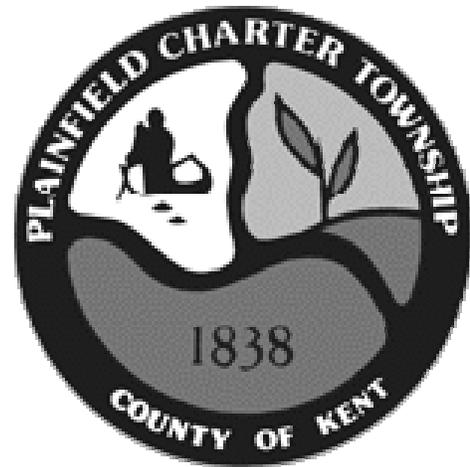


PLAINFIELD CHARTER TOWNSHIP

A COMMUNITY PROFILE REPORT



SEPTEMBER 2004

W I L L I A M S & W O R K S

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PLAINFIELD CHARTER TOWNSHIP: A COMMUNITY PROFILE REPORT

CHAPTER 1. INTRODUCTION

Producing a Master Plan, or Comprehensive Plan, requires a solid foundation of data from both original research and from secondary resources. Analysis of this data can reveal trends and conditions that may be obvious, or not so obvious, to the residents of Plainfield Township. The data that is gathered in the initial phase of preparing a Master Plan is vital to support future community goals.

The Plainfield Charter Township Community Profile is one of several phases in completing an update of the Township Master Plan. At a minimum, the entire process will involve the following elements:

- ◆ A Community Profile
- ◆ A Preferred Future
- ◆ Goal Setting
- ◆ The Comprehensive Plan Update

Planning for the long-term should be carried at a general level that recognizes the potential for change and provides flexibility.

In 1998, Plainfield Township completed a comprehensive update of the Township's Comprehensive Plan. General planning practice suggests that Master Plans should be reviewed at about five-year intervals and the Township has been fairly vigilant in doing so. The new plan approved in January, 1998 reflects many current conditions and trends, so the effort to update it in 2004 will naturally be less burdensome and may enable the community to focus on particular challenges rather than restrict the effort to a more general overview.

Nevertheless, planning for the long-term should be carried at a general level that recognizes the potential for change and provides flexibility. This results in a Master Plan that can be useful well into the future instead of becoming obsolete if or when demographic and economic trends stray from those identified in the Community Profile.

This Community Profile Report provides a "snapshot" of current conditions in the Township with respect to six key aspects of land use planning. Its purpose is to generally define current conditions and trends and, more importantly, to draw some broad conclusions about the implications they will have on the future of the Township. The

primary sources for this document are set forth in the bibliography, but the content of this report has been heavily drawn from the Township's 1998 plan and Township representatives.

The key areas of focus for this Community Profile are:

- ◆ Natural and Cultural Features (Chapter 2)
- ◆ Population (Chapter 3)
- ◆ Housing and Economic Development (Chapter 4)
- ◆ Land Use and Development Patterns (Chapter 5)
- ◆ Community Facilities and Services (Chapter 6)
- ◆ Utilities and Transportation (Chapters 7 and 8)

Each section includes an overview of its subject matter along with a brief discussion of the planning trends that are relevant. Chapter 9 discusses the implications of the data and the trends identified and Chapter 10 places the conclusions of this document in the context of the larger Master Plan development effort, including a brief discussion of next steps in that process.

SUMMARY

The following paragraphs outline some of the initial impressions that have emerged as this community profile has developed:

- ◆ Plainfield Township has experienced remarkably strong and steady growth and development over the past thirty years. There is little to suggest that this trend will abate. The community's natural features and proximity to the urban portions of West Michigan will continue to draw growth pressures.
- ◆ The current rate and pattern of growth implies that the Township will eventually be home to upwards of 86,000 persons and within the mid-term future (i.e., about 25 years) the community's population could exceed 48,000. This fact has broad implications on housing, traffic, community facilities and land use.
- ◆ The strong prevalence of residential development in Plainfield Township is likely to continue and this implies challenges relative to the cost-revenue ratio of certain land uses. Since residential uses typically demand more in services than they provide in revenues, the

Township should be prepared for the impact of future service demands and the revenue implications those demands will generate.

- ◆ The proposed new wastewater treatment facility for the North Kent region will enable the community to better control patterns and densities of growth, especially if local control is exercised over the location and timing of sewer extensions.
- ◆ Due to the limited number of through arterials in the community, traffic generated from within the Township and from surrounding communities will continue to be concentrated, resulting in congestion conditions.
- ◆ Some of the objectives outlined in the 1998 Comprehensive Plan have been achieved and others have not. All should be reevaluated in light of more current demographic and land use information and in accord with changing local policies.

CHAPTER 2. NATURAL AND CULTURAL FEATURES

Plainfield Township is situated in the southwestern lower peninsula of Michigan just north of the City of Grand Rapids. The Township is just less than 36 square miles in area and is characterized by rolling hills, rivers, and creeks mixed with new and old human development. This chapter of the Community Profile Report presents the natural and environmental conditions that characterize the community.

The Township abuts the City of Grand Rapids to the south and for years served as a suburban barrier to the northern growth of the region. The community is divided north and south by the northerly bend of the Grand River and east and west by the Rouge River. Later, the US-131 expressway added an additional barrier to east-west travel through the community.

A BRIEF HISTORY

It is appropriate to begin a profile of a community with an assessment of its human history. The following paragraphs are drawn from the Plainfield Charter Township and they offer a glimpse into the European development of the region and the formation of the Township's governmental structure.



Map 1. Location of Plainfield Charter Township

“Recorded history of the area called Plainfield Township began in 1863 when Rene' de La Salle sailed up the Grand River attempting to find a shorter passage between the Detroit River and lower Lake Michigan. Prior to 1740, the Muscatay and Hopewell Indians inhabited the land along the Grand River. The Indians continued to inhabit and frequent the area until 1912. The Ottawa Indians rights of conquest acquired the land north of the river (around the location of the Northland Drive bridge). The Indians camped atop the bluffs at the northern most point of the river (now the site of Blythefield Country Club) and established crossing points on both the Rouge and Grand Rivers of the Plainfield Indian Trail. By 1826, the United States Federal Government acquired all land north of Indiana and south of the Grand River (including Grand Rapids and Kent Township) in the Treaty of Dearborn. The northern part of the Township was deeded to the US in the Treaty of Washington D.C. in 1836. The land was promptly settled and was organized as Plainfield Township in 1836. It also encompassed

vast areas of Northern Kent Township adjoining it, which were eventually set off and organized as separate townships.

One of the earliest settlements in the Township was Plainfield Village on the north side of the Grand River. It was founded in 1838 by Andrew Stout who established a ferry across the Grand River and eventually also operated a blacksmith shop and a hotel. Plainfield Village received its name from the Indian cornfields described as "plain fields". A log building became the Village's first public school during the winter of 1837-38. In April of 1838, settlers assembled and organized Plainfield Township. The area included all of what is now Cannon Township and the present area lying on the north side of the Grand River.



Steam boating on the upper Grand River continued from 1837 through 1857

In 1840, the first sawmill and gristmill were erected on the Rogue River. A Post Office, called Austerlitz, was established on March 22, 1843. It was the first post office in Kent Township north of Grand Rapids. Plainfield Village provided a landing place, a supply and service source to busy river traffic, as the Grand River above Grand Rapids was being readied for steamboat navigation. Steam boating on the upper Grand River continued from 1837 through 1857 and again by similar streamers in the late 1880's and early 1890's in passenger excursions and lifting logs of valuable hardwood lost in log drives passing through the Township.

By 1845, Plainfield Village had grown to around 800 inhabitants, 4 hotels, 5 stores and 6 saloons and continued to grow until the 1880's. Cannon Township organized and separated from Plainfield Township in mid-1845. The part of Plainfield Township lying south of the Grand River separated from Grand Rapids Township and became a part of the township in 1847. In 1848, the first regular steamboat service on the upper Grand was making regular stops at Plainfield Village.

1850 found Robert Konkle building a second sawmill on the Rogue River near the west end of the Village. In 1860, due to the villages lumbering industry, it was doing more business than any other town or village in the Township outside of Grand Rapids. Although by 1862, the decline of Plainfield Village was predestined by contemporary events. The Township had several other settlements

at the time. Comstock Park was originally known as North's Mill, and later became known as Mill Creek and then Comstock Park. Belmont, earlier known as Whitney, was established on June 29, 1874 and was the center for the Grand Rapids and Indian Railroad, now the Penn Central. Belmont continued to grow with the increased traffic from the railroad and soon had a store, hotel and post office. In 1907, a Baptist church was constructed (now Belmont Baptist) and St. Adalberts Catholic Church (now Assumption BVM) was built in 1912.

Plainfield Township continued to grow throughout the early and mid 1900's. In 1945, Dexter Hamilton organized the Plainfield Township Volunteer Fire Department. Today, a combination full-time / part-time / paid-on-call department serves the residents of Plainfield Township, working out of two stations. In 1959, the township started its own water department and dedicated the water plant and water system in May 1964. At the time the water plant could treat 1.5 million gallons of water per day. Today that number has grown to 20 million gallons per day and serves more than 10,000 customers¹.

CLIMATE



Summertime temperatures are conducive to many outdoor activities.

According to the Midwestern Regional Climate Center (MRCC)² that averaged annual climatic conditions between 1971 and 2001, in January, temperatures in the Township range from an average low of 15°F to an average high of 30°F. These temperatures, along with an average of 71.9 inches of snowfall annually, are conducive to many wintertime activities such as cross-country skiing, snowmobiling, and ice fishing on many of the Township's inland lakes.

In July, the average low temperature of 56°F and average high of 78°F makes for a pleasant and comfortable environment for bicycling, fishing, golfing, hiking and many other outdoor summer activities. The average annual precipitation for the

Township is 37 inches.

¹ Plainfield Charter Township Website, www.plainfieldchartertp.org, August 2004.

² Midwestern Regional Climate Center Website and National Climate Data Center, 2001.

LAKES

Plainfield Township has 8 lakes totaling about 400 acres of surface area providing excellent recreational and residential opportunities. Versluis Lake is a man-made lake that evolved from a sand and gravel operation and was donated by Leonard Versluis for the purpose of a park. The lake has a seasonal fluctuation of approximately seven feet as it rises and falls with the Grand River. The Plainfield Township park located along the shores offers playgrounds areas, picnic facilities, beach and swimming areas, a bathhouse, fishing, boating (no gas engines), and two miles of paved trails.³

As Table 2.1 illustrates, most of the lakes in the community are generally small.

Table 2.1 Plainfield Township Lakes

Lake	Surface Area (Acres)
DEAN LAKE	73
DUCK LAKE	8
FRESKA LAKE	63
LITTLE PINE ISLAND	112
MEAD LAKE	22
MIRROR LAKE	11
SCOTT LAKE	16
VERSLUIS LAKE	94
Totals	399

The Township's lakes play an important role in defining the community's character, enhancing both the natural environment and the lifestyle for residents. Little Pine Island Lake is the largest of the lakes in the Township and much of the eastern shoreline of the lake is developed with seasonal and year-round residences.

RIVERS

The Grand River and Rogue River are predominating features in Plainfield Township. Both riverfronts offer excellent recreational opportunities, residential locations and wildlife habitat. Development can produce potential negative water quality impacts due to individual

³ National Center on Accessibility website (www.ncaonline.org), "Inclusive Park and Recreation Design: Versluis Park, Grand Rapids, Michigan," August 2004.

septic system density, fertilizer application, and other human-related activities.

Rogue River.

The Rogue River is a major tributary to the Grand River with its headwaters starting in southern Newaygo County. The Rogue travels through the Rogue River State Game Area in northern Kent County, south along the east side of Sparta, east and south through the City of Rockford and finally into Plainfield Township where it meets the Grand River, just west of the Northland Drive bridge over the Grand River. The tributaries of the Rogue are high quality spring fed streams that result in excellent habitat for cold-water species of fish, including trout, which is rare this far south in Michigan.⁴

In July of 1973, the Michigan Department of Natural Resources completed the Rogue River Natural River Plan. This plan was created through the State of Michigan Natural Rivers Act (Part 305, P.A. 451 of 1994). The Act allows a river, or a portion thereof, to be designated as a natural river area for the purpose of preserving and enhancing its values



Kent County portion of the Rogue River has been designated a Country Scenic River

of water conservation, its free flowing condition, and its fish, wildlife, boating, scenic, aesthetic, floodplain, ecologic, historic, and recreation value and uses. Through this plan, the Kent County portion of the Rogue River has been designated a Country Scenic River, which is a river in an agricultural setting with narrow bands of woods or pastoral borders. The Rogue River Plan, which was updated in March of 2002 includes a description of the study area, existing uses, future use and potential problems, effective laws, and an overall strategy to implement the plan.

The primary purpose of the Rogue River Natural River Plan is to maintain the integrity of the stream through appropriate land management along the river and its tributaries. The Natural River District encompasses a 300-foot wide strip of land on each side of the river. Within this strip, there are regulations and recommendations for new development including setbacks, allowable uses, and natural vegetative buffers. For example, on private land, a 50-foot natural vegetative strip

⁴ Rogue River Natural River Plan, Michigan Department of Natural Resources, 1973, updated March 2002.

shall be maintained with limitations on pruning and grazing activities within said strip. Other limitations include no commercial or industrial development within the 300-foot natural river boundary, nor any cutting, filling, or building in the floodplain, and docks are limited to six feet in width, 20 feet long, with only four feet allowed to extend over the water.

The Natural River designation has resulted in a natural rivers overlay in the Plainfield Township Zoning Ordinance for the Rogue River and Barkley Creek. This overlay district is one of the major implementation tools at the local level and serves as a great example of cooperation and effort between the state agencies and local government.

Grand River

The City of Grand Rapids and Grand River region have formed their identity largely around this important stream and its presence in the Township has been no less a significant element in the community's development. The Grand River is Michigan's longest river winding 256 miles from Jackson to Grand Haven spanning 19 counties with 12 major tributaries.⁵ The Grand River bends from the southeast corner of the Township, through the center of the Township and then down to the southwest corner into the City of Grand Rapids.



The Grand River bends from the southeast to the southwest corners of the Township

The river is a navigable stream, although early rapids and downstream dams have limited the development of riverboat commerce. In the mid- to late 19th century, the river was used as a logging stream for Michigan's timber industry and saw mills that developed along the stream corridor were often the initial nucleus of emerging communities. As indicated above, this was the case for Plainfield Township.

Much of the Grand River within Plainfield Township is bordered by large riverine wetland areas. These wetlands and the broad floodplain areas have helped to limit intense development in close proximity to much of the riverbank within the Township. Historically, the Grand Rapids and Lansing areas were known for large-scale metal finishing and plating industries that contributed significant amounts of heavy metals to the environment due to ineffective

⁵ *Assessment of the Lake Michigan Monitoring Inventory; A Report on the Lake Michigan Tributary Monitoring Project*, prepared by the Great Lakes Commission with assistance of the United States Environmental Protection Agency, August 2000.

wastewater treatment. While many of the facilities have been improved, many of the contaminants still remain in the river system. The water quality is much better than in the past, however the Grand River continues to be the largest tributary source to Lake Michigan for lead, DDT, atrazine, and second largest for mercury.

WATERSHEDS

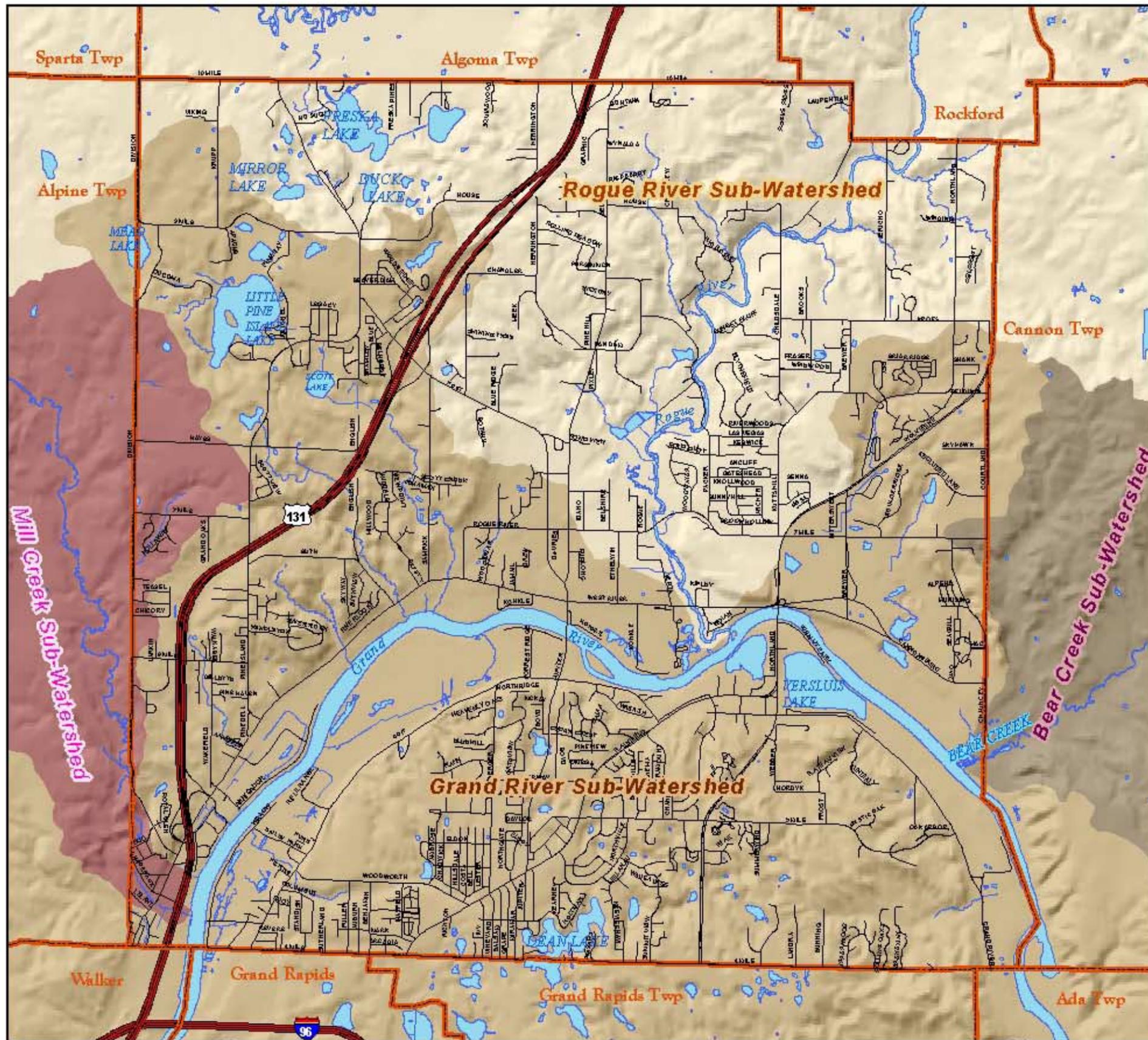
A watershed is a region of land that is drained by a particular river or river system. Typically these systems include many smaller tributaries such as creeks and streams that feed into a larger river and are influenced by elevation or the lay of the land. The Grand River is the longest river in Michigan and at over 5,500 square miles, its watershed area is among the largest in the state. All of Plainfield Township lies within the Grand River regional watershed. The portion of the watershed in Plainfield Township includes the following sub watersheds:

- ◆ Mill Creek – which drains portions of Alpine Township and western Plainfield Township and enters the Grand River in the Comstock Park area.
- ◆ Rogue River – as described above, extends into Newaygo County and enters the Grand River west of the Northland Drive bridge.
- ◆ Bear Creek – which drains parts of Cannon and Ada Township and enters the Grand River in Section 25, along the Township’s eastern line.

Water quality within a watershed is directly related to the land management practices within that watershed. For example, if a new development created a large amount of impervious surface (i.e. asphalt) and stormwater was not properly managed, it is possible that the flow of the run off into the creek, stream, or river could be increased to a point that stream bank erosion occurs. Stream bank erosion has the potential of increasing silt material on the streambed, changing the chemistry of the water with phosphates, nitrogen, and other chemicals, and altering the turbidity of the water. All of these changes may have an effect on the wildlife that is dependent on the stream or river for survival. Map 2 illustrates the watersheds, rivers, streams, and lakes in the Township. A watershed, being an area where all of these water attributes are interconnected, should be looked at closely when assessing the impacts of new development within the Township.

Plainfield Charter Township

Map 2 Watersheds Map



Legend

-  Political Boundary
 -  Interstate Highways
 -  Plainfield Twp Streets
 -  Streams
 -  Surface Water
- Watershed**
-  Bear Creek
 -  Grand River
 -  Mill Creek
 -  Rogue River



Source: REGIS and Plainfield Township.

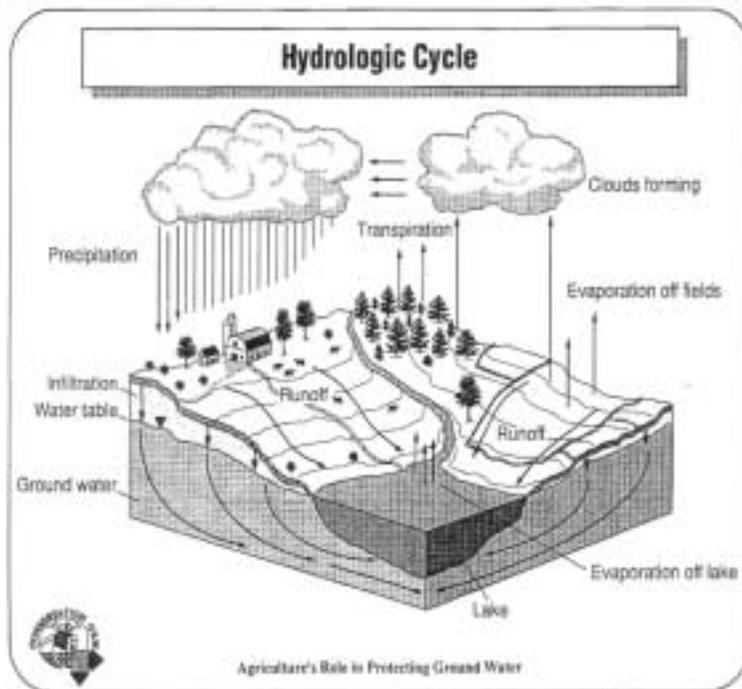
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GROUNDWATER AND SURFACE WATER

As the population in Plainfield Township continues to grow, natural resources will inevitably be impacted. The groundwater supplies in the Township, even though abundant, can be affected as more area becomes impervious and with greater demand placed on groundwater supplies.



According to Dr. Roberta Dow of the Michigan Groundwater Stewardship Program at the Michigan State University Extension in Traverse City, there are many different ways ground water can be polluted. Two primary contributors are application of fertilizer on crops and residential lawns and septic tank drainfield effluent. Proper fertilizer application management and septic tank maintenance may help to significantly reduce nitrate levels. Abandoned wells may also be a threat to ground water quality if they have not been properly closed or “capped.” Open wells may expose groundwater supplies to surface contaminants.

Since all drinking water in Plainfield Township is derived from groundwater sources – either from private wells or the municipal water supply - protecting

this key resource is of vital interest to the Township.

Soils

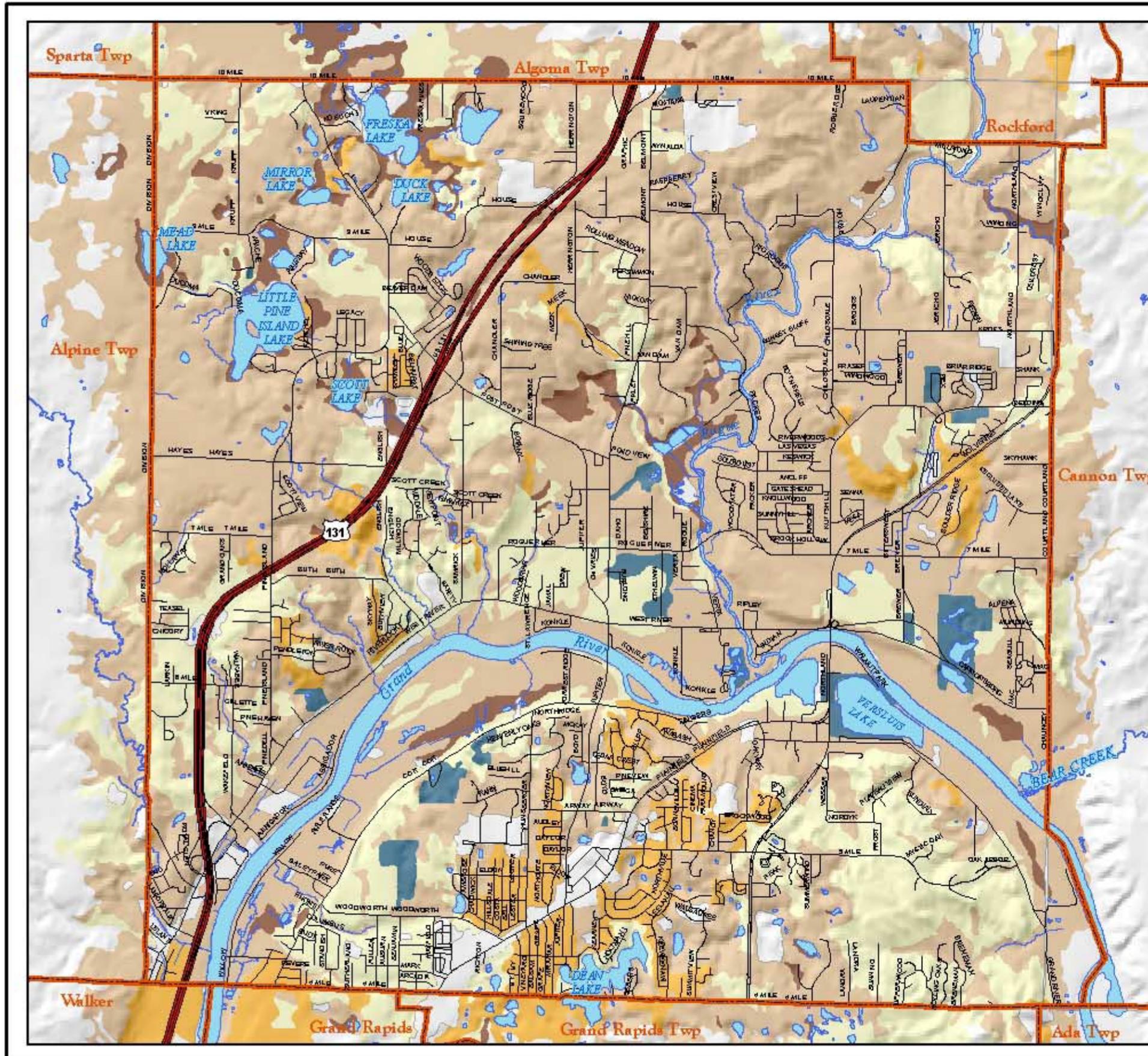
With the soils of the Township classified, areas may be designated for a suitable use.

Soil composition is an important aspect of planning for many reasons. Some soils are not well suited for individual septic systems and therefore may threaten ground water or surface water quality due to lack of proper filtration. The composition of soils determines stability and suitability for structural development. Agricultural productivity is also determined by the fertility of the soils. With the soils of the Township classified, areas can be appropriately designated for a suitable use.

The United States Department of Agriculture, Soil Conservation Service, classifies the soils of the Township into six different general soil

Plainfield Charter Township

Map 3 Soils Map



Legend

	Political Boundaries	Soils
	Plainfield Twp Streets	 Complex
	Interstate Highway	 Sandy
	Surface Water	 Gravel
	Streams	 Loam
		 Muck
		 No Data



Source: REGIS and Plainfield Township

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associations.⁶ These are briefly described as follows and illustrated on Map 3:

1. Plainfield-Oshemo-Spinks association: Nearly level to gently rolling, excessively drained and well drained, sandy and loamy soils formed in sandy and loamy materials. This association is found largely adjacent to the Grand River in on either side of the Rouge River and in the southwest corner of the Township. It is characteristic of the gravel mining operations in the Township.
2. Ithaca-Rimer-Perrington association: Nearly level to gently rolling, well drained to somewhat poorly drained, loamy and sandy soils formed in loamy, sandy, silty and clayey deposits. This association is found generally in the western portion of the Township south and west of Little Pine Island Lake.
3. Marlette-Perrington-Matea association: Gently rolling to very steep, well drained, loamy and sandy soils formed in loamy, silty, and sandy deposits. One small area of this association may be found in the northwest portion of the Township extending into Alpine Township.
4. Marlette-Chelsea-Boyer association: Gently rolling to very steep, somewhat excessively drained and well drained, sandy soils formed in sandy and loamy materials. This association predominates in the northern portion of the Township, either side of US-131.
5. Chelsea-Plainfield-Boyer association: Gently rolling to very steep, excessively drained to well drained, sandy soils formed in sandy and loamy materials. This association may be found in the northern central portion of the Township and in the southeastern corner.
6. Houghton-Cohoctah-Ceresco association: Nearly level, somewhat poorly drained to very poorly drained, mucky and loamy soils formed in herbaceous organic material or loamy alluvial deposits. This association is found along the Grand river corridor and adjoining lands.

WETLANDS

Wetlands play a critical role in regulating the movement of water within watersheds. Wetlands are characterized by water saturation in the root zone, or above the soil surface, for a certain amount of time during the

⁶ *Soil Survey of Kent County*, Michigan, United States Department of Agriculture

year. The fluctuation of the water table above and below the soil surface is unique to each wetland type.

Wetlands store precipitation and surface water and then slowly release the water in associated water resources, ground water, and the atmosphere. They help maintain the level of the water table and may serve as filters for sediments and organic matter. They may also serve as a sink to catch water, or transform nutrients, organic compounds, metals, and components of organic matter. Wetlands have the ability to impact levels of nitrogen, phosphorous, carbon, sulfur, and various metals. Without them, water quality decreases, areas are prone to flash flooding and habitat for specialized plants and animals is reduced.

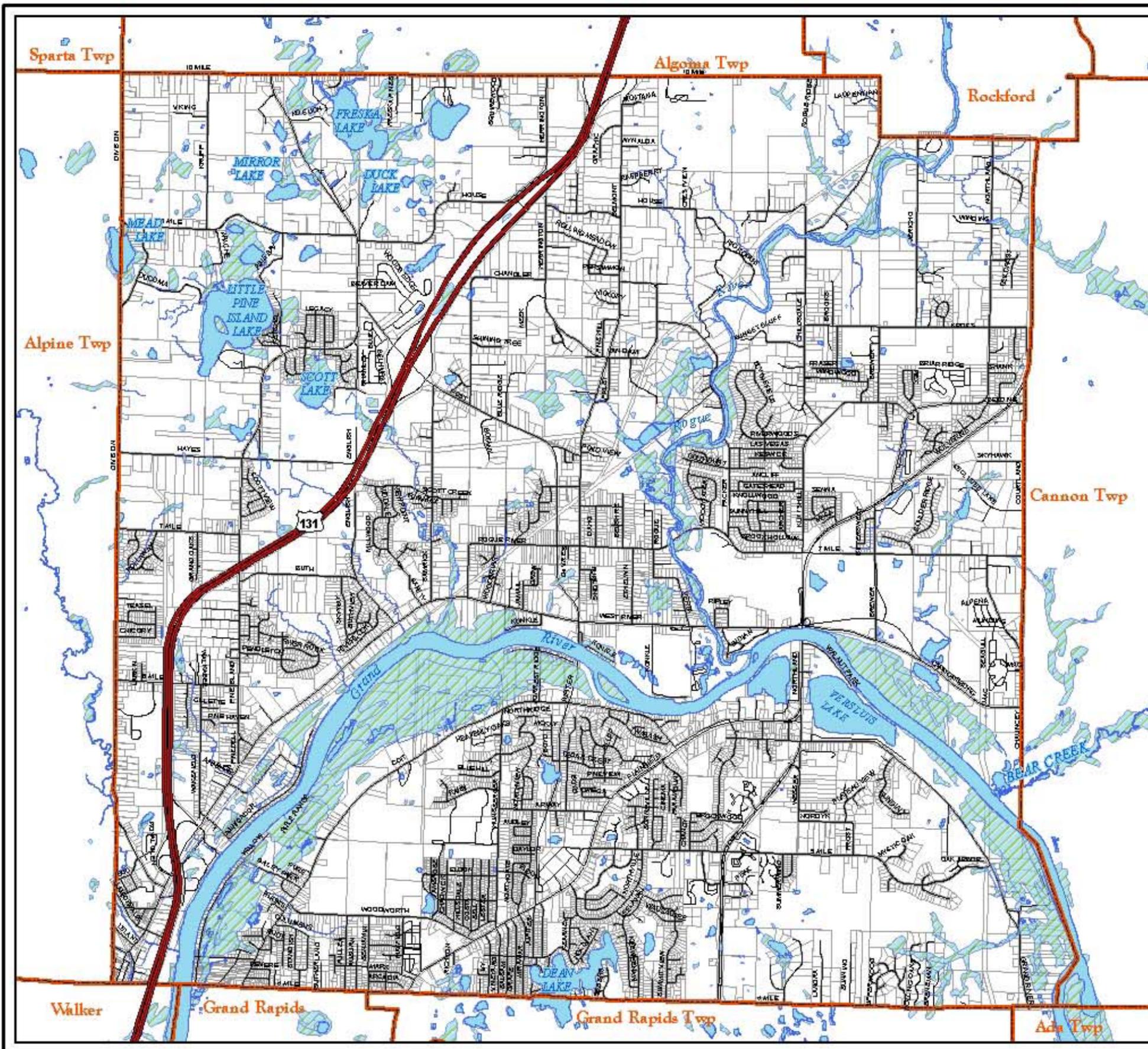


Without wetlands, water quality decreases, areas are prone to flash flooding and habitat for specialized plants and animals is reduced.

The wetlands in Plainfield Township are found primarily along the Grand River and Rouge River corridors and in the vicinity of the lakes in the northwest portion of the community. A few other scattered wetland areas are identified on Map 4, which was drawn from the REGIS geographic information system and the National Wetlands Inventory (NWI). Creation of this map involved a variety of federal government agencies, which involved the consolidation and interpretation of aerial photographs, land cover maps, and soil maps. This map is intended to illustrate the general location of wetlands and the exact location of any wetland should be determined through a field site inspection by a qualified scientist.

Plainfield Charter Township

Map 4 Wetlands Map



Legend

- Political Boundaries
- Interstate Highway
- Street Centerlines
- Parcels
- Streams
- Surface Water
- Wetlands



Source: REGIS and Plainfield Township

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Endangered, threatened, and special concern species.

Loss of habitat and increased human activity overall threatens the plant and animal diversity of Plainfield Township. The Michigan Natural Features Inventory⁷ lists threatened, endangered and special concern species on a county-wide basis. At this time, the Karner Blue Butterfly is the only listed state endangered species found in Kent County. This variety of butterfly can be found in pine barrens, oak savannas on sandy soils and containing wild lupines, which is the only known food source for larvae. As the human population of the Township continues to expand, it is possible that plant and animal diversity will also continue to decrease.



Like the proverbial canary in the coal mine, the Karner Blue Butterfly may be an indicator species of the impact of development in the Township.

Invasive and Exotic Species

Invasive plant and animal species are classes of plants or animals that are introduced into a “foreign” environment, which often result in negative impacts on the native environment. In Plainfield Township, these species include the purple loosestrife and the zebra mussel. The purple loosestrife is an aquatic plant that has the capacity to quickly degrade natural wetlands and other open bodies of water. The loosestrife has a tendency to multiply rapidly and densely, by means of prolific root and seed production, which often crowds out native wetland plants and alters the chemical balance of the wetland or lake.

Methods to control the spreading of the loosestrife can often be unreasonable for large areas. For example, burning, digging, water level management, herbicides, and cutting are impractical for regions where the weed has dominated native species. Biological control, or the introduction of natural enemies into the new habitat, is a more viable, yet costly and rigorous, alternative.

The zebra mussel is an invasive clam like aquatic species from Europe that has the propensity to impair human intentions and damage native processes. The zebra mussel was first discovered in 1988 in Lake St. Clair near Detroit, which colonized the Great Lakes region by 1990. By the mid 1990’s, the zebra mussel may have found its way to Plainfield

⁷ Michigan Natural Features Inventory Website, October 2003.

Township's lakes.⁸ Normally, infestation in inland lakes results from transport on boats and fishing gear from another infested lake. Methods to avoid infestation include:

- Do not transport bait used in infested waters, and wash bait pails with hot water
- Leave boat out of water for at least 3 days in hot, dry conditions (zebra mussels can stay alive up to 5 days out of water)
- If boat trailer has water in it, drain immediately

⁸ Michigan Sea Grant Extension website:
<http://www.msue.msu.edu/seagrant/lake100802.html>

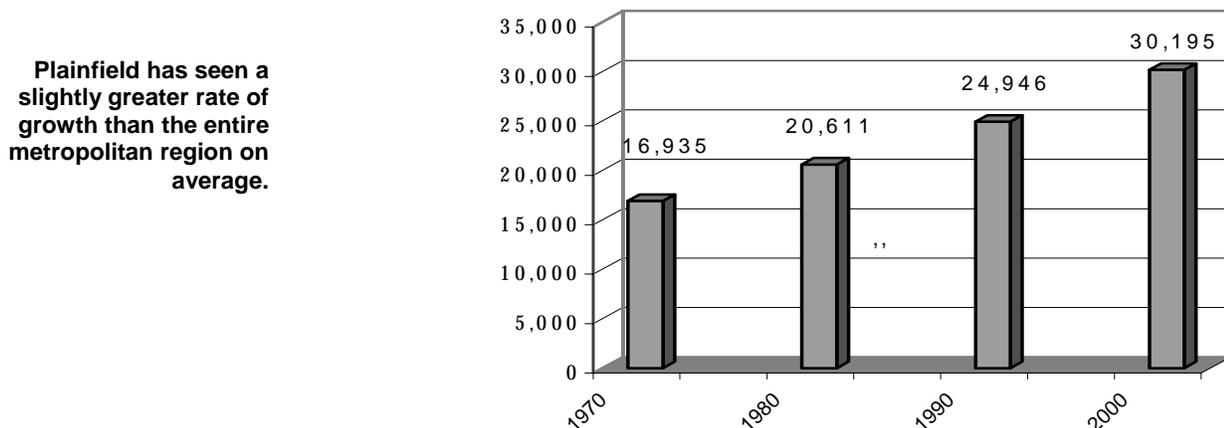
CHAPTER 3. POPULATION

Population and demographic change are among the most important measures to express growth and its likely impact on land uses in a community. Therefore, it is helpful to recognize the Township's population and growth trends in preparing a realistic and meaningful Master Plan. This chapter of the Community Profile Report describes Township population and demographic characteristics, and serves as part of the foundation for drawing conclusions about the Township's likely future.

HISTORIC POPULATION GROWTH

To begin with, it is appropriate to determine the overall growth the Township has experienced in the recent past (i.e., the last thirty years). Like many metropolitan townships in Michigan, Plainfield primarily existed as a rural farming community until experiencing post-war suburban growth. Since 1970, the United States Census illustrates that the Township's population increased from 16,935 to 30,195 in 2000, or by a total of 13,260, representing a 78.2% increase. In other words, the Township, since 1970, has grown at an average annual rate of 2.61%, or a compounded annual rate of 1.95%.

Figure 3.1 Plainfield Township Population Growth



From 1990 to 2000, Plainfield Township grew from 24,946 to 30,195, or by 21%. During this same period, Kent County grew by 14.7%; the Grand Rapids Metropolitan Statistical Area grew by 16%; and, the State

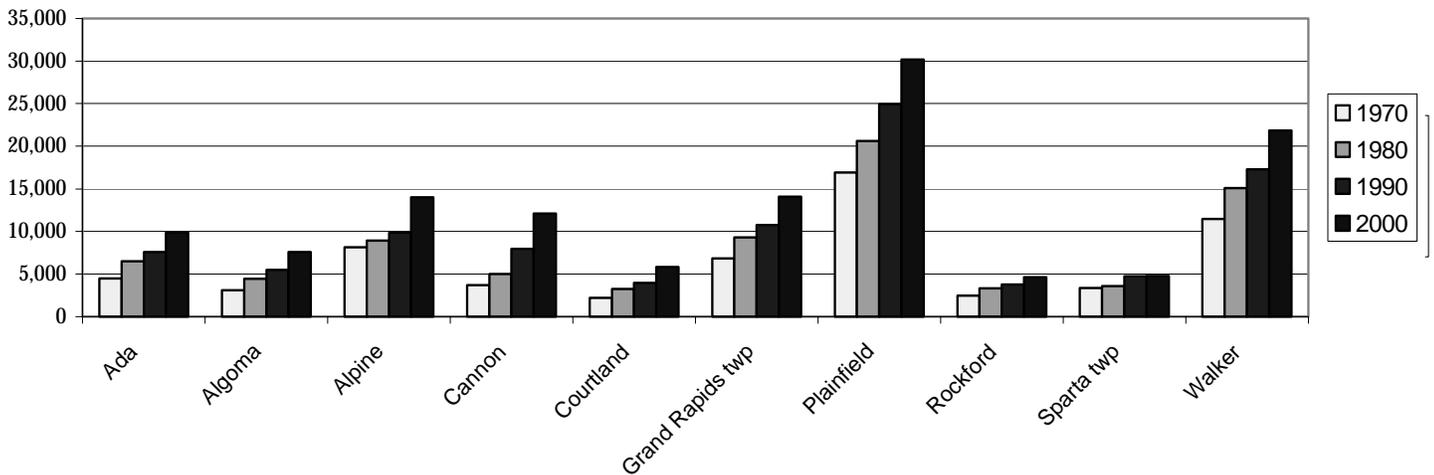
of Michigan grew by 6.9%.⁹ Therefore, Plainfield has seen a slightly greater rate of growth than the entire metropolitan region on average. In fact, the Township is Kent County's fourth largest community in terms of population, following the cities of Grand Rapids (197,800), Wyoming (69,368), and Kentwood (45,255), based on 2000 Census information.

Every surrounding jurisdiction, except the city of Grand Rapids, has continued to see increasing growth.

The bulk of Plainfield's recent growth has occurred in areas north of the Grand River, and towards the eastern portion of the Township, since these areas are primarily where undeveloped land exists. The areas south of the Grand River and west of Jupiter Avenue are generally at build out and experience little growth. The Master Plan of 1998 actually documented population decline in the neighborhoods west of Hunsberger Road.

To put Plainfield's recent growth trends in perspective, it is appropriate to compare the Township with neighboring communities. Figure 3.2 compares the 30-year population growth history of Plainfield Township with that of nine other neighboring municipalities. Every surrounding jurisdiction, except the city of Grand Rapids, has continued to see increasing growth, similar to the growth experienced by the bulk of West Michigan communities. Note that the city of Grand Rapids lost 15,806 people from 1970 to 1980, but between 1980 and 2000, the city gained

Figure 3.2 Comparative Rates of Population Growth in Area Communities



Source: West Michigan Regional Planning Commission

⁹ United States Census Bureau, 2000

15,957 people.¹⁰ Much of the growth in outlying townships can be attributed to an overall pattern of out-migration from urban to suburban and rural areas, and respectable West Michigan economic growth. In addition, the general Grand Rapids metropolitan region is growing in population, and Plainfield experiences a portion of that growth.

The following table illustrates growth from 1990 to 2000, according to information from the West Michigan Regional Planning Commission that was derived from the 1990 and 2000 Census.

Table 3.1 Comparative Rates of Population Growth

Municipality	1990 Population	2000 Population	Increase	% Change
Ada Township	7,578	9,882	2,304	30.4
Algoma Township	5,496	7,596	2,100	38.2
Alpine Township	9,863	13,976	4,113	41.7
Cannon Township	7,928	12,075	4,147	52.3
Courtland Township	3,950	5,817	1,867	47.2
City of Grand Rapids	189,126	197,800	8,674	4.6
Grand Rapids Township	10,760	14,056	3,296	30.6
Plainfield Township	24,946	30,195	5,249	21.0
City of Rockford	3,750	4,626	876	23.3
Sparta Township	4,749	4,779	30	.63
City of Walker	17,279	21,842	4,563	26.4

Cannon and Courtland townships experienced the highest percentage growth rate from 1990 to 2000 among Plainfield’s neighboring communities, while Sparta Township and the City of Grand Rapids experienced the smallest growth rate. The average growth rate for the above communities was approximately 29%. Plainfield Township’s 21% growth rate was below the average growth rate of its neighbors, even though the Township gained 5,249 residents, the second largest increase by 2000. The Township has consistently experienced a 21% growth rate every decade since 1970, indicating a very stable, yet rapid, rate of growth.

The Township has consistently experienced a 21% growth rate every decade since 1970, indicating a very stable, yet rapid, rate of growth.

POPULATION PROJECTIONS

Statistical averaging techniques were employed to project the Township’s likely population growth to the year 2030. These approaches are intended to provide a general sense of growth in the future. In communities such as Plainfield that have experienced rapid rates of

¹⁰ West Michigan Regional Planning Commission

development, future growth trends may not parallel historical statistical trends, especially since developable acreage has been consumed over time. The following generalizations are limited in scope and are based on past trends documented by the United States Census Bureau and Township data.

These projections have implications regarding future land use necessities, the demand for various public services and capital improvements, and help to understand the future position of the Township in terms of growth and total population. The following describes the projection techniques.

The Constant Proportion (or ratio) **Method** of projecting population assumes that Plainfield Township will continue to represent the same percentage of Kent County’s projected population in the years 2010, 2020, and 2030 that it represents today. In 2000, Plainfield Township comprised 5.241% of Kent County’s total population. Using the population projections for Kent County as estimated by Woods and Poole Economics,¹¹ and extending those trends through 2030, the following illustrates the results of the constant proportion method for Plainfield Township.

CONSTANT PROPORTION METHOD

	2000 Population	2010 Population Projection	2020 Population Projection	2030 Population Projection
Kent County	579,040	694,570	780,960	909,428*
Plainfield Twp	30,195	36,219	40,724	47,319

* Woods and Poole did not project county population through 2030; this figure results from an extrapolation of the rates of growth projected from 2000 through 2020 for another ten years.

The Growth Rate (or geometric) **Method** projects future population growth or decline based on the rate of growth in the Township in the past. Using the growth rate method, the following assumes that growth in the future will occur at the same average rate as has occurred annually since 1970. As indicated previously, the Township has experienced considerable population growth annually since 1970.

¹¹ Woods and Poole Economics data was gathered from the Right Place Program.

GROWTH RATE METHOD

	Compounded Annual Growth Rate				
	<u>1970-2000</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>
Plainfield Twp	1.95%	30,195	36,627	44,430	53,895

The Arithmetic Method is similar to the growth rate method in that population projections are based on growth that occurred in preceding decades. This method, however, bases population growth on the overall average increase in the number of persons per year, rather than on growth rates. The following projections are based on the average net increase of 13,260 persons between 1970 and 2000, in Plainfield Township, based on U.S. Census figures.

ARITHMETIC METHOD

	Average Increase Each Decade (Number of Persons)				
	<u>2000 Population</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	
Plainfield Twp	4,420	30,195	34,615	39,035	43,455

The Building Permit Method may be the most reliable projection technique since it depicts present growth trends based on the actual number of residential building permits issued by the Township. Plainfield Township has issued 213 new residential building permits on average per year from 1994 to July 2004.¹² The Township's average household size is 2.73 persons¹³. Extrapolating these figures into the future may project likely population growth, if current trends remain the same. This population projection technique holds that Plainfield Township will grow by 581 persons per year.

BUILDING PERMIT METHOD

<u>Average No Permits/Year</u>	<u>Persons per H/H</u>	<u>2000 Population</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>
213	2.73	30,195	36,009	41,820	47,129

¹² Plainfield Township data

¹³ United States Census Bureau, 2000

It is reasonable to predict that the population will grow to approximately 36,000 persons by the year 2010; roughly 41,500 by the year 2020; and over 48,000 by the year 2030.

The table below summarizes the preceding information. By averaging the results of these methods, it is reasonable to predict that the population of Plainfield Township will grow to approximately 36,000 persons by the year 2010; roughly 41,500 by the year 2020; and over 48,000 by the year 2030. The projections summarized here assume that past trends will continue into the future, and are limited in scope by such a supposition. Projections are based on population counts documented by the United States Census and building permit data from the Township.

POPULATION PROJECTION SUMMARY

	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>
Constant Proportion	30,195	36,219	40,724	47,319
Growth Rate	30,195	36,627	44,430	53,895
Arithmetic	30,195	34,615	39,035	43,455
Building Permits	<u>30,195</u>	<u>36,009</u>	<u>41,820</u>	<u>47,129</u>
Average	30,195	35,866	41,502	48,074

It is reasonable to assume that Plainfield Township will continue to see growth and development. Natural beauty, high quality public schools, and close proximity to choice employers and expressways may work as part of the magnetism that pulls families to the community. The Figure 3.3 on the following page illustrates population density by Census Block for 1980, 1990, and 2000. A careful examination of this graphic reveals some interesting facts. Clearly, the Township has added about 10,000 people since 1980. Figure 3.3 indicates how that population has been distributed over the intervening 20 years. Even though some greater density is apparent in 1990 and 2000, it is clear that the predominate development pattern in Plainfield Township is still relatively low density, or suburban sprawl in character.¹⁴

¹⁴ U.S. Census block group data as developed by Tetrad, PCensus.

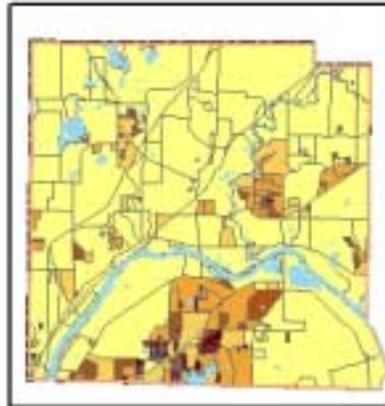
Figure 3.3
Plainfield Township
Population Change by Census Block
1980 -2000

Units per One Acre 0.0 - 0.5 0.6 - 1.1 1.2 - 1.8 1.9 - 2.9 > 3

Dwelling Units per Acre
for the Year 1980



Dwelling Units per Acre
for the Year 1990



Dwelling Units per Acre
for the Year 2000



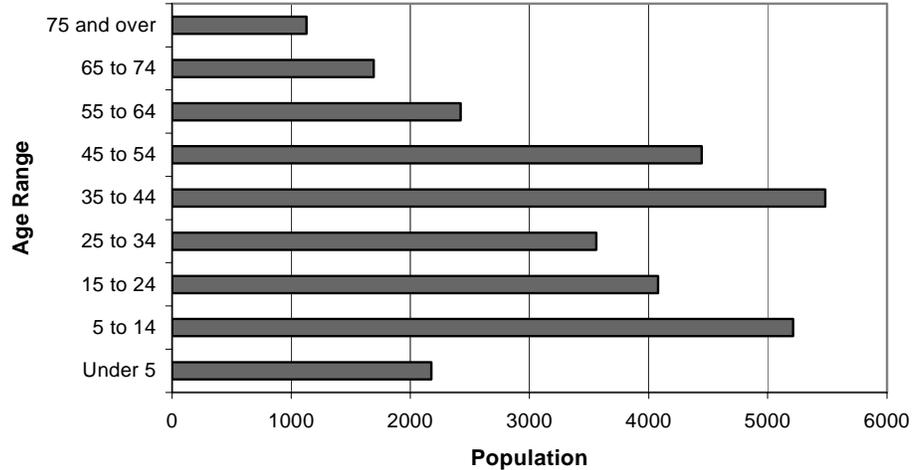
AGE, GENDER, AND ETHNICITY CHARACTERISTICS

Another opportunity to measure change involves comparing the age distribution of a community over time. This assists in determining the type of housing demands and recreational facilities that may be needed. For example, if a large portion of the population were younger, the Township may benefit from additional park and playground facilities. Similarly, the rate of increase in a senior population may have implications for more senior living opportunities, such as condominiums, and public services.

In 2000, the median age of Plainfield Township residents was 35.1 years, slightly older than the County (32.5 years), and slightly younger than the State and the U.S. (35.5 and 35.3 years, respectively). The median age represents the mid-point in the range of all ages within the Township; one-half of the population is younger and one-half of the population older.

Similar to national and statewide trends, the population of Kent County and the Township is aging. In 1990, the median age of the County was 30.8 years; and in 2000 it had risen to 32.5 years. The median age in

Figure 3.4 Plainfield Township Population Age



Source: U.S. Census Bureau, 2000

Plainfield Township in 1990 was 31.6, and had increased to 35.1 in 2000.¹⁵ Despite the aging of the “baby boomer” population, a substantial portion of the Township is in the 5 to 14 category, suggesting a need for schools, parks, and other youth-related facilities.

The 25 to 44 years age group is significant since this represents the bulk of the wage-earning population, and is the main age division for family formations. About 30% of the Township’s population falls in the 25 to 44 age group. These age groups symbolize a demand for single-family housing developments, and school and recreational facilities for children. These age groups are typically indicative of future increases in the 5 to 19 years age groups and school enrollment, and a demand for family-oriented commercial services.

Roughly twenty-three percent of the Township is age 45 to 64. This age division is generally comprised of empty nesters and aging baby boomers and implies disposable incomes. Eight percent of the Township is aged 55 to 64 years, and will likely enter retirement within the next ten years. Indicative of retirees and senior citizens, 6.3% of the Township is over 65 years of age (compared with 10.3% of Kent County). These figures, in addition to statistics on general aging, point toward a possible need for increased senior living opportunities, public transportation, and passive recreational facilities, such as parks and pedestrian facilities which connect land uses.

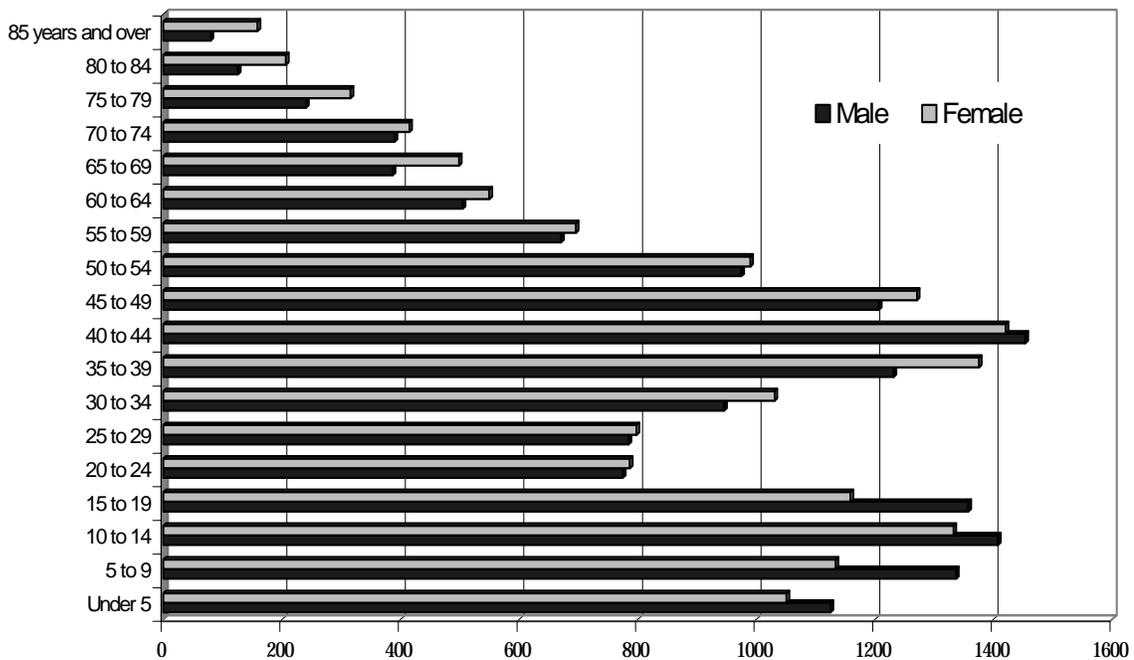
¹⁵ United States Census Bureau, 1990 and 2000

The 20 to 29 age group is small, which may imply a lack of multiple-family development and cost prohibitive single-family development.

It is clear from Figure 3.5 that the age group between 20 and 29 is relatively small compared with groups slightly younger and older. This may be due to a lack of multiple-family development that would accommodate young professionals and cost prohibitive single-family development which precludes young homebuyers from purchasing a home. Also, a trend may be for high school graduates to move from Plainfield not to return, and young professionals moving to the Grand Rapids metro area may seek out communities with more diversity in entertainment and culture.¹⁶

Figure 3.5 also illustrates that males outnumber females between the ages of 0 to 19. Females outnumber males in every other age group with the exception of the 40 to 44 year group. This pattern generally parallels gender characteristics for Kent County, and (while interesting) should

Figure 3.5 Year 2000 Comparison of Age and Gender (in 5-Year Increments)



Source: U.S. Census Bureau, 2000

¹⁶ Florida, Richard. *The Rise of the Creative Class*, 2002.

have no impact on land uses in the community.

As far as ethnicity characteristics, the community is predominantly white. The portion of the population of the Township classified as “white alone” at the 2000 Census represents 95.7% of the community. Black or African Americans represent 1.2% of the Township; American Indian and Alaska Natives represent .3%; Asians represent .9%; and other races comprise .6% of the Township. According to the 2000 Census, there are no Native Hawaiian and other Pacific Islanders in the Township. Note that 21.4% of Michigan’s population is nonwhite, while Plainfield is 4.3% nonwhite. At the 1990 Census, the Township’s minority population totaled 2.3%. Therefore, between 1990 and 2000, the minority population of the Township increased by about 724 persons, from about 574 to 1,298. This is an increase of about 126% in ten years. Even though minority populations still constitute a relatively small portion of the overall community, their representation within the Township is increasing with the overall change in the diversity of the region.

EDUCATIONAL ATTAINMENT

In addition to age, gender, and ethnicity characteristics, it is appropriate to catalog educational attainment trends in the community. This information may be an indicator of local school district quality, which is typically a major concern for families moving into the area. School district attributes are discussed in Chapter 6, Community Facilities and Services.

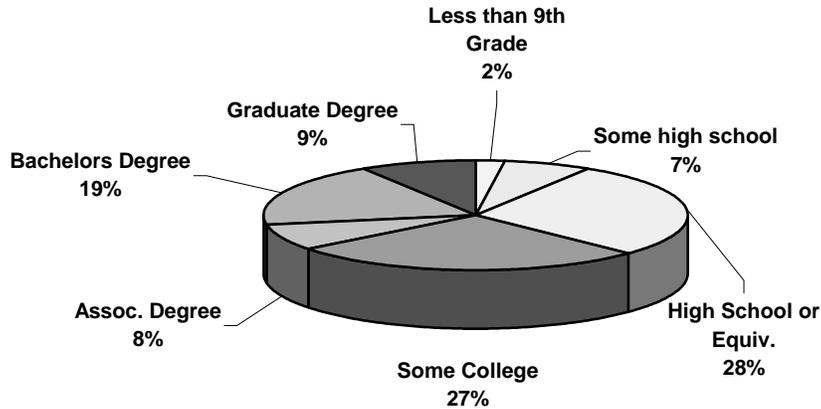
The 2000 Census indicates that within Plainfield Township approximately 28.1% of the population over 25 years of age have the equivalent of a high school education, with 27.8% having a bachelor’s degree or higher. In Kent County, roughly 28.3% of the population have the equivalent of a high school education with 25.9% reporting a bachelor’s degree or higher. Thus, educational attainment in the Township is comparable to the county overall.

Educational attainment in the Township is comparable to the county overall.

The 2000 Census reports that 31.3% of the population in Michigan has a high school education or similar equivalency, and 21.8% has at least a bachelor’s degree. A lower percentage of the population in Plainfield Township has attained the equivalent of a high school education when compared with the State. However, a greater percentage of the Township’s population has attained advanced degrees at the college, graduate, professional, and doctorate levels.

More significant, however, are the increases in educational attainment since 1990 in Plainfield Township. At that time, 53.6% of the population had ever attended post-secondary education; and only 20.7% of the population had bachelors or graduate degrees. In ten years, that percentage had risen to nearly 28% of the population for a rate of increase of 35% in a decade.

Figure 3.6 Educational Attainment in Plainfield Township



Source: U.S. Census Bureau, 2000

INCOME

Mean (or average) household income is a popular measure for determining the economic strength of an area. Income can also have implications for land use and public services, since people with higher incomes usually invest more in their houses, and may expect more from local government.

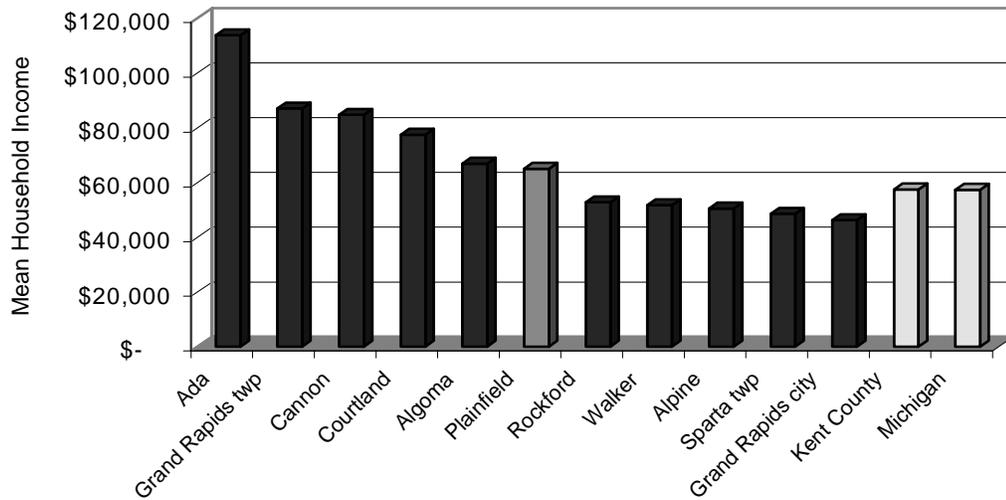
Figure 3.7 compares the 2000 mean household income between Plainfield, its neighbors, the county, and the State of Michigan. The mean household income in the Township was \$65,061, compared with \$57,512 in the county and \$57,400 for Michigan. The Township's median household income of \$55,181 exceeds that of Kent County (\$45,980) by about 20%. In a broader context, the median household income for Michigan in 2000 was reported at \$44,667. Thus, Plainfield Township slightly exceeds mean and median household income reported both for Kent County and for Michigan at large. Comparing Plainfield's neighbors, Ada Township had the highest mean household income at \$113,763, while the city of Grand Rapids had the lowest, \$46,313.

The mean household income in the Township was \$65,061, compared with \$57,512 in the county and \$57,400 for Michigan.

These income levels reflect the significant growth that occurred during the 1990s. Median household income reported for Plainfield Township in the 1990 census was only \$38,532 while that figure for Kent County was \$32,358. Therefore, during the 1990s, incomes in Plainfield Township grew by 43.2%, or at an annualized rate of 3.6%. For the County, incomes grew by about 42% for the decade or at an annualized rate of about 3.5%. Since inflation for the decade generally fell below 3% per year, these figures reflect true growth in household incomes within both Plainfield Township and Kent County.

As Figure 3.7 illustrates, the bulk of the northeastern suburbs of Grand Rapids enjoy higher incomes than the City of Grand Rapids, the county, and the State of Michigan. Plainfield’s population earned average incomes for the area.

Figure 3.7 Comparison of Mean Household Incomes in Neighboring Communities



Source: U.S. Census Bureau, 2000

CHAPTER 4. HOUSING AND ECONOMIC DEVELOPMENT

This chapter analyzes the housing and economic development trends within the community. It is useful to compare housing trends with the population projections so that housing shortages or surpluses can be estimated. In addition, comparisons of housing and land values against the incomes of current residents can help reveal the relative affordability of the local housing stock for the residents of the community.

EQUALIZED VALUE GROWTH

Comparisons of housing and land values against the incomes help reveal the relative affordability of the local housing stock.

Property values are a key measure of economic growth and the financial strength of a community. Property values reflect both investment in new development and the degree of growth in the value of those investments. Annually the Assessors of each jurisdiction report total valuation within their respective jurisdictions. These are broken down by property classification and these reports can provide an illuminating impression of the character of a community.

The total real property state equalized value (SEV)¹⁷ for Plainfield Township for 1994 was \$466.8 million, and five years later it had increased by over 50% (or about 8.6% annually) to \$704.6 million. Since 2000, values have continued to climb in the Township, although at a slightly more modest pace of 7.6% annually. The current total real property evaluation in the Township exceeded one billion dollars in 2004 (\$1,016,585,400). This value ranks second behind Cascade Township among all Townships in the County and fifth among all jurisdictions (Cities and Townships). Plainfield Township accounts for about 5.2% of the County's population (based on the 2000 Census) and about 5.3% of its total real property value.¹⁸

Table 4.1 and Figure 4.1 below compare the rates of overall SEV growth for Plainfield Township with that of other northern Kent County communities experiencing significant growth. Collectively, the communities reflected in Table 4.1 represent slightly more than one-quarter of the total value in the County. Through the latter half of the 1990s, all of the northern county communities except Sparta Township experienced double digit annual rates of growth. Even though the

¹⁷ Equalized values should represent about 50% of the actual market value of real property in the community.

¹⁸ Kent County Bureau of Equalization, *2004 Equalization Report*, April 22, 2004.

regional and national economies had weakened by 2002, investment and growth in value in the urbanizing parts of the County were still evident.

Table 4.1 Change in Total Real Property Equalized Values (in million \$)

	1994	1999	2002	2003	2004
Plainfield Township	\$ 466.8	\$ 704.6	\$ 893.6	\$ 962.1	\$ 1,016.6
Annualized rate of change	n/a	8.6%	7.6%	7.6%	5.7%
Ada Township	\$ 266.4	\$ 453.5	\$ 645.8	\$ 669.7	\$ 726.8
Annualized rate of change	n/a	14.0%	14.1%	3.7%	8.5%
Algoma Township	\$ 100.5	\$ 185.5	\$ 298.4	\$ 301.2	\$ 316.3
Annualized rate of change	n/a	13.0%	17.2%	0.9%	5.0%
Alpine Township	\$ 167.7	\$ 275.8	\$ 362.1	\$ 372.4	\$ 388.5
Annualized rate of change	n/a	12.9%	10.4%	2.8%	4.3%
Cannon Township	\$ 203.4	\$ 367.6	\$ 533.8	\$ 525.4	\$ 560.9
Annualized rate of change	n/a	12.6%	13.2%	-1.6%	6.8%
Courtland Township	\$ 82.7	\$ 150.1	\$ 224.2	\$ 226.5	\$ 246.1
Annualized rate of change	n/a	16.3%	16.5%	1.0%	8.7%
Gd. Rapids Township	\$ 292.5	\$ 499.5	\$ 710.7	\$ 722.2	\$ 782.4
Annualized rate of change	n/a	11.3%	12.5%	1.6%	8.3%
Sparta Township	\$ 107.4	\$ 159.7	\$ 215.5	\$ 220.4	\$ 236.8
Annualized rate of change	n/a	8.3%	10.5%	2.3%	7.4%
Walker, City	\$ 373.3	\$ 584.5	\$ 786.6	\$ 812.8	\$ 863.7
Annualized rate of change	n/a	9.4%	10.4%	3.3%	6.3%
Kent County	\$ 8,829.9	\$13,068.3	\$17,673.9	\$18,055.5	\$19,112.4
Annualized rate of change	n/a	8.2%	10.6%	2.2%	5.9%

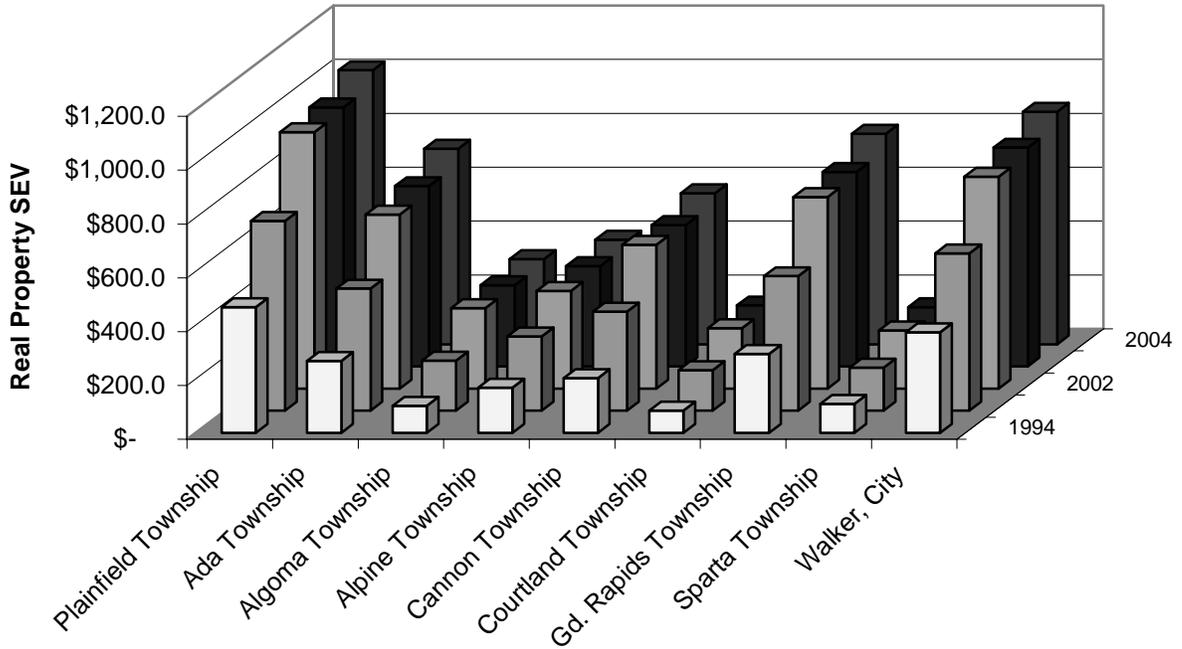
Source: Kent County Bureau of Equalization, 2004 Equalization Report, April 22, 2004

This table and Figure 4.1, compare rates of growth over the five-year period of 1994 through 1999, the three year period from 1999 to 2002 and annual growth in 2002, 2003 and 2004. Of course, Table 4.1 reflects total real property values. It does not distinguish by real property classification nor does it report on personal property (i.e., furniture, fixtures and equipment in commercial/industrial property). Overall, personal property accounts for about \$1.8 billion in Kent County (about 8.7% of total SEV) and about \$61.4 million in Plainfield Township (5.7% of total SEV).

Of the communities included in this sample, Plainfield Township is home to the largest share of values. While some communities have

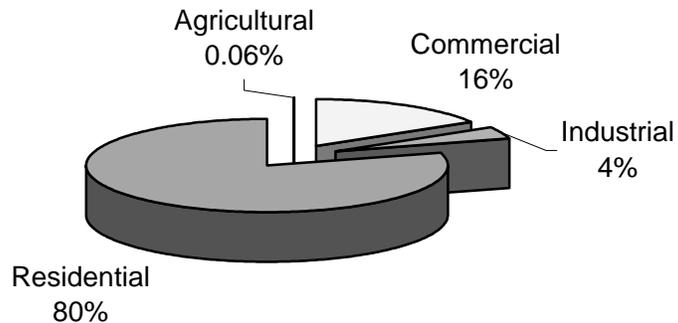
enjoyed rates of growth greater than the Township's, property values in Plainfield Township have kept pace with the county overall.

Figure 4.1 Comparison of SEV 1994 - 2004



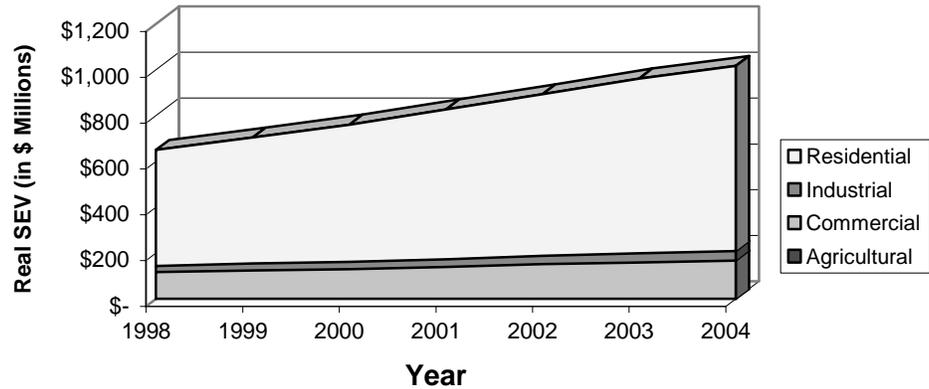
It is also important to further examine property values to consider the breakdown among land use categories (property classifications) and the varying rates of growth in each classification.

Figure 4.2 Breakdown of 2004 Real SEV



Slight growth in commercial and industrial values is apparent, but the scale of residential growth clearly dominates all property in Plainfield

Figure 4.3 Real Property SEV Growth



Township. During the six-year period ending with the 2004 assessments, residential real property values grew at an annualized rate of 8.1%, while commercial real property grew at 6.2% and industrial real property grew at 7.3%. Agricultural property also grew in value from \$308,000 to \$653,300, for an annualized rate of growth of 13.3%. However, agricultural lands comprise a very small share of total property in the Township and the assessment process may account for this increase. It is likely that agricultural land is increasing in value not as a result of its agricultural value, but rather as potential development sites. With new population pressures increasing the demand for housing and commercial uses, as development occurs adjacent agricultural land will become more valuable.

Residential properties make up the vast majority of the tax base in Plainfield Township.

It is clear from an examination of Figure 4.3 that Plainfield Township’s tax base is heavily weighted toward residential development. As discussed in Chapter 5, the community is characterized by a significant area of formerly agricultural lands that have gone out of production. These are likely future development sites and, as a result, are normally classified as residential for assessment purposes. This, however, is not a relatively new trend.

As reflected in Table 4.1, Plainfield Township has kept pace with the other most developing portions of northern Kent County. While not matching the rate of growth seen in some areas, the Township clearly is witnessing significant investment in new development. In 1990, real property in Plainfield Township constituted about 5% of the total

equalized value in the County. By 2000 it constituted 5.3%, and by 2004 it represented 5.4% of the County.

Current trends indicate that the SEV has continued to rise in all of the Townships in Kent County at rates significantly greater than inflation. Recently, the annual rate of inflation has been under 3% percent, while the County SEV rate of increase is 7.9% since 1999. If these trends continue, the urbanizing portions of the County, including Plainfield Township, will continue to be the major investment centers in the area. Proximity to the City of Grand Rapids, good expressway connections, the higher population concentration that require more services, and the existing infrastructure, all may be attributes that facilitate investment and therefore greater property values. In the case of Plainfield Township, the area's natural amenities as well as the rural and suburban lifestyle within a short commute to the City will certainly be important magnets for growth.

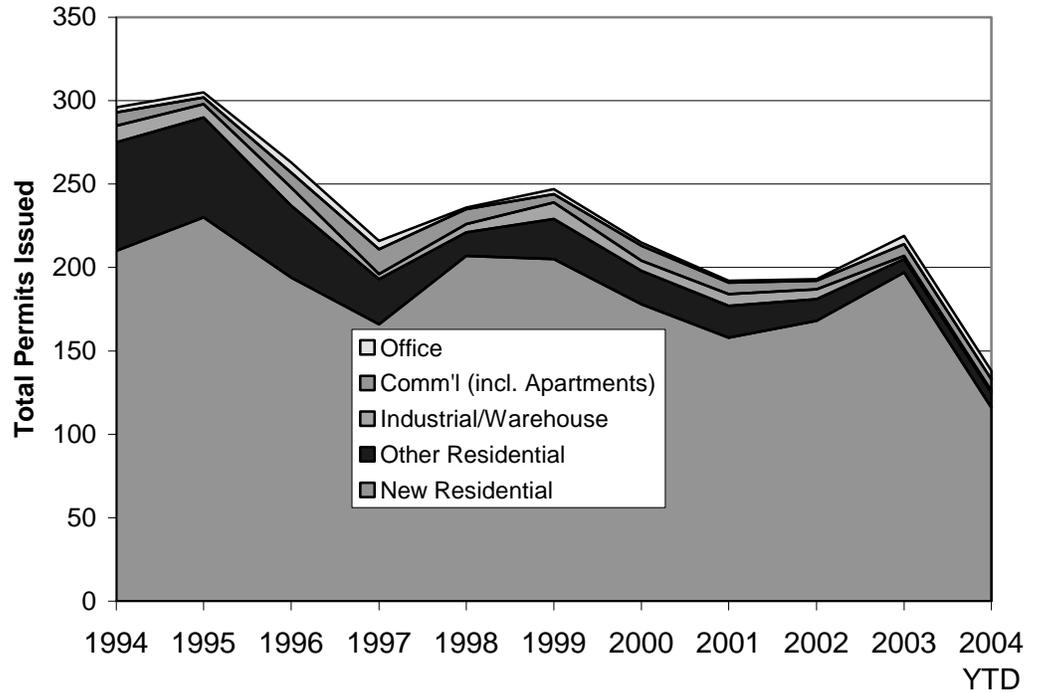
BUILDING PERMITS

Building permits are a good indication of investment in the community. As Figure 4.4 indicates, the number of total building permits issued in Plainfield Township over the past ten years has fluctuated somewhat.¹⁹ The "New Residential" category includes new single-family homes and the "Other Residential" category includes duplexes, condominiums and mobile homes. The predominance of residential development in the Township is clearly apparent from the distribution of building permits reflected in Figure 4.4.

Figure 4.4 is somewhat deceptive in that it only reports on the first seven months of 2004. Thus the overall impression is created by the fact that the rate of permit issuance has fallen dramatically since the boom years in the mid 1990s. To some extent this is true. While, this graph does illustrate a decline in the pace of growth in the latter half of the '90s and early '00s, the upward trend that started in 2002 appears to be continuing. If the current seven month trend line continues, by the end of 2004, the Township will have issued about 236 permits for new construction, an increase of almost 8% over 2003 and the most permits issued since 1999. Extending current trends, this will be made up of about 198 single family homes, 15 duplexes, condos or mobile homes, and about 22 new office, commercial or industrial facilities.

¹⁹ Plainfield Township.

Figure 4.4 Building Permits



Commercial, office and industrial building permits over the ten year span represented by Figure 4.4 accounted 176 total permits, or only about 7% of all construction activity in the Township. However, it is important to note that the average value of each commercial and industrial building permit was significantly greater. According to Township records, the average new residential building permit over the previous ten and one-half years was valued at \$155,451 while commercial building permits were valued at \$487,610 and industrial permits were valued at \$489,289, on average. By way of comparison, the highest average values were attributed to Office construction, coming in at \$636,121 per permit, on average.

On the other hand, the vast majority of the new construction in the Township was single family homes (2,029 out of 2,520 total permits, or 80.5%). Applying the total estimated market value of residential property in the Township in 2000 to the total number of housing units reported to the Census, reveals that the average value of a housing unit in Plainfield Township in 2000 was \$104,543.²⁰ This crude calculation

²⁰ In 2000, the Township Assessor reported total residential SEV in the Township at \$598,823,200 and the Census counted 11,456 housing units in the Township. Since SEV is nominally figured at one-half of market value, the average value of each housing unit may be calculated as $(\$598,823,200 \times 2) / 11,456 = \$104,543$.

should be compared with the median housing value as reported by respondents to the U.S. Census questionnaire.

The Census reports that the median dollar value of owner-occupied homes in the Township was \$135,300 in 2000. Placing this figure in perspective, in Kent County overall, the Census reported a median home value of \$115,100 in 2000. Table 4.2 compares median home values, median mortgage payments and rents in Plainfield Township, Kent County and the State.

	Median Home Values	Median Monthly Mortgage and Ownership Costs	Median Monthly Rents
Plainfield Township	\$135,300	\$1,087	\$607
Kent County	\$115,100	\$956	\$554
Michigan	\$115,600	\$972	\$546

In 2000, about 69% of the total housing stock in Plainfield Township was made up of owner-occupied dwellings. As rental properties typically change hands much more frequently, this suggests a fairly stable residential population.

EMPLOYMENT

With the relatively small extent of commercial and industrial development in the Township, most of the Township's residents find their employment outside of the community. According to the 2000 Census, the mean (average) travel time to work for Township residents was 21.5 minutes with over 95%²¹ of the workforce traveling by private automobile to work. Of that number, about 93% reported traveling to work alone. This is, of course, indicative of the "bedroom community" nature of the Township where most of the workforce finds employment in other jurisdictions.

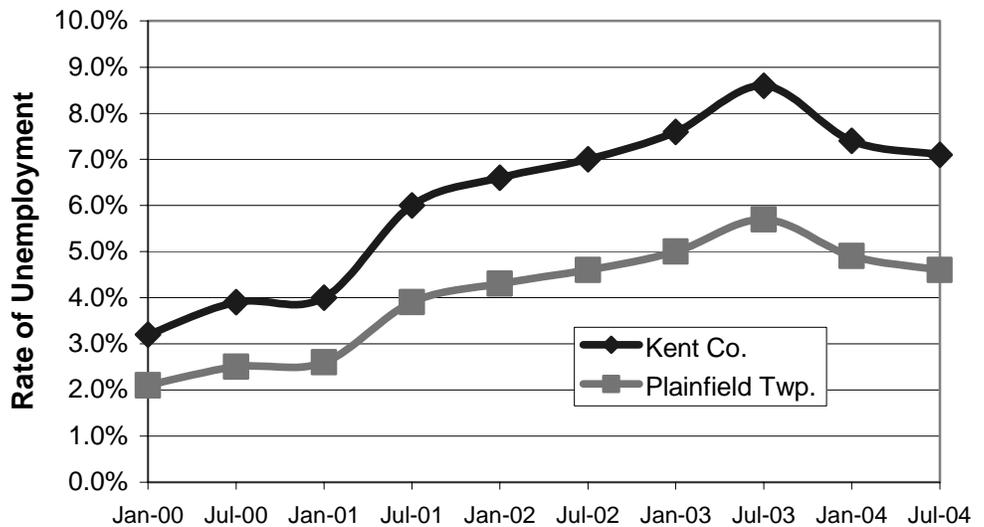
In 2000, about 74% of the population aged 16 and older within the Township was employed; and at the beginning of 2000, the Township's workforce reflected a remarkably low 2.1% rate of unemployment. Of

²¹ 14,888 of a total workforce over age 16 of 15,702, US Census

course, since the Census figures were collected, unemployment has increased significantly. Figure 4.5 reflects the biannual rates of unemployment through July 2004 for both Kent County and Plainfield Township.²²

The Kent County unemployment rate steadily dropped from about 3.5% in 1996 to an unprecedented 2.4% in late 1999. The year 2000 unemployment rate of 3.2% indicated the first increase in four years and signaled the beginnings of the softening in the economy. By July, 2003, the rate in the County had climbed to 8.6%, while the rate in the

Figure 4.5 Comparative Unemployment



Township had increased to 5.7%. Since then, the rate has moderated somewhat, but still ranges above 4% for the Township and above 7% for Kent County.

Employment represented by the Plainfield Township residents consists largely of white collar positions.

Employment represented by the Plainfield Township residents consists largely of “white collar” positions. Management and professional occupations account for nearly one-third (31.4%) of all employment, while service occupations and sales/office occupations account for 12.3% and 29.5%, respectively. Remaining occupational sectors include construction and maintenance operations (9.4%) and production and transportation (17.0%). These proportions essentially mirror those in Kent County overall.

²² Michigan Department of Career Development, Labor Market Information, website.

Within these broad employment categories, certain industries are more prominent. The fields of health care, education, data processing and architecture and engineering account for about 62% in the management and professionals category. In the service and sales occupations, the food preparation and service as well as office and sales support positions predominate the category. In traditionally “blue collar” professions, construction trades, production work and transportation employment are the primary categories.

Although Plainfield Township is largely a bedroom community, some employment is centered in the community. Its nearly 850 acres of commercial and industrial land use are home to several larger employers and institutions such as the public schools provide significant employment for area residents. The following is a listing of several of the larger employers with locations in the Township.

Behler Young	Magnum Powder Coating
Behr	Meijer
BigK	Northview Public Schools
Champion Die	NuCraft
D&M Metal Products	Rockford Public Schools
Family Fare	SSI Electronics
Gill Industries	TradeMark Die and Engineering
Maco Steel	Valley City Sign
Independent Bank	Wensco
Jackson Products	Wolverine Tool
Lowe's	

The Township has encouraged job-creating investment through industrial tax abatements and with the formation of the Plainfield Township Downtown Development Authority (DDA), serving the Comstock Park business community. The downtown development and tax increment financing plan for the Comstock Park DDA resulted in improvements to infrastructure and streetscape along West River Drive. That plan was originally adopted in 1993 and will expire in 2008, unless extended or terminated earlier by the Township Board.

CHAPTER 5. LAND USE AND DEVELOPMENT PATTERNS

Throughout its history, such features as topography, water bodies and highways have had a strong influence on the Township's development patterns.

Plainfield Township is approximately 23,540 acres or roughly 36 square miles in size. The Township is transected by the Grand River in an east-west direction, essentially isolating the southern one-third of the township from the remaining area north of the river. Additionally, US-131 works its way through the Township in a northeasterly direction acting as a conduit, connecting the greater Grand Rapids area with the rest of West Michigan. Throughout its history, these features and others, such as topography have had a strong influence on the Township's development patterns. As a result Plainfield Township has a fairly diverse range of land use and land cover patterns. Within the Township's 36 square miles one can find: high intensity commercial developments, rural type residential developments, community parks, and even a minor league baseball stadium. Pressures from the City of Grand Rapids, which is immediately south of Township and the smaller City of Rockford just to the north, have also affected the growth and development patterns in the area.

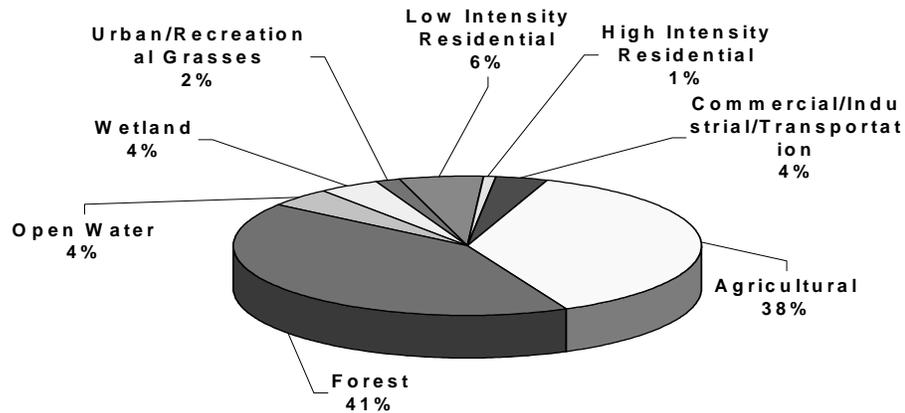
LAND COVER

Land cover describes the vegetation or land use that occupies the land in a given community. The land cover in Plainfield Township is reflected in Map 5. The Land Cover data shown is part of the larger National Land Cover Dataset (NLCD) as prepared by the United States Geological Survey (USGS) in 1992. This information was derived from LandsatTM (Thematic Mapper) satellite imagery, and was interpreted using an automated computer based process. This was followed by an accuracy assessment of the satellite data that involved the use of aerial photographs to judge the quality of the computer-based interpretation. This information is useful in determining the distribution of vegetation and development patterns throughout the Township. The National Land Cover dataset includes 21 classes of land cover type. The smallest "on the ground" unit of measure for the NLCD is 30 meters square.

Figure 5.1 illustrates the Land Cover make-up of Plainfield Township based on the 1992 NLCD. The predominant land cover type found in the Township is forested (41%), this class is a composite of the three forest related NLCD classes found in the Township: deciduous forest, evergreen forest, and mixed-forest. The Agricultural class is also an aggregate grouping of various agricultural cover types including: pasture/hay and row crops. However, many of the agricultural classes may no longer be actively farmed. Together, residential land cover types,

both low and high intensity, constitute the third largest class in the Township with 7%. The Township's diversity of land cover types, stated earlier is further illustrated by the fact that the *commercial/industrial/transportation* classes are found in the same quantities as both wetland and open water.

**Figure 5.1 Area Totals
1992 National Land Cover Dataset**



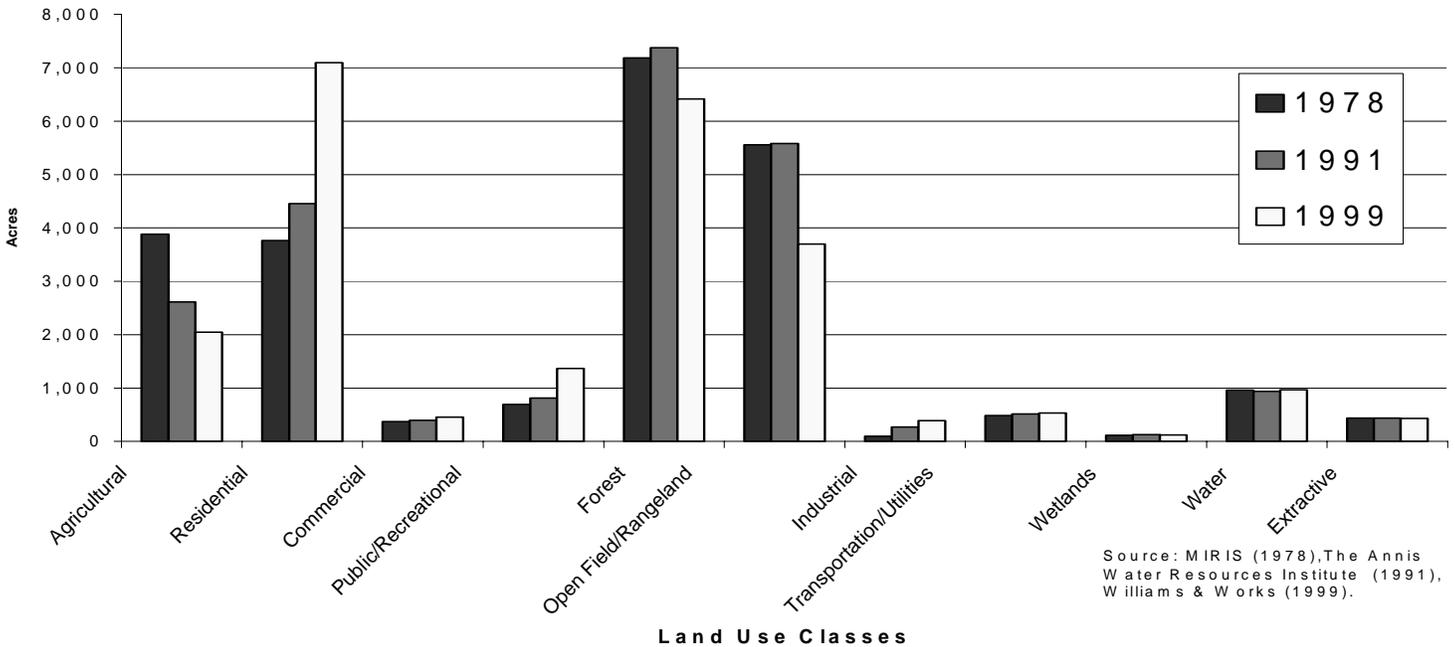
LAND USE CHANGE

The Land Use information for the Township has been derived from computerized mapping efforts of the Michigan Resources Information System (MIRIS) in 1978. An objective of MIRIS was to create a “statewide computerized database of information pertinent to land utilization, management, and resource protection activities.”²³ It is important to note that the map was prepared from aerial photographs and reflects composite groupings of land uses categories. MIRIS information is not bounded by parcel lines, but instead follows natural systems. Therefore the map is intended not to reflect zoning or exact land uses. For generalized zoning, see Map 7. Grand Valley State University’s Annis Water Resources Institute updated the original land use map of 1978, in 1991. Williams & Works using the most recent aerial photography (from 1999) again updated this data in 2004. The results of these updates are illustrated on Map 6. It should be noted that more recent aerial photos are being produced at REGIS and will be available for subsequent phases of the planning process.

²³ Michigan Department of Natural Resources, Michigan Resource Inventory Program established under the Michigan Resource Inventory Act, 1979 PA 204.

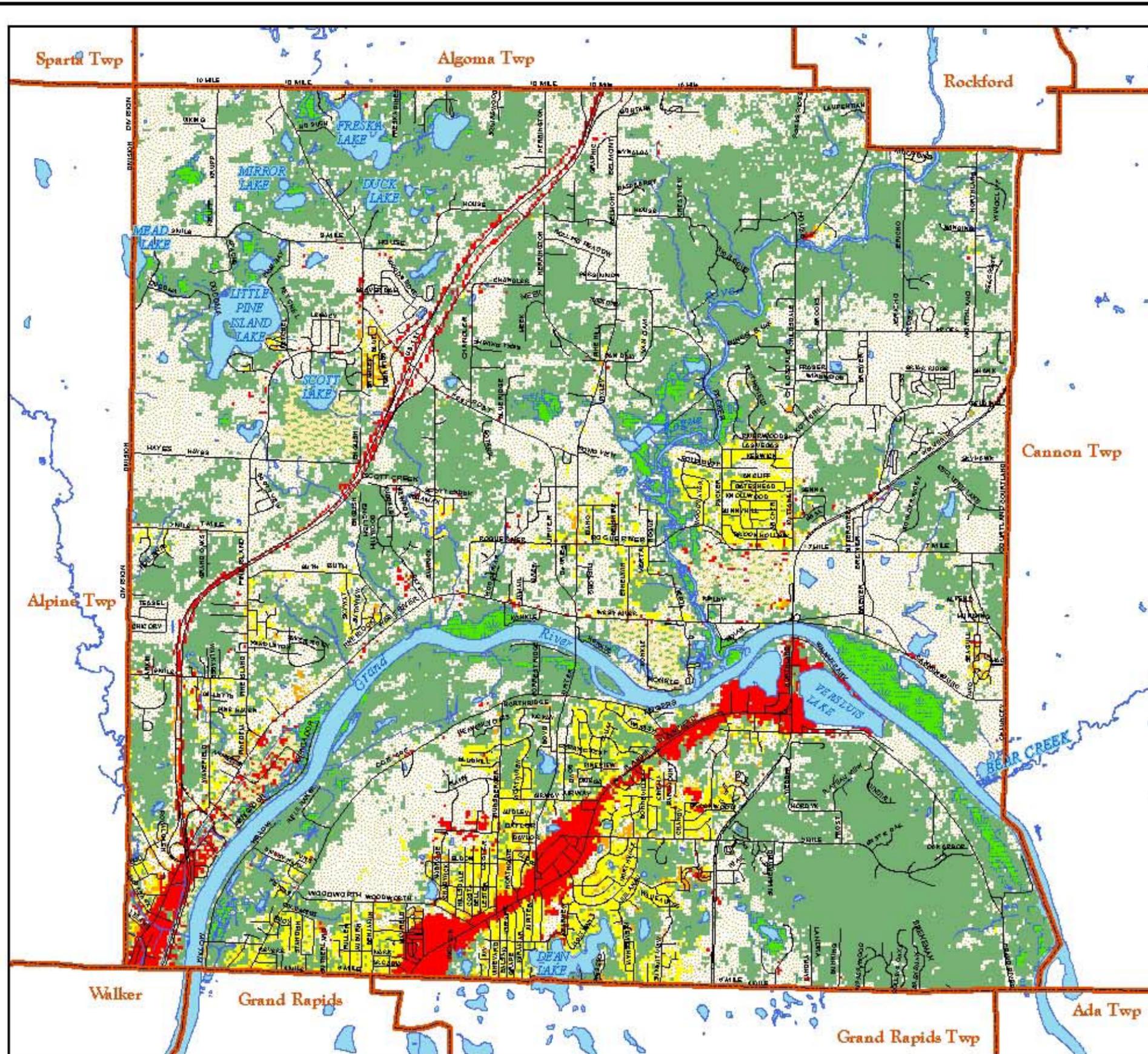
Not surprisingly Plainfield Township has seen the greatest amount of growth in its residential uses. In the years between 1991 and 1999 the Township has added roughly 2,640 acres of residential land uses. This compared to the 686 acres that were added between 1978 and 1991, is a relatively significant increase. In turn the Township has lost the greatest amount of land in the open field /range land class and in forest lands. Approximately 768 acres of forested lands have been converted to other uses since 1978. The open field/rangeland category has experienced a much greater loss of roughly 2,000 acres since 1978. Of note also are the increases in public/recreational lands and in Industrial uses, an increase of 2,053 and 293 acres respectively. The public/recreational lands class includes golf courses, which is partially accountable for the large increase seen in this group. The following table and graph further illustrate the land use change the Township has experienced.

Figure 5.2 Plainfield Township Land Use Change (1978-1999)



Plainfield Charter Township

Map 5 Land Cover Map



Legend

-  Political Boundary
-  Plainfield Twp Streets
-  Streams
-  Surface Water
- Land Cover**
-  Agricultural
-  Forest
-  Open Water
-  Transitional
-  Wetlands
-  Urban/Recreational Grasses
-  Low Intensity Residential
-  High Intensity Residential
-  Commercial/Industrial/Transportation



Source: REGIS and Plainfield Township

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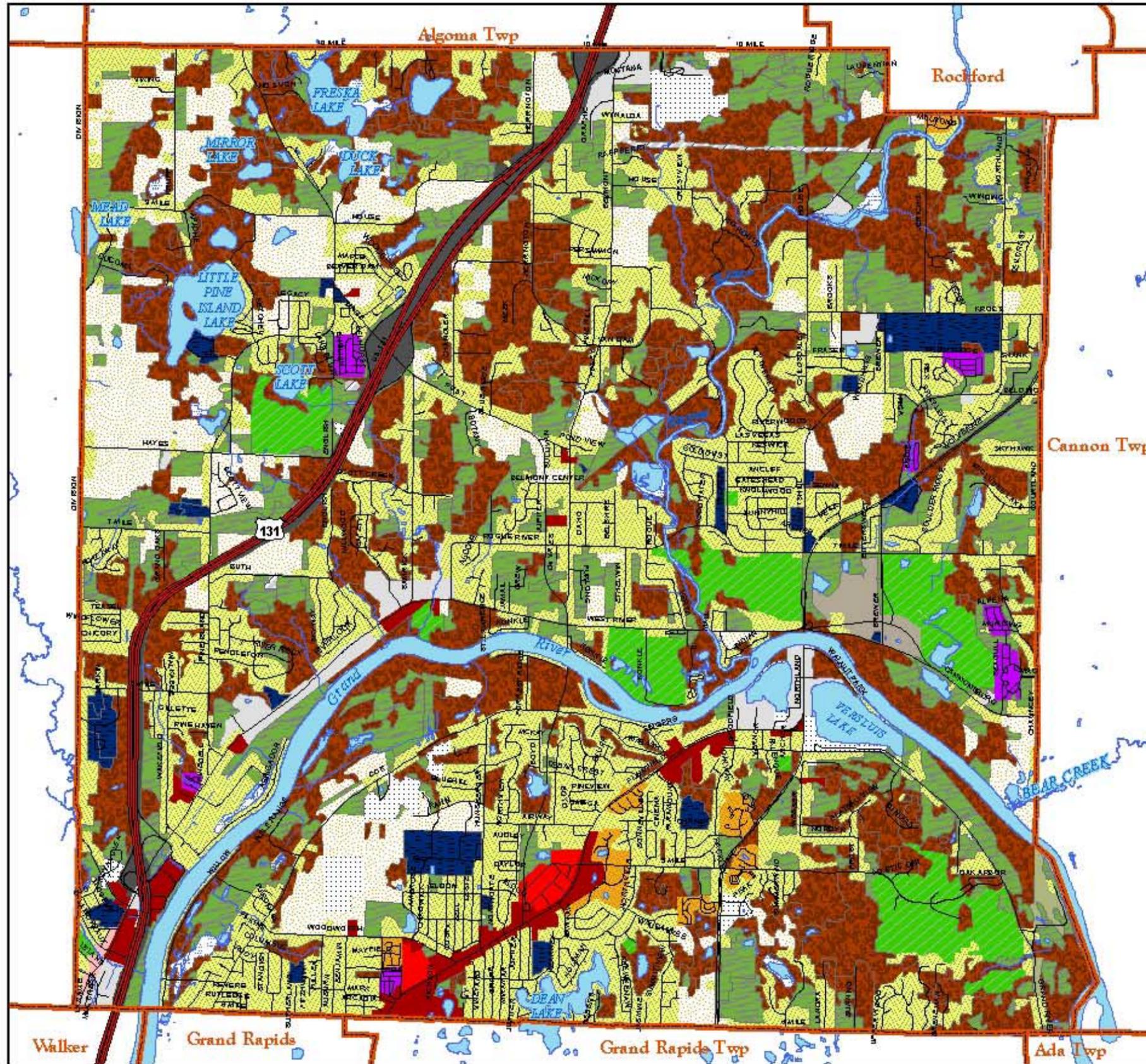
Kent County

Michigan

Plainfield Charter Township

Map 6

Updated Land Cover/Land Use



Legend

- | | | | |
|-----------------|---------------------------|--|----------------------------------|
| | Political Boundary | | Primary/Center Business District |
| | Interstate Highway | | Shopping Center |
| | Plainfield Twp Streets | | Commercial |
| Land Use | | | Industrial |
| | Open Water | | Quarries/Strip Mines/Gravel Pits |
| | Wetland/Swamp | | Utilities, Waste Disposal |
| | Herbaceous/Rangeland | | Road Transportation |
| | Wooded | | Open |
| | Agriculture | | Unknown |
| | Outdoor Recreation | | |
| | Institutional | | |
| | Low Intensity Residential | | |
| | Multi-Family (Low Rise) | | |
| | Mobile Home Park | | |



Source: REGIS and Plainfield Township

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Land Use/Land Cover Classes	1978	1991	1999
Agricultural	3,881	2,613	2,046
Residential	3,766	4,452	7,091
Commercial	373	395	454
Public/Recreational	691	813	1,362
Forest	7,183	7,376	6,415
Open Field/Rangeland	5,994	6,015	4,018
Industrial	95	266	388
Transportation/Utilities	482	514	531
Wetlands	117	125	121
Water	959	938	965
Extractive	436	434	429

CORRIDOR STUDIES AND LAND USE

North East Beltline Corridor Study. In 1997 a joint planning board was established consisting of individual members from Plainfield Charter Township, Grand Rapids Charter Township, the City of Grand Rapids, and the Grand Valley Metro Council. The board was formed in response to a sense of common challenges along the East Beltline corridor. The objective of this collaboration was the creation and implementation of the *North East Beltline Joint Development Plan*. A clear set of objectives emerged out of this plan related to land use along the corridor, they can be summarized as follows:

- ◆ Involve all jurisdictions along the corridor in consistent development, design, and review standards.
- ◆ Incorporate a more natural design concept that works in harmony with the existing landscape and natural features. Allowing for more environmentally friendly as well as aesthetically pleasing development patterns.

- ◆ Promote and support healthy development, including mixed uses in neighborhoods, daycare centers, and the redevelopment of employment centers along the corridor.

The result of that study was the cooperative adoption of a set of land use and design standards for the lands adjoining the East Beltline from I-196 to Northland Drive. Each adjoining jurisdiction has subsequently adopted the plan and incorporated its recommendations into its master plan and zoning decision-making processes.

Ten Mile Road Corridor Study. Similarly, in Spring of 2004, the City of Rockford, and Algoma and Plainfield Townships completed a corridor study for Ten Mile Road, which traverses the northern boundary of Plainfield. Ten Mile Road is a critical thoroughfare since it connects US-131 to downtown Rockford and is a gateway for all three communities. Generated during the planning process, land use objectives included:

- ◆ Limit commercial, office and industrial land uses to the area adjacent to the US 131 interchange.
- ◆ Identify significant natural features and adopt regulations to preserve these features.
- ◆ Promote residential land uses between the US 131 interchange and the City of Rockford.
- ◆ Maintain the rural appearance and character of the corridor.

A QUICK BUILD-OUT ANALYSIS

“Build-out analysis is a powerful tool for illustrating the potential impact of master plans and zoning policy if all build-able lands are developed at the maximum permitted density”.²⁴ This section evaluates the current zoning conditions in Plainfield Township, and considers the impacts future growth will have on the community by performing a build-out analysis.

Background

A Build-out analysis is essentially an evaluation of the current zoning situation in a community. It acts “...as a snapshot, worse-case scenario tool for planning. The analysis can assist local governments by showing

²⁴ Mark Wyckoff and Erin Kilpatrick, Planning Zoning News, April 2002

what growth the locality will allow in the future under current zoning designations”.²⁵ The resulting information can then be used to estimate the impacts of future growth on the community in question. The primary output from the analysis is the maximum number of dwelling units that can be built in each zoning district. Future population estimates for the community can then be derived from the number of potential dwelling units, and then compared with population projects for the area. This comparison will then allow one to judge the effectiveness of the area’s current zoning.

Traditionally a build-out analysis was performed by hand using pencil and paper. However, as a result of the increased efficiency in data collection and analysis capabilities within the last decade or so a computer-based method utilizing a Geographic Information System (GIS) is oftentimes more applicable now.

In the state of Michigan build-out analyses have been conducted for a number of communities. Commonly these studies have shown “... a disparity between existing population, projected 20-year growth, and potential build-out figures [resulting] in a serious rethinking of public policy”. In the ten counties examined by Kilpatrick and Wyckoff, build-out analyses showed that the current zoning in these communities on average would support a population increase of 453%. This extreme “overzoning” as it has come to be known, can be seen as an invitation to inefficient land use and a perpetuation of sub-urban sprawl.

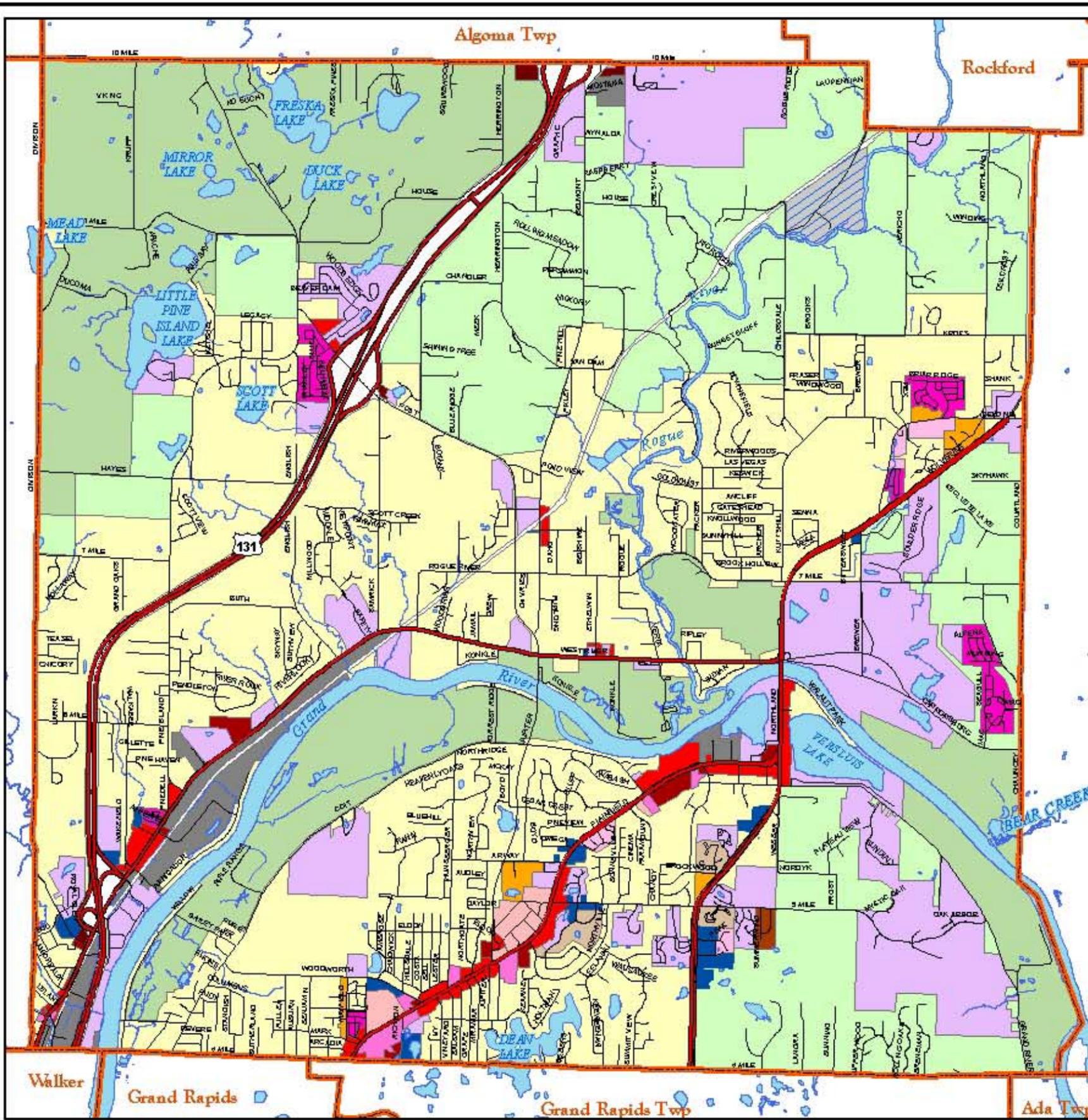
²⁵ Mary A. Zirkle, “Build-Out Analysis in GIS as a Planning Tool With a Demonstration for Roanoke County, Virginia.”

Kent County

Michigan

Plainfield Charter Township

Map 7 Generalized Zoning



Legend

- Political Boundaries
- Principal Arterial Streets
- Plainfield Twp Streets
- Streams
- Surface Water
- RP - Rural Preservation
- RER - Rural Estate Residential
- R-1 - Low Density Residential
- R-2 - Medium-low Density Residential
- R-3 - Medium Density Residential
- R-4 - High Density Residential
- R-5 - Special Residential
- R-6 - Mobile Home Residential
- C-1 - Neighborhood Commercial
- C-2 - Regional Commercial
- C-3 - Specialized Commercial
- C-4 - Planned Shopping Centers
- C-5 - Highway Commercial
- I - Industrial
- LI - Light Industrial
- O - Office
- PUD - Planned Unit Development



Source: REGIS and Plainfield Township

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Methodology.



The first step in conducting the analysis in Plainfield Township requires that the total amount of land within each residential zoning designation be calculated. It should be noted that this calculation does not take into account existing land uses. However, areas of open water and wetlands (shown as *wetlands* fig 5.3) were subtracted from the overall area of the Township (see fig.5.3). Additionally, to account for the necessary infrastructure (roads, utilities, etc.) to support development 15% was subtracted from each zoning class. Table 5.2 shows the amount of land occupied by each residential district in the Township.

Table 5.2 Total Area		
Based on Zoning District		
Mapped Residential Districts	Total Area (acres)	Minus 15 % for Infrastructure
R-1 Residential	8,192	6,963
R-2 Residential	83	71
R-3 Residential	58	49
R-4 Residential	75	64
R-5 Residential	20	17
R-6 Residential	206	175
Rural Estate (R-E)	4,836	4,111
Rural Preservation (RP)	3,308	2,812
TOTAL	16,778	14,261

The second step in the process is to determine the total, potential dwelling units allowed by zoning standards at build-out. To derive this number the total net area in each district is divided by the minimum lot area allowed in the given district (Table 5.3). Note that Planned Unit Developments or mixed use developments may permit slightly higher densities on a project-by-project basis, but for the purpose of a normal build-out analysis, the minimum lot area is a practical measure.

Table 5.3 Dwelling Units at Build-out			
Based on Zoning District			
Mapped Residential Districts	Total Area (acres)	Minimum Density (dwelling units per acres)	Potential Number of Dwelling Units
R-1 Residential	6,963	3.5	24,560
R-2 Residential	71	5.0	350
R-3 Residential	49	7.2	358
R-4 Residential	64	12.4	793
R-5 Residential	17	4.4	74
R-6 Residential	175	7.9	1,387
Rural Estate (R-E)	4,111	0.73	2,984
Rural Preservation (RP)	2,812	0.36	1,021
TOTAL	14,261		31,527

The third and final step in the analysis is to determine the total population resulting from the number of potential dwelling units, or the potential population at build-out. This is accomplished by multiplying the number of dwelling units by 2.73, the average number of people per household in the Township as determined by the 2000 U. S. Census. As an initial step, this is accomplished without consideration of the existing residential units already in a particular area. For the purposes of this Community Profile Report, this limitation is not meaningful.

As the Planning Commission begins to look at alternative future land use patterns, it may be helpful to revisit the build-out analysis and consider existing patterns as well as planned new growth.

Table 5.4 Total Population at Build-out Based on Zoning District		
Mapped Residential Districts	Potential Number of Dwelling Units	Potential Population at Build-Out
R-1 Residential	24,560	67,049
R-2 Residential	350	956
R-3 Residential	358	977
R-4 Residential	793	2,166
R-5 Residential	74	202
R-6 Residential	1,387	3,768
Rural Estate (R-E)	2,984	8,147
Rural Preservation (RP)	1,021	2,786
TOTAL	31,527	86,070

Under the current zoning, Plainfield Township's population would roughly be 86,070 at build-out.

The resulting calculations show that under the current zoning, Plainfield Township's population would roughly be 86,070 at build-out, assuming no change in current zoning standards. This is essentially is an increase of 185%. Chapter 3 includes an estimate of population growth and indicates that the Township's population is not expected to reach over 50,000 by the year 2030. However, based on the rates of growth described in Chapter 3, and given current zoning, the Township would reach full build-out in about 65 to 70 years.

Considering the scale and level of accuracy achievable with this project, the resulting numbers do shed some light on Plainfield Township's current zoning map. However, care should be taken when interpreting these results. This analysis should be seen only as a theoretical model of Plainfield Township's current zoning map. As with most models there are many variables and assumptions built into the analysis that do not necessarily reflect the real world situation.

REGIONAL LAND USE CONFLICTS AND CONSISTENCY

The areas surrounding Plainfield Township to the north, east and west are generally planned for low-density residential development or even in some cases agriculture. Overall, the land use and zoning patterns seem to flow well across jurisdictional boundaries. The one exception to this may be the northeast section of the Township, the area in and around the border with the City of Rockford. Many of the areas just across the Township line in Rockford are planned and zoned for a much higher intensity of residential use than those in the Township. The area abutting the City of Grand Rapids along the 4-Mile Road boundary provides very consistent patterns of lower density urban residential development or highway commercial along Plainfield Avenue.

CHAPTER 6. COMMUNITY FACILITIES AND SERVICES

Community facilities play a significant role in preserving quality of life.

Community facilities play a fundamental role in augmenting civic engagement, sponsoring cultural events, and promoting community pride. High quality recreational opportunities are quality of life indicators and such facilities characterize Plainfield Township. The health and leisure benefits of a trail facility and other recreation lands, such as several popular golf courses, extend beyond the Township. In addition to recreational facilities, public schools provide local spaces for interaction, learning, and community building, and safety services provide a compulsory service to the community.

This chapter of the Community Profile begins with a discussion of education opportunities within the region and portrays local school enrollment and trends. In addition, parks and recreation areas are catalogued. Finally, the chapter discusses public safety facilities which service the Township.

EDUCATIONAL FACILITIES AND TRENDS

Higher Learning Institutions

While no institution of higher learning (a facility educating beyond a high school level) exists in the Township, several colleges and universities are located within a short driving distance. These include, Grand Valley State University, Calvin College, Aquinas College, Cornerstone University, Grand Rapids Community College, and other smaller institutions. These academic facilities provide higher education opportunities and likely provide employment to some Township residents.

Libraries

Part of the Kent District Library system, two libraries serve the Township: Plainfield Library and Comstock Park Library. The two libraries assist in conducting various children, youth, and adult programs, and offer the amenities of public meeting space, access to the Internet, and a myriad of books, encyclopedias, almanacs, and other informational reading material. The Plainfield Library is located at 2650 Five Mile Road; the Comstock Park Library is located at 3943 West River Drive.

PUBLIC SCHOOLS

In addition to the two private schools which serve the Plainfield community – Chandler Woods and Assumption Catholic Elementary – four public school districts serve Plainfield Township, including Rockford, Comstock Park, Kenowa Hills, and Northview. These districts comprise thirty-one total school buildings used for educational purposes, of which thirteen are in the Township. Cumulative total enrollment of the three districts is approximately 16,890 students. See Map 8 for school district boundaries within the Township.

Note that the Kenowa Hills school district does not currently have any facilities in the Township. Approximately 3,600 students are enrolled with Kenowa Hills, which serves a small area along the eastern border of the Township. The following paragraphs describe facility locations and enrollment numbers.

Rockford Public Schools

The Rockford school district serves the northeast quadrant of the Township, and extends beyond Township boundaries. The district provides four educational facilities in the Township, and has eight others located in neighboring communities; two of which have been constructed since 2000.

The Rockford district appears to be growing the fastest, with Comstock Park witnessing some growth, and Northview remaining stable.

Enrollment trends illustrate that the school district is growing significantly. Every academic year since 1994, the Rockford school district has seen an influx of students. During the 1994-1995 school year, the district educated 6,320 students. By the 1998-1999 school year, the district had grown by over 930 students. The district has a total current enrollment of approximately 7,700 students.²⁶

In January of 2004, the following enrollment projections were estimated for the Rockford Public School District.²⁷ These numbers indicate continued student growth, and may also signify that the district is experiencing a steady arrival of younger families.

2005-2006	2006-2007	2007-2008	2008-2009
7,955	8,090	8,151	8,268

²⁶ Rockford Public Schools Superintendent Office

²⁷ Stanfred Consultants; January 19, 2004

The following Rockford Public Schools facilities are located in the Township:

- Rockford High – 4100 Kroes Street, Rockford
- Freshman Center – 4500 Kroes Street, Rockford
- Sheridan Trail Middle – 4500 Kroes Street, Rockford
- Belmont Elementary – 6097 Belmont Avenue, Belmont
- Roguewood Elementary – 3900 Kroes Street, Rockford

Comstock Park Public Schools

The Comstock Park district includes three school facilities in the western portions of the Township (and two other facilities outside the Township). The total current enrollment is 2,344; enrollment was 2,314 during the 2003-2004 school year.²⁸ The district has seen measured growth, and remains stable overall. Pine Island Elementary was recently completed for the 2001-2002 academic year, and is indicative of growth in the northwestern portion of the Township.

Comstock Park Public Schools facilities in Plainfield Township include:

- Comstock Park High – 150 Six Mile Road, Comstock Park
- Mill Creek Middle – 100 Betty Street, Comstock Park
- Pine Island Elementary – 6101 Pine Island Drive, Comstock Park



Northview Public Schools

The Northview Public School District serves the southern, most densely populated portions of Plainfield. Of the three districts serving the Township, the Northview area has the highest proportion of developed land, and therefore may not experience development and the influx of students at rates that, say, the Rockford district experiences, which is comprised, in part, by open lands in several townships. The total current enrollment is 3,300 and enrollment has remained steady over the last three years.²⁹

²⁸ Comstock Park Public Schools Superintendent Office

²⁹ Northview Public Schools Superintendent Office

All of Northview's six facilities are located within the Township:

- Northview High – 4451 Hunsberger Avenue, Grand Rapids
- Highlands Middle – 4645 Chandy Drive, Grand Rapids
- Crossroads Middle – 4400 Ambrose Avenue, Grand Rapids
- West Oakview Elementary – 3880 Styvesant Avenue, Grand Rapids
- East Oakview Elementary – 3940 Suburban Shores Drive, Grand Rapids
- North Oakview Elementary – 4300 Costa Drive, Grand Rapids

RECREATION AND COMMUNITY FACILITIES

Plainfield Township maintains eleven recreation and community facilities comprising approximately forty acres. It also accommodates other facilities maintained by Kent County, a State agency, and private organizations. These facilities provide the opportunity for picnicking, golfing, boating, hiking, camping, walking, fishing, meeting space, snowmobiling, competitive sports, and provide an aesthetic amenity for residents. They are illustrated on Map 9. This section provides a brief inventory of recreation opportunities in the Township.



The White Pine Trail State Park access in Rogue River Park provides modern restrooms and parking.

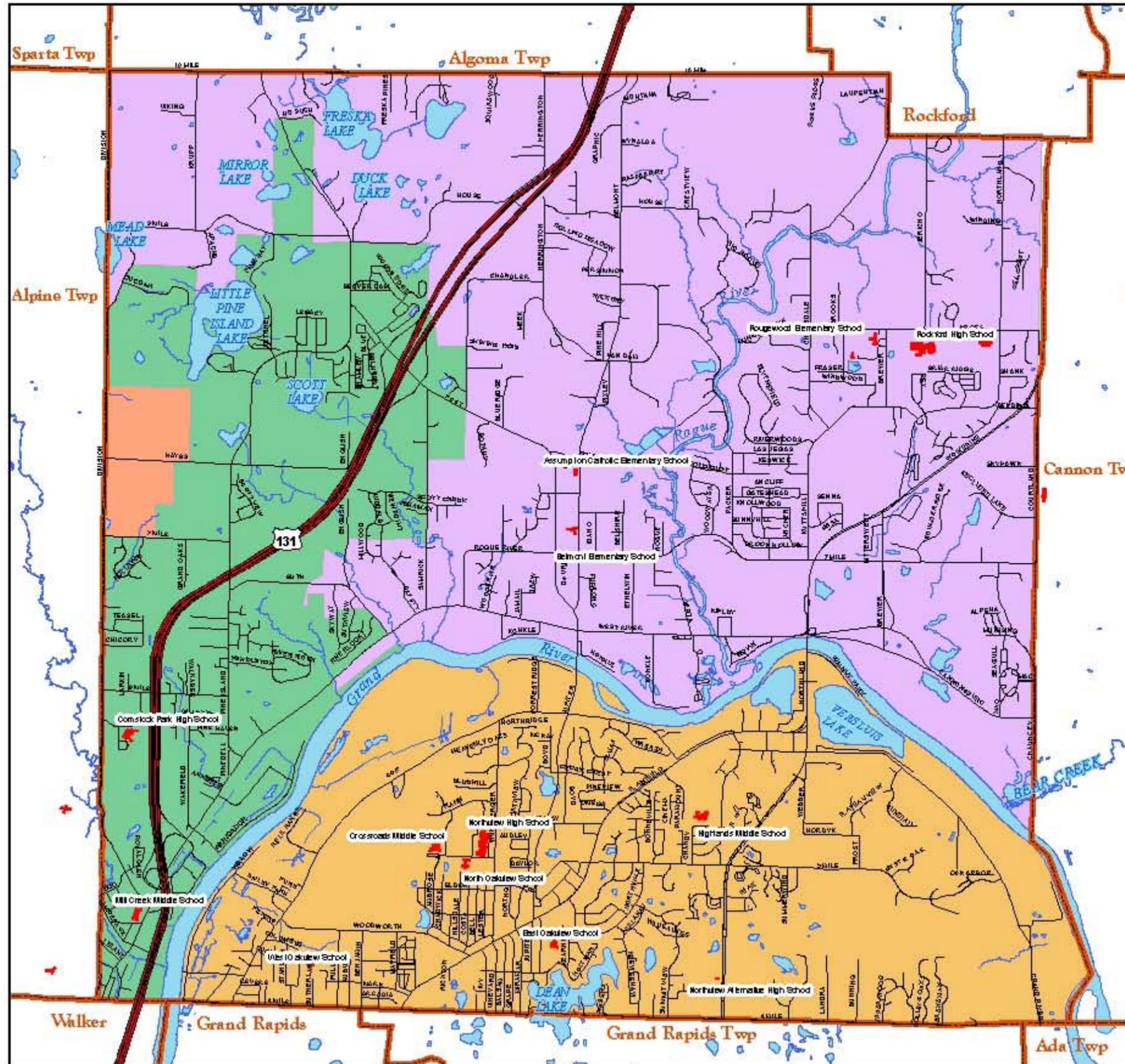
To begin, the Michigan Department of Natural Resources (MDNR) operates one park facility in the Township. The MDNR owns the Grand-Rogue River Access Site, a fifteen-acre park with ball diamonds, picnic facilities, and modern restrooms; the Township maintains it. The access site is located south of West River Drive near the confluence of the Rogue and Grand Rivers

Kent County

Michigan

Plainfield Charter Township

Map 8 School Districts



Legend

-  Political Boundary
-  Interstate Highway
-  Plainfield Twp Streets
-  Surface Water
-  Streams

School District

-  Comstock Park Public Schools
-  Kenowa Hills Public Schools
-  Northview Public Schools
-  Rockford Public Schools
-  School Facilities



Source: REGIS and Plainfield Township

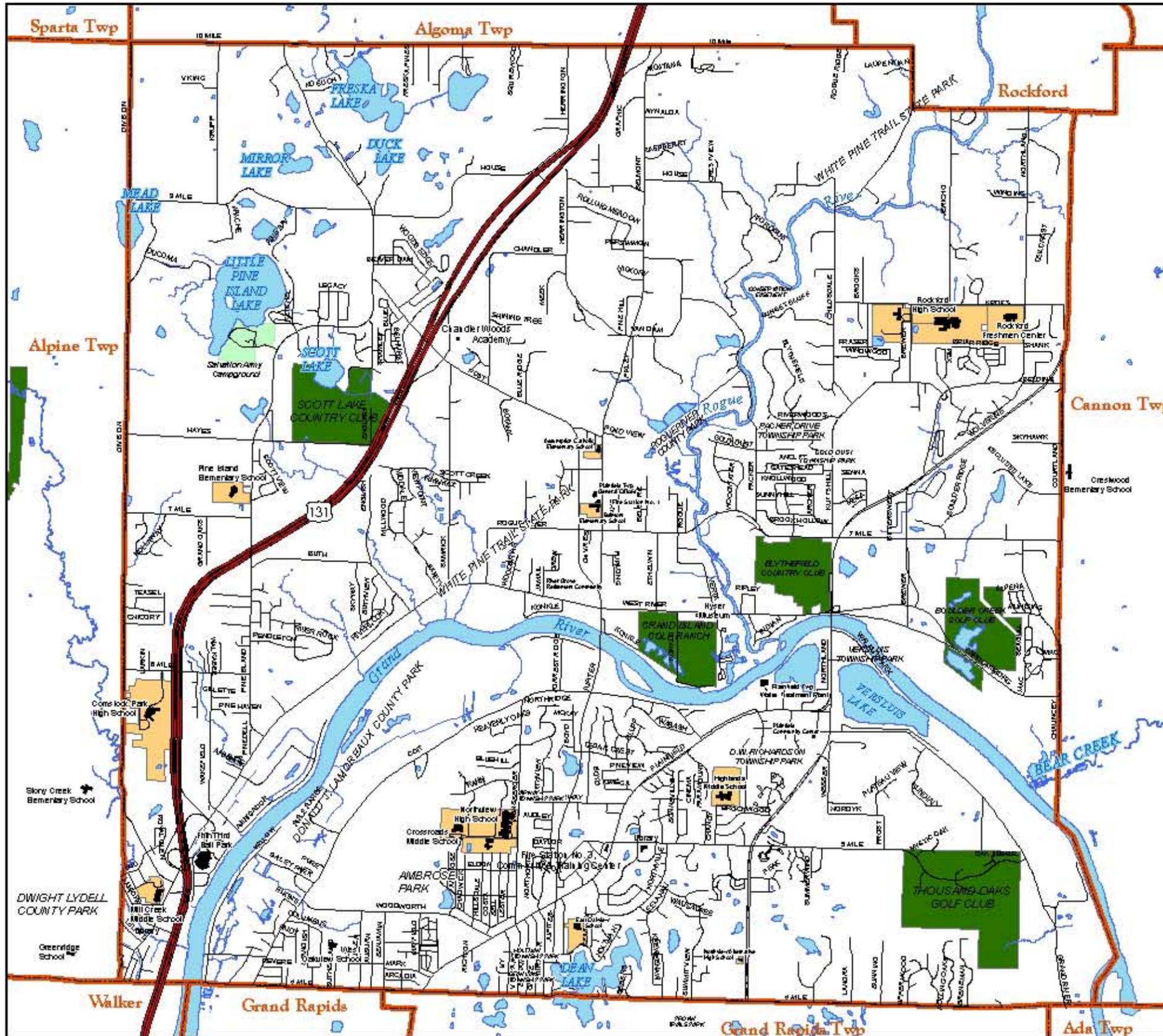
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Plainfield Charter Township

Map 9 Community Facilities



Legend

-  Political Boundary
-  Interstate Highway
-  Plainfield Twp Streets
-  Surface Water
-  Streams
-  Community Facility
-  School Boundary
-  Public Park
-  Quasi-Public Park
-  Golf Course



Source: REGIS and Plainfield Township

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The White Pine Trail State Park is a 92-mile long non-motorized trailway that navigates across the entire Township. The regional facility ultimately connects with non-motorized paths in the City of Grand Rapids to the south, connects with the City of Rockford to the north, and continues up to Cadillac in northern Lower Michigan. It was constructed on an abandoned rail right-of-way.



The White Pine Trail bridge over West River Drive provides a safe crossing for pedestrians and cyclists using the trailway.

Trail surfaces include natural ballast, hard packed gravel, and asphalt between Reed City and Big Rapids, and 7 miles of asphalt near the Rockford and Belmont areas in Plainfield Township.³⁰ The trailway accommodates mountain biking, hiking, cross-country skiing, walking and running, and the northern 78.5 miles accommodates snowmobiling.

Facilities in Cadillac, Big Rapids, and Belmont serve as the major trailheads for the White Pine Trail. The Belmont trailhead is at Rogue River Park and includes amenities such as modern restrooms and picnic facilities. Currently, the MDNR only provides emergency maintenance services and looks to municipalities to conduct general maintenance and operating activities for the trailway.³¹



Fifth Third Ballpark in southwestern Plainfield Township is home of the West Michigan Whitecaps and can seat 11,123 people.

The White Pine Trail connects to the 47-acre site of the Fifth Third Ballpark, home to the West Michigan Whitecaps. The stadium opened in 1994 and has become a major regional attraction, with professional baseball, high profile concerts and group events. Total capacity is 11,123. The Ballpark includes several amenities, such as the DTE Energy Deck, the Klingman's Patio, the Batteries Plus Powerzone, and Funland; three grill areas, and seven concession stands.³²

³⁰ Michigan Department of Natural Resources

³¹ Michigan Department of Natural Resources

³² www.whitecaps-baseball.com/BALLPARK

TOWNSHIP FACILITIES

The following facilities are owned and maintained by Plainfield Township.

Packer Drive Park. This two-acre facility serves the local neighborhood population of the Blythefield/Riverwoods community. Amenities include a baseball or softball field, three grills, and six picnic tables.

Versluis Park. Versluis Park, at Versluis Park Drive and Northland Avenue, is seventeen acres and serves the general population of the Township. Facilities include vending machines, two sand volleyball courts, a paved pathway, a picnic shelter, thirty five picnic tables, nine grills, two sets of horseshoe pits, modern restrooms, and a swimming beach. The park has Grand River and Versluis Lake frontage.

D.W. Richardson Park. Adjacent to the Plainfield Community Center, D.W. Richardson Park is 3.4 acres and incorporates benches, six picnic tables, a picnic shelter, portable restrooms, two baseball or softball fields, one basketball hoop, four shuffleboard courts, and playground equipment. This facility is considered to be a community park.



Gold Dust Park is one of eleven recreation facilities the Township maintains.

Northgate Park. Northgate Park is a one-acre neighborhood park serving the Northgate neighborhood. Amenities offered include a sandlot baseball field, two picnic tables, playground equipment, and two grills.

Dean Lake Park. This facility is a 1.5-acre park located on the west side of Dean Lake and includes three picnic tables and access to Dean Lake.

Holtman Park. Holtman Park is a two-acre facility located in the Suburban Shores neighborhood. It offers a sandlot baseball field, three picnic tables, playground equipment, and a scenic open field.

Gold Dust Park. Gold Dust Park is a two-acre park serving the Blythefield neighborhood. It includes a playground, basketball hoop, two grills, five picnic tables, and a paved pathway.

Eldon Hollow Park. This four-acre park at Chadwick Avenue and Eldon Street is undeveloped, and its hilly terrain provides the opportunity to sled during the winter months.

Airway Park. Airway Park is a two-acre facility in the Airway neighborhood. Amenities include playground equipment, three picnic tables, a baseball or softball field, and portable restrooms.

Ambrose Park. A three-acre facility in the Hills and Dales neighborhood, Ambrose Park includes access to a small pond, newer playground equipment, a picnic shelter, two grills, and four picnic tables.

Plainfield Township
plans to develop two
regional parks on
reclaimed landfill
sites.

Plainfield Community Center. Located at 5255 Grand River Drive, the Plainfield Community Center (or Senior Center) is open weeklong and offers facilities for gatherings, meetings, and parties. The main room has a total capacity of 121 seats.

The Township also has plans to develop a park along Ten Mile Road; and a reclaimed landfill on East Beltline Avenue is currently being developed as a park. In addition to these recreation and community facilities, the MDNR river access site, and the White Pine Trail, nine other recreational facilities exist in Plainfield. These include Kent County lands and privately maintained camps, country clubs, and golf courses. Also, the fifteen private and public school playgrounds and facilities can provide an outlet for recreation in the community.

KENT COUNTY FACILITIES

The following parks located in Plainfield Township are owned and maintained by Kent County.

Donald J. Lamoreaux Park. Lamoreaux Park is the largest recreational facility in the Township and adds an important amenity to Kent County residents. Adjacent to the Grand River, the park is comprised primarily of floodplain area. These lands were acquired and developed, in part, to assemble a less intense land use to protect future potential residents from flooding hazards. The 249-acre park offers fishing, nature and hiking trails, camping, winter sports, picnic facilities, ball diamonds, camping, and cross country skiing. It exists largely as a passive recreation facility.

Rogue River Park. This 79-acre facility is adjacent to the Rogue River and includes ball diamonds, tennis courts, fishing, modern restrooms, cross country skiing, playground equipment, picnic facilities, access to the White Pine Trail State Park, and hiking trails.

Dwight Lydell Park. Lydell Park crosses municipal boundaries with Alpine Township in Comstock Park. This park is 35-acres and offers its patrons tennis courts, playground equipment, ball diamonds, fishing, picnic facilities, modern restrooms, hiking trails, basketball hoops, and winter sports.

PRIVATE FACILITIES

Besides fostering scenic views and community open space, private recreation lands provide leisure opportunities, camping, and social gathering spaces. In addition to a YMCA proposed for construction west of the Belmont community, the following are privately maintained and operated recreational facilities in Plainfield.

- ◆ Blythefield Country Club; 5801 Northland Drive
- ◆ Boulder Creek Golf Club; 5750 Brewer Avenue
- ◆ Grand Island Golf Ranch; 6266 West River Drive
- ◆ Grand Rogue Campgrounds; 6400 West River Drive
- ◆ Salvation Army Camp; 6889 Pine Island Drive
- ◆ Scott Lake Country Club; 911 Hayes Road
- ◆ Thousand Oaks Country Club; 4100 Thousand Oaks Drive

PUBLIC SAFETY SERVICES AND FACILITIES

Police, fire, and hospital services are necessary for any community, as they protect the general welfare, help alleviate crime, and provide treatment when needed.

Police Protection

The Kent County Sheriff's Department provides police protection and law enforcement for Plainfield Township. While there are no police stations located within the Township, the Department provides a

minimum of one car – or officer – on patrol in the community twenty-four hours a day, seven days a week.³³



Plainfield Township supports a well-equipped modern Fire Department

Fire Protection

The Township has a large enough population to establish a comprehensive local fire department. The Township is not engaged in an inter-municipal fire service contract, where one central fire agency would serve Plainfield and at least one other community. However, several mutual aid agreements exist between Plainfield and its neighbors. These agreements initiate assistance from a neighboring fire department if a disaster is too great for the Plainfield Fire Department to address alone. Likewise, Plainfield would provide services to a

neighbor under the same circumstances.

The Plainfield Fire Department is a combination of full-time, part time, and paid-on-call staff utilizing two stations. There are 14 full-time staff; 17 paid-on-call staff; 3 people in photography and services; and, 12 reserves and apprentices, or uncertified trainees who may be in school, for a total of 64 fire department staff.³⁴

³³ Kent County Sheriff's Department

³⁴ Plainfield Fire Department

CHAPTER 7. UTILITIES

Public utilities are an important element in a growth management plan. Through the delivery of reliable and plentiful water and the safe and efficient disposal of wastewater, communities can achieve an improved quality of life for local residents. Utility systems also have the potential to aid in growth management by enabling greater densities in selected locations. Finally, and most importantly, public utility systems give the community the ability to provide effective stewardship over such important natural features as groundwater and surface water features.

WATER SUPPLY SYSTEM

Accompanying growth is the inherent need for utility and infrastructure extensions.

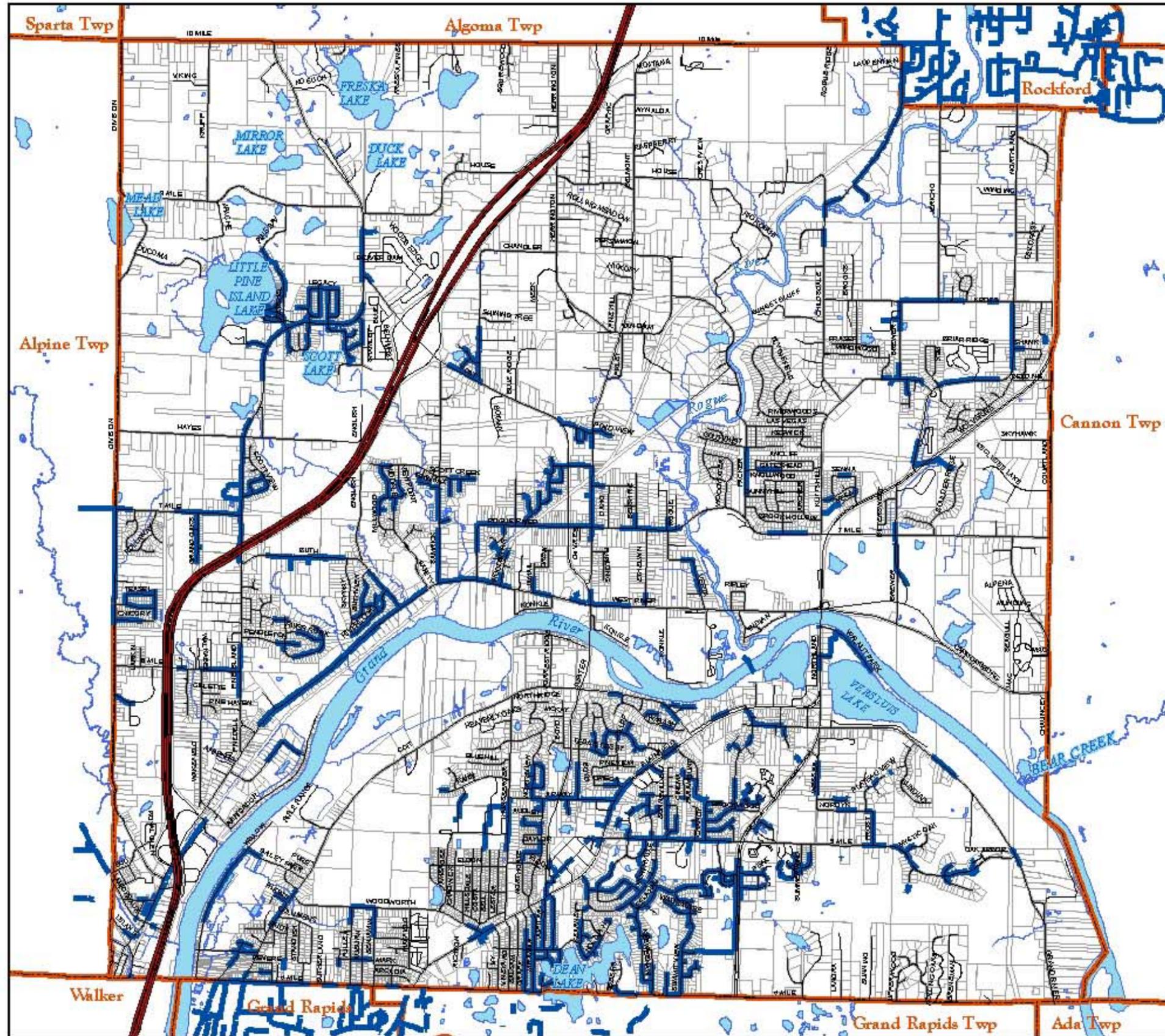
A safe, secure, plentiful and reliable source of water is vital to a community's growth and development. Potable water for drinking, sanitation, fire suppression and industrial uses are the hallmarks of modern society. Plainfield Township operates a Type I municipal water system, which meets the needs of a significant share of the community's residents and businesses. The water supplied by the municipal system is supplemented by private wells and some community systems. Map 10 illustrates the locations of key watermain installations in the Township. It should be noted that the information illustrated in Map 10 is drawn from somewhat outdated data. For example, an important extension that is not illustrated is the extension along 10-Mile Road to serve the new Meijers facility.

Groundwater is the source of water for the Plainfield Township Water System. The Township maintains three wellfields located in the vicinity of Plainfield Avenue and Northland Drive, south of the Grand River. The Water Treatment Plant, which is located on Woodfield Court near the Grand River, provides filtration, lime softening and chlorine disinfection. The total pumping and treatment capacity of the Plant is about 16 million gallons per day (MGD). The estimated storage capacity of the regional aquifer equates to about 20 MGD, but a detailed hydro geological analysis of the aquifer capacity has not been conducted.

Total system production is responsive to demand, which is greatest during the summer months when lawn sprinkling needs are greatest.

Plainfield Charter Township

Map 10 Municipal Water System Map



Legend

- Political Boundary
- Interstate Highway
- Plainfield Twp Streets
- Streams
- Surface Water
- Parcels
- Watermain (6' Diameter or Greater)



Source: REGIS and Plainfield Township

Williams & Works



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The system averages about 3 MGD during the winter months and the peak delivery rate of about 10.4 MGD occurred during a recent summer month. During the summer of 2004, pumping have averaged about 8 MGD.³⁵

The Township water plant has a 16 million gallon per day capacity, but on a typical day will produce about 8 million gallons.

A comparison of Maps 6 and 10, clearly illustrates that the water distribution system extends through much of the developed portion of the community. South of the Grand River, the system serves all but the sparsely developed areas off 4-Mile Road east of the East Beltline and along Coit Avenue near Lamoreaux Park.

North of the Grand River and west of Northland Drive, much of the developed area of the Township is served. According to Township officials, all elevation zones of the Township area able to be served when demand warrants and extensions are approved.³⁶

Township policy related to watermain extensions generally requires that the system will not be extended at public expense except as may be needed to improve the water system. This may include looping to enhance water pressure and reliability or replacement of undersized mains. Typically watermain extensions are financed either through voted special assessments or through developer agreements subject to pay-back provisions as additional users connect.

The Plainfield Township water system extends into the southeastern portion of Alpine Township and local officials estimate that Alpine Township customers account for about 12% to 15% of system demand. In addition, the Township's system is interconnected with the systems serving the Cities of Rockford and Grand Rapids.

The Township has developed a Wellhead Protection Plan (WHPP) to protect the public water supply from contamination. Over 28,000 people use the Plainfield municipal water system and it is important that this vital resource is preserved. An example of possible contamination would be gasoline or motor oil from automobile-related activities leaching into groundwater. Well fields are located in the southern portions of Township. Typical of land above the local aquifer, soils are exceptionally permeable, which means that any contamination would have a higher likelihood of percolating to the water table.

³⁵ Vince Farrarese, Water Department Director, Plainfield Township

³⁶ Prein & Newhof

The process that the Township used to compile the WHPP involved several phases. A first step was to identify the area from which the Township's sixteen wells draw their water over a ten-year duration. This included reviewing elevation surveys; various topographic, geologic, hydrogeology, piezometric, and well maps; aquifer characteristics; well logs; and, municipal well data. Once this area was delineated using model conceptualization, potential and existing contamination sources were recognized by utilizing various databases to locate source contaminant sites. Mechanisms to manage and protect the wellhead protection area were developed for the Township to implement, including a contingency plan. The WHPP may also serve as a source of information in selecting new well sites.

The Township may implement an overlay zoning district to better protect and preserve the community's vital water resources.

Public participation was incorporated into the process and the Township is dedicated to expressive citizen input. Public education and outreach included presenting the plan during public meetings of the Township Board and Planning Commission; publishing articles in public school newsletters, the Township newsletter, and local newspapers; wellhead protection area road signs; consumer confidence reports; and, a wellhead protection brochure. Public involvement in the process was key to deepening public understanding of groundwater protection concerns and to gaining public support for any protection measures that may be subsequently required.

The WHPP outlines a proactive plan for protecting Plainfield's public water supply while meeting requirements of the Michigan Department of Environmental Quality (MDEQ). Recommendations and observations contained within the WHPP include:

- ◆ The WHPP recognized that the Township would be amending the Master Plan and suggested including expansive language that encourages protection of groundwater resources in the Township. It is critical to incorporate the recommendations of the WHPP into the Master Plan, since information on vulnerable water resources will have implications for site plan standards and zoning implementation. As a result of the WHPP, the Township may implement an overlay zoning district to better protect and preserve the community's vital water resources.
- ◆ The WHPP stated that the Township would review existing site plan review standards and implement additional standards to protect groundwater resources throughout the Township. Items to be considered were listed as: storm water management, floor drain discharges, active or abandoned wells, use of hazardous substances and storage of these substances or wastes, on-site

wastewater treatment and disposal systems, and management of existing site contamination.

- ◆ The WHPP states that the Township would adopt a procedure to notify property owners of well abandonment requirements so that abandoned wells – which can be direct conduits into the aquifer – are properly abandoned and sealed.
- ◆ In the future, system demands may increase, which would extend the wellhead protection area delineations as set forth in the WHPP. The plan recommended that a buffer zone be super-imposed around the three main delineation areas (10-year, 5-year, and 1-year) to protect adjacent wells.

SANITARY SEWER SYSTEM.

Currently, wastewater from Plainfield Township is conducted to the Grand Rapids Wastewater Treatment Plant located on Market Avenue in the City of Grand Rapids. The plant is operated by the City of Grand Rapids, which, together with the Cities of Wyoming and Grandville, provide most treatment services for the metropolitan area.

The wastewater collection system (sewer system) in Plainfield Township is owned by the Township and maintained by the Kent County Department of Public Works under an agreement with the Township. Map 11 illustrates the location of the primary sewer collection in the Township.³⁷ The Township system serves most of the densely developed portions of the Township, including virtually all of the area south of the Grand River and west of the Beltline. In addition, most of the area north of the River with significant population is served. New extensions of the collection system are typically undertaken in response to resident requests stemming from failing septic tank drainfields. These are implemented by the Township with the costs supported by special assessment. In addition, a developer may seek to extend the wastewater collection system to enable a new development to occur. This type of development is financed by the developer with pay-back arrangements as adjoining property owners are connected. Properties adjoining such an extension are given ten years to make that connection. The Township normally does not extend the sewer system to provide service at system expense.

³⁷ Map 11 is drawn from the REGIS database and may be somewhat dated. For example, service to the new Meijer store is provided through Algoma Township, but is not illustrated. However, for the purposes of this Community Profile Report, the REGIS system provides an acceptable level of accuracy.

Most of the developed portions of the Township are either served with public wastewater or reasonably able to be served.

Approximately 9,000 residences are currently connected to the Plainfield Township wastewater collection system. About 2,000 homes are served by individual on-site septic tank/drainfield systems. In some areas of the Township relatively dense development has occurred over the years served by on-site well and septic systems. As these systems begin to fail, the public wastewater collection system has been and will continue to be extended. As discussed in the portion of Chapter 2 regarding soils, many areas of the Township are impacted by soils with some limitations for on-site wastewater disposal. However, the Township's engineer reports that in lower density developments, the Kent County Health Department has worked cooperatively with land owners to approve locations for private drainfields.

A private, free-standing community wastewater collection and treatment system currently serves the Leisure Village manufactured housing community at the far eastern edge of the Township. Such systems are permitted by the Department of Environmental Quality and maintained privately. The Township plans to eventually extend sanitary sewer service along Cannonsburg Road to enable this community to abandon their on-site treatment plant and connect to the public system.

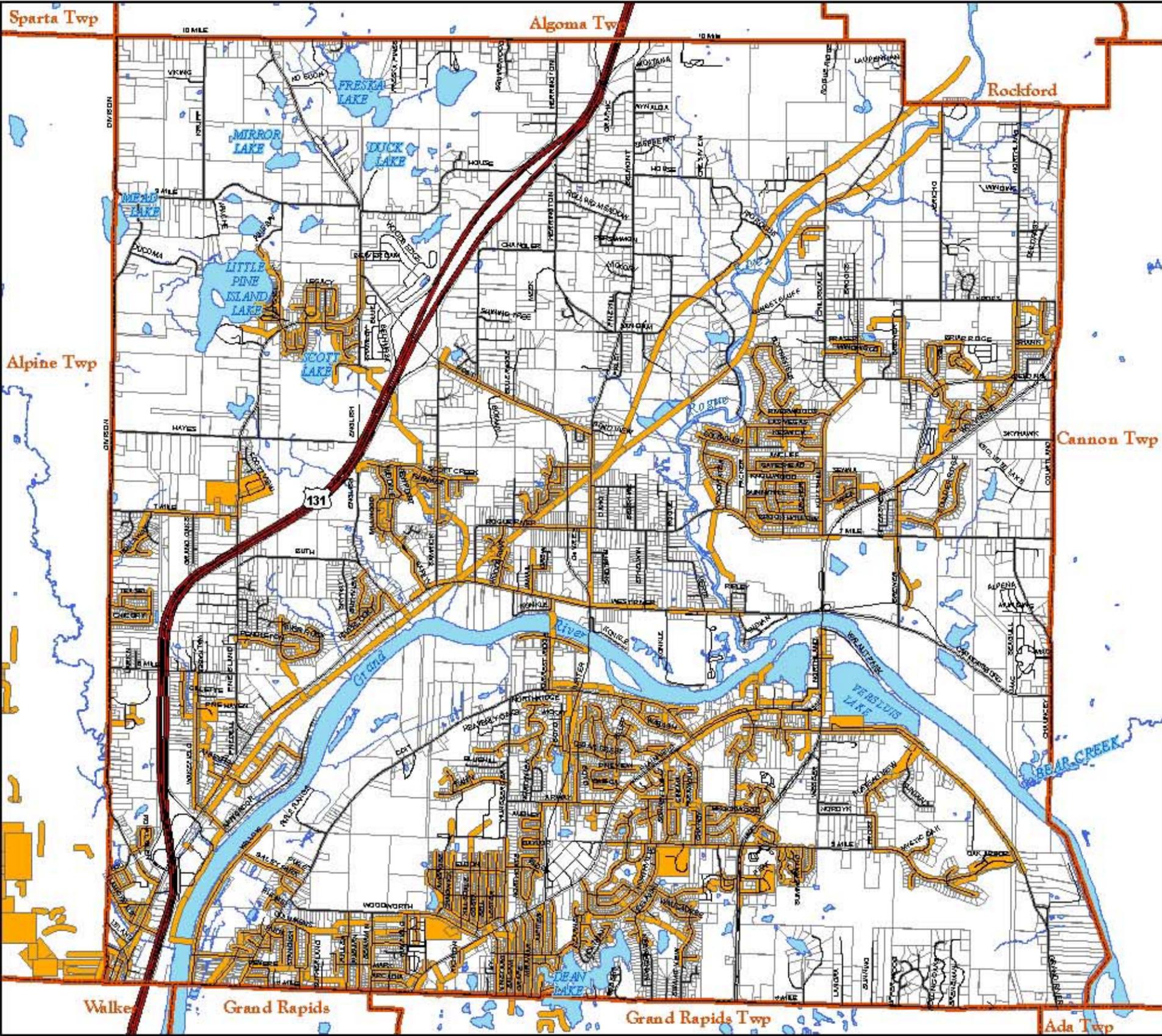
Most of the developed portions of the Township are either served with public wastewater or reasonably able to be served. One possible exception to this may be the northwestern portion of the Township, north of 9-Mile Road and west of Harrington. This area is relatively low in elevation and includes the Freska Lake, Mirror Lake and Duck Lake complex, as well as several smaller ponds and wetlands. As such, this area has developed at relatively low densities and wastewater service may only be needed if there are significant septic tank failures.

Under an agreement with City of Grand Rapids, the North Kent Sewer Authority is permitted a fixed number of Residential Equivalency Units (REUs)³⁸ that it may discharge to the City System

³⁸ An REU is considered the approximate amount of wastewater generated by a single family home on a daily basis; normally 250 to 300 gallons per day.

Plainfield Charter Township

Map 11 Municipal Wastewater System Map



Legend

-  Political Boundary
-  Interstate Highway
-  Street Centerlines
-  Parcels
-  Streams
-  Surface Water
-  Sewer



Source: REGIS and Plainfield Township.

Williams & Works

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Residents and businesses pay sewer fees to the City of Grand Rapids on a quarterly basis at rates determined by the City's utility rate board, which is comprised of representatives of the City and all the suburban jurisdictions that depend on City wastewater treatment. In the recent past, the trunk sewer conducting sanitary sewer flow to the City was upgraded to handle additional capacity.

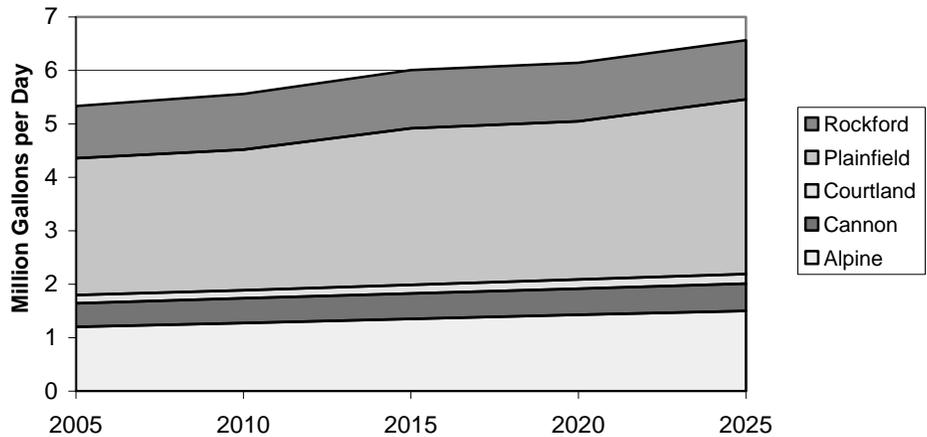
PARCC-SIDE CLEAN WATER PLANT

The current wastewater agreement with the City of Grand Rapids will expire in 2008. The members of the North Kent Sewer Authority have been in negotiations with the City regarding sewer rates for several years in advance of the agreement expiration. The members of the authority include Plainfield Charter Township, Alpine Charter Township, Cannon and Courtland Townships and the City of Rockford. Many representatives of the authority have come to the conclusion that it will not be possible to come to a balanced agreement with the City and in February, 2003, they decided to proceed with the development of a new wastewater treatment plant and allow the current agreement with the City to expire.

The proposed facility has been called the "PARCC-Side Clean Water Plant" and it will be located adjoining Lamoreaux Park in the Township. Although current wastewater flow from the North Kent Authority communities is currently about 4.84 MGD, the facility will have a design treatment capacity of 8 MGD and will be expandable to 12 MGD. The proposed design will incorporate state-of-the-art treatment technologies utilizing a synthetic membrane bioreactor. According to the Township engineer, this treatment technology is superior to more conventional processes and will result in less odor from the facility, a smaller facility overall and cleaner effluent to the Grand River. Current cost estimates indicate the facility will cost about \$48 million for design and construction and about \$2.4 million annually to operate.

Based on an analysis by the North Kent Sewer Authority, the PARCC-Side Clean Water Plant will eventually need to treat about 6.56 MGD by the year 2025. Figure 7.1 illustrates the projected rated of growth of the flow to the proposed facility.

Figure 7.1 Projected North Kent Wastewater Flow



Source: Prein & Newhof

PRIVATE UTILITIES

Most of the developed areas of Plainfield Township are served with a complete compliment of energy and communication systems. These include natural gas, electricity, telephone, cable television and broadband internet access. In some areas, natural gas has not been extended and residents rely on on-site fuel oil or LPG tanks for heating and cooking.

CHAPTER 8. TRANSPORTATION

A transportation network links activities within a community to those in surrounding municipalities, and the larger region as a whole. Transportation plays a critical role in determining the nature and intensities of land uses that occur throughout a community. Plainfield Township has a wide variety of land uses and in turn a rather diverse transportation network, providing its residents with a mixture of transit experiences, from winding rural roads to congested rush hour traffic.

FUNCTIONAL CLASSIFICATIONS

One approach to gaining a better understanding of transportation networks has been to classify the roads that make up these networks into groups based on the role or function that they play. One such classification scheme is that devised by the Federal Highway Administration, referred to as the National Functional Classification (NFC). Classes relevant to Plainfield Township are described below:

- ***Principal arterials*** are at the top of the NFC hierarchical system. Principal arterials generally carry long distance, through-travel movements. They also provide access to important traffic generators, such as major airports or regional shopping centers.
- ***Minor arterials*** are similar in function to principal arterials, except they carry trips of shorter distance and to lesser traffic generators.
- ***Collectors*** tend to provide more access to property than do arterials. Collectors also funnel traffic from residential or rural areas to arterials.
- ***Local roads*** primarily provide access to property. Examples could include residential streets or lightly-traveled country roads.

The Michigan Department of Transportation classified roads in Plainfield Township using this system in 1999. The following table contains a breakdown of roads in the Township by their functional class:

**Table 8.1 Plainfield Township
Road Function Classifications**

Principal Arterial Roads

US 131
 East Belt Line (from 4 mile North to Webber Ave.)
 Webber Ave.
 Northland Dr (from Webber Ave. North to Mesa Dr)
 Northland Dr (from Mesa Dr to Wolverine Blvd)
 Wolverine Blvd (from Northland Dr to Belding Rd)
 Plainfield Ave (from 4 mile to Plainfield/Northland cutoff)
 West River Dr. (Township Boundary North east to Northland Dr)

Minor Arterial Roads

Coit Ave (from 4 mile northeast to Plainfield Ave.)
 Jupiter Ave (from Plainfield Ave. to Post Dr.)
 Post Dr (from Jupiter Ave. to US 131)
 5 mile Rd (from Plainfield to E. Beltline)

Collector Roads

4 Mile Rd (from Plainfield Ave. west to Coit Ave.)
 6 Mile Rd (from Pine Island Dr west to Township Boundary)
 7 Mile Rd (from Pine Island Dr west to Township Boundary)
 10 Mile Rd (from Pine Island Dr west to Township Boundary)
 Belding Rd
 Belmont Ave
 Cannonsburg Rd
 Grand River Dr
 Hunsberger Ave
 N Division Ave (from West River north to 7 Mile)
 Northland Dr
 Pine Island Dr
 Post Dr
 Rogue River Rd
 Woodworth St (from Plainfield Ave. west to Coit Ave.)

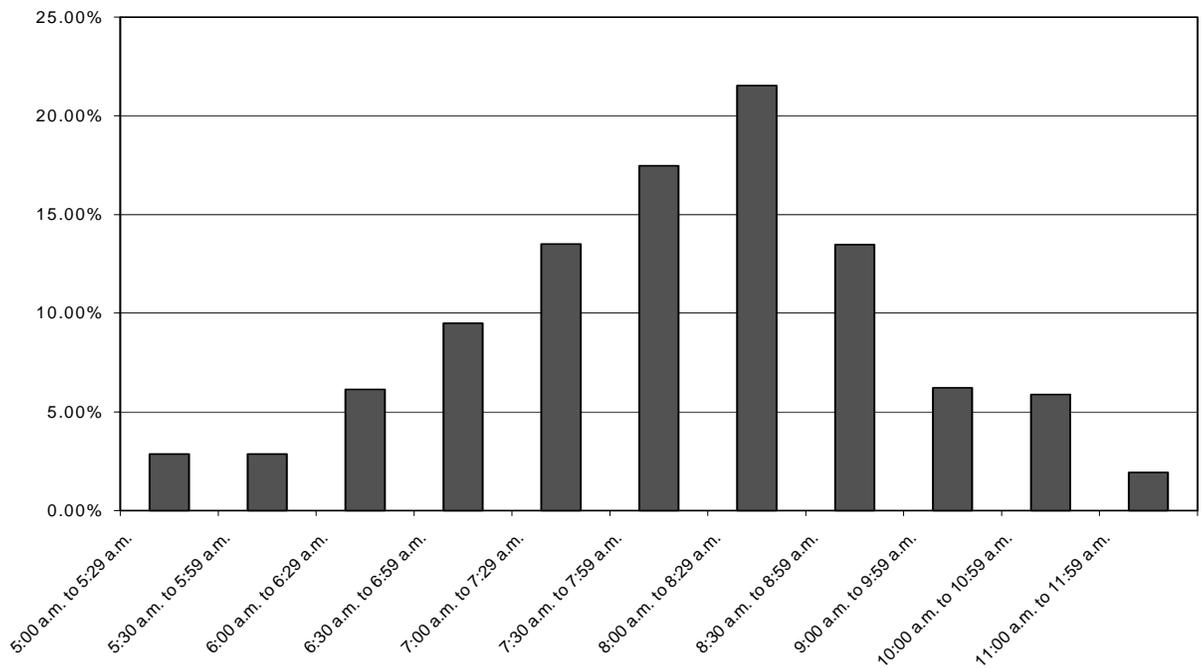
Due to the rolling topography and natural features in Plainfield Township, there are very few straight north to south or east to west roadways in the Township. Most major roads are routed around natural features such as the Grand River or one of the inland lakes in the Township. There are only two crossing points along the Township's segment of Grand River; the bridges at Jupiter Avenue and Northland Drive.

TRAFFIC VOLUME AND CONDITIONS

Commuting Patterns

According to the 2000 United States Census, 81% of the 15,702 workers 16 years and older who live in Plainfield Township work in another municipality. This results in the majority of the Township’s working residents having to utilize the regional transportation network while traveling to places of employment. The automobile is overwhelmingly the most popular form of transportation with 98% of residents either driving or riding to work. Of the people utilizing an automobile only 7% of them are in a carpool of some sort, with the most common being a carpool of two people.

Figure 8.1 Peak Travel Times Morning Commute



Source: United States Census, 2000

Most residents who work outside of the Township work within a 15 to 30 minute drive of the Township. The peak travel times during the morning commute expectedly coincides with the standard workday, with the greatest percentage of residents leaving their homes for work at around 8 am. Figure 8.1 illustrates morning commute peak travel times.

Conditions

US-131 is an important route both locally and regionally. US-131 in Michigan begins at the Indiana state line, 3 miles south of US-12 near White Pigeon, and terminates at US-31/Charlevoix Ave. in Petoskey, Michigan. US-131 has become an important route in Michigan, connecting Kalamazoo and Grand Rapids with northern and southern Michigan. Locally, US-131 serves as the major north/south connection between lower West Michigan and employment and commerce centers in the greater Grand Rapids area. Approximately 7 miles of US-131 are contained within Plainfield Township. This segment experiences on average 33,427 trips per day, with some segments experiencing volumes as high as 40,000 trips per day. During peak travel times, motorists on US-131 occasionally experience congestion.

The other major north/south route in the Township is the East Beltline/Northland Drive/Wolverine Boulevard/M-44 corridor. This route fulfills an important role by connecting major commerce and employment centers in the eastern portions of the Grand Rapids metropolis. In addition, the segment of Northland Drive south of the river has seen significant commercial growth, providing services to local and regional traffic.

Northland Drive experiences traffic volumes similar to US-131. Volumes range as high as 38,355 trips per day north of Plainfield Avenue to an average of 28,166 trips per day on all other segments of the road. The East Beltline in Plainfield Township also has substantial

traffic volume south of Grand River Drive to Five Mile Road, with traffic counts as high as 27,000 trips per day, and other areas averaging from 26,000 to 14,000 trips per day.



Until recently, the Northland Drive Bridge provided the only River crossing in the Township

Plainfield Avenue experiences traffic volumes on average of 26,811 trips per day. The intense strip commercial development that has occurred along Plainfield Avenue has made travel somewhat cumbersome. Typical development in this area consists of clustered strip commercial buildings with overwhelming signage. The frequent access points to these sites further intensify the difficulties in navigating the road.

West River Drive generally follows the northern bank of the Grand River from US-131 east to Northland Drive. West

River Drive has yet to experience the level of commercial development and access points found along Plainfield Avenue and Northland Drive, and the flow of traffic has generally been preserved. However, the traffic volume along West River Drive is considerable, with an average of 19,775 trips per day.

Below is a table showing a break down of traffic volume for all of the Principal Arterial Roads in the Township.

**Table 8.2 Daily Traffic Volume
Principal Arterial Roads³⁹**

West River Drive		
<u>From</u>	<u>To</u>	<u>Count</u>
NB US-131 Ramps	Pine Island Drive	25,290
Buth Drive	Samrick Avenue	23,296
Division Avenue	SB US-131 Ramps	22,039
Samrick Avenue	Rogue River Road	21,775
Rogue River Drive	Belmont Avenue	21,590
Lamoreaux Drive	Division Avenue	20,797
SB US-131 Ramps	NB US-131 Ramps	20,000
Belmont Avenue	M-44 (Northland Drive)	18,979
Pine Island Drive	Buth Drive	18,563
4 Mile Road	Lamoreaux Drive	13,500
Bertha Street	4 Mile Road	11,706
US-131		
<u>From</u>	<u>To</u>	<u>Count</u>
West River Drive On Ramp	North Walker Limit	40,000
SB Off Rmp to West River	SB On Ramp From West River	37,000
SB On Ramp from 10 Mile	SB Off Ramp to Post	32,138
SB On Ramp from Post	SB Off Ramp to West River	30,000
SB Off Ramp to Post	SB On Ramp from Post	28,000
North Walker Limit	Off Ramp to West River Drive	40,000
NB Off Ramp to W. River	NB On Ramp from West River	37,000
NB On Ramp from Post	NB On Ramp from 10 Mile	32,138
NB On Ramp from W. River	NB Off Ramp to Post	30,000
NB Off Ramp to Post	NB On Ramp from Post	28,000
Plainfield Avenue		
<u>From</u>	<u>To</u>	<u>Count</u>
4 Mile Road	Woodworth Street	38,173
Woodworth Street	Hunsberger Avenue	33,000
Hunsberger Avenue	Jupiter Avenue	29,000
Jupiter Avenue	5 Mile Road	24,976

³⁹ Grand Valley Metro Council REGIS Traffic Count Database Website; accessed August, 2004

**Table 8.2 Daily Traffic Volume
Principal Arterial Roads**

Plainfield Avenue (cont'd)		
<u>From</u>	<u>To</u>	<u>Count</u>
5 Mile Road	Airway Street	24,000
Airway Street	Coit Avenue	19,615
Coit Avenue	M-44 (Northland Dr)	18,914
M-44 (Wolverine Blvd)		
<u>From</u>	<u>To</u>	<u>Count</u>
Northland Drive	Belding Road	16,500
Belding Road	Northland Drive	16,500
M-44 (Northland Drive)		
<u>From</u>	<u>To</u>	<u>Count</u>
West River Drive	Rogue River Road	35,000
Rogue River Road	Blvd End	33,000
Blvd End	Northland Drive	16,500
M-44 Conn Plainfield Ave	West River Drive	38,355
M-44 (East Beltline Ave)		
<u>From</u>	<u>To</u>	<u>Count</u>
5 Mile Road	4 Mile Road	15,599
Blvd End	5 Mile Road	13,500
Blvd End	5 Mile Road	13,500
4 Mile Road	5 Mile Road	15,599
5 Mile Road	Blvd End	13,500
Blvd End	Grand River Drive	27,000
Grand River Drive	M-44 (Plainfield)	25,615



With the construction of the Jupiter/Belmont connection and bridge over the Grand River, the Belmont area enjoys significantly improved access to the metro area

As discussed above, a primary challenge for accessibility and interconnections within Plainfield Township are the many natural and man-made barriers. With the construction of the Jupiter/Belmont connection and bridge over the Grand River, the Belmont area enjoys significantly improved access to the metro area. However, such facilities are extremely expensive and difficult to develop and it is clear that traffic within the Township will continue to be handicapped by limited route alternatives, especially for north-south travel.

PUBLIC AND AIR TRANSPORTATION

Public Transit

The Interurban Transit Partnership (ITP) was created in January 2000 by the cities of Grand Rapids, East Grand Rapids, Grandville, Kentwood, Walker, and Wyoming under Act 196 of the Public Acts of the State of Michigan. The formation of ITP played a fundamental role in expanding public transportation in the Grand Rapids metro area.⁴⁰ Presently ITP is referred to as “The Rapid.”

The Rapid provides fixed-route services to the cities of Grand Rapids, East Grand Rapids, Grandville, Kentwood, Walker, and Wyoming and the townships of Byron, Gaines, Cascade and Alpine. While The Rapid’s fixed-route system currently does not serve Plainfield Township residents or businesses, given the Township’s proximity to downtown Grand Rapids, and the proximity of services along Plainfield Avenue to population centers in the City of Grand Rapids, a public transportation need in the Township may develop in the future.

North Kent Transit Services, a program offered by Hope Network of West Michigan, provides transportation services to Plainfield Township. Other communities served by North Kent Transit include: Algoma, Cannon, Courtland, Gratton, Lowell, Nelson, Oakfield, Solon, Sparta, Spencer, Tyrone, and Vergennes townships; Casnovia, Kent City, Lowell, Sand Lake, and Sparta villages; and, the City of Rockford. The service is available Monday through Friday, 8:00 am to 4:30 pm and primarily serves persons with disabilities and persons over 60 years of age.⁴¹ Transportation is on a call-in basis; there is no fixed route.

The fare price for those with disabilities and persons who are at least 60 years of age is \$3.00 if the destination is within the principal service area or connecting trips to fixed bus routes in Grand Rapids. The price is \$6.00 for other destinations within Kent County. For the general public, fees are \$5.50 and \$11.00, respectively, for destinations within the principal service area or connecting trips to fixed bus routes in Grand Rapids, and for other destinations within the county.⁴²

⁴⁰ Grand Valley Metropolitan Council 2030 Long Range Transportation Plan

⁴¹ Website for the Hope Network; www.hopenetwork.org

⁴² Ibid

Air Transportation

Commercial passenger air service is available through the Gerald R. Ford International Airport, located approximately 10 miles from Plainfield Township. The Gerald R. Ford International Airport is Michigan's second busiest commercial airport, offering 12 passenger airlines that serve 5,000 travelers each day. The airport provides daily service to regional hubs throughout the Midwest.⁴³

Also located near Plainfield Township, the Paul C. Miller – Sparta Airport is located in Sparta Township. The Village of Sparta maintains the airport for public use. The airport accommodates light, heavy, and ultra light aircraft and also provides pilot training. On an average day, the airport sees 20 aircraft operations.⁴⁴

NORTH EAST BELTLINE JOINT DEVELOPMENT PLAN

Regional transportation plans are helpful in analyzing current traffic conditions. In 1996, Plainfield Township joined Grand Rapids Township and the City of Grand Rapids – in conjunction with the Grand Valley Metro Council and the Michigan Department of Transportation – in facing some common challenges along the East Beltline corridor. In addition to the land use recommendations discussed in Chapter 5, this inter-municipal effort brought about an agreement to plan development jointly and to work toward common standards for development near the state highway.

The joint development plan included recommendations and example regulations on architectural, landscaping, and setback requirements as well as land use. In addition, the plan included sample amendments to regulatory documents, such as subdivision and zoning ordinances, to promote more attractive development along the East Beltline corridor.

For example, for subdivision and site condominium ordinances, the joint development plan suggested the following addition:

Walkways are required in the middle of long blocks and at the ends of cul de sacs and shall connect as much as possible to existing and anticipated walkways. Walkways shall be provided to provide access to adjacent parks, shopping areas, residential areas, and institutions. If the

⁴³ Website for the Gerald R. Ford International Airport; www.grr.org

⁴⁴ Website for the Paul C. Miller – Sparta Airport; www.spartaairport.com

Planning Commission has adopted a pedestrian access plan for the area, walkways shall be provided to implement that plan.

For site plan review language in a zoning ordinance, the joint development plan recommended the following addition:

Walkways shall be provided to provide access to adjacent parks, shopping areas, transit stops, anticipated walkways and institutions. If the Planning Commission has adopted a pedestrian access plan for the area, walkways shall be provided to implement that plan. Pedestrian movement must be accommodated across parking lots. These walkways must be separated from automobile travel lanes and parking spaces.

It was also recommended that sidewalks be provided along the East Beltline and intersecting roads, including Five Mile Road in Plainfield. Five Mile Road is listed as a critical link in a proposed pedestrian network contained within the plan. These suggested modifications would have the effect of fostering a more pedestrian-friendly environment along one of West Michigan's busiest state highways. Finally, the land use concept included Office, Park/Open Space, Institutional, and High Density Residential future land uses along portions of the East Beltline in Plainfield Township.

TEN MILE ROAD CORRIDOR STUDY

Plainfield Township also participated in another cooperative transportation planning effort. Working alongside the City of Rockford and Algoma Township, Plainfield helped to develop a set of objectives surrounding the Ten Mile Road corridor. The following transportation objectives, in addition to the land use objectives discussed in Chapter 5, will help the three municipalities achieve the common vision of a roadway where traffic capacity is preserved, rural character is maintained, and motorist safety is paramount.

- ◆ Reserve 120 feet of right-of-way (60' either side of section line) for the eventual widening of Ten Mile Road for a five lane or boulevard roadway.
- ◆ Limit new driveways onto Ten Mile Road, and require frontage roads and shared access between properties as they develop.
- ◆ Require connection of internal roadways to facilitate access between properties.

- ◆ Require pathways for pedestrians and bicyclists on both sides of Ten Mile Road.
- ◆ Require new developments to provide internal pedestrian and bicycle paths to better link neighborhoods.
- ◆ Explore redesign options for the Ten Mile Road/US 131 interchange.

CHAPTER 9. IMPLICATIONS

The preceding chapters presented a broad range of summary information related to current conditions and the planning trends that are apparent and emerging in Plainfield Charter Township and in the larger West Michigan region. In the context of the update of the Comprehensive Plan, it is important to ask and answer the question: What does it all mean? The following section begins that discussion. Later phases of the planning process will help to further focus and refine the Township's response to its growth management challenges and to suggest alternative responses to these challenges.

1. The natural features of the Township – including its lakes, rivers and streams and woodlands – will continue to serve as a magnet for residential development. While the pace and scale of growth is expected to be manageable, there is a risk that without effective planning, this growth will begin to degrade the very resources that draw it.
2. The population of the Township will continue to grow at rates in excess of those experienced in other portions of the State. The primary cause of this is the natural amenities discussed above and the proximity to the urban center in Grand Rapids. This population growth implies a number of land use challenges:
 - ◆ About 6,500 additional housing units by 2030, based on the 2000 average household size of 2.73 persons.
 - ◆ Up to an additional 62,500 additional automobile trips per day.⁴⁵
 - ◆ Over three square miles of vacant land consumed by residential growth, at current R-1 densities.
3. Current patterns of development indicate that the Township is spreading out in relatively low-density patterns. This implies a continued reliance on the private auto for most day-to-day activities.
4. The City of Rockford has planned and zoned for relatively high-density residential land uses along its border with Plainfield, while the Township has planned and zoned for low-density development. This inconsistency may present itself as an opportunity for the

Population growth implies a number of land use challenges.

⁴⁵ Institute of Traffic Engineers, *Trip Generation*, 7th Edition, 2003.

Township to plan and zone for higher density conservation development which clusters home sites away from significant natural features while preserving rolling hillsides, woodlands, and wetlands.

5. Based on the build-out analysis and current rates of growth, the Township is on pace to be fully built out in sixty to seventy years, with a total population of about 86,000 persons. This implies an increase in total housing units of about 178%, relatively low density land use patterns and high reliance on the private automobile.
6. Plainfield Township will likely remain primarily a bedroom community. Most residents will travel outside the community for employment and the vast majority of real property value in the community is residential. The predominance of residential development in the Township implies a need to ultimately address the cost-revenue ratio for the Township and other municipal services. Residential uses require between \$1.10 and \$1.30 in municipal services (i.e., schools, police, fire, roads, parks, etc.) for every \$1.00 contributed in tax base. Communities that concentrate on residential development ultimately need to face the prospect of higher local tax rates to support the higher demands for services.⁴⁶
7. The development of the PARCC-Side Clean Water Plant offers the Township greater control over development decisions. With substantial additional wastewater treatment capacity, the Township may encourage higher density development patterns that require sanitary sewer service. In addition, by proactively directing where utilities may be placed, the Township will be in a better position to implement its growth management goals.
8. Given the topographic obstacles that fragment the Township, a few key roadways will continue to carry the bulk of local commuter traffic. This implies increasing levels of congestion on some roadways, but may also suggest that volumes on non-through routes will remain relatively manageable.
9. The Township's current Comprehensive Plan included a wide range of goals and objectives, including East Beltline cooperative planning, the Belmont Towne Center and Plainfield Avenue redevelopment. Some of these objectives have been achieved, while others require further attention. This implies a need to evaluate carefully the policy statements expressed in earlier planning exercises in the context of

⁴⁶ Thomas, Holly L. *The Economic Benefits of Land Conservation, Planning & Zoning News*, January, 1993

updated demographic and social information to either renew and re-energize those plans or alter them as appropriate.

CHAPTER 10. CONCLUSIONS AND NEXT STEPS

The Community Profile Report provides a brief “snapshot” of Plainfield Township and the forces that are apparent. An in-depth analysis of those forces is not intended, but the challenges that are facing the community today and those that will materialize in the future are outlined. This report is intended as a “work book” for the Planning Commission as it proceeds in its efforts to update the Township Master Plan.

This report is intended as a “work book” for the Planning Commission.

As a subsequent step to the finalization of this report, the Township intends to undertake a community-wide meeting, or futuring workshop, to better define the issues and priorities of local residents. The results of that workshop will help the Planning Commission determine the appropriate next steps in completing the Master Plan. Alternative approaches may include a community opinion survey, sub-area planning and the formation of specific interest committees to study particular issues in the community and present recommendations for the final plan document.

With the benefit of that community input, the Planning Commission will re-examine the goals, objectives and strategies outlined in the 1997 Plan and identify trends, policies and patterns that either conflict with that Plan or are consistent with it. Based on that analysis, updated goals and objectives will be developed.

The new Township Master Plan will incorporate the data and information found in this Community Profile Report. It will be founded, in part, on the input received from the futuring workshop and other research that may be generated following that meeting. Finally, it will be founded on a new and revised set of goals and objectives. Properly developed and -- more importantly -- broadly endorsed, the new Master Plan will help to guide and direct growth and development in the Township to balance the challenges of change and the quality of life goals of local residents.

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