

Charter Township of East China
St. Clair County, Michigan

Community Master Plan Update



Adopted October 13, 2015

RESOLUTION 11-2015

**PLANNING COMMISSION RESOLUTION OF ADOPTION
EAST CHINA TOWNSHIP MASTER PLAN UPDATE**

East China Charter Township
County of St. Clair, Michigan

Minutes of a regular meeting of the Planning Commission of East China Township, County of St. Clair, Michigan, held in the Township Hall, on the **13th day of October, 2015**, at 7:30 p.m.

PRESENT: Freehan, Street, Barna and Endres.

ABSENT: Towne and Blackstock.

The following Resolution was offered by Member Endres and supported by Member Barna.

WHEREAS, the Township of East China has established a Planning Commission under the Planning Enabling Act, State Public Act 33 of 2008, as amended, and

WHEREAS, the Planning Commission is required by Section 7 of said Act to make and adopt the Master Plan as a guide for the physical development of the township, and

WHEREAS, an updated Master Plan was presented to the public at a hearing held on October 13, 2015 before the Planning Commission, with which notice of the hearing being provided in accordance with Section 43 of Public Act 33 of 2008, as amended.

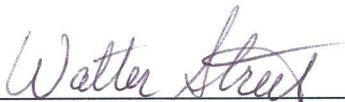
NOW THEREFORE BE IT RESOLVED THAT, the content of this document, together with all maps attached to and contained herein, is hereby adopted by the Planning Commission as the East China Township Community Master Plan Update on this 13th day of October, 2015.

AYES: Freehan, Street, Barna and Endres.

NAYS: None.

ABSENT: Towne and Blackstock.

RESOLUTION DECLARED ADOPTED.



Walter Street, Acting Secretary
East China Charter Township Planning Commission

CERTIFICATION

I hereby certify that the foregoing is a true and correct copy of a resolution adopted by the Planning Commission of East China Township, County of St. Clair, Michigan, at a regular meeting held on **October 13, 2015**, and that said meeting was conducted and public notice of said meeting was given in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan 1976, and that the minutes were kept and will be or have been made available as required by said Act.

A handwritten signature in cursive script that reads "Walter Street". The signature is written in black ink and is positioned above a horizontal line.

Walter Street, Acting Secretary
East China Charter Township Planning Commission

COMMUNITY MASTER PLAN UPDATE



East China Township

St. Clair County, Michigan

Adopted by the East China Charter Township Planning Commission on October 13, 2015

TOWNSHIP BOARD

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PLANNING COMMISSION

Robert Freehan, Chairperson
Walter Street, Vice Chair
Barbara Shonk, Secretary
Herbert Blackstock, Board Representative
George Barna
Dave Endres
Greg Towne

TOWNSHIP STAFF

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INTRODUCTION

The East China Master Plan for Future Land Use can continue to guide the development of East China Township into a pleasant and desirable community as it has in the past. In order to continue providing a quality lifestyle for both residents and visitors updating this Master Plan covers the issues that affect land use in the Township including leisure and recreation, living areas, work places, businesses and services, and public services. The current information provided in this plan will allow the community and public officials to see trends in the local economy and population in order to make informed decisions that will create sound public policy.

PURPOSE

This Master Plan is intended to serve as a roadmap for the ultimate development of the Township and to serve as a guide for land use decisions. The Plan allows the Township to predict the ultimate size or capacity of public improvements, such as utility infrastructure, parkland and public services. In addition, it provides the public with an understanding of desired future land use relationships and gives direction to the Township in making zoning decisions.

SCOPE

This Master Plan was conceived with careful review of and regard for land use in adjacent areas. The Plan however is limited to the Township boundaries out of practical ability to affect land use decisions outside of the municipality. State of Michigan legislation (MCL 125.327) contains a provision that the Township Planning Commission must review this plan every five years. The Township planning commission must decide to amend this plan or adopt a new one.

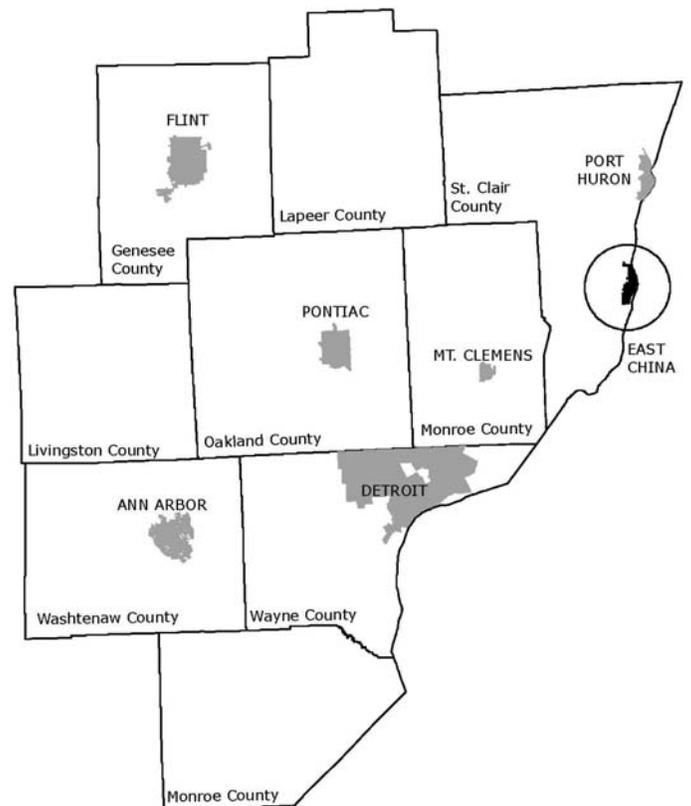
This Master Plan is intended to serve as a roadmap for the ultimate development of the Township and to serve as a guide for land use decisions.

BACKGROUND INFORMATION

REGIONAL SETTING

East China Township is located in Michigan's southeastern Lower Peninsula in the extreme eastern portion of St. Clair County bordering the St. Clair River. Areas immediately adjacent to the Township include the City of St. Clair to the north, China Township to the west, Marine City to the south and Canada across the river to the east. The center of East China Township is approximately 33 miles directly northeast of the City of Detroit and 14 miles south of Port Huron.

The accompanying Regional Location Map illustrates the geographical location of the Township in relation to the southeast Michigan region. M-29, which runs north south through the eastern section of the Township, serves as a major access route to Marine City, St. Clair and Port Huron. M-29 also connects with Fred C. Moore Highway to the north of the Township and Marine City Highway to the south, that provide residents with access to Interstate 94, the major traffic artery between the Detroit Metropolitan Area, the City of Port Huron and Canada by way of the Blue Water Bridge.



NATURAL LAND FEATURES

Examination of the natural land characteristics such as topography, soils, water resources and resulting flood plain areas helps to identify physical restrictions that influence the Township's pattern of development. In some cases these resources can provide opportunities for recreation or for prime development. In other cases, especially with floodplain or wetland areas, the natural features of the land can severely restrict the options for planning and placement of buildings and structures.

WETLANDS

Wetlands in Michigan are given formal definition within Public Act 451 of 1994, as amended, and are defined as: "Land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetlands vegetation or aquatic life, and is commonly referred to as a bog, swamp, or marsh". 8.6% of the land area in St. Clair County is covered in wetlands. The type of wetland found in East China Township is Inland Wetland. These wetlands are most commonly found along flood plains of rivers and streams. The accompanying map shows that many of the wetlands within the Township are found near the Belle and Pine River flood plains. The Wetland and Floodplains map is based on information from Southeast Michigan Regional Land Use (SEMCOG) and the National Wetlands Inventory.

TOPOGRAPHY

The land surface in East China Township is generally flat to gently rolling. Topographic maps of the area indicate most of the land lies between 580 to 600 feet above sea level. The highest natural point is located north of Hathaway Street in the extreme northern portion of the Township at 605 feet above sea level, with the lowest area located along the shoreline of the St. Clair River.

SOILS

The U.S. Department of Agriculture Soil Conservation Service as part of the St. Clair County Soil Survey surveyed the Township soils in 1969. The survey classified the majority of soils within the Township as poorly to very poorly drained clays and loamy sand over clay. Due to a seasonally high water table, these soils have severe limitations for the use of septic tank disposal fields because use of septic tanks in poorly drained soils can force waste effluent to the surface and into surface water sources or ground water aquifers, causing contamination. Adequate storm drainage and central sewer systems are essential where these soils are present.

WATER RESOURCES

Three major water resources exist within the Township; the St. Clair, Belle and Pine Rivers. These rivers are the most well defined physical features of the Township. The St. Clair River is a major commercial shipping channel which runs between Lake Huron and Lake St. Clair. Thus, communities fronting on the St. Clair River have access to all of the ports along the great lakes. Aside from its use for private recreation, the river, it also has potential as a transportation resource for industry. The Pine and Belle Rivers are tributaries of the St. Clair River that weave through the Township.

WOODLANDS

Three types of woodlands exist within East China Township: deciduous, evergreen, and mixed forests. The largest of these is deciduous tree cover according to the Michigan Center for Geographic Information. The State of Michigan does not classify woodlands by size but many municipalities describe woodlands as those areas containing significant tree cover with the absence of sod underneath. Trees in the Township are vital for social, economic and environmental reasons. They add to the overall aesthetic beauty of the Township and act as vital natural filters and aesthetic buffers for the community.



FLOOD PLAINS

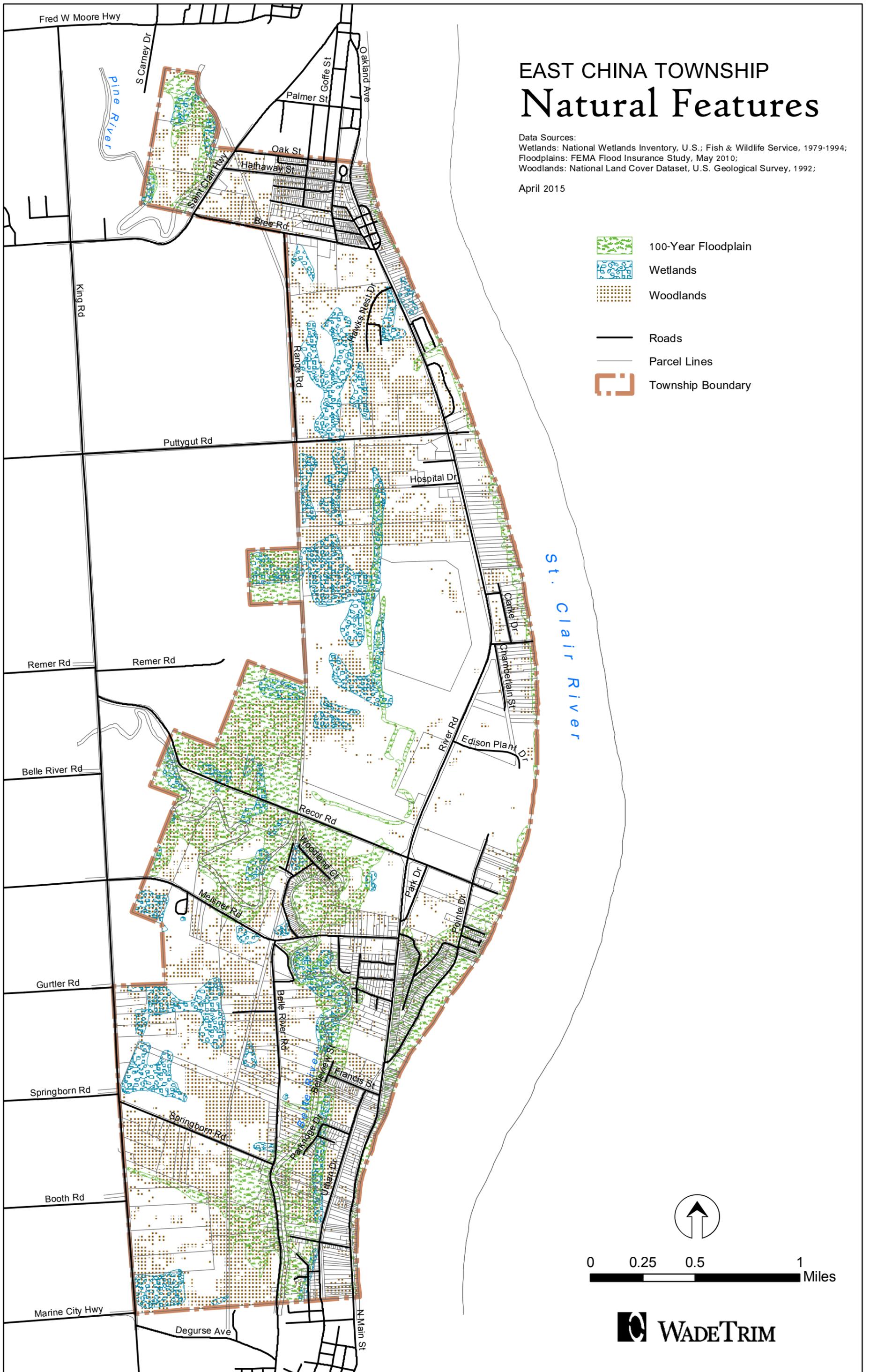
Flood plain information for this Master Plan is based on the May 2010 Flood Insurance Study by the National Flood Insurance Program (Federal Emergency Management Agency FEMA). From a planning standpoint, this information is intended to promote flood plain management through implementation of "sound land use" within flood plain areas. As illustrated on the Wetland and Floodplains Map, extensive areas along the Belle River are designated within its floodway. Similar information is also indicated for the Pine River, St. Clair River and Jordan Creek. The "regulatory floodway" is defined by FEMA as "the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height." Efforts should be made to maintain these areas in their natural state to assure preservation of natural features and to limit damage to personal property.

EAST CHINA TOWNSHIP Natural Features

Data Sources:
 Wetlands: National Wetlands Inventory, U.S.; Fish & Wildlife Service, 1979-1994;
 Floodplains: FEMA Flood Insurance Study, May 2010;
 Woodlands: National Land Cover Dataset, U.S. Geological Survey, 1992;

April 2015

-  100-Year Floodplain
-  Wetlands
-  Woodlands
-  Roads
-  Parcel Lines
-  Township Boundary



EXISTING LAND USE

The inventory of existing land is the starting point of all land use planning. It establishes a baseline of existing conditions against which future land use scenarios can be weighed. In June 2005, a windshield survey of existing land use within East China Township was performed and recorded on a Township base map. This base map had been updated with input from St. Clair County prior to the fieldwork. Land use information was mapped on a full size Township base, with various colors representing different land use categories. A reduced copy of the map is included at the end of this section. In the following text, the various land use categories included in the inventory are explained.

This land use analysis is based on "Activity" or the use of land based on its observable characteristics. A commercial activity for example refers to the physical activity on the property only and could apply equally to a grocery, restaurant, camera shop or any other commercial use.

LAND USE CATEGORIES:

SINGLE-FAMILY RESIDENTIAL:

All residential buildings containing one dwelling unit, except for mobile homes in mobile home parks, were included within this category.

MULTIPLE-FAMILY RESIDENTIAL:

Any residential building or zoning lot containing more than one dwelling unit, including mobile homes.

OFFICE:

Buildings and their related parking and open space which have a principal use for executive, administrative, professional, accounting, writing, clerical, stenographic, drafting or sales purposes. Medical offices, not including veterinarians are also counted within this category.

COMMERCIAL:

All establishments engaged in the sale of goods, including related parking space, are counted as commercial uses. Personal services, veterinarians, restaurants and automobile services are also included.

INDUSTRIAL:

Manufacturing industries, indoor or outdoor storage facilities, lumber yards, warehousing and undercoating shops are included within this category.

DETROIT EDISION:

All land owned by DTE Energy is included in this category.

PARKS:

All land used for parks or open space and owned by the Township

OPEN SPACE/VACANT:

This classification includes agriculture and all property, both public and private that has not been developed which can include woodlands, wetlands or unimproved property.

PUBLIC SCHOOLS:

School buildings, playgrounds and related facilities owned by the school district are included in the school category. Vacant land owned by the school district is also included

PUBLIC:

This classification includes all Townships owned land buildings and facilities except as otherwise specified in other categories

QUASI PUBLIC:

Churches, cemeteries, private schools and other institutional uses are categorized as quasi-public.

ROAD RIGHT-OF-WAY:

Private and public road rights-of-way as platted or shown on the base map.

RIVERS AND CANALS:

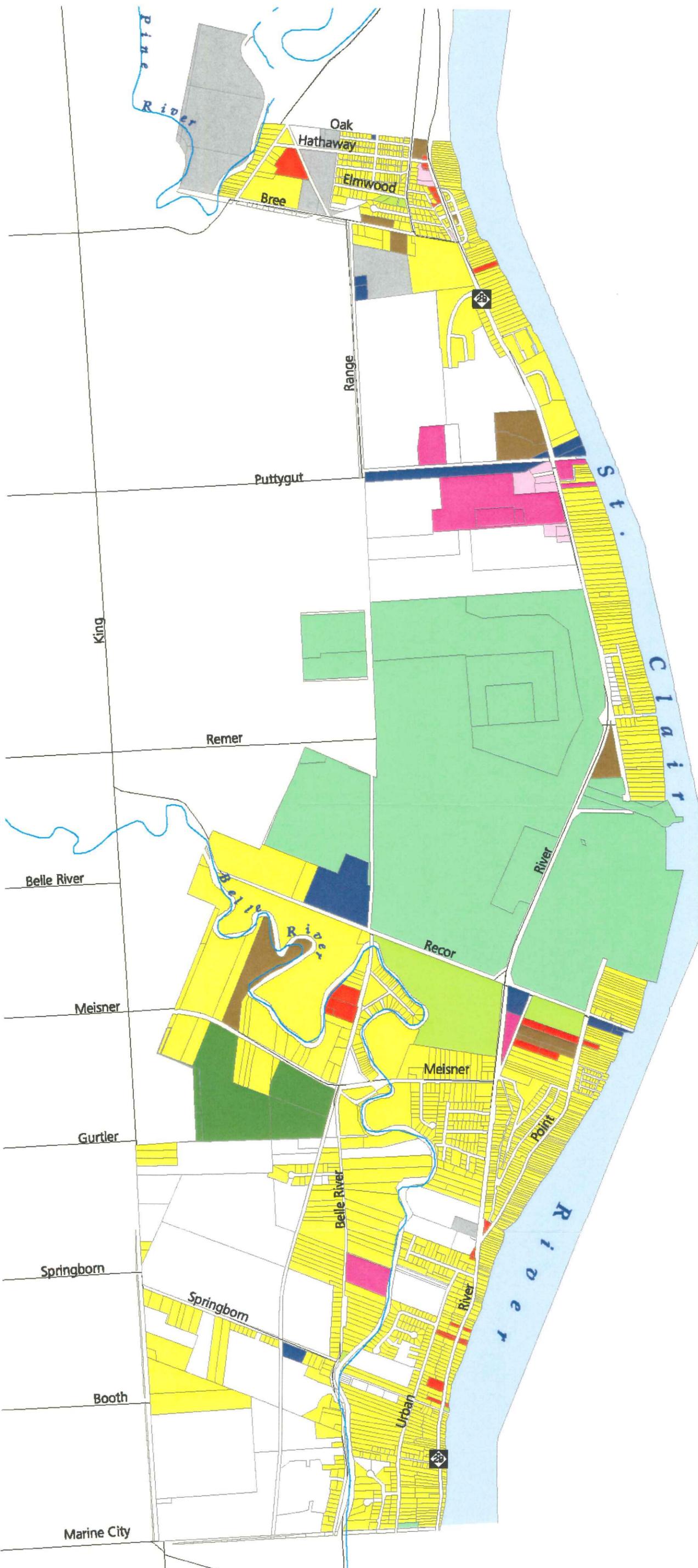
Rivers and canals as shown on the base map.

RAILROAD RIGHT-OF-WAY:

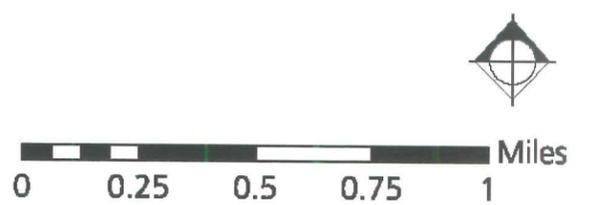
Railroad right-of-way in active use or retained by the railroad.

EAST CHINA TOWNSHIP Existing Land Use

Data Source: St. Clair County GIS, 2005. Vilcan Leman & Associates Inc. February 2006.



- Single Family Residential
- Multiple Family Residential
- Commercial
- Office
- Industrial
- Detroit Edison
- Public
- Quasi Public
- Public Parks
- Vacant



ANALYSIS OF EXISTING LAND USE:

Single-family residential land is the most extensive land use category. The 2005 land use inventory recorded 1,343 acres in single-family residential use; roughly 31% of all land in the Township and 41% of all developed land. The amount of land used for single-family homes tripled from 1965 to 1977. This coincides with demographic trends for the period, which showed dramatic, increases in population and housing. Housing growth slowed considerably during the late 1970s and 1980s. Consequently, there was little change in the amount of land devoted to single-family use from 1977 to 1994. From 1990 to 2000 the Township experienced a 19% change in the number of household units. Because of the decrease in the size of households the Township has seen new housing but not a proportionate amount of population growth. The amount of single-family residential land increased by 25% between 1994 and 2005, and remained unchanged in 2013.

Land Use Categories	Year of Land Use Inventory					Change			
	1965	1977	1994	2005	2013	1965-77	1977-94	1994-05	2005-13
Residential									
Single Family	388.4	506.3	1,072.70	1,343.40	1,343.00	30.4%	111.9%	25.0%	(-0.3%)
Multiple Family	0.1	2.1	28.7	72.6	68.6	2000.0%	1266.7%	153.0%	(-5.5%)
Business									
Commercial	13.3	12.1	16.1	36.8	40.8	-9.0%	33.1%	129.0%	10.9%
Office			15.3	16.1	16.5			5.2%	0.25%
Industrial	124.1	114.7	244.5	118	118	-7.6%	113.2%	(-52%)	0.0%
Detroit Edison	306.7	1,040.80	1,110.20	1,064.60	1,064.60	239.4%	6.7%	(-4%)	0.0%
Public Land									
Parks		75.7	98.2	94.9	94.9		29.7%	-3.0%	0.0%
Public School	55.5	55.5	89.7	80.1	80.1	0.0%	61.6%	-11.0%	0.0%
Other Public	16.9	35.1	42.3	66.2	66.2	107.7%	20.5%	56.0%	0.0%
Quasi Public	9.2	32.4	80.2	86.9	86.9	252.2%	147.5%	8.0%	0.0%
Other									
Road R.O.W.	224.2	207.3	214.1	224.5	224.5	-7.5%	3.3%	5.0%	0.0%
Rivers and Canals	71.1	71.1	71.1	71.1	71.1	0.0%	0.0%	0.0%	0.0%
Railroad R.O.W.	37.5	37.5	30.3	30.3	30.3	0.0%	-19.5%	0.0%	0.0%
Developed	1,248.70	2,191.90	3,117.40	3,305.40	3,305.40	75.5%	42.2%	6.0%	0.0%
Undeveloped	3,087.50	2,144.30	1,218.90	1,050.50	1,050.50	-30.6%	-43.2%	-14.0%	0.0%
Total of All Land	4,336.20	4,336.20	4,336.20	4,355.90	4,355.90				
*Allowances made for decreases in Edison and industrial land that are primarily due to more accurate GIS information. Increases in land use only, equal 377.3 acres									

DTE Energy is the second largest land use in East China Township. As shown in Table 1, the amount of land owned by DTE Energy in the Township has increased consistently since 1965. Currently their holdings cover 1,064 acres of land. This is about two square miles of area and roughly one fourth of all land in the Township. In addition, as shown by the land use map, DTE Energy has considerable land area along the Township boundary to the west in adjacent China Township. DTE Energy land spans more than two lineal miles of Range Road frontage.

Multiple-family residential housing constitutes a very small proportion of the Township's land use. Currently 68 acres of the Township are being used for multiple-family development. As a proportion, this is a noticeable increase since 1977 when there were only 2.1 acres. The Townships multiply family development is composed of tradition apartments, two-family residential, senior living and mobile home living. This mix of multiple-family uses allows for affordable housing for a variety of age groups and economic levels.

Generally, business uses occupy from two to four percent of all developed land in a typical community. The large amount of land owned by DTE Energy makes a straight comparison to other areas impossible. When the total acreage figure is adjusted to account for the DTE Energy land, business uses occupy only about 2 percent of all developed land. It can be surmised that this may be attributed to the significant commercial areas in nearby St. Clair and Marine City.

Industrial use accounts for 4 percent of developed land and about 3 percent of all land within the Township. These percentages show that East China is on the same level as other Townships with the mean being near 4 percent for most townships. DTE Energy is a large industrial use and if included as industry, the total would account for 36% of all developed land.

The amount of Township parkland has increased significantly over time. In 1965 there were no public parks in the Township. Township parks now occupy 94 acres. The majority of this parkland is concentrated in the large Township Park, which is 80 acres and located near the Township Hall. The balance is made up of land occupied by two waterfront areas; one at the south and one at the north end of the Township and by a neighborhood park located at the intersection of Elmwood and Riverside.

East China Public School District occupies 80 acres within the Township. This includes East China Public School facilities and the East China Stadium.

The amount of public land has also increased over time. In 1965 there were 16.9 acres of land owned by the Township. This increased to 42.3 acres by 1994. The Township has constructed a treatment plant and water tower since the 1977 inventory, increasing the amount of public land considerably to 42.3 acres. In 2005 public land totaled 66 acres and includes all Township facilities including Township Hall. Public land is 2 percent of all developed land.

A total of 3 percent of all developed land falls within the quasi-public land use category. The amount of land within the quasi-public category has increased in recent years mainly due to the expansion of the hospital complex and construction of a church adjacent to the Township hall. Quasi-public also includes Rosehill cemetery and the South East Michigan Conservation Club.

The "other" category includes street right-of-way, rivers and canals and railroad right-of-way. With the exception of land used for bike path, the amount of land devoted to rivers and canals and railroad right-of-way has remained relatively constant since 1965. A number of rail lines or spurs in East China are no longer in use. However, it appears that much of the right-of-way is still owned by railroad companies. Road right-of-way on the other hand decreased from 1965 to 1977, and increased from 1977 to 1994. The increase in recent years is related to the development of subdivisions and the expansion of some road right-of-way widths since 1977. At present 224 acres of land are in use as road right-of-way. This is about 7% percent of all developed land.

Land Use Category	Area (Acres)	Percent of Developed	Percent of All Land
Residential	1,416		
Single Family	1,343.0	41%	31%
Multiple Family	68.6	2%	2%
Business	52.9		
Commerical	40.8	1%	
Office	16.5	<1%	<1%
Industrial	118	4%	3%
Detroit Edison	1,064.60	32%	24%
Public Land			
Parks	94.9	3%	2%
Public School	80.1	2%	2%
Other Public	66.2	2%	2%
Quasi Public	86.9	3%	2%
Other	325.9		
Road R.O.W.	224.45	7%	5%
Rivers and Canals	71.1	2%	2%
Railroad R.O.W.	30.3	1%	<1%
Developed	3,305.40	100%	76%
Undeveloped	1,050.50		24%
Total of All Land	4,355.90		100.00%
Created Using Land Use Data from St. Clair County and Land Use Survey Results			

DEMOGRAPHICS

COMMUNITY DEMOGRAPHICS

PAST POPULATION GROWTH

From 1960 to 1980, East China Township experienced very rapid growth. However, population growth slowed significantly from 1980 to 1990 although it picked up again in 2000 but not at the previous rates. Population growth from 1980 to 1990 was 3.0 percent, the lowest rate for the area. While many communities experienced a decline in population during the last decade, East China experienced a slight growth. Trends in Southeast Michigan indicate that most areas which experienced growth from 1990 to 2010 did so due to population shifts rather than sizable increases in the number of live births. This is probably true for the Township and St. Clair County as a whole and thus, its population increases are most likely related to migration from the Detroit Metropolitan Area. From 1960 to 2010, Detroit and other large cities experienced tremendous drops in population as residents moved to the suburbs. From 1960 to 2010 Detroit's population decreased by over a million people.

East China Township Population Growth	
Time Span	% Change
1960-1970	56%
1970-1980	46%
1980-1990	3%
1990-2000	13%
2000-2010	4.4%
1960-2010	176%

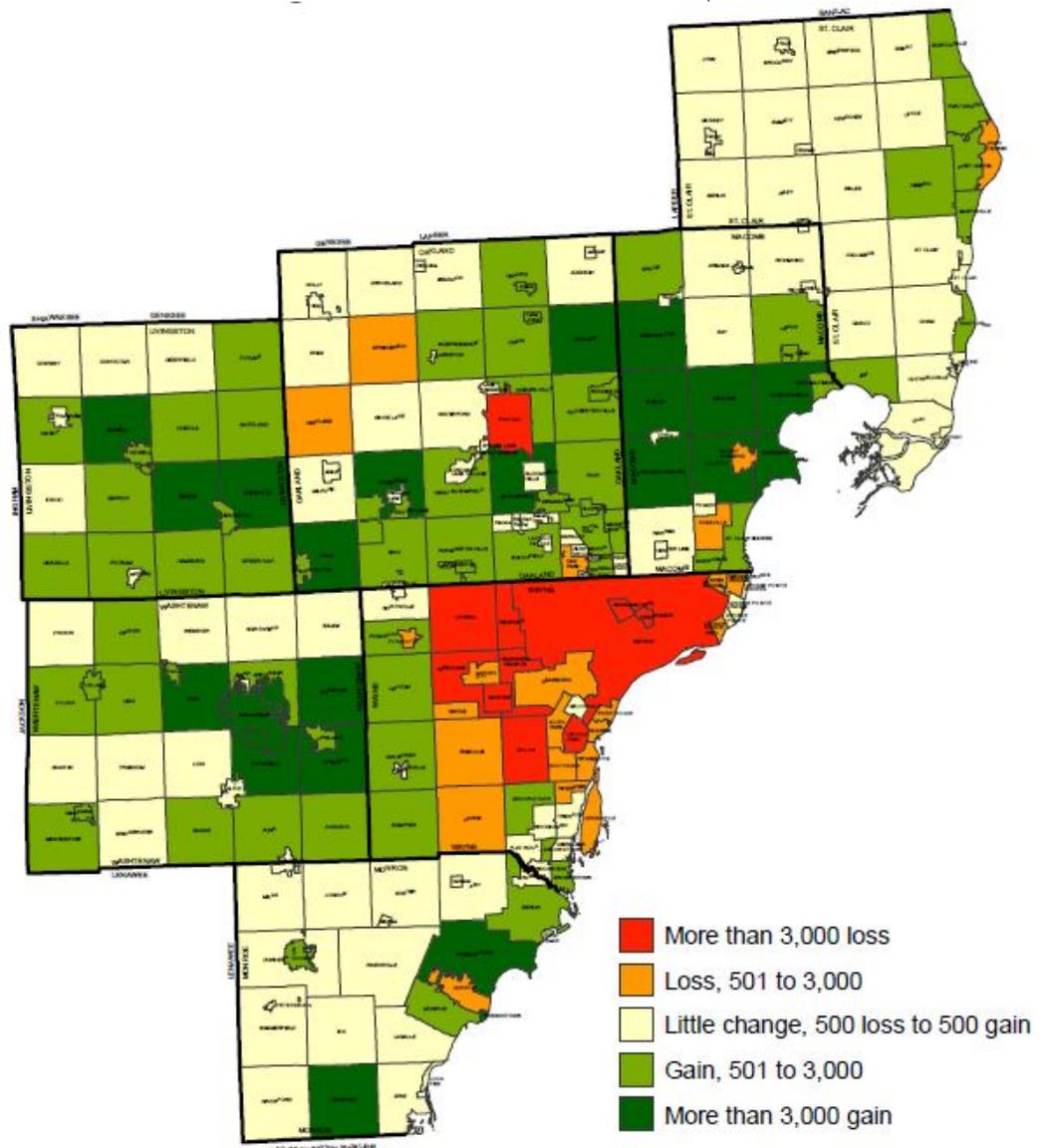
Table 3
Comparison of Population Trends

Community	1980	1990	2000	2010	2010 U.S. Census		
					1980 to 1990	1990 to 2000	2000 to 2010
East China Twp.	3,122	3,216	3,630	3,788	3.0%	12.9%	4.4%
China Twp.	2,466	2,644	3,340	3,551	7.2%	26.3%	6.3%
Cottrellville Twp.	3,075	3,301	3,814	3,559	7.3%	15.5%	-6.7%
Marine City	4,414	4,556	4,652	4,248	3.2%	2.1%	-8.7%
City of St. Clair	4,780	5,116	5,802	5,485	7.0%	13.4%	-5.5%
St. Clair County	138,802	145,607	164,235	163,040	4.9%	12.8%	-0.7%
State of Michigan	9,262,078	9,295,297	9,938,444	9,883,640	0.4%	6.9%	-0.5%

This shift from Detroit and its nearby suburbs to more rural areas helped fuel the Township's growth from 1960 to 2010. As noted earlier, more recent growth is probably related to the popularity of areas with water access. Even though population growth slowed after 1980, the number of households in East China increased by 51.2 percent over the last thirty years. This inconsistency is quite remarkable and it illustrates the significant impact that age distribution can have on population. For example, East China's median age is 50.2 years; the highest in the area and the household size (2.37 persons) is the lowest. In fact, should this trend in household size change to any significant degree, population could increase very rapidly even without sizeable increases in the housing stock.

This shift from Detroit and its nearby suburbs to more rural areas helped fuel the Township's growth from 1960-2010

The Map below represents Population Change by Community for Southeast Michigan, 2010-2040. (SEMCOG)



POPULATION PROJECTIONS

Population growth is different for each municipality depending upon societal and economic factors. Population projections are estimates of the population for future dates. These estimates are based upon domestic migration and international migration as well as future birth and death rates. A range of forecasting methods was used to forecast future populations in the Township. These have been summarized in the corresponding table and averaged to produce very general predictions.

The Southeast Michigan Council of Governments (SEMCOG) population estimates are based, in large part, on the community's housing stock. Information on new construction, including residential building permits, is collected directly from each community and used to update its housing base. Demographic factors and trends, such as vacancy rates and changes in household size, are then applied to the data to produce the population estimates. At present, household sizes are extremely small due to the Township's high median age. Some communities go through age cycles; from young to old to young again. Should this occur in East China, an influx of young families could mean an explosion in population growth as these young families begin to have children.

Location	2010 (Actual)	2020	2030
East China Twp.	3,788	8,954	4,289
St. Clair County	163,040	161,506	164,655

AGE GROUP TRENDS

From 1980 to 2010, the Township's age characteristics changed dramatically. There has been a tremendous increase in the median age. An increase in median age would be expected corresponding to the aging of baby boomers and in fact, the number of people in the 25 to 44 age group has increased. However, preschool and school age groups have declined. Table 5 below, shows age group proportions for East China Township and its neighbors. It illustrates that East China Township is extremely unique compared to surrounding communities. Its median age is much higher than any of the other communities and it has almost the lowest proportion of people in every age group below 45 and, except for China Township, the highest proportions of ages above 45. And, it is the only community in the local region in which the 25 and older population is greater than 75 percent.

Unlike its neighbors, East China Township has over 75% of its population over 25 years of age.

Table 5		2010 U.S. Census			
Comparison of Age Distributions					
Age Group	East China Township	China Township	Cottrellville Township	Marine City	St. Clair City
Under 5	4.1%	3.7%	4.4%	5.1%	5.1%
5 to 19	15.0%	23.1%	20.1%	21.0%	20.9%
20 to 24	4.9%	4.2%	5.6%	4.9%	5.0%
25 to 44	17.7%	21.4%	21.6%	25.7%	22.9%
45 to 54	16.1%	20.6%	18.9%	16.0%	17.0%
55 to 64	15.9%	14.6%	16.1%	11.9%	7.4%
65 to 74	13.0%	7.5%	7.9%	7.5%	13.9%
75 to 84	8.2%	3.7%	3.8%	5.2%	5.3%
85+	5.0%	1.3%	1.6%	2.6%	2.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Median Age	50.2	44	44.2	40.2	42.5

HOUSING AND EMPLOYMENT:

HOUSEHOLDS

Since 1980, East China Township has significantly increased the number of households, adding nearly 600 between 1980 and 2010. The largest increase, by number and proportion was from 1990 to 2000, when 231 households were added. Historically, between 1960 and 1990, housing growth in East China Township was generally much higher than growth in adjacent areas (except for Cottrellville between 1970 and 1980) and has been well above growth rates for the County as a whole. During the last decade, however, neighboring China Township had a considerably higher growth rate.

It should be noted that consistent increases in the number of households does not necessarily imply commensurate increases in population. Although housing growth has been significant, population growth has been more flat, especially between 2000 and 2010. This is a result of a decrease in the number of persons residing in a home, which is a national trend. In many ways, housing growth can be a more accurate indicator of growth than population. For example, an increase in housing can dramatically affect demand for Township water, sewer, police and fire services. A similar increase in population without an increase in the number of housing units would not have the same impact.

During the last decade, East China had a high growth rate compared to neighboring communities.

Household size has been declining which accounts for more housing unit, but proportionately less population.

Community	1980	1990	2000	2010	1980 to 1990	1990 to 2000	2000 to 2010
East China Twp.	1,060	1,236	1,467	1,603	16.5%	18.7%	9.3%
China Twp.	706	817	1,106	1,271	15.7%	35.4%	14.9%
Cottrellville Twp.	1,054	1,171	1,384	1,389	11.1%	18.2%	0.4%
Marine City	1,575	1,693	1,860	1,765	7.5%	9.9%	-5.1%
City of St. Clair	1,764	2,015	2,322	2,306	14.2%	15.2%	-0.7%
St. Clair County	47,308	52,882	62,072	63,841	11.8%	17.4%	2.8%

AGE OF HOUSING:

East China Township's housing stock is relatively new. The majority (nearly 55%) of all housing has been constructed since 1970. This is consistent with the proportions of the County's housing built since 1970. A fair number (183) of the housing units were built prior to 1939. Some of these may be of historic note and others display good architectural characteristics that may be worth preserving. While the proportion of units in the Township built prior to 1939 is far below the proportions for the County, their relative scarcity may make them more valuable to the Township as historic resources.

Newer homes, which are more expensive than existing homes have played a large part in increasing the median home value.

The table below shows median household income and median home values for East China Township and its neighbors. The Township ranked second in the income list and second in home value in the area. Twenty years ago, it was highest in home value in the County. Today China Township has surpassed the Township in median home value. Evidently, as home values increased in the Township, a number of people who purchased their homes many years ago have remained. Newer homes, which are more expensive than existing homes have played a large part in increasing the median home value.

At the same time, there has been a tremendous increase in the demand for waterfront property in recent years and East China Township has a considerable amount of frontage along the St. Clair River. Thus, homes that have existed for years are now more highly valued.

Table 7		2010 ACS	
Age of Housing, East China Township			
Year Structure Built	East China Township		St. Clair County
	Number	Percent	
2000 or later	178	11.0%	12.6%
1990 to 1999	144	8.9%	15.9%
1980 to 1989	344	21.2%	11.3%
1970 to 1979	318	19.6%	15.2%
1960 to 1969	108	6.6%	9.4%
1950 to 1959	281	17.3%	10.5%
1940 to 1949	67	4.1%	7.9%
1939 or earlier	183	11.3%	17.2%
Total	1,623	100.0%	100.0%

Table 8		2010 ACS	
Median Income and median Home Value			
Community	Median Household Income	Median Home Value	
East China Twp.	53,398	185,500	
China Twp.	60,139	214,400	
Cottrellville Twp.	50,652	169,800	
Marine City	44,075	111,400	
City fo St. Clair	45,223	158,700	
St. Clair County	49,120	150,300	

Today a total of 22.5 percent of East China residents are employed in the manufacturing industry. This percentage is comparable with the County at 20.2 percent. The next largest industry class in the Township is education, health and social services with 20.2 percent of the population employed in this sector. 7.3 percent of the population was employed under transportation and warehousing and utilities, which includes those employed by DTE Energy. The Township's employment by Industry looks much the same as the County.

Today a total of 22.2 percent of East China residents are employed in the manufacturing industry. This percentage is comparable with the County at 20.2 percent.

When looking at employment it is beneficial to look at commuting patterns for the Township. This helps to identify where Township residents are employed outside of the Township. The Mean Travel Time to Work was 34 minutes in 2000, today its 28.3 minutes. 87.6 percent of the population drive alone to work and 9.4 percent reported they carpoled. These statistics show that many residents work outside of the Township and, contribute to traffic during peak drive time periods.

	East China Township		St. Clair County	
	Number	%	Number	%
Agriculture, Forestry, Fishing and Hunting, Mining	0	0.0%	635	0.9%
Construction	98	7.5%	4,332	6.4%
Manufacturing	288	22.2%	13,654	20.2%
Wholesale Trade	23	1.8%	1,061	1.6%
Retail Trade	138	10.6%	9,734	14.4%
Transportation and Warehousing and Utilities	95	7.3%	3,598	5.3%
Information	37	2.8%	668	1.0%
Finance, Insurance and Real Estate	45	3.5%	2,460	3.6%
Professional, Scientific, Management, Admin, Waste Management	112	8.6%	4,481	6.6%
Education, Health and Social Services	263	20.2%	15,519	22.9%
Arts, Entertainment, Recreation, Accommodation, Food	140	10.8%	5,526	8.2%
Other Services	42	3.2%	2,978	4.4%
Public Administration	18	1.4%	3,105	4.6%
Employed Persons 16 Years and Over	1,299	100.0%	67,751	100.0%

EMPLOYMENT BY OCCUPATION:

According to current census data 30.2 percent of the East China Township workforce is working in management, professional, and related occupations. This is the largest occupation group within the Township followed by sales and office occupations with 24.9% and then service, at 20.2%. These percentages closely follow that of the rest of the County. The employment profile, which favors higher paying jobs, contributes to East China Township income levels being higher than the County average.

Table 10		2010 ACS		
Employment by Occupation				
	East China Twp.		St. Clair Co.	
	Number	%	Number	%
Management, Business, Science and Arts	392	30.2%	18,557	27.4%
Service	262	20.2%	12,484	18.4%
Sales and Office	324	24.9%	17,338	25.6%
Natural Resources, Construction, and Maintenance	76	5.9%	7,190	10.6%
Production, Transportation, and Materials	245	18.9%	12,182	18.0%

Table 11		2010 U.S. Census	
Comparative Income Levels			
	East China Twp.	St. Clair County	
Median Household	53,398	49,120	
Median Family	64,464	56,670	
Per Capita	25,072	23,828	

EDUCATIONAL ATTAINMENT:

A high proportion (20.5%) of East China residents who are at least 25 years old are college educated. This is a slight decrease over 2000 (20.2%) and it is because the percentage of persons with bachelor's degrees decreased from 10.2 percent to 9.5 percent. A very high proportion of Township residents who are at least 25 years old, have some college education, 25 percent. Compared to its neighbors, East China Township has a high proportion of 25 year olds that are college educated, (20.2 percent). This is the same as China Township where 20.5 percent of the residents are college educated but it is below St. Clair City's figure of 40.7 percent. East China has a high proportion of people with graduate or professional degrees, 6.0 percent, but this is still less than St. Clair's figure of 13.5 percent. East China no longer exceeds its neighbors in the proportion of residents with some college but no degree. This distinction now falls to China Township.

Table 12		2010 ACS				
Educational Attainment, East China and Neighboring Communities						
Educational Attainment (People 25 years and Over)	East China Township 2000	East China Township	China Township	Cottrelville Township	Marine City	City of St. Clair
High School (no diploma)	20.4%	16.4%	6.5%	9.1%	11.8%	5.7%
High School Graduate	34.3%	37.9%	38.6%	43.5%	41.2%	29.8%
Some College (no degree)	23.2%	25.1%	30.7%	25.1%	24.4%	23.8%
Associates Degree	6.9%	5.0%	11.0%	1.8%	12.1%	13.9%
Bachelor Degree	10.2%	9.5%	7.2%	7.3%	7.6%	13.3%
Graduate or Professional Degree	5.0%	6.0%	6.1%	4.2%	2.9%	13.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

DEMOGRAPHIC SUMMARY:

POPULATION:

Population in the Township has been climbing at an increasing rate since 1940. The greatest increase was experienced from 1970 to 1980 when population jumped by 983 people over the decade. Growth from 1980 to 1990 slowed considerably. The 1990 population was 3,216, 3,630 in 2000 and 3,788 in 2010, According to the Southeast Michigan Council of Governments (SEMCOG). A population of 4,289 is forecast by SEMCOG for the year 2030. The Township has a low proportion of preschool and school age children and a high proportion of people above the age of 45, especially seniors. This results in a median age for the Township that is far above its neighbors.

HOUSING:

Most of East China Township's housing has been constructed since 1960. The decade from 1970 to 1980 showed the most intensive growth when 394 units were constructed. Growth from 2000 to 2010 was slower than previous decades. About 71.5 percent of the Township's housing is owner occupied, which is less than common for the area. This does not mean that single-family homes are being rented but rather that the Township has more apartment buildings than some local communities. 19.1 percent of the households in the Township are renter occupied. East China has the 3rd highest median home value in the area, \$185,500. It also has the lowest number of people per household, 2.32 for owner occupied units and 1.82 for renter occupied units.

ECONOMY:

Compared to the County, East China Township has a strong economic base comprised of residents with higher educational attainment with jobs as professionals and managers in a variety of industries. This has produced higher income levels, which are a broad measure of a community's economic health.

The greatest population increase was experienced from 1970 to 1980 when population jumped by 983 people over the decade.

East China has the 3rd highest median home value in the area, \$185,500. It also has the lowest number of people per household, 2.32 for owner occupied units and 1.82 for renter occupied units.

FUTURE LAND USE

RESIDENTIAL AREAS:

SINGLE- FAMILY RESIDENTIAL

Residential land use is the most extensive use in the Township, covering slightly more area than DTE Energy. Of the residential land uses, single-family homes cover the most area. In fact, existing and planned single-family districts account for approximately 97 percent of all residential area. Areas designated as "single-family residential" on the Future Land Use Map are intended primarily for use by single housing units, each located on their own lot or land area. Within this category, other related uses should be encouraged such as parks, golf courses or libraries which serve the residents of the area without hampering the single-family environment. Other uses of a more intense nature should be strictly prohibited from intruding into the single-family areas and should, where practical, be separated by a transitional use. In such instances where a transitional use cannot or does not exist, buffers between the uses should be created with walls, berms and landscaping.

Single-family housing and lot sizes within Township vary significantly. Many homes along the waterfront that were built originally as cottages have been converted to permanent occupancy in recent years. These areas have a unique character and require special zoning standards to assure that change is not prohibited and occurs in a manner that has a positive impact on the area as a whole. At the opposite end of the lot size spectrum are large acreage parcels. A number of homes in the Township are on large parcels that are not within typical subdivisions. In some cases these large areas will probably be further split to allow additional home sites or will be subdivided. However, due to environmental conditions, lot shapes and the setting of the homes on the lots, many of these lots will never have more than one home.

Many new subdivisions are currently being developed along M-29 or River Rd. These have been developed under the guidance of and in conformity with the Township's land use regulations. Generally, the lot sizes within the Township have been well established for many years. The zoning ordinance includes three minimum single-family residential lot sizes; 7,800 square feet, 10,200 square feet and 14,500 square feet. These lot sizes equate to densities of 4.1, 3.2 and 2.2 lots per acre respectively when an estimate of space necessary for road construction is taken into account. The larger lot size was added to the zoning ordinance because market forces seemed to be demanding somewhat larger lot sizes for larger homes than were anticipated by the original two lot sizes of the zoning ordinance. Of course, the minimum standards do not set a maximum lot size and thus, the lot size minimums do prohibit developers from reestablishing larger lots.

MULTIPLE-FAMILY RESIDENTIAL

Multiple-family residential development has greatly increased over the past few decades with an especially significant increase of housing units for the elderly. However, the amount of planned multiple-family area is still very low in relation to residential land use as a whole. It should be noted that the existing mobile home park, which covers about three acres of land, is included within the multiple-family category for the purposes of the existing land use study and density. However, the multiple-family residential category of the Future Land Use Map is not intended to imply that mobile home parks would be permitted within any area shown for multiple-family use. Mobile home parks are unique developments with use characteristics unlike a typical multiple-family development. Certainly the architecture of the units is different. In addition, the layout and infrastructure demands of mobile home parks are significantly different from multiple-family units and the uses allowed by the State within mobile home parks are far more extensive than those that would be permitted within one of the Township's multiple-family districts.

Multiple-family areas are intended primarily for a range of residential uses such as apartments and attached site condominiums. The key distinction is that areas designated as multiple-family will allow two or more housing units to be located on a single land area. The uses would typically be developed at a higher density than single-family areas thus allowing them to serve as transitional uses from areas of non-residential use or major thoroughfares. Related accessory uses such as child care centers or recreation facilities could also be situated in multiple-family developments.

There are four major areas planned as multiple-family in the Township. Two of these are located on Bree Road in the north part and two more are located more centrally off Point Drive and at M29 and Charmberlain. The last, located on the north side of Puttygut Road, represents a change to the Master Plan. This frontage was planned as commercial. However, the intersection with M-29 has been zoned and is developing as multiple-family. The remaining frontage between this site and the cemetery has also been zoned as multiple-family. This zoning change reflects an obvious change to the Master Plan and it is changed accordingly.

NEIGHBORHOOD UNITS

A neighborhood unit is an area containing residential land uses that have an easily identifiable cohesiveness due to lot sizes, development forms, housing styles, physical characteristics or natural boundaries. The physical boundaries include natural and man-made features such as major thoroughfares, railroads, rivers, and other existing or planned uses that are of a greater intensity than residential uses. From a planning standpoint it is important to reinforce the cohesiveness of a neighborhood unit and limit land uses contained within the neighborhood to those serving the residential function such as open spaces, park land, elementary schools and, of course, housing.

The neighborhood unit should remain free from intrusion by non-residential uses. Consideration of community character as to landscaping, facade and building layout and open space conservation can result in new neighborhoods and houses that are developed without having significant impact on the character and feel of the existing neighborhoods within the Township. These areas are designated as Single-Family Residential on the Master Plan.

HOLDING CAPACITY

A build-out analysis for the entire Township was conducted in order to determine the future number of dwelling units and population. The build-out analysis involved a review of existing land uses, developments that are currently being reviewed by the Township or are under construction.

Constraints to this development included existing built areas, wetland areas, steep slopes, road right-of-way, surface water, and parcels that were not zoned residential. Using the zoning code to identify densities, the number of potential dwelling units is determined by applying the density of units per acre to the buildable residential land available. This results in a total potential for 2,396 new dwelling units in the Township. The potential for new persons can also be estimated by applying the average family size to the number of expected dwelling units. Adding this to the current population results in an estimate for a capacity of approximately 9,200 persons.

Table 13 Build-Out Assessment				
	Units Per Acre	Net Buildable Area	Potential Dwelling Units	Potential Population*
R-1 Single Family Residential	4.1	194 ac.	795	1,797
R-2 Single Family Residential	3.2	125 ac.	400	904
R-3 Single Family Residential	2.2	472 ac.	1,038	2,346
R-M Multiple-Family Residential	10.89	15 ac.	163	368
TOTALS			2,396	5,415
*Population Capacity Based on 2.26 Persons Per Household (US Census 2010)				

EAST CHINA TOWNSHIP Buildout Analysis

Data Source: St. Clair County GIS, 2005. Vilican Leman & Associates Inc.

October 10, 2006

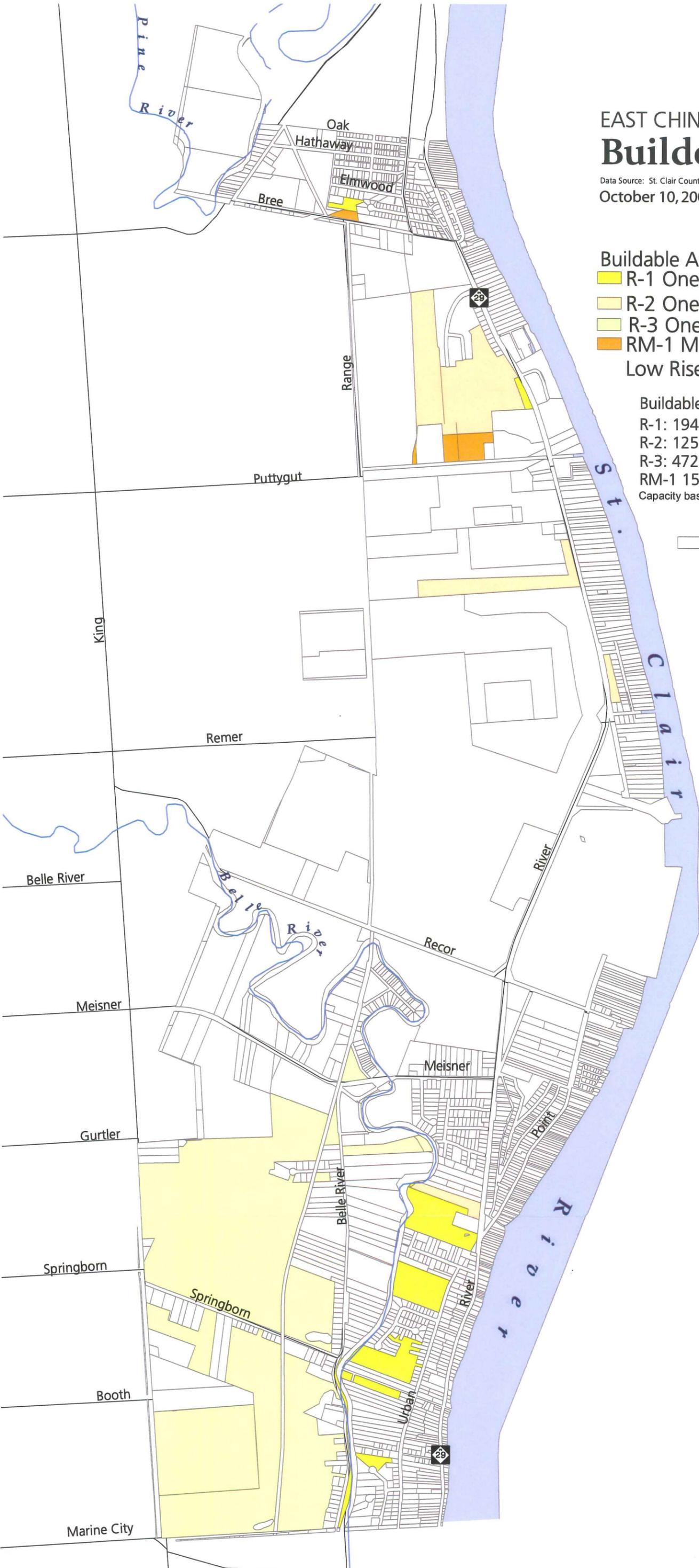
Buildable Area

- R-1 One Family Residential (4.1 Units/Acre)
- R-2 One Family Residential (3.2 Units/Acre)
- R-3 One Family Residential (2.2 Units/Acre)
- RM-1 Multiple Family - Residential Low Rise (10.89 Units/Acre)

Buildable Area by Zoning Class

R-1: 194 Acres; 795 Dwelling Units; 1,109 Persons
 R-2: 125 Acres; 400 Dwelling Units; 960 Persons
 R-3: 472 Acres; 1,038 Dwelling Units; 2,492 Persons
 RM-1 15 Acres; 158 Dwelling Units; 380 Persons
 Capacity based on 2.4 persons per household. Data Source: US Census 2000.

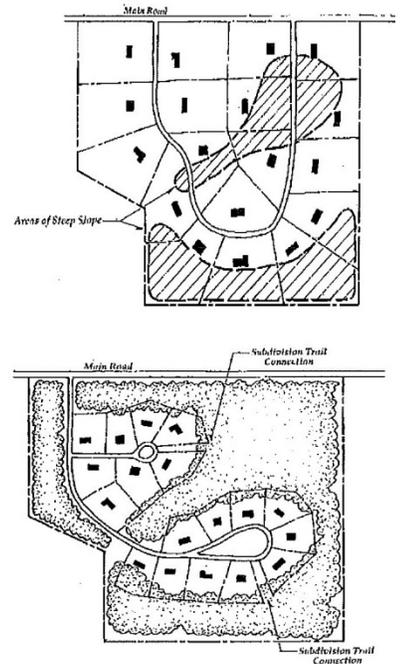
- Constraints to Development
- Existing Built Areas
- Wetland Areas
- Steep Slopes
- Road Right-of-Ways
- Surface Water
- Non Residential Zoned Parcels



OPEN SPACE

The provision of open space within a neighborhood is desirable and should be strongly encouraged. In the past, elementary schools formed the nucleus of the neighborhood unit providing community space, play areas and open land. Most elementary schools built today are constructed along the edge of a neighborhood unit with direct access to a collector street. These new schools often serve not one, but several neighborhood units. Without the benefit of this public space being provided by the schools, communities have attempted to provide the space through other means, either by creating public parks or working with developers to provide private open space for neighborhood residents. Such space may be in the form of active recreation space for unorganized sports or as passive open space provided to preserve sensitive natural areas such as a flood plain, wetland or forest.

Aside from outright purchase of space, "single-family clustering" and "open space subdivisions" are valuable zoning tools that can be used to encourage the provision of open space. The one-family residential cluster housing option allows the development of sites in an alternative manner where the normal subdivision approach would be too restrictive due to the parcel's shape, environmental characteristics, or location in relation to other land uses. Under this option homes can be placed close to one another or attached in a concentrated portion of the site. The remaining area is left preserved or used for park space while the overall density of the site is maintained.



The top diagram represents the lay out for a traditional subdivision. The bottom diagram depicts the lay out for a subdivision using clustering principles to conserve open space. Both options have the same number of housing units.

Under the open space option lot area and width is reduced to a set amount below what would normally be permitted. In exchange, the area that would have been used within the lot is used instead within a common open space. When using the open space option there should be a focus on achieving open space in a form that promotes a goal of the Township. This could include providing recreation land, preservation of natural features, or providing open space linkages to other neighborhoods. Such a mechanism can be accomplished either through a planned development approach or as an open space option. In either case, the density should remain the same as it would through conventional development.

COMMERCIAL LAND USE:

Generally, as a community grows and population increases, businesses locate within the community to serve the residents. However, the residential population of East China is concentrated primarily in two areas: the southern and northern portions of the Township. Existing commercial districts within Marine City to the south and the City of St. Clair to the north serve the shopping needs of residents in these areas. Thus, growth in population for East China may not result in a corresponding growth in commercial uses if commercial uses in adjacent cities meet the needs of new residents.

CLASSIFICATION OF COMMERCIAL USES:

Commercial land uses can be broken down into several categories related to the type of use and intensity. There are many factors involved in the location and type of commercial business that an area can support. Therefore, they are divided into separate categories, with separate land use restrictions. The Township Zoning Ordinance has three different zoning districts that reflect these variations in type. They are referred to as "Local, Community and General" district types.

LOCAL BUSINESS:

Uses included in this category serve the convenience needs of the Township's residents. It is important that they be located in close proximity to residential uses and therefore, the uses allowed in these areas are limited to assure that they do not negatively impact nearby residences. Uses such as small grocery stores and beauty salons are typical local businesses permitted. Setback requirements are minimal because the sites are oftentimes small.

COMMUNITY BUSINESS:

This includes a wider range of uses than would be included in the neighborhood business category. The uses are intended to be clustered in shopping centers and serve a broad population base of consumers. The centers should be isolated, where practical, from single-family residences because of their intensity. When abutting a single-family development, a transitional land use is often planned as a buffer or heavy landscaping and screening is used. These areas would cater to both the convenience and comparison-shopping needs of the Township residents. Uses such as sit down restaurants; theaters and large grocery stores are typical community businesses.

GENERAL BUSINESS:

These uses do not rely on a synergistic relationship one another and are often located so as to serve passer-by traffic. Thus, they may offer products and services to consumers from both within and from outside the community. Because these uses tend to have a high rate of traffic generation and vehicle turn-over, it is necessary that they be located only along high capacity roadways. Uses such as automobile service stations and fast food restaurants are typical general businesses.

For many, many years now, the Township Master Plans have reflected a land use policy that encourages the residential development of most areas of the Township. Existing developments line even the major roads. For this reason, there are no areas planned for general business development. And, through the years, the Township has resisted attempts to establish such use areas through zoning changes of even existing uses that are nonconforming. Again, market driven forces have not been strong enough in the Township to give an indication that there is a significant need for such uses; they are provided for by neighboring communities.

OFFICE SERVICE BUSINESS:

This zoning and land use category is intended to accommodate space for sales, services, and other general uses in an office environment. These uses usually have a lower intensity than commercial uses because they have a relatively low volume of traffic, do not require extensive delivery of goods or other trucking activity and have relatively short hours of operation. These uses may be included within transition zones between high and low intensity districts. They may also sometimes be part of a shopping center or a specialized district such as the medical campus. Uses such as accounting, banking, and real estate office are typical office service businesses.

PLANNED COMMERCIAL AREAS:

East China is positioned between the cities of St. Clair and Marine City, which have both traditionally served as shopping outlets for Township residents. Port Huron to the north and shopping areas in the Detroit area also provide residents with commercial retail and services. Therefore, the demand for commercial space within the Township has been low.

Offices

Office uses are not as heavily influenced by the surrounding population. Their market base may not necessarily aim to attract residents of community or passer-by traffic. In fact, their market influence may only be a small concentrated group of consumers. Also, the amount of vehicular and pedestrian movements as well as customer turnover is low. The factors that create a demand for large office uses are usually more regional than local in scope. Existing office service land use is very low in East China. Only a small area at the north edge of the Township and part of the medical campus contain office uses. The largest area planned for office use is within the medical campus district. It offers the opportunity for related businesses such as medical supply shops, pharmacies, and fitness centers.

Currently, there are no small office areas noted on the Master Plan nor are there any OS-1 Districts on the Zoning Map. However, the time may come when an office will be very helpful in providing reasonable use of a small parcel that is located where a transition is needed, where a business use would be objectionable.

Businesses

A small area for retail commercial activity is planned at the northern portion of the Township. It includes a relatively small district located on M-29 just south of the Township Boundary. The surrounding area is mainly residential. This district is planned primarily to accommodate the convenience shopping needs of that area's residents. There are also some existing business and office uses in the area that are zoned Local Business. This use area is not recognized on the Master Plan. There is no intent to change the zoning of these parcels. But, by planning the area as residential use, the intent of the Master Plan is to not consider expansion of the zoning for these small business uses.

Land east and south of the Township Hall is also planned for Commercial use. The previous plan set this area aside for industrial research office use. However, a number of recent changes have established a pattern of commercial uses. These were permitted because the General Business zoning remained in place, even though the Master Plan designated the industrial research office. It would be difficult to now establish a new type of use in the area. This General Business district is intended to accommodate uses that occupy large land areas.

The other commercial area of the Plan is located at the very southwest corner of the Township where there is good access via King Road. The uses are planned where they can "feed off" of the commercial area and uses developing in Marine City and China Township. It is a large area (about 70 acres depicted) and market forces will probably not result in rapid development. The Township's policy with regard to this, relative to market timing, is that the southern portion of the area should develop first. The intent is not to have business development occur on the northern portions of the area that could result in a "leap-frog" pattern and where market forces might not yet be strong enough to result in a shopping area, but rather an isolated low-value commercial use that would not be intensely developed. The General Business District off Park Road is available for these types of uses.

ACCESS MANAGEMENT:

Access management focuses on the control of vehicle movements in and out of a development as a means of improving the efficiency and safety of adjacent roads. Because business uses tend to generate high volumes of traffic, it is necessary to give special attention to the design of access. Access management can result in a reduction in the number, and spacing of driveways and thus, reduce the potential for accidents. The following guidelines should be applied:

- Whenever possible, adjacent developments should be encouraged or required to provide parking lot links in order to decrease the number of turning movements and increase the space between driveways.
- All driveways from Major or Collector Streets should include acceleration, deceleration and passing lanes.
- Driveways should be placed as far as practical from street intersections.
- Developers should be encouraged to work with the Township in the early stages of a development to determine the best driveway locations to minimize accidents and congestion, and to improve vehicle access.

INDUSTRIAL LAND USE:

Industrial uses, generally, represent a positive addition to a community's tax base and promote the welfare of an area by providing employment opportunities. East China currently has about 36 percent of its total developed land area in industrial use - about 27 percent of all land in the Township. The total amount of land planned for industry is approximately 1, 182 acres. DTE Energy property accounts for most of the existing and future planned industry - 90 percent, or 1,064 acres.

Few changes have been made in the shape and location of industrial districts. For the most part changes focus on eliminating land use conflicts between different districts. With the sizeable amount of industry existing and the extensive amount of industrial land available for the future, there is no apparent need for any new planned industrial areas to be added. The "Planned Industrial Areas" section which follows, highlights some of the changes made.

CLASSIFICATIONS OF INDUSTRIAL USES

INDUSTRIAL RESEARCH OFFICE (IRO):

IRO areas are intended to accommodate and attract new, high technology industrial uses, which are of a low intensity. These uses often have extensive portions of their buildings devoted to offices and tend to be located within industrial parks, isolated from heavy industrial areas.

LIGHT INDUSTRIAL:

The Light Industrial category is intended to provide space for industrial uses whether in or outside of an industrial park environment whose external physical impacts are restricted to the district. Such areas should be well separated from residential areas by transitional uses or intensive screening techniques as shown in the previous section, "Commercial Land Use."

HEAVY INDUSTRIAL:

This category accommodates industrial uses of a high intensity that typically exhibit external characteristics that may have an impact on surrounding areas. Such uses should not be located near single-family homes. Ordinances and review of plans by the Township should attempt to focus negative impacts to the rear of each site while providing a pleasant image from adjacent roads.

PLANNED INDUSTRIAL AREAS:

Industry has played a substantial part of East China's history. The Township has devoted a significant portion of its land to various industrial uses. The DTE Energy Utility Company holds the majority of it, most of which is in the central part of the Township. All of the planned industrial areas are located approximately in the central and northern portions of the Township.

The Industrial, Research and Office category is intended to accommodate and attract new, high technology industrial uses, which are of a low intensity. The category was new with the previous Master Plan and, as yet, a use of this type has not been established. These uses often have extensive portions of their buildings devoted to offices and tend to be located within industrial parks, isolated from heavy industrial uses.

The market potential for such uses in the Township is not evident. But, the district could be very helpful in the future to accommodate uses that would be acceptable but that would otherwise require industrial zoning that would also permit other uses that could have a negative impact on the surrounding area.

COMMUNITY FACILITIES:

PUBLIC FACILITIES

There are no significant changes anticipated in the near future to land that is owned by the Township. Land now devoted to Township activities includes several sites in addition to the Township Hall at the corner of River and Recor Roads. The sewer treatment plant is stationed along Recor Road near the St. Clair River. The state-of-the-art membrane microfiltration water treatment plant and above ground storage tank completed in 2001 are situated at the corner of Pointe Drive and Recor Road. The north end Township water tower is located on the very north border of the Township on Catherine Street. The south end tower is located along Springborn Road on a site shared with the DPW storage building.

Two tennis courts currently occupy the Township property along Recor Road that is planned to hold a Community Civic Center in the future. Current land devoted to Township facilities and planned facilities appears to contain adequate space for the current and future needs now anticipated. In 1952, East China Township constructed a water filtration plant on Recor Road. This original plant was rated with a 500,000 gallon per day capacity. This original facility was expanded in 1966 to provide 1million gallons per day. The new plant located at 5111 Pointe Drive will cover the needs of both East China Township and China Township until 2020. The new plant provides high quality drinking water using the first Zenon microfiltration system in the Midwest. This plant was complete in February of 2001 and has a 2.7 million gallon per day capacity. The new plant is jointly owned by East China Township and China Township.

A wastewater treatment plant was constructed on Recor Road in the early 1980 s. With the construction of this plant, the St. Clair River Sewer Authority was formed to serve the Townships of China and East China. The Sewer Authority operates the treatment plant, while the sewer transmission systems are operated by the respective Townships. A map is included on the following page, which graphically represent where sewer and water are currently available.

RECREATION FACILITIES

East China Township Park is the largest recreation facility in the Township located on an 80-acre site. The park includes baseball fields, soccer fields, a sledding hill, a dog park, picnic shelters, a community built playscape and a 10-acre nature area with trails. The park also contains a section of the Townships Bridge-to-Bay bike trail. The planned countywide bike trail will be more than 50miles long and extend from the Blue Water Bridge in Port Huron to Anchor Bay in Algonac. Many of the established parks are in need of improvement and restoration as is noted in the 2012 recreation plan.

SCHOOL FACILITIES

Past Master Plans have illustrated approximate locations of new school buildings based on family sizes and projected population growth. Even though the planning and construction of educational facilities are the domain and responsibility of the School Board, coordination sometimes allows land to be reserved for schools. An area between the bike path along the abandoned railroad rights-of-way and the existing public school property is planned for future school expansion. The land also provides a direct connection between the bike path and the existing public school property, thus allowing pedestrian access to the school site while minimizing road crossings.

Although even general locations are not shown for schools, there are planning principles that should guide the location of school sites. Elementary schools would ideally be located on Collector Streets because these streets are intended for traffic volumes that are greater than would be expected on local streets. Because the schools generate extra traffic, it is better to not locate them on a local street. Secondary schools, on the other hand, generate significant volumes of traffic, including the many high school pupils that drive to school. For these reasons, secondary schools should be located on Major Thoroughfares.

QUASI - PUBLIC USES

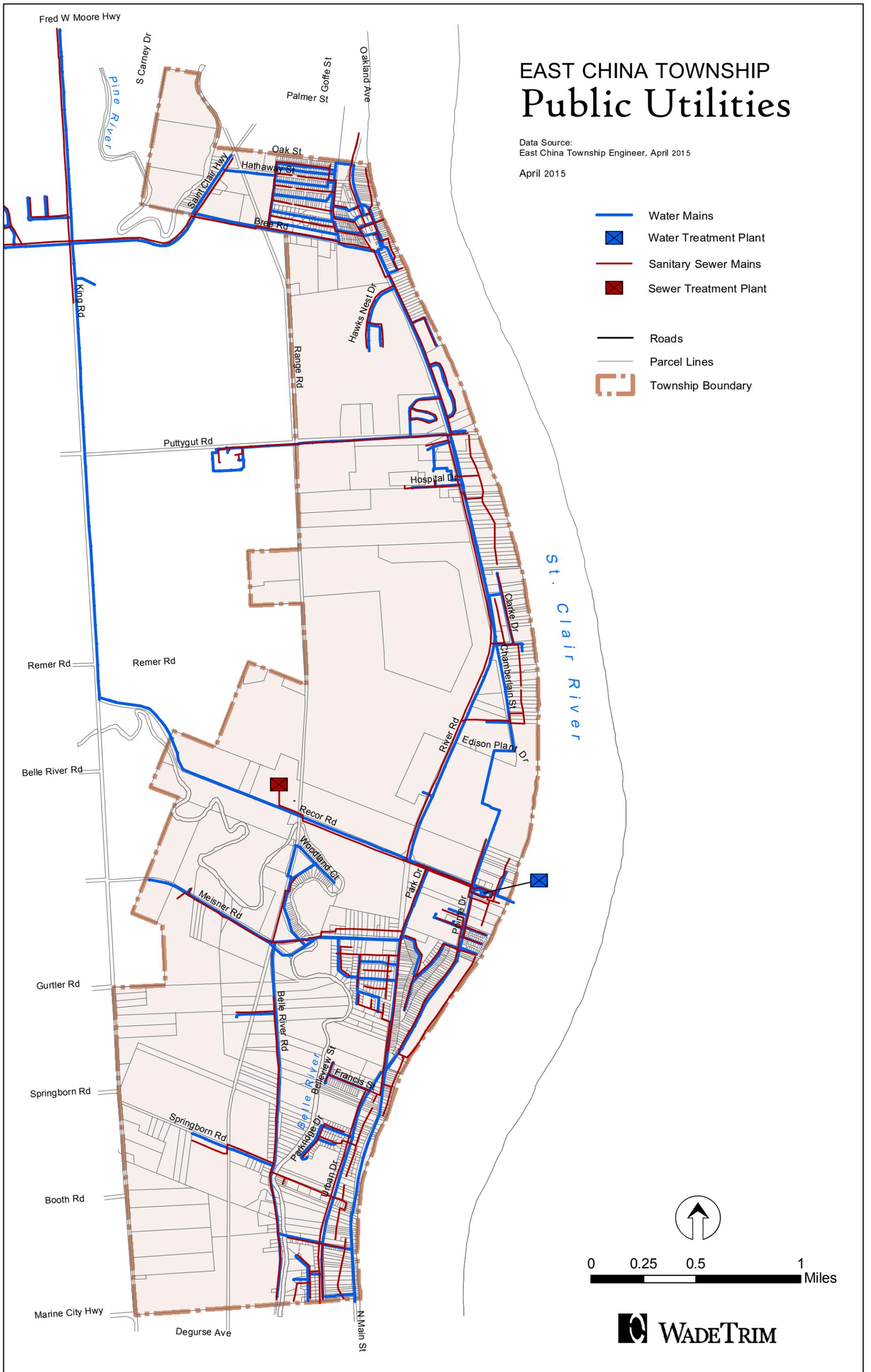
Future quasi-public additions will mainly consist of development relating to the River District Hospital, churches and daycare centers. Growth in this classification is projected to occur in a planned medical campus of related uses including medically related businesses, offices, elderly housing and hospital expansion. All of these uses should develop in a manner that emphasizes a pedestrian environment and encourages non-motorized circulation. This not only allows mobility for the local elderly residents but also promotes a convenient system for those working in the area. In addition to projected expansion in the immediate vicinity of the hospital, future residential subdivisions may also contribute to the expansion of quasi-public facilities in the form of private open space for the use of a neighborhood's residents.

EAST CHINA TOWNSHIP Public Utilities

Data Source:
East China Township Engineer, April 2015

April 2015

-  Water Mains
-  Water Treatment Plant
-  Sanitary Sewer Mains
-  Sewer Treatment Plant
-  Roads
-  Parcel Lines
-  Township Boundary



THOROUGHFARE PLAN

THOROUGHFARE LAND USE RELATIONSHIPS:

RESIDENTIAL

Only minor or local streets should be within residential neighborhoods. Through streets should form the boundaries when an existing physical feature or a related land use does not. The residential street layouts should serve to discourage through movements within the neighborhood. In the areas where residential neighborhoods border through streets, green space buffers, planting berms, and other various screening techniques should be applied. The main concern with residential areas near through streets is the safety and welfare of residents, especially children.

RECREATIONAL

Recreation facilities that serve the entire Township should be located on through streets, so that visitors can easily access the facility without impacting residential neighborhoods with heavy traffic. Neighborhood parks, depending on their size, can be located on local streets (if small) or on collector streets if serving more than one neighborhood (generally over ten acres).

COMMERCIAL

Shopping centers are best located on through streets (preferably major thoroughfares) because of the intensity of their use. Commercial areas generate a large number of turning and parking movements, which, if not properly planned, can cause dangerous driving situations and disruption to a through route. Ingress and egress points for commercial properties should be installed so that the location of turning movements may be controlled. Access management techniques such as driveway spacing, property entrance distances from intersections, parking lot connections of adjacent properties, and marginal access drives should all be considered when commercial development is proposed.

INDUSTRIAL

Through streets can be located within an industrial area or, in some cases, might be better located as buffers between residences and industry. The interior streets of an industrial zone or park should be developed to standards that facilitate the movement of large vehicles. This may include wider road, gentler turning radii and the ability to provide for sudden peak hour traffic loads. Street trees should be at least ten feet from internal drives to assure that trucks do not damage branches. Backing vehicles into the roadway should generally be prohibited and can best be controlled through the application of zoning standards and the review of site plans.

STREET CLASSIFICATION SYSTEM:

LOCAL STREETS

Local streets consist of residential streets and industrial district service drives. They are to be used by people traveling to and from destinations within the neighborhood or district. Local streets should allow access to collector streets wherever possible, but in such a manner that through traffic is not encouraged to use the streets as shortcuts. Application of the Township's Subdivision Regulations and site plan review process will assist in the development of local street networks by stubbing a street at the end of a site so it can be continued when the adjacent site is developed. A local street should be relatively short and narrow with a 66-foot right-of-way width, so as to divert high-speed traffic to through streets. Curbs and sidewalks may be introduced to local streets in more urbanized areas of the Township, although the rural standard may also be acceptable in certain circumstances. This would allow for no curbing to create for a more rural and environmentally friendly atmosphere. In denser neighborhoods, on-street parking should be introduced back to the local streets to provide "traffic calming". This also promotes a more safe and pedestrian friendly environment.

THROUGH STREETS

These thoroughfares are normally wider and are intended to handle long-range traffic demands. The topography of the area, location and length of the street, and adjacent land uses to the street will assist in determining the essential function of a street and, thus, its classification. For the purposes of this plan there are two classifications of through streets, collector streets and major thoroughfares.

COLLECTOR STREETS

These are streets that collect vehicles from local streets and distribute them to either local destinations or major thoroughfares. Collector streets carry a higher volume of traffic than local streets and thus require a greater width. An 86-foot right-of-way is adequate for this type of street. These streets should remain narrow and continue to accommodate bicycle and pedestrian traffic. A landscape median can help provide for slower traffic which allows larger traffic volumes.

Local Streets

In rural areas of the Township, local streets are often designed to the County's rural standard, where curbs and gutters are not required.

MAJOR THOROUGHFARES

This type of street serves some of the same purposes as a collector street, except that it usually extends over longer distances and therefore, handles a larger number of vehicles. Thus, a major thoroughfare will connect points of high traffic generation. The longer trips and wider rights-of-way on this type of facility accommodate higher speeds, which require design standards for safety such as minimum curve radiuses. Because of the high speeds desired and heavy traffic volumes, a 120 -foot right-of-way width is sufficient for most major thoroughfares. If traffic volumes are predicted to be even greater, than a right-of-way width of 150 feet may be desired.

FUTURE ROAD RIGHTS-OF-WAY:

As population in the Township and surrounding area grows, roads will need to be widened in order to accommodate increases in traffic and to provide space for proper landscaping and pedestrian ways. The proposed right-of-way widths for major thoroughfares and collector streets are listed below. The Thoroughfare Plan map at the end of this section provides a graphic depiction of the thoroughfare designations.

Major Thoroughfares	
King Road	150'
Puttygut Road	120'
River Road	120'
Collector Streets	
Recor Road	86'
Meisner	86'
St. Clair Highway	86'
Bree	86'
Springborn	86'
Range Belle River	86'

MAJOR THOROUGHFARES:

KING ROAD

This is a major north-south connector between Marine City and St. Clair. Because of this, its use as a major thoroughfare is of great importance to East China Township. Major thoroughfare treatment and upkeep would relieve some of the through and truck traffic on M-29 and the residential portions of the Township. This would also provide sufficient access to the industrial areas in both China and East China Township.

PUTTYGUT ROAD

Because of the existing and future planned development along Puttygut Road, it is categorized as a major thoroughfare. Expansion of the Medical Campus and future multiple-family residential use will generate greater traffic volumes on this thoroughfare in the future. The road also serves as a connector from King Road to M-29.

M-29 (RIVER ROAD)

This road is planned as a major thoroughfare because of its convenience as a north-south traffic route through the Township. It connects the communities along the St. Clair River throughout the County. This makes it a State Road of regional importance to the Township. Because of the roads setting along the St. Clair River it has great potential as a scenic drive. Furthermore, the southern entrance from Marine City could be revamped to create a welcoming "gate way" into the community. For further details refer to the M-29 Entrance Way and Scenic Drive Treatment section of this Master Plan.

COLLECTOR STREETS:

RECOR ROAD

The primary function of this road is to connect King Road with the interior of the Township. Township Hall and Township Park are the largest generators of traffic on Recor Road. This is due in large part to Township Park being used by other communities because of its extensive facilities and activities that are offered such as youth sports including soccer and softball.

MEISNER ROAD

In the past Meisner Road has been recommended as a major thoroughfare, providing an additional east-west connector from King Road to M-29. The inability to acquire additional R. O. W. from adjacent properties, as well as the high residential density in the area, would make it difficult to upgrade the road to a major thoroughfare. Thus, the road is better suited as a collector to service residents and school traffic between King Road and M-29.

ST. CLAIR HIGHWAY

Only a small portion of St. Clair Highway passes through East China Township. At this time there is no need for major thoroughfare treatment. However, if development progresses in the neighboring communities of China Township and St. Clair City, such a need may become apparent.

BREE ROAD

The primary function of this street is as a connector between St. Clair Highway and M-29. The road is only one mile long and runs partially through a residential district.

SPRINGBORN ROAD

The primary function of this road is as a connector between Belle River Drive and King Road. The single-family residential development and thus, primarily carries residential traffic. Currently, Springborn stops at the Belle River. However, a bridge crossover and extension of Springborn is proposed to provide a continuous through street from King Road to M-29.

RANGE ROAD

This road will act primarily as an industrial collector and serve the proposed industrial corridor along the Port Huron and Detroit Railroad.

BELLE RIVER ROAD

This road is a connector street from the south Township boundary to Meisner Road. It will accommodate new residential development in the area. The Belle River will act as a physical boundary to residential development so as to lessen the number of vehicles that will use the street.

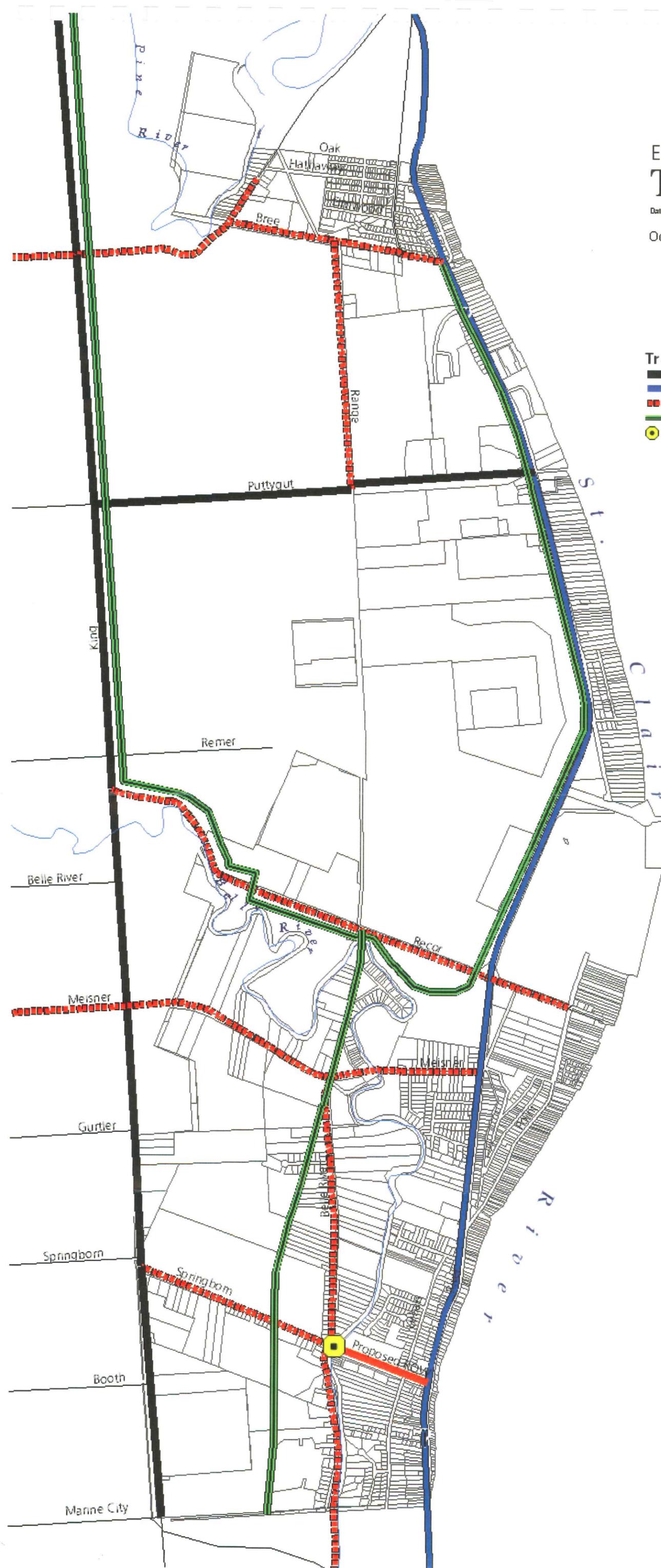
EAST CHINA TOWNSHIP Thoroughfare Plan

Data Source: St. Clair County GIS, 2005; Vilcan Leman & Associates Inc.

October 10, 2006

Transportation System

- Major Thoroughfare
- Scenic Drive
- Collector Street
- Bike Path
- Proposed Belle River Bridge

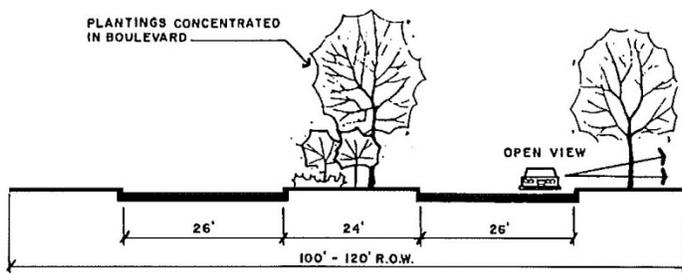


M-29 SCENIC DRIVE TREATMENT

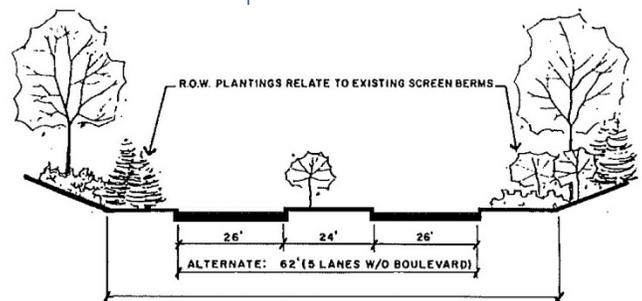
A map is included on the following page that illustrates the proposed location of various types of landscaping treatment that can be used to enhance the character of M-29 as a scenic drive. Two types of road improvements are proposed, with related landscape treatment schemes.

A four-lane boulevard is proposed within a 100 foot to 120-foot right-of-way from the Township's northern boundary south to Meisner Road. A 24 foot landscaped boulevard would separate the two roadways, each being 26 feet wide. This would require expansion of the 86-foot right-of-way between Puttygut and Hawthorne Roads to a minimum of 100 feet. The remaining right-of-way along this section of M-29 presently ranges from 100 feet to 120 feet. Three landscape planting schemes are proposed within this area to coincide with right-of-way restrictions and adjacent land use. In the northern section, from the Township boundary south to the DTE Energy property, existing and proposed land use is predominately residential and commercial. Tree plantings along this section would be concentrated within the boulevard enabling traffic to relate to residential and commercial areas to the west of M-29 and the St. Clair River to the east (Scheme A).

From the DTE Energy property south to Recor Road the existing land use is predominately nonresidential in character. Landscape treatment along this section would be reasonably dense to hide the industrial use from through traffic. This should be implemented within a 120-foot right-of-way. (Scheme B). A heavy concentration of tree plantings along the DTE Energy section would buffer the impact of the screening berms and the St. Clair Power Plant.



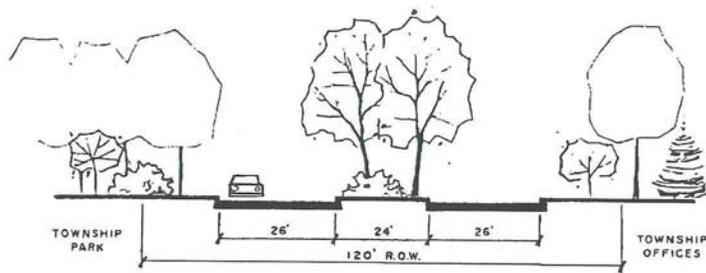
Scheme A



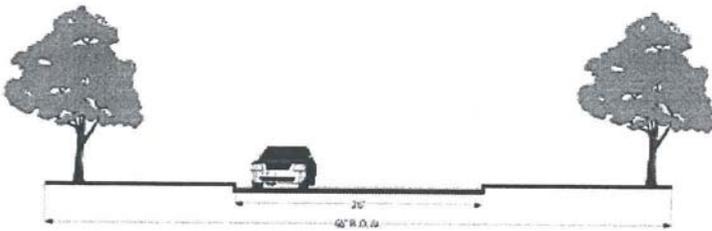
Scheme B

Informal groupings of trees within the boulevard and R.O.W. border are proposed between Recor and Meisner Roads (Scheme C). This park-like treatment would extend the natural character of Township Park across M-29 to include the Township Hall site. A desirable "greenbelt effect" would be created throughout this entire area.

From Meisner Road south to the Township boundary, M-29 would continue as a two-lane road within the existing 66-foot wide right-of-way (Scheme D). Redevelopment would include the installation of curb and gutter and street tree plantings between the street and the edge of the right-of-way.



Scheme C



Scheme D

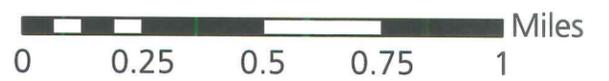
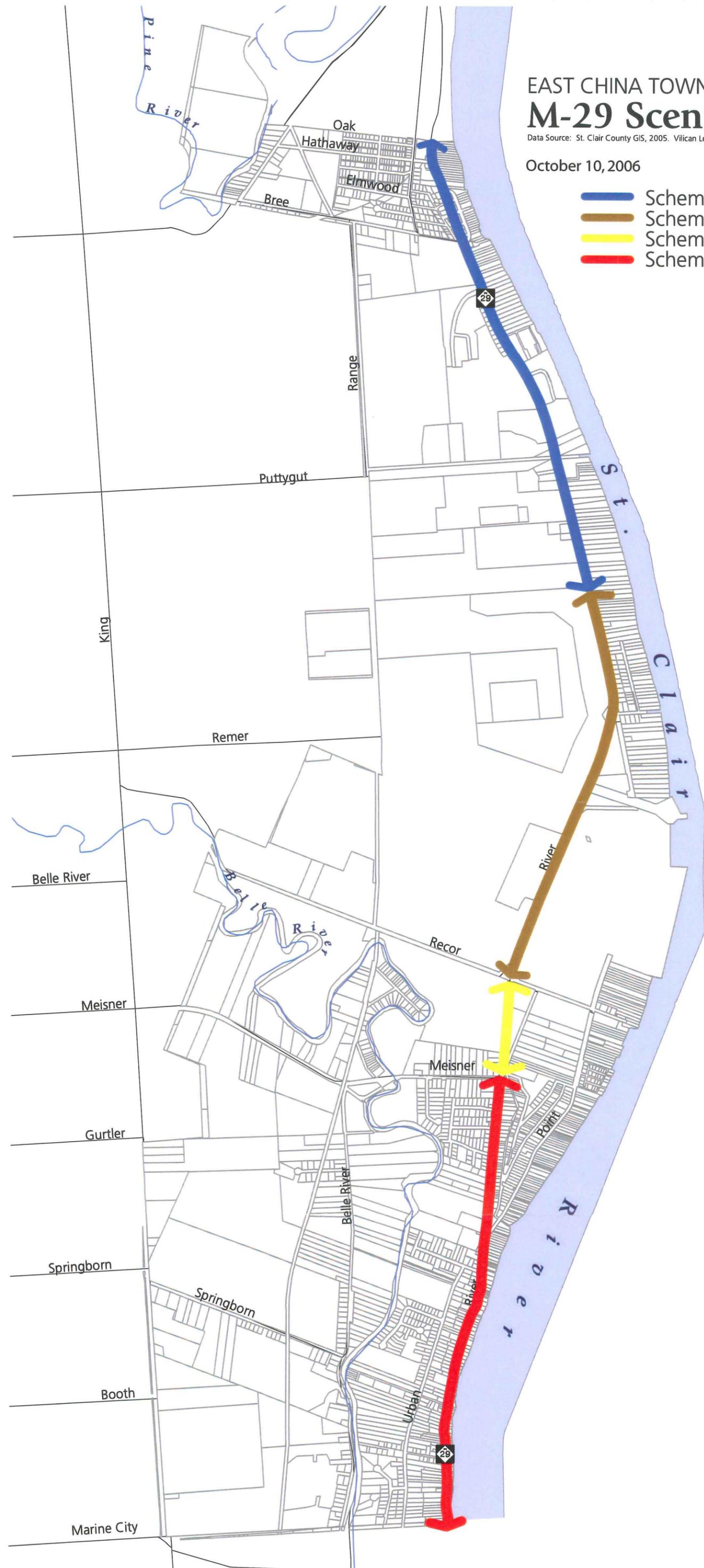
EAST CHINA TOWNSHIP

M-29 Scenic Drive Treatment

Data Source: St. Clair County GIS, 2005. Vilican Leman & Associates Inc.

October 10, 2006

-  Scheme A
-  Scheme B
-  Scheme C
-  Scheme D

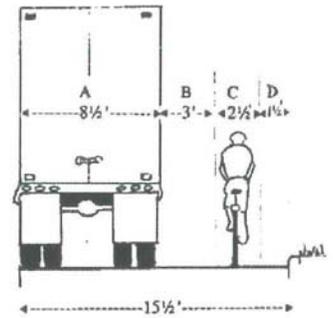


BICYCLE/PEDESTRIAN PATH NETWORK

A bicycle/pedestrian path network is planned for the Township that will provide a system throughout the Township. A portion of it is also a part of the County path that is planned to run through numerous communities, including East China, and traverse the entire length of the County from north to south. It has been named the "Bridge to Bay" trail and it will extend from Blue Water Bridge in Port Huron to Algonac and Anchor Bay. The trail will span some 50 miles at its completion and pass through the cities of Port Huron, Marysville, St. Clair, Marine City and Algonac. The Township has been at the vanguard of the County in developing this trail. A second bicycle/pedestrian path continues west on Recor Road to the China Township bike path system.

From the abandoned railroad right-of-way, the path connects with paths at the Township Park. It continues north from the park along the M-29 right-of-way to Bree Road. The area surrounding the path is planned for a range of uses, and developments joining the path will be required to have some form of access to the path. This access should be in the form of a paved path located within a dedicated right-of-way, or easements to assure permanent pedestrian access.

Local streets may need to intersect the path to connect to other residential areas; however, they should be kept to a minimum in order to limit the likelihood of pedestrian/vehicle accidents. Where possible the Township should encourage the creation of open space adjacent to the path to decrease intrusion into lots and to enhance the path system as a recreation amenity.



Create linkages between existing and new neighborhoods and current and future bicycle networks.

Retrofit existing roadways with paved shoulders or bike lanes to accommodate bicyclists, and with sidewalks and safe crossings to accommodate pedestrians.

FUTURE LAND USE MAP

The Future Land Use Map is intended to serve as a guide toward logical development when used in conjunction with the current zoning ordinance and map. These tools together give the Township the legal basis to implement and guide development within the Township. This future land use section should be used to generate a logical pattern of land use within the Township. It should be used to control growth and create and preserve viable and livable neighborhoods. The Future Land Use map includes ten distinct categories which represent various planned land uses.

SINGLE-FAMILY RESIDENTIAL

Areas designated as "single-family residential" are intended primarily for use by single housing units, each located on their own lot or land area. Within this category other related and compatible uses should be encouraged which serve the residents of the area without hampering the single-family environment. These include uses such as churches and golf courses. Residential development options such as open space subdivisions or site condominiums and cluster layouts are encouraged to preserve open space and natural features.

MULTI-FAMILY RESIDENTIAL

Multiple-family areas are intended primarily for a range of residential uses that would be allowed at a higher density than single-family areas. In addition, areas designated as multiple-family would allow two or more housing units to be located on a single land area. Related uses would also be situated in multiple-family areas.

MEDICAL CAMPUS

The medical campus category is intended to allow for the flexible expansion of the hospital and its associated uses in a planned and coordinated manner. This is essential to allow existing and future uses to respond and adapt to changes in technology, the medical profession and society as a whole. Each use proposed within the boundary should be reviewed in the context of the entire area. Pedestrian and vehicular interconnection should be encouraged and barrier free design of outdoor spaces should be encouraged. The primary use in the medical campus concept is a hospital or hospitals and related uses located within the hospital building itself. This might include pharmacies, bookstores, florists, card shops, cafeterias and similar uses that serve the needs of those using the facilities, visiting or employed in the immediate area. In addition, related independent uses would be allowed which could include medical offices, residential facilities for the elderly, child and adult care facilities, buildings and facilities for emergency vehicles (including ambulances heliports and other vehicles) , medical research and educational facilities, libraries, parks and other recreation facilities, banks, medical supply businesses and other uses

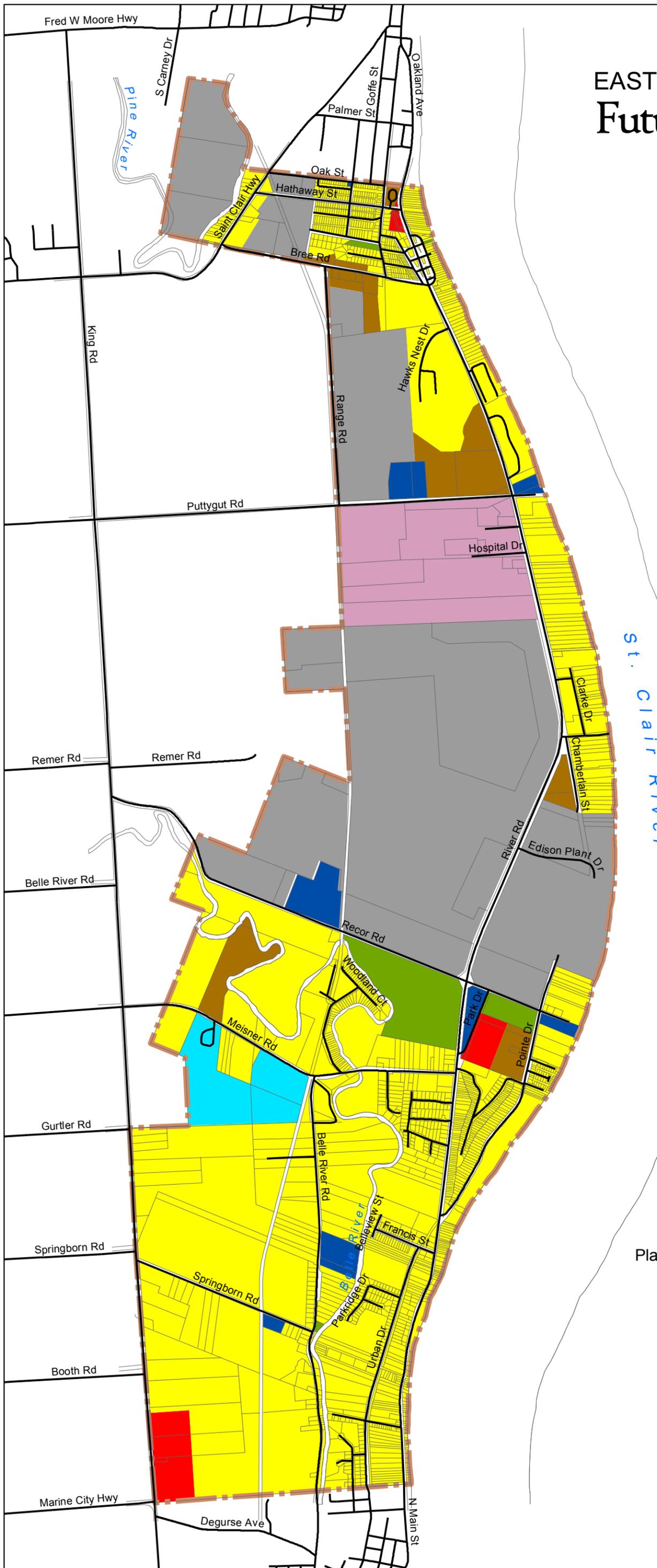
COMMERCIAL

Areas designated for commercial use include a wide range of business types. The areas planned in the north part of the Township, for the most part, recognize small, existing uses that provided services for the surrounding neighborhood. The large area at the southwest corner of the Township is intended for large commercial enterprises that would be developed in an orderly manner from the south to the north of the area. The portrayal of these areas on the Future Land Use map is intended to establish logical places for new commercial uses to be located and to provide an indication that certain existing business land uses should continue. This is also reflected in instances where the business zoning may remain within an area that is planned for residential use. In addition, there is an assumption that the areas shown for commercial use are, or will, be compatible with adjacent land uses. Much of this is dependent upon proper administration of the zoning ordinance including proper zoning of the land.

EAST CHINA TOWNSHIP Future Land Use Plan

Future Land Use

- Single Family Residential
- Multiple Family Residential
- Commercial
- Medical Campus
- Industrial
- Public Schools
- Public & Quasi Public
- Public Parks
- Roads
- Parcel Lines
- Township Boundary



Adopted by the East China Township
Planning Commission on October 13, 2015
Resolution 11-2015

Walter Street
Walter Street, Acting Secretary
East China Charter Township Planning Commission



0 0.25 0.5 1 Miles



LIGHT INDUSTRIAL

The light industrial category is intended to provide space for industrial uses whether in or outside of an industrial park environment whose external physical impacts are restricted to the district.

HEAVY INDUSTRIAL

This category accommodates industrial uses of a high intensity that typically will exhibit external characteristics that may have an impact on surrounding areas.

PUBLIC AND QUASI-PUBLIC

This category includes public and private institutions and clubs. Portrayal on the map implies a willingness to continue a use. In addition, the map shows an expansion of the existing cemetery site on Puttygut Road.

COMMUNITY PARK

The community park category includes all land planned for active and passive public recreation use. The 2013-2017 Recreation Plan should be referenced for information on the development of the Township parks system.

PUBLIC SCHOOL

This category includes all land presently owned by the School District. No additional school land is shown.

IMPLEMENTATION

The Zoning Ordinance and the Subdivision Regulations are the primary tools through which the Plan can be implemented. As development and redevelopment continues, these land use tools will help to provide compatible land use relationships between uses and encourage quality site design. This can be promoted through the site plan review process. Encouraging developers to utilize options like cluster and open space plats and site condominiums will assist in setting aside open space, providing recreation space and in protecting natural resources.

For the plan to be truly effective, however, the Planning Commission must actively pursue goals of the plan. This will require revisions to the zoning ordinance or other ordinances affecting land use decisions. Additionally, the Planning Commission may wish to actively pursue the implementation of recommended improvements noted on the Future Land Use Map and throughout the Master Plan document.

ZONING PLAN

The East China Township Zoning Ordinance (Chapter 480 of the Township Code) was adopted by the Township Board in 1998 and has undergone various amendments since that time. The Ordinance has established a total of 15 zoning districts. As required by Public Act 33 of 2008, the following is an explanation of the relationship between the future land use categories presented in the Future Land Use Plan and the zoning districts established in the Zoning Ordinance.

PLAN AND ZONING RELATIONSHIP: RESIDENTIAL

The Future Land Use Plan identifies two residential future land use categories, as follows:

- Single Family Residential
- Multiple Family Residential

The detailed descriptions of each residential future land use category are provided on page 49 and 50 of this Plan.

The following residential zoning districts have been established in the East China Township Zoning Ordinance:

- R-1 One-Family Residential District
- R-2 One-Family Residential District
- R-3 One-Family Residential District
- RM-1 Multiple Family Residential District
- RM-2 Multiple Family Residential District
- MHP Mobile Home Park

The R-1, R-2 and R-3 One-Family Residential Districts are designed to be the most restrictive of the residential districts. The intent is to provide for an environment of predominantly low-density single-unit dwellings along with other residentially related facilities which serve the residents in the district. The R-1 District stipulates a minimum lot size of 7,800 square feet and minimum lot width of 65 feet. The R-2 District stipulates a minimum lot size of 10,200 square feet and minimum lot width of 85 feet. The R-3 District stipulates a minimum lot size of 14,500 square feet and minimum lot width of 100 feet.

The RM-1 and RM-2 Multiple-Family Residential Districts are designed to provide sites for multiple-family dwelling structures, and related uses, which will generally serve as zones of transition between the nonresidential districts and lower density single-family districts. The multiple-family districts are further provided to serve the limited needs for the apartment-type unit in an otherwise medium-density, single-family community. The RM-1 District is a “low-rise” district allowing buildings of up to 25 feet in height whereas the RM-2 District is a “medium rise” district allowing buildings of up to 42 feet in height with a slight increase in allowable density in relation to the RM-1 District.

The MHP Mobile Home Park Districts possess site development characteristics similar to multiple-family residential development. They are designed to provide for transition between nonresidential development and multiple-family residential development.

The long-term implementation of the residential future land use categories outlined in the Future Land Use Plan will be accomplished, in terms of height, area, bulk, location and use, by the specific requirements outlined in their corresponding residential zoning districts, as listed below:

- The Single-Family Residential future land use category is accomplished through the R-1, R-2 and R-3 One Family Residential Zoning Districts.
- The Multiple-Family Residential future land use category is accomplished through the RM-1 and RM-2 Multiple Family Residential Districts. As a transition between nonresidential development and multiple-family development, the Multiple-Family Residential future land use category may also be accomplished through the MHP Mobile Home Park Zoning Districts.

It should also be noted that the Zoning Ordinance has established a Planned Neighborhood Development (PND) District which provides flexibility in residential development. The PND Zoning Districts are intended to permit the development of a mixture of housing types on sites within the Township which, due to area, perimeter dimensions, location, and physical site characteristics, could be logically developed as a self-contained residential area. The PND District is further intended to provide flexibility in design by giving the Planning Commission the ability to modify or waive standards of this chapter to adapt to development techniques or forms.

PLAN AND ZONING RELATIONSHIP: NON-RESIDENTIAL

The Future Land Use Plan identifies six non-residential future land use categories, as follows:

- Commercial
- Medical Campus
- Industrial (Light and Heavy)
- Public Schools
- Public & Quasi Public
- Public Parks

The detailed descriptions of each non-residential future land use category are provided on page 49 and 50 of this Plan.

The following non-residential zoning districts have been established in the East China Township Zoning Ordinance:

- OS-1 Office Service
- LB Local Business
- GB General Business
- MC Medical Campus
- IRO Industrial Research Office
- I-1 Industrial One
- I-2 Industrial Two
- P-1 Vehicular Parking

The OS-1 Office Service Districts are designed to accommodate office uses, office sales uses, and certain basic personal services. The LB Local Business Districts are designed to meet the day-to-day convenience shopping and service needs of persons residing in adjacent residential areas. The GB General Business Districts are intended to permit a wider range of business and entertainment activities than those permitted in the LB Local Business Districts.

The Medical Campus District is intended to allow for the continuation and flexible expansion of a hospital and its associated uses in a planned and coordinated manner.

The IRO Industrial Research Office Districts are designed to provide for uses which are office or research-type or industrial uses which have limited impact outside of the industrial building. The I-1 Industrial One Districts are designed to primarily accommodate wholesale activities, warehouses, and industrial operations whose external, physical effects are restricted to the area of the district and in no manner affect in a detrimental way any of the surrounding districts. The I-2 Industrial Two District is designed primarily for manufacturing, assembling, and fabrication activities, including large-scale or specialized industrial operations, whose external physical effects will be felt to some degree by surrounding districts.

The P-1 Vehicular Parking Districts are intended to permit the establishment of areas to be used solely for off-street parking of private passenger vehicles as a use incidental to a principal use.

The long-term implementation of the non-residential future land use categories outlined in the Future Land Use Plan will be accomplished, in terms of height, area, bulk, location and use, by the specific requirements outlined in their corresponding non-residential zoning districts, as listed below.

- The Commercial future land use category is accomplished through the OS-1 Office Service, LB Local Business District and GB General Business Zoning Districts. P-1 Vehicular Parking Zoning Districts may also be appropriate within the Commercial future land use category.
- The Medical Campus future land use category is accomplished through the MC Medical Campus Zoning District.
- The Industrial future land use category is accomplished through the IRO Industrial Research Office, I-1 Industrial One and I-2 Industrial Two Zoning Districts.
- The Public Schools future land use category does not relate to any particular zoning district. Rather, public schools could be accommodated in a variety of zoning districts. For example, public schools are allowed as a special conditional use within the R-1, R-2 and R-3 Districts.
- The Public & Quasi Public future land use category does not relate to any particular zoning district. Rather, public and quasi-public facilities such as churches and fraternal organizations could be accommodated in a variety of zoning districts. For example, such uses are allowed as a special conditional use within the LB District.
- The Public Parks future land use category does not relate to any particular zoning district. Rather, recreational uses could be accommodated in a variety of zoning districts. For example, recreational facilities are allowed as a principal permitted use within the R-1, R-2 and R-3 Districts.