e. Large industrial plants f. High schools g. Large office buildings h. Community hospitals i. Clinics j. Sub-community parks k. Golf courses <p>All commercial retail strip development over one quarter mile in length not on a principal arterial.</p> <p>Interconnection of the main central business district with satellite community central business districts.</p>	<p>Maximum: One half mile in central business district; two miles in other parts of urbanized area</p>	≥4,500 (≥15,000)	<ul style="list-style-type: none"> 1. Bus Route 2. Truck Route 3. Signalization 4. Interchanges with a freeway 5. Major river crossing/ restrictive topography 	10.0% to 15.0%

*The roadway or highway segment must be a minimum of one half mile long.

URBAN COLLECTORS						
Basic Criteria				Supplemental Criteria		
Must meet one of the below criteria plus Current ADT or the Parenthetical Current ADT Alone				Must meet two of the criteria below plus 90% of Current ADT		Mileage Percent of System Range
System Continuity	Land Use Service	Spacing	Current ADT*			
<p>May penetrate each residential neighborhood and connect to nearby arterial.</p> <p>May include the logical street system for traffic circulation in the central business district (relative to land use service).</p> <p>A rural collector remains a collector when crossing into an urbanized area until it meets the urban minor arterial criteria.</p>	<p>A collector should be within a quarter mile of the following land uses:</p> <ul style="list-style-type: none"> a. Elementary, intermediate or middle schools b. Small industrial plants c. Large warehousing d. Neighborhood shopping centers e. Small office buildings f. Neighborhood parks g. Marinas 	<p>Maximum: One quarter mile in central business district; one mile in other parts of urbanized area</p>	<p>≥2,250 (≥9,000)</p>	<ol style="list-style-type: none"> 1. Bus route 2. Truck route 3. Signalization 4. Interchanges with a freeway 5. Major river crossing/restrictive topography 		<p>5.0% to 10.0%</p>
*The roadway or highway segment must be a minimum of one quarter mile long.						

URBAN LOCAL STREETS		
All public streets not classified as arterials or collectors.		<p>65.0% to 80.0%</p> <p>68.0% to 73.0% in most urbanized areas</p>
Source: Wisconsin Department of Transportation, <i>Functional Classification Criteria</i> , 2003; and Bay-Lake Regional Planning Commission, 2008.		

Figure D.2: Functional Classification Criteria for Streets and Highways in Rural Areas

RURAL PRINCIPAL ARTERIALS					
Basic Criteria				Supplemental Criteria	Mileage Percent of System Range
Must meet any two of the criteria below					
Population Service*	Land Use Service	Spacing	Current ADT	None	2.0% to 4.0% statewide
Connect places $\geq 50,000$ with other places $\geq 50,000$ Connect places 5,000 - 49,999 with places $\geq 50,000$	Provide access to major recreation areas of the state.	Maximum: 30 miles between Principal Arterials	$\geq 6,000$		
*A place is considered served by a principal arterial if the principal arterial either penetrates its boundary or comes within 10 miles of the center of the place and penetrating service is provided by a minor arterial.					
RURAL MINOR ARTERIALS					
Basic Criteria				Supplemental Criteria	Mileage Percent of System Range
Must meet any two of the criteria below					
Population Service*	Land Use Service	Spacing	Current ADT	Must meet both of the criteria below plus 90% of Current ADT	4.0% to 8.0% statewide
Connect places 1,000 - 4,999 to places $\geq 50,000$ Connect places 5,000 - 49,999 to other places 5,000 - 49,999 Connect places 1,000 - 4,999 to places 5,000 - 49,999, or with principal arterials	Serve all traffic generating activities with an annual visitation of 300,000, if not served by a principal arterial.	Maximum: 30 miles between Arterials	$\geq 2,000$	1. Alternate population connection 2. Major river crossing/ restrictive topography	
*A place is considered served by a minor arterial if the minor arterial either penetrates its boundary or comes within two miles of the center of the place and a major collector provides penetrating service.					

RURAL MAJOR COLLECTORS*					
Basic Criteria				Supplemental Criteria	Mileage Percent of System Range
Must meet any two of the criteria below or the Parenthetical Current ADT Alone				Must meet two of the criteria below plus 90% of Current ADT	
Population Service**	Land Use Service	Spacing	Current ADT***		
Connect places 1,000 - 4,999 to other places 1,000 - 4,999	Land Use Service Index ≥ 16 .	Maximum: 10 Miles between Major Collectors or Higher Function Routes	$\geq 1,000$ ($\geq 4,000$)	<ol style="list-style-type: none"> 1. Alternate population connection 2. Major river crossing 3. Restrictive topography 4. Interchange with a freeway 5. Parallel to a principal arterial 	<p>5.0% to 18.0% countywide</p> <p>Most counties should be at 7.0% to 14.0%</p>
Connect places 500 - 999 to places $\geq 50,000$					
Connect places 500 - 999 to places 5,000 - 49,999					
Connect places 500 - 999 to places 1,000 - 4,999					
Connect places 500 - 999 to other places 500 - 999					
Connect places 100 - 499 to places $\geq 50,000$					
Connect places 100 - 499 to places 5,000 - 49,999					
Connect places 100 - 499 to places 1,000 - 4,999					
Connect places 100 - 499 to places 500 - 999, or with higher function routes					
<p>*Loop routes and stub ended routes less than five miles long and meeting the basic criteria for a major collector should be limited to a minor collector classification.</p> <p>**A place is considered served by a major collector if the major collector comes within a half mile of the center of the place.</p> <p>***The roadway or highway segment must be a minimum of a half mile long.</p>					

RURAL MINOR COLLECTORS					
Basic Criteria				Supplemental Criteria	Mileage Percent of System Range
Must meet any two of the criteria below or the Parenthetical Current ADT Alone				Must meet two of the criteria below plus 90% of Current ADT	
Population Service*	Land Use Service (served if within one half mile of place)	Spacing	Current ADT**		
Connect places 100 - 999 to other places 100 - 999	Land Use Service Index ≥8	Maximum: 10 Miles between Minor Collectors or Higher Function Routes	≥400 (≥1,600)	1. Alternate population connection 2. Major river crossing 3. Restrictive topography 4. Interchange with a freeway 5. Parallel to a principal arterial	5.0% to 10.0% countywide
Connect places 50 - 99 to places ≥50,000					
Connect places 50 - 99 to places 5,000 - 49,999					
Connect places 50 - 99 to places 1,000 - 4,999					
Connect places 50 - 99 to places 500 - 999					
Connect places 50 - 99 to places 100 - 499, or with higher function routes					
*A place is considered served by a minor collector if the minor collector comes within a half mile of the center of the place. **The roadway or highway segment must be a minimum of a half mile long.					

RURAL LOCAL ROADS	
All public roads not classified as arterials or collectors.	65.0% to 75.0% countywide Most counties should be at 68.0% to 72.0%
Source: Wisconsin Department of Transportation, <i>Functional Classification Criteria</i> , 2003; and Bay-Lake Regional Planning Commission, 2008.	

TRANSPORTATION FUNDING PROGRAMS

The following provides a brief description of transportation related funding programs that are administered by the Wisconsin Department of Transportation (WisDOT). The programs are divided into two categories: 1) formula driven programs for which funding is based on population and/or road mileage; and 2) competitive funding programs.

Wisconsin Department of Transportation

General Transportation Aid (GTA)

Town road improvements, construction and maintenance are funded, in part, through the state's disbursement of general transportation aids. The state provides a payment to each county and municipality in the state that pays a portion of local governments' costs for such activities as road and street reconstruction, filling potholes, snow removal, grading shoulders, marking pavement, and repair of curb and gutters. The statutory "rate per mile" is \$1,825 for 2004. Beginning in 2000, each municipality was required to establish and administer a separate segregated account from which moneys may be used only for purposes related to local highways and must deposit into that account all state or federal money for local highway purposes.

Local Mileage Certification

Each local government that increased or decreased the mileage of its roads is required to file a certified plat with DOT by December 15 of each year. Local governments that have no changes in total local road miles are required to file a certified plat or a certified statement that no mileage increases have occurred. Beginning in 2001, the requirement for local governments to file certified plats with county clerks is eliminated and the mileage certification process was changed from an every other year activity to an annual activity. State GTA payments are based on the certified mileage of each local unit of government.

Local Roads Improvement Program (LRIP)

This program provides funding to local units of government for the costs associated with improving seriously deteriorating county highways, town roads, and municipal streets in cities and villages under the authority of the local unit of government. Projects are required to have a minimal design life of 10 years. This is a biennial program and all funds are distributed the first year. Applications are submitted through the county highway commissioners by November 15 of the odd numbered years.

There are three entitlement components for funding road improvements: 1) County Highway Improvement component (CHIP); 2) Town Road Improvement component (TRIP); and 3) cities and villages under Municipal Street Improvement component (MSIP).

In addition LRIP funds three statewide discretionary programs; CHIP-D County Highway Discretionary Improvement Program; 2) Trip-D Town road Discretionary Improvement Program; and 3) MISP-D Municipal Street Discretionary Improvement Program for cities and villages.

All LRIP projects are locally let, with up to 50% of the costs reimbursed by WisDOT upon completion, and the remainder matched by the local unit of government. Eligible projects include, but are not limited to design and feasibility studies, bridge replacement or rehabilitation, reconstruction, and resurfacing. Ineligible projects include, but are not limited to new roads, seal coats, ditch repair, and/or curb and gutter construction.

Local Bridge Program

This program includes two separate programs 1) a statewide local bridge entitlement program and 2) a high cost local bridge program (high cost bridges are those that cost more than \$5 million and exceed 475 feet in length).

This program funds 80% of project costs to replace and rehabilitate structures on the Federal Bridge Register in excess of 20 feet. Bridges with sufficiency ratings less than 50 are eligible for replacement and those with sufficiency ratings less than 80 are eligible for rehabilitation.

Counties set priorities for funding within their area, with projects funded on a statewide basis.

Local bridge projects are solicited by local WisDOT transportation office (District 3) staff in winter of the odd numbered years, with program approval in summer of the odd numbered years. The program has a three-year cycle.

Flood Damage Aids

This program provides local governments with financial assistance for replacing or improving roads or roadway structures that have had major damages caused by flooding.

County Forest Aid Program

This program provides assistance to counties that have eligible roads located within county forests. It is intended to defray the costs for the improvement and maintenance of public roads within a county forest.

Rural and Small Urban Area Public Transportation Assistance Program - Section 5311

Allocations to the State are set at the federal level. Funds may be used for operating assistance, and capital assistance. Eligible public transportation services include public transportation service operating or designed to operate in non-urbanized areas (a non-urbanized area is one that has a population of 50,000 or less).

Specialized Transportation Assistance Program for Counties - Section 85.21

Allocations under this formula program are based upon the proportion of the state's elderly and disabled population located in each county, subject to two minimums: no county can receive less than a ½ percent of the total annual appropriation; and no county can receive an allocation smaller than they received in 1992. A local match of 20 percent is required.

Eligible expenditures include:

- directly provided transportation service for the elderly and disabled;
- purchase of transportation service from any public or private organization;
- a user-subsidy for the elderly or disabled passenger for their use of the transportation service;
- volunteer driver escort reimbursement;
- performing or purchasing planning or management studies on transportation;
- coordinating transportation services;
- performing or purchasing in-service training relating to transportation services; and/or
- purchasing capital equipment (buses, vans, etc.) for transportation services.

The following provides a brief description of competitive (transportation related) grant programs that are federally and state funded:

Local Transportation Enhancement Program (TE)

Administered by WisDOT the TE program provides funding to local governments and state agencies for projects that enhance a transportation project. There are 12 eligible project categories;

- providing facilities for bicycles and pedestrians;
- providing safety and educational activities for pedestrians and bicyclists;
- acquiring scenic easements and scenic or historic sites;
- sponsoring scenic or historic highway programs; including the provision of tourist and welcome centers;
- landscaping and other scenic beautification;
- preserving historic sites;
- rehabilitating and operating historic transportation buildings and structures;
- preserving abandoned railway corridors;
- controlling and removing outdoor advertising;
- conducting archaeological planning and research;
- mitigating water pollution due to highway runoff or reducing vehicle caused wildlife mortality; and
- establishing transportation museums.

Federal funds will cover up to 80 percent of the project, while the project sponsor is responsible for providing at least a 20 percent match.

Surface Transportation Program - Discretionary (STP-D)

This program encourages projects that foster alternatives to single occupancy vehicle trips. Such as rehabilitation and purchase of replacement vehicle for transit systems, facilities for pedestrians and bicycles, system-wide bicycle planning, and a wide range of transportation demand management (TDM) projects. Communities over 5,000 are eligible to apply for the funds through the competitive application process.

Transportation Demand Management Programs

Transportation Demand Management consists of policies and programs designed to reduce the number of single occupant vehicles (SOV) trips in a region, especially during peak travel periods.

There are two grant programs: TDM Grant Program; and Wisconsin Employment Transportation assistance Program (WETAP).

1. TDM Grant Program

The TDM Grant program provides funding to successful grant recipients to implement projects that encourage innovative solutions and alternatives to reducing SOV trips. WisDOT accepts applications annually. Eligible applicants may include local governments, chambers of commerce, and others as defined by the program. The required local match is 20 percent of the project costs.

2. Wisconsin Employment Transportation Assistance Program (WETAP)

As a joint program between the Wisconsin Department of Workforce Development (DWD) and WisDOT, it provides funding to help low-income people access, or retain or advance in

employment with the goal of meeting the entire population’s transportation needs. This program is funded with combined federal and state dollars, and requires a local match.

Application requirements include the development of regional job access plans that identify the need for transportation services and illustrate the alternatives proposed for the program. Plans should be developed between public transit providers, local units of government, transportation planners, human service agencies, low-income individuals and other interested parties

Transportation Economic Assistance (TEA Grant) Program

This program provides a 50% state grant to governing bodies, private businesses, and consortiums for road, rail, harbor and airport projects that are necessary to help attract employers to Wisconsin, or to encourage business and industry to remain and expand in Wisconsin.

VOLUME II - APPENDIX E
LAND USE INVENTORY DATA

LAND USE INVENTORY CODES

Bay-Lake Regional Planning Commission			
Land Use Inventory Summary Form			
100	RESIDENTIAL	600	INSTITUTIONAL/GOVERNMENTAL
200	COMMERCIAL	700	OUTDOOR RECREATION
300	INDUSTRIAL	800	AGRICULTURE/SILVICULTURE
400	TRANSPORTATION	900	NATURAL AREAS
500	COMMUNICATION/UTILITIES		
CODE	LAND USE CLASSIFICATION	CODE	LAND USE CLASSIFICATION
100	RESIDENTIAL	500	COMMUNICATION/UTILITIES
110	Single Family Residential	510	Generation/Processing of Communication/Utilities
111	Single Family Residential Garage	511	Electric Power Plants
130	Two Family	512	Wind Turbine
150	Multi-Family	514	Telephone and Telegraph Terminals/Dispatch Centers
170	Group Quarters	516	Radio/Television Stations
180	Mobile Homes	521	Natural Gas Terminals/Plants
190	Land Under Residential Development	525	Other Liquid Fuel Terminal Plants
195	Residential Open Space/Vacant Lot	535	Water Supply Filter Treatment Plants
199	Vacant Residence	537	Water Supply Wells
		540	Transmission of Communication/Utilities
200	COMMERCIAL	541	Major Electric Power Transmission Lines R/W
210	Retail Sales	542	Electric Power Substations
230	Shopping Centers	546	Radio/Television Transmission Towers/Antennae
250	Retail Services	551	Major Natural Gas Transmission Lines R/W
270	Office Parks	552	Natural Gas Substations
299	Vacant Commercial	555	Other Major Liquid Fuel Transmission Lines R/W
		556	Other Liquid Fuel Substations
300	INDUSTRIAL	572	Water Supply Booster/Pumping Stations
310	Manufacturing	577	Water Supply Storage Tanks/Reservoirs
340	Wholesaling	580	Waste Processing/Disposal/Recycling
360	Extractive (Mining)	581	Trash/Garbage Landfills
380	Storage	582	Other Trash/Garbage Dumps
381	Open	583	Sewage Treatment Plants
382	Enclosed	584	Sewage Sludge or Water Supply Chemical Disposals
399	Vacant Industrial	585	Fly Ash and Other Fire Residue Disposal
		586	Recycling/Disposals
400	TRANSPORTATION	587	Abandoned Landfill
410	Motor Vehicle Related	588	Yard Waste
411	Federal Highways	591	Solid Waste Separation/Recycling Plants
412	State Highways	595	Incinerators
413	County Highways	599	Vacant Communication/Utilities
414	Local Streets and Roads		
415	County Forest Roads		
416	Federal Forest Roads		
417	Off-Street Parking		
418	Bus Terminals		
419	Truck Terminals		
420	Other Motor Vehicle Related		
440	Rail Related		
460	Air Related		
480	Marine Related		
484	Piers/Docks		
490	Nonmotorized Related		
499	Vacant Transportation		

APPENDIX E - LAND USE INVENTORY DATA

CODE	LAND USE CLASSIFICATION	CODE	LAND USE CLASSIFICATION
600	INSTITUTIONAL/GOVERNMENTAL FACILITIES	700	OUTDOOR RECREATION
610	Administrative Institutions/Governmental Facilities	710	Cultural/Natural Activities
611	Administrative Buildings	712	Zoos
612	Post Offices	716	Nature Study Areas
613	Military Installations	721	Designated Historic/Cultural/Archaeological Sites
614	Municipal Garages	730	Land Related Activities
630	Safety Institutions/Governmental Facilities	731	Campgrounds
631	Police/Fire Stations/Offices	735	Lawns/Yards
637	Ancillary Municipal Safety Facilities	736	Parks/Parkways/Forest-Related Picnic Areas
638	Prisons or Jails	737	Separate Picnic Areas
640	Educational Institutions/Governmental Facilities	738	Lookout Tower
641	Pre-School/Day Care	741	Playfields/Ball Diamonds/Volleyball Courts
642	Primary Schools	745	Swimming/Wading Pools
643	Middle Schools	746	Tennis Courts
644	Secondary Schools	747	Trails
645	Vocational Schools	751	Athletic Fields
647	Two-Year Colleges/Universities	756	Ice Skating Rinks
648	Four-Year and Graduate Colleges/Universities	757	Roller Skating Rinks
651	Libraries	758	Ski Areas
652	Community Center	761	Golf Courses
655	Museums	762	Golf Driving Ranges
660	Health Institutions/Governmental Facilities	766	Archery/Gun/Skeet Ranges
661	Hospitals	768	Hunting Preserves
663	Clinics	769	Race Tracks
665	Long-Term Health Care Facilities	770	Other
680	Assembly Institutions/Governmental Facilities	780	Water Related Activities
681	Fairgrounds	781	Boat Launching Sites/Areas
682	Gymnasiums	782	Other Water Access Sites/Areas
683	Sports Stadium/Arenas	783	Marinas
684	Fraternal Organizations/Clubhouses	784	Lighthouse
690	Religious and Related Facilities	799	Vacant Outdoor Recreation
691	Churches/Temples/Synagogues		
694	Cemeteries		
699	Vacant Institutional/Governmental		
800	AGRICULTURE/SILVICULTURE	900	NATURAL AREAS
805	Fallow Fields	910	Water
810	Croplands/Pastures	911	Lakes
830	Long-Term Specialty Crops	912	Reservoirs and Ponds
850	Animal Husbandry	913	Rivers and Streams
851	Fish Hatchery/Aquaculture	914	Canals and Channels
870	Farm Buildings/Accessories	930	Vital Natural Functions
880	Commercial Forests	936	Wildlife Refuges
899	Vacant Agriculture/Silviculture	937	Designated Scientific Sites/Areas
		950	Other Natural Areas, including Open Space
		951	Woodlands
		952	Wetlands
		953	Grasslands
		954	Beaches
		955	Bluffs
		960	Other Publicly-Owned Natural Areas
		990	Land Under Development
		99999	City or Village

2008 MANITOWOC COUNTY LAND USE INVENTORY

CODE	LAND USE CLASSIFICATION	ACRES
100	RESIDENTIAL	17,474.3
110	Single Family Residential	16,485.0
130	Two Family	275.9
150	Multi-Family	284.0
170	Group Quarters	33.8
180	Mobile Homes	324.3
199	Vacant Residence	71.3
200	COMMERCIAL	1,730.3
210	Retail Sales	1,139.6
230	Shopping Centers	19.9
250	Retail Services	445.4
270	Office Parks	25.2
299	Vacant Commercial	100.3
300	INDUSTRIAL	3,493.4
310	Manufacturing	1,205.2
340	Wholesaling	49.0
360	Extractive	2,114.7
381	Open Storage	10.9
382	Enclosed Storage	41.8
399	Vacant Industrial	71.7
400	TRANSPORTATION	17,086.4
410	Motor Vehicle Related	632.1
411	Federal Highways	1,378.6
412	State Highways	972.2
413	County Highways	3,064.4
414	Local Streets and Roads	9,864.9
417	Off-Street Parking	84.0
418	Bus Terminals	0.8
420	Other Motor Vehicle Related	153.8
440	Rail Related	572.9
460	Air Related	359.8
480	Marine Related	2.9
500	COMMUNICATION/UTILITIES	632.3
510	Generation/Processing of Communication/Utilities	121.8
511	Electric Power Plants	126.0
512	Wind Turbine	0.6
514	Telephone and Telegraph Terminals/Dispatch Centers	5.2
516	Radio/Television Stations	2.0
521	Natural Gas Terminals/Plants	0.2
535	Water Supply Filter Treatment Plants	39.6
537	Water Supply Wells	2.0
540	Transmission of Communication/Utilities	7.8
542	Electric Power Substations	44.8
546	Radio/Television Transmission Towers/Antennae	40.1
551	Major Natural Gas Transmission Lines R/W	0.4
552	Natural Gas Substations	6.0
556	Other Liquid Fuel Substations	0.2
572	Water Supply Booster/Pumping Stations	1.4
577	Water Supply Storage Tanks/Reservoirs	14.9
580	Waste Processing/Disposal/Recycling	32.2
581	Trash/Garbage Landfills	70.4
582	Other Trash/Garbage Dumps	3.1
583	Sewage Treatment Plants	27.6
584	Sewage Sludge or Water Supply Chemical Disposals	22.6
586	Recycling/Disposals	44.7
588	Yard Waste	11.0
591	Solid Waste Separation/Recycling Plants	7.5
599	Vacant Communication/Utilities	0.2
600	INSTITUTIONAL/GOVERNMENTAL FACILITIES	1,611.0
610	Administrative Institutions/Governmental Facilities	32.9
611	Administrative Buildings	24.7
612	Post Offices	7.1
613	Military Installations	8.0
614	Municipal Garages	55.2
630	Safety Institutions/Governmental Facilities	3.7
631	Police/Fire Stations/Offices	30.1
638	Prisons or Jails	1.6
640	Educational Institutions/Governmental Facilities	8.5
641	Pre-School/Day Care	10.6
642	Primary Schools	147.7
643	Middle Schools	50.0
644	Secondary Schools	104.9
645	Vocational Schools	1.6
647	Two-Year Colleges/Universities	161.4
651	Libraries	5.2
652	Community Center	8.5
655	Museums	5.8
660	Health Institutions/Governmental Facilities	31.2
661	Hospitals	26.9
663	Clinics	57.0
665	Long-Term Health Care Facilities	24.6
680	Assembly Institutions/Governmental Facilities	3.2
681	Fairgrounds	76.4
682	Gymnasiums	13.1
683	Sports Stadium/Arenas	23.8
684	Fraternal Organizations/Clubhouses	22.3
690	Religious and Related Facilities	118.2
691	Churches/Temples/Synagogues	152.8
694	Cemeteries	350.3
699	Vacant Institutional/Governmental	43.6

CODE	LAND USE CLASSIFICATION	ACRES
700	OUTDOOR RECREATION	5,481.7
710	Cultural/Natural Activities	14.4
712	Zoos	63.7
716	Nature Study Areas	5.8
721	Designated Historic/Cultural/Archaeological Sites	14.1
731	Campgrounds	273.3
735	Lawns/Yards	0.2
736	Parks/Parkways/Forest-Related Picnic Areas	3,546.7
737	Separate Picnic Areas	0.9
741	Playfields/Ball Diamonds/Volleyball Courts	241.8
745	Swimming/Wading Pools	3.3
746	Tennis Courts	17.3
747	Trails	212.6
751	Athletic Fields	84.5
758	Ski Areas	10.6
761	Golf Courses	814.5
762	Golf Driving Ranges	17.1
766	Archery/Gun/Skeet Ranges	50.8
768	Hunting Preserves	4.4
769	Race Tracks	47.0
770	Other	0.9
780	Water Related Activities	2.4
781	Boat Launching Sites/Areas	10.5
782	Other Water Access Sites/Areas	2.1
783	Marinas	41.8
784	Lighthouse	0.2
799	Vacant Outdoor Recreation	1.1
800	AGRICULTURE/SILVICULTURE	221,614.7
805	Fallow Fields	1,221.6
810	Croplands/Pastures	213,139.5
830	Long-Term Specialty Crops	817.0
850	Animal Husbandry	78.9
851	Fish Hatchery/Aquaculture	9.0
870	Farm Buildings/Accessories	6,185.7
899	Vacant Agriculture/Silviculture	163.0
900	NATURAL AREAS	112,347.9
911	Lakes	914.1
912	Reservoirs and Ponds	1,814.2
913	Rivers and Streams	2,061.8
914	Canals and Channels	0.7
936	Wildlife Refuges	178.3
950	Other Natural Areas, including Open Space	29,679.4
951	Woodlands	77,313.9
954	Beaches	385.5
TOTAL		381,471.9

Source: Bay-Lake Regional Planning Commission, 2009

VOLUME II - APPENDIX F
GLOSSARY OF TERMS

Planning and Zoning Definitions

- Alley:** a permanently reserved public or private secondary means of access to an abutting property.
- Accessory Structure:** a detached subordinate structure located on the same lot as and incidental to the principal structure.
- Accessory Use:** a use incidental to and on the same lot as a principal use. *See also* “accessory structure” and “principal building”.
- Acre:** a unit of area used in land measurement and equal to 43,560 square feet. This is approximately equivalent to 4,840 square yards, 160 square rods, 0.405 hectares, and 4,047 square meters.
- Adaptive Reuse:** the conversion of obsolescent or historic buildings from their original or most recent use to a new use.
- Adequate Public Facilities Ordinance (APFO):** an ordinance that ties development approvals to the availability and adequacy of public facilities. Adequate public facilities are those facilities relating to roads, sewer systems, schools, and water supply and distribution systems.
- Administrative Appeal (Appeal):** a quasi- judicial* process before the local zoning board to review a contested ordinance interpretation or an order of an administrative zoning official.
- Adverse Impact:** a negative consequence to the physical, social, or economic environment.
- Aesthetic Zoning:** the regulation of building or site design to achieve a desirable appearance.
- Affordable Housing:** housing that has its mortgage, amortization, taxes, insurance, and condominium and association fees constituting no more than 30% of the gross household income per housing unit. If the unit is rental, then the rent and utilities constitute no more than 30% of the gross household income per rental unit. *See s. COMM 202.01, Wis. Admin. Code.*
- Agriculture:** the use of land for farming, dairying, pasturage, apiculture (bees), aquaculture (fish, mussels), horticulture, floriculture, viticulture (grapes), or animal and poultry husbandry; this includes the necessary accessory uses for packing, treating, or storing the produce from these activities. *See also* ss. 30.40(1) and 91.01(1), *Wis. Stats.*
- Agricultural Conservation Easement:** conservation easements that restrict specifically farmland from development or specified farming practices and give farmers income, property, and estate tax reductions.
- Agricultural Protection Zoning:** a method for protecting agricultural land use by stipulating minimum lot sizes or limitations on non- farm use.
- Air Rights:** the ownership or control of all land, property, and that area of space at and above it at a height that is reasonably necessary or legally required for the full use over the ground surface of land used for railroad or expressway purposes.
- Amendment:** a local legislative act changing a zoning ordinance to make alterations, to correct errors, or to clarify the zoning ordinance. A class 2 notice must be published and a public hearing must be held before a county board may adopt a proposed amendment. *See s. 59.69, Wis. Stats.*
- Amenities:** features that add to the attractive appearance of a development, such as underground utilities, buffer zones, or landscaping.
- Americans with Disabilities Act (ADA):** a congressional law passed in 1990, which provides a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities as well as clear, strong, consistent, enforceable standards addressing discrimination against individuals with disabilities.
- Amortization:** a method of eliminating nonconforming uses (usually minor structures) by requiring the termination of the nonconforming use after a specified period of time, which is generally based on the rate of economic depreciation of the use or structure.
- Annexation:** the process of incorporating an area of land in a township into a municipality. *See ch. 66, subch. II, Wis. Stats.*
- Appellate Body:** a body authorized to review the judgments made by administrative officers. For example, a board of adjustment hears appeals of the decisions of a county zoning administrator.
- Aquatic and Terrestrial Resources Inventory (ATRI):** a public and private partnership to gather, link, and make available data used for decisions affecting Wisconsin’s landscape; a systematic and comprehensive information management system developed by the Wisconsin DNR to improve environmental and resource management decisions.
- Aquifer:** a geologic formation, usually comprised of saturated sands, gravel, and cavernous and vesicular rock, that carries water in sufficient quantity for drinking and other uses.
- Aquifer Recharge Area:** the surface area through which precipitation passes to replenish subsurface water bearing strata of permeable rock, gravel, or sand.
- Architectural Control/ Review:** regulations and procedures requiring the exterior design of structures to be suitable, harmonious, and in keeping with the historic character or general style of surrounding areas.
- Area Variance (Variance):** the relaxation of a dimensional standard in a zoning ordinance decided by a local zoning board. *See ss.59.69, 60.61, 60.62 and 62.23, Wis. Stats.*
- Arterial:** a major street, which is normally controlled by traffic signs and signals, carrying a large volume of through traffic.

- Bargain Sale:** the sale of land (to a conservation organization, for example) at less than market value.
- Base Flood:** a flood that has a one percent chance of being equaled or exceeded in any give year, commonly called a 100- year flood. *See also "floodplain".*
- Benchmark:** a performance- monitoring standard that allows a local government to periodically measure the progress of a local comprehensive plan's goals and policies; also, a fixed and recorded elevation point from which another, relative elevation can be surveyed.
- Berm:** A low earthen ridge constructed as a landscaping feature or to direct runoff or deflect noise.
- Best Management Practices (BMPs):** the conservation measures and management practices intended to lessen or avoid a development's impact on surrounding land and water.
- Billboard:** a sign that identifies or communicates a message related to an activity conducted, a service rendered, or a commodity sold at a location other than where the sign is located.
- Block:** a unit of land or contiguous lots or parcels bounded by a roadway or other barrier.
- Board of Appeals/ Board of Adjustment (BOA):** a board of appointed individuals that hears appeals on variances and exceptions. Board of Appeals applies to cities, villages, and towns, whereas Board of Adjustment applies to counties.
- Brownfields:** lands contaminated by spills or leaks and that are perceived to be unsuitable for future development due to its hazardous nature or owner liability concerns.
- Buffer Area:** an area separating two incompatible types of development or a development and sensitive natural resources.
- Build Out:** the maximum, theoretical development of land as permitted under zoning regulations.
- Build Out Analysis:** a projection, based on the maximum, theoretical development of all lands, of the impact of a community's cumulative growth.
- Building Coverage:** *See "lot coverage".*
- Building Line:** the line parallel to the street line that passes through the point of the principal building nearest the front lot line.
- Building Scale:** the relationship between the volume of a building and its surroundings, including the width of street, amount of open space, and volume of surrounding buildings. Volume is determined by the three- dimensional bulk (height, width, and depth) of a structure.
- Bulk Regulations:** standards that establish the maximum size of structures on a lot and the location where a building can be, including coverage, setbacks, height, impervious surface ratio, floor area ratio, and yard requirements.
- Bundle of Rights Concept of Property:** *See "rights".*
- Business Improvement Districts (BID):** an area within a municipality consisting of contiguous parcels subject to general real-estate taxes other than railroad rights- of-way and that may include railroad rights- of- way, rivers, or highways continuously bounded by the parcels on at least one side. *See s. 66.1109(1)(b), Wis. Stats.*
- Business Incubator:** retail or industrial space, which may offer shared or subsidized management support such as information and advice on regulations, advertising, promotion, marketing, inventory, labor relations, and finances and facility support such as clerical staff, security, electronic equipment, and building maintenance that is affordable to new, low profit- margin businesses.
- By Right:** a use that complies with all zoning regulations and other applicable ordinances and that is permitted without the consent of a review board.
- Capital Improvement:** a physical asset that is large in scale or high in cost.
- Capital Improvements Plan/ Capital Improvements Program (CIP):** a city's or county's proposal of all future development projects and their respective cost estimates listed according to priority.
- Capital Improvement Programming/ Capital Improvement Planning:** the scheduling of budgetary expenditures for infrastructure to guide and pace development.
- Carrying Capacity Analysis:** an assessment of a natural resource's or system's ability to accommodate development or use without significant degradation.
- Census:** The census of population and housing, taken by the U.S. Census Bureau in years ending in 0 (zero). Article I of the Constitution requires that a census be taken every ten years for the purpose of reapportioning the U.S. House of Representatives.
- Census Tract:** a relatively permanent county subdivision delineated to present census data.
- Central Business District (CBD):** the primary, downtown commercial center of a city.
- Certificate of Appropriateness:** a permit issued by a historic preservation review board* approving the demolition, relocation, or new construction in a historic district.
- Certificate of Compliance:** an official document declaring that a structure or use complies with permit specifications, building codes, or zoning ordinances.

Cesspool: a buried chamber such as a metal tank, perforated concrete vault, or covered excavation that receives wastewater or sanitary sewage to be collected or discharged to the surrounding soil.

City: an incorporated municipality. Cities are divided into the four following classes for administration and the exercise of corporate powers: *Also see ch. 62, Wis. Stats.*

- a) Cities of 150,000 population and over- 1st class cities
- b) Cities of 39,000 and less than 150,000 population- 2nd class cities.
- c) Cities of 10,000 and less than 39,000 population- 3rd class cities.
- d) Cities of less than 10,000 population- 4th class cities.

Clear Zone: an area within a roadway right- of- way that is free of any obstructions, thus providing emergency vehicle access.

Closed (Executive) Session: a governmental meeting or portion closed to everyone but its members and members of its parent body for purposes specified in state law. Governmental meetings are subject to Wisconsin’s ‘Open Meetings Law.’ *See s.19.81- 19.98, Wis. Stats .*

Cluster Development Zoning (Clustering): concentrating the total allowable dwelling units on a tract of land into higher densities on a smaller portion of the tract, leaving the remaining land as open space. For example, in a five- acre minimum lot zoned area, 10 units would be constructed on 50 acres; however, 10 units could also be ‘clustered’ on 20 acres (allowing minimum two- acre lots), leaving the remaining 30 acres as common open space.

Collector: a street designed to carry a moderate volume of traffic from local streets to arterial* streets or from arterial streets to arterial streets.

Combination Zones: a zone that is placed over another, now underlying zone and that adds or replaces existing requirements of the underlying zone.

Commercial District: a zoning area designated for community services, general business, interchange of services, and commercial recreation.

Common Open Space: squares, greens, parks, or green belts intended for the common use of residents.

Community Development Block Grant (CDBG): a grant program administered by the U.S. Department of Housing and Urban Development (HUD), the state departments of Administration and Commerce, and the Wisconsin Housing and Economic Development Authority (WHEDA) that provides money for community rehabilitation and development. *See s.16.358 and 560.045, Wis. Stats.*

Community Development Zone: Zones meeting certain requirements and designated by the state Department of Commerce for the purpose of administering tax benefits designed to encourage private investment and to improve both the quality and quantity of employment opportunities. The Community Development Zone Program has more than \$38 million in tax benefits available to assist businesses that meet certain requirements and are located or willing to locate in one of Wisconsin’s 21 community development zones. *See s.560.70, Wis. Stats. See also “enterprise development zone”.*

Community of Place: *See “sense of place”.*

Comprehensive Plan: a county development plan or city, village, town, or regional planning commission master plan prepared under and meeting the content requirements outlined in s.66.1001, *Wis. Stats.* Comprehensive plans provide a vision and general idea of how land should be used to assure public health, safety, and welfare.

Concurrency Management System: the process used to determine that needed public services are concurrent with a development’s impacts.

Concurrency Test: an analysis of public facilities’ ability to accommodate a development; in other words, adequate capacity of facilities must precede or be concurrent with a development’s demand.

Conditional Use: a land use, construction activity, or structural development, which must be tailored to the site conditions and adjacent property uses through a public and technical review process, that is listed as a conditional use in a zoning district.

Conditional Use Permit: a permit issued by a zoning administrator, if the applicant meets certain additional requirements, allowing a use other than a principally permitted use.

Conditional Zoning: special conditions an owner must meet in order to qualify for a change in a zoning district designation.

Condominium: real estate and improvements where portions are designated for separate ownership and the remainder for common ownership. *See s.703.02, Wis. Stat .*

Congestion Mitigation and Air Quality Program (CMAQ): a program under the U.S. Department of Transportation intended to fund transportation projects and programs in non- attainment and maintenance areas that reduce transportation- related emissions.

Conservation Areas: environmentally sensitive and valuable lands protected from any activity that would significantly alter their ecological integrity, balance, or character except in cases of overriding public interest.

Conservation Development Zoning: a type of cluster development zoning that emphasizes a planned unit development for preserving open space, wetlands, natural landscaping, floodplains, or other prioritized resources as well as for preventing stormwater runoff.

- Conservation Easement:** a recorded legal agreement between a landowner and a qualified conservation agency that transfers development rights from the owner to the agency to protect natural or historic features. *See s. 700.40, Wis. Stats.*
- Conservation Reserve Program:** a federal Department of Agriculture program that pays farmers to convert ‘erodible’ cropland into vegetative cover.
- Consolidated Metropolitan Statistical Area (CMSA):** a statistical area defined by the U.S. Census; a large metropolitan statistical area with a population of one million or more that includes one or more primary metropolitan statistical areas (PMSA). *See also “metropolitan statistical area” and “primary metropolitan statistical area” in this category.*
- Contested Case:** a hearing similar to a court proceeding where parties have a right to review and object to evidence and cross-examine witnesses who testify.
- Contiguous Properties:** properties sharing a property line.
- Cooperative Agreement:** an agreement between two or more organizations to share in the financing or managing of a property, providing of services, or some other joint venture. *Also see ss. 66.0307, 150.84, and 299.80, Wis. Stats. for specific examples of authorized agreements .*
- County:** a political subdivision of the state. Counties are delineated in ch. 2, *Wis. Stats.* Wisconsin has 72 counties. *See ch. 59, Wis. Stats.*
- cul de sac :** a circular end to a local street [*French* , “bottom of the bag”]
- Dedication:** the transfer of property from private to public ownership.
- Deed Restriction:** a limitation, which is recorded with the county register of deeds and to which subsequent owners are bound, on development, maintenance, or use of a property.
- Design Guideline:** an activity standard that preserves the historic or architectural character of a site or building.
- Design Review/ Control:** an aesthetic evaluation, considering landscape design, architecture, materials, colors, lighting, and signs, of a development’s impact on a community
- Design Standards:** criteria requiring specific dimensional standards or construction techniques. *See also “performance standards”.*
- Detachment:** the transposition of land from a municipality back into a township. *See s. 66.0227, Wis. Stats.*
- Developer:** a person or company that coordinates the ownership, financing, designing, and other activities necessary for the construction of infrastructure or improvements.
- Development:** an artificial change to real estate, including construction, placement of structures, excavation, grading, and paving.
- Development Values:** the economic worth of land based upon the fair market price after residential, commercial, or industrial structures have been added.
- District:** a part, zone, or geographic area within the municipality where certain zoning or development regulations apply.
- Down Zoning:** a change in zoning classification that permits development that is less dense, intense, or restrictive. *See also “up zoning”.*
- Dwelling Unit:** the space in a building that comprises the living facilities for one family. *See also “multifamily,” “single- family attached,” and “single- family detached dwelling”.*
- Easement:** written and recorded authorization by a property owner for the use of a designated part of the property by others for a specified purpose. *See also “conservation easement”.*
- Ecological Impact:** a change in the natural environment that could disrupt wildlife habitat or vegetation, or that could cause air, water, noise, or soil pollution.
- Economic Unit:** units of land that, although they may be separated from one another physically, are considered one economically.
- Eminent Domain:** the right of a government unit to take private property for public use with appropriate compensation to the owner. *See ch. 32, Wis. Stats .*
- Enabling Act:** legislation authorizing a government agency to do something that was previously forbidden. *See also “takings”.*
- Enterprise Development Zone:** zones meeting certain statutorily defined criteria and designated by the state Department of Commerce for providing tax incentives to new or expanding businesses whose projects will affect distressed areas. An enterprise development zone is “site specific,” applying to only one business, and is eligible for a maximum of \$3.0 million in tax credits. The department can designate up to 79 zones, which can each exist for up to seven years. The department is allowed to vary zone benefits to encourage projects in areas of high distress. *See s.560.70, Wis. Stats. See also “community development zone”.*
- Environmental Corridors:** linear areas of natural resources that are critical to maintaining water quality and quantity and to providing habitat linkages that maintain biological diversity. Environmental corridors are often associated with rivers and streams.

- Environmental Impact Ordinance:** a local legislative act requiring an assessment of the potential harmful environmental effects of a pending development so that steps to prevent damage can be taken.
- Environmental Impact Report (EIR):** a report that assesses an area’s environmental characteristics and then determines the impact that a proposed development will have.
- Environmental Impact Statement (EIS):** a statement prepared under the National Environmental Policy Act (NEPA) or Wisconsin Environmental Policy Act (WEPA) predicting the impacts a proposed government action is likely to have on the environment and describing the affected environment and the alternative actions considered. *See* s.1.11, *Wis. Stats.*, P.L.91-190, 42 USC 4331, NR 150, *Wis. Admin. Code.*
- Environmental Nodes:** discrete, inherently non- linear areas of natural resources that are sometimes isolated from areas with similar resource features. Planning objectives often include linking environmental nodes.
- Environmentally Sensitive Areas:** areas such as wetlands, steep slopes, waterways, underground water recharge areas, shores, and natural plant and animal habitats that are easily disturbed by development.
- Esplanade:** waterfront area intended for public use.
- Estate Management Strategies:** strategies enacted during a landowner’s lifetime or upon her death to help preserve family lands and farms.
- Ex parte Contact:** communication, which is normally prohibited, with a decision maker in a quasi- judicial proceeding, which is not part of a public hearing or the official record in a matter.
- Exactions:** compensation, which may take the form of facilities, land, or an actual dollar amount, that a community requires from a developer as condition of the approval of a proposed development project. Exactions may be incorporated into the community’s zoning code or negotiated on a project- by- project basis; but, they must reflect the type and extent of the expected adverse impacts of the development.
- Executive Session:** *See “closed session”.*
- Extraterritorial Zoning:** a local government’s authority to zone areas outside its boundaries. Under Wisconsin law, the extraterritorial zone for 1st, 2nd, and 3rd class cities extends 3 miles beyond the corporate limits. The limit extends 1½ miles beyond the municipal boundary for 4th class cities and villages. *See* s.62.23(7a), *Wis. Stats.* .
- Exurban Area:** the area beyond a city’s suburbs.
- Fee Simple Acquisition:** the purchase of property via cash payment.
- Fee Simple Interest in Property:** absolute ownership of and with unrestricted rights of disposition to land. This describes the possession of all rights to property except those reserved to the state. *See “rights”.*
- Fiscal Impact Analysis:** the projection of the costs and benefits of additional or new facilities, rentals, or remodeling of existing facilities, including data relative to increased instructional, administrative, maintenance, and energy costs and costs for new or replacement equipment.
- Fiscal Impact Report:** a report projecting the costs and revenues that will result from a proposed development.
- Floating Zone:** an unmapped zoning district that is described in ordinance and on the zoning map only when an application for development is approved.
- Floodplains:** land that has been or may be covered by flood water during a ‘regional flood’ as is defined in NR 116, *Wis. Adm. Code.* The floodplain includes the floodway and floodfringe, and is commonly referred to as the 100- year floodplain.
- *Floodfringe:* that portion outside of the floodway covered by water during a regional flood.
This term is generally associated with standing water, but may under local floodplain zoning ordinances, be developed for specified purposes if development is protected from flooding.
 - *Floodway:* the channel of a river or stream and those portions of the floodplain adjoining the channel required to discharge a regional flood.
This term is generally associated with flowing water and is required by local floodplain zoning ordinances to remain undeveloped and free of obstructions. *See also “base flood”.*
- Forest Crop Law:** a program enacted in 1927 that exempts DNR approved privately owned forest land from general property taxes but instead requires the owner to make an acreage share payment or a state contribution. Under the program, land is taxed at a constant annual rate while its timber is taxed after harvest. Entries into the FCL closed as of 1 January 1986 with enactment of the Managed Forest Law. Today about 25,000 landowners, owning more than 2.5 million acres, are enrolled in the three existing forest tax laws: Forest Crop Law, Woodland Tax Law, and Managed Forest Law. *See* ch. 70, *Wis. Stats.* .
- Front Lot Line:** the lot line separating an interior lot from the street, or the shortest lot line of a corner lot to a street.
- Gentrification:** the resettlement of low and moderate- income urban neighborhoods by middle and high- income professionals.
- Geographic Information System (GIS):** computer technology, tools, databases, and applications that provide spatial (geographic) data management, analysis, and mapping capabilities to support policy evaluation, decision- making, and program operations.

- Geologic Review:** an analysis of geologic features on a site, including hazards such as seismic hazards, surface ruptures, liquefaction, landslides, mud slides, erosion, and sedimentation.
- Gift Credit:** a dollar or in-kind matching amount (labor, supplies, land donation, etc.) required to secure funds for a development.
- Global Positioning System (GPS):** a computerized tool for determining longitudinal and latitudinal coordinates through the use of multiple orbiting satellites.
- Green Spaces:** See “open spaces”.
- Group Quarters:** The group quarters population includes all people not living in households. Two general categories of people in group quarters are recognized: (1) the institutionalized population and (2) the noninstitutionalized population.
- Growth Management:** the pacing of the rate or controlling of the location of development via law enactment to manage a community’s growth.
- Growth Trend Series:** In a growth series, the starting value is multiplied by the step value to get the next value in the series. The resulting product and each subsequent product is then multiplied by the step value.
- Hamlet:** a predominantly rural, residential settlement that compactly accommodates development.
- Hamlet Lot:** a small residential lot in a contiguous group with adjacent and fronting lots oriented toward each other in some ordered geometric way and forming a boundary with the surrounding countryside.
- Hazardous Substance:** any substance or combination of substances, including solid, semisolid, liquid or gaseous wastes, which may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or which may pose a substantial present or potential hazard to human health or the environment because of its quantity, concentration, or physical, chemical, or infectious characteristics. This term includes irritants, strong sensitizers, explosives, and substances that are toxic, corrosive, or flammable. See s.292.01(5), *Wis. Stats.*
- Heavy Industry:** the basic processing and manufacturing of products from raw materials; or, a use engaged in the storage or manufacturing processes using flammable or explosive materials or those that potentially involve offensive conditions. See also “light industry”.
- Highly Erodible Soils:** soils highly susceptible to erosion as determined by an equation that considers soil type, slope, and amount of rainfall but does not consider current land management or vegetative cover. These soils are often identified in county soil survey books.
- Historic Area:** an area designated by an authority, having buildings or places that are important because of their historical architecture or relationship to a related park or square or because those areas were developed according to a fixed plan based on cultural, historical, or architectural purposes.
- Historic Preservation:** the research, protection, restoration, and rehabilitation of historic properties.
- Historic Property:** a building, structure, object, district, area, or site, whether on or beneath the surface of land or water, that is significant in the history, prehistory, architecture, archaeology, or culture of Wisconsin, its rural and urban communities, or the nation. See s.44.31(3), *Wis. Stats.* See s.13.48(1m)(a), *Wis. Stats.*
- Homeowner’s Association:** a nonprofit organization made up of property owners or residents who are then responsible for costs and upkeep of semiprivate community facilities.
- Home Rule:** constitutional provisions in some states that give local units of government substantial autonomy. Wisconsin is a “strong” home rule state.
- Housing Occupancy:** refers to whether a housing unit is occupied or vacant.
- Housing Tenure:** refers to whether the housing occupant is an owner or renter.
- Housing Unit:** a single-family house, townhouse, mobile home or trailer, apartment, group of rooms, or single room that is occupied as a separate living quarters or, if vacant, is intended for occupancy as a separate living quarters.
- Incorporation:** orderly and uniform development of territory from town to incorporated status. See ch. 66, subch. II, *Wis. Stats.*
- Impact Fees:** cash contributions, contributions of land or interests in land, or any other items of value that are imposed on a developer by a political subdivision to offset the community’s costs resulting from a development. See s. 66.0617, *Wis. Stats.*
- Impervious Surface:** a ground cover such as cement, asphalt, or packed clay or rock through which water cannot penetrate; this leads to increases in the amount and velocity of runoff and corresponds to increases in soil erosion and nutrient transport.
- Improvements:** the actions taken to prepare land, including clearing, building infrastructure such as roads and waterlines, constructing homes or buildings, and adding amenities.
- Incentive Zoning:** the granting of additional development possibilities to a developer because of the developer’s provision of a public benefit.
- Industrial District:** a district designated as manufacturing, research and development, or industrial park.

- Infill:** the development of the last remaining lots in an existing developed area, the new development within an area already served by existing infrastructure and services, or the reuse of already developed, but vacant properties. *See also "redevelopment"*.
- Infrastructure:** public utilities, facilities, and delivery systems such as sewers, streets, curbing, sidewalks, and other public services.
- Installment Sale:** a real estate transaction in which the landowner and the recipient negotiate terms for the property to be transferred over an extended period of time rather than all at once.
- Institutionalized Population:** The institutionalized population includes people under formally authorized, supervised care or custody in institutions at the time of enumeration; such as correctional institutions, nursing homes, and juvenile institutions.
- Intermodal Surface Transportation Efficiency Act, 1991 (ISTEA):** a federal transportation act that authorized the first 23 "high priority corridors" of the total 42 authorized by the ISTEA, the National Highway System Designation Act (1995), and the Transportation Equity Act for the 21st Century.
- Intelligent Transportation System (ITS):** a system of technologies, including traveler information systems to inform motorists of weather and road conditions, incident management systems to help emergency crews respond more efficiently to road incidents, and commercial vehicle operations to increase freight transportation efficiency, intended to relieve state highway congestion.
- Interim Zone of Influence:** a procedure for the exchange of information or resolution of conflicts on certain proposed land- uses between a city or town and the county.
- Interim Zone/ Development Controls:** *See "moratorium"*.
- Judicial Appeal:** the review of a local zoning decision by the state judicial system.
- Land:** soil, the ground surface itself, a subdivision, a tract or parcel, a lot, an open space, or the physical elements below ground.
- Land Banking:** the obtaining, holding, and subsequent release of lands by a local government for controlled development or conservation.
- Land Exchange:** a transaction where a public agency or nonprofit organization exchanges a land parcel for another land parcel with high conservation value.
- Land use Intensity System (LUI):** a comprehensive system created in the mid- 1960s by the U.S. Federal Housing Administration for determining or controlling the intensity of land development.
- Land use Inventory:** a study, cataloging the types, extent, distribution, and intensity of current and future uses of land in a given area.
- Land use Plan:** the element of a comprehensive plan that designates and justifies the future use or reuse of land. *See s.66.1001, Wis. Stats.*
- Landfill:** a disposal facility for solid wastes. *See ch.289, Wis. Stats.*
- Land Trust:** a private, nonprofit organization that protects natural and cultural resources through conservation easements, land acquisition, and education.
- Large- Lot Zoning:** a requirement that each new house be constructed on a minimum number of acres (generally, five or more acres). Developments that feature large- lot zoning may include the dispersal of some impacts, less efficient infrastructure, and greater areas of land use.
- Leapfrog Development:** new development separated from existing development by substantial vacant land.
- Leaseback:** *See "purchase/ leaseback"*.
- Level of Service (LOS):** a measurement of the quantity and quality of public facilities.
- Light Industry:** the manufacture and distribution of finished products, including processing, fabrication, assembly, treatment, packaging, incidental storage, and sales. *See also "heavy industry"*.
- Limited Development:** the development of one portion of a property to finance the protection of another portion.
- Linear Trend Series:** In a linear series, the step value, or the difference between the first and next value in the series, is added to the starting value and then added to each subsequent value.
- Lot:** a parcel of land that is occupied or intended for occupancy, including one main building and any accessory buildings, open spaces, or parking spaces. *See also "through lot"*.
- Lot Area:** the area of a horizontal plane bounded by the vertical planes through front, side, and rear lot lines.
- Lot Averaging:** the design of individual adjoining lots within a residential subdivision where the average lot is the minimum prescribed area for the zoning district.
- Lot- by- Lot Development:** a conventional development approach where each lot is treated as a separate development unit conforming to all land- use, density, and bulk requirements.
- Lot Coverage:** the total when an area of a lot covered by the total projected surface of all buildings, impervious surfaces, or vegetative coverage is divided by the gross area of that lot.

- Lot Depth:** the average horizontal distance between the front and rear lot lines.
- Lot Line:** the property lines at the perimeter of a lot.
- Lot Width:** the distance between side lot lines. This is generally measured at the front setback, but the specific protocol varies between jurisdictions.
- LULU:** a locally unwanted land use. *See also* “NIMBY,” “NIABY,” and “NIMTOO”.
- Main Street Program:** a comprehensive revitalization program established in 1987 to promote and support the historic and economic redevelopment of traditional business districts in Wisconsin. The Main Street Program is administered by the state Department of Commerce.
- Managed Forest Law:** a law enacted in 1985, replacing the Forest Crop Law and Woodland Tax Law, that exempts DNR approved privately owned forest land from general property taxes but instead requires the owner to pay an annual acreage payment, a state contribution, a yield tax, or a withdrawal penalty. Landowners have the option to choose a 25 or 50 year contract period. Enrollment is open to all private landowners owning ten or more acres of woodlands. Today about 25,000 landowners, owning more than 2.5 million acres, are enrolled in the three existing forest tax laws: Forest Crop Law (FCL), Woodland Tax Law (WTL), and Managed Forest Law (MFL). *See ch. 70, Wis. Stats.*
- Manufactured Housing:** a structure, containing within it plumbing, heating, air- conditioning, and electrical systems, that is transportable in one or more sections of certain sizes and is built on a permanent chassis, and when connected to the required utilities, is designed to be used as a dwelling with or without a permanent foundation. Such housing must comply with the standards established under the National Manufactured Housing Construction and Safety Standards Act. *See* 42 USC 5401 to 5425 and ch.409, *Wis. Stats.*
- Map:** a drawing or other representation that portrays the spatial distribution of the geographic, topographic, or other physical features of an area.
- Median age:** The midpoint age that separates the younger half of a population from the older half.
- Metropolitan Statistical Area (MSA):** a statistical area defined by the U.S. Census; a freestanding metropolitan area (i.e. an area with a minimum population of 50,000 and adjacent communities with a high degree of economic and social integration) or a Census Bureau defined urbanized area with a population of 100,000 or greater (75,000 in New England), not closely associated with other metropolitan areas. Nonmetropolitan counties surround these areas typically. *See also* “consolidated metropolitan statistical area” and “primary metropolitan statistical area”.
- Mini- Lot Development:** a development containing lots that do not meet the minimum size or other requirements.
- Mitigation:** the process of compensating for the damages or adverse impacts of a development.
- Mitigation Plan:** imposed development conditions intended to compensate for the adverse impacts of the development.
- Mixed- Use Development:** a development that allows multiple compatible uses to be in close proximity to one another in order to minimize transportation infrastructure impacts and to create a compact, efficient neighborhood; for example, single family, multifamily, commercial, and industrial uses are located within a reasonable proximity to each other.
- Modernization:** the upgrading of existing facilities to increase the input or output, update technology, or lower the unit cost of the operation.
- Moratorium:** a temporary development freeze or restriction pending the adoption or revision of related public policies or provisions of public infrastructures or services.
- Multifamily Dwelling:** a building or portion occupied by three or more families living independently of each other.
- Multimodal Transportation:** an integrated network of various transportation modes, including pedestrian, bicycle, automobile, mass transit, railroads, harbors, and airports.
- Municipality:** a city, village, town, or other unit of local government. The application of this term varies and it often has specific legal meanings.
- National Environmental Policy Act (NEPA):** a congressional act passed in 1969, establishing a national environmental policy. NEPA requires federal agencies to consider the environmental effects of decisions early in their decision- making processes and to inform the public of likely impacts. Environmental impact statements (EISs) are prepared consistent with this law. The act also established the Council on Environmental Quality. *See* P.L. 91- 190, 42 U.S.C. 4321- 4347. *See also* “environmental impact statement” and “Wisconsin Environmental Policy Act (WEPA)”.
- National Register of Historic Places in Wisconsin:** places in Wisconsin that are listed on the national register of historic places maintained by the U.S. Department of the Interior, National Park Service.
- Neighborhood Plan:** a plan that provides specific design or property- use regulations in a particular neighborhood or district.
- Neighborhood Unit:** the model for American suburban development after World War II based around the elementary school with other community facilities located at its center and arterial streets at its perimeter.
- Neotraditional Development:** a land- use approach that promotes neighborhoods with a variety of housing and architectural types, a central gathering point, and interconnecting streets, alleys, and boulevards edged with greenbelts.* *See also* “New Urbanism” and “smart growth”.

- Net Acre:** an acre of land excluding street rights-of-way* and other publicly dedicated improvements such as parks, open space, and stormwater detention and retention facilities.
- New Urbanism:** an approach to development that includes the reintegration of components such as housing, employment, retail, and public facilities into compact, pedestrian-friendly neighborhoods linked by mass transit. *See also “Neotraditional development” and “smart growth”.*
- NIABY:** Not in anyone’s backyard. *See also “LULU,” “NIMBY,” and “NIMTOO”.*
- NIMBY:** Not in my backyard. *See also “LULU,” “NIABY,” and “NIMTOO”.*
- NIMTOO:** Not in my term of office. *See also “LULU,” “NIMBY,” and “NIABY”.*
- Nonconforming Activity:** an activity that is not permitted under the zoning regulations or does not conform to off-street parking, loading requirements, or performance standards.
- Nonconforming Building:** any building that does not meet the limitations on building size or location on a lot for its use and district.
- Nonconforming by Dimension:** a building, structure, or parcel of land that is not compliant with the dimensional regulations of the zoning code.
- Nonconforming Lot:** a use or activity which lawfully existed prior to the adoption, revision, or amendment of an ordinance but that fails to conform to the current ordinance.
- Nonconforming Use:** a use (or structure) that lawfully existed prior to the adoption or amendment of an ordinance but that fails to conform to the standards of the current zoning ordinance.
- Noncontributing Building:** a building or structure that does not add to the historic architecture or association or cultural values of the area.
- Noninstitutionalized Population:** The noninstitutionalized population includes all people who live in group quarters other than institutions, such as college dormitories, military quarters, and group homes. Also, included are staff residing at institutional group quarters.
- North American Industry Classification System (NAICS):** a classification system developed by the United States, Canada, and Mexico to provide comparable industrial production statistics collected and published in the three countries. The NAICS replaces the Standard Industrial Classification (SIC) system and provides for increased comparability with the International Standard Industrial Classification (ISIC) system developed and maintained by the United Nations. *See also “Standard Industrial Classification (SIC)”.*
- Office Park:** a large tract that has been planned and developed as an integrated facility for a number of separate office buildings and that considers circulation, parking, utilities, and compatibility.
- One-Unit, Attached:** This is a 1-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.
- One-Unit, Detached:** This is a 1-unit structure detached from any other house; that is, with open space on all four sides. Such structures are considered detached even if they have an adjoining shed or garage. A one-family house that contains a business is considered detached as long as the building has open space on all four sides. Mobile homes or trailers to which one or more permanent rooms have been added or built also are included.
- Open Session:** a meeting that is in accordance with Wisconsin’s ‘Open Meetings Law.’ *See s.19.85- 19.98, Wis. Stats .*
- Open (Green) Spaces:** a substantially undeveloped area, usually including environmental features such as water areas or recreational facilities. *See also “common open spaces”.*
- Ordinance:** a local law; a legislative enactment of a local governing body.
- Orthophoto Quad:** an aerial photograph that has been adjusted, via the correcting of distortions and inaccuracies due to plane tilt, elevation differences, or the curvature of the earth’s surface, to reflect as accurately as possible the actual topography of the earth’s surface.
- Outright Donation:** the donation of land to a unit of government or a qualified charitable land conservation management organization.
- Outright purchase:** the acquisition of land for the benefit of the public.
- Overlay Zone:** an additional land use or zoning requirement that modifies the basic requirements of the underlying designation.
- Parcel:** *See “lot”.*
- Pedestrian Friendly:** a development that is primarily accessible to pedestrians rather than automobiles and with an emphasis on street sidewalks rather than parking.
- Performance Standards:** general criteria established to limit the impact of land uses or development. *See also “design standards”.*
- Pervious Surface:** a ground cover through which water can penetrate at a rate comparable to that of water through undisturbed soils.

- Planned Unit Development:** land under unified control to be developed in a single development or a programmed series of phases. A planned development includes the provisions, operations, maintenance, facilities, and improvements that will be for the common use of the development districts, but which will not be maintained at general public expense.
- Plan Commission:** an appointed local government commission authorized to make and adopt a master plan, consistent with s.66.1001, *Wis. Stats.*, for the physical development of the city. *See* s.62.23, *Wis. Stats.*
- Plat:** a map of a lot, parcel, subdivision, or development area where the lines of each land division are shown by accurate distances and bearings.
- Point System:** numerical values assigned to a development’s impacts on a community’s resources.
- Political Subdivision:** a city, village, town, county, sanitary district, school district, inland lake protection and rehabilitation district, or other special purpose unit of government.
- Pre-acquisition:** a technique where one organization (usually a private land trust) purchases a property and holds it until another organization (usually a government agency) can allocate the funds to purchase it.
- Preservation:** leaving a resource undisturbed and free from harm or damage. While ‘preservation’ is often used interchangeably with ‘conservation,’ the latter entails a connotation of prudent resource use.
- Primary Metropolitan Statistical Area (PMSA):** a statistical area defined by the U.S. Census; an area within a consolidated metropolitan statistical area consisting of a large urbanized county or cluster of counties that demonstrates very strong internal economic and social links, in addition to close ties to other portions of the larger area. *See also* “metropolitan statistical area” and “consolidated metropolitan statistical area”.
- Prime Agricultural Land:** land determined by local governments to be important for sustaining agricultural operations and that are often protected from conversion to other uses. *See* ch.91, *Wis. Stats.*
- Prime Farmland:** farmland classified by the Natural Resources Conservation Service as best for the crop production of row, forage, or fiber because of level topography, drainage, moisture supply, soil texture and depth, and susceptibility to erosion and runoff. Ideally, prime farmland allows least cost to both the farmer and the natural resources. *See* ch.91, *Wis. Stats.*
- Principal Building:** the building, including all parts connected, where the primary use of the lot is conducted.
- Private Road:** a way open to traffic, excluding driveways, established as a separate tract for the benefit of adjacent properties.
- Privately Owned Waste- Treatment Systems (POWTS):** sewage treatment and disposal systems, which are also called on- site sanitary systems, that are not connected to sewer lines or wastewater treatment plants.
- Public Dedication:** reserving land in a subdivision for public use such as a school or park.
- Public Road:** public property dedicated and reserved for street traffic.
- Purchase of Development Rights (PDR):** a public or private government initiative that acquires the development rights of property to limit development and protect natural features or open space. *See also* “rights” and “transfer of development rights”.
- Purchase/ Leaseback:** an arrangement where a community purchases a natural area and then either leases it back with special lease restrictions or sells it back with deed restrictions designed to protect the natural features of the property.
- Quarter, Quarter Zoning:** a development standard that limits non-farm development to one house per 40 acres (¼ of ¼ of the original 640- acre section).
- Quasi- Judicial Decisions:** “resembling a court;” quasi- judicial decision making must follow rules of due process and is midway between legislative and administrative functions. Examples of quasi- judicial decisions include variances, appeals, and conditional- use permits.
- Quasi- Public Use/ Facility:** a use conducted or a facility owned or operated by a nonprofit or religious institution that provides public services.
- Rear- lot Line:** a lot line, opposite the front lot line, that generally does not abut a public roadway.
- Redevelopment:** any proposed replacement of existing development. *See also* “infill”.
- Redevelopment Authority:** an authority, known as the “redevelopment authority of the city of [city name],” created in every city with a blighted area. This authority, together with all the necessary or incidental powers, is created to carry out blight elimination, slum clearance, and urban renewal programs and projects as set forth in Wisconsin Statutes. *See* s.66.1333 (3)(a) 1, *Wis. Stats.*
- Reforestation:** the planting or replanting of forest plants.
- Regional Plan:** a plan that covers multiple jurisdictions, often within the administrative area of a regional planning commission, and that can be prepared jointly by cooperating municipalities, regional planning commissions, state agencies, or other entities.
- Requests for Proposals (RFP):** a document describing a project or services and soliciting bids for a consultant’s or contractor’s performance.
- Requests for Qualifications (RFQ):** a document describing the general projects, services, and related qualifications of bidding consultants or contractors.

Reservation of Site: See “public dedication”.

Reserved Life Estate: an arrangement where a landowner sells or donates property to another party (for example, a conservation organization) while retaining the right to lifetime use.

Revolving Fund: a conservation fund, replenished through donations or selling of the land to another conservation organization or a government agency, used to purchase land or easements.

Rezoning: an amendment to a zoning map or zoning ordinance that changes the zoning- district designation and use or development standards.

Right of First Refusal: an agreement between a landowner and another party (for example, a land trust) that gives the other party a chance to match any third- party offer to purchase lands.

Right of Way (ROW): a strip of land occupied by or intended to be occupied by a street, crosswalk, walkway, utility line, or other access.

Rights (The Bundle of Rights Concept of Property): government and private owners each hold portions of the bundle of rights in real property.

Owner property rights include:

- *Right to Use:* the right to improve, harvest, cultivate, cross over, or not to use.
- *Right to Lease:* the right to lease for cash or the right to hold a cash, including a share lease or third or fourth lease, a crop share lease, a one year lease, or a perpetual lease.
- *Right of Disposition:* the right to sell, to bequeath, to mortgage, or to establish trusts on all or part of a property.

Government property rights include:

- *Eminent domain:* the right to purchase land for public use
- *Escheat:* the right for the succession in title where there is no known heir
- *Regulation*
- *Taxation*

Riparian Areas: the shore area adjacent to a body of water.

Roadway Setback: the required or existing minimum distance between a public roadway (measured from the centerline or edge of right- of- way) and the nearest point on a structure.

Scenic Corridor: a linear landscape feature that is visually attractive (for example, stream corridors or blufflines).

Scenic Easement: an easement* intended to limit development in order to preserve a view or scenic* area.

Seasonal Dwelling: a dwelling not used for permanent residence or not occupied for more than a certain number of days per year. The standard varies between jurisdictions.

Secondary Dwelling Unit: an additional dwelling unit in a freestanding building or above a residential garage and located within or on the same lot as the principal dwelling unit.

Sense of Place: the constructed and natural landmarks and social and economic surroundings that cause someone to identify with a particular place or community.

Set Back: the minimum distance a building, structure, or activity can be separated from a designated feature such as a waterway or bluffline.

Shoreland: a state mandated water resource protection district that Wisconsin counties must adopt.

Shorelands include lands adjacent to navigable waters within 1,000 feet of the ordinary high- water mark of a lake, pond, or flowage and within 300 feet of the ordinary high- water mark or floodplain of a river or stream.

Shoreland- Wetland: shorelands that are designated as wetlands on Wisconsin Wetlands Inventory maps. See *Wis. Stats.*

Shoreline Stabilization: the placement of structural revetments or landscaping practices to prevent or control shoreline erosion.

Side Lot Line: a lot line that is neither a front lot line nor a rear lot line.

Single- family Attached Dwelling: one of two or more residential buildings having a common wall separating dwelling units.

Single- family Detached Dwelling: a residential building containing not more than one dwelling unit surrounded by open space.

Sign: any device that is sufficiently visible to persons not located on the lot that communicates information to them.

Site Plan: a scaled plan, which accurately and completely shows the site boundaries, dimensions and locations of all buildings and structures, uses, and principal site development features, proposed for a specific lot.

Sliding Scale Zoning: a ratio of dwelling units to land acreage that concentrates development on smaller lots by increasing the minimum lot size for houses built on larger parcels.

Smart Growth: an approach to land- use planning and growth management that recognizes connections between development and quality of life. The features that distinguish smart growth approaches vary. In general, smart growth invests time, attention, and resources in restoring community and vitality to center cities and older suburbs. In developing areas, the

approach is more town- centered, is transit and pedestrian oriented, and has a greater mix of housing, commercial, and retail uses. Smart- growth approaches preserve open space and other environmental amenities. The term is also used to refer to Wisconsin’s comprehensive planning law. *See* s.66.1001, *Wis. Stats.* *See also* “*New Urbanism*” and “*Neotraditional development*”.

Special Designation: the protection of scenic river corridors and other valuable resources through state or federal means such as recognition, acquisition, or technical assistance.

Special District/ Special Purpose Unit of Government: a government entity that is responsible for performing specific tasks and oversight essential to a community’s or region’s well being. Special districts include sanitary districts, metropolitan sewerage districts, drainage districts, inland lake protection and rehabilitation districts, business improvement districts, tax incremental financing districts, architectural conservancy districts, and port authorities.

Special Exception: *See* “*conditional use*”.

Spot Zoning: a change in the zoning code or area maps that is applicable to no more than a few parcels and generally regarded as undesirable or illegal because it violates equal treatment and sound planning principles.

Stand: a number of plants growing in a continuous area. Examples include ‘a stand of hardwood’ or ‘a stand of timber.’

Standard Industrial Classification/ Standard Industrial Code (SIC): an industry classification system to facilitate the collection, tabulation, presentation, and analysis of data relating to establishments and to ensure that data about the U.S. economy published by U.S. statistical agencies are uniform and comparable. *See also* “*North American Industry Classification System (NAICS)*”.

Statewide Comprehensive Outdoor Recreation Plan (SCORP): a plan that aims to offer a research base and overall guidance for all providers of Wisconsin’s outdoor recreation, including federal, state, county, city, village, and town governments, resorts and other businesses, and a variety of other public and private organizations. Ideally, SCORP is used in conjunction with other planning documents such as property master plans, community park and open space plans, the State Trails Strategic Plan, six- year development plans, and county and regional planning commission plans.

Stewardship Program: a state bonding program established by the Wisconsin Legislature in 1989 and re- authorized in 1999 that provides funds to protect environmentally sensitive areas and to maintain and to increase recreational opportunities across the state.

Stormwater Detention/ Stormwater Retention: the storage of stormwater runoff.

Stormwater Management: the reduction of the quantity of runoff, which affects flooding, or of pollutants generated at a development site and carried in stormwater.

Story: a space in a building between the surface of any floor and the surface of the next above floor or roof.

Subdivision: the description (usually by survey) and recording of separate land parcels or lots.

Summary Abatement: a legal action taken to suppress the continuation of an offensive land use. *See also* “*tax abatement*”.

Sustainability: long- term management of ecosystems intended to meet the needs of present human populations without compromising resource availability for future generations.

Sustainable Development: development that meets the needs of the present generation without compromising the needs of future generations.

Takings: government actions that violate the Fifth Amendment to the U.S. Constitution, which reads in part, “nor shall private property be taken for public use, without just compensation.” Such actions include regulations that have the effect of “taking” property. The Supreme Court has established four clear rules that identify situations that amount to a taking and one clear rule that defines situations that do not.

The court has found “takings” in the following circumstances:

- *where a landowner has been denied “all economically viable use” of the land;*
- *where a regulation forced a landowner to allow someone else to enter onto the property;*
- *where the regulation imposes burdens or costs on a landowner that do not bear a “reasonable relationship” to the impacts of the project on the community; and*
- *where government can equally accomplish a valid public purpose through regulation or through a requirement of dedicating property, government should use the less intrusive regulation, for example, prohibiting development in a floodplain property.*

The Supreme Court has also said that where a regulation is intended merely to prevent a nuisance, it should *not* be considered a taking.

Tax Abatement: a release of a certain tax liability for a specific period of time and under certain circumstances. *See also* “*summary abatement*”.

- Tax Increment:** additional tax revenue resulting from a property- value increase; the amount obtained by multiplying the total of all property taxes levied on all taxable property within a tax- incremental district in a year by a fraction having as a numerator the value increment for that year in the district and as a denominator that year's equalized value of all taxable property in the district. In any year, a tax increment is "positive" if the value increment is positive and "negative" if the value increment is negative. *See* s.66.1105, *Wis. Stats.*
- Tax Increment Financing (TIF):** a local governmental financing of private- sector redevelopment, anticipating the additional revenues of the tax increment.* *See* s.66.1105, *Wis. Stats.*
- Town:** the political unit of government; a body corporate and politic, with those powers granted by law. *See* ch. 60, *Wis. Stats.*
- Township:** all land areas in a county not incorporated into municipalities (cities and villages).
- Tract:** an indefinite stretch or bounded piece of land; in subdivisions, a tract is often divided into individual lots.
- Traditional Neighborhood:** a compact, mixed- use neighborhood where residential, commercial, and civic buildings are within a close proximity. *See also* "Neotraditional development" and "New Urbanism".
- Traffic Calming:** the process of increasing pedestrian safety via decreasing automobile speed and volume.
- Traffic Impact Analysis:** an analysis of the impacts of traffic generated by a development.
- Traffic Impact Mitigation Measure:** an improvement by a developer intended to reduce the traffic impact created by a development.
- Transfer of Development Rights:** a technique, involving the designation of development (receiving) zones and protected (sending) zones, for guiding growth away from sensitive resources and toward controlled development centers by transferring development rights from one area to another via local law authorization such as a deed or easement. *See also* "rights" and "purchase of development rights".
- Transit- Oriented Development (TOD):** moderate or high- density housing concentrated in mixed- use developments* that encourages the use of public transportation.
- Transitional Use:** a permitted use or structure that inherently acts as a transition or buffer between two or more incompatible uses.
- TRANSLINKS 21:** a statewide transportation system plan prepared by the Wisconsin Department of Transportation in response to federal and state laws.
- Transportation Demand Management (TDM):** a strategy that alleviates roadway stress by reducing vehicle density via the increasing of passengers per vehicle.
- Transportation enhancements (ISTEA & TEA- 21):** funds contributed by the federal highway transportation program to enhance cultural, aesthetic, and environmental aspects of local transportation and transit systems.
- Underlying Zoning District:** a term referring to a zoning district when it is affected by an overly district.
- Undevelopable:** an area that cannot be developed due to topographic or geologic soil conditions.
- Unified Development Code:** the combining of development regulations into a single zoning code.
- Universal Transverse Mercator Grid (UTM):** a civilian grid system, which uses only numbers and can be handled by digital mapping software and Geographic Information Systems.
- Unnecessary Hardship:** a unique and extreme inability to conform to zoning ordinance provisions due to physical factors; and, one of three tests a property must meet in order to qualify for a zoning variance.
- Up Zoning:** changing the zoning designation of an area to allow higher densities or less restrictive use. *See also* "down zoning".
- Urban Area:** the area within a municipal boundary that is serviced by infrastructure; an intensively developed area with a relatively large or dense population.
- Urban Forest:** all trees and associated vegetation in and around a city, village, or concentrated development.
- Urban Growth Area:** an area designated for urban development and usually designed to protect open space or resources beyond its boundaries.
- Urban Growth Boundary:** the perimeter of an urban growth area.
- Urban Sprawl:** low- density, automobile- dependent, and land- consumptive outward growth of a city; the spread of urban congestion and development into suburban and rural areas adjoining urban areas.
- Utility Facilities:** any above ground structures or facilities used for production, generation, transmission, delivery, collection, or storage of water, sewage, electricity, gas, oil, or electronic signals.
- Variance:** a relaxation of dimensional standards by a local zoning board in compliance with statutory criteria. *See* s.59.99(7), *Wis. Stats.*
- Vehicle Miles Traveled (VMT):** a measure of automobile and roadway use.
- Village:** an incorporated area with a population under 5,000. *See* ch. 61, *Wis. Stats.*
- Watershed:** the area where precipitation drains to a single body of water such as a river, wetland, or lake.

- Wellhead Protection:** a plan to determine the water collecting area for a public well, identify the pollution sources within that area, and detect, prevent, and remedy potential contamination to the collecting area.
- Wetlands Inventory Map:** a map of wetlands classified according to their vegetation, hydrology, and types of human influence, developed by the Wisconsin Department of Natural Resources, used to identify wetlands for protection.
- Wetlands Reserve Program:** a federal program with state partnering to restore the functions and values of wetlands and to preserve riparian areas through conservation easements and wetland reconstruction.
- Wildlife Habitat Incentives Program:** a program that awards landowners federal cost- sharing funds after the installation of improvements to wildlife or fishery habitat.
- Wisconsin Administrative Code (Wis. Admin. Code):** a component of state law that is a compilation of the rules made by state agencies having rule- making authority. These rules provide the detailed provisions necessary to implement the general policies of specific state statutes
- Wisconsin Environmental Policy Act (WEPA):** a state law establishing a state environmental policy. WEPA requires state agencies to consider the environmental effects of decisions early in their decision-making processes and to inform the public of likely impacts and alternatives that were considered. Environmental impact statements (EISs) are prepared consistent with this law. *See also "environmental impact statement" and "National Environmental Policy Act (NEPA)". See NR 150, Wis. Admin. Code, and s.1.11, Wis. Stats.*
- Wisconsin Initiative for Statewide Cooperation on Landscape Analysis and Data (WISCLAND):** a partnership between government agencies, private companies, and nonprofit groups to collect, analyze, and distribute landscape information.
- Wisconsin Register of Historic Places:** a listing of districts, sites, buildings, structures, and objects that are significant in national, state, or local history, architecture, archaeology, engineering and culture. The Wisconsin register of Historic Places is maintained by the Wisconsin State Historical Society. *See s. 44.36, Wis. Stats.*
- Woodland Tax Law:** a law enacted in 1954 that extended land eligibility of the Forest Crop Law to owners of small forest parcels. Entries into the WTL closed as of 1 January 1986 with enactment of the Managed Forest Law. Today about 25,000 landowners, owning more than 2.5 million acres, are enrolled in the three existing forest tax laws: Forest Crop Law, Woodland Tax Law, and Managed Forest Law. *See ch. 70, Wis. Stats.*
- Zero Lot Line:** the location of a building in such a manner that one or more of its sides rests directly on its lot line.
- Zone:** an area designated by an ordinance where specified uses are permitted and development standards are required.
- Zoning Inspector:** an appointed position to administer and enforce zoning regulations and related ordinances.
- Zoning Permit:** a permit issued by the land- use or zoning administrator authorizing the recipient to use property in accordance with zoning- code requirements.

Source: *Land-Use Lingo: A Glossary of Land-Use Terms*, WDNR, 2001.

Note: All references are to 1999-2000 Wisconsin Statutes.

Bay-Lake Regional Planning Commission

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Toni M. Loch
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Door County

Paul DeWitt
Mariah K. Goode
Nomination Pending

Florence County

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Administrative Assistant

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Joshua W. Schedler
GIS Specialist

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Transportation Planner III

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Community Planner