

**GLADWIN COUNTY
COMPREHENSIVE MASTER PLAN
2007 - 2012**



Prepared by:
The Gladwin County Planning Commission

With assistance from:
The East Central Michigan Planning & Development Region



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CHAPTER I PHYSICAL & SOCIAL FEATURES

CHAPTER I

PHYSICAL AND SOCIAL FEATURES

A. INTRODUCTION

This Master Plan was developed through a joint effort of the Gladwin County Planning Commission and the East Central Michigan Planning and Development Regional Commission. Assistance was also provided by the City of Gladwin, Gladwin County Chamber of Commerce, Gladwin County Board of Commissioners and the Upper Tittabawassee River Task Force.

The Master Plan is a comprehensive land use and infrastructure plan that sets for local goals, objectives and policies for community growth and/or redevelopment over the next 20-30 years. It is used as the basis for the local zoning ordinance, subdivision regulations, other local land use regulations and for ensuring that capital improvements are consistent with the Master Plan.¹

This plan is intended to be an official statement setting forth policies concerning desirable future development for the county. The plan for Gladwin County will serve as the expression of the County's vision for its future and provide a guide to accomplish that vision.

The plan's basic purposes shall be to:

1. **To guide and accomplish, in Gladwin County and its environs, that development that is coordinated, adjusted, harmonious, efficient and economical, considers the character of the planning jurisdiction and its suitability for particular uses, judged in terms of such factors as trends in land and population development and will present future needs that best promote public health, safety, morals, order, convenience, prosperity, and general welfare.**

The plan shall also include promotion of or adequate provision for one or more of the following:

- A. A system of transportation to lessen congestion on streets;
 - B. Safety from fire and other dangers
 - C. Light and air
 - D. Healthful and convenient distribution of population consistent with State law;
 - E. Good civic design and arrangement and wise and efficient expenditure of public funds;
 - F. Public utilities such as sewage disposal and water supply and other public improvements;
 - G. Recreation opportunities
 - H. The use of resources in accordance with their character and adaptability.
2. The plan shall be flexible so that it anticipates change and should be kept up-to-date with regular reviews and modifications; i.e., every three to five (3-5) years.
 3. The plan should be realistic so that it can be implemented, and should address short-term actions as well as long-range strategies.
 4. The plan shall allow for public input at all times.

¹Michigan Planning Enabling Act (MPEA)

Gladwin County Master Plan

The advantages of having a Master Plan in Gladwin County are:

- **To provide consistency in decision-making.**
- **Strong legal support (i.e., favorable review by courts at all levels, as long as actions are not arbitrary or capricious in nature.**
- **To allow for the wise use of resources; natural, financial, infrastructure or buildings.**
- **Preservation of community character.**
- **Preserving future choices.**

B. ADMINISTRATIVE STRUCTURE

Gladwin County is governed by a seven member Board of Commissioners. The Board of Commissioners meets on the second and fourth Tuesday of each month. The county government operates the jail, maintains rural roads, operates the major local courts, keeps files of deeds and mortgages, maintains vital records, administers public health regulations and participates with the state in the provision of welfare and other social services. The county board of commissioners controls the budget but has only limited authority to make laws or ordinances. In Michigan, most local government functions - police and fire, building and zoning, tax assessment, street maintenance, etc.- are the responsibility of individual cities and townships.

The seven (8) member Gladwin County Planning & Zoning Commission acts as an advisory body to the Board of Commissioners and meets on the 1st Wednesday of each month.

C. ZONING

Gladwin County has county-wide zoning although Billings, Clement, Sage, Secord and Tobacco Townships have their own zoning including Zoning Administrator. The county-wide zoning ordinance was effective February 14, 2005.

Within the City of Gladwin, commercial establishments are located along M-61 with residential areas lying to both the north and south of the corridor. Industrial uses are located along the City's eastern boundary. To the south there is a significant amount of public and recreational land. The City Park, some state forest land, airport and county fairgrounds are located south of M-61. The Cedar River runs south from Gladwin to Ross Lake along which is centered the City of Beaverton. There, commercial and industrial development is clustered around M-18 while residential development occurs around the lake and off main travel arteries. Both Beaverton and Gladwin have industrial parks. The majority of multi-family housing in the county can be found in the cities of Beaverton and Gladwin; Gladwin has two high-rise senior housing complexes and Beaverton has one.

The County and the City co-own the airport which does have an airport layout plan or airport approach plan. Zoning relative to the airport is consistent with City and Village Zoning Act (Act 207) of 1921.

D. HISTORICAL PERSPECTIVE

Adoption of the "Ordinance of 1781" marked the beginning of the history of Michigan Territory. The Revolutionary War concluded, England had yielded what was to be Michigan to the United States and in 1787 it formally became part of the Northwest Territory.

In the early days of the Northwest Territory most of these lands were inhabited by the Chippewa and Sauk Indians. Under the Treaty of Detroit in 1807 what is now Michigan was roughly surveyed by the United States. In this survey, the lands of Gladwin were included with "Midland Territory" marked as "Region of the Saginaw." The treaty set aside the area for the joint use of the Chippewa, Pottawattomie, Wyandotte and Ottawa nations of Indians.

Gladwin County Master Plan

Under the “Treaty of Saginaw”, dated 1819, all lands in this region known as “The Region of the Saginaw” were ceded to the United States Government by the Indian Nations. Two reservations were accepted, however, and remained for many years.

On January 14, 1837, a treaty was made between the United States and the Chippewa Nation, under terms of which the Chippewas’ ceded both 1819 reservations back to the government. A provision was made that proceeds from the sale of these lands would go to the Native Americans.

When this treaty was signed, all of present-day Midland and Clare Counties, along with parts of Roscommon, part of Gladwin, Isabella, Bay, Saginaw, Gratiot and Arenac Counties was the territory of Midland.

The County of Gladwin was organized in the year 1875. The name Gladwin commemorates Major Henry Gladwin, British Commandant at Detroit, who saved it against repeated Indian assaults during Pontiac’s uprising in the years 1763-64.

This area was once an important lumbering center. Now, the popular state forest wilderness, numerous lakes and streams, attract sportsmen, vacationers and retirees alike.

The City of Gladwin is the County seat and has a population of 2,682. It’s Sister City, Beaverton, eight miles south, has a population of 1,150. Both are incorporated cities and governed by a Mayor and City Council. In 2003, the overall county population was 26,939 or 51.3 persons per square mile. Comparing a 1990 population of 21,896 with 2000, the County has experienced a 23.0% increase in 10 years.

There are 15 townships in the County. In the 2000 Census, four (4) of the county’s 15 townships have populations under 1,000 persons which demonstrates the County’s rural character. There are large concentrations of population found in several townships primarily along the River, its tributaries and their impoundments. River basins are deep and dams installed at Edenville, Smallwood, Secord, Beaverton, Chappel and Sugar Spring have created sizeable impoundments.

E. REGIONAL SETTING

Gladwin County (Figure I-1) is located in a rural forested area near the center of Michigan’s lower peninsula on the southern edge of what is commonly thought of as the state’s northern recreational area(s). It is bounded by Arenac, Bay, Clare, Midland, Ogemaw and Roscommon Counties.

Approximately 51 percent of the County is forested. The Tittabawassee State Forest makes up the largest portion of this forested area. Less than 8.7 percent of the county is wetland or water, but water-based recreation and recreational developments are an important economic and developmental force in the county. The Tittabawassee River and its impoundments, Pratt Lake, Wiggins Lake, and the Molasses and Cedar Rivers are important water resources.



Figure I-1 Regional Setting Map



Gladwin County Master Plan

Agriculture, both cash crops and pasture, account for approximately 37 percent of the county's area while 85,415 acres are held as public lands.

Gladwin, though considered rural in character, is in close proximity to the cities of Midland, Bay City, Saginaw and Mt. Pleasant and its economy is affected by these areas. Many residents from Gladwin County commute to outlying areas for employment. North-south highway access routes are M-18 and M-30. M-61 provides east-west access.

The total land area of Gladwin County consists of 507 square miles. Large portions of the total area are forested and held in public ownership as state forest lands. The highly developed areas of the county are concentrated along the M-18, M-30 and M-61 corridors. The major concentrations of population and housing are found in the cities of Beaverton and Gladwin. An increasingly important land use feature is lake and riverfront residential developments. Summer cabins and cottages are being converted into, and utilized for, year-round residences at an increasing rate.

F. POPULATION CHARACTERISTICS

Gladwin County is influenced by national trends that have short and long-term impacts. Among the major trends are:

- Declining family size.
- An increase in the median age as Baby Boomers (1946-1964) age.
- Growth in service and high tech areas rather than traditional industry and manufacturing.
- A growth shift to rural areas with increasing numbers of people commuting to urban areas or retiring to areas previously used for recreational purposes.

Historical population data for Gladwin County, and its political subdivisions reflecting net changes in the population for the past 40 years are shown in Tables I-1 and I-2. During this period, the county has consistently grown at a rate greater than the region or the state especially in terms of seasonal homes.

The county's population has grown steadily since 1990. Gladwin County's present population growth can be largely attributed to retirees moving into seasonal homes as well as the relocation of small industries into the county.

These trends distinguish the county as possessing unique attributes which attract growth. The plan identifies the major growth attractions as:

- a. The County's scenic environment with abundant lakes, streams, forests, etc.
- b. Quality of life
- c. An increasingly aging population as a result of an influx of retirees and a general aging of the population overall.

In 2002 the County had 17,431 housing units, 10,561 households and a homeownership rate of 85.7%. The median value of owner-occupied housing units was \$86,800. The total number of persons per household was 2.43.

During 1990-2000, only the City of Beaverton experienced a population decline. Since 1990 most civil divisions within the county have undergone moderate to substantial population growth. During 1990-2000, the fastest growing townships were Butman, Buckeye, Sherman and Gladwin.

G. POPULATIONS WITH UNIQUE NEEDS

According to the 2000 Census, 5,613 individuals or 22%, of the total population of Gladwin County (ages 5 and over) has a disability. The State of Michigan reports an 18 percent ratio. The U.S. Census defines a disability as “as long-lasting physical, mental or emotional condition. This condition can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning or remembering. This condition can also impede a person from being able to go outside the home alone or to work at a job or business.”

This number is significant because the 21 to 64 year old age category represents the County’s primary work force. Of the residents 65 years old or older, 41.6% are disabled. The needs of this segment of the population should be considered when plans are made for both public and private facilities. Recreation planning should pay special attention to th disabled to remain in compliance with Title II of the Americans with Disabilities Act (ADA). This act prohibits both intentional and unintentional discrimination against any individuals in all programs, activities and services provided by public entities.

H. SEASONAL POPULATION

In 2000 Michigan had 233,922 temporary residences, or 5.5 percent (5.5%) of the total housing units in the state. In 2000 seasonal, recreational or occasional use housing units in Gladwin County totaled 5,588 or 33.2 percent (33.2%) of the total housing units in the County.

In 2000, the townships of Clement, Grim, Hay and Secord all have seasonal dwelling totals exceeding fifty percent (50%) of their total dwelling counts. The bulk of the County’s seasonal dwellings are located in these townships. This suggests that the conversion of seasonal or second homes to permanent homes in retirement will require emphasis on sound planning to address the full range of the life cycle. It also suggests that a wider range of facilities, with special attention to universal access, for both young and older citizens will be needed.

All seasonal population data, at the County level, is based on information developed by the **2003-2007 Michigan Comprehensive Outdoor Recreation Plan** prepared by the Michigan Department of Natural Resources.

**TABLE I-1
HISTORICAL POPULATION DATA
GLADWIN COUNTY
1980-2000**

Unit	1980 Population	1990 Population	2000 Population	% Change 1980-2000
GLADWIN COUNTY	19,957	21,896	26,023	18.9%
MICHIGAN			9,938,444	
Beaverton Township	1,612	1,671	1,815	18.6%
Bentley Township	771	751	859	14.4%
Billings Township	2,076	2,305	2,715	17.8%
Bourret Township	315	400	471	17.7%
Buckeye Township	970	996	1,333	33.8%
Butman Township	834	1,188	1,947	63.9%
Clement Township	781	822	994	20.9%
Gladwin Township	743	916	1,044	13.9%
Grim Township	115	100	129	29.0%
Grout Township	1,542	1,626	1,869	14.9%
Hay Township	1,056	1,173	1,402	19.5%
Sage Township	2,049	2,177	2,617	20.2%
Secord Township	850	914	1,140	24.7%
Sherman Township	773	796	1,029	29.2%
Tobacco Township	1,966	2,229	2,552	14.5%
Beaverton City	1,025	1,150	1,106	-3.8%
Gladwin City	2,479	2,682	3,001	11.9%

Source: U.S. Department of Census, 2000 Census

**TABLE I-2
GLADWIN COUNTY
POPULATION PROJECTIONS 1990-2030**

	1990	2000	2010	2020	2030	Growth Rate
GLADWIN COUNTY	21,896	26,023	29,967	34,660	39,097	1.19%
Townships						
Beaverton	1,671	1,815	1,927	2,100	2,289	1.09%
Bentley	751	859	978	1,112	1,284	1.14%
Billings	2,305	2,715	3,103	3,461	3,985	1.18%
Bourret	400	471	542	633	756	1.18%
Buckeye	996	1,333	1,697	2,273	2,876	1.34%
Butman	1,188	1,947	2,793	3,412	4,099	1.64%
Clement	822	994	1,109	1,341	1,622	1.21%
Gladwin	916	1,044	1,123	1,265	1,441	1.14%
Grim	100	129	156	201	234	1.29%
Grout	1,626	1,869	2,098	2,343	2,694	1.15%
Hay	1,173	1,402	1,673	2,007	2,348	1.20%
Sage	2,177	2,617	3,005	3,497	3,978	1.20%
Secord	914	1,140	1,345	1,681	2,032	1.25%
Sherman	796	1,029	1,227	1,582	2,040	1.29%
Tobacco	2,229	2,552	2,807	3,136	3,575	1.14%
Cities						
Beaverton	1,150	1,106	1,061	1,018	977	0.96%
Gladwin	2,682	3,001	3,245	3,634	4,070	1.12%

Source: U. S. Census & ECOMPDR
Method: Linear Trend Extrapolation

I. HOUSING

Twelve percent (12%) of all houses in Gladwin County were built before 1939 and 32.51 percent were built between 1970-1980. In 1980, Gladwin County had a total of 7,159 total occupied housing units, 85 percent (85%) of which were owner-occupied. In 1990, Gladwin County had a total of 8,347 occupied, year-round households; 6,816 of which were owner-occupied (81.5%).

The total number of housing units in Gladwin County in 1990 was 14,885. Gladwin County's total number of housing units in 2000 was 16,828 or 33.2%; a slight drop. The total number of housing units in 2005 was 18,136 with a home ownership rate (in 2000) of 85.7%. The total number of occupied housing units in Gladwin County in 2000 was 10,661 with 1,508 being renter-occupied. From 1990-2000 the total number of households increased by 26.5% percent.

In the county, the City of Gladwin had approximately 95% of housing units served by public sewer. The only sewerred portion of the county's waterfront development, outside of the cities of Beaverton and Gladwin, is Sugar Springs. In 2000, there remained 122 houses in the County that still lack complete plumbing, 108 lacking complete kitchen facilities and 429 without phone service.

The median value of a Gladwin County owner-occupied housing unit in 1990 was \$42,700 as opposed to \$60,000 at the State level and \$79,100 at the national level. The median value of a Gladwin County owner-occupied housing unit in 2000 was \$86,800 as opposed to \$115,600 at the State level. The median rent in 2000 was \$395 per month. The median monthly costs for houses with a mortgage in Gladwin County in 2000 was \$751.00 per month.

The estimated median house/condo value in 2005 in Gladwin County was \$117,491 as opposed to the State of Michigan average of \$149,300. When comparing Gladwin County's housing with other areas, it must be considered that many of the housing units are small cottages which derive their value primarily from the surrounding natural amenities.

Single family new house construction building permits were:*

- 2000: 266 buildings, average cost: \$106,600
- 2001: 274 buildings, average cost: \$111,400
- 2002: 241 buildings, average cost: \$115,900
- 2003: 249 buildings, average cost: \$128,900
- 2005: 187 buildings, average cost: \$136,800
- 2006: 94 buildings, average cost: \$147,300

* Number of permits per 10,000 residents

Table I-3 details general housing characteristics for Gladwin County and its municipalities.

**TABLE I-3
GENERAL HOUSING CHARACTERISTICS
2000**

Unit of Government	Total Housing Units	Total Owner/Renter Occupied	Owner	Renter	Seasonal	Avg. HH size - Occupied Housing
GLADWIN COUNTY:	16,828*	10,561	9,053	1,508	5,588	2.85
Beaverton	750	658	582	76	56	3
Bentley	361	327	305	22	22	3
Billings	2,148	1,172	1,045	127	900	2
Bourret	516	211	190	21	289	2
Buckeye	645	495	430	65	110	3
Butman	1,482	853	801	52	584	2
Clement	1,186	471	442	29	677	2
Gladwin	419	345	314	31	56	3
Grim	123	49	43	6	70	3
Grout	754	654	578	76	64	3
Hay	1,321	601	553	48	681	2
Sage	1,526	986	898	88	483	3
Secord	1,373	551	515	36	770	2
Sherman	950	429	386	43	474	2
Tobacco	1,399	1,029	930	99	324	3
Gladwin City	1,329	1,234	767	467	18	2
Beaverton	546	496	274	222	10	2

Source: **2000 Census of Population and Housing**, U. S. Department of Commerce, Bureau of the Census

Special Note: Amish housing is considered to be included in Total Housing Units.

J. SOCIAL AND DEMOGRAPHIC CHARACTERISTICS

Gladwin County's 2000 social characteristics data by selected age group are shown in Table I-4 along with the comparable data for the state. In general, the data shows that the Gladwin County population contains similar proportions of pre-school age children (under 5 years old) and greater percentages of senior citizens than statewide averages. A review of the age data by political subdivision shows the greatest numbers of pre-school children living in Gladwin, Sage and Grout Townships and in the cities of Beaverton and Gladwin. See Table I-4.

In terms of median age, the Gladwin County average of 42.3 years exceeds the 2000 state figure of 35.5. In the townships and cities, however, the median age ranges from about 31.4 to 54 years. The youngest ages are found in the townships of Gladwin, Bentley and Beaverton.

Woman make up a slightly smaller proportion of the county population, 50.8 percent in relation to the state average of 51.5 percent. This relationship is reflected most strongly in the townships. In the cities this trend is reversed.

K. RACIAL COMPOSITION

Like many rural northern Michigan communities, there is limited racial diversity in Gladwin County. On a county-wide basis, the population is approximately 97.1 percent white, a characteristic that is also apparent in the local governmental unit structure. Although small minority populations are scattered throughout many of the local units, these generally constitute one (1) percent or less of the total population of any given municipality. Other races in Gladwin County, Michigan include: American Indian (1.2%), Two or more races (1.1%) and Hispanic at 1.0%.

Data on Gladwin County's racial composition is shown in Tables I-5 and I-6.

TABLE I-4
GLADWIN COUNTY SOCIAL CHARACTERISTICS - 1990 - 2000
by Selected Age Group

Local Unit	% Under 5 years	% 5-19 years	% 19 years & older	65 years and over	% Male	% Female	Median Age 1990	Median Age 2000	% Chg. 1990-2000
Townships:									
Beaverton	6.8	23.5	58.2	11.5	51.1	48.9	31.7	37.0	16.7
Bentley	5.9	20.4	58.6	15.0	49.4	50.6	31.5	37	17.4
Billings	4.3	16.8	61.1	17.8	49.2	50.8	39.9	45	12.7
Bourret	4.6	13.6	60.3	21.5	53.1	46.9	48.5	50	3.0
Buckeye	5.4	25.5	57.5	11.6	51.8	48.2	34.4	36	4.0
Butman	3.3	14.6	56.4	25.7	51.2	48.8	42.4	55	29.7
Clement	3.9	12.9	57.3	25.9	48.7	51.3	49.6	53	6.8
Gladwin	9.4	26.0	52.0	13.0	49.9	50.1	31.4	34	8.2
Grim	5.5	23.3	59.6	11.6	50.4	49.6	37.3	37	0.08
Grout	6.1	23.0	56.5	14.0	50.2	49.8	32.7	38	16.2
Hay	4.6	19.0	56.3	20.1	49.5	50.5	39.6	44	11.1
Sage	5.6	21.3	54.7	18.4	49.5	50.4	36.7	42	14.4
Secord	3.4	10.2	57.5	28.9	49.0	51.0	54.0	56	3.7
Sherman	4.6	18.0	58.6	18.7	52.6	47.4	41.6	46	10.5
Tobacco	5.8	19.6	59.8	14.8	50.6	49.4	35.8	41	14.5
Cities:									
Beaverton	6.8	23.3	51.5	18.4	46.6	53.4	31.7	37	16.7
Gladwin	6.6	20.8	50.6	22.0	45.1	54.9	35.5	38	7.0
Gladwin County	5.5	20.0	56.2	18.3	76.8	39.3		42.3	
Michigan									

Source: 2000 Census of Population and Housing, Michigan, U.S. Department of Commerce, Bureau of Census

**TABLE I-5
RACIAL COMPOSITION OF GLADWIN COUNTY'S TOTAL POPULATION
2000 CENSUS**

COUNTY OR MCD	TOTAL	RACE						NOT OF HISPANIC ORIGIN		
		WHITE	BLACK	INDIAN & ESKIMO	ASIAN & PACIFIC	OTHER RACES	HISPANIC ORIGIN ¹	WHITE	BLACK	OTHER RACES
GLADWIN COUNTY	26,023	25,411	35	145	74	81	249	25,256	32	10
Beaverton City	1,106	1,073	11	7	1	1	6	1,072	11	-
Beaverton Twp.	1,815	1,784	2	12	3	2	10	1,777	1	-
Bentley Twp.	859	843	-	4	1	-	6	839	-	-
Billings Twp.	2,715	2,634	3	20	2	14	40	2,607	3	5
Bourret Twp.	471	457	-	2	2	4	4	457	-	-
Buckeye Twp.	1,333	1,288	2	5	4	21	25	1,287	1	-
Butman Twp.	1,947	1,915	2	6	1	6	12	1,911	2	1
Clement Twp.	994	971	1	7	1	4	6	978	1	-
Gladwin City	3,001	2,884	7	16	32	11	45	2,853	7	-
Gladwin Twp.	1,044	1,035	4	-	-	-	1	1,034	4	-
Grim Twp.	129	125	-	-	-	4	4	125	-	-
Grout Twp.	1,869	1,833	-	16	1	1	17	1,816	-	1
Hay Twp.	1,402	1,368	-	17	1	2	14	1,356	-	-
Sage Twp.	2,617	2,539	1	20	10	7	10	2,535	-	2
Secord Twp.	1,140	1,131	1	2	3	1	7	1,126	1	-
Sherman Twp.	1,029	1,005	1	8	5	2	5	1,001	1	1
Tobacco Twp.	2,552	2,526	-	3	7	1	37	2,491	-	-

¹ Hispanic origin included with White population

Source: 2000 Census of Population & Housing, U. S. Department of Commerce, Bureau of the Census

**TABLE I-6
RACIAL COMPOSITION OF GLADWIN COUNTY'S POPULATION
2000 CENSUS -18 AND OVER**

COUNTY OR MCD	TOTAL	RACE						NOT OF HISPANIC ORIGIN		
		WHITE	BLACK	INDIAN, ESKIMO	ASIAN & PACIFIC	OTHER RACES	HISPANIC ORIGIN ¹	WHITE	BLACK	OTHER RACES
GLADWIN COUNTY	19,974	19,577	17	108	53	42	135	19,487	15	7
Beaverton City	806	792	3	5	1	1	2	792	3	-
Beaverton Twp.	1,310	1,239	-	7	3	1	5	1,285	-	-
Bentley Twp.	647	635	-	4	1	-	5	631	-	-
Billings Twp.	2,142	2,082	2	16	2	8	20	2,068	2	4
Bourret Twp.	385	377	-	2	2	1	1	377	-	-
Buckeye Twp.	962	940	2	4	3	5	6	940	1	-
Butman Twp.	1,634	1,611	1	5	1	3	8	1,608	1	-
Clement Twp.	836	816	1	6	1	4	6	814	1	-
Gladwin City	2,255	2,174	5	13	24	5	26	2,154	5	-
Gladwin Twp.	696	693	-	-	-	-	1	692	-	-
Grim Twp.	93	92	-	-	-	1	1	92	-	-
Grout Twp.	1,373	1,356	-	8	1	-	8	1,348	-	-
Hay Twp.	1,096	1,074	-	12	1	2	7	1,069	-	-
Sage Twp.	1,971	1,919	1	16	9	7	9	1,916	-	2
Secord Twp.	994	985	1	2	3	1	7	980	1	-
Sherman Twp.	810	793	1	5	2	2	4	790	1	1
Tobacco Twp.	1,964	1,949	-	3	2	1	19	1,931	-	-

¹Hispanic origin included with White Population

Source: 2000 Census of Population & Housing, U. S. Department of Commerce, Bureau of the Census

L. CIVILIAN LABOR FORCE

In the year 2000 the total work force in Gladwin County's totaled 9,300. The total number of employed persons was 8,500 and the number of unemployed persons was 800. The County had an unemployment rate of 8.6 percent. Overall employment trends, from 1997-2001 show that Gladwin County experienced a 0.9% increase in employment. The State of Michigan during that same time period experienced a 1.5% increase in employment and the nation experienced a 4.2% increase in job growth.

Workers 16 years and older amounted to 6,686 with 38.5 percent of those working outside the county. The number of individuals, 16 years and older, working from their homes totaled 5.5 percent.

In July 2002, Gladwin County had a total of 464 establishments. There were eighty-six (86) Retail Trade establishments, eighty-one (81) construction establishments and forty-six (46) manufacturing establishments. Gladwin County is primarily a rural, service and retail industry-oriented county. See Table I-7.

A breakdown of Gladwin County employers can be found in Tables I-10 and 11. As an additional employer category, Government employed 13.7 percent of the labor force in 2000.

The Michigan Economic Development Corporation, Office of Labor Market Information, has formulated predictions for occupation growth in Region 7B (Arenac, Iosco, Clare, **Gladwin**, Ogemaw and Roscommon).

The top ten fastest growing occupations² through 2008 are projected to be, in this order: Artists & Commercial Artists, Computer Support Specialists, Systems Analysts, Laborers/Landscapers/Groundskeepers, Adjustment Clerks, College & University Faculty, Hotel/Motel/Resort Desk Clerks, Medical Assistants, Electrical/Electronic Technicians and Sales Agents, Real Estate.

More than 50% of the Gladwin County workforce is employed within the boundaries of Gladwin County with 2.1% of those actually walking to their workplace. For those working outside of Gladwin County the average work commute is approximately 30 minutes with many choosing to work 45-60 minutes away. The actual percentage of residents working outside the county in 2000 was 38.5%.³

M. PER CAPITA INCOME

In 2001-2002 Michigan's median household income was \$44,239. In 2000, Gladwin County had a per capita personal income (PCPI) of \$19,690 and a median household income, in dollars, of \$32,019. The majority of the workers are private wage and salaried workers. Male full-time workers' median income in dollars was \$33,871 while female full time workers' median income in dollars was \$21,956.

N. TOTAL PERSONAL INCOME

In 2000 Gladwin County had total personal income (TPI) of \$514,095. The Counties total TPI grew 19.5% from 1997 to 2000. See Table I-8 for a breakdown of Personal Income in Gladwin County.

²Office of Labor Market information, Michigan Department of Career Development, 2003

³Gladwin County Community Needs Assessment Committee "Strong Families, Safe Children" 2003

**Table I-7
GLADWIN COUNTY
WORK FORCE BY EMPLOYMENT AREA
2001**

Sector	# of Employees	Total Establishments
Forestry, fishing, hunting and agriculture support	20-99	4
Utilities	20-99	1
Construction	372	68
Manufacturing	1,280	46
Retail Trade	890	84
Transportation & Utilities	20-99	12
Information	52	7
Finance & Insurance	133	19
Real Estate & rental & leasing	52	7
Professional, scientific & technical services	76	23
Management of companies & enterprises	100-249	3
Admin. Support, waste mgt., remediation services	20-99	14
Educational services	0-19	1
Health care and social assistance	476	31
Arts, entertainment & recreation	0-19	6
Accommodation and food services	494	45
Other services (except public administration)	226	58
Auxiliaries (exec. Corporation, subsidiary and regional management)	0-19	1
Unclassified establishments	1	7
TOTAL:	4,488	459

Source: U. S. Census Bureau, 2001 County Business Patterns (NAICS).

**Table I-8
GLADWIN COUNTY
PERSONAL INCOME (in Thousands of Dollars)
2000**

Components by Type	1997	1998	1999	2000
Personal Income	430,313	456,439	483,051	514,095
Non-farm personal income	429,522	455,755	480,734	513,169
Farm income	791	684	2,317	926
Components by Industry	1997	1998	1999	2000
Farm Earnings	791	684	2,317	926
Non-farm Earnings	153,655	149,123	158,913	168,160
Private Earnings	121,356	117,214	125,295	132,612
Ag. Serv., forestry, fishing, et al	646	0	0	0
Mining	208	0	0	0
Construction	15,702	14,927	17,189	18,670
Manufacturing	39,067	35,977	38,758	39,716
Durable Goods	35,540	31,645	29,922	31,506
Transportation and public utilities	7,319	7,704	8,170	9,131
Wholesale Trade	4,026	4,358	4,919	4,992
Retail Trade	19,734	19,512	19,225	20,192
Finance, insurance & real estate	5,437	3,648	3,887	3,890
Services	29,217	29,496	31,369	34,142
Government & government enterprises	32,299	31,909	33,618	3,554
Federal, civilian	2,310	2,405	2,606	3,212
Military	652	634	669	707
State and local	29,337	28,870	30,343	31,629

Source: U. S. Department of Commerce, Economic and Statistics Administration, Bureau of Economic Analysis, issued May 2002

**TABLE I-9
GLADWIN COUNTY
2000 EMPLOYMENT BY INDUSTRY (NUMBER OF JOBS)**

Components by Type	1997	1998	1999	2000
Total Employment	7,875	7,754	79,167	8,174
Wage and Salary Employment	5,361	5,151	5,256	5,463
Proprietor's employment	2,514	2,603	2,660	2,711
Farm employment	516	511	521	510
Non-farm Employment	7,359	7,243	7,395	7,664
Components by Industry				
Private	6,268	6,155	6,304	6,543
Ag. Serv., forestry, fishing, and other	84	0	0	0
Mining	11	0	0	0
Construction	666	629	702	728
Manufacturing	1,002	889	963	1,002
Transportation and public utilities	232	228	240	238
Wholesale Trade	179	228	240	238
Retail Trade	1,718	1,635	1,526	1,613
Finance, insurance and real estate	1,901	1,088	1,091	1,121
Services	1,902	1,088	1,091	1,121
Government and government enterprises	1,091	1,088	1,091	1,121
Federal, civilian	52	55	59	81
Military	53	50	51	51
State and Local	986	983	981	989

Source: U. S. Department of Commerce, Economic and Statistics Administration, Bureau of Economic Analysis, issued May 2002

**TABLE I-10
GLADWIN COUNTY - 2000
TOP MANUFACTURING EMPLOYERS**

SIC	FIRM	LOCATION	# EMPL.	PRODUCT
3542	Brown Machine	Beaverton	200	Thermo-forming machinery
3559	Lyle Industries, Inc.	Beaverton	140	Speciality machines, presses
3679	DURA Automotive Systems, Inc.	Gladwin	121	Brake/accelerator cable assemblies
	TLC Polyform, Inc.	Beaverton	100	Mfg. Horticultural trays & inserts
	Gladwin Co. Industries	Gladwin	90	Sheltered workshop: wood products
	Saint-Gobain Performance	Beaverton	75	Mfg. Silicone rubber products
	HPI	Coleman	70	Mfg. Processed Plastics
2882	Patter Products	Beaverton	60	Silicone rubber fabricating
3443	Gladwin Tank Mfg. Inc.	Gladwin	45	Pressure vessels & custom fabr.
3089	L&W Products	Beaverton	40	Plastic thermoform & materials
3541	Gladwin Manufacturing	Gladwin	30	Precision cutting carbide tools
3089	Cyberplast Industries, Ltd.	Beaverton	25	Horticultural trays and inserts
3089	Loose Plastics Inc.	Beaverton	25	Custom extruded plastics
3559	Modern Machinery, Inc.	Beaverton	25	Plastic thermoform machinery
3714	Howe Racing, Inc.	Beaverton	19	Racing cars & equipment
3549	Central Automated Machinery	Gladwin	15	Plastic thermoform machinery
2711	Gladwin County Record LLC	Gladwin	13	Newspaper publishing
2822	Laur Silicone Rubber Compound	Beaverton	10	Custom silicone rubber
3542	Custom Manufacturers, Inc.	Gladwin	9	Machinery, materials , handling systems
3273	Beaverton Transit Mix, Inc.	Beaverton	9	Ready-mix, steps & blocks
3544	Young Industries, Inc.	Gladwin	8	Tool & Die
3715	V-Bottom Trailer Co., Inc.	Gladwin	8	Truck trailers for gravel hauling
3272	Beaverton Security Septic Company	Beaverton	8	Septic tanks

Source: Michigan Economic Development Corporation, Office of Labor Market Information, Harris Publishing Company, 1998 Industrial Directory

**TABLE I-11
GLADWIN COUNTY
OTHER MAJOR EMPLOYERS
1998-2000**

SIC	FIRM	LOCATION	# EMPLOYEES	PRODUCT
8211	Beaverton Rural School District	Beaverton	360	School/Education
8062	Gladwin Hospital, Inc.	Gladwin	160	Health care
8058	Mid-Michigan Gladwin Pines Nursing Facility	Gladwin	140	Health care
5411	Fauchey Foods	Gladwin	125	Grocery Stores
5411	Ashcrafts Market, Inc.	Gladwin	100	Municipal offices
9111	City of Gladwin	Gladwin	100	Municipal offices
9111	County of Gladwin	Gladwin	100	Executive Offices
5812	Lost Arrow	Gladwin	79	Restaurant/Motel
8051	J & S Healthcare Systems, Inc.	Gladwin	65	Health care
5511	Graff Motor Sales, Inc.	Gladwin	58	Car Dealer
7992	Sugar Springs	Gladwin	50	(Seasonal) Golf Course
5311	Pamida	Gladwin	35	Retail store
7532	3M Collision, Inc.	Gladwin	20	Auto repair/paint services

Source: Michigan Economic Development Corporation, Local County Economic Development Contact

Within the private sector, the fastest growing employment sectors were Wholesale Trade (32.9%) followed by Transportation and public utilities (16.3%) and Finance, Insurance and Real estate at 16.2%. Construction was up 9.3% while Manufacturing remained flat (1,002 jobs in 1997 and 1002 jobs in 2000).

Within the Government and Government Enterprises categories, the fastest employment growth sector was within federal and civilian job postings.

O. PROPERTY VALUES

A review of the State Equalized Value of the County reveals a significant growth in property value especially those located along the County’s many lakes, rivers, streams and dam impoundments. The SEV is established by assessors for tax purposes, and is equivalent to half a property’s estimated market value. Table I-12 shows SEV growth in Gladwin County from 1999 - 2004. The average increase in SEV for Gladwin County over this period was 9.9%.

SEV is also a good indicator of Township property tax revenue. Township property tax revenue is dependent upon taxable value related to the SEV. Though taxable value increase at a lower rate than SEV (as it is capped by “Proposal A”), it catches up with SEV as properties change hands. Since SEV, and eventually taxable value is increasing, the County’s townships will likely expect to see similar increases in tax revenue.

**Table I-12
SEV Growth - Gladwin County
1999-2004**

	Gladwin County SEV	% Increase
1999	\$ 657,624,047	
2000	\$ 725,538,906	10.3%
2001	\$ 803,232,482	9.7%
2002	\$ 913,494,840	13.7%
2003	\$ 990,741,513	8.5%
2004	\$ 1,018,224,940	7.2%
<i>Average</i>		9.9%

Data Source: ECMPDR In-house information and Gladwin County Equalization Department

P. EDUCATIONAL ATTAINMENT, PUBLIC ASSISTANCE AND POVERTY

Of those persons 25 years or older in Gladwin County, 41.6 percent have completed high school and 14.5 percent have completed their Associates, Bachelor’s or graduate degree.

In 2000 the County had 6.8% of students with less than a 9th grade education and 15.0% of 9th to 12th grade with no diploma. Table I-13 contains a complete breakdown of Gladwin County’s Educational Attainment in the population 25 years and over.

According to the ECMPDR “High School Attainment Assessment - MEAP”, in the year 2001, all Gladwin High School scores were at or above state averages except for Social Studies. Overall it ranked 2nd out of 15 district schools and 25th out of 64 regional schools.

Gladwin County Master Plan

In the year 2003, all Gladwin High School scores dropped, three of them in double digits. Gladwin High Schools overall rank fell to 5th among 15 district schools. Also in the year 2003, out of 748 state standard tests attempted at Gladwin High School, 353 were failed for a failure rate of 47.2%, nearly half.

In the year 2001, Beaverton High School was 7th out of 15 district schools and 50th out of 73 regional schools. In 2003, Beaverton High School's ranking among 15 district schools fell to 11th. In the year 2003, out of 603 State Standard Tests attempted at Beaverton High School, 312 or 51.7% were failed, more than half.

The High School MEAP is a test of 10th grade knowledge, given in the spring of the junior year. Those who fail are given a chance to take the test again.

These educational attainment statistics are critical as the County plans for its future. Educational attainment is also a key component in the Poverty cycle in any given area.

Q. POVERTY

The federal government classifies a family of four (4) earning a combined income of \$17,050 or less as living in poverty or living below the established poverty line threshold.

In 1980, 14.7 percent of persons in Gladwin County were living in households below the poverty level. In 1993, 3,529 households each month or 14.6 percent of the total population were receiving public assistance in Gladwin County (State average is 10.9%).

In 1990, the County's total population was 21,896 with 4,381 people below the poverty level or a 65.56 change from 1980. In 1999, 17.6 percent of persons in households in Gladwin County lived below the poverty line. The State average in 1999 was 10.5 percent. (See Table I-14 Gladwin County Poverty Status - 2000).

In 2000, seven hundred ninety-seven (797) Gladwin County families or 10.4% were below the poverty rate. In families with female head of household, the percentage increased to 35.4%. The poverty rate among all individuals was 13.8%. In 2000, Michigan's overall poverty rate increased from 9.6 percent to 10.5 percent. Only four (4) states – Florida, Hawaii, Illinois and Mississippi – experienced both higher poverty and lower incomes between the two-year periods. In 2004, the number of persons in Gladwin County living below the acknowledged poverty line as \$14.0% with the State at 12.5%.

R. CRIME⁴

From 1998 through 2002, the total crime reported for Gladwin County was a fraction of the total crime in Michigan for 2002 alone. The highest incidents of crime in Gladwin County are burglary, larceny and aggravated assault. See Table I-15 for details.

⁴Gladwin County Community Needs Assessment Committee "Strong Families, Safe Children" 2003

**Table I-13
GLADWIN COUNTY
EDUCATIONAL ATTAINMENT
Population 25 years and over
2000**

Educational Attainment	Number	Percent
Population 25 years and over	18,308	100.0%
Less than 9 th grade	1,236	6.8%
9 th to 12 th grade, no degree	2,742	15.0%
High School Graduate (includes equivalency)	7,609	41.6%
Some college, no degree	4,008	21.9%
Associate degree	1,032	5.6%
Bachelor's degree	1,160	6.3%
Graduate or professional degree	521	2.8%
Percent of high school graduates or higher	78.3%	NA
Percent bachelor's degree or higher	9.2%	NA

Source: Bureau of the Census, 2000 Census

**Table I-14
GLADWIN COUNTY
POVERTY STATUS
2000**

Subject	# Below Poverty Level	% Below Poverty Level
FAMILIES	797	10.4%
With related children under 18 years	555	17.9%
With related children under 5 years	218	20.5%
Families with female head of household	297	35.4%
With related children under 18 years	275	47.1%
With related children under 5 years	106	62.4%
Individuals	3,544	13.8%
18 years and over	2,354	11.9%
65 years and over	335	7.3%
Related children under 18 years	1,150	19.4%
Related children under 5 years	845	18.8%
Unrelated individuals 15 years and over	970	24.8%

Source: U. S. Bureau of the Census, Table DP-3. Profile of Selected Economic Characteristics: 2000, US Census 2000

**TABLE I-15
GLADWIN COUNTY
CRIME STATISTICS
1998 - 2002**

Crime	1998	1999	2000	2001	2002	5-year Total	State 2002 Total
Murder	0	5	0	0	0	5	619
Rape	3	6	9	4	3	25	1,124
Robbery	4	0	0	1	0	5	2,617
Aggravated Assault	21	31	19	27	36	134	12,965
Burglary	70	89	25	23	41	248	6,632
Larceny	28	44	67	66	57	262	26,659
Car Theft	3	4	9	6	17	39	2,410
Arson	6	4	4	1	1	16	454
Index Total	135	183	133	128	155	734	53,480

Source: U. S. Census Bureau



CHAPTER II

ENVIRONMENTAL FEATURES

CHAPTER II

ENVIRONMENTAL FEATURES

A. INTRODUCTION

Since 2000, Gladwin County has seen modest development with most of the development occurring as a result of the County's attraction as a resort/recreation area. To maintain the quality and character of Gladwin County, environmental constraints must be respected when development occurs .

In addition, the County has taken steps to ensure that proper hazard mitigation planning measures have been put into place. Gladwin County does have a FEMA-approved Hazard Mitigation Plan which maintains the County's eligibility to receive Hazard Mitigation Planning Grant funds in the event of a disaster.

B. GEOLOGY AND TOPOGRAPHY

1. Surface and Sub-surface Geology

Gladwin County lies on the northwestern edge of an area in east central Michigan that was profoundly influenced by inundation from a large, post-glacial lake as recently as 10,000 years ago. As a result, all but the northwestern corner of the county exhibits topographic features characteristic of lacustrine environments, including relatively flat terrain and surface soils derived primarily from clay and silt parent materials.

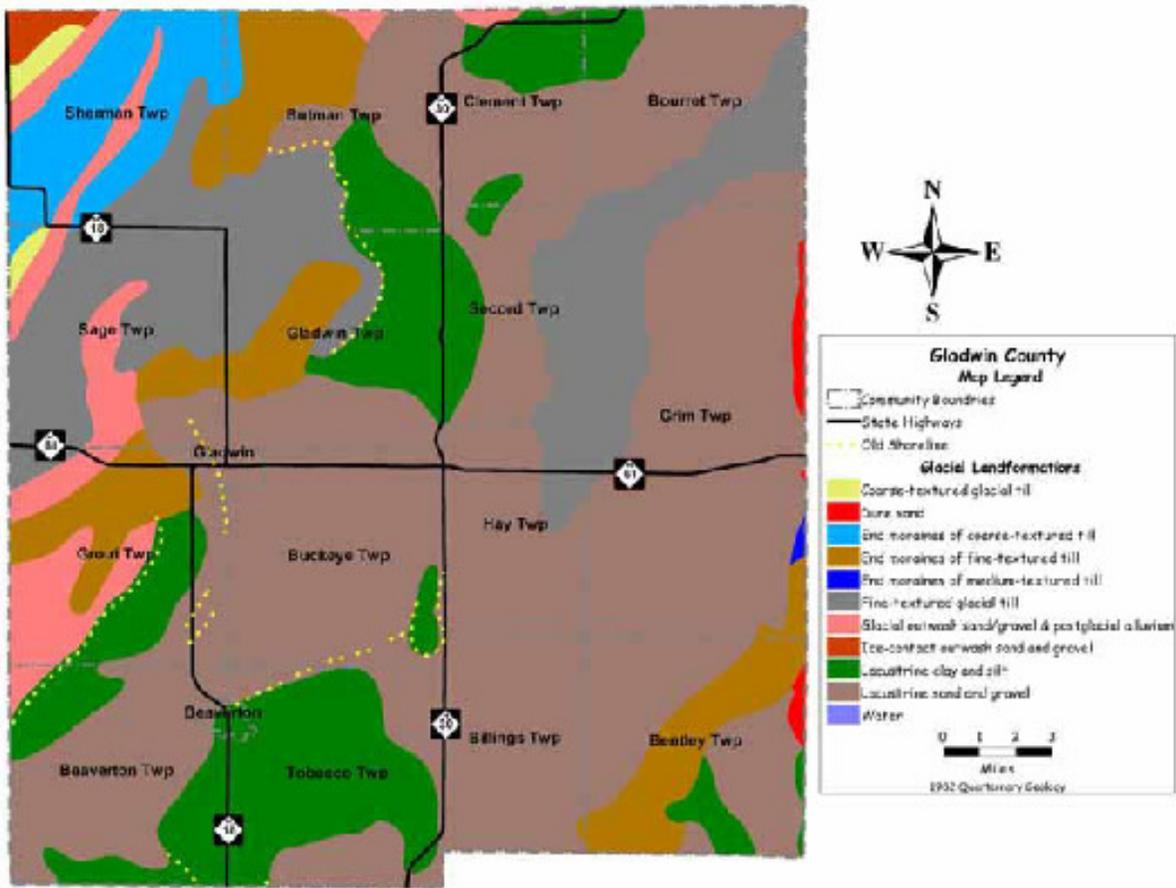
The northwestern corner of the county is characterized by glacial moraines and other surface features more typical of northern Michigan, with gently rolling to steeply sloping terrain and soils derived from sandy and stony parent materials.

The glacial features described above consist of deposited sediments known as glacial drift. The term "drift" encompasses a wide range of materials, from finely sorted clays, silts, and sands to relatively unsorted agglomerations of materials ranging in size up to large boulders. The nature of glacial drift played a critical role in determining the characteristics of the surface soils in Gladwin County. The thickness of the glacial drift in the county, expressed as the depth of the material to the first bedrock layer, ranges from a minimum of 51 feet in the eastern half of the county to as much as 400 feet in the extreme northwestern corner. Gladwin County's glacial drift covers bedrock strata belonging primarily to two formations; the *Pennsylvanian* and *Mississippian*.

Pennsylvanian age rock strata are geologically the youngest formations found in the mid-Michigan area, having been laid down approximately 300 million years ago. Within Gladwin County's borders *Pennsylvanian* age rocks belong to the *Saginaw and Grand River Formations*, sub-units consisting of sedimentary rock such as shales, siltstones, sandstones, and a few minor coal deposits. *Pennsylvanian age* rocks underlay over 90 percent of the county.

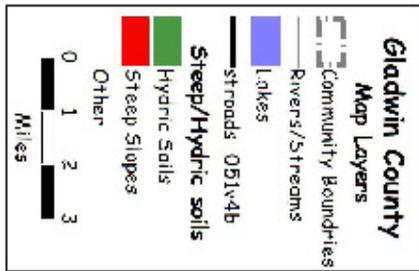
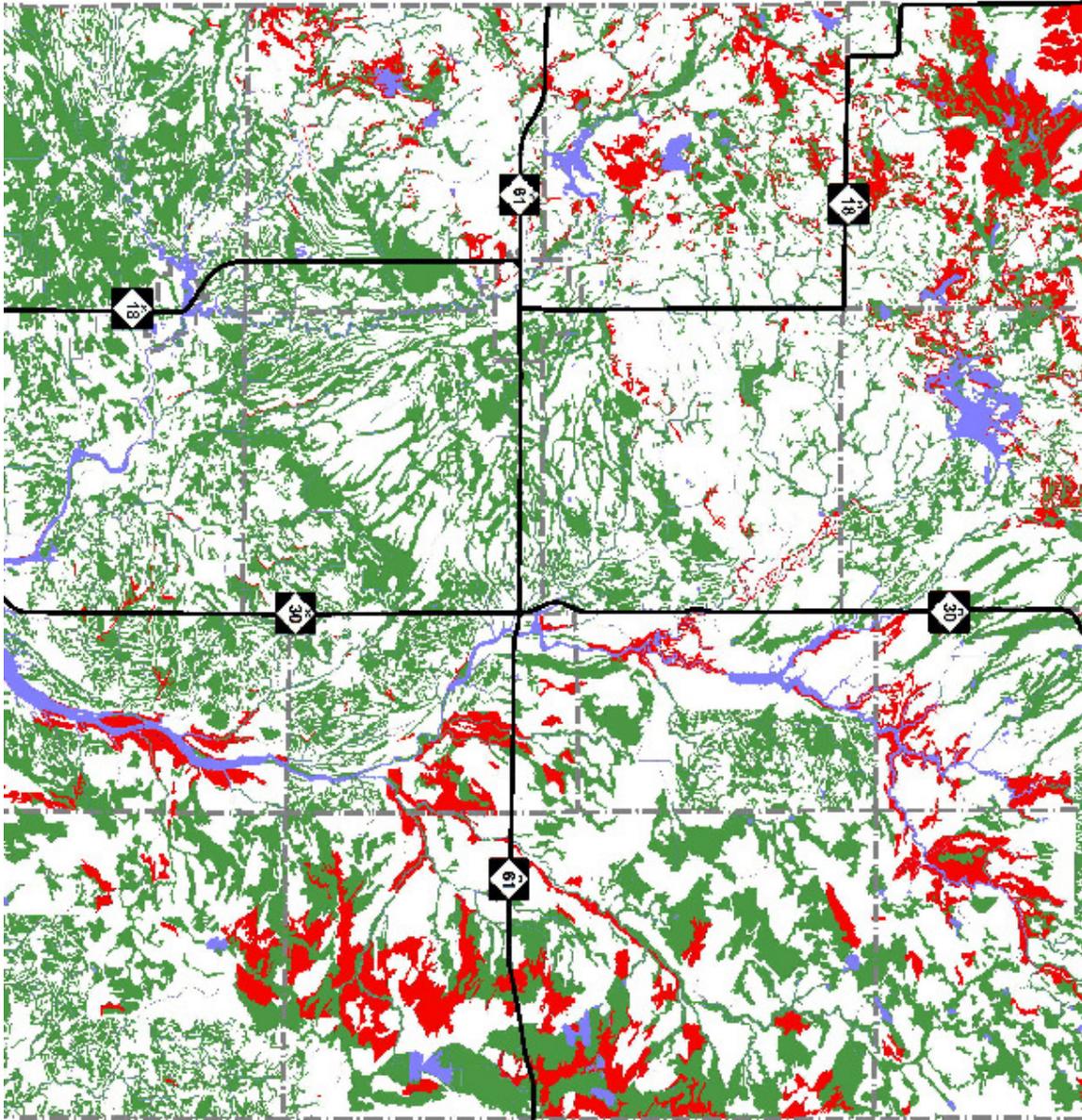
Mississippian age strata underlay only a minor portion of extreme northeastern Gladwin County. These strata belong to the Marshall Sandstone and Coldwater Shale Formation which are between 330 and 350 million years ago. As a result of Gladwin County's glacial history, most of the topography, with the exception of the moraine systems in the northwestern townships, is relatively flat. Surface elevations range from approximately 700 feet above sea level in the southeast corner of the county to over 1,100 feet in the extreme northwestern corner.

Figure II-1



Glacial Land Formations

Figure II-2
Steep/Hydric Soils



2. Geography and Topography

All soils and topographic features in Gladwin County are the direct result of glaciers that covered Michigan at various times. The most characteristic features resulting from glacial activity are moraines, lakes, tills and outwash plains. Agricultural activity in the county is influenced by the type of terrain. Lake plains in the south central area are utilized primarily for cash crops whereas the low rolling hills in the north and western portion of the county are utilized primarily for grassland, dairy and beef production.

A well-defined system of rivers and streams from the north and west generally drains south and east. All of Gladwin County lies within the Tittabawassee River Basin. Other significant rivers in the county are the Molasses, Tobacco, Cedar, and the Sugar. Many river basins are deep and dam fills have been installed at Edenville, Smallwood, Secord, Beaverton and Chappel. These dams have created sizeable lakes around which both summer and year-round residences have developed. There are over 470 linear miles of rivers, streams and waterways in the county with just over two percent (2%) of the county's area being surface water.

3. Slope

Another developmental determinant is slope. Slope is the ratio of height vs. horizontal distance. When the amount of slope exceeds 15 percent development and construction is difficult and expensive, erosion is increased, and on-site water treatment poses a greater threat to surface water quality. Gladwin County, fortunately, has few areas where excessive slope presents a significant problem.

C. SOILS

The Soil Conservation Service (SCS) has developed detailed soils data for Gladwin County. This information is presented in the [Gladwin County Soil Survey \(USDA\)](#).

The importance of this information in land use decision-making cannot be over-emphasized. Such information can be applied in managing farms and woodlands; selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry and recreation.

This document will not reproduce the detailed information contained in the Gladwin County Soil Survey. Instead, the Survey is incorporated as part of the Comprehensive Plan by this reference.

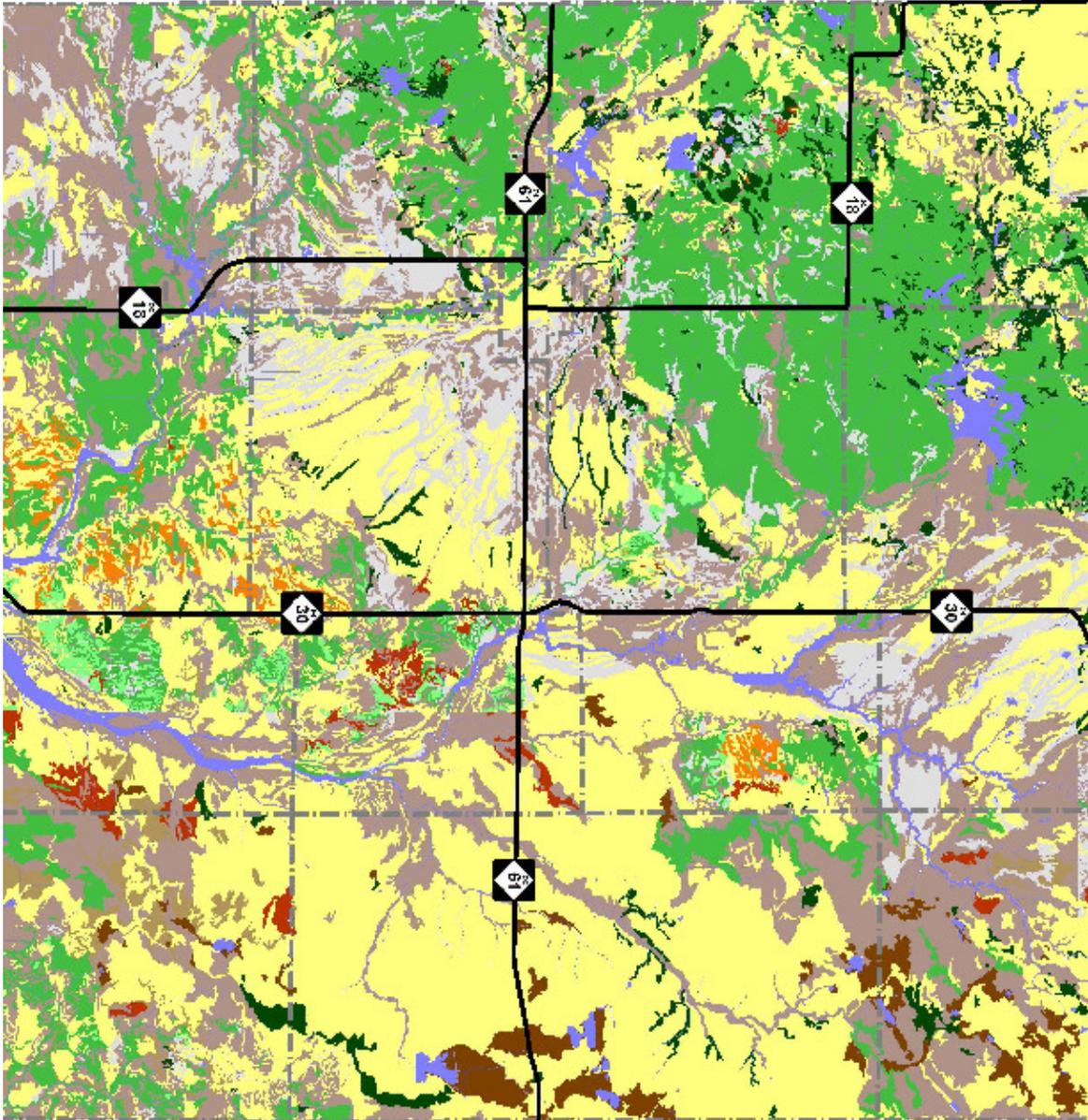
Soil suitability for land use is primarily determined by soil composition, permeability, drainage characteristics, susceptibility to erosion and depth to bedrock. To avoid problems such as groundwater contamination, buckling and shifting of foundations and roads, severe erosion and the loss of important agricultural land, the suitability of the soil for all land uses must be assessed.

The structure and behavior of soils are very important to nearly every aspect of development. Stability, permeability, slope, depth, drainage, chemistry, fertility, and wetness, among others, all bear on the suitability of land for particular uses. Knowledge of soils is elemental to environmentally sound growth.

1. Soil Associations

General soil associations are presented for planning purposes only; soil types can vary widely within soil associations and site investigations will be necessary for virtually any specific use planned for any given parcel of land. See Figure II-7 for Soil Association map.

Figure II-3 Soil Texture



Gladwin County

Map Layers

- Community Boundaries
- Rivers/Streams
- Lakes
- Streets OS1v4b

Soil Texture

- fine sand
- loam
- loamy sand
- muck
- mucky sand
- sand
- sandy loam
- silt loam
- silty clay loam
- very fine sandy loam
- Other

0 1 2 3 Miles



Gladwin County soils reflect a combined influence of geologic history of the area and the climate. Soils in the county span a wide spectrum of textural and drainage characteristics, from sandy, well drained soils to clay, very poorly drained soils. Generally soils in the eastern and southern sections of the county are derived from lake bed sediments and are fine textured and poorly drained, while soils in the northern and western portions of the county are rolling to steeply sloping, coarser in texture and moderately well drained to well drained. The soil associates described below conform to the more current soil association nomenclature used virtually everywhere in the state.

Soil associations are very general descriptions of a county's pedology and should be verified in the field. The fourteen (14) soil associations in Gladwin County are: (1) *Iosco-Brevort*; (2) *Allendale-Pickford-Pinconning*; (3) *Iosco-Brevort-Kawkawlin*; (4) *Iosco-AuGres-Ingolls*; (5) *Rubicon-Ocqueoc-Ingalls*; (6) *Croswell-AuGres-Rubicon*; (7) *Mancelona-Gladwin*; (8) *Chelsea-Rubicon-Montcalm*; (9) *Nester-Kawkawlin-Sims*; (10) *Sims*; (11) *Nester-Kawkawlin-Iosco*; (12) *Uby-Brimley-Bruce*; (13) *Hettinger-Bowers-Iosco*; and (14) *Roscommon-Carbondale*.

2. Soil Characteristics for Development

The information available on Gladwin County's soils was used to find their strengths and weaknesses for different types of development. It should be noted that information on soils in Gladwin County is by **major soil group**. Therefore, individual soils should be examined on a project by project basis to determine actual site conditions. To present a general overview of strengths and weaknesses of soil for development in Gladwin County, the subject is divided generically in the following types of development.

3. Soils for Residential Development

To assess the ability of Gladwin County's soils to support residential development, the following variables must be considered: degree of wetness or dryness, flood potential, slope, erosiveness, vegetative capability, depth to water table, shrink-swell potential (during wetting and drying), soil texture, and permeability (rate and time for downward movement of water).

4. Soils for Light Industrial and Commercial Use

Soil characteristics that influence the development of light industrial and commercial buildings are: bearing capacity, shrink-swell potential, liquification, piping compressibility, quality of foundation material for footings, its volume change under a load, water table, flooding and erosion problems.

5. Soils for Highways and Streets

Characteristics used to rate soils for highways and streets are: bearing capacity, whether or not it is subject to frost heave, erosiveness, water table, shrink-swell potential, quality of material for subgrade, its volume change under load, drainage and its erosive potential.

6. Soils for Landfill Siting

The secure disposal of solid waste products from residential, commercial and industrial sources in well designed and properly located landfills is an important consideration for public health and the quality of surface and groundwater in Gladwin County. A detailed discussion of soil traits amenable to landfill construction is not within the scope of this document, however, a generically suitable site would probably exhibit deep clay soils, good drainage, low infiltration, level to flat terrain, a great depth to the water table, good vegetative capability, and remoteness from surface waters and floodplains.

7. Soils for Agricultural Use

The soils best suited for agricultural activity are located in the western half of the county. These soils are generally good and require a minimum amount of drainage. Soils in the eastern half of the county are generally poorly drained and are sandy in nature. Wet and sandy conditions are favorable for forested areas. A large percentage of the land in the eastern half of the county consists of the Tittabawassee State Forest. The number of farms in Gladwin County has increased while the average size has decreased.

**TABLE II-1
SOIL ASSOCIATION BREAKDOWN**

Map Unit	Soil Association	Soil Series Included	Characteristics	% of County land area covered
1	Iosco-Brevort: Sandy and loamy soils on Lake Plains.	Croswell, Epoufette, Sims, Gladwin and Mancelona	Drainage somewhat poor to poor. Slope ranges from 0% to 25%.	20%
2	Allendale-Pickford-Pinconning: Sandy and loamy soils on Lake plains.	Rubicon, Croswell	Drainage somewhat poor to very poor. Slope range from 0% to 25%.	7%
3	Iosco-Brevort-Kawkawlin: Sandy and loamy soils on Lake plains.	AuGres, Roscommon, Rubicon	Drainage somewhat poor to very poor. Slopes range from 0% to 25%	5%
4	Iosco-AuGres-Ingalls: Sandy and loamy soils on lake plains.	Croswell, Menominee, Quebec	Drainage somewhat poor. Slopes ranges from 0% to 14%	3%
5	Rubicon-Oqueoc-Ingalls: Sandy and loamy soils on Lake plains.	Menominee, Iosco, Burleigh, Brevort	Drainage very good to somewhat poor. Slopes range from 0% to 14%	5%
6	Croswell-AuGres-Rubicon: Sandy soils on Lake plains, outwash plains, and moraines	Chelsea, Deford, Grayling, Kinross, Roscommon, Wainola, Rousseau	Drainage very good to somewhat poor. Slopes range from 0% to 18%	24%
7	Mancelona-Gladwin: Sandy soils on Lake plains, outwash plains and moraines	Chelsea, Epoufette, Montcalm	Drainage very good to somewhat poor. Slopes range from 0% to 25%	3%
8	Chelsea-Rubicon-Montcalm: Sandy soils on Lake plains, outwash plains, and moraines	AuGres, Epoufette, Tawas	Drainage very good, slopes range from 05 to 25%. Generally hilly.	3%
9	Nester-Kawkawlin-Sims: Loamy soils on Lake plains and till plains	Belding, Cohoctah, Menominee, Ubyly	Drainage very good to very poor. Slopes range from 0% to 30%	6%
10	Sims: Loamy soils on Lake plains and till plains	Iosco	Drainage poor to very poor. Slopes range from 0% to 6%	2%

TABLE II-1
SOIL ASSOCIATION BREAKDOWN
 page 2

Map Unit	Soil Association	Soil Series Included	Characteristics	% of County land area covered
11	Nester-Kawkawlin-Iosco: Loamy and sandy soils on moraines.	Breckenridge, Montcalm, Rubicon, Sims	Drainage very good to somewhat poor. Slope ranges from 0% to 30%. Generally hilly	11%
12	Ubyly-Brimley-Bruce: Loamy soils on Lake plains	Burleigh, Deford, Wainola	Drainage somewhat poor to very poor. Slope range from 0% to 12%.	1%
13	Hettinger-Bowers-Iosco: Loamy soils on Lake plains	Brevort, Bruce, Menominee, Pickford	Drainage somewhat poor to very poor. Slopes range from 0% to 14%	5%
14	Roscommon-Carbondale: Mucky and sandy soils on Lake plains.	AuGres, Brevort	Drainage very poor. Slopes range from 0% to 2%.	5%

D. SURFACE WATER & GROUNDWATER RESOURCES

Adequate supplies of both surface and ground water is one of the most important elements in shaping the land use patterns in the county. Their importance to recreation, residences, agriculture, wildlife, commerce, and industry cannot be overemphasized.

The continuing need for adequate amounts of good quality water is of prime importance to the future growth of Gladwin County. Existing sources of potable water must be protected to supply the needs and ensure the health of a growing population.

Drainage patterns are an important consideration for future development in Gladwin County. The effects of relatively impermeable urban and suburban areas on runoff generation and water quality, and the consequences of dams, dikes and diversions on flow rates, ground water levels and wetlands are issues which should be addressed before construction begins.

Most of Gladwin County falls within the Saginaw River drainage basin and is drained primarily by the Tittabawassee River and its tributaries. Minor portions of the eastern border of the county are drained by the Pine and Kawkawlin River systems, both of which drain directly into the Saginaw Bay. Surface water quality

is generally good, and several large impoundments on the Tittabawassee River system provide recreational opportunities and are popular locations for seasonal home developments.

Several streams, most notably the Upper Cedar and Sugar Rivers, are high quality cold water streams which provide a popular fishery.

Groundwater is critical in Gladwin County because virtually all domestic supplies in the county are derived from groundwater sources, either from private or municipal wells, from groundwater sources. Groundwater may be present in the unconsolidated glacial drift or within porous bedrock materials. Both situations exist in Gladwin County and local groundwater conditions may exhibit extreme variability across the county. Glacial materials vary considerably in their ability to hold significant supplies of groundwater, however, most of the county enjoys ample supplies of relatively high quality groundwater contained within the glacial drift.

Bedrock groundwater sources are rarely used in Gladwin County, although they are available throughout the county. The high cost of tapping bedrock sources and the availability of adequate supplies of glacial groundwater make bedrock sources less attractive to potential users, and fewer than 10 percent of all wells in Gladwin County utilize bedrock sources

A major consideration to any type of development; i.e., residential development, solid waste management and septic/sewer system placement development is the vulnerability of groundwater sources to contamination from surficial sources. Most groundwater resources in Gladwin County are relatively invulnerable to surface contamination, due primarily to the presence of thick, impermeable clay layers overlying water-bearing glacial deposits or rock strata. The aquifer consists of gravel, sand or sandstone. In some areas, it is at or near the surface; in others, these materials are up to 200 feet deep. However, several significant areas within the county are classified as high vulnerability areas. Such aquifers are subject to contamination by effluent from septic tank disposal fields and confined livestock facilities, agricultural chemicals, leaking fuel tanks and landfills.

Gladwin County Master Plan

Soil is one of nature's greatest water purifiers, however, soil has its limitations. If contaminants are introduced into the soil too rapidly, its purifying effect will be reduced. In addition, soils differ in the capacity to assimilate waste effluents. Great care must be taken in the location and development of water supply systems as well as in the placement and operation of potential contaminant sources. Detailed site investigations prior to any development would determine aquifer vulnerability at any particular site.

Since September 11, 2001 it is no longer possible to access Act 307 Michigan Sites of Environmental Contamination listings, however, in 1993 there were thirty-six (36) Gladwin County sites listed on the Act 307 list. In each case, groundwater quality has been impaired to the point of contamination or threatened water supplies.

1. Flood Risk Areas

In Michigan, flood plains and wetland issues are covered by the Goemaere-Anderson Wetland Protection Act of 1979 which restricts their use to certain activities while allowing other activities only by permit. The Act is administered by the Michigan Department of Natural Resources.

Figure II-4
Gladwin County Wetlands

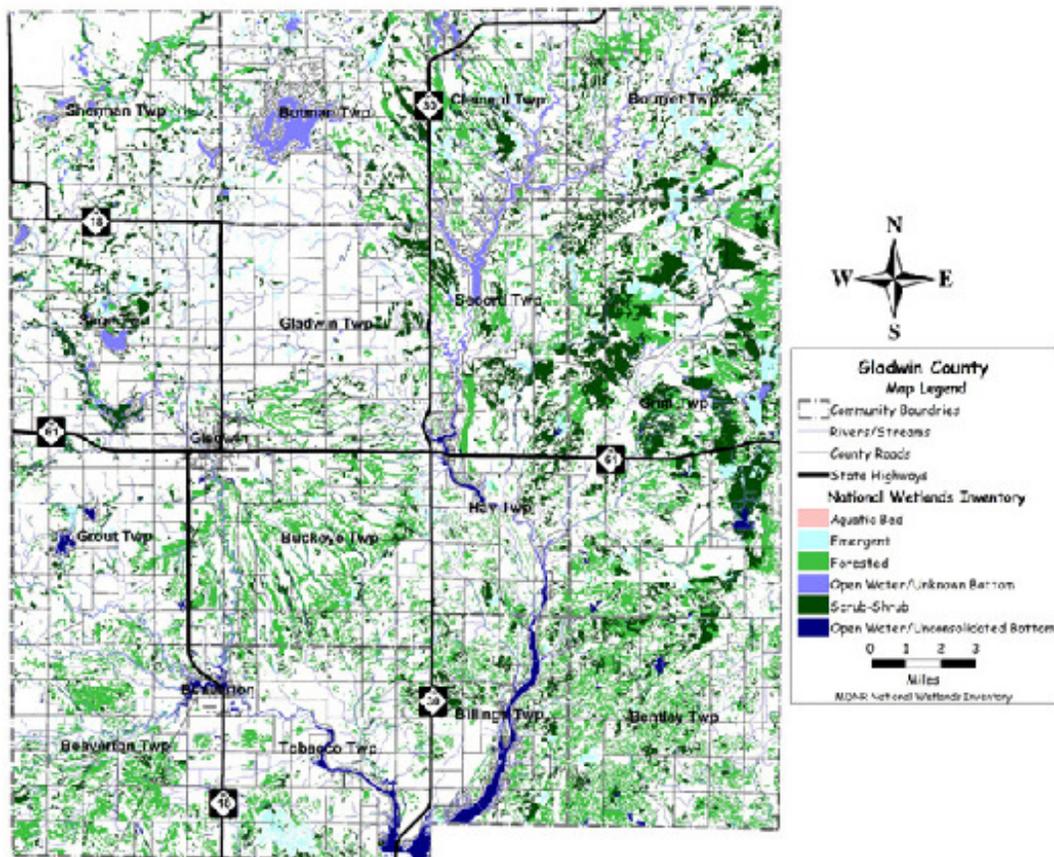
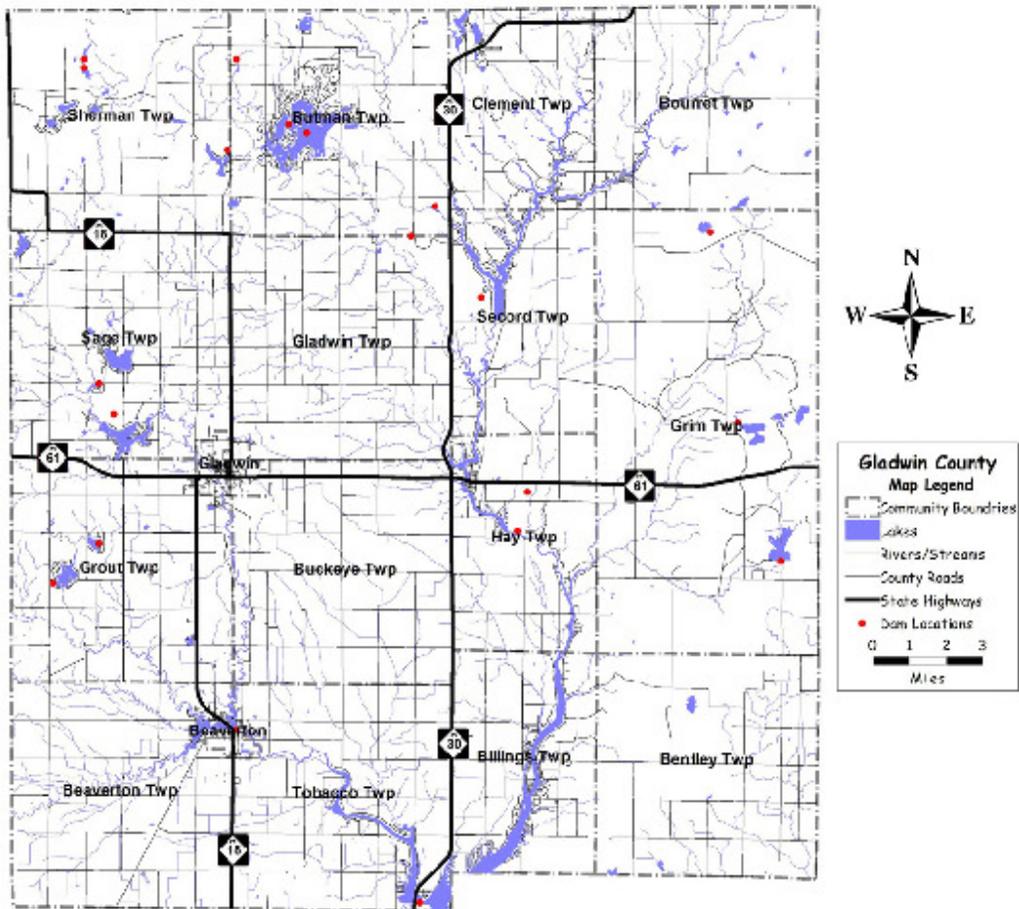


Figure II-5 - Gladwin County Waterways



E. CLIMATE

Gladwin County enjoys a relative mild continental climate which is moderated by the proximity of the Great Lakes (SCS, 1972).

1. Temperature

Temperatures in Gladwin County are generally warmer in winter and cooler in summer than those of areas of similar latitude in the western part of the state. The average daily maximum temperature in July, the warmest month, is 82 degrees F, while the average daily minimum in the coldest month, January, is approximately 12 degrees F. Extreme temperatures on record at Gladwin are a high of 105 degrees and a low of -36 degrees, recorded in 1936 and 1929, respectively.

2. Precipitation

Average precipitation for Gladwin County stands at 30.48 inches per year, with most occurring as rainfall between April 1 and September 30. Snowfall averages slightly less than 44 inches per year but is subject to wide variations from year to year. Prevailing winds are from the southwest and are generally strongest in March.

F. FOREST COVER

The eastern portion of Gladwin County is heavily forested (175,233 acres), therefore, good management of the county's public forest cover is essential. Large portions of the County's forests are held by State ownership. The multiple use concept of forestry offers raw material for the pulp, bolt, and saw log industry, a good environment for the ever-burgeoning recreation industry, the improvement of habitat for wildlife and enhancement of the many natural functions of forests which bear on environmental quality.

Of 330,200 acres of land in Gladwin County, 175,200 acres (69.67%) are forested; 86,469 acres of which are classified as state recreation lands (26.3%).

In planning for future forest management in Gladwin County, the pressures that human populations put on forest land must be recognized. Small land holdings and subdivisions will be used more for vacation homes. Their rate of construction will depend upon the controls applied. More streets, roads and highways will be built that will reduce forest cover. The setting aside of tracts of forest lands, where no development is contemplated, should also be a consideration in the land use decision making process for Gladwin County.

G. LAND USE

Land use planning or a lack of same consistently ranks as one of the most difficult issues facing many county and township governments. The focus of most planning efforts is the provision of economic development and public services which generally results in a lack of consistent implementation of those land use policies and regulations defined within local comprehensive plans.

The eastern portion of Gladwin County consists primarily of public forest lands with residential concentrations around recreational lakes. The western portion of the county is comprised primarily of agricultural lands. Urbanized areas are centered around the cities of Beaverton and Gladwin with scattered commercial and industrial development along M-18, M-30 and M-61 corridors. There are no metropolitan areas within Gladwin County.

Gladwin County Master Plan

Gladwin County’s general land use, as detailed by MIRIS, is broken down as follows:

Total Areas:	330,240 acres
Water Areas:	6,848 acres
Land Surfaces:	323,392 acres
State Forest:	85,732 acres
Publicly or privately owned forest land	186,900 acres
Public recreation land	86,470 acres
Number of inland lakes >50 acres in size	7,294

A map is attached detailing Gladwin County’s current land use. Also see Appendices for complete inventory of selected recreation and tourism resources in Gladwin County.

The majority of development in Gladwin County is in the communities of Gladwin and Beaverton. Urbanized areas take up approximately 2.3 percent of the County’s land area. The development is also centered along the County’s major highway corridors, rivers and lakeshores and involves second home/cottages and tourist/resort attractions.

Approximately 53.1 percent of Gladwin County is forested. Much of this land is held in the Tittabawassee State Forest. These land holdings represent significant recreational resources for the County. Inland waters and wetlands comprise 8.7 percent of the County’s surface.

Agriculture uses account for approximately one-fifth of the land use in the County. Table II-2 and Figure II-3 present general overviews of land use in the County.

The County’s work on updating their Zoning Ordinance relative to land use will need to ultimately be a part of the County’s Comprehensive plan.

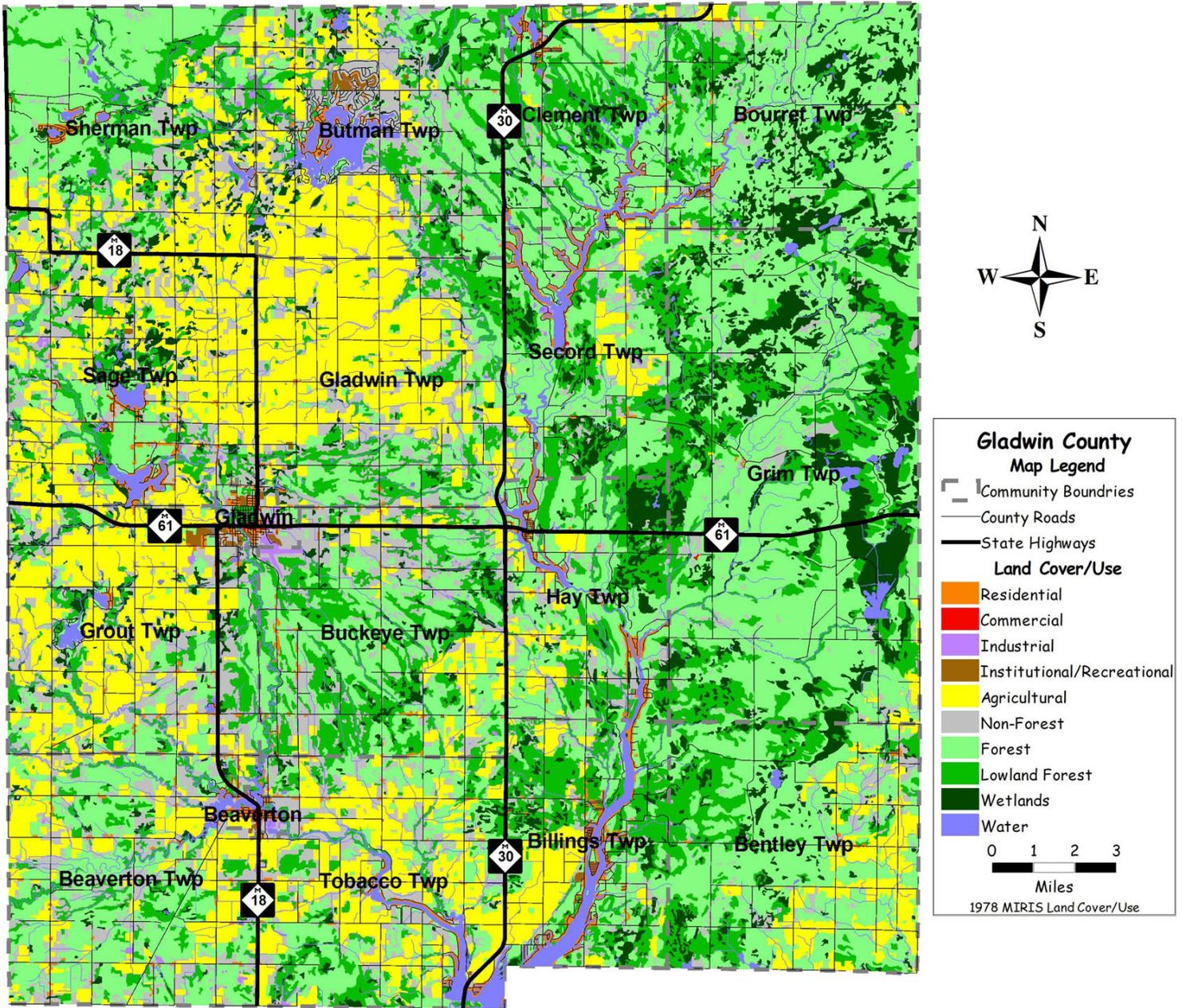
**Table II-2
Gladwin County Land Use**

Category	Acreage	% of County
Agriculture	67,698	20.5
Forest	175,233	53.1
Wetland	28,863	8.7
Urban	7,745	2.3
Other ⁵	50,694	15.4
Total	330,233	100.0

⁵

Includes: Transitional, Recreation, Extractive, Transportation, Institutional and Miscellaneous.

Figure II-6
Existing Land Use





CHAPTER III COMMUNITY FACILITIES

CHAPTER III

COMMUNITY FACILITIES

A. INTRODUCTION

Community facilities are those generally regarded as infrastructure (sewer and water facilities, etc.), police and fire protection, school buildings and other physical structures or services that are provided for directly by a unit of government. Community facilities can also include human services, private business facilities as well as civic and religious facilities. With changing federal roles and diminishing resources, many local units of government today find themselves unable to provide for the expected broad range of public services on an individual basis.

B. PUBLIC SAFETY

1. Police Protection

There is a State Police Post Branch in Gladwin County located in the City of Gladwin. There are two (2) local police departments in the county that have certified officers with the power to arrest. The County jail is the only lock-up facility in the county and is used by local police departments.

2. Fire Protection

All units of government within Gladwin County depend on volunteer fire departments. In addition the County has an unwritten/mutual aid policy with all surrounding out-of-county fire districts and all fire districts are included in the E-911 system.

3. Emergency Operations Plan

Gladwin County has an official Emergency Operations Plan in effect. The County also has developed a Hazard Mitigation Plan developed in order to remain eligible to receive Disaster Funds through FEMA. This County has an Office of Emergency Management and an Emergency Management Director.

C. UTILITIES, SEWER & WATER

Consumers Power Company supplies most of the county with natural gas and electricity. Michigan Consolidated Gas Company serves Butman and Sherman Townships. Ameritech (SBC) provides all telephone service.

Both the City of Gladwin and the City of Beaverton provide water and sewer service to city residents utilizing a municipal well-based system.

D. INDUSTRIAL FACILITIES

Gladwin County has two (2) industrial parks; one in the City of Gladwin and one in the City of Beaverton. The Gladwin Industrial Park is State-certified and located on 80 acres in the city. The park has paved roads, city water, sewer and underground utilities. Fire protection is available within the park.

The Beaverton Industrial Development Corporation operates an industrial park within the City of Beaverton. This park is served by city water, sewer and the street is paved.

Gladwin County Master Plan

Manufacturing within Gladwin County covers a broad spectrum with strong emphasis on plastic materials and plastic machinery, metal processing and fabrication; general machine shop and speciality manufacturing. The labor force within the county is considered highly skilled.

E. SOLID WASTE MANAGEMENT

The County has a Solid Waste Management Plan certified by the Michigan Department of Natural Resources. Most of the solid waste produced in Gladwin County is collected by private waste haulers and transported to landfills or are transported by individual residents or business owners. The County has reciprocal agreements with the counties of Bay, Crawford and Clare for the export of solid waste.

Currently there are two (2) main private waste haulers operating in Gladwin County. City Management serves Bentley Township and the City of Beaverton from their Midland operation. Lake Disposal serves several townships in southwestern Gladwin County and City Management Company, located in West Branch, serves as the major provider of waste pickup services to both residential and commercial customers in the County. There are no solid waste transfer stations or licensed solid waste disposal facilities operating in Gladwin County at this time.

F. EDUCATIONAL FACILITIES

There are two schools districts serving the majority of Gladwin County residents; The Beaverton Rural Schools and the Gladwin Community Schools. There are four (4) private schools in Gladwin County; Christian Word Center, Sacred Heart School, Skeels Northern Christian School and the Charter school Creative Learning Academy.

Limited vocational training is offered at both high schools. Advanced vocational training can be obtained from Mid-Michigan Community College in Harrison and Kirtland Community College in Roscommon and Delta College, University Center, Michigan. Adult education classes are offered throughout the County in area schools.

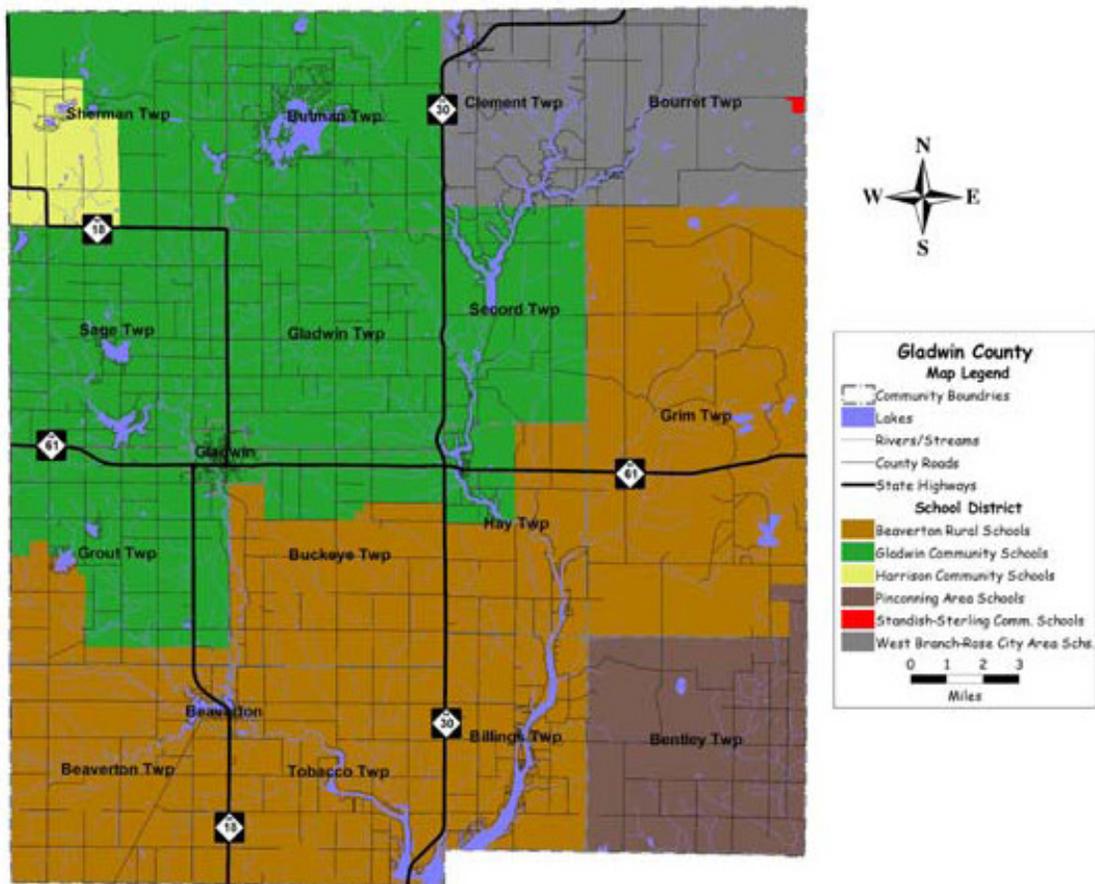
Four year colleges, within commuting distance of the County, are Northwood Institute in Midland, Saginaw Valley State University in Saginaw, Central Michigan University in Mount Pleasant and Ferris State College in Big Rapids.

G. CULTURAL FACILITIES

Library services for Gladwin County are provided by the Gladwin County Library. Services are also provided to the City of Beaverton by the Beaverton Branch of the library. The Gladwin City Council of the Arts operates a community art center, outdoor amphitheater and other related art programs. There are thirty-nine (39) churches in Gladwin County. The nearest synagogue is in Midland.

The Gladwin County Historical Society has established a museum in which donated historical items related to the County and its history are displayed. The museum is housed in the Michigan Central Railroad Depot built in 1912.

Figure III-1 - School Districts



H. RECREATION FACILITIES

Gladwin County is a prime recreation area in the State and has extensive recreation facilities. There are several beautiful inland lakes, and other water courses are available for recreational use. Thousands of acres of state lands are available for public usage. Approximately 26.3 percent (26.3%) of Gladwin County is represented by State lands.

Given the location and natural amenities of Gladwin County, the area supports several types of recreational activities including cross-country skiing, snowmobiling, fishing, boating, hiking, horseback riding, camping, and color tours. There are many miles of snowmobile trails in the Gladwin Refuge and Field Trail Area. Gladwin County also ranks high in recreational hunting opportunities with over 83,000 acres of land available for these pursuits. MDNR estimates of the deer herd in Gladwin County have been expanded to 50+ per mile.

The County also has an MDNR-approved Recreation Plan. The County has four (4) parks, a state of the art Sports Complex located in the City of Gladwin and a multi-purpose County-owned area known as the Gladwin County Recreation Area. There are activities available year-round for visitors and residents alike.

Gladwin County offers a large number of lakes, rivers and others water bodies which have recreational facilities located in the County can be found in the Appendices. For a complete inventory of all recreation facilities, see the *Gladwin County Recreation Plan, (ECMPDR 2003)*.

I. HEALTH FACILITIES

The County is served by the Mid-Michigan Regional Medical Center-Gladwin and is fully accredited by the Joint Commission on Accreditation of Healthcare Organizations.

The medical center is a 42-bed acute care facility with ten (10) physicians (MD's and DO's). The nearest largest medical center in Midland is 35 miles away.

There are two extended care facilities in the county. There are also a number of dentists, optometric centers, chiropractors and other medical services available to residents.

J. HUMAN SERVICES

Several youth programs exist in the county including Mid-Michigan Big Brothers and Big Sisters of Clare-Gladwin area, Beaverton Youth Recreation Program, Girl Scouts, Gladwin Little League, and Scouting USA. There are six (6) Senior Centers serving individuals in the cities of Gladwin and Beaverton. The County is also served by the Salvation Army.

There are a number of financial institutions in the county, including Chemical Bank-Michigan in Beaverton with three (3) branches in Gladwin and one (1) each in Edenville and White Star; Comerica-Midland branch in Beaverton, First of America-Gladwin main office and a branch on M-18 north of Gladwin and National City Bank.

Gladwin has several civic and business associations that contribute greatly to the area; i.e., Chambers of Commerce, Lion's Club, Kiwanis, Knights of Columbus, Eastern Star, Masons, etc.

The Gladwin Zettel Memorial Airport occupies 160 acres southeast of the City of Gladwin. The Gladwin County Fairgrounds leases 24.5 acres from the Airport. The Fair and Fairgrounds serve key roles in the County in agriculture enhancement and recreation.



CHAPTER IV TRANSPORTATION

CHAPTER IV

TRANSPORTATION

A. FACILITIES

1. Roads and Highways:

Gladwin County is considered by many as an “up-north” county, however, it is located in the mid-central section of the lower peninsula. The County is served by three (3) state highways, with M-18 and M-30 providing north-south movement and M-61 providing east-west movement.

Although not located within the county’s borders, three (3) major freeway-type facilities pass in close proximity to the County. I-75 (interstate), which passes through Saginaw, Bay and Roscommon Counties, is accessible easterly via M-61 to Standish only eight (8) miles east of the county line and north via M-30, 26 miles to West Branch.

US-10 (Freeway) which passes through Midland County before linking with I-75 at Bay City, is accessible via either M-18 or M-30 less than ten (10) miles south of the county’s common border with Midland County. US-27 (Freeway), which passes through Clare County, is accessible via M-61 eight and one-half miles west of the west Gladwin County lines. These highways provide an excellent transportation network linking Gladwin County will all major population centers in the Region and the State.

County local roads, which comprise the bulk of the surface transportation network with the County, vary considerably in their condition and trafficability. Those areas not served by state highways rely completely on county roads which are maintained by the cities of Beaverton and Gladwin. The exception is the forty-two (42) miles of common county boundary roads around the Gladwin County perimeter. Thirteen and eight hundredths (13.8) miles are maintained by agreement with adjoining counties. They are:

County	Miles of roadway
Arenac County	.05 miles
Bay County	2.3 miles
Clare County	5.0 miles
Midland County	3.5 miles
Ogemaw County	2.0 miles
Roscommon County	0.5 miles
Total Miles maintained by outside agreement	13.8 miles

Source: Gladwin County Road Commission, 2007

The Gladwin County Road Commission maintains the remaining mileage.

Gladwin County Master Plan

A breakdown of all basic county roadways excluding the City streets of Beaverton and the City of Gladwin, subdivision streets of in and out-county areas, and those sections of roadways maintained by adjacent counties, are as follows:

Miles of Roadway	
State Trunkline Paved	83
County Primary	229
County Local	650

Due to the large square mileage of the Tittabawassee River State Forest Area, the majority of the County's road system lies in the western half of the County.

Asset Management

The Michigan Department of Transportation (MDOT) has been annually conducting pavement assessments in all Michigan Counties including Gladwin for the past three years (2002-2005). This process is called **Asset Management** and is overseen at MDOT by the **Asset Management Council** in Lansing. The purpose of this activity is to ensure that the State has a complete and up to date inventory of it's roadway (pavement, etc.) conditions and to comply with federal audit rule GASB-34 which requires that all local units of government shall count their infrastructure as an asset for auditing purposes.

To date, the activity has been confined to only federal aid eligible roadways. In Gladwin County this would consist primarily of **Rural Collectors**. The rural collector routes generally serve intra-county motorists where predominant travel distances are shorter than on arterial routes. Consequently, moderate speeds are typical and allowed. This system is sub-classified according to the following criteria:

Major Collector Roads. These roads are eligible for federal aid and should:

- Provide service to any county seat not on an arterial route to the larger towns not directly served by the higher system, and to other traffic generators of equivalent intra county importance, such as consolidated schools, county parks, important mining and agricultural areas and similar uses;
- Link these places with nearby towns or cities, or with routes of higher classification (arterials); and
- Serve as the more important intra-county travel corridors.

Minor Collector Roads. These roads should:

1. Be spaced at intervals, consistent with population density, to collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road;
2. Provide service to the remaining smaller communities; and
3. Link the locally important traffic generators with their rural hinterland.

B. PLANNED ROAD and BRIDGE IMPROVEMENTS

An issue of critical importance to local planning officials within Gladwin County is what to do in the event that the bridge/roadway on M-61 over the Cedar River should become incapacitated for any reason and for any length of time. At this time there would be no other direct route, from the east, to reach the Mid-Michigan Regional Medical Center-Gladwin if the bridge were out of service. The loss of this bridge could prove to be life threatening in case of emergencies.

Gladwin County Master Plan

Additionally, there is an interest in determining if there are any plans to extend M-18 straight north from the stop sign at its intersection with M-61. Commissioners suggest that redirecting M-18 north following Oberlin Road to where it would once again intersect with M-18 would not only by-pass congestion in the downtown area but could provide for the elimination of two dangerous curves on the route to Meredith. These are issues worthy of future study and discussion with appropriate transportation agencies.

According to the Gladwin County Road Commission (GCRC), a number of road and bridge improvements are planned in 2005 and 2006. The following figure illustrating Gladwin County roadways and tables reflect those projects:

Figure IV-1 - Roadways and Other

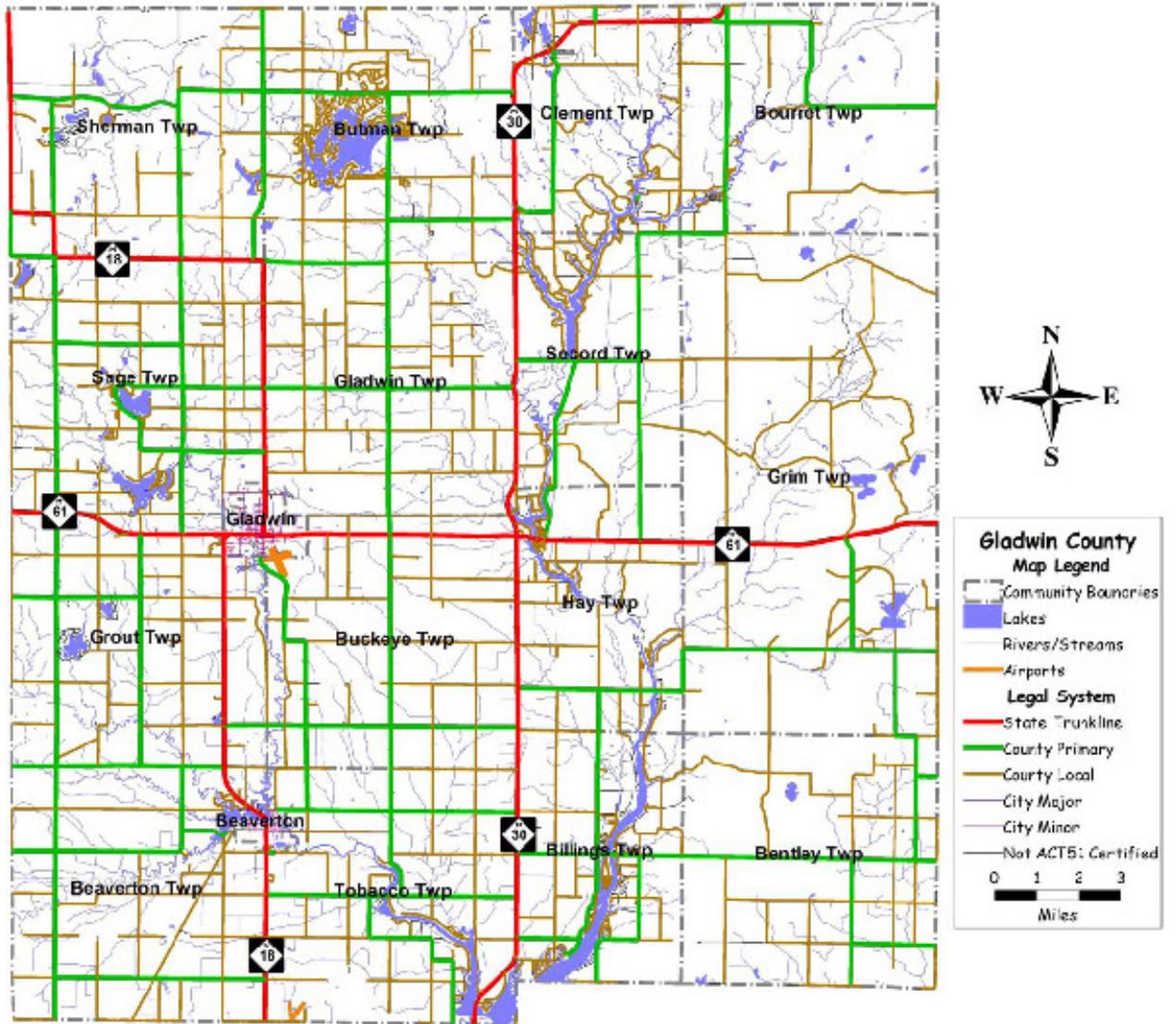


TABLE IV-1
Gladwin County
PROPOSED ROAD CONSTRUCTION PROGRAM - 2005

Name	Project No.	Township	Location
PRIMARY			
River Road	05-01	Buckeye	Smith Road to Winegars Road
Three Rivers Road	05-09	Hay	M-61 North 1 mile
LOCAL			
Bourrett	04-04	Bourret	Sugar River Road South
Butman Road	02-05	Butman	Grass Lake Road south 1 mile
Hockaday Road	04-05	Butman	Sugar River Road north 0.4 mile
Dutcher Road	05-02	Butman	Hockaday Road west to Shell Road
Smith Road	05-03	Buckeye	Hawkins Road east 0.4 mile
Plude Road	05-04	Grout	Grout Road to Scottish Hills
West Branch Drive	04-08	Secord	Pinehurst Road north 0.7 mile
Van Dyke Road	04-09	Tobacco	M-30 to Dundas Road
Mangus Road	05-05	Tobacco	M-30 south 0.7 mile
BRIDGES			
Van Dyke Road over Crockett Drain	05-06	Tobacco	
Flock Road over Nestor Drain	05-07	Tobacco	
Eaton Road over North Branch Cedar River	04-10	Sage	
Buzzell Road over Drain	05-08	Grout	
Mohawk over Elk Lake Creek	05-10	Clement	

Source: Gladwin County Road Commission, October 2005

**TABLE IV-2
Gladwin County
PROPOSED BITUMINOUS PROGRAM - 2005**

Name	Length	Township	Location
PRIMARY			
Chappel Dam Road	0.7	Sherman	Sugar River Road south 0.7 mile
Bomanville Road	2.0	Secord/Grim/Bourret/ Clement	Three Rivers Road to Wildwood Road
Dale Road	1.0	Tobacco	Wagner Road east 1 mile
LOCAL			
School Road	1.5	Bentley	Estey Road to Katzer Road
Lakeshore Drive	1.0	Secord	Wirtz Road north to the Township Line
Robertson Drive	0.3	Beaverton	M-18 north to the end
Pineway Road	0.5	Clement	Starts 1 mile SE of Borman Road then SW ½ mile
Mohawk Trail	0.5	Clement	Starts Road east 0.4 mile
Sugar Springs	5.0	Burman	
Garage Facility		City of Gladwin	Around Building and Yard Roads
Miscellaneous	1.0	Tobacco	M-30 to Dundas Road

Source: Gladwin County Road Commission, October 2005

TABLE IV-3
Gladwin County
PROPOSED PROJECTS FOR 2006

Name	Township	Location
Complete all projects not completed in 2005		
F-97	Butman	Renas Road north 1.5 miles
Dutcher Road	Butman	Hockaday Road west 1.0 miles
Adams Road	Sherman	Meredith Grade south 0.70 miles
Dale Road	Tobacco	Boos Road to M-30 (2 miles)
Sugar River Road	Sherman	Chappel Dame east 1 mile
Sugar Springs	Butman	15 miles - crush and resurface

Source: Gladwin County Road Commission, October 2005

TABLE IV-4
Gladwin County
PROPOSED PROJECTS FOR 2007

Name	Township	Location
Complete all projects not completed in 2006 - CONSIDERED TOO EARLY TO DEVELOP REST OF THE PROGRAM		

Source: Gladwin County Road Commission, October 2005

2. Airports

The Gladwin Zettel Memorial Airport is located to the south-east corner of the City of Gladwin. The Airport is primarily located in Buckeye Township and is jointly owned and operated by Gladwin County and the City of Gladwin. No scheduled commercial air service is available. It is classified as a “Class B” field. The Airport does have a Master Plan to guide its future development.

In 2003, MDOT developed a Community Benefits Assessment of the Gladwin Zettel Airport. It is broken down as follows:

Parameters:

Un-surveyed Airport	
Non-urbanized area	
General Aviation Airport	
Year	2000
Total Aircraft Operations	9,460
Itinerant Operations	4,730

Estimated Economic Activity Generated

Direct Impact	\$ 339,000
Indirect Impact	\$ 397,000
Induced Impact	\$ 496,000
Total Impact:	\$1,232,000

The Airport has an approved Approach Plan. This Plan was approved by the Michigan Aeronautics Commission. The plan consists of three parts: FAA Part 77 Height Standards, Land Use Guidelines, Protection for weather reporting equipment and navigational aides.

All four zoning acts in Michigan provide for airport protection using height and land use compatibility guidelines. MDOT or “Aeronautics” requires that the City/Village, Township or County incorporate Approach Plans into local master plans. The County’s final Zoning Ordinance will include language consistent with all State laws regarding the Airport Approach Plan for the Gladwin Airport.

The closest commercial air traffic is available at MBS International Airport, located at Freeland, Michigan forty-seven (47) miles from the City of Gladwin. It offers passenger airline service and it also serves as a base for air freight and general aviation. Other commercial airports available are located in Flint, Lansing, Grand Rapids, Traverse City and Detroit.

3. Transit Services

The Gladwin City/County Transit System operates within the city limits of Gladwin and serves the cities of Gladwin and Beaverton as well as the total county. In addition, it has an agreement with Clare County to transport riders to and from Gladwin County to Mid-Michigan Community College in Harrison.

There are no interstate bus services available within the county. Indian Trails is available along the I-75 and US-23 corridor and Greyhound lines along the US-10 and US-27 corridor.

4. Rail

Currently, there are no active rail lines within Gladwin County. No new service to any portion of Gladwin County is foreseen in the future.



CHAPTER V GOALS, OBJECTIVES AND STRATEGIES

CHAPTER V

GOALS

A. OVERVIEW

This section of the Master Plan presents the overall goals and objectives that have been developed to provide a strong, coherent direction for the future development of Gladwin County. The formulation of these statements evolves from the desire to remedy existing problems, to maintain positive features, and to provide an attractive and functional community environment in the future. The goals/objectives form a key element of the Gladwin County Master Plan. Desired land use arrangements and proposed implementation strategies are a natural outgrowth of established goals.

In order to be a viable tool, the Master Plan must be based on the wants and needs of area citizens and representatives from various sectors in the county. Business, local units of government and human service agencies must be involved in the drafting and execution of the Master Plan. The Plan must also be consistent with all laws related to County Planning and Zoning.

A 2003 citizens survey was done by the Gladwin County Human Services Coordinating Body and that information has been incorporated as critical input to the planning process. Future strategies for the county will be centered around a cooperative effort among county public and private interests. The 2003 survey identified five (5) top issues facing Gladwin County and its residents. They were:

1. **Lack of Jobs**
2. **Unemployment**
3. **Poverty**
4. **Access to Dental Care**
5. **Crime**
6. **Affordable Medical**
7. **Alcohol/Drug Abuse**
8. **Affordable Housing**

The primary benefits of establishing planning goals for Gladwin County are:

- **Consistency:** A comprehensive list of statements concerning a variety of planning issues can help avoid arbitrary decision-making in the future.
- **Efficiency:** Clearly stated goals can help reduce the time spent on individual topics while providing sound planning principles to guide the process.
- **Coordination:** Established goals provide a single framework to guide actions by the Planning Commission, County Board and the public.
- **Stability:** Goals tend to be general and long-range in nature. As such, they remain stable under a variety of changing community conditions.
- **Basis for Decisions:** Established goals and policies are necessary to provide a reasonable basis for land use controls such as zoning. Furthermore, clearly state policies are helpful if the fairness of specific land use regulations is questioned.

Gladwin County Master Plan

- **Strong Legal Support:** The County's zoning-related actions are viewed favorably by courts at all levels as long as actions are not made in an arbitrary and capricious fashion.
- **Wise Use of Resources:** The Plan can help guide the wise use of financial, infrastructure or building resources. When supported by a capital improvements program, the master plan can be used to implement County projects etc.
- **Preservation of Community Character:** The Plan expresses the County's vision for the future and establishes its existing and intended character. The Plan describes the County's character and how it will be maintained, enhanced or changed.

The proposed Goals and Objectives for Gladwin County follow:

ECONOMIC DEVELOPMENT

GOAL: **PROMOTE A DIVERSE ECONOMY THAT PROVIDES OPPORTUNITIES FOR LOCAL INTERESTS AS WELL AS OPPORTUNITY FOR POTENTIAL BUSINESS THAT MAY LOCATE FROM OUTSIDE THE AREA:**

Objective: Continue to strengthen the tourism economy in the county.

Objective: Promote a sustainable agricultural base in the county where feasible.

Objective: Encourage small or light industry in the county.

Objective: Promote retail diversity in the county.

Objective: Promote forest products industry where feasible.

Objective: Begin to think of the County as part of a Regional economy.

Strategies:

Strategy: Attract outside business interests who can increase the standard of living by: (1) marketing the County and (2) providing support services to attract their interests.

Strategy: Continue to work to maintain existing businesses within the County.

Strategy: Establish and maintain a full time Economic Development Corporation and Director.

Strategy: Encourage small business expansion and location by utilizing all available resources including but not limited to: Small Business Administration Program and cooperation with the Small Business Technology Development Center based at Delta College.

Strategy: Strengthen ties amongst local chambers. Promote general policies which address price structure, cooperative promotional efforts and development guidelines for business areas.

Strategy: Initiate, though the county EDC, a small business retention program.

Strategy: Work closely with the Regional Planning & Development Region, Region 7B, area economic development organizations, etc., in an effort to link business interests with fiscal and informational resources.

COUNTY SERVICES AND FINANCE

GOAL: ENSURE ADEQUATE DELIVERY OF PUBLIC SERVICES TO PROTECT THE HEALTH, SAFETY, AND WELFARE OF COUNTY RESIDENTS WHILE PROMOTING GENERAL QUALITY OF LIFE IN THE COUNTY.

Strategies:

Strategy: Work with local units and promote cooperation in order to maintain quality public safety devices.

Strategy: Increase public awareness of County resources and services. Increase citizen's and local elected official's awareness of the planning process and recommendations set forth in the master plan.

Strategy: Assist in the provision of adequate water supplies and sewage disposal systems, using public works project review and capital improvements plan.

GENERAL LAND USE & DEVELOPMENT

GOAL: PROMOTE THE EFFICIENT USE OF LAND IN THE COUNTY, WHICH PROTECTS BOTH NATURAL AMENITIES AND INDIVIDUAL PROPERTY RIGHTS. ENCOURAGE QUALITY DEVELOPMENT THAT DOES NOT CONFLICT WITH SURROUNDING LAND USES.

Strategies:

1. Encourage the managed, sensible growth of the County through good planning, zoning and appropriate development controls.
2. Encourage the preservation of agricultural lands and existing farm operations.
3. Encourage the preservation of natural features and open space.
4. Discourage the placement of land uses that are incompatible with existing natural features.
5. Discourage the placement of land uses that are incompatible with surrounding development.
6. Promote preservation of the County's historical sites and buildings.
7. Consider allowing conservation development approaches to future residential development where feasible.
8. Make provisions to accommodate future residential, commercial, and other types of development in appropriate locations.

9. Provide designated areas with adequate infrastructure and services to support commercial and industrial land uses.
10. Protect the integrity and character of residential areas in the County.

RESIDENTIAL LAND USE AND HOUSING

GOAL: PROVIDE FOR RESIDENTIAL DEVELOPMENT IN A MANNER THAT RESULTS IN BOTH HOUSING AND NEIGHBORHOODS THAT ARE SAFE, HEALTHY AND ATTRACTIVE, WHILE ALSO PROVIDING A DIVERSE AND ADEQUATE SUPPLY OF DWELLING UNITS.

Strategies:

1. The County will adopt and implement ordinance provisions whose purpose is to foster the establishment of residential developments that maintain rural character and preserve natural amenities, including agricultural land and production.
- 2.. Reserve sufficient land for both dispersed and more intensive residential development in convenient, economical, and environmentally sound locations.
3. Consider making allowances for innovative development techniques (such as conservation development and clustering) which would permit development at higher densities, while also using the available land more efficiently and preserving natural features.
4. Encourage the development of housing opportunities for all economic levels.
5. Encourage regulatory measures that are necessary to ensure that both new and existing housing meets appropriate health and safety standards.
6. Encourage basic housing standards to ensure the compatibility of future housing with the existing housing stock.
7. Encourage the adoption of consistent enforcement of proper standards for home occupations.
8. Protect the integrity and character of residential areas in the County.
9. Encourage improved neighborhoods with design guidelines related to lighting, sidewalks, landscaping and provision of open space.
10. Develop or redevelop affordable housing for all age groups, particularly including young families and senior citizens to provide a diverse housing stock to permit residents to move within the County.

COMMERCIAL AND LIGHT INDUSTRIAL LAND USES

GOAL: **ENCOURAGE SOUND COMMERCIAL AND LIGHT INDUSTRIAL DEVELOPMENT THAT IS COMPATIBLE WITH THE COUNTY'S CHARACTER.**

Strategies:

1. Before approval, the County will seek information from applicants for land development projects to ensure that adequate utilities/septic or wells, roads, fire and police services are adequate to serve the proposed uses.
2. Protection of groundwater resources, natural features and other environmental features will be a primary consideration of the County when reviewing development proposals.
3. Ensure that new commercial or industrial development will only be permitted in areas where public sewer or water are available.
4. Encourage the development of commercial centers or clusters, as opposed to strip development where feasible.
5. Encourage beautification efforts in commercial areas through amenities such as lighting, signage and landscaping.
6. Encourage the preservation of natural features and open space and discourage the placement of land uses that are incompatible with existing natural features.
8. Discourage the placement of incompatible land uses with surrounding development.
9. Promote preservation of the County's historical sites and buildings.
10. Consider allowing conservation development approaches to future residential development where feasible.
11. Make provisions to accommodate future residential, commercial, and other types of development in appropriation locations.
12. Provide designated areas with adequate infrastructure and services to support commercial and industrial land uses.
13. Designate an appropriate location for light industry that provides opportunity for development while also preventing adverse impacts on the community.
14. Provide necessary services such as medical facilities within the County for residents and employers as development increases.

TRANSPORTATION

GOAL: THE COUNTY WILL PURSUE LAND DEVELOPMENT POLICIES THAT FOSTER A SAFE AND EFFICIENT TRANSPORTATION NETWORK APPROPRIATE FOR GLADWIN COUNTY AND ITS RESIDENTS.

Strategies:

1. The County will encourage the study of long-term planning options for bridge and roadway work and design to provide better access to critical facilities; i.e., Mid-Michigan Regional Hospital and work with appropriate local, state and federal agencies.
2. In cooperation with the townships and the Road Commission, the County will seek to develop and maintain a priority review system for paving streets, considering such factors as resident desires, traffic volumes, roadway function, land use and other appropriate elements.
3. Promote coordination in review, comments and resolutions on land use and environmental factions which relate to transportation planning.
4. The County will encourage land development along major roadways that reduces the number of access points for individual uses (Access Management).
5. The County will participate annually in the MDOT Asset Management Program to ensure compliance with GASB Rule 34.
6. Explore the connection of all modes of transportation addressed in the Plan to satisfy federal, state and local legislation.
7. Advocate transportation needs and projects to ensure that they will serve the needs of the public and commerce effectively and safely.
8. Promote the coordination of all public agencies on the improvements and services that support local aviation to best serve the general public and the commercial and industrial users.
9. Develop a transportation strategy in accordance with Master Plan Goals and Objectives.
10. Promote the upgrade of roads and bridges from local funds and/or matching funds availability. Priority to be established in Capital Improvements Plan.
11. Encourage the public through promotions to protect the environment for the generations to come.
12. Develop local public interest in aviation by promoting air show events, fly-ins or a location for parachute clubs.
13. Establish a working relationship with transit officials to ensure a sound service area for Gladwin County and promote demand service to adjacent counties.
14. The County will maintain close coordination with the County Road Commission and the MDOT-approved Rural Task Force for the Gladwin County area.



Chapter VI

**Gladwin County General Development Plan -
Land Use & Zoning**

A. General Concepts

The Gladwin County Master Plan is a **general guide for future development**. It is intended to direct future land use in a way that will result in a development pattern that is logical, economical, visually pleasing, and environmentally sound. A basic concept that has guided the Plan's development is the desire to retain the rural character and natural features that make Gladwin County an attractive plan to live and visit while, at the same time, adequately providing for future development.

The Plan is designed to accommodate a reasonable amount of new development in a flexible manner and in accordance with the County's Zoning Ordinance. Any development that occurs must also be done in accordance with sound land use controls, and it must be consistent with the County's character and values. The major concepts put forth to form the basis for Gladwin County's plan are summarized as follows:

1. Drastic changes are not encouraged in the character and population of the County. The County wishes to remain a relatively rural residential, agricultural, and recreational area. The County's natural features will continue to dominate the character of the community.
2. In all future development, the plan advocates retaining the County's natural features, forests, farmlands and open spaces to the greatest extent possible.
3. Additional low-density rural residential development will be accommodated in the plan as long as it is: (a) consistent with the County's Zoning Ordinance and (b) that it is attractive, environmentally sound and compatible with other land uses.
4. More intensive (i.e., medium density) residential development **may** be accommodated in areas designated for more compact dwelling types on smaller lots through conservation development approaches (such as clustering and planned unit developments). Under present conditions, the suitability of soils for water and wastewater disposal systems (i.e., wells and septic systems) remain a major factor in determining where more intensive development may take place. The Plan recommends that the County continue to look into the development of a sanitary sewer system to serve portions of the County particularly in sensitive waterfront/lakefront areas and the most densely populated parts of the County.
5. Provisions should be made for the development of additional small-scale retail and service business establishments. These types of development should be directed into a designated business area, and not randomly scattered throughout the County.
6. The Master Plan should contain a provision for the continued development of light industry in the future. Appropriate uses would include small-scale manufacturing operations that are conducted entirely within enclosed buildings. Suitable locations should have access to all season roads, and they should be sufficiently isolated from residential areas.
7. In all cases, future development must not create demands for public services that exceed the County's capabilities to provide such services.
8. Future efforts should be directed toward improving development standards for sensitive environmental areas, particularly waterfront development adjacent to the County's lakes and streams.

B. Major County Land Uses via Zoning

The future direction for Gladwin County's land use and development pattern is mainly shaped by the community's natural features and by the County's desire to retain an attractive "up-north" character. The major land uses envisioned by this plan are outlined as follows:

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Residential-Farming District (R-F)

The ***Farming District*** aspect of this planning district includes those portions of the County that are more sparsely developed. These areas will be used predominately for a mixture of agricultural, forestry, lumber, crop and tree farming, gardening, dairy, stock and poultry farming and other uses compatible with this district. Accessory uses such as home occupations should be permitted with appropriate standards. The major uses within this district will be sited on lots of at least one acre or more in accordance with the County's zoning regulations. Recent changes to the Zoning Ordinance permit limited cottage industry development and regulate non-farm more stringently.

This planning district contains the existing farmlands in the County. It is the plan's intent that current farmlands and other large tracts of land should be conserved for agricultural pursuits and related purposes as defined. It is also the plan's intent to discourage urban development in these areas and to preserve their rural character. These areas will not require major public services such as water and sewer. **Non-farm uses** will need to co-exist within this District.

The ***Residential*** land use category within this district is intended to provide for development of single family or two-family homes. This district includes those portions of the County that have been divided into small lots for seasonal and year-round residences. The District also includes those portions of the County that have been divided into small lots for seasonal and year-round residences. In particular this district includes the lakefront and recreation-oriented subdivisions within the County. The County Zoning Ordinance requires a minimum lot area of six thousand (6,000) square feet for residences.

In general the district is meant to encourage the development of attractive residential areas with compatible services and amenities.

The Residential district also includes lands that are on or immediately adjacent to bodies of water. The County should continually pursue appropriate measures for better protection of the water resources. Potential objectives could include, but not necessarily be limited to, the following:

- ◆ Reduction of nutrient discharge to water bodies from sources such as septic systems and fertilizers.
- ◆ Controlling erosion and sedimentation discharge.
- ◆ Preservation of scenic views.
- ◆ Prevention of overuse of water resources and avoiding conflicts among recreational users. The Zoning Ordinance addresses "keyhole" access to discourage overuse.

Local Business Districts (B-1)

This District is intended to permit local retail and wholesale business activities as well as services uses which are desirable to serve the residential areas of the County. Appropriate uses would include small scale retail business and personal service establishments. Inappropriate uses would include those that create hazards, offensive or loud noises, vibration, smoke, glare or heavy truck traffic.

The primary purpose of the Local Business District is to provide areas for retail and wholesale business activities generally compatible with each other and for services commonly associated with commercial districts. Provisions are also made by "Special Permit" for inclusion of enterprises and activities having special problems or conditions.

General Business District (B-2)

This District is intended to provide for the general community and area wide commercial and service needs of Gladwin County and for the orderly development and concentration of such uses. The District should be established along major county roads which can satisfactorily accommodate the large volumes of vehicular traffic typically associated with such commercial concentrations. There is very limited land designated in this category.

Industrial District (I-1)

The Master Plan includes provisions for industrial development in the County. Industrial development should only occur in suitable areas for the encouragement and conduct of selected industries, for processing raw and semi-finished materials, for storage of industrial products, for wholesale and retail establishments and related commercial operations. Standards governing this District ensure that the uses will not create negative impacts on surrounding areas and that are

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generally compatible with the community's character.

Dwelling District (D-1)

The Master Plan provides for a Dwelling District to provide areas primarily designed for use consisting of residential dwellings for only one (1) family or household group, each located on separate premises adequate in size to provide for safe water and sewage disposal facilities, properly spaced to diminish spread of fire and setback from the public thoroughfare to facilitate safe exit from and entrance to the premises. The Zoning Ordinance regulates large and small residential lots separately from a dimensional standpoint to accommodate smaller waterfront and seasonal homes.

State Forest Lands

State forest lands shall be identified on the County's Future Land Use map. The State of Michigan holds these lands in public ownership. Generally, these are undeveloped areas that are available for outdoor recreation uses, such as hunting, hiking and snowmobiling or cross-country skiing.

Local Parks and Recreation Areas

Local parks and Recreation Areas will be identified on the County's Future Land Use map. The County has a Michigan Department of Natural Resources approved Recreation and Open Space Master Plan. This plan allows the County to pursue grants that will provide financial assistance for acquiring and developing public recreation facilities.

Airport Layout Plan/Airport Approach Plan

The Master Plan shall ensure consistency with the MDOT-approved Airport layout plan or airport approach plan and in accordance with the Michigan Zoning Enabling Act, PA 110 of 2006, as amended. See next.

Excerpted language from:

C. Michigan Zoning Enabling Act, P.A. 110 OF 2006

Re: Airport Layout or Approach Plans

125.3203. Zoning ordinance; plan; incorporation of airport layout plan or airport approach plan; zoning ordinance adopted after March 28, 2001.

Sec. 203. (1) The zoning ordinance shall be based upon a plan designed to promote the public health, safety, and general welfare, to encourage the use of lands in accordance with their character and adaptability, to limit the improper use of land, to conserve natural resources and energy, to meet the needs of the state's residents for food, fiber, and other natural resources, places of residence, recreation, industry, trade, service, and other uses of land, to insure that uses of the land shall be situated in appropriate locations and relationships, to avoid the overcrowding of population, to provide adequate light and air, to lessen congestion on the public roads and streets, to reduce hazards to life and property, to facilitate adequate provision for a system of transportation, sewage disposal, safe and adequate water supply, education, recreation, and other public requirements, and to conserve the expenditure of funds for public improvements and services to conform with the most advantageous uses of land, resources, and properties. The zoning ordinance shall be made with reasonable consideration to the character of each district, its peculiar suitability for particular uses, the conservation of property values and natural resources, and the general and appropriate trend and character of land, building, and population development.

(2) If a local unit of government adopts or revises a plan required under subsection (1) after an airport layout plan or airport approach plan has been filed with the local unit of government, the local unit of government shall incorporate the airport layout plan or airport approach plan into the plan adopted under subsection (1).

(3) In addition to the requirements of subsection (1), a zoning ordinance adopted after March 28, 2001 shall be adopted after reasonable consideration of both of the following:

(a) The environs of any airport within a district.

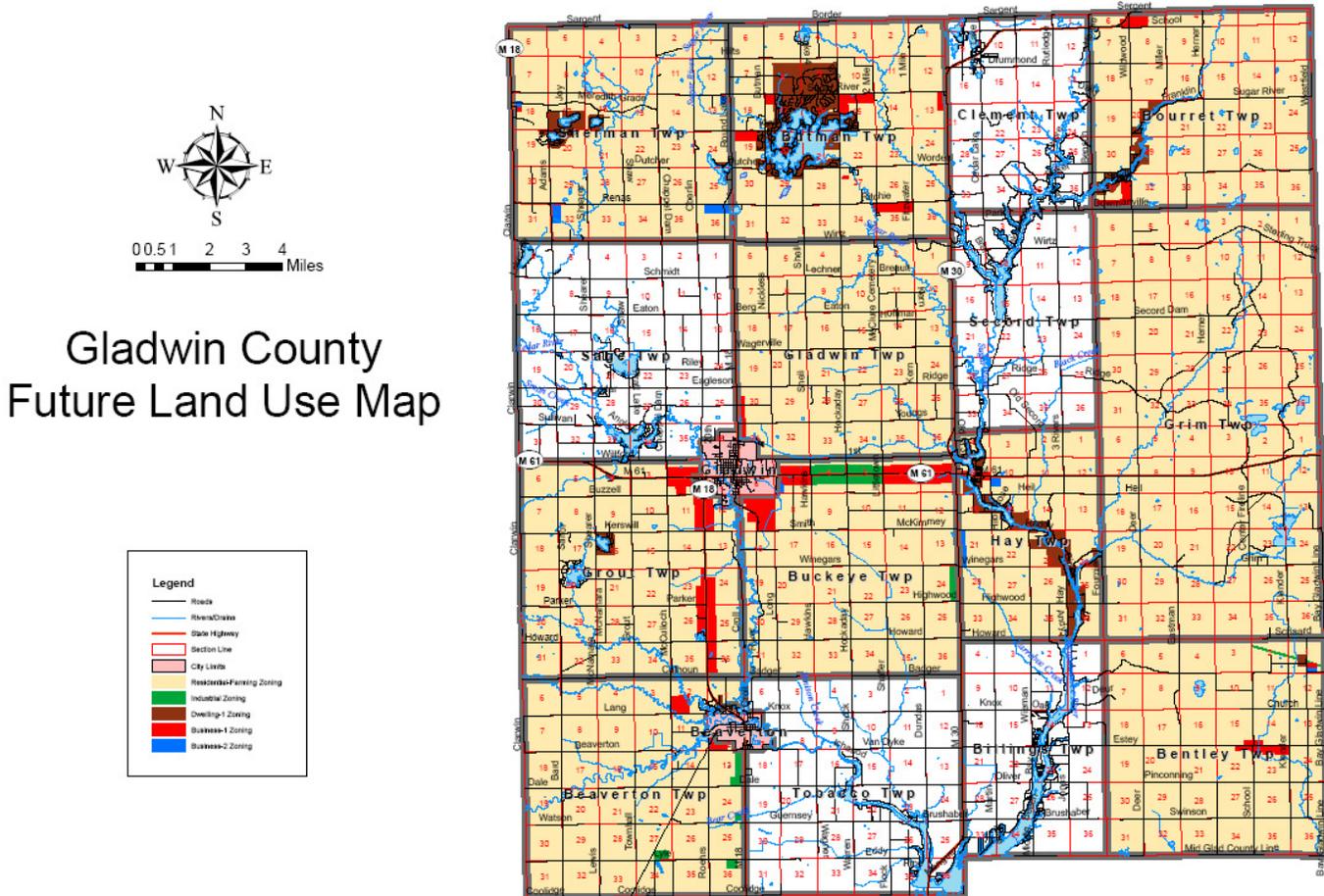
(b) Comments received at or before a public hearing under section 306 or transmitted under section 308 from the airport manager of any airport.

(4) If a zoning ordinance was adopted before March 28, 2001, the zoning ordinance is not required to be consistent with any airport zoning regulations, airport layout plan, or airport approach plan. A zoning ordinance amendment adopted or variance granted after March 28, 2001 shall not increase any inconsistency that may exist between the zoning ordinance or structures or uses and any airport zoning regulations, airport layout plan, or airport approach plan. This section does not limit the right to petition for submission of a zoning ordinance amendment to the electors under section 402 or the right to file a protest petition under section 403.

History: 2006, Act 110, Eff. July 1, 2006.

D. Existing and Future Land Use Map(s)

The locations of the planning and zoning districts are shown on the Future Land Use Map. It is important that the Future Land Use Map is NOT a Zoning Map. This map is intended to serve as a guide for shaping the Township’s long range land use and development pattern(s). The map is also intended to guide zoning and other land use decisions as development occurs.



The Future Land Use Map portrays a land use pattern for Gladwin County as the county develops over an extended period of time (i.e., 15 to 20 years). This means that achieving the land use pattern shown on the map will likely be a gradual process. The relationship to this long-range concept to short-term land use decisions (especially zoning) is discussed further in the **County’s Action Program** for carrying out the Master Plan.

Additionally, each land use map, existing and proposed, can be overlaid with the Gladwin County Airport Protection Plan for ease of study and review.



CHAPTER VII
ACTION PROGRAM

ACTION PROGRAM

Introduction

The Gladwin County Master Plan has been prepared to serve as a guide on both short-term and long-range issues which the County will face as it develops in the future. Community planning issues identified within the Master Plan are used to formulate the goals and objectives set forth previously.

A. Public Involvement and Education

Public involvement and education are critical to the success of any plan. The community must be aware of the plan's existence and it must also accept the plan's findings and recommendations. The Planning Commission has the main responsibility for working to achieve community involvement in the planning process and support for planning in general.

B. Plan Updates

Community planning is a dynamic process. In order for the Master Plan to be a viable document, it must be updated every five years. It is recommended that the Planning Commission conduct a basic review of the document on an annual or bi-annual basis. Modifications should be made as necessary. The result is a plan that is always current and based on the best available information. These periodic plan updates do not need to be lengthy or elaborate. Depending on the subject matter, an update might be presented in a memo of a few pages. However, the Planning Commission should note that the plan amendments must be handled in the same manner as the adoption of the original plan with respect to public notice and hearing requirements.

C. Annual Implementation Program

As an extension of the annual plan review process mentioned previously, the Planning Commission should also evaluate the implementation progress that has been made in the previous year. Following this review, the Planning Commission should prepare a list of specific objectives to be accomplished in the coming year and over the next five years. This list should then be ranked to identify the Planning Commission's priorities, and it should include both capital and non-capital projects.

The draft implementation program should then be submitted to the County Board of Commissioners for review, discussion and consensus.

D. Updates to the County Zoning Ordinance

The County Zoning Ordinance is expected the single most important tool for plan implementation. This Master Plan incorporates all aspects of the new County Zoning ordinance. Future periodic reviews and updates to the Zoning Ordinance are suggested.

E. Use of the Master Plan in Zoning Decisions

The Master Plan should be consulted prior to making zoning decisions. Experience indicates that the lack of such consultation often results in decisions that are contrary to plan recommendations. Zoning actions that are contrary to the plan also diminish the public significance of the document and limit its potential benefit should the County become involved in zoning litigation. Zoning in Gladwin County includes many areas that are undeveloped, resulting in a close similarity between the zoning map and future land use map. This means that changes in zoning, particularly to less intensive uses, will likely require a change in the Future Land Use Map since it is intended to be a guide for further development.

F. Maintain Consistency Between the Plan and Zoning Ordinance

If zoning decisions are made that are contrary to plan recommendations, it is important that the Planning Commission review the documents and consider a possible plan revision to reflect the zoning action. Plan amendments will also be necessary if issues arise in which the plan does not offer sufficient guidance. In such a case, new or expanded material should be added to the plan to address the new issues.

G. Annually review the Capital Improvements Program for action and relevancy.

This is an activity that should be coordinated between the County Board of Commissioners, County Planning Commission and the EDC Director.

Gladwin County Master Plan

H. Other Goals/Strategies and Action Recommendations

In addition to the previous general topics, the Master Plan contains a number of recommendations concerning County planning issues. These are based on identified issues. Also, the various action recommendations have been linked to the Goals and objectives previously presented.

The recommended action tasks are not presented in any sort of priority listing. All topics are considered to be important. The County Board of Commissioners should use this listing to formulate the annual implementation program, as described elsewhere in this section.

For each objective, one or more actions are recommended to achieve that objective. The main parties responsible for carrying out each action and a proposed schedule for completing the tasks are also indicated in the tables.

A Master Plan Implementation Action Task table follows:

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Master Plan Implementation Action Tasks

STRATEGY	TIME FRAME	RESPONSIBLE AUTHORITY
Master Plan assessment, review and encouragement	12-18 months	P/Commission
Ensure Zoning Ordinance is complied with and reviewed at regular intervals	1-3 years	P/Commission/Zoning Administrator
Ensure compliance with Airport Approach Plan and its zoning	Ongoing	Joint County/City Planning Commissions
Develop Planning Commission subcommittees and task forces to work with local units of government and private interests	Form committees within six (6) months of plan adoption	Chairperson of Planning Commission
Cooperate with school districts to improve education system	Form Task Force within 1-3 months of plan adoption	Planning Commission
Develop Capital Improvements Program	12-24 months	Planning Commission
Formulate model development standards	12-24 months	Planning Commission or delegate
Assess local site plan review	12-24 months	Planning Commission or delegate
Feasibility study of prime agricultural land protection	12-24 months	Planning Commission or delegate
Develop County Land Use Map	1-3 years	Planning Commission
Work with Road Commission to prioritize road segment and bridge improvements	1-3 years	Planning Commission
Pursue county-wide sewer project	2-5 years	Planning Commission and Board of Commissioners
***	***	***
Track new development on a quarterly basis	System in place within 2 years; continuous thereafter	Building Inspector
***	***	***
Develop model provisions for historic site and building preservation	12-24 months	Historic Society reps.
Pursue Housing needs assessment and housing program expansion	1-3 years	Housing Commission or delegate
Promote Michigan State Housing Development Authority programs	3-9 months following Needs Assessment	Housing Commission or delegate
***	***	***
Support composting operations within the County	12-24 months	Solid Waste P/C
Encourage County procurement of recycled materials	12-18 months from plan adoption	Solid Waste P/C
Support continuation or expansion of recycling program	Continuous	County Commission
***	***	***
Investigate alternative revenue sources	1-3 years	Board of Commissioners



CHAPTER VIII

Capital Improvements Program

2008 CEDS CAPITAL IMPROVEMENT PLAN GLADWIN COUNTY, MICHIGAN

City of Beaverton (Immediate Need)

Hydro-Electric Dam Renovation/Repair	
Repair deteriorated taintor gates	\$400,000
Repair deteriorated concrete	\$400,000
Replace wooden stop log gates	\$200,000
City owned dam, generates non-carbon based electricity	
Advanced level of disrepair, dam could fail, attention is urgent	
Largest employer in town relies on the backwater as its only source of fire suppression	

City of Beaverton

Waste Water Treatment Facility	
Remove sludge from pond	\$200,000
Design and implement new irrigation system	\$300,000

City of Beaverton

Replace handicap walkway to boat launch to Calhoun Campground	\$200,000
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City of Beaverton

Construction of new City Hall Building	\$700,000
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City of Gladwin

New water tower	\$1,500,000
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City of Gladwin

Grout Street Parking Lot	\$130,000
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City of Gladwin

City Park and Campground Improvements	\$216,475
Park Day-Use Bathroom: applied for \$85,432, Received \$50,000	
Tennis Courts: applied for \$154,300, received \$105,000	
Land and Water Conservation Fund – applied for \$43,235 Match of \$43,235	
Michigan Natural Resources Trust Fund – applied for \$153,956 Match of \$89,508	

Gladwin County Master Plan

City of Gladwin

Farmer's Market

Feasibility study, site selection, preliminary engineering and
Architecture design, preliminary cost estimations \$25,000

City of Gladwin

Inter-Regional Trail: non-motorized, fully handicapped accessible,
East-West Route: planning, right of way identification, preliminary
Engineering and cost estimations \$25,000

City of Gladwin

Inter-Regional Trail: non-motorized, fully handicapped accessible,
North-South Route: planning, right of way identification, preliminary
Engineering and cost estimation \$25,000

City of Gladwin

Water System iron removal \$1,000,000

City of Gladwin and Gladwin School District

Safe Route to Schools: planning, right of way determination,
Preliminary engineering and cost estimation, final engineering
And bid process, construction of up to 1.5 miles \$200,000

Three Gladwin County Townships

Wastewater/Sewer expansion. The three townships are working together in a project that
would expand their current sewer system. Because of ecoli issues as well as a growing
population, the current lines are very much inadequate.
Total Cost is estimated to be: \$1,500,000
Currently there is 10%, or \$15,000 in local match secured.
The time line for the project to begin is the **next 3-5 years**.

Gladwin County/City of Gladwin

Gladwin Zettel Memorial Airport

Crack seal airport pavement \$6,900

Maintenance of airport pavement
Total Federal dollars: 95% = \$6,555
Total State dollars: 2.5% = \$172.50
Total Local dollars: 2.5% = \$172.50

Partial Construction of Fuel farm (Avgas) \$241,500

Existing fuel farm does not meet current codes.
Total Federal dollars: 95% = \$241,500
Total State dollars: 2.5% = \$6,037.50
Total Local dollars: 2.5% = \$6,037.50

Gladwin County Master Plan

Complete construction of Fuel farm (Jet “A”) Existing fuel farm does not meet current codes. Total Federal dollars: 95% = \$170,430 Total State dollars: 2.5% = \$4,485 Total Local dollars: 2.5% = \$4,485	\$179,400
Seal Airport Pavement and Repaint Airport Airport Pavement Maintenance Total Federal dollars: 95% = \$241,300 Total State dollars: 2.5% = \$6,350 Total Local dollars: 2.5% = \$6,630	\$254,000
Terminal Apron Extension Demand for additional aircraft parking Total Federal dollars: 95% = 537,035 Total State dollars: 2.5% = \$14,132.50 Total Local dollars: 2.5% = \$14,132.50	\$565,300
Acquire Snow Removal Equipment Plow truck is needed for snow removal. Airport currently uses the City’s, and availability is an issue. Total Federal dollars: 95%: = \$95,000 Total State dollars: 0%: = \$0 Total Local dollars: 5% = \$5,000	\$100,000
Construct SRE Building Provide storage for anticipated equipment Total Federal dollars: 95% = \$123,310 Total State dollars: 2.5% = \$3,245 Total Local dollars: 2.5% = #4,245	\$129,800
AWOS Install AWOS Total Federal dollars: 95% = \$114,000 Total State dollars: 2.5% = \$3,000 Total Local dollars: 2.5% = \$3,000	\$120,000
Extending existing 75’ Runway 9-27 by 300 feet	\$1,000,000
Widening Runway 9-27 from 75’ to 100’ These two improvements would be necessary to elevate GDW (Gladwin Zettel Memorial Airport) to a C-II facility.	\$4,300,000

Economic Development Corporation of Gladwin County
Application to USDA-RUS for Rural Business Enterprise Grant \$ 104,500
Revolving Loan Fund for start-ups and micro-enterprises
Total Federal dollars: \$99,500
Total State dollars: \$0
Total Local dollars: \$5.000

Economic Development Corporation of Gladwin County
Application for USDA Rural Business Opportunity Grant \$50,000
For economic planning, technical assistance for rural
businesses, and training for rural entrepreneurs or economic
development officials.

Economic Development Corporation of Gladwin County
Application for USDA Intermediary Re-Lending Program Loans \$1,000,000
To finance small business facilities and community development
projects, expansion of business creation or saving of rural jobs.

Economic Development Corporation of Gladwin County
Application for USDA Rural Economic Development Loans and Grants \$1,000,000
To finance economic development and job creation projects
in rural areas through loans or grants.

Source: Economic Development Corporation of Gladwin County; Frank Starkweather, 2008

APPENDIX A

**DESCRIPTION OF
ASSORTED TERMS**

DESCRIPTION OF TERMS

Alluvial:	Unconsolidated sediments, including sand, gravel and silt, deposited by streams.
Aquifer:	Earth materials containing sufficient groundwater that the well can be pumped out.
Bearing Capacity:	Refers to a soil's ability to hold the weight of vehicles and structures.
Compressibility:	Refers to the amount a soil compacts under weight.
CFS:	Volume measure delineating cubic feet per second.
Delta:	Outwash area of a stream or river where sediments are deposited.
Erosiveness:	Refers to a soil's tendency to wash or blow away.
Frost-Heave:	Refers to a soil's rate of expansion as it freezes and shifts.
Fire Insurance:	Rating on a scale from 1-10. The rating is assigned to jurisdictions on the basis of ability to prevent property loss in case of fire. One (1) is the best rating with the least amount of risk while ten (10) indicates a high amount of risk.
Glacial Drift:	Rock debris that has been transported by glaciers and deposited, either directly from the ice or the meltwater.
Moraine:	An accumulation of glacial drift that is significant enough to affect the topography of an area, leaving hills, ridges, etc.
Littoral:	Pertaining to the near-shore and beach environments.
Impervious:	Materials that retard greatly or prevent water from infiltrating (soaking into) the soil, i.e., pavement, compacted soil, etc.
Loamy:	Refers to texture of soil that is intermediate, between fine-textured and coarse textured soils. Loamy soils contain some clay, silt and sand.
Median:	Relates to the middle value in a distribution. The number of values below this point is equal to the number of values above it. <u>Not</u> the same as an average.
Pathogens:	Any agent that causes disease, especially an organism such as a bacteria or fungus.
Pedology:	Study of soil associations.
Planning Commission:	A body generally appointed by the County Commission consisting of not less than five (5) and not more than eleven (11) members who represent various segments of a jurisdiction's population; i.e., economic, governmental and social. This body is authorized and empowered to make, adopt, amend, extend, add to, or carry out the Master plan.
Region 7:	East Central Michigan Planning and Development Regional Commission. Established by Executive Order in 1972. Geographic area encompasses 14 counties within east central Michigan. Voluntary membership: 14 counties, 47 member board; federal economic district.
Relief:	The variations in elevation of an area on the earth's surface.
Sediments:	Materials that settle out of a stream, river or outwash area; i.e., sand, silt, gravel.

Gladwin County Master Plan

Sedimentary Rock:	Rocks formed from compressed sediment.
Shrink-Swell:	Refers to soil's tendency to expand and contract under various conditions.
Strata:	Horizontal layering of materials (sedimentary rock) especially one of several layers, one on top of the other.
Vegetative Capability:	Refers to vegetation's ability hold soil and prevent erosion.
Water Table:	The upper surface of groundwater, or that level below which the soil is saturated with water.

APPENDIX B

OTHER SOCIO-ECONOMIC DATA - GLADWIN COUNTY

Gladwin County Master Plan