

MACOMB TOWNSHIP

MASTER PLAN

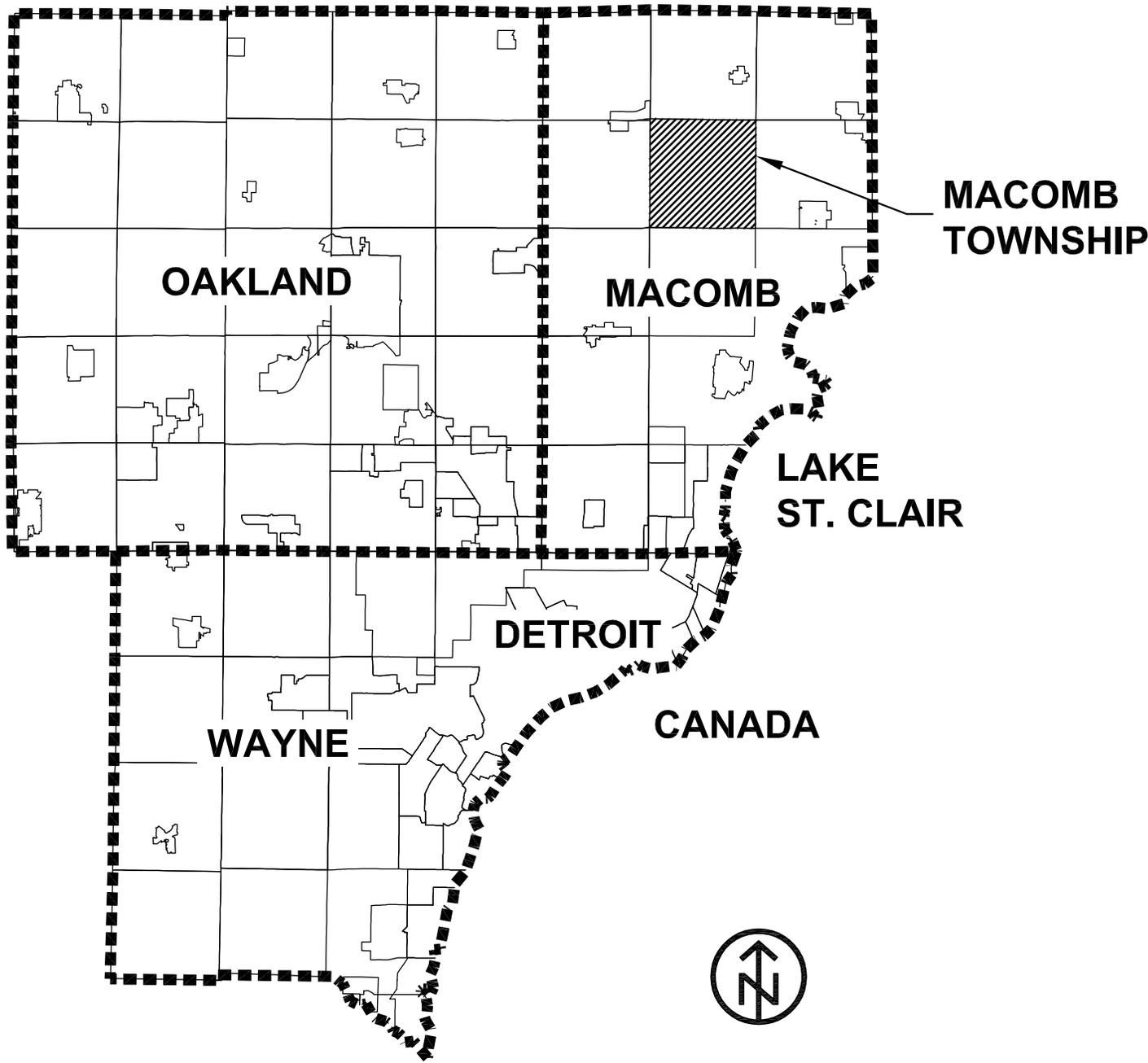
2008

**PREPARED BY THE MACOMB TOWNSHIP PLANNING COMMISSION
AIDED BY COMMUNITY PLANNING CONSULTANTS, INC.**

**ADOPTED BY THE MACOMB TOWNSHIP
BOARD OF TRUSTEES
DECEMBER 10, 2008**

**Amended October 28, 2009
Added Gratiot Avenue Corridor Improvement Plan
(See Appendix)**

MACOMB, MICHIGAN



Spalding DeDecker
Associates, Inc.



Engineering Consultants
Infrastructure • Land Development • Surveying

MACOMB TOWNSHIP COMMUNITY PROFILE

POPULATION	50,478 (2000 CENSUS) 75,018 (2008 ESTIMATE) 135,022 PROJECTED ULTIMATE HOLDING CAPACITY
SIZE AND AREA	36 SQUARE MILES
TRANSPORTATION	GTW RAILROAD M-59 (HALL ROAD)
PUBLIC SCHOOL DISTRICTS	CHIPPEWA VALLEY SCHOOLS L'ANSE CREUSE SCHOOLS NEW HAVEN SCHOOLS UTICA COMMUNITY SCHOOLS
RECREATION	RECREATION CENTER MACOMB CORNERS PARK WALDENBURG PARK MACOMB TOWNCENTER PARK
MAJOR LAND USES	AGRICULTURE RESIDENTIAL COMMERCIAL INDUSTRIAL MACOMB TOWN CENTER
LOCATION	CENTER OF MACOMB COUNTY TWELVE MILES NORTH OF DETROIT

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Supervisor John D. Brennan and Planning Commission members Joa Penzien and Arnold Thoel were in office during the preparation of this revised Master Plan 2008.

MACOMB TOWNSHIP, MICHIGAN

CENTER OF MACOMB COUNTY – HEART OF THE WORLD

Macomb Township Master Plan

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Introduction

The Planning process is fundamental to most things that we do, either as a community or on an individual basis. Decisions made affect either the entire community or can affect an individual. A decision to create a park system will affect the entire Township while a zoning variance can adversely affect the residents of a street or one individual. It is therefore important that the planning process be equally applied to all persons to minimize negative impacts and to maximize positive features of community growth. Planning is looking backward into history and looking forward into the future so that today's decisions will be meaningful and creative to serve the Township residents.

The earlier Master Plan stated that "Planning and specifically local land use planning, is basically a process whereby a community, through its elected and appointed leadership, examines the present characteristics of development in terms of its assets and liabilities, defines current local and regional development trends, determines what are the most probable and desired goals for future development, and charts a course of action to accomplish those goals."

The undated Plan retains all of the valid features of the original Plan and is amended to conform to the present commitments placed on the Township through development and adopted Plans.

The original Master Plan was adopted by the Macomb Township Planning Commission on July 17, 1973, and served as a basis for developing recommendations to the Township Board on matters of land use proposals.

Decisions made by outside private and public agencies, which directly affected the Township's Master Plan, required major revisions as they pertain to roads, community facilities and land use. The current condition of the economy of the State of Michigan as well as the entire country may well create situations that may cause a re-evaluation of certain goals and objectives of the planning process.

The Township's Master Plan has been initiated by the Macomb Township Board through the creation of the Macomb Township Planning Commission under authority of Rural Township Planning Commission Act, Act 168 of P.A. 1959, as amended. This State Enabling Act directs that the "Planning Commission shall make and adopt a basic plan as a guide for the development of unincorporated portions of the Township."

In reviewing the total proposals of the Plan, the reader must be aware of the details spelled out in the following mentioned studies which have been refined, summarized and updated for this report: 1) Population Analysis, 2) Basic Land Use, 3) Housing Analysis, 4) Policies and Programs, and 5) Economic Analysis.

Macomb Township can be proud of its early involvement in the planning process. Standards for growth and development have been established and have now become the guide for new home construction taking place. With these procedures in place the Plan can concentrate on new avenues of challenge such as the development of parks and recreation system, a Town Center, civic appearance and other services to its residents.

Background information necessary to prepare the revisions to the Master Plan for Macomb Township takes into account the current economy of the State of Michigan and some development issues that are not only peculiar to Michigan but the Country as a whole. For example germane to the issue includes a recent report which indicates that 30,000 persons moved out of the State of Michigan in 2007 and home building has been drastically reduced. Therefore challenges are presented to the Planning Commission and to the Township Board that must be addressed when mapping out the future "direction" for Macomb Township.

In preparing the Master Plan, it is important to understand the current market and what might be anticipated in the future. Early in this decade, the growth of Macomb Township included the construction of over 5 or 6 or even 7 houses per day. Currently less than one house is being built per day. The recession of late 2008 preceded by the National Financial crisis has curtailed subdivision platting to a point where no plats are under consideration and those that were in the preliminary stages prior to the fall of 2007 have been put on hold for an indeterminable amount of time. Equal in importance, large tracts of residentially zoned land and a substantial number of residential building sites (lots), have decreased in value. Also approximately 200 homes are in foreclosure in the Township with property values plus absorption rates declining dramatically. These circumstances will impact the creation of new residential development over the next three to five years and possibly more. A further impact on residential development in the Township is the fact that approximately 3,357 developed and vacant housing sites exist in the Township. In addition there are 4,216 building sites in proposed developments in the Township which are on hold pending a turn around in economic conditions. In addition, there are 2,400 home sites planned in the Macomb Town Center approximately two dozen of these sites have been developed.

The most recent publications by the Southeast Michigan Council of Governments indicates the 2008 Township population at 75,734 and is projected to increase by about 1,200 persons per annum or 46.9% and to 111,247 in 2030. Household (occupied housing units) are presently at 26,236 and are projected to increase by 64.3% and to 43,095 in 2030. On the other hand, the average household size is projected to decline from 2.88 in 2008 to 2.58 in 2030. Based on current economic conditions, it seems that the growth projections are overstated. The Macomb Township Clerks Office estimates a housing unit count of approximately 27,454.

The Council of Governments indicates a job forecast of 3,150 in 2000 that would increase by 72.3% and to 5,427 in 2010, that in 2020 is projected to increase by 39.8% and to 7,588, and that in 2030 will be increased by 27.5% and to 9,678, as of 2000 it was indicated that 89% of the daytime population were non-working, that 50.9% of the jobs by industry were in services, 30.1% were in manufacturing, 52% of the 24,616 workers were employed in Macomb County, and 32.3% had an associate, bachelor's, or graduate/professional degree. Based on current economic conditions given, that lesser amounts of disposable income are available for or durable goods, the downsizing of the automobile industry, and declining incomes, it appears that the job forecasts may be aggressive/optimistic. In contrast with the softening in the residential sectors employment will have a significant impact on the demand for and the price of housing. Comments made by local developers and builders substantiate these facts and suggest that when the housing market returns the size and price of housing will be much less than recent construction.

The creation of commercial facilities until recently has been aggressive. No less than a dozen commercial projects are either recently approved, under construction or on the drawing board. Approximately 500,000 square feet is currently under construction and includes a Target Store on Hall Road east of Heydenreich, Kohl's Store on the southeast corner of 23 Mile and Hayes, a Kroger Store on the southwest corner of 26 Mile and Romeo Plank. In addition, there are several pharmacies, branch banks, offices, and several strip centers are in the process of being constructed. However, it appears that due to the substantial decline in housing starts and lending problems being experienced by the banking community, the smaller strip centers with no anchor, such as a drugstore, could be adversely affected. Thus, fewer of the smaller multi-use centers without an anchor will be built in the near future, whereas larger facilities that serve a much broader economic base will continue to be established but at a lesser pace.

Other development that should have a positive impact on the quality of life and hopefully attract families to reside in Macomb Township include the recent construction of the St. John's hospital/office buildings at 23 Mile and Romeo Plank and the Beaumont hospital/office building at Hall and Tilch. A new wing was added to the Park's and Recreation Building in the Town Center which has doubled its size, and two new fire stations plus a fire training tower have been recently completed. Also, a new industrial building containing an 110,000 square feet has been built on 23 Mile Road as well a 30,000 square foot additions to an existing facility.

It is likely that when the economy turns around that the housing built in Macomb Township will change. Early projections by some developers indicate that the house size will decrease along with anticipated price. It is also a point that the mortgage companies and the banks will be less prone to encourage loans larger than can be repaid.

Background

The Macomb Township Officials of the early days of the Township development determined the destiny of the Township. This was done at the direction of the State of Michigan through the planning laws beginning as early as the 1920's and 30's. The state determined that it is the responsibility of each community to plan for its own destiny and then provided certain laws governing how this should take place. The Rural Township Planning Commission Act, Act 168 of P.A. 1959, as amended is the State Enabling Act that directs that the, "Planning Commission shall make and adopt a basic plan as a guide for the development of unincorporated portions of the Township." The Planning Act was further amended in the year 2002 providing for, among other things, the option of the adoption of the Master Plan to be made by the Township Board.

The Planning process is not new to Macomb Township. In the 1960's the Township began work on the first plan. This plan was completed and adopted in 1973 and served as a basis for, among other issues, developing recommendations to the Township Board on matters of land use proposals. Only the efforts of the Planning Commissioners themselves know of the work that went into the planning process. But it is known that considerable changes and reviews went into the adoption of the plan. For example, the location of the industrial area in the west portion of the Township had to adapt to the final alignment of the east/west M-59. At first the alignment was to follow the 21 ½ Mile Road, but was finally situated on (20 Mile) Hall Road. Since that time the plan has been updated and or amended in 1988, 1994, 1999, 2002 and now again in 2008.

A court case involving the use of the south half of the industrial area determined that the property is best suited for residential purposes. This action reduced the industrial portion of the Master Plan by approximately 200 acres. The total acres effected by the court action is approximately one half of the industrial planned in 2002.

The 1988 Master Plan stated that, "Planning, and specifically local land use planning, is basically a process whereby a community, through its elected and appointed leadership, examines the present characteristics of development in terms of its assets and liabilities, defines current local and regional development trends, determines what are the most probable and desired goals for future development, and charts a course of action to accomplish those goals." That philosophy stays true today.

The duties of the Planning Commission have not changed from the original intention of Macomb Township in appointing the first Planning Commission... Macomb Township can be proud of its early involvement in the planning process. Standards for orderly growth and development have been established and have now become the guide for the pace of the construction of new homes, commercial uses and industries taking place. With these procedures all in place the Township can concentrate on new avenues of challenge, as noted in the Introduction, including the development of parks and recreation for its citizens, civic appearance, the creation of a Downtown and other services to its residents.

The Township has grown in the northwest, southwest and southeast quadrants with the development of low diversity of housing on lots ranging from 50' to 70' in size. The 70' lots have developed in many subdivisions with houses of 1800 to 3500 square feet in size.

MACOMB TOWNSHIP MASTER PLAN

A Glossary of Planning Terms

1. **Strip Development** - Strip Development, although occurring naturally, is usually characterized by an assortment of gas stations, drive-ins, motels, auto sales and service operations and generally occurring on major roads. Strip development severely restricts road carrying capacity.
2. **Strip Zoning** - This type of zone consists of a ribbon of uses fronting one or both sides of major roads and extends inward about 1/2 of a block.
3. **Strip/Multi-Use Center** - A strip or multi-use center normally defines a type of commercial grouping of stores. The stores are attached side by side forming a building which fronts to the major road upon which it is located. Strip/Multi-Use Centers normally provide both local and general businesses serving a residential areas.
4. **Buffer Zone** - A strip of land or structure such as a brick wall, identified in the zoning ordinance or Master Plan, established to protect one type of land use from another, with which it is incompatible.
5. **Incompatible Land Use (s)** - Land uses, one of which will have an adverse affect upon the other, when developed adjacent to each other.
6. **Special Land Use Permit** - A use other than a use of right. Certain zones or areas of the Township may allow uses that are necessary to serve the area but cannot because of the intensity or adverse impact that they may have on the neighborhood, be allowed in the area as a matter of right. Under special conditions such a use may be approved by the Planning Commission after a public hearing.
7. **Floodplain** - A floodplain or flood-prone area means any land area susceptible to being inundated by water from any source.
8. **Wetland** - A wetland is an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that, under normal circumstances, does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.
9. **Setback** - A term usually defined as the required distance between a structure and all lot lines. However, the term yard is preferred since the term setback carries with it a connotation that the setback is provided to protect the development of streets. A yard requirement establishes areas on the lot set aside to provide light and air.
10. **Yard** - A yard is defined as an area to be kept as open space to provide light and air.
11. **Density** - The average number of families, persons or housing units per acre of land. Usually density is expressed "per acre".

Glossary (continued)

12. **Subdivision Plat** - The term used to define the process of dividing a parcel of raw land into smaller buildable sites, blocks, streets, open space and public areas. This process is regulated by the State of Michigan and administered by the Township.
13. **Road System** - The system used to tie all properties together. The system used in the planning process in Macomb Township involves local roads, collector roads, industrial roads and major thoroughfares. In the case of Macomb Township all roads are under the control of the Road Commission of Macomb County.
14. **Linear Development** - Linear development is defined for Macomb Township as development, normally associated with Hall Road. Such development has been accepted over the years and is associated with such type uses that serve more than what is considered local areas. Such uses that local in linear development include banks, auto sales, restaurants, large malls, gas stations, tire stores etc.
15. **Holding Capacity** - The capacity of Macomb Township when determined by the calculation of housing units as compared with the density assigned to all the land for development in accordance with the residential designations of the Master Plan.
16. **New Urbanism** - A planning and urban design technique applied to the development of communities whereby the adverse impacts of the use of automobiles are proposed to be minimized. Manifestations of this technique may include the following: a, less right-of-way or narrower streets for more grid like street patterns, b, integrated pedestrian pathways in design of neighborhood, c, more public buildings and open space used as focal points, d, the integration of services and commercial into the residential areas which are within easy walking distances from each home.
17. **Shopping Center Development** – A group of commercial establishments built on a site which is planned, developed, owned, and managed as an operating unit related in location, size and type of shops to a trade area that the unit serves. The unit provides offstreet parking in definite relationship to the types and total size of the stores. A shopping center shall be a minimum of one hundred thousand (100,000) square feet of floor area and not less than three separate businesses.
18. **Senior Citizen Housing**-Various levels of housing are needed for the elderly. These include home ownership, shared living, independent living, assisted living and nursing care. Also to be considered is the site development of housing for the elderly and can range from normal housing standards as prescribed by the zoning ordinance to variations in parking requirements, occupancy (floor size of unit), density provisions and site location.

Senior citizen housing should be located in an area of close proximity to social activities, retail services, social services, medical care and churches. Any site location should also consider the proximity of a safe environment, which would include transit facilities, recreation areas, pedestrian walkways and other amenities such as passive recreation areas for outdoor leisure activities as well as for exercise.

Regional Planning Influences

The planning process cannot function in a vacuum, nor can Macomb Township. The Township has 8 abutting communities, all of which influence in some way the growth and development of the land within its jurisdiction. The same is true for the region. The Detroit Metropolitan Area and the major forces within it determine the activity within Macomb Township. Listed below are some of the major players in the service of Macomb Township.

Southeast Michigan Council of Governments (SEMCOG)

SEMCOG's mission is solving regional problems - improving the efficiency and effectiveness of the region's local government as well as the quality of life in Southeast Michigan. Essential functions are:

providing a forum for addressing issues which extend beyond individual governmental boundaries by fostering collaborative regional planning, and

facilitating relations among local governments, educational institutions and state and federal agencies.

As a regional planning partnership in Southeast Michigan, SEMCOG is accountable to local governments who join as members. Membership is open to all counties, cities, villages, townships, intermediate school districts, community colleges and universities in Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw and Wayne Counties.

SEMCOG supports local planning by providing technical, data and intergovernmental resources. In collaboration with local governments, SEMCOG is responsible for adopting regionwide plans and policies for community and economic development, water and air quality, land use and transportation, including approval of state and federal transportation projects. Funding for SEMCOG is provided by federal and state grants, contracts and memberships.

Suburban Mobility Authority for Regional Transportation (SMART)

SMART, as a community transit agency, provides customized transportation within a community or to adjacent communities. This service allows people who may have no other means of transportation to get to doctors' appointments, grocery stores, work and other places.

SMART and the local government share in the responsibility for providing to the community efficient small bus service that is tailored to each community's residents. In the case of Macomb Township calls from qualified passengers are channeled through the Township Hall.

Huron-Clinton Metropolitan Authority (HCMA)

The Huron-Clinton Metropolitan Authority is a regional park agency created to serve the people of Wayne, Oakland, Macomb, Livingston and Washtenaw counties. It consists of excellent environmental and human resources which provide an enhancement of the quality of life and general well-being of its users.

Of the 13 metro parks in the system, 3 directly serve the residents of Macomb Township. Metropolitan Metropark, Wolcott Mill Metropark and Stony Creek Metropark are all within minutes of Macomb Township. These three parks provide untold recreation adventures and activities for young and old alike.

Michigan Department of Transportation and the Road Commission of Macomb County.

The Road Commission of Macomb County controls all the public roads in Macomb Township. The Master Thoroughfare portion of the Master Plan for the Township is greatly impacted by the Road Commission. Over the past years of planning in the Township, the Planning Commission has worked very closely with the Road Commission in formulating and adopting the Thoroughfare Plan. All subdivision plats are coordinated with the Road Commission standards and their plans for the development of a major road system tied with the continued roads in adjacent communities.

A major MDOT improvement to M-59 (Hall Road) has impacted the Township of Macomb. The widening and construction of a boulevard median has significantly enhanced the capacity of this road as well as promoting the development of its frontage.

Current Road Commission projects in Macomb Township include bridge work over Deer Creek at 25 Mile Road and road paving of 25 Mile Road between Hayes and Romeo Plank Road. A traffic signal and intersection improvement is also a project of the Road Commission.

Macomb County Planning Commission

The Macomb County Planning Commission is an excellent provider for information and assistance in the development of community plans. The Commission through its staff provides services including economic development assistance, coordination of subdivision review process, aerial photography and mapping resources and assistance in the use of Community Development Block Grant funds.

Michigan Department of Natural Resources

The DNR through the Michigan Department of Environmental Quality (MDEQ) provides services to Macomb Township via the review of all development. The platting process includes MDEQ review as does the review of all commercial in development. To date two mitigation areas have been developed in Macomb Township; one on 22 Mile just east of future Heydenreich and the other on the east side of Romeo Plank between 22 and 23 Mile Roads.

Local Planning Influences

Important information about the eight communities that abut Macomb Township is presented in the following paragraphs. It is the intention to note important land use relationships of these neighboring communities. The Master Plans of these abutting communities provide the Planning Commission with the potential impact of abutting land uses on Macomb Township.

Shelby Township

The land uses along the common boundary line of Macomb Township and Shelby Township are very similar. A major industrial area along Hayes Road between 22 and 23 and 1/2 mile roads is planned in both communities, west of Hayes in Shelby and east of Hayes in Macomb. Residential is most predominant for the balance with some commercial planned across boundary lines at the major intersections.

A major access, along 23 Mile Road, from Macomb Township to the M-53 north/south freeway passes thru the center of Shelby Township. Considerable traffic from both Macomb Township and Shelby Township utilizes 23 Mile Road as a major means of travel.

Washington Township

Washington Township lies kitty corner to the northwest of Macomb Township. The land within a mile from the border point is planned at residential.

Ray Township

Twenty Six Mile Road is the common boundary between Ray and Macomb Townships. All the land in Ray Township abutting Macomb Township is planned as residential. Twenty Six Mile Road is a major east/west road planned at 204' wide.

Lenox Township

Lenox Township is kitty corner to the northeast of Macomb Township. The land planned in Lenox Township is residential. A large area encompassing a portion of Ray and Lenox Townships is designated as recreation and lies just north of 26 Mile Road.

Chesterfield Township

Chesterfield Township for the most part along the Macomb Township border is planned as residential. Property along Gratiot and the GTW Railroad in the south portion is planned and developing for industrial purposes. Industrial is planned to within 1/4 mile of Macomb Township in the area of 23 Mile Road. The area between the industrial, in Chesterfield, and the border is developed for residential purposes.

A major access, along 23 Mile Road, from Macomb Township to the I-94 freeway passes thru the center of Chesterfield Township. Considerable traffic from both Macomb Township and Chesterfield Township utilizes 23 Mile Road as a major means of travel.

Harrison Township

The area of Harrison Township which abuts Macomb Township is south of Hall Road and is planned for industrial purposes. A major intersection of two major roads (Hall and Gratiot) is located in this area.

Clinton Township

Most of Clinton Township south of Hall Road is planned for non-residential purposes. The Hall Road is a major dividing force with the north side in Macomb developed for commercial. Residential uses exist along the north side of Hall Road in Macomb Township.

City of Sterling Heights

Lakeside Mall and its environs, including multiple family and free standing commercial provide the land use structure kitty corner to the southwest of Macomb Township. Lakeside Mall has provided a major catalyst for development along Hall Road. Intense commercial has developed on both sides of Hall Road.

CONCLUSION

As evidenced by a review of the uses planned adjacent to the Macomb Township borders, the entire area is developing in a cohesive fashion. Care has been taken to develop property on the common boundary in a compatible manner.

The Hall Road (M-59) has developed as a major east/west artery along the south border of Macomb Township providing a major traffic route and as a major commercial/industrial corridor. Residential areas have developed in Macomb Township along most of it's borders and in surrounding communities and for the most part are free from the intrusion of major commercial and industrial uses.

Twenty Six Mile Road will also play a major roll in the east/west traffic flow across the northern border of Macomb Township.

Twenty Three Mile Road has become a major east/west road connecting I-94 with M-53 thru Chesterfield, Macomb and Shelby Townships. Hayes Road, Romeo Plank Road and North Avenue are the current major roads connecting Macomb Township with the north and south areas for Macomb County. Other major roads, now less traveled, or in some cases not yet existing, will ultimately tie Macomb Township with the communities north and south of Macomb Township.

Thru the cooperative efforts of adjoining communities, thru planning and zoning, it is anticipated that negative impact uses will not cause problems for residents of either community.

Local communities are further assisted by the Macomb County Planning Commission who reviews all Master Plans prepared in the County. The County Planning Office coordinates the entire process and assists in promoting various developments that are beneficial to both the county and local units of government.

NATURAL FEATURES OF MACOMB TOWNSHIP

COMPOSITE OF NATURAL FEATURES

The composite of natural features provides the reader with an overview of the features important to land development and for the Parks and Recreation services.

GENERALIZED SOILS

FLOODPLAINS MAP

Approximately 7,500 acres or about one-third of Macomb Township is impacted by 100 to 500 year flood plains. This unusually high percentage of the Township within the 100 to 500 year flood plain requires that certain efforts be made to properly address the use of these areas. Macomb Township has already endorsed five golf courses all of which utilize flood plains.

Generally the flood plain areas are tabulated in the vacant or agriculture area categories or in the recreation category

WATER FEATURES AND WOODLANDS

Although no large lakes exist in Macomb Township approximately 33 linear miles of waterways play a significant role in planning for land development. The North Branch and the Middle Branch of the Clinton River crosses the Township from the north to the south along Romeo Plank and North Avenue respectfully. Numerous branches of these two water courses further affect the development of the Township and these features will play a role in the development of recreation facilities.

Woodlands of the Township are located primarily along the stream and river beds and offer excellent values to passive recreation facilities including picnicking, hiking and nature preserves.

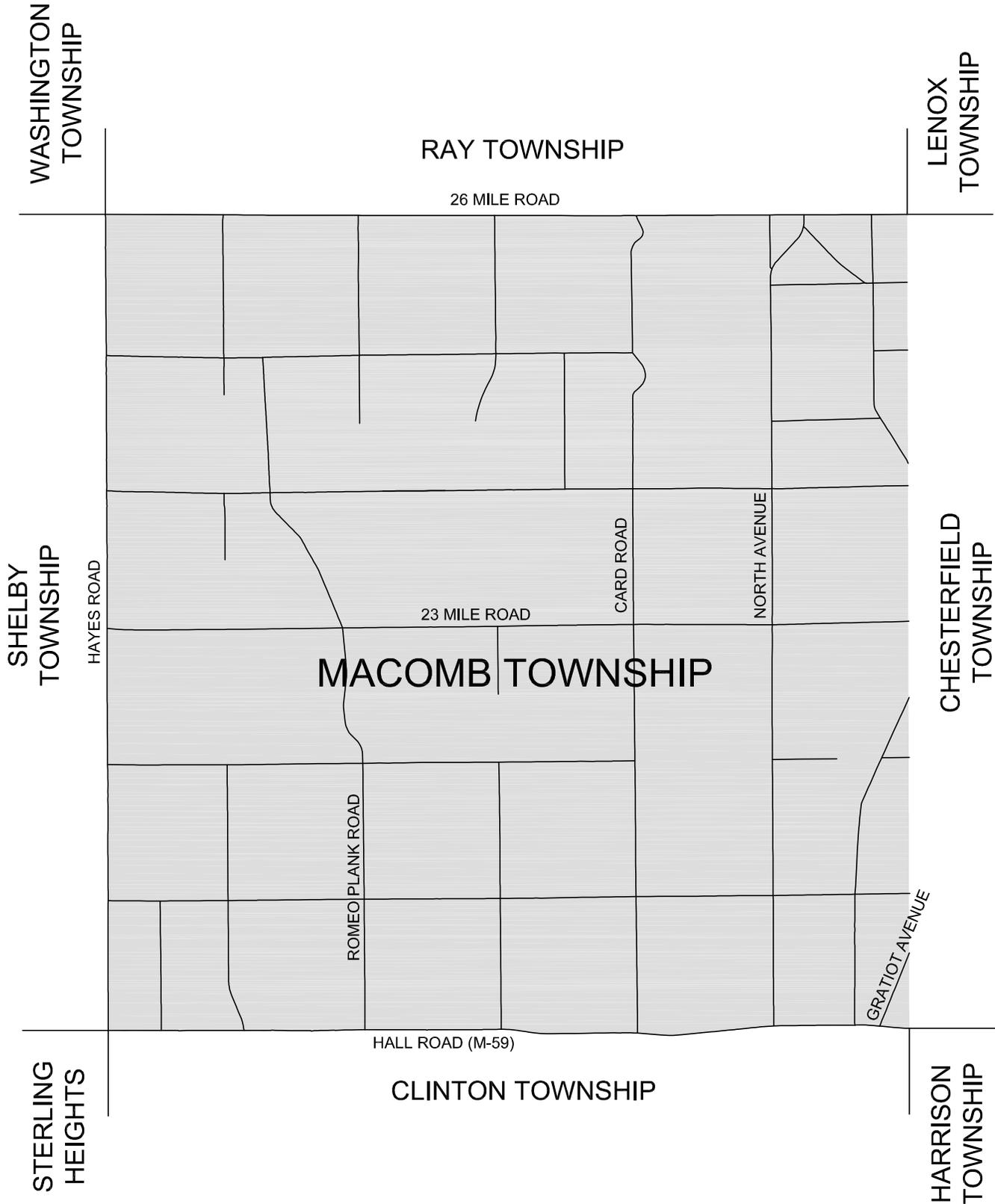
WETLANDS

Wetlands are normally classified on the basis of vegetation growth. The National Wetland Inventory Maps, prepared by the U.S. Department of the Interior, provide Macomb Township with the best source of wetland data.

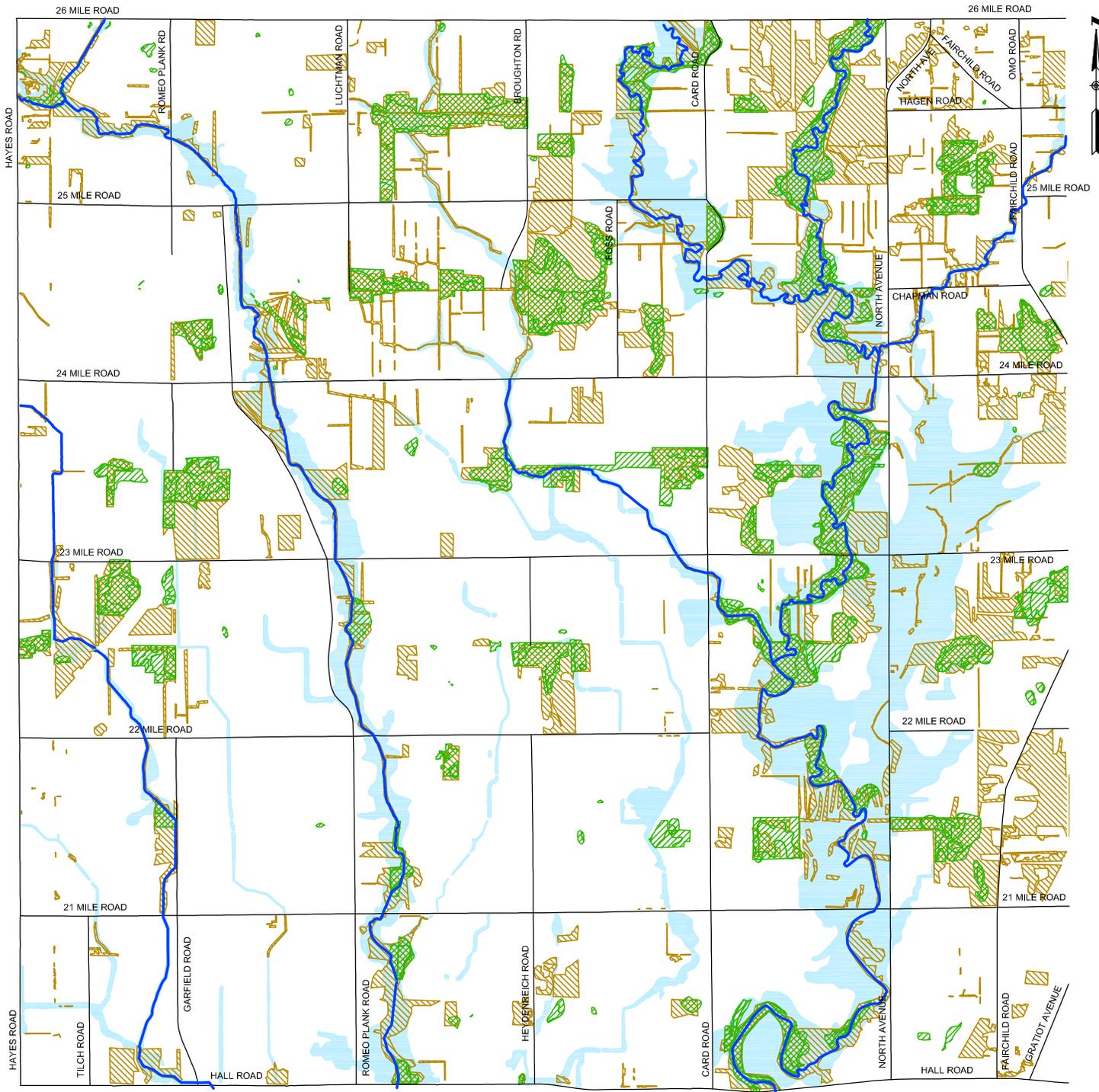
TOPOGRAPHY

The topography of Macomb Township may be characterized as generally flat with only 45 feet difference between the high elevation of approximately 640 feet and the low elevation of approximately 595 feet recorded. All of Macomb County has a relatively level terrain with the exceptions of portions of Shelby, Washington and Bruce Townships. The elevation of 575 feet above sea level is recorded along Lake St. Clair shoreline.

MACOMB TOWNSHIP & SURROUNDING COMMUNITIES



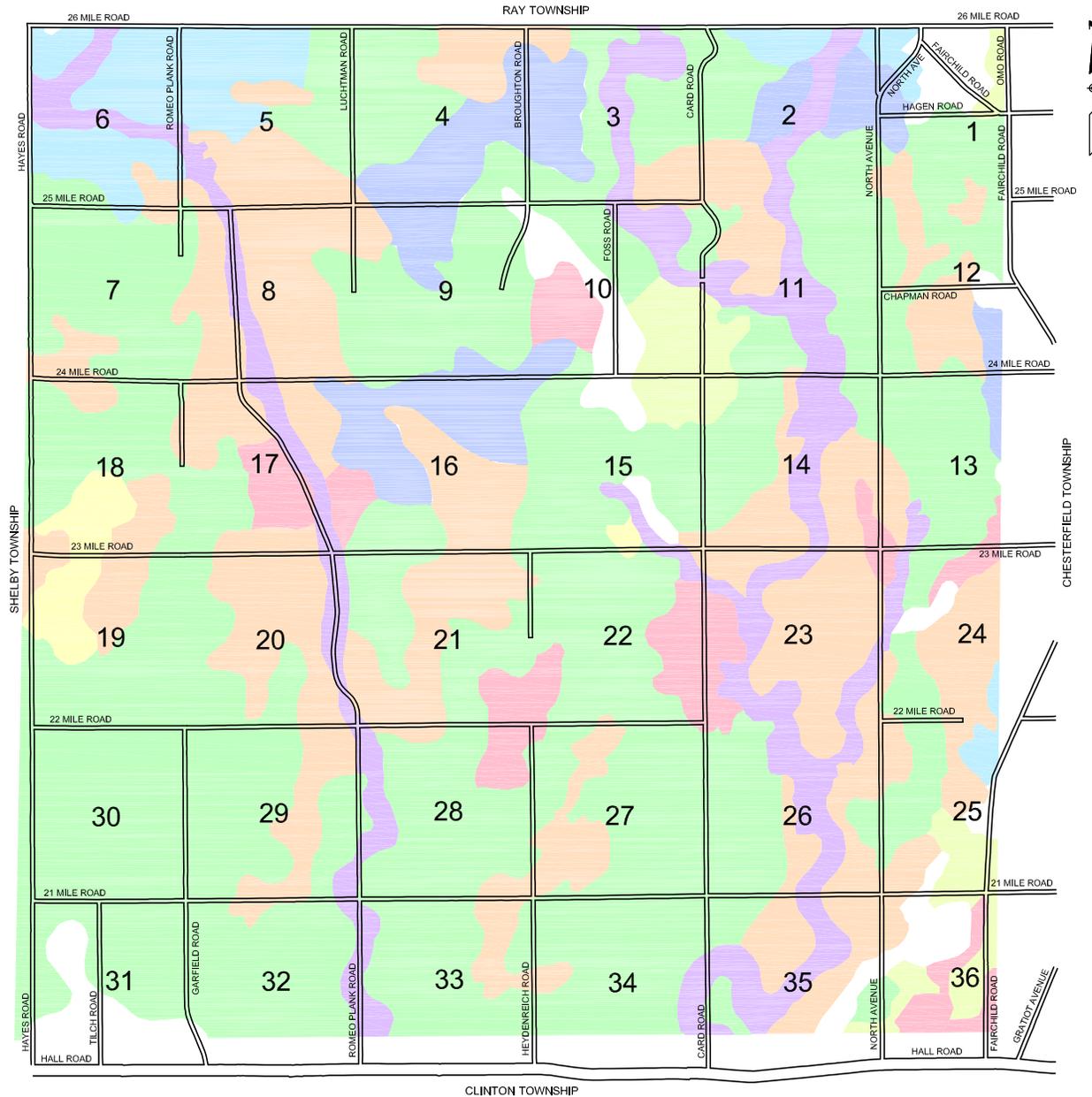
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COMPOSITE OF NATURAL FEATURES MACOMB TOWNSHIP, MI

-  100-YEAR FLOODPLAIN
-  WETLANDS
-  WOODLANDS
-  RIVERS

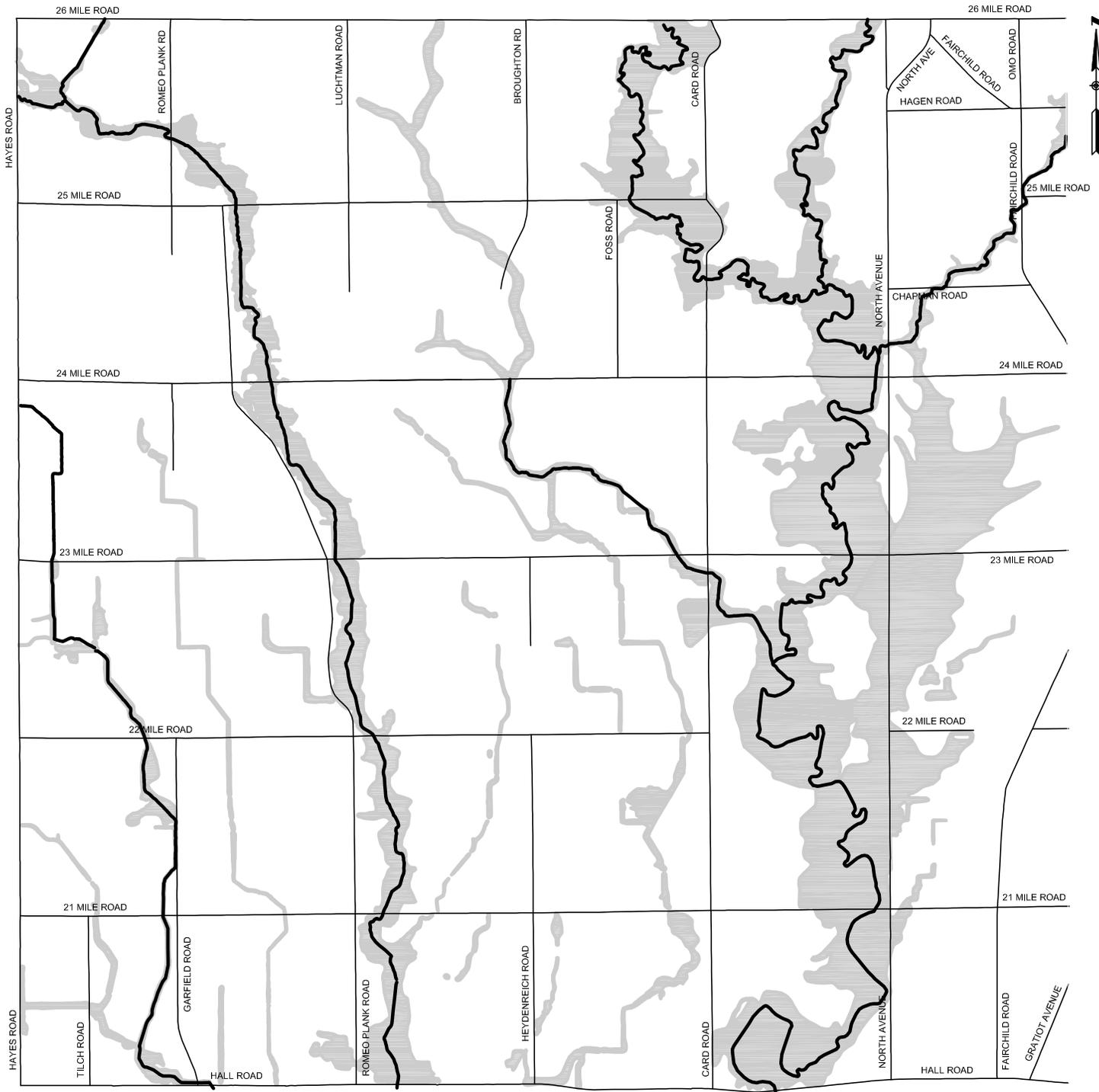




GENERALIZED SOILS MACOMB TOWNSHIP, MI

	WELL DRAINED	HILLY	SAND & GRAVEL
	POORLY DRAINED	LEVEL	SANDY LOAM
	POORLY DRAINED	LEVEL	SANDY LOAM
	POORLY DRAINED	LEVEL	SANDY LOAM
	POORLY DRAINED	LEVEL	LOAM
	POORLY DRAINED	LEVEL	LOAM
	POORLY DRAINED	LEVEL	CLAY
	POORLY DRAINED	LEVEL	CLAY
	POORLY DRAINED	LEVEL	ALLUVIAL

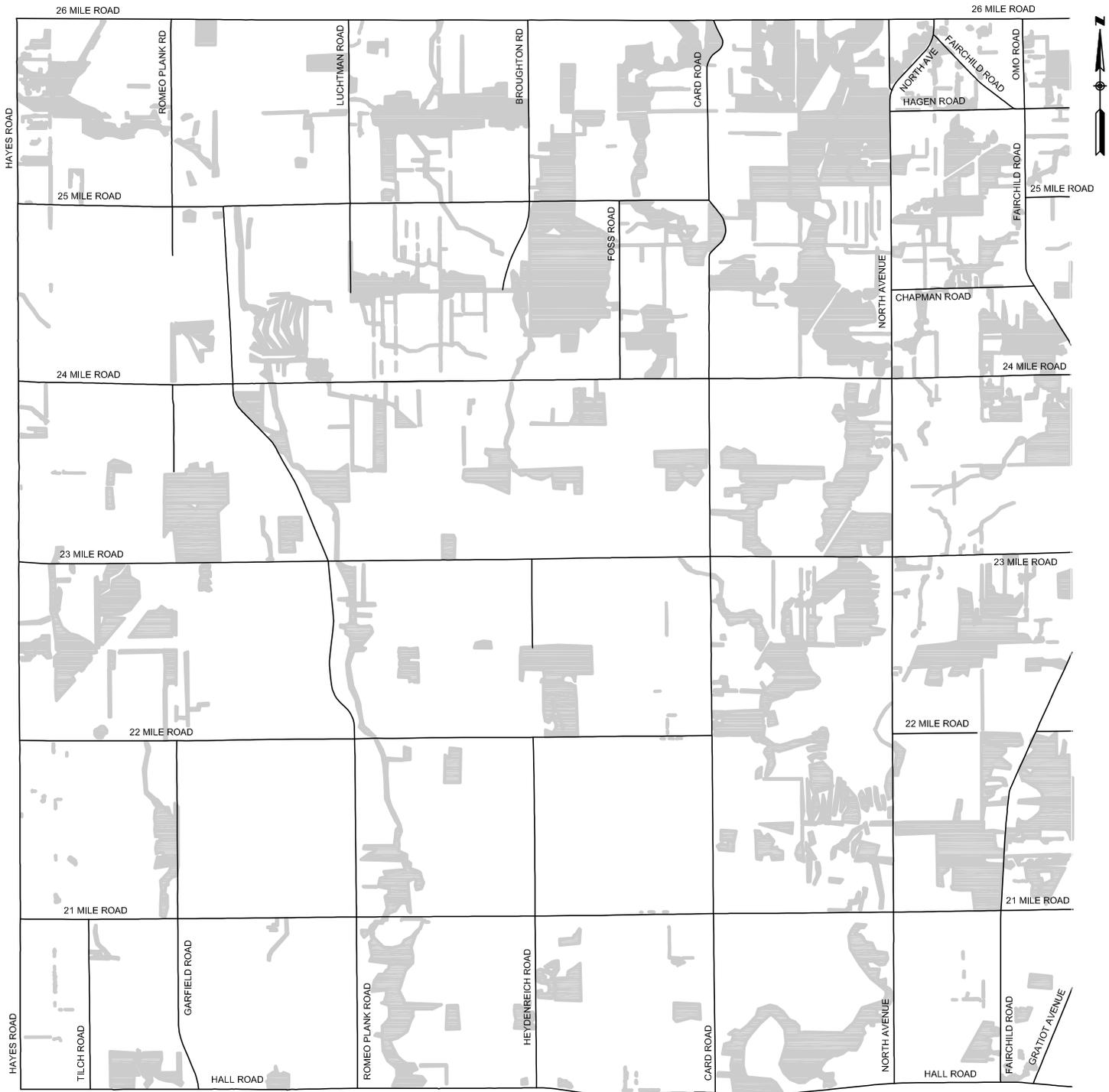




FLOODPLAIN MAP MACOMB TOWNSHIP, MI

-  WETLANDS
-  RIVER





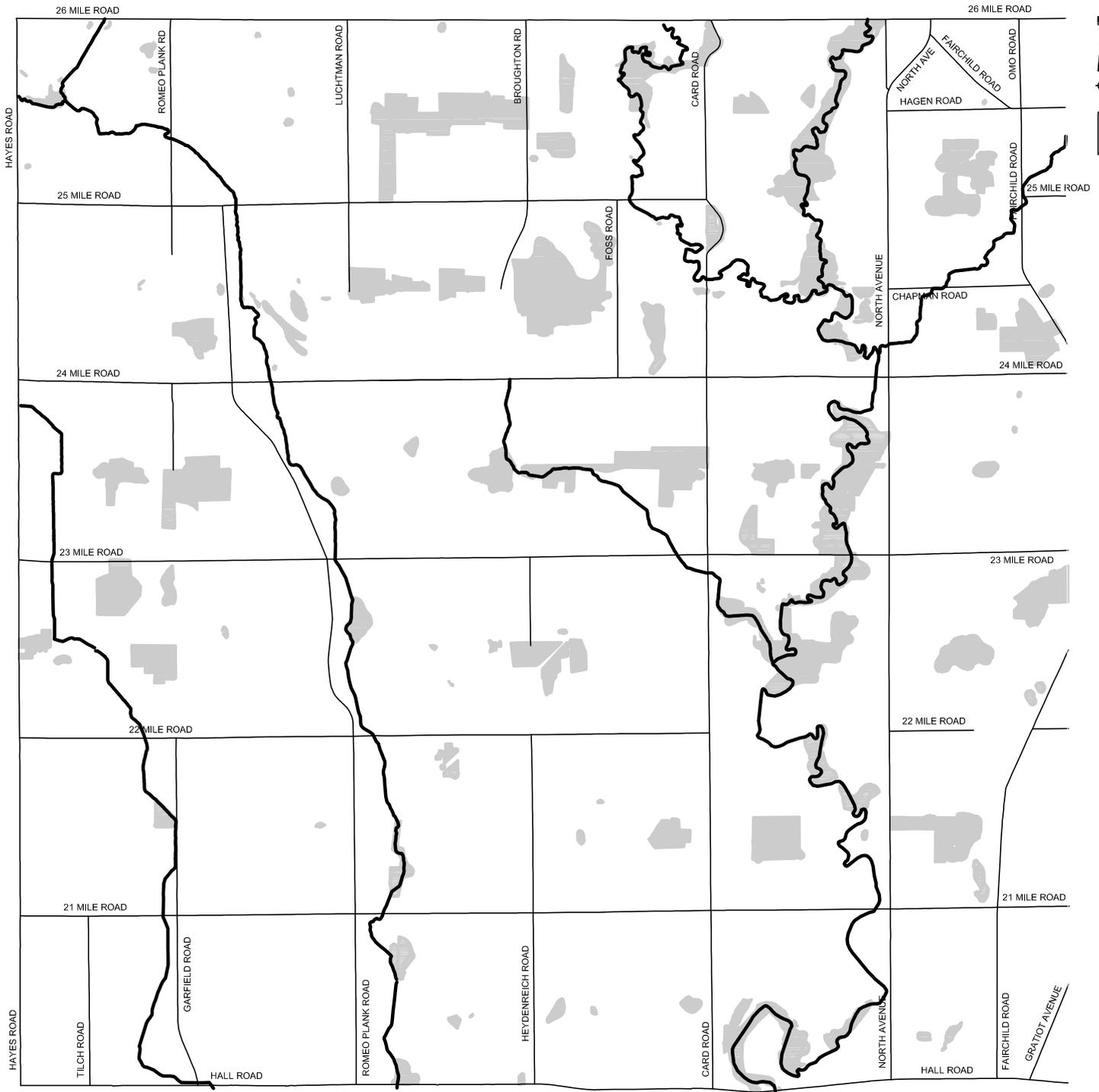
WOODLANDS MAP MACOMB TOWNSHIP, MI



100-YEAR FLOODPLAIN

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WETLANDS MAP MACOMB TOWNSHIP, MI

- WETLANDS
- RIVER



EXISTING LAND DEVELOPMENT IN MACOMB TOWNSHIP

Summary reports, tabulations and maps

Existing Collector Roads in Macomb Township

Collector roads also identified as half mile roads have developed as part of subdivisions according to the adopted master thoroughfare plan. Although it is intended to be located along quarter section lines, many are off set to conform to the subdivision design. Based on individual circumstances the Township has amended the plan by eliminating some of these roads. A review of the existing collector road map indicates that the system is fragmented and lacks continuity for many reasons. Some of the reasons are that the roads have been discontinued, roads were not paved as apart of development, incompatible land use have blocked its continuance and simply that the land is waiting for development. (See attached Existing Collector Road Map, see page 19)

Existing Utilities in Macomb Township

The public utilities easements and right-of-ways consisting of oil, natural gas and electrical power lines has been set at an earlier time and places a constraint on developing properties. Urban development is requiring new electrical substations to provide electrical power and telecommunication towers are being located at strategic locations to serve the wireless telephone needs of the growing population. A total of 183 acres are utilized by the utilities servicing Macomb Township. (See Existing Utilities Map, see page 20)

Existing Public Lands in Macomb Township

The major properties owned by the Township include the Town Hall, Recreation Center, three park sites, four fire station sites, and the water/sewer building site. In addition to the Township's properties and other than school sites, two other significant public sites exist in the Township, the SMDA land fill property and the MDOT mitigated wetland property. A total of 550 acres are in public use. (See page 22 for Public Lands Map)

EXISTING LAND USE

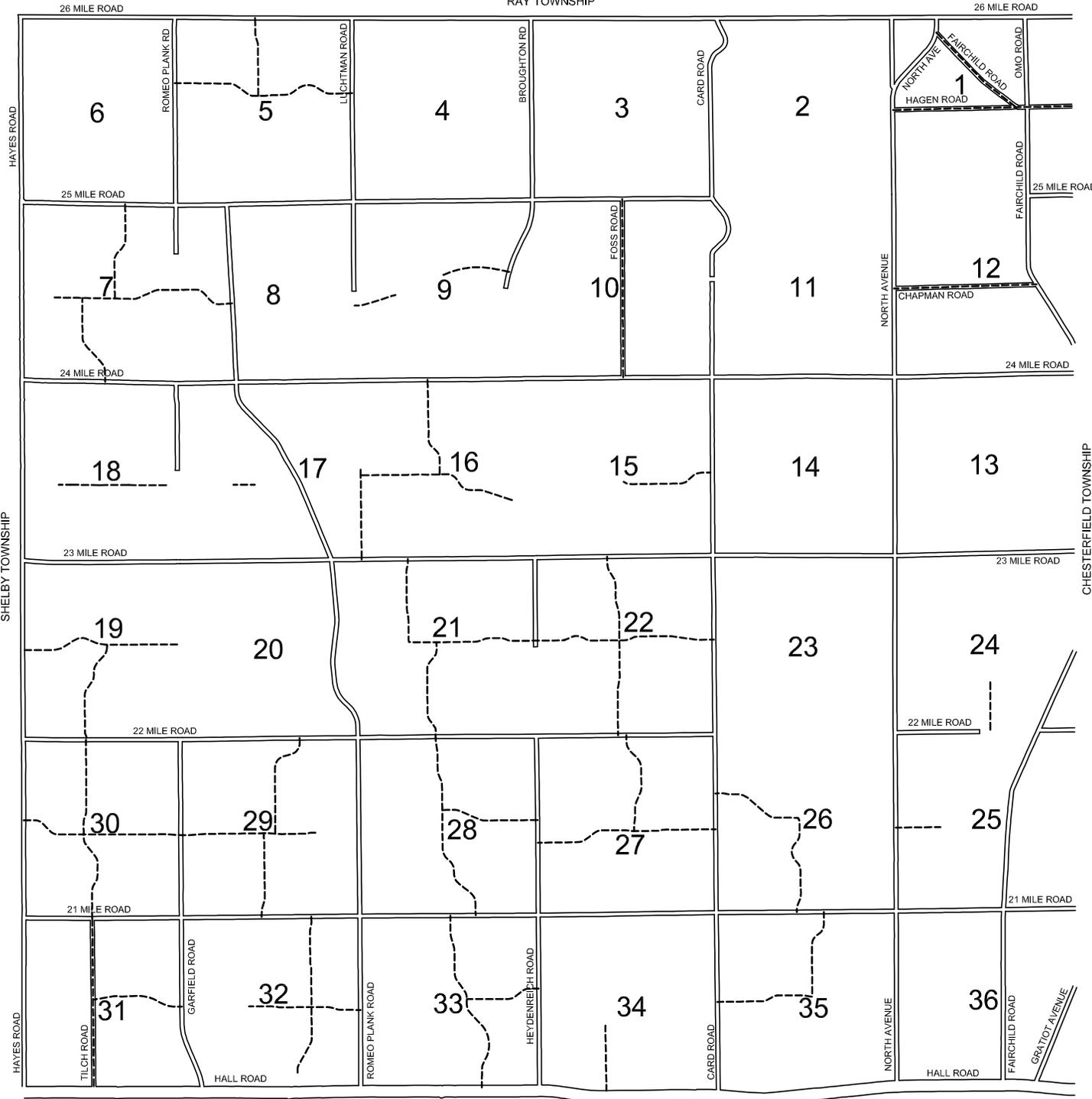
The amount and distribution of various kinds of land use in the Township determines the need and location of most of the Township service facilities as well as providing for a balance of all commercial and industrial land use. These statics will aid in all development in determining all land use needs. Below are the tabulations made from the Land Use Surveys conducted over the years including the summer of 2000 and those conducted in the preparation of this material.

COMPARISON OF 2008 EXISTING LAND USE DATA WITH 1969, 1985 and 2000 LAND USE DATA IN ACRES

MAJOR LAND USE CATEGORY	1969	1985	2000	2008
Residential	1,445	2,436	7,500	9,387
Commercial	36	129	253	365**
Manufacturing	35	102	112	329
Public & Semi Public	78	205	700	1,327
Agriculture, Vacant Land, Utilities and Roads	21,446	20,168	14,475	11,632

**As of 2006

MACOMB TOWNSHIP EXISTING COLLECTOR ROADS

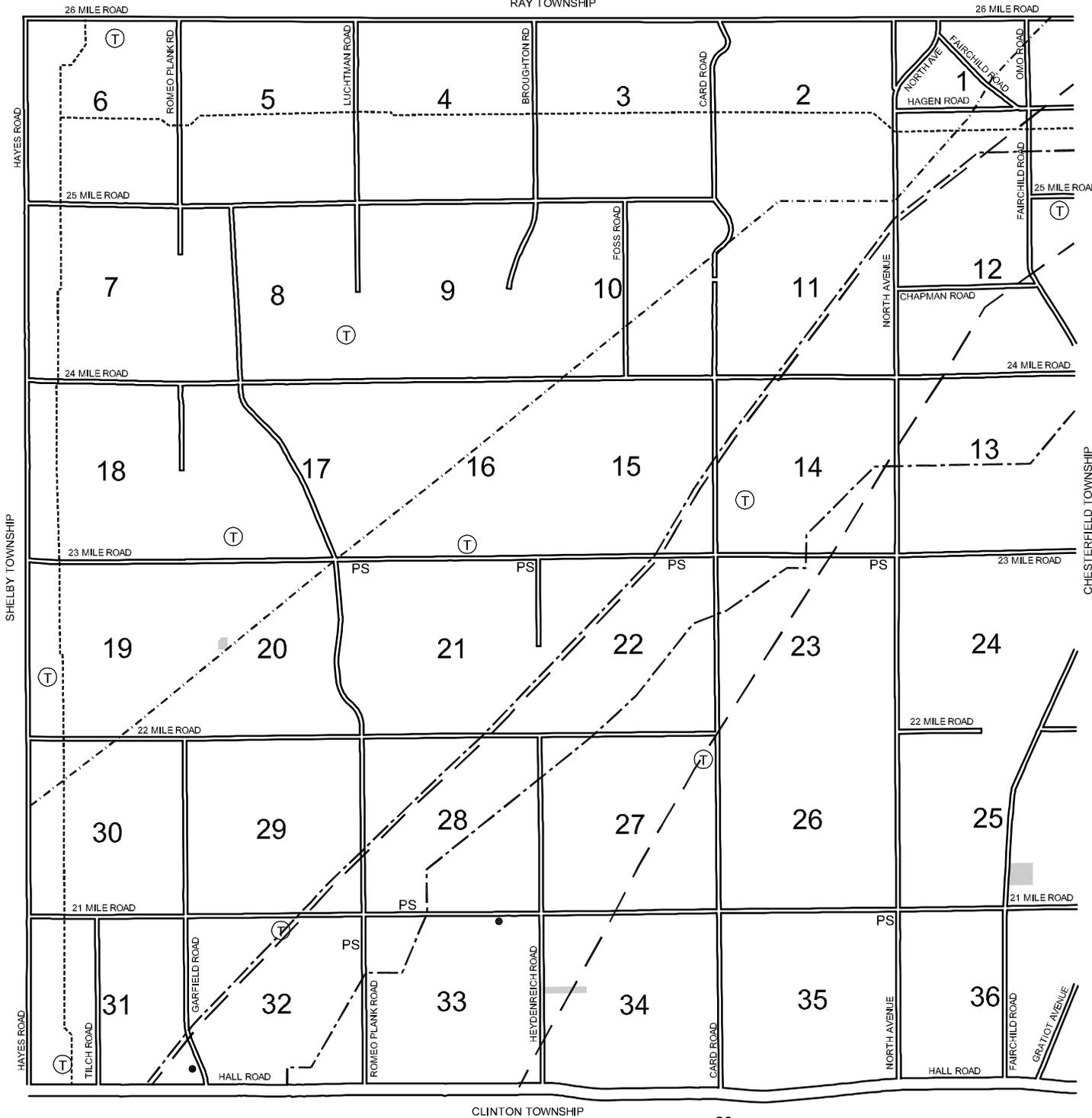


SECTION	NAME	DIRECTION
1	FAIRCHILD ROAD	N/S
	HAGAN ROAD	E/W
5	ST. ANDREWS DRIVE	N/S
	COUNTRY CLUB DRIVE	E/W
7	CLARION DRIVE	N/S
	CARNATION DRIVE	N/S
	HOWARD DRIVE	E/W
8	HUNTINGTON WOODS DRIVE	E/W
9	MACOMB STREET	E/W
10	FOSS ROAD	N/S
12	CHAPMAN ROAD	E/W
15	PINECONE ROAD	E/W
16	WOODSIDE DRIVE	N/S
	PINECONE ROAD	E/W
17	LEONE DRIVE	E/W
18	LEONE DRIVE	E/W
19	WESTMINISTER LANE	N/S
	KINGSWAY DRIVE	E/W
21	MIDDLE RIVER DRIVE	N/S
	YALE DRIVE	N/S
	GLORIA DRIVE	E/W
22	SHENANDOAH DRIVE	N/S
	VESPER DRIVE	E/W
24	WAYBURN DRIVE	N/S
25	GOLFVIEW DRIVE	E/W
26	BRENNA DRIVE	N/S
	HOMESTEAD DRIVE	E/W
27	VILLAGE DRIVE	N/S
	SUMMERFIELD DRIVE	E/W
28	BEACON VILLAGE DRIVE	N/S
	VINE DRIVE	E/W
29	VALLEY FORGE DRIVE	N/S
	WHITE PLAINS DRIVE	E/W
30	TILCH ROAD	N/S
	HAVERRILL DRIVE	E/W
	TILCH ROAD	N/S
31	EAST VIEW DRIVE	E/W
	PLUMGROVE DRIVE	N/S
32	MILLSTONE DRIVE	E/W
	RIVERWOOD DRIVE	N/S
33	WINDEMERE DRIVE	E/W
	MACOMB CENTER DRIVE	N/S
35	CREEKSIDE BOULEVARD	N/S
	BRANTINGHAM ROAD	E/W

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MACOMB TOWNSHIP EXISTING UTILITIES



- OIL PIPELINE
- EDISON POWER LINES
- GAS PIPELINE
- CONSUMER'S ENERGY
- EDISON SUBSTATION
- TEMPORARY EDISON SUBSTATION
- PS SANITARY PUMP STATION
- Ⓣ TELECOMMUNICATION TOWER

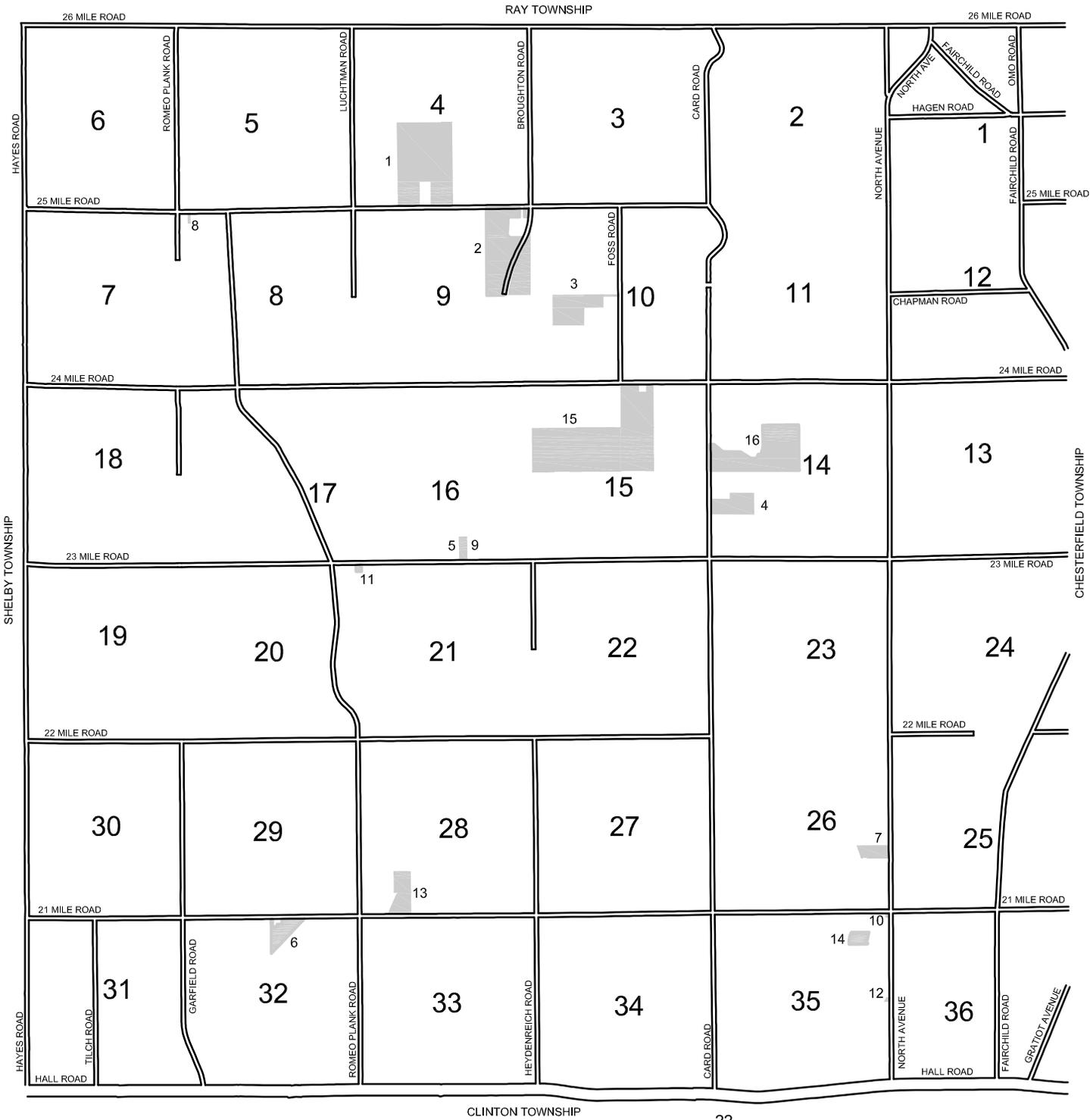


Public Properties Chart

Section	Use	Proposed	Owner	Acres
4	Macomb Corner Park		Township	94.125
8	Fire Station #4		Township	2.733
9	Town Hall & Parks & Rec.		Township	71.060
9	Macomb Town Center Park		Township	10.870
10	Future Park	Park	Township	26.129
14	Vacant – Card Road		Township	54.530
14	Water/Sewer Building		Township	17.857
15	Closed Land Fill		Township	62.554
15	Closed Land Fill		SMDA*	92.05
16	Broadcast Media/Fire Station #1		Township	4.304
18	Sewer line property		Township	4.000
18	Sewer line property		Township	4.000
20	Sewer line property		Township	3.000
20	Sewer line property		Township	1.000
21	Vacant – Marseille		Township	Lot
22	Wetlands		MDOT	60
24	Vacant – Fairchild		Township	.315
26	Fire Station #3		Township	9.000
28	Waldenburg Park		Township	16.755
32	Fire Station #2		Township	6.544
33	Clinton River – 21 Mile Road		Township	1.368
35	Vacant – Patnick Road		Township	1.340
35	Vacant – Patnick Road		Township	0.740
35	Vacant – Patnick Road		Township	0.700
35	Vacant – Patnick Road		Township	0.680
35	Vacant – Patnick Road		Township	1.280
35	Vacant – Patnick Road		Township	2.020
35	Sewer Lift Station		Township	0.404
35	Vacant – North		Township	Lot

- South Macomb Disposal Authority

** Michigan Department of Transportation



MACOMB TOWNSHIP EXISTING PUBLIC PROPERTY



MACOMB TOWNSHIP

- 1 MACOMB CORNERS PARK
- 2 MACOMB TOWN CENTER
- 3 FUTURE PARK SITE
- 4 WATER & SEWER DEPARTMENT
- 5 FIRE STATION #1
- 6 FIRE STATION #2
- 7 FIRE STATION #3
- 8 FIRE STATION #4
- 9 SENIOR CENTER
- 10 SANITARY PUMP STATION #2
- 11 SANITARY PUMP STATION #9
- 12 VACANT LAND
- 13 WALDENBURG PARK
- 14 VACANT PROPERTY (PATNICK DRIVE)

SMDA & MACOMB TOWNSHIP

- 15 CLOSED LANDFILL

MDOT

- 16 MITIGATED WETLAND

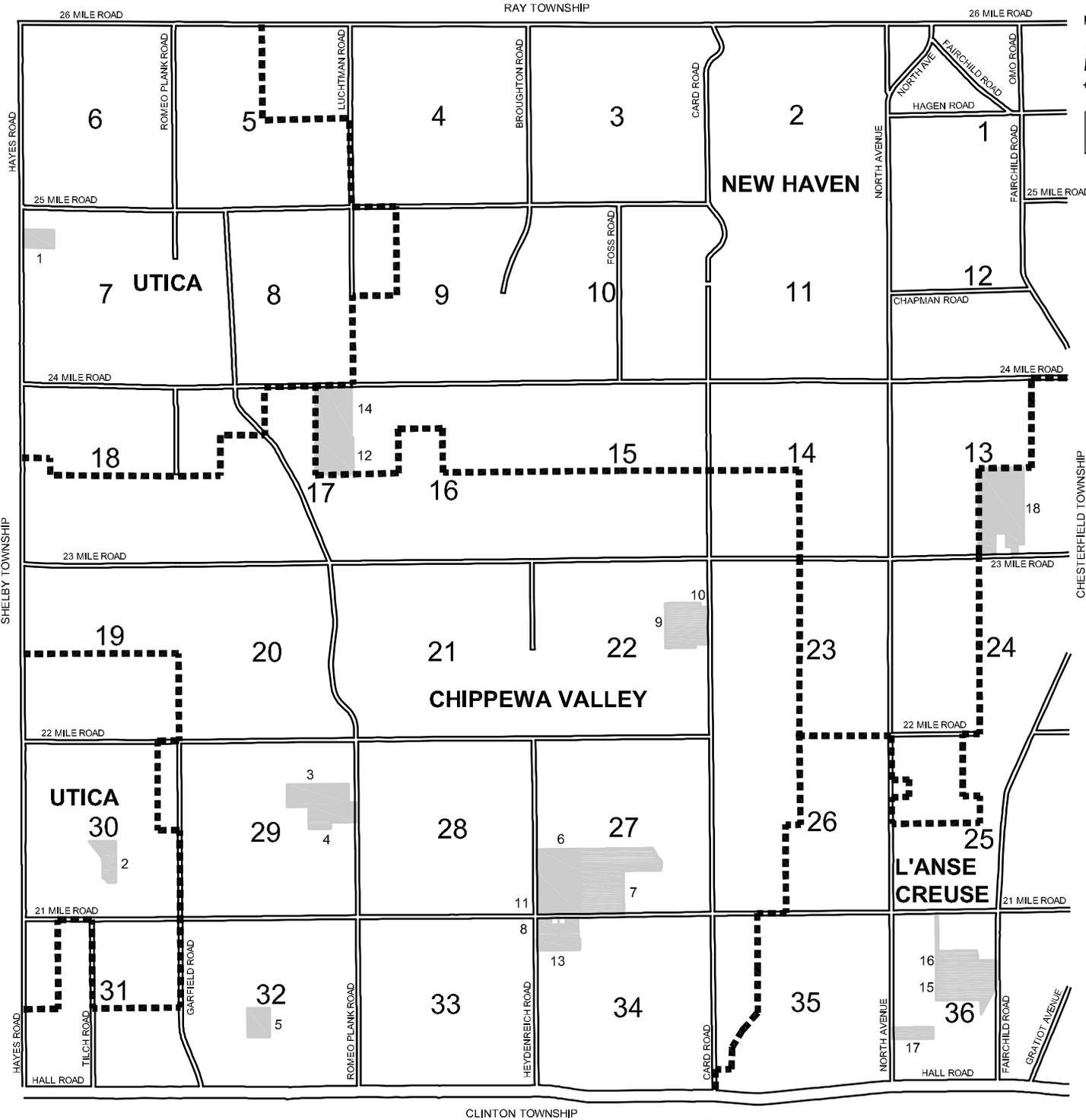


Existing Schools in Macomb Township

Within the four school districts in Macomb Township, only New Haven has no property in the limits of the Township. In Macomb Township, Utica has two elementary schools; Chippewa Valley has six elementary schools, two middle schools and one high school and L'Anse Creuse has one elementary, one middle and one high school. In addition, L'Anse Creuse has acquired property for future school(s). Further, M.I.S.D. has two active schools buildings. The Township is also served by Lutheran North High School, St. Peter Elementary School, Emmanuel Lutheran Elementary School and Schoolhouse Montessori School, and three day care centers. (See Existing School Map and following tabulations).

Section	Use	Owner	Acres
7	Beck-Centennial Elementary	Utica	12
13	Vacant	L'Anse Creuse	72
17	Macomb Intermediate	M.I.S.D.*	30
17	Sequoyah Elementary	Chippewa Valley	40
22	Shawnee Elementary and Little Turtle Preschool	Chippewa Valley	38
27	Cheyenne Elementary	Chippewa Valley	27
27	Dakota High	Chippewa Valley	76
27	Seneca Middle	Chippewa Valley	41
29	Iroquois Middle	Chippewa Valley	29
29	Mohawk Elementary	Chippewa Valley	18.7
30	Ebeling Elementary	Utica	13.6
32	Fox Elementary	Chippewa Valley	13.9
34	MISD-Glen Peters	M.I.S.D.*	16.5
34	Ojibwa Elementary	Chippewa Valley	18.0
36	North Middle	L'Anse Creuse	31
36	North High	L'Anse Creuse	30
36	Atwood Elementary	L'Anse Creuse	9.6
		Total	516.3 acres

* Macomb Intermediate School District



MACOMB TOWNSHIP EXISTING PUBLIC SCHOOLS

UTICA

- 1 BECK-CENTENNIAL ELEMENTARY
- 2 EBELING ELEMENTARY

CHIPPEWA VALLEY

- 3 IROQUOIS MIDDLE
- 4 MOHAWK ELEMENTARY
- 5 FOX ELEMENTARY
- 6 CHEYENNE ELEMENTARY
- 7 DAKOTA HIGH
- 8 OJIBWA ELEMENTARY
- 9 SHAWNEE ELEMENTARY
- 10 LITTLE TURTLE PRE-SCHOOL
- 11 SENECA MIDDLE
- 12 SEQUOYAH ELEMENTARY *

MACOMB INTERMEDIATE

- 13 GLEN H. PETERS INTERMEDIATE
- 14 MISD VACANT SITE

L'ANSE CREUSE

- 15 L'ANSE CREUSE NORTH MIDDLE
- 16 L'ANSE CREUSE NORTH HIGH
- 17 ATWOOD ELEMENTARY
- 18 FUTURE

NEW HAVEN

* LOCATED WITHIN NEW HAVEN DISTRICT



Existing Quasi-Public Uses in Macomb Township

The Township has five golf courses, nine churches, four cemeteries and three social centers. It is anticipated that existing golf courses may undergo change due to the pressure of development by expanding or contracting. In addition, new courses may be introduced in flood plain and wetland areas.

New churches are in the making due to population growth and existing churches and expanding.

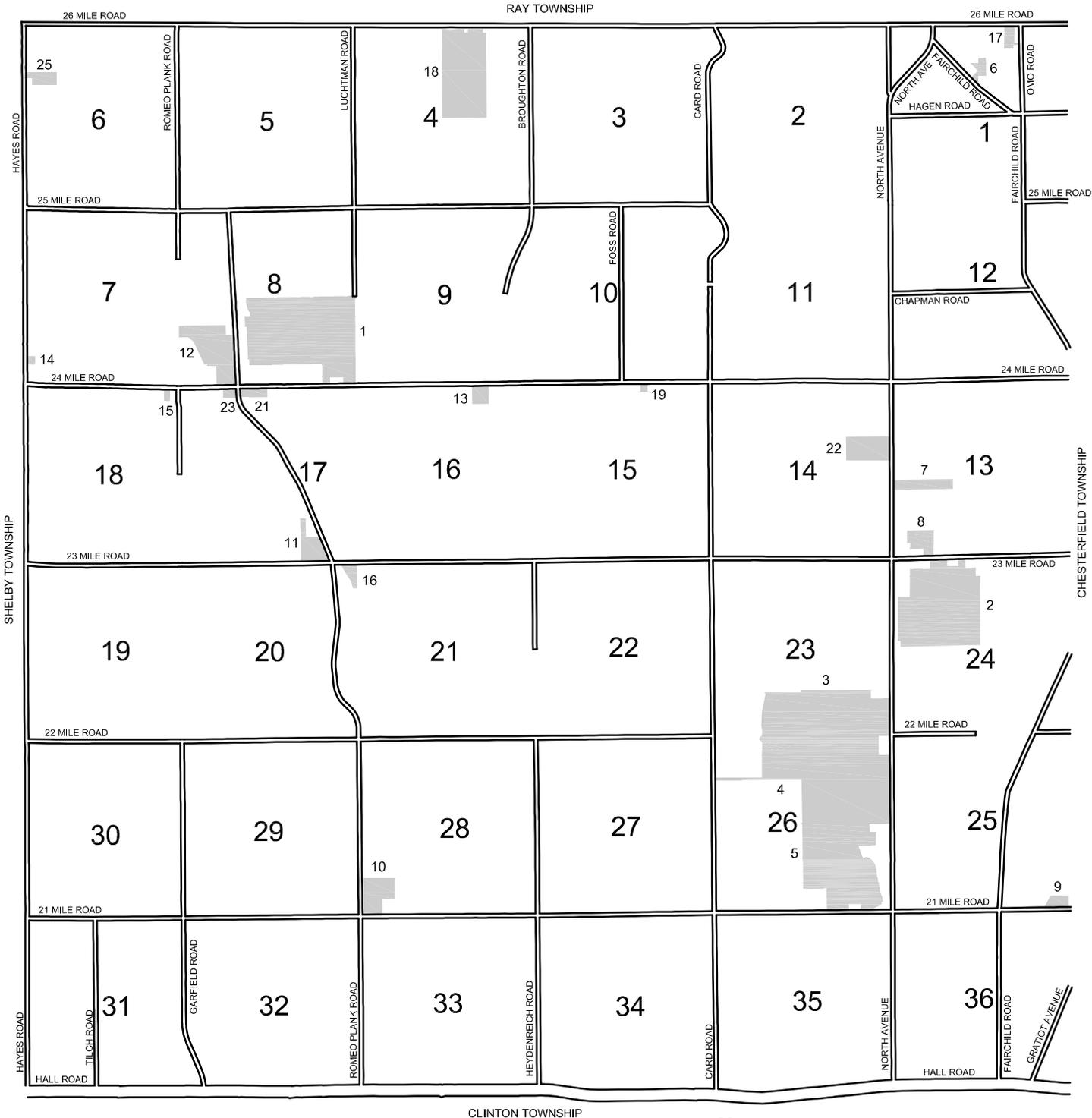
The existing cemeteries are either closed or near capacity.

The Lion's Club and Lutheran Fraternity of America Hall have served the Township for many years and Lutheran Youth Center is presently under construction. (See Quasi-Public Map)

Section	Churches in Macomb Township	Acreage
1	Faith United Methodist Church	4.759
7	New Hope Church	Home
8	St. Peters Church	44.318
13	Church of the Covenant	11.553
13	Bethel Church of Nazarene	12.797
16	Community of Hope Church	7.000
17	St. Isidores Church	16.670
25	Christian Life Church	6.238
28	Immanuel Lutheran Church	16.620

Section	Cemeteries in Macomb Township	Acreage
1	Meade Cemeteries	4.962
4	Glen Eden East Cemetery	84.560
15	Whitney Macomb	1.360
17	St. Peters Cemetery	5.780

Section	Quasi – Public Uses in Macomb Township	Acreage
5	Lutheran Fraternity of America Hall	.733
6	Austrian Society	10.00
14	Lions Club	20.00
17	St. Peter's Youth Center	3.010



MACOMB TOWNSHIP EXISTING QUASI-PUBLIC



GOLF COURSES

- 1 CRACKLEWOOD
- 2 BELLO WOODS
- 3 HICKORY HOLLOW
- 4 SYCAMORE
- 5 BURNING TREE

CHURCHES

- 6 FAITH UNITED METHODIST
- 7 BETHEL CHURCH OF THE NAZARENE
- 8 CHURCH OF THE COVENANT
- 9 MT. CLEMENS CHRISTIAN
- 10 IMMANUEL LUTHERAN
- 11 ST. ISIDORE ROMAN CATHOLIC
- 12 ST. PETER LUTHERAN
- 13 COMMUNITY OF HOPE LUTHERAN

DAY CARE & PRIVATE PRE-SCHOOLS

- 14 GODDARD DAY CARE
- 15 RAINBOW CHILD CARE
- 16 SCHOOLHOUSE MONTESSORI

CEMETERIES

- 17 MEADE
- 18 GLEN EDEN
- 19 WHITNEY MACOMB
- 20 IMMANUEL LUTHERAN
- 21 ST. PETER LUTHERAN

SOCIAL CENTERS

- 22 LION'S CLUB
- 23 ST. PETER YOUTH CENTER
- 24 LUTHERAN FRATERNITY OF AMERICA
- 25 AUSTRIAN SOCIETY

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LAND USES INCLUDED ON THE GENERALIZED LAND USE MAP

Summary of Residential Development in Macomb Township

This report tabulates residential development in Macomb Township. It is placed in three categories (completed, developing and proposed) and outlines the four types of residential uses (subdivision, condominiums, mobile homes and apartments).

Undeveloped Residential Lots/Units in Macomb Township

This list is prepared by the Water & Sewer Department which tabulates the vacant subdivision lots and condominium units in housing projects. 9,387 acres are devoted to residential use.

Macomb Township Commercial Tabulation

This tabulation consists of all properties zoned for commercial in Macomb Township and indicates the acreage and use of each. The totals indicate the percentage of land that is vacant or non-conforming. 365 acres are devoted to commercial development as 2006.

Macomb Township Office Tabulation

Office uses are tabulated with commercial development.

Macomb Township Industrial Activities

The industrial land use, existing and proposed, is drastically changed due to the litigation. A total of 329 acres are developed for manufacturing uses.

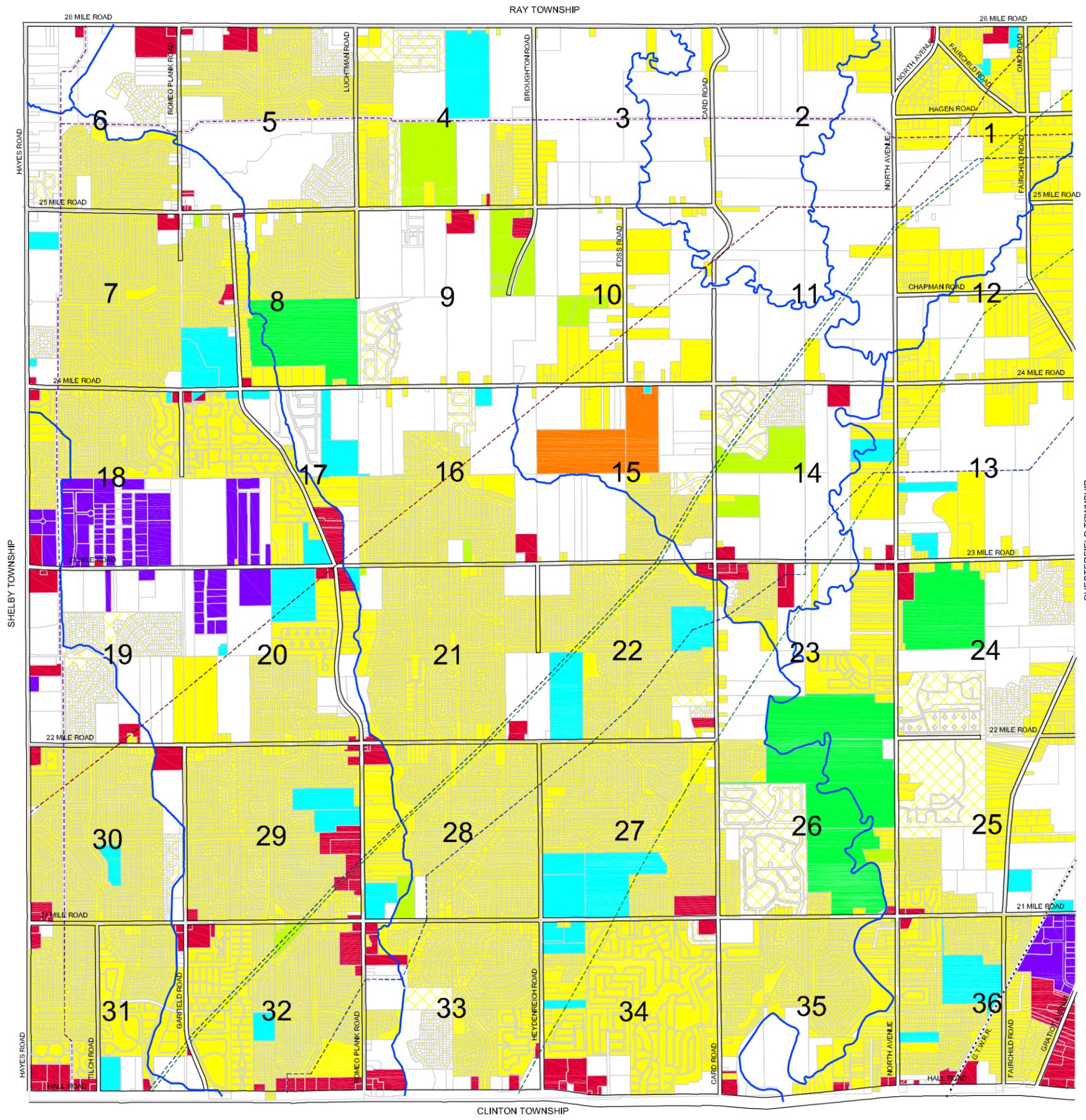
The Generalized Land Use Map for Macomb Township

This generalized land use map depicts six land use categories (residential (2), commercial, industrial, golf course, Township property, landfill and public/quasi public).

It is estimated that approximately 60 percent of the Township is developed with a population of approximately 75,000 persons.

An additional 5 percent of the 23,000 acres of the township is committed to future development based on the approvals given by the Township and proposals being reviewed by the administration.

The land use patterns are well established in the Township and will strongly influence the future of the remaining undeveloped land.



LEGEND

LAND USES

- Residential
- Residential (Developing)
- Commercial
- Industrial
- Golf Course
- Public / Quasi-Public
- Township Property
- Landfill

UTILITIES

- Oil Pipeline
- Gas Pipeline
- Edison Easement
- Consumer's Energy
- Grand Trunk Western Railroad

WATERWAYS

- Rivers & Drains

EXISTING LAND USE MAP 2008 (Generalized)

MACOMB TOWNSHIP, MICHIGAN

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Macomb Township Housing Development
July 21, 2008

Macomb Township Subdivisions

Sec.	Name	Lots	Ten. Prel.	Final Prel.	Final	Status
1	Lefurgey	16	--	--	2/17/1956	Completed
1	Lefurgey #1	16	--	--	10/8/1957	Completed
	Total	32				
4	Brookwoods	8	6/23/2004	10/27/2004	4/27/2005	Developing
4	Fallbrooke Farms	104	3/12/2003	10/22/2003	3/24/2004	Developing
4	Kotner Beverly Gardens	17			1/2/1947	Completed
4	Strathmore	104	3/28/2001	2/11/2004	8/11/2004	Developing
4	Pine Valley	49	9/14/2005	9/14/2005	11/27/2006	Developing
4	West Park Estates	66	10/26/2005	5/9/2007	5/9/2007	Developing
4	Wolverine Trace 1	46	6/27/2001	8/22/2001	2/12/2003	Developing
4	Wolverine Trace 2	43	6/27/2001	8/22/2001	2/12/2003	Developing
	Total	437				
5	Clearstone	100	11/22/2004	8/24/2005	5/24/2006	Developing
5	Country Club of North	254	9/24/1997	10/28/1998	12/20/1999	Completed
5	Emerald Green	102	2/15/2001	4/24/2002	8/27/2003	Completed
5	English Garden Estates 1	49	3/24/1999	8/9/2000	5/9/2001	Completed
5	English Garden Estates 2	28	2/26/2003	5/14/2003	4/14/2004	Completed
5	Winding Creek	265	3/22/2000	9/26/2001	1/9/2002	Completed
5	Wolverine Country Club 1	191	10/23/2003	11/22/2005	12/14/2005	Developing
5	Wolverine Country Club 2	244	10/23/2003	11/22/2005		Proposed
5	Wolverine Country Club 3	16	10/23/2003	11/22/2005		Proposed
	Total	1249				
6	Kotners Hayes Roads	20			11/5/1956	Completed
6	Pine Pointe No. 1	124	2/26/1997	7/22/1998	10/14/1998	Completed
6	Pine Pointe No. 2	3	2/26/1997	11/22/1998	4/14/1999	Completed
6	River Pointe	32	10/24/2007			Proposed
6	The Rivers No. 1	161	8/13/1997	3/11/1998	9/28/1998	Completed
6	The Rivers No. 2	154	8/13/1997	3/11/1998	8/25/1999	Completed
6	The Rivers No. 3	77	8/13/1997	3/11/1998	12/13/2000	Completed
6	The Villagio 1	91	8/25/2004	7/27/2005	10/26/2005	Developing
6	The Villagio	107	8/25/2004	7/27/2005		Proposed
6	The Villagio	66	8/25/2004	7/27/2005		Proposed
	Total	835				
7	Altermatt Farms #1	64	3/26/1997	8/27/1997	1/28/1998	Completed
7	Altermatt Farms #2	109	3/11/1998	10/14/1998	1/27/1999	Completed
7	Bayberry Park 1	78	3/23/1994	10/12/1994	12/7/1994	Completed
7	Bayberry Park 2	80	3/23/1994	10/12/1994	8/23/1995	Completed
7	Bayberry Park 3	49	3/23/1994	10/12/1994	10/23/1996	Completed
7	Bayberry Park 4	51	3/23/1994	10/12/1994	3/12/1997	Completed
7	Bayberry Place 1	76	6/14/1989	3/14/1990	4/2/1990	Completed
7	Bayberry Place 2	33	6/14/1989	3/14/1990	9/25/1991	Completed
7	Bayberry Place 3	66	6/14/1989	3/14/1990	7/28/1993	Completed

Sec.	Name	Lots	Ten. Prel.	Final Prel.	Final	Status
7	Gateway Village	58	1/14/2004	10/13/2004	11/22/2005	Developing
7	Macomb Hills No. 1	76	6/8/1988	10/25/1989	10/26/1990	Completed
7	Macomb Hills No. 2	30	6/8/1988	10/24/1990	11/22/1991	Completed
7	Macomb Hills No. 3	55	6/8/1988	10/24/1990	6/24/1992	Completed
7	Spring Hill Meadows 1	33	4/25/1990	11/14/1990	12/26/1990	Completed
7	Spring Hill Meadows 2	35	4/25/1990	1/15/1992	1/29/1992	Completed
7	Verona Park No. 1	78	1/13/1993	8/11/1993	9/22/1993	Completed
7	Verona Park No. 2	72	4/12/1995	9/13/1995	11/8/1995	Completed
7	Villa Rosa No. 1	42	6/14/1989	6/27/1990	7/25/1990	Completed
7	Villa Rosa No. 2	54	2/26/1992	4/8/1992	5/13/1992	Completed
7	Villa Rosa No. 3	53	3/9/1994	6/22/1994	9/14/1994	Completed
7	Villa Rosa No. 4	53	9/27/1996	5/15/1997	11/12/1997	Completed
7	Villa Rosa No. 5	103	12/9/1998	9/8/1999	4/12/2000	Completed
	Total	1348				
8	Cracklewood	10		10/23/1991	3/11/1992	Completed
8	Huntington Woods 1	16	5/17/1988	4/28/1990	3/28/1990	Completed
8	Huntington Woods 2	30	5/17/1988	4/28/1990	12/26/1990	Completed
8	Huntington Woods 3	52	5/17/1988	4/28/1990	7/22/1992	Completed
8	Huntington Woods 4	31	8/12/1992	4/28/1993	12/20/1993	Completed
8	Huntington Woods 5	59	10/13/1993	11/21/1994	11/21/1994	Completed
8	Huntington Woods 6	7	10/13/1993	11/21/1994	11/29/1995	Completed
8	Huntington Woods 7	54	10/13/1993	11/21/1994	11/29/1995	Completed
8	Huntington Woods 8	40	9/9/1998	1/27/1999	5/26/1999	Completed
8	Penziens Farms	255	10/22/1997	6/24/1998	8/26/1998	Completed
8	Penziens No. 1	4	8/24/1988	9/12/1990	1/30/1991	Completed
8	Sumpter Forest	289	8/13/1997	8/12/1998	1/13/1999	Completed
	Total	847				
12	Light	12	--	--	10/15/1954	Completed
12	Light No. 1	12	--	--	5/15/1956	Completed
	Total	24				
14	Elan Estates	116	12/10/2003	3/9/2005	5/10/2006	Developing
	Total	116				
15	Castle Mar	99	3/14/2001	3/13/2002	2/12/2003	Developing
15	Fairways Macomb 1	77	6/28/2000	3/14/2001	11/14/2001	Completed
15	Fairways Macomb 2	140	11/14/2001	8/28/2002	1/22/2003	Completed
15	Northwood Farms	110	10/27/2004			Proposed
15	Portofino Villas	43	1/24/2005	11/9/2005	9/12/2007	Proposed
	Total	469				
16	Char Estates	30	5/25/2005	3/12/2008		Proposed
16	Evergreen Estates	26	11/8/1999	10/11/2000	9/12/2001	Completed
16	Harmony Acres No. 1	40	11/12/2003	5/24/2004	8/10/2005	Developing
16	Harmony Acres No. 2	35	11/12/2003	5/14/2008		Developing
16	Harmony Acres No. 3	19	11/12/2003	5/14/2008		Developing
16	Harmony Acres No. 4	43	11/12/2003	5/14/2008		Developing
16	Indian Pointe #1	131	2/28/1996	6/25/1997	2/25/1998	Completed
16	Indian Pointe #2	132	2/28/1996	6/25/1997	2/25/1998	Completed
16	Pinewood Villas	96	11/8/1995	12/13/1995	3/13/1996	Completed
16	Pinewood Villas East	65	2/28/1996	8/28/1996	10/23/1996	Completed

Sec.	Name	Lots	Ten. Prel.	Final Prel.	Final	Status
16	Pinewood Villas West	53	2/28/1996	9/25/1996	1/8/1997	Completed
16	Wellington Estates 1	146	1/24/2005	1/23/2008		Proposed
16	Wellington Estates 2	1	1/24/2005	1/23/2008		Proposed
16	Wellington Estates 3	4	1/24/2005	1/23/2008		Proposed
16	Westwood Estates 1	192	4/10/1996	1/8/1997	8/13/2003	Completed
16	Westwood Estates 2	91	8/14/2002	10/23/2002	4/27/2005	Developing
16	Westwood Estates 3	28	8/14/2002	10/23/2002	4/27/2005	Developing
16	Woodside Trails	115	12/9/1998	2/23/2000	11/20/2000	Completed
	Total	1247				
18	Buckskin	26	1/27/1993	3/9/1994	4/28/1994	Completed
18	Deerwood No. 1	69	10/28/1987	2/10/1988	1/23/1989	Completed
18	Deerwood No. 2	48	10/28/1987	2/15/1989	10/19/1989	Completed
18	Deerwood No. 3	49	10/28/1987	6/14/1989	11/15/1989	Completed
18	Deerwood No. 4	67	10/28/1987	6/14/1989	1/26/1990	Completed
18	Deerwood No. 5	29	10/28/1987	7/9/1989	4/10/1991	Completed
18	Meadowbrook Park 1	75	6/14/1989	5/9/1990	9/12/1990	Completed
18	Meadowbrook Park 2	69	6/14/1989	11/13/1991	1/29/1992	Completed
18	Meerschaert Farms	48	3/8/1995	8/2/1995	2/28/1996	Completed
18	Sawmill Creek	113	10/23/1991	8/26/1992	11/30/1992	Completed
	Total	593				
19	Westminister 1	203	8/28/2002	6/9/2004	12/28/2005	Developing
19	Westminister 2	290	8/28/2002	2/14/2005	12/28/2005	Developing
	Total	493				
20	Brook Run West	8	2/13/2002			Proposed
20	Walnut Creek No. 1	101	4/27/1994	8/24/1994	12/13/1995	Completed
20	Walnut Creek No. 2	101	4/27/1994	8/24/1994	1/29/1997	Completed
20	Willowood Phase 1	60	10/14/1992	6/22/1994	10/26/1994	Completed
20	Willowood Phase 2	111	10/14/1992	6/22/1994	8/9/1995	Completed
20	Willowood Phase 3	30	3/27/1996	12/11/1996	12/19/1996	Completed
20	Willowood Phase 4	5	5/22/1996	12/11/1996	12/11/1996	Completed
20	Witt Acres	6	--	3/8/1961	4/19/1961	Completed
	Total	422				
21	Brook Run	90	8/22/2001	1/22/2003	12/10/2003	Developing
21	Buckingham Village 1	122	2/9/2001	7/11/2001	12/11/2002	Developing
21	Buckingham Woods 1	161	12/21/1998	9/8/1999	12/20/1999	Completed
21	Buckingham Woods 2	138	12/21/1998	9/8/1999	12/20/1999	Completed
21	Cambridge Commons	129	4/13/1994	2/8/1995	11/29/1995	Completed
21	Cambridge Commons 2	56	3/13/1996	7/23/1997	3/25/1998	Completed
21	Capps	10	--	4/10/1957	8/1/1957	Completed
21	Fieldstone Estates 1	101	6/9/1999	4/12/2000	12/13/2000	Developing
21	Fieldstone Estates 2	77	6/9/1999	4/12/2000	11/25/2002	Developing
21	Koss Farms 1	76	2/23/2000	8/22/2001	1/9/2002	Completed
21	Koss Farms 2	75	2/23/2000	8/22/2001	1/9/2002	Developing
21	Middle Branch Estates	65	11/21/1994	11/29/1995	8/28/1996	Completed
21	Middlecreek Estates	45	11/13/2002	9/10/2003	5/12/2004	Developing
21	Middle River #1	112	11/12/1992	10/27/1993	11/22/1993	Completed
21	Middle River #2	40	11/12/1992	10/27/1993	12/8/1993	Completed
21	Middle River #3	51	11/12/1992	10/27/1993	12/8/1993	Completed

Sec.	Name	Lots	Ten. Prel.	Final Prel.	Final	Status
21	Middle River Sub.	53	12/8/1993	10/26/1994	11/21/1994	Completed
21	North Hampton Court	15	4/12/1995	2/14/1996	9/11/1996	Completed
21	Vokaert	20	--	1/14/1956	1/31/1956	Completed
	Total	1436				
22	Buckingham Village 2	181	5/14/2003	2/11/2004	1/24/2005	Developing
22	Deerfield Farms	52	6/25/1997	3/11/1998	6/24/1998	Completed
22	Deerfield Park Estates 1	94	10/26/1994	8/2/1995	2/14/1996	Completed
22	Deerfield Park Estates 2	119	4/24/1996	5/22/1996	10/9/1996	Completed
22	Deerfield Park East	66	4/9/1997	10/22/1997	2/11/1998	Completed
22	Edinburgh Estates 1	114	3/11/1998	9/9/1998	4/14/1999	Completed
22	Edinburgh Estates 2	181	3/11/1998	9/9/1998	6/9/1999	Completed
22	Gateway Farms	114	1/22/2003	9/24/2003	2/11/2004	Developing
22	Golden Gate Estates	115	2/26/2003	9/24/2003	2/11/2004	Developing
22	Lone Oak Estates	23	8/10/2005	8/26/2006		Proposed
22	Lone Star	15	1/14/2004	1/24/2005	6/28/2006	Developing
22	Margherita Estates	23	8/13/2003	6/13/2007	6/13/2007	Developing
22	Stagsleap Pointe 1	70	2/25/1998	9/23/1998	1/27/1999	Completed
22	Stagsleap Pointe 2	87	2/25/1998	1/27/1999	10/27/1999	Completed
22	Wingate Farms	53	9/12/2001	1/8/2003	12/10/2003	Developing
	Total	1307				
23	Parkview Commons 1	53	7/28/1999	9/13/2000	10/25/2000	Completed
23	Parkview Commons 2	8	7/28/1999	9/13/2000	11/20/2000	Completed
23	Parkview Estates	24	12/10/2003	9/22/2004	8/10/2005	Developing
23	Rainbow	10	--	8/12/1959	8/9/1960	Completed
23	Rivera Ridge Estates	57	3/23/2005	9/13/2006		Proposed
23	Rivers Estates	61	1/22/2003	10/22/2003	9/22/2004	Developing
23	Woodland Farms	157	9/28/2005	9/28/2005		Proposed
	Total	370				
24	Hoffman	13	--	8/8/1962	4/2/1963	Completed
24	Hugel Farms Acres	30	No	Record	Found	Completed
24	Legacy Farms 1	174	10/11/2006	5/11/2005	6/28/2006	Developing
24	Legacy Farms 2	119	10/11/2006			Proposed
24	Legacy Farms 3	15	10/11/2006			Proposed
24	Pinnacle Farms	66	2/25/2004	4/26/2006	4/12/2006	Proposed
24	Pinnacle Woods	142	8/22/2001	3/9/2005	4/12/2006	Developing
24	Woodview	27	6/23/2004			Proposed
	Total	586				
25	Anastasia	17	--	3/24/1954	5/17/1954	Completed
25	Fairchild Country Homes	14	--	6/1/1958	9/17/1958	Completed
25	Fairchild Country Homes 1	21	--	9/26/1965	5/9/1966	Completed
25	Golfview	30	8/25/2004	10/12/2005	11/27/2006	Proposed
25	Hickory Creek No. 1	64	8/13/1997	10/14/1998	3/10/1999	Completed
25	Hickory Creek No. 2	23	8/13/1997	10/14/1998	11/22/1999	Completed
25	Manchester Woods	237	5/9/2007			
25	Northview	28	4/1/1959	10/14/1959	11/17/1959	Completed
25	Stoneridge	106	1/24/2005	12/13/2006		Proposed
	Total	540				
26	Burning Tree Estates	29	5/24/1995	6/12/1996	8/14/1996	Completed

Sec.	Name	Lots	Ten. Prel.	Final Prel.	Final	Status
26	Hidden Meadows	46	8/28/2002	4/9/2003	2/11/2004	Developing
26	Sycamore Estates	118	6/27/2001	10/26/2002	6/11/2003	Completed
26	Vista Green	24	--	10/17/1956	1/17/1957	Completed
	Total	217				
27	Brittany Farms	33	6/9/1999	5/10/2000	9/13/2000	Completed
27	Brittany Park	114	7/24/1996	5/28/1997	8/27/1997	Completed
27	Carlton Place	95	7/28/1999	6/28/2000	4/11/2001	Completed
27	Cornerstone Village 1	102	9/10/1997	7/8/1998	10/28/1998	Completed
27	Cornerstone Village 2	22	9/10/1997	8/12/1998	10/28/1998	Completed
27	Cornerstone Village 3	77	9/10/1997	2/9/2000	10/11/2000	Completed
27	Cornerstone Village 4	22	9/10/1997	2/9/2000	10/11/2000	Completed
27	Cornerstone Village 5	58	9/10/1997	2/9/2000	10/11/2000	Completed
27	Cornerstone Village 6	123	9/10/1997	2/9/2000	9/11/2002	Developing
27	Deerfield Park South 1	97	8/22/1995	2/28/1996	10/23/1996	Completed
27	Deerfield Park South 2	78	3/22/1995	2/28/1996	4/9/1997	Completed
27	South Fork No. 1	120	4/26/1995	7/10/1996	10/8/1997	Completed
27	South Fork No. 2	64	7/14/1999	2/9/2000	6/14/2000	Completed
27	Summerfield Estates 1	65	11/22/1993	12/21/1994	2/8/1995	Completed
27	Summerfield Estates 2	79	11/15/1994	7/24/1996	1/8/1997	Completed
27	Summerfield Estates 3	24	11/15/1994	4/14/1999	10/13/1999	Completed
27	Summerfield Estates 4	141	4/14/1999	5/24/2000	2/28/2001	Completed
27	Wexford Meadows	16	5/25/2005	12/27/2006		Proposed
	Total	1330				
28	Beacon Square No. 1	110	3/22/1995	4/26/1995	8/23/1995	Completed
28	Beacon Square No. 2	127	3/13/1996	5/22/1996	9/25/1996	Completed
28	Beacon Square No. 3	119	7/24/1996	1/29/1997	12/22/1997	Completed
28	Brook Run South	14	11/25/2003	9/22/2004	10/26/2005	Developing
28	Chelsea Park	74	4/26/2000	7/11/2001	10/10/2001	Developing
28	Chelsea Court	14	5/28/2003	6/9/2004	12/14/2005	Developing
28	Cherry Valley	56	3/23/1994	1/11/1995	4/8/1995	Completed
28	Deerfield Manor	82	7/23/1997	3/11/1998	6/10/1998	Completed
28	Lancaster No. 1	188	4/14/1999	3/8/2000	10/11/2000	Completed
28	Lancaster No. 2	65	4/14/1999	3/8/2000	11/13/2002	Completed
28	Manor Place	108	6/24/1998	3/24/1999	7/14/1999	Completed
28	Pinecrest No. 1	98	7/24/1996	9/9/1998	3/24/1999	Completed
28	Pinecrest No. 2	19	7/24/1996	9/9/1998	10/27/1999	Completed
28	Pinecrest No. 3	78	7/24/1996	9/9/1998	10/27/1999	Completed
28	Rocco Estates	9	6/12/2002	9/10/2003	12/10/2004	Developing
28	Rockwood No. 1	41	4/22/1998	7/14/1999	4/26/2000	Completed
28	Rockwood No. 2	6	5/9/2001	2/25/2004	12/14/2005	Developing
28	Split Rail Grove	64	1/29/1997	7/9/1997	9/24/1997	Completed
	Total	1272				
29	Brentwood Farms 1	112	12/13/1989	6/27/1990	1/30/1991	Completed
29	Brentwood Farms 2	61	7/22/1992	7/14/1993	9/8/1993	Completed
29	Brentwood Farms 3	44	7/22/1992	7/14/1993	10/27/1993	Completed
29	Brentwood Farms 4	97	7/22/1992	7/14/1993	6/8/1994	Completed
29	Cross Creek	93	2/26/1992	6/22/1994	11/10/1994	Completed
29	Foester	8	--	11/9/1960	12/6/1960	Completed

Sec.	Name	Lots	Ten. Prel.	Final Prel.	Final	Status
29	Greenbrier	46	11/23/1988	--	5/23/1990	Completed
29	Iroquois Valley	26	6/28/1989	10/24/1990	1/30/1991	Completed
29	Mocam	81	--	9/12/1979	11/1/1979	Completed
29	Pompea Gardens	277	--	8/23/1978	11/3/1978	Completed
29	Rose Pointe #1	69	5/27/1987	11/23/1988	1/11/1989	Completed
29	Rose Pointe #2	47	--	11/25/1992	1/13/1993	Completed
29	Rose Pointe #3	45	9/8/1993	4/13/1994	6/22/1994	Completed
29	Rose Pointe #4	4	2/14/1996	7/10/1996	10/9/1996	Completed
29	Shenadoah Village	276	--	7/12/1978	9/14/1978	Completed
29	Shenadoah Village 2	31	--	7/12/1978	11/27/1978	Completed
29	Turnberry	58	9/10/1997	3/11/1998	6/24/1998	Completed
29	Turnberry Pointe	18	3/14/2001	6/23/2004	2/23/2005	Developing
29	Valley Forge #1	203	--	9/01/1977	10/27/1977	Completed
29	Valley Forge #2	48	--	2/14/1979	3/26/1979	Completed
29	Valley Forge #3	44	3/9/1988	6/28/1989	7/10/1989	Completed
29	Waldenburg Heights	25	--	5/25/1966	4/18/1969	Completed
	Total	1713				
30	Farmbrook	64	--	--	4/22/1987	Completed
30	Freedom Valley #1	61	8/27/1986	2/10/1988	3/8/1988	Completed
30	Freedom Valley #2	66	8/27/1986	3/29/1989	6/14/1989	Completed
30	Gloede Park Estates 1	51	12/14/2005	6/9/2004	1/11/2006	Developing
30	Gloede Park Estates 2	7		6/9/2004		Developing
30	Haverhill #1	252	--	7/9/1975	8/12/1975	Completed
30	Haverhill #2	148	--	7/9/1975	9/3/1975	Completed
30	Haverhill #3	319	--	6/23/1976	8/24/1976	Completed
30	Jefferson Meadows 1	72	--	10/24/1979	1/11/1980	Completed
30	Jefferson Meadows 2	144	--	10/22/1986	12/3/1986	Completed
30	Jefferson Meadows 3	67	11/21/1994	11/8/1995	2/28/1996	Completed
30	Jefferson Meadows 4	95	11/21/1996	8/14/1996	2/12/1997	Completed
30	Jefferson Meadows 5	117	11/21/1996	3/25/1998	6/24/1998	Completed
30	Strawberry Knoll	69	12/10/1997	3/11/1998	6/10/1998	Completed
	Total	1532				
31	Breckenridge #1	337	--	7/25/1979	10/1/1979	Completed
31	Breckenridge #2	69	--	10/22/1986	12/19/1986	Completed
31	Breckenridge #3	100	--	4/23/1987	6/17/1987	Completed
31	Cedar Lane	10	--	3/11/1959	4/9/1959	Completed
31	Lakeside Landings	111	7/24/1996	4/8/1998	10/14/1998	Completed
31	Lakeside Meadows	112	--	12/27/1978	3/20/1979	Completed
31	Partridge Creek	67	--	11/28/1979	1/22/1980	Completed
	Total	806				
32	Fox Run #1	60	--	3/3/1987	6/10/1987	Completed
32	Fox Run #2	72	--	7/13/1988	12/5/1988	Completed
32	Margate Estates	85		5/23/1979	7/18/1979	Completed
32	Plumgrove #1	414	--	9/14/1977	10/28/1977	Completed
32	Plumgrove #2	357	--		1977	Completed
	Total	988				
33	River Park Estates	22	8/23/1995	9/11/1996	4/23/1997	Completed
33	Riverside Glen	52	12/8/1993	11/21/1994	12/7/1994	Completed

Sec.	Name	Lots	Ten. Prel.	Final Prel.	Final	Status
33	Riverwoods Phase 1	75	9/8/1993	9/28/1994	5/10/1995	Completed
33	Riverwoods Phase 2	95	8/14/1996	8/28/1996	10/23/1998	Completed
33	Riverwoods Phase 3	14	12/22/1997	9/9/1998	9/23/1998	Completed
33	Riverwoods Phase 4	67	10/28/1998	6/9/1999	7/28/1999	Completed
33	Riverwoods Farms	61	8/11/2004	9/28/2005	11/14/2007	Developing
33	S.P. of Haltiner	12	--	9/9/1959	1/14/1960	Completed
33	Twin Rivers 1	156	8/11/1999	8/11/2004	11/22/2004	Developing
33	Twin River 2	68	8/11/1999			Proposed
33	Windemere Woods 1	99	7/11/1990	7/22/1992	8/12/1992	Completed
33	Windemere Woods 2	34	6/23/1993	10/13/1993	11/10/1993	Completed
33	Windemere Woods 3	95	7/11/1990	8/24/1994	2/8/1995	Completed
33	Windemere Woods 4	27	7/24/1996	4/23/1997	4/22/1998	Completed
33	Windemere Woods 5	58	7/24/1996	4/23/1997	7/28/1999	Completed
33	Westchester Farms 1	127	3/13/1996	5/13/1998	10/27/1999	Completed
33	Westchester Farms 2	58	3/13/1996	6/28/2000	10/25/2000	Completed
	Total	1120				
34	Adrienne Estates 1	30	8/28/1996	9/9/1998	9/22/1999	Completed
34	Adrienne Estates 2	16	--	--	5/14/2003	Developing
34	Supervisor's Plat 1	6	--	--	12/10/1956	Completed
	Total	52				
35	Beaufait Farms 1	70	12/11/1996	8/27/1997	4/22/1998	Completed
35	Beaufait Farms 2	63	6/9/1999	7/28/1999	12/8/1999	Completed
35	Beaufait Farms 3	72	6/9/1999	9/13/2000	4/11/2001	Completed
35	Beaufait Farms 4	10	3/10/2004	6/23/2004	4/12/2006	Developing
35	The Bluffs of Beaufait 1	99	5/8/2002	9/25/2002	6/25/2003	Developing
35	The Bluffs of Beaufait 2	47	5/8/2002	6/23/2004	8/24/2005	Developing
35	Creekside Village 1	48	7/24/1994	7/26/1995	10/11/1995	Completed
35	Creekside Village 2	13	7/27/1995	11/13/1996	11/13/1996	Completed
35	Creekside Village 3	29	7/27/1995	11/13/1996	5/28/1997	Completed
35	Creekside Village 4	160	3/26/1997	11/12/1997	2/11/1998	Completed
35	Loeffler	39	--	2/11/1953	3/15/1953	Completed
35	S.P. Deneweth	36	--	9/11/1946	9/25/1948	Completed
35	Tesner Park	51	4/11/2001	2/25/2004	6/22/2005	Developing
35	Towngate	108	10/9/1996	6/24/1998	4/14/1999	Completed
	Total	845				
36	Battaglia	30	4/23/2008			Proposed
36	Dobson	25	--	10/17/1952	8/26/1953	Completed
36	Dobson #1	16	--	10/17/1952	8/26/1953	Completed
36	Drouillard John	24	--	2/10/1954	3/18/1954	Completed
36	Duprey Gardens	27	--	6/8/1955	6/23/1955	Completed
36	Faith	18	--	5/13/1959	8/17/1959	Completed
36	Hall Farm Estates	57	--	3/25/1955	6/30/1955	Completed
36	Hall Farm Estates #1	43	--	7/10/1955	11/23/1955	Completed
36	Harway Station	56	--	4/8/1953	5/16/1953	Completed
36	Oak Grove	19	1/29/1992	8/26/1992	2/24/1993	Completed
36	Oak Pointe	48	7/27/1994	12/21/1994	2/8/1995	Completed
36	Park Lane	17	6/14/1989	11/14/1990	1/30/1991	Completed
36	Ridgepointe	131	11/25/1992	9/8/1993	11/10/1993	Completed

Sec.	Name	Lots	Ten. Prel.	Final Prel.	Final	Status
36	S.P. Grove Acres	40	--	11/14/1946	12/30/1946	Completed
36	S.P. Stanton-Hartway	78	--	6/8/1951	11/15/1951	Completed
36	Urban Peters	24	--	10/31/1947	12/12/1947	Completed
36	Urban Meadows	76	4/12/2000	8/22/2001	4/9/2003	Developing
	Total	729				
	Grand Total of Lots	25,251				

Condominiums in Macomb Township

Section	Name	Units	Date Approved	Status	Extension
4	Strathmore Condo 1	152	10/27/2004	Developing	
4	Strathmore Condo 2	130	10/26/2005	Developing	7-11-2007
	Total	282			
6	Brenton Woods	56	7/13/2005	Developing	
6	Villas of Villagio	62	10/2/2007	Proposed	
	Total	118			
8	Cardinal Cove	13	10/12/2005	Proposed	11/14/2007
	Total	13			
9	Macomb Town Center	487		Proposed	
9	Macomb Town Center S.	602	9/14/2005	Developing	
9	Pheasant Run 1	72	4/13/2005	Developing	
	Total	1161			
13	Stillwater Crossing	516	12/28/2005	Proposed	8/21/2007
14	Hartford P.U.D.	340	4/26/2000	Developing	
	Total	340			
17	Averhill Parc	87	9/5/2001	Completed	
17	Bridgewater Estates	156	9/27/2006	Proposed	
17	Cobblestone Ridge 1	52	5/16/1989	Completed	
17	Cobblestone Ridge 2	112	2/6/1990	Completed	
17	Cobblestone Ridge 3	122	2/18/1992	Completed	
17	Maple Villas 1 and 2	72	3/16/1993	Completed	
17	Maple Villas 3	37	3/21/1995	Completed	
17	Silver Pines Village	150	4/2/2002	Developing	11/3/2003
17	Westgrove	116	9/7/1994	Completed	
	Total	904			
18	Hunters Pointe	44	9/21/1993	Completed	
18	West Creek	165	10/1/1991	Completed	
	Total	209			
19	Strawberry Fields	59	4/26/2006	Proposed	5/14/2008
	Total	59			
20	Highland Hills 1	132	8/5/1997	Completed	
20	Highland Hills 2	127	8/5/1997	Completed	
20	Highland Hills 3	36	10/4/1999	Completed	

Section	Name	Units	Date Approved	Status	Extension
20	Monarch Estates	167	6/13/2007	Proposed	5/28/2008
20	Wingfield Estates	121	5/23/2007	Proposed	6/3/2008
	Total	583			
21	Becher Estates	44	10/12/2005	Developing	
	Total	44			
23	The Park at Riverside	192	C.J.	Developing	3/26/2008
	Total	192			
24	Retreat Condos	407	2002	Developing	
	Total	507			
25	Hunters Chase	40	2/20/1990	Completed	
25	Mission Valley	45	8/17/1993	Completed	
25	The Park at Legacy	183	4/6/2004	Proposed	
25	The Preserve at Legacy	50	4/6/2004	Proposed	
	Total	318			
26	Fairlane Estates	25	5/28/2007		5/14/2008
26	Lake Arrowhead	237	5/11/2005	Developing	
26	Woodberry Estates 1	125	12/5/1995	Completed	
26	Woodberry Estates 2	179	6/12/2002	Developing	
	Total	566			
30	Farmbrooke	96	6/16/1987	Completed	
	Total	96			
31	Ashley Commons	76	1986	Completed	
31	Balfour	40	1987	Completed	
31	Huntcliff Phase 1 & 2	88	1987	Completed	
31	Huntcliff Phase 3	40	4/19/1988	Completed	
31	Leisureton Lakeside Villas	78	6/6/1989	Completed	
31	Meadows	125	8/18/1987	Completed	
31	Pheasant Ridge	12	10/1/1990	Completed	
31	Warwick Village	342	3/7/2000	Completed	
	Total	801			
32	Country Meadows	146	4/18/1995	Completed	
32	Glenmoor Village	120	8/19/1997	Completed	
32	Madison Manor	150	10/5/1999	Developing	
	Total	416			
33	Windemere Commons	218	3/16/1999	Completed	
	Total	218			
34	Brookside No. 1	38	4/7/1992	Completed	
34	Brookside No. 2	69	7/20/1993	Completed	
34	Fairway Commons	50	6/20/2005	Proposed	
34	Fairways West	80	12/18/1990	Completed	
34	Hall Meadows	176	7/17/2001	Developing	
34	Jewel Pointe	23	5/15/2001	Completed	
34	Windemere Farms	287	C. J.	Developing	

34	Wood Creek Farms 1	37	1/16/1996	Completed	
34	Wood Creek Farms 2	47	1/16/1996	Completed	
	Total	2,296			
35	Fairways East	97	11/17/1992	Completed	
	Total	97			
36	Pine Hill	56	5/17/1988	Completed	
36	Pines	52	6/6/1989	Completed	
	Total	108			
	Total Condos	9844			

Mobile Home Parks in Macomb Township

Section	Name	Units	Date Approved	Status	Extension
32	Camelot Villas	876	1971	Completed	
	Total	876			
34	Chateau Macomb 1	823	6/28/1971	Completed	
34	Chateau Macomb 2	452	12/16/1975	Completed	
34	Chateau Macomb 3	347	1/19/1988	Completed	
34	Chateau Macomb 4	228	5/17/1988	Completed	
34	Chateau Macomb 5	51	10/16/1990	Completed	
34	Chateau Macomb Westbrook	395	6/7/1995	Completed	
	Total	2296			
	Grand Total M.H.	3172			

Apartments in Macomb Township

Section	Name	Units	Date Approved	Status	Extension
25	Legacy Place	287	4/6/2004	Proposed	4/23/2008
	Total	287			
32	Northport Phase 1	200	7/21/1987	Completed	
32	Northport Phase 2	315	7/21/1987	Completed	
	Total	515			
	Grand Total Apts	802			

**UNDEVELOPED RESIDENTIAL LOTS/UNITS
IN MACOMB TOWNSHIP
2008**

Section Number	Project Name	Remaining Building Sites
34	Adrienne Estates No. 1	1
34	Adrienne Estates No. II	7
21	Becher Estates	33
35	Bluffs of Beaufait Farms 1 & II	43
6	Breton Woods	39
21	Brook Run	18
28	Brook Run South	3
4	Brookwoods	5
22	Buckingham Village 2	109
	Card Road Home Sites	3
15	Castle Mar	6
28	Chelsea Court	7
27	Cornerstone Village 3, 4 &5	1
27	Cornerstone Village 6	9
5	Country Club of the North	1
8	Cracklewood Subdivision	2
14	Elan Estates	33
5	Emerald Green	1
	Englewood Drive Parcel Division	3
5	English Gardens II	7
34	Fairway Commons	38
4	Fallbrooke Farms	56
21	Fieldstone Estates Phase 1 & 2	3
22	Gateway Farms	31
7	Gateway Village Estates	46
30	Gloede Park	38
22	Golden Gate	16
34	Hall Meadows	76
16	Harmony Acres	121
14	Hartford PUD *Addison	38
14	Hartford PUD *Village	138
26	Hidden Meadows	26
8	Huntington Woods 8	7
16	Indian Pointe 1	1
21	Koss Farms 1 & 2	6
26	Lake Arrowhead Phase 1	218
25	Legacy Farms	174
22	Lone Star Estates	10
9	Macomb Town Center South Phase 1	106
9	Macomb Town Center South Condos	74
21	Middlecreek Estates I & II	11
36	Oakgrove	2

Section Number	Project Name	Remaining Building Sites
23	Parc at Riverside	4
23	Parkview Estates	17
4	Pine Valley	30
21	Pomaville Parcel Splits	1
24	The Retreat	242
6	The Rivers Phase 1	2
6	The Rivers Phase II	1
6	The Rivers Phase III	3
23	The Rivers Estates	48
33	Riverwoods	2
33	Riverwoods III	1
28	Rocco Estates	5
28	Rockwood	4
17	Silver Pines Condos	52
27	Southfork Estates	1
22	Stagsleap Pointe	1
22	Stagsleap Pointe II	0
4	Strathmore	0
4	Strathmore Condos Phase I	72
8	Sumpter Forest	2
35	Tesner Park	40
29	Turnberry Pointe	14
33	Twin Rivers	117
7	Villa Rosa 5	0
23	Village at Riverside Condos	21
6	Villagio	248
31	Warwick Village Condos	0
4	West Park Estates	60
18	Westcreek Commons	2
18	Westcreek Estates	2
19	Westminister Phase 1	136
4	West Park Estates	60
16	Westwood Pointe I & II	153
33	Windemere Farms Condos	140
33	Windemere Woods 5 & 6	1
22	Wingate Farms	2
5	Wolverine Country Club	76
4	Wolverine Trace	2
26	Woodberry Estates	87
16	Woodside Trails	0
	Total	
Information	supplied from the Water/Sewer Dept.	3,357

MACOMB TOWNSHIP

PROPOSED HOUSING DEVELOPMENT 2008

MACOMB TOWNSHIP PROPOSED SUBDIVISIONS

Sec	Name	Lots	Ten. Prel.	Final Prel.	Status
5	Clearstone	100	11/22/2004	8/24/2005	Proposed
5	Wolverine Country Club 2	244	10/23/2003	11/22/2005	Proposed
5	Wolverine Country Club 3	16	10/23/2003	11/22/2005	Proposed
6	River Pointe	32	10/24/2007		Proposed
6	The Villagio	107	8/25/2004	7/27/2005	Proposed
6	The Villagio	66	8/25/2004	7/27/2005	Proposed
15	Northwood Farms	110	10/27/2004		Proposed
15	Portofino Villas	43	1/24/2005	11/9/2005	Proposed
16	Char Estates	30	5/25/2005	3/12/2008	Proposed
16	Wellington Estates 1	146	1/24/2005	1/23/2008	Proposed
16	Wellington Estates 2	1	1/24/2005	1/23/2008	Proposed
16	Wellington Estates 3	4	1/24/2005	1/23/2008	Proposed
20	Brook Run West	8	2/13/2002		Proposed
22	Lone Oak Estates	23	8/10/2005	8/26/2006	Proposed
23	Rivera Ridge Estates	57	3/23/2005	9/13/2006	Proposed
23	Woodland Farms	157	9/28/2005	9/28/2005	Proposed
24	Legacy Farms 2	119	10/11/2006		Proposed
24	Legacy Farms 3	15	10/11/2006		Proposed
24	Pinnacle Farms	66	2/25/2004	4/26/2006	Proposed
24	Woodview	27	6/23/2004		Proposed
25	Golfview	30	8/25/2004	10/12/2005	Proposed
25	Stoneridge	106	1/24/2005	12/13/2006	Proposed
27	Wexford Meadows	16	5/25/2005	12/27/2006	Proposed
33	Twin River 2	68	8/11/1999		Proposed
36	Battaglia	30	4/23/2008		Proposed
	Total of Proposed Lots	1,621			

**MACOMB TOWNSHIP
PROPOSED CONDOMINIUM DEVELOPMENTS**

6	Villas of Villagio	662	10/2/2007	Proposed	
8	Cardinal Cove	13	10/12/2005	Proposed	11/14/2007
9	Macomb Town Center	487		Proposed	
13	Stillwater Crossing	516	12/28/2005	Proposed	8/21/2007
17	Bridgewater Estates	156	9/27/2006	Proposed	
19	Strawberry Fields	59	4/26/2006	Proposed	5/14/2008
20	Monarch Estates	167	6/13/2007	Proposed	5/28/2008
20	Wingfield Estates	121	5/23/2007	Proposed	6/3/2008
21	Becher Estates	44	10/12/2005	Proposed	
25	The Park at Legacy	183	4/6/2004	Proposed	
25	The Preserve at Legacy	50	4/6/2004	Proposed	
34	Fairway Commons	50	6/20/2005	Proposed	
	Total Condos	2508			

**MACOMB TOWNSHIP
PROPOSED APARTMENTS**

Section	Name	Units	Date Approved	Status	Extension
25	Legacy Place	287	4/6/2004	Proposed	4/23/2008
	Grand Total Apts	287			

GRAND TOTAL OF 4,216 PROPOSED LOTS/UNITS

POPULATION ANALYSIS

INTRODUCTION

The characteristics of Macomb Township's population are important to the long-range planning process. Historical and current population trends are especially pertinent in identifying the need for various types of community facilities. Future land use and public utility demands are related to demographic trends and characteristics. The population data that the planning commission utilizes in its analysis comes from two primary sources; the U.S. Census Bureau and the Southeast Michigan Council of Governments (SEMCOG).

The Census Bureau conducts many censuses and surveys. The most well-known census and survey of population is the official population census of the United States, called the decennial census. It is conducted every ten years, most recently in April 2000. During each decennial census, the Census Bureau collects data from every household in the U.S. and its territories. The Decennial Census collects data every 10 years about households, income, education, homeownership, and more for the United States. The data is used for apportionment of the seats in the House of Representatives. The next decennial census is set for 2110. Besides the decennial census, the Census Bureau conducts nearly one hundred other surveys and censuses every year.

SEMCOG produces estimates of population and households for every county and community in the seven-county SEMCOG region. These estimates are provided on an annual and monthly basis. Estimates are provided on an annual and monthly basis. The Regional Development Forecast (RDF) provides population and household numbers at five-year intervals for 233 communities and 1,442 sub-community areas across Southeast Michigan.

The study of population characteristics in Macomb Township is based upon the population forecasts as prepared by the U.S. Census Bureau, SEMCOG, and the Macomb County Planning Economic Development Department. The Population and Housing Narrative Profile based on the "2006 American Community Survey" is the most current data source available to local units of government from the Census Bureau at this time two years from the next decennial census.

The most current population data for Macomb Township is utilized in the review of each characteristic. Comparable data for Macomb County is included and provides data for the overall picture of the area of Macomb Township as well as surrounding communities to understand just how Macomb Township fits into and interacts with the balance of Southeast Michigan.

POPULATION CHANGE

The population of the United States which is currently estimated at 304,241,759 has grown 22% since 1990 outpacing the rate of growth for the State of Michigan (8.3%), Southeast Michigan (9.5), and the County of Macomb (16%). The current population of the United States has more than doubled since 1950 when there were just over 151 million persons.

Michigan's growth spurt took place between 1930 and 1970 when the population grew from 4.8 million to 8.9 million growing at a rate of 1,000,000 persons per decade. Slowdowns occurred after 1970 with the 1990 census for Michigan indicated at 9,295,297 just 33,219 over the 1980 count. However, the 2000 population figure for Michigan was 9,938,444 persons, 643,147 more than 1990, a substantial rate of increase over the 1980 - 1990 census to census counts. The 2008 population of Michigan is estimated at 10.1 million persons.

Macomb Township is growing at a faster rate than either the State or the Country. Between 1940 and 1990 Macomb Township grew from 1,935 persons to 22,714. A major jump in raw numbers took place between 1990 and 2000 and continued thru 2006 before the national housing slump brought growth to an end. The April, 2008 estimate of 75,018 puts Macomb ahead of Shelby Township in total population; thus ranking Macomb Township behind only Warren, Sterling Heights and Clinton Township in Macomb County. The population of Macomb Township as compared to adjoining communities the State of Michigan and the United States of America is illustrated on the Table below; "Comparative Population Growth 1950 – 2008"

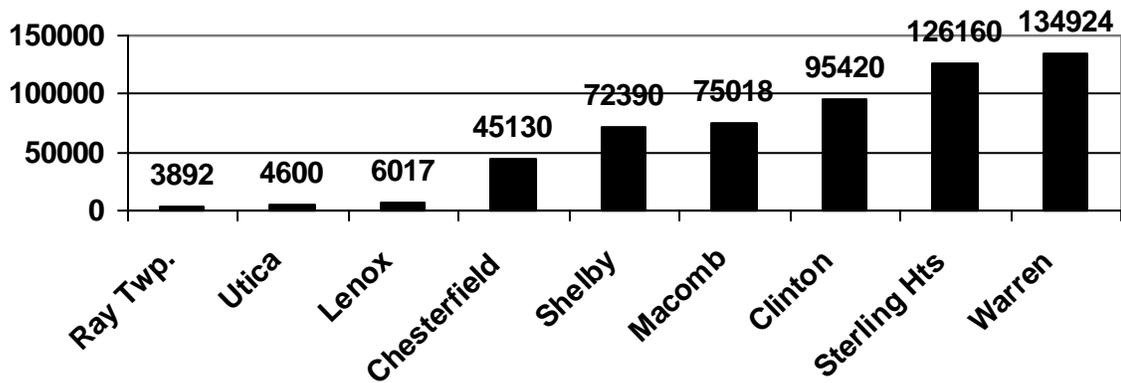
Table 1. COMPARATIVE POPULATION GROWTH 1950-2008

<u>Community</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>April 2008</u>
Chesterfield	3,722	5,888	9,378	18,276	25,905	37,405	45,130
Clinton	10,076	25,688	48,865	72,400	85,866	95,648	95,420
Lenox	1,993	2,356	2,869	3,028	3,069	5,352	6,017
Macomb	2,715	4,807	6,140	14,230	22,714	50,478	75,018
Ray	1,671	2,086	2,683	3,121	3,230	3,740	3,892
Shelby	5,930	17,114	29,467	38,939	48,655	65,159	72,390
Sterling Hts.	6,509	14,622	61,365	108,999	117,810	124,471	126,160
Utica	1,196	1,454	3,504	5,282	5,081	4,577	4,600
Warren	42,653	89,246	179,260	161,134	144,864	138,247	134,924
Macomb Co.	184,961	405,804	625,309	694,600	715,240	788,149	835,948
Michigan	6,371,766	7,823,194	8,881,826	9,262,078	9,295,297	9,938,444	10,071,822
USA	151,325,798	179,323,175	203,302,031	226,542,199	248,709,873	281,421,906	304,129,788

Macomb Township's 2008 population is presented below in two separate bar graph charts below; "Comparative 2008 Populations" and "Macomb Township Population Growth". In "Comparative 2008 Populations" bar chart the 2008 population estimate for Macomb Township is illustrated along side that of other Macomb County communities. It can be easily seen how Macomb Township ranks with the three largest communities in the county and the adjoining townships.

Figure 1

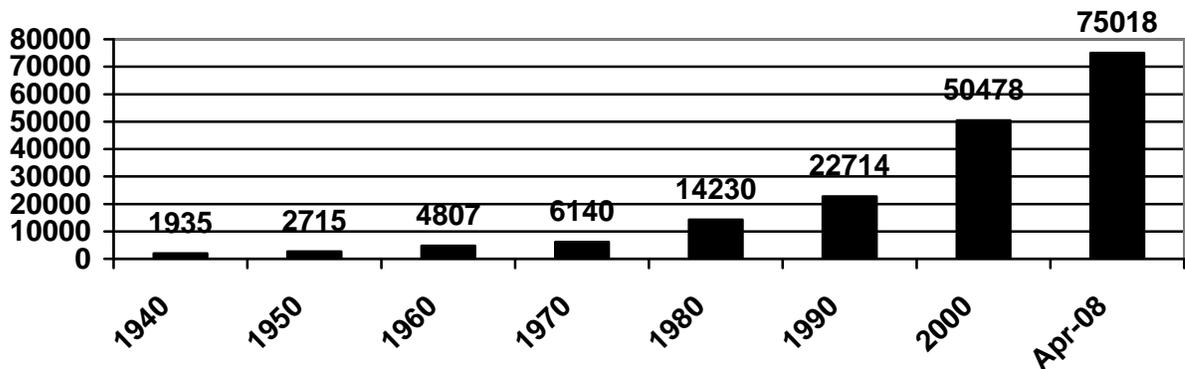
Comparative 2008 Populations



The bar chart below; "Macomb Township Population Growth" Macomb Township's population is illustrated based on the decennial census since 1940 along with the 2008 estimate. The chart clearly shows how explosive growth took place after 1980 continuing on through 2008.

Figure 2

Macomb Township Population Growth



In the table below; “*Number of New Residents by Decade; Selected Communities-Macomb County*”, Macomb Township’s growth is represented in raw numbers and in percentages for each ten year period since 1950. Since 1970 Macomb Township has outpaced the other communities in the County in percentage growth and has been the fastest growing in actual numbers since 1980. Since the 2000 decennial census Macomb Township’s population growth has been slightly more than half the growth for Macomb County as a whole. While Macomb Township’s growth has been rapid it almost pales in contrast with Warren’s growth spurt between 1960 and 1970; (see table below) when that city grew 90,014 persons. Fortunately, Macomb Township’s growth has been more even paced allowing for infrastructure to be brought on-line more in keeping with the growth.

Table 2.

Number of New Residents by Decade; Selected Communities- Macomb County												
Community	1950-1960		1960-1970		1970-1980		1980-1990		1990-2000		2000-2008	
	#	%	#	%	#	%	#	%	#	%	#	%
Chesterfield Twp	2,166	+58	3,490	+59	8,895	+95	7,629	+42	11,500	+44.4	7,725	+20.7
Clinton Twp.	15,612	155	23,177	90	23,535	48	13,466	+18.5	9,782	+11.4	-228	-
Lenox Twp.	263	-18	513	+22	159	+6	41	+1	5,364	+74.7	665	+12.4
Macomb Twp.	2,092	+78	4,333	+28	8,090	+132	8,484	+60	27,764	+122	24,597	+48.7
Ray Twp.	415	25	597	29	438	16	109	+3.4	510	+15.8	152	+1.04
Shelby Twp.	11,184	+189	12,353	+72	9,472	+32	9,716	+25	16,504	+33.9	7,231	+11
Sterling Heights	8,113	+124	46,473	+319	47,634	+77	8,811	+8	6,661	+5.7	1,689	+1.4
Utica	258	+22	2,050	+141	1,778	+51	-201	-4	-504	-9.9	23	+5
Warren	46,593	109	90,014	101	-18126	-10	16,270	-11.2	-6,617	-4.6	-3,323	-2.4

AGE

Aging is considered by demographers as the world’s most dramatic demographic trend. For example, by 2030, one in eight of earth’s population will be over 65 years of age. In the United States, the aging of baby boomers and the “coming of age” of echo boomers will lead to a dramatic increase in single-person households. Changes in the population can affect demand for more various housing types such as increasing demand for multifamily housing in both retirement and workforce categories. The next three tables deal with the impact of age on the population; median age, age by sex tallied by age cohort and age distribution by life cycle.

MEDIAN AGE

The median represents an age in the population where half of the total population is less and one-half is greater than that age. The median age of Macomb Township’s population has increased dramatically between 1970 and 2006; increasing from 23.6 to 35.7 years of age. The township’s median age is lower than that of the county, the State of Michigan and the United States. However, the county’s median age increased more on a percentage basis (56%) than the Township’s (51%).

It should not be surprising that the median age should increase from 1970 given the impact of the baby boomers. In 1970 the baby boomers were distributed between the ages of 5 through 24 years of age. As those age cohorts grew older the median age was pushed higher. There was no other factor like natural increase or migration that could counterbalance the impact of the baby boomers on the median age especially considering that since 1970 no other grouping of age cohorts exceeded the baby boomers.

Table 3.
**Median Age-Macomb Township compared with Macomb
 County-State of Michigan and U.S.**

Unit	1960	1970	1980	1990	2000	2006*▪
Macomb Twp	--	23.6	27.0	30.8	33.6	35.7
Macomb County	24.8	24.6	29.1	33.9	37.0	38.4
Michigan	28.3	26.3	28.8	32.6	35.5	37.3
USA	29.5	28.3	30.0	32.9	35.3	36.4

▪U.S. Census Bureau American Fact Finder, 2006 American Community Survey

Population by Age Group

An important index in the preparation of a plan for a community is the age distribution of its citizens. In the 2000 Census the largest 10 year age group for Macomb Township was 35 to 44 years and remained the largest age cohort in 2006 based on the 2006 American Community Survey. When the 10 year cohorts before and after are added in; that 30 year consecutive age range (25-54) accounts for 47% of the total population based on the 2006 Community Survey versus 48% of the population in the 2000 Census.

The Table below lists Population by sex and age using age cohorts for the 1980, 1990, 2000 censuses and 2006 American Community Survey estimates for Macomb Township. Of note within that Table are the following:

- The male/female ratio has remained consistent since 1980
- The relationships among age cohorts remained relatively consistent between 2000 and 2006
- In-migration remains the most influential factor in changes within each age cohort. Most notably check the 35-44 cohort; 9,821 persons from that cohort resided in Macomb Township in 2000 which grew to 14,646 according to the 2006 ACS survey.

The Table below is then converted below into an Age Distribution by Life Cycle table. That Table which is presented on the next page, converts the age cohorts into more recognizable terms such as “preschoolers, school age, family formation, middle age and senior citizens”; thus making the table more meaningful to the individual reader.

There does not appear to be any significant changes in any of the life cycle groupings since the 2000 Census to the 2006 ACS Survey. While both pre-school and school age children groupings together with the “family formation” group declined in percentage terms since 2000 it does not appear to be statistically significant. The difference was made up by increases in the middle age and senior citizen groups. Those decreases and corresponding increases would appear to reflect the characteristics of the new residents moving into the Township since 2000. This not entirely unexpected since demographers are of the opinion that a growing senior population and a declining proportion of children and working-age residents will characterize growth in the future.

Table 4.
Population by Sex and Age; Using Age Cohorts for the 1980, 1990, 2000
Censuses and 2006 ACS estimates; Macomb Township, Michigan

Subject	1980 Population	%	1990 Population	%	2000 Population	%	2006* Population	%
Total Population	14,230	100	22,714	100	50,478	100	72,914	100
Male	7,077	49.9	11,318	49.9	25,193	49.9	36,392	49.9
Female	7,153	50.1	11,396	50.1	25,285	50.1	36,522	50.1
Under 5 yr	1,307	9.2	2,115	9.3	4,549	9.0	5,949	8.2
5 to 9 year	1,281	9.0	2,171	9.6	4,602	9.1	6,273	8.6
10 - 14 yr	1,298	9.1	1,833	8.3	4,055	8.0	6,032	8.3
15 –19 yr	1,154	8.2	1,596	7.0	3,157	6.3	4,421	6.1
20 – 24 yr	1,441	10.1	1,331	5.8	2,351	4.7	3,795	5.2
25 – 34 yr	2,954	20.7	4,407	19.4	7,920	15.7	9,234	12.7
35 – 44 yr	1,654	11.7	4,265	18.8	9,821	19.5	14,646	20.1
45 – 54 yr	1,355	9.6	1,994	5.7	6,768	13.4	10,437	14.3
55 – 59 yr	581	4.0	737	3.2	2,039	4.0	3,768	5.2
60 – 64 yr	460	3.2	750	3.3	1,464	2.9	2,452	3.4
65 – 74 yr					2,323	4.6	3,989	5.5
75 – 84 yr	745	5.2	1,449	6.6	1,209	2.4	1,688	2.3
85 & over					220	0.4	230	0.3

Source: *ACS Demographic and Housing Estimates: 2006

The relationship between the pre-school and school age population and the “family formation” categories is obvious. Since the “family formation” grouping makes up the greatest percentage of the working-age category the actual numbers relative to Macomb Township do not appear to be out of line with national trends. Macomb Township had and continues to have available land for immediate development for residential purposes. Until the credit crunch brought the housing construction to a halt on a nationwide basis Macomb Township grew aggressively as noted earlier in this chapter. The new residents that arrived between 2000 and 2006 in numbers estimated to be in excess of 22,000 persons were distributed throughout the life cycle categories in line with what the balance of Macomb County and Southeast Michigan experienced.

Table 5.

Age Distribution by Life Cycle Category for Macomb Township

Age Group	1970	%	1980	%	1990	%	2000	%	2006	%
Preschool (0 to 4 yr)	536	8.7	1,307	9.2	2,115	9	4,549	9	5,949	8.2
School Age (5 to 19 years)	2,311	37.6	3,733	26.2	5,446	24	11,814	23.4	16,726	22.9
Family Formation (20 to 44)	1,815	29.6	6,049	42.5	10,193	45	20,092	39.9	27,675	38.0
Middle Age (45 to 64)	1,140	18.6	2,396	16.8	3,481	15	10,271	20.3	16,657	22.8
Senior Citizen 65+ years	338	5.5	745	5.3	1,479	7	3,752	7.4	5,907	8.1
Totals	6,140	100	14,230	100	22,714	100	50,478	100	72,914	100

Source: United States Census Bureau

HOUSEHOLDS

There needs to be limited discussion at this point to distinguish between terms used in this chapter. Population includes all residents whether they reside in housing units or in group quarters (nursing homes, dormitories, correctional facilities, residential group homes, etc.). Total households equal the total number of occupied housing units. The census tallies in sets including those households with children and those without children. Persons per household is an average, calculated by dividing household population by the total number of households. The household population is considered to be all persons occupying housing units—defined as houses, apartments, manufactured homes, or other structures intended as separate living quarters where occupants live and eat separately from any other persons in the building.

HOUSEHOLD GROWTH

Table 6.

Household Growth Trends- Macomb Township/Macomb County; 1980-2008

	1990	1980-1990	% Change	2000	1990-2000	% Change	2008	2000-2008	% Change
Macomb Township	7,335	2,404	48.5%	17,922	10,587	144.3%	25,995	8,073	45%
Macomb County	264,991	35,186	15.3%	320,276	55,285	20.9%	343,981	23,705	7.4%

Household growth patterns in the Township, have as would be expected kept pace with population growth. Just as with total population counts the numbers and percentage growth of households in the Township far surpassed those for Macomb County (see the above Table; *Household Growth Trends- Macomb Township/Macomb County; 1980-2008*. Between 1980 and 1990 households grew at a slower rate than total population counts; (48% vs. 60%) but between 1990 and 2000 household growth outpaced population counts (144% vs. 122%). Since 2000, however it is estimated that household growth and population growth is approximately the same (45% vs. 49%).

The makeup of the new housing units is certainly significant. In Macomb Township there were 24,491 total households in 2006. Of that total 19,905 or 82% were family households and of those 11,039 or 45% had children in the housing unit under 18 years of age. This is a much higher percentage than the State of Michigan where families made up 67 percent of the households in 2006 and households with children were 34% in 2000. SEMCOG projects that for the region, the growth in households with children will increase a mere three percent between 2000 and 2030 and a smaller percentage of total households. However, households without children are expected to increase from 66% of households in 2000 to 71% in 2030.

Other points of interest relating to households include:

- While elderly households have increased in the Township between 2000 and 2006 that group of the population is low in comparison with the region where in excess of 22% of total households are elderly compared to 16% in Macomb Township.
- By 2030, elderly households will be the largest group of households in the Region at 37%.
- In Macomb Township married-couple families make up 74% of total households vs. 66% of total households in Macomb County.
- The composition of the un-married households in both the County and the Township show a marked contrast. In the Township only 16% of households are persons living alone while that category makes up 30% of total households in the County.

Table 7.
Household Size-Macomb Township/Macomb County/Michigan/USA; 1970-2008

	1970	1980	1990	2000	2008
Macomb Township	3.72	3.07	3.09	2.97	2.88
Macomb County	3.63	3.00	2.68	2.52	2.40
Michigan	3.27	2.84	2.63	2.56	2.54*
U.S.	3.14	2.76	2.63	2.62	2.61

* 2006 U.S. Census Bureau; American Fact Finder, ACS

Household size data as presented on the Table above; *Household Size-Macomb Township/Macomb County/Michigan/USA; 1970-2008* clearly indicates how Macomb Township while dropping in household size remains significantly higher than the household size for the County, the State of Michigan and the United States. However, it is interesting to note that the rate of decrease in household size for Macomb Township is double that of the State of Michigan and is seven times greater than for the United States. The rate of decrease in household size for the County however is three percentage points higher than for the Township. It appears that as the Township's population matures and changes with respect to "Life-cycle Categories" the Township's household size should continue to decline. In fact SEMCOG projects that by 2030 the household size should reach 2.58 persons.

The drop in household size together with the drop-off in building permits for new housing since 2006 should manifest itself in Macomb Township by a slower growth rate in population than experienced in the first half of the decade. Macomb Township has vacant land available for development as well as improved lots prepared for new housing which will enable the population to grow in spite of the decrease in household size. Communities without available land for new housing will experience a drop in population from 2000 and from this date forward to 2030.

The 2010 Census should provide more insight into the various population categories since it represents a total count on all important categories relating to age groups, household size and composition.

Estimated Ultimate Population for Macomb Township

Introduction

The estimated ultimate population, holding capacity, for Macomb Township is based on the established land use patterns of the 2008 Master Plan.

The land use plan outlines the residential areas and depicts them by five different densities such as two, three, six or nine units per acre.

In order to make a reasonable estimate of the ultimate holding capacity of the Township, it was necessary to gather information from various sources and to set some guidelines for making calculations.

The factors used to calculate population were derived from the U.S Bureau of Census and the Southeast Michigan Council of Governments (SEMCOG).

For the purpose of making population estimates, the Township was divided into committed or uncommitted areas of residential development. The committed areas are defined as existing, developing or proposed (areas whose plans have been approved). The uncommitted areas are sections of the Township that are vacant, farmed or rural in nature.

Committed Residential Development:

Approximately one half the land designated for residential in the Township is either existing, developing or proposed for development. This information was further updated to include all new applications submitted for residential development since the first of the year.

Based on this information, sections 5,7, 8,18, 19 20, 21, 22, 27, 28, 30, 33, 34, 35 and 36 are nearly completed for residential purposes and sections 26, 29, 31 and 32 are for all practical purposes completed.

As of March 2006, SEMCOG estimates the population of Macomb Township to be 72,914 persons living in 25,264 households.

Uncommitted Residential Development

For all other residential areas that are designated in the Master Plan but not yet committed for development, estimates for the holding capacity of each square mile section is determined by deducting and excluding other related land uses as follows:

- All major road rights-of-way were deducted from the gross area of land.
- All waterways were excluded by calculating the length times 200 feet of width.
- All utility easements were excluded from the land area by calculating the length times 100 feet of width.
- Future recreational land needs were determined and factored into the calculations.
- Land for future schools was factored into the residential calculations.
- Of the seven golf courses serving Macomb Township in 2002 two have closed (Wolverine and T-J's) it is anticipated that two more (Sycamore Hills and Hickory Hollow) will close but will reorganize as a housing project retaining 18 holes as an amenity. It is undetermined if the balance of Cracklewood, Bello Woods and Burning Tree will remain as golf courses.
- Information with regard to future lands needed for commercial and industrial use in the township was provided in part by a recently completed commercial base study and used in calculating future residential acreage.

The net acres of residential land is multiplied by the residential density designated in the Master Land Use Plan to determine the potential households. The estimated population is determined by using the family size of 2.88 persons per household. This factor is established by the U.S Census Bureau in its 2006 census forecast.

Based on these calculations, the uncommitted residential areas will generate an additional 14,738 households. This added to the current number of households of 37,596 provide an eventual holding capacity of 135,022 persons.

Total Estimated Population for Macomb Township

The total estimated households for the Township or its ultimate holding capacity when the Township is built out is 52,334 (existing, developing and proposed households of 37,596 plus 14,738 estimated future households) and the ultimate population on the basis of 2.58 persons per household is 135,022 persons.

This estimate is made on the basis that the golf courses will remain in tact, the lot sizes remain as presently exists in the zoning ordinance, that properties will not be rezoned to higher residential density zones, and that there will not be any major change in the state land use laws.

It is recommended that the population estimates be reviewed and updated every five years. (See attached tabulations of estimated population and population projections by sections.)

ESTIMATED ULTIMATE POPULATION (HOLDING CAPACITY), MACOMB TOWNSHIP, MICHIGAN

Committed for Residential Use
Existing, Developing & Proposed

Uncommitted Vacant Residential Acreage
Estimate of Future Households

Projected Totals

Section Number	Parcels	Lots	Units	Total Households	Vacant Acres	2	3	6	Total Households	Households	Population
1	71	32	-	103	252	-	756	-	756	859	2,216
2	15	-	-	15	522	1,044	-	-	1,044	1,059	2,732
3	20	-	-	20	496	992	-	-	992	1,012	2,611
4	9	689	-	698	160	-	480	-	480	1,178	3,039
5	14	1,267	-	1,281	100	-	300	-	300	1,581	4,079
6	15	836	62	913	150	-	450	-	450	1,363	3,517
7	5	1,348	-	1,353	100	-	300	-	300	1,653	4,265
8	50	847	-	897	35	-	105	-	105	1,002	2,585
9	11	-	1,650	1,661	80	-	150	-	150	1,811	4,672
10	40	-	-	40	462	924	-	-	924	964	2,487
11	5	-	-	5	489	978	-	-	978	983	2,536
12	54	24	-	78	411	-	1,233	-	1,233	1,311	3,382
13	45	513	-	558	250	-	750	-	750	1,308	3,375
14	9	120	340	460	160	-	480	-	480	940	2,425
15	13	469	108	590	260	-	780	-	780	1,370	3,535
16	12	1,247	-	1,259	200	-	600	-	600	1,859	4,796
17	30	175	748	953	80	-	240	486	726	1,679	4,332
18	14	593	209	816	15	-	45	-	45	861	2,221
19	6	974	59	1,003	-	-	-	-	-	1,003	2,588
20	20	422	583	1,025	55	-	165	-	165	1,190	3,070
21	7	1,437	-	1,444	61	-	183	-	183	1,627	4,198
22	15	1,367	-	1,322	45	-	135	-	135	1,457	3,759
23	45	370	307	722	200	-	600	-	600	1,322	3,411
24	20	584	507	1,111	118	-	354	216	570	1,681	4,337
25	12	542	864	1,418	100	-	300	930	1,230	2,648	6,832
26	26	699	250	975	90	-	270	-	270	1,245	3,212
27	20	1,330	16	1,366	14	-	42	-	42	1,408	3,633
28	15	1,272	-	1,287	51	-	153	-	153	1,440	3,715
29	35	1,713	-	1,748	-	-	-	-	-	1,748	4,510
30	5	1,533	96	1,634	36	-	108	-	108	1,742	4,494
31	12	806	900	1,718	-	-	-	-	-	1,718	4,432
32	11	988	1,807	2,806	-	-	-	-	-	2,806	7,239
33	13	1,120	218	1,351	24	-	72	-	72	1,423	3,671
34	11	463	2,658	3,132	19	-	57	-	57	3,189	8,228
35	30	866	97	993	10	-	30	-	30	1,023	2,639
36	5	728	108	841	10	-	30	-	30	871	2,247
Totals	740	25,374	11,587	37,596	5,055	3,938	9,168	1,632	14,738	52,334	135,022

RAY TOWNSHIP

6 1,602 3,517	5 2,243 4,079	4 991 3,039	3 77 2,611	2 66 2,732	1 435 2,216
7 3,582 4,265	8 2,454 2,585	9 96 4,672	10 137 2,487	11 41 2,536	12 296 3,382
18 2,399 2,221	17 2,372 4,332	16 2,443 4,796	15 907 3,535	14 466 2,425	13 162 3,375
19 512 2,588	20 2,040 3,070	21 3,908 4,198	22 3,046 3,759	23 827 3,411	24 646 4,337
30 4,382 4,494	29 4,744 4,510	28 3,519 3,715	27 3,607 3,633	26 1,197 3,212	25 786 6,832
31 4,705 4,432	32 7,130 7,239	33 3,106 3,671	34 5,371 8,228	35 2,399 2,639	36 2,323 2,247

CLINTON TOWNSHIP

**MACOMB TOWNSHIP
MASTER PLAN 2008**

**POPULATION PROJECTIONS
BY SECTION**

**ULTIMATE
HOLDING CAPACITY**

00 SECTION NUMBER

75,018 EXISTING POPULATION

**135,022 PROJECTED ULTIMATE
HOLDING CAPACITY**

Prepared by: Community Planning Consultants, Inc.
May 2008

Master Plan Special Considerations

The Master Land Use Plan for 2008 provides for the following approximation of acreages for Macomb Township.

LAND USE PLAN	
Residential	15,489 acres
Commercial	582 acres
Manufacturing	642 acres
Public and Semi- Public	1,327 acres
Agriculture, Vacant Land, Utilities and Roads	5,000 acres
Total	23,040 acres

Commercial Facilities Needs Analysis

The Macomb Township Planning Commission has completed a Master Plan Amendment for Commercial areas. In accordance with the provisions of the Township Planning Act No. 265 of 2002 the proposed amendment was reviewed by adjacent communities, utilities and railroads, SEMCOG the regional planning agency, and the Macomb County Planning Commission.

The Macomb Township Planning Commission held the required Public Hearing regarding the proposed amendments on October 17, 2006 and voted to adopt the Amendment for Commercial Areas. The County Planning Commission on November 15, 2006 found that the Township's amendments appeared to be consistent with all pertinent local and County Plans and endorsed the 2006 Macomb Township Master Plan Amendment for Commercial Areas.

The Planning Commission forwarded the amendments as a recommendation to the Township Board. The Macomb Township Board at its meeting of March 28, 2007 voted to approve the amendments as submitted from the Planning Commission. The Macomb Township Master Plan Amendment for Commercial Areas is therefore adopted.

On the following pages is found summary discussion relating to the amendment process together with the findings of the consultants retained to assist the Township that formed the basis for the amendment as adopted.

BACKGROUND INFORMATION

The Macomb Township Master Plan was adopted by the Township Board in December of 2002 in accordance with Act No. 263 of the Public Acts of 2001 of the State of Michigan. The plan as adopted continued a long standing planning program within the Township. In the 1960's the Township began to develop a long-range planning program. The original Master Plan was adopted by the Planning Commission in 1973 with subsequent updates in 1988, 1994, 1999 and 2002.

The Plan in effect addresses land use issues for the entire Township projecting 20 years into the future. The Plan includes the allocation of land for agriculture, residences, commerce, industry, recreation, public buildings, schools, open spaces and other uses. The plan also includes the general location, character and extent of streets, roads, highways, railroads, trail ways, green ways and discussion relating to drainage, sanitary sewers and water supply systems. Finally, the Plan includes recommendations for implementing proposals contained therein.

MASTER PLAN AMENDMENT FOR COMMERCIAL AREAS

On October 26, 2005 the Macomb Township Board of Trustees took action to create a moratorium on the creation of further commercial zoning (rezoning) in the Township. Their action was predicated on the numerous petitions to rezone land for commercial, contrary to the adopted Master Plan.

The period of six months of the moratorium has provided the Township Board an opportunity to authorize a full study of the Macomb Township commercial areas. The Township Board retained the services of Gilbert Zook, SRPA, SRA to prepare a commercial market analysis for Macomb Township. Mr. Zook worked closely with Community Planning Consultants, the Township planning consultant in the preparation of the study. With the completion of the study, the Board has authorized the Planning Commission to review the master plan to determine any necessary amendments to update the plan in accordance with the findings and recommendations of the study.

The study was made based upon the material collected and analyzed for the entire Township by quadrant. The southerly half of the Township contains two quadrants (southeast and southwest) where most of the existing residential and commercial development has taken place. The northerly half of the Township also contains two quadrants (northeast and northwest) and although currently in the developing stage does contain considerable vacant commercial land, including the Macomb Town Center.

COMMERCIAL MARKET ANALYSIS by GILBERT A. ZOOK, SRPA, SRA

The Zook Study provided the basis for the recommendations of the Planning Commission to the Township Board. Its conclusions were stated as a reference point for a determination of further needs of commercial zoned and developed lands.

The following are summary findings and conclusions of the Commercial Market Analysis prepared for Macomb Township by Gilbert Zook.

- A. The primary, comparison and secondary markets for Macomb Township indicate an excess of retail commercial space in 2006.
- B. The study demonstrates an excess of commercial space thru 2010 in the southwest and southeast quadrants of the Township. These quadrants contain 550,000 sq. ft. gross leasable area (GLA) of excess commercial for the year 2006 with 645,000 sq. ft. (GLA) of excess retail commercial space by the year 2010. Only these areas currently planned or zoned for commercial should be developed. Hall Road is the exception in that all frontage along Hall Road could be developed as commercial.
- C. The northwest and northeast quadrants of the Township will require a limited amount of commercial space thru 2010.
- D. There is a current need for 95,000 square feet of commercial for the north one-half of Macomb Township with an additional 23,000 GLA needed by the year 2010. However, 17 sites, including the Macomb Town Center area, 3 in the northeast quadrant and 14 in the northwest quadrant, are currently represented on the 2002 Master Plan as commercial. These sites are noted on the inventory could provide 417,600 sq. ft. of GLA of commercial space thru the year 2010.

CONCLUDING STATEMENTS FOR AMENDMENTS TO MASTER PLAN FOR COMMERCIAL AREAS

- A. Based on the Findings and Conclusions of the "Commercial Market Analysis", (The Zook Report) an excess of retail commercial space exists in the south half of the Township. Therefore, any future amount of land either planned or zoned for commercial land use in the southeast and southwest quadrants of the Township should be limited to parcels designated as "Commercial" in the 2002 Master Plan, in conjunction with parcels not now zoned commercial that front on Hall Road.

According to the Zook report, there are in excess of approximately 550,000 square feet of gross leasable area (GLA) for the year 2006 in the south half of the Township. By the year 2010, there will be in excess of 645,000 square feet of GLA in the south half of the Township. The report continues that there are 179 acres (nearly 2,000,000 sq. ft. of GLA) of land 'zoned and planned with nothing pending' in the south half of the Township.

Therefore, no additional land should be zoned for commercial purposes in the south half of the Township except for parcels designated as "Commercial" in the 2002 Master Plan including parcels now zoned commercial and those fronting on Hall Road.

- B. Based on the Findings and Conclusions of the "Commercial Market Analysis" the northwest and northeast quadrants of the Township need a limited amount of commercial space through 2010.
- C. As recommended in the Zook report, up to 118,000 sq. ft. of gross leasable area (GLA) additional commercial space through the year 2010 could be distributed in the north half of the Township on the existing sites as shown on the Master Plan of 2002; 77,000 sq. ft. in the northwest quadrant and 41,000 sq. ft. in the northeast quadrant.
- D. Based upon the Zook analysis the Master Plan shows that the Township has approximately 2.5 times more commercially zoned land in the north one-half of Macomb Township than is needed by the year 2010.

Therefore, no additional land should be zoned for commercial purposes in the northwest quadrant of the Township.

With respect to the northeast quadrant three (3) sites currently exist zoned or planned for commercial. Those sites contain 20.9 acres and could provide 227,6000 sq. ft. of GLA. However, since residential development is not anticipated in the northeast quadrant in the numbers that will support commercial development in the near future. It is recommended rezoning for future commercial development other than those sites in the northeast quadrant be delayed until 2010.

- E. Since the 2002 Master Pan provides sufficient locations for commercial development in accordance with the Zook inventory, no changes need to be made to the 2002 Master Plan map.

Industrial Land Use Report

Introduction

Michigan's economy has become more diversified in the last two decades, and therefore has become more similar to the national economy. However, the state continues to rely heavily on the auto industry, and will likely do so far into the future. Prior to 1980, Michigan had long been regarded as a highly cyclical, highly prosperous state dominated by the automobile industry. Michigan is now much closer to the national average in terms of income. Michigan's economy also appears to be less cyclical than in the first half of the twentieth century.

Michigan's exports grew strongly through the 1990s. Michigan's leading export is automobiles, or transportation equipment as reported in the official national data. Transportation equipment represents over half of Michigan's total exports, with machinery a distant second, and other sectors essentially negligible.

Manufacturing continues to be an important employer in Michigan. Although absolute and relative employment in manufacturing in Michigan has declined, as has manufacturing employment throughout the United States, at the new millennium manufacturing employed one in five Michigan worker, more than the 13.7% employed in manufacturing nationally.

The current recession then, affecting the domestic automobile industry has and will continue to have an impact on industrial markets in the Detroit region including Macomb County. In mid-2008, there are more companies leasing space than those that are vacating space, however, asking lease rates are at a 10-year low in some areas and face rates, without inflation factoring, are the same as what existed 20 years ago.

There are many large pockets of obsolete manufacturing buildings that bring down the regional average sale prices and rental rates. On the other hand the buildings that are more modern and have the necessary amenities are in higher demand and in some markets there aren't enough new, quality buildings. Hot spots for leasing are found in newer industrial markets in Rochester Hills, Auburn Hills, and Shelby Township. Even so, and with vacancy levels at 17% to 18%, developers are hesitant to construct buildings unless a build-to-suit is in existence.

According to Gilbert A. Zook, SRPA, SRA; Certified General Appraiser, industrial development in the Township would be ranked as slow when compared to the competing market in Shelby Township, except for a 100,000 square foot manufacturing building that was just completed on 23 Mile Road, west of Romeo Plank. In Shelby Township, the center of its market fronts on a five lane road, its west end abuts the M-53 Expressway, and in the recent past, Schoenherr Road was enlarged to five lanes. Without rezoning, Shelby has allowed industrial properties to be used for commercial purposes and there has been or will be built on 23 Mile Road, fast food facilities such as White Castle, Tim Horton's, Taco Bell, Dunkin Donuts, and Star Bucks, strip shopping centers, bank branch offices, plus service centers including a tire store, quick oil change facilities, and drive-thru car wash. Internally, a substantial amount of building space has been absorbed because the Township has allowed occupancy by dancing and cheerleading schools, gymnasium and exercise facilities, plus soccer training facilities. The widening of 23 Mile to five lanes between Hayes and Romeo Plank Roads should be a positive factor for the marketing of industrial parcels in Macomb Township.

The Master Plan

The Master Plan is a general policy. The Plan contains several policies, each supported by a group of objectives designed to serve as a guide to consistent and rational public and private decisions in the use and development of land and public improvements. The Macomb Township Planning Commission has taken the position that Macomb should develop following a planned approach rather than that of a “what will be will be” approach.

The Macomb Township Master Plan is composed of four (4) basic elements:

A policy element which describes in statement form community goals and development policies designed to achieve the Plan.

A land use plan element which describes in text and graphic form the proposed spatial distribution and intensity of residential, commercial and industrial land uses.

A community facilities plan element which describes the suggested location and extent of community wide functions required by the existing and anticipated population.

A thoroughfare plan element which describes a proposed system of public roads required to adequately service existing and future land use activities in the Township.

PURPOSES OF THE MASTER PLAN

The purposes of the Master Plan are:

- To plan for the development of the vacant areas of the Township and to provide for the physical environment of the Township. The Plan works in conjunction with the Zoning Ordinance to promote the general health, safety and welfare by making the Township more functional, beautiful, healthful and efficient.
- To promote the public interest of the Township residents.
- The Plan is a statement of long-range programs to accomplish stated goals by placing the responsibility for determining policies with the Planning Commission and providing an opportunity for citizen participation.
- To consider long-range solutions into short-range actions.
- To bring professional and technical knowledge to bear on the making of political decisions concerning the physical development of the Township.

THE MASTER PLAN PROCESS

The Master Plan provides the Macomb Township governing officials with a guide in the physical development of lands encompassed within the Township boundaries. Since local governing officials are involved on a daily basis with decisions concerning zoning, improvements, public building sites, etc., it is necessary that a guide be developed to provide proper direction in these decisions.

One of the major facets of the Plan is its recognition that no community exists within a vacuum and its development process is constantly affected by the development decisions of those in the private sector, as well as the programs and policies of county and state agencies and adjacent government units. A second major factor in the Plan is recognition that the Plan is only a document and, in and of itself, cannot achieve desired community goals. The Plan must be linked at its inception to major public and private investment decisions already made which must be reevaluated from time to time as additional public and private investment decisions occur. Based on this logic, the early Plans of the Township recognized existing land development patterns and drainage limitations of much of the Township's soils. The earlier plan also reflected on certain assumptions regarding the timing and location of future sanitary sewer and water services and the construction of M-59.

GOALS OF THE MASTER PLAN

The statement of goals is designed to provide the Township Officials with guidance and direction when making decisions affecting the development of the Township. Although general in nature the goals are specific in their intention in outlining the type of community suggested by the Plan. Macomb Township is an extension of the Detroit Metropolitan Area and of the development that has taken place in Macomb County. The Township is generally flat, criss-crossed with several utility easements and drains with at least 30% of its area designated as flood plain.

The past development of the Township indicates that neither high intensity industrial or large commercial centers have been built and the Plan proposes to continue this trend with comparatively low densities for all uses of residential, commercial and industrial. The industrial development taking place is that of small shops and high tech design facilities. The subdivision as regulated by the State of Michigan provides the main method of home site construction with some condo, mobile home and apartment styles of living interspersed. The shopping center will provide most of the retail, service and commercial uses and the industrial park will provide most of the industrial site space.

The Plan provides for the creation of a healthful environment for all residents and strives to obtain the maximum value from existing and proposed public investment in facilities and services. Traditional planning techniques adopted in the original Master Plan for Macomb Township have already set the stage for Macomb Township. This Plan Update will strengthen those early planning decisions and provide the basis for continued "good planning".

GOALS FOR THE DEVELOPMENT OF MACOMB TOWNSHIP

General Goal Statements

- Creation of a healthful environment with low intensity of development for all residents.
- To obtain the maximum value from existing and proposed investment in facilities and services.
- To best utilize all property encompassed by the Township boundaries.

Specific Goal Statements

Land Use – Goals

Designate the location of industrial areas which are compatible with surrounding land uses and are reasonable in terms of regional growth patterns, and transportation proposals.

Designate a Township Center area to serve as focal point of the community and a “hub” around which government services are provided.

Provide a diversification of housing types to serve the needs of all residents and age groups.

Provide areas to serve the commercial needs of residential neighborhoods.

To preserve the existing tax base and to encourage new development to create a balance between working and living in Macomb Township.

Transportation – Goals

Provide a transportation network system which will promote a safe and efficient circulation within all Township areas and ready access to the regional transportation network for all types of land use activities.

Natural Resources – Goals

To preserve or make more effective use of natural resources which will benefit the Community as a whole.

Existing Development – Goals

To preserve and expand existing development by utilizing these elements as nuclei of neighborhood units.

Community Facility – Goals

Develop a system of education, recreation, libraries, police and fire protection.

Further study is necessary in the provision of community facilities. A Master Plan for recreation is under review. It is normal for school properties to be utilized with other community facilities such as recreation and library services. Therefore, meetings with representatives of the four school districts are recommended to develop continued cooperative relationships for the mutual benefit of the Township and the school districts.

Community Appearance – Goals

Visual condition and community character are important to the overall appearance of the Township. Special features of Township development should be addressed to assure a “quality” look about the community. Spot zoning, stockade type fences, indiscriminate driveways and roads, oversized signs and inadequate setbacks all must be avoided to create the environment sought by the Plan.

The Plan suggests that the Township create a Beautification Commission to further develop a plan concerning the “appearance” of Macomb Township. Such a Commission could also consider entrance signs placed at the borders of the Township and would develop a plan for tree planting and accent lighting. A garden club already exists with considerable interest in dressing up certain spots of the Township.

Historical Preservation – Goals

Macomb Township has a rich past. Much could be done by the creation of a Historical Commission to preserve Township history. Portions of public property could be utilized to develop a museum, maybe an old historical building could be moved to the site, for storage and display of Township artifacts.

THE NEED FOR POLICIES

The State of Michigan, through its Planning Laws has directed each community to prepare a plan for its development. In the case of Macomb Township this direction is means that certain boards and commissions are created to bring about the directive through assigned actions. The Plan hopes to provide polices that can help to serve as a guide in the fair and equitable use of the authority of each board or commission. Well established policies can also help administrators and the public to understand the decisions that are made with the total community in mind.

SPECIFIC POLICY STATEMENTS

1. The Macomb Township Master Plan provides for the logical placement of all land uses. Areas of the Township have been set aside for residential, commercial and industrial with community type facilities interspersed as necessary to serve the residents of the entire Township. Planning decisions should be made taking into account tax base needs, efficient use of Township land and for the good of all Township residents.

The Plan addresses such traditional problems as strip development, "spot zoning" and the development of adequate buffers where commercial and industrial meet residential development. Care must be taken to contain the industrial development in the specified area and to avoid allowing the mixing of land uses. Likewise Township Officials should discourage commercial development except for those areas so designated.

2. The Master Plan also suggests, as did the original plan, to provide a Township Center which could serve as a "focal" point around which all Township activities can revolve and to serve as an "identity". Certain provisions of the Town Center Plan provide for the mixing of land uses. These situations are designed to complement the special features of the Town Center.

The Macomb Town Center, although progressing nicely, has, like other developments in Michigan, been stymied by the recession. As indicated earlier, when the economy gets back up to speed, the Township must revisit such plan proposals to determine if the direction now being taken is correct. Meetings with the primary developers within the Town Center are necessary to determine if the already approved plans are still valid in terms of the need and desire of the residents. For example, if projections of the developers are correct there may be a need to expand the features of the Macomb Town Center plan for both commercial and housing developments.

3. Macomb Township is impacted by approximately 7500 acres or about 1/3 of the Township with flood plains (100-500 year). These natural resources are generally along stream beds which criss / cross the entire Township. Obviously these stream beds must be addressed as part of the platting process and included as part of the planning process and included as part of the lots created. In some instances those portions of the stream beds should be set aside for "open space" or park purposes.

It is the intention of the Plan to attempt to coordinate these parcels, which are usually long and narrow, into a logical recreation program that will benefit the entire Township. It is felt that they can be tied together with larger parcels to formulate a complete recreation system. Further study should be made to determine the extent of, and exact plan for, the use of -the, flood plain and wetland properties in the Township. The Recreation Commission has already addressed this issue through the development of a specific plan for recreation for the Township.

4. As properties develop and the demand for homes increases, as is happening in Macomb Township, alternative home styles are presented by the home builder. Thus far the single-family detached house on a single lot has been the most prevalent. However, other styles have also been offered to the home buyer. These include apartments, mobile homes, condos and "site condos". The apartment style is obvious as a series of units which are tied together-in one building and offered for rent. Mobile homes are usually contained in mobile home parks with the owner owning the unit and renting a space for it in an organized setting with several amenities offered. Condominiums are also offered which provide units in 1 to 6 unit buildings, which are owned by the individual and located on common ground.

The "site condo", probably the newest style is a single family detached units, that have the appearance of a standard subdivision. Macomb Township has addressed this method of development by allowing for individual projects to be constructed but assuring that they tie together formulating cohesive neighborhoods. This enables adequate emergency services to all residents of the area.

5. The plan provides for a road network to tie all the major land uses together in a safe and efficient manner. The portion of the plan is developed very closely with the Road Commission of Macomb County. All of the major- roads are established by the Road Commission in an overall County Plan. Macomb Township has the responsibility, to plan for all subdivision streets and to adopt the Master- Thoroughfare Plan which will provide for access to the regional network for all types of land use activities.
6. Macomb Township does not allow, nor does this Plan provide for, the connections or continuations of local public streets with private roads. Obviously private roads, can provide access to public streets but the two types of streets should not interconnect because of ownership.
7. More recently, through the land division act, the developer of a subdivision must provide for 20' landscape area between the lots and adjoining major roads. This provision has negated the need for the 150' lot depth backing to the major roads.

The 20' landscape area provides the buffer intended by the 150' deep lots and satisfies the demand to provide a buffer between homes and major roads.

8. Other concerns of the Plan include the development of the Northeast quadrant of the Township and the provision of larger lot single family development.

With respect to the Northeast quadrant of the Township it is anticipated that development in this area will not take place until such time as the sewer facilities are extended. The school system for the area will then have to be expanded since no facilities have yet been provided in this portion of the Township. The Planning Commission will be happy to meet with the School District Officials to discuss the provision of sites for this area.

Since the stage for development has been set for the balance of the Township with respect to lot sizes, the Planning Commission is considering that larger lot development might take place in the Northeast quadrant of the Township. Currently the large lot zoning of R-1-S is located in this area and could be expanded to provide for further large lot development. It is noted that the current R-1-S zone provides for larger lots which require septic fields because of the lack of sewers in the area. The larger lot will provide for further diversification in the type of home development in Macomb Township.

9. It is also of primary importance that the plan provides for all community facilities to properly serve the Township. Parks, libraries and police and fire protection facilities are included in the overall Master Plan for Macomb Township.

Schools, although not delineated in the plan, are noted as necessary to serve the Township residents. In addition to education facilities, individual schools also serve as a recreation facility and provide an essential focal point for neighborhoods. School Boards act independently of Township government and therefore the Master Plan does not attempt to locate school facilities. The information collected and population data processed is made available as part of the overall Plan document and are offered to assist in the data required to locate public education facilities.

10. It is the intention of the Master Plan to provide commercial uses and services to the Macomb Township residents. Many such facilities already exist in the Township and are situated in shopping centers, smaller multi-use centers and on single use sites, mostly in the south and west portions of the Township. The current plan affirms commercial development that has taken place thus far and provides for future commercial land for the balance of the Township and will support its development based upon need and certain market studies that show its location and amount.
11. The Master Plan provides for special consideration for the use of land encumbered by wetlands and flood plains.

12. Senior Citizen Housing - Although Macomb Township does not now have any housing projects devoted solely for the elderly there are many conventional housing projects that have high percentage occupancy by senior citizens. These projects are located in several locations including Hayes and Hall Roads, 23 Mile Road and Romeo Plank Road, 24 Mile Road and Garfield and 21 Mile Road and North Avenue. By and large these locations cater to independent housing in condominiums where the associations retain services of lawn care and snow removal. The demand for senior citizen housing beyond home ownership or independent living has not yet presented itself, especially in Macomb Township. The Township must be prepared for the need for other senior citizen housing as the current population ages and requires service.

The elderly population of Macomb Township represents a fast growing portion of the total population of the Township. The 2000 census indicates that 3,752 (about 7.4% of the then population) persons in Macomb Township were 65 years of age or older. 10,271 persons were between the ages of 45 and 64 years of age (about 20.3 % of the then population). According to SEMCOG nearly twice as many people living in the area, by the year 2030, will be age 65 or older than there were in the 2000 census. SEMCOG also indicates that not all elderly people are prone to leaving their homes for a warmer climate. Various reasons account for this including economics, physical ability and psychological. They may just want to stay by their grandchildren. Therefore, as their numbers increase, the elderly will create a greater impact on local society. The Master Plan for Macomb Township must therefore plan for the expected changes that in all probability will take place.

Various levels of housing are needed for the elderly. These include home ownership, shared living, independent living, assisted living and nursing care. Also to be considered is the site development of housing for the elderly and can range from normal housing standards as prescribed by the zoning ordinance to variations in parking requirements, occupancy (floor size of unit), density provisions and site location.

Senior citizen housing should be located in an area of close proximity to social activities, retail services, social services, medical care and churches. Any site location should also consider the proximity of a safe environment, which would include transit facilities, recreation areas, pedestrian walkways and other amenities such as passive recreation areas for outdoor leisure activities as well as for exercise.

13. The northeast quadrant, much of which is encumbered with rivers and wetlands is an area of concern. The Township has an opportunity to decide if the area should be laid out to take this into account. The density may stay the same with innovative site development. For example, the Macomb Township current zoning ordinance provides for a cluster provision. The cluster provision of the zoning ordinance allows a variation of housing types while maintaining the density of the applicable zoning district. Open space is preserved and development costs are reduced.

The Macomb County Planning Department has proposals to coordinate the areas of the northeast quadrant of the Township with abutting areas of the county for open space, bike paths, recreation areas etc. that can be tied into housing developments. The Master Plan must address these issues. Feedback from the Township residents through a survey conducted by the Recreation Department indicates the need for such facilities.

14. Clean, renewable energy sources are important to the regional economy as well as to the global environment. Renewable energy sources include solar, wind, wave, geothermal and biomass. These sources presently provide a small amount of total energy in the U.S. but have the potential to provide much more and to free communities from the unknown costs and supply issues associated with foreign fuel sources. Renewable energy sources provide an alternative to traditional fossil fuels like oil, petroleum, natural gas and coal.

The legislative foundation might not be in place yet, but renewable energy has made progress in Michigan thanks to the ingenuity of programs such as Michigan Alternative Renewal Energy Center (which is actively studying biomass energy production, particularly from farm waste and has recently installed an anaerobic digester to convert typical crops and waste into energy), large commercial-scale wind projects and efforts of individual residents who exercise efficiency and generate renewable energy at home. This article first examines some of the renewable alternatives to fossil fuels and the legislative bringing them into prominence. Then, it goes into further detail on wind power, a renewable source gaining presence in Michigan.

RESIDENTIAL LAND USE

The availability of water and sewer in the Township promoted original housing development in the south and west areas of the Township. It is noted that Macomb Township has been the fastest growing Township in Michigan for the past few years. Diverse housing patterns developed consisting of single-family subdivisions, condominiums and mobile home parks. These existing developments and projected future patterns planned indicated that the major portion of the Township is proposed as low-density residential. The high densities of medium, medium high and high are generally concentrated between Hall Road and Twenty-One Mile Road in Sections 31, 32, 33 and 34. As the Township grew other high density areas were approved along Romeo Plank and North Avenue. The total acreage for all densities of residential is 11,266 or about one-half of the Township area. The extension of water and sewer facilities were first planned and constructed in the early development of the Township and promoted very rapid residential growth, both in the south and west portions of the Township.

The proposed densities of each of the five residential classifications are:

2 units or less per acre

3 units or less per acre

6 units or less per acre

9 units or less per acre

6 units or less per acre (mobile home park)

Areas of the Township that have not developed rapidly have been held back because of the lack of facilities including water and sewer lines. These areas may develop but could do so only with the construction of individual wells and septic fields. Because of the need for larger parcels to adequately provide for wells and septic systems this method of development creates as much less dense ratio and offers housing diversification.

This plan proposes to continue low density and to create an area for large lots (two units or less per acre) in the northeast sections of Macomb Township. The plan also:

Provides for residential development that will give a diversity of living styles as well as a population that can be supported by Township services.

Encourages the preservation of the natural features of open space through the State of Michigan initiated cluster provisions in the undeveloped portions of the Township that will compliment the environment and vice versa. (add cluster provisions in all residential zones, with densities of those zones)

Protects residential areas from incompatible land uses.

Provides for lot or parcel sizes that will compliment the planned house size.

Encourages residential development where proper utilities, services and roads can be provided. The plan sets aside approximately 15,489 acres for residential purposes. Currently 9,387 acres are developed or developing.

COMMERCIAL LAND USE

The “Commercial Needs Analysis” as reported in this document has indicated that the south half of Macomb Township, south of 23 Mile Road, has in place more than enough commercial space to support the needs of the surrounding population. Even so, and based on the assumption that high traffic volumes and cross-trafficking will generate a sufficient number of patrons, new development has and should continue adjacent to the Hall Road corridor. Examples include a Target Store, smaller strip shopping centers, and office buildings

Previous Master Plan recommendations regarding the development of land uses in the south and west portion of the Township are reaffirmed in this plan update. The plan promotes the development of planned shopping centers as the preferred method of utilizing commercial properties.

Planned shopping centers provide the unified commercial buildings, controlled access and internal circulation, ample parking and because of the consolidation of uses and structures, an ease of transition between the commercial uses and adjacent residential areas. The patterns of commercial serving the south and west portions of the Township have already been established. The commercial facilities planned to serve the north and east sections of the Township will have as their guide the development of the Township Center and the lower residential densities planned for this area.

Strip type commercial development should be avoided as the indiscriminate location of businesses along Macomb Township major roads will have an adverse impact upon abutting properties, especially residential, and on the efficient flow of traffic.

The plan also:

- Provides for the development of commercial facilities in conjunction with the New Town area where comparison as well as convenience centers are proposed.
- Provides that the existing commercial land, developed and or zoned, be enhanced and protected. These areas are deemed to be sufficient to service the existing and proposed land uses within the life span of this plan. A total of 629 acres currently zoned commercial will serve the current population. However, as the population increases additional commercial land will be needed in the northern portion of the Township.
- Promotes the concentration of comparison shopping facilities on Hall Road.

- Provides for zoning controls of shopping centers on land already zoned commercial to provide for walls, greenbelts, setbacks, bypass lanes, acceleration and deceleration lanes to properly relate them to residential areas, roads and public services.
- The Master Plan provides for a total of 582 acres (per forecast made in 2006 via a Master Plan revision) for commercial uses. 365 acres have been developed with 217 acres vacant for a total of 582 acres for commercial purposes.

Concluding Comments Relating to Commercial Development in Macomb Township

The metropolitan Detroit area is in a major recession which involves loss of jobs, reduced incomes, high unemployment, people leaving the State, and excessive gas prices with no end in sight. These factors will have a long-term impact on the price and type of housing plus commercial/office development. Extended travel will be necessary for major purchases with existing development requiring daily and convenience shopping to be within a five to 10 minute drive. The most current examples include new Kroger Stores at 26 Mile and Romeo Plank, 23 Mile and Hayes, Kohl's at 23 Mile and Hayes, smaller strip centers at 21 Mile and North Avenue, 22 Mile and Hayes, plus 24 Mile and Garfield, and Chase Bank branch offices at 23 Mile and Hayes Road, 21 Mile and Card Roads, and 23 Mile and Schoenherr Roads.

The health care industry is one of the few bright spots in the local economy. St. John Hospital recently established two substantial medical office buildings at 23 Mile and Romeo Plank and has plans for a 200 to 400 bed hospital at this location. Major medical office buildings are under construction on Hayes and Schoenherr Roads south of 23 Mile Road. Also, in the recent past William Beaumont Hospital built a large medical office at the northeast corner of Hall and Tilch Roads. Walgreen's have or will be building drug stores at the northeast corner of 24 Mile and Hayes Road and at the southwest corner of 21 Mile and Card Roads. A Rite Aide store is proposed at the southeast corner of 24 Mile and Hayes and in the recent past, CVS stores were built at the northwest corner of 24 Mile and Hayes and the southeast corner of 23 Mile Road and North Avenue.

The infusion of commercial development in the future will be dependent upon the pace at which the market stabilizes and new homes are built. Due to the existence of over 3,000 vacant/improved building sites, homes in foreclosure, and homes that are for sale, it may be at least five years before any vacant land is developed with a subdivision. The need for commercial development is based on the availability of spendable dollars. If the current trends of declining wages and high gas prices continue into the extended future, demand for commercial developments and housing maybe be severely impacted since potential buyers will seek markets that are in closer proximity to the major employment centers or wherein there exists some form of public transportation such a rail/bus lines which are non-existent in Macomb Township and most of Macomb County.

HALL ROAD

Hall Road (M-59), the major east/west artery crossing Macomb Township is located running along the south boundary of the Township and like Twenty-Three Mile Road, connects M-53 with I-94. Currently, Hall Road has been widened by the State providing for six lanes of traffic divided by a surface boulevard.

The general development along Hall Road is of a commercial nature with some multiple-family intermixed. The south side of Hall Road in Clinton Township is developed in approximately the same fashion. A major educational complex housing the Macomb County Community College is located on the southwest corner of Hall and Garfield Roads. Other major facilities along Hall Road include Lakeside Mall, major office buildings, large department type box stores (Home Depot and Target Stores), new car auto dealerships, a major recreation facility and miscellaneous uses scattered between M-53 (east of Utica) and I-94 east of Macomb Township. More recently, the Partridge Creek Shopping Center has been constructed in Clinton Township on the south side of Hall Road.

Hall Road frontage is zoned commercial to a depth ranging from 200 feet to 1200 feet. The deepest of 1200 feet located in the area of Heydenreich and Card Roads.

Although commercial along Hall Road is planned as intensive, future development must be tempered with a proper buffer between the more intensive uses and those residential uses existing and proposed north of Hall Road. The current "Plan" encourages future development of commercial uses along Hall Road and should be supported but with the least amount of adverse impact on the adjacent residential development. The provisions of the Zoning Ordinance are written to protect abutting uses and when applied to the development of the property along Hall Road will make the area compatible with the adjacent residential development, aide in proper traffic flow, provide an aesthetically pleasing and a good transition between the traffic along Hall Road and the abutting uses.

Project type development whether commercial or residential should address the impact of all major roads and their intersections as well as the influence such development would have on abutting residential properties. Where possible, the property of a given area should be included in the overall design. The exclusion of parcels or areas that could develop as a spot zone or incongruous area should be avoided.

To aid in supporting this transition the Township has recently amended the zoning ordinance to provide for buffering to better protect the abutting residential uses.

INDUSTRIAL LAND USE

The plan proposes that 642 acres of industrial land be provided for Macomb Township. Approximately 542 is planned in the area bounded by Twenty-Two and ½ Mile, Twenty-Three and One-Half Mile and from 1000 feet east of Hayes Road to one-quarter mile west of Romeo Plank. The other 100 acres are planned for the Gratiot/Twenty-One Mile Road area. Road patterns, land use relationships and usable site development can alter the details of development.

A major change took place between the adoption of the Township Plan for 2002 and the preparation of the plan for 2008. Litigation to determine the use of land in the south ½ of Section 19 took place with a decision that the property should be used for residential purposes. The primary property involved the land now developed for the Westminister Subdivisions. The location of Westminister is such that its development as residential dictated that the balance of the south ½ of Section 19 would also be best rezoned to provide for residential purposes. The difference between the 2002 plan and the 2008 plan as it relates to the industrial portion consists of the following acreages:

267 acres removed and converted into residential subdivisions.
20 acres on 22 Mile Road
5 acres on Hayes Road
58 acres on 22 Mile Road (proposed residential development)
39 acres on 22 Mile Road (proposed residential development)
71 acres as miscellaneous parcels in the area
6 acres for a church on 21 Mile Road
140 acres for land made up of deep parcels fronting on 22 Mile Road
252 acres of street r-o-w
858 total acres removed from the industrial land planned in 2002

642 acres of industrial land remains available for Master Plan of 2008

Of these 642 acres, 329 are developed and 313 are vacant. At this point it is necessary to note that the 2002 plan which indicated the acreage for industrial also included the streets. The net acreage for industrial in this plan both vacant and developable is 642.

Based upon the information as outlined above it is proposed that the industrial patterns established in the current Master Plan be amended as follows.

1. That a greenbelt berm be created as part of an industrial development where industrial uses back to residential properties.
2. That traffic be encouraged to Twenty-Three Mile via Garfield Road and a collector road through Macomb Corporate Center, and via a north/south collector road, 1/4 mile west of Garfield.

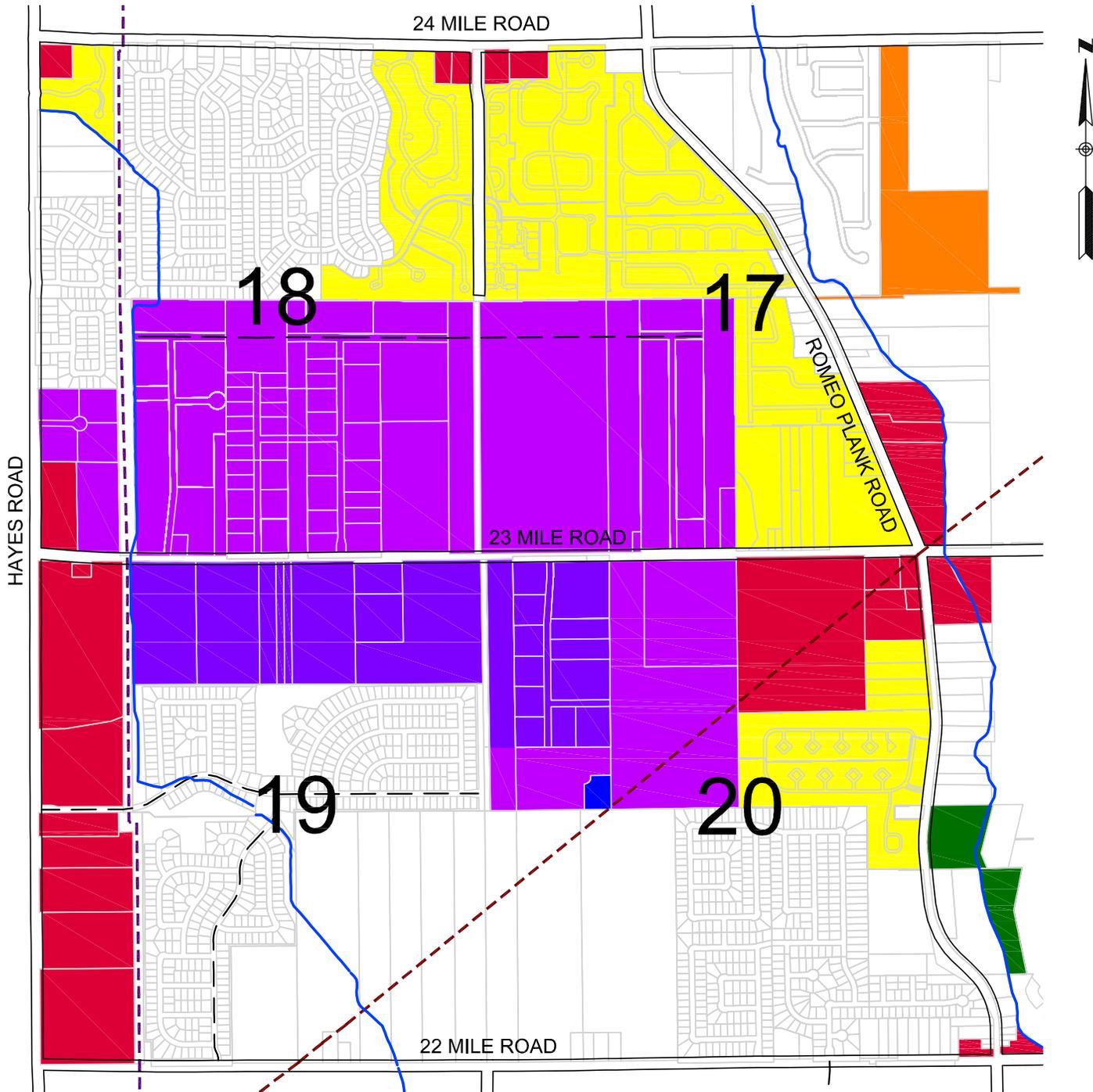
3. A plan for the area is essential. Without land use controls each property owner could develop by construction of individual streets to open up each parcel. This approach would obviously create strained land use relationships and defeat the purpose of planning.
4. That the heavy industrial development be confined to the Twenty-Three Mile frontage at Garfield. The areas surrounding the heavy industrial along Twenty-Two Mile, Hayes, the area north of Twenty-Three Mile frontage and the area east of Garfield should be developed as light industrial.

The plan proposes that 642 acres of industrial land be provided for Macomb Township. Of these 329 acres are developed and 313 acres are vacant. (At this point it is noted that the 2002 Master Plan which included the acreage for industrial was a gross acreage figure including the streets adjoining the lots.) The net acreage for this plan includes both vacant and developed and totals 642 acres.

Approximately 542 acres are planned in the area bounded by Twenty-Two ½ Mile Road, Twenty-Three ½ Mile Road, Hayes Roads and one-quarter mile west of Romeo Plank. The other 100 acres are planned for the Gratiot/Twenty-One Mile Road area. Road patterns, land use relationships and usable site development can alter the details of development.

Twenty-Three Mile Industrial Area and 21 Mile Road Industrial Area

1. The Twenty-Three Mile Industrial corridor is the primary industrial street through Macomb Township. The Industrial development extends from Hayes Road to approximately $\frac{1}{4}$ mile west of Romeo Plank with industrial streets running north and south from 23 Mile to service the existing and proposed industrial buildings.
2. Hayes Road also serves the industrial development as well as commercial facilities being constructed thereon.
3. Future Garfield Road will also provide access to industrial development to the north and south of 23 Mile Road.
4. An integrated street pattern will service all of the properties to the north and south of 23 Mile Road.
5. A total of 542 acres of industrial development is planned for this area.
6. The 21 Mile Road Industrial corridor ties into Gratiot Avenue, with a link between these two streets, Erb Drive, to provide access and street frontage for the 100 acres developed and planned for this area.
7. The attached sketches indicate the road pattern and parcel layout of these areas.

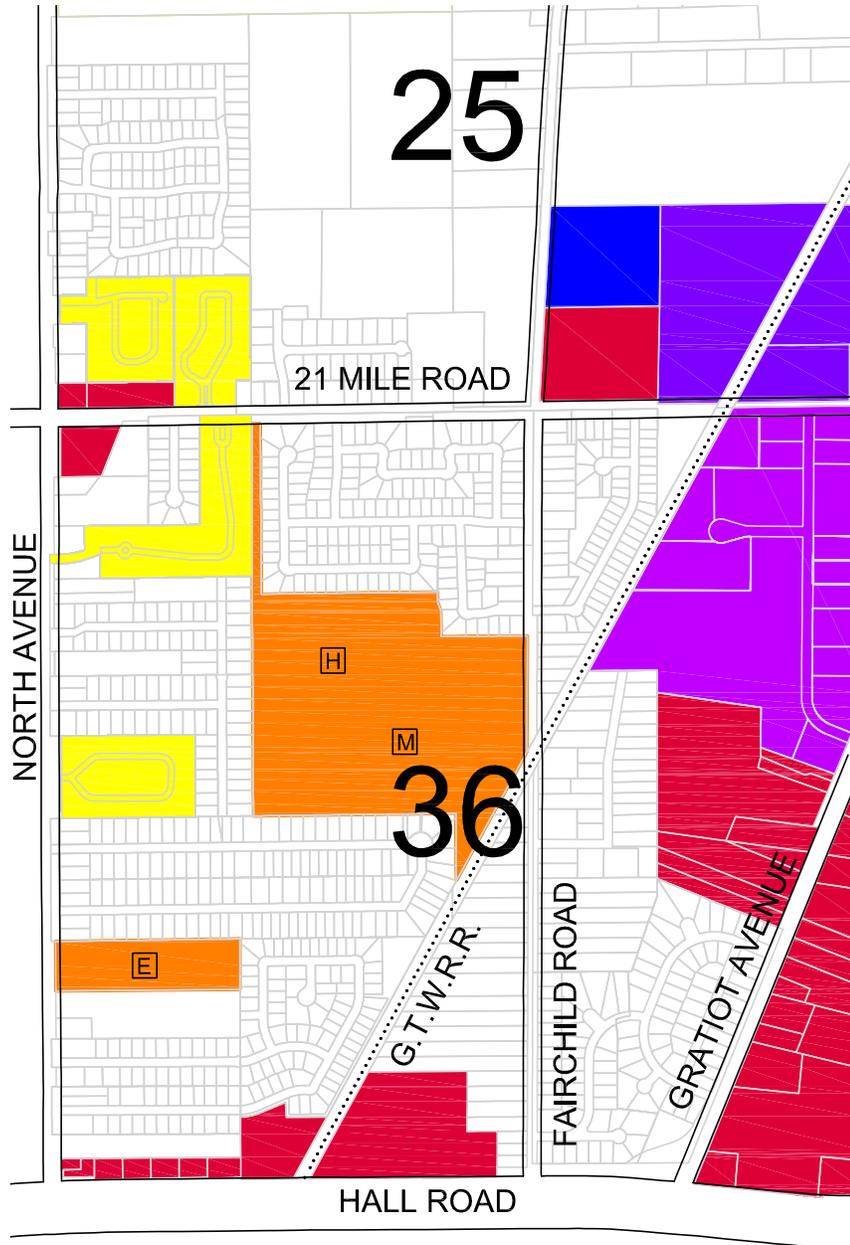


INDUSTRIAL AREA - SECTIONS 17, 18, 19 & 20

<p>LAND USES</p> <ul style="list-style-type: none"> Residential (Two Unit per Acre) Residential (Three Unit per Acre) Residential (Six Unit per Acre) Residential (Nine Unit per Acre) Residential (Mobile Home Park) Commercial Industrial (Heavy) Industrial (Light) Public School H High School M Middle School E Elementary School Township Property Closed Landfill Macomb Town Center 	<p>ROAD RIGHTS-OF-WAY</p> <ul style="list-style-type: none"> Major Road (M-59) (350') Major Road (North Ave) (150') Major Road (120') Collector Road Industrial Road (70') Connector Road (60') Grand trunk Western R.R. <p>UTILITIES</p> <ul style="list-style-type: none"> Oil Pipeline Gas Pipeline Edison Easement Edison Substation 	<p>WATERWAYS</p> <ul style="list-style-type: none"> Rivers & Drains Wetlands
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INDUSTRIAL AREA - SECTIONS 25 & 36

LAND USES

Residential (Two Unit per Acre)	
Residential (Three Unit per Acre)	
Residential (Six Unit per Acre)	
Residential (Nine Unit per Acre)	
Residential (Mobile Home Park)	
Commercial	
Industrial (Heavy)	
Industrial (Light)	
Public School	
High School	
Middle School	
Elementary School	
Township Property	
Closed Landfill	
Macomb Town Center	

ROAD RIGHTS-OF-WAY

Major Road (M-59) (350')	
Major Road (North Ave) (150')	
Major Road (120')	
Industrial Road (70')	
Connector Road (60')	
Grand trunk Western R.R.	

UTILITIES

Oil Pipeline	
Gas Pipeline	
Edison Easement	
Edison Substation	

WATERWAYS

Rivers & Drains	
Wetlands	

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COMMUNITY FACILITIES

Community facilities are those services and accompanying buildings and equipment which provide for the needs of modern day living environment. The functions are generally related to aspects of health, safety, and welfare which cannot be provided on an individual basis and are generally provided by local government to serve community-wide needs.

For purposes of the Plan for Macomb Township, community, facilities include:

1. Township center.
2. Educational facilities.
3. Recreation facilities.
4. Public buildings, facilities and service:
 - government (offices, water/sewer etc.)
 - police, fire and libraries.

THE MACOMB TOWNSHIP CENTER

Macomb Township, like many other fast growing communities, does not have a central identification area that can be called the “downtown” or Township center. The earlier Master Plans for the Township (1972, 1988, 1994 and 1999 provided for such an area with the Township offices providing the central focal point. The planning philosophy supporting this approach has remained the same in terms of providing the Township with a Township Center. Uses planned for such an area include the Township Offices, business office, commercial facilities, a higher density of residential areas and recreation and open spaces. The purpose of this blend of uses is to create activity and to promote a central area that can be called Macomb Township.

In 2000 the Township acquired a 79 acre parcel in the north central area of the Township in Section 9. With this acquisition the Planning Commission has included in the Master Plan that the balance of Section 9 of the Township be designated as the Macomb Township Center. A proposal of mixed use development including approximately 2400 homes and 95,600 square feet of specialty retail, service businesses and restaurant developments, all integrated with the construction of a new Township Government Office complex was planned. The philosophies of “new urbanism” are proposed for the development of Section 9 and are guided by two planning firms appointed to make such designations and recommendations to the Township Board.

The Master Plan for the area further provides that the Township place emphasis upon the completion of road improvements, provisions of necessary utilities and the establishment of a Macomb Downtown Development Authority to promote the Macomb Township Center. The specifics of this Plan are spelled out in an overall plan (Macomb Township Center – Community Master Plan) prepared by Macomb Township.

It is the intention of the Master Plan to maintain and reinforce the authentic historical architectural and town characteristics of Macomb Township. All development must be made to strictly adhere to the proposed architectural codes and standards in order to create a unique and consistent environment for the Township Center.

The implementation of goals of the Township Center should be made through the development of a special overlay zoning option and the adoption of the proposed Plan, increased density, the preservation of open space and natural features and integration of commercial uses, within a central “hub”, can be achieved with Macomb Township.

To date, streets and open space have been built in accordance with the plan as well as a number of single family homes and apartments have been constructed. Other plans for the area are in the planning and development stage.

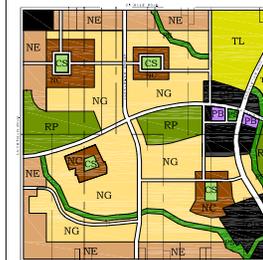
CONCEPTUAL PLANNING STUDY
FOR
MACOMB TOWN CENTER

M A C O M B T O W N S H I P , M I C H I G A N

Prepared for:
MACOMB TOWNSHIP
148 Pierce Street
Macomb, MI 48042
810.286.0621

Town Planning & Landscape Architects:
GIBBS PLANNING GROUP, INC
148 Pierce Street
Birmingham, Michigan 48009
248.642.4800

30 August 2001



MACOMB TOWN CENTER ZONING CATEGORIES

	RP RURAL PRESERVE
	NE NEIGHBORHOOD EDGE
	NG NEIGHBORHOOD GENERAL
	NC NEIGHBORHOOD CENTER
	CD CORE DOWNTOWN
	TL TOWNSHIP LAND TO BE DETERMINED
	PS PUBLIC SPACE
	CS COMMON SPACE
	PB PUBLIC BUILDING

Regulating Plan

General Plan Notes

- All public streets shall be constructed to Macomb County Road Construction Standards and, where existing conditions exist, shall be brought into conformity.
- All new culverts shall be 30' wide. All new culverts shall be 12' high.
- All streets shall have a design speed of 35 mph or less, or 25 mph or less, as appropriate.
- All streets are subject to being closed during final implementation of the plan.
- All traffic signals shall be 12' high and shall be in the middle of the block.
- Lot dimensions shall be determined to achieve the overall density requirements applicable to each development, with consideration given to the number of independently owned lots to be included. The range of lot dimensions shall be between 50' and 72'.
- All plans and specifications shall comply with the regulating plan and district regulations of Macomb Township Center and with all other applicable local codes.
- All lots shall be served with gas and water per Macomb Township, Macomb County, and State of Michigan standards.
- All lots will be served with underground electric, telephone, cable, and gas services.
- All proposed utility will be placed in accordance to Macomb Township standards and utility company standards.
- Street drainage will be provided in accordance with Macomb County Standards.
- Location of existing and proposed bus stops shall be verified to ensure that no structures are located within 100 feet.
- Wetlands shown on this plan are identified by:
 - Department of Interior Geological Survey Wetlands Quadrangle, Macomb County, MI 7.5 version Series Topographic.
 - United States Department of Interior National Wetlands Inventory.
- Wetland, Open, and proposed tree boundaries shown here are approximate.

Legend:

	Commercial
	Civic
	Rowhouses/Apartments/Liv-work
	Single Family Neighborhood General/Neighborhood Edge
	Parks / Square / Green
	Nature Preserves
	Required Streets
	Township Land - To be Determined
	Excluded Parcels
	Parcel Line



FIRE STATIONS

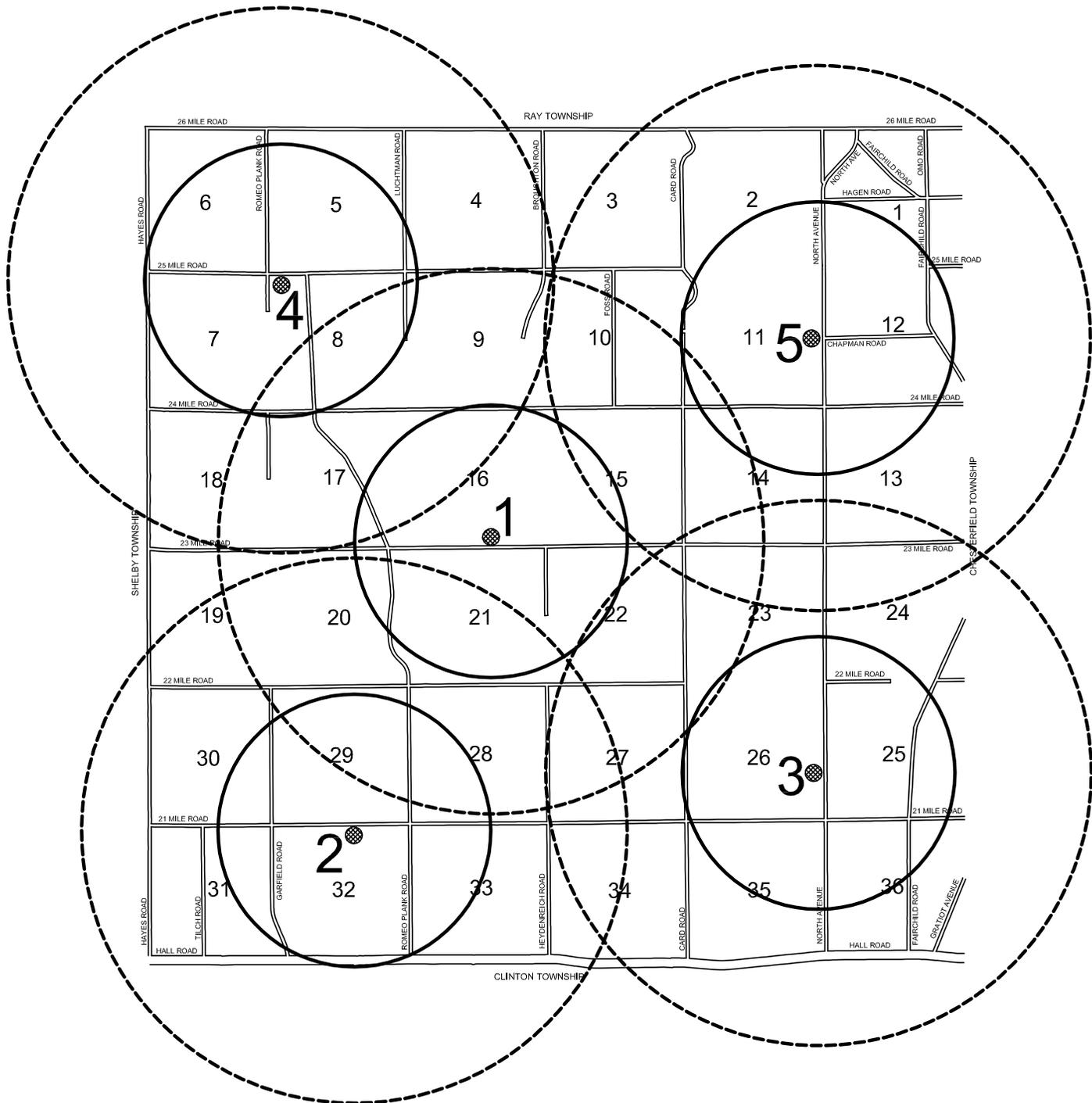
Macomb Township is served by a combination of full and part time firefighters, with four stations currently in existence. Station One is located near the center of the Township on Twenty-Three Mile Road. The Headquarters are located on Twenty-One Mile Road, approximately one mile east of Romeo Plank. Two new stations have been constructed as noted below. The Township also participates with a county-wide mutual aid agreement. Currently the Township has a rating of 5, as set by the ISO (Insurance Services Organizations). The rating system of ISO creates the standards by which insurance companies determine insurance rates for communities.

The Master Plan Map applies the general fire protection response standards to the proposed future land use plan. These standards provide a guideline for the Township in the determination of the location of the fire stations planned. An attempt is made to located stations on site with a service radius of at least 1 – ½ miles to 2 miles.

As proposed in the 2002 Master Plan two (2) additional stations have been constructed for Macomb Township.

Construction of the third station to serve Macomb Township was completed in 2004. Station number 3 is location located on the west side of North Avenue, approximately 1/3 north of 21 Mile Road. More recently the Township approved a request by the Fire Department to construct a training fire tower on this site. In 2006 the Township constructed the fourth fire station located on the south side of 25 Mile Road west of Romeo Plank in accordance with the Master Plan of 2002.

A fifth station proposed to serve the northeast quadrant of the community is being considered by the Township Board and will provide coverage in accordance with the land use plan. (See page 85 for the Fire Station Locations Map).



FIRE STATION LOCATIONS AND RESPONSE AREAS MACOMB TOWNSHIP, MI

- 1 ● FIRE STATION NO. 1
- 2 ● FIRE STATION NO. 2
- 3 ● FIRE STATION NO. 3
- 4 ● FIRE STATION NO. 4
- 5 ● FUTURE STATION

- ONE MILE RADIUS
- - - TWO MILE RADIUS

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PARKS AND RECREATION AREAS

A balanced system of parks and recreation area is essential to the growth and development of Macomb Township. A significant factor is that the Township still has relatively inexpensive undeveloped land available. This suggests very strongly that immediate provisions be made to acquire the recreational facilities that are necessary by present and future populations. Because the phenomenal growth of Warren, Sterling Heights, Shelby Township and Clinton Township engulfed Macomb Township early acquisition of park land was essential. Several sites were acquired and since developed.

The Township has developed two major Township Parks. One in the northern area of Twenty-Five Mile Road, and the other on Twenty-One Mile Road. Other parks/playgrounds should be developed in conjunction with various school and public facilities.

The Waldenburg Park, a 17 acre park has been developed on 21 Mile Road, just east of Romeo Plank and the Macomb Corners Park, a 95 acre park site has been developed on the north side of 25 Mile Road east of Luchtman Road. A community recreation center that includes an aquatics area, gymnasiums, fitness center and other activity amenities has been constructed in the Town Center adjacent to the new Town Hall on Broughton Road, south of 25 Mile Road.

Other sites are being considered by the Parks and Recreation Department for future recreation development. Sites located in the southeast and southwest quadrants of the Township are necessary to service the Township residents that do not now have ready access to park sites and facilities. Sites of approximately 20 acres or larger in size with easy access, by the residents who will be using them, are necessary.

The Master Plan also envisions a "linear" park system based upon a use of the many waterways, and utility easements where possible, that criss-cross the Township. As indicated in the land use portion of the plan approximately 1/3 of the Township is impacted by flood plains, many of which parallel the North Branch and Middle Branch of the Clinton River and various drainage ways of the Township cutting through neighborhoods. Existing golf courses are impacted by areas of flood plain which indicates that flood plains can be utilized to the benefit of the residents of Macomb Township.

The plan strives to establish parks in various locations of the Township with ties to each other with walks and paths along the water courses. These walks, paths and trailways will provide organized areas for jogging, hiking and nature study.

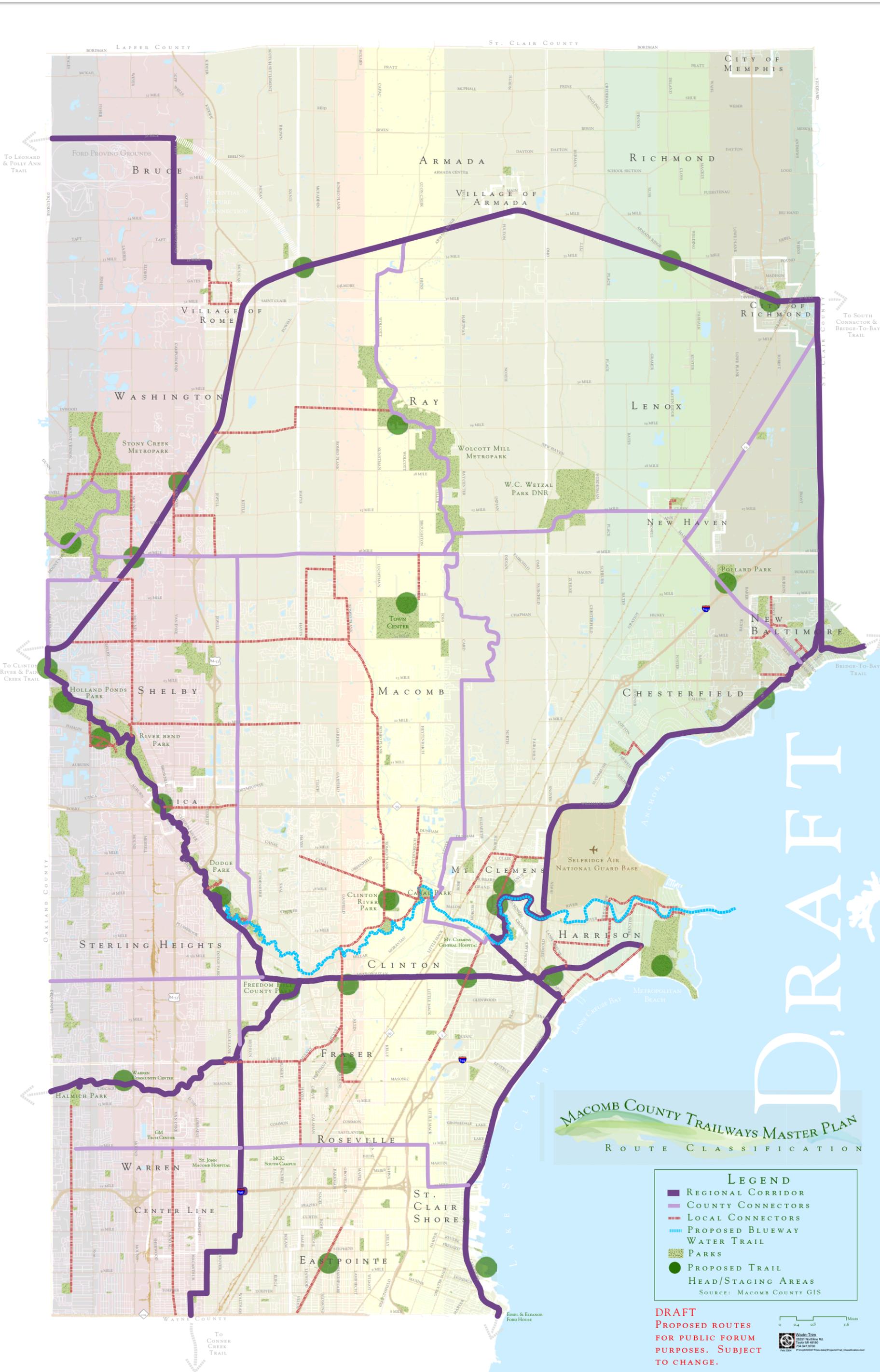
Approximately 8 years ago the Township adopted a provision that subdivisions developed along the major roads must provide 8' wide pathways instead of the normal 5' wide sidewalks. This action was taken to encourage walking and cycling and to give sufficient space for such activities. This plan encourages the provision of additional pathways to connect those subdivisions that are separated by vacant land (either developed without sidewalks or not subdivided land) to complete the connections between recreation areas and other public facilities such as schools and churches. This coupled with features of the Macomb County Trailways Master Plan will aid in the development of a Township wide "connected" system.

An important consideration is the development of a non-motorized pathway network that provides pedestrian access through the community. This network principally utilizes open space properties along watercourses and pathways established along major vehicular thoroughfares and it is planned that it will tie into the trailways plan developed by the Macomb County Planning Commission. A copy of the County plan is attached for reference on page 88. It is therefore proposed by this Master Plan that the Township through its Department of Recreation work with the County to provide a system of walkways in connection with the County proposals tying Macomb Township with the balance of the County.

The Township has undertaken research and development programs to obtain input from the general citizenry to prepare for a long range Parks and Recreation program. Further elements and details of the Master Plan for Parks and Recreation will be published under separate cover in anticipation of adoption by the Township Board in 2009.

LIBRARIES

The Township is presently served by a joint system serving Macomb and Clinton Townships. A branch facility has been opened on 24 Mile Road west of Romeo Plank Road to serve Macomb Township residents. No other facilities exist in the Township other than those provided within the schools serving Macomb Township residents. It is anticipated that no new construction of library facilities will take place other than a possible future main library in the Town Center. In its stead, it is recommended that the school facilities be expanded to provide additional library facilities for residents within the service areas of the school.



DRAFT

MACOMB COUNTY TRAILWAYS MASTER PLAN

ROUTE CLASSIFICATION

LEGEND	
	REGIONAL CORRIDOR
	COUNTY CONNECTORS
	LOCAL CONNECTORS
	PROPOSED BLUEWAY WATER TRAIL
	PARKS
	PROPOSED TRAIL HEAD/STAGING AREAS
SOURCE: MACOMB COUNTY GIS	

DRAFT
 PROPOSED ROUTES
 FOR PUBLIC FORUM
 PURPOSES. SUBJECT
 TO CHANGE.

0 0.4 0.8 1.6 Miles

Wade-Tim
 2014
 Taylor MI 48180
 734.547.9700
 Feb 2014 P:\proj\020112\020112-004\Project\Final_Classification.mxd

RECREATION GOALS

The National Recreation and Parks Association provides guidelines for basic principles and desirable standards for recreational facilities in the country. These guidelines must be referenced along with other principles and standards that have been developed by other professions that provide an additional regional and local perspective of recreational facility acquisition and development. Collectively these principles and standards must be modified in order to be applicable to each individual community. Some basic principles involve:

1. A balanced system of parks and recreation areas should be provided to serve all Macomb Township.
2. A system of parks and recreation areas should include both active and passive uses, as well as indoor and outdoor facilities.
3. The type and size of recreation facilities should be related to the size and age groupings of the population to be served.
4. Physical barriers and opportunities such as rivers, heavily traveled roads and railroads, should be considered in determining the size and location of parks and recreation areas.
5. Natural areas having aesthetic advantages should be utilized, where possible.
6. If possible, recreation areas should be provided in combination with schools.
7. Year-round indoor recreation buildings should be developed as part of the school plan, where possible.
8. Playgrounds should be provided adjacent to elementary schools, and playfields adjacent to junior or senior high schools.
9. Neighborhood parks should be developed in conjunction with playgrounds, utilized as buffers.
10. Playgrounds and neighborhood parks should be located in the interior of residential areas, preferably in the center.
11. Local community parks should provide amenities unique to their development and to supplement facilities located elsewhere in the community.

RECREATION STANDARDS

In order to properly allot correct areas to each individual type of recreation, it is necessary that standards be established. The standards prescribed by the National Recreation and Park Association include:

1. A total of ten (10) acres in recreation, active and passive, should be provided for each 1,000 persons.
2. A playground, which is an active recreation area serving elementary school-age children between the ages of five (5) and twelve (12) years of age, should be 3 to 7 acres in size, having a service radius of 1/4 to 1/2 miles, with one (1) acre serving 800 people.
3. A neighborhood park, which is a relatively small area for passive recreation of all age groups; should be developed in conjunction with a playground or playfield; be approximately two (2) acres in size, or 4.7 acres if separate, should serve a population of 1,000 persons per acre, and have a service radius of 1/4 to 1/2 mile.
4. A playfield, which is intended to serve all teenagers and adults, is an active recreation facility and generally developed in conjunction with a junior or senior high school. Its size should be approximately 12 to 20 acres, at a rate of one (1) acre per 800 persons, with a service radius of 1/2 to 1 mile.
5. Community recreation buildings serve primarily youth and adults and might also be developed in conjunction with the cultural and civic center. They should be developed in connection with a junior or senior high school, with a 1 to a 2 mile radius, at the rate of 1 per 20,000 population.
6. A municipal-wide park is an area sufficiently large enough to provide a wide variety of recreation facilities for all age groups and might include hiking trails, day camps, picnic facilities and the like. A township-wide park should be at least 100 acres in size and be developed at 2 to 4 acres per 1,000 population.
7. Special facilities include:
 - a. Indoor Swimming Pool - One (1) per 50,000 persons.
 - b. Golf Course - 1-hole per 3,000 population; with one 18-hole course using 100 acres or more.

SCHOOLS

The fundamental recommendations to the four school districts serving Macomb Township are (as has been in past Master Plans) as follows:

- Early acquisition of school sites.
- Acquire sites large enough to permit future development for recreational uses other than just for school purposes.
- Base future education facilities needs on the ultimate population capacity of defined neighborhoods.

In addition to the fourteen (14) existing schools plus two (2) intermediate school sites, the school plan recognizes the need for additional schools to serve the residents of the Township. It is recognized that since each of the school district boundaries cross municipal boundaries students will not always attend a school either in their local neighborhood or even Macomb Township. It is possible for example, that there may be no other high schools built within the township boundaries. The balance of the new schools to be built serving Macomb Township students will be sited based on the need and land availability. Each district has their own site selection standards.

The site location factors for each school including the following:

Elementary - Elementary schools no longer select sites in the interior of the mile section. Given the changing demographics especially lower family sizes it is no longer reasonable to expect that one section or square mile will support an elementary school. Therefore, elementary sites will be best suited for the major roads.

Middle and Senior High- Secondary school sites should be situated along major roads.

The Macomb Intermediate School District has one elementary school building located on Heydenreich, south of 21 Mile Road and an undeveloped site in Section 17 adjoining Sequoyah Elementary.

The unit of government responsible for education is the local school district which operates as a separate government entity under State Law with prescribed taxing powers. In terms of financial investment, expenditures on school make up the largest share of the local tax dollar. It, therefore, behooves the Township and School Districts to coordinate their planning efforts in order that expenditures can be used in terms of efficiency and economy.

The timing for school construction must closely follow residential development with the Township.

SCHOOL STANDARDS

	Elementary School	Junior High School	Senior High School
Assumed Family Size			
Single	3.5	3.5	3.5
Multiple (low)	2.2	2.2	2.2
Mobile Home	2.5	2.5	2.5
Multiple (high)	2.0	2.0	2.0
School Children/Family			
Single	.53	.19	.16
Multiple (low)	.189	.072	.079
Mobile Home	.304	.092	.079
Multiples (high)	.000	.000	.000
School Enrollment			
Minimum Number of Pupils	300	800	1,000
Average Number of Pupils	600	1,200	1,800
Maximum Number of Pupils	1,200	1,200	2,600
Land Area Required			
Minimum Site Size	7 acres	18-20 acres	30 acres
Average Site Size	12-14 acres	24-26 acres	40 acres
Maximum Site Size	20 acres	30-32 acres	50 acres

MASTER THOROUGHFARE PLAN for Macomb Township

Through comprehensive planning, street and highway needs can be anticipated before land development takes place. Advance knowledge of how the municipality will be developed and what requirements are necessary for thoroughfares enables the proper authorities to acquire the necessary rights-of-way for major streets. Such anticipation properly locates major roads and eliminates the need to purchase developed land. This helps to serve tomorrow's traffic needs at minimum expenditure to the taxpayer. Macomb Township Thoroughfare Plan is prepared in close cooperation with the Road Commission of Macomb County.

The size and location of traffic arteries and their relationship to one another and to the Township's existing and proposed land use patterns can well determine the character, quality and stability of the Township.

Thoroughfare Plan Criteria

The Thoroughfare Plan proposal for Macomb Township is based upon the following criteria:

1. All standards of the Michigan State Highway Department and the Road Commission of Macomb County will be applied to development in Macomb Township.
2. All primary roads serving state, regional and county needs, which are essential in conveying traffic through the Township, will be provided wherever feasible.
3. Location and size of roads serving the Township's future needs are related to the residential density plan element.
4. Effort is made to minimize crossing of railroads, expressways, drains, floodplains and natural and manmade waterways, to minimize bridging. This criteria is dependent upon the service to the area and the provision of access for emergency vehicles.
5. The criteria is made based upon the importance and affect of the M-59 Boulevard along Hall Road.
6. The local road system will be developed to serve the neighborhood unit.
7. The existing road system and its logical extension should be used as a basis for the public road system.
8. The provisions of the Land Division Act will be applied to the development of roads.

Thoroughfare Plan Guidelines

1. The Plan discourages industrial and residential traffic from conflicting with each other where possible.
2. The Collector Roads will serve the following purposes:
 - a. Provide access from residential streets to major roads.
 - b. Serve such local traffic generators as schools, recreation areas and churches.
 - c. Discourage thru traffic across a number of neighborhoods.
 - d. Relate to major roads at half-mile and/or third-mile points for ideal signal control systems.
 - e. Open internal areas of square mile sections for future development.
 - f. Avoid land locking of property from public road systems.
 - g. Relate as much as possible to existing property line divisions.
 - h. Accommodate access requirements of future community facilities.
3. Encourage development outside the defined 100-year floodplain.
4. Wherever possible, the Township should set aside future right-of-way for all roads and provide proper setbacks for any new developments so when the Road Commission of Macomb County constructs the street, the right-of-way will be available.
5. Plats are developed with access to hard surfaced roads to avoid premature development.
6. A recent new type of road has been added to the road classification system identifying a road that will have the same purpose as a collector road but will not be developed using the same standards. This new road will be called a “connector” road and will have a 60’ width and a pavement width of 28’. It is primarily designed to serve the Town Center area.

Cross Section Standards

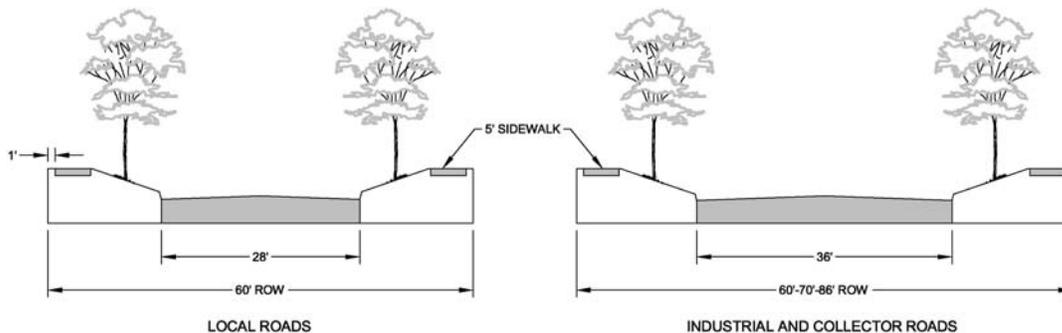
The basic road network in Macomb Township consists of public roads controlled by the Road Commission of Macomb County. Four types of roads are stipulated in the Master Plan – local roads, collector roads, industrial streets and major thoroughfares. Along with local officials, the Road Commission of Macomb County has established certain standards for the widths of pavements for each type of public road.

As indicated in the sketches below the construction standards of local roads require pavement widths of 28 feet. Connector, industrial and collector streets shall have pavement widths of 36 feet.

Other types of roads such as major thoroughfares with right-of-way widths of 120 feet, 150 feet and 204 feet require varying pavement widths depending upon requirements of the Road Commission of Macomb County with input from the local Township officials.

With respect to private roads, such as may be approved in condominium projects, the Township Land Development Ordinance indicates that the above standards for local roads are applicable.

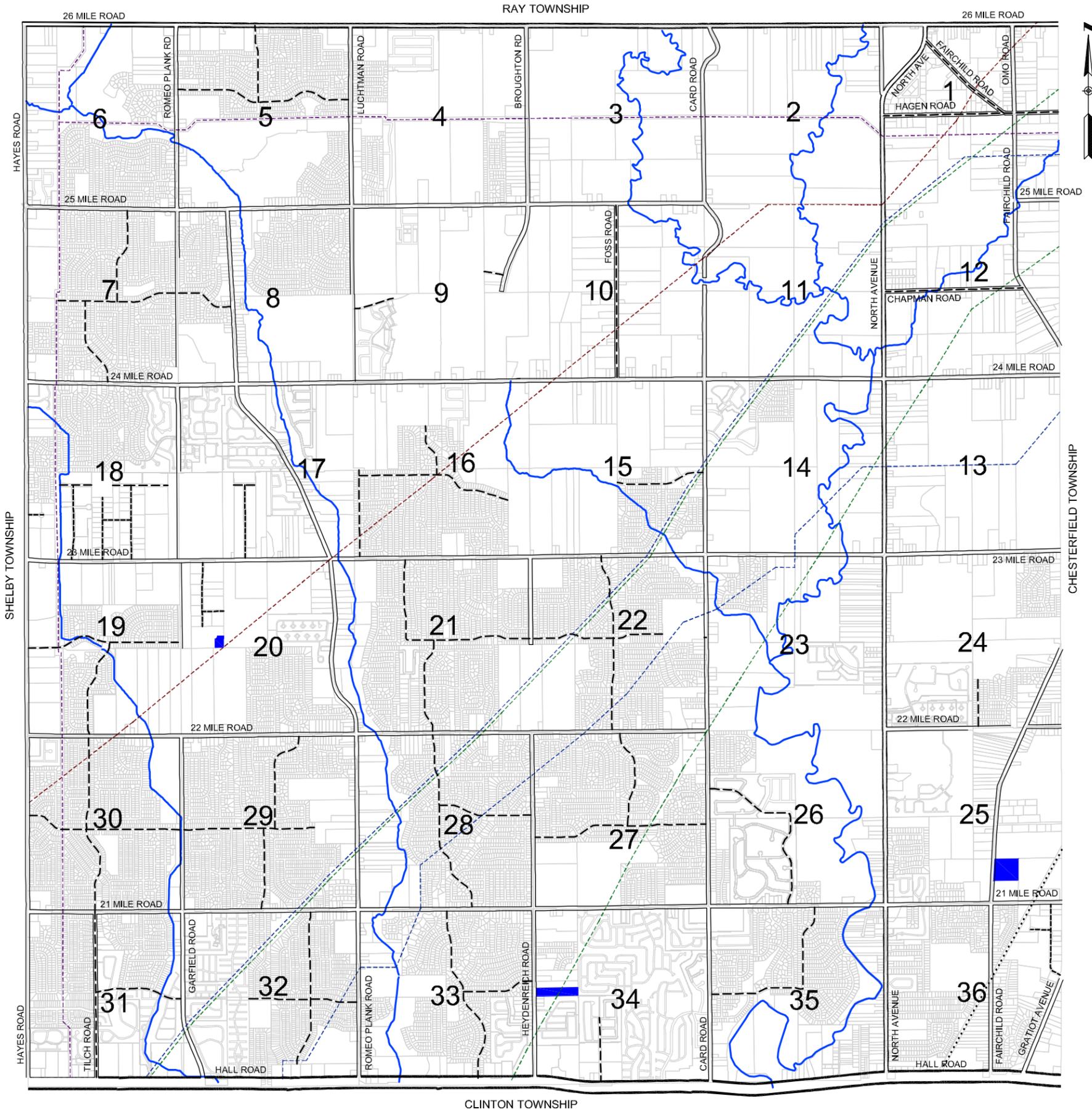
On public roads the sidewalks or pathways, (required on both sides of the street) are located one foot inside the right-of-way. However, on private roads the sidewalks, (also required on both sides of the street) may be positioned anywhere from the back of the curb to no further than 15 feet from the back of the curb, taking into account that the sidewalks shall not be located over the top of the water main, which is typically located at eight feet from the back of the curb. Further, the sidewalk shall not be installed in such a location that cars parking in the driveway, outside the garage, will block the path of the sidewalk.



MASTER THOROUGHFARE PLAN MAPS

Page 96 is the Existing Thoroughfare Developed

Page 97 is the Proposed Thoroughfare Including Rights-of-Way



LEGEND

EXISTING ROAD RIGHTS-OF-WAY

- Major Road (M-59) (350')
- Major Road (26 Mile) (204')
- Major Road (North Ave) (150')
- Major Road (120')
- Existing 1/2 Width Major Road
- Collector Road (86')
- Industrial Road (70')
- Connector Road (60')
- Grand trunk Western R.R.

UTILITIES

- Oil Pipeline
- Gas Pipeline
- Edison Easement
- Consumer's Energy
- Edison Substation

WATERWAYS

- Rivers & Drains

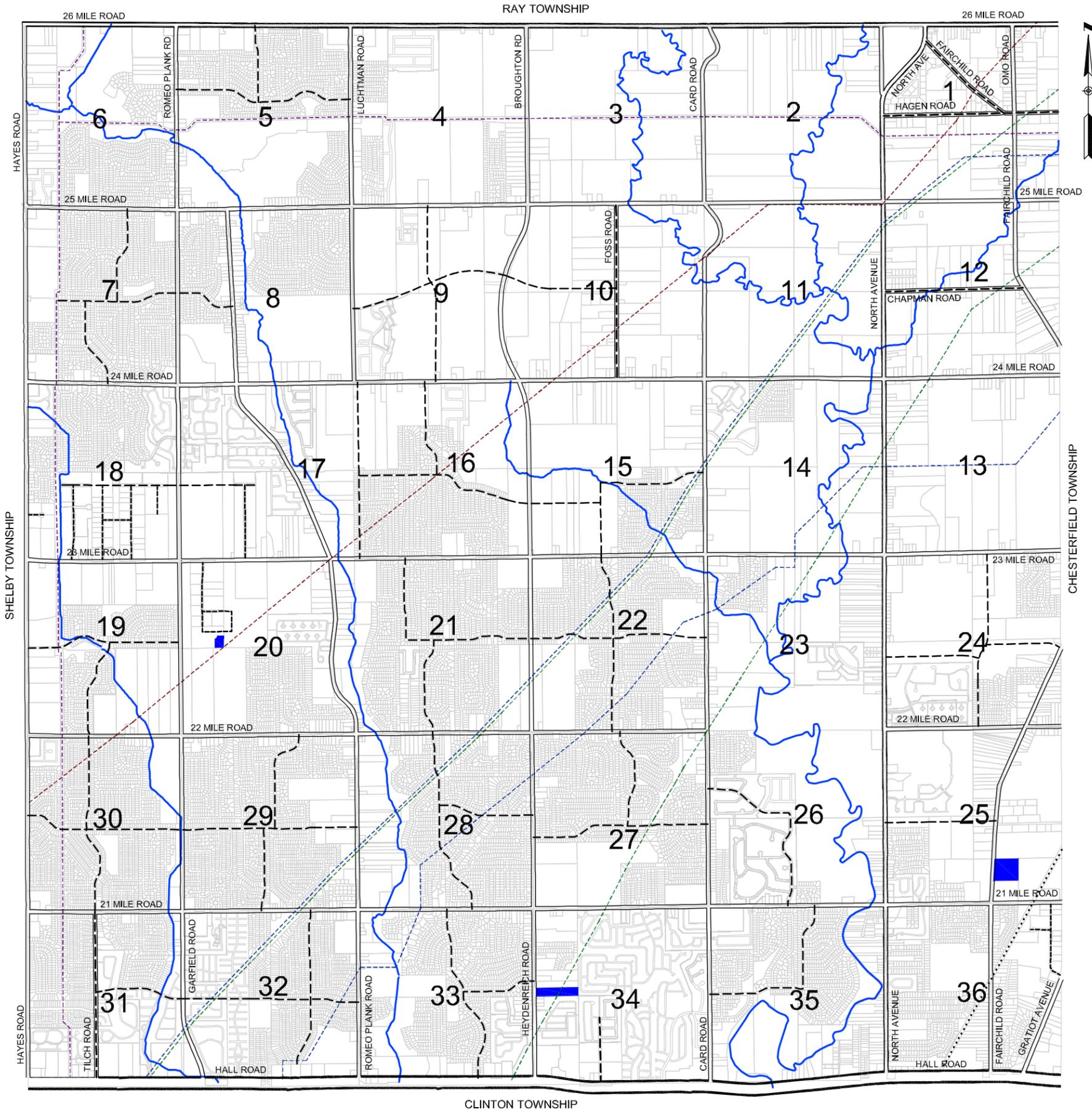
EXISTING THOROUGHFARE PLAN - DEVELOPED 2008

MACOMB TOWNSHIP, MICHIGAN

Spalding DeDecker Associates, Inc.



Engineering Consultants
Infrastructure • Land Development • Surveying



LEGEND

PROPOSED ROAD RIGHTS-OF-WAY

- Major Road (M-59) (350')
- Major Road (26 Mile) (204')
- Major Road (North Ave) (150')
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MASTER THOROUGHFARE PLAN 2008

MACOMB TOWNSHIP, MICHIGAN

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PLAN IMPLEMENTATION MEASURES

Zoning

A legal definition of zoning can be derived or implied from the language of the Township Rural Zoning Act, Act 184 P.A. 1943, as amended. A more general definition is suggested by the International City Manager's Association as follows: "Zoning is essentially a means of insuring that the land uses of a community are properly situated in relation to one another, providing adequate space for each type of development."

The Zoning Ordinance is a legal tool used by communities to provide for a fair and balanced regulation of the development of land and the application of standards to that development. The Master Plan provides the basis for the districts outlined in the Zoning Ordinance. The Ordinance is comprised of two sections – the text, which spells out the specifics and a map which delineates the district lines.

Section 10.0101. Purpose.

The purpose of this Ordinance is to promote the public health, safety, morals, and general welfare; to encourage the use of lands in accordance with their character and adaptability; and to limit the improper use of land; to avoid the overcrowding of population; to provide adequate light and air; to lessen congestion of the public roads and streets; to reduce hazards to life and property; to facilitate adequate provisions for a system of transportation, sewage disposal, safe and adequate water supply, education, recreation and other public requirements; and to conserve the expenditure of funds for public improvements and services to conform with the most advantageous uses of land, resources and properties, and with reasonable consideration among other things, to the character of each district, its peculiar suitability for particular uses, the conservation of property values and natural resources, and the general and appropriate trend and character of land, building, and population development as studied and recommended within a comprehensive development plan by the Macomb Township Planning Commission, and regulations adopted, therefore, by the Macomb Township Board.

ZONING ORDINANCE

Article

- I. Purpose and Interpretation
- II. Definitions
- III. General Provisions
- IV. Agricultural District (AG)
- V. Residential One-Family Suburban District (R-1-S)
- VI. Residential Estate One-Family District (R-1-E)
- VII. Residential Urban One-Family (R-1)
- VIII. Residential Multiple-Family Low Density District (R-2-L)
- IX. Residential Multiple-Family Medium Density District (R-2)

- X. Residential Multiple-Family High Density District (R-2-H)
 - XI. Residential Mobile Home Park District (R-3)
 - XII. Community Facilities District (CF)
 - XIII. Office – Low Rise District (O-1)
 - XIV. Office – High Rise District (O-2)
 - XV. Local Commercial District (C-1)
 - XVI. General Commercial District (C-2)
 - XVII. Commercial (Shopping Center) District (C-3)
 - XVIII. General Highway Commercial District (C-4)
 - XIX. Warehouse District (WH)
 - XX. Industrial Research District (MR)
 - XXI. Light Industrial District (M-1)
 - XXII. Heavy Industrial District (M-2)
 - XXIII. Special Land Development District (SLD)
 - XXIV. Administration
 - XXV. Traditional Neighborhood Development Code
 - XXVI. Wireless Communications
- Appendix

Subdivision Regulations

This local ordinance will be used in concert with the State of Michigan Subdivision Control Act of 1967 and will define local desires regarding improvements required in new subdivisions. Subdivision regulations also provide a means of coordinating land subdivision trends with consideration for the programmed timing of major public investments in sanitary sewer and water, as well as the need for public facility sites. Such regulations also allow coordination of land subdivision with the acquisition of adequate public road rights-of-way in relation to the Major Thoroughfare Plan Element.

Capital Improvement Program

The role of this program technique is to relate the planned development of the residential, commercial and industrial land use to the timing of public expenditures for facilities and services required by these major land use activities. As such, it can serve as a guideline for fiscal planning and decisions by the Township Board.

Land Division Act

The provisions of the Land Division Act are applied in conjunction with other regulatory measures of the Township. Subdivisions and site plans, which are regulated by special codes and ordinances, are subject to provisions of the Land Division Act especially where they abut other land uses and or major road rights-of-way.

Citizens Support

The primary force which will determine whether the Macomb Township Master Plan will be effectively used as a guide for major public development decisions are the existing and future residents of the Township. Without their continued understanding and support of the Plan and its stated policies, normal conflicts which arise between individual desires and the general public goals can become acute and overshadow consideration of the long-range benefits of a planned growth pattern in the Township. Certain auxiliary boards and commissions should be established to further goals of interested citizen groups. A historical commission, beautification commission and a crime commission should be appointed to provide advice and a sounding board for the elected officials in these special areas.

Other Government Programs

Various government programs are designed to aid communities in providing services to their residents. For example, federal and state programs for Community Development Block Grants (CDBG) and park development through the DNR and the Land and Water Grants can be used and are generally dependent upon a Master Plan for their approval.

Application of Engineering Principles and Standards to Planning

The Planning Commission should be aware that the utilities shown on the Township's Master Plan for public water and sanitary sewer service are sized to meet the population densities shown on the Township's Master Land Development Plan. As changes in zoning and population density are considered by the Planning Commission, the Township's Water and Sanitary Sewer Master Plan must be reviewed to ensure that utility service is adequate to accommodate the proposed change. This is particularly important to the Township's sanitary sewer system where pipe sizes and system purchase capacity can provide limited flexibility without major infrastructure improvements. Should these types of improvements be necessary to accommodate a change in land use, the Township Board will need to take into consideration the project costs and feasibility before adopting changes.

The Water and Sewer Department has recently completed Macomb Township's third permanent connection to the Detroit water distribution system which will mainly provide service in the southeast portion of the Township. This connection will provide additional system reliability during emergencies and peak demand days. Additionally, the Detroit Water and Sewerage Department is continuing to make capital improvements to their distribution system which directly services the Township in order to provide more consistent pressure and flow. The Water and Sewer Department is also continuing its program of replacing old undersized water mains with new water mains that are in accordance with the Township's Water System Master Plan.

The Water and Sewer Department is nearly complete with the second phase of a multiphase project to upgrade the 23 Mile Road sanitary sewer system. The first two phases of this project encompassed the construction of a gravity sewer between Garfield and Romeo Plank Roads and a pump station east of the Middle Branch of the Clinton River. The remaining phases will continue to upsize gravity sewer along 23 Mile Road from the new pump station to the McBride Drain pump station, east of Card Road. When these upgrades are complete, the trunkline sanitary sewer system along 23 Mile Road will be sized to accommodate the ultimate flow from the north end of the Township.

The Macomb County Office of Public Works published new engineering standards on August 1, 2008. These standards are intended to address the new permit requirements of Phase II of the National Pollution Discharge Elimination System (NPDES). The Township has recently applied for this new permit and has agreed to adopt the new storm water discharge standards of the County. Our office is in the process of updating the Township's engineering standards to meet these new discharge requirements. From the Planning Commission's standpoint, these new standards may result in developer's changing site design to accommodate sedimentation basins, vegetative buffer zones along open water courses, bio-swales, wet detention basins, etc. These new requirements are in addition to traditional requirements for storm water management such as detention and erosion control.

Similar to Section 9 (Macomb Town Center), the Township should consider adopting unique development standards for the low density residential areas planned for Sections 2, 3, 10 & 11. The Township may desire to have a softer development character in these areas versus the standard residential (R-1) areas with wide concrete road sections, curbs and enclosed storm sewer. Items such as open ditches and swales for drainage, clustering to promote green space, etc. can also help offset the reduction in density in this area.

BRIEF HISTORY OF MACOMB TOWNSHIP

Macomb Township was officially established on March 7, 1834, but there had been settlers six years before. Flat and fertile Macomb Township land is watered by the Middle and North branches of the Clinton River. This good farm land attracted German farmers. Even now, Macomb Township retains its German influence.

Among the first settlers in Macomb Township were Daniel Kniffen, Calvin Davis, Daniel Miller and Lester Giddings. In 1827, the Kniffens' acquired land on the Middle branch of the Clinton River at what became Macomb Corners. They built a home and settled there by 1828.

Macomb Township is now losing its rural image as evidenced by an increase in population of 50,478 as of the census of 2000 and 75,018 as of the 2008 estimate.

Gratiot Avenue Corridor Improvement Plan

prepared for



Southeast Michigan Council of Governments (SEMCOG)

in conjunction with



**Michigan Department of Transportation
Macomb County Planning & Economic Development
Road Commission of Macomb County**

prepared by



LSL Planning, Inc.
Community Planning Consultants



Gratiot Avenue

Corridor Improvement Plan

The vision for access management along the Gratiot Avenue corridor is to restore and preserve road capacity, improve safety conditions, and support the long-term vision for expanded regional transit, non-motorized systems and community sustainability.

Spanning 26 miles in Macomb County, the Gratiot Ave corridor is flush with opportunities to improve safety along this key artery by retrofitting the existing access, redesign of key intersections and improving the interaction between motorists, non-motorized users, and transit users. Together, the communities, county agencies, Southeast Michigan Council of Governments (SEMCOG) and the Michigan Department of Transportation (MDOT) all acknowledge the need for a coordinated approach to promote efficient and safe travel and livable streets along a vibrant Gratiot business corridor.

Access management is a key tool to improve transportation conditions and safety for all users. The Gratiot Ave. Corridor Improvement Plan, which focuses on access management, includes guidelines, regulations, and site-specific recommendations to achieve this vision.

Gratiot experiences periodic

congestion along several segments and there are locations with a relatively high number of crashes. Some of the crashes and congestion along Gratiot are due to conflicts created where vehicles are entering or exiting access points, disruptions to the flow of traffic and pedestrians traveling along the street.

Those conflicts, and thus the potential for crashes and congestion, can be reduced through standards on the number, placement, and design of access points (intersecting streets, median crossovers and commercial driveways).

Implementation will be a coordinated effort between the Michigan Department of Transportation, the Road Commission of Macomb County, Macomb County Planning, SEMCOG and the nine communities involved in this process, as development proposals, road projects, transit enhancements and other opportunities arise.

Components of the Gratiot Avenue Corridor Improvement Plan

1. An **access management plan** with guidelines and site-specific recommendations.
2. Accompanying guidelines for coordinating improved transit, non-motorized and **community sustainability**.
3. **Zoning ordinance amendments** for corridor communities to adopt and apply for consistent standards.
4. **Consistent protocol** for inter-agency communication, coordination and to seek funding.

What is access management?

Access management involves maximizing the existing street capacity and reducing potential for crashes through limiting the number of access points, carefully placing and spacing access points (commercial driveways and median crossovers), and other enhancements.

Who benefits?

Extensive national and state data demonstrates a number of benefits experienced along corridors with access management. A wide range of people benefit, including:

- Motorists
- Customers
- Residents, visitors, and employees
- Business owners and operators
- Property owners
- Pedestrians and transit users

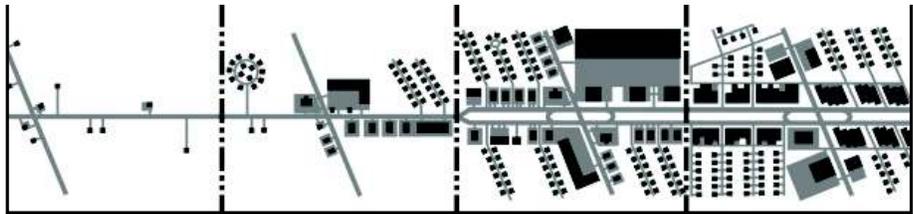
Photo simulation: Example Recommendation



Access Management

Principles

- Design for efficient access.
- Separate the conflict areas.
- Remove turning vehicles or queues from the through lanes.
- Limit the types of conflicts.
- Provide reasonable access.



	Rural	Suburban Fringe / Exurban	Established Suburban	Compact Urban
Land Use Character	Single family, agricultural, commercial nodes	Residential subdivisions, commercial strips	Residential subs/plats, redevelop commercial strips with infill TOD	Residential plats, urban commercial, compact mixed-use
Street	2 lanes, center turn lane select locations	2 or 3 to 5 lanes, center turn lane	5 or 6 to 8 lane blvd, some on-street pkg.	6 or 8 lane blvd with on-street parking
Access	1-1/2 Mile signals, 455' drive spacing w/ service drives	455' drive spacing, retro-fit to eliminate some access near signals	Infill access, retro-fit and new cross-access, esp. signals & poor offsets	Retro-fit to reduce number drives, 1-sided signals
Non-Motorized	Pathways	Add sidewalks	Connect gaps, esp. near transit stops	Widen sidewalks, add pedestrian signals
Transit	Demand response	Park and ride	Frequent bus, potential BRT or express bus, TOD redevelopment	Frequent bus, potential BRT/LRT

Benefits

- Contributes to more liveable, vibrant communities.
- Reduces crash potential.
- Preserves or restores capacity.
- Sustains more vibrant business districts.
- Maximizes taxpayer investment in road construction.
- Maintains or improves traffic flow.
- Supports community goals along corridor: non-motorized, transit, low-impact development & others.

Access Management can apply to communities in any stage of development.

Access Management Techniques

Access Placement

- Require space between driveways & road intersections
- Ensure new driveways are directly aligned with or properly offset from driveways across the street
- Consolidate closely spaced drives

Access Design

- Promote cross access between parking areas and to service drives
- Restrict turning movements (e.g. right-in/right-out only, etc.)
- Require proper driveway radius & ample throat depth

Intersections, Crosswalks & Signals

- Use advanced pedestrian signals
- Ensure non-motorized connectivity near transit stops and crosswalks
- Design intersections with 'bump-outs' & pedestrian refuge islands
- Include pavement markings & texture

Roadway Design

- Improve intersection design
- Provide proper median crossovers
- Encourage shared cross-access to signalized drives or cross streets
- Include service/frontage roads & rear access roads/alleys

Project Process | Public Input and Awareness

- Project Steering Committee including community, county, SEMCOG & state representatives.
- 5 public workshops for public education & input (3/30 - 3/31/09 & 7/23/09).
- Project brochures to help summarize the Plan.
- Project web site to provide project information.
- Community presentations and public hearings for master plan and zoning ordinance amendments.

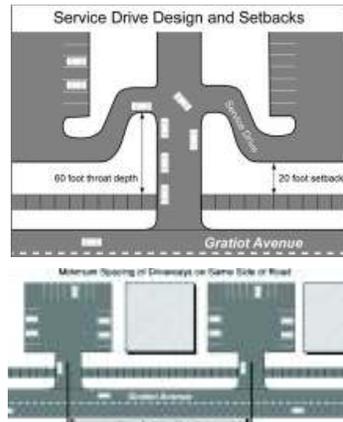
To synchronize the large number of communities and transportation agencies involved, a Technical Group consisting of the contributing agencies of MDOT, SEMCOG and Macomb County was established to oversee the administration of the plan. This group acted as the technical review and coordinating group, and facilitated communication with the steering committee, local communities and public.



Recommendations

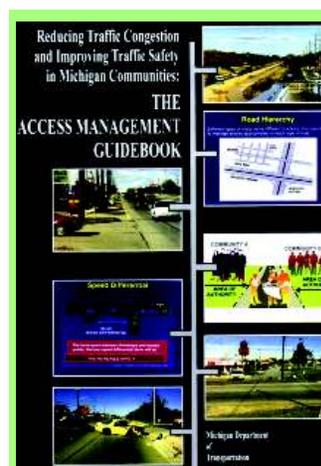
Access management can be accomplished through a variety of techniques, both physical and regulatory. To account for the physical conditions in place and provide a guide for decisions in the future that may not have been contemplated, the plan includes a wide range of recommendations, from guidelines for driveway spacing and design to site-specific recommendations for future access or retro-fit closures.

Extensive field work, expert access management staff, an involved technical and steering committees, community outreach and public workshops all played a role in creation of the guidelines and site-specific recommendations in the plan.



Example standards from the plan and ordinance amendments.

As new development and redevelopment occurs, the site plan review process and MDOT/County access permit process have common footing with this plan as they re-review the conditions on a particular site



MDOT's Access Management Guidebook serves as the basis for the structure and recommendations in this plan.

Decades of research and comprehensive standards represent best practices from access management across the country. This program provides flexible, balanced solutions where textbook conflicts with reality.

before deciding what, if any, revisions to the number, spacing, or location of driveways or the design of the parking or site circulation should be changed to meet the intent of the plan and ordinance.

How Quickly Will Changes Occur?

Site plan review through each community will provide the most opportunity for implementation; the amount and speed of private investment requiring site plans often dictates if and when changes occur. Other corridors with similar projects in place have seen a steady pace, generally 20-30% implemented within 10 years. More on implementation on page 4.



Site-Specific Recommendations: Retrofit vs. New Development

"Retro-fit" recommendations refer to developed sites, where spacing standards of 300+ feet are infeasible (usually due to narrow lot width). When reviewing the access configuration for retro-fit, several factors come into play that form a hierarchy of conditions and opportunities to look for when considering changes:

- Driveways close to signalized intersections.
- Sites with more than one driveway.
- Corner sites that could access an adjacent side street or service drive.
- Adjacent parking areas that could be connected to eliminate excess drives and/or provide options for customers to cross between sites.
- Area layout that could provide room for front or rear service drives to provide access to multiple businesses via one drive.



Large vacant or redevelopment parcels provide opportunity to plan for properly spaced and design access when **new development** occurs. Although the plan provides guidelines for spacing, the project team examined conditions on and adjacent to these site to develop specific locations for future access points and conceptual alternatives for service drives and connections. Considerations for site-specific recommendations for new development include:

- Location of driveways on the opposite side of the street (to line up future driveways).
- Design of median crossovers, where applicable.
- Site topography and natural features for access and service drive location.
- Location and design of current or planned signalized intersection(s).
- Zoning/planned use of sites.



Implementation



Getting Started: Set Up CAMP!

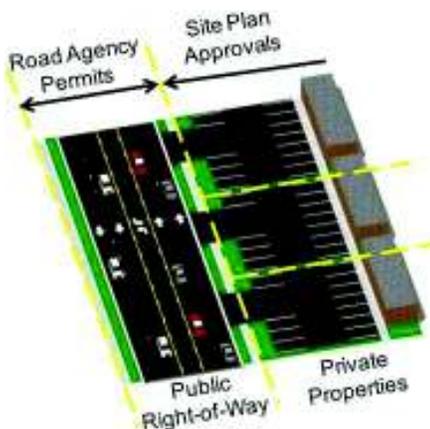
No matter the level of development, Access Management can improve future safety and travel operations on Gratiot Avenue. Doing so is as simple as setting up a CAMP to implement plan recommendations and techniques:

- C**ommunity: Recommendations tailored to the character and conditions in your community.
- A**ccess: Access points and driveways can contribute to congestion and decline in safety; safe access supports vibrant business.
- M**anagement: Managing the number, placement and design of access points results in a safer road, better traffic flow and an improved business environment.
- P**rogram: Planning for development/redevelopment positions communities to implement access management strategies as opportunities arise - pilot projects get the ball rolling more quickly!

Implementation Opportunities

Over time, opportunities for implementation by the local community, MDOT and the MCRC include:

- New development site.
- A change in use or expansion on an existing site.
- Any project that requires a site plan review.
- Road reconstruction or resurfacing.
- Streetscape enhancement projects.
- Pilot or demonstration projects using special funding.
- Use of a local funding source, like a DDA, to cover some or all of the expense associated with closing or consolidating driveways.



Community and Agency Role

Improving access is accomplished through dedication to access management and gradual but persistent implementation of the plan's recommendations. Responsibility to ensure proper access design falls on the shoulders of both the regulating road agency (MDOT and RCMC) and each community. The following actions support continued vigilance in implementing this plan:

- Community - apply to Site Plan Review
- Road agency (MDOT or RCMC) - apply to an Access Permit
- Together - coordinated pursuit of funding opportunities for implementation
- Other agencies (SMART, SEMCOG, RTCC) - apply during planning, design, and policy decisions along the corridor

Want More Information?

Visit the project web site: www.accessgratiot.info, contact your community, or contact:

[Introduction]

This corridor improvement plan and associated zoning ordinance provisions are **intended to improve safety and traffic operations** along the Gratiot Avenue corridor in Macomb County. Gratiot experiences periodic congestion along several segments and there are locations with a relatively high number of crashes. Some of the crashes and congestion along Gratiot are due to conflicts created where vehicles are entering or exiting access points, disruptions to the flow of traffic and pedestrians traveling along the street. Those conflicts, and thus the potential for crashes and congestion, can be reduced through standards on the number, placement, and design of access points (intersecting streets, median crossovers and commercial driveways).

Along developed segments, **access management will be implemented over time as opportunities arise or redevelopment occurs**; along less developed segments modern spacing standards will be applied as new development is proposed. Implementation will be a coordinated effort between the Michigan Department of Transportation, the Road Commission of Macomb County, and the nine communities involved in this process.

While access management benefits are most obvious to motorists, there are many beneficiaries. Several communities along the corridor have policies to make walking and biking more convenient. Multiple regional

Purpose and Primary Goal

This corridor improvement plan will help address questions like:

- *How can access be designed to improve safety and traffic flow while still providing reasonable access to adjacent land uses?*
- *What are the benefits of access management?*
- *What access-related improvements should be made?*
- *When and how are access improvements made? And by whom?*
- *How can we reduce the impact of redevelopment?*
- *How can access management make the corridor more convenient for those walking, biking and riding transit?*

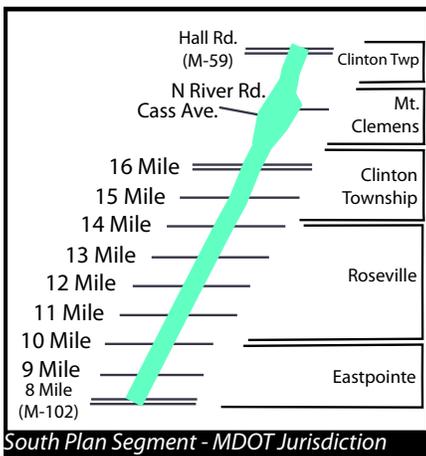
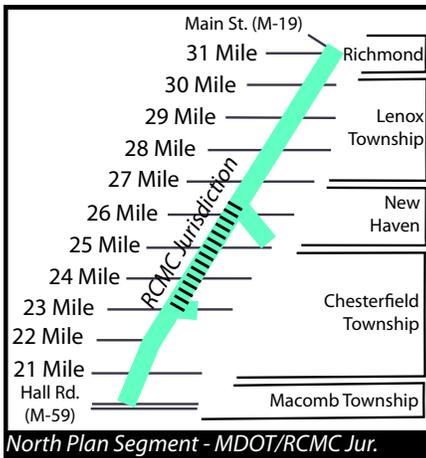


For the purposes of this plan, a **crash** is an accident reported and recorded by local or state police.

transit agencies envision improved transit opportunities along the corridor in the future. Access management supports those endeavors since fewer conflicts will improve the environment for all modes of transportation.

Businesses, especially those along congested segments, **can also benefit since access to their location can be safer and more convenient for customers.** In addition, in some locations, recommendations may allow “extra” driveways to be replaced with parking. Finally, businesses, motorists and the general public can benefit from long-term payback of “greening” the corridor by using “low impact design,” both as part of improvements within the right-of-way and within redevelopment of properties along Gratiot Ave.

Study Area



The most important aspect of this process is the recognition that effective and timely communication between the cities, townships, county agencies, and MDOT, both now and into the future, is the key to successful implementation.

Gratiot Ave. is one of six major avenues (along with Fort, Michigan, Grand River, Woodward and Jefferson) planned by Judge Augustus Woodward in 1805 that extend outward in a “spoke” pattern from downtown Detroit. Gratiot Ave. was established in 1835 as the prime route leading to Fort Gratiot near Port Huron. Gratiot Ave. was originally designated as M-19, until 1926, when implementation of the U.S. Highway system converted most of the study area to Highway M-3. While designations of the corridor have changed over time, Gratiot Ave. remains a major link between Macomb County and the cities of Detroit and Port Huron.

The study area for this project includes frontage properties along Gratiot Ave. between 8 Mile and County Line Rd., M-3 (23 Mile Rd.) as it turns east from Gratiot Ave. along 23 Mile Rd. to I-94, and M-19 (New Haven Rd.) from Gratiot Ave. east to I-94. Portions of Gratiot Ave are signed M-3 and M-19, which is all under the jurisdiction of the Michigan Department of Transportation. Between 23 Mile Rd. and New Haven Rd. (in between where M-3 and M-19 enter/exit the corridor), the Road Commission of Macomb County has jurisdiction. For the intent of this project, those collective road segments are defined as the “Gratiot Corridor.”

Today, large numbers of residents, students, employees, and business owners live, work, shop, attend class, and visit key destinations along the corridor. Among the key destinations are the Macomb Mall, downtown Mount Clemens (the county seat), and the Selfridge Air National Guard Base. The Gratiot corridor serves as the key transportation corridor for moving significant automobile traffic, commercial goods, and many pedestrians and bicyclists, and transit users.

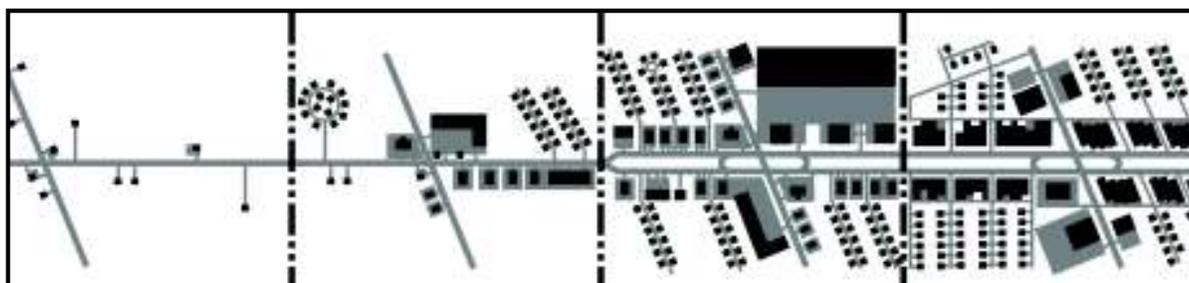
Led by the Southeast Michigan Council of Governments (SEMCOG), the Michigan Department of Transportation (MDOT), and Macomb County, the project steering committee identified opportunities to improve safety along this corridor. This includes retrofitting the existing access systems in developed areas and planning and management of access in undeveloped or growing areas in advance of development. Results will also improve the interaction between motorists, non-motorized and transit users, and will

complement efforts to incorporate “green infrastructure” throughout the plan area.

The cities of Eastpointe, Roseville, Mount Clemens, Richmond; the townships of Clinton, Macomb, Chesterfield, Lenox; the village of New Haven; the Road Commission of Macomb County (RCMC); and the Michigan Department of Transportation (MDOT), all have jurisdiction over or along the corridor either in the right-of-way or outside the right-of-way. All recognize the need for a coordinated approach for efficient and safe travel for motorists, pedestrians, bicyclists, and transit users. In addition, the corridor needs to serve as a catalyst for redevelopment consistent with the intended character. To that end, access management is recognized as a key tool to improve transportation conditions and safety for all users.

Corridor Conditions

Gratiot Ave. is characterized by a mix of urban, suburban and rural environments that are representative of the land use trends existent when each community was developed. The range of urban, suburban and rural development found along the corridor provides the framework upon which the recommendations of this plan were prepared. In recognition of these distinctions, the study area was split into two segments, each with its own separate plan based on the same principles of access management and similar guidelines. The divergent nature of development in these two segments demands different planning and regulatory approaches.



	Rural	Suburban Fringe / Exurban	Established Suburban	Compact Urban
Land Use Character	Single family, agricultural, commercial nodes	Residential subdivisions, commercial strips	Residential subs/plats, redevelop commercial strips with infill TOD	Residential plats, urban commercial, compact mixed-use
Street	2 lanes, center turn lane select locations	2 or 3 to 5 lanes, center turn lane	5 or 6 to 8 lane blvd, some on-street pkg.	6 or 8 lane blvd with on-street parking
Access	1-1/2 Mile signals, 455' drive spacing w/ service drives	455' drive spacing, retro-fit to eliminate some access near signals	Infill access, retro-fit and new cross-access, esp. signals & poor offsets	Retro-fit to reduce number drives, 1-sided signals
Non-Motorized	Pathways	Add sidewalks	Connect gaps, esp. near transit stops	Widen sidewalks, add pedestrian signals
Transit	Demand response	Park and ride	Frequent bus, potential BRT or express bus, TOD redevelopment	Frequent bus, potential BRT/LRT

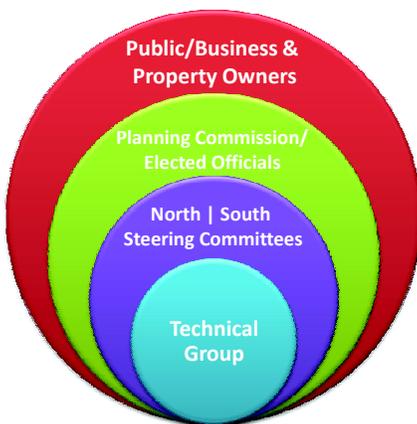
South Gratiot Corridor Improvement Plan Segment

The southern segment of the corridor, including those portions of Gratiot Ave. south of M-59, represents the more developed portion of the corridor. It includes the cities of Eastpointe, Roseville and Mount Clemens, in addition to the highly developed portions of Clinton Township.

North Gratiot Corridor Improvement Plan Segment

Communities north of M-59 are generally not as urban as those located to the south. The townships of Chesterfield, Lenox and Macomb, the village of New Haven and the city of Richmond are included in this portion of the corridor.

Preparation of this Plan



To synchronize the large number of communities and transportation agencies involved, a Technical Group consisting of the contributing agencies of MDOT, SEMCOG and Macomb County was established to oversee the administration of the plan. This group acted as the technical review and coordinating group, and facilitated communication with the local communities and the public.

In addition to the Technical Group, two separate Steering Committees were formed consisting of representatives from each of the nine communities along the corridor. Both Steering Committees met to review the issues, provide suggestions on draft recommendations, and assist in distribution of information to the public, organizations and local officials.

This plan considered future land use plans and other initiatives planned within the local communities and between various committees and agencies along the corridor. Where appropriate, meetings with local communities, planning commissions, and other groups were convened to discuss plan recommendations and draft zoning ordinance amendments.

This plan was developed over 14 months and included a series of meetings with the public and individual local communities and agencies. The public involvement process included two public workshops held at the Lenox Township Hall on March 30, 2009, and the Eastpointe City Hall on March 31, 2009. Those open houses began with presentations on the benefits of improved access management. Drafts of the plan recommendations and concepts for select intersections were displayed in an “open house” setting with Technical Group members available to answer questions. Comments by the public, local officials, and the MDOT staff were considered and many were incorporated into the final recommendations.

Technical Group:

- Michigan Department of Transportation (MDOT)
- Macomb County Planning and Economic Development Department
- Southeast Michigan Council of Governments (SEMCOG)
- Road Commission of Macomb County (RCMC)
- Suburban Mobility Authority for Regional Transportation (SMART)
- Regional Transit Coordinating Council

Steering Committee Members:

North Segment Communities:

- Macomb Township
- Chesterfield Township
- Village of New Haven
- Lenox Township
- City of Richmond

South Segment Communities:

- City of Eastpointe
- City of Roseville
- Clinton Township
- City of Mount Clemens

Methodologies

Access Management

This plan was developed after carrying out a site-by-site review of the corridor that considered access, natural features, site design, land use, planned land use, zoning, and crash data. The MDOT Access Management Guidebook, which includes decades of research and statistics supporting access management from around the country, forms a solid base for formulating draft recommendations for reducing the number of drives and promoting the benefits of access management. The experience of the consultant team coupled with input from the public, Technical Group, Steering Committees, and local boards and commissions was instrumental in creating a corridor improvement plan that serves the needs of the nine local communities.

Crash Analysis and Concepts

Crashes along the corridor were divided into intersection crashes and link crashes. Any crashes within 150 feet of a signalized intersection were considered to be intersection crashes and crash rates at these locations were compared to SEMCOG’s critical intersection crash rates for the southeast Michigan region.

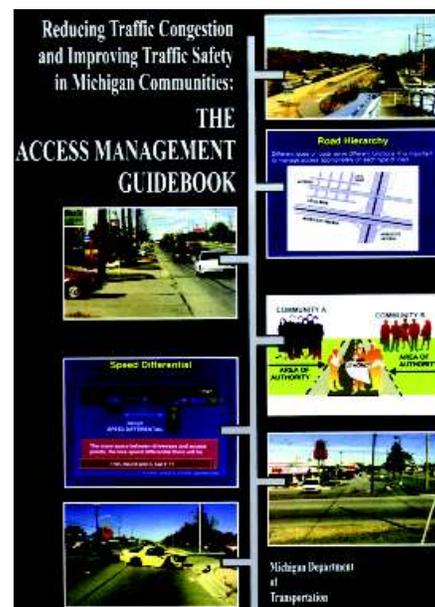
Intersection crash rates were also calculated and compared to the SEMCOG critical crash rates for intersections in the Detroit metropolitan area. Only one intersection, Gratiot Ave. at 11 Mile Rd. exceeded the critical crash rate. Crash types at this intersection are discussed in the Roseville section of the report.

To evaluate the link crashes, Gratiot Ave. was divided into unsignalized segments of no more than ¼ mile in length. Since SEMCOG has not calculated critical crash rates for links, critical crash rates specific to Gratiot Ave. were calculated based on all the crash data for the roadway. Figure 1.1 presents the critical link crash rates, by link Average Daily Traffic (ADT), relative to the rest of the links on Gratiot. It was found that the critical crash rate differed significantly by the amount of vehicles on the roadway, therefore, the critical crash rate is categorized by average daily traffic.

Figure 1.1: Critical Crash Rates for Gratiot Ave. Links

Average Daily Traffic	1 - 20,000	20,001 - 30,000	30,001+
Number of Links	88	94	58
Number of Crashes	499	876	559
Average Crash Frequency	5.67	9.13	9.64
Critical Crash Frequency	8.00	11.69	11.78
Critical Crash Rate	3.19	3.45	2.42

The crash rate and frequency calculated for each link was then compared to the critical crash rate and frequency calculated for the corridor. Critical



This plan is based on the research and standards in the MDOT Access Management Guidebook. This project builds on Guidebook standards and provides balanced solutions where textbook conflicts with reality.

Critical Crash Rate is a threshold established by SEMCOG based on crash rates (number of crashes compared to amount of traffic) at intersections across the region. Along the Gratiot Ave. Corridor, only the intersection of I-696/11 Mile Rd. and Gratiot had a critical crash rate.

Average Daily Traffic (ADT) is the number of vehicles that traverse a segment of roadway over a typical 24-hour period.

links were thus identified and crash types along these links were evaluated to see if there were any access management related patterns to the crashes. Again, SEMCOG does not calculate critical crash type percentages for links as they do for intersections. Therefore, critical crash type percentages were calculated for boulevard and two-way links by average daily traffic. Figure 1.2 presents these critical percentages.

The crash rate, number of crashes, and crash type percentages are presented for each community in separate chapters. Where applicable, discussion of possible causes for these crash patterns and mitigation suggestions are provided.

Figure 1.2: Critical Crash Percentages for Gratiot Avenue Links

ADT Range	Number of Links	Crash Type						Total
		Single Vehicle	Head-On+ Sideswipe Opposite	Angle + Head-on Left	Rear-end	Sideswipe Same	Uncoded + Other	
Two-Way								
1-20,000	46	45 / 26%	7 / 4%	34 / 20%	61 / 36%	9 / 5%	15 / 9%	171
20,001+	35	38 / 8%	18 / 4%	231 / 47%	145 / 29%	50 / 10%	9 / 2%	491
Boulevard								
1-20,000	42	34 / 10%	0 / 0%	108 / 33%	84 / 26%	85 / 26%	18 / 5%	329
20,001-30,000	75	65 / 11%	2 / 0.3%	117 / 20%	252 / 43%	134 / 22.7%	17 / 3%	587
30,001+	42	34 / 10%	2 / 1%	78 / 23%	148 / 44%	67 / 20%	7 / 2%	336

/ #% = Number of Crashes / Percentages of Crashes

Intersection Evaluation

In discussion with local municipalities, a number of intersections along the corridor were suggested for further study. At these locations, field visits were performed, and existing conditions were modeled in Synchro/ SimTraffic, a microsimulation software package. Depending on the issues raised, signal timings and geometric conditions were modified to improve operations, safety, or both under existing traffic conditions. Future traffic volumes were obtained from the SEMCOG model for the year 2030. The proposed alternatives were then evaluated under these future traffic volumes.

Non-motorized and Transit

To allow a comprehensive evaluation of transportation, existing transit and continuity and major gaps in non-motorized facilities were identified along the corridor.

Most of the Gratiot corridor is served by public transportation, including SMART (Suburban Mobility Authority for Regional Transportation) that offers bus routes throughout Macomb County.

In addition to existing bus transit, the Regional Transit Coordinating Council (RTCC) has designated the corridor for arterial rapid transit with

plans to introduce bus rapid transit and more intense transit (based on ridership) in the future. This plan considered several aspects of access and transit facilities in the recommendations including:

- Promote dense land use and design.
- Reduce/eliminate conflict points around stations.
- Fully connect sidewalks and paths within 1/4 mile of stations.
- Provide safe crossings to and from stations.

Green Infrastructure

Stormwater management has historically been addressed from an engineering standpoint, to manage the quantity of runoff and prevent flooding, but the quality of stormwater runoff can also be managed by applying green infrastructure techniques. From a stormwater management perspective, green infrastructure, also referred to as low impact development (LID), is the application of techniques that emulates the natural water cycle. LID uses a basic principle modeled after nature: manage rainfall by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Instead of conveying and managing/treating stormwater in large, costly, end-of-pipe facilities often located in drainage areas, LID addresses stormwater through smaller, more cost-effective landscape features.

This plan provides a policy framework rather than site-specific recommendations for both LID planning and engineering techniques. These techniques should be considered as part of the menu of other potential improvements when there is a change to a site plan or a proposed new development to determine if there are ways to better address stormwater runoff.

What is Green Infrastructure?

From a stormwater management perspective, green infrastructure is an alternative stormwater system that incorporates low impact development (LID) applications intended to emulate the natural water cycle and manage rainfall by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source.

Successful implementation of the plan's recommendations will require continued coordination between the local communities, county transit agencies, MDOT, and local quasi-public organizations like the various downtown development authorities (DDAs). Therefore this access management program fosters a collaborative approach so all the various groups are working together to achieve the same plan.

This access management program includes not only amending community master plans to include this plan but also adoption of zoning ordinance amendments by each community to provide consistent regulations. Custom-tailoring of specific details, such as triggers for implementation for a change in use, expansion or redevelopment, were based on input and discussion with officials from each community and MDOT staff. Both the plan and ordinances provide some flexibility to respond to new information and conditions in the future.

A model flow chart illustrating coordination and the review process between each local community and agencies for project applications is

Plan Implementation

Implementation Opportunities

- Any project that requires a site plan review.
- Road reconstruction (including resurfacing in some cases).
- Road expansion or reconfiguration.
- New development or redevelopment of a site.
- Streetscape enhancement projects.
- Provision of new or expanded transit service.
- Establishment of a local or county funding source to cover some or all of the expense associated with closing or consolidating driveways.

included at the end of *Chapter 4: Implementation*. The plan and standards in the ordinances will be endorsed and used by MDOT, SEMCOG and RCMC, to guide development and road improvements along the corridor.

[Access Management] Guidelines

Numerous studies in Michigan and nationwide have shown that a proliferation of driveways or an uncontrolled driveway environment can increase the number and severity of crashes, reduce capacity of the street, and create a need for more costly improvements in the future. Areas where access management plans have been adopted and implemented by the communities and road agencies have resulted in 25-50 percent reductions in access-related crashes (*Access Management Manual*, Transportation Research Board).

Access management techniques are used to improve transportation operations and increase safety along road corridors for all types of transportation while maintaining reasonable access to properties. It involves maximizing the existing street capacity and improving the corridor for transit riders, bicyclists, and pedestrians by reducing and limiting the number of access points, careful placing and spacing of access points (commercial driveways), and provision of non-motorized facilities where missing.

In the State of Michigan, access management has been in practice for over two decades. In 1999, MDOT commissioned a task force to research, discuss, and organize best practices on access management, and officially adopted a statewide guide, known as The Access Management Guidebook, in 2001. That document and its foundation in significant

What is Access Management?

Access management involves maximizing the existing street capacity and improving the corridor for transit, bicyclists, and pedestrians by reducing or limiting the number of access points, carefully placing and spacing access points (commercial driveways), and other enhancements.

national research and statistics form the basis for this plan's standards and recommendations.

Access management is not new in Macomb County either. The RCMC has been successfully applying access management to both residential and commercial development throughout the county for several years, and many of the local communities along Gratiot have adopted access management standards for all or portions of their community.

Benefits of Access Management

The terms "access" and "access point" are used frequently throughout this document; these terms refer to commercial driveways (e.g. retail, office, industrial, etc.) and platted roadways or private roads but generally do not refer to driveways for individual single family homes.

Access management is achieved by:

- **Reducing the overall number of access points**
- **Optimizing the location of bus stops**
- **Connecting key gaps in non-motorized facilities**
- **Properly spacing access points**
- **Applying geometric design**
- **Increasing shared access systems**

By considering the relationship between access points along a roadway, motorists, non-motorized users, transit riders, communities, residents and businesses along the corridor all stand to benefit. National experience and case studies of other corridors have shown that access management can:

- Reduce crash potential by regulating the placement, spacing, and design of future access points and by redesigning existing ones as opportunities arise.
- Maintain or increase travel efficiency by reducing or eliminating access points that unnecessarily slow traffic and create additional emissions.
- Provide landowners with reasonable access to their property, though in some cases the number of access points may be fewer or more indirect than those that currently exist.
- Boost local property values and increase the vitality of adjacent businesses by reducing congestion and improving business visibility.
- Improve air quality by reducing the need to brake and accelerate, eliminating unnecessary vehicle idling, and promoting alternative travel options.
- Enhance access to and from businesses, both in terms of safety and convenience.
- Lessen the need for costly road widening or other major improvements by maximizing the efficiency and volume of traffic.

Benefits of this Planning Effort

While application of access management can provide the above benefits, merits of the planning process are often overlooked. Bringing communities together into a joint planning effort increases opportunities for information sharing and cross-education. It is also helpful in educating the public, especially those directly impacted by the plan's recommendations. This planning effort can help to:

- Provide information on the benefits of access management and the

various implementation techniques to assist local and county officials in their planning efforts.

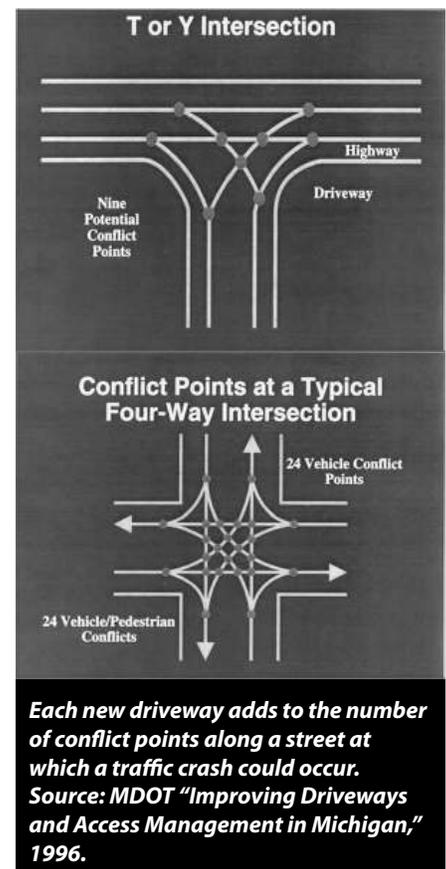
- Promote continued coordination and communication between the MDOT, RCMC, local governments, the public, and transit providers during the development review process.
- Inform property owners, business operators, potential developers, and the general public about access management, its benefits, the rationale for recommendations, and how it is applied over time.
- Increase the timeliness of development reviews through advance planning, clear and consistent protocol and early coordination with local communities and business owners.
- Educate communities and property owners about green infrastructure techniques, benefits and implementation, which if applied will support other corridor goals to improve safety, aesthetics, and enhance pedestrian, non-motorized and transit environments.

To achieve prescribed benefits, access guidelines must recognize the following principles:

- Design for efficient access. Identify driveway design criteria that promote safe and efficient ingress and egress at driveways, while considering the interaction with pedestrians and bicyclists.
- Separate the conflict areas. Reduce the number of driveways, increase the spacing between driveways and between driveways and intersections, and reduce the number of poorly aligned driveways.
- Remove turning vehicles or queues from the through lanes. Reduce both the frequency and severity of conflicts by providing separate paths and storage areas for turning vehicles and queues.
- Limit the types of conflicts. Reduce the frequency of conflicts or reduce the area of conflict at some or all driveways by limiting or preventing certain kinds of maneuvers.
- Provide reasonable access. Recognize that property owners have an inherent right to access public roadways, although reasonable access may be indirect in some instances.

Optimum driveway spacing simplifies driving by reducing the amount of information to which a driver must react. Adequate spacing between driveways and unsignalized roadways (or other driveways) can reduce confusion that otherwise requires drivers to watch for ingress and egress traffic at several points simultaneously while controlling their vehicle and monitoring other traffic ahead and behind them. Reducing the amount of information related to selecting an access point and avoiding conflicting turns and traffic provides greater opportunity to see and safely react to

Access Management Principles

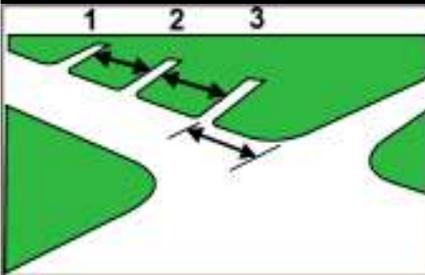


automobiles in the street and pedestrians and bicyclists on pathways and sidewalks.

The following section discusses the key access design guidelines that were used during the analysis of the Gratiot Avenue Corridor Improvement Plan. The specific ways in which these criteria or standards have been applied to particular communities and sites along the corridor is outlined in the following chapters.

Tools and Techniques

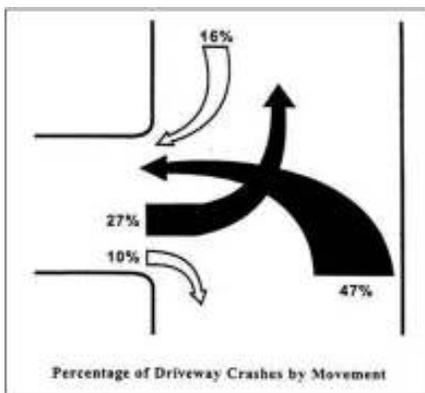
Increasing spacing between adjacent driveways and cross streets can reduce congestion and crash potential, especially near signalized intersections.



Minimum Driveway Spacing

Posted (MPH)	Min. Spacing
25	130 feet
30	185 feet
35	245 feet
40	300 feet
45	350 feet
50+	455 feet

Source: MDOT Access Management Guidebook, 2001.



Above: data from the National Highway Institute indicates that most driveway crashes involve left-turn movements

Access management can be accomplished through a variety of techniques, both physical and regulatory. Specific recommendations that consider existing access points along Gratiot and potential new ones are illustrated on a series of drawings contained within the chapter for each community. Recommendations and regulations are based on the following techniques.

- **Driveway Spacing from Other Driveways:** Driveways need to provide adequate spacing from other driveways to ensure that turning movement conflicts are minimized. Generally, the higher the posted speed limit, the greater the driveway spacing needed.

Spacing standards recommended for this corridor are based upon MDOT guidelines for minimum distances between driveways, centerline to centerline (shown in the table to the left). The posted speed limits in spring 2009 for the corridor are illustrated on the recommendations maps.

- **Limit Number of Access Points:** The number of access points to a development should be limited to one where possible. Every effort should be made to limit the number of driveways; and encourage access off side streets, service drives, frontage roads, shared parking areas, and shared driveways. Certain developments generate enough traffic to consider allowing more than one driveway and larger parcels with frontages that are wide enough to meet spacing standards may also warrant an additional driveway.
- **Driveway Spacing from Intersections:** Driveways need to be spaced far enough from intersections to ensure that traffic entering or exiting a driveway does not conflict with intersection traffic. Typical standards take into account the type of roadways involved, type of intersection control, and type of access requested.

For state trunkline roadways such as this corridor that have speed limits of 30 to 40+ miles an hour, full movement driveways should typically be at least 230 feet away from a signalized intersection (460 feet in 40 mph zones) and 115 to 230 feet away from unsignalized intersections.

- **Design of Access Points:** The geometric design of access points, including the width, throat, radius, and pavement type, should meet current standards wherever possible to promote smooth transition to

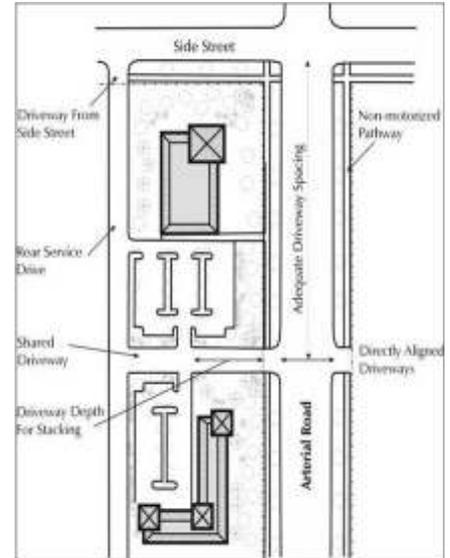
and from Gratiot at driveways.

- **Shared Driveways and Cross-Access:** Sharing or joint use of a driveway by two or more property owners should be encouraged. This will require a written easement from all affected property owners before or during the site plan approval process. Where future shared access is desired, the developer should construct a 'stub' drive up to the property line (with access easement) or initiate a floating cross-easement that will be reciprocated by adjacent development in the future to facilitate an easy connection when opportunities arise on adjacent property.
- **Promote Service Drives:** Frontage drives, rear service drives, and shared driveways should be used to minimize the number of driveways, while preserving the property owner's right to reasonable access. Such facilities provide customers with access to multiple shopping/commercial sites without re-entering the main roadway. In areas within one-quarter mile of existing or future signal locations, access to individual properties should be provided via these alternative access methods first, rather than by direct connection to a major arterial.

In areas where service drives are proposed or recommended, but adjacent properties have not yet developed, the site should be designed to accommodate a future service drive, with access easements provided. The local municipalities / MDOT / RCMC may temporarily grant individual properties a direct connection to Gratiot Ave. until the frontage road or service drive is constructed. The direct access point to the main roadway should be closed when the frontage road or service drive is constructed. In any case, care should be taken to minimize any negative traffic impacts of service drive connections to residential side streets.

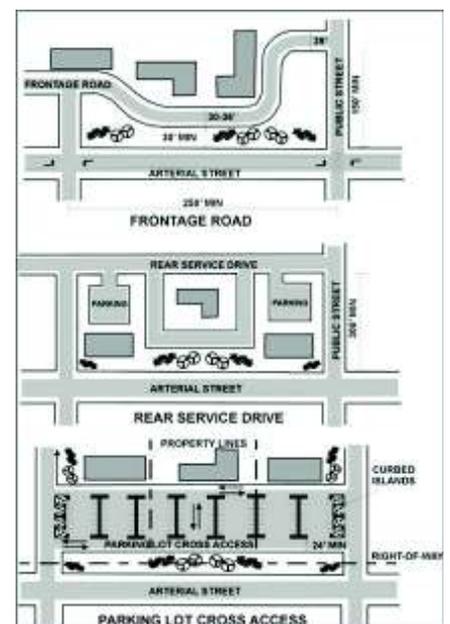
A critical design element of service drives, especially frontage roads, is the amount of space between the through traffic lane and the service drive (also known as throat depth or storage space). For shared access drives providing access to two small commercial uses, the throat/storage depth should be at least 40 feet. For drives providing access to more than two small commercial uses, the throat/storage depth should be at least 60-100 feet (potentially more depending on the trip generation of the land uses served).

Rear service drives are often preferred over frontage drives because they do not create issues with driveway depth and facilitate placing parking to the rear of buildings and moving the buildings closer to the road. Additionally, rear service drives have the potential for integrated access and circulation with other development further to the rear of deeper development areas, such as office or residential areas. Several areas along the Gratiot Ave. corridor have many contiguous deep lots where most development area is on the front 200' of the lot. This arrangement may facilitate the development of a rear service



Above: rear service drives and shared driveways are important techniques to reduce the number of access points, especially near cross streets.

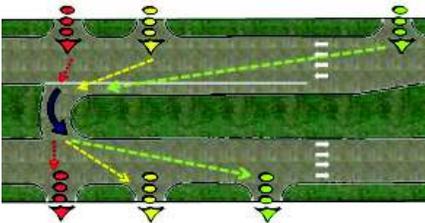
Below: the success of different types of shared drives, roads, and parking connections are dependent on lot depth, building placement, and parking configuration.



drive, alley, or future public road to provide rear access to businesses fronting Gratiot Ave. and direct access to land areas beyond the new drive.

Service drives are usually constructed and maintained by the property owner or an association of adjacent owners. The service drive itself should be constructed to public roadway standards in regard to cross section (ie. 22-30 feet wide), materials, design, and alignment. Parking along service drives is discouraged, as it can interfere with internal circulation and access to the arterial. In some cases where space or existing conditions warrant, all or portions of a service drive may consist of connected parking drive aisles across multiple properties.

- **Driveway Alignment and Offsets Relative to Other Driveways:** On corridor segments or cross streets without a center median, driveways should be aligned with those across the street or offset a sufficient distance to prevent left turn turning movement conflicts. Minimum offsets on the corridor should be determined by posted speeds and range from 325 feet for a 30-mile per hour zone to 750 feet in a 55-mile per hour zone.



Driveways located too close to median crossovers cause weaving that can increase congestion and crashes.

- **Median Crossover Spacing and Alignment:** Generally, 75% of all crashes related to access are associated with left turns in or out of a site. Where medians exist, driveways are functionally right-in/right-out only, which reduces the potential for crashes. Thus, the most important dimensions focus on spacing from signalized intersections and from median crossovers. For those segments on the corridor that have a center median (or may in the future), driveways should be sufficiently spaced from median crossovers to reduce the need for vehicle weaving over a short distance between an access point and median crossovers, or vice versa. The standard MDOT offset distance is determined by posted speeds and ranges from 525 feet for a 40-mile per hour zone to 750 feet in a 50+ mile per hour zone. That preferred distance is not likely to be practical along Gratiot Ave.; therefore, access decisions for development within 500 feet of a crossover should involve the road agency and community so access is located as far from the crossover as practical. Agencies should collaborate on site design review near crossovers to determine what solution presents the best opportunity to reduce crash potential.

Advantages of Center Medians

- *Reduced delay and better progression for through traffic on the major arterial.*
- *Increased capacity at the main intersection.*
- *Fewer stops for through traffic.*
- *Reduced risk to crossing pedestrians.*
- *Fewer and more separated conflict points.*
- *Two-phase signal control allows shorter cycle lengths, thereby permitting more flexibility in traffic signal progression.*

Source: U.S. Federal Highway Administration

- **New Median Design Concept:** Center medians have been shown to improve traffic movement and reduce crash potential on high volume corridors by eliminating left turns into individual properties, all benefits experienced in the south segment of the corridor and elsewhere in southeast Michigan. Wide center medians with directional crossovers (indirect left turns) are currently located in Eastpointe, Roseville and the south part of Clinton Township. This wide median includes a “Michigan Left” that allows most vehicles to complete a U-turn fairly easily. As more intense development in the north portions of the corridor leads to increased traffic volumes

along Gratiot, the construction of medians may become a desirable option. In certain portions of the corridor, some types of median will likely not be feasible due to existing right-of-way widths and existing access patterns. In some cases, a more narrow median with direct left turns could be considered where right-of-way is limited, speeds are moderate, and left turns by larger vehicles can be accommodated.

- **Internal Sidewalk Connections to Public System:** Sites should be designed to include internal sidewalks or pathways that are clearly marked and located at a prominent location to encourage use, but clearly separated or otherwise protected from driveway and internal circulation lanes. This is especially important for segments of the corridor that have higher densities of residential nearby or where senior oriented residential developments are located that generally have a higher amount of sidewalk traffic to and from businesses.

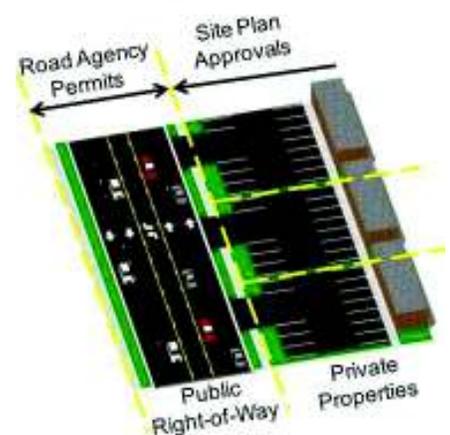
Other Access Standards

Implementation of the above access guidelines will help to maximize the utility of the right-of-way, preserve capacity, increase safety for all modes, and increase the useful life of the plan corridor. In addition to location and number, the geometric design of access points is also important to the overall operation of a corridor.

Achieving improved access is accomplished through dedication to access management and persistent implementation of this plan's recommendations. Once the plan is complete, the responsibility to ensure proper access design falls on the shoulders of both the regulating road agency and each local community. It is imperative that local officials understand the basis for, benefits of and procedural demands of access management. Equally important is coordination between these agencies and communities to ensure everyone's needs are considered. The following actions support continued vigilance in implementing this plan:

- Adopt the plan into the master plan.
- Adopt appropriate ordinance amendments.
- In advance of development, consider those places where pre-planning of service drives or secondary side streets can help with access.
- Continue coordination with other corridor communities and road and transit agencies.
- Regularly meet to review and, if necessary, update the plan as conditions change.

Local Support and Planning Considerations



Due to the complex relationship between public jurisdiction in and adjacent to the right-of-way, coordination between local communities and the road agency (and transit providers, where applicable) is key to coordinated decisions on access design.

[Non-Motorized and Transit] Guidelines

The focus of this Corridor Improvement Plan is to address access-related issues along the Gratiot Ave. corridor. However, as access is improved over time, communities should also consider other ways to enhance the corridor. These can include ways to make Gratiot Ave. more walkable and convenient for transit users. Redevelopment within sites and reconstruction within the road right-of-way also provides opportunities to apply “green infrastructure” techniques to reduce the impact of stormwater runoff. These improvement concepts are described in this chapter.

Many of the more urban communities along the Gratiot Ave. corridor are served by sidewalks, bike paths and transit service. The cities of Eastpointe, Roseville, Mount Clemens and Richmond have generally continuous sidewalk systems along both sides of Gratiot Ave. Communities with larger areas of undeveloped land (mostly in the northern segments) have sidewalks along frontage of some, often more recent, developments, but have many gaps that can make navigating the corridor difficult. As development along the corridor continues and transit service is planned to expand, the importance of a connected non-motorized system increases.

As properties along the Gratiot corridor continue to develop and redevelop, and as regional transit options are considered, investment should be balanced to ensure non-motorized infrastructure is in place, complemented by green infrastructure where feasible, to connect transit and community destinations with businesses and homes. The following sections outline site and access design considerations to support safe

access for non-motorized and transit facilities, and explains how use of green infrastructure and low impact development (LID) concepts can enhance them.

The amount of non-motorized and transit use will depend on the local context and design of local facilities. Providing pedestrian-friendly streets is critical to encouraging use of other options because they prioritize the pedestrian and bicyclist and improve the comfort level of users. For instance, residents of the northern segments are less likely to ride their bikes along Gratiot since there are no existing sidewalks or pathways. Other areas in the southern segment have sidewalks in need of repair, or transit stops in need of additional amenities. This plan seeks to improve the existing non-motorized systems in the southern segment and augment the system in the northern segment, all while encouraging improvements that will interface with regional transit plans and benefit future transit riders. The following sections summarize access design considerations and local initiatives toward enhancing transit and non-motorized activity and improving the natural environment and suggest additional tools and policies that local communities can implement to support them.

Regional Trail Systems

The planned Stony Creek to Metro Beach Trail extends southeast from the Stony Creek Metropark in Shelby Township to the Metro Beach Metropark in Harrison Township. While several gaps still exist, the oldest portion crosses Gratiot Ave. connecting 16 Mile Rd. to Metro Beach. Local communities should pursue connections to destinations along Gratiot Ave. near the Trail, even as far north as Mt. Clemens or Macomb Mall to the south.

Macomb County recently developed the Macomb Orchard Trail, which connects Shelby Township northeast through Washington, Bruce and Armada Townships, through the Village of Armada, then southeast through Richmond Township and terminates in the City of Richmond. The path terminates just west of Gratiot Ave., at the intersection of Main St. and Division Ave. Sidewalks along Main St. generally connect the trail to Gratiot Ave., and with some improvement, signs and/or paths could be developed along Division Ave. to create a clearer or more substantial connection.

The Gratiot corridor has the potential to connect the Orchard and Stony Creek Metro trails over time if non-motorized facilities are properly planned. In some communities, sidewalks and pathways exist that can connect pedestrians and bicyclists to the regional trails; connectivity should be reviewed and gaps filled where feasible.

Source: Macomb County Planning



Local Sidewalk/Pathway Systems

Most of the non-motorized system along Gratiot Ave. consists of sidewalks installed over time in conjunction with development. The more urban communities along Gratiot Ave. have generally continuous sidewalk systems. The southern segment of the study in particular contains complete sidewalk systems that connect local neighborhoods to commercial businesses and downtown areas. Some of the townships along the corridor have gaps in their sidewalks that hinders non-motorized navigation. Where activity areas generate pedestrian traffic, such as schools, public places or transit stops, pedestrians have been observed to unsafely cross Gratiot away from crosswalks.

Non-Motorized Access Design Guidelines

While providing sidewalks and pathways is a common goal, designing any non-motorized system requires careful planning that considers safety, efficiency, convenience and cost v. benefit. It is important to provide clearly delineated areas both along the corridor and within private commercial developments, especially in areas where vehicular traffic is high. When planning for future non-motorized systems, communities should follow the guidelines listed below.

- **Design Access Points in Consideration of Pedestrians/Bicyclists.** The geometric design of access points, including the width, throat, radius, and pavement type, should all include consideration of the interaction with off-street non-motorized users. Excessively wide driveways with little or no separation from off-street parking areas and broad, sweeping driveway curbs provide an unprotected non-motorized environment that lacks clear definition for turning movements and increases the amount of time a pedestrian or bicyclist is exposed to traffic. Driveways should include a clear-vision zone at the entrance, free of visual obstructions like shrubs, signs, utility boxes, or other barriers.
- **Delineate Driveway Crossings.** Sidewalk or pathway crossings of driveways should be clearly delineated. For higher volume areas (traffic or pedestrian) the crossing could be striped or constructed of durable contrasting material. Textured or colored concrete are good options since they can withstand vehicular weight while attracting the attention of motorists. Maintenance of crosswalk markings should be made a condition of site plans, just like maintenance of parking lot striping.
- **Mid-block Non-Motorized Crossings.** Gratiot is the county's highest volume transit corridor and therefore presents a great need for safe non-motorized crossings. In cases where signalized intersections are a significant distance apart, additional mid-block non-motorized crossings should be considered to provide safe, visible crossings. While mid-block crossings are more common in urban areas where vehicles are traveling at slower speeds, newer design technologies and more advanced signalization options are now available to facilitate

mid-block non-motorized crossings. Mid-block crossings could be considered near school sites, key transit stops or other locations that attract relatively high volumes of pedestrian and bicycle traffic across Gratiot Ave. due to the likelihood that non-motorized users will try to cross mid-block.



Above: a mid-block non-motorized crossing should include multiple elements to increase visibility and distinguish the crossing area from the roadway, similar to the treatment shown here.

One example where a mid-block enhanced and/or signalized crosswalk could be evaluated is adjacent to New Haven High School which is located on the east side of Gratiot Ave. Students regularly cross Gratiot to visit commercial businesses on the west side. There are no nearby signalized intersections and many students cross the road at unsafe locations.

- **Non-Motorized System Connectivity.** As Macomb County moves toward more advanced transit service along Gratiot, corridor communities should assess the connectivity of their local non-motorized system. Some bus stop locations in the north do not provide adequate connections to public sidewalks to local businesses or park and ride lots. These basic connections are needed not only to support transit, but to increase safety of non-motorized travel. Over time, communities should seek to provide a continuous system of sidewalks and pathways along the entire Gratiot Corridor.
- **Accommodate Bicyclists.** Non-motorized systems must also accommodate bicycle activity. Amenities like bicycle storage, staging areas, and rest spots should be included in community-wide non-motorized systems. Bike traffic can be accommodated along Gratiot by off-street, multi-use pathways. Due to the high speeds and traffic volumes along Gratiot, this plan suggests that bike routes and/or on-street bike lanes be provided along parallel corridors for those desiring to commute or otherwise bike along the corridor.

Combined with the economic downturn, higher fuel prices and more “transit friendly” attitudes by younger workers have led to more focus on transit opportunities in the Metro Detroit region both generally and specifically along Gratiot. This section provides an overview of the Regional Transit Concepts planned for the south segment of the corridor by the Regional Transit Coordinating Council (RTCC) and discusses the transit access design criteria to support existing and future transit facilities.

Regional Transit Concepts

In its 2008 Comprehensive Regional Transit Service Plan, RTCC outlines transit improvements throughout the region through the year 2035, including Gratiot Ave. as one of three potential Light Rail Transit corridors. A phased approach toward light rail is envisioned to begin with enhanced/express bus service (referred to as Arterial Rapid Transit) that may lead to Bus Rapid Transit and possibly a light rail or streetcar system. Light Rail Transit along Gratiot from downtown Detroit to M-59 by 2035 is part of a

Communities can maximize benefit of future transit investment by allowing pedestrian-oriented development around transit and development nodes.

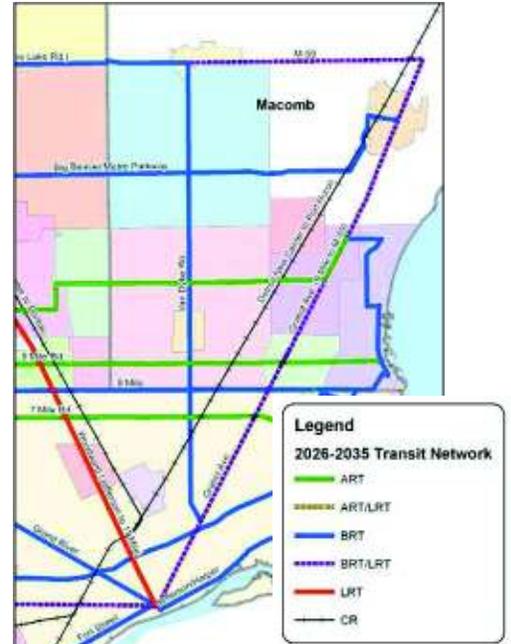
long-range plan for the region.

Transit Access Design Guidelines

The following is a summary of transit facilities standards related to access management to support transit and pedestrian flow, especially around higher use transit stops.

- **Improve Visibility and Safety of Transit Stop Locations.** The location of transit stops along the entire corridor should continue to be evaluated regularly by SMART to improve bus stop spacing and respond to changes in ridership. Bus stop designations should consider the relationship to nearby access points, the visibility of a stopped bus to approaching traffic, and the proximity of crossing points for boarding and de-boarding riders to cross Gratiot Ave.
- **Non-Motorized Connectivity to Transit Stops.** Successful transit depends upon a connected non-motorized system in the areas around transit stops. Many existing bus stops do not include sidewalks and amenities to provide a comfortable experience for transit riders. In some cases, bus stops are simply marked only by a SMART sign at a location lacking basic features, such as a sidewalk connection or hard surface to stand on when waiting for a bus. In some cases during the winter months, pedestrians are forced to stand in the travel lanes of the roadway to find an area clear of snow.

Furthermore, the need for new mid-block non-motorized crossings may emerge where high volumes of pedestrian and bicycle traffic need to cross Gratiot to access transit stops. While higher volume transit stops should be located near existing signalized crossings when possible, the need for additional signalized crosswalks near key transit stops should be monitored.
- **Park and Ride Access.** Efficient, convenient access to park and ride facilities, especially those served by an internal or enhanced bus stop, should be given priority relative to other access points. Addressing the absence of sidewalk-connected Park and Ride lots in high traffic areas north of M-59 is a top priority to encourage traveler choices.
- **Reduce Walking Distances to Local Destinations and Commercial Nodes.** When discussing “walkability,” planners often refer to the commonly accepted threshold of a quarter mile, or 5 minute walk, after which a pedestrian is more likely to drive or use other modes of transportation. As transit service is enhanced, corridor communities and road agencies should promote more compact development around key transit stops while diversifying transportation spending to accommodate all modes.
- **Consideration of Alternate Transit Modes.** The location and design of access points and parking areas should consider future alternate/ advanced transit. Driveways should generally be limited in the vicinity of transit stops to help prevent conflicts.



Source: RTCC Regional Transit Plan

BRT stands for Bus Rapid Transit, which uses surface roads to accommodate faster, more comfortable bus service. BRT vehicles look like a train, but are more versatile and lower cost than rail systems because they can run on existing roads.

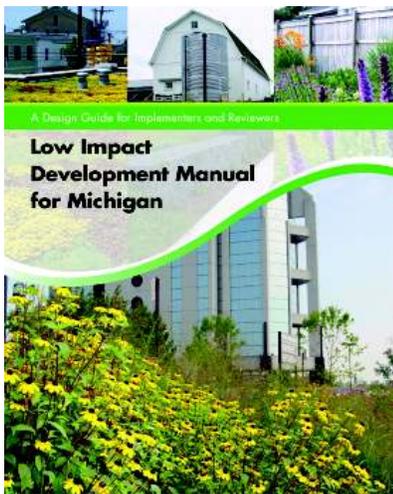
LRT, or Light Rail Transit, operates on a fixed rail, but is more maneuverable than traditional railroad equipment. LRT is more reliable because the system is usually separate from and not vulnerable to heavy vehicular traffic, but are generally more expensive due to dedicated right-of-way and rail system.

Source: U.S. DOT - FTA

Green Infrastructure Guidelines

As previously mentioned, incorporating green infrastructure with access management improvements provides numerous benefits to property owners, regulatory agencies and the general public:

- Reduces municipal infrastructure and utility maintenance costs (e.g., streets, curbs, gutters, storm sewers).
- Reduces stormwater runoff volume and improves stormwater quality.
- Increases energy and cost savings for heating, cooling, irrigation.
- Protects community character/aesthetics.
- Reduces salt usage and snow removal on paved surfaces.
- Protects/restores the water quality of rivers and lakes.
- Improves air quality.
- Improves urban wildlife and habitat opportunities.



Download SEMCOG's Low Impact Development Manual for Michigan at <http://www.semco.org/LowImpactDevelopment.aspx>

Stormwater systems are expensive to build and maintain. Techniques to lessen the amount of runoff and its rate of flow can help reduce those costs. Stormwater runoff along this corridor has historically been directed to privately-owned and municipally-owned storm sewer systems with little regard for the volume, flow and especially the quality of the water. Improved water quality benefits the environment and can help reduce the need for these costly hardscape improvements that have the added benefit of more appealing landscapes. Design options to consider include use of rain gardens, native plant species, street trees (i.e. Planter Boxes, Tree Pits), bioswales and porous pavement. In many cases, these beneficial design alternatives offer a significant long-term cost savings, even when factoring in some additional maintenance costs.

The guidelines below should be considered as part of any site plan review. Similar to the recommended practice for a review of access points, each community's site plan review process should provide a mechanism for a stormwater management plan review when significant site modifications are proposed.

Green Infrastructure Design Guidelines

While discussion of green infrastructure is provided in a general context within this plan, the design of these systems is very site specific. While low impact design is encouraged wherever it can be applied along the corridor, it is specifically warranted in areas where vegetation may be installed in lieu of impervious surfaces (i.e. pavement). In all situations, a clear understanding of the regulatory authorities that may require review, approval and permitting for green infrastructure techniques is necessary. For more detailed design criteria, please review SEMCOG's Low Impact Development Manual (A Design Guide for Implementation and Reviewers).

- **Bioretention (Rain Gardens) & Bioswales** should be considered in areas between the new or existing sidewalk where driveways are removed and in areas where the road median is relocated or enlarged.

It is important to clearly define the drainage area and the stormwater volume that will be managed. For larger drainage areas, a series of rain gardens should be considered and in all situations, an overflow should be provided for larger rain events. Plant species should be salt tolerant, provide aesthetic benefits and be low maintenance. Sidewalks should be designed to direct runoff into these areas, and maintenance agreements should be included as part of any approval.

- **Native Street Tree Planters** are recommended where earth is disturbed due to the removal or relocation of a driveway or median crossover. Maximizing exposed soil around the tree will facilitate water infiltration; however, tree grates and planter options can be applied in more urban or high pedestrian traffic areas. Street tree species should be varied to minimize the potential of invasive threats.
- **Porous pavement** may be considered instead of previous applications (i.e. asphalt or concrete) in parking areas or the road gutter. To function properly, porous pavement requires adequate subsurface soil conditions, overflow connection to a storm sewer or other final discharge location and routine vacuum maintenance. Porous pavement should not be installed in areas where there is a potential for soil contamination.



Top: Streetscape raingardens could be implemented where driveways are eliminated. **Bottom:** Pervious pavers could be used as a porous alternative to traditional pavement in parking lanes to reduce runoff. *Images source: SEMCOG*

When implemented in community planning, the following strategies support goals for both transit and more walk able communities:

- Plan for and zone for a density of residents and employees to support transit, especially in the vicinity of major transit stops.
- Allow Mixed Use in transit areas.
- Create a Destination around transit stops.
- Make transit stops a focal point.
- Create non-motorized links to points of interest.
- Improve the streetscape, including elements that calm traffic and improve aesthetics for auto and non-motorized users alike.
- Ensure pedestrian/bicyclist connectivity between bus stops and nearby destinations.
- Incorporate a “greening” strategy with other access changes as an integral element contributing to more livable streets.

[Implementation]

How to Use the Corridor Improvement Plan Chapters

Access management, non-motorized and transit recommendations for specific sites within the overall plan area are described and illustrated in the following chapters by community. The numbering of maps starts at the southern end of the plan segments (south: Eight Mile Road (M-102) in Eastpointe; north: Hall Road (M-59) in Macomb Township) and proceed northerly through the plan segments.

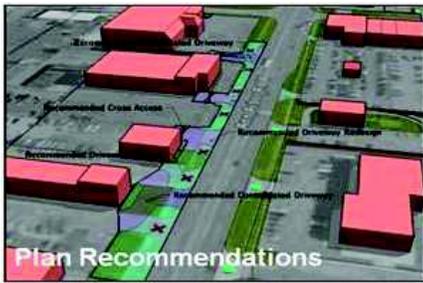
Each community chapter begins with an inventory of existing conditions, problems, and opportunities, and concludes with parcel-specific illustrative recommendations for improving access and adjacent non-motorized and transit facilities along the corridor. The illustrative recommendations should be used in concert with Chapters 1-3, which provide standards and guidelines for new development or redevelopment not specifically addressed in the illustrative plan.

A successful access management program includes three components:

1. A corridor improvement plan with guidelines and site-specific recommendations (this Plan).
2. Zoning ordinance amendments for local communities in the

Implementation of the Plan Standards and Recommendations

Incremental Implementation Process



study area to enact consistent standards and solidify the plan's role in Site Plan Reviews.

3. Consistent protocol for inter-agency communication and coordination in transportation and land use along the corridor.

This Gratiot Avenue Corridor Improvement Plan is based on both state and nationally recognized standards. The plan makes recommendations for developing and implementing standards to be used for future access considerations. It also identifies specific recommendations for improvements to existing access systems that will reduce crash potential and provide better efficiency throughout the corridor. These recommendations are typically referred to as "retrofit" access improvements. As these improvements are made over time, simultaneous review of stormwater systems is also needed to determine the amount of low impact design or green infrastructure that can be applied.

While the highly developed nature of some communities within the plan corridor makes it difficult to implement the optimal access spacing standards in those communities, the goal still is to minimize the number of driveways as much as possible with additional consideration of the interaction between access points and non-motorized and transit users.

In many cases, especially where driveways already exist, not all the MDOT standards can be met. In most cases, the hierarchy should be:

For areas with a median:

1. Maximize spacing from signalized intersections.
2. Ensure sufficient spacing from crossovers.
3. Maximize spacing from other driveways.

For non-median areas:

1. Maximize spacing from signalized intersections.
2. Line up directly with, or provide sufficient offset from, access across the street.
3. Maximize spacing from other driveways on the same side of the street.

Where minimums are not practical, access should be located to maximize the spacing. In some cases, a shared access system should be considered.

To provide a legal basis for requiring access design in site plan review, each community should incorporate the plan recommendations and standards by reference, via ordinance amendment and organize and consolidate all access-related standards and review procedures in the local codes. In addition to the inherent flexibility of this Plan, the zoning ordinance amendments adopted by each community include the ability for Planning

Commissions to modify the standards on a case-by-case basis, with the guidance of the plan recommendations where applicable. Standards and plan recommendations can be modified during site plan review, provided the intent of the standards and/or recommendations is being met to the maximum extent practical on the site.

When community officials review a development proposal for a specific property, additional information should be shown on the site plan or lot split request including the dimensions between proposed access points and existing ones on adjacent properties along both sides of the street. This can help in evaluating if the recommended spacing can be met consistent with the zoning requirements. For lot splits or phased projects with outlots, the community should require an overall access system plan to illustrate how individual sites will be linked rather than each having individual access points. That access system should be clearly approved as part of the site plan, including any access easements or recording of access restrictions on the outlots.

Retrofit recommendations in the following chapters of the plan will only be possible when an owner or developer volunteers or triggers an access review with MDOT, the RCMC, and/or local communities during another approval process. Others may be implemented through other programs and incentives, outlined in the implementation opportunities section, from the townships, cities, county, and MDOT to assist businesses with the costs of closing and reconstructing driveways.

In some cases, where a service drive to link businesses is a long-range alternative, temporary access may need to be approved. The site plan should include a note that the driveway is temporary and will be removed by the owner upon availability of a shared access system in the future. Location for a shared access connection should be shown on the site plan and an “access agreement” provided to allow construction of that connection in the future including the responsibility for initial construction costs and on-going maintenance. Liability usually is absorbed by the individual property owners.

In addition to standards, specific recommendations, and ordinance language for implementation, this project has gone beyond the typical exercises of an access management project both in its incorporation of non-motorized, transit and green infrastructure considerations and its conceptualization and consideration of the potential positive impacts of coordinated public and private investment along the corridor.

A coordinated and comprehensive access management approach is essential if future development and redevelopment in the plan area is to be accommodated and traffic safety and flow in the area is to be improved. Development decisions along the plan corridor are under the purview of several agencies.

This plan is a flexible document that is subject to adjustments and

Recommendations are based on published standards and a specific review of conditions along the Gratiot Avenue Corridor in 2009. Like other aspects of the Master Plan, this corridor plan is intended to be used as a guide to reference during review of a development proposal.

Planning Commissions and those involved in access permit review should consider this Plan but can vary from the standards when warranted, such as if conditions have occurred or there is new information related to a particular location. For example, in some cases a community and MDOT may agree to close a different driveway than recommended, or to change the access design rather than close it.

There may also be opportunities with a major redevelopment to reduce the number of existing driveways more dramatically than illustrated. The overall goal is for practical application consistent with the overall intent to reduce the number of access points and eliminate or redesign those that have the most potential to impede traffic flow or cause crashes.

improvements as the plan corridor develops or redevelops. Although the basic design parameters should remain in place, exact locations and configurations of driveways and service/frontage roads may shift as development plans come into focus.

Community and Agency Role in the Plan

Local Community Role:

- *Maintain and Update Plan every 5 years as part of the Master Plan review.*
- *Cooperate with Macomb County and other local communities toward corridor-wide implementation.*
- *Coordinate with RCMC and/or MDOT on development reviews along Gratiot Ave.*
- *Work with SEMCOG toward implementing green infrastructure opportunities along the corridor.*

Successful implementation of the recommendations in the Gratiot Avenue Corridor Improvement Plan requires a partnership between the local communities, road and other agencies, transit providers, developers and the public to accommodate planned development along the corridor while reducing the negative impacts of unorganized and poorly design access.

While some of the recommendations in this plan can be directly implemented, many are long-term initiatives that will require an on-going partnership and commitment between the members of the Steering Committee. To keep local officials and boards aware of the benefits of access management and their role in implementation, this plan includes an informational 'road show' that can be presented by Steering Committee members, complete with an informational project/access management brochure and a PowerPoint presentation.

Recognizing that several areas of transition between local communities exist along the corridor, a pro-active approach to collaboration on projects and plans is essential. Successful coordination will help create smoother transition across the boundaries, while providing for both a high quality image for the corridor and unique identity for each community.

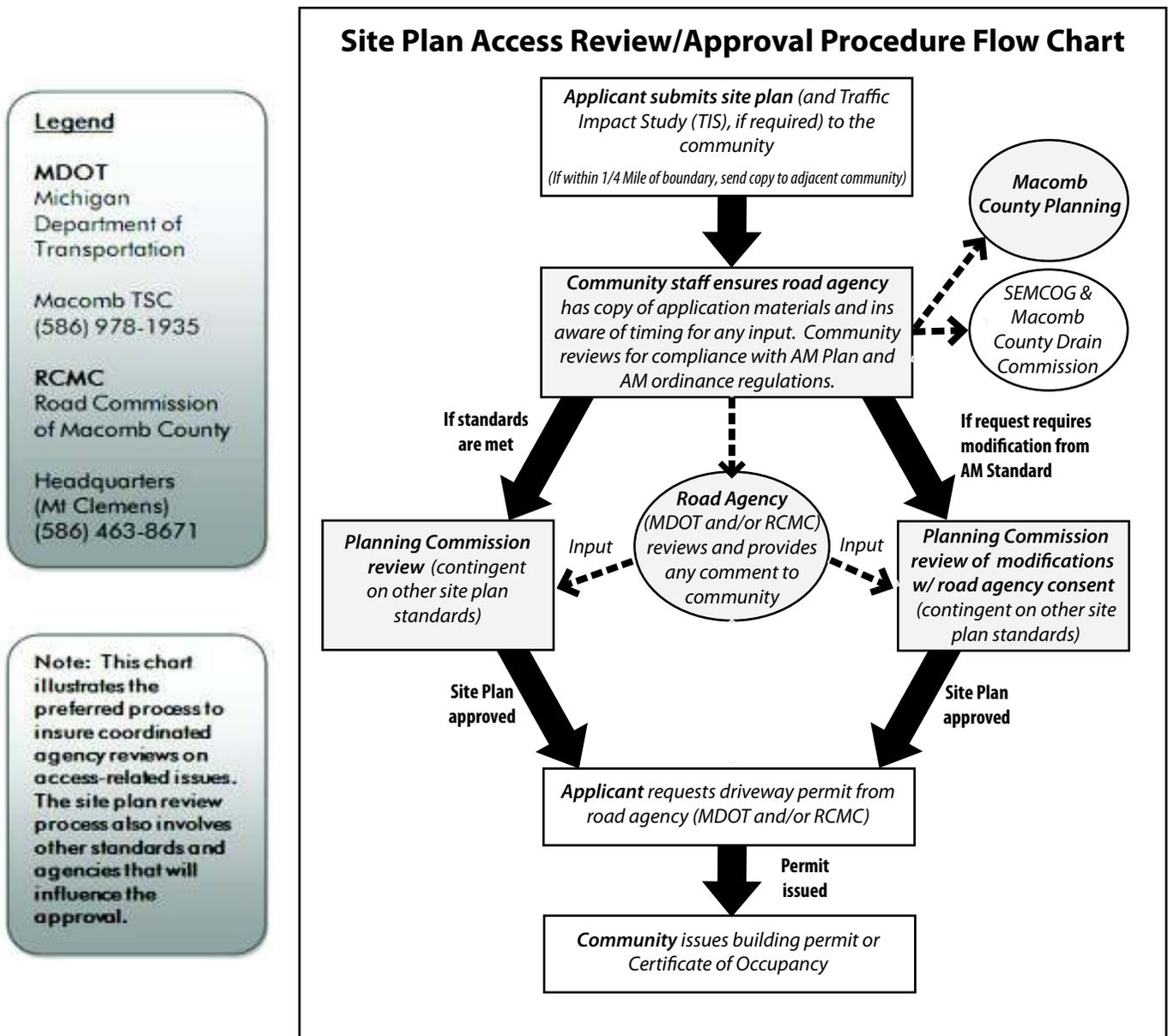
Larger development projects that cross or are within ¼ mile of a community boundary should include a review by both communities early in the project process. This important step is reflected in the Access Review/Approval Procedure Flow Chart later in this Chapter. In addition, special attention should be paid to the interaction of access points, non-motorized facilities, and transit facilities at and around these transition areas when making decisions.

The local communities have jurisdiction over land use planning, zoning, site plan and subdivision review outside the corridor right-of-way. The cities and village have full jurisdiction on side streets, the Road Commission of Macomb County has jurisdiction over the township roads, and MDOT has control over improvements within the corridor right-of-way. This complex network of agencies makes a formal, mutually agreed upon access approval procedure a critical element for the future implementation and success of this plan.

The flow chart illustrated in this Chapter outlines the recommended process to be followed in reviewing a typical development proposal or situation that triggers access review along the plan corridor. It provides for a coordinated review by the cities, village, townships, RCMC, and MDOT. The intent of the process is to ensure that local government review of the access design and the RCMC and/or MDOT access permit processes are coordinated to implement the recommendations of this plan and realize the maximum benefits of access management. The process provides feedback loops between the planning commissions and RCMC/MDOT as modifications are made to access and circulation.

Site Plan Access Review and Approval Procedure

Figure 4.2: Site Plan Access Review/Approval Procedure Flow Chart



Other Implementation Opportunities

Implementation of the Plan's recommendations is expected to be gradual, taking a number of years with a few driveways closed or modified each year. In addition to site plan review at the community level, there may be other opportunities to accelerate implementation of the Plan's recommendations. These include:

1. Implementation of access management recommendations as part of road reconstruction or resurfacing projects.
2. Pilot projects.
3. Establishment of a local or county funding source to cover some or all of the expense associated with closing or consolidating driveways.

Implementation as Part of Road Reconstruction or Resurfacing Projects.

When access management is part of a publicly funded project, such as streetscape plans or road reconstruction projects, the agencies involved should include access improvements in the design and budget. This should include time for coordination and meetings with private property owners. If budget restrictions prohibit large-scale implementation, the agency should strategically decide which access points need modification or removal. Priority should be given to modifying or removing access points that contribute to congestion or an unsafe condition. Some reconstruction and other resurfacing of segments along the corridor is planned in the future. Implementation of driveway closures could accompany these projects, but only after meetings between MDOT and property owners to agree on access changes before design plans are finalized.

Pilot Projects. Access management is implemented when site plan reviews are submitted. However, the stagnant development environment in this current era of economic uncertainty and reluctance to add to a developer's cost to improve a site will delay implementation of recommendations. As a method to "kick-start" implementation of the Plan and to continue momentum from the initial plan and ordinance adoption sought during this project, the Macomb County Department of Planning and Economic Development, with assistance from SEMCOG and MDOT, is championing a series of pilot projects to illustrate the benefits of access management.

While the Gratiot Access Corridor Improvement Plan has provided each community with a wealth of technical data and community action items regarding transportation efficiency and safety, the project team seeks to establish a pilot project in each community to ensure that the benefits, principles, policies, and procedures set forth in the document take hold. An implementation 'opportunity zone' was identified and mapped for each community. A zone's selection was based on several factors including the location of critical crash segments, areas with high driveway densities, DDA/TIFA boundaries and where clusters of other

access recommendations are shown. The zones do not identify any specific pilot project; rather they identify areas that are particularly in need of improvement. Working with local community leaders and property owners, Macomb County staff will select pilot projects based on anticipated redevelopment proposals, the willingness of property owners to participate, and where improvements are needed to correct a serious safety concern. Once a pilot project is selected the County will work with the property owner(s) and the local community to develop a viable plan of action (acceptable to all parties) to implement the recommended improvements. Because the full or partial costs of improvements will be absorbed by a public road agency, a property owner can benefit from being selected for a pilot project.

Establishment of a Local or County Funding Source to Cover Some or all of the Expense Associated with Closing or Consolidating Driveways.

Implementation of most of the Plan's recommended improvements will depend on available funding. In some cases, the costs of the improvements will be borne by the property owner; most often as part of a property's development or redevelopment. Other funding sources will be identified as projects proceed, and may come from State or federal grants, the County or local community transportation funds. In cases where a recommended improvement is located in the boundaries of a Downtown Development Authority or Corridor Improvement Area, the DDA may have funds to contribute to implementation. The DDA is likely to recognize that the creation of a safer and more efficient road network will result in a commercial area that is more attractive to potential customers and the economic benefits generated.

Preferably, an on-going fund should be established by the community or Macomb County to assist in implementing the recommended improvements on a continuous basis. Annual contributions to the fund could be made by the County, local community, DDA or other identified sources.

On-going Implementation

Communities along Gratiot Ave. should continue to update this Corridor Improvement Plan as part of their 5 year community Master Plan review. This ensures the recommendations in the Plan are relevant, reflect current conditions and policy, and respond to changes in access along the corridor. Communities should work with Macomb County to further regional pathway initiatives, and should maintain relationships with regional transit agencies in order to ensure future plan updates reflect their efforts and progress toward improved transit service.

To continue implementation of the Gratiot Avenue Corridor Improvement Plan, the Steering Committee could continue to meet on a regular basis; this plan recommends a quarterly meeting. In addition to continuing

the inter-jurisdictional cooperation, these meetings will provide a forum to discuss and coordinate major development proposals, heritage or other route designations along the corridor, traffic impact studies, right-of-way preservation and roadway cross-section designs, rezoning proposals, ordinance text amendments, local master plan updates, roadway improvements or reconstruction, non-motorized transportation, streetscape enhancement, green infrastructure implementation, and other issues along the corridors. The Steering Committee or an alternate on-going committee can seek funding for and coordinate the strategic implementation of recommended improvements to maximize the resulting benefits. Because of its familiarity with the Plan and its knowledge regarding the status of recommended improvements, the committee can serve as an important resource when the Plan is in need of updating.

It should be noted that the recommendations outlined in this plan can be used on other area corridors with existing or expected future access management issues. The underlying benefits obtained by maintaining good control of the number and location of commercial access points can be realized on all major roads. While the access management standards adopted by each community only initially apply to the boundaries of the overlay zoning districts adopted by each community, expansion of the district boundary or future amendments can allow application of the standards established in this plan throughout each community.

[Glossary]

Definition of Terms

Access Point: Commercial driveways (e.g. retail, office, industrial, etc.) and platted roadways or private roads, and generally not including driveways for individual single family homes.

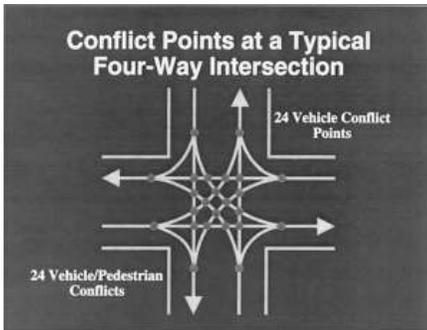
Access Management: A series of techniques and standards to maximize the existing street capacity, reduce potential for crashes and improve overall corridor conditions by reducing or limiting the number of access points, carefully placing and spacing access points and ensuring good access design.

Capacity: The volume of vehicles the road was designed to carry in a unit of time, such as a “peak” hour.

Computer Traffic Modeling (Also called Microsimulation): A traffic model is a computerized tool that represents and analyzes the primary methods and ways of travel. Usually this tool is a software package which incorporates the roadway system (i.e. laneage), intersection vehicular volumes, and signal timings to determine the amount of congestion along the corridor or intersections. The model is calibrated to existing traffic counts and future traffic volumes can be inputted to test the effect of changes in the road network. This project used the Synchro/SimTraffic modeling program.



Screen image from 23 Mile Rd. traffic simulation



Each new driveway adds to the number of conflict points along a street at which a traffic crash could occur.
 Source: MDOT "Improving Driveways and Access Management in Michigan," 1996.

Conflict point: The location where traffic streams, moving in different directions, interfere with each other, i.e., merging, diverging and crossing, and create the potential for a crash.

Crash (reported): A vehicular accident that is reported and recorded by local or state police.

- **Link Crash:** Any crash not within 150 feet of a signalized intersection.
- **Sideswipe Same:** a collision involving vehicles traveling in the same direction, where the crash impacts the side of one or both vehicles.
- **Rear-end:** a collision involving two (or more) vehicles traveling the same direction where one vehicle crashes into the rear end of the other.
- **Single MV:** A crash involving only one vehicle.
- **Head-On:** A collision involving two vehicles traveling in opposite directions where the crash impacts the front of one or both vehicles.
- **Sideswipe Opposite:** A collision involving vehicles traveling in the opposite direction, where the crash impacts the side of one or both vehicles.
- **Angle:** A collision involving two vehicles where one vehicle crashes into the side of the other.
- **Head-on Left:** A collision involving two vehicles traveling opposite directions where one vehicle is making a left-turn maneuver and the crash impacts the front of one or both vehicles.
- **Intersection Crash:** Any crash within 150 feet of a signalized intersection.

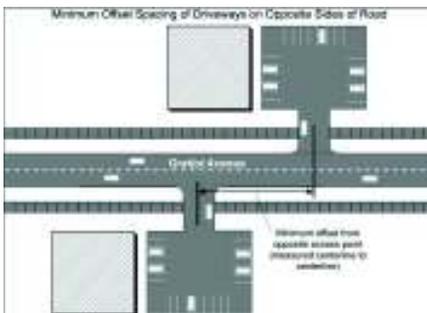
Cross-access: The means by which adjacent sites can traverse the parking and maneuvering areas of each other's site, thereby eliminating the need to re-enter the public road to access a neighboring site. Cross-access is usually conveyed through mutual easements or use agreements.

Driveway offsets: The distance between the centerlines of driveways or streets across the street from one another.

Geometric Driveway Design: The various elements of driveways including driveway width, throat depth, turning radii, slope and construction methods.

Indirect Left (also called a Michigan Left): A type of turn that requires drivers to drive through an intersection (or turn right in some cases), and turn around in a median crossover then turn right onto the destination roadway (or if the movement begins with a right turn, to continue straight to the destination roadway).

Level of Service (LOS): A rating of A through F that summarizes transportation operating conditions or the amount of delay that is experienced by drivers. It is usually used to describe a section of road or an intersection as experienced by drivers, but can also be applied for users of



Driveway offsets.

other modes of transportation.

Low Impact Design (LID): LID is an ecologically friendly approach to site development and storm water management that aims to mitigate development impacts to land, water, and air. The approach emphasizes the integration of site design and planning techniques that conserve natural systems and hydrologic functions on a site. The practice has been successfully integrated into many municipal development codes and storm water management ordinances throughout the United States.

Median: A raised island within the road right-of-way that divides the travel lanes along corridors, reduces crashes and improves turning by directing all traffic in one direction.

Median Crossover (direct): A break in the median island that allows for vehicles traveling in one direction to cross the median and turn to travel the opposite direction. Direct crossovers allow vehicles to turn directly into a driveway or intersecting road.

Median Crossover (indirect): A break in the median island that allows for vehicles traveling in one direction to cross the median and turn to travel the opposite direction.

Mid-block crossings: A pedestrian road crossing that is not located at a signalized intersection. Mid-block crossings may be signed or signaled, but only for sake of allowing pedestrians to cross the travel portion of the road.

Mode of Transportation: A type of travel, whether on foot (pedestrian), on a bicycle, in an automobile, bus, transit or other means of transportation.

Non-motorized: A transportation mode not using motorized vehicles, e.g., walking, bicycling, and roller-blading.

Park and Ride Lots: Parking lots located at the outskirts of urbanized or congested areas that offer convenient parking facilities and regular transit service between the lot and riders' destinations.

Right-of-Way (ROW): Easements, land and/or property acquired for or devoted to transportation purposes.

Roundabout: An intersection design alternative to traffic signals or stop signs. Rather, a circular traffic pattern is established that directs entering vehicles in a counter-clockwise direction and allows them to merge with other vehicles in the roundabout and then turn intersecting streets or complete a through movement.



Roundabout.

Shared Driveway: Use of a single driveway to access multiple development sites.



Streetscape elements can include decorative streetlights, pavers, and other ornamentation.

Streetscape: The design of roads and equipment, such as lights, landscaping, and benches located within the right-of-way usually intended to improve or enhance the road appearance and usability.

Traffic Count: A record of the number of vehicles, people aboard vehicles, or both, that pass a given checkpoint during a given time period. The count can be based on physical observations, in-street counters or by camera.

Travel Lane: Portion of the road between the center line and curb where vehicles or bicycles are permitted to operate, but where parking is prohibited.

Traffic Volume: The number of vehicles that actually pass through a given point along a street or through an intersection. May be counted for a full day or "peak" hours.

[Macomb]

Township



As Macomb County's fastest growing community in the 2000's, Macomb Township witnessed explosive growth in population with many single family subdivisions and commercial developments. Several golf courses and large tracts of agricultural land contribute to the rural character but may also be viewed as opportunities for continued growth in the future. Located on the north side of M-59, Macomb Township is the southernmost segment of the North Gratiot Corridor Improvement Plan area. The Township's east boundary traverses Gratiot Ave. near Erb Dr., where Gratiot Ave. enters Chesterfield Township.

Existing and Future Land Use

Single-family residential is the predominant land use along the west side of Gratiot Ave., with some industrial uses toward the north end of the Township. Erb Industrial Park is an active industrial complex that attracts truck traffic to and from its accesses to Gratiot and 21 Mile Rd. The east side of this segment consists of auto-oriented uses including the gas station and Ford dealership at the northeast corner of Hall Rd. and Gratiot Ave., with a manufactured home dealership and several drive-through restaurants and gas stations located farther north.

With the exception of several properties adjacent to and in between Abington Circle, the Macomb Township Master Plan classifies Gratiot Ave. frontage as commercial and industrial uses.

Roadway Conditions and Concepts

Figure 5.1: 2007 Average Daily Traffic (ADT) along the Gratiot Corridor in the Macomb Township

Between	ADT
Hall (M-59) & 21 Mile Rd.	36,278

Source: SEMCOG

Roadway Conditions

The half mile of Gratiot Ave. (M-3) in Macomb Township is a five-lane cross section, with two through lanes in each direction with a center left turn lane. Most of this stretch has a full lane width paved shoulder some motorists use as an acceleration/deceleration lane for accessing businesses and cross streets. Average Daily Traffic (ADT) along Gratiot Ave. in Macomb Township in 2008 was approximately 37,000 vehicles per day, and the posted speed limit is 45 MPH. There were no segments or intersections with high crash rates in this segment of the corridor.

Intersection Evaluation and Concepts

Gratiot Ave. at Marketplace Blvd and Erb Drive

One area selected for special study during this planning process was the intersection at Marketplace Blvd. and Erb Dr. Community representatives and the public expressed concern about northbound and southbound left-turning vehicles. A signal warrant analysis was conducted on both intersections and found that the approach volumes are not sufficient to meet standards for a signal.

Access Conditions and Recommendations

Existing Access Conditions

Multiple driveways are the norm for most businesses in the township's Gratiot corridor, while connections between adjacent properties are few and far between. Shared access and other site alternatives could be pursued to reduce the number of driveways to the corridor. Including cross streets, Gratiot Ave. in Macomb Township has 50 access points per mile, compared to the MDOT standard of approximately 30 access points per mile. This plan recommends closing 10 driveways in Macomb Township, a 33% reduction in driveways.

Access Recommendations

Map tiles 1 through 2 illustrate site-specific recommendations for access management, including ways to improve the relationship between vehicle access and non-motorized and transit facilities. As outlined in *Chapter 4: Implementation*, these recommendations are based on state and national research, a thorough review of the conditions along the corridor, significant public input, and the extensive experience and expertise of the plan team with access management across the state.

Driveway spacing near Hall Rd./M-59 and along the west side of the corridor is adequate; however, shared access could be pursued to bring the gas station driveway farther north and away from the intersection. Uses on the east side contain several driveways, usually two per drive-through business, with some exceptions. In most cases, a drive-through use can operate just as well internally, and much better for the Gratiot corridor

Map Tiles 1 through 2 illustrate specific recommendations in Macomb Township for access management (such as the sample shown) including how to improve the relationship between vehicle access and non-motorized and transit facilities. All of the Map Tiles are located after Chapter 9.

overall, with one access point and preferably, a connection to adjacent uses.

Because the recommendations are based on the conditions at the time this plan was developed, a significant change in conditions along the corridor should prompt a thorough consideration of any proposed project in the context of the policies, standards, and goals of this plan. The Township, MDOT, Road Commission of Macomb County and members of the Steering Committee will play an important role in reviewing development proposals along this corridor to promote more efficient and safe access.



Sample Recommendations north of M-59.

Non-Motorized

The west side of this segment of the corridor lacks non-motorized facilities. Most of the newer developments on the east side of the corridor have installed sidewalks along the Gratiot Ave. frontage that create an almost continuous sidewalk through Macomb Township. Sidewalk breaks are found along the frontage of residential uses and the older developed sites. Opportunities to fill these gaps, especially near transit stops, should be taken to increase connectivity.

Transit

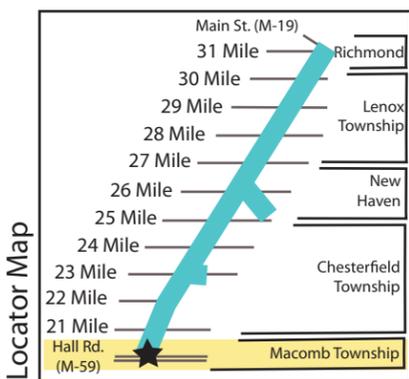
SMART (Suburban Mobility Authority for Regional Transportation) runs the North Macomb Connector Service to places in Macomb County north of Hall Rd./M-59. One fixed route is offered along Gratiot Ave. between Hall Rd. and 23 Mile Rd., where it proceeds east along 23 Mile Rd. toward New Baltimore. Curb-to-curb service is provided upon advance reservations to other locations. Transit stops in the township should include sidewalk connections to businesses and other existing or planned sidewalks.

Non-motorized, and Transit Conditions Recommendations

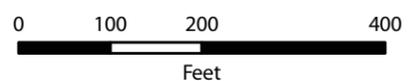


Gratiot Avenue Access Management Plan - North

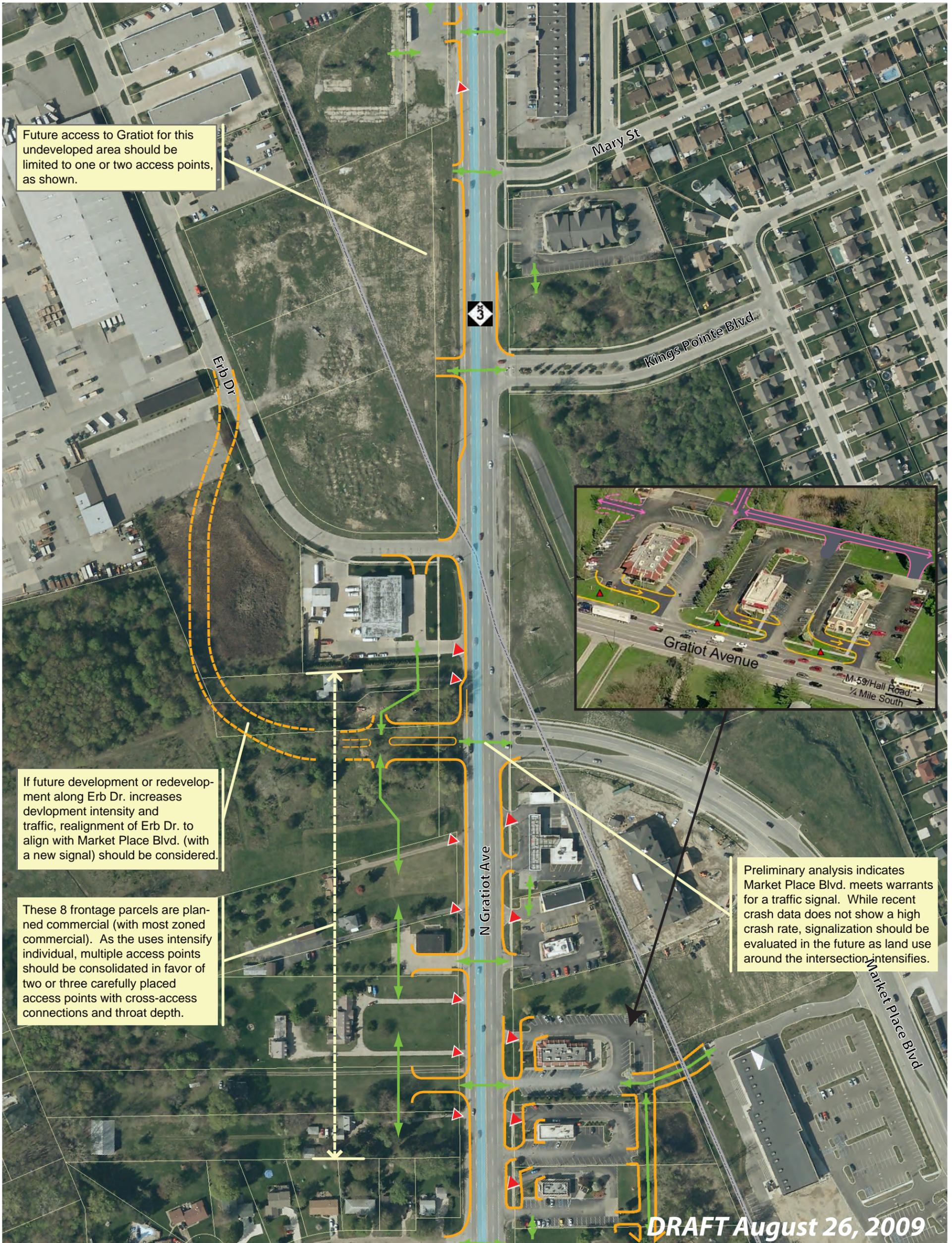
Map Tile Number
1
OF
32



- Study Corridor
- - - Suggested Curbing
- ↔ Suggested Connections
- New Developments
- ▲ Suggested Drive Closings
- X Signalized Intersections



The preparation of this project is financed in part through: cooperation with the Michigan Department of Transportation, Urban Mass Transportation Administration; the Federal Highway Administration, and the participation of the Michigan State Transportation Commission; or a planning grant from the environmental Protection Agency. This project is being prepared in 2009 for the Southeast Michigan Council of Governments.



Future access to Gratiot for this undeveloped area should be limited to one or two access points, as shown.

If future development or redevelopment along Erb Dr. increases development intensity and traffic, realignment of Erb Dr. to align with Market Place Blvd. (with a new signal) should be considered.

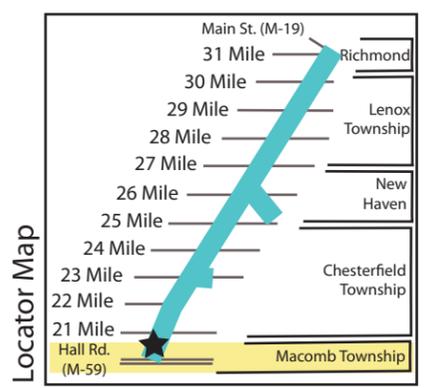
These 8 frontage parcels are planned commercial (with most zoned commercial). As the uses intensify individual, multiple access points should be consolidated in favor of two or three carefully placed access points with cross-access connections and throat depth.

Preliminary analysis indicates Market Place Blvd. meets warrants for a traffic signal. While recent crash data does not show a high crash rate, signalization should be evaluated in the future as land use around the intersection intensifies.

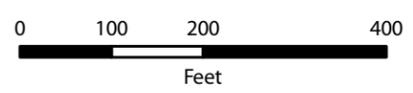
DRAFT August 26, 2009

Gratiot Avenue Access Management Plan - North

Map Tile Number
2
OF
32



- Study Corridor
- Suggested Curbing
- ↔ Suggested Connections
- New Developments
- ▲ Suggested Drive Closings
- ⚡ Signalized Intersections



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