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Chapter One - Introduction

Clay Township adopted the current Master Plan in February of 1992. That Plan was a comprehensive document intended to guide the Township through the planning horizon of 20 years. To ensure that local land use policies reflect current conditions in the community, a Master Plan should be periodically evaluated and updated as conditions in the Township change. Since the previous Plan was adopted, the Township has experienced expansions to the public sanitary sewer and water systems and the development of a new zoning ordinance. Because a township's plan is statutorily required to be in compliance with the zoning ordinance and because infrastructure improvements directly affect density and type of land use, Clay Township determined that the 1992 Plan should be amended to reflect the most current township conditions and ordinances. This amendment is not intended to replace the 1992 Plan in its entirety. It is only intended to update selected areas of the Plan in a manner which will allow easy inclusion into the current Plan.

This amendment, while focusing primarily on the future land use element, also incorporates updated year 2000 census information, whenever available, and the existing land use inventory. In addition, the utility extension areas have been analyzed as a basis for adjusted future land use recommendations. Since the goals of the community remain as the primary directive of any Plan, we have included the 1997 goals into this amendment for easy reference.

This Clay Township Master Plan amendment was drafted by the Clay Township Planning Commission. The public hearing and final adoption of this amendment was the responsibility of the Planning Commission.

Acknowledgements

This Plan is the result of many hours of effort on the part of the Township Planning Commission as well as the citizens who attended the public hearing. We wish to acknowledge the officials in the Township who were directly responsible for creating this Plan amendment by listing their names below:

Township Board of Trustees

Joseph H. McKoan IV, Supervisor
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Chapter Two - Socioeconomic Profile

The purpose of this examination is to identify the characteristics of the population and local employment base and to reveal what trends are occurring and what opportunities may exist for future land use development activities. For example, a population comprised of members in the family formation group would indicate a need for multiple-family dwellings, active recreation areas, primary educational facilities, and ample employment opportunities. The first of the socioeconomic features to be analyzed is Clay Township's population characteristics.

Population Characteristics

Historical Population Growth

Clay Township is an integral part of the region embraced by the Southeast Michigan Council of Governments (SEMCOG). The Region, one of fourteen such planning and development regions in the state, includes among its members the various governmental units located in this six county area. Clay Township, as a constituent of the SEMCOG, as well as the Detroit Metropolitan area, is directly affected by regional conditions and trends.

Since 1960, the Detroit Metropolitan area has been characterized by population growth and by a significant geographical shifting of population. Evidence of this phenomenon can be seen from the data presented in Table 1.

The City of Detroit, the largest city in the region, has shown continued decreases in population since 1960, most of which occurred between 1970 and 1980. Between 1970 and 2000, the City of Detroit lost 561,623 people, a decrease of 46.6 percent.

Opposite the City of Detroit's declining population trend was an increase of population in the out-county. Wayne County, excluding the City of Detroit, decreased by 420,717 people (-37 percent) between 1970 and 1980. Between 1960 - 1970, Wayne County had experienced population gains. Thus, it can be seen that many of the residents moving from Detroit and Wayne County have located to suburban and rural areas throughout the remainder of Tri-County and in other areas of the region. Data in Table 1 document regional population trends. As evidenced, St. Clair County experienced the largest percentage growth of counties at 15 percent. This trend has continued into the 1990's. St. Clair County remains the fastest growing County in the region, increasing over 11 percent between 1990 and 2000.

This shifting of the population was of particular importance to Clay Township's population growth in that some of those wishing to relocate from the City of Detroit, Wayne County, or moving into St. Clair County for the first time, located in the Township.

Table 1

The Township has been subjected to considerable and consistent population growth over the last 50 years. It has been one of the fastest growing communities in St. Clair County since 1940. Data in Table 2 document the population trends of all governmental units in St. Clair County since 1990.

In 1940, Clay Township had a population of 1,509 persons. By 2000, it had gained an additional 8,313 people, an increase of more than 550 percent.

Clay Township achieved an additional increase in population since 1980, adding 344 persons to its 1980 population of 8,518. Its 1980 population of 8,518 represents a 25 percent increase over its 1970 total, placing it second in terms of numerical change behind only Casco Township. During the decade of the 1990's, Clay Townships population increased 960 residents giving it a 2000 population of 9,822 residents. This represents a 9.8 percent increase during the last decade. With the exception of the 1980's, this represents a significant decrease in the rate of growth in the Township when compared to the level of population increase during each of the previous four decades. Columbus Township experienced the largest population increase during the last decade with 1,380 residents, or a 30 percent increase.

In 2000, census figures show that Clay Township accounted for 6.00 percent of the County's total population. Data in Table 3 notes the share of County population for Clay Township, Algonac, and Ira Township.

Migration into or out of a community can be exposed by analyzing the variables of live births and deaths which have occurred in the community. The excess of live births over deaths over a specified time is termed the natural increase in population. The differential between the natural increase in population and the total population change in a community, during the same period, is the net-migration into or out of the community.

The live births and deaths attributable to the residents of Clay Township during the 1970-1980 decade are documented in Table 4. During this period it is computed that the natural increase in population in the Township was 81 persons; however, the total population change between 1970 and 1980 was 2,146 people. Thus, it can be calculated that 2,105 people migrated into the community during this period. Table 4B reveals the same data for 1980 to 1988.

Age - Sex Distribution

Data provided in Table 5 document the age composition for Clay Township for the Years 1990 and 2000. Examining this information can assist in determining future housing requirements. For example, established family groups demonstrate a tendency to reside in single-family residential units, while a population consisting of mostly family formation groups, (i.e., young married couples), are inclined to reside in multiple-family developments.

Table 2

Table 3

Table 4

Table 5

Between 1990 and 2000, Clay Township experienced a population increase of 960 persons. By reviewing the various age categories that comprise the Township's total population, it is possible to determine how individual age groups changed during this ten-year period and which groups made the largest contribution to the Township's overall population increase.

Eight (8) of the 11 age categories shown in Table 5 reported an increase between 1990 and 2000. The single largest population gain occurred in the 45-54 age category, which expanded by 395 persons between 1990 and 2000. Large increases are also noted for the 55-59 age group (+318) and the 75+ group (+153).

The overall population increase during the 1990s was primarily the result of individuals between the ages of 45 and 54. This age group increased by 395 persons between 1990 and 2000. The 20-24 and under 5 years age groups each decreased during the 1990's.

Table 5 also illustrates that there are a growing number of residents 75 years of age or older. A large share of the elderly population generally live on a limited income. This income often does not permit an allowance for undertaking housing repairs. In addition, many elderly persons are not physically able to perform repairs which might be easily made at minimum expense by a younger household. Thus, it is important to identify areas where this population segment lives, as such areas are especially prone to structural decline.

Minority Group Composition

The Township's racial mix has remained predominately white over the last decade; however, there have been significant gains achieved by the nonwhite population. Data in Table 6 exhibit the racial composition of the Township for 1990 and 2000. The nonwhite population increased by 163 persons, or some 62.2 percent over the last decade. This compares to an 8.3 percent increase (796 persons) for the white population over the same period of time.

Household Size

A relatively recent phenomenon, characteristic of today's population, is one of the declining household size. As a result, it has not been uncommon for communities to register a net increase in the housing supply while simultaneously recording a population loss. This trend has evolved due, to a large extent, to the declining family size.

The Township is not immune to this trend. Data in Table 7 depict the number of persons per household for the years 1990 and 2000.

The Township has experienced a decrease in the number of persons per household between 1990 and 2000. In 2000, the Township's persons per household ratio was 2.50, a decline of thirteen percent since 1990.

Such a decline must be considered when analyzing future housing needs in conjunction with population projections, as housing units will be occupied by far fewer people. It is estimated that Clay Township will continue to show a decline in household size.

The U.S. Department of Commerce, Bureau of the Census, has prepared a series of estimates for the average size of future households in its publication "Projections of the Number of Households and Families: 1979 to 1995." This report, issued in May, 1979, represents the latest projections on this topic issued by the U.S. Census. Data in Table 8 document these projections.

The presentation of data in Table 8 indicates that projecting the average number of persons per household requires making certain assumptions about the composition of the population, including the number of future births and age, sex and marital status distributions. Such an analysis is beyond the scope of this report. Thus, it will be assumed that the average size of households added to Clay Township between 2000 and the Year 2010 will follow national trends.

Population Projections

Projections of future population growth provide the bridge between the present and the future in the comprehensive planning process. These projections help dimension future land use requirements, as well as the demand for various municipal services.

Projections of future population growth need to consider the growth of the larger geographic region within which the community is located. For the Township, this involves considering future population growth within the community as it relates to growth for St. Clair County and southeast Michigan as a whole. The growth of these larger geographic areas will influence population growth in Clay Township.

As noted earlier, Clay Township experienced consistently steady growth over the past several decades. Growth patterns and trends for the County as a whole indicate that Clay Township is located in the proximity of one of the County's primary growth corridors. This fact, and the Township's vast shoreline area which provides potential recreation space, indicates the area will likely continue to expand in the future. The principal challenge for planning purposes is to determine the extent to which the Township's population will likely increase in the succeeding years.

Several techniques are traditionally used to project future population growth. These alternative approaches to population forecasting, and the results that they yield, are summarized in the following discussion. Included as part of this analysis are population projections that have been prepared by the Southeast Michigan Council of Governments.

For Clay Township, three projection methods were used to arrive at the 2020 population estimate. The first, called the Arithmetic method, extrapolated the absolute population change that occurred between 1980 and 2000 at the same rate through 2020. Accordingly, 326 persons were added for each five-year interval. The second method applies the 2000 ratio of Township population over the County (6 percent). This figure is then applied as a constant factor against the average County population for each of the projected time periods. The average of these methods, once compiled and averaged, gives Clay Township a projected 2020 population of 11, 152.

Table 6

Table 7

Table 8

Table 9

These population projections assume that the Township will continue to play an important role in the future growth of St. Clair County. The extent to which these projection may be realized, however, depends on a number of factors which include the following:

- The amount of high quality residential land that remains available for residential development. Continued development of shoreline areas, including both lake and riverfront properties, may influence the influx of household into the Township.
- The image of Clay Township as a place to live.
- The expansion of employment opportunities in the southern St. Clair County area.
- The types and varieties of housing permitted or encouraged within the Township.

As planning for the Township proceeds, decisions regarding future development patterns will emerge and dictate the parameters of housing or residential development. As alternatives and directions are analyzed, the population forecast will be refined or developed anew from the emerging development patterns.

Barring some unforeseen circumstances, continued growth is anticipated for the Township. The challenge for this planning process is, therefore, to establish plans and policies which provide a foundation that allows the Township to fashion this future growth into a balanced and functional pattern that effectively addresses the needs of Township residents into the next century.

Housing Characteristics

This section of the study details the characteristics of Clay Township's housing stock by type, age, value, occupancy characteristic, and other indices. Such an analysis is essential in determining the type of new housing which should be built in the Township and, to a large extent, it is the characteristics of the existing structures which will determine what can be built and marketed in the future.

Type of Structure

Data in Table 10 describe the type of structures which exist in the Township as of 1990. Overall, the housing stock is characterized by single-family homes. In 1990, nearly 90 percent of the Township's homes were of the one-family variety. Only a small portion of the housing stock was composed of multi-family housing. They represented two percent of the available housing units. Mobile homes/trailers comprised 8.7 percent of Clay Township's housing units.

Housing Tenure

Occupancy characteristics are presented in Table 11 and illustrated in Diagrams 2 and 3. As would be anticipated, with a high proportion of homes of a single-family detached variety, the Township has a high rate of home ownership.

Approximately 87 percent of the occupied housing units are owner-occupied. About 12 percent of the year-round occupied units are renter-occupied.

Table 10

Table 11

Unit Value

Housing costs in the region, as in other areas of the nation, have been rising rapidly in recent years. The gap between the cost of decent housing, particularly new housing, and what families can afford to pay is growing, resulting in increased numbers of people being priced out of the new housing market. The Clay Township community has also experienced rising housing prices.

Data in Table 12 show the median value of housing in the Township for 1990, for owner- and renter-occupied units, and compares the data to the values of owner and renter occupied units for the Township for 1980. The cost of owner-occupied units has increased by \$36,600 (75.6 percent) over this 10-year period reaching a 1990 level of \$85,000. Contract rent has increased by \$145 (70 percent) over the same period, reaching a 1990 level of \$352.

The increasing cost of shelter may prohibit many residents from moving into newer units, and may force a greater reliance on housing rehabilitation as a means to provide suitable housing to certain existing and potential Township population segments. This will require the establishment of specific community development programs to address their needs.

Data in Tables 13 and 14 present, in detail, the housing sale and rent prices, respectively, for units sited in Clay Township and St. Clair County, Michigan for 1990.

The data provided in Tables 13 and 14 reveal that Clay Township can generally command higher prices in the housing market as measured against St. Clair County. For example, almost 39 percent of the owner occupied housing units are valued at more than \$100,000 compared to some 16 percent of County housing units.

Table 12

Table 13

Table 14

The value of housing units in a community is related to the size, age and maintenance of the structures. Another factor which determines the value and enters into the supply and demand analysis is the location of the residential structure. The same house in the same community can vary in value by several thousand dollars based on whether it is north or south, east or west of a certain real or intangible barrier. Also, identical housing units vary in value from one community to another, based on the connotation that the community has developed as a place in which to reside.

All of these factors influence the unit value of the housing stock in Clay Township to some degree; however, age of structures is undoubtedly the most influential.

Age of Structure

The age of a house is one factor used in the evaluation of the structural quality of the building. The average lifespan of a structure approximates 50 years, with some lasting longer while others deteriorate faster, depending upon the quality of construction and maintenance. Using this standard, many homes built in Clay Township prior to 1950 should be approaching the end of their utility.

Data in Table 15 document the number of year-round housing units by year of construction. Fifty-five percent were built since 1960, and about 40 percent were constructed since 1970.

Recent Residential Activity

Residential construction activity in the Township has continued over the last year. Data in Table 17 document the trends in new residential construction in the Township since the last U.S. Census (1990).

In 1990, Clay Township had 3,559 year-round housing units. Between 1990 and 2000, Clay Township had a total of 4,194 year-round housing units. This represented an increase of 635 units, or a 15.1 percent increase.

Table 15

Table 16

Chapter Three - Existing Land Use

Since 1992, very little has changed in Clay Township in the overall arrangement of land use. Single family residential, commercial and mobile home park were the only land use categories to experience any change. The changes to those three categories are discussed below.

Clay Township Land Usage

Map 1, entitled Existing Land Use (amended in 2002), shows the major land use categories in Clay Township. The Township covers an area of approximately 36.96 square miles or 23,654.05 acres. Table 24 indicates the distribution of uses on an acreage basis.

Single-Family Residential

Single family residential land use presently occupies 2,398.53 acres of land which account for about 10.1 percent of the total Township area.

The total acreage of Single family residential has not changed significantly since 1992. In fact, only one property on the Mainland, located just west of the City of Algonac, has been included in the Single family residential category since 1992. On Harsens Island, one small parcel located near the Old Club has also changed from commercial to Single Family residential. Each of these properties was created through the rezoning of commercial property. No subdivisions of any size have been developed since 1992.

Mobile Home Park

At the time of the 1992 field survey, 35.08 acres were used for mobile home park purposes, or 0.1 percent of the total area within Clay Township. Only one change has occurred since this survey. In 1999, the existing mobile home park located just north of the intersection of M-29 and Nook Rd. was approved for expansion. This expansion added approximately 2.2 acres to the mobile home park existing land use category.

Commercial

At the time of the 1992 field survey, approximately 133.52 acres were occupied by commercial uses. This amounted to about 0.6 percent of the total Township land area. Most of this acreage was, and still is, found along M-29 and in the San Souci area of Harsens Island.

The commercial land use category has experienced the greatest change since 1992. Most of the change has occurred along M-29, just west of the City of Algonac. In addition, two small parcels on Harsens Island have been converted to commercial land uses since the last update to this document.

TABLE 17 EXISTING LAND USE CLAY TOWNSHIP, ST. CLAIR COUNTY, MICHIGAN 2002*		
LAND USE	AREA	PERCENT OF TOTAL
Residential	2,448.4	10.3
Single-Family	2,395.53	10.1
Multi-Family	14.79	0.1
Mobile Home Park	38.08	0.1
Commercial	133.52	0.6
Industrial	25.13	0.1
Public	11,279.74	47.7
Semi-Public	322.85	1.4
Right-of-way	667.66	2.8
Open Space/Vacant	8,741.13	37
Extractive	35.52	0.1
TOTAL	23,653.95	100.0

*Land Use Survey by Wade-Trim/Associates, July and August 1990 and updated in 2002.

Chapter Four - Natural Features

Environmentally sensitive areas can be defined as land areas whose destruction or disturbance will immediately effect the life of the community by either: 1) creating hazards such as flooding; or 2) destroying important resources such as wetlands and wood lots; or 3) wasting important productive lands and renewable resources.¹

The purpose of this report, therefore, is two-fold. First, this study determines land most suitable for development, which would require the least development costs and provide the maximum amenities without having adverse effects on existing natural systems. Secondly, this report will help identify lands most suitable for recreation-conservation. The applicable natural features of Clay Township are presented below.

Significant Site Features

Significant site features are those surface characteristics which serve to "shape the community," in some instances discouraging development, and in others attracting particular land use activities. The first of these to be examined is topography.

Topography

Severe grade changes are not apparent anywhere in the Township. In fact, this level terrain presents many possibilities to developers, although development costs are severely increased when wetlands or floodplains are present. In many cases, these natural features severely restrict, or actually prohibit development.

The topography of Clay Township is generally low and flat. On the main land, land elevations range from a height of about 596 feet above sea level near the intersection of High and Stone Roads to a low of 579 feet above sea level at Taft Road near Algonac High School. On Harsens Island, the elevations range from 576 in the St. Clair flats area to 577 feet near Voakes Road to 580 feet near the Ferry landing.

Woodlands

United States Geological Survey (U.S.G.S.) data for Clay Township shows the existence of numerous woodlands throughout the community (see Map 2). These likely, second- and third-growth woodlands are valuable as wildlife habitat and for aesthetic enjoyment. Woodlands also moderate certain climate conditions, such as flooding and high winds, by protecting watersheds from siltation and soil erosion caused by storm water runoff or wind. Woodlands can also improve air quality by absorbing certain air pollutants, as well as buffer excessive noise generators. To the extent feasible, these woodlands should be exempt from future land development. Most of the woodlands are located in the central portion of the mainland in areas used primarily for low density single-family residential development. Due to the lack of available utilities in many of the primary

¹For a complete discussion on the importance of protecting environmentally sensitive areas see Performance Controls for Sensitive Lands, Planning Advisory Service Reports 307 and 308, June 1975.

wooded areas, low-density residential development will continue. This land use is compatible with preserving woodlands, especially as large suburban estate size lots continue in popularity.

Major Bodies of Water

Clay Township's strategic location at the mouth of the St. Clair River, where it pours into Lake St. Clair via the north, south, and middle channels and Anchor Bay, allows for the enjoyment of water related living and recreation opportunities. Water bodies within Clay Township are a mixed blessing. While the natural beauty and recreational opportunities offered by Clay's proximity to said waterways draw residents and visitors alike to the community, these very waterways are also a hindrance to development given the preponderance of sensitive lands that result. These waterways are associated with floodplains, wetlands, and poorly drained soils.

Besides their obvious aesthetic and recreational benefits, these waterways serve as natural retention areas for storm water runoff, act as a groundwater recharge resource and also tend to moderate the microclimate in proximity to its shores. Protection of these natural assets should be given high priority in future land use planning decisions.

Hydrology

Surface drainage in Clay Township is accomplished by a system of natural drainageways and creeks. Included is the Beaubien Creek, Beaverdam Drain, Swartout Creek, Malcolm Drain, Dana Drain, Cartwright Drain, and Marine City Drain. The Harsens Island Drain is located on Harsens Island.

These watercourses are prone to flooding during major wet weather events. Development within flood prone areas must be carefully managed.

Floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard.

The Federal Insurance Administration of the U.S. Department of Housing and Urban Development has developed Flood Insurance Rate Maps for Clay Township (see Map 3). They depict both the 100-year and 500-year flood boundaries. This is considered the flood hazard area. These areas should be considered as candidates for recreation-conservation areas inasmuch as existing development within this zone is limited.

Wetlands

According to the Michigan Department of Natural Resources, wetlands are defined as:

"...Areas between terrestrial and aquatic systems where the water table is at, near, or above the land surface for a significant part of most years."²

Hydrologic characteristics found in wetland areas permit the formation of hydric soils, which in turn support the growth of hydrophytic vegetation, or vegetation grown in areas

² Michigan Department of Natural Resources, Division of Land Resource Programs, *Current Use Inventory Classification System Definitions*.

with high concentrations of water near the surface. Examples of wetlands include marshes, mudflats, wooded swamps and floating vegetation situated on the shallow margins of bays, lakes, rivers, ponds, streams and manmade impoundment areas such as reservoirs.

Wetland areas are divided into two main categories, Forested (Wooded) and Nonforested. Forested wetland includes seasonally flooded bottomlands areas, shrub swamps and wooded swamps, including those around bogs. Wooded swamps and flood plains contain primarily oaks, red maple, elm, ash, alder, and willow. Shrub swamp vegetation includes alder, willow and buttonbush. Shrub swamps are wetland areas which are dominated by woody vegetation less than six meters tall. Predominate species include alder, dogwood, sweetgale, leatherleaf, and water willow. Forested wetland also include areas dominated by trees more than 20 feet in height. Normally the soil surface is seasonally flooded with up to 12 inches of water. Usually, several levels of vegetation are present, including such species as cedar, black spruce, tamarack and balsam fir.

Nonforested wetlands are dominated primarily by either wetland herbaceous vegetation or they are non-vegetated. Predominate species include cattail, bullrush, sedges and other grasses, along with broad-leaf emergents such as water lily, arrow arum and arrowhead.

Wetlands are important to a community as they provide the area with a natural ground water purification system. Care should be taken to protect these areas from harmful intrusion from such sources as lawn fertilizers, road salts and other similar chemical pollutants. Wetland systems filter these excess nutrients out of the surface runoff, lessening the occurrence of unwanted plant and algae growth in inland lakes and streams. Wetlands also provide places for breeding, nesting and rearing of young waterfowl and other species of birds, mammals, fish and reptiles. They intercept and hold flood or storm waters, naturally dissipating them over a period of time.

Part 303 of the Natural Resources and Environmental Protection Act, PA 451 of 1994, defines a wetland as:

"Land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation or aquatic life and is commonly referred to as a bog, swamp, or marsh and which is any of the following:

- ❖ Contiguous to the Great Lakes or Lake St. Clair, an inland lake or pond, or a river or stream.
- ❖ Not contiguous to the Great Lakes, an inland lake or pond, or a river or stream; and more than five acres in size; except this subdivision shall not be of effect, except for the purpose of inventorying, in counties of less than 100,000 population.
- ❖ Not contiguous to the Great Lakes, an inland lake or pond, or a river or stream; and five acres or less in size if the department determines that protection of the area is essential to the preservation of the natural resources

of the state from pollution, impairment, or destruction and the department has so notified the owner."

The Wetland Act authorizes the Michigan Department of Environmental Quality (MDEQ) to preserve certain wetland areas. The MDEQ may require permits before altering regulated wetlands and may prohibit development in some locations. Among the criteria used by the MDEQ when conducting a wetland determination are:

- ❖ Presence of standing water (at least one week of the year).
- ❖ Presence of hydric soil types that are saturated, flooded, or ponded sufficiently to favor wetland vegetation (usually black or dark brown in color).
- ❖ Predominance of wetland vegetation/plant material, or aquatic life, such as cattails, reeds, willows, dogwood, elderberries, and/or red or silver maple trees.
- ❖ Presence of important or endangered plant or wild life habitat or a rare ecosystem.
- ❖ The area serves as an important groundwater recharge.
- ❖ Size and Location - minimum size to be state regulated is five acres unless the wetland is contiguous to a lake, pond, river or stream, or is considered to be "essential to the preservation of natural resources of the state."

The determination that a site contains a regulated wetland can have several consequences:

- ❖ The MDEQ may issue a permit to fill the wetland.
- ❖ The MDEQ may require mitigation, such as replacing the wetlands. Sometimes this involves increasing the overall on-site wetland acreage by two or three times.
- ❖ The MDEQ may prohibit development in the wetland area if it is determined that there is a "prudent" alternative.

Map 4 indicates that there is an abundance of wetlands in Clay Township, many of which may be protected under the Natural Resources and Environmental Protection Act.

Soils

Soils represent significant limitations to urban development in Clay Township.

Data in Table 26 (1992 Plan) indicate that there are 22 different soil types within the Township, many of which can be classified as sensitive soils. "Suitable soils" -- those soils that will accommodate construction with few limitations -- are identified on Map 2.

Some of these soils are poorly drained and have a high water table making them unsuitable for waste disposal. It is difficult to keep basements dry in such soils. Poorly drained soils also cause cracking of pavement. Substantial frost heaving also occurs in such soils. Other sensitive soils are prone to flooding and are located within the Township's identified flood hazard areas. Development in these areas should be discouraged.

It should be noted, however, that these soil interpretations are general in nature and will not eliminate the need for on-site study and testing of specific sites for the design and construction of specific uses. This data can be used to plan more detailed investigation and for avoiding undesirable sites for temporary uses.

Noise

The U.S. Department of Housing and Urban Development regulation's require recipients of CDBG funds take into consideration noise criteria and standards and consider ameliorative actions when noise sensitive land developments are proposed in noise exposed areas. If CDBG activities are planned in noise impacted areas, and HUD assistance is contemplated later for housing and/or other noise sensitive activities, the HUD standards must be met for those activities.

Chapter Five – Transportation and Infrastructure

Transportation System

The overall system of roads and thoroughfares are essentially a public service which enable people, firms, and various other entities to carry on diverse activities at sites designated for these purposes in separated locations. They exist to make it possible for concentrations of people, firms, and other human institutions to carry on their activities in different locations in space. Within this context, one can readily ascertain the interrelationships between the transportation network and land use planning. Moreover, the very heart of transportation planning is concerned with the design of circulation systems which maximize accessibility for essential movements between linked activities, giving due consideration to safety, comfort, and amenity as well as cost. Adequate transportation systems are, therefore, a major consideration in a community's development.

For the present and in the foreseeable future, roads will be the basic element of the Township's transportation system. As traffic conditions become more complex and interwoven with patterns of urban expansion and growth, stopgap measures of traffic control become inadequate. The street system cannot be expected to operate at a satisfactory level of service and safety unless there is a continuing and comprehensive program of system-oriented planning and engineering for traffic. Consideration of the efficiency and safety of traffic operations must be a part of the decision-making process for street system and land use planning, street design, and traffic control.

This section of the Master Plan establishes the existing transportation network, and describes general street classification systems. Without adequate planning, the Township will be trying to continually to catch up with urban development problems rather than succeeding in giving direction to changing land use patterns.

Clay Township is located in the southernmost tip of St. Clair County, at the mouth of Lake St. Clair. The M-29 state highway traverses the Township along the along the St. Clair River and the North Channel. This is the primary access road to the Township. To arrive in Clay Township from I-94 to the west, one must travel approximately 15 miles along M-29. M-29 continues north to Port Huron.

A significant amount of traffic traverses the Township. Residents of municipalities to the north and east of the Township traverse the Township when going to the City of Detroit via I-94. Regional traffic between the cities of New Baltimore, and Algonac also pass through the Township. M-29 is the principle carrier of this regional traffic.

In addition to through traffic, traffic also originates and has its destination within Clay Township. Over 8,500 persons reside in the Township. In addition, there are numerous traffic generators in the Township including:

- Substantial residential development.
- Commercial areas developing along M-29.
- Regional recreation facilities at Algonac State Park, St. Johns Marshland Recreation Area, Dickinson Island, and Harsens Island/St. Clair Flats.

Functional Classification

Not all roads provide the same function for carrying traffic. Motorists with their destination or origin outside the Township will generally travel on regional thoroughfares, specifically M-29. These highways are generally indicated as state routes and are engineered for fast moving traffic between major population centers. Roads which are designed to provide links between major land uses relating to employment, shopping, and residential uses within the Township are considered major thoroughfares. Roads which provide access to abutting property are considered local.

At present, most thought is given to access through Ira Township via the M-29 State Highway. Future emphasis must be directed toward improving interior north-south highways which help traffic circulate through Cottrellville Township and then west or north to the freeway or east to the river and shoreline communities.

A most important part of the Plan is the understanding and cooperation of local Township officials, Macomb and St. Clair County officials, adjoining cities and Township officials, the State and the many private interests in the region. The entire region will dramatically improve its environment and economic well-being by improving accessibility to and from the entire area.

In terms of giving direction to changing or evolving land use patterns, the plan must provide sufficient street capacity for the traffic requirements of all areas of the Township. This can best be accomplished if land uses are so arranged in relation to a street plan that provides for:

1. Concentration of most of the traffic on a limited mileage, adequately designed major street system;
2. Location of the street in the major system to serve efficiently all areas of the Township; and,
3. An adequate supply of local streets to supplement the major street system.

Recognizing the foreseeable need for improving traffic movement within the Township and the interrelationships between traffic and land use, streets should be grouped according to their predominant function and service characteristics. Functional classification of roads represent an essential element in land use/transportation planning by providing the basic framework for projections of needs, construction priorities, and financing at each level of government.

The following is a definition of the recommended functional purpose classifications, as well as recommendations for the delineation of streets within each classification. Recommended classifications are indicated on Map 5.

Major Thoroughfares

These provide for intra-Township traffic mobility and trip continuity, serving high volumes of traffic. Their main function is to carry large volumes of traffic between major land uses in

the county, such as traffic between residential and employment areas. They also provide access to freeways and often augment the freeway when traffic volumes between regions are not heavy enough to warrant a freeway. Additionally, these routes distribute travel within geographic areas. Since these routes serve high volumes of traffic, direct access to abutting property must be subject to control of entrances, exits, and curb use, or eliminated by use of marginal access roads. Major thoroughfares should not, however, penetrate identifiable neighborhoods. Due to capacity and design characteristics and other utility considerations, major thoroughfares commonly require a minimum right-of-way width of 120 feet. Additional right-of-way may be required if planted boulevard streets are contemplated.

The following streets are delineated as major thoroughfares:

Mainland

1. Marsh Road - Provides the major north-south trip continuity in the eastern portion of the Township. It is clear that this road is proposed as a major thoroughfare, and accesses the City of Algonac as well as the state park.
2. Field Road - This road also provides for easy north-south traveling to access parts north of and beyond the Township, via Stone Road, and south to M-29 via Nook.
3. Holland Road (between Morrow and Stone) - The east-west pattern of this road facilitates east-west traffic on M-29, through the center of the Township. This road also provides access to other northbound thoroughfares.
4. Starville Road - A major north-south thoroughfare, Starville Road when connected via Holland Road to Phelps, Folkert or Stone, provides north-south transportation.
5. Taft Road - This road parallels M-29, running east-west. Access is provided to north-south thoroughfares such as Folkert and Phelps, via Taft. Connection and improvement of these roads provides a needed parallel to M-29 to facilitate intense development within this corridor and improve travel mobility in the center of the Township.
6. M-29 - Currently provides the main route for east-west and north-south traffic movement in the Township.
7. Folkert - This north-south road carries traffic north to Holland Road which connects with Starville or Stone to move traffic into or out of the Township.
8. Nook-Island-Ainsworth Roads - These roads are short, connecting roads. Each runs perpendicular, north-south, to M-29, and allows traffic to infiltrate the central Township road system, specifically accessing Fruit and Taft.
9. Phelps - Phelps Road is essentially an extension of Taft. Planned for paving in the near future, the improvement of this road will open up certain portions of the Township to more dense development, possibly PUD, and with appropriate intersection improvements at Holland and Starville, will serve the Township as a major north-south thoroughfare.

10. Stone Road - This road provides major access to the interior system of streets in the Township. It provides for north-south trip continuity in the eastern portion of the Township, as well as linkage to the economic center in the City of Algonac.

Island

1. M-154 - (North Channel, Columbine, Lacroix, and Green): This Road is a state highway. M-154 is considered a major thoroughfare. The street conditions on the island are unique in that they may not fall exactly within the definitions as may be appropriate on the mainland. Nevertheless, the island can serve as a microcosm of a larger regional thoroughfare system. M-154 provides access to the St. Clair Flats Wild Life area and to residences and commercial marinas along the south channel. Thus, the traveling public, tourists, and residents alike utilize this route.
2. Middle Channel Drive - Golf Course-North Channel Drive: This stretch of road provides access to homes and state property on the northern portion of the island. Along with M-154, this series of roads forms a half circle loop around Harsens Island.

Collector Streets

The prime function of collector streets is to provide traffic service between local streets and major thoroughfares. Traffic served will essentially be generated from a relatively small area or a specific traffic attraction such as schools and churches. Ease of access is a major consideration in the design of these streets. Route continuity is of limited importance since traffic will utilize these routes for only a small portion of their total trip length. In residential areas, these streets should be designed to discourage commercial and industrial, as well as through traffic. Accordingly, in commercial and industrial areas, these streets should be designed and constructed to accommodate heavy vehicles with provisions for additional illumination, pedestrian movements, parking lots, and loading docks. Collector Streets often provide direct access to abutting property.

The following streets are delineated as collector streets:

Mainland

1. Mill Road
2. Genaw Road
3. Jankow
4. High
5. Benoit
6. Swartout between Marsh and McKinnely
between Starville and Macomb
7. Macomb
8. Clay
9. Peters

Island

1. Cottage Lane
2. Ames
3. Columbine
4. Krispin
5. South Channel Drive
6. Stewart
7. Orchid
8. Little
9. Voakes
10. Rattray

Local Streets

Local streets provide for only local traffic movement with direct access to abutting property, as well as internal circulation and access to the development adjacent to them. These streets carry practically no through traffic and route continuity is of minimum importance.

Local streets are primarily a component of platting practices. The street layout that is planned for a subdivision has a major influence on the area's livability, traffic safety, and development costs. Typically subdivisions currently existing in the Township are grid patterned or linear road systems. Colony Isles are typical of the linear subdivisions. One or two long streets, with lots on either side typify subdivided properties in the Township. These are primarily located within the vicinity of M-29.

It is important to recognize that land planning policy will have a direct and practical bearing upon the physical design of the Township's road system and upon planning for other transportation services. While the road network will receive high priority in the short-run, it is equally important to recognize an alternative long-range goal influencing both transportation and land use policy.

Public Utilities

Public water supply systems and sanitary sewerage are available generally throughout the mainland. Public water is available for much of Harsens Island excluding the interior lands. Such utilities are important not only from a public health and safety standpoint, but also permit higher density development. Utilities also allow larger scale nonresidential uses to be built.

The Clay Township public water supply system began in 1945 with construction of that part of the distribution system along the North Channel Shoreline. The system, supplied by water from the City of Algonac, has been gradually expanded north and west from the shoreline area along St. Clair River, north of Algonac and the North Channel shoreline to include almost all properties on the mainland. On Harsens Island, public water service is available to most waterfront lots around the Island and inward along Krispin and Lacroix Roads.

The Township's share of Algonac Water Plant capacity is limited by contract to 2.7 mgd (million gallons per day) of the plant capacity of 4 mgd. The Township's average use at this time is 739 kgd (thousand gallons per day) or 270 mpy (million gallons per year). The capacity

available is 1,748 kpd (638 mpy). The Water Distribution System is designed to accommodate full development along the county roads with partial development of land between roads.²

The sanitary sewer collection system is not as extensive as the water system. It was started in 1977 and generally serves the St. Clair River shoreline north of Algonac and the North Channel shoreline to the north Township line. It extends inland in a few areas in the central portion of the mainland. There are no public sewer facilities available on Harsens Island.

Sewage is handled at a county owned wastewater treatment plant in Algonac which also serves Algonac and Ira Township. The plant capacity available to Clay Township is 945 kpd (1,435 kpd). A master plan for sewer system expansion exists for the central part of the Township.

Existing utilities are indicated on the following maps.

²Boldt, McCleod and Johnson, Inc., Clay Township Water Supply and Sewage Disposal System, 1991.

Chapter Six - Planning Standards

The following assesses the market potential for future residential, commercial/office, and industrial uses within the Township based on nationally recognized planning and design standards. This database will be used to determine the minimum amount of each land use which can reasonably be expected to be needed in Clay Township by 2020. It should be noted that, at the time of this year 2002 amendment, detailed housing numbers are not available at the township level. It is known that 5,325 housing units were counted in the 2000 Census in Clay Township, but information on housing by type, age or similar category is not available. When necessary, 1990 statistics were used.

Residential Needs Analysis.

Housing need is determined by three factors. First, the future population must be projected. Second, the number of housing units must be calculated given the characteristics of the future population (persons per household and vacancy rate). Third, an estimate of the existing structures which are expected to become substandard and replaced during the planning period must be made.

Clay Township is unique in the amount of seasonal housing available. According to the 2000 Census, 26% of the housing in Clay Township is seasonal or recreational. This figure is significantly higher than St. Clair County as a whole and is comparable to percentages found in northern Michigan recreational counties such as Leelanau, Charlevoix and Kalkaska. For the purposes of calculating future housing need in Clay Township, we will focus our computations on year-trend housing need. This is due to the fact that the seasonal housing is included in the census as part of the vacancy rate. While these homes may be vacant for a large part of the year, they are not generally for sale or otherwise available as housing for people wanting to move into the Township. For the purposes of land planning, we will focus on the need for additional housing to accommodate new year-round residents.

The Socioeconomic Profile projects that the Township's 2020 population will be 11,152 people. Data in Table 18 indicate the number of dwelling units required to house this population assuming a five percent vacancy rate in that year.

Table 18
Housing Unit Requirements
2000 and 2020

Category	2000	2020	Change 2000-2020	
			Number	Percent
Total Population	9,822	11,152 ^a	1,330	11.9
Persons Per Household	2.5	2.5	0.0	0.0
Total Occupied Year-round Units	3,934	4,461	527	11.8
Vacancy Rate (%)	7.2	5.0	(2.2)	(30.5)
Total Year-Round Housing Units	3,934	4,363	429	9.8

Data compiled by Wade-Trim.

Sources: 2000 US Census, Population and Housing Characteristics, Michigan

^a Consultant estimate.

In total, an estimated 4,363 year-round housing units will be required to house the anticipated 2020 population of Clay Township. This consists of 429 new homes or 9.8 percent more than the 2000 inventory.

The housing requirements for Clay Township in 2020 equals the total new units plus replacement units. Thus, 1,897 year-round housing units will be required by 2020, or 394 more units than existed in 2000. It is projected that the vast majority of units will continue to be the single-family detached variety, given the preponderance of this type of development in the Township and the lack of public sewer and water facilities in some areas.

Commercial and Industrial Needs Assessment

The commercial and industrial needs of Clay Township, as projected to the year 2020, have not changed significantly since the 1992 Master Plan was adopted. This is due to the fact that the population has not significantly increased since 1992 and neither has the generalized land use pattern significantly changed. As a result, for a thorough analysis of future commercial and industrial need, refer to the existing Master Plan.

Chapter Seven - Goals and Objectives

Before a community can actively plan for its future growth and development, it must first set certain goals and objectives that define the boundaries of its needs and aspirations and, thus, establish a basis for Future Land Use Plan formulation. These goals and objectives must reflect the type of community desired and the kind of lifestyle its citizens wish to follow, given realistic economic and social constraints.

The following text represents a recommended set of goals (the ultimate purposes or intent of the plan), and objectives (means of attaining community goals), which are prepared to guide local decision-makers in reviewing future land use proposals.

Goals

Clay Township adopts the following general community goals to guide future land development activities and to develop, maintain, and enhance those desirable qualities of the community which have attracted its residents.

1. Continue to protect and enhance the unique quality of life that is typically characteristic of Clay Township.
2. Create an optimum human environment for the present and future residents of the Township, an environment that will not only solve their physical needs but will offer variety, choice, opportunity for change, and individual growth.
3. Develop an adequately balanced community-wide land use pattern to ensure diversity, stability, and serve residents' needs.
4. Develop adequate guidelines to assure a reasonable balance between anticipated growth and development and the ability to provide necessary services.
5. Improve economic conditions by encouraging both commercial and recreational activities which will attract tourism in order to reduce unemployment, increase the local standard of living, and improve the local economy.
6. Encourage intergovernmental cooperation with the City of Algonac and other surrounding governmental units in the growth of the Clay Township area, particularly in the coordination of long-range planning efforts.
7. Encourage the maintenance of an efficient thoroughfare system by regularly reviewing the traffic needs of the community in conjunction with the concepts provided in the Master Plan.

Achievement of these goals can be accomplished if the community adopts and adheres to the following goals and objectives with respect to residential, commercial, industrial, community facilities, transportation, and recreation and open space.

Residential Development

Goal

Promote the development of planned residential areas designed to offer a variety of identifiable living environments.

Objectives

1. Discourage strip frontage residential development along major roads and encourage medium-high density single-family housing development in those areas where it will not detract from existing residential development patterns and where infrastructure exists to support these uses.
2. Encourage the combining of nonconforming lots so that all single-family development has adequate outside space.
3. Encourage the renewal and revitalization of those residential areas of the Township with housing that falls below minimum standards, partly through clearance, redevelopment and comprehensive code enforcement, and partly by encouraging home improvements and private and public investment in rehabilitation programs.
4. Require that suitable and adequate transition areas or buffers be established between residential, commercial, and industrial areas to maintain property values and physical attractiveness.
5. Encourage the removal of conflicting or undesirable land uses from residential areas.
6. Seek a means of encouraging the development of suitable housing for the elderly population and for low- and moderate-income households.
7. Promote preservation and code enforcement to maintain substantial residential areas.

Commercial Development

Goal

1. Provide for a full range of commercial facilities which are adequate to serve the residential population and attract the tourist trade.

Objectives

1. Encourage the development of clustered, commercial, and office facilities in close proximity to major street intersections, thus providing the opportunity to offer a variety of goods and services most conveniently.

2. Strip commercial thoroughfare frontage developments should be discouraged except where it can be substantiated that there is a need for highway-oriented type businesses and other business uses that are not typically involved in comparison or multi-purpose shopping trips.
3. Recognize the importance of recreational and tourist commercial businesses to the overall economy of Clay Township and encourage commercial development to establish an identity that is unique to our area and will draw people to the community.
4. Promote the development of bed and breakfast accommodations and other suitable lodging facilities to attract tourists to the area and provide the catalyst necessary for additional development opportunities.
5. Encourage future marinas and boat storage, facilities to develop in a manner that preserves attractive views of the river.
6. Establish and maintain different classes of commercial zoning to minimize conflicts with residential and light industrial uses and to provide suitable locations for a wide variety of commercial business types.
7. Encourage innovative development to help service the island segments of our community.
8. Encourage the use of landscaping, setbacks, and marginal access drives to promote aesthetics and safety.

Industrial Development

Goal

Encourage a variety of light industrial development with attractive sites in planned locations which will strengthen the tax base and provide additional employment opportunities for area residents.

Objectives

1. Encourage the development of new types of industries, especially those that are economically associated with the existing industrial base and compatible with the environment and existing land use pattern.
2. Provide industry at locations which can be readily serviced by public utilities and which are easily accessible to the existing transportation network.
3. Locate industrial areas where they have reasonable boundaries and are not subject to encroachment by incompatible uses.
4. Preserve and rehabilitate appropriate industrial areas by removing incompatible uses, consolidating land, and removing vacant and substandard buildings, as well

as giving particular attention to landscaping, buffer strips, off-street parking, and other design matters.

5. Incorporate and utilize the concept of development of industrial land in industrial parks or planned industrial districts with well designed points of entrance and exit, controlled site and building design, and adequate parking areas.
6. Incorporate a series of comprehensive performance standards governing industrial uses.
7. Seek a means of attracting and assisting existing industries to expand their operations to enhance the community.

Community Facilities

Goal

Provide community facilities and services as necessary to protect the health, safety, and welfare of Clay Township residents in the most cost-efficient manner.

Objectives

1. Provide for public and semi-public use areas offering a variety of opportunities for human fulfillment in locations that are appropriate for their development and utilization.
2. Provide adequate utilities and infrastructure so that Clay Township may ensure managed and responsible growth.
3. Extend and stage future sewer and water service in an orderly manner, leaving no gaps or spaces in coverage.
4. Encourage large lots and on-site disposal systems where sewer extensions are not foreseeable within the planning period.
5. Plan development in a manner that best utilizes the Township's utility system.
6. Consider combined services to citizens of both Clay Township and other neighboring communities.
7. Recognize that drainage can be a problem and that a variety of solutions are available for correcting drainage problems (retention, pumping, gravity design, and drain deepening).
8. Develop a plan for community facilities including fire stations, libraries, and general utilities.
9. Continue to place a high priority on the quality of education provided in Clay Township to attract and retain a highly trained and competitive work force.

Transportation

Goal

Plan for a network of roads by type and function that will provide a complete road system including major, secondary, collector, and local roads.

Objectives

1. Cooperate with the Michigan Department of Transportation to ensure that a proper relationship exists between planned road improvements and the Township's desired future land use pattern.
2. Limit points of ingress/egress on major roads.
3. Provide a transportation system that recognizes the need for both auto and truck traffic and eliminates as many points of conflict between the two as possible.
4. Increase pedestrian safety by providing opportunities for pedestrian circulation along existing and planned road systems.
5. Provide for a cut-over bypass road to reach the Fruit Road or Algonac area.
6. Improve the road system to better serve residences and businesses.
7. Promote bus transportation from New Baltimore to Port Huron along M-29.
8. Promote the summer shuttle bus service to encourage tourism from State Park to Algonac to Harsens Island.
9. Seek adequate and sufficient right-of-way for M-29 and encourage the development of multiple travel lanes.
10. Encourage an adequate ferry loading and stacking lane area on both the Island and the Mainland.
11. Consider the development of an alternative means of access to Harsens Island.
12. Examine feasible alternatives for the provision of bike paths and pedestrian walking and jogging trails along M-29 to the St. John's Marsh area and in other areas of the Township, as necessary.

Recreation and Open Space

Goal

Promote the development of existing recreational facilities and preserve sufficient open space to satisfy the needs of the Township residents.

Objectives

1. Cooperate with the state of Michigan and adjoining communities in the development of recreation and community facilities.
2. Seek a means of working with the Michigan Department of Natural Resources to develop the land that they control to provide nature walks, bike paths, pedestrian sidewalks, trails, points of controlled viewing, and other similar passive recreational amenities.
3. Seek cooperation from the Algonac State Park to expand use of the park for more summer and winter recreational activities.
4. Encourage intergovernmental cooperation between the Township, City, and school district for the joint use and development of park and school facilities.

The goals and objectives are intended to provide the framework for the future development of the Township and will help to maintain an orderly, prosperous, and attractive development pattern. As the planning process progresses, the goals and objectives may be altered and new ones formed. It is recommended that the goals and objectives be reviewed and updated as necessary.

Chapter Eight - Future Land Use Plan

The Future Land Use Plan is designed to serve as a guide for future development. If it is to serve the needs of the community and function effectively, it must incorporate several important characteristics.

1. The Plan Must Be Generalized

The Plan, by its very nature, cannot be implemented immediately. Therefore, only generalized locations (not necessarily related to property lines) for various land uses are indicated on the Plan.

2. The Plan Should Embrace An Extended But Foreseeable Time Period

The Plan depicts land uses and community development strategies through the Year 2000.

3. The Plan Should Be Comprehensive

The Plan, if it is to serve its function as an important decision-making tool, must give adequate consideration to the sensitive relationships which exist between all major land use categories, including environmentally sensitive properties.

4. The Plan Should Acknowledge Regional Conditions and Trends

Clay Township is an integral part of the Region; therefore, the Plan should acknowledge the Township's regional context. Through recognition of regional implications, the Township's Future Land Use Plan will be more realistic and reasonable in terms of guiding the future utilization of land resources in the Township.

5. The Plan Must Be Flexible

The Plan may require periodic revisions to reflect significant changes in local, state, or national conditions which cannot be foreseen at this time.

For example, within the past thirty years, several major innovations in land development have occurred. Included among these are: the initiation and expansion of the freeway system; modifications in shopping facilities (shopping centers, enclosed malls, free parking); relocation of employment centers from the cities to the suburbs; changes in housing preferences from the traditional single-family home to apartments, townhouses, condominiums, and mobile homes; and the declining family size.

It is, of course, impossible to predict the variety of changes which may occur over the next decade or two. Therefore, the plan should be analyzed and modified periodically to reflect changing conditions.

6. The Plan Must Be Updated Periodically

A comprehensive review of the Future Land Use Plan should be undertaken approximately every five years to provide for an adequate analysis of new conditions and trends. Should major rezonings which are in conflict with Plan recommendations be accomplished, the Plan should be reviewed and amended accordingly, to reflect the current community development goals and policies.

The Township Plan depicts the generalized desired development pattern for the Township for the next two decades. It is designed to provide the necessary guidelines for making future land use, community facility, and capital improvement decisions.

Plan Recommendations

Twelve (12) land use classifications are proposed for Clay Township. The various land uses have been portrayed on Map 8 and in Table 19 for each classification. A discussion of each land use category is presented following the Table.

TABLE 19		
FUTURE LAND USE		
CLAY TOWNSHIP, ST. CLAIR COUNTY, MICHIGAN		
YEAR 2000*		
LAND USE	AREA (ACRES)	PERCENT OF TOTAL
Residential Suburban	5146.02	21.95
Residential Suburban - 2	1098.70	4.46
Single-Family	4171.19	17.83
Single-Family Waterfront	289.56	1.22
Multiple-Family	42.86	0.02
Mobile Home Park	135.31	0.06
Planned Waterfront Development	221.73	0.90
Commercial	417.18	1.86
Industrial	92.19	0.39
Recreation/Conservation	11179.74	0.04
Public/Semi-Public	191.81	48.45
Rights-of-Way	667.66	2.82
TOTAL	23,653.95	100.00

*Compiled by Wade-Trim/Associates.

Residential Suburban

The Residential Suburban category is intended to provide open land area for orderly residential growth, continued agricultural use, and residential activities of a semi-rural character in areas that have limited public water and no public sewerage facilities and are likely to remain so for an extended period of time or in areas that are otherwise largely rural in character. Lands in this classification are found in the northern part of the mainland and the interior of Harsens Island. It is further intended that the district protect and stabilize the essential characteristics of these areas in order to promote and encourage suitable environments for low density family life, and to maintain and to preserve the woodlands, open space and general semi-rural character of the Township.

A minimum lot area of one acre or 43,560 square feet of gross area is recommended for single-family lots located within this land class.

Residential Suburban Two

Lands in the Suburban Residential 2 classification would act as a transition zone between the large lot Residential Suburban lands and higher density single-family areas. To properly accomplish this function, lots sizes should be less than the one-acre required for Residential Suburban but larger than the other single family residential classes.

Areas planned for the Residential Suburban 2 category are generally found on the mainland in a horizontal strip running south of Holland Road and north of Mill Street.

Single-Family

This land use is intended for single-family residential development of relatively small lots of a more urban nature, with the following objectives.

1. To protect the residential character of areas so designated by excluding activities and land uses which are not compatible such as, but not limited to, principal commercial and industrial uses;
2. To encourage a suitable environment for family life by permitting appropriate neighborhood facilities such as churches, schools, playgrounds, and open space;
3. To permit certain institutions and utility facilities considered necessary in, or compatible with, residential neighborhoods;
4. To preserve openness of the living space and to avoid overcrowding by requiring certain minimum yards and open spaces, and by restricting maximum coverages and the bulk of structures;
5. To provide for access of light and air to windows, and for privacy, as far as reasonable, by controls over the spacing and height of buildings and other structures;

6. To protect residential areas from unnecessary traffic and to restrict volume of traffic to the greatest degree possible; and
7. To encourage development within residential areas that is attractive, consistent with family needs, and conducive to constantly improved environmental quality.

Connection to public sanitary sewer and/or water supply systems is assumed; however, densities consistent with the Township's existing Zoning Ordinance are recommended until full utility service is supplied throughout the land area classified as single-family.

Portions of Harsens Island have been designated for single-family residential use with the understanding that residential densities will be restricted and limited through various zoning provisions and environmental factors. Limitations on future lot sizes include a lack of sewer service. Areas planned for future single-family residential use on Harsens Island generally include the waterfront properties.

Additional limitations on future residential densities on Harsens Island include significant environmental constraints including submerged lands; wetlands protected by the Michigan Department of Natural Resources; and location within the 100 year floodplain. A third factor that restricts residential density on Harsens Island is the St. Clair Flats Wildlife Area. These lands are publicly owned and are preserved for wildlife habitat. Development of the St. Clair Flats Wildlife area is not encouraged or ever expected to occur.

The physical and environmental impacts of the future development of any remaining residential lots will be insignificant in light of the many factors that are currently in place to preserve the natural environment on Harsens Island. Further, development of 18,000 square foot residential lots within the planned single-family residential areas will be compatible with the density of residential development that already exists in those areas of the Island.

Although a significant amount of the Township is planned for single-family residential land use, there is no reason why single-family development needs to be dull and unimaginative. For example, designing single-family units in small groups or clusters reduces lot sizes and increases common open space. The land area gained through the decrease in lot size can be used collectively for a park area available to residents of that subdivision.

Another concept which adds flavor to single-family neighborhoods is planned unit development. This incorporates a mixture of land uses such as single-family housing, multiple-family housing, and common open spaces. This would create a slightly higher density than proposed for low density residential and, at the same time, could establish an area with a variety of housing types.

Cluster subdivisions and planned unit developments are new concepts which should be encouraged in future single-family development, where density bonuses are given to developers as a means of preserving fragile or environmentally important lands.

Single-Family Waterfront

This district recognizes the environmental and aesthetic qualities of waterfront and canal properties. This district permits the construction of one-family homes on canal lots with a minimum front yard setback and larger rear yard setback. Such lot sizing takes maximum advantage of the canal setting. All lots within this district must be served with public water and sewer.

Multiple-Family

Approximately 70 acres of land area have been allocated for multiple-family development. Permitted uses within this district would be group housing for the elderly, garden apartments, townhouses, multiplex and duplex units. Projects can either be condominium or rental development.

Permitted development densities may range between four to five units per acre (duplex) to ten to fifteen units per acre (garden apartments), depending on dwelling unit type.

Each dwelling unit, of whatever type, must be served by both municipal sanitary sewer and water. Individual developers are responsible for providing facilities and services sufficient to serve the needs of their prospective markets. Additional public services (police patrols, fire protection, etc.) will be required with their extent dependent upon relative population densities.

Mobile Home Park

The purpose of this district is to provide for the development or expansion of mobile home parks, and to:

1. Bring about mobile home parks which are an asset to the community and to prevent the development of those which would be a community liability;
2. Promote mobile home parks with the character of residential neighborhoods;
3. Protect the health, safety, and welfare of mobile home park residents and the surrounding community; and to
4. Fit this legitimate use of land into development plans as they are considered, adopted and amended by the Township, and which plans will harmonize this type of residential development with other existing and proposed land uses.

It is intended that mobile home parks will be served adequately by essential public facilities and service such as highways, police and fire protection, water and sewers, drainage structures, refuse disposal, or that the persons or agencies responsible for the establishment of the mobile home park shall be able to provide adequately any such service.

Four mobile home park areas are shown. These represent the locations of the existing parks in the Township as specified in the existing land use section of this plan. The

additional land area adjacent to Channel View has also been classified as Mobile Home Park to allow for future expansion of this housing type.

Planned Waterfront Development

The waterfront areas within Clay Township are a valuable community resource. The St. Clair River, Lake St. Clair, and Anchor Bay are community assets which already draw tourists to the area. A majority of existing commercial uses have developed over the years in response to tourist/recreation activity and operate on a seasonal basis. Commercial recreation and tourism should be encouraged in order to increase the market potential for these uses in the Township. Planned waterfront development permits a variety of complementary land uses subject to special performance standards and site development criteria.

Waterfront development projects can include recreational, public, resort, business, and residential uses which are related to the waterfront and which cannot feasibly be located elsewhere. Industrial uses are prohibited.

To provide for adequate utilization of this option, a relatively large parcel, or combination of parcels under single ownership, is required. The advantages of this approach over lot-by-lot development include additional flexibility in project design and the preparation of a unified site plan that can make the best use of the land.

All uses must be served by both sanitary sewer and water systems as may be approved by Clay Township. Each individual developer must provide adequately improved open spaces as a part of the plan and, in addition, must provide other facilities and services sufficient to serve prospective market needs. Other public services will be required in varying degrees, depending upon those specific uses which are proposed.

The target areas noted on the future land use map are well suited for planned waterfront development. They are adjacent to waterways and are also bounded or in close proximity to either existing and/or proposed commercial sites. These particular locational features allow for full utilization of the waterfront concept. That is to say that recreation, marina, and tourist related commercial uses, may be located within the waterfront development area in such a manner as to have direct access to major travel routes, and to also serve as transitions between more intensive commercial uses located along the major travel corridors and existing and/or proposed waterfront commercial areas. In addition, developed open spaces, which should be required as a part of every project, may be designed in a fashion which will provide relatively convenient pedestrian access from those portions of the project adjacent to waterways to commercial uses fronting the major travel corridors.

Commercial

Commercial development is an important aspect of the growth of any community, in terms of offering adequate commercial services to residents as well as providing a reasonable tax base and increased employment opportunities. The size of the potential market will ultimately determine the extent of the Township's commercial base. Some commercial uses are designed to serve a relatively small, local market, and depend almost exclusively upon the population residing within the community. Other retail sales

and office developments, however, demand a much larger market extending well beyond the Township boundary. Recommendations for implementation of the commercial classification include dividing the Township's commercial areas into three sections to both ensure a healthy mix of business as well as protect established neighborhoods from incompatible non-residential encroachment.

It is recommended to allot approximately 566 acres for various types of business development. A substantial proportion of this land is currently developed and/or zoned commercially. As noted in previous chapters, what may appear to be extensive commercial development in fact has lesser impact than that found in other communities due to the tourism/recreation commercial nature of the uses.

The location of business uses is an important consideration in the Plan because of its economic importance and effect on traffic and neighboring land uses.

Businesses are primarily clustered near intersections. Some linear development is also proposed along M-29; however, this recommendation is made to acknowledge existing nonresidential development along these routes, as well as in consideration of the limited development potential for alternative uses at these locations. As a rule, linear business development should be considered outmoded and inappropriate in a community such as Clay Township which has attracted many residents due to the rural and open space nature of the area.

These proposals have been made on a basis which reflects future local population densities and acknowledges general regional trends and traffic patterns. Future commercial rezoning requests which are not in conformance with the Future Land Use Plan must be carefully analyzed in terms of their potential effect on the existing, vacant, commercially zoned properties. The indiscriminate rezoning of properties for commercial use will hinder the development of existing commercially zoned properties. The result will be a pattern of commercial development which does not adequately serve the local and regional populations.

Industrial

The Future Land Use Plan allows adequate space within the Township for industrial growth. This acreage is contiguous to existing industrial areas on the mainland, in close proximity to the Algonac City limits, and the Townships most urbanized sections. Due to this relationship, this district has been established to provide for those uses which are generally compatible with, or, which under the imposition of certain reasonable standards, may be safely and aesthetically located in close proximity to commercial or residential uses. Light industrial uses are recommended.

Light industrial uses include operations which are, in the main, confined within enclosed structures. Compliance with reasonable performance standards is required in an effort to reduce adverse affects on neighboring properties. Typical light industrial uses may include the manufacturing of products for component parts, parts assembly, food packaging, warehousing, and tool and die shops. In addition, certain commercial uses are also allowed because their building size and architecture are similar with industrial uses. Examples include indoor tennis clubs, ice rinks, shooting galleries, bowling alleys, etc.

Significant new industrial uses are not to be encouraged. This is due to the fact that M-29, in its present configuration, cannot readily and efficiently accommodate a substantial increase in truck traffic without causing a potentially dangerous circulation system.

Recreation/Conservation

Given the preponderance of State and DNR owned land in the Township which is held in open space, and likely not to be developed, the Township will not actively encourage local government acquisition of additional land for this purpose. The preservation of environmentally sensitive and/or important land is in great measure accomplished through state holdings.

The Future Land Use Plan incorporates an open space network - the Recreation/Conservation classification. It is necessary for a Township to have lands available for recreational use, but it is also necessary to have land remain in its natural state untouched by any type of development. The value to the public of certain open areas of the Township is represented in their natural, undeveloped, or unbuilt condition. It is recognized that the principal use of certain open areas is, and ought to be, the preservation, management, and utilization of the natural resource base possessed by these areas. In order that this value may be maintained and this use encouraged, this Plan has established a district designed to protect and enhance open space in the Township. Such assets are the Township's natural resources, natural amenities, natural habitats of wildlife, watershed and reservoir areas, and public recreation areas. In so doing, the Township may see a reduction of hardships and financial burdens imposed upon the Township through the wanton destruction of resources, the improper and wasteful use of open land, and wooded areas, and the periodic flooding and overflow of creeks and streams.

Recreation/Conservation areas are of extreme importance to a growing community. Not only do they meet the increasing opportunities afforded by increasing leisure time and are a source of health and pleasure, but also serve as a reminder that man can never put his natural habitat back. Approximately 11,280 acres of the Township's total land area dispersed through the community is devoted to this category. This represents 47.69 percent of the Township land area.

Public/Semi-Public

The public/semi-public category represents public and semi-public land development currently in existence in the Township. The Land Use Plan designates 191.8 acres for both public and semi-public uses. Existing uses include the Township hall, schools, fire and police stations, the Department of Public Works, parks, and a cemetery.

M-29 Corridor Development Plan

A majority of the nonresidential land uses within Clay Township have located adjacent to State Highway M-29. Location along the corridor is of considerable economic importance to business owners in the Township since it provides maximum exposure and accessibility to passing motorists. Clay Township has prepared a corridor

development plan for M-29 and has established a Downtown Development Authority (DDA) to prevent deterioration and enhance economic growth in the corridor area.

The development plan includes an assessment of existing conditions, and a Development Plan which provides a visual representation of the development potential of the M-29 corridor. Areas along the corridor are identified for "reuse," expansion, redevelopment, and preservation.

Appendices

Public Hearing Notice

Public Hearing Minutes

Resolution of Adoption by the Planning Commission

Transmittal to the Township Board

Transmittal to the St. Clair County Planning Commission



- SINGLE FAMILY RESIDENTIAL
- MULTIPLE FAMILY RESIDENTIAL
- MOBILE HOME PARK
- COMMERCIAL
- INDUSTRIAL
- PUBLIC
- SEMI - PUBLIC
- EXTRACTION
- VACANT

SOURCE: FIELD SURVEY, JULY 31, 1990, AUGUST 8, 21, 1990.
 COMMUNITY PLANNING AND MANAGEMENT, P.C.
 J. WIGGERS



EXISTING LAND USE

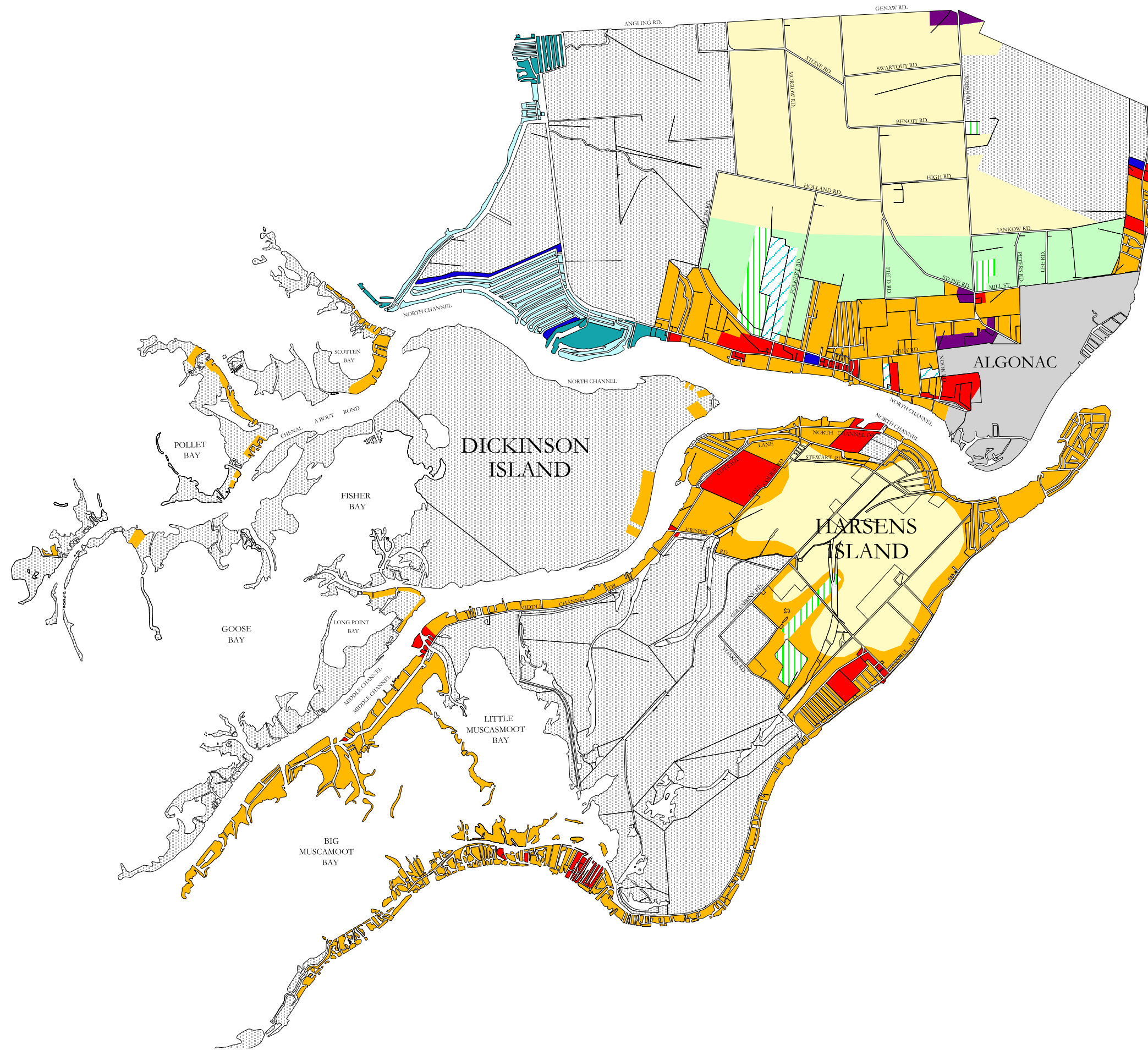
A PLAN FOR

**CLAY TOWNSHIP,
 ST. CLAIR COUNTY, MICHIGAN**

Wade-Trim

MAP 2

Amended: September 2002



- Residential Suburban
- Residential Suburban 2
- Single Family Residential
- Single Family Residential - Waterfront
- Manufactured Home Park
- Multiple Family Residential
- Commercial
- Planned Waterfront
- Industrial
- Recreation/Conservation
- Public/Semi-Public
- City of Algonac

FUTURE LAND USE
 A PLAN FOR
CLAY TOWNSHIP
 ST. CLAIR COUNTY, MICHIGAN

Wade-Trim
 MAP 8

