

INTRODUCTION

An existing land use inventory is a necessary first step in planning for the future of a community. The inventory depicts the existing distribution and location of land uses within the Township. The 2020 Existing Land Use Map (see Map IV-3) was developed through Kalamazoo County's GIS mapping system using township tax maps.

METHODOLOGY

The 2020 Existing Land Use Map was created using 2020 Township assessment data provided by the Kalamazoo County Equalization Department. Specifically, the set of land use codes assigned by the County for tax purposes was used as a template for creating the land use classifications represented on the Existing Land Use Map. For example, recreational uses such as the golf courses are shown on the map as commercial since they are taxed as businesses. The following describes each of the land use classifications present in more detail.

LAND USE CLASSIFICATIONS

Agricultural – An area that is cropland, permanent pasture or orchard.

Residential - An area in which residential dwellings with their accessory buildings occupy the major portion of the land. This includes the most dominant housing type in the Township, **Single-Family Residential**. Single-Family Residential refers to one detached or attached (duplex) dwelling unit on a single parcel. Most dwelling units considered single-family are built on foundations or basements using traditional building methods. However, **Manufactured Housing/Mobile Homes** are also within this land use classification, and can include Mobile Home Parks, which are developments for the placement of mobile homes for occupancy that meet the design and construction standards of the State of Michigan.

Commercial - An area where goods are distributed or services are provided. This category includes structures, adjacent land and parking areas dedicated for the use of employees and customers. Commercial also includes land uses often identified as:

Commercial Recreational - An area or facility used for commercial recreational activities, including water parks, golf courses and ski areas. This category includes structures, adjacent land and parking areas dedicated for the use of employees and customers.

Industrial - An area where raw or unfinished materials or commodities are used to produce a product or service. This can also include wholesale business activities.

Tax Exempt -

Institutional - An area or facility used by a township, city, county, school district or state agency to meet the needs of the community. This includes city and township offices, schools, public meeting spaces, public parking lots and other public uses, such as cemeteries.

Quasi-Public - An area or facility used by a limited number of persons with particular interests and nonprofit organizations, such as churches, day care centers, private schools, private clubs and related activities.

Public Utility - An area or facility not generally accessible to the public but used to provide services to the community, such as water towers, wastewater treatment areas and water pumping stations.

Lakes - Larger open areas of water that are contained in a depression of the earth's surface and supplied from the drainage of a more or less extended area.

Other Uses - Areas that are open space/forested land, which can be covered with deciduous and coniferous species of trees or shrubs. This category also includes fallow agricultural fields, flood plains, and wetlands. Lands in this category consist of both suitable and unsuitable areas for development.

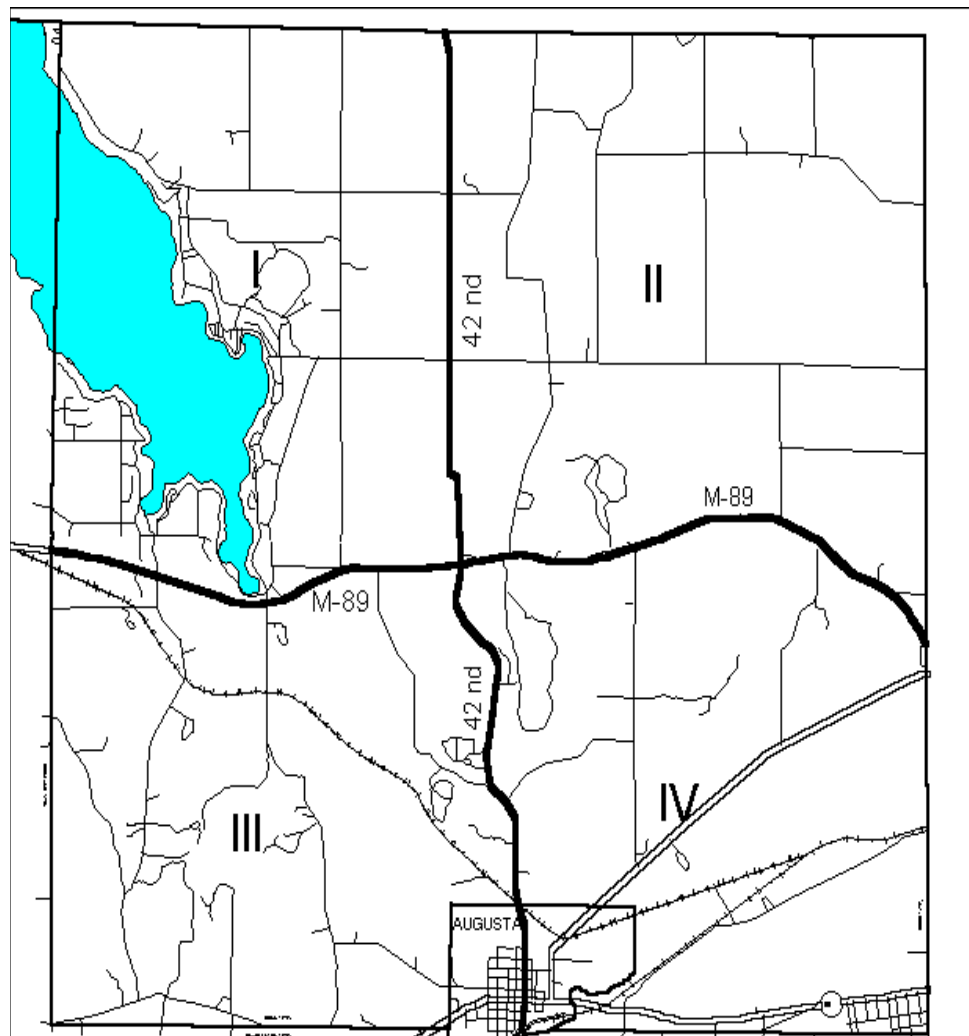
Vacant Land, and areas that cannot be placed in the other categories noted above, are also included in this category. Basically, undeveloped and/or vacant

land is land that may or may not be suitable for development, as well as land that is not likely to be developed as it is owned and managed by public and nonprofit institutions, or larger commercial holdings. Portions of MSU's land holdings within Ross Township, as well as lands owned by the Cheff Therapeutic Riding Center, are placed within this classification due to their restricted development potential.

LAND USE DISTRIBUTION OVERVIEW

To provide an overview of the existing land use pattern in Ross Township, the Township has been divided into four quadrants. General quadrant descriptions are provided below.

MAP IV-1 - QUADRANTS



Quadrant 1 – is defined as the area consisting of the northwest quarter of Ross Township. Gull Lake is located within Quadrant 1, and, as a popular residential and recreational destination for the greater Kalamazoo/Battle Creek area, contains a great deal of development. The more predominant land uses in this sector include the Kellogg Biological Station and its holdings (research farm, dairy, and bird sanctuary), and Gull Lake Ministries.

Quadrant 2 – is defined as the area north of M-89 and east of 42nd Street. Stony Lake and Hamilton Lake are located within Quadrant 2, as is Augusta Creek, which flows east/west and north/south within this profile area. Wetlands and wooded land are located throughout this quadrant. The Michigan Department of Natural Resources (MDNR), Maple Hills Golf Course, Skywood Recovery (former Yarrow Golf and Conference Center), the Cheff Therapeutic Center, and the Battle Creek Hunt Club are all large landholders within Quadrant 2, as are farmers with larger agricultural holdings.

Quadrant 3 – is defined as the area south of M-89 and west of 42nd Street. The Village of Augusta was not included in the land use mapping exercise. Sherman Lake, Graham Lake, Pond Lily Lake and Butterfield Lake are located within this quadrant.

The former Brook Lodge, Gull Lake View Golf Course & Resort, portions of the Kellogg Forest, and the Sherman Lake YMCA Outdoor Center are among the most predominant land uses in this area.

Quadrant 4 – is defined as the area south of M-89 and east of 42nd Street. Wetlands are present in this study area, especially along the Kalamazoo River. A portion of the Fort Custer Military Reservation occupies the southeast corner of Quadrant 4. A stretch of Augusta Creek, which continues through the Village of Augusta and into the Kalamazoo River, flows parallel to, and east of, 42nd Street. Stonehedge Golf Course, Stoa-in Brae Golf Course, Fort Custer Military Reservation, Fort Custer National Cemetery, Fort Custer Recreation Area, W.K. Kellogg Forest, and agriculture are major land uses within this quadrant.

LAND USE DISTRIBUTION

The following text describes the existing land use distribution in Ross Township. Table IV-1 and the accompanying Ross Township Existing Land Use Map (Map IV-4) supplement this text and provide land use distribution data and graphic representation of that distribution.

GENERAL EXISTING LAND USE DESCRIPTION

In 2020, the character of Ross Township's land use is defined by open space, woodlands, agricultural activity, rural country roads, wetlands, valuable water resources, and low-density residential development. Protected institutional lands consisting of farmland, open space and wooded areas make up 22 percent (4,394 acres) of the Township's existing land use area, with agriculture following at 14 percent (2,903 acres), and undeveloped and vacant lands at 2 percent (394 acres), with lakes representing an additional 1,776 acres not reflected in the land use total acreage. Combined, these natural areas account for over 45 percent of the Township's total geographic area. This does not include the abundant open space acreage contained within the residential category (10,559 acres), which is defined by an average density 1 dwelling unit/5 acres.

TABLE IV-1 - EXISTING LAND USE (YEAR 2020)

| Land Use Type | Existing Acreage | % of Total Acreage |
|---|------------------|--------------------|
| Residential | 10,559 | 51.0 |
| Tax Exempt (Institutional) | 4394 | 22.0 |
| Agricultural | 2903 | 14.0 |
| Commercial (inc. commercial recreational) | 1310 | 6.0 |
| Other Uses (inc. wooded areas, open space) | 394 | 2.0 |
| Industrial | 64 | 0.30 |
| Unknown (no data) | 938 | 5.0 |
| Total Acreage | 20,562 | 100.0 |
| *Excludes roads/lakes in acreage total | | |

SOURCE: KGIS, 2020

Agricultural

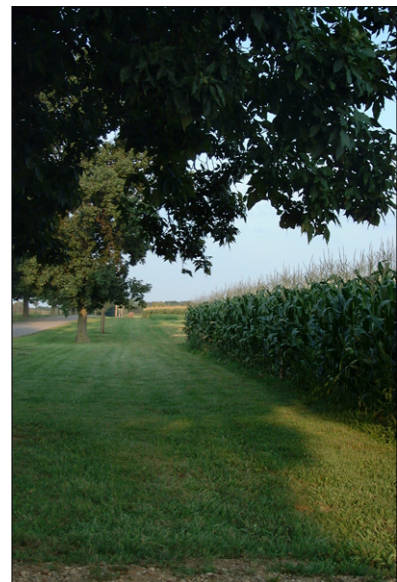
Agricultural land use accounts for 2,903 acres in the Township. This acreage is largely associated with independent and often smaller farms facilitating crop, orchard, and/or livestock activities. Michigan State University also holds



approximately 1,100 acres of agricultural farmland in Ross Township (categorized as Tax Exempt). The majority of that farmland, which is used for experimental/research purposes, is located in the western portion of the Township, east of Gull Lake and west of 43rd Street. As noted on the Existing Land Use Map,

agricultural land use is currently active throughout the Township. However, land north of M-89 in Ross Township is the most dominant area for this activity.

As is common in most rural communities, family farms, particularly those operated as full-time farms, are declining within the Township. Overall, land devoted to active agriculture has steadily decreased over the past several decades, although institutional farmlands, under the ownership and operation of Michigan State University, have “stabilized” this decline. As development pressures increase, the capacity to sustain large areas of agriculture becomes more difficult.



Residential

Residential uses account for 10,559 acres in Ross Township, for an average gross density of 0.2 units per acre (or an average of 5 acres for each unit). According to 2019 data, approximately 90 percent of residential housing is single-family. Applying the percentage of 2019 single-family residential housing to the total 2019 Township residential acreage of 10,559, approximately 9,539 acres of Township land is suggested to be dedicated to single-family housing. While this is not the most accurate measure of specific existing residential land use, it does provide a reasonable estimate of the probable amount of land being utilized for single-family homesteads.

The Existing Land Use Map graphically displays the distribution of residential land within Ross Township. Heavy concentrations of residential development can be found along the shores and immediate surrounding areas of Gull Lake and Sherman Lake. Additional higher density single-family development is located near Stony Lake and Crane's Pond. The balance of residential development is located in linear configurations along the major roads in the Township.



Such perimeter development, while common in many rural areas, is not considered the most efficient approach to land utilization. While splitting larger parcels into smaller lots along roadways was facilitated by the Subdivision Control Act, which was subsequently amended by the Land Division Act, there are negative impacts that result from these corridor developments. Because lots are developed along county roads, which are in effect perimeter roads surrounding full sections, the interior portions of the sections are typically not used, or if they are actively farmed, the potential for residential/agricultural conflicts is enhanced. That is more likely to occur as the number of houses along the perimeter roadways increase. As perimeter lots develop, the preservation of the rural landscape becomes more difficult, in effect changing the visual character of the Township. In addition, each developed lot requires at least one driveway. As the number of lots and houses increase, so does the number of driveways. Over time, the propensity

for vehicular accidents will increase. Alternative, more efficient residential land use patterns will be considered in Section VII.

Commercial

Commercial uses cover 1310 acres of the Township. This represents only 0.3 percent of the Township's buildable land area (non-wetland/lake areas). Commercial land uses are located in Sections 8, 17, 19, 20, 25, 26 and 33 and consist primarily of small convenience retail and restaurants concentrated in Section 20, on the south shore of Gull Lake. A motel is located in this area at the intersection of M-89 and 38th Street.



Township residents do their convenience shopping in Richland or Augusta. Since many residents commute to work in Kalamazoo/Portage or Battle Creek, it is likely that a substantial amount of shopping for convenience goods is also done in those communities. Comparison shopping (appliances, clothing, sporting goods, etc.) is available in the Kalamazoo/Portage and Battle Creek areas, both of which are only a 15 to 30-minute drive from Ross Township.

Skywood Recovery Center (formerly Yarrow Executive Conference and Training Center) is located on 300 acres west of 48th Street in Section 1. A state-of-the-art residential treatment facility, the Skywood facility and operations have been designed to take advantage of the woodlands, fields and ponds present on the property, harnessing the restorative effects of the natural environment. While the center is itself a commercial activity, the majority of the land on which it sits is open space. Consequently, the total 300-acre site is not designated as commercial land use, and instead, the majority is included in the open space, wetland and water categories.

Commercial Recreational

Commercial recreational land uses in the Township are predominantly golf courses, namely Gull Lake View Golf Club & Resort (283 acres in Section 20), Stonehedge Golf Course (164 acres in Section 23), and Stoaatin Brae Golf Club in Section 26).

Maple Hills Golf Course, (80 acres in Section 13), a 9-hole course located on C Avenue, closed in 2020. Gull Lake View Golf Club & Resort contains a West and East Course, each with 18 holes. Stonehedge contains two 18-hole courses, Stonehedge North and Stonehedge South, located on each side of M-89. Stoa-in Brae, established in 2016, is a sweeping links-style course and sits at one of the highest points in Kalamazoo County. It was named both Michigan Golf Course of the Year and National Golf Course of the Year in 2020.

While much of the institutional land in the Township is designated primarily for research and education, it is also open to the public for recreation purposes. Additional recreational land uses are associated with the Kellogg Biological Station, MSU's W.K. Kellogg Forest, Michigan State Game Area, the Cheff Center, the Fort Custer State Recreation Area, and the North Country Trail. These largely undeveloped land holdings are described in more detail on page III-3.

Industrial

Skamp Industries, Inc. located on M-89 east of 38th Street, is the only industrial land use within the Township. This is primarily due to the close proximity of the Township to the Fort Custer Industrial Park west of Springfield, which offers a more comprehensive package for industrial development.

Institutional

Areas defined as institutional, which include natural and agricultural areas as well as buildings and structures that are under the ownership and jurisdiction of public and quasi-public entities, occupy over 4,599 acres (see Table IV-2), or almost 22 percent of the Township's and use acreage.

Those portions of institutional holdings that are actually improved (with administrative, research, conference, and ancillary buildings) encompass a very small portion of the institutional land area within the Township. These improved portions of Institutional lands are located in Sections 5, 6, 8, 9, 13,



20, 21, 23, 27, 28, 33 and 36 (see Map IV-2). For the most part these institutional properties are tax exempt properties. These are buildings and structures predominantly belonging to Michigan State University, and include the various components of the W.K. Kellogg Biological Station, including the Manor House, Conference Center and Walter F. Morofsky Library at the intersection of B Avenue and East Gull Lake Drive in Section 6; the Dairy Center west of 40th Street in Section 5, the Kellogg Bird Sanctuary in Section 8, east of East Gull Lake Drive, and the Learning Center in Section 8 west of 40th. Michigan State University sold Brook Lodge Hotel and Conference Resort located in Section 28 north of Augusta in 2018. The 63-acre portion of the property occupied by the facility's historic buildings is currently under contract for future use.



MSU's W.K. Kellogg Experimental Forest, located on 42nd Street, is known worldwide for research on tree breeding, planting techniques, and plantation management. The 716-acre property contains a visitor building and restrooms, along with a picnic area, an interpretive walking trail and numerous footpaths.

The Cheff Therapeutic Center is located on 43rd Street between M-89 and C Avenue. It is a nonprofit organization devoted to providing therapeutic services to the physically disadvantaged through equestrian activities. The Center's facilities include offices, bathrooms, classrooms, and an indoor arena, totaling 25,000 square feet. The Center has several riding trails within the 307 acres it owns in Sections 15 and 16.

The Battle Creek Hunt Club, a private equestrian club, is located on 43rd Street, three miles north of Augusta. The club maintains a club house and dining room, an indoor and two outdoor riding arenas, space for boarding, as well as kennels, and has riding trails within the 109 acres it encompasses.

Gull Lake Ministries (Gull Lake Bible Conference) is a non-denominational religious retreat and conference center located within the Midland Park plat in Section 8 on the east shore of Gull Lake. The Center is used for group retreats and family vacations during the summer and for faith-based events and conferences during other times of the year. The Ministries-owned property encompasses approximately 30 acres, with another 8.5 acres leased from MSU. Lodging on the grounds consists of waterfront and inland condos and lodge-style units, as well as



cottages, in addition to a conference center, church (tabernacle) and recreation facilities (basketball, tennis, pickleball, volleyball, frisbee golf, zip line, splash pad, swimming and boating). Except for residences occupied year-round by Conference staff, most residential units are occupied only on a weekly or daily basis.

The Conference center contains administrative offices, 18,500 square feet of waterfront dining and space to accommodate groups of up to 500 people.

TABLE IV-2 – INSTITUTIONAL LANDS IN ROSS TOWNSHIP

| Institution | Section Location | Approximate Acres |
|---|------------------|-------------------|
| MSU Kellogg Biological Station | 4,5,6,7,8,9 | 1,419 |
| Fort Custer Military Reservation, National Cemetery, State Recreation Area | 35,36 | 1,020 |
| W.K. Kellogg Forest | 21,22,27,28 | 716 |
| Brook Lodge | 21,28,29 | 483 |
| Cheff Therapeutic Center | 15,16 | 307 |
| YMCA Outdoor Center | 29,32 | 113 |
| Battle Creek Hunt Club | 15 | 82 |
| Gull Lake Ministries | 8 | 40 |
| Kalamazoo County Landfill (closed) | 27,28 | 40 |

| | | |
|---|--------------------|-------|
| Miscellaneous (Township office, cemeteries, park, schools, churches) | 8,12,14, 20, 21,31 | 25 |
| MDNR State Game Area | 9,10 | 330 |
| City of Kalamazoo | 30 | 24 |
| Total | | 4,599 |

SOURCE: Gove Associates, Inc.

In addition to the Gull Lake Ministries facility, there are three churches within close proximity to Gull Lake and one church on 46th Street north of M-89. These include St. Anne’s Catholic Church on D Avenue, west of 39th Street near the southeast corner of Gull Lake; Yorkville Community Church at the corner of D Avenue and 37th Street near the southwest corner of Gull Lake; Gull Lake Bible Church on Midland Drive, within close proximity to, but not associated with, Gull Lake Ministries in Midland Park; and Day Bible Church on the corner of 46th Street and CD Avenue.

The Michigan Department of Natural Resources State Game Area encompasses approximately 330 acres and is located east of 42nd St. and north of C Ave.

Township lands/facilities include Ross Township Hall and Fire Station located on the south side of M-89 between 37th and 38th Streets in Section 19, on 6.7 acres of land. The Township also owns and maintains four cemeteries: Yorkville Cemetery established near the Yorkville Community Church (2 acres); Howlandsburg Cemetery covering one acre south of G Avenue between 37th and 38th Streets; Day Cemetery encompassing 2.25 acres situated near the intersection of C Avenue and 45th Street; and the one-half acre Ross Cemetery located north of the intersection of M-89 and 42nd Street. The Howlandsburg Cemetery is at capacity, but the remaining three cemeteries have plots available. The remaining cemeteries should be able to accommodate needed burial sites well past the 20-year planning period. In addition, the Fort Custer National Cemetery, located in the southeast corner of the Township in Section 36, encompasses 770 acres, of which 250 acres are developed with gravesites, leaving a substantial capacity for expansion. There are almost 14,000 interments in the current developed portion of the cemetery.

The Ross Township Park, located on the east shoreline of Gull Lake, represents the Township's only publicly-owned recreational facility. The Park is provided over 300 feet of beach frontage on Gull Lake and is a popular destination for passive recreation (picnic, swim).

Overall, the improved (developed) portions of institutional lands comprise only a small proportion of the total land holdings by public, quasi-public and nonprofit organizations.

MAP IV-2 – TAX EXEMPT PROPERTY

Wetlands/Water Bodies

In 2002, wetlands occupied approximately 3,499 acres, or 15.9 percent of the total Ross Township land area. Water areas, including lakes, rivers and streams, account for another 1,809 acres, or 8.2 percent of the Township's total existing land area.

Gull Lake is the largest surface water body in the Township, encompassing 2,050 acres, of which 1,121 acres are within the Township boundaries, accounting for 62 percent of the Township's total water area and 5.1 percent of Ross Township as a whole. Gull Lake has a maximum depth of 110 feet with a lake bottom consisting of a combination of sand, gravel, peat, marl, and muck. The perimeter of this lake is essentially developed, with portions developed as relatively high density residential.

Sherman Lake, located in the southwest quadrant of the Township, is the second largest lake, covering 120 acres with a depth of up to 35 feet. Sherman Lake also contains residential land uses along its western, northern and eastern shorelines. A public access site with a boat ramp, parking and toilets is located on North Sherman Lake Drive. The YMCA Center is situated on the east shore of the lake.

Stony Lake is located in the center of the Township immediately adjacent to M-89 and encompasses approximately 60 acres. Stony Lake Hills, a residential subdivision covering about 150 acres, borders Stony Lake on the east. **Crane's Pond**, located in Section 29 just west of 38th Street, is 54-acres in size and situated just north of Sherman Lake. Cranes Pond, a 140-acre open space community, occupies the northwestern shoreline of the lake.

Duck Lake and **Wintergreen Lake**, both located in the northwest quadrant of the Township, cover 29 acres and 39 acres, respectively. Both of these lakes are within the Kellogg Biological Station boundaries and surrounded by woodland and cropland. Duck Lake has a maximum depth of 14 feet with an organic soil and sand bottom. Wintergreen Lake has access to a wildlife viewing area as part of the Kellogg Bird Sanctuary visitor's program, and is a natural lake with a man-

made dam. It has a maximum depth of 21 feet with a bottom consisting of marl, organic soils and sand.

Hamilton Lake is located in Sections 1 and 12 in the northeast quadrant of the Township. This lake encompasses 40 acres with no public access and is surrounded by woodland. It has an inlet and outlet on Augusta Creek.

Graham Lake is located in Section 19 and covers approximately 10 acres. An outlet feeds it from Gull Lake to the north and the lake's water flows into the Gull Lake Outlet into **Butterfield Lake**. Butterfield Lake is located in Sections 19 and 30 and encompasses 27 acres. The lake's water flows into the Gull Lake Outlet, which eventually flows into the Kalamazoo River. Both Butterfield Lake and Graham Lake are in wetland areas and therefore are not likely to be developed.

Douglas Lake, located in Section 28, covers 9 acres, with Old Mill brook serving as an inlet and outlet for this body of water. **Craven Lake**, west of Douglas Lake, has a surface area of 32 acres in Sections 28 and 29. Both Craven Lake and Douglas Lake are surrounded by wetlands. **Mill Pond**, located in Section 31, east of 37th Street and north of G Drive, is a man-made pond covering 29 acres that was created during the logging era within the Gull Lake Outlet. There are some residential parcels along the west side of the lake. **Pond Lily Lake** is in Section 32, covering 20 acres west of 39th Street and bordered by wetlands on the north. **Goslins Lake** is a small body of water in Section 11 covering 1.8 acres, with Augusta Creek serving as the lake's inlet and outlet.



There are also 68 small unnamed lakes within the Township, ranging in size from 0.1 acre to 15 acres. All, except for two which are man-made, are natural lakes or ponds, with many surrounded by wetlands.

The **Kalamazoo River** runs through the southeast quadrant of the Township for

a distance of about three and a half miles. Because of the substantial amount of wetlands on both sides of the river, most of its shoreline is undeveloped. **Augusta Creek**, with headwaters in Barry County, runs north and south through the middle of the Township, emptying into the Kalamazoo River in the Village of Augusta. The Creek also runs east-west through Hamilton Lake in the northeast portion of the Township. Augusta Creek is a major natural asset to the Township, creating a watershed basin of steep slopes and wetlands and contributes to the scenic beauty of the area.

The expanse of wetlands within Ross Township are clearly illustrated on the Existing Land Use Map (Map IV-4). Wetlands of various sizes can be found within every section of Ross Township. Large wetland areas are located along the Kalamazoo River, Augusta Creek, and all Township lakes. The largest concentration of wetlands is in the north central portion of the Township, along both sides of Augusta Creek and around Hamilton Lake, in Sections 1, 2, 3, 10, 11, and 12. Much of this area contains forest vegetation conducive to wet soils and standing water.

Other large areas of wetlands include forested areas along both sides of the Kalamazoo River in the southeast section of the Township, the areas around Butterfield and Graham Lakes and an area east of Sherman Lake in Sections 28 and 29. Land along both sides of Augusta Creek, particularly east of 42nd Street in Sections 16, 15 and 27, also contain significant wetlands. The overwhelming majority of wetlands are located in larger parcels of approximately 20 acres or more. Because of these wet areas, these parcels, for the most part, have limited development potential.

SUMMARY

Given the ongoing concern within Ross Township and the northeastern region of Kalamazoo County concerning the preservation of open space and conservation of water resources, Table IV-1 further demonstrates that there is a large inventory of Township land (especially open space and water resources) that could be negatively impacted by development without an appropriate master plan. Such impacts could include soil erosion and sedimentation problems, especially in

waterfront areas, from runoff due to development, loss of vegetation, potential groundwater contamination from high intensity development using on-site septic systems, and the detrimental loss of scenic features and viewsheds. The Future Land Use section of this Plan will designate the most appropriate locations for future development and recommend development patterns and strategies that will help to mitigate those negative impacts.

MAP IV-3 – EXISTING LAND USE - 2020