

Oronoko Charter Township



A COMMUNITY PROFILE REPORT

December 2008

Williams & Works
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CHAPTER I. INTRODUCTION

Producing a Master 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 have implications on land use and development in Oronoko Charter Township. The data that is gathered in the initial phase of preparing a Master Plan is vital to support future community goals.

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

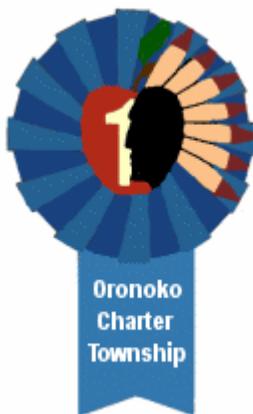
- A Community Profile
- Goal Setting
- A Preferred Future
- Implementation Strategies

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

In 1999, Oronoko Charter Township completed a comprehensive update of the Township's Master Plan. General planning practice, as well as state statute, suggests that Master Plans should be reviewed at about five-year intervals and the Township has been fairly vigilant in doing so. The current plan, adopted in January 2000, reflects many current conditions and trends, so the effort to update it in 2008 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 the Township with the flexibility to adapt to that change. The resulting Master Plan becomes useful well into the future instead of becoming obsolete if demographic and economic trends stray from those identified in the Community Profile.

The 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 conclusions about the implications they will have on the future of the Township. The primary sources for this document are identified in the references, but the content of this report has also been drawn from the Township's 1999 plan and Township representatives.



Oronoko Township was organized on March 11, 1837

The key areas of focus for this Community Profile are:

- Natural Features & the Environment (Chapter 2)
- Population (Chapter 3)
- Housing and Economic Development (Chapter 4)
- Land Use & Development Patterns (Chapter 5)
- Community Facilities & Services (Chapter 6)
- Utilities & Transportation (Chapter 7)

Each section includes an overview of its subject matter along with a brief discussion of the planning trends that are relevant.

SUMMARY

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

- The St. Joseph River and Lake Chapin plays an important role in defining the community's character, enhancing both the natural environment and the lifestyle for residents.
- Recent growth trends and predictions suggest that the Township's population is declining slightly, but there has been a fair amount of new construction in the Township recently, and some feel that Oronoko Township is poised to experience significant growth in coming years. The Township's rural character, natural beauty and proximity to regional employment centers make it an ideal location for new families.
- Oronoko Township is zoned to accommodate far more growth that can be expected over the life of this plan, which suggests that they Township may want to consider strengthening zoning regulations to provide more guidance and direction with regard to new development.
- The presence of Andrews University has a significant impact on the Township. Its large campus and cultural facilities are major factors in the Township, and the Township's Master Plan should recognize its significance.
- The Township contains an efficient transportation network that connects residents to employment opportunities throughout the region. Currently, the transportation network is adequate to meet current demands.



Oronoko Township Hall

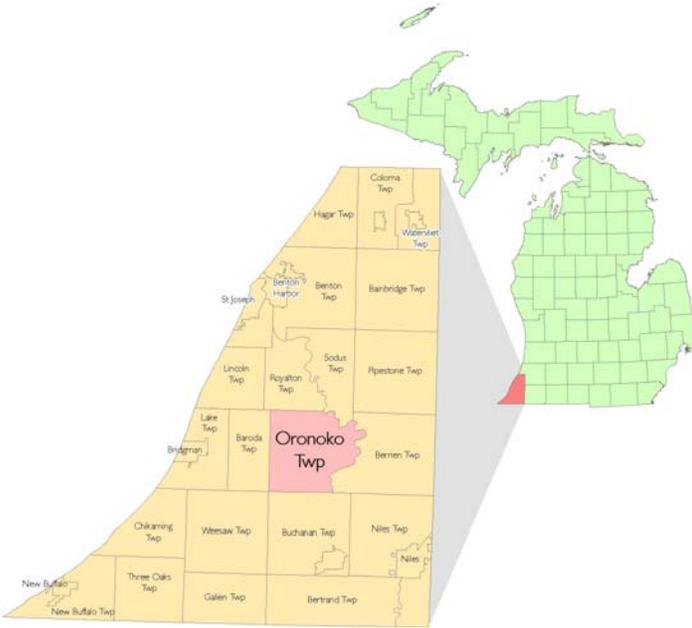
- Some of the objectives outlined in the 1999 Comprehensive Plan Update have been achieved and others have not. Regardless, all should be reevaluated in light of more current demographic and land use information and in accord with changing local policies.
- Most of the Township's population lives in the eastern portion of the Township, near the Village of Berrien Springs. As growth and development continues to alter the community's character, Township may look to work cooperatively with the Village to address challenges that may arise.

CHAPTER 2. NATURAL FEATURES & THE ENVIRONMENT

Oronoko Charter Township is situated in the southwestern lower peninsula of Michigan in the center of Berrien County, just a few miles north of the State's border with Indiana. The Township has an area of slightly more than 33 square miles and is characterized by abundant agricultural land, wooded habitats, 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 is bounded by Royalton Township to the north, Buchanan Township to the south, Baroda Township to the west and by the Saint Joseph River and Lake Chapin to the east. The Township was organized on March 11, 1837 and became a Charter Township in 1988.

There is some uncertainty surrounding the origins of the Township's name. Some believe the Township was named after Oronoko, an Indian Chief known by the Governor, George Mason, while others believe that the Township was named after the heroine in the novel *Oroonoko, OR, The Royal Slave: A True History*, written by Mrs. Aphra Behn in 1688.



Map 1. Location Map of Oronoko Charter Township

CLIMATE

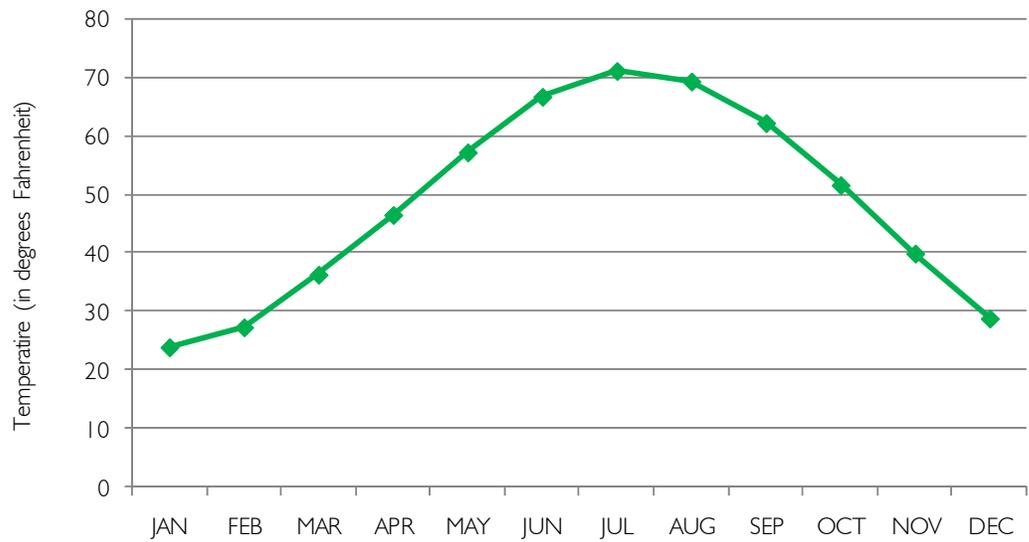
Temperatures in the Township are conducive to many wintertime activities such as cross-country skiing, snowmobiling and ice fishing.

According to the Midwestern Regional Climate Center (MRCC)¹ that averaged annual climatic conditions between 1971 and 2001, in January, temperatures in the Township range from an average low of 17°F to an average high of 30°F. These temperatures, along with an average of 76 inches of snowfall annually, are conducive to many wintertime activities such as cross-country skiing, snowmobiling and ice fishing.

In July, the average low temperature of 56°F and average high of 77°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. The Township's proximity to Lake Michigan creates a significant amount of lake-effect precipitation. The Township's location and weather create a unique microclimate which is conducive to agricultural activities, such as vineyards.

¹ Midwestern Regional Climate Center Website and National Climate Data Center, 2001.

Figure 2.1
Average Monthly Temperature, 1971-2000



LAKES & RIVERS

Lake Chapin

The most significant lake in the Township is Lake Chapin, which comprises a part of the Township's eastern border. Lake Chapin has an area of approximately 480 acres and is a popular destination for fishing and boating. Lake Chapin is a man-made reservoir, created with the construction of the Berrien Springs Dam in 1908. A fish ladder was added in 1975, and at the time it was the second major fish ladder to be constructed in the State of Michigan.



Lake Chapin plays an important role in defining the community's character

Lake Chapin plays an important role in defining the community's character, enhancing both the natural environment and the lifestyle for residents. Much of the western shoreline of the lake is developed with seasonal and year-round residences.

St. Joseph River

The St. Joseph River is approximately 210 miles long and begins in Hillsdale County, dips southwest into northern Indiana before turning northwest and emptying into Lake Michigan between St. Joseph and Benton Harbor. The St. Joseph River watershed is over 4,600 square miles in area, contains over 400 lakes, and falls approximately 600 feet from its source in Hillsdale County to Lake Michigan.

The St. Joseph River formed about 8,000 years ago when the last glaciers retreated, and small settlements first appeared near the river between 2,000 and 4,000 BC. Early European explorers found Miami and Potawatomi peoples living near present-day St. Joseph. The river was a significant early transportation route for both Native Americans and French fur traders.

The river provides residents with recreational opportunities such as fishing, canoeing and kayaking. Much of the St. Joseph River north of the Village of Berrien Springs is bordered by wetland areas. These wetlands and the 100-year floodplain areas have helped to limit intense development in close proximity to portions of the riverbank within the Township.

WATERSHEDS

A watershed is a region of land that is drained by a particular river or river system

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. All of Oronoko Township lies within the St. Joseph River regional watershed. In addition to lands that drain directly to the St. Joseph River, Oronoko Township also includes the following sub watersheds:

- Big Meadow Drain – Drains the northern portion of Oronoko Township, as well as portions of Lincoln and Royalton Township and enters the St. Joseph River in northwest Royalton Township.
- East Branch of the Galien River – Drains a very small portion of Oronoko Township, as well as portions of Baroda Township, Lake Township, Weesaw Township and Buchanan Township.
- Hickory Creek – Drains the western portion of Oronoko Township as well as portions of Buchanan Township, Weesaw Township, Baroda Township, Lake Township, Lincoln Township, Royalton Township and meets the St. Joseph River in St. Joseph Township.
- Lemon Creek – Drains the central portion of Oronoko Township and enters the St. Joseph River just north of Berrien Springs.

Water quality within a watershed is directly related to the land management practices with that watershed

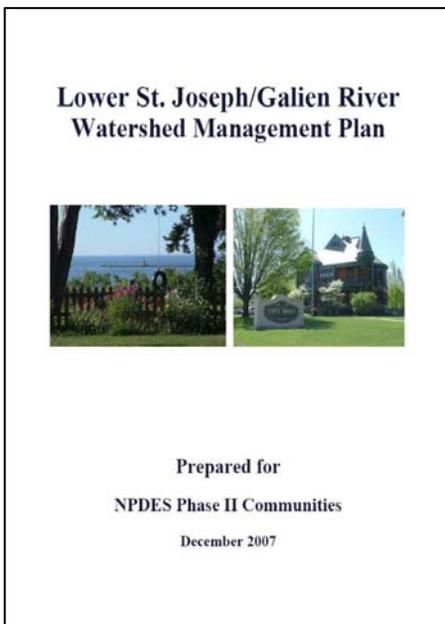
Water quality within a watershed is directly related to the land management practices within that watershed. For example, if a new development creates a large amount of impervious surfaces (i.e. asphalt) and stormwater is not properly managed, it is possible that the volume and velocity of the runoff into the creek, stream, or river could increase 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 and

temperature 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.

According to the Great lakes Commission, Land Uses within the St. Joseph River watershed are roughly 60 percent agricultural, 20 percent forested, and less than 10 percent of the area is urbanized. However, management practices within the agricultural industry have contributed to bank erosion and sedimentation issues within the watershed. Water quality in the St. Joseph River watershed has been negatively affected by:

Roughly 60% of all land uses within the St. Joseph River watershed are agricultural

- nonpoint source pollution from agricultural uses
- highly erodible soils
- the location of twelve Superfund (hazardous waste) sites
- the presence of Atrazine, PCBs, nutrients, suspended solids, trans-nonachlor and mercury



The Lower St. Joseph/Galien River Watershed Management Plan was completed in 2007

The St. Joseph River Watershed Management Plan

In 2007, the Lower St. Joseph/Galien River Watershed Management Plan was completed. The purpose of the plan is to “identify and implement actions needed to improve water quality and reduce water quantity impacts by encouraging cooperation between the diverse public and private entities in the watershed.”² The plan identifies several overall goals for the St. Joseph River Watershed. Below is a list of goals from the plan that are related to land use practices, planning and development:

- Reduce soil erosion and sedimentation by site remediation, controlling pathways, and preventing or minimizing sources so that surface water functions and uses are not impaired and aesthetics are improved.
- Increase preservation, restoration, protection, and appreciation of open space and coastal zones, and implement actions that restore, enhance, and sustain the health, biodiversity, and productivity of the ecosystem (a system of natural areas, wildlife habitats, corridors, farmland, open land, and parklands).
- Reduce the levels of chemicals, pesticides, heavy metals, petroleum, and other toxins that are harmful to public health and that degrade aquatic habitat.
- Minimize hydrologic impacts of development, maintain water levels high enough for navigation, protect streambanks from erosion, and reduce flooding impacts.

² Lower St. Joseph River Watershed Management Plan, December 2007

Oronoko Charter Township

Berrien County, Michigan

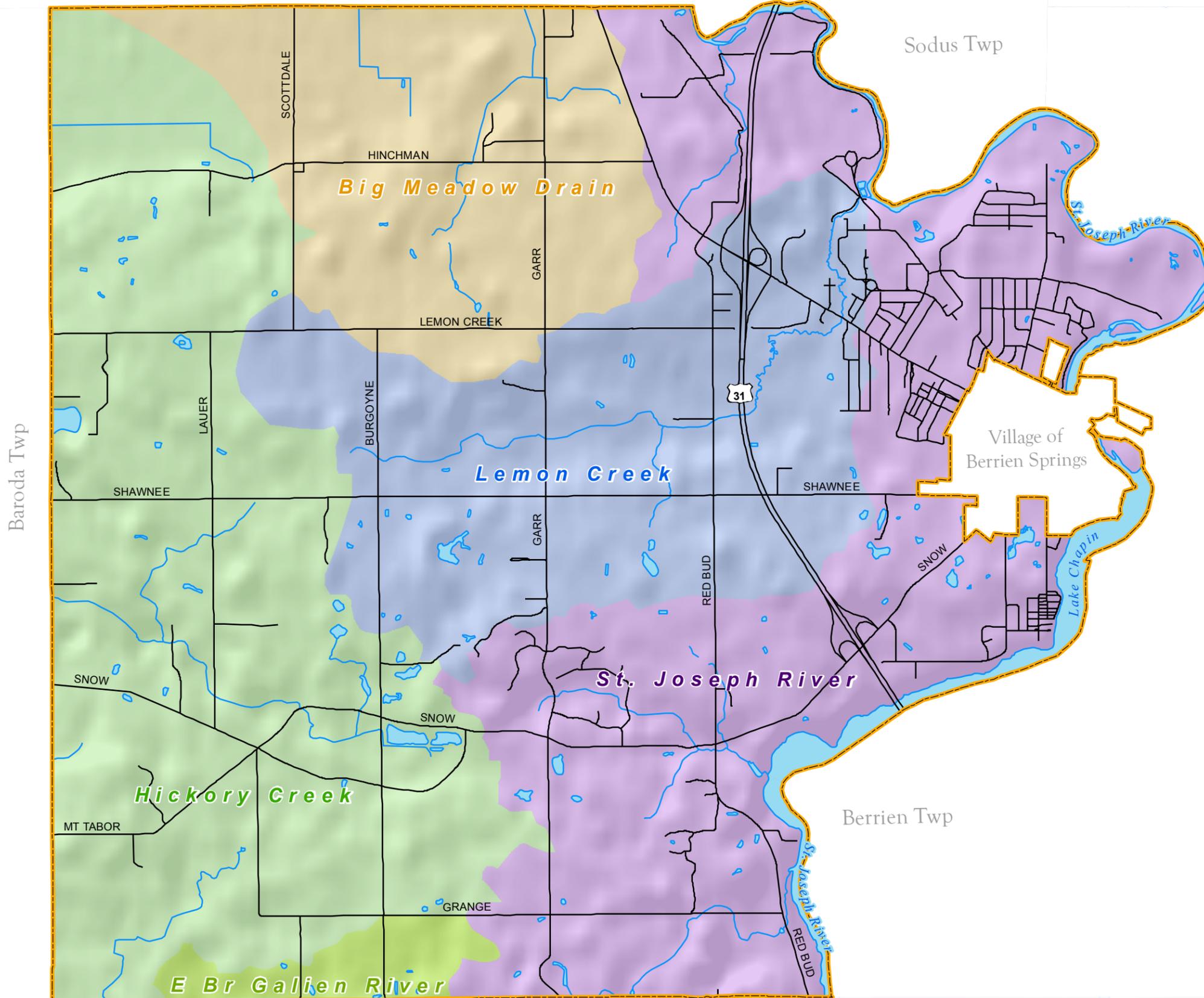
Map 2
Watersheds

Legend

- Big Meadow Drain
- Hickory Creek
- Lemon Creek
- St. Joseph River
- E Br Galien River

Source: Berrien County and the Michigan Center for Geographic Information

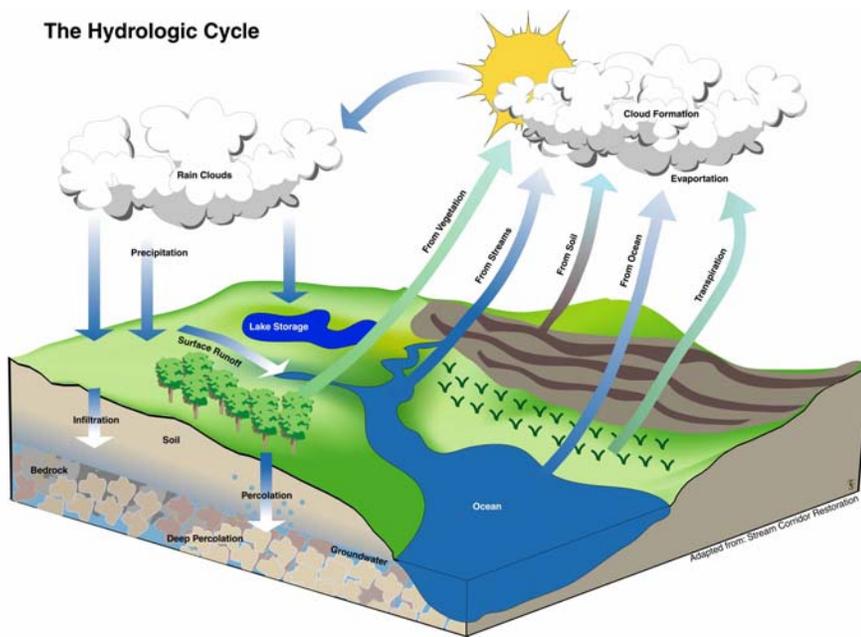
1 inch = 3,500 feet



As the Township’s population continues to grow and development pressures increase, care must be taken to ensure that new developments are carefully planned to protect the quality of the water in the St. Joseph River and its tributaries. The health of the watershed should be carefully considered when assessing the impacts of new development within the Township.

GROUNDWATER

As the population in and around Oronoko 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, Michigan, 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 contaminates.

Since all drinking water in Oronoko Charter 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

The composition of soils determines stability and suitability for structural development

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 also determines stability and suitability for structural development and agricultural productivity is dependent on

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 has classified the soils of the Township into many different general soil associations, and Map 3 illustrates the different soil textures found in Oronoko Township:

- **Sandy** – Sands are loose and single-grained. Soil materials classified as sands contain 85-100% sand-sized particles, 0-15% silt-sized particles, and 0-10% clay-sized particles.
- **Loamy** – Loam is soil material that is medium-textured and is composed of a mixture of clay, silt and sand. Soil materials classified as loams contain 7-27% clay, 28-50% silt and less than 52% sand.
- **Muck** – Muck is extremely dark in color and contains well-decomposed organic soil mixed with mineral soil material. Mucky soils contain at least 20% organic matter.
- **Complex** – Complex soils are characterized by the presence of two or more kinds of soil occurring in such a pattern that they cannot be shown separately on a soil map.
- **Pits** – Pits are open excavations from which the soil and underlying material has been removed, exposing material that supports little or no plant cover. Pits may have standing water at varying depths.

Map 4 illustrates the engineering limitations of the soil types found in the Township for dwellings with basements. Soils that are “not limited” have characteristics that are generally favorable to development. Soils that are “somewhat limited” have characteristics that are not favorable to development without special planning or design. Soils that are “very limited” have characteristics that are highly unfavorable to development, and development on these soils may result in increased construction maintenance and costs.

Oronoko Charter Township

Berrien County, Michigan

Map 3
Soils - Texture

Legend

Soil Texture

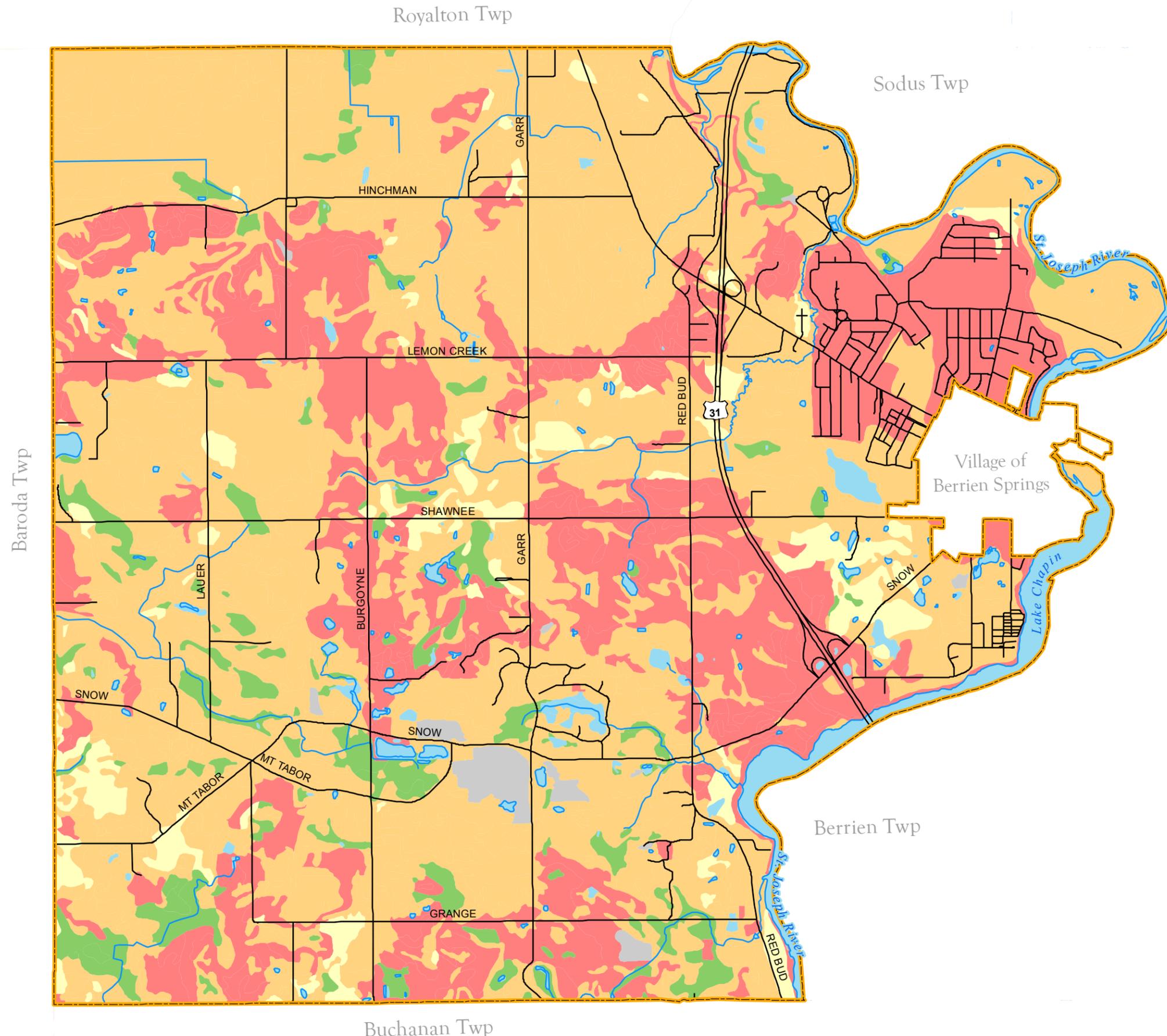
-  Sandy
-  Loamy
-  Muck
-  Complex
-  Poned/Water
-  Pits

Source: Berrien County and the Michigan Center for Geographic Information

1 inch = 3,500 feet



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Oronoko Charter Township

Berrien County, Michigan

Map 4 Soil Development Limitations

Legend

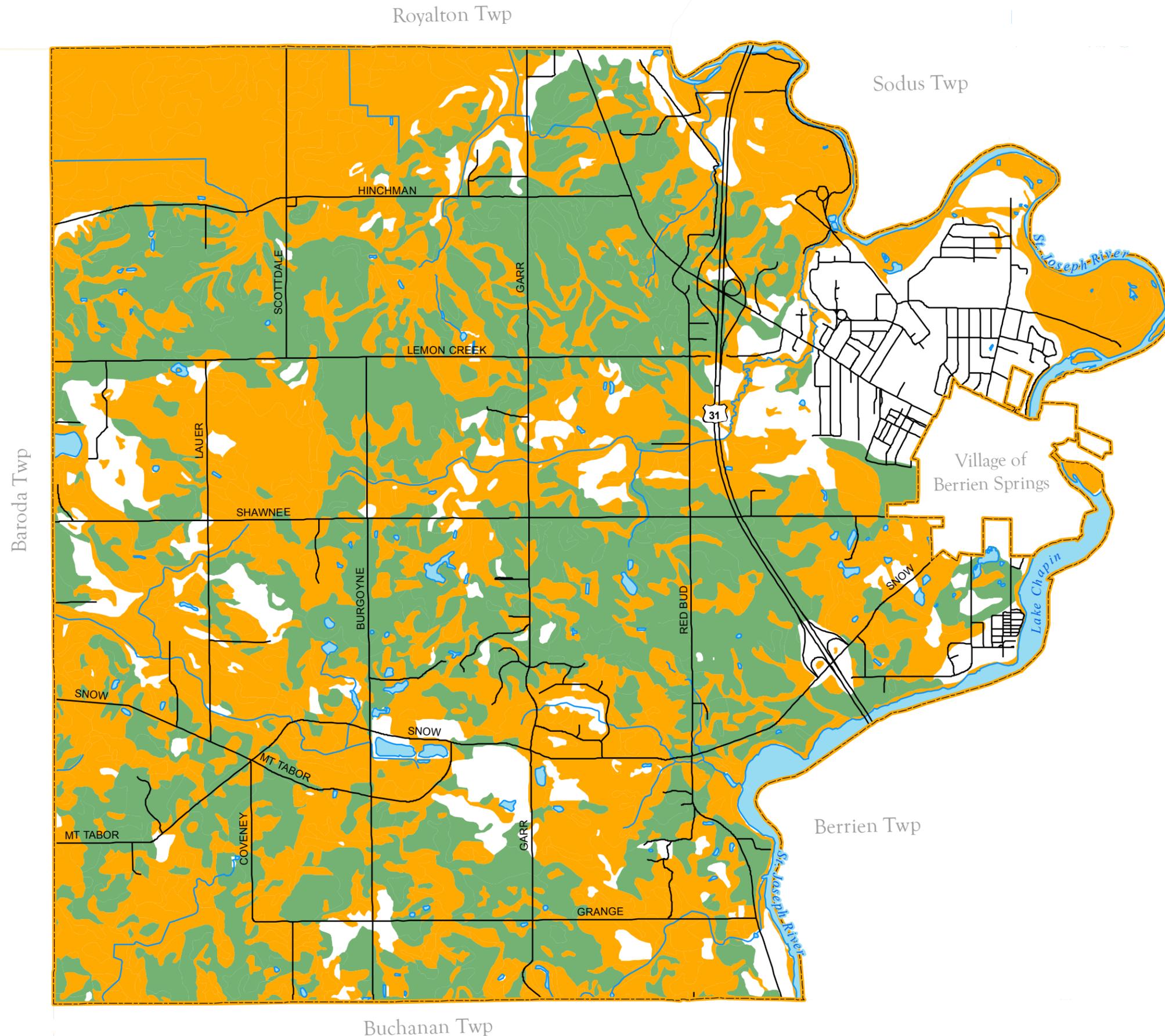
- Development Suitability
- Not limited
 - Somewhat limited
 - Very limited

Source: Berrien County and the Michigan Center for Geographic Information

1 inch = 3,500 feet



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



Wetlands play a critical role in regulating the movement of water within watersheds

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.

The wetlands in Oronoko Township occupy approximately 5,100 acres and are scattered throughout the Township, but are found primarily along stream and drain corridors. Wetland areas and hydric soils are identified on Map 5, which is based on the state-wide Wetland Inventory conducted by the Department of Environmental Quality (DEQ), and hydric soils are indentified by the Soil Survey Geographic.

According to the Michigan Department of Environmental Quality, a hydric soil “is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions. This lack of oxygen in the soil can lead to the formation of certain observable characteristics in wetland soils, such as a thick layer of organic matter (non-decomposed plant materials) in the upper part of the soil column.”³ While the presence of a hydric soil does not necessarily indicate the presence of a wetland, hydric soils are considered to be wetland soils, according to the United States Natural Resources Conservation Service.

This map is intended to illustrate only the general location of potential wetland areas in the Township. The exact location of any wetland or hydric soil should be determined through a field site inspection by a qualified scientist.

³ Michigan Department of Environmental Quality http://www.michigan.gov/deq/0,1607,7-135-3313_3687-10408-,00.html

PLANNING IMPLICATIONS

Oronoko Township's natural features and rural character will likely continue to draw attract new residents, resulting in continued 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.

The Township's contains 5,100 acres of potential wetland areas, and many of the soils found in the Township are not conducive to residential development. Additionally, most land within the Township drains toward the St. Joseph River, and protecting this watershed is important to the environmental health of the entire region. Careful site planning will be needed for the Township to aid in maintaining these critical natural features.

Oronoko Charter Township

Berrien County, Michigan

Map 5 Potential Wetland Areas

Legend

-  Streams
-  Open Water
-  Potential Wetland Areas
-  Potential Hydric Soils

This Wetlands Inventory Map is intended to be used as one tool to assist in identifying wetlands and provide only potential and approximate locations of wetlands and wetland conditions.

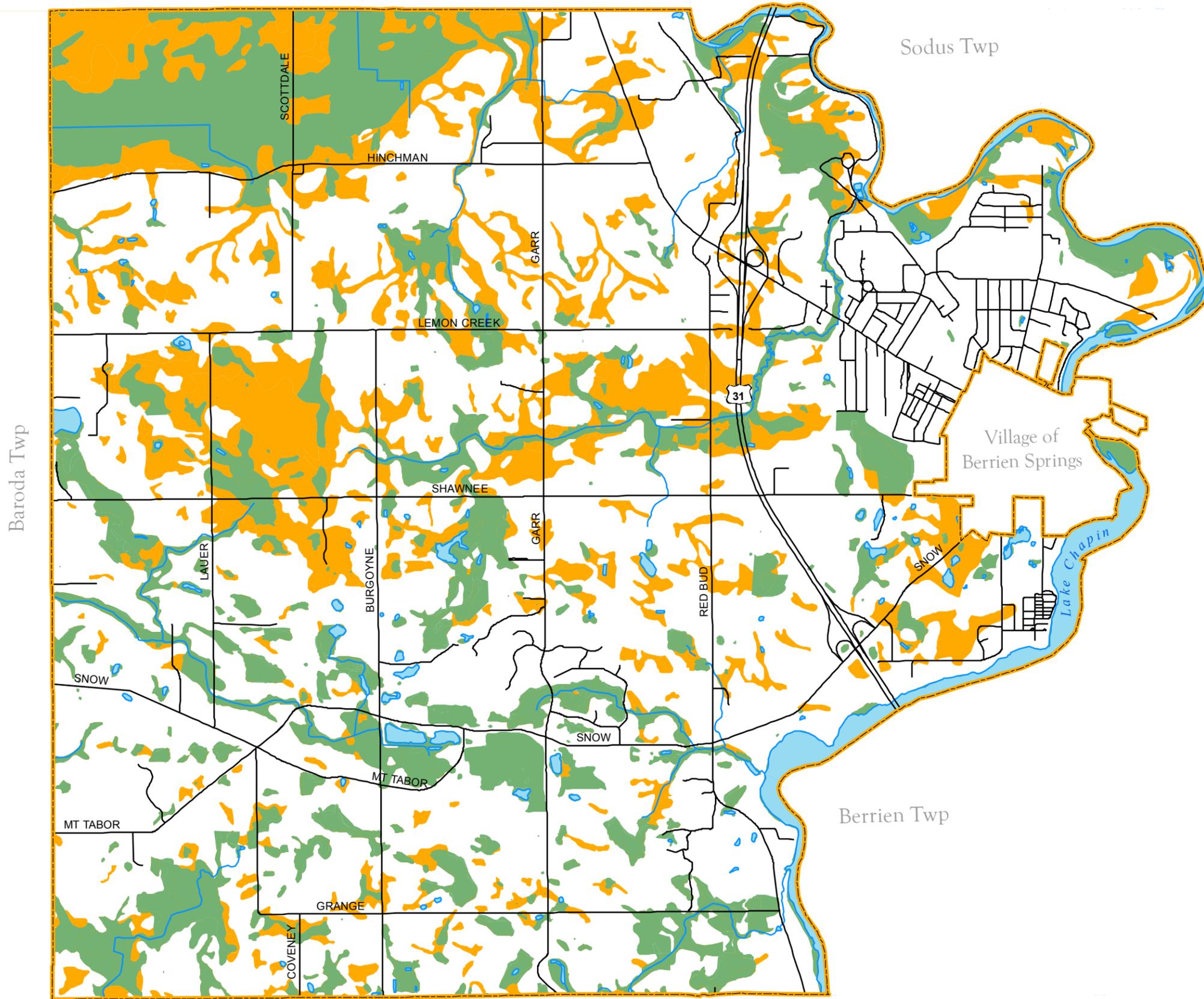
This map is not intended to be used to determine specific locations and jurisdictional boundaries of wetland areas subject to regulation under part 303 Wetlands Protection Act, 1994 PA 451, as amended. Only an on-site evaluation performed by MDEQ in accordance with Part 303 shall be used for jurisdictional determination. A permit is required from the MDEQ to conduct certain activities in jurisdictional wetlands.

Source: Berrien County and the Michigan Center for Geographic Information

1 inch = 3,500 feet



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CHAPTER 3. POPULATION

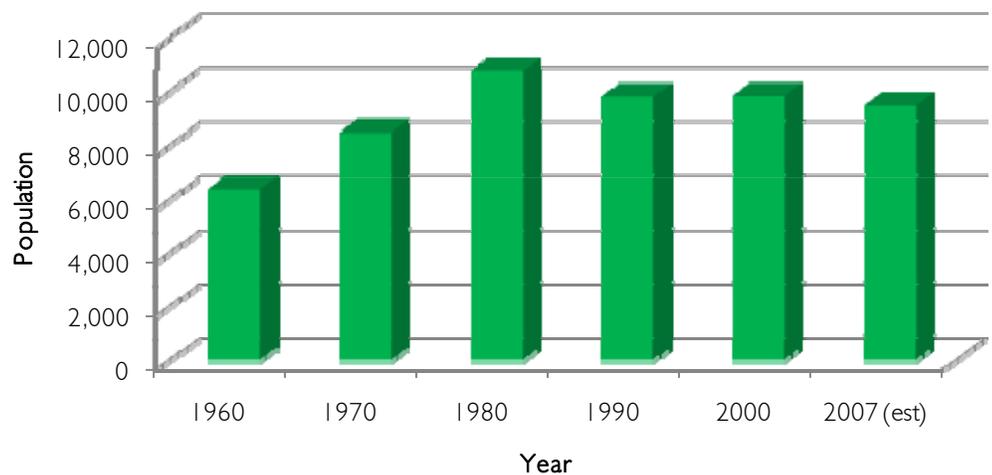
Population and demographic change are among the most important measures to express growth and its likely impact on land uses in a community. An accurate analysis of the Township's current and future population is critical to ensure that the Township will meet future needs for housing, recreation and other community services and preserve the high quality of life that characterizes Oronoko Charter Township.

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

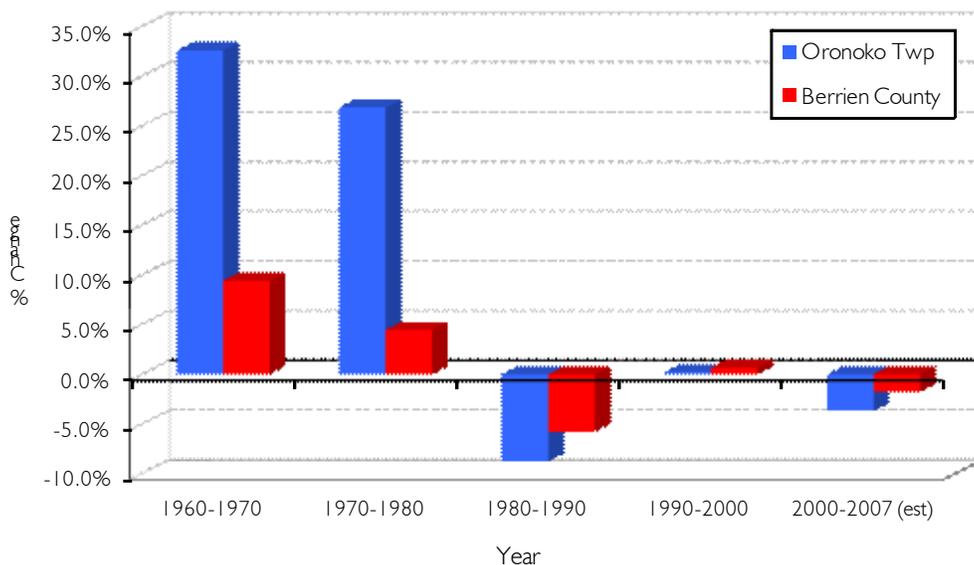
To begin with, it is appropriate to determine the overall growth the Township has experienced in the recent past (i.e., the last thirty years). Oronoko Township experienced relatively steady growth in the 1960s and 1970s, and that growth has plateau and declined in recent years. In 1980, the Township's population was 10,761, compared with 9,843 in 2000 and an estimate of 9480 in 2008. Figure 3.1 illustrates the change in population in Oronoko Township from 1960 to 2007.

Figure 3.1
Population Change, 1960-2007
Oronoko Charter Township



From 1990 to 2000, the Township experienced very little change in population, with the Township adding 24 residents during that time. Population changes in Berrien County have mirrored those experienced in the Township, although changes in the County's population have been more drastic. Figure 3.2 illustrates the percent change in population in Berrien County and Oronoko Township from 1960-2007.

Figure 3.2
Comparison in Population Change, 1960-2007
Oronoko Township and Berrien County, Michigan



POPULATION PROJECTIONS

Statistical averaging techniques were employed to project the Township's likely population growth to the year 2030

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 Oronoko Township that have experienced varying rates of growth development, future growth trends may not parallel historical 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 they help to understand the future position of the Township in terms of growth and total population. The following describes the projection techniques.

Using the Constant Proportion Method, the population of Oronoko Township will decrease over the next ten to fifteen years.

The Constant Proportion (or ratio) Method of projecting population assumes that Oronoko Charter Township will continue to represent the same percentage of Berrien County’s projected population in the years 2010, 2020, and 2030 that it represents today. In 2000, Oronoko Township comprised about 6.05% of Berrien County’s total population. Using the population projections for Berrien County as estimated by the Woods and Poole Economics⁴, and extending those trends through 2030, the following illustrates the results of the constant proportion method for Oronoko Township.

Constant Proportion Method

	<u>2000 Population</u>	<u>2010 Population Projection</u>	<u>2020 Population Projection</u>	<u>2030 Population Projection</u>
Berrien County	162,453	159,696	155,538	153,598
Oronoko Twp	9,843	9,661	9,410	9,293

The Growth Rate Method predicts that the Township will grow to nearly 11,400 residents by 2030

The Growth Rate (or geometric) Method projects future population growth or decline based on the rate of change 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’s population grew between 1970 and 1990, but declined in the 1990s, resulting in an overall compounded annual rate of change of +0.489%.

Growth Rate Method

Compounded Annual Growth Rate	<u>1970-2000</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>
	Oronoko Twp	0.489%	9,843	10,335	10,851

⁴ West Michigan Growth Statistics. Woods and Poole Population Estimates Published by The Right Place, Inc. August 2008.

The Arithmetic Method suggests that the Township will grow to more than 11,100 by 2030

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 45 persons per year between 1970 and 2000, in Oronoko Township, based on U.S. Census figures.

Arithmetic Method					
	Average Increase Each Decade (Number of Persons)	2000 Population	2010	2020	2030
Oronoko Twp	450	9,843	10,293	10,743	11,193

The Building Permit Method predicts that the Township will grow to more than 11,500 by 2030

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. Oronoko Township has issued 22 new residential building permits on average per year from 1995 to 2007.⁵ The Township’s average household size is 2.62 persons⁶. Extrapolating these figures into the future may project likely population growth, if current trends remain the same. This population projection technique holds that Oronoko Township will grow by 58 persons per year.

Building Permit Method					
Average No Permits/Year	Persons per H/H	2000 Population	2010	2020	2030
22	2.62	9,843	10,423	11,003	11,583

The table on page 25 summarizes the preceding information. By averaging the results of these methods, it is reasonable to predict that the population of Oronoko Township will grow to approximately 10,200 persons by the year 2010; roughly 10,500 by the year 2020; and nearly 11,400 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.

⁵ Oronoko Township data

⁶ United States Census Bureau, 2000

Table 3.1. Population Projection Summary

	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>
Constant Proportion	9,843	9,661	9,410	9,293
Growth Rate	9,843	10,335	10,851	11,394
Arithmetic	9,843	10,293	10,743	11,193
Building Permits	9,843	10,423	11,003	11,583
Average	9,843	10,199	10,556	10,866

AGE, GENDER AND ETHNICITY

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.

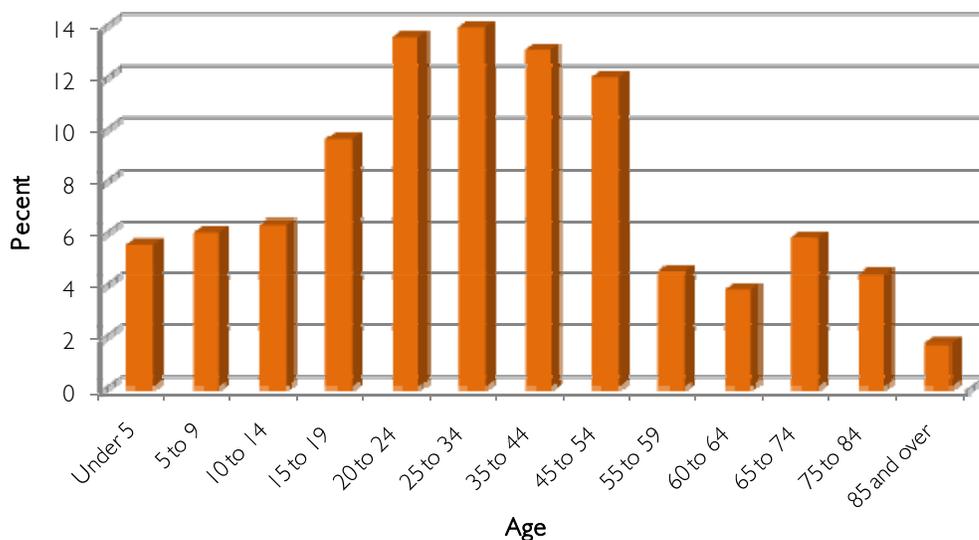
In 2000, the median age of Oronoko Township residents was 31.3 years, significantly younger than the County (37.4 years), and also younger than the State and the U.S. (35.5 and 35.3 years, respectively). This can likely be attributed to the large student population and Andrews University. The median 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.

In 2000, the median age of Oronoko Township residents was 31.3 years

Despite the aging of the “baby boomer” population, more than 15% of the Township’s population is under the age of 15, suggesting a potential need for schools, parks, and other youth-related facilities.

The 25 to 44 years age group is significant since this represents the main age division for family formations. About 27% of the Township’s population falls in the 25 to 44 age group. The bulk of the wage-earning population is between the ages of 25 and 54, and nearly 40% of the Township’s population falls within this age range. 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.

Figure 3.3
Age Distribution
Oronoko Charter Township, Michigan



Nearly one-fifth of Township residents are over the age of 55. This age division is generally comprised of “empty nesters” and aging baby boomers and implies disposable incomes. About 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, 11.9% of the Township is over 65 years of age (compared with 14.4% of Berrien 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.

As far as ethnicity characteristics, the community is relatively diverse. The portion of the population of the Township classified as “white alone” at the 2000 Census represents 66.5% of the community. Black or African Americans represent 17.5% of the Township; American Indian and Alaska Natives represent 0.4%; Asians represent 7%; and other races comprise 8.6% of the Township. Note that 80.2% of Michigan’s population is “white alone”, compared with Oronoko Township at 66.5%.

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. Figures pertaining to education attainment in Oronoko Township are also influenced by the presence of Andrews University, which will be discussed in Chapter 6, Community Facilities and Services.

In 2000, 43.3% of Township residents had the equivalent of a bachelor's degree or higher

The 2000 Census indicates that within Oronoko Township approximately 16.2% of the population over 25 years of age have the equivalent of a high school education, and 43.3% of the population have a bachelor's degree or higher. In Berrien County, roughly 31.9% of the population have the equivalent of a high school education with 19.6% reporting a bachelor's degree or higher. Thus, generally, residents in the Township are more educated than the county overall, much of which can be likely be attributed to Andrews University.

The 2000 Census reports that 31.3% of the population in Michigan has a high school education or similar equivalency as the highest level of education achieved, compared with 16.2% in the Township. In the State of Michigan, 21.8% has at least a bachelor's degree, compared with 43.3% reporting a bachelors degree or higher in the Township..

PLANNING IMPLICATIONS

It is reasonable to assume that Oronoko Charter Township will continue to experience growth and development. Natural beauty, high quality educational institutions, access to cultural and recreational facilities and close proximity to choice employers, expressways, churches, and regional destinations work as part of the magnetism that draws residents to the community.

By averaging the results of four different methods of population projection, it is reasonable to predict that the population of Oronoko Township will grow to more than 11,000 persons by the year 2030. While this rate of growth is not unmanageable, it does suggest that demands on public facilities, utilities and transportation networks will increase.

CHAPTER 4. HOUSING & 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.

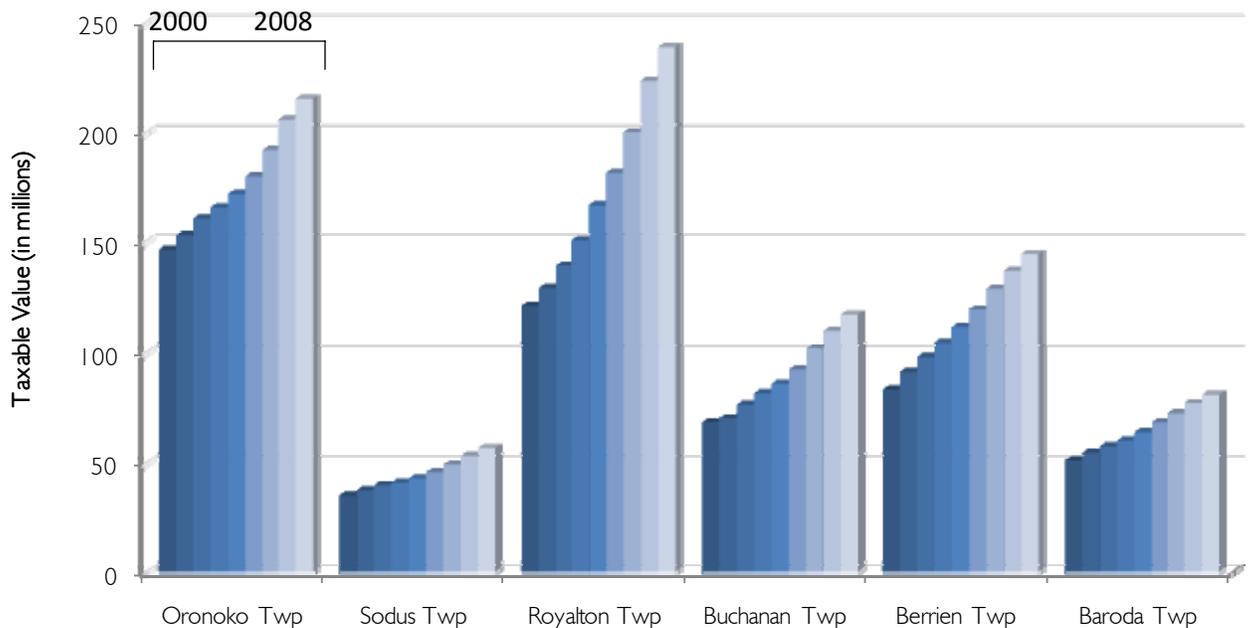
TAXABLE VALUE GROWTH

Property values are a key measure of economic growth and the financial strength of a community

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, and these reports can provide an illuminating impression of the character of a community. The table below compares the annual taxable values of real property in Oronoko Charter Township to those of surrounding municipalities.

Figure 4.1

Change in Taxable Value of Real Property, 2000-2008
Oronoko Charter Township and Surrounding Municipalities



Source: Berrien County Equalization Department

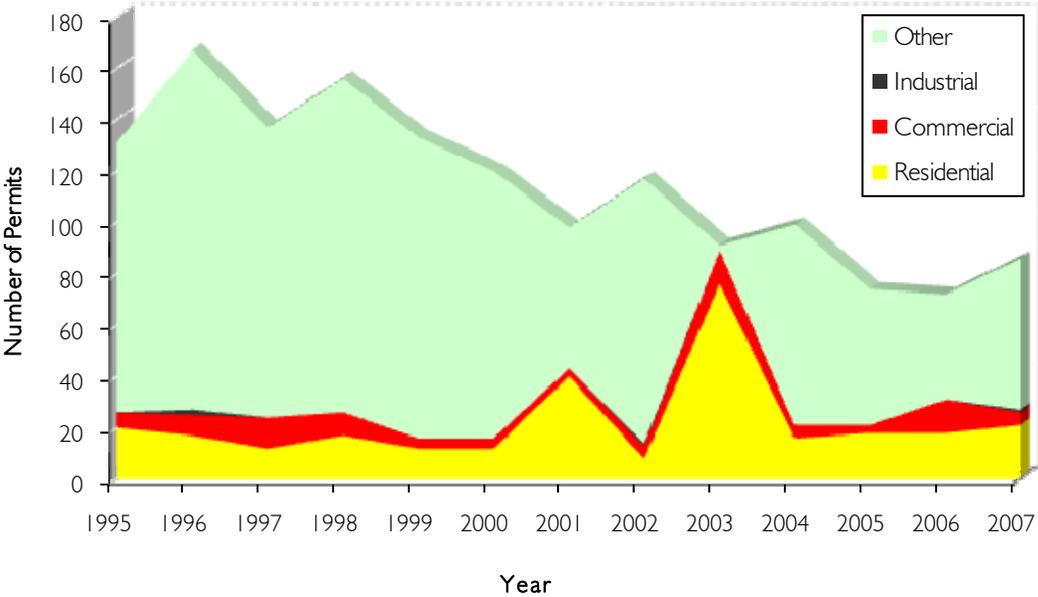
Municipality, 2000-2008

The total real property taxable value for Oronoko Charter Township in 2000 was \$146.2 million, and by 2008 it had increased by nearly 50% to \$215.2 million. This value ranks tenth among all 30 jurisdictions in Berrien County, in 2008. Oronoko Township accounts for about 6% of the County’s population (based on the 2000 Census) and about 3.4% of its total real property value. It is important to note that while many estimates indicate that the Township’s population has leveled off in recent years, the value of real property has continued to increase at a relatively steady rate.

BUILDING PERMITS

Building permits are a good indication of investment in the community. As Figure 4.1 indicates, the number of total building permits issued in Oronoko Township over the past ten years has fluctuated somewhat.⁷ The “Residential” category includes new single-family homes, duplexes and multi-dwelling buildings. The “other” category consists of remodels, additions, garages, and other modifications to existing residential structures. The “commercial” and “industrial” categories consist of new construction or modifications to existing commercial or industrial development, respectively.

Figure 4.2
 Building Permit Activity
 Oronoko Charter Township, 1995-2007



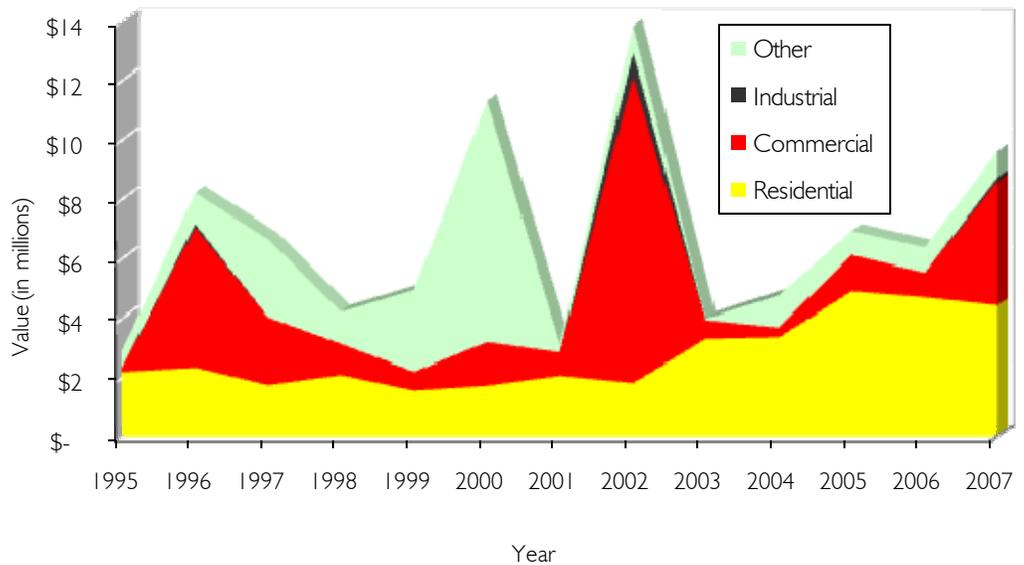
⁷ Oronoko Charter Township

Despite a decreasing trend in the number of permits issued, the value of all permits issued has trended upward since 2003

Figure 4.2 is somewhat deceptive in that it only reports on the number of building permits issued, and does not address the value of those permits. Thus an overall impression of decline is created by the fact that the number of permits has fallen significantly since the mid-to late-1990s.

If the value of all permits issued over the same time period is examined, it is revealed that despite a decreasing trend in the number of permits issued, the value of all permits issued has trended upward since 2003. Figure 4.3 illustrates the value of building permits issued from 1995-2007.

Figure 4.3
Value of Permits Issued
Oronoko Charter Township, 1995-2007

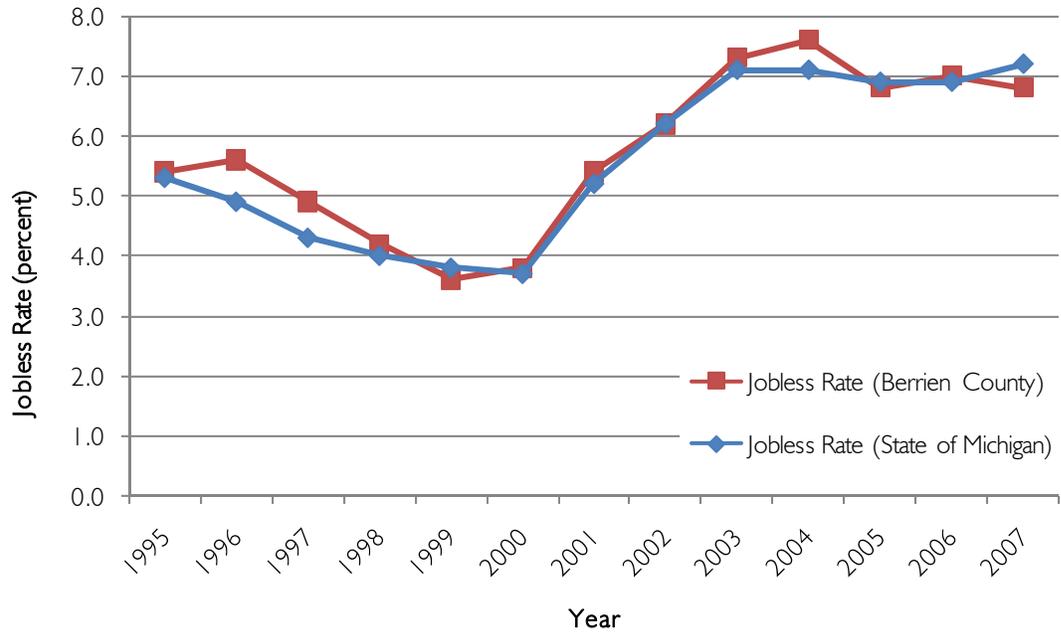


EMPLOYMENT

With the relatively small extent of commercial and industrial development in the Township, many 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 16.2 minutes. Of the Township’s labor force, about 66% reported traveling to work alone, 12.2% carpoled and 15.8% indicated that they walked to work. These figures may be influenced by the presence of Andrews University, where it is likely that many students live in close proximity to the University and are able to walk or carpool.

At the beginning of 2000, the Township’s workforce reflected a relatively low jobless rate of 3.8%. Of course, since the Census figures were collected, unemployment has increased significantly. Figure 4.4 illustrates the jobless rate in Berrien County from 1995-2007.

Figure 4.4
 Jobless Rate in Berrien County
 and the State of Michigan



The County's jobless rate has averaged around 7% for the past three to four years

Over the last twelve years, the jobless rate in Berrien County has closely mirrored that of the State in general. In the late 1990s, the jobless rate steadily declined to a low in Berrien County of 3.6% in 1999. By 2004, however, the jobless rate had more than doubled to 7.6% in the County and 7.1% in the State of Michigan. Since that time, the jobless rate has moderated somewhat, but has still averaged around 7% for the past three to four years.

Of those who are employed in Oronoko Township, nearly half (40.8%) are employed in management, professional and related occupations, educational, health and social services, according to the 2000 Census. Additionally, 23.8% are employed in sales and office occupations, 17.6% are employed in service occupations, and 10.7% are employed in production, transportation and material moving occupations. Despite the predominant agricultural land use in the Township, agriculture, forestry, fishing and hunting and mining only account for 1.4% of total employment.

Although Oronoko Township is largely a rural and agricultural community, some employment is centered in the Township. It is home to several larger employers and institutions such as Andrews University provides significant employment for area residents. The following is a listing of several of the largest employers with locations in the Township:

- Andrews University 775 Employees
- Premier Tool & Die Cast Corp 160 Employees
- Twixwood Nursery 70 Employees
- Tabor Hill Winery 30 Employees
- Tafcor & Tyler Wood Products 30 Employees

PLANNING IMPLICATIONS

Despite the recent downturns in the state and local economy, development activity and property values within Oronoko Township remain strong. Investment in Oronoko Township continues to increase in value, and property values have steadily increased since 2000. The Township enjoys a diversified workforce consisting of jobs in education, manufacturing and agriculture.

However, the jobless rate in the Township mirrors that of the State, and a large portion of Township residents look to other communities for employment opportunities. As the Township grows in population, it may be necessary to examine the potential of increasing employment opportunities within the Township.

CHAPTER 5. LAND USE AND DEVELOPMENT PATTERNS

Oronoko Charter Township has an area of approximately 33 square miles. It is bounded on the north by Royalton Township, on the south by Buchanan Township, on the west by Baroda Township, and on the east by the St. Joseph River and Lake Chapin. Additionally, US-31 runs through the eastern portion of the Township from north to south, connecting the Township with the larger urban centers towards the north and south. These features have affected growth and development patterns in the Township over time, and will continue to make the Township an attractive location for new development.

LAND COVER

Land cover describes the vegetation of land use that occupies the land in a given community

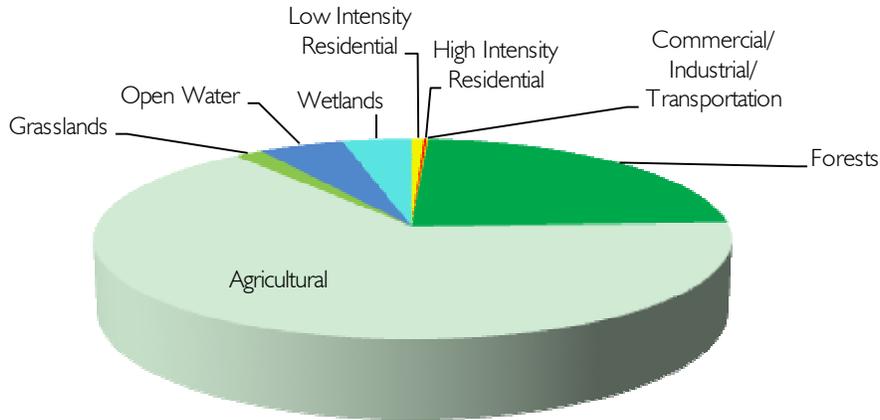
Land cover describes the vegetation or land use that occupies the land in a given community. The Land Cover data analyzed for this plan is part of the larger National Land Cover Dataset (NLCD) as prepared by the United States Geological Survey (USGS) in 1992. This information was derived from LandsatTM (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.



Agricultural uses, such as vineyards, are found throughout the Township

Figure 5.1 illustrates the Land Cover make-up of Oronoko Township based on the 1992 NLCD. The predominant land cover type found in the Township is agricultural (65%), this class is a composite of three planted/cultivated related NLCD classes found in the Township: pasture/hay, row crops and small grains. The Forested class is also an aggregate grouping of the three forest cover types including deciduous forest, evergreen forest and mixed forest. Together, residential land cover types, both low and high intensity, constitute less than one percent of the Township’s land cover. However, since the data is based on research and analysis performed in 1992, many of the Township’s new developments are not reflected. Generally, however, the data reflects the current land cover found in Oronoko Charter Township.

Figure 5.1
Land Cover in Oronoko Charter Township



LAND USE CHANGE

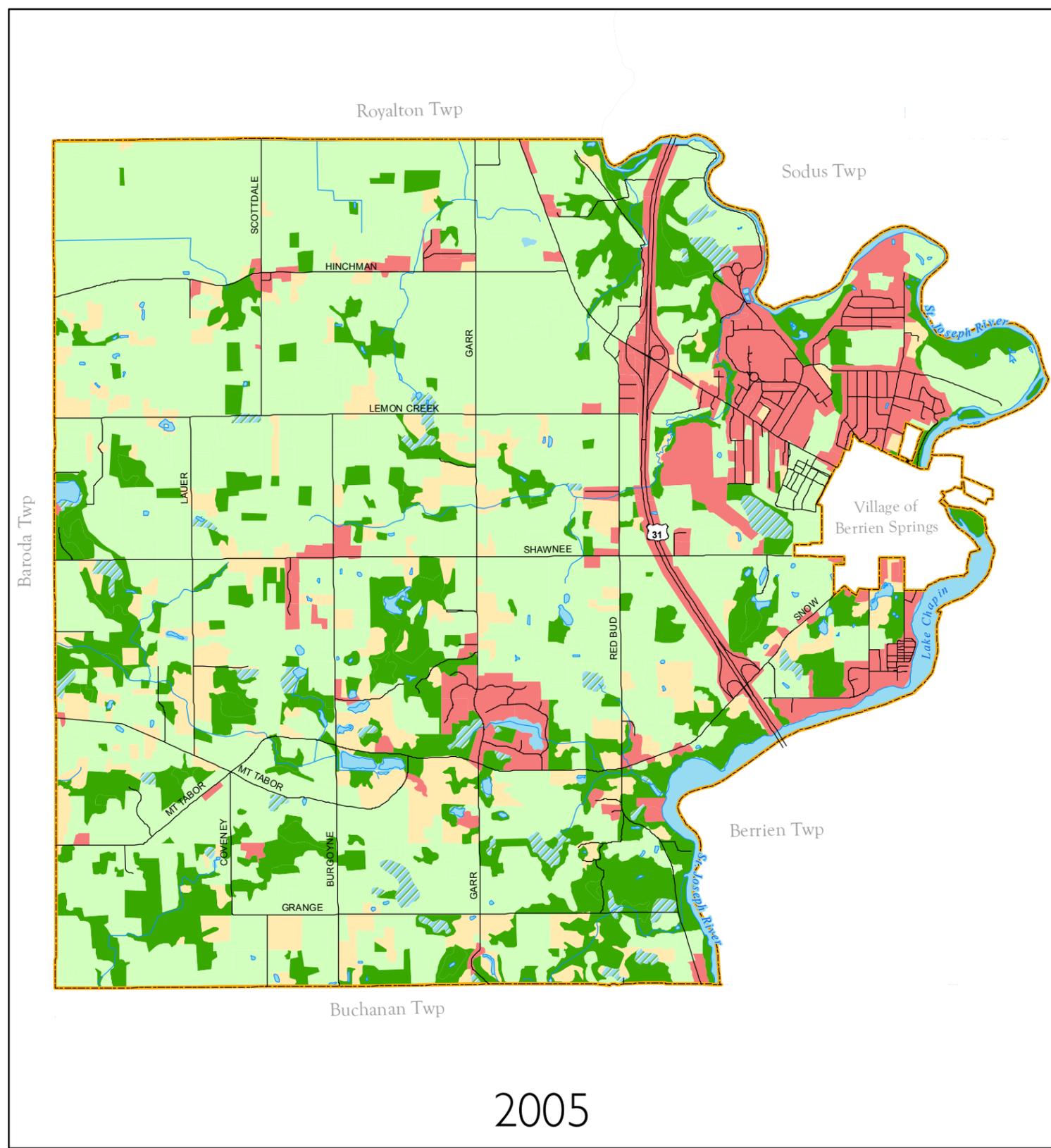
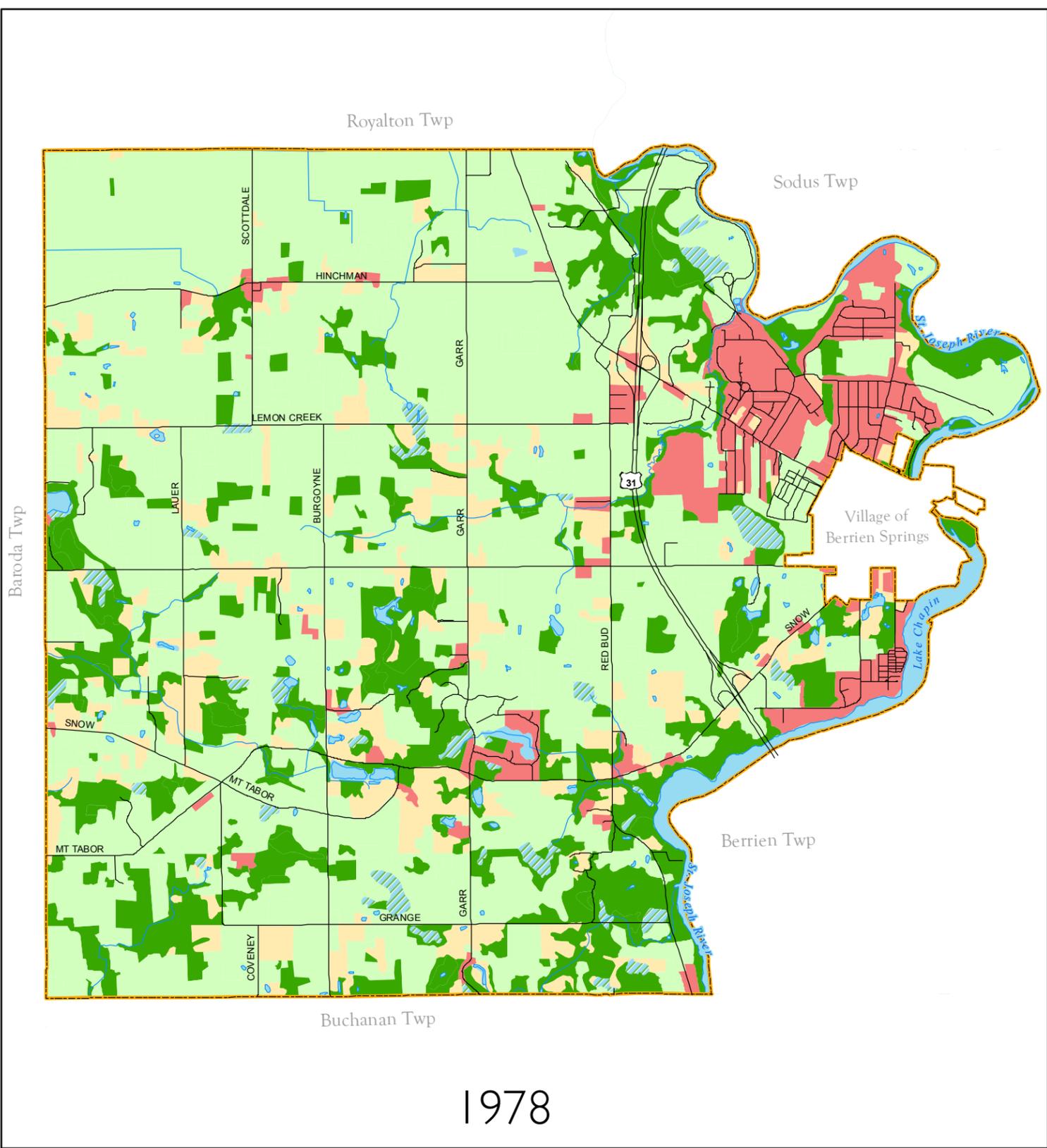


Large lot residential development has occurred in some of the Township's agricultural areas

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." It is important to note that the information in Map 6 was prepared from aerial photographs and reflects composite groupings of land use 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. Williams & Works updated this information in 2008, based on 2005 digital aerial photography and updated parcel data. Map 6 illustrates land use change in the Township between 1978 and 2005.

During this time period, the largest change in land uses the Township experienced was an additional 805 acres lands classified as "urban and built-up", which was largely due to an increase in low-density residential development in rural areas of the Township, and the construction of US-31 and its accompanying interchanges in the Township, which occurred in the 1990s.

The increase in urban and built-up lands resulted in a corresponding decrease in lands classified as agricultural (580 acres), forested land (121 acres) and rangeland (103 acres).



Oronoko Charter
Township
Berrien County, Michigan

Map 6
Land Use Change
1978-2005

Legend

	Agricultural Land		Urban and Built Up
	Forest Land		Water
	Rangeland		Wetlands

Table 5.1. Land Use Change, 1978-2005, Oronoko Charter Township

Land Use Category	1978 (acres)	1978 Percent	2005 (acres)	2005 Percent	Change (acres)	Change (percent)
Agricultural Land	12,675	58.12%	12,095	55.46%	(580)	-4.58%
Forest Land	3,885	17.81%	3,764	17.26%	(121)	-3.11%
Rangeland	2,007	9.20%	1,904	8.73%	(103)	-5.13%
Urban and Built Up	1,868	8.57%	2,673	12.26%	805	43.09%
Water	1,000	4.59%	1,000	4.59%	0	0.00%
Wetlands	373	1.71%	372	1.71%	(1)	-0.27%

A QUICK BUILD-OUT ANALYSIS

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

A Build-out analysis is essentially an evaluation of the current zoning situation in a community. It acts as a worst-case scenario tool for planning. The analysis can assist local governments by showing what growth the locality will allow in the future under current zoning designations. 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 projections for the area. This comparison will then allow one to judge the effectiveness of the area's current zoning.

A build-out analysis can assist local governments by showing what growth the locality will allow in the future under current zoning designations

Many build-out analyses 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 ten Michigan communities examined by Kilpatrick and Wyckoff⁸, 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 suburban sprawl.

⁸ Mark Wyckoff and Erin Kilpatrick, Planning Zoning News, April 2002

Step 1: Analyze Current Zoning

The first step in conducting the analysis in Oronoko Charter Township requires the calculation of the total amount of developable land within each residential zoning district. For purposes of this analysis, it was assumed developable parcels were those with an area greater than five acres. Additionally, to account for the necessary infrastructure needed (roads, utilities, etc.) to support development, 15% was subtracted from the total developable land in each residential zoning district. Table 5.2 shows the amount of land occupied by each residential district in the Township.

Table 5.2. Developable Land Based on Residential Zoning District

Mapped Residential Districts	Developable Acres	Net developable Acres (Minus 15 % for Infrastructure)
A-R Agricultural Residential	12,764	10,849
E-1 Estate Residential	1,575	1,339
R-1 Single Family Residential	511	434
R-2 Single & Two-Family Residential	755	642
R-3 General Residential	133	113
Total	15,738	13,377

Step 2: Determine Potential Dwellings

The second step in the process is to determine the number of potential dwelling units allowed by zoning standards at build-out. To derive this number, the total developable net area in each district is divided by the minimum lot area allowed in the given district (Table 5.3).

Table 5.3. Residential Lots at Build-Out Based on Zoning District

Mapped Residential Districts	Net Developable Acres	Minimum Lot Size	Potential Number of Lots
A-R - Agricultural Residential	10,849	1 Acre	10,849
E-1 Estate Residential	1,339	1 Acre	1,339
R-1 Single Family Residential	434	15,000 sq ft	1,260
R-2 – Single & Two-Family Residential	642	12,000 sq ft	2,330
R-3 General Residential	113	12,000 sq ft	410
Total	13,377	--	16,188

Step 3: Determine Potential Population

The third and final step in the analysis is to determine the total population resulting from the number of potential lots, or the potential population at build-out. This is accomplished by multiplying the number of lots by 2.62, the average number of people per household in the Township according to the 2000 Census. Since most of the Township consists of single-family homes, we have assumed that each of the residential zoning districts will contain one home per lot.

Table 5.4. Population at Build-Out Based on Zoning District

Mapped Residential Districts	Potential Number of Lots	Number of additional residents at build-out
A-R - Agricultural Residential	10,849	28,424
E-1 Estate Residential	1,339	3,508
R-1 Single Family Residential	1,260	3,301
R-2 – Single & Two-Family Residential	2,330	6,104
R-3 General Residential	410	1,074
Total	16,188	42,411

The resulting calculations show that under current zoning, Oronoko Charter Township would have a population of 52,254 persons at build-out, which is an increase of 430%. Based on the rates of growth described in Chapter 3, and given current zoning, the Township is not likely to reach full build-out for more than 300 years. This means that the Township is severely “overzoned” to accommodate far more growth than it is likely to experience over the life of this plan. This also means that the Township’s current zoning standards need to provide more guidance in terms of where in the Township new development should be located.

Under current zoning, Oronoko Charter Township would have a population of 52,254 persons at build-out

As the Township 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. However, care should be taken when interpreting these results. This analysis should be seen only as a theoretical model of Oronoko Township’s current zoning map. As with most models there are many variables and assumptions built into the analysis that are not necessarily reflective of the real-world situation.

PLANNING IMPLICATIONS

As illustrated in the Land Use and Land Cover maps, Oronoko Township is still predominately a rural and agricultural community and is likely to remain as such for the foreseeable future. However, as the build-out analysis demonstrated, the current zoning in the Township provides little guidance for the location of new development. This apparent lack of direction may result in new development becoming fragmented and undermine the rural character and natural beauty that attracts much of this development in the first place. Therefore, as the Township considers amendments to the Zoning Ordinance and map in the future, it is recommended that the Township consider revisions that would provide more guidance pertaining to location of new development.

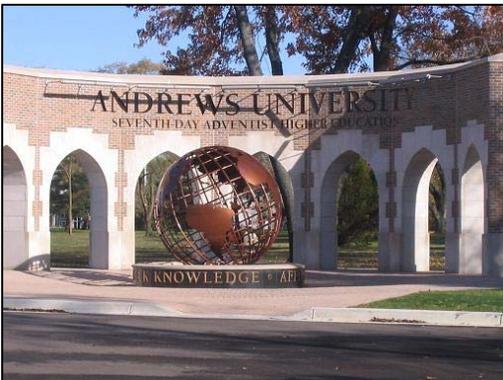
CHAPTER 6. COMMUNITY FACILITIES AND SERVICES

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 Oronoko 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.

HIGHER LEARNING INSTITUTIONS

Residents of Oronoko Charter Township are within close proximity to many educational institutions, and one university, Andrews University, is located within the Township's boundaries. Several additional colleges and universities are within driving distance. These include Lake Michigan College in Benton Harbor, Western Michigan University – Southwest Campus in Benton Harbor, Southwestern Michigan College in Niles, Siena Heights College in Benton Harbor, and Notre Dame University in South Bend, Indiana.



Andrews University is an educational institution of the Seventh Day Adventist Church

Andrews University

Located in the northeast portion of the Township just east of US-31, Andrews University is an educational institution of the Seventh-Day Adventist Church. It was founded in 1874 in Battle Creek, and moved to its present location in the Township in 1901. Originally called Battle Creek College, the name was changed to Emmanuel Missionary College upon its relocation. The name was changed again in 1960 to Andrews University, after the church's first overseas missionary, John Nevins Andrews.

Andrews University's 2008 enrollment was 3,419 students engaged in undergraduate, seminary/professional and Master's/Doctoral studies. As of 2008, approximately 885 of the University's students were international, representing 98 different countries. The University employs more than 700

people, including 280 faculty members teaching 85 undergraduate majors and 50 graduate majors.

The University has a significant impact on land use and development in the Township, as it owns some 1,400 acres of property in the Township. The presence of the University also diversifies the Township in terms of ethnicity, housing, educational attainment, and in many other areas.

Year	2004	2005	2006	2007	2008
Total Enrollment	3,017	3,087	3,195	3,221	3,419

Andrews University also provides many cultural facilities in the Township, including the Siegfried Horn Archaeological Museum, the Howard Performing Arts Center, the Crayon Box (Children’s Day Care) and the James White Library.

PUBLIC SCHOOL DISTRICTS

Oronoko Township is served by four school districts: Berrien Springs Public Schools, Buchanan Community Schools, River Valley School District and Lakeshore School District. However, the vast majority of the Township is served by Berrien Springs Public Schools.

Berrien Springs Public Schools

Berrien Springs Public Schools enrolls approximately 1,800 K-12 students and almost all of Oronoko Township is within this district. This school district extends beyond the Township’s boundaries and contains four

schools: Berrien Springs High School, Berrien Springs Middle School, Sylvester Elementary and Mars Elementary. All four of these facilities are located within the Village of Berrien Springs. Enrollment trends illustrate that the school district is growing steadily, which is somewhat surprising given that the population of the Township has declined in recent years. Since 2004, enrollment in the district has grown by 14%, or 227 students. As of 2008, the district’s total enrollment was 1,855 students.



Approximately 1,800 K-12 students are enrolled at Berrien Springs Public Schools

Table 6.1. Enrollment Trends in Berrien Springs Public Schools

	2004	2005	2006	2007	2008
Mars Elementary	359	375	365	333	379
Sylvester Elementary	344	351	351	353	387
Berrien Springs Middle School	380	398	403	395	416
Berrien Springs High School	502	527	545	554	536
Alternative Ed	43	73	117	127	137
Total	1,628	1,724	1,781	1,762	1,855

Source: Berrien Springs Public Schools

Buchanan Community Schools

Buchanan Community Schools are located in Buchanan, south of the Township, however, a small (approximately 200-acre) area of this district reaches north into Oronoko Township along Red Bud Trail south of Grange Road.

There are five schools within Buchanan Community Schools: Buchanan High School, Buchanan Middle School, Moccasin Elementary School, Ottawa Elementary School and Stark Elementary School. Approximately 1,702 students are enrolled in Buchanan Community Schools, and are distributed as follows:

- Moccasin, Ottawa and Stark Elementary Schools: 779 students
- Buchanan Middle School: 382 students
- Buchanan High School: 541 students

River Valley School District

The River Valley School District is located in Three Oaks, which is southwest of the Township, however, approximately 450 acres in the southwest corner of the Township are within this school district's boundaries.

There are four schools within this district: Chikaming Elementary School, Three Oaks Elementary School, River Valley Middle School and River Valley High School. Below is the approximate enrollment of each school in this district:

- Chikaming Elementary: approximately 200 students
- Three Oaks Elementary: approximately 200 students
- River Valley Middle School: approximately 160 students
- River Valley High School: approximately 370 students

Lakeshore School District

The Lakeshore School District is located in Baroda and Stevensville to the west of the Township. Only about 80 acres of this school district is located in Oronoko Charter Township along Hartline Road, which is the Township's western border.

There are five schools within this district, none of which are in Oronoko Township: Lakeshore High School, Lakeshore Middle School, Stewart Elementary, Hollywood Elementary and Roosevelt Elementary.

- Stewart, Hollywood and Roosevelt Elementary Schools: 1,313 students
- Buchanan Middle School: 678 students
- Buchanan High School: 989 students

RECREATION AND COMMUNITY FACILITIES

Community facilities play an elemental role in augmenting civic engagement, sponsoring cultural events, and promoting community pride. Recreational opportunities are quality of life indicators and such facilities characterize Oronoko Charter Township. The developed portions of the Township contain numerous recreational opportunities including trails and bikeways, golf courses, and parks. In addition to recreational facilities, public schools provide neighborhood spaces for interaction, learning, and community building, and safety services provide a compulsory service to the community.



Oronoko Charter Township maintains one park and five cemeteries

Township Facilities

Oronoko Charter Township maintains one park and five cemeteries in the Township. Robert G. Feather Park is located adjacent to the Township Hall and contains one baseball field, playground equipment, picnic facilities and two pavilions: one enclosed pavilion with restroom facilities and one open pavilion. The enclosed pavilion can be reserved by Township residents with payment of a deposit.

Greater Berrien Springs Recreation Department

The Greater Berrien Springs Recreation Department (GBSRD) is a non-profit organization that provides year round athletic programs for children ages 4-18. Programs offered by GBSRD include basketball, volleyball, soccer, football, cheerleading, tennis, golf and many others.

Programs are funded through contributions from Oronoko Township, Berrien Township the Village of Berrien Springs and numerous local businesses. Most of the activities are held at locations provided by Berrien Springs Public Schools.



The Township's fruit farms and wineries serve a unique role in the Township and the region

Farm Markets and Wineries

Oronoko Township is home to several high-quality farms and wineries that serve an important role in the Township, as well as the region as a whole. These farms have been located in the Township for decades, and their continued operation plays an important role in defining the Township's agricultural heritage. These important agricultural operations also serve as a recreational opportunity for residents and visitors.

Local farms in Oronoko Township include Stovers, Hildebrand, and Lemon Creek. These farms operate farm markets as well as "u-pick", where visitors pick their own fruit, which is generally available from June through October. Stovers Farm also offers opportunities for education through school field trips and entertainment on the weekends, and Lemon Creek Winery and Fruit Farm hosts numerous events, including a radio show and an art fair.

Wineries in the Township include Tabor Hill, Lemon Creek Winery, Roundbarn Winery, Domaine Winery and Free Run Cellars. Many of the wines produced at these wineries have won numerous local and national awards, and some wineries also host events, banquets and offer winemaking classes.

The Township's farms and wineries are an important component of the local economy and a key aspect of the Township's identity. The viability of these important community members should be considered as one of the Master Plan's recommendations.

Educational and Cultural Facilities

Berrien Springs Community Library. Located at 215 Union Street in Berrien Springs, the Berrien Springs Community Library serves residents of the Township as well as the Village of Berrien Springs. According to the National Center for Education Statistics, the library contains over 45,000 books and serial volumes, as well as numerous subscriptions, videos and audio materials. The library's total circulation in 2005 was 135,827.

Andrews University James White Library. James White Library is a large, multi-level research library that primarily serves students and faculty at Andrews University. Originally located on the second floor of the University's Administration Building, it quickly grew and when the library opened in its current location in 1962, it housed over 120,000 volumes. As

of this writing, the James White Library houses more than 750,000 volumes and nearly 3,000 periodical subscriptions, and annual circulation is approximately 80,000. The library also has a collection of non-print material, and its catalogue is available on the internet. Members of the community are permitted to use the library with the purchase of a community card, which costs \$36 annually.



image source: www.andrews.edu

Howard Performing Arts Center benefits both the University and the community

Andrews University Howard Performing Arts Center. Andrews University Howard Performing Arts Center is located on the university’s campus and is a cultural resource for the entire region. It serves as a performance venue for university orchestras and choirs, community-based musical groups, as well as visiting musicians. According to the University’s website, the center's broadcast and recording studios will provide a new home for WAUS-FM, the campus public radio station. In addition, the facility will be available to schools, civic groups and other organizations for special events and educational programs.



The 1839 Courthouse in Berrien Springs is the oldest Courthouse in Michigan

1839 Courthouse Square. Located in Berrien Springs, this is the oldest Courthouse in the state of Michigan. It was used as a Courthouse until 1894, when the County seat was moved from Berrien Springs to St. Joseph. Since that time, new owners re-used the buildings on the courthouse square for various uses including a dance hall, church, and low-income apartments. Today the square houses a County museum, archives and serves as headquarters for the Berrien County Historical Association. Its original buildings are listed on the National Register of Historic Places. Also included in this historical site is the Sheriff’s residence, the old County Office building, a two-story log house and a blacksmith shop.

Public Safety Services and Facilities

Police. Oronoko Charter Township is served by the Berrien Springs Oronoko Township Police Department, which is funded entirely by Oronoko Township. This police department is comprised of ten full- and part-time policed officers, which are complimented by a reserve division that of citizens that provide support to officers and community events. The department’s personnel consist of the Chief of Police, Patrol Lieutenant, Detective and Patrol Officers.

Officers also participate in several county task force operations including the Sheriff’s Tactical Response Unit, the Homicide Task Force, the Fire Investigation Task Force and various county wide traffic enforcement initiatives.



Fire and Rescue. The Township is served by the Berrien Springs/Oronoko Township Fire Department, which is a volunteer fire department consisting of 28 firefighters. The department's personnel are also trained in search & rescue, vehicle extrication, hazardous material awareness, swift water rescue, ice rescue, carbon monoxide alarm responses and some members are also trained as First Responders.

PLANNING IMPLICATIONS

Recreational and cultural opportunities are plentiful for Oronoko Township Residents. However, if Oronoko Township experiences the growth that is outlined in Chapter 3, it will create a need for additional facilities and services, as well as additional demand on the revenue available to support those services.

Recent residential development in the Township implies a need to ultimately address the cost-revenue ratio for the Township and other municipal services. Typically, 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.⁹ This suggests that the Township should work towards diversifying its tax base and consider growth or redevelopment of industrial and commercial uses, or ultimately need to face the prospect of higher local tax rates to support the higher demands for services in the community.

Furthermore, the Township's agricultural businesses and wineries provide an important and unique service within the community, and care should be taken to support their active role in the community, and to resist low-density residential development patterns that might encroach on their viability.

⁹ Thomas, Holly L. *The Economic Benefits of Land Conservation*, Planning & Zoning News, January, 1993

CHAPTER 7. UTILITIES & TRANSPORTATION

TRANSPORTATION

Transportation plays a critical role in determining the nature and intensity of land uses that occur throughout a community

A safe and well-balanced transportation network is essential to the health of any jurisdiction, as it links activities and land uses within a community to those in the broader region. Transportation plays a critical role in determining the nature and intensity of land uses that occur throughout a community. Oronoko Township has a wide variety of land uses and in turn a rather diverse transportation network, providing its residents with a mixture of transportation experiences, from winding rural roads to busy limited-access highways.

The Township's land uses do not generate congestion on the level that many Berrien County communities experience. Further, most roads in Oronoko Township navigate straight through the Township, providing sufficient connections with neighboring communities.

This chapter of the Community Profile will chronicle the characteristics of the Township's transportation system as it pertains to quality of life and land use planning.

Road 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 was devised by the Berrien County Road Commission. This classification system is shown on Map 7 and contains the following categories:

- Interstate Highway
- State Highway
- County Road, Primary System (paved)
- County Road, Local System (paved)
- County Road, Local System (unpaved)
- Private Road

The following table contains a breakdown of the highways and County primary roads in the Township based on their classification system by the Berrien County Road Commission.

Oronoko Charter Township

Berrien County, Michigan

Map 7 Road Classification

Legend

-  Interstate Highway
-  State Highway
-  County Road, Primary System (Paved)
-  County Road, Local System (Paved)
-  County Road, Local System (Unpaved)
-  Private Road
-  No Data

Source: Berrien County and the Michigan Center for Geographic Information

1 inch = 3,500 feet



Williams & Works

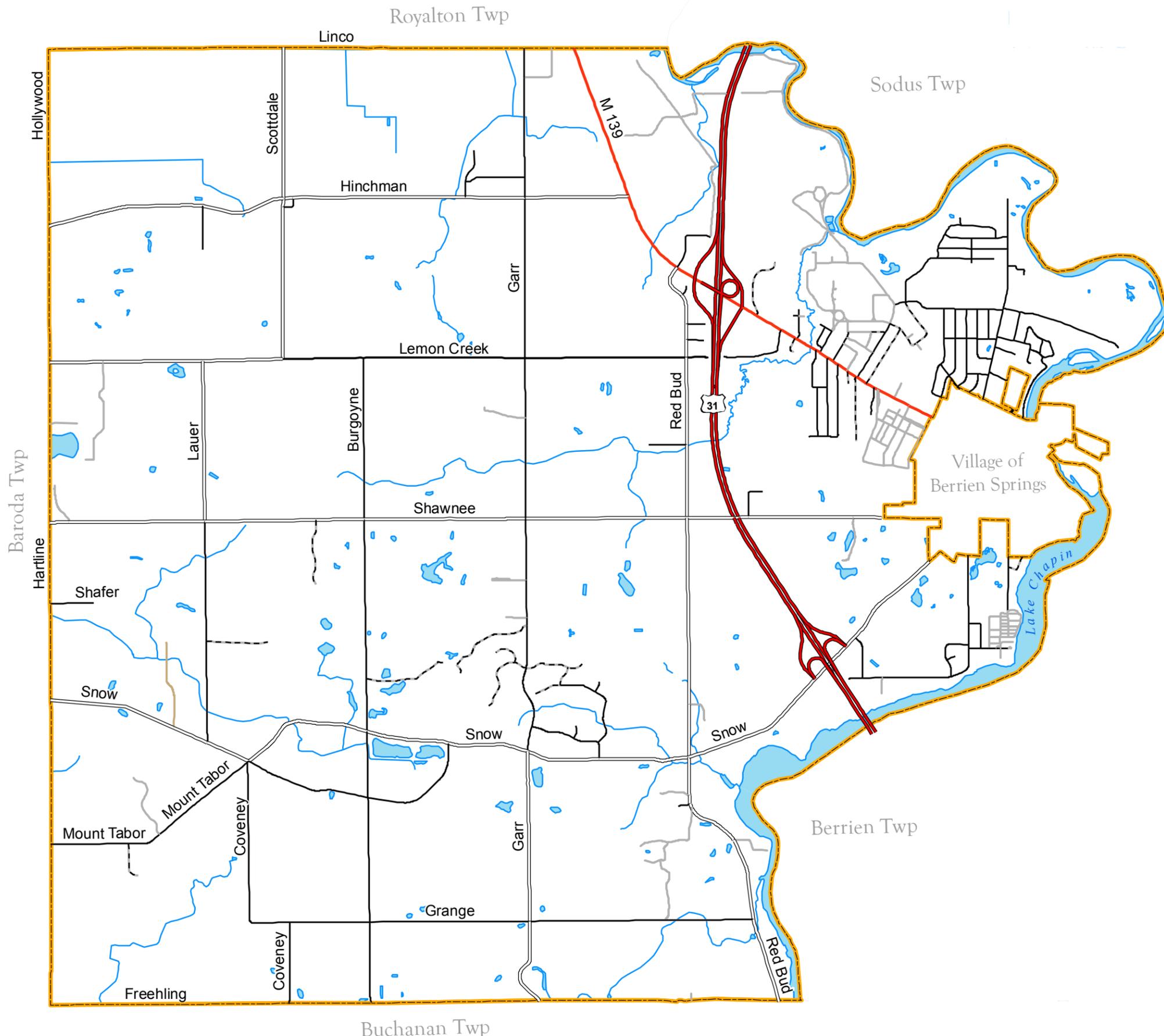


Table 7.1. Highway and Primary Road Classifications
Oronoko Charter Township

Interstate Highways
US-31
State Highways
M-139 (Old US-31)
County Road, Primary System
Hollywood Road
Hinchman Road
Scottdale Road
Linco Road (part)
Lemon Creek Road (part)
Lauer Road
Shawnee Road
Snow Road
Garr Road (part)
Red Bud Trail
Hills Road

Most of the roads in the rural parts of the Township run north-south or east-west, generally along section lines. In some instances, however, roads are routed around natural features such as rolling hills or open water. The Township contains three crossings over the St. Joseph River: twice along US-31 and M-139 in the Village of Berrien Springs.

Commuting Patterns

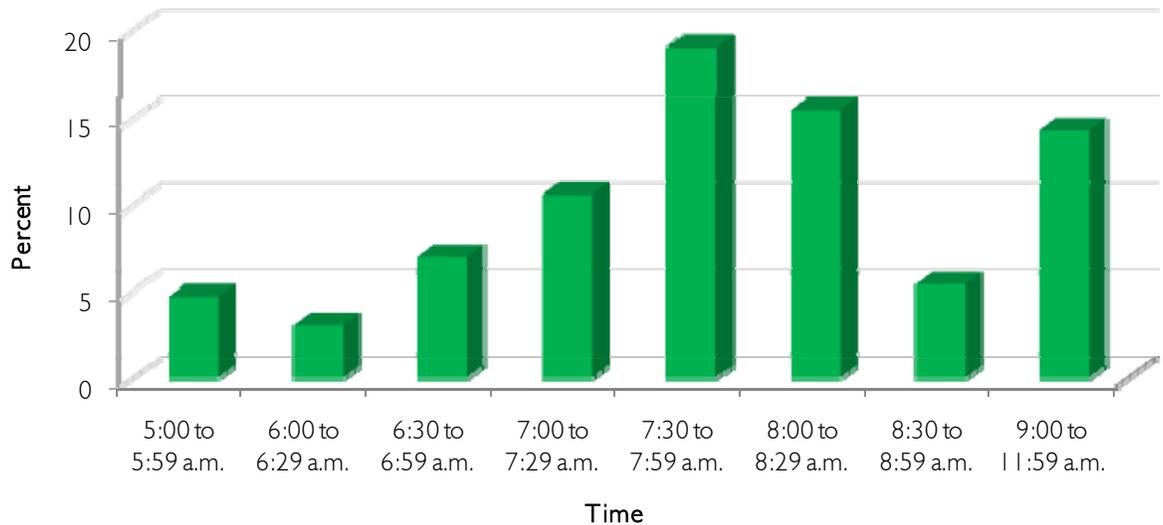
Nearly half of the Township's working population works outside of Oronoko Township

According to 2000 Census data, nearly half of the Township's working population travels outside the Township for work. Additionally, about 8% of the Township's residents work in a different County. Conversely, about 45% of the Township's workers live in a different community and about 8% live in a different County. This has significant implications with regard to the transportation network, as a large portion of the Township's residents and workers utilize the regional transportation network to access employment.

Of Township residents who work in another community, about 17% work in the City of St. Joseph, about 10% work in Benton Charter Township, and about 10% work in St. Joseph County, Indiana. However, the overwhelming majority (91%) of Township's working population works within Berrien County.

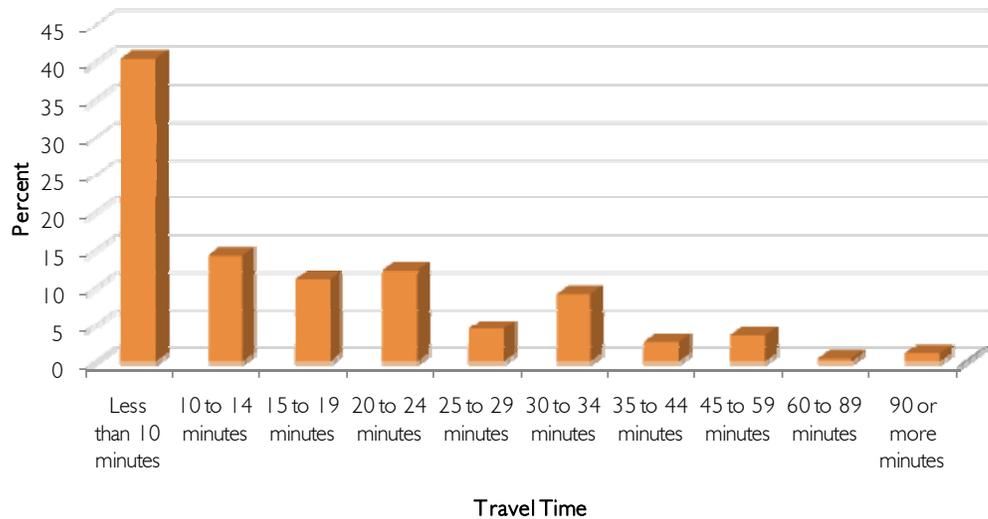
Most of the Township’s residents (66.2%) drove to work alone, but a significant portion (12.2%) shared a ride, and a slightly larger portion (15.8%) walked to their jobs, according to the 2000 Census.

Figure 7.1
Peak Travel Times, Morning Commute
Oronoko Charter 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 around 8 am. Most residents who work outside of the Township work within a 15 to 30 minute drive of the Township. Figure 7.1 illustrates morning commute peak travel times, and Figure 7.2 illustrates the travel time to work for Township residents, based on 2000 Census data.

Figure 7.2
Travel Time to Work
Oronoko Charter Township



Travel Conditions and Traffic Volumes

US-31 is an important route both locally and regionally. US-31 in Michigan begins at the Indiana state line, 3 miles south of US-12 near White Pigeon, and terminates at I-75 near the Mackinac Bridge, just south of Mackinac City, Michigan. US-31 has become an important route in Michigan, connecting the Township to many population centers in western Michigan including St. Joseph, Holland, Grand Haven and Muskegon. Locally, US-31 serves as the major north/south connection between the Township and employment and commerce centers such as Niles, the Benton Harbor/St. Joseph area and South Bend, Indiana. Approximately 4 ½ miles of US-31 are contained within Oronoko Township. This limited-access highway as two interchanges in the Township: one at M-139 and one at Snow Road. According to data compiled by the Michigan Department of Transportation (MDOT), US-31 in Oronoko Township carries approximately 10,000 vehicles per day.

Approximately 10,000 vehicles travel along US-31 each day in the Township

M-139 (Old US-31) is another major road in the Township, connecting employment centers in St. Joseph and Niles. In addition, the segment of Old US-31 in the Township between US-31 and Berrien Springs has seen commercial development, providing services to local and regional traffic. M-139 carries between 6,000 and 8,000 vehicles per day in the Township, according to MDOT.

Below is a table showing a breakdown of traffic volume for selected roads in the Township. The traffic counts were collected by the Berrien County Road Commission, the Southwest Michigan Planning Commission and the Michigan Department of Transportation.

**Table 7.2. Selected Traffic Counts
Oronoko Charter Township, 2003-2008**

US-31			
Location	Count	Year	Source
South of Snow	7,883	2002	MDOT
South of Snow	9,866	2006	MDOT
South of Snow	10,102	2008	MDOT

M-139			
Location	Count	Year	Source
North of US-31	7,983	2005	MDOT
North of Hinchman	6,331	2006	MDOT

Garr Road			
Location	Count	Year	Source
North of Shawnee	392	2002	BCRC
South of Shawnee	483	2002	BCRC
South of Snow	309	2006	BCRC
South of Linco	385	2008	BCRC
North of Shawnee	322	2008	BCRC

Hinchman Road			
Location	Count	Year	Source
West of M-139	1,567	2004	SWMPC
East of Hollywood	1,458	2005	BCRC
West of M-139	1,885	2005	BCRC
West of M-139	1,507	2005	BCRC

Lemon Creek Road			
Location	Count	Year	Source
East of Hollywood	1,527	2002	BCRC
West of Scottdale	1,589	2004	SWMPC
West of Red Bud	1,343	2004	SWMPC
East of Scottdale	1,213	2004	SWMPC
West of Scottdale	1,279	2005	BCRC
West of Red Bud	969	2008	BCRC

Red Bud Trail			
Location	Count	Year	Source
South of Shawnee	2,313	2003	BCRC
South of Lemon Creek	2,380	2003	BCRC
North of Lemon Creek	3,784	2004	SWMPC
North of Shawnee	2,334	2004	SWMPC
South of Shawnee	2,225	2004	SWMPC
South of Shawnee	1,819	2008	BCRC

Shawnee Road			
Location	Count	Year	Source
East of Garr	2,882	2002	BCRC
West of Garr	2,764	2002	BCRC
East of US-31	2,753	2002	BCRC
East of Lauer	3,314	2004	SWMPC
East of Lauer	2,752	2005	BCRC
West of Village Limits	2,437	2008	BCRC

Snow Road			
Location	Count	Year	Source
East of Tudor	1,783	2002	BCRC
West of Tudor	3,258	2002	BCRC
East of Tudor	2,062	2004	SWMPC
East of Tudor	2,704	2005	BCRC
West of Red Bud	916	2006	BCRC
West of Garr	588	2006	BCRC
East of Red Bud	2,730	2008	BCRC
North of Mt. Tabor	290	2008	BCRC

BCRC: Berrien County Road Commission
 SWMPC: Southwest Michigan Planning Commission
 MDOT: Michigan Department of Transportation

Generally, traffic on the Township's roads flows smoothly and there are few congestion concerns. Vehicular traffic flow is heaviest towards the eastern portion of the Township, since these areas have absorbed most development in the Township. However, traffic in the Township is currently manageable.



Andrews University Airpark is located just east of US-31



Berrien Bus provides mass transit services to numerous destinations in Berrien County

Public and Air Transportation

Andrews University Airpark. While there are no commercial airports in the Township, Andrews University Airpark is located south of Old US-31 and east of US-31. The Airpark primarily serves students participating in the University's Program of Aviation Flight, although it is available for use by members of the Community as well. The University owns seven aircraft and 30 hangars.

The nearest commercial airports include the Michiana Regional Transportation Center in South Bend, Indiana, and the Kalamazoo International Airport in Kalamazoo.

Berrien Bus. Berrien Bus is a nonurban system that provides public transportation to Township residents. This service is headquartered in Berrien Springs and offers regularly-scheduled daily trips to destinations across the County including Benton Harbor, St. Joseph, Niles, Coloma, Watervliet and others. Additionally, Berrien Bus offers a demand-response service where riders can schedule a ride at least a day in advance.

Fares for Berrien Bus are \$2.00 for riders who live within five miles of the Village, and \$4.00 for riders who live more than five miles from the Village. Senior citizens over the age of 60 receive a 50% discount off the regular fares.

UTILITIES

Most residents of the Township rely on private wells and septic systems to meet their water and wastewater needs

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.

The source of Berrien Springs' water supply is groundwater, and the currently this water plant has sufficient capacity to provide water services to additional homes if it is needed. As for wastewater, a new treatment plant was recently constructed on the east side of the St. Joseph River, and this facility also has capacity to accommodate additional users, if expansion becomes necessary.

Water

Residents of Oronoko Township generally rely on private wells to meet their needs for clean drinking water. The Village of Berrien Springs and Andrews University both own and operate their own water and sanitary sewer systems. The Berrien Springs system serves a portion of Township residents.

Areas in Oronoko Township served by public water services consist of the Kephart Woods neighborhood to the north of the village, as well as some properties along Shawnee Road and Snow Road. Along Shawnee, a water line extends a short distance to the west of the Village limits. Along Snow Road, a water line extends from the Village to the Township's Public Safety building located about ¼ mile southwest of the Village.

Sewer

Currently, the Village of Berrien Springs provides sewer services to a limited number of areas in the Township. Along Shawnee Road, a sewer line extends a short distance to the west of the Village limits. Along Snow Road, a water line extends from the Village to the Township's Public Safety building located about ¼ mile southwest of the Village. Additionally, an apartment complex on Rose Hill Road, south of the Village limits, is also served.

PLANNING IMPLICATIONS

While the current transportation system in the Township functions smoothly, increasing population and development pressures may begin to increase congestion on the transportation network. A smooth and efficient transportation network is critical for a community experiencing population growth, and as Oronoko Township's population increases, the transportation network will have to be analyzed. Possible topics for study should include not only at traffic volume and conditions, but roadway surfaces, access management and vehicular and pedestrian safety.

Currently, there are no plans to extend water or sewer utilities in the near future. However, if the growth trends outlined in Chapter 3 are realized, the Township may need to consider adding additional water and wastewater utilities to Township residents.

CHAPTER 8. CONCLUSIONS AND NEXT STEPS

CONCLUSIONS

The preceding chapters presented a broad range of summary information related to current conditions and the planning trends that are apparent and emerging in Oronoko Charter Township. In the context of the update of the Master 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. Oronoko Township's natural features and rural character will likely continue to draw attract new residents, resulting in continued residential development. This trend has become evident in new developments that have occurred in rural portions of the Township. Currently, the pace and scale of growth is expected to be manageable, but there is a risk that without effective planning, growth will begin to degrade the natural resources that attract it.

To avoid such a scenario, the Township's should consider land use policies during the master planning process that protect natural features to the greatest extent possible.

2. The population projections in Chapter 3 suggest that the Township will grow to more than 11,000 persons by 2030. Such an increase has numerous land use challenges:
 - Nearly 400 new housing units, based on the Township's average of 2.62 persons per household, according to the 2000 Census.
 - Nearly 10,000 additional car trips per day¹⁰
 - Approximately 137 acres of land consumed by development at current densities in the R-1 district, or about 400 acres at current densities in the AG or E-1 district.
3. Current patterns of are relatively low-density in nature, and much of the new development has occurred in relatively isolated locations. This implies a continued reliance on the private auto for most day-to-day activities.

¹⁰ Institute of Traffic Engineers, *Trip Generation*, 7th Edition, 2003.

4. Based on the build-out analysis, the Township plans to accommodate more than 50,000 persons, although given the current rate of growth, build-out will not be reached for hundreds of years. This suggests that the Township's current zoning standards provide little guidance or direction to new growth.
5. The current potential for additional low-density growth threatens to undermine the agricultural and winery operations that are critical to the Township's identity, culture and history. As the master planning process continues, the Township should consider the potential impact that land use decision may have on agricultural uses.
6. Currently, the extent of public water and sewer utilities in the Township is limited. However, increased population growth may be accompanied by increased demand for utilities. The Township should consider directing where utilities may be located, thereby placing the Township in a better position to implement land use management goals.
7. The Township's 1999 Comprehensive Plan included a wide range of goals and objectives including controlling the growth rate, preserving agricultural lands and encouraging commercial and industrial growth. Some of these objectives have been achieved, while others may require further attention or refinement. This implies a need to evaluate carefully the policy statements expressed in earlier planning exercises in the context of updated demographic and social information to either renew and re-energize those ideas or alter them as appropriate.

NEXT STEPS

The Community Profile Report provides a brief “snapshot” of Oronoko Charter 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 an informative “work book” for the Planning Commission as it proceeds in its efforts to update the Master Plan.

As a subsequent step to the finalization of this report, the Township intends to undertake a community-wide open house and visioning 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.

With the benefit of that community input, the Planning Commission will re-examine the goals, objectives and strategies outlined in the 1999 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 visioning 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.

REFERENCES

The following agencies, websites, official reports, and individuals were consulted in the compilation of the Oronoko Charter Township Community Profile. Where conclusions or specific data was drawn from a source, it is noted in parentheses or in footnotes within the text. In all instances, the reader is encouraged to consult the sources noted below.

Andrews University Website. www.andrews.edu

Berrien County Historical Association website,
<http://www.berriehistory.org/>

Berrien County Road Commission, Township Maps

Berrien County Traffic Counts, 2002-2007

Berrien Springs Public Schools Website.
<http://www.homeoftheshamrocks.org/>

Buchanan Community Schools Website.
<http://www.buchananschools.com/>

Friends of the St. Joseph River Association <http://www.fotsjr.org/> accessed September 2008

Greater Berrien Springs Recreation Department website, <http://gbsrd.org/>

Great Lakes Commission, Great lakes Tributary Modeling Program
<http://www.glc.org/tributary/models/stjoseph.html> accessed September 2008

Lakeshore Community Schools Website.
<http://www.lakeshoreschools.k12.mi.us/>

Lower St. Joseph / Galien River Watershed Management Plan. December 2007.

Mark Wyckoff and Erin Kilpatrick, *Planning & Zoning News*, April 2002

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

Michigan Center for Geographic Information, Geographic Data Library.
accessed October 2008

Michigan Department of Labor and Economic Growth, Labor Market Information

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

Michigan Department of Transportation Traffic Monitoring Information System, Accessed October 2008.

National Center for Education Statistics, Library Statistics Program

Oronoko Charter Township Demographics, prepared by Berrien County Community Development Department

Oronoko Charter Township Website, www.oronokotownship.org

River Valley School District Website. <http://www.rvschools.org/>

Southwest Michigan Planning Commission Traffic Counts, 2001-2005

Unemployment statistics online, accessed October 2008

United States Census Bureau

West Michigan Growth Statistics. August 2008. Prepared by The Right Place, Inc.

www.greatschools.net