



CLYDE TOWNSHIP MASTER PLAN

Adopted July 20, 2004

Prepared by
Clyde Township Planning Commission
June 29, 2004

Assisted by
Birchler Arroyo Associates, Inc.
Planning Communities & Transportation Systems
www.birchlerarroyo.com

CLYDE TOWNSHIP MASTER PLAN

Adopted July 20, 2004

Prepared by
Clyde Township Planning Commission
June 29, 2004

Assisted by
Birchler Arroyo Associates, Inc.
Planning Communities & Transportation Systems

TABLE OF CONTENTS

TEXT

Introduction	1
Regional Setting	5
Brief History	9
Existing Conditions Summary	11
Existing Land Use	19
Vision Statement	27
Goals & Objectives	31
Land Use Plan	41
Thoroughfare Plan	59
Implementation Strategies	79

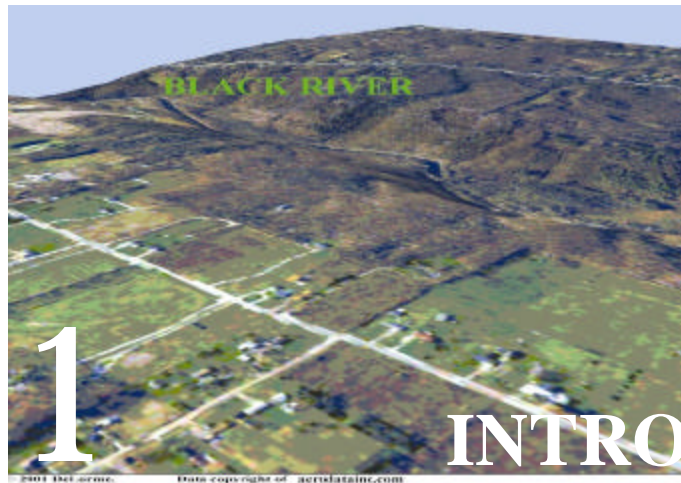
APPENDICES

A: Existing Conditions Analysis	83
B: Sand & Gravel Analysis and Plan	117
C: Recreation Plan	133
D: Attachments	

LIST OF MAPS

Regional Location	5
Master Plan Designations of Adjacent Communities	8
Sensitive Lands	17
Limitations to Development	18
Existing Land Use 2002	25
Land Use Plan	55
Future Municipal Water and Sewer Service Areas	57-58
Traffic Volumes	61
Existing Road Conditions	63
Road Functional Classifications	69
Thoroughfare Plan	77
Community Facilities	99
Municipal Water Service Area	100
General Soils	105
Topography	107
Watersheds	108
Floodplains	109
Wetlands	110
Woodlands	111
Bedrock Geology	112
Surface Geology	113
Soils	114
Limitations To Development	115
Prime Farmland	116
Refractive, Abrasive, and Other Industrial Minerals Operations	122
Sand & Gravel Pits	123
Sand & Gravel Resources	124
Drift Thickness	125
Sand & Gravel Evaluation Criteria	130
Sand & Gravel Extraction Preferred Areas	131
Existing Land Use – Recreation Plan	151
Topography	156
Wetlands	157
Woodlands	158

Surface Geology	159
Soils	160
Zoning Districts Map	161
Township Recreation Facilities	173
Bill Bearss Map	196
Skate Park	197
River Park	198



INTRODUCTION

A community Master Plan can be described as visionary, resourceful, informative, and, in many cases, historical. It is a long-range policy document that is intended to guide future decision-making related to land use and community development. It is intended to portray a clear statement of community goals and objectives - a vision of the future – and plans to achieve the vision.

WHAT IS A MASTER PLAN?

A community's Master Plan is a blueprint for the future. It is a comprehensive document, long-range in its view, and intended to guide development in the Township over a period of 10 to 20 years. The Master Plan sets forth public policies that will be followed regarding growth, development, and redevelopment. The information and concepts presented in the Master Plan are intended to guide local decisions on both public and private uses of land, as well as the provision of public facilities.

***Master Plan
= Guide***

WHY DOES A COMMUNITY PREPARE A MASTER PLAN?

The Township Planning Act of 1959 states that **“the planning commission shall make and adopt a basic plan as a guide for the development of unincorporated portions of the Township.”** The Act also states that the plan should be used to:

- ✍ promote public health, safety and general welfare;
- ✍ encourage the use of resources in accordance with their character and adaptability;
- ✍ avoid the overcrowding of land by buildings or people;

- ✍ lessen congestion on public roads and streets;
- ✍ facilitate provision for a system of transportation, sewage disposal, safe and adequate water supply, recreation and other public improvements; and
- ✍ consider the character of each township and its suitability for particular uses judged in terms of such factors as the trends in land and population development.

WHAT IS THE RELATIONSHIP BETWEEN THE MASTER PLAN AND ZONING ORDINANCE?

Zoning is a regulatory mechanism for controlling the classification and regulation of land use. It is law. The Zoning Ordinance controls land uses based on today's conditions.

Unlike the Zoning Ordinance, the Master Plan is a set of policies, not a law. While the Zoning Ordinance and Zoning Map regulate current and proposed

Zoning Ordinance = Law

land use, the Master Plan and its maps and policy statements are intended to guide land use decision-making over the long term. The Master Plan is a community's "vision," while the zoning ordinance contains the rules that govern the path to that vision.

State law requires that the zoning ordinance be based on an adopted plan. Therefore, the Master Plan forms the basis upon which zoning decisions are made. With a Master Plan in place, zoning decisions consistent with the plan are presumed by the courts to be valid; it is up to the challenger to prove the municipality's action is not valid. Without a Master Plan, the courts may find the Township's argument to be weaker, leaving the community more vulnerable to a negative ruling.

THE PLANNING PROCESS

Clyde Township initiated the Master Plan process by working with its planning consultant to prepare an inventory and analysis of existing conditions - an environmental scan. The Planning Commission reviewed its regional setting, development history, existing land use, natural features, and population characteristics. Problems, opportunities, and community assets were identified. The existing conditions analysis findings are provided in the Appendix of this document.

Concurrent with the completion of the existing conditions analysis, the Planning Commission mailed a Citizen Survey to a sample of all property

owners within the Township. Once the survey results were available, the Township Planning Commission reached out to the public for additional input through the Visioning process. Representatives from a variety of interests within the community came together on June 25, 2002 to discuss the future of Clyde Township and assist in preparing a Vision Statement.

The next step in the process was for the Planning Commission to develop its goals and objectives statements. Using the valuable input from the citizen survey and the Visioning process, a series of goals and objectives were formulated to guide the "Plan" elements of the Master Plan.

The final task was to prepare a Land Use Plan and Thoroughfare Plan to guide future development. The final "Plan" chapters were prepared with direct references to the goals and objectives. In addition, action items for plan implementation were incorporated into the final document to chart a path to make the plan a reality. It is important to note that the Land Use Plan Map is intended to show generalized land use and is not intended to indicate precise size, shape or dimension. In addition, the recommendations of the Land Use Plan have a long-range planning horizon and do not necessarily imply that short-range rezoning is appropriate.

The final step in the planning process was to garner additional public input through a public hearing, which is required by the Township Planning Act. This final segment of the process provided an opportunity to receive public input prior to the adoption of the plan.

This page left intentionally blank



REGIONAL SETTING

A community's future is determined by many factors. Some are the result of local decisions, while others result from action taken outside the community. Very few communities are self-sufficient. Rather, the interaction between communities within the region gives each one the opportunity to grow and develop. Two regional factors can help an individual community chart its possible paths: regional location and regional influences.

REGIONAL LOCATION

Clyde Township is in northeast St. Clair County. The Township is bordered by Port Huron and Fort Gratiot Townships on the east, Burtchville and Grant Townships on the north, Kenockee Township on the west, and Kimball and Wales Townships to the south. The historic settlements of Ruby, Abbotsford, Atkins, and North Street exist within the Township. State road M-136 traverses the northern half of the Township, connecting Port Huron with M-19 in Brockway Township. M-19 provides linkages to the cities of Yale, Memphis and Richmond.



Map RS 1
Regional Location

Clyde Township is located approximately 12 miles from Port Huron, 14 miles from Sarnia, Ontario, Canada, 70 miles from downtown Detroit, and 65 miles from Flint. Good regional access is found at the Wadhams and Taylor/Lapeer Road interchanges with I-69 just south of the Township border.

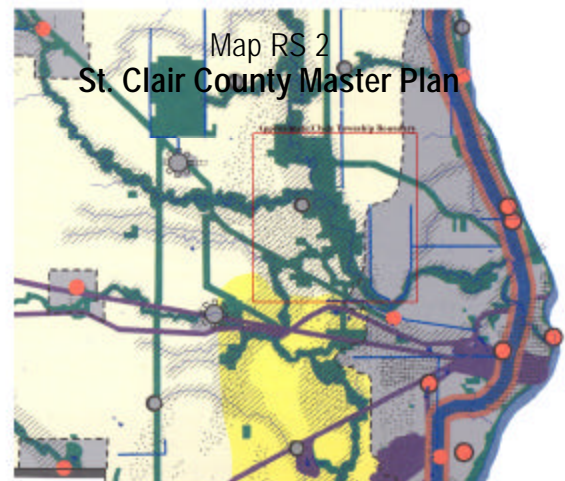
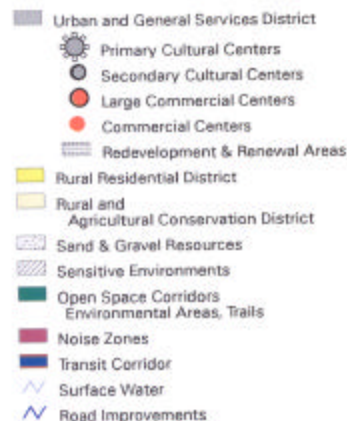
OTHER PLANNING ACTIVITIES

At the county level, the St. Clair County Metropolitan Planning Commission carries out County planning functions. The Commission is responsible for transportation planning, applications for federal funding for housing rehabilitation and the County's Solid Waste Management Plan. The Solid Waste Management Plan does not recommend the opening of any new landfills, but rather encourages recycling, reuse, waste reduction, and composting. The County also provides digital mapping services in its Geographic Information Systems section. In addition, Lands and Graphics provides property line maps and aerial photography of County lands.

The St. Clair County Master Plan was the recipient of a 2000 Michigan Society of Planning Award. The Master Plan map notes that Clyde Township has sand & gravel resources, sensitive environments, open space corridors, rural residential land, rural and agricultural land, a secondary cultural center (Ruby), and is partially within a Urban and General Services District (see Map RS 2).

The St. Clair County Parks and Recreation Commission (PARC) is responsible for implementing the St. Clair County Parks and Recreation Master Plan. The Plan notes the influence and importance of the Port Huron State Game Area, which encompasses over 6,000 acres in Clyde and Grant Townships, and the Wadhams to Avoca Trail – a 9.8 mile section of abandoned CSX railroad right-of-way that is being converted to a pedestrian trail. Goodells Park, a 327 acre centerpiece of County Park property, is located in adjacent Wales Township to the southwest.

St. Clair County Master Plan



The Southeast Michigan Council of Governments is the planning agency that conducts regional planning services, such as planning for land use, transportation, recreation, and public utility extension. SEMCOG is also active in transportation modeling, organizing data resources, and review of local applications for federal funding.

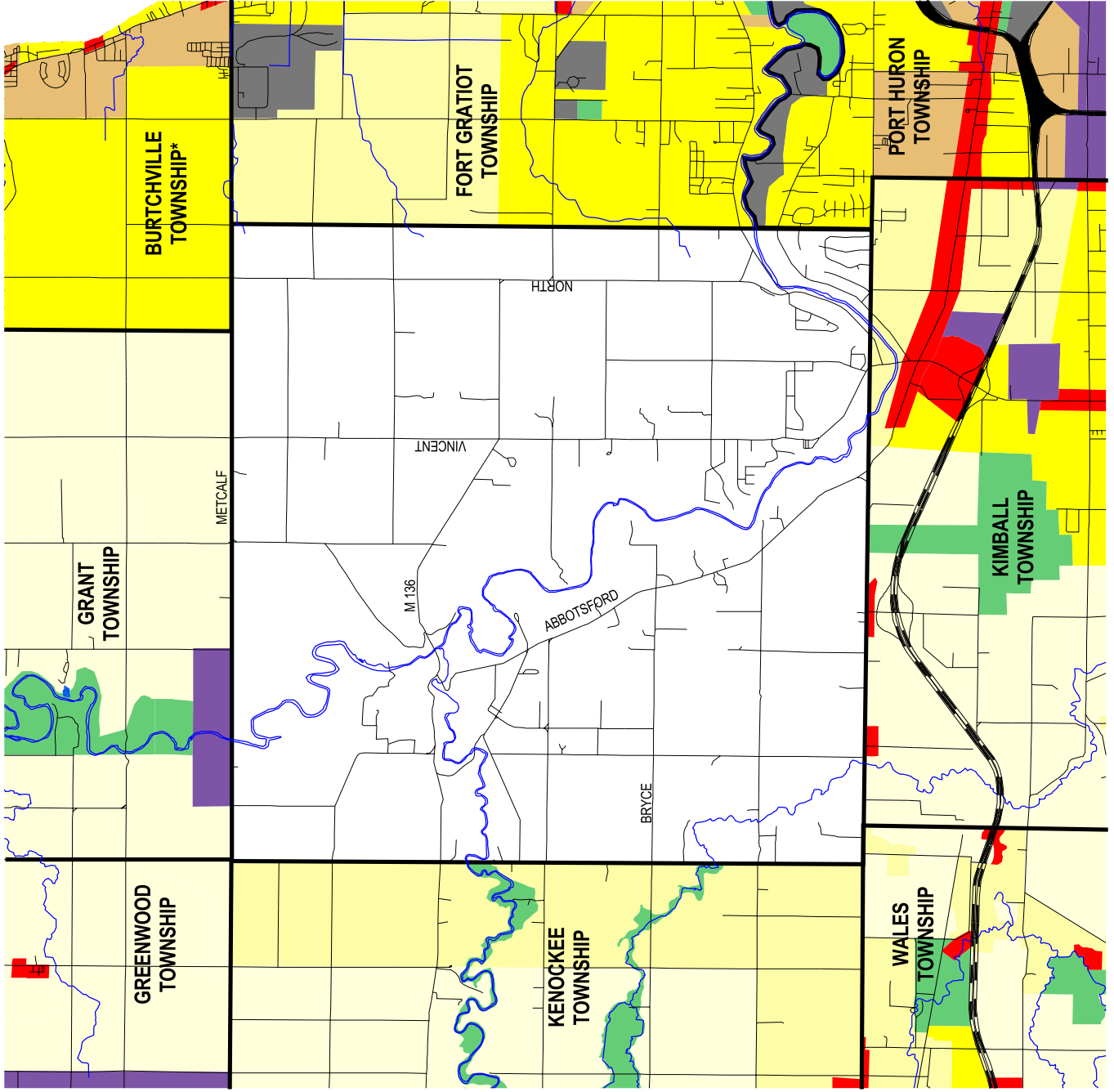
LOCAL INFLUENCES

In addition to regional plans that may affect the future development of Clyde, local plans by neighboring communities may also influence land use along the Township's boundaries. As noted above, Clyde has common borders with seven townships.

Map RS 3 shows the future land use recommendations of the communities that border Clyde. This information was obtained from the St. Clair County Metropolitan Planning Commission. The most predominant adjacent planning category is agriculture and low density single-family residential. Exceptions include an industrial area in Grant Township, west of Gibbons Road; two small commercial areas in Kimball Township, at English Road and Taylor Road; high density residential in Fort Gratiot Township (southern 2/3 of township border); and high density residential in Burtchville Township.

FUTURE INFLUENCES

Clyde Township will most likely be influenced by growth pressure influenced by its proximity to Port Huron and the I-69 freeway. With the convenient access of I-69 and easy connection to I-94, the Clyde Township area is within a commuting drive to many employment and shopping centers that the Detroit metropolitan area has to offer. The resources of the Black River, Mill Creek, Pine River, and Port Huron State Game Area will be attractive to many people. The potential expansion of water and sewer service could foster additional pressure for growth. The Township will look to consider these existing resources and influences when developing its plan.



**GENERALIZED
MASTER PLAN CATEGORIES***

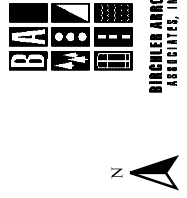
- OFFICE, MIXED OFFICE, TRANSITIONAL
- OPEN SPACE
- WATER
- BUSINESS, COMMERCIAL
- PUBLIC FACILITIES, QUASI PUBLIC
- INDUSTRIAL, WAREHOUSE, LIGHT MANUFACTURING
- UTILITY, TRANSPORTATION
- AGRICULTURE AND 'RURAL RESIDENTIAL
- SINGLE FAMILY RESIDENTIAL, LOW DENSITY
- SINGLE FAMILY RESIDENTIAL, HIGH DENSITY
- MULTI-FAMILY RESIDENTIAL, ALL LOT SIZES

* NOTE: GENERALIZED MASTER PLAN INFORMATION IS UNAVAILABLE FOR BURTCHVILLE TOWNSHIP; THEREFORE, THIS MAP ILLUSTRATES GENERALIZED ZONING CATEGORIES FOR BURTCHVILLE TOWNSHIP ONLY.

**ADJACENT
COMMUNITIES GENERALIZED
MASTER PLAN**

CLYDE TOWNSHIP, ST. CLAIR COUNTY

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BURTCHVILLE ASSOCIATES, INC.



BRIEF HISTORY

This chapter includes a brief overview of the history of St. Clair County and Clyde Township. This information is part of the process of understanding past and present influences on the Township's development patterns.

St. Clair County modern settlement history dates back to the 1670s, when French Explorer Robert Cavelier de la Salle and French Missionary Pere Louis Hennepin sailed through the Detroit River and entered Lake St. Clair. The date was August 12, 1679, which was the date of the religious festival of Sainte-Claire, who founded the order of Franciscan nuns.

St. Clair County was detached from then Wayne County in 1820 by an order of Lewis Cass, Governor of the Northwest Territory. It included a much larger area encompassing St. Clair, Huron, and Sanilac Counties (and beyond). After several changes in shape over the years, St. Clair County took its present day form in 1852.

Clyde Township was incorporated as a village in 1836 with Ralph Wadhams as the Supervisor. In 1837, the Township had a population of 339 residents. Supervisor Wadhams was the proprietor of Clyde Mills within the Township and suggested the name of Clyde for the Township. At the time, the Township included land, which later became the Townships of St. Clair, Riley, Lexington, Columbus, Wales, Berlin, Emmett, Kimball and Kenockee. The organization of the new Townships situated Clyde Mills in Kimball Township in the settlement area known as Wadhams. The present boundaries of the

Township were established by 1855, and by 1860 Clyde Township had a population of 1,128 residents.

Historic settlements in Clyde Township include Ruby, North Street, Atkins, and Abbottsford. Ruby was an active settlement area in the mid-1850s. Saw mill owner John Beard was the first Postmaster in 1854. By 1876, there was a post office, plow manufactory, planing mill and church in town.

The Ruby Methodist Church congregation was organized in November 1854 at a meeting in the North Street Schoolhouse. In 1862, the group began to meet in a store building owned by John Beard. He later donated the building and lot to the church. In 1928 the church building was moved a short distance to its present location and a church house was added to the rear.

Abbottsford was originally settled around a saw mill in 1816 and called Fairfield. The name change was made to reflect the owner of the saw mill and grist mill. A post office opened in 1892.

Atkins was a station on the Pere Marquette Railroad and served as a post office as of 1873. Allen Atkins first settled this area in 1837.

North Street was also a station on the Pere Marquette Railroad. It included a post office, school and church in 1879.

The following resources were used in the preparation of the history chapter: St. Clair County Master Plan (2000) by the St. Clair County Metropolitan Planning Commission; A Brief History of Michigan and St. Clair County, by Tom Kephart (part of Michigan GenWeb); the State Historic Preservation Office, Michigan Historical Center, Michigan Department of State; St. Clair County, Michigan. Its History and its People by William Lee Jenks; and History of St. Clair County Michigan Published by A.T. Andreas & Co.



SUMMARY

As noted in Chapter 1, the planning process begins with an evaluation of a community's characteristics, such as population, housing, workforce, income, local market potential, development patterns, natural resources and other pertinent factors. Once a database of existing conditions is compiled, a community can evaluate the findings, which provide a foundation as goals are set, plans are developed, and implementation strategies are determined.

The following information highlights the key findings of the Existing Conditions Analysis found in Appendix A of this document.

POPULATION & HOUSING

Population

As shown in Table ECS 1 below, Clyde Township had a 55% increase in population between 1970 and 1980. Other adjacent communities grew at a slower rate during this decade. Clyde's rapid growth leveled off between 1980 and 1990 with a 9.1% percent increase in population, similar to nearby Burtchville Township. Communities such as Greenwood Township, Port Huron Township and Wales Township experienced slight declines in population between 1980-1990, while most of the communities adjacent to the Township had varying degrees of modest growth. Growth between 1990 and 2000 remained steady for Clyde Township with a 9.3% increase in population. Other adjacent communities experienced moderate increases ranging from 13-19%, while several nearby Townships such as Grant, Greenwood, Kenockee and Wales experienced even greater rates of growth (as high as 37.8%).

Table ECS 1
Population, Clyde Township & Adjacent Communities

	1970	1980	70-'80 percent change	1990	80-'90 percent change	2000	90-'00 percent change
Clyde Twp.	2,980	4,632	55.44%	5,052	9.07%	5,523	9.3%
Burtchville Twp.	2,037	3,069	50.66%	3,359	9.45%	3,956	17.8%
Fort Gratiot Twp.	7,075	8,496	20.08%	8,968	5.56%	10,691	19.2%
Grant Twp.	832	1,119	34.50%	1,210	8.13%	1,667	37.8%
Greenwood Twp.	889	1,046	17.66%	1,037	-0.86%	1,373	32.4%
Kenockee Twp.	1,250	1,730	38.40%	1,854	7.17%	2,423	30.7%
Kimball Twp.	6,152	7,180	16.71%	7,247	0.93%	8,628	19.1%
Port Huron Twp.	7,635	7,886	3.29%	7,621	-3.36%	8,615	13.0%
Wales Twp.	1,970	2,368	20.20%	2,294	-3.13%	2,986	30.2%
St. Clair County	120,175	138,802	15.50%	145,607	4.90%	164,235	12.8%

Source: 1970, 1980, 1990, 2000 U.S. Census, SEMCOG Community Profiles

Table ECS 2 below provides information regarding the change in the number of total housing units, households, and specific household characteristics between 1990 and 2000. During this decade, the number of non-family households increased by a greater percentage than the number of family households. However, the number of female-headed households remained stable, which is contrary to national trends.

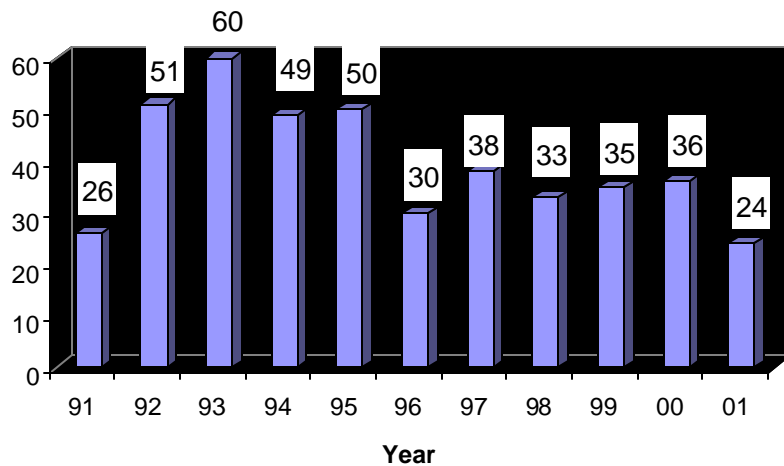
Table ECS 2
Clyde Township Household Characteristics, 1990 -2000

	1990	2000	1990-2000# Change	1990-2000 % Change
Total Housing Units	1641	1989	348	21.2%
Number of Households	1603	1931	328	20.5%
Family Households	1382	1591	209	15.1%
Non-Family Households	221	340	119	53.9%
Female Headed Households	113	115	2	1.8%
Persons Per Household	3.15	2.85	-0.30	-9.5%

Source: 1990, 2000 U.S. Census, SEMCOG Community Profiles

According to SEMCOG, between January, 1991 and December 2001, 432 residential building permits were issued in the Township. This represents a 26.3 % increase in housing units over the past decade. Figure ECS 1 on the following page shows the specific trends in residential building activity over the past decade.

Figure ECS 1
Residential Building Permits, January 1991- December 2001



Source: SEMCOG Building Permits

POPULATION PROJECTIONS

It is important to have a good estimate of the future population so that planning for infrastructure, municipal services, and administrative capabilities can be well managed and directed to appropriate target populations. Planning for a population that is less or more than expected can impact the community's ability to provide necessary services. Several population projections and sources were calculated and reviewed as part of the Township's Master Plan. These projections are described in detail in Appendix A, a summary of the projections used is provided below.

Table ECS 3
Population Projection Summary

Method / Source	2010 Projection	2020 Projection	2030 Projection
SEMCOG	5,812	6,178	6,413
Constant Proportion	6,365	6,472	6,839
Growth Rate	6,037	6,586	10,236
Increasing Proportion	6,028	6,665	7,145

Based on the above summary, the Township should plan within a reasonable range for the next 20 years. For 2010, a population of 5,800 – 6,200 appears possible without being overly aggressive. For 2020, a range of 6,200 – 6,600 provides a reasonable planning target. For 2030, a range of 6,400 – 6,800 is assumed.

NON-RESIDENTIAL DEVELOPMENT FORECASTS

Several forecasting methods were used to assist the Township in preparing for future non-residential development. A detailed analysis of the methods applied can be found in Appendix A. Table ECS 4 below provides a summary of the Commercial Development Forecast Methods used.

Table ECS 4
Summary of Commercial Development Forecast Methods

SUMMARY	GLA* Based on Retail Spending Analysis	GLA Based on Clyde Township Support Population Analysis
Neighborhood (Convenience)	36,134	39,600 – 66,000 sq. ft.
Community (Minor Comparison)	24,390	0
Regional (Major Comparison)	17,922	0

*GLA = Gross leasable area

According to *Urban Planning and Design Criteria*, neighborhood commercial developments typically need approximately one acre per 12,500 square feet of space, community commercial developments typically need approximately one acre per 15,000 square feet, and regional centers need approximately one acre per 13,300 square feet. Based on the summary table above, in order to provide for neighborhood convenience shopping within Clyde, 3 to 5 acres of land would be needed, 0 to 2 acres is needed for community commercial development, and 0 to 1.5 acres for regional shopping. The total amount of land area planned for retail may need to be larger than these numbers because of two key factors: 1) business generated by the Wadhams Road interchange pass-through, non-resident traffic; and 2) limitations on total buildable area due to wetlands, steep slopes, woodland preservation, and the like.

Industrial Development

The demand for industrial development is related to many factors including materials, labor, transportation, energy, and public policy. Industrial developers examine the availability of utilities, affordable housing for the work force. Given the rural character of Clyde, and the existing limited amount of industrial land uses within the community, the total population methodology of estimating industrial land use needs is more appropriate for the Township. Based on an estimated 2030 population of 6,600 for Clyde Township, approximately 79 acres of industrial land can be supported within the community.

Office Development

There are two types of office buildings: single-tenant and multi-tenant. Single tenant buildings can be located in almost any location satisfactory to the tenant, who may also be the building owner. Multi-tenant office buildings, which are often built on the speculation that tenants will be found, are much more tied to market factors. Multi-tenant office developers look at access, proximity to professional and clerical labor, parking, transit opportunities, proximity to professional and personal services and the overall "image" of the community.

It is not reasonable to expect that multi-tenant office buildings would be viable in Clyde Township. Small professional office, medical office, and combination office/industrial buildings are likely to be more viable within the community over the next 15-20 years.

COMMUNITY FACILITIES

Township facilities include the Clyde Township Hall, two cemeteries, the North Street Post Office and the Township's Fire Station. Several park properties are owned and maintained by the Township totaling approximately 39.36 acres. The Port Huron State Game Area lies within the Township's boundary as well as the Wadhams to Avoca Trail – a 9.8 mile section of abandoned CSX railroad right-of-way that is being converted to a pedestrian trail.

Clyde Township is within the Port Huron and Yale School Districts. The Yale District covers only a small portion of the northeast corner of the Township west of Brott Road. There are no school facilities, either public or private, located within the Township's boundaries.

Limited water service is provided for the southeast quadrant of the Township through an agreement with neighboring Kimball Township. Although Kimball Township, Port Huron Township and St. Clair County operate a central sewer system, the Township has not made plans to tap in to this system.

NATURAL FEATURES

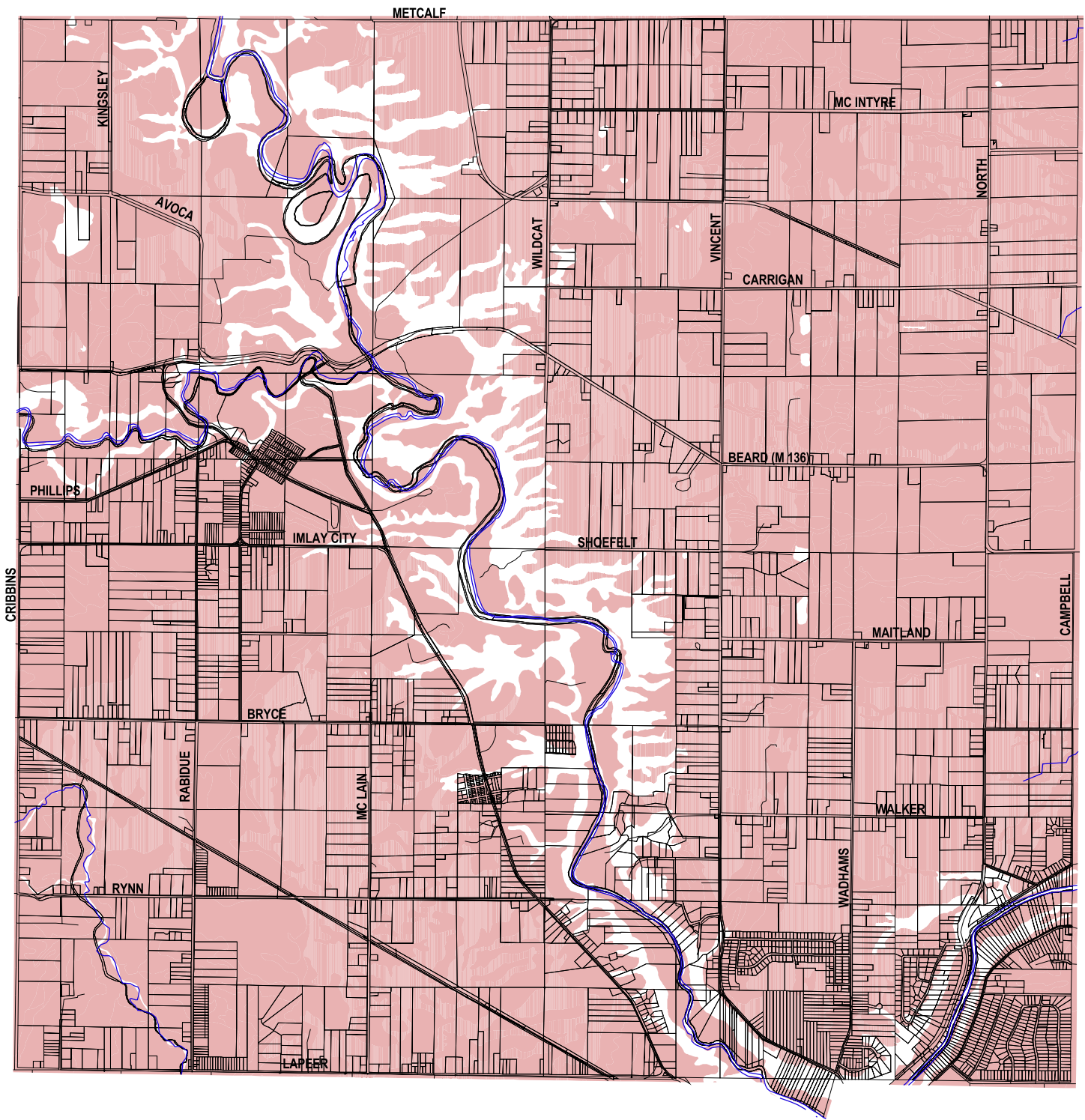
The identification of natural features that presently exist in the Township is an important step in the Master Plan process. With such knowledge, decision-makers can make informed decisions about the preservation and protection of the Township's natural resources. Appendix A provides detail regarding the location and characteristics of Natural Features within the Township.

Map ECS 1 provides a composite view of some of the more sensitive natural features existing within the Township. Wetlands exist in scattered areas throughout the Township. Those which are five acres or more, as well as smaller wetlands hydrologically connected to large wetlands, are under the jurisdiction of the Michigan Department of Environmental Quality. Wetland areas are a valuable resource serving many important functions including habitat and flood management. Measures should be taken to protect wetlands from encroachment by development activities within the Township.

Prime Farmland is also depicted on the Sensitive Lands map; this land has certain characteristics that make it well suited to agricultural use. In general, continued use of these properties for agriculture is recommended and should be encouraged. The U.S. Department of Agriculture's recommended characteristics of Prime Farmland are described in detail in Appendix A. In general continued use of these properties for agriculture is recommended and should be encouraged.

Floodplain areas are also depicted as part of the Sensitive Lands Map, ECS 1. Several areas of the Township fall within the 100-year floodplain. In general, these areas follow the Black River, Pine River and Mill Creek. Identification of flood-prone areas is critical when planning for a community. Development should be severely limited within the floodplain.

Map ECS 2 indicates that most of the Township consists of soils with severe limitations for development that require sewage disposal systems. As detailed in Appendix A the soils in Clyde Township are made up primarily of clay and sand. The sand and loamy sand soils existing in the southwest portion of the Township are poorly filtered and susceptible to wetness and ponding. In general, the loam, clay, silt and muck soils prevalent throughout the Township present severe limitations to development without sanitary sewer service. Since Clyde does not have sanitary sewer service, new development is restricted by the soil's ability to support septic systems.



SOILS WITH SEVERE LIMITATIONS
TO RESIDENTIAL DEVELOPMENT
WITHOUT PUBLIC SEWERS

LIMITATIONS TO DEVELOPMENT

CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP ECS 2

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BIRCHLER ARROYO
ASSOCIATES, INC.



EXISTING LAND USE

An updated existing land use inventory provides a base from which current and long-range planning recommendations and decisions can be made. By updating the parcel-by-parcel inventory of land use, the Township is able to analyze current conditions and make comparisons with past studies to identify changes and trends in the Township's land use.

A field survey of existing land use in Clyde Township was conducted in May of 2002. The use of each parcel was recorded on a base map of the Township. Once the land uses for all of the parcels in the Township were identified, Geographic Information Systems (GIS) software was used to create a land use database that could be linked to the Township's parcel map. As a result, Map ELU 1 illustrates the land use of each individual parcel, as well as the overall land use patterns throughout the Township.

LAND USE CLASSIFICATIONS

The following is a description of the various land use classifications used in the survey.

Residential Uses

Single Family Residential

This category includes areas containing single-family or two-family dwelling units and accessory structures.

Multiple Family Residential

Included in this category are all apartments and multi-plex type of units where more than two separate residential units occupy a single building on a lot.

Mobile Home Park

Planned mobile home parks and their related accessory buildings and recreational areas.

Commercial and Industrial Uses

Commercial

Includes land areas where retail sales and service establishments are found. This category also includes office uses.

Industrial

Uses with or without buildings where materials are processed, fabricated, assembled, or manufactured; or where equipment, materials, or wastes are stored out-of-doors are classified as industrial.

Extractive

Includes extractive activities that are primarily carried out upon the surface of the earth through open excavation, such as sand, gravel and rock quarry removal operations.

Public and Other Uses

Public

Includes public uses, such as public parks, schools and government buildings. Also included in this category are cemeteries. Not included was state-owned recreation land.

Quasi-Public

Included in this category are also public and private recreational uses, such as golf courses and parks.

Agricultural

This category includes all land area used for crops and permanent pasture land. If the parcel appeared to have been farmed in the last few years, though not within the last growing season, it was included in this classification.

Open

Included in this category are woodlands, water bodies, open and vacant land.

State

This category includes all land area owned by the State of Michigan including the Game Area along the Black River.

CURRENT LAND USE INVENTORY

Total acreage was calculated for the different land use categories using GIS. The following table provides a breakdown of land use in the Township.

Table ELU 1
Existing Land Use, Clyde Township, 2002

Land Use Category	Total Area ⁽¹⁾ (Acres)	Percent of Total Land Area (%)
Single Family Residential	3,138	14.4
Multiple Family Residential	6	0 ⁽²⁾
Mobile Home Park	2	0 ⁽²⁾
Commercial	141	0.6
Industrial	38	0.2
Extractive	194	0.9
Public	63	0.3
Quasi Public	52	0.2
Agricultural	5,497	25.3
Open Space	8,123	35.9
State	4,514	20.7
TOTAL	21,767	100

⁽¹⁾ Does not include areas outside of parcel boundaries such as Right of Way

⁽²⁾ Less than 1% of total land area

LAND USE ANALYSIS

The following is a summary analysis of land use in Clyde Township.

Residential Uses

Approximately 3,138 acres are being used for single family residential purposes, making up 14% of the Township's land area. As shown in Table ELU 1 above, there are few multiple family residential or mobile home park uses within the Township.



Single Family Residential

Single family homes are dispersed throughout the Township. Most are located on large lots with agricultural land; however, there are concentrations of homes on smaller lots in the southeast corner of the Township.

Commercial and Industrial Uses

There are 179 acres of land used for commercial and industrial purposes in the Township. These uses combined total roughly 0.8% of the Township's land area.

Commercial

There are very few commercial uses in Clyde, comprising only 141 acres of



land in the Township. Currently, these uses are dispersed throughout the township. Many of the commercial uses identified occur in conjunction with residential or agricultural land uses. These activities include animal boarding, riding corrals and other animal care activities. Other commercial uses in the Township include the Dorsey House Restaurant at Wildcat and Beard Roads, the Ruby General Store, and the Little Market at Lightle Road in the southeast corner of the Township.



Industrial

There are only 38 acres of land used for industrial purposes in the Township. Although these uses are primarily concentrated along the north side of Lapeer Road, east of McLain, others were identified throughout the Township.

Instances of outdoor storage, trucks and accessory buildings, which appeared to be used for warehousing and repair activities were identified during the survey. Several small industrial type uses were identified in Ruby.

Extractive

An estimated 194 acres of Township land is used for Sand and Gravel Extraction purposes, which represents about 0.9% of the land in the Township.

Public and Other Uses

Roughly 84% percent of the land area in Clyde is used for purposes other than residential, commercial and industrial. Both Table ELU 1 and Map ELU 1 clearly indicate that agricultural and open space uses including State-owned land predominate throughout the Township.

Public

Public uses within the Township include the Township Hall, North Street Post Office, a Fire Hall, and several parks. These uses make up approximately 66 acres and 0.3% of the Township's land.



Quasi Public

These uses comprise only 0.2% of the Township's total land area, with 50 acres devoted to these uses. The new Cornerstone Church, shown to the left is an example of a quasi-public use.

Open Space

Woodlands, water bodies and vacant land make up 8,123 acres of land, or 37% of the Township's total area. Much of the land in this category is heavily wooded, especially along the Black River.

Agricultural

Aside from open space, agriculture is the most prominent land use within Clyde. Currently, 5,497 acres of land are used for agriculture; approximately 25% of the Township's total land area.



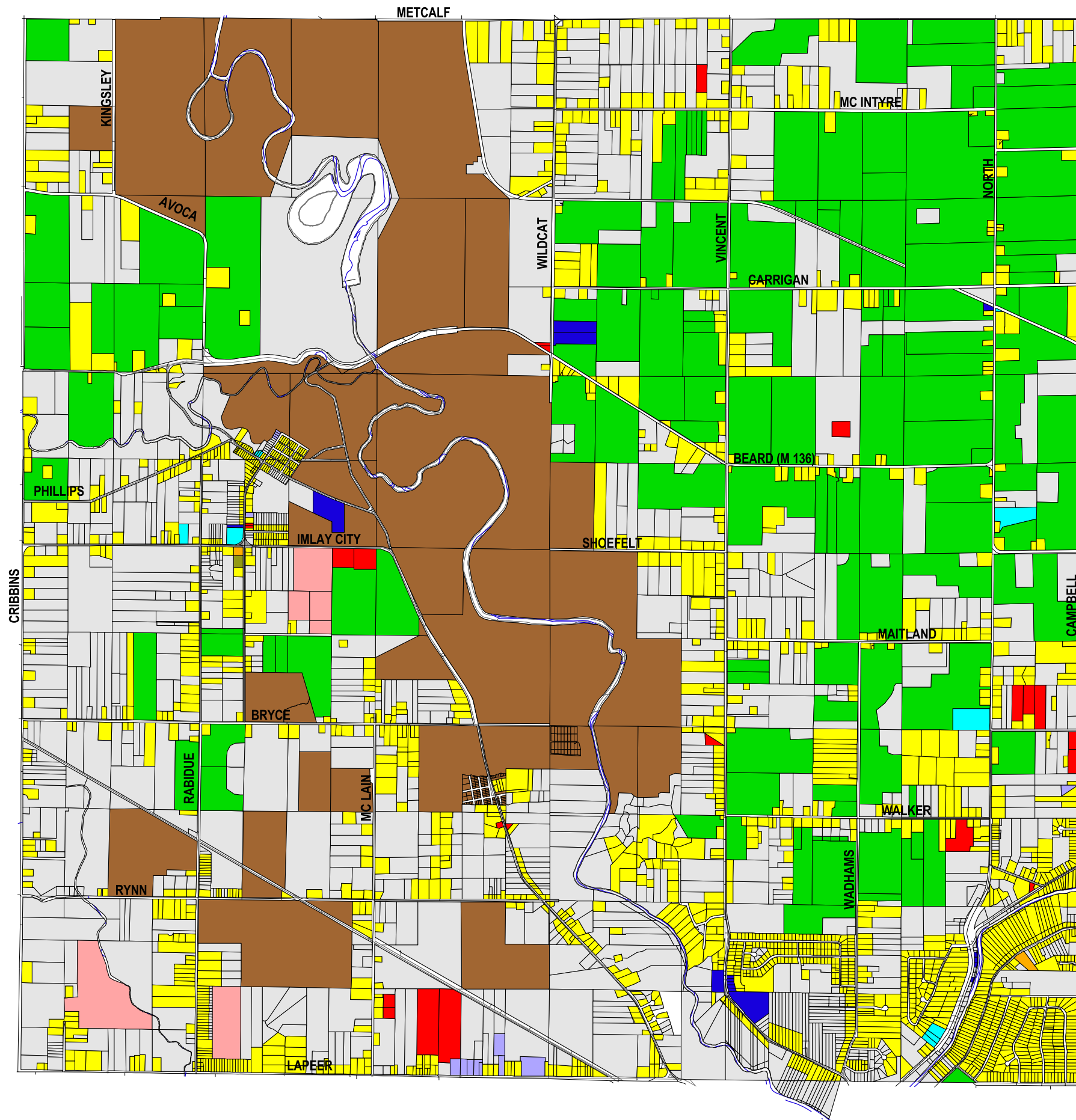


State

Approximately 4,514 acres of land within the Township boundary is owned by the State of Michigan. The Port Huron State Game area along the Black River constitutes roughly 21% of the Township's land area. Map ELU 2 depicts the State-owned land within the Township.

CONCLUSION

The existing land use analysis documents the role of Agricultural, Open Space and State-owned Recreational land uses in the Township. With the exception of Open Space and State-owned land, the majority of the Township's land area is comprised of agricultural uses. Changes in existing land use should be monitored as a means of assessing the effectiveness of Township land use policies and regulations.



- AGRICULTURAL
- SINGLE FAMILY RESIDENTIAL
- MULTIPLE FAMILY RESIDENTIAL
- MOBILE HOME PARK
- COMMERCIAL
- INDUSTRIAL
- EXTRACTION
- PUBLIC
- QUASI PUBLIC
- STATE
- OPEN SPACE

Note: This map shows generalized existing land use patterns, reflecting how land is used today, (May 2002). It is not intended to be a precise, parcel by parcel land survey. Data sources include aerial photography and a drive-by windshield analysis.

EXISTING LAND USE: 2002

CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP ELU 1

SOURCES:
BASE MAP PROVIDED
BY ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION
EXISTING LAND USE SURVEY
CONDUCTED BY BIRCHLER
ARROYO ASSOCIATES, INC.
MAY 2002



This page left intentionally blank.



6 VISION STATEMENT

Long-range planning must take place in a public forum, with opportunities for public participation, if it is to be representative. The support of the community can also foster improved implementation opportunities. An approach that has been used successfully when planning for the future of a community involves preceding the planning process with an exercise designed to develop "a vision of the future" for the Township. The basic components include the following:

- ✍ Identify the "stakeholders", that is, those groups that have a stake in improving the quality of life in the Township.
- ✍ Involve the stakeholders in a process designed to identify what the future should be like in the Township.
- ✍ Build consensus among the stakeholders in setting forth the important characteristics of any new planning program.
- ✍ Prepare a vision statement from the stakeholders' consensus that will serve as the underlying direction for the Planning Commission's work of preparing a new Master Plan.

On June 25, 2002, the Clyde Township Planning Commission hosted a meeting, at which approximately 33 individuals representing various interests, organizations, and businesses in the community discussed the future of the Township. The participants divided into six groups and were asked to organize their discussion and come to a consensus about five topics: Community Character and Features, Residential Development, Traffic and Circulation, Non-residential Development, and Recreation.

The Community Vision Statement has been formulated based on the consensus presentations by the six vision groups. While the statements of the participants were often specific, the vision statement is intended to present a set of general observations that can serve as a resource to the Planning Commission. Programs, policies, and ordinances are then used as the implementation tools to help achieve the Future Vision.

COMMUNITY VISION STATEMENT

The following statements are intended as a guide to provide direction to the Planning Commission as they formulate a new Master Plan for Clyde Township. This chapter does not constitute the official goals and objectives of the Planning Commission. Rather it was intended to be used as a resource to develop the goals and objectives contained in the next chapter.

Community Character and Features

Agricultural activity and open space are major components of Clyde Township's rural and scenic character. Preserving open space, natural features and a rural residential character is a high priority for Clyde residents. Clyde Township's established "rural character" is based upon a development pattern that fosters traditional rural lifestyles consisting of primarily large lot residential development that does not generally require the extension of urban governmental services and amenities. Township residents value their liberty, freedom and private property rights; this was expressed through the community survey and the Future Vision workshop. Township officials must find a balance between the role of local government and the preservation individual rights and freedom. Future residential growth should be planned to minimize impacts on natural features, wildlife habitat and open space. The Township should emphasize rural character by preserving open space and promoting farmland preservation. In addition, special measures should be taken to protect the Township's natural features, such as the Black River Mill Creek, Port Huron Game Area, and Beard's Hills as well as other natural features to maintain the visual landscapes that are traditionally found in rural areas and communities. Planning for future growth and preparing for the impact that it could have on Clyde is the best way to preserve the existing rural character of the Township.

Residential Development

Residential growth is likely to increase, and residents are concerned with how development will impact the Township's established rural character. Conscientious planning of future residential uses and infrastructure must take place if Clyde's open space and country atmosphere are to be maintained. The Township's codes and policies should continue to promote low-density

large lot development on 2.0-2.5 acre lots. Preservation of working farms should be emphasized. The Township should promote a variety of housing, including affordable housing in proper zones. The southeast ¼ of the Township contains areas, which may be appropriate for higher density residential development. Natural features should be preserved while maintaining individual private property rights and limited government intervention.

Traffic and Circulation

Clyde Township's road infrastructure is rural in character with primarily unpaved roads and a lack of sidewalks throughout the Township. Overall residents value the existing mix of paved and gravel roads because they help to maintain the rural atmosphere. Improvements can be made, however, to enhance traffic circulation within and through the Township. Residents did express a desire to pave highly traveled roads and to consider the addition of more north-south access roads including a possible Black River crossing. The need for regular maintenance of existing roads to control dust, improve cleanliness and to prevent and alleviate potholes was emphasized. Posted speeds are needed to slow traffic, along with enforcement of speed and weight limitations. Major intersections need lighting and signalization. Due to the existing road conditions and rural character of the Township, sidewalks should not be located alongside the roads. Existing bike paths are adequate; patrolling and emergency access to the path is necessary for improved safety.

Non-residential Development

There does not appear to be a need for significant additional commercial and industrial uses in Clyde Township. Residents emphasized the need to support existing commercial and industrial businesses in adjacent communities and maintain the Township's residential tax base. Future convenience commercial and industrial uses should be located away from agricultural areas and concentrated in the Lapeer Road corridor. Non-residential development should be small in scale consistent with the rural atmosphere of Clyde Township. The Township should promote natural preservation through coordination with the Michigan Nature Association and the Michigan Department of Natural Resources. Recreational land uses such as riding stables and canoe liveries that have little impact on the Township's agricultural character are the preferred type of non-residential development. Township services are adequate for such a rural Township. Township policies and programs to eliminate blight should be established.

Recreational Development

Township residents expressed the need for recreation programming for all age groups including seniors and school age children. The promotion of

riding stables, canoe rental facilities and soccer fields was important to Township residents. Many residents expressed a sentiment that current recreation facilities are underutilized and should be better maintained and utilized. Despite this sentiment some residents expressed the need for the creation of a centralized recreation center to benefit the aged. Interest in the creation of an area for off-road recreation such as all terrain vehicles and snowmobiles was expressed. Although it was suggested that the State Game Area might have potential for off-road vehicle trails, there was some opposition to this idea. There is very little Township support for a local recreation millage to fund additional park development, programming and maintenance. However, residents suggested utilizing existing Township facilities and establishing admission based recreation programs as a way to provide for additional recreational activities.

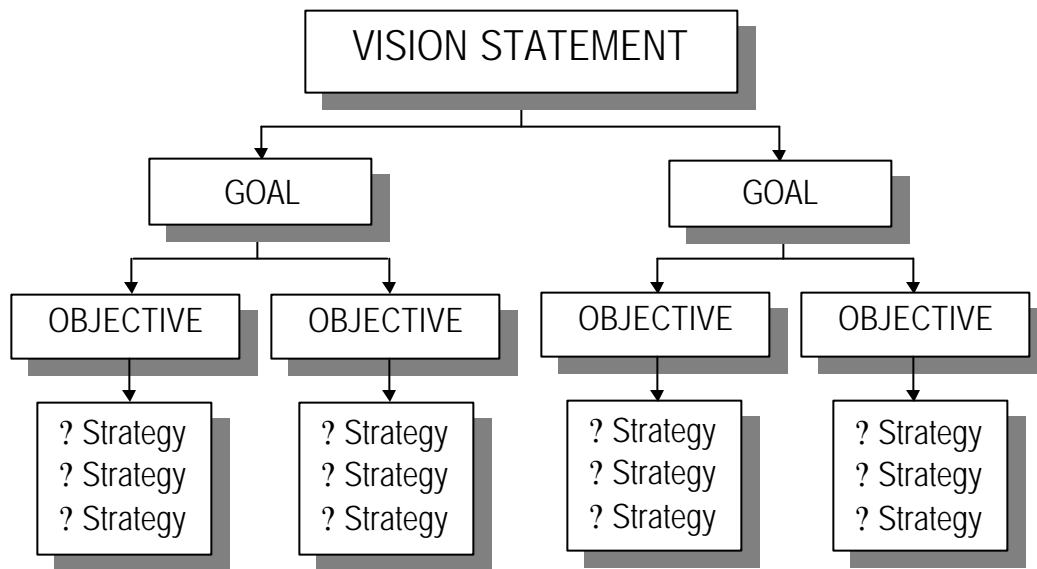


7 GOALS & OBJECTIVES

Long-range land use planning requires a policy basis from which decisions can be made. Through the information gathered in the Visioning process, the Township identified changes that it hopes to promote for the betterment of Clyde's future. These sought after changes take the form of goals and objectives statements. These statements formulated by the Planning Commission are the cornerstone of the planning process and provide the basic framework for public and private decision making.

Goals are typically very general statements about the quality and character of the community that are not very easily quantified or measured. Goals must be translated into measurable **objectives** that can be prioritized and pursued by instituting specific **strategies** that will be followed. The goals and objectives proposed are intended to result in a specific quality and character for the community. This will be achieved by following strategies designed to permit measurable progress toward achieving the Township's objectives. These strategies will have to balance the public purposes inherent in planning for the long-range future of the community with the rights of private property owners to develop an appropriate use of their land.

The following illustration provides a graphic depiction of the relationship between the vision statement, goals, objectives, and strategies. The goals, objectives, and strategies that follow were developed from a synthesis of the public comments received during the Visioning Session and the deliberations of the Planning Commission.



COMMUNITY CHARACTER

Goal

Maintain and promote Clyde's rural and agricultural character.

Objective

Encourage future development that is compatible with Clyde's unique character.

Strategies

- ✍ Consider Agricultural goals, objectives, and strategies without restricting development.
- ✍ Update the Zoning Ordinance to include provisions, that will maximize the preservation and protection of the woodlands, wetlands, agricultural land and open space in the Township as development occurs.
- ✍ Strengthen code enforcement to protect Clyde's unique community character.
- ✍ Develop and enforce landscaping requirements to separate and buffer incompatible land uses and to improve views from the roadway.
- ✍ Develop a set of design guidelines and Zoning Ordinance standards to ensure future development is compatible in scale and character with the surrounding area.

- ✍ Update the Zoning Ordinance to include standards for exterior lighting that reduce unnecessary transmission of light into the night sky.
- ✍ Consider developing special treatments for landscaping and signage at key entry points for the Township to strengthen the community's identity.
- ✍ Promote maintenance and enhanced upkeep of public parks and rights-of-way.

NATURAL FEATURES

Goal

Protect and enhance the natural features of Clyde Township as the community continues to grow and develop.

Objective

Establish requirements for new developments so that wetlands, woodlands, water bodies, steep slopes and other natural features will be protected to the maximum extent feasible.

Strategies

- ✍ Include provisions in the Zoning Ordinance to preserve open space and maintain a rural residential character within the Township.
- ✍ Update the Zoning Ordinance to include provisions, that will reasonably preserve and protect the woodlands, wetlands and steep slopes within the Township as development occurs.
- ✍ Review Zoning Ordinance development standards to reduce requirements, which will result in unnecessary loss of open space.
- ✍ Establish appropriate buffer zones around wetlands, lakes, and river edges.
- ✍ Wildlife preservation should be encouraged and wildlife corridors established as features of new developments.
- ✍ The Township should work with the Michigan Nature Conservancy and / or other similar organizations to preserve open space areas that have significant natural value.
- ✍ Actively plan for the development of future parks, recreation, and open space within the community by maintaining and updating the Township's Recreation Plan.

INFRASTRUCTURE

Goal

Promote and maintain appropriate infrastructure to support the Township in a manner that is sensitive to the environment and the Township's rural character.

Objective

Develop utility systems as deemed appropriate to provide needed services and to protect the health, safety and general welfare of the Township's residents.

Strategies

- ✍ Study and establish appropriate water service area boundaries.
- ✍ Municipal water service should be limited to areas planned for higher density development. Limited sewer service is anticipated in the more densely populated southeast corner of the Township south of the Black River.
- ✍ Ensure that future developments within the service areas provide water and/or sewer service without added expense to the Township.
- ✍ Review Zoning Ordinance standards to ensure that development criteria encourage higher density residential uses to occur within areas planned to be served by future utility extensions and where they will not negatively impact the natural environment.
- ✍ Discourage utility extensions to areas where lower density development and continued agricultural activity is planned.

Objective

Develop and maintain transportation systems to move goods and people with maximum efficiency.

Strategies

- ✍ Retain gravel roadways on less traveled roads to maintain the Township's "country atmosphere".
- ✍ Review roadway conditions and traffic volumes in order to target areas that should be considered for road improvements.
- ✍ Pave existing high traveled gravel roadways, where appropriate, in order to improve roadway capacity and traffic flow.

- ✍ Improvements to Clyde Township's road system should keep pace with development, and should be planned to control and direct future growth.
- ✍ The Township should work with the Road Commission to develop a road-paving plan to prioritize the improvement of roads within the community.
- ✍ Explore opportunities for non-motorized pathways in appropriate locations throughout the Township.
- ✍ Establish emergency access points along the Township's bike path system and to the Wadhams to Avoca Trail.

RESIDENTIAL DEVELOPMENT

Goal

Provide a variety of housing opportunities to meet the needs of Township residents, while maintaining Clyde's rural residential character and agricultural identity.

Objective

Encourage low density single family developments in appropriate locations that are complimentary to the Township's rural setting and that preserve valuable natural features and open space.

Strategies

- ✍ Design residential development standards to be directly related to the natural capacity of the land.
- ✍ Develop Zoning Ordinance standards, which encourage development patterns that result in preservation of natural features and maintenance of open spaces.
- ✍ Single-family homes ranging from a minimum of two (2) to ten (10) acres in density should be encouraged in the majority of the Township.

Objective

Encourage a variety of residential developments, consistent with the community's needs and its limited utility systems, while maintaining open space and decreasing negative impacts on the visual and natural environment.

Strategies

- ✍ Provide a variety of residential zoning districts to permit housing in a variety of styles and price ranges in order to accommodate residents of all income levels.
- ✍ Provide for development of limited higher density housing, such as apartments, townhouses, manufactured housing, and senior housing, restricted to areas with adequate utility and transportation systems in place.
- ✍ Develop specific Zoning Ordinance standards, which require appropriate water and sewer service for higher density development.
- ✍ Develop and enforce landscaping requirements to buffer residential uses of differing densities and improve views from the roadway.
- ✍ Review Zoning Ordinance standards to ensure that development criteria encourage residential uses of different densities to occur within appropriately planned areas where they will not negatively impact community character or the natural environment.

NON-RESIDENTIAL DEVELOPMENT

Goal

Maintain commercial operations, which meet the needs of Township residents without detracting from the rural character of the Township.

Objective

Consider the need for additional commercial, retail and service facilities that will meet the convenience needs of the community, while complimenting the area's existing commercial centers.

Strategies

- ✍ The Township should avoid duplication of retail services that are already conveniently available in surrounding communities, but should provide appropriate local retail services at convenient locations when needed by neighborhood areas within the community.

- ✍ Review and enhance Zoning Ordinance landscape standards for commercial uses to ensure developments that are visually appealing and appropriately screened from residential areas.
- ✍ Review Zoning Ordinance sign standards to ensure appropriate scale, lighting, landscaping, and design of commercial signage that is compatible with the residential character of Clyde Township.
- ✍ Review Zoning Ordinance standards to ensure that development criteria encourage commercial uses to occur within appropriately planned areas where they will not negatively impact community character and the natural environment.
- ✍ Limited commercial development such as convenience retail and services should be directed primarily to the Lapeer Road Corridor.
- ✍ Establish Zoning Ordinance standards to promote rural commercial facilities such as riding stables, canoe liveries and other similar activities which are compatible with the character of the Township.

Goal

Existing and future Industrial development should not detract from the community's rural character, and should help to balance the local tax base while providing job opportunities to local residents.

Objective

Support light industrial and research development in a concentrated area that will not negatively impact adjacent land uses, community character, or natural features.

Strategies

- ✍ Develop Zoning Ordinance standards for landscaping and screening to buffer industrial and research uses from adjacent land uses and to improve views from the roadway.
- ✍ Review Zoning Ordinance standards for industrial and research uses to ensure that development criteria encourage such uses to occur within planned industrial areas rather than scattered throughout the Township.
- ✍ Review and enhance Zoning Ordinance standards regarding permitted placement and required screening of outdoor storage areas.
- ✍ Review Zoning Ordinance sign standards to ensure appropriate scale, lighting, landscaping, and design of industrial signage that is compatible with the residential character of Clyde Township.

- ✍ Review and enhance the performance standards of the Zoning Ordinance to ensure that the health and safety of Township residents is maintained while encouraging new light industrial and research development.
- ✍ The Township should direct potential industrial developments to locate within the Lapeer Road corridor to meet future demands for industry.

RECREATIONAL FACILITIES

Goal

Provide a variety of recreation facilities and programs to meet the needs of the community's growing population.

Objective

Recreational facilities and programs must be developed to meet the immediate and future needs of Township residents.

Strategies

- ✍ Periodically update the Township's Recreation Plan in order to maintain eligibility for acquisition and development grants through the State and other funding sources.
- ✍ Additional recreational programming for all ages should be established; a centralized recreation facility for indoor programming should be considered.
- ✍ Acquire limited additional property for development of playgrounds to serve the Township.

Objective

Increase utilization of existing parks throughout the Township by providing for a variety of activities.

Strategies

- ✍ Develop adequate playfields on existing recreation property in order to accommodate a variety of active recreation programs.
- ✍ Explore opportunities for non-motorized pathways to improve access to local parks throughout the Township, with possible connections to neighboring communities.
- ✍ Pursue the development of Soccer Fields within the community.

- ✍ Explore opportunities to accommodate unique recreational activities such as mountain bike trails, suitable areas for remote control vehicles and rollerblading activities.

GOAL Develop recreation facilities and programs to provide active recreation opportunities for a wide range of individuals and age groups.

Objective

Design recreation facilities that are accessible and programs that provide opportunities for persons with disabilities.

Strategies

- ✍ Update existing park facilities to meet barrier-free access requirements.
- ✍ Pave interior park pathways to improve barrier-free access and general access to and around park facilities.

GOAL Develop recreation facilities and programs to provide passive recreation for a wide range of individuals and age groups.

Objective

Design recreation facilities and programs that provide opportunities for persons of all age groups, including youth, adult and senior Township residents.

Strategies

- ✍ Develop passive recreation areas within playfield and community park areas that include amenities such as benches, shaded areas, walking trails, bike paths, and picnic facilities.
- ✍ Utilize existing Township and community facilities for a wide range of recreation programming. Partner with local churches and service organizations to host Township wide events.

This page left intentionally blank



LAND USE PLAN

The Land Use Plan chapter of the Master Plan provides recommendations for the future use of land within Clyde Township. The formulation of the Land Use Plan was based on factors such as regional influences, land use patterns, natural features, community demographics and need for various land uses. Its purpose is to link the community's goals and objectives developed from the visioning process to specific land use recommendations.

IDENTIFYING NEEDS

The Township's Master Plan should provide for a well-balanced mix of land uses that are consistent with the community's rural character.

As noted above, one factor that should be considered when developing future land use recommendations is anticipated demand or market potential on the planning horizon. Is there a demonstrated need for a specific land use in the Township? A land use plan should not change simply to replicate changing market conditions. Rather, it should generally provide for land uses that are reasonably expected to serve the future population, recognizing the overall context of regional influences, community character, natural features, and other factors. The influence of market forces is especially important for land uses such as commercial, office and industrial development. A balanced supply of these uses—provided in a manner that reflects community character—is critical to a municipality for a number of reasons. If there are fewer acres available than the market can support, a community could lose potential tax base, employment opportunities and decrease the quality of life for residents who need the goods and services that such uses provide.

If there is an over abundance of commercial, office or industrial land, marginal businesses may develop and/or building vacancy rates may increase, creating the potential for blight. This could also lead to undue competition

with traditional city and village centers, which could ultimately encourage sprawl and harm existing commercial business districts.

An analysis of the Township's nonresidential land use market potential was conducted in order to determine how much commercial, office and industrial land Clyde will be able to support in the future (see Appendix A). The following is a brief overview of the analysis:

Commercial Development

Results of the commercial market potential analysis indicate that the future population of Clyde Township and the surrounding area would not be sufficient to support either community or regional comparison shopping. Neighborhood convenience shopping, however, could be viable in the Township if limited in scale and clustered in appropriate areas.

According to the Market Potential analysis, the estimated 2000 per capita income of Clyde residents was \$20,405. Based on this income level, Clyde's total convenience retail expenditures (expected to be spent within the community) were projected to be \$25,727,172 in 2030. This projected amount of retail spending indicates that the community could support approximately 36,000 square feet of convenience (neighborhood) retail space. In order to provide this amount of retail space, a minimum of 4 acres of land would be needed for such uses. The total amount of land planned for retail uses, however, should be greater than this minimum because of limitations on total buildable area due to wetlands, steep slopes, etc., as well as to accommodate additional business generated by limited regional influences.

*Clyde Township's
future demand
for non-
residential
development
will be limited due
to low population
densities.*

Industrial Development

The market potential analysis details two common methods of forecasting future industrial needs for a community. The preferred method, which is based on the population of an area, estimates that Clyde's projected 2030 population of 6,600 could support approximately 79 acres of industrial land. Due to Clyde's rural character and limited amount of existing industrial use, this population-based method is more appropriate for the Township than land percentage methodologies.

Office Development

Using information regarding the employment of Clyde Township residents, the market potential analysis estimates that only a modest amount of office development could be supported, even if residents working in office settings outside the Township were to relocate within Clyde. It is unlikely to expect large multi-tenant office development to occur in Clyde Township's rural

setting. Small professional office, medical office, and combination office/industrial buildings are likely to be more viable within the community.

Residential

The need for a variety of housing types in a community must also be considered as part of the long-range planning process. The most common form of residential development is a single family home placed on a large parcel. Some of these are part of a family farm operation. There are a few other types of residential development in the Township, particularly in the southeast portion of the Township. These other housing styles need to be included in the Township's plan to accommodate anticipated future needs. Not everyone can afford to live in a single family home on a large lot, and many choose to live in more dense residential settings.

Other housing styles found in the region include apartments, attached single family, manufactured housing (mobile home) developments, and single family homes on smaller lots. These types of housing would be inappropriate in many areas of the Township and could negatively impact rural character and result in haphazard land use patterns. Properly placed, however, they can provide alternative and, in some cases, more affordable housing choices that are appropriate for any community.

LAND USE CATEGORIES

The following describes the land use categories designated on the Land Use Plan Map. Note that the Land Use Plan Map is intended to show generalized land use and is not intended to indicate precise size, shape or dimension. The recommendations of the Land Use Plan have a long-range planning horizon and do not necessarily imply that short-range rezoning is appropriate.

Rural Agriculture

This category is intended to accommodate primarily agricultural land uses, farm dwellings, and non-farm dwellings that are in keeping with the rural and agricultural character. Agricultural land uses would be characterized by traditional cash crops, animal raising, horse boarding, nurseries, and similar uses. Outdoor recreation and limited business



uses may also be appropriate when specific development standards are provided. Large lot low-density development is intended for this district. Much of the northern part of the Township falls into this category.



Rural Transitional

The intent of the Rural Transitional district is to allow for the same uses as the Rural Agriculture category while permitting slightly higher residential densities and other rural uses, compatible with rural lifestyles. The Rural Transitional district provides for a transition area between active farms and farm residences and higher density land use patterns. Rural Transitional

uses would include non-commercial rural recreational and outdoor uses requiring large tracts of open land. Less intensive agricultural uses may also be found in this area. In order to promote the preservation of large tracts of open land necessary to accommodate the permitted outdoor activities, clustered developments which preserve a minimum of 50% of the land area would qualify for a higher residential density than conventional developments.

Low-Density Residential

Areas designated for low-density residential are intended to accommodate primarily residential development and associated uses. The use of cluster (open space) developments in this category can result in the preservation of large areas of open space that would otherwise have been taken up by traditional land subdivision.



Medium-Density Residential

These areas are designated for residential development in more of a village setting than the lower-density residential categories. Areas served by municipal or other comparable sewer treatment and water will qualify for more density than areas where these services are not available. Medium-Density Residential areas provide a transition between the more intensive uses of a commercial, industrial, or other activity corridor and the less heavily populated residential areas. They can also serve as transition zones from more densely

Development of residential uses in areas surrounding Open Space should be clustered to provide a transitional development pattern.

populated areas to rural areas. Possible uses in this category include subdivisions and site condominiums, as well as manufactured housing communities.



High Density Residential

The High Density Residential category is designed to accommodate single family dwellings on smaller lots, two-family dwellings, and low rise multiple-family residential development.

Commercial

The Commercial land use category is intended to accommodate the convenience shopping needs of the Township and passers-by on adjoining roadways, rather than to draw in business from a wider area. Development in



these areas should be consistent with Clyde's rural character and should compliment the area's existing commercial centers. Small-scale office uses may also be appropriate in such areas.

Light Industrial

This category is intended to accommodate light industrial and research and development land uses carried out primarily within enclosed buildings. Light Industrial uses should be in keeping with Clyde's rural and agricultural setting and compatible with the Township's natural features. They should not cause disturbance to other uses nearby.



Open Space

The intent of the Open Space category is the preservation of these natural features to the maximum extent possible. Uses in these areas should be very low-impact, such as passive recreation and conservation areas. Development of residential uses in surrounding areas should be clustered to preserve open space and should be in keeping with the intent of the Open Space category. Areas designated in this category are primarily dominated by significant natural features such as rivers, floodplain, lakes and heavy woodlands. A

significant portion of the open space in Clyde Township is already owned and managed by the State of Michigan. The Wadhams to Avoca Trail crosses the southwest corner of the Township. Clyde Township may want to focus its conservation efforts on preserving open space in the form of farmland. In addition, the three bodies of water that pass through the Township—the Black



River, the Pine River, and Mill Creek—are important natural features and should be carefully protected from negative impacts of development such as pollution and erosion.

Public

Land uses categorized as Public include lands and facilities that are actually owned by the government, such as schools, government buildings, and community parks.



LAND USE RECOMMENDATIONS

The following describes how the goals and objectives identified by the Planning Commission through the community vision process directly relate to the Land Use Plan.

Goals

Maintain and promote Clyde Township's rural and agricultural character.

Protect and enhance the natural features of Clyde Township as the community continues to grow and develop.

Objectives

Encourage future development that is compatible with Clyde's unique character.

Establish requirements for new developments so that wetlands, woodlands, water bodies, steep slopes and other natural features will be protected to the maximum extent feasible.

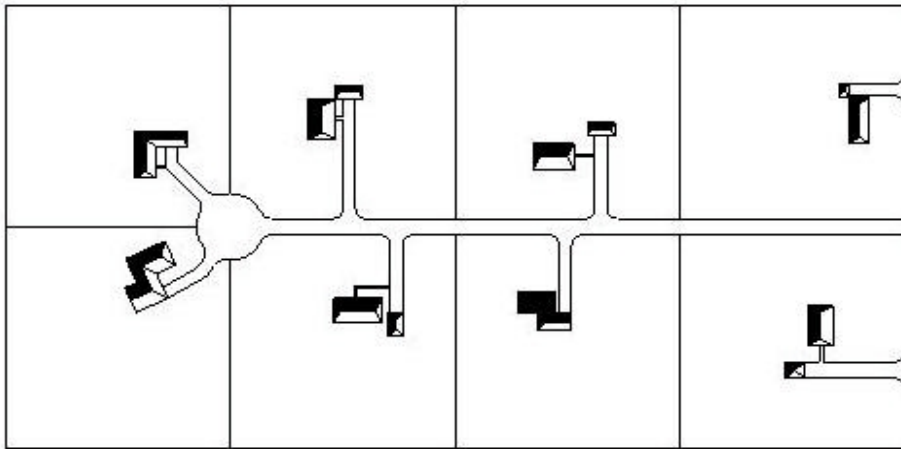
Community Character, Agriculture and Open Space

Clyde Township's rural and scenic character and small hometown feel are valued by the community and should be maintained. This character is derived primarily from agricultural activity, while the abundant natural features such as woodlands, wetlands and rivers also play a role.

In order to maintain the community's rural character and its defining agricultural and rural activities, the Land Use Plan map designates much of the northern half of the Township as Rural Agriculture. As previously described, this classification is primarily intended to accommodate farm and rural land uses. Single family non-farm residential uses in these areas are intended to be compatible with the area's agricultural activity and should be developed in a manner that preserves open space. In addition, development in agricultural areas should respect significant historical and cultural resources, important viewsheds, wildlife habitat, and valuable natural features.

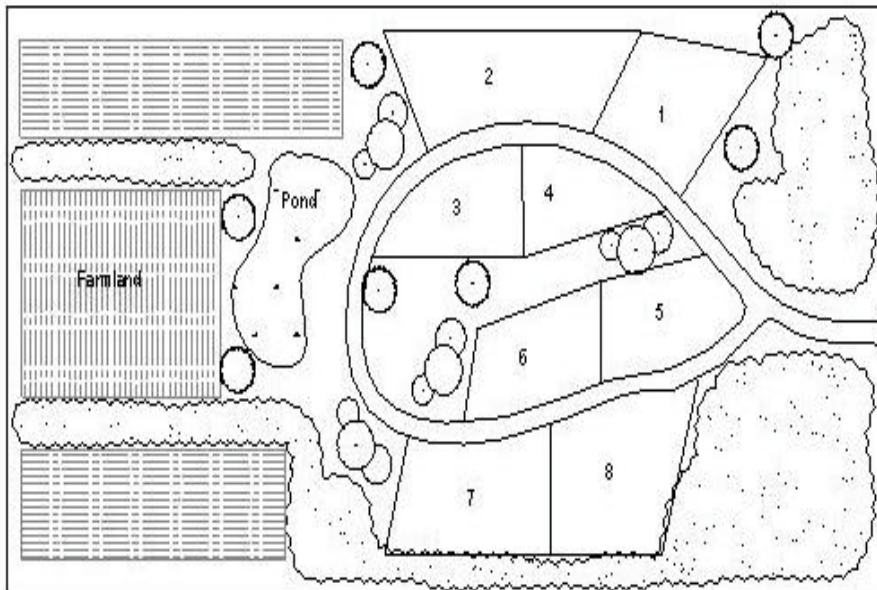
To accomplish this type of development, Township ordinances should provide strong incentives for non-farm dwellings to be developed in a manner that preserves open or landscaped areas, especially along major roads. Residential developments should be creatively located to minimize their visual impact, as well as to allow the continuation of agricultural uses. As illustrated by the graphics below, these objectives can be accomplished through the use of significant building setbacks, or encouraging unified developments that maintain a portion of farmland or open space along the roadway through the construction of a new road for access to such parcels.





Traditional development exampl

Typical traditional development results in the erosion of rural character due to an interruption in the visual landscape and the loss of agricultural land. Carving up farmland into residential lots does little to preserve rural character. Open space development, however, preserves rural character by maintaining agricultural land, natural features, and open views.



Open space development exampl

The Land Use Plan map identifies several areas that are dominated by significant natural features, such as rivers, lakes and major woodlands. To the maximum extent possible, areas within this category should be preserved and maintained. Development should be low-impact and primarily limited to passive recreation and conservation areas. Innovative design techniques should be considered for surrounding residential development in order to exert minimal impact on these natural features. To provide incentives for

open space preservation, property designated with the RA category may qualify for increased density by clustering to preserve permanent open space.

Residential Uses

In addition to the Rural Agriculture designation the Land Use Plan defines four residential categories to meet the diverse housing needs of the Clyde community. Map LUP 2 reflects the Township's planned future water and sewer service areas, which will impact the potential for residential growth.

The Land Use Plan designates a large section of land across the southern half of the Township as Rural Transitional (RT). This area should accommodate very low density residential development that reflects the Township's rural character and is compatible with surrounding agricultural uses and natural features. Rural Transitional areas should be developed in a manner that encourages the preservation of active farmland, open views and woodlands through innovative open space zoning techniques. While primarily intended for residential use at a slightly higher density than surrounding Agricultural areas, Rural Transitional areas should be in keeping with Clyde's existing rural character. This land use designation is a transitional zone between the larger parcels of the Rural Agriculture and Low and Medium Density Residential categories below which allow houses to be closer together.

Low Density Residential (LDR) is recommended at the southeast corner of the Township as well as the area north of Lapeer Road along Rabadue Road. For many years to come these areas may be indistinguishable from Rural Residential areas, since the density is limited by the lack of a sewer system. However, if sewer service becomes available densities may be increased in these locations. Additional density could also be achieved, subject to approval by the St. Clair County Department of Health, if the lots were part of a platted subdivision or site condominium with coordinated wells and community or package sewer treatment systems.



The two areas designated as Medium Density Residential (MDR) on the Land Use Plan map are located, respectively, near the southern boundary of the Township north of Lapeer Road between Abbotsford and McLain Roads, and in the Ruby area north and south of Imlay City Road and west of the Port Huron State Game Area. Like the Low Density Residential category, Medium Density Residential densities are limited by a lack of sewer service. If and

Goal

Provide a variety of housing opportunities to meet the needs of Township residents, while maintaining Clyde's rural residential character and agricultural identity.

Objectives

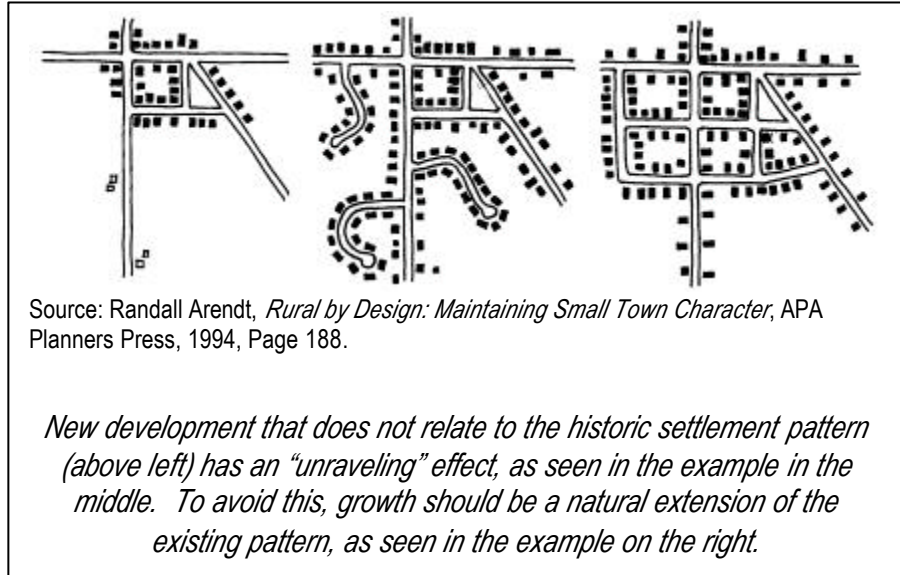
Encourage low-density single family developments in appropriate locations that are complimentary to the Township's rural setting and that preserve valuable natural features and open space.

Encourage a variety of residential developments, consistent with the community's needs and its limited utility systems, while maintaining open space and decreasing negative impacts on the visual and natural environment.

when the areas are linked with public sewer systems or are built under the conditions described above, densities may increase.

Medium Density Residential lot sizes may be flexible depending on the development methods used. The area near Ruby already includes some smaller lot sizes, and is suitable for developments with more of a “village” layout, as opposed to the dispersed housing and large amounts of open space created by the Residential Agriculture and Rural Transitional categories. The area near Lapeer Road is suitable for smaller lot single-family and manufactured housing communities. In all categories, but especially in Medium Density Residential areas, creative arrangement of residential developments and the use of existing historic and cultural features as focal points is encouraged to link the new with the old. The following page shows an example of development that takes existing forms into account.





High Density Residential (HDR) uses are recommended for a small area between Campbell Road and the North River in the southeast corner of the Township. This area is already served by municipal water and is within the planned sewer area shown on Map LUP 2, so it is appropriate for the more intensive land use of this category. Multiple Family uses increase the Township's mix of housing types and provide some diversity in Clyde's appearance and layout. While intended for a significantly higher density than most of the Township, building and site design of multiple family uses should be in keeping with Clyde's overall rural character.

Commercial and Industrial Uses

The Land Use Plan map designates a portion of the Township for Commercial (C) development. Most of the commercial is planned for the along Lapeer Road west of Vincent and east of McLain. Another small commercial area is planned at the intersection of Beard Road and Wildcat Road. These planned commercial areas are intended for convenience retail and small office uses; large-scale, comparison retail and highway-oriented commercial uses are discouraged. Commercial businesses within the Township are intended to serve the convenience needs of Clyde and its immediately surrounding areas. Such uses are not intended to compete with the larger commercial centers of St. Clair County which satisfy the regional and comparison shopping needs of Clyde residents.

Development in Commercial areas should fit into Clyde's rural setting. Uses should be designed in a manner which is compatible with surrounding residential and agricultural uses and consistent with the Township's existing commercial uses. Buildings and site layout should reflect a small-town, rural character, not strip or suburban-style commercial developments. Specifically, commercial buildings should be situated close to the road with the majority of parking located in the rear. In addition, building facades, signage and lighting should be appropriate for a rural area.

As seen in the graphics on the following page, rear parking and shared access drives allow commercial buildings to have a close relationship to each other and the road, unlike typical more suburban-style commercial developments.



Goals

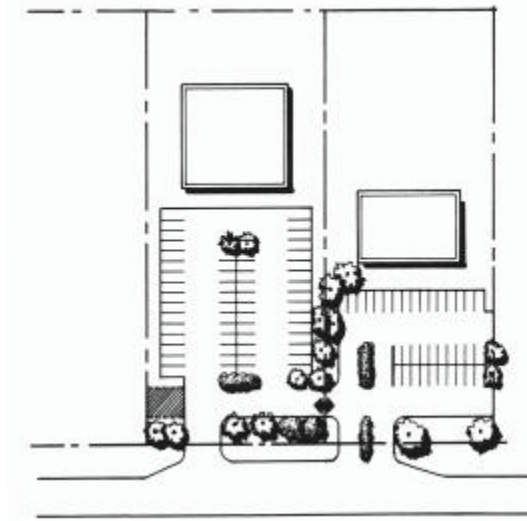
Maintain commercial operations which meet the needs of Township residents without detracting from the rural character of the Township.

Existing and future industrial development should not detract from the community's rural character, and should help to balance the local tax base while providing job opportunities to local residents.

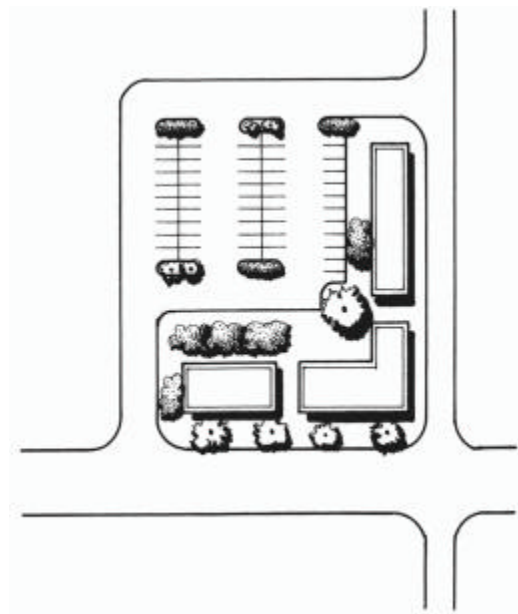
Objectives

Consider the need for additional commercial, retail and service facilities that will meet the convenience needs of the community, while complimenting the area's existing commercial centers.

Support light industrial and research development in a concentrated area that will not negatively impact adjacent land uses, community character, or natural features.



Typical suburban-style commercial development with parking areas in front of buildings (left); an example of an option for shared parking located behind commercial buildings (below).



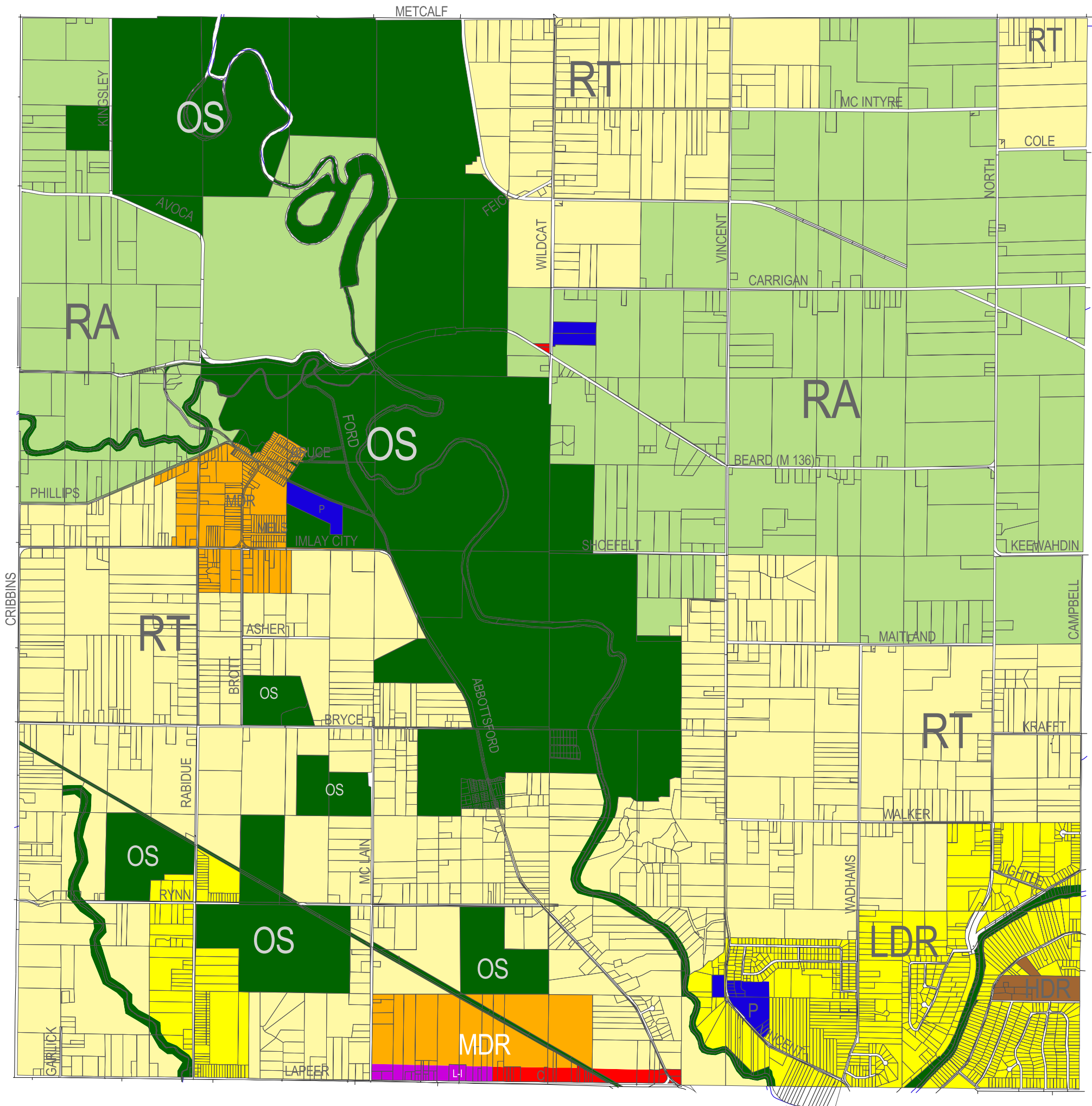
The Land Use Plan designates an area along Lapeer Road for Light Industrial (LI) uses. Such uses are intended to be light industrial or research and development type establishments, such as warehousing with accessory office and research or testing facilities. Industrial buildings and sites should be designed to have minimal negative impacts on surrounding areas and natural features. All uses should be carried out within completely enclosed buildings or, when limited outdoor storage is provided, with appropriate screening of storage areas from all property lines. In general, all industrial uses must be screened from adjacent residential and agricultural property.

Public Uses

The Land Use Plan map shows only Public uses that exist at the present time. Since Clyde Township enjoys such a large recreation area in the form of the Port Huron State Game Area, and already has some community parks, much expansion of the Township's park system is not anticipated. Planned new sites are expected to be small tot lots or playgrounds. Existing township parkland is expected to remain adequate for the Township's needs several years into the future, with some modifications to provide updated equipment and new opportunities for recreation on existing park property.

CONCLUSION

The Land Use Plan seeks to promote the rural and agricultural character of Clyde Township, as well as important natural features. It is a policy document intended to guide future decisions regarding land use and overall community development, and it is intended to provide a clear link between the community's goals and objectives and specific land use recommendations. While the Land Use Plan portrays the community's vision for the future, implementation of the Plan is the real key to achieving that vision.



- OS OPEN SPACE
- RA RURAL AGRICULTURE
- RT RURAL TRANSITIONAL
- LDR LOW DENSITY RESIDENTIAL
- MDR MEDIUM DENSITY RESIDENTIAL
- HDR HIGH DENSITY RESIDENTIAL
- C COMMERCIAL
- LI LIGHT INDUSTRIAL
- P PUBLIC

Notes:

1. This Land Use Plan is intended to show generalized land use and is not intended to indicate precise size, shape or dimension. These recommendations have a long-range planning horizon and do not necessarily imply that short-range rezoning is appropriate.
2. The Clyde Township Master Plan includes the Land Use Plan Map and all text, maps, charts, tables and other graphics included in the full Master Plan report.
3. It is the intent of the Township that development on and within the 100-year floodplain be discouraged and regulated by ordinance. Refer to Floodplain Map ECA 6.

LAND USE PLAN

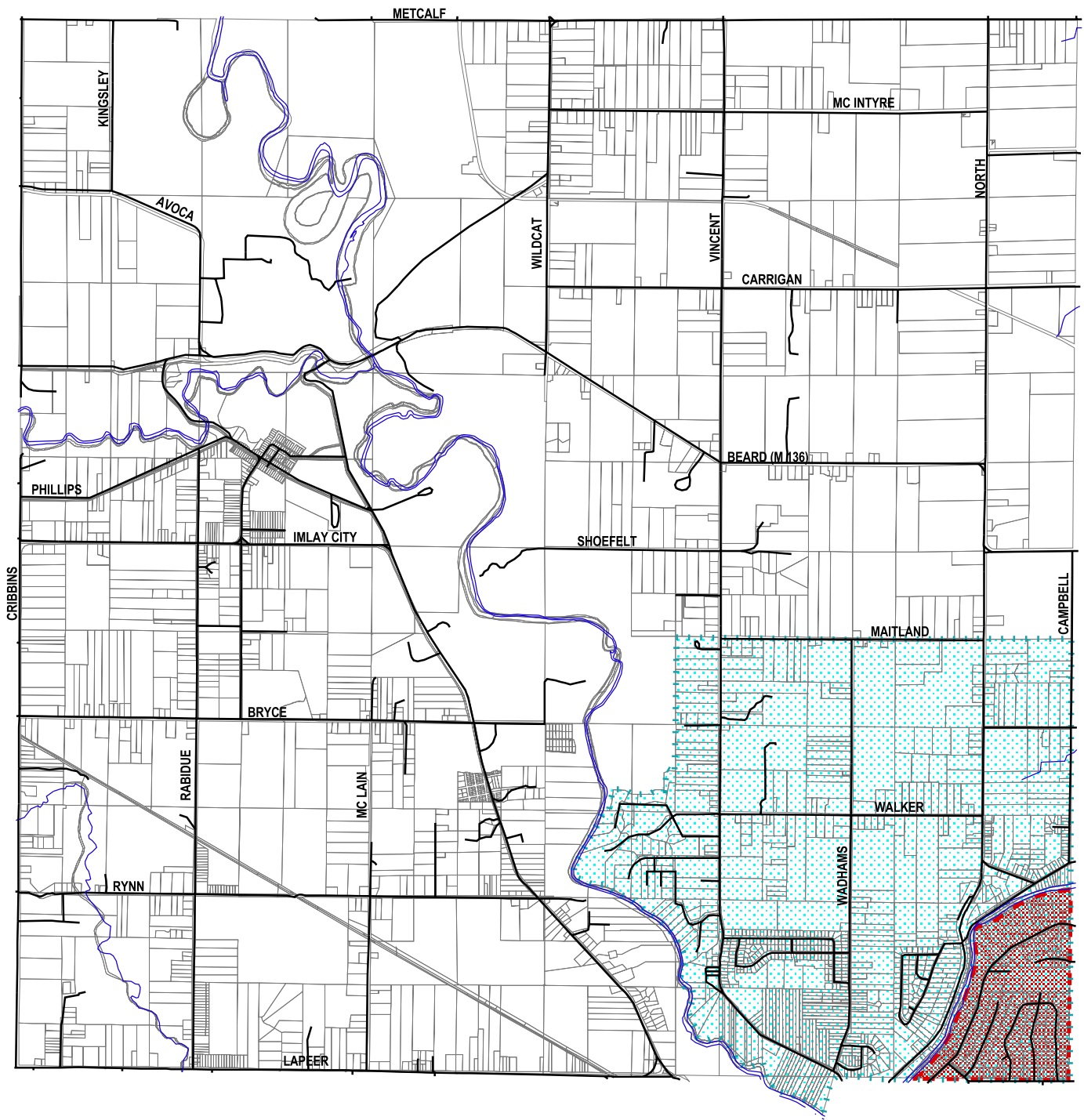
CLYDE TOWNSHIP

ST. CLAIR COUNTY

MAP LUP 1



This page left intentionally blank.



PHASE 1



PARCELS



RIVERS



FUTURE MUNICIPAL SEWER SERVICE AREA



FUTURE MUNICIPAL WATER SERVICE AREA

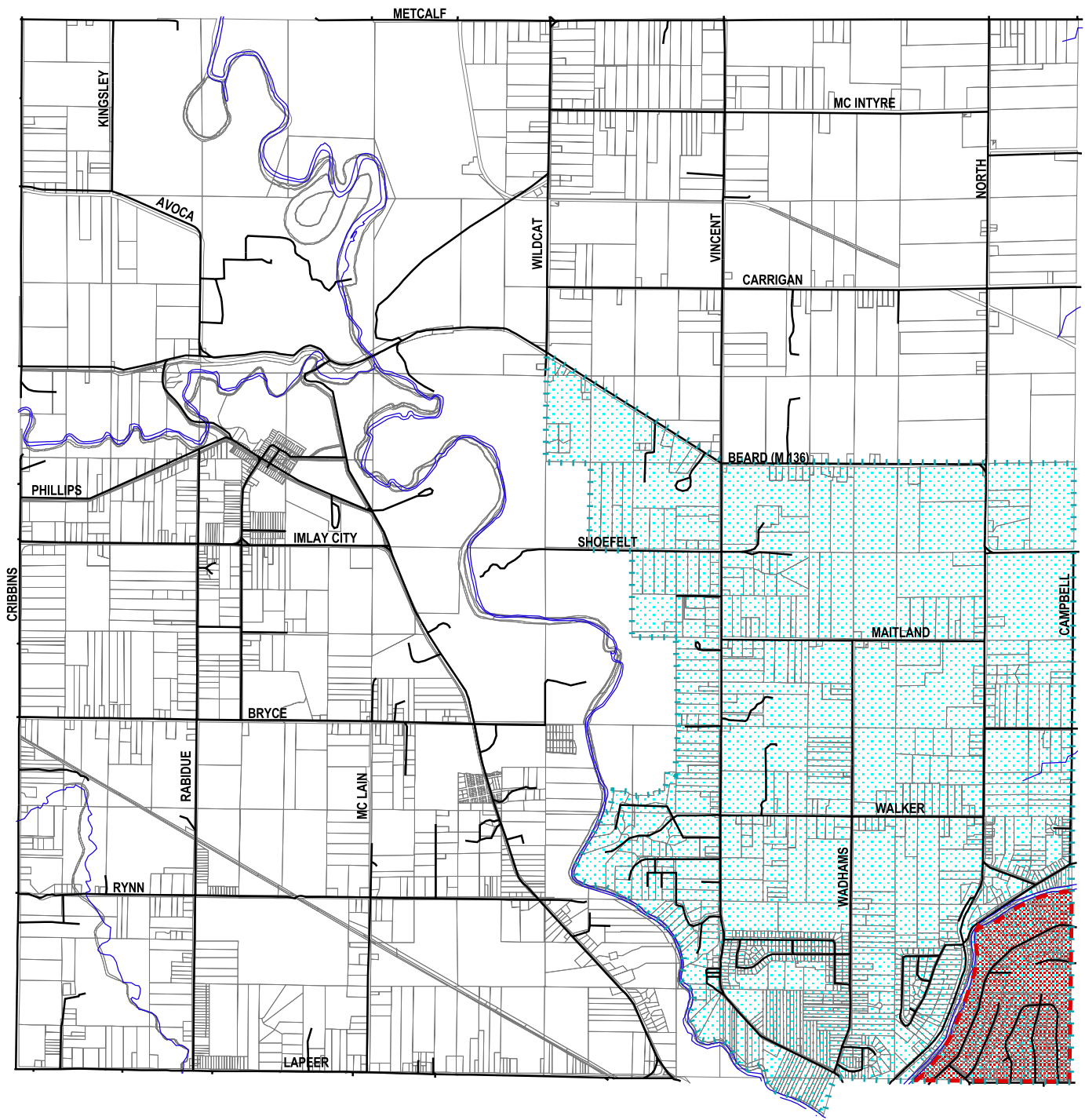
FUTURE MUNICIPAL WATER AND SEWER SERVICE AREAS

CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP LUP 2



BIRCHLER ARROYO
ASSOCIATES, INC.



PHASE 2



PARCELS



RIVERS



FUTURE MUNICIPAL SEWER SERVICE AREA



FUTURE MUNICIPAL WATER SERVICE AREA

FUTURE MUNICIPAL WATER AND SEWER SERVICE AREAS

CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP LUP 2A



BIRCHLER ARROYO
ASSOCIATES, INC.



9 THOROUGHFARE PLAN

An examination of the transportation network within a community is an important part of a Master Plan as land uses and roads are interdependent. A well designed and maintained road network is needed to provide access to development; yet the pattern of land uses and number and type of access points onto roads impact the function of the road system. The function of the road system and its ability to move traffic in an efficient and convenient manner has a significant impact on the viability of land uses and the overall quality of life in a community.

EXISTING CONDITIONS

The process for planning a community's transportation system is similar to the land use planning process; it must begin with a study and analysis of existing conditions. This includes an analysis of current traffic volumes of the Township's roadways.

Traffic Volumes

The Traffic Volumes Map shows 24-hour traffic volumes on major roadways. To prepare this map, data were obtained from the St. Clair County Road Commission and Michigan Department of Transportation.

The highest volume roads for which data are available in Clyde Township are North, Vincent, Keewahdin, and Wildcat Roads. By far the most heavily traveled among these is North Road, which carries an estimated 28,574 vehicles per day.* Vincent Road carries 12,433 vehicles per day (based on 2002 counts), Wildcat Road carries 11,228 vehicles per day (2001 counts),

* Estimate based on a combination of 2000 and 2002 traffic counts.

and Keewahdin carries 8,562 vehicles per day. With the exception of Keewahdin, which is also known as State Route M-136, all the most heavily traveled roads run north and south. Most traffic heading west appears to enter the Township on either Keewahdin (M-136) or Krafft Roads, then travels north out of the Township on North, Vincent, or Wildcat Roads.

M-136 (which becomes Beard west of North Road) is the only east-west road in the entire Township that continues all the way through the Port Huron State Game Area in the center of the Township. However, it is not nearly as well-traveled as the north-south routes, demonstrating that traffic that is simply passing through the area follows the north-south routes out of Clyde Township and uses an east-west route not in the Township. Most of the east-west traffic in the Clyde area uses I-69.

Existing Road Network

As indicated on the Existing Road Conditions Map, the majority of Clyde Township's roads are unpaved. The latest traffic volume counts provide information about only some of these roads, some of which carry very low volumes (under 700 vehicles per day). The ability of unpaved roads to carry high traffic volumes depends on their width, alignment, and state of maintenance.

The Existing Road Conditions Map also identifies locations on the Township's road system that may be of concern. Such locations include:

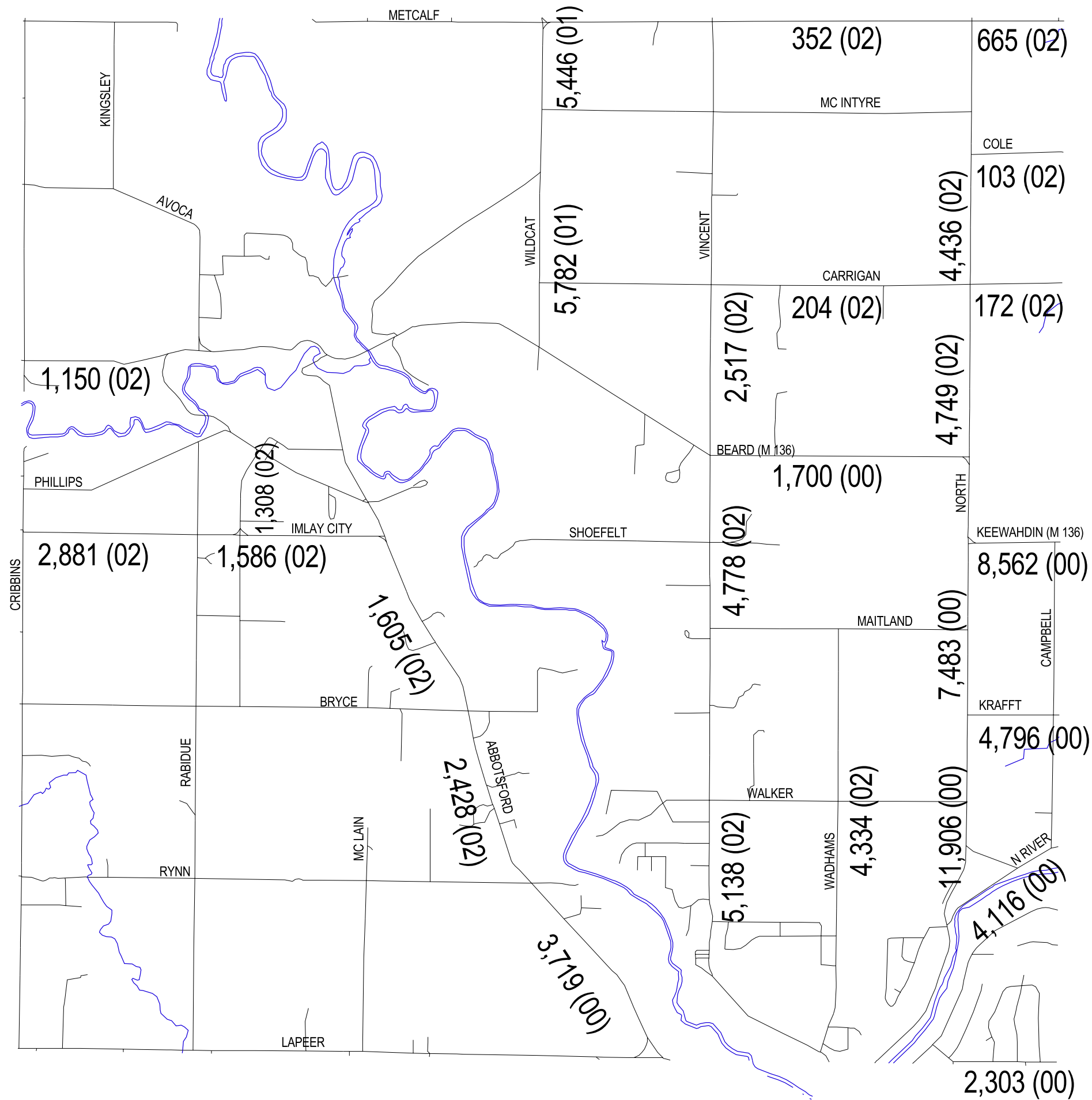
- ✍ Severe curves
- ✍ Offset intersections (where the center line of the road is shifted on the opposite side of the intersection)
- ✍ Skewed intersections (angles less than ninety degrees or other unusual configurations)

Traffic Crashes

This section includes a general examination of traffic crash causes and factors that influence traffic safety. Information regarding specific traffic crash data and trends within Clyde Township were not available for this report.

Causes of Traffic Crashes and Factors that Influence Safety

Roadway design, driver behavior, and weather conditions may all be contributing factors to the cause of a crash. The most frequent cause of traffic crashes is attributed to improper driving. Excessive speed, failure to yield the right-of-way, and following too closely are the principal types of improper driving behavior that lead to crashes. Alcohol and other drugs were reported to be a factor in over one-half of the fatal traffic crashes in the United States.



ROADS
RIVERS
1,234 (02) DAILY TRAFFIC VOLUME (YEAR)

DAILY TRAFFIC VOLUME SOURCES: ST. CLAIR
COUNTY ROAD COMMISSION & MICHIGAN
DEPARTMENT OF TRANSPORTATION

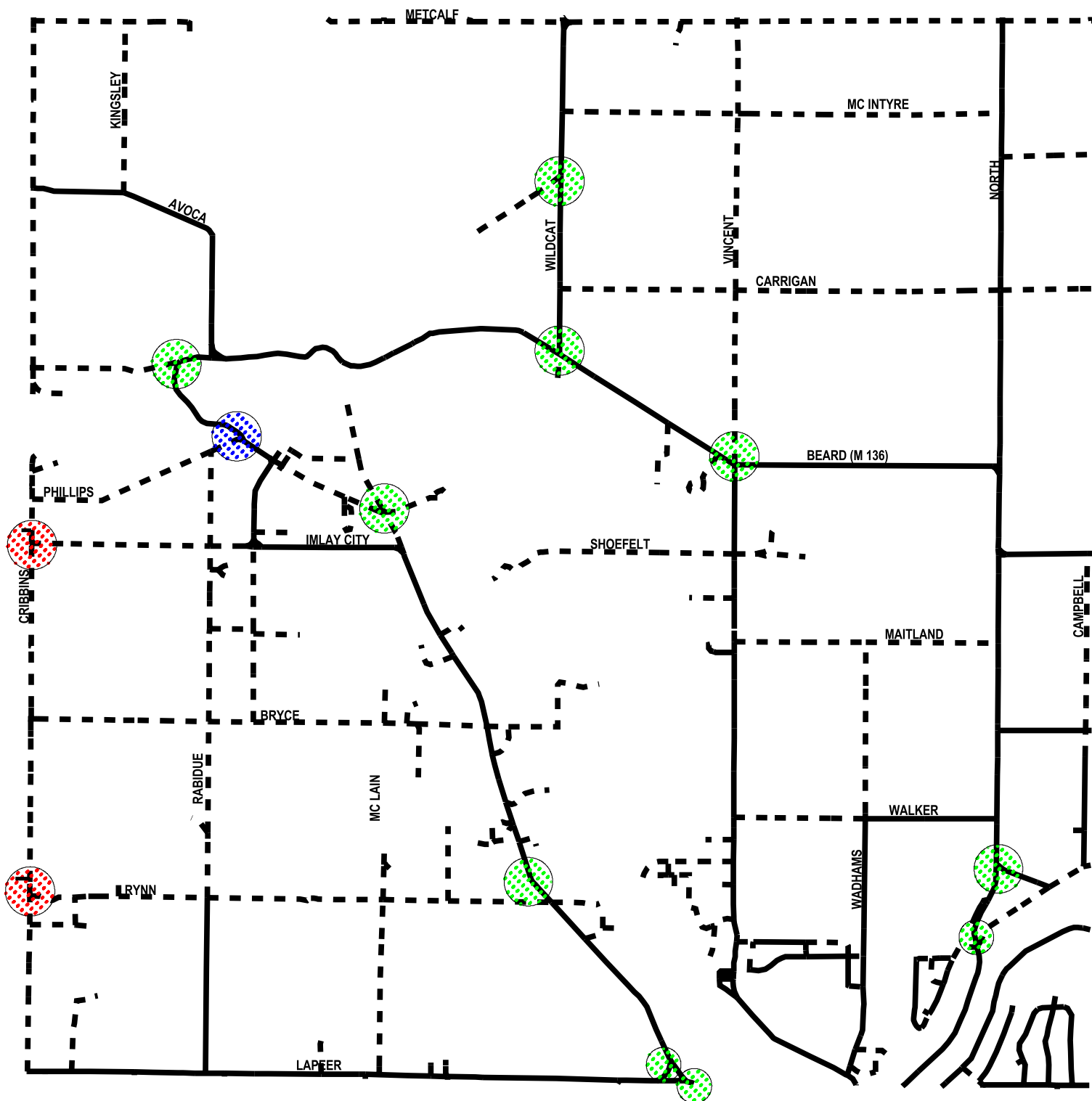
TRAFFIC VOLUMES CLYDE TOWNSHIP ST. CLAIR COUNTY

MAP TH 1



BIRCHLER ARROYO
ASSOCIATES, INC.

This page left intentionally blank.



EXISTING ROAD CONDITIONS

CLYDE TOWNSHIP
ST. CLAIR COUNTY



PAVED ROADS

UNPAVED ROADS



OFFSET MAJOR INTERSECTION



SKEWED MAJOR INTERSECTION



SKEWED MAJOR INTERSECTION
WITH GRADE CHANGE

MAP TH 2

BASE MAP SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BISCHOFF ARROYO
ASSOCIATES, INC.

The impact of weather on traffic crashes may seem significant because a high number of traffic crashes can occur during a short period of time; however, over one-half of total traffic crashes take place when pavement is dry.

The general characteristics of traffic crashes vary significantly in urban and rural areas. Approximately one-quarter of all rural crashes take place at intersections versus about one-half for urban areas. Although more crashes take place in urban areas, crashes in rural areas are more severe; the severity is primarily due to higher rural speeds.

The impact of congestion becomes apparent when examining the relationship between increased traffic volumes and accident frequency. Studies have shown that crash rates increase with increasing volume to a certain point, and then the crash rate drops as congestion and volumes increase. The peak in one study was found to be 650 vehicles per hour on California highways; another study of two-lane rural roads showed similar results with a peak at about 333 vehicles per hour.

Roadway design and safety features also impact crash rates. Several roadway design and safety features are discussed below.

Lane Width

The effect of roadway width on traffic crashes generally increases as vehicle speeds increase. One study showed that widening 240 miles of highway from nine-foot wide lanes to 11-foot wide lanes reduced crashes by 21 percent on low-volume roads and 47 percent on high volume roads.

Highway Shoulders

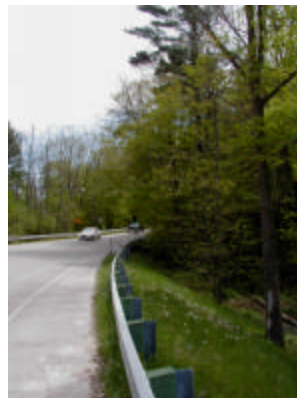
Studies have shown that crash rates decrease with increasing shoulder width. This is primarily due to the fact that motorists traveling on roads with wide shoulders have a stable area to use if they cross the outer pavement edge.

Horizontal Curves

Curves in roadway pavement increase the possibility of traffic crashes. The most frequent crash type is skidding.

Vertical Alignment

A change in pavement elevation can also have an impact on crash rates. Long, steep grades and steep grade/horizontal curve combinations can



Curves in the roadway, like this one, can increase the potential for crashes.

greatly increase the frequency of crashes.

Intersections

The design, location, number of approaches, traffic controls and vehicular volume of an intersection influence the number and type of crashes that will occur at a given intersection. For example, an intersection with three approaches is generally safer than one with four approaches because of the reduced number of conflicting movements. The sight distance for the motorists approaching the intersection is also a critical variable.

Speed

The speed at which vehicles travel must reflect an appropriate response to existing road and traffic conditions in order to minimize the frequency and severity of crashes. High speeds are often safer than slow speeds on roads designed for high speed travel, provided road and weather conditions are good. However, high speeds can decrease the frequency of crashes yet increase the severity of crashes.

Other Factors

Other factors that influence speed and safety include night lighting, railroad crossings, pedestrian crossing, interchanges, and median designs. A comprehensive discussion of all these factors is beyond the scope of this report. However, the general discussion above has been included to provide the reader with some background on the cause of traffic crashes and factors influencing safety before examining accident data within Clyde Township.

THOROUGHFARE PLAN

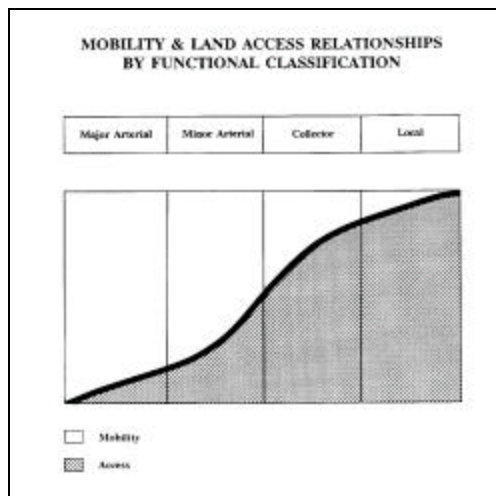
An examination of the road network within a community is an important part of a Master Plan because land uses and roads are interdependent. The function of the road system and its ability to move traffic in an efficient and convenient manner has a significant impact on the viability of land uses and the overall quality of life in a community. The Thoroughfare Plan is designed to achieve the goals and objectives for traffic and circulation in Clyde Township that were identified by the Planning Commission through the community vision and goals process.

Traffic Planning Design Principles

Traffic is concentrated on certain roadways due to the roads' physical condition, level of use, and direction of travel, as well as the overall land-use pattern. On average, about 20 percent of the roads in the United States carry approximately 80 percent of vehicle miles traveled. In order to set funding priorities for the roads that carry the highest volumes, transportation planners established a street classification system.

Although there is some variation in their classification, roadways are typically divided into those that carry through traffic and those that carry local traffic. It is desirable to physically separate these two road types as much as possible to eliminate conflicting traffic movements, traffic congestion, delays, and crashes. In order to function successfully, the overall traffic circulation system must be carefully integrated. Map TH 3, identifies the principal arterials, arterials, collectors, minor collectors and local streets in the Township.

Figure TH 1



Goal

Develop and maintain transportation systems to move goods and people with maximum efficiency.

Objectives

Retain gravel roadways on less heavily traveled roads to maintain the Township's "country atmosphere."

Review roadway conditions and traffic volumes in order to target areas that should be considered for road improvements.

Major Arterials

Major arterials provide travel routes from one city to another, and can traverse one or more states. They are most often used for longer trips, as higher speeds are allowed. When a principal arterial passes through a more populated area, however, the highway functions more like an arterial. The number of intersections increases and speeds decrease. Principal arterials are planned for 150-foot rights-of-way. North and Lapeer Roads are currently the only roads planned as major arterials.

Arterials

Arterial roads carry trips of shorter length than do principal arterials. They can provide routes for lengthy trips if a principal arterial or freeway is not available. Arterial roads have a dual function: to provide routes for through traffic while providing access to abutting properties and minor intersecting streets. This can lead to congestion and traffic crashes because of turning vehicles conflicting with through traffic. As indicated on the Thoroughfare Plan Map, Cribbins, Rabidue, Bryce,

Avoca, Kingsley, Rynn, Imlay City, Metcalf, Carrigan, Wildcat, Vincent, Beard, Abbottsford, and Wadhams Roads are designated as arterials within the Township. These roads are planned for 120-foot rights-of-way.



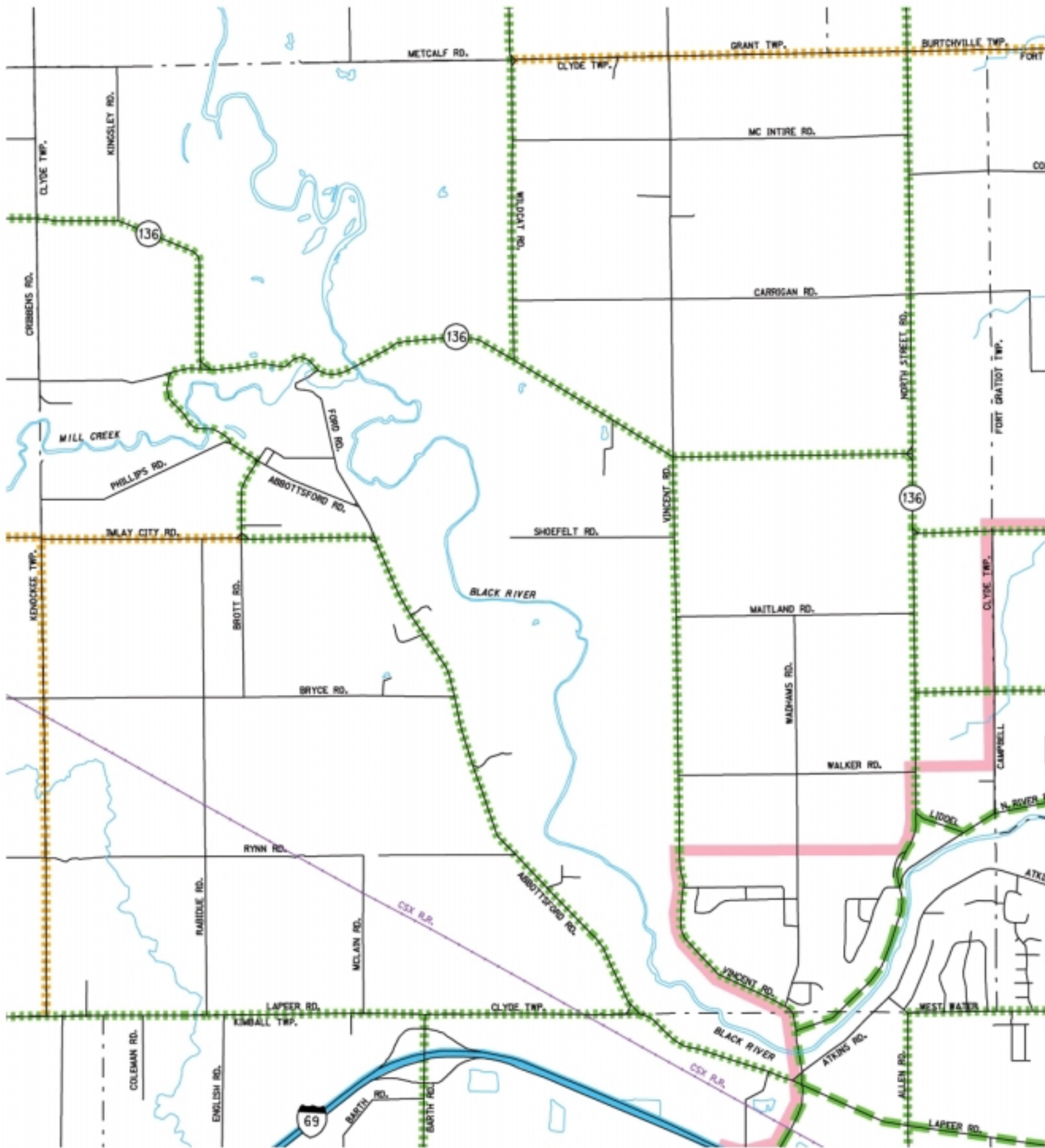
Collectors

The intent of a collector street is to collect vehicles from the local streets or rural areas and distribute them to either local destinations or to an arterial. The collector street system serves both land access and through traffic. Collectors in the Township are Phillips, McLain, McIntyre, Campbell, Walker, and Shoefelt Roads. These roads are planned for an 86-foot right-of-way.

Local Roads

Providing access to adjacent land is the sole function of local roads, which include both public and private roads. These streets make up a large percentage of total street mileage in urban areas and a small percentage in rural areas, but they almost always carry a small portion of vehicle miles traveled. The aim of local streets is to provide access to collector streets and through routes, but in such a manner that through traffic is not encouraged to use the local streets as a shortcut route. Public local streets are planned for 66-foot rights-of-way, unless otherwise determined by the planning

This page left intentionally blank.



Source: MDOT

LEGEND FOR OFFICIAL MAP	
FEDERAL-AID SYSTEMS OR PROGRAMS ARE COLOR CODED. ROADS SHOWN IN BLACK ARE INELIGIBLE FOR FEDERAL-AID.	NATIONAL HIGHWAY SYSTEM: BLUE PURPLE RED
	SURFACE TRANSPORTATION PROGRAM: GRAY GREEN ORANGE (IN ADDITION TO BLUE, PURPLE & RED)
NATIONAL FUNCTIONAL CLASSIFICATION SYSTEMS	
	URBAN INTERSTATE RURAL
ROADS SHOWN WITH ANY ONE OF THESE CLASSIFICATIONS ARE ALSO CALLED FEDERAL-AID HIGHWAYS.	INTERSTATE
	OTHER FREEDWAYS
	OTHER PRINCIPAL ARTERIALS
	MINOR ARTERIALS
	URBAN COLLECTORS (NONE IN RURAL AREA)
LIMITED ELIGIBILITY FOR FEDERAL-AID	MAJOR COLLECTORS (NONE IN URBAN AREA)
INELIGIBLE FOR FEDERAL-AID	MINOR COLLECTORS
	LOCAL STREETS AND ROADS
FEDERAL-AID URBAN BOUNDARY	BOUNDARY BETWEEN URBAN & RURAL LAND AREA

PREPARED BY: MDOT BUREAU OF TRANSP. PLANNING
STATEWIDE PLANNING SECTION
FILE NAME: "STCLAIR"
REVISED/UPDATED: SEP. 7, 1999

ROAD FUNCTIONAL CLASSIFICATION

CLYDE TOWNSHIP

ST. CLAIR COUNTY

MAP TH 3



BIRCHLER ARROYO
ASSOCIATES, INC.

This page left intentionally blank.

commission. Private roads may vary in width, but a desirable easement is also 66 feet.

Access Management Recommendations

As discussed above, most streets provide two functions: 1) to move traffic, and 2) to provide access to land uses that abut them. However, these functions can often conflict because each access point interrupts traffic movement as vehicles turn off and onto the roadway. In order to balance these two road functions, access management techniques should be used.

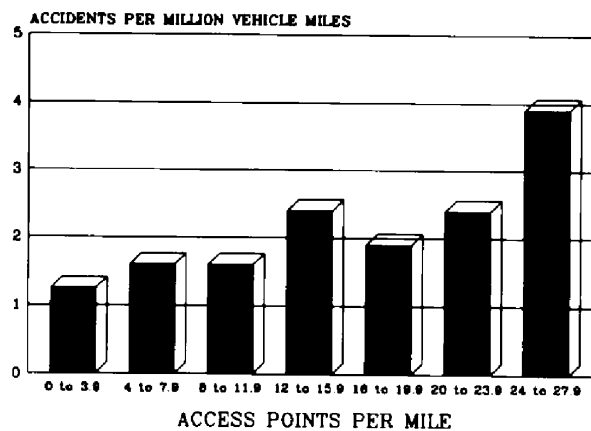
The access management techniques described below primarily apply to more intensive, non-residential land uses. However, the standards for shared access driveways are appropriate for individual residential home sites. Access management is usually implemented through the site plan review process, and these techniques are suggested as guidelines in that process. Each case will require an individual analysis to determine the appropriate action given the characteristics of the site and use.

Restricting the Number and Spacing of Access Points

Limiting the number of driveways permitted for each land use can help preserve the traffic movement function of a roadway. Proposed and existing land uses should provide the minimum number of driveways needed to provide access to a development site. If additional driveways are proposed, additional street frontage for the subject site, and appropriate spacing between existing driveways should be provided.

Figure TH 2

ACCIDENT RATES FOR ROAD SECTIONS WITH DIFFERENT ACCESS POINT FREQUENCIES



Source: Access Management for Streets and Highways, U.S.
Department of Transportation, FHWA, 1982

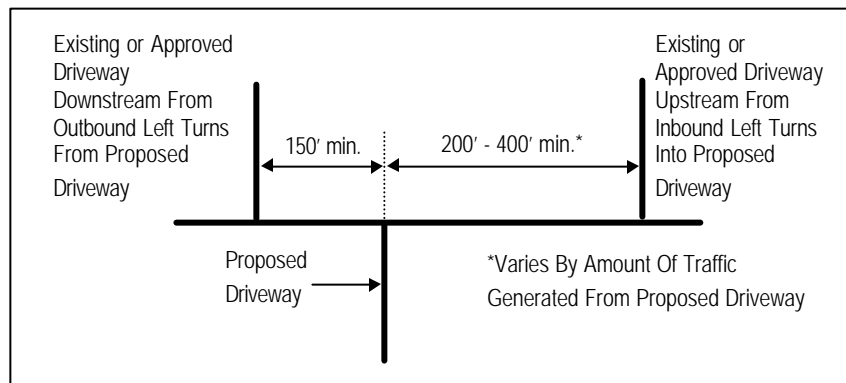
Even if only one access point is proposed, the most appropriate location should be selected to preserve the function of the roadway and more importantly, to assure public safety. Driveways located too close together are safety hazards and they can negatively impact road capacity. Recommended spacing standards for non-residential driveways on the same and opposite sides of the roadway are provided below.

Table TH 1
**Spacing Standards for
 Driveways on Same Side of Street**

Road Speed (mph)	Driveway Spacing (feet)
20	85
25	105
30	125
35	150
40	185
45	230
50	275

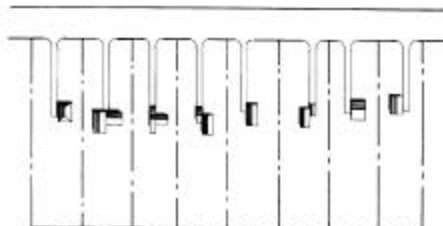
Source: FHWA Report IP-82-3, June 1982; FHWA Report RD-76-86, August 1975

Figure TH 3
**Spacing Standards for
 Driveways on Opposite Side of Street**

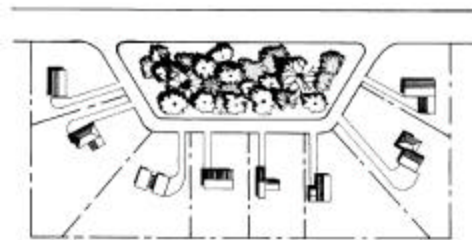


✍ Encouraging Shared Access

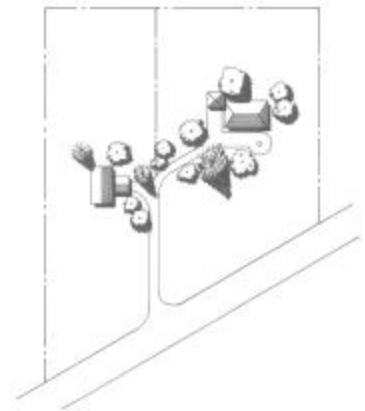
Providing shared access to a site reduces the number of access points, preserves the capacity of the road, and can even help to maintain the character of the community. As illustrated in the graphic individual driveways serving residential acreage parcels can reduce the capacity of



the roadway and the rural character of the community. Shared access can be achieved through a variety of techniques including shared driveways, frontage roads, service roads and internal connections between sites. As new houses are developed on acreage parcels, shared driveways or frontage roads are desirable alternatives. These techniques not only preserve the capacity of the roadway; they serve as a buffer for the houses providing visual screening and protection from traffic noise.

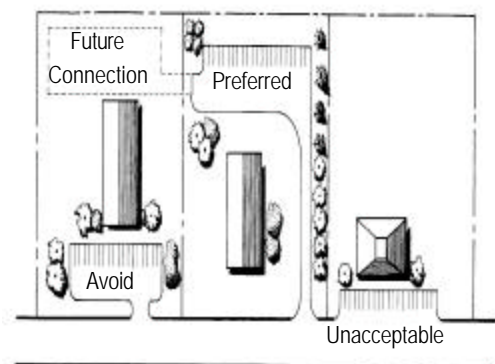
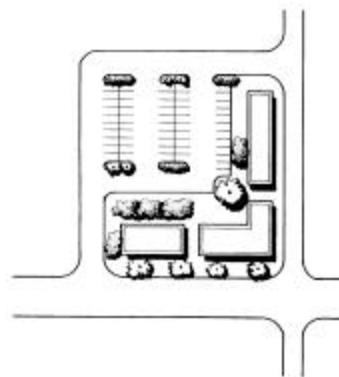


Frontage Road



Residential Shared Drive

As discussed above, access management is also critical for non-residential land uses because of their intensive nature and tendency to demand a higher number of access points. The following graphics illustrate ways in which non-residential uses can utilize access management techniques.



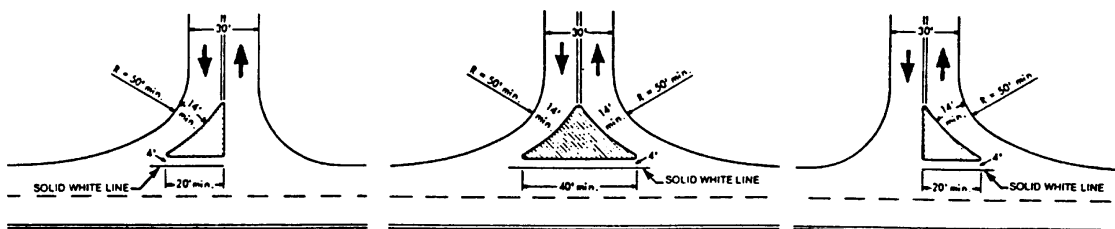
Shared access for a number of non-residential uses preserves the road capacity, which is especially important near intersections. Shared parking at the rear of the buildings also helps preserve the aesthetic appearance and character of the community. If shared access drives are not feasible, internal service roads and/or internal parking lot connections between uses should be provided to preserve roadway capacity.

Access/Driveway Design

Another access management technique is assuring proper driveway and intersection design. To begin with, driveways should be designed with adequate width, turning radius, and depth to allow automobiles and large trucks to enter and exit a site safely and efficiently. A clear vision area at the corners of all driveways and intersection is also needed for safe driver visibility.

In addition, uses that generate high volumes of traffic may warrant the construction of deceleration and acceleration lanes adjacent to driveways and intersections. Left turn passing lanes or center left turn lanes may also be necessary. Such improvements are often identified by the completion of traffic impact studies. In general, traffic impact studies are recommended whenever a proposed land use will generate more than 750 vehicle trips per day and/or more than 100 vehicle trips in one direction during the morning (e.g., 7 a.m. - 9 a.m.) or afternoon (4 p.m. - 6 p.m.) peak hour.

Finally, restricting turning movements at a driveway or intersection is often warranted due to traffic volumes or poor spacing of proposed access points to existing driveways and/or intersections. For example, when an existing driveway is too close to an intersection, it is possible to improve the access and safety by restricting turning movements to right turns in and out of a proposed or existing development site. The following graphic illustrates ways in which driveways can be "channelized" to restrict turning movements.



PREVENTS LEFT-TURN EGRESS

**PREVENTS LEFT-TURN EGRESS
AND INGRESS**

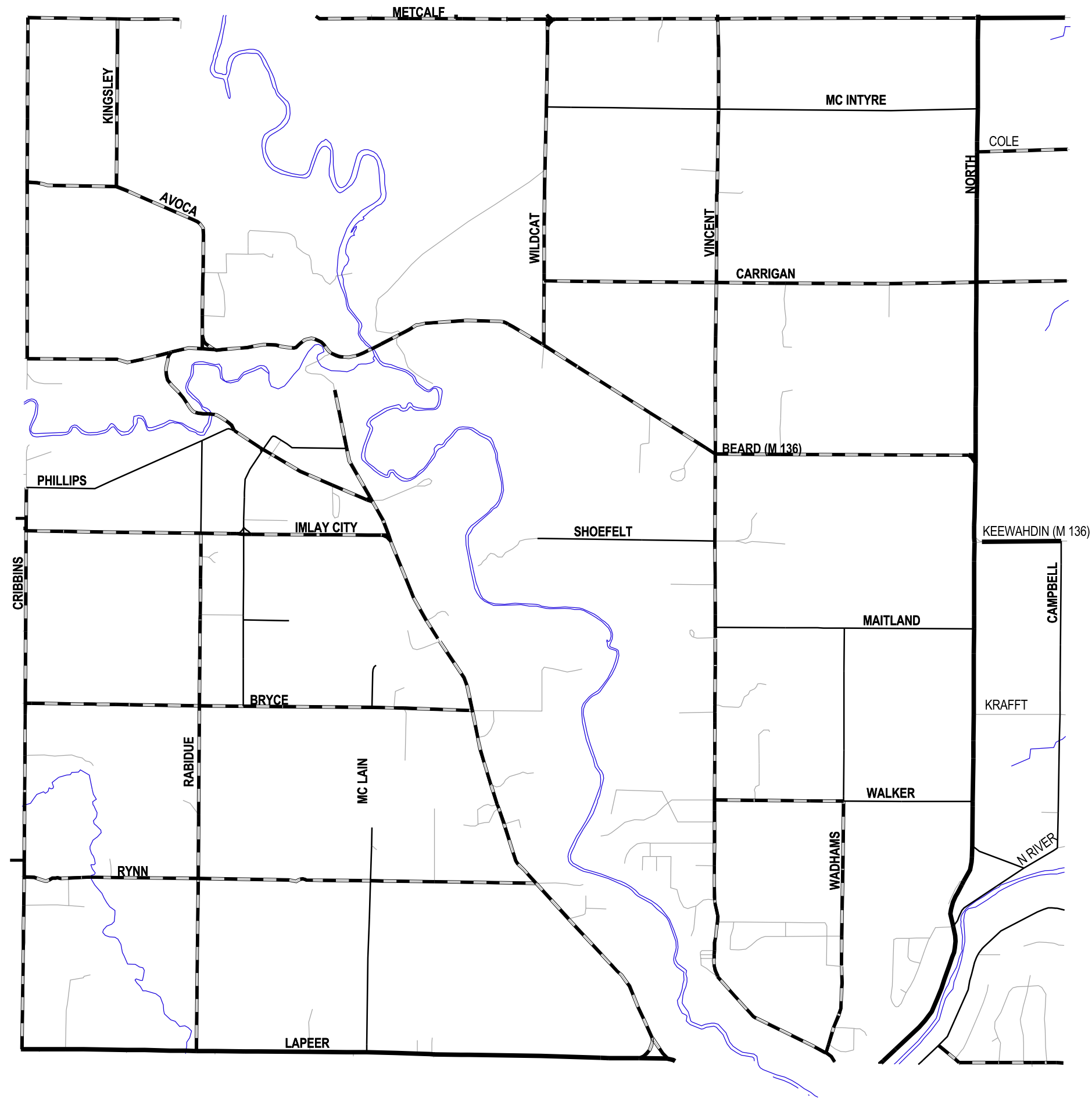
PREVENTS LEFT-TURN INGRESS

CONCLUSION

Because Clyde Township does not have direct control over the roads in the Township, it is important that the St. Clair County Road Commission and the Michigan Department of Transportation be kept aware of the plans of the Township. Because land use and thoroughfare elements are closely interrelated, and any change in one may have a marked effect upon the other, information regarding plans of the State, County and Township should be exchanged on a regular basis.

As new development and redevelopment is proposed, it should be examined with regard to impact on the thoroughfare system. The continued economic viability and quality of life of Township residents is closely linked to good traffic flow and access management. When redevelopment or new development takes place, efforts should be made to minimize its impact on traffic congestion and safety. Site plans for any type of use should be reviewed for adequate rights-of-way and access management techniques where appropriate. If and when subdivision plats and site condominiums are proposed, adequate rights-of-way should be required from the developer, to the extent permitted by law. In addition, individual home sites fronting on thoroughfares should be encouraged to develop shared access drives or frontage roads. By implementing access management techniques in the site plan and review and redevelopment processes, the Township can insure that development occurs in concert with the overriding goal of safe and efficient movement throughout the Township.

This page is left intentionally blank.



- MAJOR ARTERIAL (150' ROW)
- ARTERIAL (120' ROW)
- COLLECTOR (86' ROW)
- LOCAL ROAD (66' ROW)

THOROUGHFARE PLAN

CLYDE TOWNSHIP ST. CLAIR COUNTY

MAP TH 4



**BIRCHLER ARROYO
ASSOCIATES, INC.**

This page left intentionally blank.



10 IMPLEMENTATION STRATEGIES

As stated in the introduction, the Master Plan is a policy document intended to guide future decisions regarding land use and the overall physical development of the Township. The implementation program summarized in the following table has been developed to assist with the continual use of this policy document.

Table IM 1
Implementation Program

Goal / Objective	Action
Maintain and Promote Township's rural character.	Update Zoning Ordinance to include provisions for the protection of woodlands, wetlands, agricultural land and open space.
	Develop Zoning Ordinance Performance Standards to address issues such as noise, dust, smoke, open storage and fire and explosive hazards associated with development.
	Develop special landscape treatment and sign requirements for key entry points to strengthen the community's identity.
	Develop Zoning Ordinance standards and regulations for exterior lighting to prevent unnecessary transmission of light into the night sky.
	Explore incentives for the preservation and/or reuse of barns and other historic structures in the Township.

Goal / Objective	Action
	Develop a set of design standards and guidelines that ensure new residential, commercial, and industrial development promotes Clyde's rural character.
	Re-evaluate the current site plan review process and revise to require pre-application meetings with applicants to discuss standards and options for development.
Protect and enhance the natural features of Clyde Township as the community continues to grow and develop.	Consider developing an overlay zoning district to identify preferred areas for sand and gravel mining operations to minimize negative impacts on natural features within the Township.
	Amend the Zoning Ordinance to include a wetlands and watercourse setback requirement.
	Maintain a natural resources inventory for the Township, which includes wetlands, woodlands, steep slopes, flood plain, and wildlife habitat.
	Actively plan for the development of future parks, recreation and open space by updating and maintaining the Township's Recreation Plan.
Promote and maintain appropriate infrastructure to support the Township in a manner that is sensitive to the environment and the Township's rural character.	Develop a natural features protection ordinance to establish appropriate buffer zones around wetlands, lakes, river edges and wildlife corridors.
	Establish Zoning Ordinance standards to ensure higher density residential uses occur within areas planned to be served by future utility extensions where they will not negatively impact the natural environment.
Encourage a variety of residential developments, consistent with the community's needs and its limited utility systems while protecting existing natural features.	Establish appropriate water service boundaries; discourage utility extensions where lower density development and agricultural activity is planned.
	Provide for a variety of residential zoning districts to permit housing in a variety of styles and price ranges in order to accommodate residents of all income levels.
	Develop specific Zoning Ordinance standards to require adequate utilities for higher density development.
	Develop landscape requirements to buffer different residential densities from each other and improve views from the roadway.

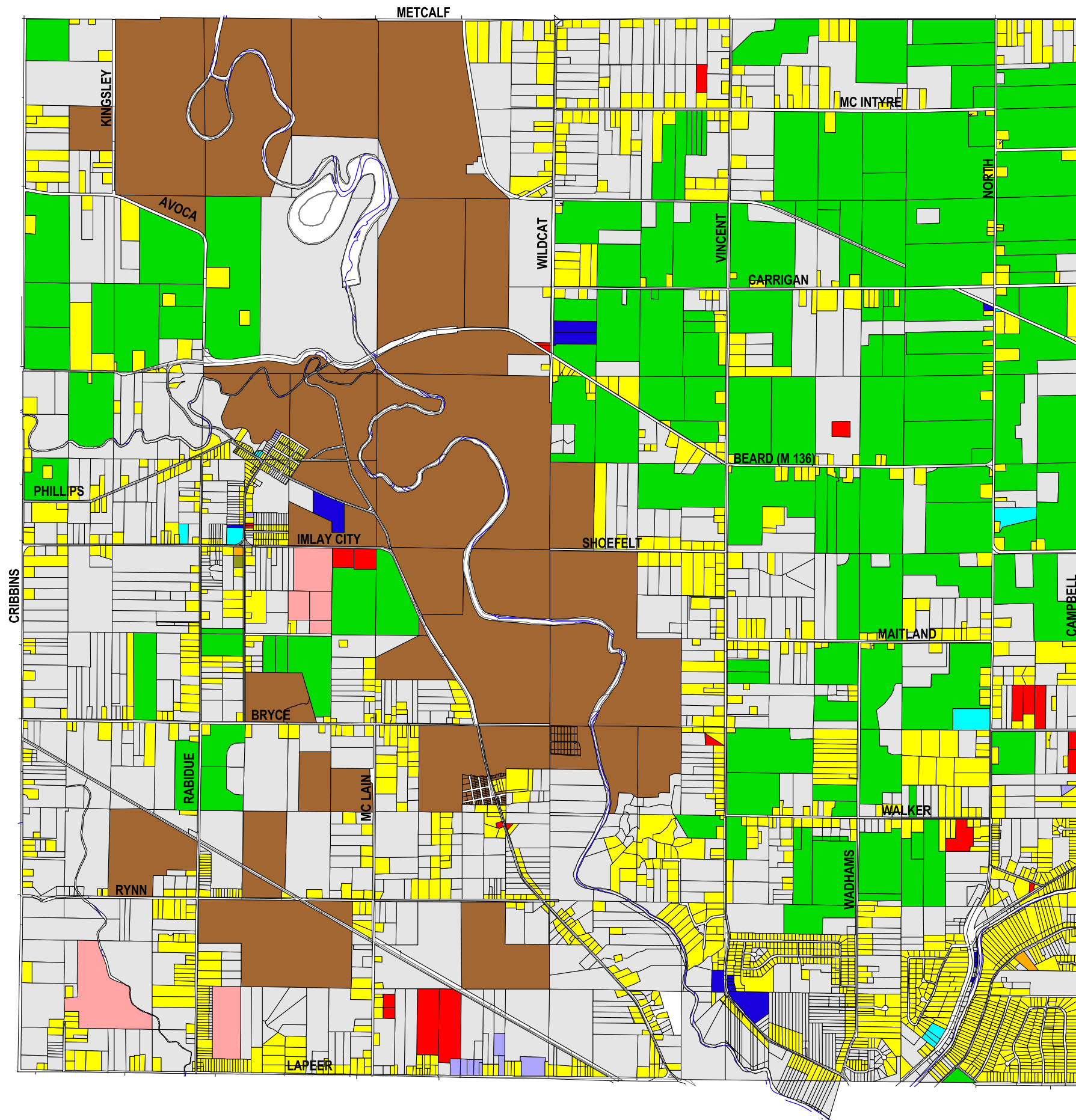
Goal / Objective	Action
Maintain commercial operations that meet the needs of Township residents and that do not detract from Clyde's rural character.	Encourage Industrial development to occur within the Lapeer Road Corridor.
	Re-evaluate Zoning Ordinance standards for industrial and research uses to ensure that they encourage such uses to develop within planned industrial areas rather than scattered throughout the Township.
	Develop Zoning Ordinance standards and design guidelines that limit suburban-style strip development and encourage clustered commercial areas that are in keeping with the policies of the Master Plan.
Develop and maintain transportation systems to move goods and people with maximum efficiency.	Consider the establishment of a Truck Route Ordinance to regulate heavy truck traffic and prohibit such traffic on certain roads for safety and road maintenance purposes.
	Amend Zoning Ordinance where appropriate in order to implement access management recommendations.
	Work with the County Road Commission to develop a road-paving plan to prioritize the improvement of highly traveled gravel roads in the community.

The Township's Sand and Gravel Master Plan has identified areas which may be suitable for future sand and gravel mining operations. The Planning Commission should pursue the adoption of a Sand and Gravel Overlay District as part of the Zoning Ordinance rewrite. Priority Areas identified in the Sand and Gravel Plan should be given consideration for application of the Township's overlay district on the Township's Zoning Map provided all zoning standards are met.

CONCLUSION

Each of the recommendations in this chapter will present opportunities to implement pieces of the Township's Master Plan. The list of implementation tools will grow as the Township gains new experience. The suggestions presented in this chapter are offered as actions that should be taken in the short-term in order to set the basic concepts of the Plan in motion. As the Township begins the delicate task of negotiating with developers, institutions, public agencies, state and county departments, and the like, additional actions will become necessary in order to maintain the momentum of the Plan.

This page left intentionally blank.



- AGRICULTURAL
- SINGLE FAMILY RESIDENTIAL
- MULTIPLE FAMILY RESIDENTIAL
- MOBILE HOME PARK
- COMMERCIAL
- INDUSTRIAL
- EXTRACTION
- PUBLIC
- QUASI PUBLIC
- STATE
- OPEN SPACE

Note: This map shows generalized existing land use patterns, reflecting how land is used today, (May 2002). It is not intended to be a precise, parcel by parcel land survey. Data sources include aerial photography and a drive-by windshield analysis.

EXISTING LAND USE: 2002

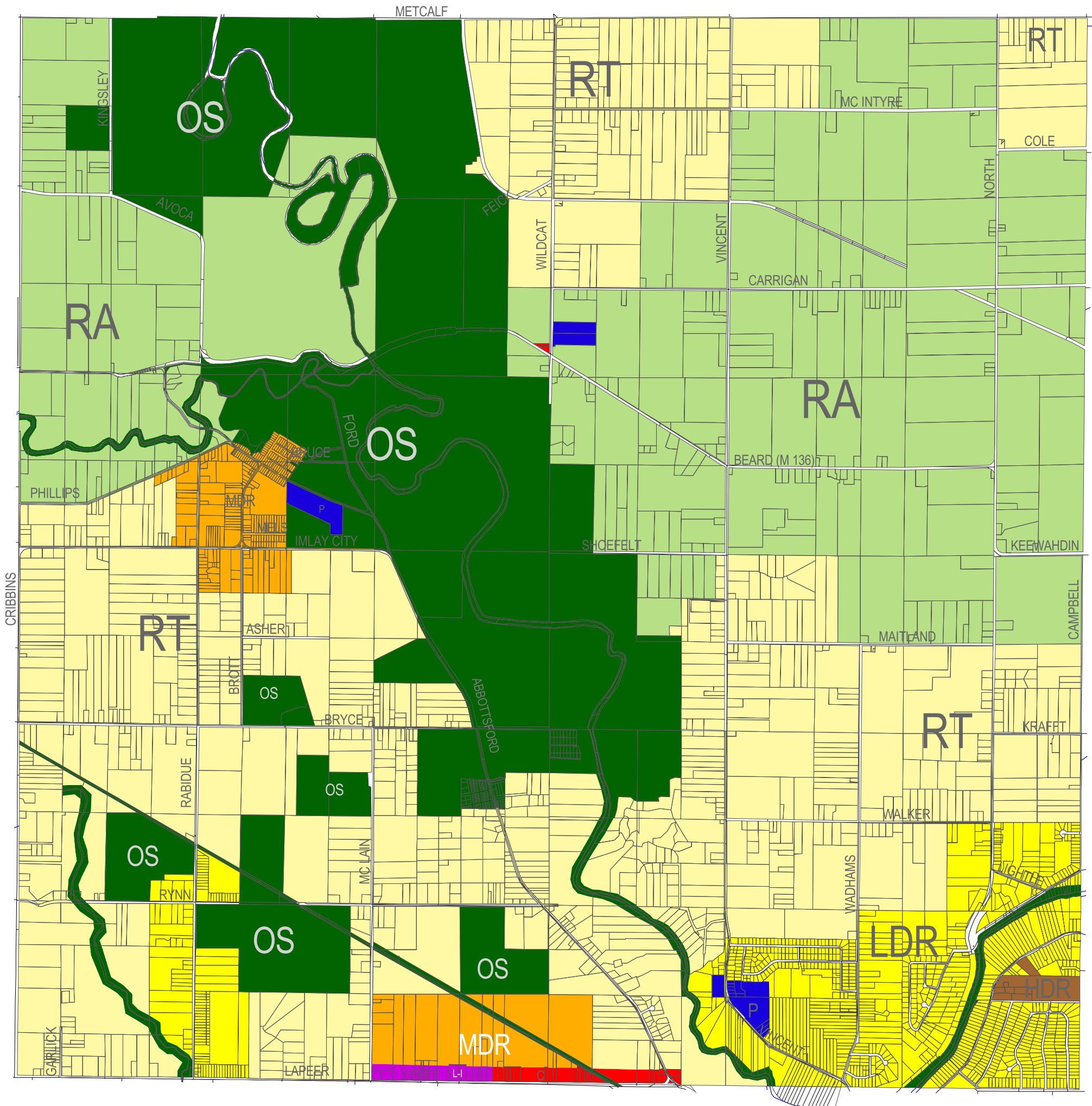
CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP ELU 1

SOURCES:
BASE MAP PROVIDED
BY ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION
EXISTING LAND USE SURVEY
CONDUCTED BY BIRCHLER
ARROYO ASSOCIATES, INC.
MAY 2002



This page left intentionally blank.



- OS OPEN SPACE
- RA RURAL AGRICULTURE
- RT RURAL TRANSITIONAL
- LDR LOW DENSITY RESIDENTIAL
- MDR MEDIUM DENSITY RESIDENTIAL
- HDR HIGH DENSITY RESIDENTIAL
- C COMMERCIAL
- LI LIGHT INDUSTRIAL
- P PUBLIC

Notes:

1. This Land Use Plan is intended to show generalized land use and is not intended to indicate precise size, shape or dimension. These recommendations have a long-range planning horizon and do not necessarily imply that short-range rezoning is appropriate.
2. The Clyde Township Master Plan includes the Land Use Plan Map and all text, maps, charts, tables and other graphics included in the full Master Plan report.
3. It is the intent of the Township that development on and within the 100-year floodplain be discouraged and regulated by ordinance. Refer to Floodplain Map ECA 6.

LAND USE PLAN

CLYDE TOWNSHIP

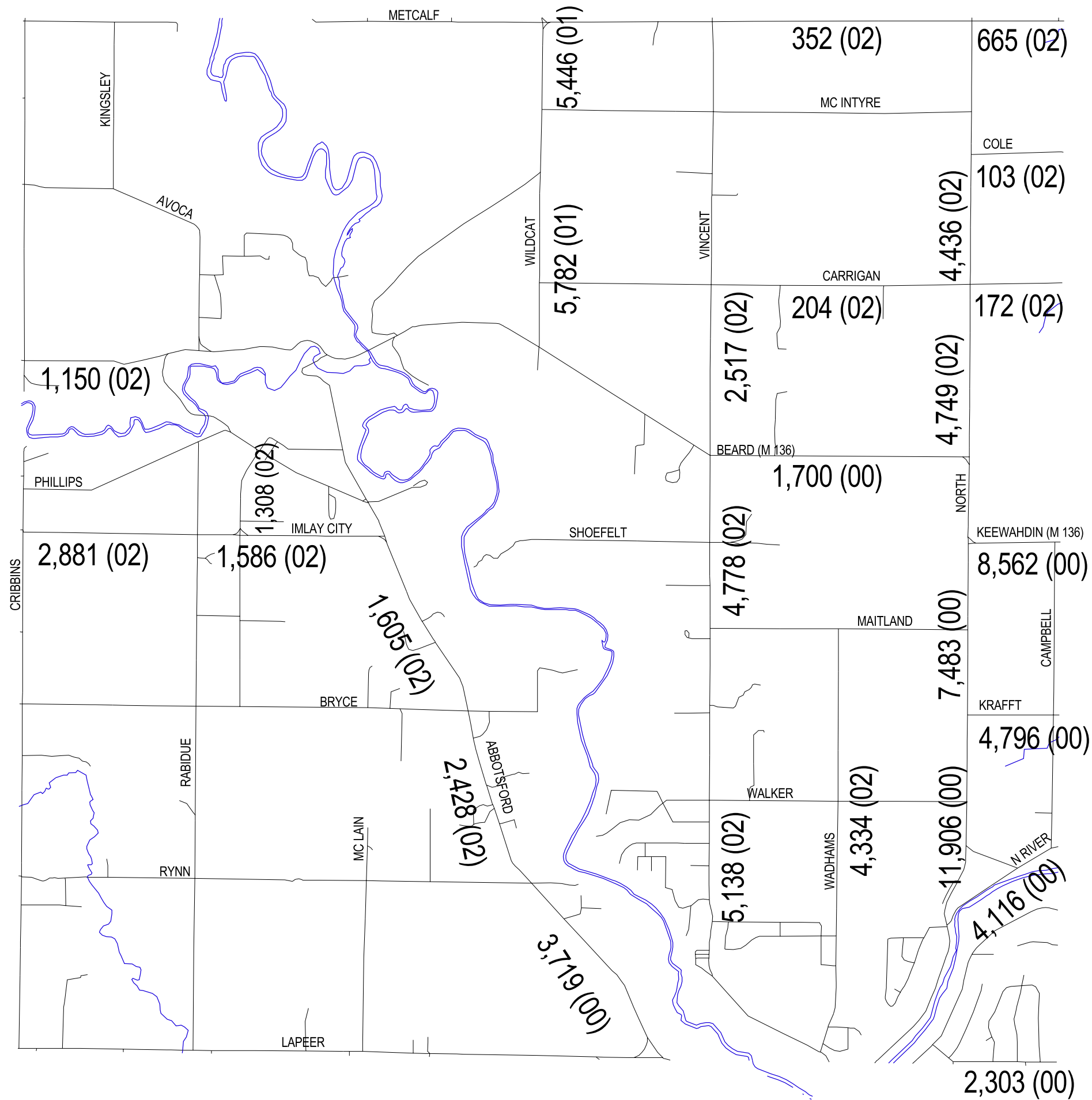
ST. CLAIR COUNTY

MAP LUP 1



BIRCHLER ARROYO
ASSOCIATES, INC.

This page left intentionally blank.



ROADS
RIVERS
1,234 (02) DAILY TRAFFIC VOLUME (YEAR)

DAILY TRAFFIC VOLUME SOURCES: ST. CLAIR COUNTY ROAD COMMISSION & MICHIGAN DEPARTMENT OF TRANSPORTATION

TRAFFIC VOLUMES CLYDE TOWNSHIP ST. CLAIR COUNTY

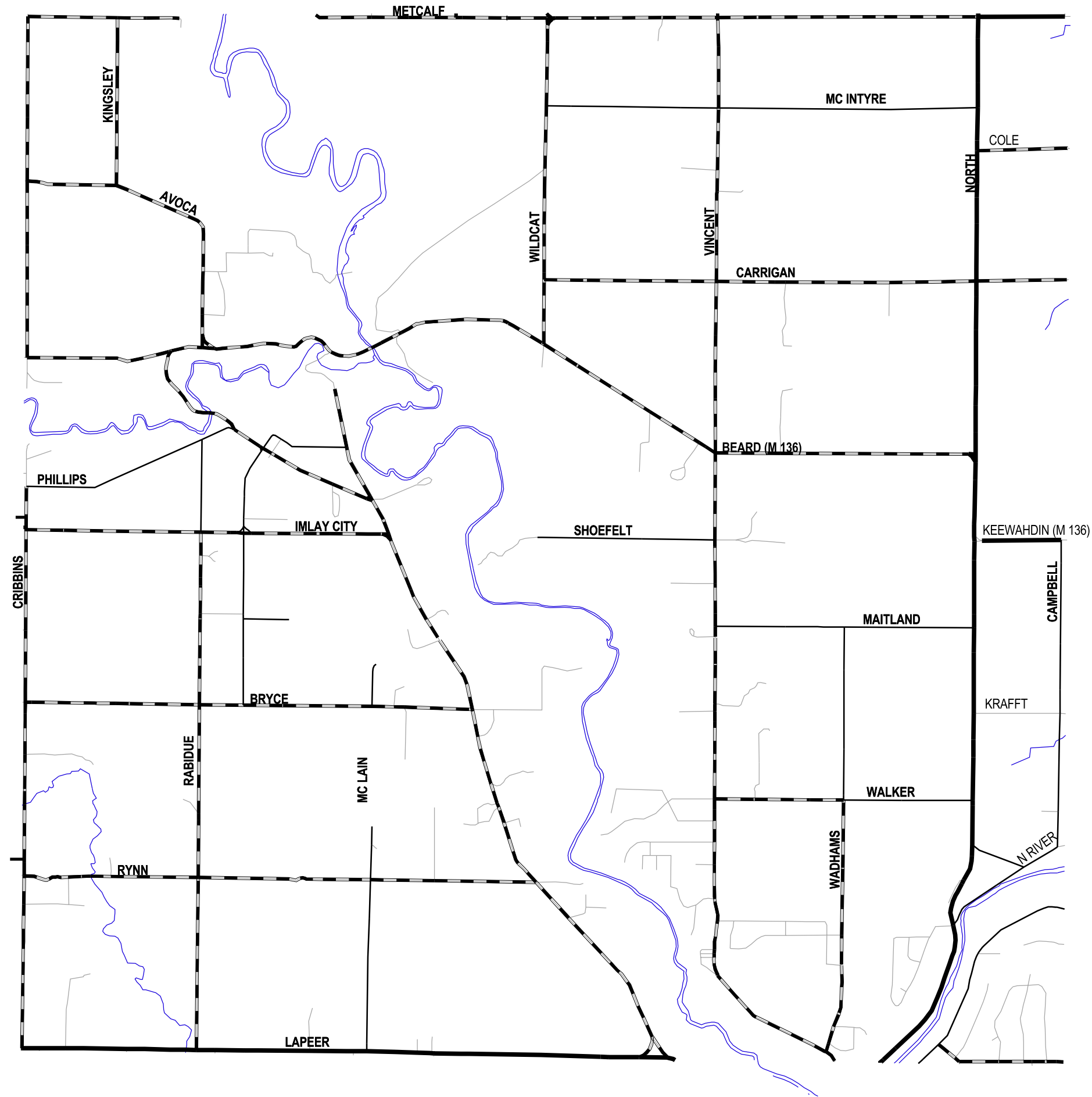
MAP TH 1



BIRCHLER ARROYO
ASSOCIATES, INC.

This page left intentionally blank.

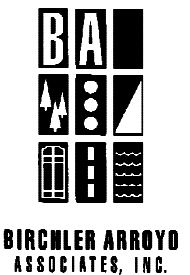
This page left intentionally blank.



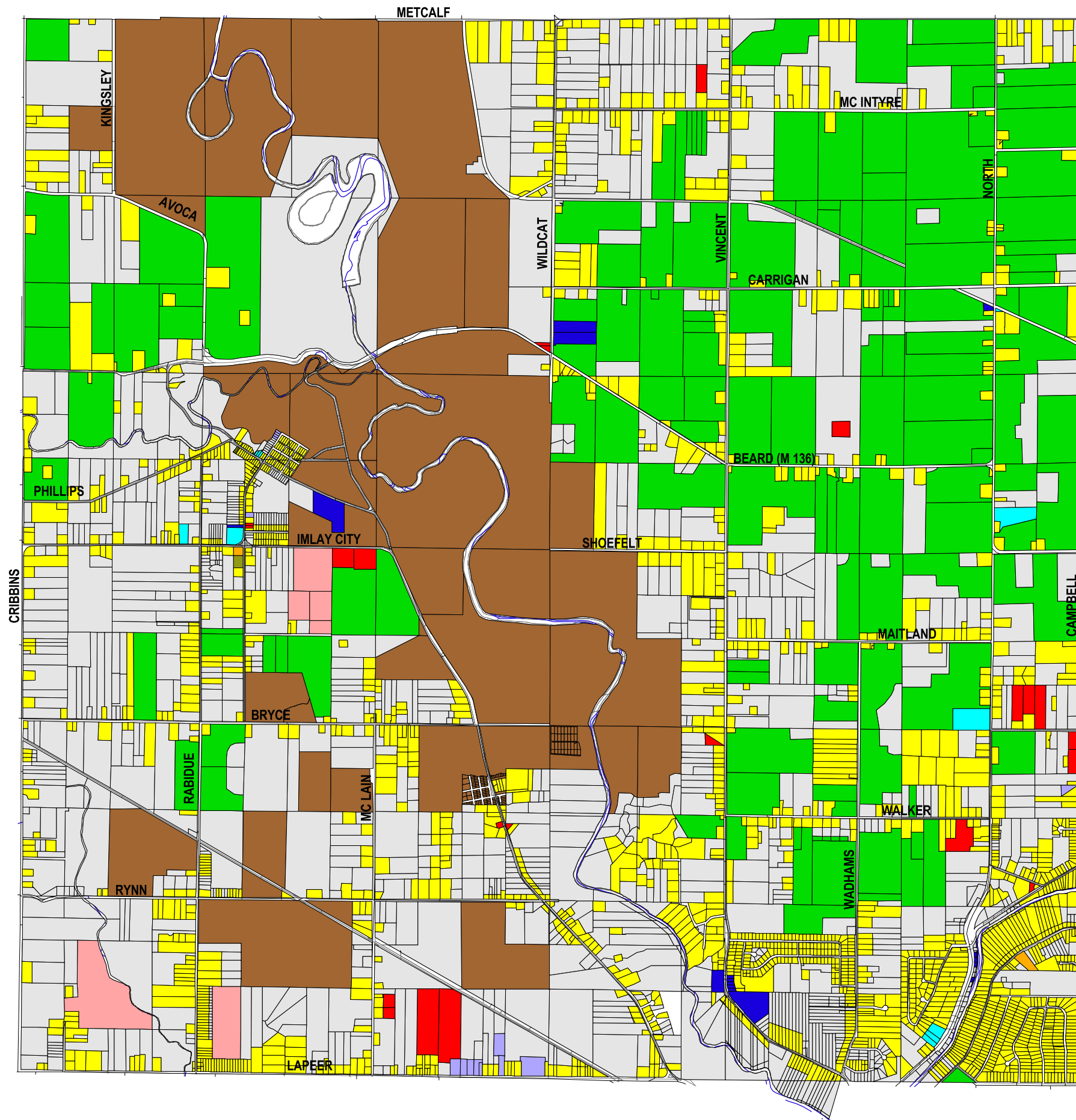
- MAJOR ARTERIAL (150' ROW)
- ARTERIAL (120' ROW)
- COLLECTOR (86' ROW)
- LOCAL ROAD (66' ROW)

THOROUGHFARE PLAN CLYDE TOWNSHIP ST. CLAIR COUNTY

MAP TH 4



This page left intentionally blank.



- AGRICULTURAL
- SINGLE FAMILY RESIDENTIAL
- MULTIPLE FAMILY RESIDENTIAL
- MOBILE HOME PARK
- COMMERCIAL
- INDUSTRIAL
- EXTRACTION
- PUBLIC
- QUASI PUBLIC
- STATE
- OPEN SPACE

EXISTING LAND USE

CLYDE TOWNSHIP, ST. CLAIR COUNTY

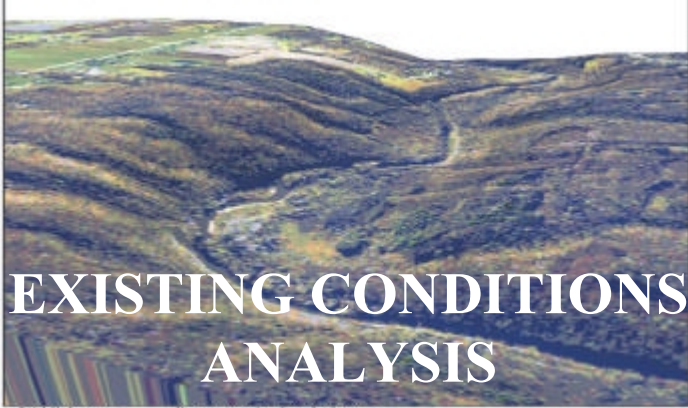
This map shows generalized existing land use patterns, reflecting how land is used today, (May 2002). It is not intended to be a precise, parcel by parcel land survey. Data sources include aerial photography and a drive-by windshield analysis.

MAP RP 1



This page left intentionally blank.

APPENDIX A



EXISTING CONDITIONS ANALYSIS

As noted in Chapter 1, the planning process begins with an evaluation of a community's characteristics, such as population, housing, workforce, income, local market potential, development patterns, natural resources and other pertinent factors. Once a database of existing conditions is compiled, a community can evaluate the findings, which provide a foundation as goals are set, plans are developed, and implementation strategies are determined.

The following information provides an update to the existing condition analysis conducted in the Master Plan adopted by the Township Planning Commission in 1993.

POPULATION & HOUSING

Population

As shown in Table ECA 1 below, Clyde Township had a 55% increase in population between 1970 and 1980. Other adjacent communities grew at a slower rate during this decade. Clyde's rapid growth leveled off between 1980 and 1990 with a 9.1% percent increase in population, similar to nearby Burtchville Township. Communities such as Greenwood Township, Port Huron Township and Wales Township experienced slight declines in population between 1980-1990, while most of the communities adjacent to the Township had varying degrees of modest growth. Growth between 1990 and 2000 remained steady for Clyde Township with a 9.3% increase in population. Other adjacent communities experienced moderate increases ranging from 13-19%, while several nearby Townships such as Grant, Greenwood, Kenockee and Wales experienced even greater rates of growth (as high as 37.8%).

Table ECA 1
Population, Clyde Township & Adjacent Communities

	1970	1980	70-'80 percent change	1990	80-'90 percent change	2000	90-'00 percent change
ClydeTwp.	2,980	4,632	55.44%	5,052	9.07%	5,523	9.3%
BurtchvilleTwp.	2,037	3,069	50.66%	3,359	9.45%	3,956	17.8%
Fort GratioTwp.	7,075	8,496	20.08%	8,968	5.56%	10,691	19.2%
GrantTwp.	832	1,119	34.50%	1,210	8.13%	1,667	37.8%
GreenwoodTwp.	889	1,046	17.66%	1,037	-0.86%	1,373	32.4%
KenockeeTwp.	1,250	1,730	38.40%	1,854	7.17%	2,423	30.7%
KimballTwp.	6,152	7,180	16.71%	7,247	0.93%	8,628	19.1%
Port HuronTwp.	7,635	7,886	3.29%	7,621	-3.36%	8,615	13.0%
WalesTwp.	1,970	2,368	20.20%	2,294	-3.13%	2,986	30.2%
St. Clair County	120,175	138,802	15.50%	145,607	4.90%	164,235	12.8%

Source: 1970, 1980, 1990, 2000 U.S. Census, SEMCOG Community Profiles

For the purpose of evaluating the constant proportion method of projecting future population (discussed in more detail below), it is useful to compare the Township's population trends to the County's. Table ECA 2 below shows the Township's share of the County's growth. Between 1970 and 1980, Clyde comprised 3.34% of the County's population, and 8.87% of the County's growth. However, between 1980 and 1990, the Township comprised a slightly higher percent (3.47%) of the County's population, and 6.17% of the County's growth. The Township's share of the population was 3.36% in 2000 representing only 2.53% of the County's growth.

Table ECA 2
Growth as a Percent of SClair County, 1970 - 1990

Year	Clyde Township Population	St. Clair County Population	Township Share of Population	Township Share of County Growth
1970	2,980	120,175	2.48%	--
1980	4,632	138,802	3.34%	8.87%
1990	5,052	145,607	3.47%	6.17%
2000	5,523	164,235	3.36%	2.53%

Source: 1970, 1980, 1990, 2000 U.S. Census Bureau

Households and Housing

As discussed above, Clyde's population increased 9.3 % between 1990 and 2000. The number of households in the community increased by 21.2 % (see Table ECA 3). The number of households increased at a greater rate than the population due to a decrease in the Township's household size. In 1990 Clyde Township had an average household size of 3.15 persons per household and in 2000 it was 2.82 persons per household.

This change follows a national trend of smaller household sizes, which is expected to continue over the next two decades. According to projections for 2010 and 2020 prepared by the Southeast Council of Governments (SEMCOG), the average household in Clyde will have 2.67 and 2.56 persons respectively.

Table ECA 3
Households, Clyde Township & Adjacent Communities

	1980	1990	80-'90 percent change	2000	90-'00 percent change
ClydeTwp.	1,451	1,641	13.09%	1,989	21.21%
BurtchvilleTwp.	1,625	1,600	-1.54%	1,880	17.50%
Fort GratioTwp.	3,024	3,551	17.43%	4,334	22.05%
GrantTwp.	387	419	8.27%	606	44.63%
GreenwoodTwp.	354	375	5.93%	492	31.20%
KenockeeTwp.	567	635	11.99%	866	36.38%
KimballTwp.	2,341	2,538	8.42%	3,302	30.10%
Port HuronTwp.	2,685	2,836	5.62%	3,478	22.64%
WalesTwp.	733	758	3.41%	1,059	39.71%
St. Clair County	51,903	57,494	10.77%	67,108	16.72%

Source: 1980, 1990, 2000 U.S. Census, SEMCOG Community Profiles

Table ECA 4 provides information regarding the change in the number of total housing units, households, and specific household characteristics between 1990 and 2000. During this decade, the number of non-family households increased by a greater percentage than the number of family households. However, the number of female-headed households remained stable, which is contrary to national trends.

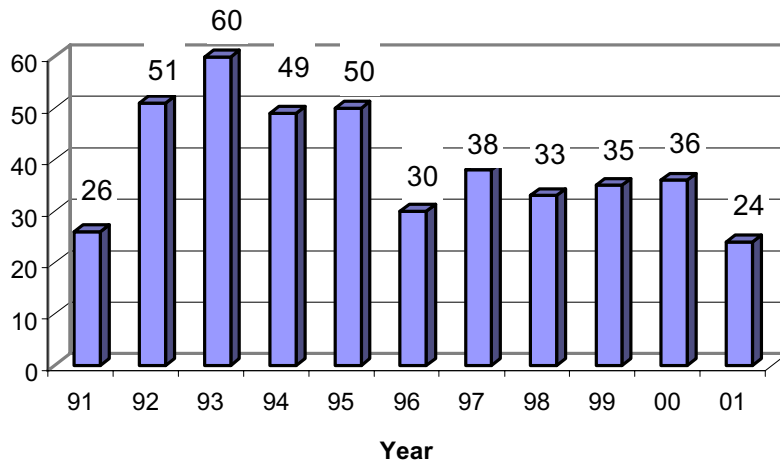
Table ECA 4
Clyde Township Household Characteristics, 1990 -2000

	1990	2000	1990-2000# Change	1990-2000 % Change
Total Housing Units	1641	1989	348	21.21%
Number of Households	1603	1931	328	20.46%
Family Households	1382	1591	209	15.12%
Non-Family Households	221	340	119	53.85%
Female Headed Households	113	115	2	1.77%
Persons Per Household	3.15	2.85	-0.30	-9.52%

Source: 1990, 2000 U.S. Census, SEMCOG Community Profiles

According to SEMCOG, between January, 1991 and December 2001, 432 residential building permits were issued in the Township. This represents a 26.3 % increase in housing units over the past decade. Figure ECA 1 shows the specific trends in residential building activity over the past decade.

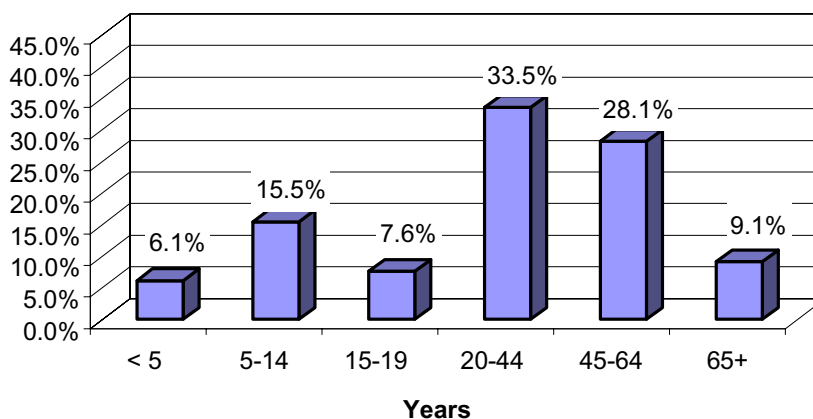
Figure ECA 1
Residential Building Permits, January 1991- December 2001



Source: SEMCOG Building Permits

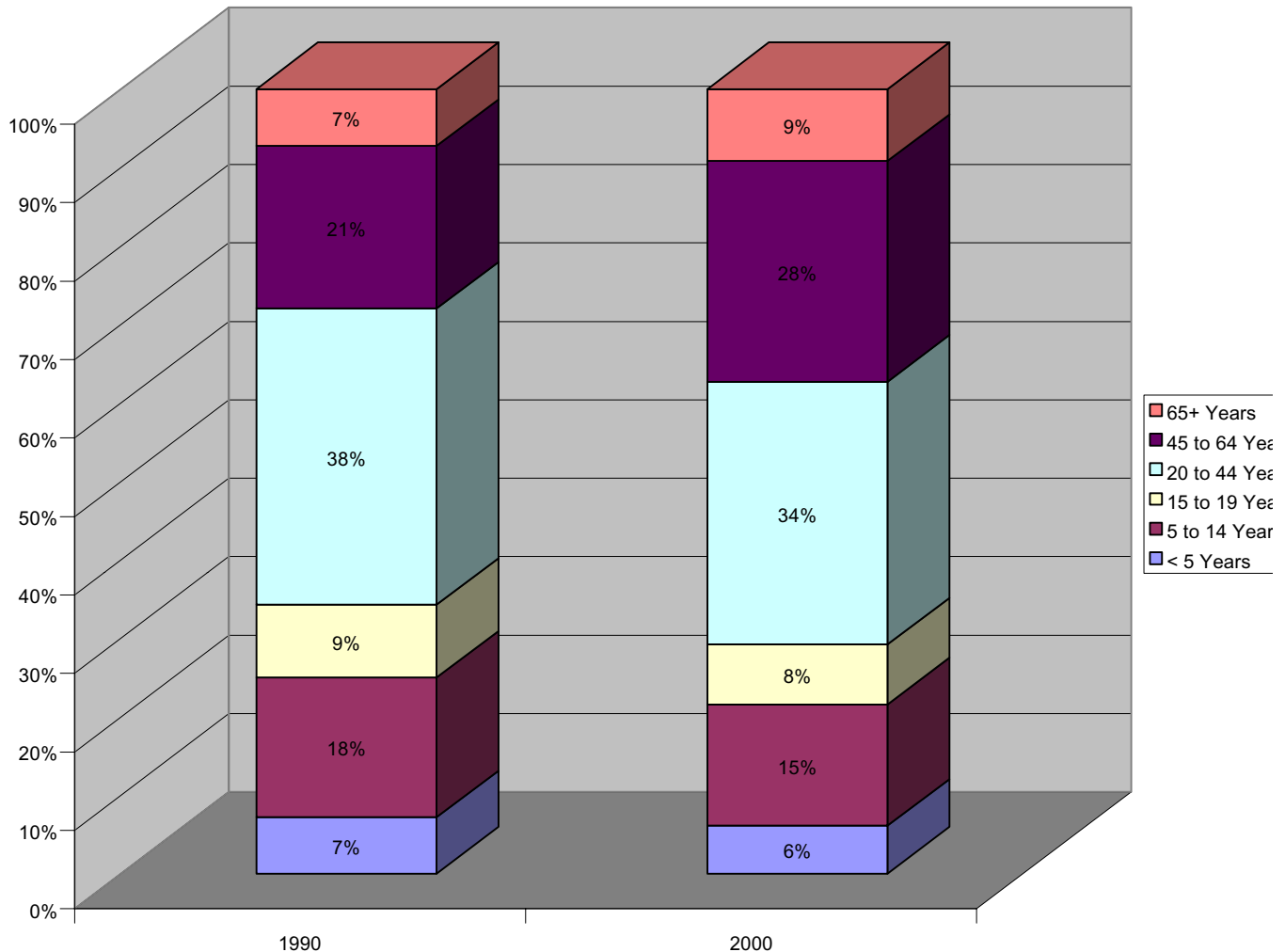
In addition to total population, housing unit and household size, it is also important to examine overall age groupings of a population. The 2000 U.S. Census of Population and Housing indicates that Clyde has nearly an equal number of men and women. The population is 50.6% male and 49.4% female. The overall age grouping provides figures for the number of school-age children, the size of the workforce (i.e., 20-64 years groups), and size of the elderly population. This data can be used for school enrollment projections, planning for recreation facilities, special services for the elderly, and other governmental services. Figure ECA 2 provides the overall age distribution of the Township's residents.

Figure ECA 2
Clyde Township, Age Distribution, 2000



Source: 2000 U.S. Census

Figure ECA 3
Major Age Comparisons, 1990 and 2000, Clyde Township



Source: 1990, 2000 U.S. Census

Figure ECA 3 compares the overall age distribution of the Township's residents from 1990-2000. The Major Age Group Comparison indicates that the age distribution in the Township had a subtle shift during the 1990s. There was a significant increase in the population 45 years and older - from 28% to 37% - reflecting the impact of baby boomers on the age distribution. There was a decrease in percentage for every age category under 45 years of age. The number of pre-school and school-age children declined slightly, representing 29% of the entire population. These demographics indicate it is critical for the community to plan for the needs of people of all ages, with a particular emphasis needed on programs and facilities for older adults.

Table ECA 5 indicates the racial breakdown of Clyde Township residents, per the 2000 U.S. Census of Population and Housing.

Table ECA 5
Race, Clyde Township

Race	Number of people	Percentage
White	5,398	97.7%
Black or African American	16	0.28%
American Indian and Alaska Native	19	0.34%
Asian	21	0.38%
Native Hawaiian and Other Pacific Islander	2	0.036%
Some other race	19	0.34%
Two or more races	48	1.0%

Source: 2000 U.S. Census of Population and Housing

Population Projections

It is important to have a good estimate of the future population so that planning for infrastructure, municipal services, and administrative capabilities can be well managed and directed to appropriate target populations. Planning for a population that is less or more than expected can impact the community's ability to provide necessary services.

SEMCOG prepares periodic *Regional Development Forecasts* for its seven county region within southeast Michigan. Recent population projections for Clyde Township, adjacent communities and St. Clair County are provided in Table ECA 6 below.

Table ECA 6
**SEMCOG Population Projections
Clyde Township & Adjacent Communities**

	2010	2020	2030	2000-2030 % Change
ClydeTwp.	5,812	6,178	6,413	10.3%
BurtchvilleTwp.	4,354	5,337	6,268	44.0%
Fort GratiotTwp.	11,956	12,840	13,458	12.6%
GrantTwp.	1,879	2,158	2,410	28.3%
GreenwoodTwp.	1,596	1,795	2,023	26.8%
KenockeeTwp.	2,952	3,631	4,060	37.5%
KimballTwp.	10,123	11,327	11,976	18.3%
Port HuronTwp.	9,629	10,825	11,603	20.5%
Wales Twp.	3,556	4,223	4,804	35.1%
St. Clair County	176,795	192,626	203,552	15.1%

SEMCOG: 2030 Regional Development Forecast

Over the next 30 years, SEMCOG forecasts a modest growth of 10.3% for Clyde, in comparison to adjacent communities. However, the forecast growth is only five percent lower than the County's overall projected growth percentage.

Because all projections have a certain margin of error, it is useful to consider other population projection methodology. While SEMCOG uses a complex computer modeling program to forecast population, there are also a variety of less complex mathematical methods that can be used to project the Township's future population. The constant proportion, growth rate, and increasing proportion methods are relatively easy to administer and can lend alternative projections based on historical growth rates.

The constant proportion method assumes that the Township will maintain the same percentage of the county's projected 2010, 2020 and 2030 population as it experienced in 2000. Clyde Township contained 3.36% of the County's 2000 population. Projections for the Township using SEMCOG projections as the County population are as follows:

	<u>St. Clair County</u>	<u>Clyde Township</u>
2000 Population	164,235	5,523
2010 Projection	176,795	6,365
2020 Projection	192,626	6,472
2030 Projection	203,552	6,839

The constant proportion method assumes that the Township's percentage of County population will remain the same. In the last thirty years this proportion has fluctuated by only 0.02%, indicating that the constant proportion method may be an appropriate methodology for the Township. As shown above, the 2010 projected population of 6,037 is slightly higher than the SEMCOG 2010 forecast of 5,812. For 2030, the projection exceeds SEMCOG's by over 3,800 people.

The growth rate method assumes that the 2000-2010 growth rate will be the same as between 1990-2000, and the 2010-2030 growth rate will be the same as between 1980 and 2000. This method of projection results in the following projections:

2000 Population	5,523
1990 - 2000 - % Change	9.3
1980 - 2000 - % Change	19.24
1970 - 2000 - % Change	85.34
2010 Projection	6,037
2020 Projection	6,586
2030 Projection	10,236

As shown above, the 2010 projected population of 6,037 is slightly higher than the SEMCOG 2010 forecast of 5,812.

The increasing proportion method assumes that the rural areas and small Townships on the fringe of growth centers will expand over the next two decades as the growth centers approach their build-out. This method requires that the forecaster apply a growth rate to the community. The data below assumes that Clyde Township will comprise 3.41 percent of the County population in 2010, 3.46 percent in 2020, and 3.51 percent in 2030 (i.e., a 0.05 percent increase per decade). The results are as follows:

	<u>2010</u>	<u>2020</u>	<u>2030</u>
St. Clair County	176,795	192,626	203,552
Increasing %	3.41%	3.46%	3.51%
Clyde Township	6,028	6,665	7,145

The increasing proportion method appears to be a slightly high forecast, when comparing the 2010 projection of 6,028 to the SEMCOG 2010 forecast of 5,812 and the 2030 population of 7,145 to SEMCOG's forecast of 6,839.

Table ECA 7
Population Projection Summary

Method / Source	2010 Projection	2020 Projection	2030 Projection
SEMCOG	5,812	6,178	6,413
Constant Proportion	6,365	6,472	6,839
Growth Rate	6,037	6,586	10,236
Increasing Proportion	6,028	6,665	7,145

Based on the above summary, the Township should plan within a reasonable range for the next 20 years. For 2010, a population of 5,800 – 6,200 appears possible without being overly aggressive. For 2020, a range of 6,200 – 6,600 provides a reasonable planning target. For 2030, a range of 6,400 – 6,800 is assumed.

Education

Table ECA 8 shows the education attainment levels for Clyde Township and St. Clair County. As shown, compared to the County, more people in the Township graduated from high school in 1980. The percentage of Township high school graduates in 1990 was slightly below that of the County in 1990. However, the Township had a higher percentage of persons that obtained a bachelor's degree or greater in both 1980 and 1990.

Table ECA 8
**Educational Attainment, 1980-1990,
 Clyde Township & St. Clair County**

	Clyde Township		St. Clair County	
	1980	1990	1980	1990
Not A High School Graduate	782 (30%)	580 (18%)	27,217 (34%)	22,992 (25%)
Graduated High School	1,161 (46%)	1,123 (36%)	32,280 (41%)	33,813 (37%)
Some College- No Degree	328 (13%)	1,015 (33%)	10,947 (14%)	24,715 (27%)
Bachelor's Degree or Greater	252 (9%)	337 (11%)	7,412 (9%)	9,721 (10%)

*2000 Census figures on Education were not available for this report
 Source: SEMCOG Community Profiles

Employment

According to the U.S. Census, there were 2,497 Clyde Township residents employed in 1990. Of those persons, 73.4% traveled under 30 minutes, 16.4% traveled between 30 to 60 minutes, and 10.2% traveled over one hour to work. Almost 70% of the employed persons in the Township work within the Managerial and Professional, Technical, Sales and Administrative Support, and the Operators, Fabricators and Laborers occupational categories. As shown below in Table ECA 9, the employment distribution in Clyde Township is fairly consistent with the distribution of employment in St. Clair County.

Table ECA 9
**Employment by Occupation & Industry
 Clyde Township & St. Clair County, 1990***

Occupation	Clyde Township		St. Clair County	
	Number	% of Total	Number	% of Total
Managerial & Professional	540	21.6	12,706	19.8
Technical, Sales, & Administrative Support	737	29.5	17,069	26.6
Service	280	11.2	8,862	14.0
Farming, Forestry, & Fishing	67	2.7	1,697	1.2
Precision Production Craft, Repair	398	15.9	10,466	16.3
Private Household Occupations	12	0.5	120	0.2
Operators, Fabricators, & Laborers	463	18.6	14,074	21.9
TOTALS	2,497	100.0	64,179	100.0

*2000 Census figures on Occupation were not available for this report.
 Source: 1990 U.S. Census

According to the Local Area Unemployment Statistics (LAUS Data) released by the Michigan Department of Career Development Employment Service Agency, the 2001 annual average number of individuals in the labor force in Clyde Township was 3,175. The 2001 annual average number of workers in

the labor force for St. Clair County was 84,275. Based on this information Clyde Township's share of the workforce represents roughly 3.8% of the total workforce for St. Clair County. The 2001 annual average unemployment for Clyde was 3.8%. This rate is low in comparison to the annual average unemployment rate for the County, which was 6.5%.

Income

The median household income in Clyde Township was \$41,528 in 1989, according to the 1990 US Census of the Population and Housing. The per capita income was \$13,688 from the same source. The 1990 Census reported a per capita income for St. Clair County of \$13,257. Per capita income Census figures for the 2000 Census were not available for this Master Plan Update.

The Bureau of Economic Analysis (BEA) also compiles information on personal income at the County level. The BEA's per capita income figures differ from those reported by the census in that they include transfer payments (i.e. Pension, Student Loans, Medicare), Dividends (Interest and Rent) combined with the dollar income reported in the US Census. The BEA reported that the per capita personal income for St. Clair County in 2000 was \$25,602. The 1990 US Census reported a 1989 per capita income of \$13,257 for St. Clair, 22.62% less than the BEA 1989 Per Capita Income of \$17,132. In order to more effectively estimate Clyde Township's per capita income for 2000 the County BEA figure for 2000 was reduced by 22.62%. It was then estimated that Clyde's per capita income for 2000 would be 103% of the modified County per capita income (which is the same % that the Twp. shared with the County as reported in 1990 Census). The adjusted BEA figure comparable to the US Census definition would yield an approximate per capita income of \$20,405 for Clyde Township. This estimate represents an increase of approximately 49% over the past 10 years. The adjusted BEA estimate reflects a compound annual growth rate of 3.69% for the Township from 1989 to 2000.

Low Income

According to the 1990 Census of Population and Housing, 5.67% of Clyde Township households were living below the poverty line. This is nearly half the 11.64 % of households in St. Clair County that were living below the poverty line in 1990. Figures from the 2000 Census are not yet available.

NONRESIDENTIAL LAND USE MARKET POTENTIAL

An important part of the existing conditions analysis is an examination of demand or market potential for non-residential land uses. A balanced supply

of commercial, office and retail development is critical to a community for a number of reasons. If there are fewer acres available than the market can support, a community could lose potential tax base, employment opportunities and decrease the quality of life for residents who need the goods and services that such uses provide. If there is an over abundance of commercial, office and industrial land, marginal businesses may develop and/or building vacancy rates may increase creating the potential for blight.

Commercial Development

In order to determine how much commercial land Clyde Township can support, an analysis of income levels in Clyde is necessary. As noted earlier, in 1989 the Census reported the per capita income of Clyde residents as \$13,688. The per capita income of St. Clair County from the same source was 13,257. The available Census data was analyzed along with per capita information available from the BEA to establish the Township's estimated per capita income for 2000 of \$20,405 which is an increase of approximately 49% over the past 10 years. Based on this income level, tables ECA 10 and 11 provide estimates of Clyde's 2000 ("current") retail expenditures and projected retail expenditures.

Retail Spending

Once the amount of retail spending within a community is estimated, the amount of needed retail space (in square feet) can be estimated. This can be determined by looking at two factors: retail spending and supporting population. There are three shopping center classifications used for analysis: neighborhood convenience, community comparison, and regional comparison.

Table ECA 10

Forecast Neighborhood Expenditures, Clyde 2000 & 2030

Total Year 2000 Income	Current ('00) Retail Expenditures	Current ('00) Neighborhood Expenditures	Forecast 2030 Income	Forecast 2030 Retail Expenditures	Forecast 2030 Neighborhood Expenditures
\$112,696,815 ¹	\$61,983,248 ²	\$15,340,853 ⁵	\$377,993,353 ⁴	\$207,896,344	\$51,454,345 ^{3,5}

1. \$20,405 x 5,523 people (2000 Census population)
2. Assumes 55% of total income is spent on retail purchases (PAS Report #358, *Analyzing Neighborhood Retail Opportunities*, Published by American Planning Association)
3. Assumes 33% of total retail expenditures is spent in convenience goods stores, 40% spent in comparison goods stores (PAS Report #358, Published by American Planning Association)
4. \$57,271 x 6,600 people (2030 population estimate with income adjusted for 3.5% inflation)
5. Assumes 75% of Convenience goods spending will be made within Neighborhood Shopping Center categories.

Table ECA 11

Forecast Community and Regional Expenditures, Clyde, 2000 & 2030

Current ('00) Retail Expenditures	Current ('00) Community Expenditures	Current ('00) Regional Expenditures	Forecast 2030 Retail Expenditures	Forecast 2030 Community Expenditures	Forecast 2030 Regional Expenditures
\$61,983,248	\$17,510,267 ^{1,2}	\$12,396,649 ³	\$207,896,344 ⁴	\$58,730,717 ^{1,2}	\$41,579,268 ^{1,3}

1. Assumes 40% spent in comparison goods stores (PAS Report #358, Published by American Planning Association)
2. Birchler Arroyo Associates, Inc. estimates that 25% of Convenience goods and 50% of Comparison goods spending will be made within Community Shopping Center categories.
3. Birchler Arroyo Associates, Inc. estimates that 50% of comparison item purchases made by Township residents could take place within the Township and 50% of Comparison goods spending will be made within Regional Shopping Center categories.
4. \$57,271 x 6,660 people (2030 population estimate with income adjusted for 3.5% inflation)

According to the latest retail data published in the Dollars & Cents of Shopping Centers: 2002 (Urban Land Institute) the average annual sales per square foot of gross leasable area for neighborhood shopping centers is \$271.53 per square foot. Community centers had an average annual sales per square foot of \$229.84 and regional centers had an average of \$218.77. Based on the previous retail spending analysis, Clyde Township could support the following square footages in commercial centers.

Table ECA 12

**Shopping Center Classifications
Commercial GLA based on 2030 Population**

Type	Forecasted 2030 Sales per Square Foot	Forecasted 2030 Township Resident Expenditures	Expenditures made within Township	GLA Based on Clyde Township 2030 Retail Spending
Neighborhood (Convenience)	\$712 ¹	\$51,454,345	\$25,727,172	36,134
Community (Minor Comparison)	\$602 ¹	\$58,730,717	\$14,682,679	24,390
Regional (Major Comparison)	\$580 ¹	\$41,579,268	\$10,394,817	17,922

1. ULI- 2002 data with 3.5% annual inflation for 2030 forecast.
2. Birchler Arroyo Associates, Inc. estimates that 50% of neighborhood item purchases and 25% of community and regional item purchases made by Township residents could take place within the Township.

As reflected in Table ECA 12, with \$25,727,172 estimated (50% of forecasted 2030 convenience expenditures assumed to be spent within the community) available for convenience spending within the Township in 2030, Clyde Township could support 36,134 square feet of neighborhood retail.

Supporting Population

A general comparison with the results of the retail spending analysis can be made using an analysis of the supporting population in the Township. As the table ECA 13 below illustrates, neighborhood retail centers are the smallest and serve the daily needs of nearby residents by providing basic goods and services, such as groceries, hardware, dry cleaning, banking, etc. A population of 5,000 - 10,000 people living within a five to ten minute drive is generally required to support such a development.

Table ECA 13
**Shopping Center Classifications
GLA Based on Supporting Population**

Type	Leading Tenant	General Range (Typical GLA)	Minimum Site	Supporting Population	GLA Based on Clyde 2030 Population
Neighborhood (Convenience)	Supermarket	30,000 - 100,000 sq. ft. (50,000 sq. ft.)	3 - 10 ac.	5,000 - 10,000	39,000- 66,000
Community (Minor Comparison)	Junior Dept. or Discount Store	100,000 - 300,000 sq. ft. (150,000 sq. ft.)	10 - 30 ac.	20,000 - 60,000	0
Regional (Major Comparison)	1 or more Full Line Dept. Store	300,000 - 900,000 sq. ft. (400,000 sq. ft.)	30 - 60 ac.	60,000 - 100,000	0

Source: Shopping Center Development Handbook, 2nd edition, Urban Land Institute

Based on the previous analysis, Clyde Township's projected 2030 population of 6,600 could support between 39,600 sq. ft. and 66,000 sq. ft. of neighborhood commercial development. Population projections do not reflect an adequate supporting population for Community Commercial or Regional Commercial development within the Township.

Table ECA 14
Summary of Commercial Development Forecast Methods

SUMMARY	GLA Based on Retail Spending Analysis	GLA Based on Clyde Township Support Population Analysis
Neighborhood (Convenience)	36,134	39,600 – 66,000 sq. ft.
Community (Minor Comparison)	24,390	0
Regional (Major Comparison)	17,922	0

According to *Urban Planning and Design Criteria*, neighborhood commercial developments typically need approximately one acre per 12,500 square feet of space, community commercial developments typically need approximately one acre per 15,000 square feet, and regional centers need approximately one acre per 13,300 square feet. Based on the summary in Table ECA 14 above, 3 to 5 acres of land would be needed, in order to provide for

neighborhood convenience shopping within Clyde, 0 to 2 acres is needed for community commercial development, and 0 to 1.5 acres for regional shopping. The total amount of land area planned for retail may need to be larger than these numbers because of two key factors: 1) business generated by the Wadhams Road interchange pass-through, non-resident traffic; and 2) limitations on total buildable area due to wetlands, steep slopes, woodland preservation, and the like.

Industrial Development

The demand for industrial development is related to many factors including materials, labor, transportation, energy, and public policy. Industrial developers examine the availability of utilities, affordable housing for the work force, suitable characteristics of the land, and good transportation access.

There are two common methods of forecasting future industrial needs for an area: 1) based on total population, and 2) based on total land area.

According to *Urban Planning and Design Criteria*, a typical planning standard for industry is 12 acres per 1,000 population. Based on an estimated 2030 population of 6,600 for Clyde Township, approximately 79 acres of industrial land can be supported within the community. The total land area method forecasts that within a rural community industrial land typically consumes 2-5 percent of total land area. Two percent of the 22,967 acres of land area within the community equals 459 acres.

Given the rural character of Clyde, and the existing limited amount of industrial land uses within the community, the total population methodology of estimating industrial land use needs is more appropriate for the Township.

Office Development

There are two types of office buildings: single-tenant and multi-tenant. Single tenant buildings can be located in almost any location satisfactory to the tenant, who may also be the building owner. Multi-tenant office buildings, which are often built on the speculation that tenants will be found, are much more tied to market factors. Multi-tenant office developers look at access, proximity to professional and clerical labor, parking, transit opportunities, proximity to professional and personal services and the overall “image” of the community.

More than half of the employed residents of Clyde (1,587) work in professions that typically occur within an office setting (i.e. managerial, technical, sales, etc.). In addition, 73.4% of employed residents travel less than 30 minutes to their workplace. Assuming that this commuting pattern occurs evenly among all office professions, 1,165 office professionals work within relative proximity to Clyde Township.

The Urban Land Institute estimates that approximately 202 square feet of office space is needed per employee. Based on this projection and the estimate of office employees within close proximity to Clyde Township, approximately 235,330 square feet of office space could be supported within the Township. However, it is not reasonable to expect that multi-tenant office buildings would be viable. Small professional office, medical office, and combination office/industrial buildings are likely to be more viable within the community over the next 15-20 years.

COMMUNITY FACILITIES

Township and Postal Facilities

Map ECA 1 identifies the community facilities in the Township. The Clyde Township Hall is located on the east side of Vincent Road, north of Lapeer Road. At this time, there are no plans to expand the Township Hall. The Township Post Office is located in Section 13 on the west side of North Road.

Police and Fire

The Township's fire station facilities are located in Ruby east of Glyshaw Road and west of South Street. There are no plans for future facilities. The County Sheriff's road patrol and the Michigan State Police provide police protection for the Township. Therefore, there are no police station facilities located within the Township, nor are there plans for future facilities.

Sewer and Water

Limited water service is provided for the southeast quadrant of the Township through an agreement with neighboring Kimball Township. The existing water service area is depicted on Map ECA 2. The current water service area extends 350' from the centerline on either side of the road. Although Kimball Township, Port Huron Township and St. Clair County operate a central sewer system, the Township has not made plans to tap in to this system.

Schools

Clyde Township is within the Port Huron and Yale School Districts. The Yale District covers only a small portion of the northeast corner of the Township west of Brott Road. There are no school facilities, either public or private, located within the Township's boundaries. In addition, at this time, there are no plans to build any new school facilities within the Township.

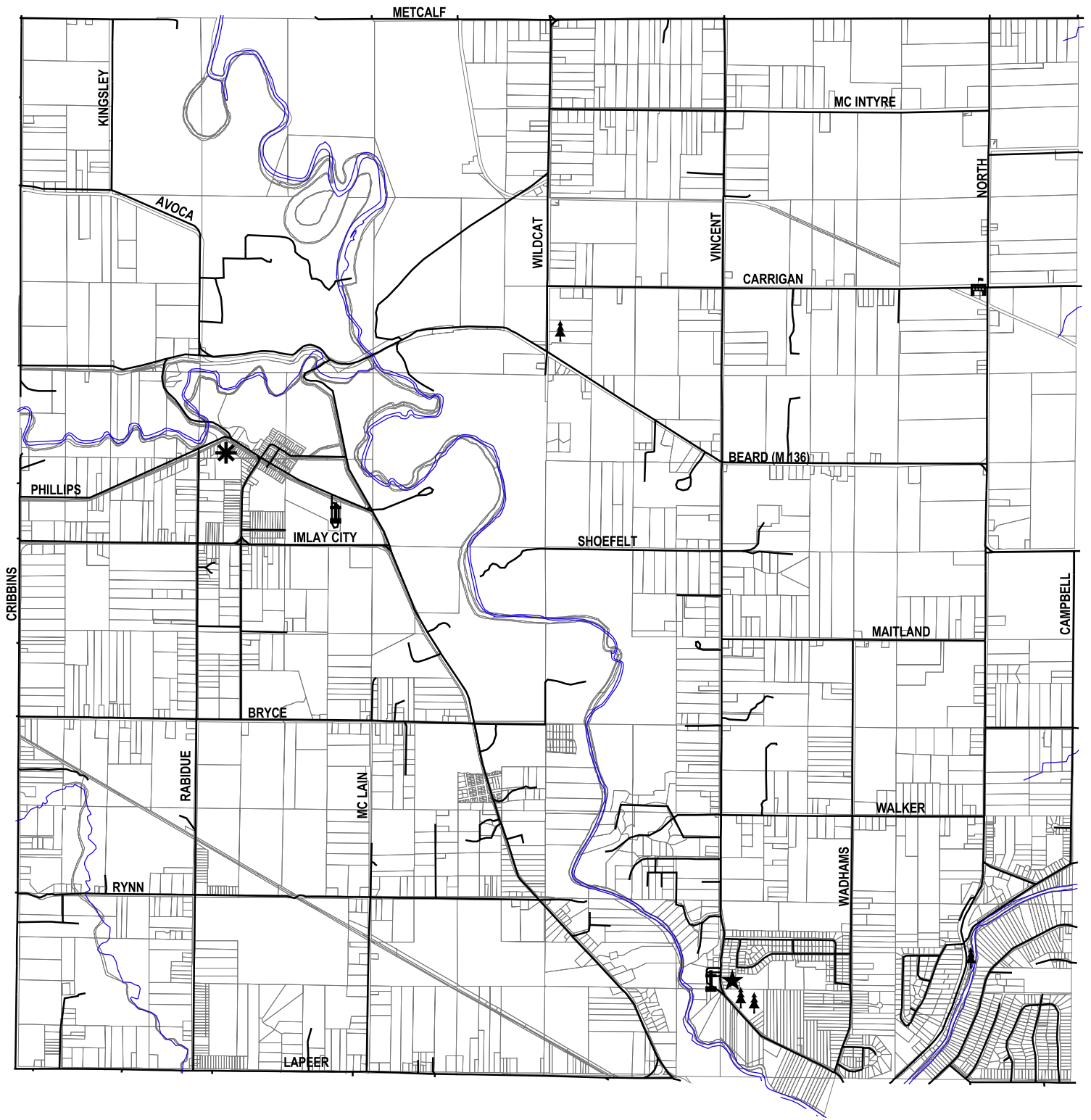
Recreation Facilities

The Port Huron State Game Area lies within the Township's boundary as well as the Wadhams to Avoca Trail – a 9.8 mile section of abandoned CSX railroad right-of-way that is being converted to a pedestrian trail. In addition

to these recreational areas, there are three local parks within the Clyde Township boundaries. Two of the parks are located along Vincent Road near the Township Hall. The Bill Bearss Park is located on the east side of Wildcat Road south of Carrigan and north of Beard Road. The Township owns additional property (1.36 acres) north of the Black River in the southeast corner of the Township

Cemeteries

There are two cemeteries located within the Township. The Kinney Cemetery is located on the west side of Vincent Road across from the Township Hall. The Ruby Cemetery is located southeast of Ruby near the intersection of Abbottsford and Ford Road.



COMMUNITY FACILITIES

CLYDE TOWNSHIP, ST. CLAIR COUNTY

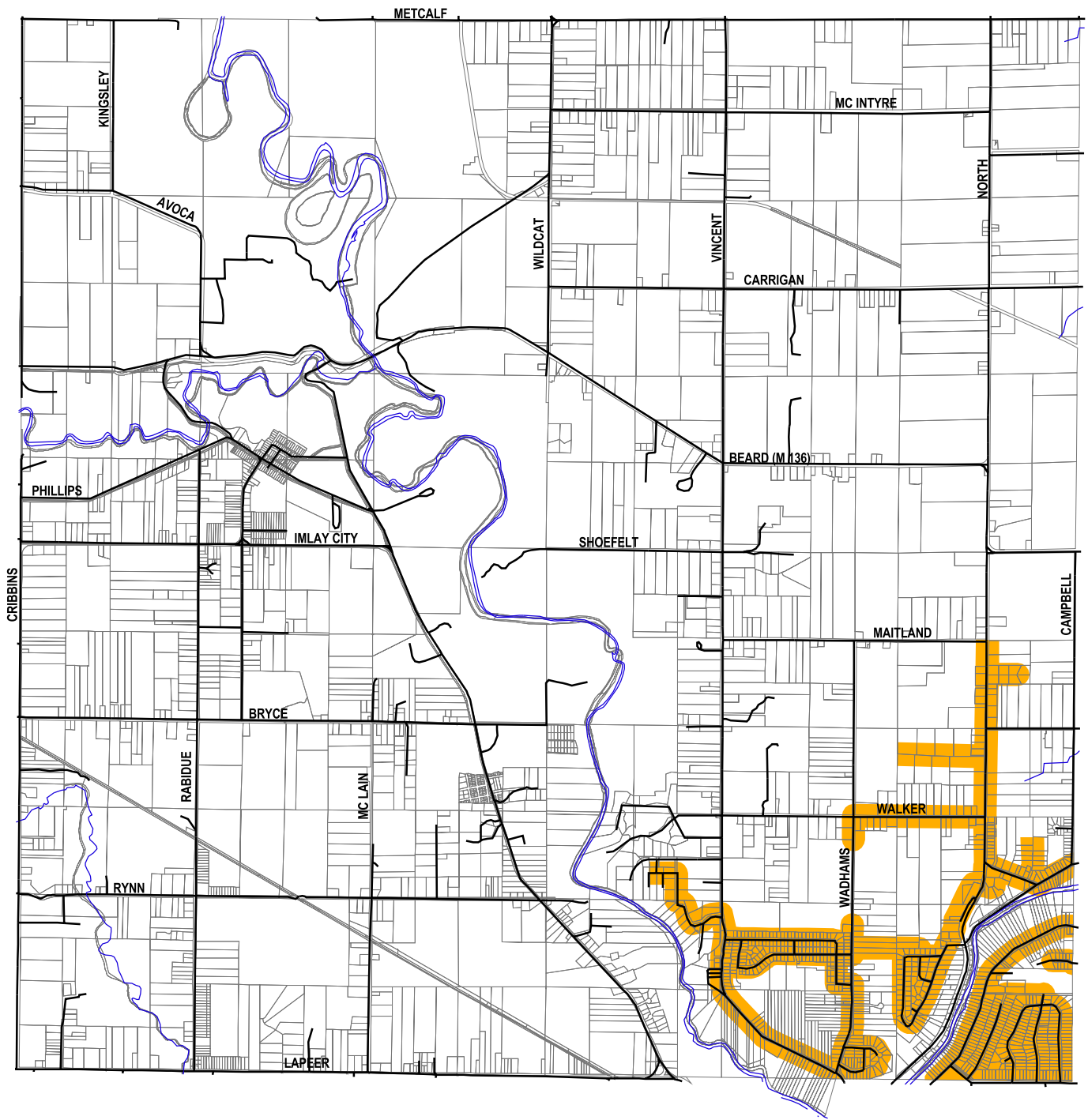
- ★ TOWNSHIP HALL
- ✱ FIRE HALL
- 🏠 POST OFFICE
- 🌲 PARK
- ✙ CEMETERY

MAP ECA 1

SOURCE OF PARCEL DATA:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



DIRCHLER ARROYO
ASSOCIATES, INC.



MUNICIPAL WATER SERVICE AREA

 EXISTING WATER SERVICE AREA

CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP ECA 2



**BIRCHLER ARROYO
ASSOCIATES, INC.**

NATURAL FEATURES

The identification of natural features that presently exist in the Township is an important step in the Master Plan process. With such knowledge, decision-makers can make informed decisions about the preservation and protection of the Township's natural resources.

Topography

Clyde Township's topography varies by 197 feet from the lowest point to the highest point. The lowest point of 590 feet is located in the Black River valley near the southeast corner of the Township, and the highest point of 787 feet is located west of the Black River Valley on the west side of the Township. USGS Quad Map ECA 4 illustrates the Township's topography. Rolling hills in the Township provide views and add to Clyde's scenic beauty and character.

Watersheds

As shown on Map ECA 5 Clyde Township falls within three major watersheds. The Black River Watershed intersects Clyde from the northwest quadrant to the southeast quadrant of the Township with several outlets including Mill Creek. The Willow River Watershed covers a portion of the northeast quadrant of the Township with outlets to Milwaukee Creek and Port Huron. The Pine River Watershed covers most of the southeast quadrant of the Township.

Floodplains

Knowing the extent of flood-prone areas is critical when planning for a community. While floodplains can serve as great viewsheds and provide aesthetic areas for parkland or open space, development should be severely limited within the floodplain. As indicated on the Floodplain Map ECA 6, several areas of the Township fall within the 100-year floodplain. In general, these areas follow the Black River, Pine River and Mill Creek.

Wetlands

Wetlands are valuable natural resources within the Township as they provide many important functions. They may serve as a storm water holding area to reduce flooding; provide for the settling of sediments and pollutants from surface water runoff; reduce stream bank erosion caused by storm water runoff; and provide habitat for fish and wildlife. Wetlands throughout the Township are depicted on Map ECA 7. Those which are five acres or more, as well as smaller wetlands hydrologically connected to large wetlands, are under the jurisdiction of the Michigan Department of Environmental Quality. As development and redevelopment occurs within the Township, the continued protection of wetland resources is needed.

Woodlands

As shown on Map ECA 8, the Port Huron State Game area is the most notable natural feature in Clyde Township. It is the largest contiguous tract of mature forest in the thumb of Michigan and contains oak, maple and mixed woodland along the border of the Black River. Woodlands are valuable natural features, which serve as windbreaks, aid in the absorption of rainwater, replenish oxygen, create natural beauty and character, and provide wildlife habitat. Preservation of these areas is important, and the effects of development on woodlands throughout Clyde should be minimized.

Wildlife

The game area serves as an important migratory stop over for many species of birds on their way to northern nesting grounds. It is also an important breeding area for at-risk species such as Cerulean and Golden-winged Warbler, Wood Thrush and Bald Eagle. Several southern species normally not found in Michigan such as Hooded Warbler and Louisiana Water Thrush nest here. The woods are also home to game birds such as Ruffed Grouse and introduced Wild Turkey. Ring-necked Pheasant and Northern Bobwhite Quail can be found in surrounding fields as can the threatened Henslow's Sparrow.

Mammals commonly seen in the area include White-tailed Deer, Gray and Red Fox, Muskrats, Beaver, Coyote, Red, Gray and Fox Squirrels, Cottontail Rabbits, Mink and several species of Bat. MDNR surveys have revealed that the areas bordering the Black River are home to the protected Blanding's Turtle and other reptiles and amphibians. The portion of the Black River flowing through the game area also harbors one of the few remaining colonies of the federally endangered Riffle-shell Mussel. Endangered plants including Painted Trillium have been inventoried in the game area.

Bedrock Geology

Bedrock is the solid rock at or near the earth's surface. Over most of the state, bedrock is buried beneath glacial drift, often several feet deep. Map ECA 9 depicts the Bedrock Geology of Clyde Township. Antrim Shale covers the northeast portion of the Township and extends to the west near Imlay City Road and down to the southeast corner of the Township. Antrim Shale is used for the manufacture of cement, brick and tile. Bedford shale exists to the west and south of the Antrim Shale Bedrock. The northwest corner of the Township consists of Berea Sandstone and Bedford, which is present at points along the western boundary to the south. The Bedford Shale is commonly described as gray shale that has thin beds of Berea Sandstone within it. Berea Sandstone has been characterized as a fine grained sandstone light gray in color. A segment of Sunbury Shale exists at the southwest boundary of the Township.

Surficial Geology

The surficial geology of Clyde is shown on Map ECA 10. The eastern portion of Clyde Township is primarily composed of end moraines of fine-textured glacial till, which consists of deposits of nonsorted glacial debris that was left as glaciers retreated from the area. This fine textured material is not very porous and does not result in significant groundwater recharge. A small band of end moraines of coarse-textured till exists in the southwest quadrant of the Township. The coarse-textured till can be more porous due to the larger size of the material that was deposited. As illustrated by the map, three small pockets of dune sand are located within the southern portion of the Township, which typically consist of pale brown fine to medium quartz sand with some heavy minerals.

Lacustrine clay and sand occurs from the northwest quadrant of the Township along the path of the Black River. Small pockets of lacustrine clay and sand exist near the northeast and southwest corners of the Township. These materials typically underlay extensive, flat, low-lying areas formerly inundated by glacial Great Lakes. They were once deposited in lake water and exposed by the decreasing water level or the elevation of land.

Soils

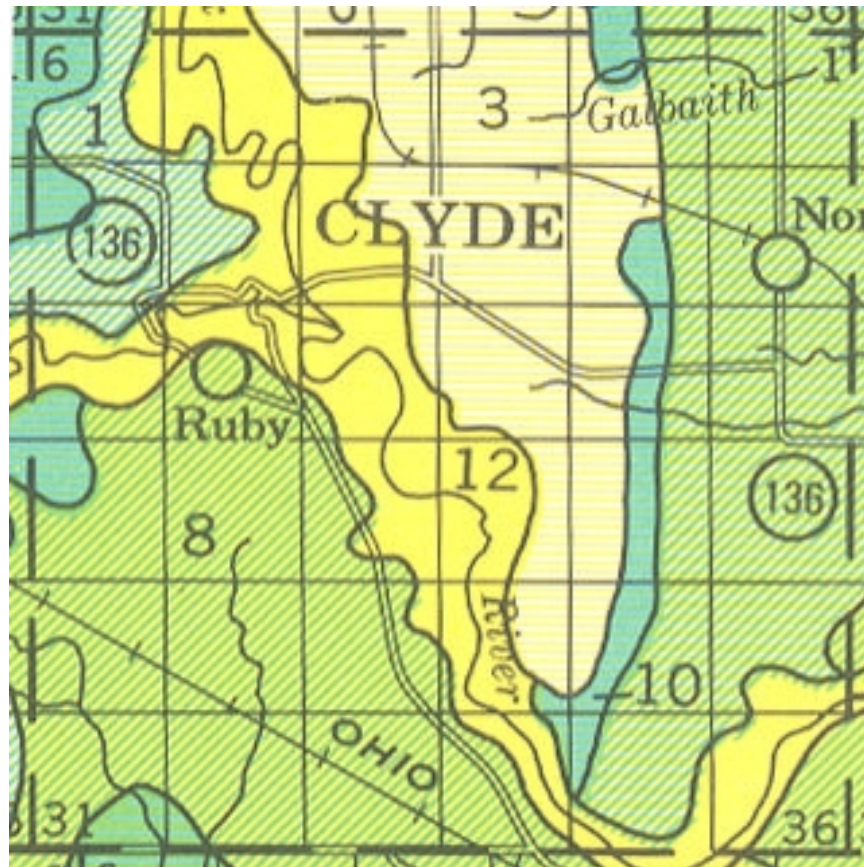
Map ECA 3, General Soils shows the locations of various soil types in Clyde Township. These soil associations are areas with distinctive or proportional patterns of soils. Of the twelve different types of soils in St. Clair County, seven of them are found in Clyde Township.

The majority of the Township is characterized by the “Londo-Avoca” association, “Wainola-Deford” association and “Pert-Sims” association. Each of these soil types is nearly level and is somewhat poorly drained. The Londo-Avoca association that occurs along the east portion of the Township from north to south is characterized by high lime soils that have a loamy to sandy subsoil located on till plains and moraines. The Wainola-Deford association along the south west portion of the Township has a sandy subsoil and is found along glacial lake beaches, outwash plains, and deltas. Pert Sims soils occurring to the east of the Black River are dominantly high-lime soils that have a clayey to loamy subsoil and are located on till plains and moraines. Alluvial and rough broken land is found along the Black River. This type of soil is generally found along waterways and floodplains. In addition, there are pockets of “Boyer-Wasepi-Spinks” association, “Blount-Parkhill” association and “Allendale-Latty” association within the Township. These soils are nearly level to gently sloping and somewhat poorly drained. The Boyer-Wasepi-Spinks association is a sandy soil with a sandy to loamy subsoil that occurs in glacial drainageways and on glacial lake beaches and outwash plains. Blount Parkhill association subsoils are loamy and occur on

till plains. The Allendale-Latty association includes very poorly drained soils with a sandy to clayey subsoil found on the lake plain.

The patterns of soils found in an area can generally be explained by the type of surface geology found below the soil. The surface geology found in southeastern Michigan can be divided into two broad zones: a lowland zone, and a hill zone. These two zones parallel each other in a northeast/southwest direction, following the shoreline of Lake St. Clair. The lowland zone, consisting of St. Clair, Macomb, Wayne, and Monroe Counties was most likely covered by an ancient glacial lake as the last ice age came to a close. The geology in these areas consists mostly of clay and sand. The counties lying to the west of the lowland zone (Oakland, Livingston, and Washtenaw Counties) are characterized as hill zones. The geology in these areas is composed mostly of sand and gravel deposits that were dropped by moving, melting ice. The soil types found in Clyde Township follow this general description of clay and sand.

Map ECA 3
General Soils



SOIL ASSOCIATIONS

1	Blount-Parkhill association	8	Wainola-Deford association
2	Londo-Avoca association	10	Boyer-Wasepi-Spinks association
3	Pert-Sims association	12	Alluvial land-Rough broken land association
5	Allendale-Latty association		

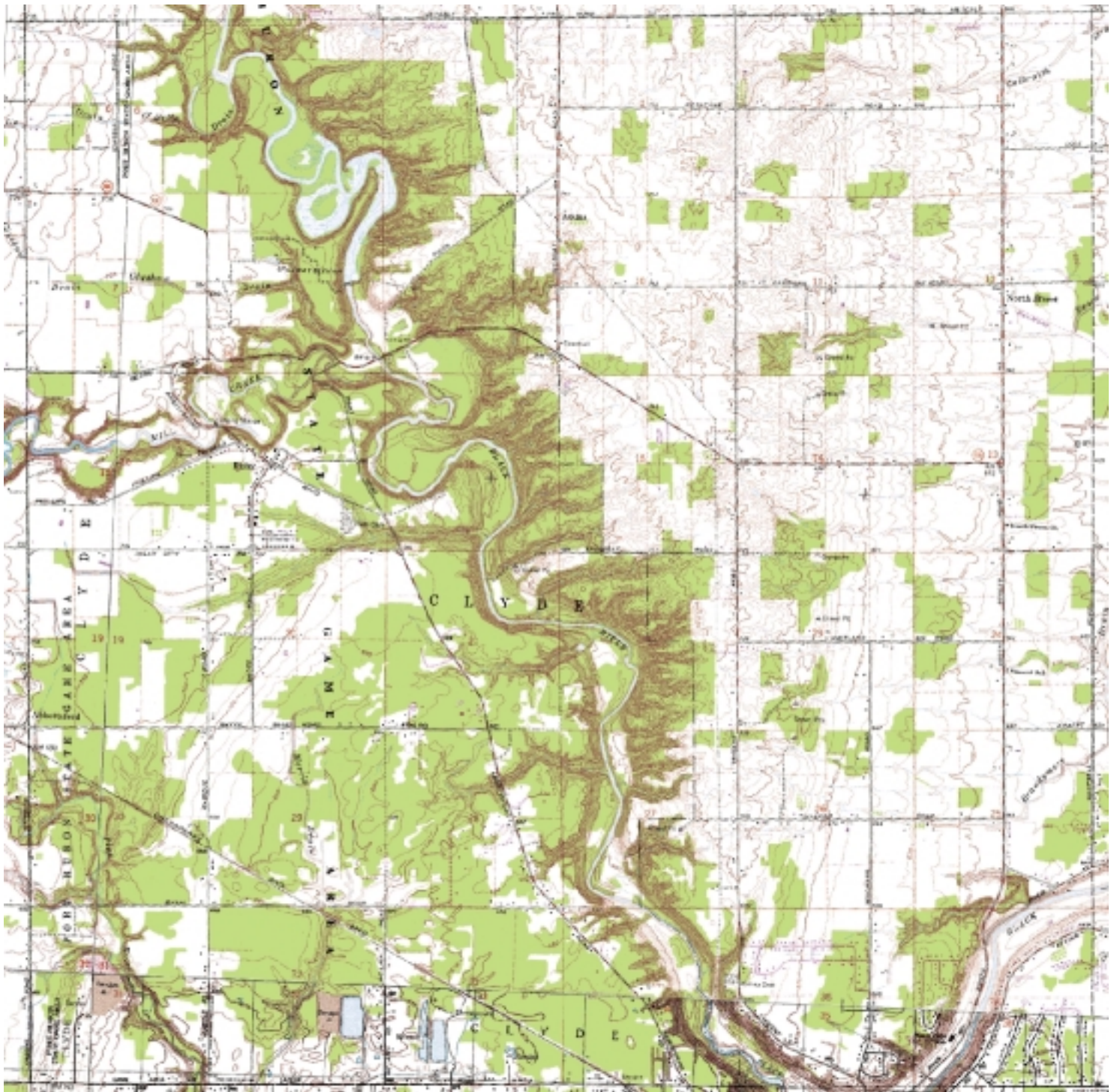
Source: U.S. Department of Agriculture Soil Conservation Service

The Soils Map ECA 11 identifies the different soil types existing within the Township. Sand and loamy sand soils existing in the southwest portion of the Township are poorly filtered and susceptible to wetness and ponding. In general, the loam, clay, silt and muck soils prevalent throughout the Township present severe limitations to development without sanitary sewer service. Since Clyde does not have sanitary sewer service, new development is restricted by the soil's ability to support septic systems. Map ECA 12 indicates that most of the Township consists of soils with severe limitations for development that require sewage disposal systems.

Prime Agricultural Land

Map ECA 13 depicts the areas within the Township with potential as prime farmland. As shown on the map, the majority of the land east of the Black River contains soils that are considered prime for agricultural purposes. The northwest corner of the Township also contains a significant amount of prime agricultural soils. This is important to note when making decisions regarding future land uses throughout the Township. According to the U.S. Department of Agriculture, Prime Farmland has the following characteristics:

- ☐ Soils capable of providing yields of crops common to the area that are equal to or greater than yields from well-managed, deep, well-drained sandy loams.
- ☐ Soil quality, a growing season, and moisture conditions necessary to produce a high yield of crops economically if managed in accordance with modern farming methods.
- ☐ Slopes of less than six percent.
- ☐ Active rooting depth of a least 20 inches.
- ☐ Soils that are not waterlogged. Waterlogged soils are those that have standing water as much as six inches deep several times during the growing season.
- ☐ Soils that do not flood more than once every two years.
- ☐ Soils that present no particular difficulty in cultivating with large equipment (less than 10 percent is covered with coarse rock fragments).
- ☐ Soils with the potential for being made prime agriculture through economically justifiable investments and practices, including drainage, clearing, irrigation, etc.



TOPOGRAPHY

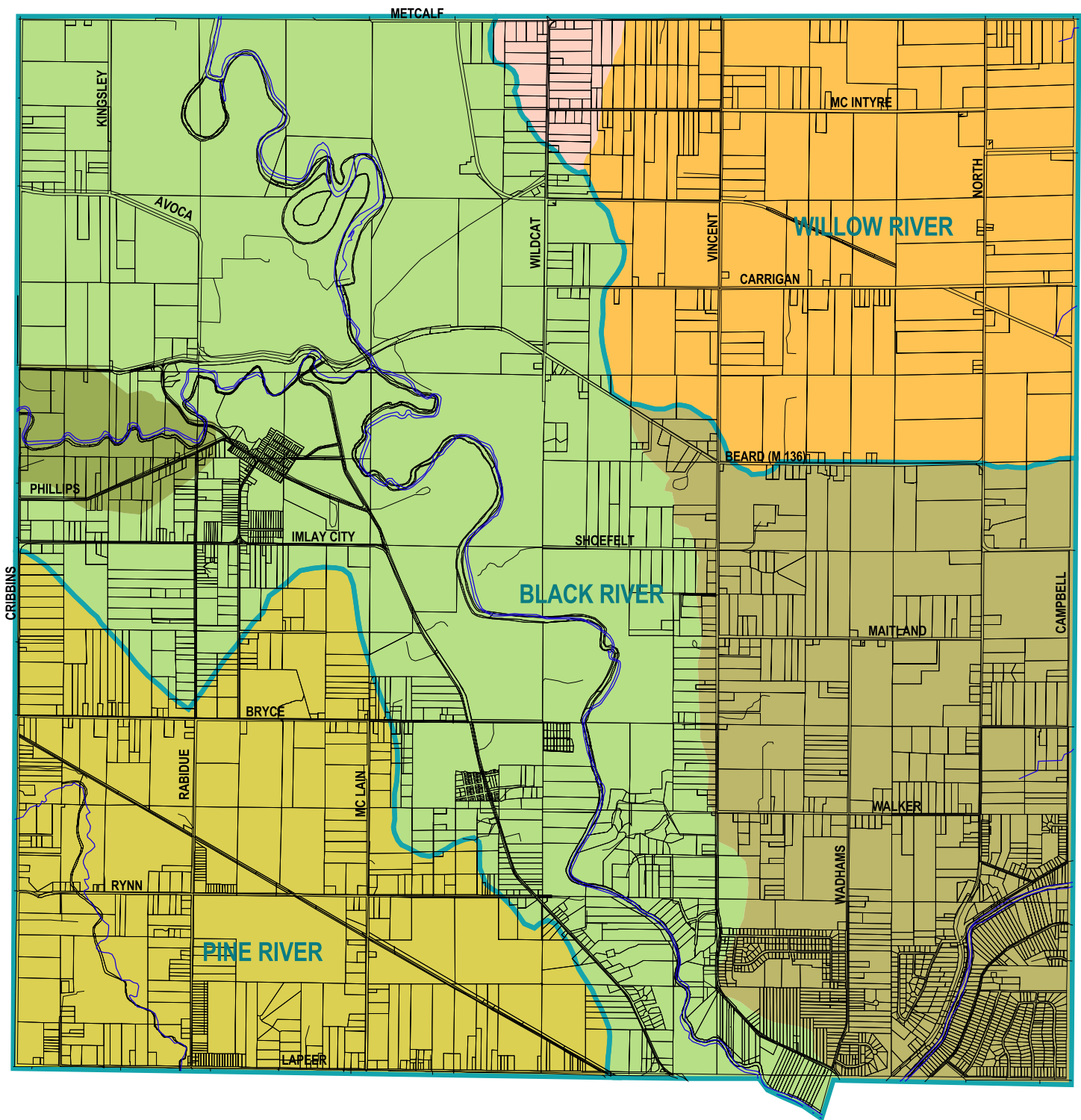
CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP ECA 4

SOURCE:
USGS



**BIERNLER ARROYO
ASSOCIATES, INC.**



MAJOR WATERSHED

SUBWATERSHED (OUTLET)



MILL CREEK (AT GAGE #04160000)



BLACK RIVER (AT GAGE #04160050)



BLACK RIVER (AT MOUTH)



MILWAUKEE CREEK (AT MOUTH)



LAKE DRAINAGE (TO LAKE HURON)



PINE RIVER (AT GAGE #04160350)

WATERSHEDS

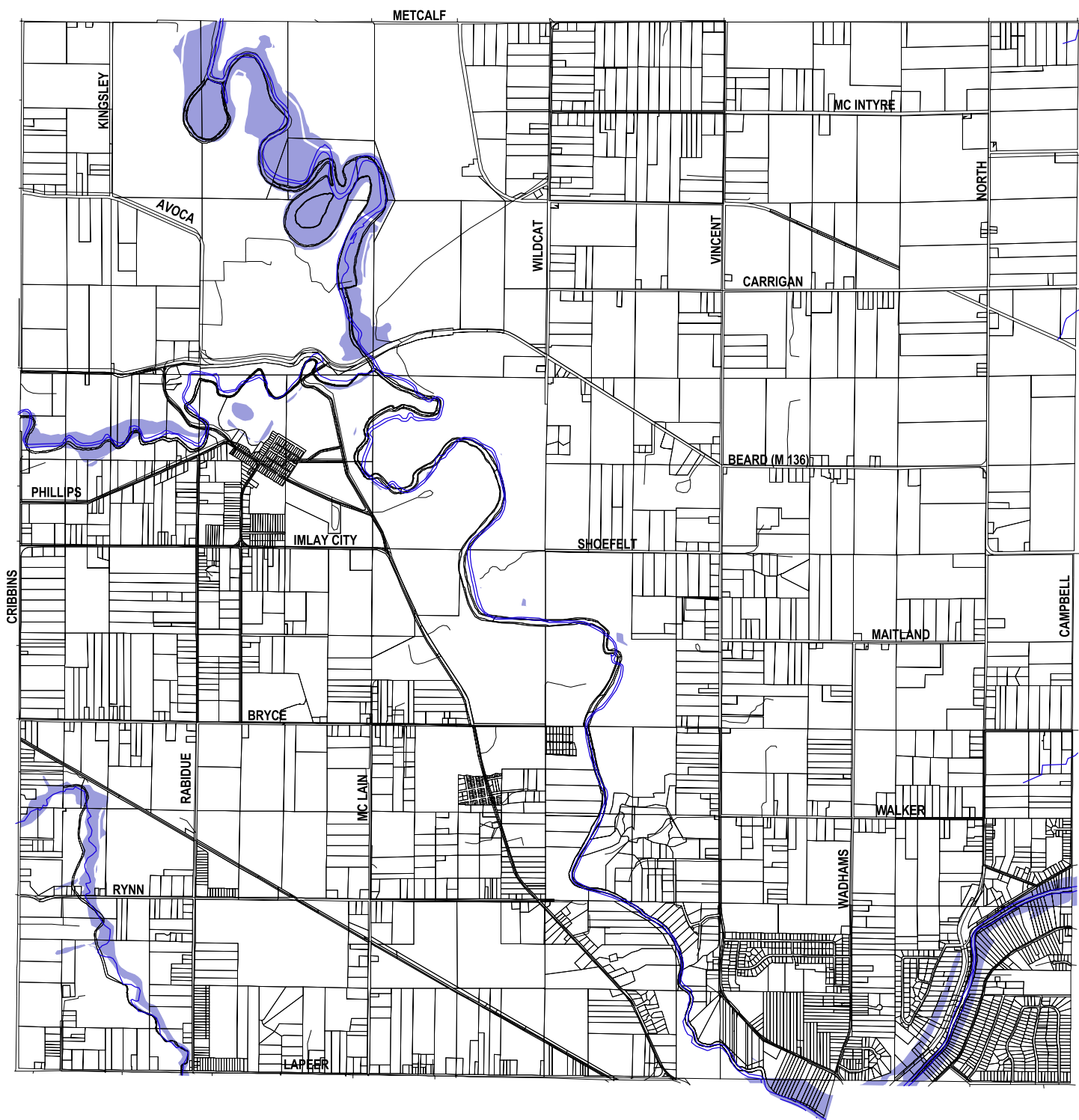
CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP ECA 5

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BIRCHLER ARROYO
ASSOCIATES, INC.



FLOODPLAINS

CLYDE TOWNSHIP, ST. CLAIR COUNTY

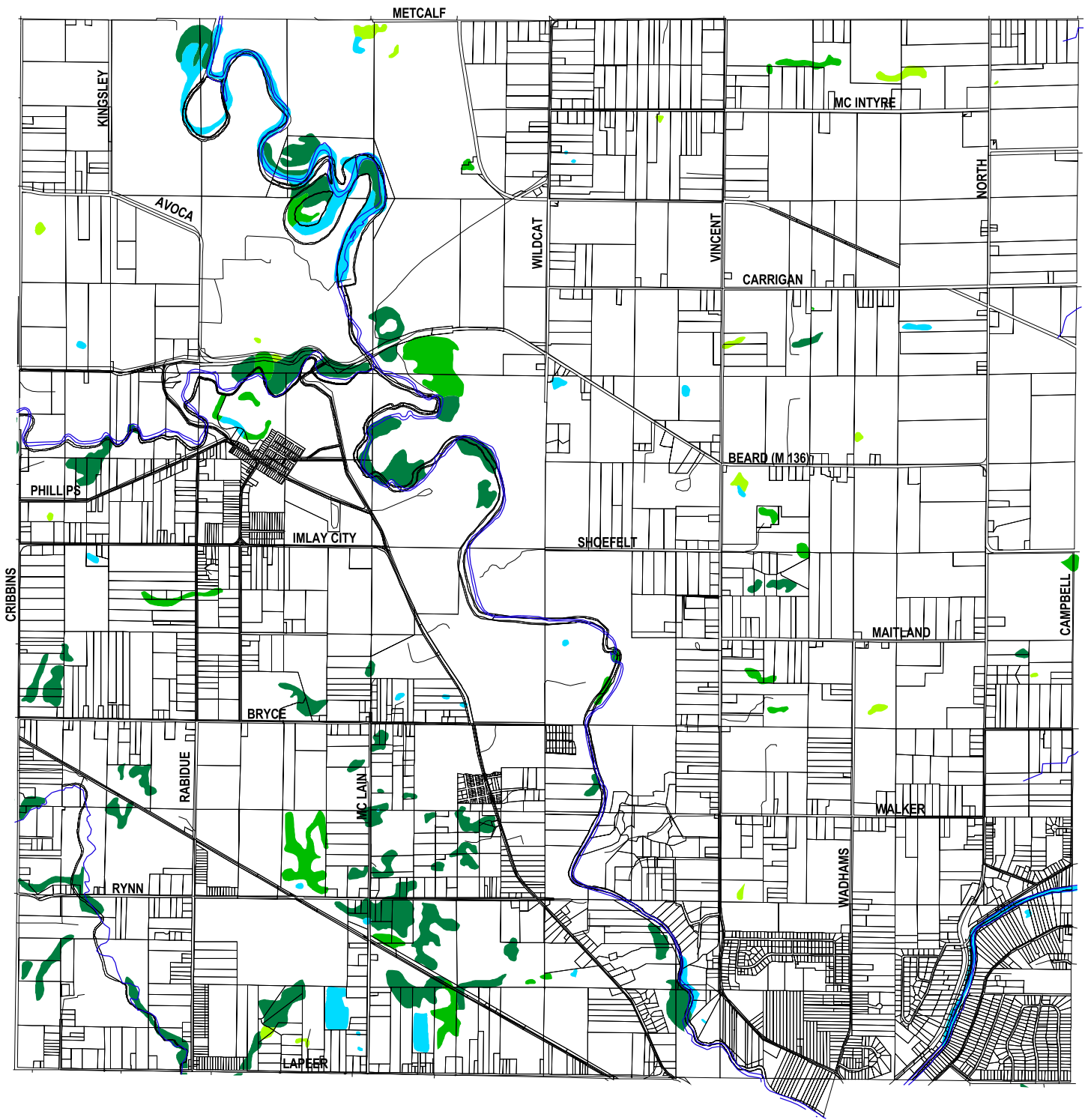
 100-YEAR FLOODPLAIN

MAP ECA 6

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BIRCHLER ARROYO
ASSOCIATES, INC.



WETLANDS

CLYDE TOWNSHIP, ST. CLAIR COUNTY

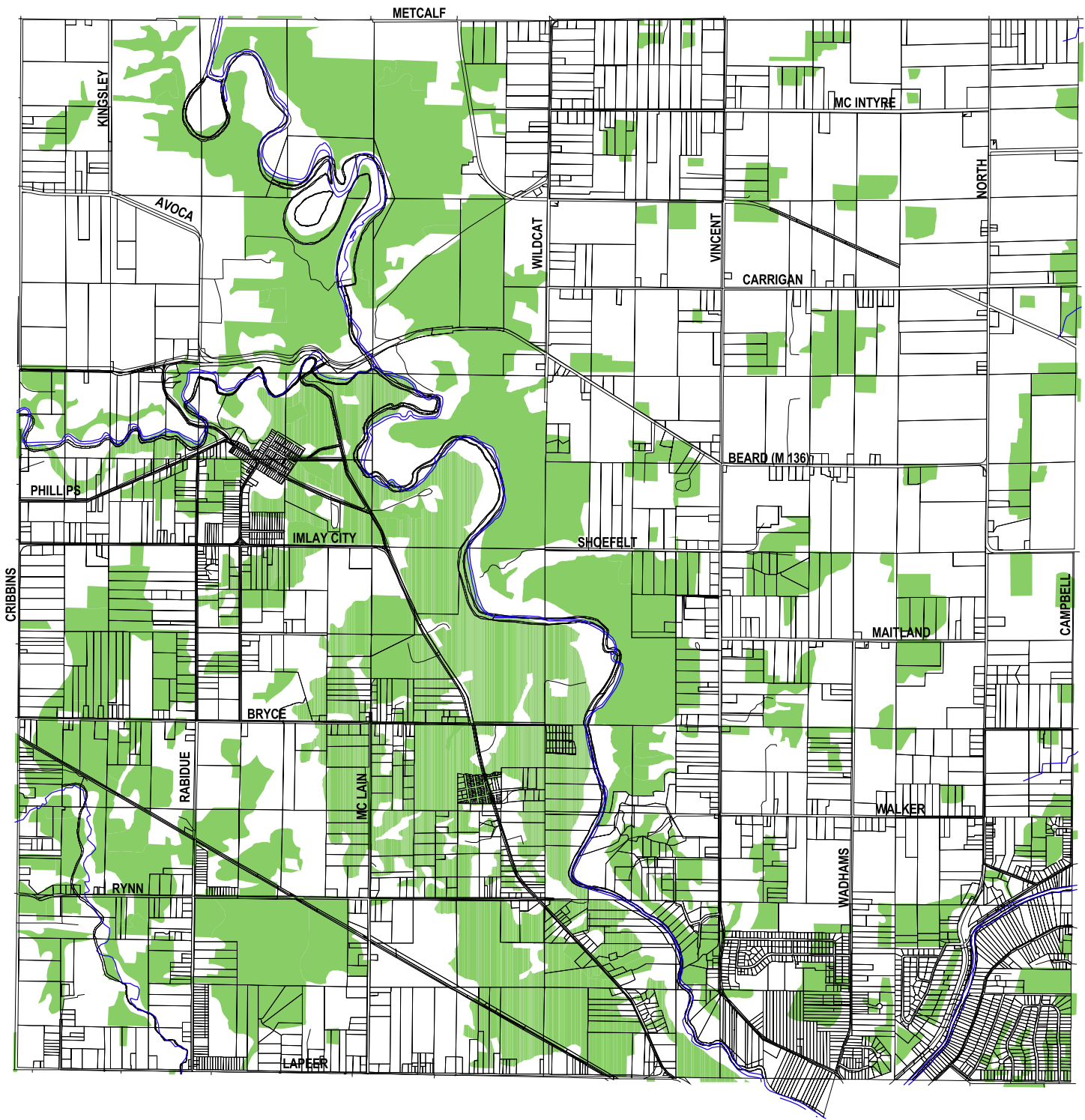
- EMERGENT
- SCRUB-SHRUB
- FORESTED
- OPEN WATER/UNKNOWN BOTTOM

MAP ECA 7

SOURCE:
NATIONAL WETLANDS
INVENTORY



**BIRCHLER ARROYO
ASSOCIATES, INC.**



WOODLANDS

CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP ECA 8

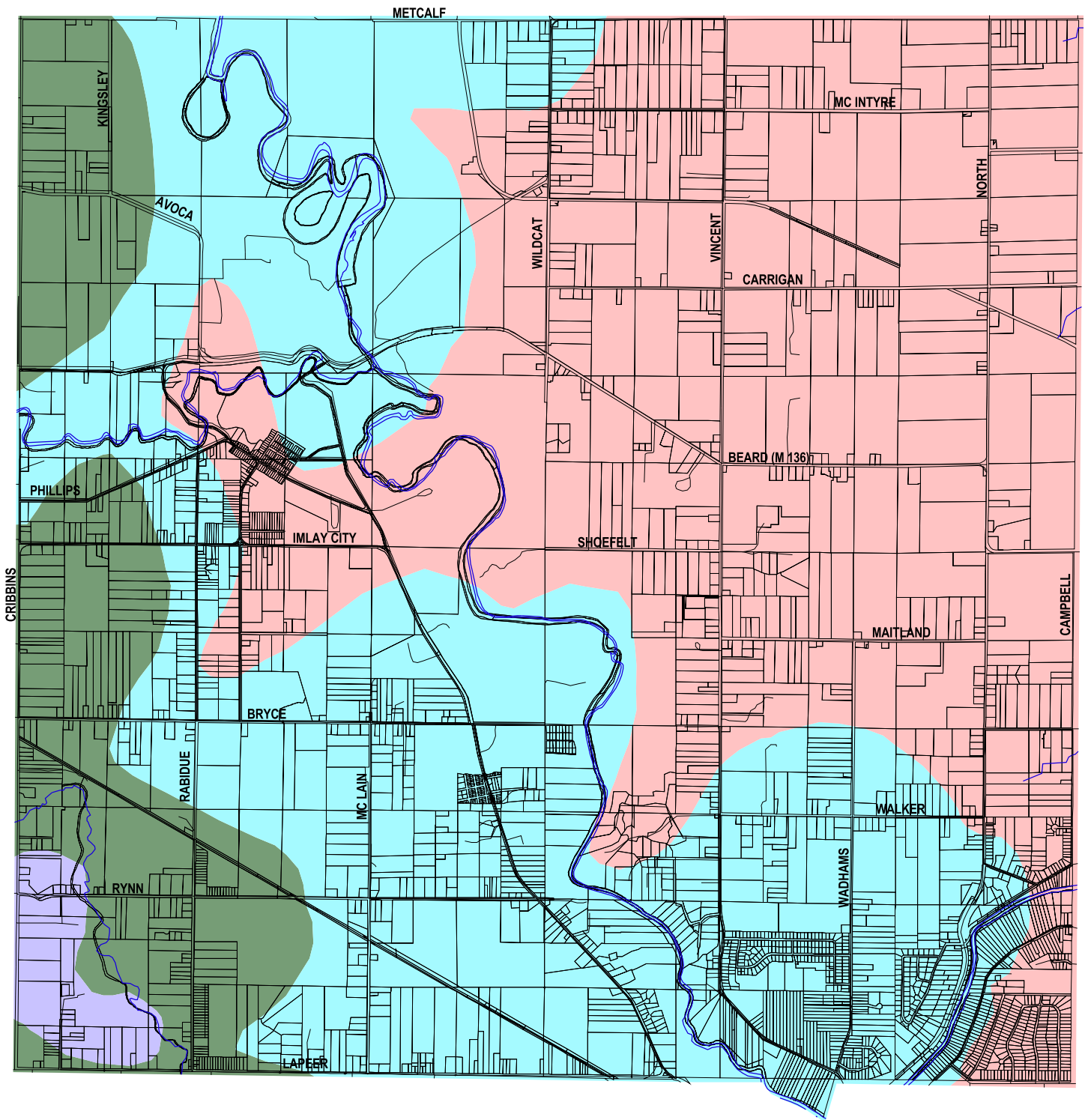
SOURCE:
MIRIS



BIRCHLER ARROYO
ASSOCIATES, INC.



WOODLANDS



BEDROCK GEOLOGY

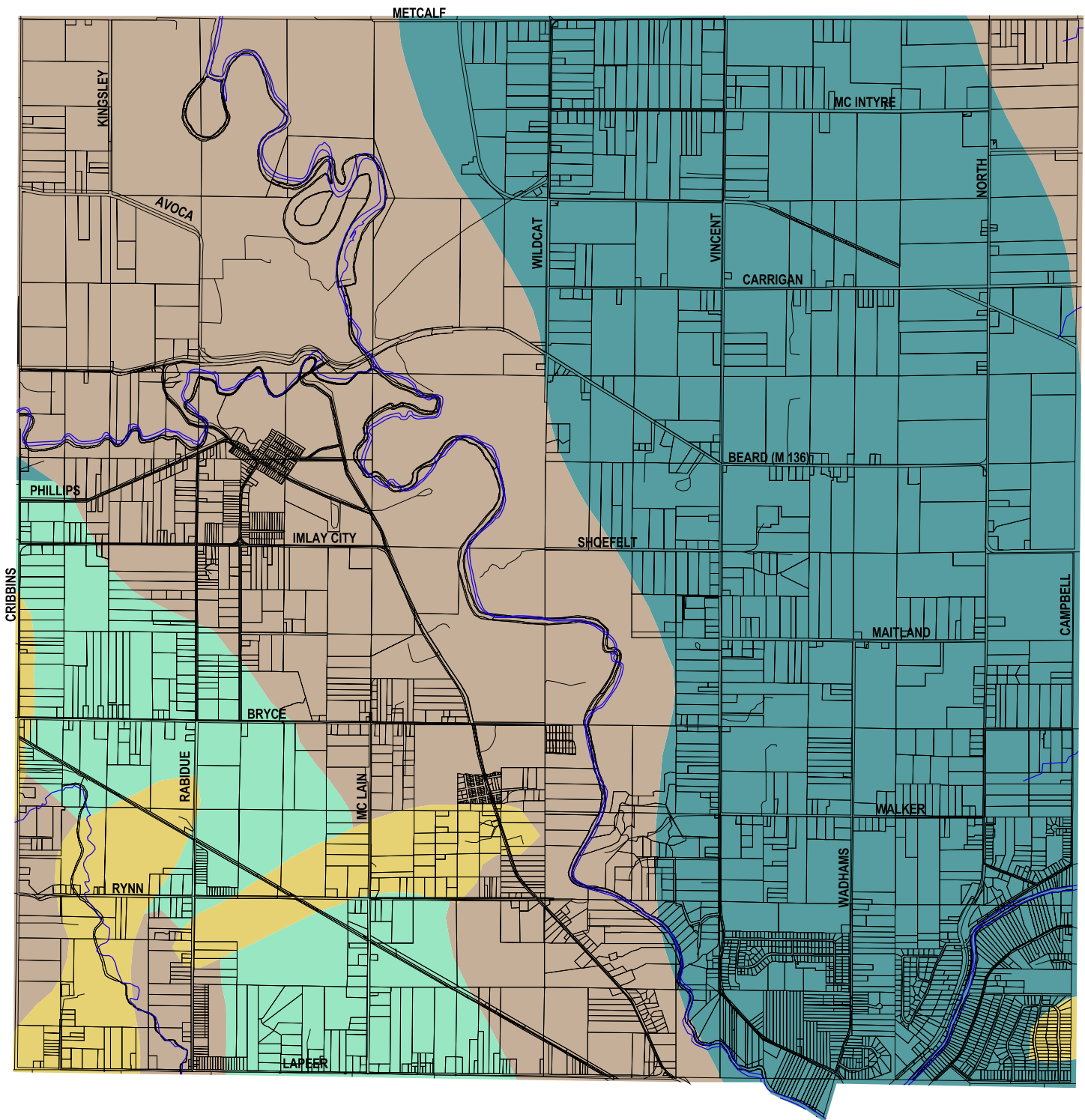
CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP ECA 9

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BIRCHLER ARROYO
ASSOCIATES, INC.



SURFACE GEOLOGY





CLYDE TOWNSHIP, ST. CLAIR COUNTY

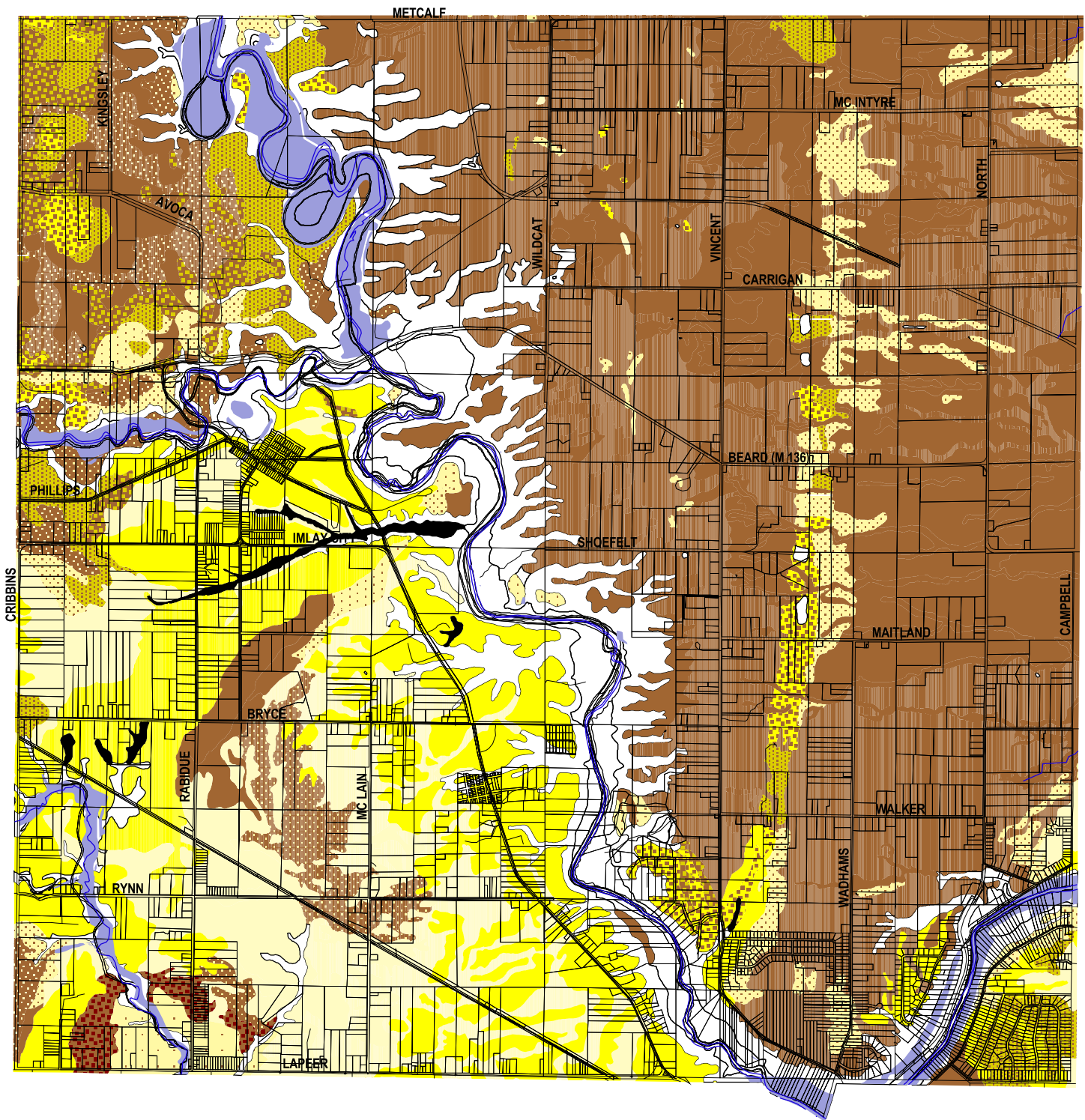
MAP ECA 10

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BIRCHLER ARROYO
ASSOCIATES, INC.

-  DUNE SAND
-  END MORAINES OF COARSE-TEXTURED GLACIAL TILL
-  END MORAINES OF FINE-TEXTURED GLACIAL TILL
-  LACUSTRINE CLAY AND SAND



SOILS

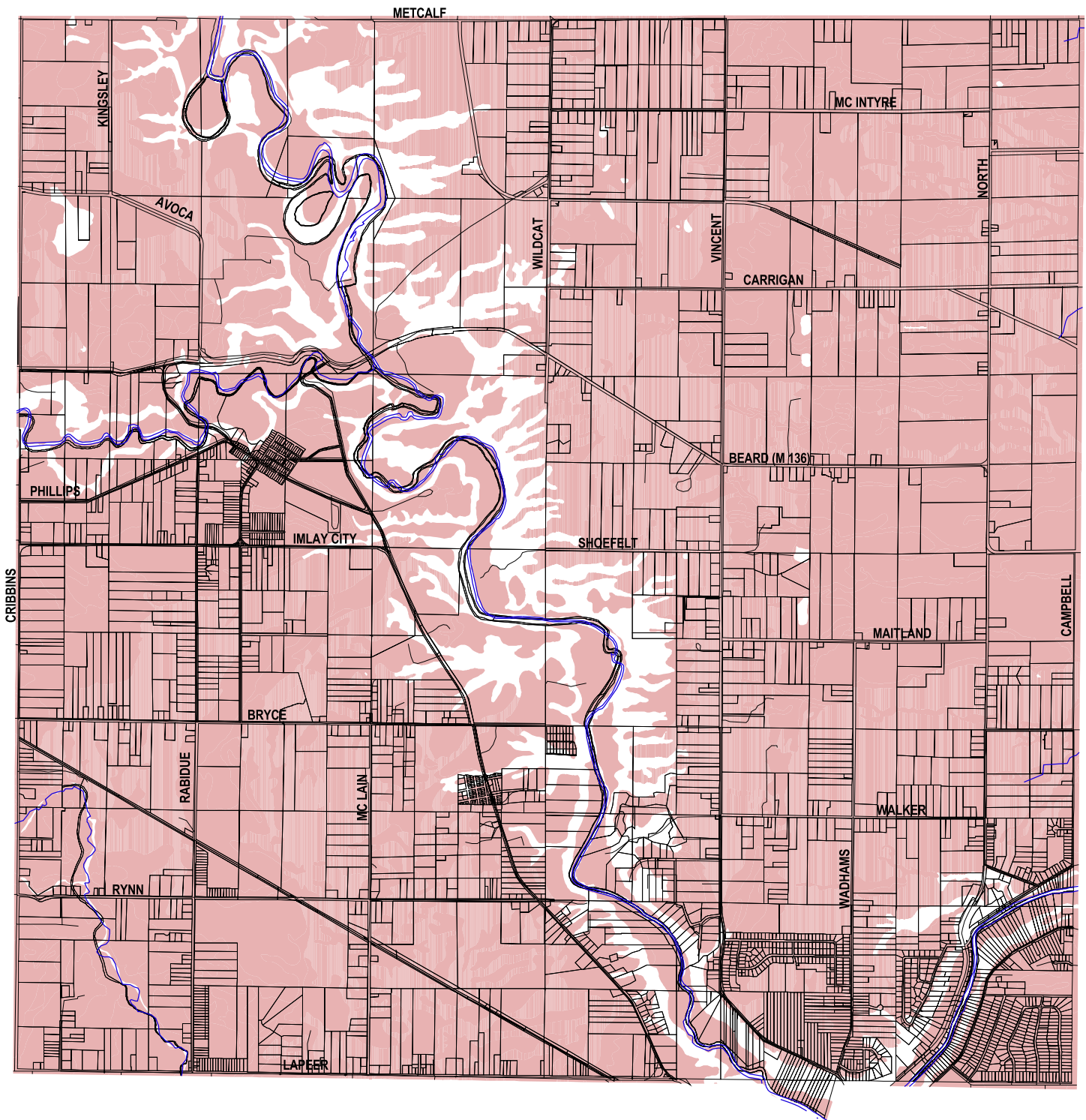
CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP ECA 11

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BIRCHLER ARROYO
ASSOCIATES, INC.



SOILS WITH SEVERE LIMITATIONS
TO RESIDENTIAL DEVELOPMENT
WITHOUT PUBLIC SEWERS

LIMITATIONS TO DEVELOPMENT

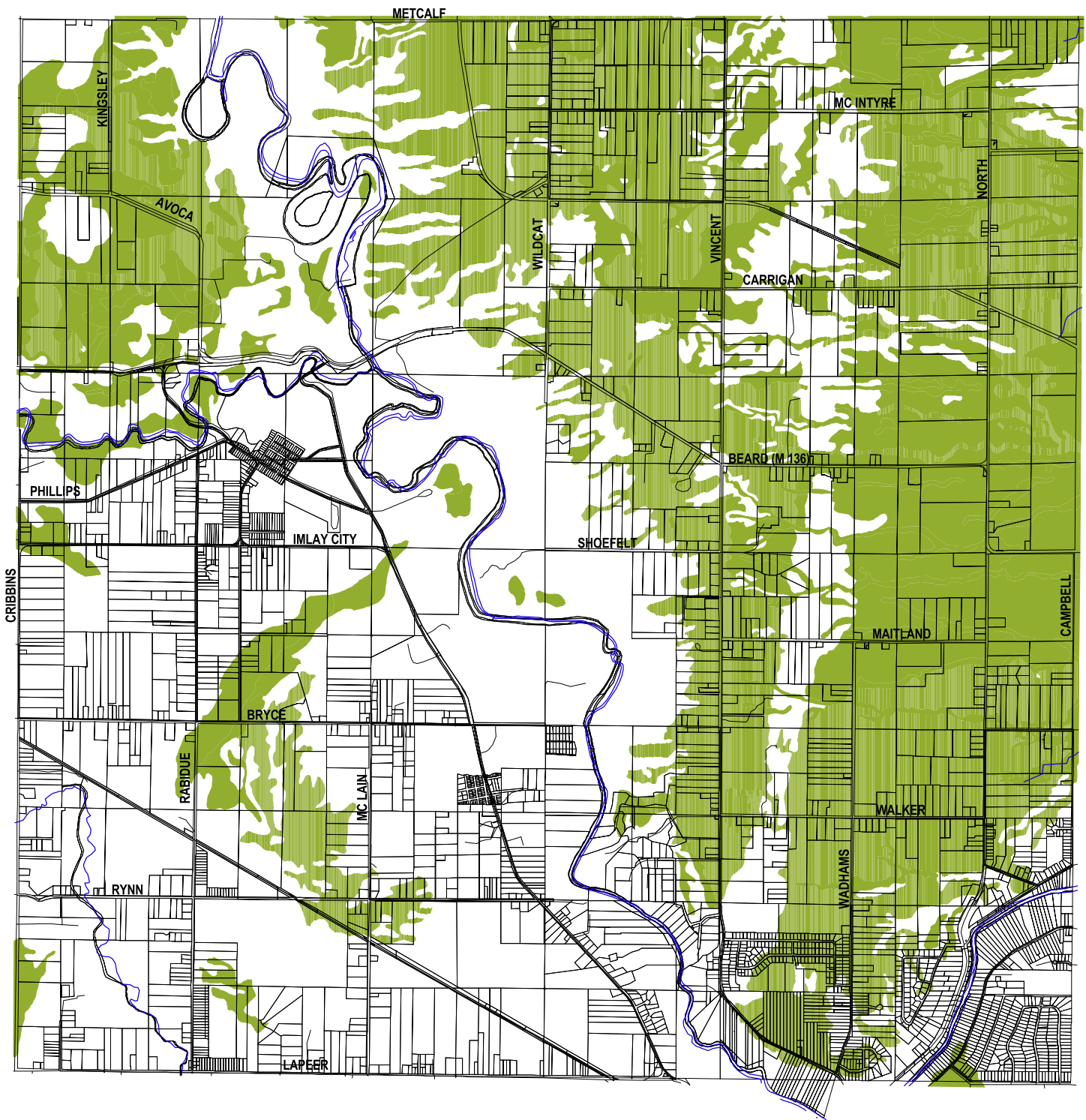
CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP ECA 12

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BIRCHLER ARROYO
ASSOCIATES, INC.



PRIME FARMLAND

CLYDE TOWNSHIP, ST. CLAIR COUNTY

 PRIME FARMLAND

MAP ECA 13

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



APPENDIX B



This page left intentionally blank.

APPENDIX B



This page left intentionally blank.



In addition to the natural features highlighted in the Existing Conditions Analysis (Appendix A), Clyde Township like other glacial outwash areas in the Midwest is likely to contain mineral resources such as sand and gravel beneath the surface of the Township's land. According to the U.S.G.S, Michigan ranks third in the nation in terms of tonnage for production of sand and gravel for construction uses. Map S&G 1 illustrates sand and gravel operations in Michigan. St. Clair County and Clyde Township have hosted sand and gravel operations. Map S&G 2 identifies areas where these resources have been mined within the Township. Continued growth pressure within southeast Michigan and the presence of natural aggregates will likely result in additional requests for mining activities within the Township's boundaries. Therefore the Township has expressed an interest in incorporating an analysis of these minerals into the Master Plan to assist them in planning for the potential development of future mining activities.

The U. S. Geological Survey (U.S.G.S.) reports that natural aggregates including sand, gravel and crushed stone are among the most abundant natural resources in the world. These resources are essential for infrastructure development and maintenance. Aggregates such as sand and gravel are needed by the construction industry for many uses including street and road construction, bricks, tiles, concrete and other building materials. Industrial users require silica sand for glassmaking and foundry operations as well as for the production of other materials. Different forms of aggregates are used for agricultural, medical, public safety and environmental protection applications.

Sand and gravel resources are accessed through surface mining activities including the creation of pits and quarries with large earth moving machinery such as front-end loaders and noise-producing processing plants. Mining facilities rely on large trucks to transport their material within their local market a factor, which can add to the potential land use conflicts associated with the mining activity itself. Despite the abundance of naturally occurring aggregate materials in the U.S., access to these

materials is complicated due to prevailing settlement patterns and zoning regulations. Communities are often reluctant to promote mining activities due to the intensive nature of their operations. Planning for mineral extraction activities should allow communities to direct mining operations to less sensitive areas within the community. This forethought could be instrumental in minimizing impacts on developed areas while insuring access to a valuable resource within the community. Although the Township recognizes the value of natural aggregates to the future development of the region Township Officials understand the need to minimize the impacts of mining activities and the impacts commonly associated with such operations. Impacts such as dust, noise, and visual degradation of the landscape are not well received in local communities. Increased costs for road maintenance and construction are an indirect cost of restrictions on local mining activities.

Clyde Township has recognized the need to identify natural aggregate deposits in order plan for reasonable land uses while balancing the quality of life issues for local residents. Map S&G 3 identifies **potentials** sand and gravel resources based on the St. Clair County Soil Survey. The map depicts soil types that may be suitable sources of sand and gravel. The quality and the quantity (amount of the material deposited) are determining factors as to whether mining activity is feasible. Map S&G 4 depicts the drift thickness, which can be used to determine the depth to bedrock. This map could be interpreted as an indicator of the volume of material below the surface, which may be available for mining. These two maps together with the inventory of past and present pits in the Township may be used to locate potential mining sites. In order to determine the quality and quantity of the resource available field surveys and tests would be required which are beyond the scope of this analysis.

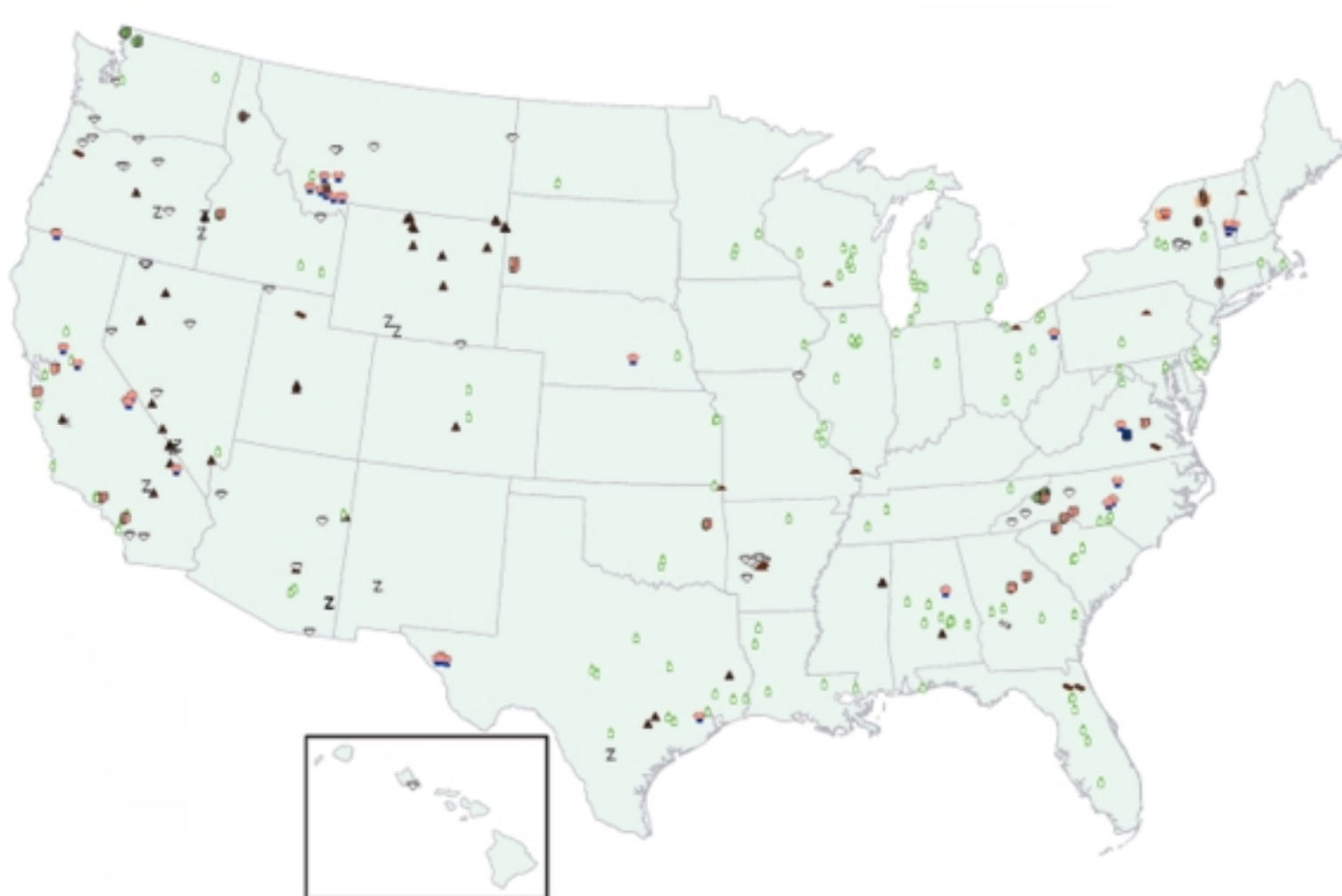
Map S&G 3 identifies soils suitable for sand primarily in the southwest portion of the Township, these soils are part of the Wainola-Deford association and may contain fine sandy material but do not appear suitable for gravel. Wetness may hinder excavation of material found in these soil associations.

Sand and Gravel deposits may be found together in small areas throughout the Township. The Boyer Wasepi Spinks association found in pockets may contain both materials, although sand is the predominantly material.















Map S&G 2 illustrates gravel pits, which have operated throughout the Township which indicates that the material has been identified in quantities significant enough for extraction.

It is difficult to make assumptions using these maps due to the general nature of the information. In order to verify whether the sand & gravel resources are available in significant enough quantities to warrant an extraction operation, field surveys of

individual sites is necessary. However, these maps and resources are useful as planning tools to develop plans and policies that will guide future decisions related to this land use.



EXPLANATION

-  ASBESTOS
-  BENTONITE
-  FELDSPAR
-  GARNET
-  GEMSTONES
-  INDUSTRIAL SAND & GRAVEL
-  KYANITE
-  OLIVINE
-  SILICA
-  SYNTHETIC MULLITE
-  TALC & PYROPHYLLITE
-  WOLLASTONITE
-  ZEOLITE
-  ZIRCON

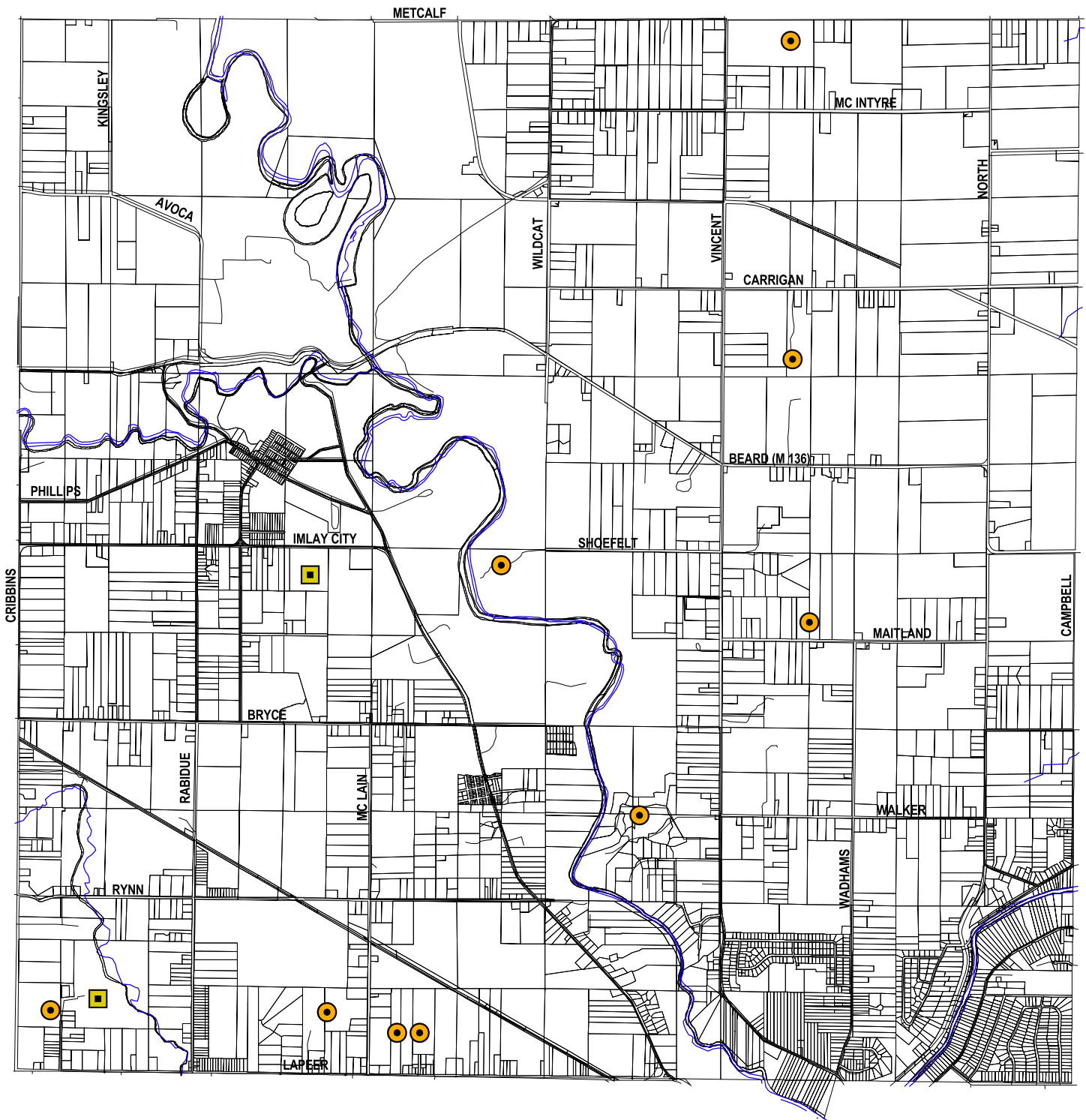
REFRACTORY, ABRASIVE, AND OTHER INDUSTRIAL MINERALS OPERATIONS

MAP S&G 1

SOURCE:
USGS



BUREAU OF LAND MANAGEMENT
U.S. DEPARTMENT OF THE INTERIOR



SAND & GRAVEL PITS

CLYDE TOWNSHIP, ST. CLAIR COUNTY

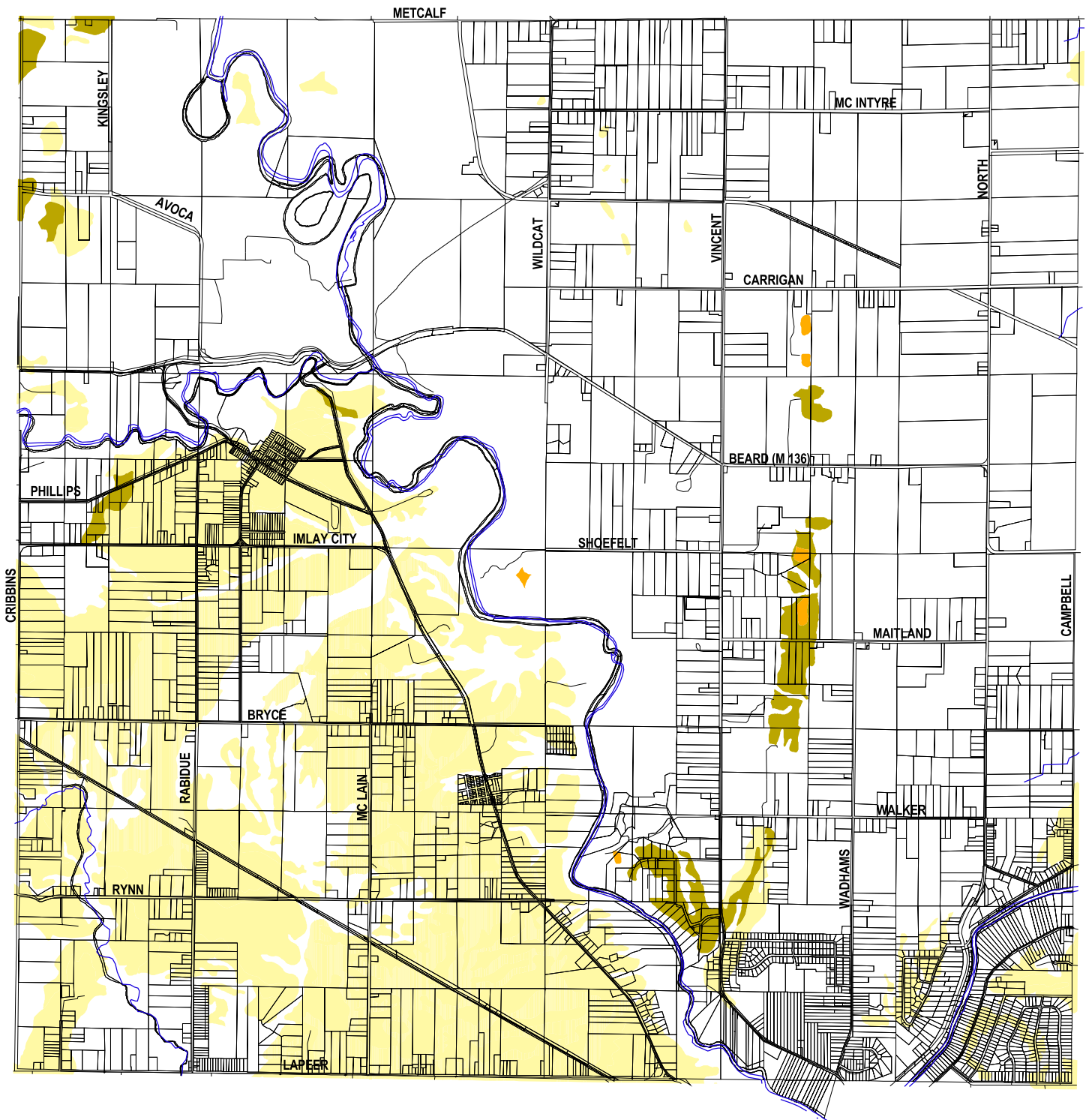
- INACTIVE SAND & GRAVEL PITS
- ACTIVE SAND & GRAVEL PITS

MAP S&G 2

SOURCE:
CLYDE TOWNSHIP



BIRCHLER ARROYO
ASSOCIATES, INC.



SAND & GRAVEL RESOURCES

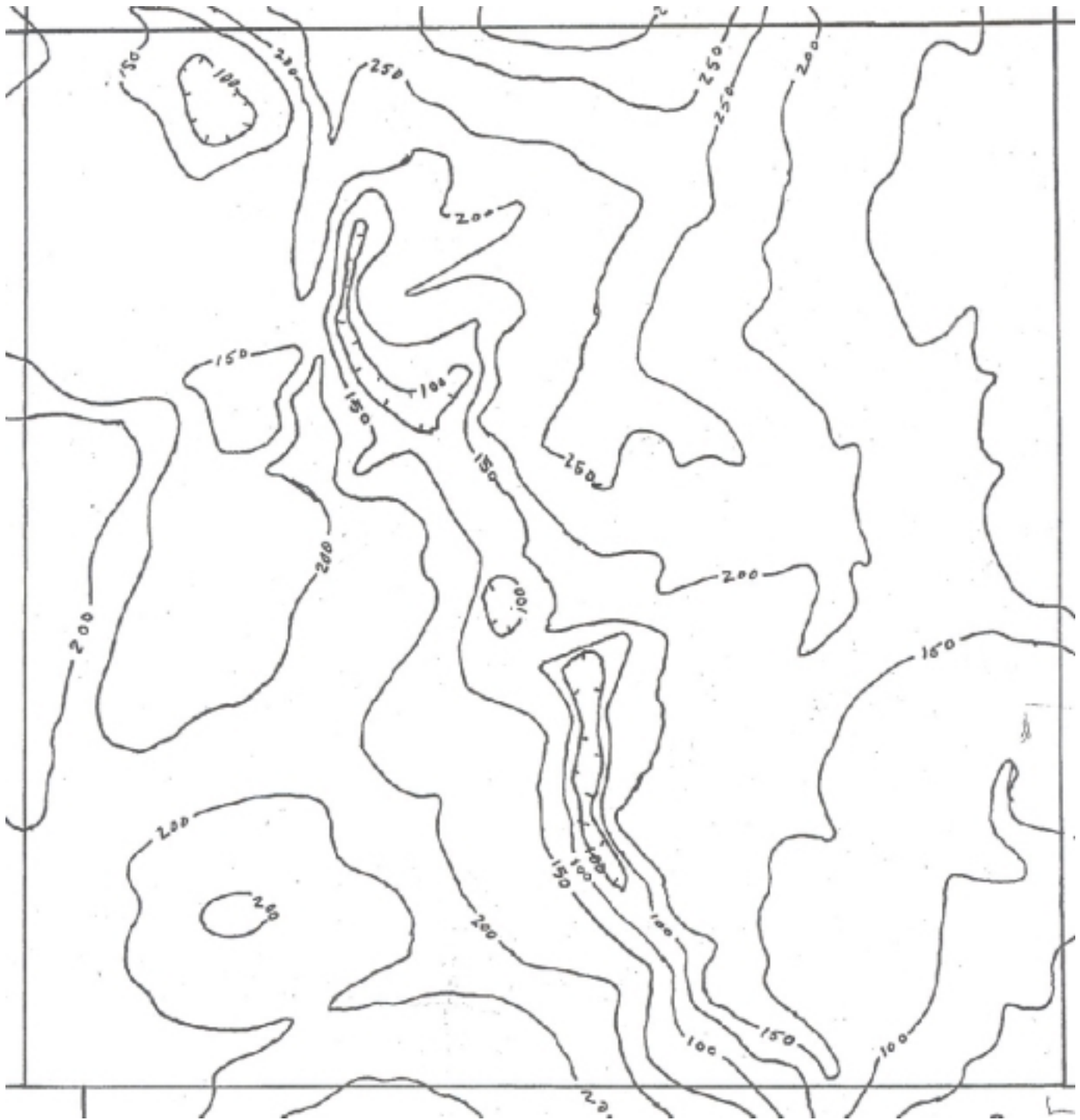
CLYDE TOWNSHIP, ST. CLAIR COUNTY



MAP S&G 3

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION





DRIFT THICKNESS

CLYDE TOWNSHIP, ST. CLAIR COUNTY

DRIFT THICKNESS IN 50-FOOT CONTOUR INTERVALS

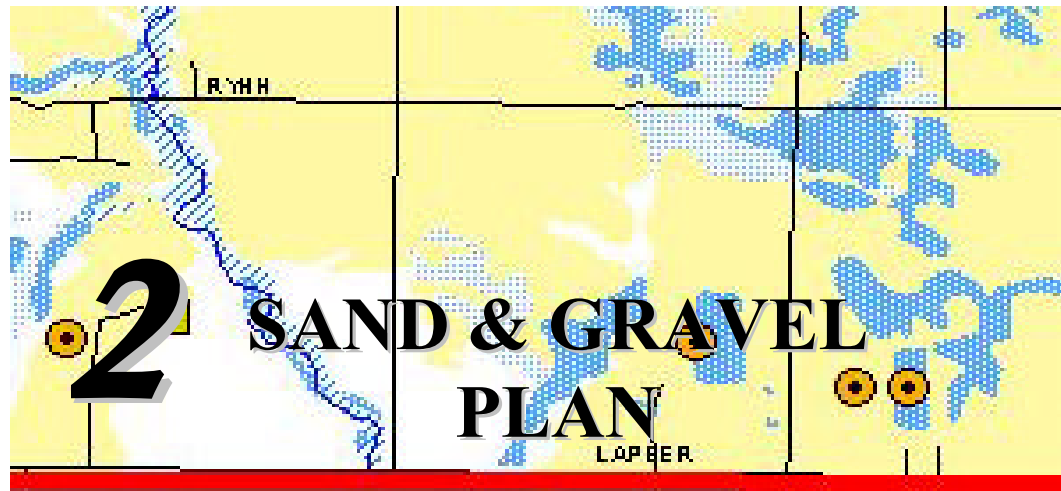
MAP S&G 4

SOURCE:
MICHIGAN DEPARTMENT
OF NATURAL RESOURCES
GEOLOGICAL SURVEY
DIVISION



BIRCHLER ARROYO
ASSOCIATES, INC.

This page left intentionally blank.



As discussed in Chapter 1, sand and gravel resources have been identified in Clyde Township. Upon examining the sand and gravel analysis in Chapter 1, the Township Planning Commission established a set of criteria to identify preferred locations for future mining operations. These criteria are the basis for the Township's Sand & Gravel Extraction Plan. This plan will enable the Township to establish a policy framework for sand and gravel extraction and minimize negative impacts on the community. The goal of this plan is to identify preferred areas for local extraction of sand and gravel within the Township that can adequately sustain the temporary impacts associated with sand and gravel extraction.

CRITERIA FOR FUTURE SAND & GRAVEL OPERATIONS

In an effort to direct future sand and gravel operations and to minimize the negative impacts of such operations on local residents, the Township established the following criteria to evaluate potential locations for future Sand and Gravel Operations.

Access to Class A Roadways

Due to the intensive nature of the hauling activities associated with mining operations, preferred locations for future sand and gravel operations within Clyde require access to a Class A Roadway. Map S&G 5 identifies the Class A Roadways currently existing within Clyde Township. The Class A Roads identified are under the jurisdiction of the State or St. Clair County and are designed to carry heavy truckloads with maximum weight limits year round. The weight limits are dependent on the number of axles, and are determined in a manner which evenly distributes the load in order to reduce the wear and tear on the roads. St. Clair County's general construction standards for County Class A Roads require 1' of Sand, 6"-8" of Gravel, and 5"-7" of Bituminous Pavement. Unpaved roads are not considered Class A Roadways in this analysis.

A potential negative impact associated with sand and gravel mining operations is the use of large trucks to haul away mined material. The size and number of trucks used in such operations can disturb the normal traffic conditions on local roadways and cause excessive wear and tear on routes traveled. Congestion and noise due to trucks queuing up to enter the facility prior to business hours is often a concern of local residents. Dust control and proper containment of trucks can also become a problem if not adequately addressed by the operator.

Preferred locations for future sand and gravel mining in Clyde Township should meet other established criteria and must have access to Lapeer Road, Wildcat Road or M-136. Vincent Road south of M-136 and North River Road south of Keewahdin are also designated as Class A County Roadways, and may provide access to potential mining operations.

Proximity to Sensitive Lands

Mining operations should not be encouraged in close proximity to sensitive lands or natural features. The potential negative impact of such activities on wetlands, the Black and Pine Rivers, and the Prime Farmland, which makes up a good portion of the east side of the Township, must be avoided. The removal of trees and native vegetation as well as the destruction of wildlife habitat should be considered when measuring the impacts of a mining operation.

Concentration of Residentially Developed Properties

Existing development patterns must be taken into consideration when identifying preferred locations for mining operations. Areas with existing dense residential development should be avoided. Extraction operations utilize heavy machinery and the noise and dust associated with these can present problems to nearby residential uses. The nature of the activity can also introduce risks of injury to children if the operation is not properly secured. Increased truck traffic in residential areas can result in traffic conflicts as well as frustration due to noise and congestion.

Existence of Sand & Gravel Resource

Areas which have been identified as potential sources for sand and gravel are more likely to contain the resource and therefore would be more likely result in future mining activities. As discussed in Chapter 1 and depicted on Map S&G 5 these resources appear to be concentrated to the west of the Black River and south of M-136. However, small scattered areas of sand and gravel resources are found in

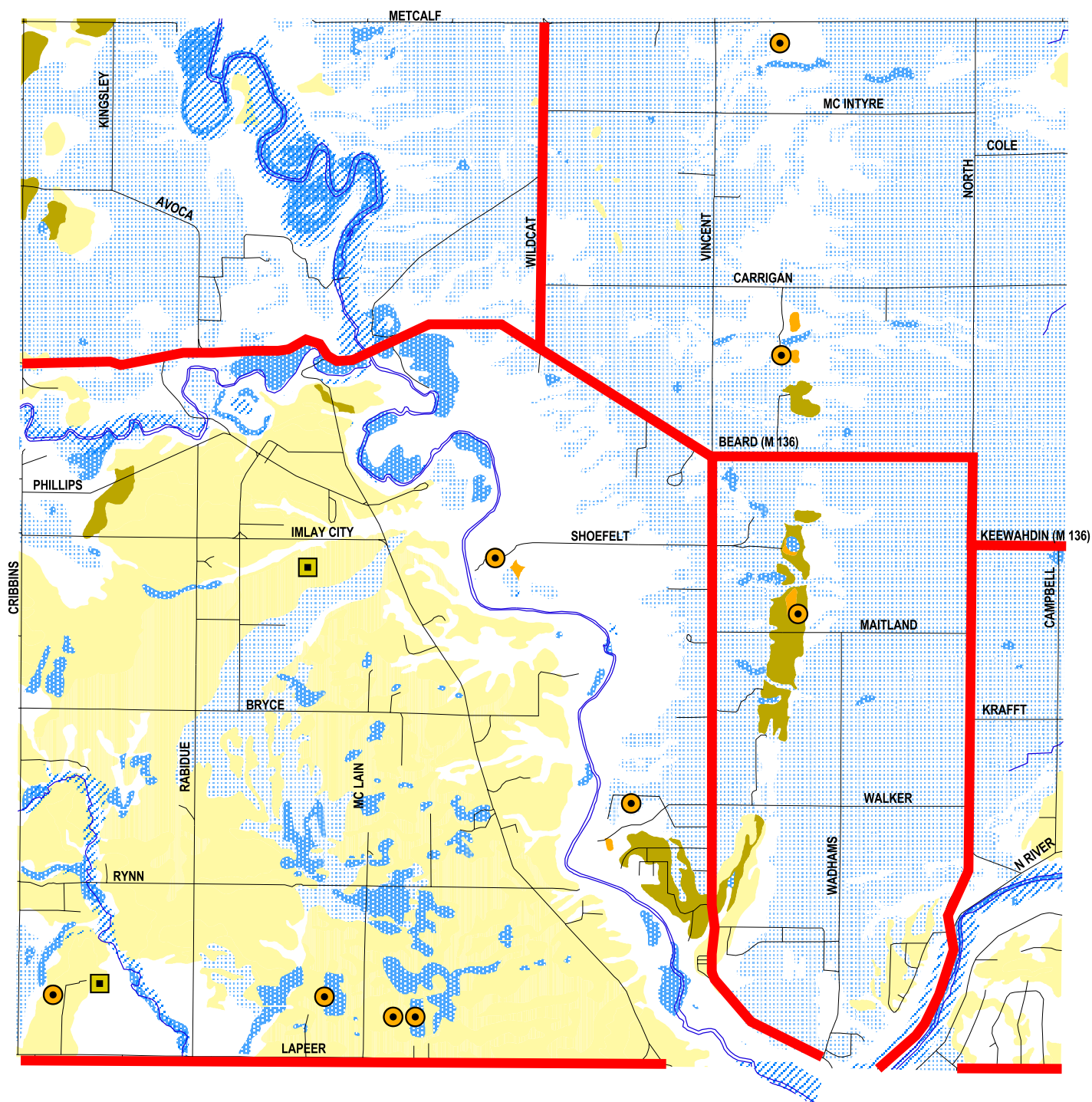
other areas of the Township. Due to the general nature of the mapping information other methods may be used to further identify potential sand and gravel resources. These include:

- 1) Presence of sand and gravel on the ground surface;
- 2) Landform features such as flat-topped bench like steps or terraces;
- 3) Previous sand and gravel mining activities;
- 4) Inquiries from private sector mine operators.

Once an area has been identified as having potential sand and gravel resources additional investigation will be necessary to determine whether there are sufficient quantities available for a commercial venture. This is the responsibility of the private sector and will require on site testing and evaluation.

PREFERRED AREAS FOR FUTURE SAND & GRAVEL OPERATIONS

Map S&G 6 identifies preferred locations for sand and gravel extraction operations based on the combination of criteria discussed above. These areas should be given the highest priority for consideration as part of the Township's Sand & Gravel Overlay District. Proposed mining operations in preferred locations must obtain a Mining permit through the Township's permit process and are subject to the regulations identified in the Township's ordinances. Those mining operations proposed outside of the preferred areas depicted on Map S&G 6 shall be reviewed on a case by case basis. Substantial adherence to the criteria and policy established in this document will be the basis for consideration of each proposal.



- CLASS A ROADS
- INACTIVE SAND & GRAVEL PITS
- ACTIVE SAND & GRAVEL PITS
- SAND
- GRAVEL
- SAND & GRAVEL
- 100-YEAR FLOODPLAIN
- WETLANDS
- PRIME FARMLAND

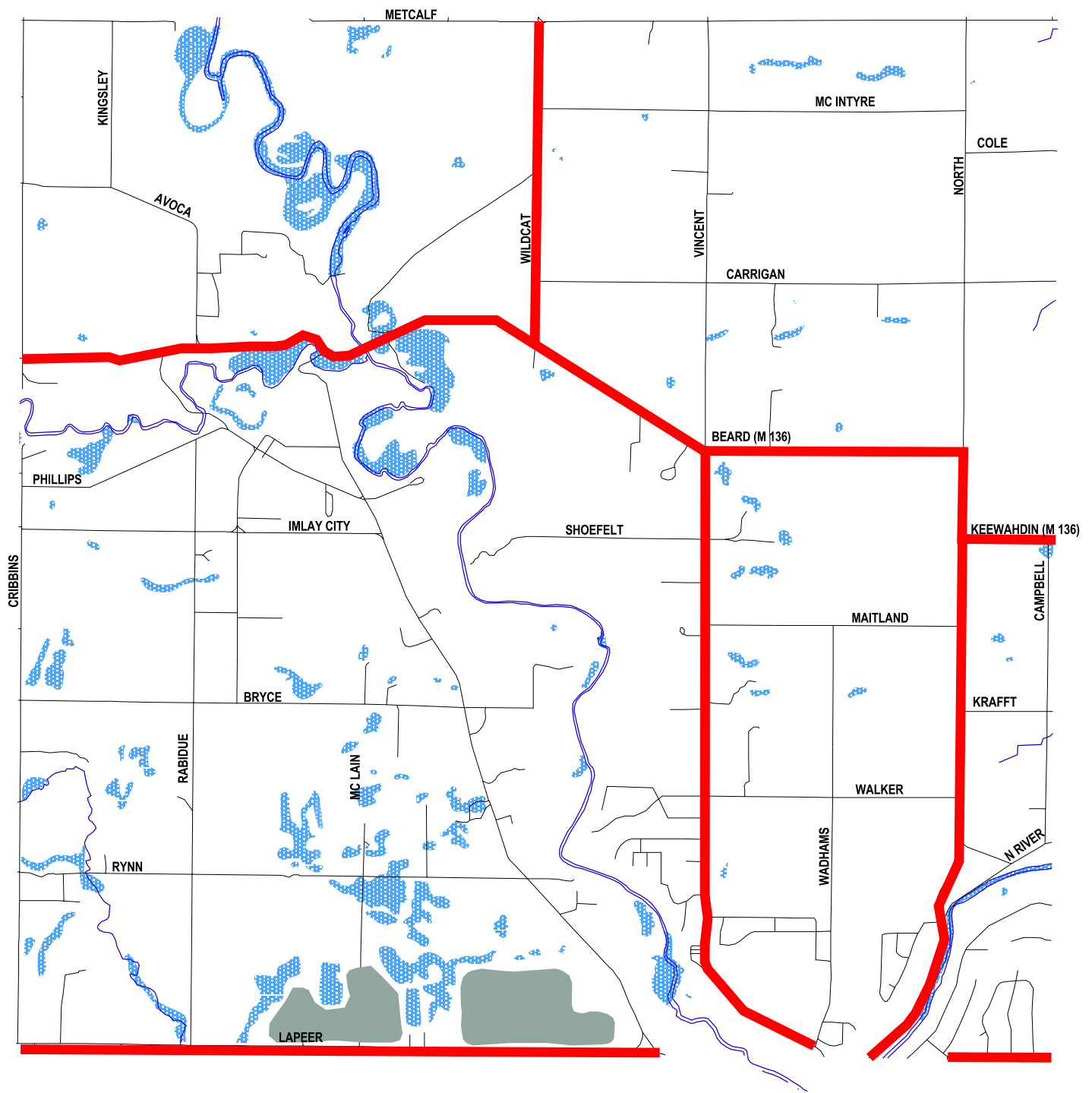
SAND & GRAVEL EVALUATION CRITERIA

CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP S&G 5

SOURCES: CLYDE TOWNSHIP,
ST CLAIR COUNTY, STATE OF
MICHIGAN, ST CLAIR COUNTY
ROAD COMMISSION





- CLASS A ROADS
- PREFERRED SAND & GRAVEL AREAS
- WETLANDS

SAND & GRAVEL EXTRACTION PREFERRED AREAS

CLYDE TOWNSHIP, ST. CLAIR COUNTY

MAP S&G 6

SOURCE:
CLYDE TOWNSHIP



This page left intentionally blank.

APPENDIX C



CLYDE TOWNSHIP RECREATION PLAN

This page left intentionally blank.



INTRODUCTION

This Recreation Plan was prepared by the Clyde Township Parks and Recreation Commission in cooperation with the Township's Planning Commission and has been adopted by the Clyde Township Board of Trustees. The Plan is intended to guide future Township parks and recreation programs, services, facilities, development, operations and maintenance for the five-year term of the Plan. In addition, the Plan is intended to form the basis for future application for recreation grant funding from the Michigan Department of Natural Resources. The Recreation Plan should be viewed as one component of the Township's over-all long-range planning efforts.

Recreation Planning

The ultimate responsibility for expenditure of funds to provide recreational facilities, programs, operations, and maintenance in Clyde Township rests with the Clyde Township Board of Trustees. The Board established the Clyde Township Parks and Recreation Commission in 1987. The Township Board has directed the Recreation Commission to work with the Township Planning Commission to update the 1999-2003 Recreation Plan and advise the Board on the Township's current and future recreation needs.

Recreation Facilities and Programs

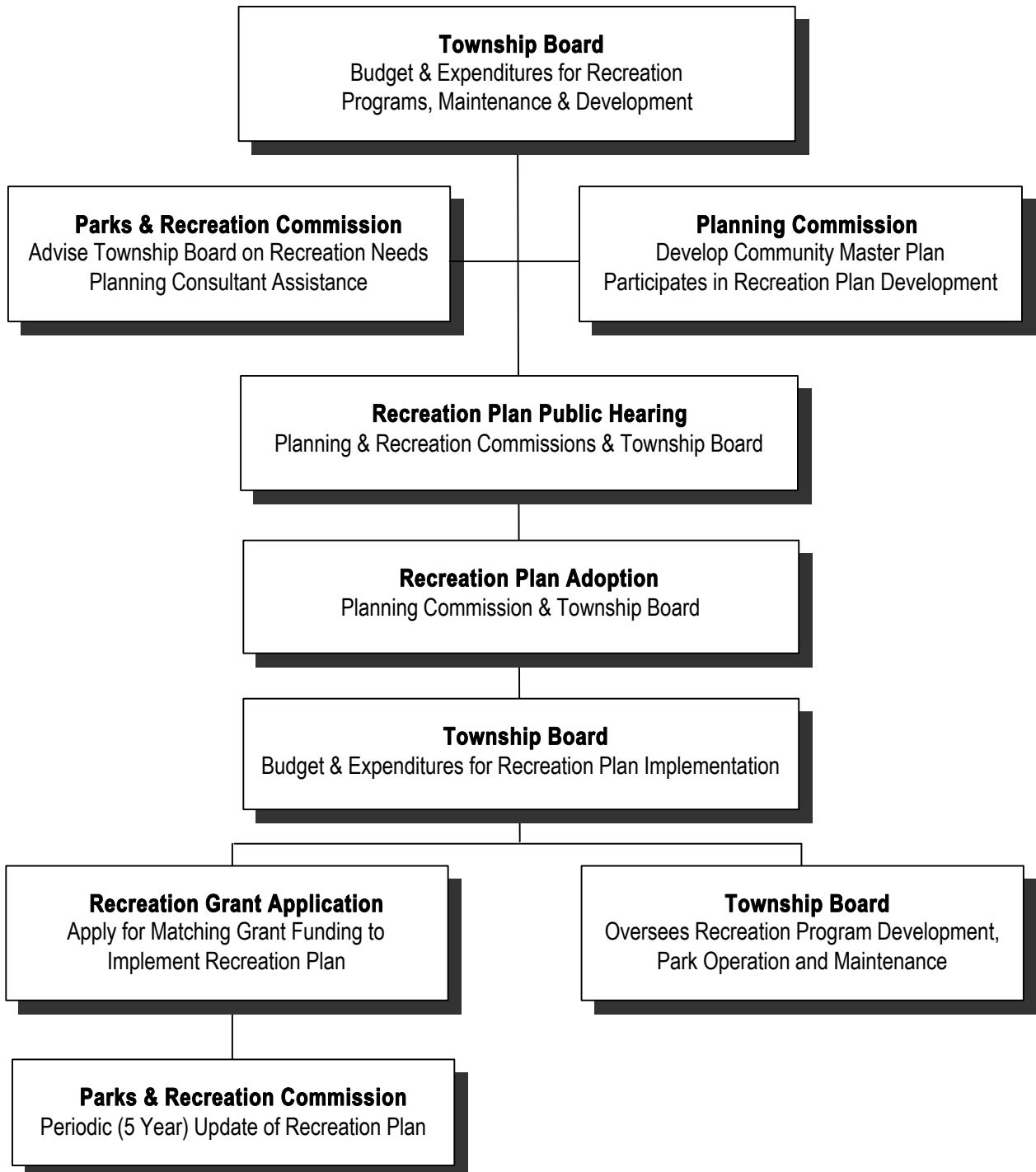
The Township currently owns three parks totaling approximately 38 acres. Maintenance of the existing facilities is accounted for in the Township's Recreation Budget. These properties will be evaluated for recreational uses in this Recreation Plan.

Recreation Budgets

Beginning in 1995, the Township has received funding for recreational purposes from St. Clair County through disbursement of a County-wide recreation millage which was approved by voters in 1994. The recreation millage has returned \$115,367.57 to Clyde Township for use in funding recreation facilities and programs through 2001. This figure does not include the 2002 allocation of \$17,500.00. To-date, the Township has spent \$106,966.00 of this money. Approximately \$33,130.50 was used for playground equipment and improvements to ball fields at Bill Bearss Park and new playground equipment in 2000- 2001. The remainder of the money spent to date, roughly \$73,835.50, was used for the clean up of the former Gun Club Property. Future years' funding from the recreation millage, general fund monies, and grant revenues will form the basis for recreation programs, facilities and maintenance activities called for in this Recreation Plan.

Administrative Structure

The following flow-chart outlines the administrative structure for recreational services and programs in Clyde Township:



This page left intentionally blank.



2 COMMUNITY DESCRIPTION

REGIONAL SETTING

Clyde Township is situated in northeastern St. Clair County. The Township's neighbors include Grant and Burtchville Townships to the north, Kenockee Township to the west, Fort Gratiot and Port Huron Townships to the east, and Wales and Kimball Township to the south. A Regional Location map illustrating Clyde's location in southeast Michigan is provided on the following page.

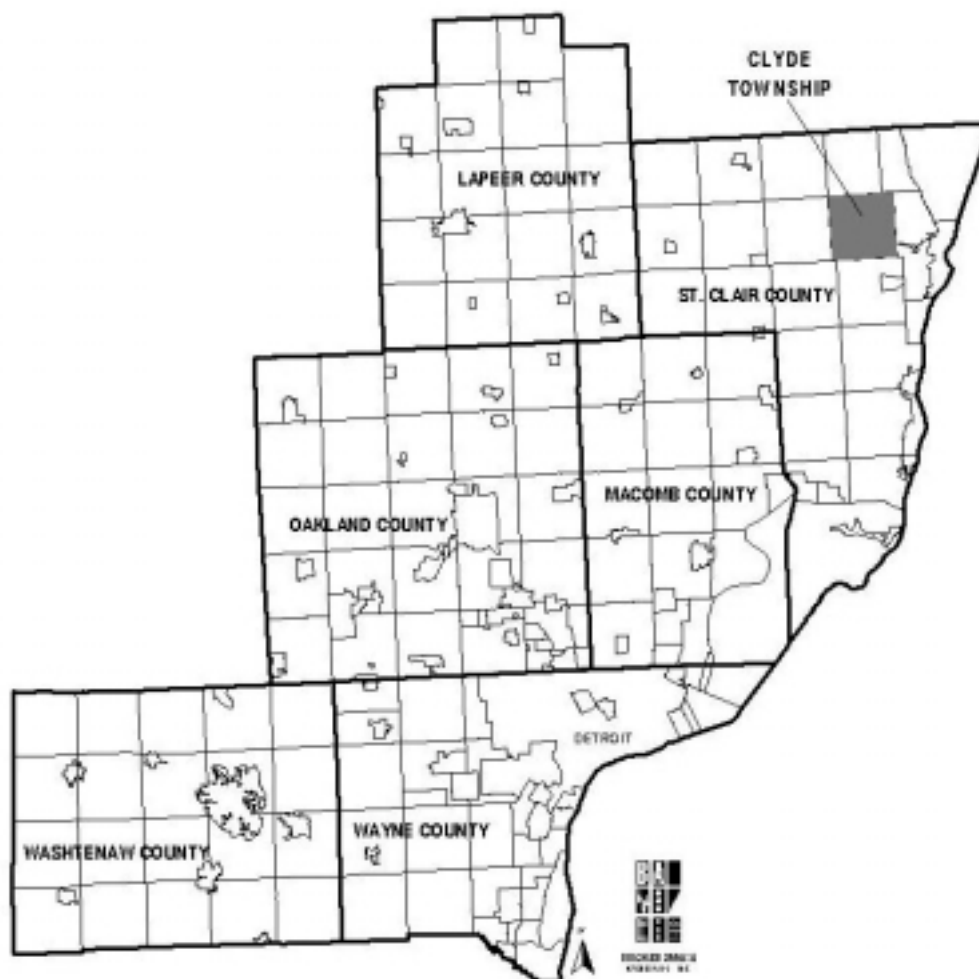
Regional Planning Influences

St. Clair County has been part of the Southeast Michigan Council of Governments (SEMCOG) since its inception in 1969. The SEMCOG region includes six other counties: Livingston, Macomb, Monroe, Oakland, Washtenaw, and Wayne. SEMCOG's activities include land use policy planning, recreation planning, transportation planning, sewer and water service area planning, as well as providing planning-related data, and reviewing local applications for federal and state grants.

At the county level, the St. Clair County Metropolitan Planning Commission carries out County planning functions. The commission is responsible for the County's economic development plan, solid waste management plan, transportation planning, and applications for federal funding for housing rehabilitation.

The St. Clair County Parks and Recreation Commission (PARC) is responsible for implementing the St. Clair County Parks and Recreation Master Plan. The Plan notes the influence and importance of the Port Huron State Game Area, which encompasses over 6,000 acres in Clyde and Grant Townships, and the Wadhams to Avoca Trail – a 9.8 mile section of abandoned CSX railroad right-of-way that is being converted to a pedestrian trail. Goodells Park, a 327 acre centerpiece of County Park property, is located in adjacent Wales Township to the southwest.

Regional Location Map



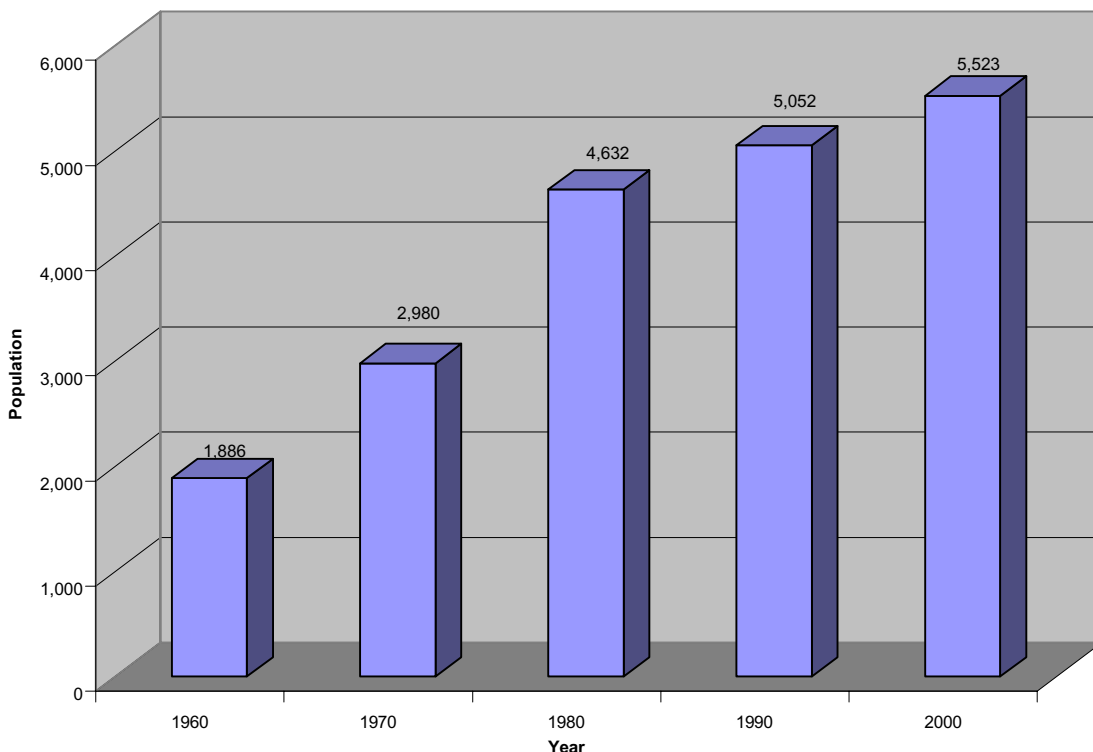
COMMUNITY POPULATION AND POPULATION TRENDS

The population of a community, its composition and characteristics, is a basic ingredient in planning for the future. Historical and current population trends can be used in various ways to illustrate problem areas of development and provide an indication of probable future needs. Proper planning of future recreation facilities must consider both the existing population and population projections.

Population

Figure 1 below shows population growth in Clyde Township from 1960 to 2000. As indicated, the Township population has grown steadily during the past 40 years. The highest rate of growth occurred during the 1960s, when the population increased over 58%. The lowest rate of growth was during the ten-year period from 1980-1990 at 9.07%. The Township's greatest numerical growth occurred in the decade from 1970-1980. During that ten-year period, Clyde Township added 1,652 new residents. The Township's Projections of future population and number of households may be found in Table 3 on page.

Figure 1
Population Growth 1960-2000



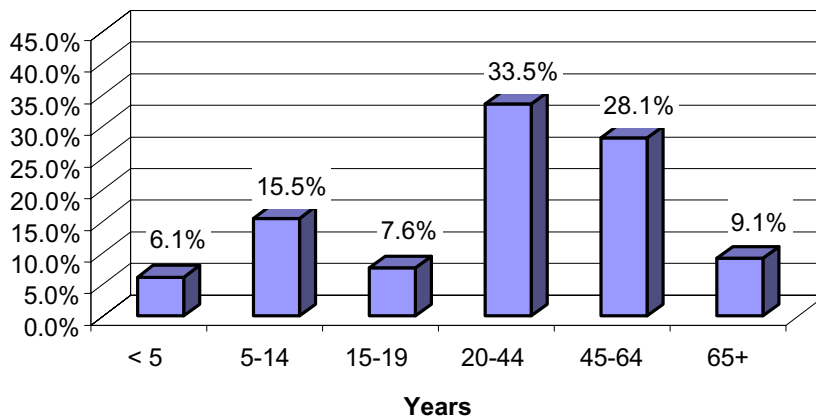
Source: 2000 U.S. Census

The US Census of Population reports there were 5,523 Township residents in 1,931 households as of April 1, 2001. According to SEMCOG, between January, 1991 and December 2001, 432 residential building permits were issued in the Township. This represents a 26.3 % increase in housing units over the past decade.

Age and Senior Citizens

In addition to total population, housing unit and household size, it is also important to examine overall age groupings of a population. The overall age grouping provides figures for the number of school-age children, the size of the workforce (i.e., 20-64 years groups), and size of the elderly population. This data can be used for school enrollment projections, planning for recreation facilities, special services for the elderly, and other governmental services. Figure 2 provides the overall age distribution of the Township's residents.

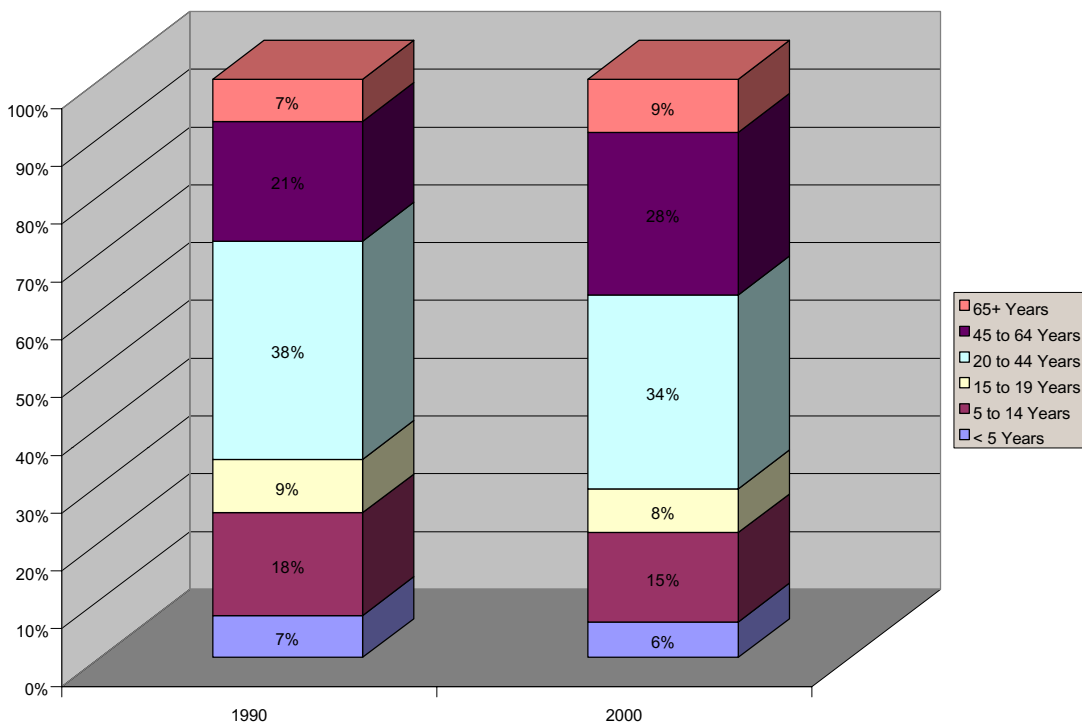
Figure 2
Clyde Township, Age Distribution, 2000



Source: 2000 U.S. Census

Figure 3 compares the overall age distribution of the Township's residents from 1990-2000. The Major Age Group Comparison indicates that the age distribution in the Township had a subtle shift during the 1990s. There was a significant increase in the population 45 years and older - from 28% to 37% - reflecting the impact of baby boomers on the age distribution. There was a decrease in percentage for every age category under 45 years of age. The number of pre-school and school-age children declined slightly, representing 29% of the entire population. These demographics indicate it is critical for the community to plan for the needs of people of all ages, with a particular emphasis needed on programs and facilities for older adults.

Figure 3
Major Age Comparisons, 1990 and 2000, Clyde Township



Source: 1990, 2000 U.S. Census

Gender

The 2000 U.S. Census of Population and Housing indicates that Clyde has nearly an equal number of men and women. The population is 50.6% male and 49.4% female.

Race

Table 2 on the next page indicates the racial breakdown of Clyde Township residents, per the 2000 U.S. Census of Population and Housing.

Table 1
Race, Clyde Township

Race	Number of people	Percentage
White	5,398	97.7%
Black or African American	16	0.28%
American Indian and Alaska Native	19	0.34%
Asian	21	0.38%
Native Hawaiian and Other Pacific Islander	2	0.036%
Some other race	19	0.34%
Two or more races	48	1.0%

Source: 2000 U.S. Census of Population and Housing

Income

The median household income in Clyde Township was \$41,528 in 1989, according to the 1990 US Census of the Population and Housing. The per capita income was \$13,688 from the same source.

LOCATION OF POPULATIONS WITH UNIQUE NEEDS

Persons with Disabilities

Figure 4 below indicates that 4.2% of the Township's 1990 population between the ages of 16 and 64 had a mobility or self-care limitation. Nearly 8% of the 16 to 64 year-old population has a work disability. Of those 65 years and older, the percentage of persons with a mobility or self-care limitation increased to 18.6%. Statistics on mobility and self-care limitations were provided only for residents who are 16 years of age or older, so information is not available for children under 16 years of age who may have special recreation needs. This disability information is important for Clyde to evaluate, so that people who may require special access or special accommodations at the Township's parks and recreation facilities can be served in an appropriate manner. An analysis of the barrier-free status of Clyde's parks and recreation facilities, provided later in this Recreation Plan, helps to ensure that a variety of facilities are accessible to all residents and that the Township is meeting Federal barrier-free standards.

Table 2
**Work Disability Status and Mobility/Self-Care Limitation Status, 1990
Clyde Township**

	Total Persons	% Of Population
Persons 16 to 64 Years of Age	3,319	--
- With Mobility/Self-Care Limitation	138	4.2%
- Work Disability	262	7.9%
Persons 65+ Years of Age	361	--
- With mobility/self-care limitation	67	18.6%

Source: U.S. Census of Population and Housing

Low-Income

According to the 1990 Census of Population and Housing, 5.67% of Clyde Township households were living below the poverty line. This is nearly half the 11.64 % of households in St. Clair County which were living below the poverty line in 1990. Figures from the 2000 Census are not yet available.

Employment Trends

According to the U.S. Census, there were 2,497 Clyde Township residents employed in 1990. Of those persons, 73.4% traveled under 30 minutes, 16.4% traveled between 30 to 60 minutes, and 10.2% traveled over one hour to work. Almost 70% of the employed persons in the Township work within the Managerial

and Professional, Technical, Sales and Administrative Support, and the Operators, Fabricators and Laborers occupational categories. As shown below in Table 3 the employment distribution in Clyde Township is fairly consistent with the distribution of employment in St. Clair County.

Table 3
**Employment by Occupation & Industry
Clyde Township & St. Clair County, 1990***

Occupation	Clyde Township		St. Clair County	
	Number	% of Total	Number	% of Total
Managerial & Professional	540	21.6	12,706	19.8
Technical, Sales, & Administrative Support	737	29.5	17,069	26.6
Service	280	11.2	8,862	14.0
Farming, Forestry, & Fishing	67	2.7	1,697	1.2
Precision Production Craft, Repair	398	15.9	10,466	16.3
Private Household Occupations	12	0.5	120	0.2
Operators, Fabricators, & Laborers	463	18.6	14,074	21.9
TOTALS	2,497	100.0	64,179	100.0

*2000 Census figures on Occupation were not available for this report.

Source: 1990 U.S. Census

According to the Local Area Unemployment Statistics (LAUS Data) released by the Michigan Department of Career Development Employment Service Agency, the 2001 annual average number of individuals in the labor force in Clyde Township was 3,175. The 2001 annual average number of workers in the labor force for St. Clair County was 84,275. Based on this information Clyde Township's share of the workforce represents roughly 3.8% of the total workforce for St. Clair County. The 2001 annual average unemployment for Clyde was 3.8%. This rate is low in comparison to the annual average unemployment rate for the County, which was 6.5%.

FUTURE POPULATION PROJECTIONS

SEMCOG has formulated population projections for the seven county Southeast Michigan region, including St. Clair County, from 2010 through 2030. The following table compares the population levels forecast for Clyde Township by SEMCOG with those contained in the Township Master Plan.

Table 4
Clyde Township Population Projection 2010 - 2030

	2010	2020	2030
SEMCOG	5,812	6,178	6,413
Clyde Township Master Plan	5,800-6,200	6,200-6,600	6,400-6,800

LAND USE PATTERNS

In order to analyze the community and provide a reasonable base from which to make current and long-range recreational planning recommendations, the existing use of land must be surveyed and evaluated. In many cases, the existing land uses have already set a pattern in certain parts of the community. In other areas there may be vacant or underutilized land that can be evaluated for its development, recreation or conservation value.

The following information is based primarily on a parcel-by-parcel survey of land use which took place in May of 2002. The information was recorded on a base map of the Township, checked with 2001 aerial photos, and has been evaluated for accuracy by the Planning Commission.

Land Use Classifications

The following is a description of the various land use classifications used in the survey.

Residential Uses

Single Family Residential

This category includes areas containing single-family or two-family dwelling units and accessory structures.

Multiple Family Residential

Included in this category are all apartments and multi-plex type of units where more than two separate residential units occupy a single building on a lot.

Mobile Home Park

Planned mobile home parks and their related accessory buildings and recreational areas.

Commercial and Industrial Uses

Commercial

Includes land areas where retail sales and service establishments are found. This category also includes office uses.

Industrial

Uses with or without buildings where materials are processed, fabricated, assembled, or manufactured; or where equipment, materials, or wastes are stored out-of-doors are classified as industrial.

Extractive

Includes extractive activities that are primarily carried out upon the surface of the earth through open excavation, such as sand, gravel and rock quarry removal operations.

Public and Other Uses

Public

Includes public uses, such as public parks, schools and government buildings. Also included in this category are cemeteries. Not included was State-owned recreation land.

Quasi-Public

Included in this category are also public and private recreational uses, such as golf courses and parks.

Agricultural

This category includes all land area used for crops and permanent pasture land. If the parcel appeared to have been farmed in the last few years, though not within the last growing season, it was included in this classification.

Open

Included in this category are woodlands, water bodies, open and vacant land.

State

This category includes all land area owned by the State of Michigan including the Game Area along the Black River.

Current Land Use Inventory

Total acreage was calculated for the different land use categories using GIS. The following table provides a breakdown of land use in the Township.

Table 5
Existing Land Use Clyde Township, 2002

LAND USE CATEGORY	Total Area⁽¹⁾ (Acres)	Percent of Total Land Area (%)
Single Family Residential	3,138	14.4
Multiple Family Residential	5	0 ⁽²⁾
Mobile Home Park	2	0 ⁽²⁾
Commercial	141	0.6
Industrial	38	0.2
Extractive	194	0.9
Public	66	0.3
Quasi Public	50	0.2
Agricultural	5,497	25.3
Open Space	8,123	35.9
State	4,514	20.7
TOTAL	21,767	100

(1) Does not include areas outside of parcel boundaries such as Right of Way

(2) Less than 1% of total land area

LAND USE ANALYSIS

This analysis will concentrate on the generalized “pattern” of existing uses with the intent of highlighting land use impacts on the recreational needs of the Township. The development patterns identified on the Existing Land Use Map RP 1 provide a basis from which to begin development of a recreation plan. The arrangement of existing land uses and zoning districts (see Zoning Map), along with future development, will determine where and to what extent recreational facilities and programs will be needed.

Agriculture

As can be seen from the Existing Land Use Map, agriculture is the primary surface use of the land in Clyde Township, aside from Open Space and State -owned land. The other predominant land use is Single-Family Residential scattered throughout the Township along the County road network. There are a few commercial and industrial facilities in the Township; however, these are widely scattered.

From a recreation standpoint, the large amount of agricultural and open land areas translates into a very low residential density throughout the Township. This results in a situation which is not generally conducive to neighborhood oriented park development due to low population concentration in these areas. However, the expansive areas of agriculture are an integral part of the rural “open space” character throughout the majority of the Township. Many of these areas serve as a passive open space network as viewed from the County roads.

Recreation

The Port Huron State Game Area which comprises roughly 21% of the Township's land, Bill Bearss Park and the Township Hall Park are the only areas currently utilized for recreational activities within the Township. Additional Township-owned land adjacent to the Black River is a potential recreation site which will be evaluated further in this recreation plan.

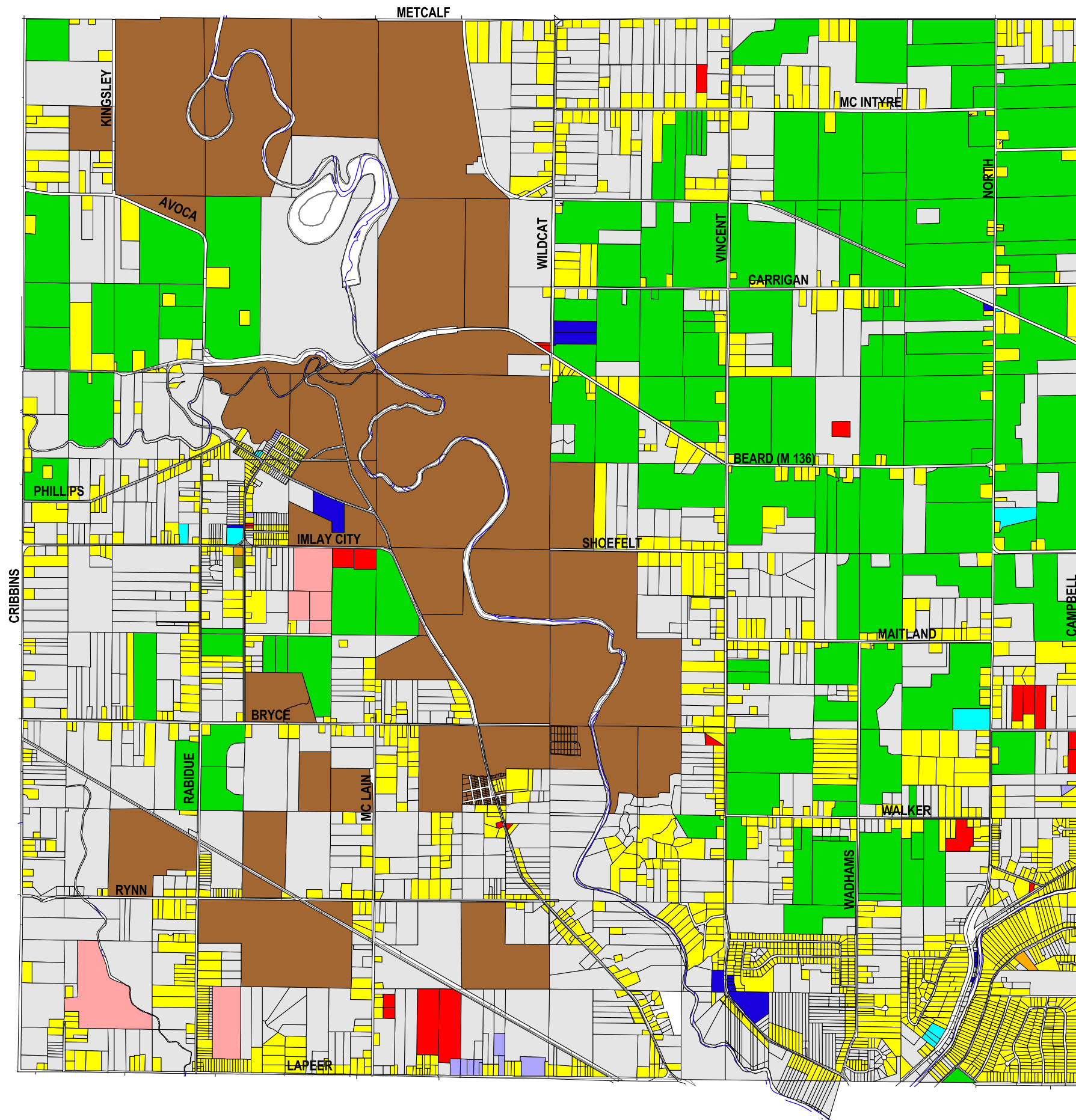
Residential

Single-family residential homes are the predominant land use after agriculture and open space. Residences are primarily scattered along the County road network. In addition, one small mobile home development is located on the east side of Brott just south of M-21. Two small multiple family residential developments were identified within the Township.

Commercial and Industrial

Commercial and industrial uses are minimal throughout the Township. The existing commercial facilities are widely scattered and do not result in a concentration of commercial land uses within the Township. Industrial uses within the Township are primarily concentrated along the North side of Lapeer Road, east of McLain; other industrial type uses are scattered throughout the Township.

This page left intentionally blank.



- AGRICULTURAL
- SINGLE FAMILY RESIDENTIAL
- MULTIPLE FAMILY RESIDENTIAL
- MOBILE HOME PARK
- COMMERCIAL
- INDUSTRIAL
- EXTRACTION
- PUBLIC
- QUASI PUBLIC
- STATE
- OPEN SPACE

EXISTING LAND USE

CLYDE TOWNSHIP, ST. CLAIR COUNTY

This map shows generalized existing land use patterns, reflecting how land is used today, (May 2002). It is not intended to be a precise, parcel by parcel land survey. Data sources include aerial photography and a drive-by windshield analysis.

MAP RP 1



This page left intentionally blank.

PHYSICAL RESOURCES

Topography

Clyde Township's topography varies by 197 feet from the lowest point to the highest point. The highest point of 787 feet is located west of the Black River Valley on the west side of the Township and the lowest point of 590 feet is located in the Black River Valley near the southeast corner of the Township. The attached USGS Quad Map illustrates the Township's topography. While much of the Township is relatively flat, the Black River Valley has some hills with greater topographic relief. Areas with relatively flat topography in the Township make it both logistically and financially easier to provide active recreational opportunities, including ballfields. The hilly areas provide a natural, aesthetic amenity for more passive recreation uses, such as a trail system.

Wetlands Woodlands and Wildlife Resources

As illustrated on the accompanying maps, Clyde contains a significant number of woodlands and wetlands. Woodlands are concentrated near the Port Huron State Game Area which includes large wooded areas on either side of the Black River. Wetlands are scattered throughout the Township although many are located along the Black River corridor. The majority of the wetlands are categorized as forested wetlands. Providing access to these natural areas through the development of passive recreational activities, such as a trail system, will preserve these areas for future generations while assisting to meet the recreational needs of the community.

The game area serves as an important migratory stop over for many species of birds on their way to northern nesting grounds. It is also an important breeding area for at risk species such as Cerulean and Golden-winged Warbler, Wood Thrush and possibly Bald Eagle. Several southern species normally not found in Michigan such as Hooded Warbler and Louisiana Water Thrush nest here. The woods are also home to game birds such as Ruffed Grouse and introduced Wild Turkey. Ring-necked Pheasant and Northern Bobwhite Quail can be found in surrounding fields as can the threatened Henslow's Sparrow.

Mammals commonly seen in the area include White-tailed Deer, Gray and Red Fox, Muskrats, Beaver, Coyote, Red, Gray and Fox Squirrels, Cottontail Rabbits, Mink and several species of Bat. MDNR surveys have revealed that the areas bordering the Black River are home to the protected Blandin's Turtle and other reptiles and amphibians. The portion of the Black River flowing through the game area also harbors one of the few remaining colonies of the federally endangered Riffle-shell Mussel. Endangered plants including Painted Trillium have been inventoried in the game area.

Geology

As shown on the Surficial Geology Map, the eastern portion of Clyde Township is primarily composed of end moraines of fine-textured glacial till. This material which consists of deposits of nonsorted glacial debris was left as glaciers retreated from the area. The fine textured material is not very porous and does not result in significant groundwater recharge. A small band of end moraines of coarse-textured till exists in the southwest quadrant of the Township. The coarse-textured till can be more porous due to the larger size of the material, which was deposited. As illustrated by the map, three small pockets of dune sand are located within the southern portion of the Township, which typically consist of pale brown fine to medium quartz sand with some heavy minerals.

Lacustrine clay and sand occurs from the northwest quadrant of the Township along the path of the Black River. Small pockets of lacustrine clay and sand exist near the northeast and southwest corners of the Township. These materials typically underlay extensive, flat, low-lying areas formerly inundated by glacial Great Lakes. They were once deposited in lake water and exposed by the decreasing water level or the elevation of land.

Soils

The Soils Map identifies the different soils existing within the Township. Sand and loamy sand soils existing in the southwest portion of the Township are poorly filtered and susceptible to wetness and ponding. In general, the loam, clay, silt and muck soils prevalent throughout the Township present severe limitations to development without sanitary sewer service. This poses only a slight limitation with regard to recreational uses and facilities due to the limited need for septic facilities associated with many recreational uses. Passive recreational activities such as nature areas and trails will, in general, create little if any need for septic systems. Active recreational facilities such as ballfields and the like will necessitate on-site soil investigations to insure adequacy of soils and septic design for the needed sanitary facilities for participants and spectators.

The Prime Agriculture Map identifies areas of the Township that have prime agricultural soils. As this map illustrates, the majority of the land east of the Black River contains soils that are prime for agricultural purposes. The northwest corner of the Township also contains a significant amount of prime agricultural soils. This is important to note when making decision regarding future land uses throughout the Township.

Transportation Systems

Two-lane unpaved roads characterize many of the existing roads within Clyde Township. Roads that are paved include Wadhams, North Street, Wildcat, Beard

Road (M-36), Vincent south of Beard and portions of Imlay City and Abbotsford Roads.



Climate

Clyde Township has a climate similar to the cities of Flint (approximately 65 miles to the west) and Detroit (70 miles to the southwest). While the daily temperature in Clyde Township will likely be slightly lower than in the Cities of Detroit and Flint, any variation in temperature and precipitation is not significant enough to impact the recreational needs and opportunities of the community. Table 9 provides normal temperature and precipitation for the winter month of January, spring month of April, summer month of July, and fall month of October.

Table 6
**Normal Temperature and Precipitation
Detroit and Flint, 1961-1990**

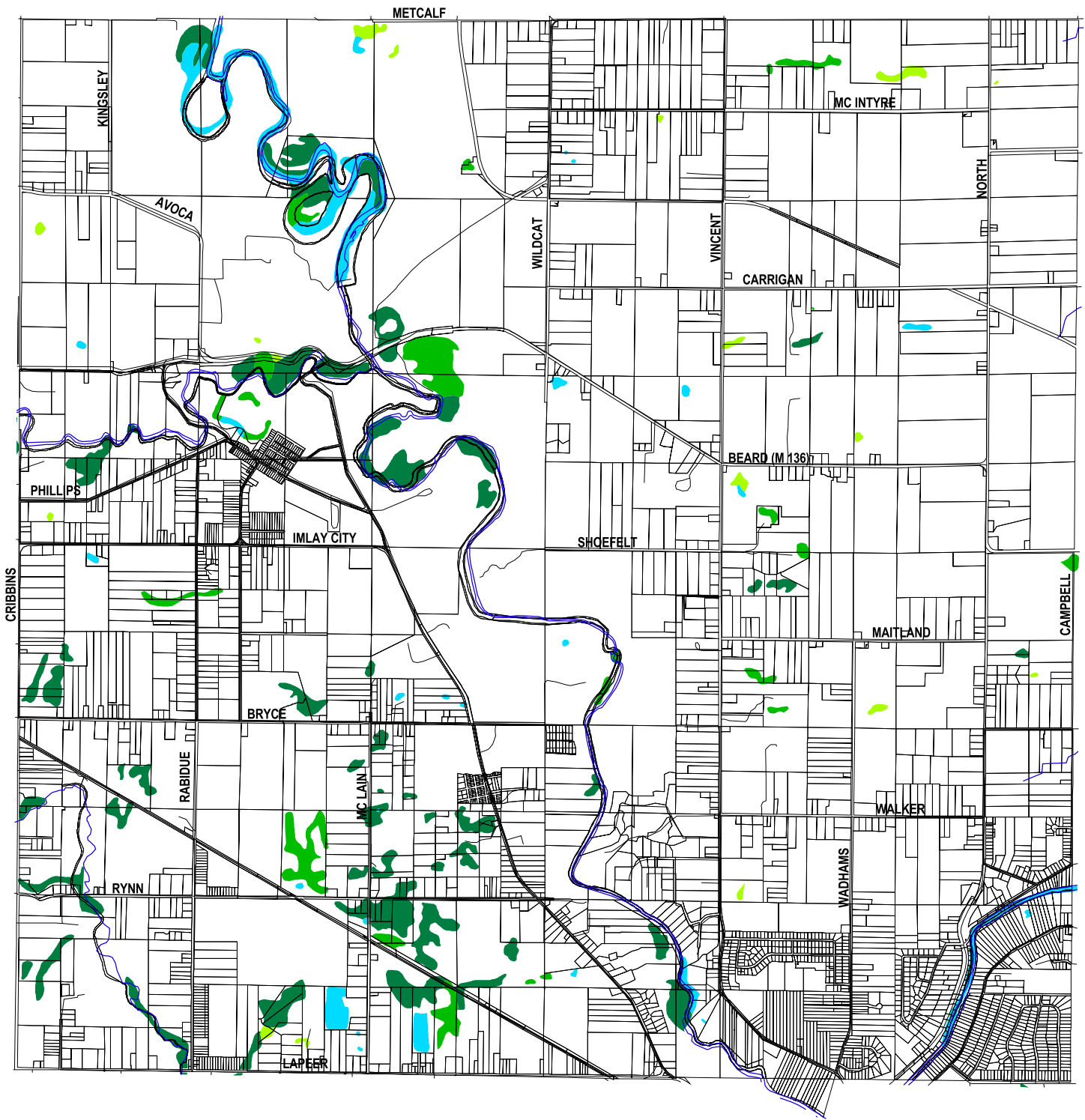
	January		April		July		October	
	Detroit	Flint	Detroit	Flint	Detroit	Flint	Detroit	Flint
Normal Daily Max. Temperature	30°	29°	58°	60°	83°	82°	62°	60°
Normal Daily Min. Temperature	16°	14°	37°	36°	61°	60°	41°	41°
Normal Monthly Precipitation*	1.76	1.39	2.95	2.94	3.18	2.71	2.10	2.18

***Note:** Normal Monthly Precipitation is measured in inches and includes the liquid water equivalent of snowfall.

Source: National Oceanic and Atmospheric Administration (NOAA)

Zoning

Clyde Township's zoning ordinance includes 11 zoning classifications. There are seven residential zoning classifications, including one-family residential districts, two-family residential districts, a multiple-family residential district, and a mobile home park district. There are two retail or business districts. The remaining zoning districts include limited manufacturing and open space. A copy of the Zoning Map, adopted April 1, 1991, is found at the end of this chapter.



WETLANDS

CLYDE TOWNSHIP, ST. CLAIR COUNTY

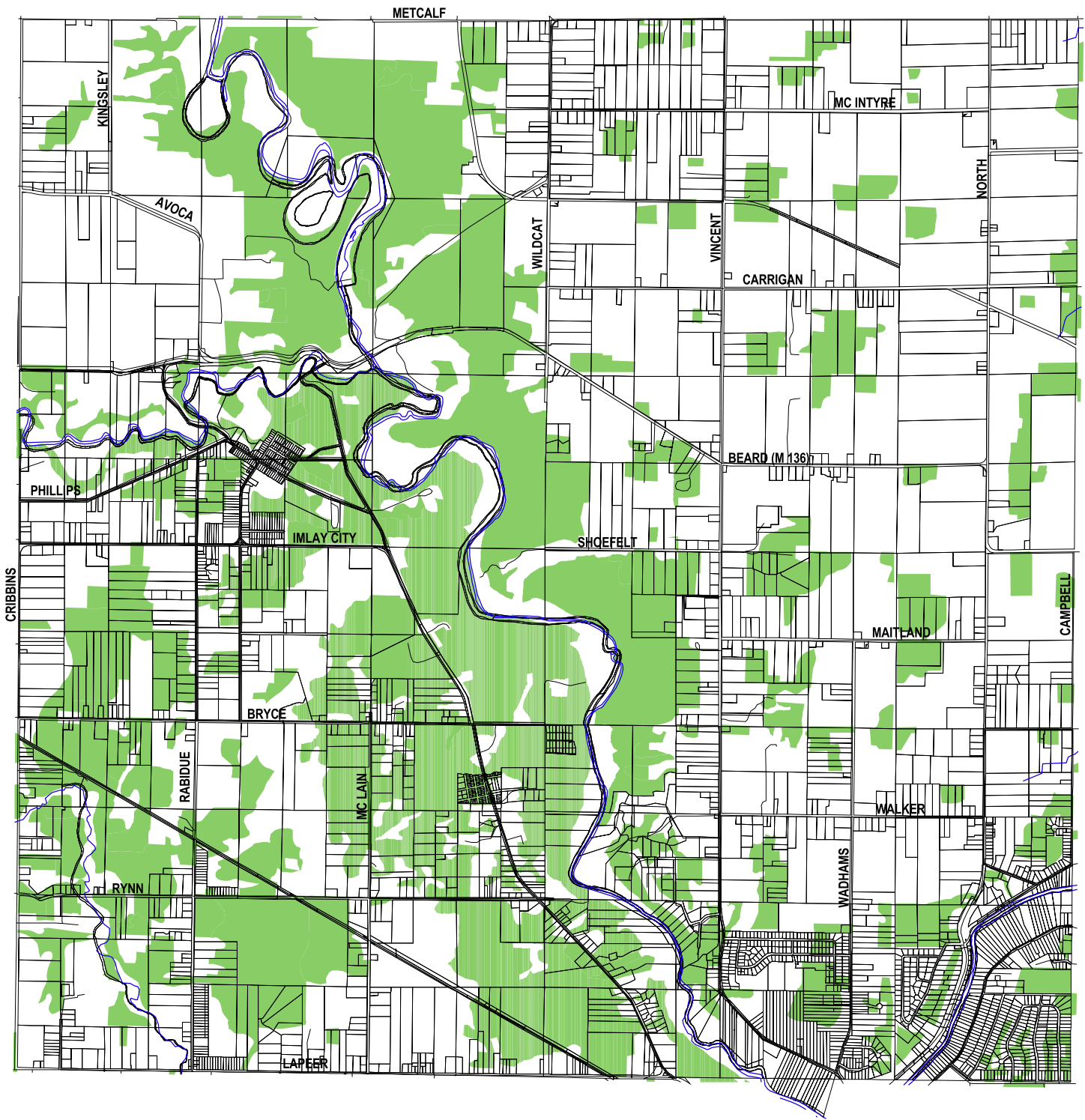
- EMERGENT
- SCRUB-SHRUB
- FORESTED
- OPEN WATER/UNKNOWN BOTTOM

MAP RP-3

SOURCE:
NATIONAL WETLANDS
INVENTORY



**BIRCHLER ARROYO
ASSOCIATES, INC.**



WOODLANDS

CLYDE TOWNSHIP, ST. CLAIR COUNTY

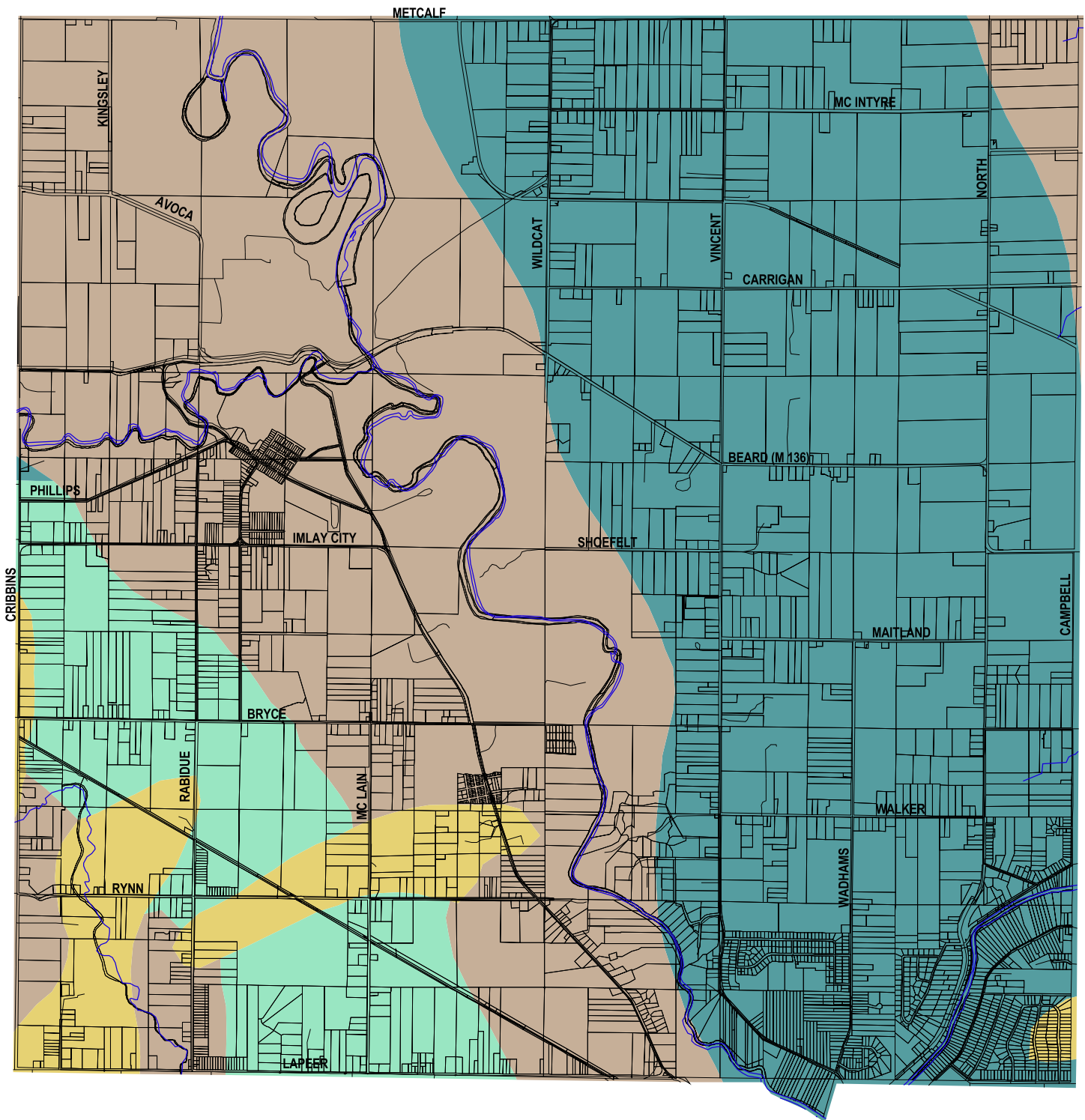
MAP RP-4

SOURCE:
MIRIS



BIRCHLER ARROYO
ASSOCIATES, INC.

 WOODLANDS



SURFACE GEOLOGY

CLYDE TOWNSHIP, ST. CLAIR COUNTY

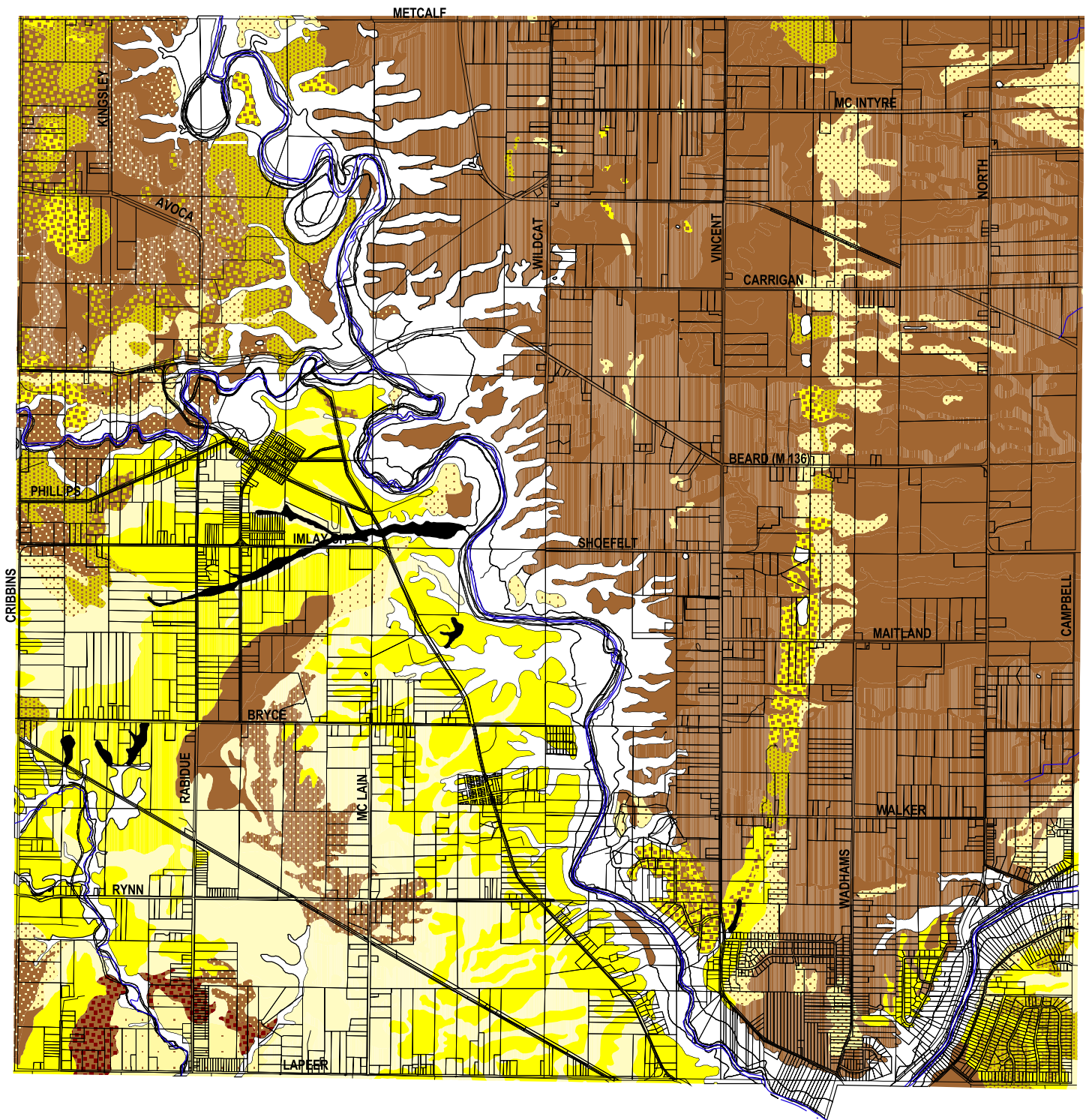
- DUNE SAND
- END MORAINES OF COARSE-TEXTURED GLACIAL TILL
- END MORAINES OF FINE-TEXTURED GLACIAL TILL
- LACUSTRINE CLAY AND SAND

MAP RP 5

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BIRCHLER ARROYO
ASSOCIATES, INC.



SOILS

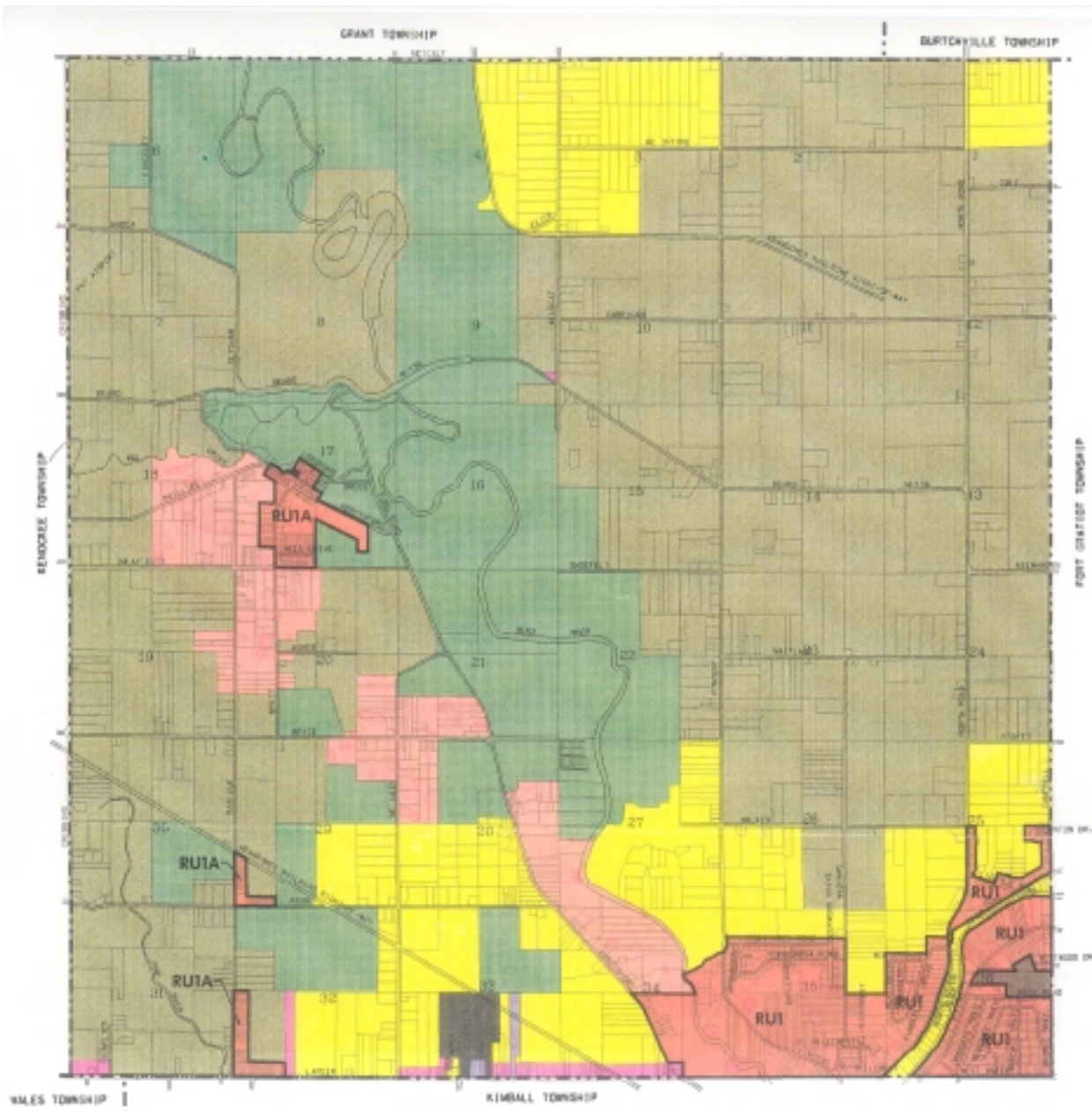
CLYDE TOWNSHIP, ST. CLAIR COUNTY






MAP RP-6

SOURCE:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BIRCHLER ARROYO
ASSOCIATES, INC.



- | | |
|---|---------------------------------------|
|  | RA RESIDENTIAL AGRICULTURE |
|  | RSF RESIDENTIAL SUBURBAN FARMS |
|  | RE RESIDENTIAL RURAL ESTATE |
|  | RU1 RESIDENTIAL URBAN |
|  | RU1A RESIDENTIAL URBAN |
|  | RU2 RESIDENTIAL URBAN MULTIPLE FAMILY |

- | | |
|---|--------------------------|
|  | MHP MOBILE HOME PARK |
|  | C-1 LOCAL COMMERCIAL |
|  | C-2 GENERAL COMMERCIAL |
|  | LM LIMITED MANUFACTURING |
|  | OS OPEN SPACE |

THIS ZONING MAP WAS PREPARED BY THE TOWNSHIP ENGINEER AND IS SUBJECT TO THE APPROVAL OF THE BOARD OF TOWNSHIP COMMISSIONERS. IT IS HEREBY CERTIFIED THAT THE SAME IS CORRECT AND TRUE TO THE BEST OF HIS KNOWLEDGE AND BELIEF.

DATE: 10/10/2018

BY: [Signature]

TOWNSHIP ENGINEER

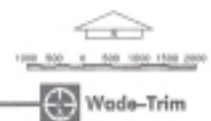
REVIEWED: 10/10/2018

REVIEWED: 10/10/2018

MAP RP-7

ZONING DISTRICTS MAP

CLYDE TOWNSHIP, ST. CLAIR COUNTY, MICHIGAN



This page left intentionally blank.



3 RECREATION FACILITIES INVENTORY

LOCAL RECREATION FACILITIES

Determination of existing recreational facilities and programs is an essential step in the recreation planning process. This section inventories and describes the various recreational facilities available to Township residents within the Township and throughout the region. Map 8 indicates the location of many of the local recreation facilities described below.

Clyde Township

The Township currently owns a total of 39.36 acres of recreational property in four locations within the Township. Bill Bearss Memorial Park consists of 20 acres located on the east side of Wildcat Road. The Township Hall Park is 1 acre located adjacent to the Township Hall on Vincent Road. The Township also owns an additional 17-acre recreational area adjacent to the Township Hall Park, which was formerly operated as a private gun club. Approximately 1.36 acres of City-owned property adjacent to the Black River could be also be used for recreational purposes. These properties will be evaluated in this Plan for recreational uses. The facilities and their major features are listed in Table 7 on the following page. In addition to the Township owned recreational property the Port Huron State Game Area and the Wadhams to Avoca Trail are also located within the Township for use by local residents.

Table 7
Recreation Facilities, Clyde Township

Facility	Amenities
Bill Bearss Memorial Park	Playground Equipment, Tennis Courts, Pavilion, Bike Rack, Portable Restrooms, 6 Ball Diamonds, Equipment Storage, Concession Stand, Water
Township Hall Park	Playground Equipment, Tennis Courts, Pavilion, Cooking Grills, Bike Rack, Portable Restrooms
Clyde Township Recreational Area*	Former Gun Club – Black Top Surface (In Line Skating Area), Basketball Court
Black River Property	Undeveloped

Burtchville Township

Available facilities at the Burtchville Township Park include baseball diamonds, picnic shelters, playground equipment, and a beach.

Fort Gratiot Township

The Township has two parks within its boundaries. The facilities and their major features are listed in Table 8 below.

Table 8
Recreation Facilities, Fort Gratiot

Facility	Amenities
River Front Park	Tennis Courts, Baseball Diamonds, Basketball Courts, Picnic Area, Boat Launch, Fishing
State Road Park	Playground Equipment, Baseball Diamonds, Track & Field

Kenockee Township

Kenockee Township has one 20-acre park adjacent to the Township Hall, which they hope to improve with additional amenities.

Kimball Township

Kimball Township has two Township parks, Park 1 on Howard Road and Park 2 on Henry Road. The facilities and their major features are listed in Table 9 below.

Table 9
Recreation Facilities, Kimball Township

Facility	Amenities
Park 1	Picnic Shelter, Playground Equipment, Baseball Fields, Restrooms
Park 2	Picnic Shelter, Playground Equipment, Portable Restrooms

Port Huron Township

Port Huron Township has six recreational facilities. The facilities and their major features are listed in Table 10 below.

Table 10
Recreation Facilities, Port Huron Township

Facility	Amenities
Lion's Den	Picnic Area, 4 Fishing Platforms, Playground Equipment, Lion's Club Building
Water Street Park	Camping, Tennis Courts, Playground Equipment, Picnic Area
Port Huron Twp. Campground	Facilities for 150 RV's
Memorial Beach Park	Baseball Diamonds, Public Restrooms, Playground Equipment, Picnic Area, Soccer Fields, Fishing, Basketball Courts
40 th Street Pond	Fishing, Picnic Area, 65 acre pond Pavilion / Gazebos
Hoover School	Pavilion / Picnic Area, Playground Equipment, Basketball Court

School Facilities

Schools within the area also provide a range of recreational opportunities. Facilities at the nearest facilities are listed in Table 11 below.

Table 11
Recreation Facilities, Schools

District	School	Facilities
Port Huron School District	Indian Woods Elementary	Baseball Field, Basketball Hoops, Playground Equipment
	Kimball Elementary	Playground Equipment, Ball Field
	Chippewa Middle	2 Baseball Fields, Basketball Court
	Fort Gratiot Middle	2 Baseball Fields
	Sparlingville Elementary	Playground Equipment, Ball Field, Soccer Field

COUNTY FACILITIES

St. Clair County

The County currently owns one park site, Goodells Park in Wales Township. Park amenities include a playground, BMX bicycle track, model airfield, derby pit, butterfly garden, nature area, garden center, picnic pavilions, equestrian areas, animal barns, community center, farm museum, visitors center, and special events buildings. The County also owns the Wadhams to Avoca Trail. While the 9.82-mile trail is currently unimproved, the County is planning to pave the trail in the future.

The Bridge to Bay Trail is a cooperative trail program involving the St. Clair County Parks and Recreation Commission and local units of government along the County's shoreline. When complete, the trail will extend from the County's northern border,

under the Blue Water Bridge, to Anchor Bay. Individual communities are responsible for designating, developing, maintaining, regulating and policing trail routes; however, St. Clair County provides a portion of the funding for trail development and construction.

The County Parks and Recreation Commission (PARC) is funded by a county recreation millage. This funding is used by the County to develop and maintain County recreational facilities. In addition, twenty five (25) percent of the millage is returned to local communities in the County for recreational uses on a per capita basis. This has resulted in an infusion of money for recreational planning and facility development with St. Clair County at the county and local level.

Macomb County

The County owns and operates two parks. Facilities at each are listed in Table 12 below.

Table 12
Recreation Facilities, Macomb County

Facility	Location	Size	Amenities
William Tucker County Park	Harrison Township	30 acres	Picnic facilities, Fishing
Freedom Hill County Park	Sterling Heights	100 acres	Bocce ball, Volleyball, Picnic shelter, Bandstand / dance floor, Pavilion, Amphitheater with lawn seating, Paved lighted parking, Radio controlled race car track, Playground / tot lot, Concessions, Restroom facilities, Ethnic festivals, Boat shows, Auto shows, Holiday festivals

Lapeer County

Three parks are owned and operated by the County. Facilities at each are listed in Table 13 below.

Table 13
Recreation Facilities, Lapeer County

Facility	Location	Size	Amenities
General Squier Park	Dryden Township		Baseball Diamond, Picnic area, Nature / skiing trails, Sledding, Meeting Halls, Restrooms
Seven Ponds Nature Center	Dryden Township		Interpretive center, Library & Bookstore, Nature Trails
Torzewski County Park	Oregon Township		Water slide / swimming, Picnic area with shelters, Boat rental, Nature trails, Baseball Diamond

REGIONAL RECREATIONAL FACILITIES

Huron Clinton Metropolitan Authority

The Huron Clinton Metropolitan Authority (HCMA), a regional park agency, owns and operates three parks in St. Clair County.

Table 14
HCMA Recreation Facilities, St. Clair County

Facility	Location	Size	Amenities
Metrobeach Metropark	Harrison Township	770 acres	Picnic areas / shelters, Concessions, Fishing, Playgrounds, Ice skating, Tot lots, Volleyball, Cross-country skiing, Basketball, Nature interpretive center, Biking / hiking / nature trails, Golf (Par 3), Multi-use play fields, Swimming beach and wave pool, Marina and Boat Launch
Wolcott Mill Metropark	Ray Township	2,380 acres	Historic grist mill, Interpretive program, Open summer only, 200 acres currently open to public
Stony Creek Metropark	Shelby Township	4,461 acres	Picnic areas / shelters, Golf (Regulation), Fishing, Boat Launch, Biking / hiking / nature trails, Ice skating, Multi-use play fields, Nature interpretive center, Playgrounds, Swimming beach, Cross-country skiing

Public Boat Launches

Table 15 includes MDNR or other public boat launches in the area.

Table 15
Public Boat Launches

Boat Launch	County	Access Provided To:
Algonac Municipal Ramp	St. Clair	N. Channel, St. Clair River
Algonac State Park	St. Clair	St. Clair River
Ames	St. Clair	Middle Channel, St. Clair River
Deckers Landing	St. Clair	N. Channel, St. Clair River
Fair Haven	St. Clair	Lake St. Clair
I-94 Bridge Municipal Ramp	St. Clair	Black River
Marine City	St. Clair	St. Clair River
Snooks	St. Clair	Middle Channel, St. Clair River
St. Clair Municipal Ramp	St. Clair	Pine River
12 th Street Municipal Ramp	St. Clair	Black River
Walkers Flats Impoundment	St. Clair	Black River
Brandenburg Memorial Park	Macomb	Lake St. Clair
Selfridge Boat Launch	Macomb	Lake St. Clair
Harley Ensign Memorial Launch	Macomb	Clinton River / Lake St. Clair
Metro Beach	Macomb	Lake St. Clair
Stony Creek Metropark	Macomb	Stony Creek Lake
Nepessing Lake	Lapeer	Nepessing Lake
Minnewanna Lake	Lapeer	Minnewanna Lake
Big Fish Lake	Lapeer	Big Fish Lake
Davidson Lake	Lapeer	Davidson Lake
South Branch	Lapeer	Flint River
Sawdel Lake	Lapeer	Sawdel Lake
Long Lake	Lapeer	Long Lake
Watts Lake	Lapeer	Watts Lake

State Parks and Recreation Areas

The State of Michigan owns and operates the following facilities in the region:

Table 16
State Recreation Facilities

Facility	Location	Amenities
W.C. Wetzel State Park	Lenox Township Macomb County	Model airplane landing strip, Hiking, Hunting, Pavilion at landing strip, Cross-country skiing, Picnic tables, Viewing area, Snowmobiling
Algonac State Park	Clay & Cottrellville Townships St. Clair County	Boat launches, Hunting, Fishing, Nature trails, Snowmobiling, Hiking, Picnic shelters, Cross-country skiing, Camping, Playgrounds / tot lot
Bald Mountain Recreation Area	Orion Township Oakland County	Cabins, Snowmobiling, Hunting, Picnic tables and shelters, Cross country skiing, Fishing, Playgrounds, Hiking / nature trails, Boat launch, Concessions, Target shooting / skeet, Swimming
Lakeport State Park	Burtchville Township St. Clair County	Camping, Cabins, Interpretive program, Picnic tables and shelters, Playgrounds, Hiking trails, Concessions, Swimming, Fishing
Lapeer State Game Area	Lapeer County	Hunting, Hiking
Metamora Hadley State Recreation Area	Hadley Township	Camping, Nature /Cross Country skiing trails, Picnic areas / shelters, Swimming
Port Huron State Game Area	Clyde & Grant Townships St. Clair County	Hunting, Hiking, Fishing
St. Clair Flats Wildlife Area	Harsen's Island, Clay Township, St. Clair County	Hunting, Boating, Fishing, Nature walks / study
St. John's Marsh Wildlife Area	Clay Township St. Clair County	Wildlife viewing, Hunting

OTHER RECREATION FACILITIES

Golf Courses and Driving Ranges

There are twenty-two public golf courses and five private golf clubs within St. Clair County.

Campgrounds

There is one private campground within Clyde Township. In addition to the camping facilities at the State Parks listed above, there are five private campground facilities within St. Clair County.

Marinas

According to a 1994-95 study done by Michigan State University Department of Park, Recreation and Tourism Resources, there are sixty-four marinas providing 5,310 slips, 594 transient slips and 145 day-only slips in St. Clair County.

Nature Preserves

The Michigan Nature Association (MNA), a private non-profit organization, owns and maintains several nature preserves in St. Clair and Macomb Counties. These are listed in Table 17 below.

Table 17
**Michigan Nature Association Preserves
Macomb, Lapeer, Sanilac and St. Clair Counties**

Preserve	County	Size
Wilcox - Warnes Memorial Nature Sanctuary	Macomb	44.8 acres
Myron & Isabel Zucker Memorial Nature Sanctuary	Lapeer	70 acres
Birch Creek Nature Sanctuary	Sanilac	28 acres
James and Alice Brennan Memorial Nature Sanctuary	St. Clair	118 acres
Alton T. McGraw Memorial Plant Preserve	St. Clair	4.2 acres
Stephen M. Polovich Memorial Plant Preserve	St. Clair	17.5 acres
Big Hand Road Plant Preserve	St. Clair	5.4 acres
Trillium Trail Nature Sanctuary	St. Clair	20.0 acres
Alice W. Moore Woods Nature Sanctuary	St. Clair	66.2 acres
Elmore P. and Irene Jasper Woods Nature Sanctuary	St. Clair	48.6 acres
St. Clair Lakeplain Forest Nature Sanctuary	St. Clair	69.0 acres
Red Wing Acres Nature Sanctuary	St. Clair	40.0 acres

The Michigan Chapter of the Nature Conservancy also has nature preserves throughout the State. Dickinson Island is the closest in proximity to Clyde Township. This 7.5-acre preserve is now owned by the State and is a part of the St. Clair Flats preserve area on Dickinson Island in Clay Township.

Quasi-Public Recreational Facilities

The Ruby Lion's Club is the only Quasi-Public Recreational Facility within the Township. Amenities available at the site include a public meeting room, softball diamond, tennis court and horseshoe pit.

BARRIER FREE ANALYSIS

A critical component in planning for recreation facilities is providing barrier-free access in order to accommodate the needs of physically-challenged visitors. Barrier-free access includes, but is not limited to, ensuring adequate barrier-free parking spaces, sidewalks, trails, picnic tables, and playground equipment are provided for renovated or new recreational facilities. Currently, the parks and recreation facilities in Clyde Township have very little, if any, barrier-free areas. Existing parks have a number of deficiencies in the area of barrier-free access. This analysis does not include a review of the Black River Property as it is currently undeveloped. The following is a list of general deficiencies noted from a barrier-free analysis inventory completed in May of 2002. The inventory of recreation areas which are not in compliance with barrier-free standards are general in nature taken from The Accessibility Checklist, a guidebook based on the Uniform Federal Accessibility Standards (UFAS) and the codes and standards of the ADA Guidelines. This inventory will be incorporated into the overall Action Program.

Bill Bearss Park

GENERAL OBSERVATIONS

- Parking
 1. Barrier-free spaces must be appropriately identified.
 2. Parking lot surface not accessible to those in wheelchairs.
- Pathways
 1. Barrier-free route not provided from parking to picnic shelter.
 2. Barrier-free access to bleachers is not provided.
 3. Barrier-free route to the Tennis Courts is not provided.
- Playgrounds
 1. Play Equipment is not compliant with ADA standards.
 2. Surfacing within 8' of play equipment does not meet Consumer Products Safety Commission (CPSC) requirements.
- Picnic Area
 1. Garbage cans are not on hard surface pads adjacent to pathways
 2. Picnic tables do not meet barrier free requirements.

Township Hall Site

GENERAL OBSERVATIONS

- Parking
 1. Barrier-free spaces must be appropriately identified.
 2. Stall width 8'6" required.
- Restrooms
 1. Barrier-free door not available on restroom inside Township Hall.

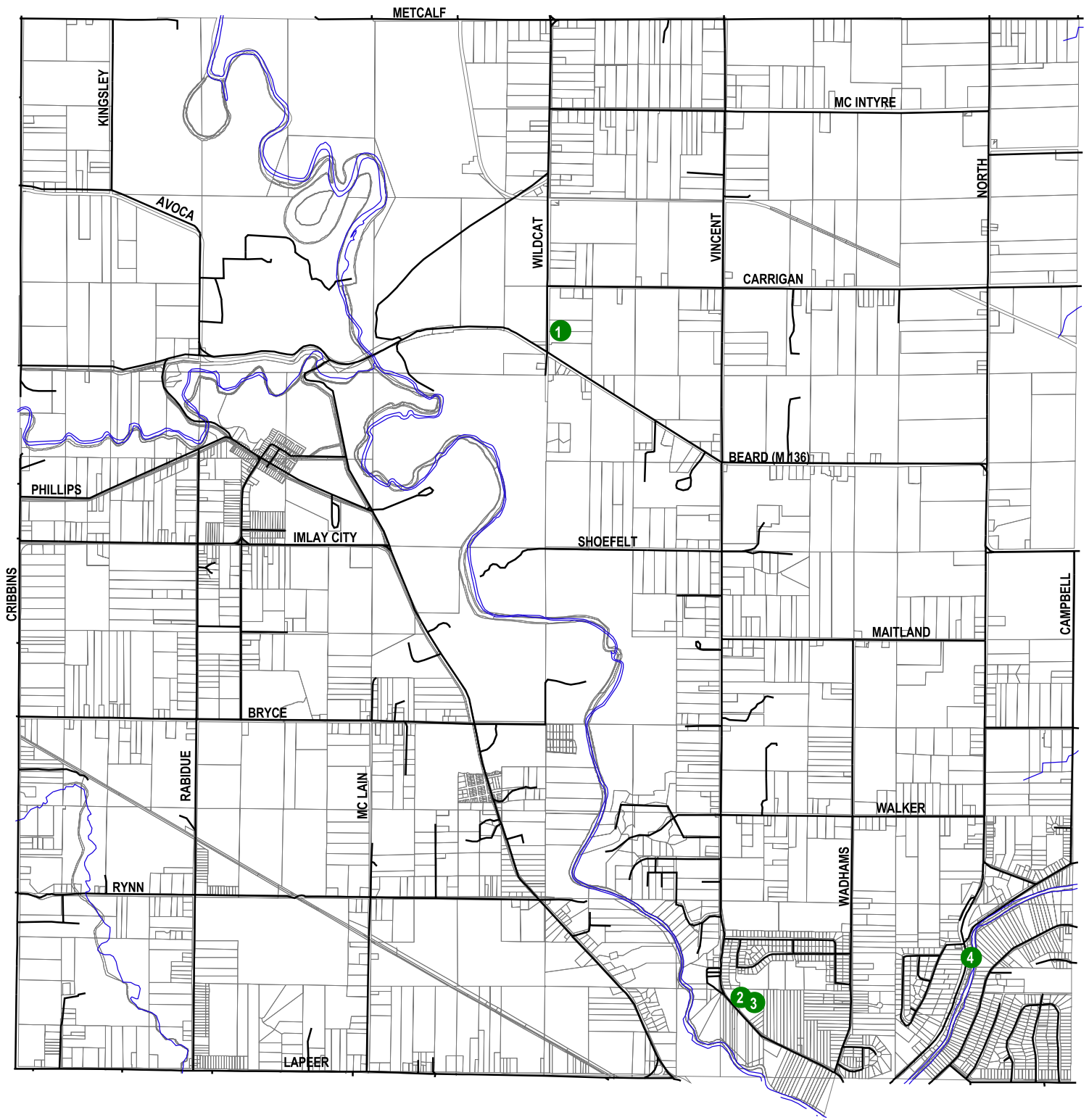
- Playgrounds
 1. Swingset is not compliant with ADA standards.
 2. Surfacing within 8' of equipment does not meet CPSC requirements.
- Picnic Areas
 1. Picnic tables are not compliant with ADA standards.
 2. Barrier-free route to grills not provided.
 3. 30"x48" clear, level space not provided in front of grill.
- Doors
 1. Township Hall Accessible entrances are not identified by the International Symbol of Accessibility.

Clyde Township Recreational Area

GENERAL OBSERVATIONS

- Playfields
 1. Barrier-free access not provided from parking lot to black top area.
- Parking
 1. Barrier-free spaces must be identified with appropriate signage.
 2. Minimum stall width 8' 6".

Based upon the general observations included in the barrier free analysis, Township recreation properties and facilities need to be brought into ADA compliance. This issue will be addressed further in Recreation Standards and Deficiencies component of the Plan.



- 1 BILL BEARSS MEMORIAL PARK
- 2 TOWNSHIP HALL PARK
- 3 CLYDE TOWNSHIP RECREATION AREA
- 4 BLACK RIVER PROPERTY

TOWNSHIP RECREATION FACILITIES

CLYDE TOWNSHIP, ST. CLAIR COUNTY

RP-8

SOURCE OF PARCEL DATA:
ST. CLAIR COUNTY
METROPOLITAN
PLANNING COMMISSION



BIRCHLER ARROYO
ASSOCIATES, INC.

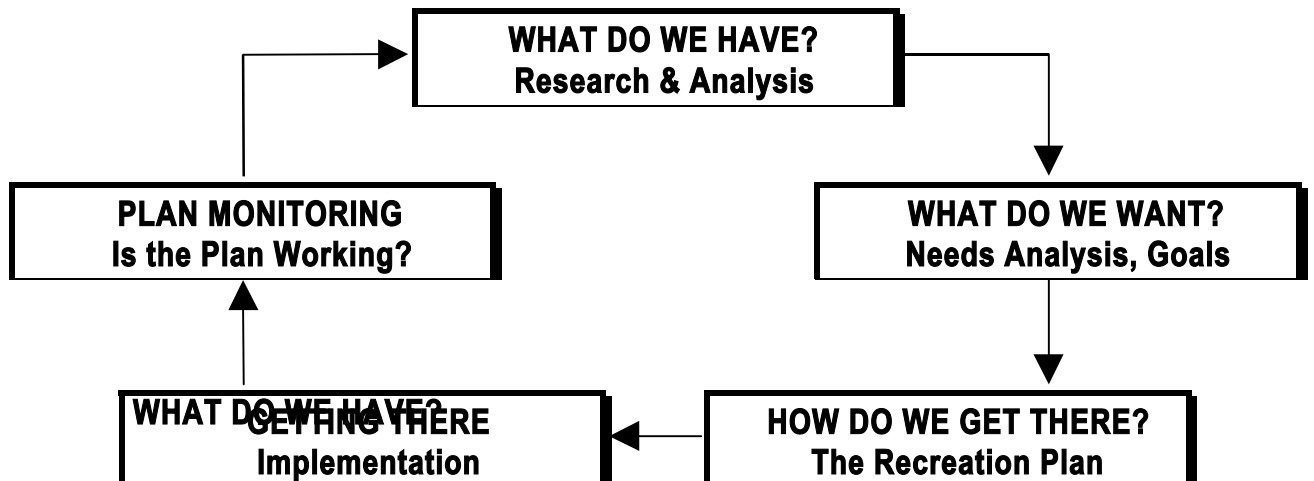
This page left intentionally blank.



4 RECREATION PLANNING PROCESS

The recreation planning process in Clyde Township is intended to involve residents from a broad cross-section of the Township's population. Responsibility for recreation planning rests primarily with the Township Board, with assistance from the Parks and Recreation Commission. The Township Board, as the legislative body, maintains ultimate authority for recreation planning and budgeting in the Township. The Township receives assistance in recreation and general planning matters from a planning consultant.

The recreation planning process followed the following general framework:



WHAT DO WE HAVE?

With the assistance of the Township's planning consultant, the Parks & Recreation Commission and the Planning Commission analyzed the basic demographic characteristics and natural features of the community. They then reviewed the consultant's inventory of existing recreational programs and facilities within the Township and region. Finally, this information was used to form a comparison of existing recreational facilities with projected needs based on recreation standards.

WHAT DO WE WANT?

The above information and the results of the Community Recreation Survey and the Master Plan Visioning session were then used to provide the basis for an understanding of the types of recreational facilities currently serving the Township's residents and what projected needs will be based on population projections. This information, along with the comments of the Recreation Advisory Committee and Township Board were then synthesized into a series of goals and objectives for the Recreation Plan.

HOW DO WE GET THERE?

The Goals and Objectives formed the basis for the five-year Recreation Action Plan. There is a direct link between the needs assessment, Planning Commission / Parks & Recreation Commission and Township Board comments, and the Recreation Plan. The consultant and Recreation Advisory Committee prepared a suggested five-year Recreation Plan framework for consideration by the Township Board based upon the goals and objectives. The Board then finalized a draft Recreation Plan for adoption after proper notice and public hearing. (See Appendix for public hearing notices and minutes of meetings).

GETTING THERE

This phase will involve the implementation of the Recreation Plan. Included will be consideration of funding alternatives such as Township general fund revenues, County recreation millage funds, and application for State recreation grants, as well as other grant opportunities where appropriate.

PLAN MONITORING

This phase will occur periodically, at least every five years. It is intended to include a review of the goals and objectives of the Recreation Plan as well as an examination of the Township's progress in achieving the five-year action plan.

This page left intentionally blank.



DEVELOPMENT STANDARDS

To formulate a plan for recreation areas, standards must be developed outlining requirements for service areas, land needs based on future population, and the ultimate size and extent of the facilities and their location. These recreation planning standards are a valuable tool in making an assessment of future recreation needs. Standards may be used effectively only as a means for comparing present conditions to what is thought to be suitable or desirable, and as a general guide toward estimating future needs and demands. The following organizations have developed standards for recreation which are referenced in this analysis of Township recreation facilities.

☐ American Society of Planning Officials (ASPO)

The ASPO standards were developed using data collected from the National Recreation Association, the American Public Health Association, the Athletic Institute, and planning commissions in several major cities.

☐ Heritage Conservation & Recreation Service (HCRS, Formerly Bureau of Outdoor Recreation)

The HCRS compiled data on standards used or recommended by various city, county, metropolitan, state, and federal park and recreation agencies.

☐ Urban Land Institute (ULI)

The ULI, a private research organization concerned with planning and development of land, recommends standards for recreation areas for community and neighborhood development.

☐ National Recreation and Park Association (NRPA)

The NRPA developed these recommended standards and guidelines for recreation, parks and open space.

Facility Types

The major types of community recreation facilities recommended by the above organizations include:

Playgrounds – areas developed primarily to serve the active recreation needs of 6-12 year olds. A portion of a local playground should be set aside for the needs of pre-schoolers.

Playfield or Athletic Fields – areas designed to serve teenagers and adults with various types of active group recreational activities during the entire year. If possible, the playfield should provide: areas for paved game courts such as tennis, basketball and volleyball; space for shuffleboard and horseshoe courts; sports fields for activities such as softball, baseball, football, and soccer; picnicking; and small children's play areas.

Community Parks – areas designed to serve a number of neighborhoods, or, in less populated areas, an entire township. It is suggested that a major recreation building, designed to meet the needs of all age groups, be included in the community park. In addition, it should include areas of natural beauty with nearby picnic and trail development; fields and paved courts for various kinds of sports; and minor playground and playlot development. Other potential activities include outdoor swimming, lighted spectator-type athletic fields, ice skating, and ample off-street parking.

The following table summarizes the recommended standards of ASPO, HCRS, ULI and NRPA for playgrounds, playfields, and community parks. Because these standards were primarily developed for cities and more developed townships, we have provided in the right column the recommended standards for a more rural community such as Clyde Township.

Table 18
Summary of Recreation Planning Standards

Facility	ASPO	HCRS	ULI	NPRA	Consultant Recommendation
Playground					
Site Size (acres)	3 – 7	5	2 – 5	1	2
Service Radius (miles)	0.5	0.25	0.5	0.25	0.5
Acres/1,000 Pop	1.5	1.5	1.5	0.5*	0.5
Playfield					
Site Size (acres)	20	25	10 – 15	5-10	20
Service Radius (miles)	1	1.5	1.5	0.5	2
Acres/1,000 Pop	2.0	2.5	1.5	2.0*	2.0
Community Park					
Site Size (acres)	25	50	40 – 100	20+	40
Service Radius (miles)	1 – 2	2	2	2	3
Acres/1,000 Pop	1+	4.0	3.5	5 – 8*	5.0

*NRPA has recently adopted a Level of Service (LOS) methodology to determine amount of recreation land needed. NRPA's methodology using acres / population is still a valid application and is used for this plan.

In addition to the above standards, the National Recreation and Parks Association (NRPA) has established standards for specific facilities. These standards are listed in Table 19 below.

Table 19
Standards for Special Facilities

Facility	Space Requirement	Population Per 1 Facility	Comment
Baseball Diamonds	3 – 3.85 ac. min.	5,000	90 ft. baseline
Softball Diamonds	1.5 – 2 ac.	5,000	60 ft. baseline
Tennis Courts	7,200 sq.ft./court	2,000	Best in battery of 2 – 4
Basketball Courts	9,480 sq.ft.	5,000	
Swimming Pools (25 yard)	1 – 2 ac.	20,000	Locate in school or community-wide park
Skating Rinks (artificial)	22,000 sq.ft.	100,000	Best as part of multiple use facility
Community Centers		25,000	
Golf Course	110 ac.	50,000	18 hole course
Soccer Fields	1.7 – 2.1 ac.	10,000	Need depends upon popularity

Source: NRPA, Washington, DC

RECREATION DEFICIENCIES

As noted in the Recreation Inventory, there are 4 Township-owned recreation properties. Three of the properties are currently developed with some kind of recreation facilities. To identify the current and expected need for recreation facilities within the Township, Tables 20 and 21 compare the Township's current and projected population, and developed recreation acreage with the recreation facility standards noted above.

Table 20
Projected Recreation Demand

Facility	Acreage Currently Needed	Acreage Needed by 2010	Acreage Needed by 2020
Playground	2.75	3	3
Playfield	11	12	12-13
Community Park	27.5	29-31	31-33

Table 21
Existing Recreational Facilities

Facility	Developed Acreage	Acreage Currently Needed	Deficiency / Surplus
Playground	1	2.75	-1.75 Acres
Playfield*	17	11	+6 Acres
Community Park	20	27.5	-7.5 Acres

* The Township Recreation Area is not currently available for use due to lead contamination.

Based on the recreation planning standards presented in the beginning of this chapter, Clyde Township is currently slightly deficient in playground and community park facilities. Despite this deficiency, there appears to be surplus acreage available for playfields, which could be further developed to meet the community's needs.

The following is a synopsis of current deficiencies and needs for recreation facilities in Clyde Township based upon the above discussion, evaluation of the existing inventory and analysis of the recreation survey.

Community Park

Bill Bearss Memorial Park is the Township's only community park. This centrally located, easily accessible Township park includes a small playground and playfields as noted in the facilities inventory. This park currently consists of 20 acres, which is

considerably below the recommended 40-acre minimum for community parks. However the consultant's recommendation suggests approximately 27.5 acres of community parkland is needed to meet the Township's current recreation demands based on the Township's current population. Based on this the Township is approximately 7.5 Acres deficient with regard to community parkland. An additional 13 acres may be needed by the year 2020 to accommodate population growth resulting in a total inventory of community parkland of 33 acres.

Playground

The Township Hall Park is 1 acre in size and is currently the Township's only playground. A total of 2.75 acres of playground facilities are currently needed based on the Township's 2000 population. Use of the service area standard for choosing the location of playgrounds is not applicable for a large portion of the Township because of its agricultural use and sparse population. Based on 2020 population projections, approximately 3 acres will be needed to meet expected future demand for playgrounds. One or two new facilities in different geographical areas of the Township would be desirable.

Playfields

Based on 2000 census information, eleven acres of playfields are needed within the Township to serve the current population. The Township Recreational Area adjacent to the Township Hall Park consists of 17 acres and meets the criteria of a playfield. It should be noted that as of the last Census of Population (2000), nearly thirty percent (29%) of the Township's population was under 20 years of age. This supports the need for additional development of playfield facilities. Playfields also serve to accommodate adult softball activities and the like, thus providing necessary facilities for the largest segment of the Township's population. Soccer is also becoming a popular sport in the area. There are currently no soccer fields in Clyde Township. Due to the existing lead contamination on this site the park is not currently in use. Future development is dependent on the remediation of the contamination and premitted activities may be limited

Table 22

Projected Special Facilities Demand

Facility	Total Needed in 2000	Total Needed by 2010	Total Needed by 2020	Total Existing
Baseball Diamond	1	1	1	4
Softball Diamond	1	1	1	2*
Tennis Courts	2	3	3	4
Soccer Field	1	1	1	0
Basketball Courts	1	1	1	1

* The existing softball diamonds are not available for use.

As illustrated in Table 22, the Township needs 1 basketball court based on the 2000 population. Two tennis courts are recommended for the Township's 2000 population, the Township currently has a total of 4. One soccer field is also needed for current and future demand. The facilities inventory reveals that the Township currently has 4 baseball diamonds and two softball diamonds available at Bearss Memorial Park. Although the number of ball fields exceeds the projected need for the community, existing facilities may reflect the interests of local residents. The Township should monitor the use of the existing fields to determine whether they are meeting the needs of local residents.

OVERALL SUMMARY OF RECREATIONAL NEEDS

Based on the existing facilities, the Township's current and projected population and the results of the Township's recreation survey, the following specific concerns should be addressed:

- ❖ Generally areas for soccer and football fields are deficient in the Township. The lack of school facilities for within the Township exacerbates this problem.
- ❖ Additional facilities should be considered for future development of the existing recreational areas.
- ❖ Despite the recreation deficiencies identified, only limited additional property for playground and community parkland will be necessary due to the rural character and the existing State Game Area property within the Township.
- ❖ Playground facilities are needed to serve residents in the Ruby area.
- ❖ Remediation of the Township Recreation Facility (former gun club) is necessary in order for the facility to develop as part of the Township's recreation inventory.
- ❖ Providing pathways for pedestrians and bicyclists would expand residents access to the large Township park areas of Bill Bearss Park/ Clyde Township Recreation Area and the Port Huron State Game Area.
- ❖ Paving interior pathways within community and neighborhood parks would assist in resolving some of the accessibility issues identified within the Barrier-Free Analysis.



6 GOALS & OBJECTIVES

Goals and objectives formulated by the Township are the basis for the recreation planning process and form the framework for public and private decision-making regarding recreational facilities and programs in the Township. The purpose of the Recreation Plan is to pursue long-range recreational goals and objectives through specific short-range actions.

The following goals and objectives were adopted by the Township Board, with input from the general public and the recommendations of the Recreation Advisory Committee. In order to solicit public input into the goals and objectives process, the Township distributed a community recreation survey in June of 2002. The questionnaire was sent to 200 households throughout the entire Township. Forty (40) surveys were returned, for a response rate of 20%. (Results of the survey are included in the Appendix.) The goals are based on the findings of the existing conditions analysis of the Township's natural features, population, housing, land uses, and recreation facilities and programs, results of the Community Recreation Survey, and the projected deficiencies analysis.

The recreation goals and objectives are not prioritized. The yearly Action Program and Recreation Plan chapters that follow will detail the specific program strategies to achieve the short-range goals and objectives over the next five years.

Goal

Provide a variety of recreation facilities and programs to meet the needs of the community's growing population.

Objective

Recreational facilities and programs must be developed to meet the immediate and future needs of Township residents.

Strategies

- ☐ Periodically update the Township's Recreation Plan in order to maintain eligibility for acquisition and development grants through the State and other funding sources.
- ☐ Additional recreational programming for all ages should be established; a centralized recreation facility for indoor programming should be considered.
- ☐ Acquire limited additional property for development of playgrounds to serve the Township.

Objective

Increase utilization of existing parks throughout the Township by providing for a variety of activities.

Strategies

- ☐ Develop adequate playfields on existing recreation property in order to accommodate a variety of active recreation programs.
- ☐ Explore opportunities for non-motorized pathways to improve access to local parks throughout the Township, with possible connections to neighboring communities.
- ☐ Pursue the development of Soccer Fields within the community.
- ☐ Explore opportunities to accommodate unique recreational activities such as BMX trails, suitable areas for remote control vehicles and rollerblading activities.

GOAL Develop recreation facilities and programs to provide active recreation opportunities for a wide range of individuals and age groups.

Objective

Design recreation facilities that are accessible and programs that provide opportunities for persons with disabilities.

Strategies

- ☐ Update all existing park facilities to meet barrier-free access requirements.
- ☐ Pave interior park pathways to improve barrier-free access and general access to and around park facilities.

GOAL Develop recreation facilities and programs to provide passive recreation for a wide range of individuals and age groups.**Objective**

Design recreation facilities and programs that provide opportunities for persons of all age groups, including youth, adult and senior Township residents.

Strategies

- ☐ Develop passive recreation areas within playfield and community park areas that include amenities such as benches, shaded areas, walking trails, bike paths, and picnic facilities.
- ☐ Utilize existing Township and community facilities for a wide range of recreation programming. Partner with local churches and service organizations to host Township wide events.

This page left intentionally blank.



RECREATION PLAN

The Township's long range plan for recreational facilities and programs is based on the goals and objectives which were developed during the planning process. The Action Program that follows describes in detail the proposed plan for Township recreation expenditures for the next five years. Each year's proposed actions are followed by a Basis for Action which explains why they are the Township's priority.

RUBY PARK

As stated in Chapter 5, the Township is deficient with regard to playground parkland. The need for this type of parkland was emphasized during the 1999 Recreation Plan update, particularly with regard to the Ruby area. The Lion's Club property at the northwest corner of Imlay City and Brott Roads would provide a perfect location for such facility.

Parkland Acquisition

Due to the deficiency noted above and the need to provide adequate recreational space for the residents of the Ruby area, land acquisition for an additional facility is a high priority. As indicated in the 1999 Recreation Plan approximately 3 acres of

the 5 acre Lion Club property near Ruby could satisfy this need if purchased by the Township.

Park Development

Once purchased, initial development of the “Ruby Park” property would consist of new playground equipment. A basketball court would also be a good addition to this park.

EXISTING PARK IMPROVEMENTS

The Parks and Recreation committee has identified necessary improvements to their existing facilities.

Clyde Township Recreation Area

This site is currently unavailable for recreation purposes due to lead contamination. Suggestions for development of the site include areas for skateboarding / rollerblading and in line hockey. Once the contamination of the site has been properly remediated additional facilities such as soccer / football fields may be added.

Bill Bearss Memorial Park

As discussed in Chapter 5, soccer fields will be needed in the Township’s community park to meet the current and expected future demands of the Township. Residents have also expressed an interest in a disc golf course at this site. These facilities may be developed in place of some of the ball fields not currently in use at this park. Necessary maintenance to this park includes resurfacing of the existing tennis courts and updating playground equipment. Bill Bearss Memorial Park provides the community with its single most significant outdoor recreation facility. Access to the facility is limited by the lack of connections between paved parking and recreation areas. At a minimum paved barrier free parking spaces must be identified and connected to an internal path system. This will also assist in allowing persons with mobility limitations to get into the park and out of their vehicles at key locations.

Riverfront Property

The 1999 recreation plan identified this area for the development of a canoe launch and fishing facility. A new entrance to the property, fishing docks and parking areas were included in the previously approved 5-year plan. Residents expressed continued interest in canoe facilities and increased access to the Black River through the recreation surveys and during the master plan vision meeting. Paved parking, fishing docks and a canoe launch are necessary improvements in order to establish the property as a viable recreation area.

Develop Paved Internal Pathways

In order to open Township parks for use by persons with mobility limitations, a system of paved internal pathways is needed at each facility. These pathways will provide barrier free access to the various park amenities and should connect with barrier free parking spaces.

Pave Parking Areas

The Township Recreation Area does not currently have paved parking. As it is developed, paved parking must be provided for barrier free spaces at a minimum. Plans to add a playground facility in Ruby should also include adequate paved parking with barrier free spaces.

LOCAL AND REGIONAL PARK ACCESS

As noted by the Parks and Recreation Committee during the planning process, Clyde Township has a number of excellent park facilities that all require access via automobile. One of the long-range goals of the Township's Recreation Plan is the provision of access to key parks via non-motorized pathways. The key components of the Township's non-motorized pathways planning are:

- ☐ Development of a pathways network that connects the Township Park systems with residential areas.
- ☐ Connection of the Township pathways to major county and regional systems, such as the Wadhams to Avoca Trail.
- ☐ Connection of the Township pathways to major local and regional facilities, such as the access points for the Port Huron State Game Area and Goodells Park.

ACTION PROGRAM

The 5-year Action Program outlines the estimated recreation expenditures and funding for the addition of playground parkland, canoe and fishing areas and other park improvements, as discussed in the Recreation Plan.

YEAR 1 (2002):

Ruby Parkland Development Phase 1

Land Purchase (3 acres)	\$80,000
ESTIMATED TOTAL	\$80,000
<u>Source of Funds</u>	
Local Share (30%)	\$30,000
State Grant (70%)	\$50,000

*Local share includes funds from the Township's portion of the County-wide recreation millage, Township general funds, donations, and in-kind services.

Basis for Action

Clyde Township is deficient with regard to playground parkland. At a minimum the Township needs a two-acre facility to serve the needs of the residents living in Ruby. Clyde Township would like to accommodate this need for parkland by acquiring property from the Lion's Club located at the northeast corner of Imlay City Road and Brott Road.

Improvements to BiBearss Memorial Park- Phase 1

Develop Soccer Field(1)	\$31,250
Develop 9-hole Disc Golf Course (1)	\$20,000
Barrier-Free Internal Pathway	\$13,455
Barrier-Free Picnic Tables (2)	\$1,250
Add Deciduous Trees (20)	\$10,225
ESTIMATED TOTAL	\$76,180

<u>Source of Funds</u>	
Local Share*(30%)	\$22,854
State Grant (70%)	\$53,326

*Local share includes funds from the Township's portion of the County-wide recreation millage, Township general funds, donations, and in-kind services.

Basis for Action

There appears to be an abundance of ball fields currently existing at the site. The proposed improvements will provide for a wider variety of activities at the park. It is a high priority for the Township to complete the internal pathway planned for Bill Bearss Park. This park is the primary recreational resource for the community and the internal pathway will allow improved access to the park's recreational activities for the entire community.

YEAR 2 (2003):

Riverfront Park Development Phase 1

Establish New Entrance to Property From Old North Road	Unknown
Grade & Pave Parking Area	\$156,937
Establish Canoe Launch	Unknown

ESTIMATED TOTAL

Source of Funds

Local* (30%)

State Grant (70%)

*Local share includes funds from the Township's portion of the County-wide recreation millage, Township general funds, donations, and in-kind services.

Basis for Action

Development of this property will provide much desired access to the Black River. Throughout the planning process residents expressed the need for canoeing and fishing opportunities within the Township.

Ruby Parkland Development Phase 2

Add New Playscape / Playground Equipment	\$35,000
--	----------

ESTIMATED TOTAL \$35,000

Source of Funds

Local Share* (30%)

\$10,500

State Grant (70%)

\$24,500

*Local share includes funds from the Township's portion of the County-wide recreation millage, Township general funds, donations, and in-kind services.

Basis for Action

Provide playscape to increase recreational opportunities at this newly established neighborhood park.

YEAR 3 (2004):

Improvements to the Township Recreational Area- Phase 1

Paved Fitness Path Around Park Property (8' wide – 1,533 linear feet)	\$39,858
Add Paved Pathways to Provide Barrier-Free Access	\$9,636

ESTIMATED TOTAL \$49,494

Source of Funds

Local* (30%)

\$14,848

State Grant

\$34,646

*Local share includes funds from the Township's portion of the County-wide recreation millage, Township general funds, donations, and in-kind services.

Basis for Action

Paving pathways and establishing a fitness path in the Township Recreational Area will improve its barrier-free access and make the recreational facilities much more usable and functional.

YEAR 4 (2005):

Improvements to BiBearss Park- Phase 2

Expand Disc Golf Course to 18 Holes (1)	\$7,500
Resurface Tennis courts (2)	\$15,000
Barrier-Free Picnic Tables (2)	\$1,250
Picnic Tables (10)	\$6,250
Add 30' x 40' Picnic Pavilion (1)	\$22,000
Update Playground Equipment	\$12,500
ESTIMATED TOTAL	\$64,500

Source of Funds

Local Share* (30%)	\$19,350
State Grant (70%)	\$45,150

*Local share includes funds from the Township's portion of the County-wide recreation millage, Township general funds, donations, and in-kind services.

Basis for Action

Maintenance and upkeep is necessary for existing playground equipment and tennis courts. Additional facilities for passive recreation such as picnic pavilions and benches should encourage family gatherings and events at the park.

YEAR 5 (2006):

Riverfront Parkland Phase 2

Establish Fishing Docks	\$4,800
Add 20' x 20' Pavilion	\$7,000
Picnic Tables (2)	\$1,250
ESTIMATED TOTAL	\$13,050

Source of Funds

Local* (30%)	\$3,915
State Grant (70%)	\$9,135

*Local share includes funds from the Township's portion of the County-wide recreation millage, Township general funds, donations, and in-kind services.

Basis for Action

Development of this property will provide much-desired access to the Black River. Throughout the planning process residents expressed the need for canoeing and fishing opportunities within the Township.

Township Recreational Facility- Phase 2

Develop Soccer Fields (2)	\$62,500
Add Basketball Courts (2)	\$57,100
Skate Park	\$355,200
ESTIMATED TOTAL	\$474,800

Source of Funds

Local * (30%)	\$142,440
State Grant (70%)	\$332,360

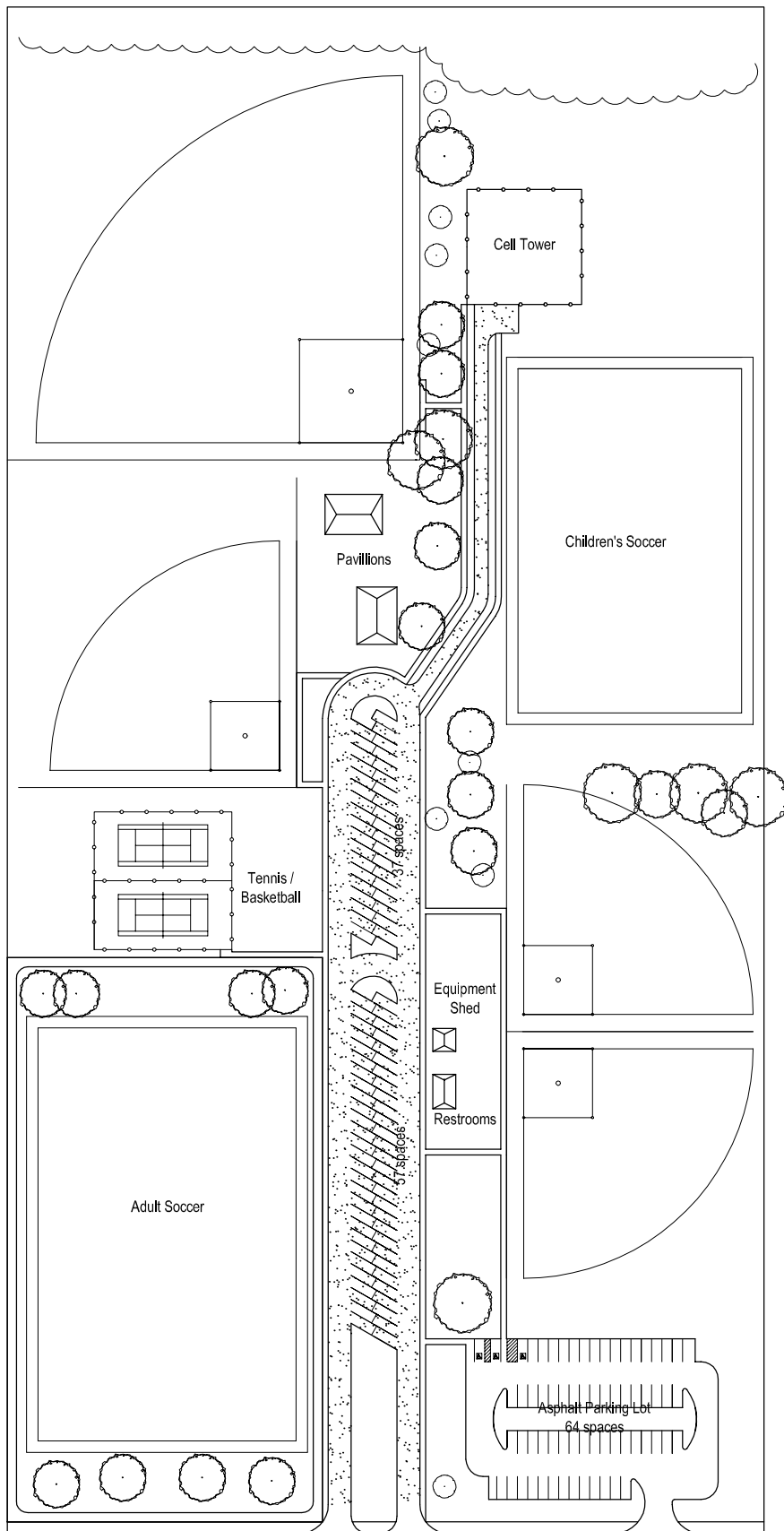
*Local share includes funds from the Township's portion of the County-wide recreation millage, Township general funds, donations, and in-kind services.

Basis for Action

Once remediation of this property is complete additional facilities can be added.

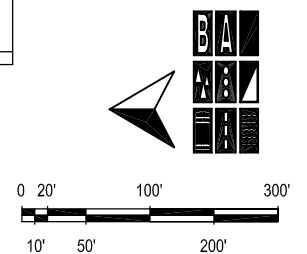
State Grant	\$688,973
Township Share	\$260,988

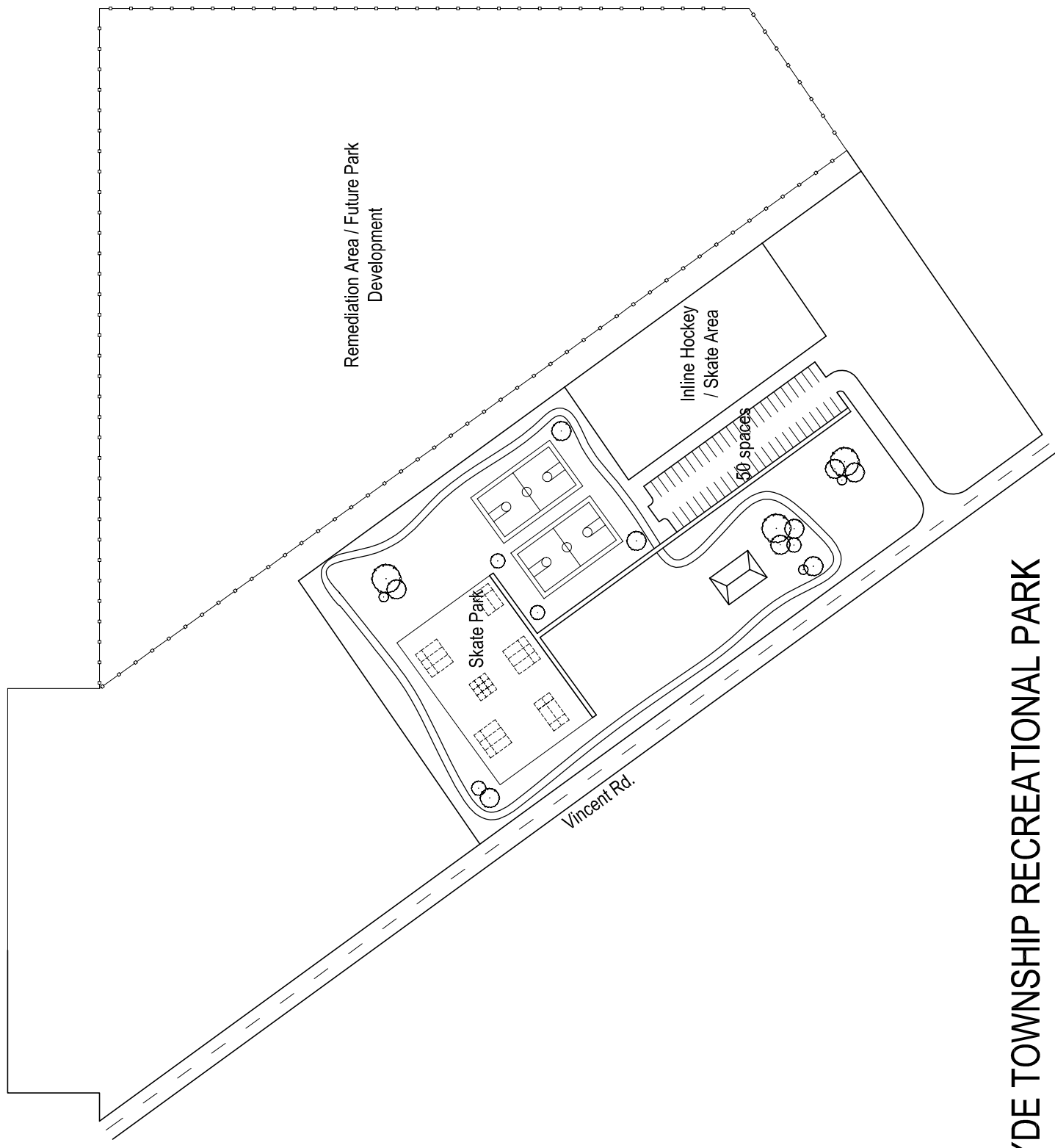
Total Estimated 5 Year Action Plan Costs	\$949,961
---	------------------



BILL BEARSS MEMORIAL PARK

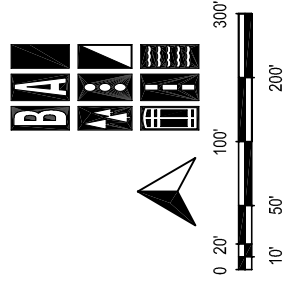
DRAFT Clyde Township Recreation Plan

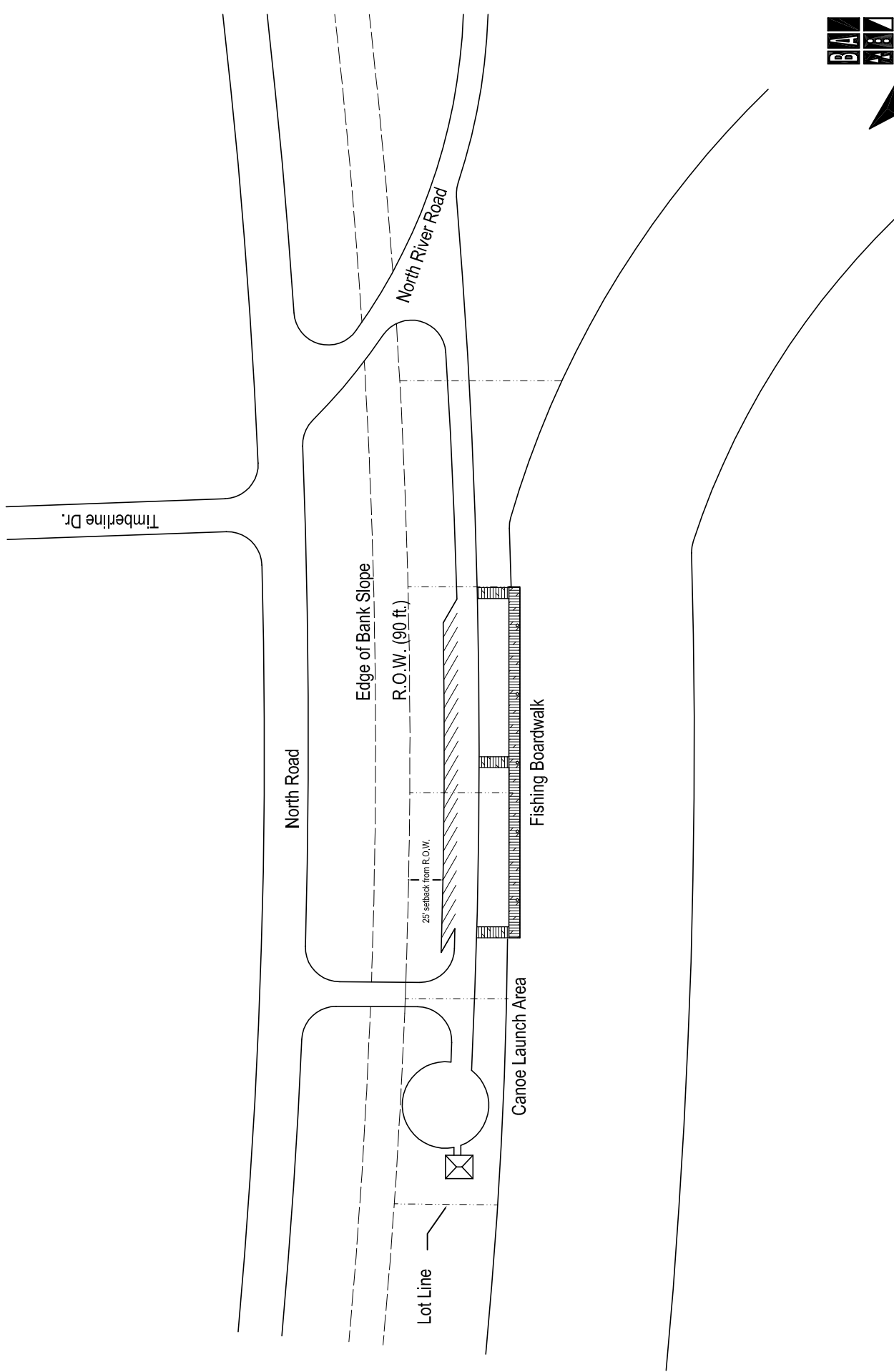




CLYDE TOWNSHIP RECREATIONAL PARK

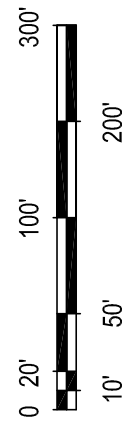
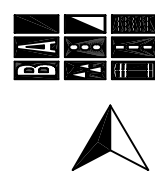
DRAFT Clyde Township Recreation Plan





RIVERFRONT PARK

DRAFT Clyde Township Recreation Plan



**CLYDE TOWNSHIP BOARD OF TRUSTEES
ST CLAIR COUNTY, MICHIGAN**

**CLYDE TOWNSHIP MASTER PLAN
RESOLUTION of ADOPTION
July 20, 2004**

WHEREAS the Township Planning Act Number 168 of 1959, as amended, authorizes the establishment of a township planning commission with the authority and responsibility to make and adopt a Plan for the unincorporated portions of the Township, and

WHEREAS the Township Planning Act Number 168 of 1959, as amended further allows for the adoption of the master plan by the Township Board, and

WHEREAS the master plan shall show the township planning commission's recommendations for the physical development of the township and may include a plan for land use, thoroughfares, community facilities and other subjects which can reasonably be considered as pertinent to the future development of that area of the township, and

WHEREAS the Clyde Township Board created the Clyde Township Planning Commission for the purpose of carrying out the intent of the Township Planning Act, including the preparation and adoption of master plans, and

WHEREAS the Clyde Township Planning Commission has worked diligently preparing the necessary studies and maps, conducting four public input workshops and a visioning session, establishing goals and objectives, preparing plans, and holding a public hearing on its plans, as required by State Law, and

WHEREAS, the Planning Commission held a public hearing on June 29, 2004 to consider public comments on the master plan, and

WHEREAS, the Planning Commission adopted the master plan on June 29, 2004 and.

WHEREAS, the Clyde Township Board of Trustees has affirmed their right to approve or reject the recently updated master plan.

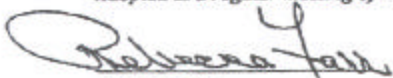
NOW THEREFORE BE IT RESOLVED that the Clyde Township Board of Trustees concurs with the Planning Commission and hereby adopts this Master Plan for Clyde Township, on a motion by John Zmiejko supported by Betty Simpson.

AYES: 7

NAYS: 0

ABSENT: 0

Adopted at a regular meeting of the Clyde Township Board of Trustees held on the 20th day of July 2004.



Rebecca Farr,
Clyde Township Clerk