

Oshtemo Township Master Plan Update

2017

CHARTER TOWNSHIP OF OSHTEMO
KALAMAZOO COUNTY, MICHIGAN
DRAFT REPORT, JANUARY 12, 2018

Acknowledgments

This document is an update addendum to the 2011 Oshtemo Township Master Plan. It was prepared by the Oshtemo Township Planning Commission through the engagement of citizens and stakeholders of the Township at various meetings, workshops and an online engagement portal. This Plan recognizes the contributions of all who participated in the planning process.

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Introduction and Planning Drivers

OSHTEMO TOWNSHIP MASTER PLAN UPDATE 2017



Land Use Classification Legend

- Residential Single-Family
- Residential Medium-Density
- Residential High-Density
- Commercial
- Industrial
- Community Center
- Office
- Public Use
- Open Space
- Water

All Drive South Sub-Area

PRISMACOLOR



Introduction

This 2017 Master Plan Update document is an addendum to the Oshtemo Township 2011 Master Plan, which was originally adopted by the Township Board on September 11, 2012, upon recommendation by the Township Planning Commission. This 2017 Master Plan Update was adopted by the Township on _____, 2017.

According to the Michigan Planning Enabling Act (P.A. 33 of 2008), the Planning Commission is required to review the master plan at least every five years and determine whether updates to the plan are necessary. Consistent with the Act, the Township Planning Commission has determined that this 2017 Master Plan Update is necessary to account for changing conditions and emerging trends, including increased growth pressures and new economic realities facing the Township.

The primary purpose of the 2017 Master Plan Update is four-fold:

1. To document key trends influencing land use planning and development at the local level
2. To prepare a new Rural Character Preservation Strategy
3. To prepare a new sub-area plan for Maple Hill Drive South
4. To outline minor modifications to the Future Land Use Plan and Map

This document includes four chapters. The first three chapters supplement the original 2011 Master Plan. The fourth chapter, Future Land Use Plan, replaces Chapter 8 from the 2011 Master Plan.

Planning Drivers

As a framework for the evaluations and proposals included in this 2017 Master Plan Update, this “planning drivers” narrative documents the key local, state, and national trends which are influencing planning and development decisions at the local level.

Population Trends and Projections

Within the United States, total population is on the rise. The U.S. population passed the 300 million mark in 2006 and stands at 317 million as of November 2013. Further, the U.S. population is projected to cross the 400 million mark by 2051. Notably, the U.S. is alone among industrialized nations experiencing substantial population growth.¹

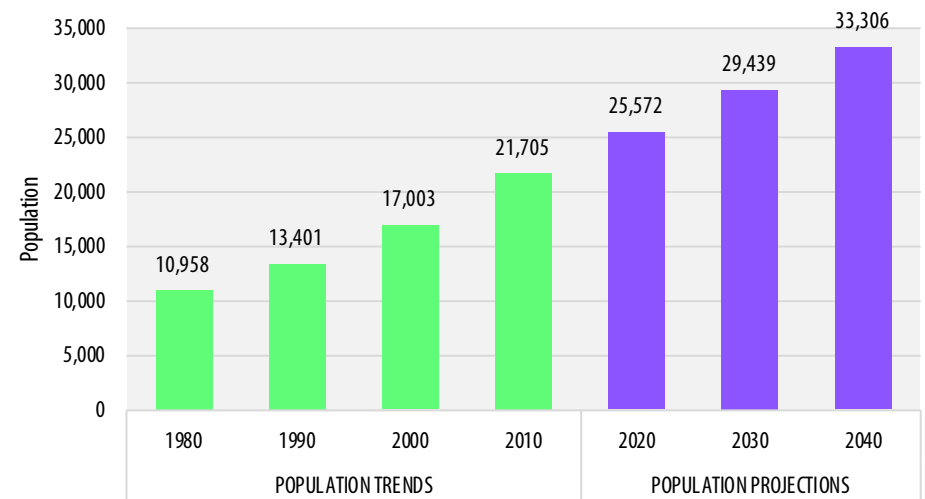
At the local level, population growth is steady and strong. Between 1980 and 2010, Oshtemo Township’s population nearly doubled, from 10,958 to 21,705. Projections from the 2011 Master Plan suggest that the Township’s population will continue to increase steadily, reaching more than 33,000 residents by the year 2040. (See **Figure 1**)

Although the projections from the 2011 Master Plan are somewhat dated, they are consistent with outside data sources such as Esri’s Demographic and Income Profile, which indicates that the Township’s population stands at 22,671 as of 2016 and is expected to increase to 23,575 by 2021. Thus, the 2011 Master Plan projections are determined to be reasonable and appropriate for planning purposes in this 2017 Master Plan Update.

DATA CONCLUSION: EXPECTED POPULATION GROWTH WILL RESULT IN CONTINUED DEMAND FOR MORE HOUSING AND SERVICES IN OSHTEMO TOWNSHIP.

¹ Paragraph Sources: U.S. Census Bureau Projections Show a Slower Growing, Older, More Diverse Nation a Half Century from Now. U.S. Census Bureau, December 12, 2012; The Next 100 Million. By Arthur C. Nelson and Robert E. Lang. Planning Magazine, January 2007.

Figure 1
Population Trends and Projections
Oshtemo Township, 1980-2040



Population Source: U.S. Census Bureau
Population Projection Source: Oshtemo Township Master Plan 2011

Population, Household and Family Growth

Over the next 5 years, the number of citizens, households and families within Oshtemo Township is expected to expand at an annual rate that is close to the national average. However, Oshtemo Township’s annual population, household and family growth rates are nearly triple those of the State of Michigan as a whole. (See **Table 1** and **Table 2**)

DATA CONCLUSION: EXPECTED POPULATION, HOUSEHOLD AND FAMILY GROWTH WILL RESULT IN CONTINUED DEMAND FOR MORE HOUSING AND SERVICES IN OSHTEMO TOWNSHIP.

Table 1
Population, Household and Family Trends and Estimates
Oshtemo Township, 2010-2021

CATEGORY	2010	2016	2021
Population	21,705	22,671	23,575
Households	9,708	10,077	10,465
Families	4,787	4,897	5,048

Source: Esri Demographic and Income Profile, 2016

Table 2
Population, Household and Family Growth Rates
Oshtemo Township, Michigan and United States, 2016-2021

GEOGRAPHY	2016 - 2021 ANNUAL GROWTH RATE ESTIMATES		
	POPULATION	HOUSEHOLDS	FAMILIES
Oshtemo Township, MI	0.79%	0.76%	0.61%
Michigan	0.23%	0.28%	0.16%
United States	0.84%	0.79%	0.72%

Source: Esri Demographic and Income Profile, 2016

Diversity

At both the national and local level, trends point toward increasing population diversity. For the United States, the following statistics demonstrate changing demographics:²

- Minorities account for 37% of the U.S. population as of 2012
- Minorities will account for 57% of the U.S. population by 2060
- The Hispanic population will more than double, from 53 million in 2012 to 129 million by 2060
- The U.S. will become a majority-minority nation for the first time in 2043

Within Oshtemo Township, based on Esri's Demographic and Income Profile, the white population will dip from 80.0% of the total population in 2010 to 76.0% in 2021, while minority races will all increase during the same time period.

DATA CONCLUSION: INCREASINGLY DIVERSE CITIZENS MAY REQUIRE VARIED SERVICES, HOUSING, SHOPPING, AND RECREATIONAL OPTIONS WITHIN OSHTEMO TOWNSHIP.

² Paragraph Sources: U.S. Census Bureau Projections Show a Slower Growing, Older, More Diverse Nation a Half Century from Now. U.S. Census Bureau, December 12, 2012.

Generational Composition

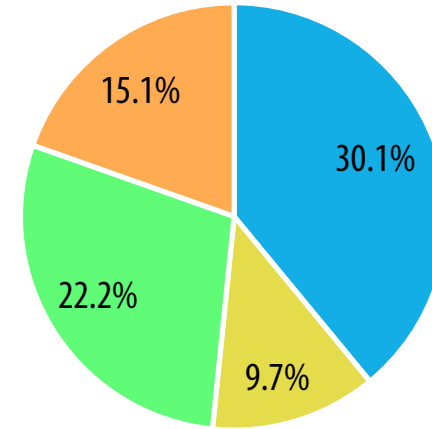
Community planning must respond to the services different age groups will demand. Therefore, it is important to identify the composition of local residents by age cohort. **Figure 2** shows the generational composition of Oshtemo Township as of 2010. The “Veteran Generation”, comprised of those who in 2010 were age 65 or older, contains 15.1% of the Township population. The “Baby Boomers”, who were 46 to 64 years old in 2010, comprise 22.9% of the population. “Generation X”, who were 30 to 45 years old in 2010, makes up 9.7% of the Township population. Finally, “Generation Y”, who were less than 29 years old in 2010, comprises the largest segment of the Township population at 30.1%.

Two key generational trends are occurring at the national level. First, the Baby Boomer generation is aging. This is demonstrated by the growth in the age groups containing citizens 55 years and older. Within the U.S. between 2015 and 2060, the 55 to 64 age population will increase from 83 million to 97 million. During this same time, the 65+ age population will double from 48 million to 92 million. The 85+ age population will triple from 6 million to 18 million. A second key generational trend is the growth in Generation Y, which numbered 73 million in 2000, and will increase to 82 million by 2030. The growth in the U.S. population aged 20 to 29 alone will increase from approximately 38 million citizens to 44 million citizens over a 15 year span.³

DATA CONCLUSION: PLANNING POLICIES IN OSHTEMO TOWNSHIP MUST RECOGNIZE THE NEEDS AND PREFERENCES OF AGE GROUPS SUCH AS THE AGING BABY BOOMERS AND THE GROWING GENERATION Y.

³ Paragraph Source: Projections of the Population by Selected Age Groups and Sex for the United States: 2015 to 2060. U.S. Census Bureau, December 2012.

Figure 2
Generational Composition
Oshtemo Township, 2010



■ Generation Y (Less than 29 years old in 2010) ■ Generation X (30-45 years old in 2010) ■ Baby Boomers (46-64 years old in 2010) ■ Veteran Generation (65 year old or older in 2010)

Source: Esri Demographic and Income Profile, 2016

Age Trends and Estimates

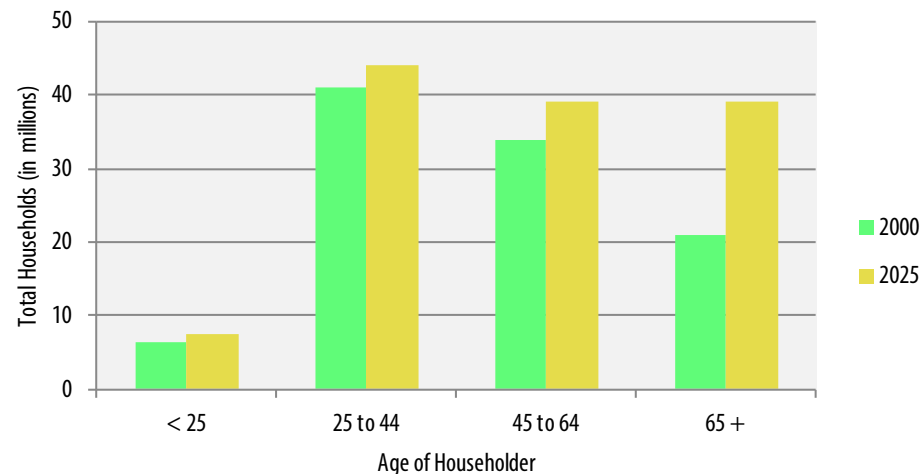
As shown in **Figure 3**, households within the United States are increasingly becoming older. Although all household types are expected to grow within the U.S. between 2000 and 2025, the number of households headed by a householder older than 65 years is expected to nearly double, from just over 20 million households to just under 40 million.

Figure 4 illustrates the various age groups within Oshtemo Township and their changing composition (percentage) of the overall Township population as of 2010, 2016 and 2021. The only age group which grew as a percentage of the total population between 2010 and 2016, and which is also expected to grow through 2021, is the 65 years and older age group. (The 35 to 44 years age group declined between 2010 and 2016, but is expected to grow slightly through 2021.) The age group with the sharpest decline between 2010 and 2021 was the 20 to 34 years age group (2.1 percentage point decline). However, the 20 to 34 years age group still makes up the largest segment of the Township's population.

Median age trends and estimates also demonstrate an aging population. The Township's median age increased from 32.3 years in 2010 to 33.6 years in 2016. The median age is expected to further increase to 35.6 years by 2021.

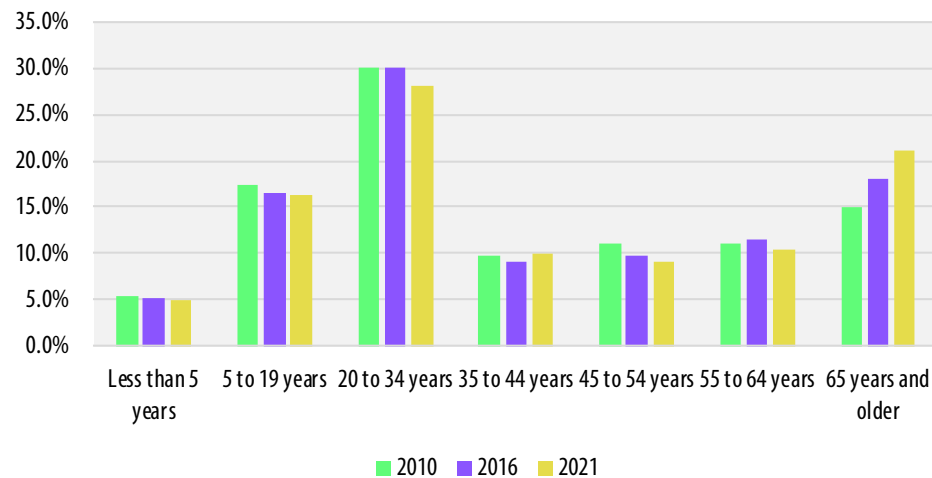
DATA CONCLUSION: AN AGING POPULATION WILL IMPACT THE TYPE OF SERVICES NEEDED AND PREFERENCES FOR HOUSING, TRANSPORTATION, RECREATION, SHOPPING, AND OTHER AMENITIES.

Figure 3
Households by Age of Householder
United States, 2000-2025



Source: Housing for Niche Markets, Capitalizing on Changing Demographics. Urban Land Institute, 2005.

Figure 4
Age Group Trends and Estimates
Oshtemo Township, 2010-2021



Source: Esri Demographic and Income Profile, 2016

Tapestry Segmentation and Lifestyle Characteristics

Various commercial data services, including Esri, provide demographic analyses which identify certain lifestyle characteristics from traditional demographic data. These analyses go beyond income, age, and employment and assess the lifestyle characteristics of populations and address subjects like housing type preferences, spending habits, leisure preferences, and family associations.

Esri's Tapestry Segmentation is a geodemographic system that identifies 68 distinctive markets in the U.S. based on socioeconomic and demographic characteristics to provide an accurate, comprehensive profile of U.S. consumers. Of the 68 tapestry segments within the United States, six are found in Oshtemo Township, the largest segment being the College Town segment, followed by Retirement Communities and Green Acres. (See **Table 3**)

As developed by Esri, a detailed "profile" for each of the six tapestry segments found within Oshtemo Township is included in the **Appendix**. The sidebar on the next page includes a narrative description for the Top 3 tapestry segments within Oshtemo Township.

DATA CONCLUSION: PLANNING POLICIES IN OSHTEMO TOWNSHIP MUST RECOGNIZE THE LIFESTYLE PREFERENCES OF ITS CITIZENRY, AS DOCUMENTED IN THE TAPESTRY PROFILE.

Housing

Housing data for this section was obtained from Esri's Housing Profile for Oshtemo Township. As can be expected in a community with a growing population, the total number of housing units within Oshtemo Township has increased since 2010 and is expected to continue to increase through 2021. (See **Figure 5**) Overall demand for housing is on the rise, as evidenced by a decline in the housing vacancy rate from 8.9% in 2010 to 7.3% by 2021. This comparatively low vacancy rate (the State-wide vacancy rate is approximately 15%) also demonstrates a tight housing market. Finally, the overall value of housing within Oshtemo Township is expected to increase, from a median value of \$188,646 in 2016 (average value of \$194,779) to \$204,238 by 2021 (average value of \$212,149).

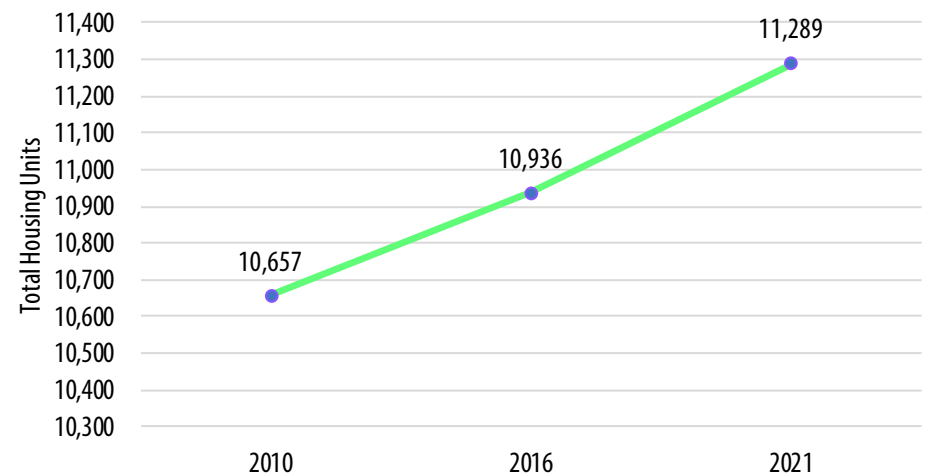
DATA CONCLUSION: HIGH DEMAND FOR NEW HOUSING WILL LEAD TO HOUSING UNIT GROWTH AND A TIGHT LOCAL HOUSING MARKET WILL CONTRIBUTE TO HIGHER HOUSING UNIT VALUES.

Table 3
Tapestry Segmentation
Oshtemo Township, 2016

TAPESTRY SEGMENT	2016
College Towns	37.3%
Retirement Communities	17.1%
Green Acres	13.5%
Exurbanites	10.8%
Middleburg	10.7%
Old and Newcomers	10.7%
TOTALS	100.0%

Source: Esri Tapestry Segmentation Area Profile

Figure 5
Housing Unit Trends and Estimates
Oshtemo Township, 2010-2021



Source: Esri Housing Profile, 2016

Who Are We?

Top 3 Community Tapestry Segments in Oshtemo Township

College Towns

About half the residents of College Towns are enrolled in college, while the rest work for a college or the services that support it. Students have busy schedules, but make time between studying and part-time jobs for socializing and sports. Students that are new to managing their own finances tend to make impulse buys and splurge on the latest fashions. This digitally engaged group uses computers and cell phones for all aspects of life including shopping, school work, news, social media, and entertainment. College Towns are all about new experiences, and residents seek out variety and adventure in their lives.



Retirement Communities

Retirement Communities neighborhoods are evenly distributed across the country. They combine single-family homes and independent living with apartments, assisted living, and continuous care nursing facilities. Over half of the housing units are in multi unit structures, and the majority of residents have a lease. This group enjoys watching cable TV and stays up-to-date with newspapers and magazines. Residents take pride in fiscal responsibility and keep a close eye on their finances. Although income and net worth are well below national averages, residents enjoy going to the theater, golfing, and taking vacations. While some residents enjoy cooking, many have paid their dues in the kitchen and would rather dine out.



Green Acres

The Green Acres lifestyle features country living and self-reliance. They are avid do-it-yourselfers, maintaining and remodeling their homes, with all the necessary power tools to accomplish the jobs. Gardening, especially growing vegetables, is also a priority, again with the right tools, tillers, tractors, and riding mowers. Outdoor living also features a variety of sports: hunting and fishing, motorcycling, hiking and camping, and even golf. Self-described conservatives, residents of Green Acres remain pessimistic about the near future yet are heavily invested in it.



Content and Imagery Source: Esri Tapestry Segmentation Profile

National and Emerging Housing Type Trends

Since the middle of the twentieth century, the single-family detached home has played a dominant role in the housing market. Owning such a home was widely considered the primary element of the “American Dream.” A strong economy, the development of the interstate highway system, favorable tax laws, and easy financing led to rapid development of the suburbs with predominantly low-density housing. The home-ownership rate soared, reaching nearly 70% by the mid-2000s. However, the “Great Recession” that hit in late 2007 brought a housing market crash whose impacts are still felt today. Recovery from the recession has occurred, but the characteristics of the housing market appear to have moved in a different direction, steered by various demographic changes occurring within the United States. These changes include racial and ethnic diversification, a growing immigrant population, and an increasing percentage of non-traditional households. However, the growth and evolving preferences of the Baby Boomers and Generation Y has also had a major impact on housing supply and demand.

Once preferring large-lot detached homes, the aging Baby Boomer generation (born 1946 to 1964) is expanding the nation’s senior population and increasing demand for “downsized” units and housing that caters to the needs of seniors. Despite a preference for many to age in place, a large number of Baby Boomers will be in search of new housing. According to housing market researcher Arthur C. Nelson, when those age 65 and older move, 80% will vacate single-family houses, but only 41% will move back into single-family units; the other 59% will be located in multi-family units.⁴

Now entering the housing market, Generation Y (those born between the early 1980s and the early 2000s) will account for 75% to 80% of the owner-occupied housing absorbed by people under 65 before 2020.⁵ Different from their parents living preferences, this generation prefers

4 Paragraph Source: Robert Steuteville, “The Coming Housing Calamity,” New Urban News, June 2011.

5 Source: “Demographic Challenges and Opportunities for U.S. Housing Markets,” Bipartisan Policy Center, March 2012.

housing in mixed-use urban environments and increasingly views renting as an advantageous option.

The following statistics demonstrate the changing trends and emerging preferences related to housing types:

- Since 2009, the number of owner-occupied housing units has fallen by over 300,000, while the number of renter occupied-housing units has risen by over 3 million⁶
- Renting is more appealing across all age groups, all parts of the U.S., city, suburb, small town and rural⁷
- The groups that are growing the fastest are people in their mid-20s and empty-nesters in their 50s. These are the groups that are most likely to seek an alternative to low-density, single-family housing.⁸
- More than 60% of Generation Y would prefer to live in a single-family dwelling. However, while this generation prefers single-family development, they do not have the financial resources to afford this type of product. They have been hit hard by the recession as they’ve entered independent adulthood. This has reduced their income and limited their ability to form households and attain homeownership.⁹
- The projected need for new housing units between 2005 and 2030 is equally divided between attached units including apartments, townhouses and condos, and small lots (on less than 1/6 acre), with no net increase projected in the need for houses on larger lots¹⁰

6 Source: Ryan Noonan, “Understanding the Trend in Multi-Family Housing Growth During the Recovery,” Economic and Statistics Administration, November 25, 2013.

7 Source: Jeffery Gundlach, Doubleline Capital CEO, as reported by ThinkAdvisor.com, May 7, 2014.

8 Source: Urban Land Institute, Higher Density Development: Myth or Fact, 2005

9 Source: 2011 National Community Preference Survey by the National Association of Realtors; RLCO Consumer Research Data; and, Bipartisan Policy Center, “Demographic Challenges and Opportunities for U.S. Housing Markets,” March 2012.

10 Source: John Pitkin and Dowell Myers, “U.S. Housing Trends: Generational Changes and the Outlook to 2050”, 2008.

- Americans' ideal communities have a mix of houses, places to walk, and amenities within an easy walk or close drive. Only 12% say they would prefer a suburban neighborhood with houses only¹¹

DATA CONCLUSION: CHANGING HOUSING TYPE TRENDS SUGGEST THAT OS-HEMO TOWNSHIP SHOULD ENDEAVOR TO PROVIDE A DIVERSIFIED HOUSING STOCK THAT PROVIDES HOUSING CHOICE FOR INDIVIDUALS OF ALL LIFESTYLES AND AGES.

Economic Trends -- "Placemaking" as an Economic Development Tool

According to the Michigan Economic Development Corporation, "placemaking" or "place-based economic development" aims to create quality places where people want to live, work, play and learn. It is driven by the economic imperative that businesses must attract and retain talent in order to succeed.¹²

The idea of using sense of place as an economic development tool has been growing in momentum and now is firmly entrenched throughout the State. In fact, the State of Michigan is building its economic development model on the idea of placemaking. Simplified, the idea of placemaking is to celebrate those elements that define a community -- the spaces, the culture and the quality of life -- to attract a range of new businesses and investments.

The age of providing tax breaks to lure industrial development and even the age of industrial or manufacturing growth as the primary pieces of economic development are over. While this may have hurt Michigan's economy over the last decade, the shifts in the economy have the potential to benefit the long term growth of a sustainable economy throughout the State, and locally in Kalamazoo and Oshtemo Township. A new economic development strategy for Oshtemo Township and the larger region will be the marketing of, and investments toward, its high quality of life, business districts, neighborhoods, educational and cultural in-

¹¹ Source: National Association of Realtors, "The 2011 Community Preference Survey", March 2011.
¹² Source: "Placemaking." Michigan Economic Development Corporation. <https://www.miplace.org/communities/placemaking/> Accessed April 2017.

stitutions, public school system, natural amenities, and access to recreational and outdoor amenities.

The following eight "assets of place" should be considered by the Township as focus areas for the implementation of place-based economic development through planning and zoning policies as well as investment decisions.¹³

1. Physical Design & Walkability
2. Green Initiatives (the way we use natural resources)
3. Arts & Culture
4. Entrepreneurship
5. Multiculturalism & the Global Workforce
6. Messaging & Technology
7. More Transportation Choices
8. Education & Institutions as an Anchor

DATA CONCLUSION: THE TOWNSHIP SHOULD PROMOTE THE EIGHT ASSETS OF PLACE IN ITS PLANNING AND ZONING POLICIES AND INVESTMENT DECISIONS, SEEKING TO CREATE QUALITY PLACES WHERE PEOPLE WANT TO LIVE, WORK, PLAY AND LEARN.


¹³ Source: The Economics of Place: The Value of Building Communities Around People. Edited by Colleen Layton, Tawny Pruitt & Kim Cekola. Michigan Municipal League. 2011.

Planning Drivers Conclusions

As documented in the following analysis, there are a handful of key factors that will continue to influence the direction of planning and development within Oshtemo Township.

Population, household, and family growth at the local level is leading to an increased demand for housing during the next 5 to 10-year planning horizon. The population of Oshtemo is expected to increase by close to 1,000 persons by 2021. With an average household size of 2.21 persons, housing is expected to increase by at least 460 units. Comparatively low vacancy rates (approximately 7% for Oshtemo in comparison to 15% for Michigan) demonstrate a tight housing market and will contribute to increased housing values. In addition, the changing housing trends suggest the Township should offer a more diversified housing stock, providing greater choice. For example, the groups that are growing the fastest in the housing market are people in their mid-20's and empty-nester's in the mid- to late-50's. Both of these groups are likely to seek alternative housing styles like multi-unit housing, townhouses, attached condominiums, and site condominiums on small, manageable lots.

In addition to housing, the increasingly diverse population (ages, ethnicities, lifestyles, etc.) of Oshtemo Township will require more varied services, shopping, transportation, and recreational options. The variation of services to address a more diverse population will primarily be private-market driven. However, the planning policies and regulatory requirements of the Township must recognize the lifestyle preferences of its citizenry, specifically of differing age groups like the Baby Boomers and the growing Generation Y. One way to assist with varied economic development opportunities is to encourage "placemaking" as a tool to create quality places where people want to live, work, play, and learn. Incorporating the eight "assets of place" tools into the regulatory requirements of development helps to define Oshtemo and its culture, hopefully attracting a range of new businesses and investments.

A green tractor is shown from a first-person perspective, mowing a field of tall grass. The tractor's front wheel and a portion of its hood are visible in the lower foreground. The field is lush green, with the mowed path curving through it. In the background, there is a line of trees under a clear blue sky.

Rural Character Vision Statement for the Study Area:

APPRECIATE, PRESERVE, PROTECT AND ENHANCE THE NATURAL AND BUILT ENVIRONMENT OF RURAL OSHTEMO TOWNSHIP IN A WAY THAT HONORS ITS TRADITIONAL RURAL LIFESTYLE, NATURAL HABITATS AND ENVIRONMENTALLY SENSITIVE LANDS, AGRICULTURAL LANDS AND ENTERPRISES, HISTORIC AND CULTURAL RESOURCES, SCENIC VISTAS, AND RECREATIONAL AMENITIES, WHILE ALLOWING FOR LIMITED AND COMPATIBLE LOW-DENSITY RESIDENTIAL DEVELOPMENT, AS WELL AS LIMITED SERVICE USES.

Introduction

What is rural character? Certainly, the qualities or characteristics that define rural character are different depending on the perspective of the person who is asked the question. Regardless of the answer, it is clear that more people are attracted to the intrinsic qualities of rural areas, whether it is the agrarian lifestyle, natural landscapes, or low-density development patterns. The natural and social value of rural areas is being increasingly recognized, including the key contributions that rural areas provide to food production and the local economy, as well as the environmentally significant lands that are preserved within rural areas. Given the importance and attraction of rural areas, communities are recognizing the critical need to identify and preserve cherished rural characteristics so that they can be enjoyed for future generations.

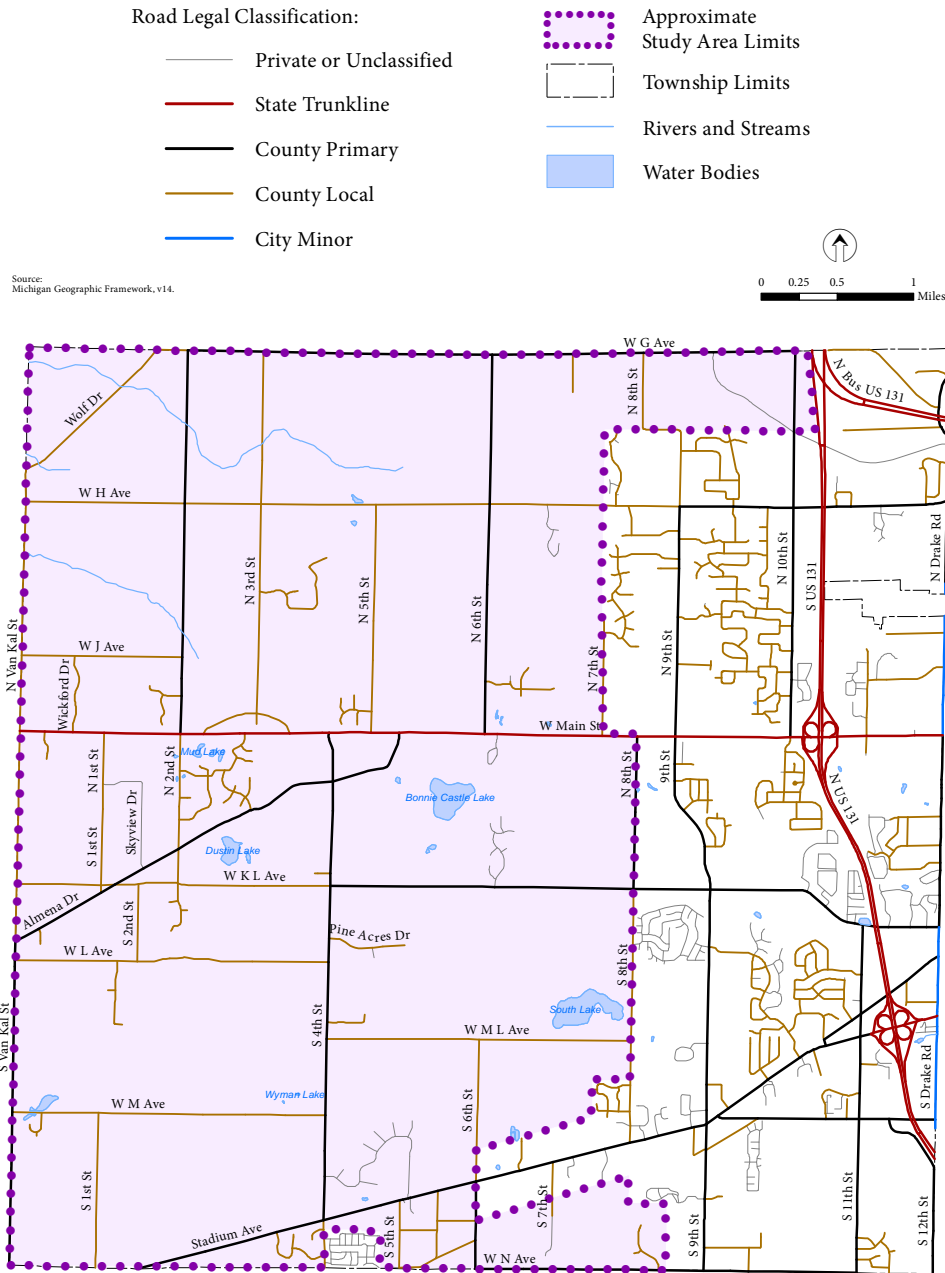
The Future Land Use Map of the 2011 Oshtemo Township Master Plan identifies the majority of the western half of Oshtemo for Rural Residential use (refer to Figure 8.1 in the 2011 Plan). The Master Plan calls for this area to include a mixture of predominantly residential and agricultural use of a rural and low-density character. The Plan also calls for the protection and preservation of natural features within the area and the rural character it defines. As a supplement to this vision, this Rural Character Preservation Strategy establishes an implementation approach to achieve that vision. This strategy has been established with a thorough understanding of existing conditions of the area and direct engagement of area residents and stakeholders.

Study Area

The general study area for this Rural Character Preservation Strategy is shown on **Map 1**. In total, the study area encompasses approximately 15,200 acres or slightly less than 24 square miles.

Existing Conditions Assessment

Map 1
Study Area and Road Network



Transportation Network

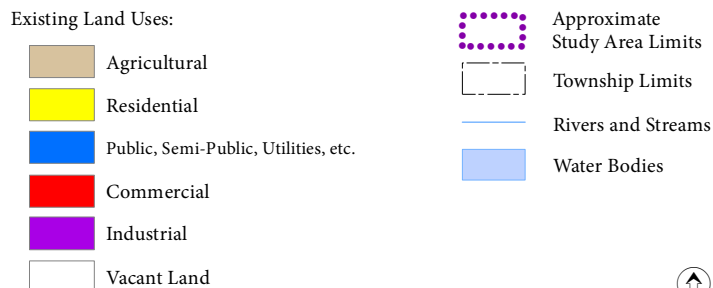
The road network within the study area is shown on **Map 1**. One state highway, West Main Street (M-43), traverses through the study area. M-43 is a five-lane road east of 2nd Street and a two-lane road west of 2nd Street. County primary roads within the study area include portions of West G Avenue, West KL Avenue, Stadium Avenue, 4th Street, 2nd Street, Almema Drive and Van Kal Street. These county primary roads are generally paved two-lane roads. The remainder of the roads in the study area are either county local roads or private/unclassified roads. These roads are typically paved 2-lane roads.

Land Use Patterns

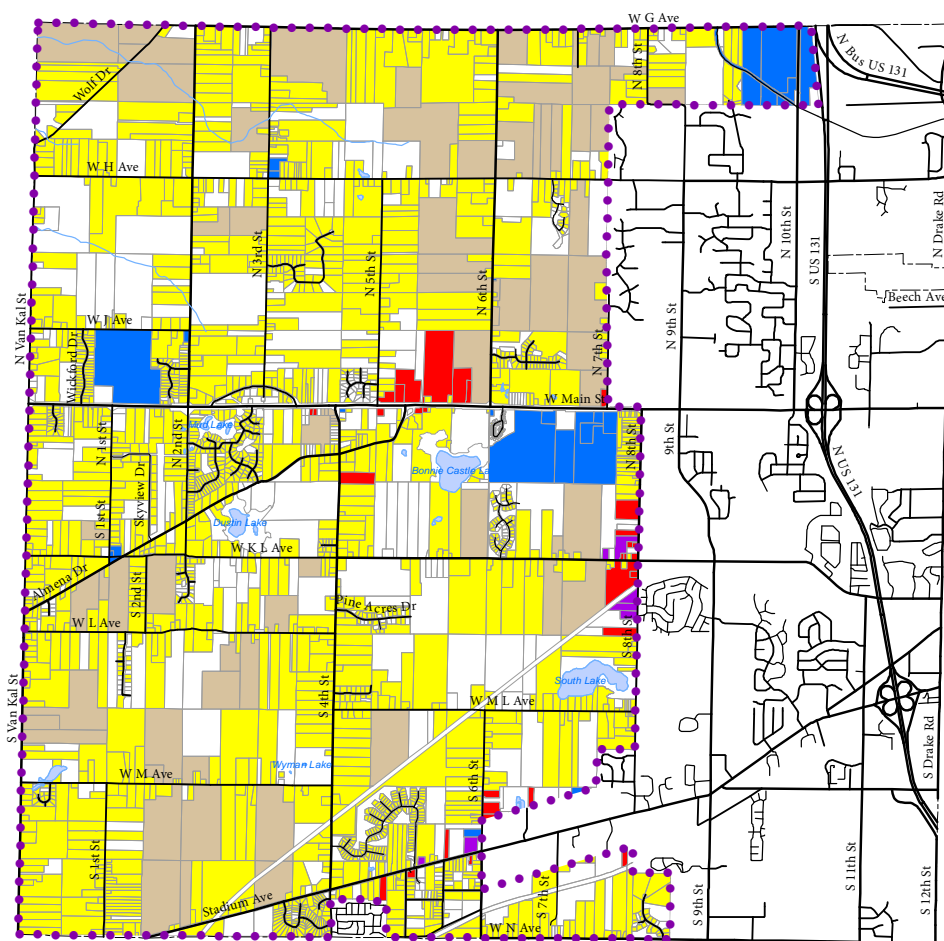
The existing land uses within the study area are illustrated on **Map 2**. Of the total study area acreage, approximately half is currently utilized for residential purposes, of which is primarily low-density single-family residential use. (It should be noted that if a property is occupied by a single-family dwelling, the entire property is classified as residential use. Thus, the percentage of the study area dedicated to residential use is somewhat misleading, as in many cases, only a small portion of the property is occupied by a dwelling while the larger remaining portion of the property is open.) Generally, residential land use is scattered throughout the study area.

Consisting of farmsteads and/or cultivated land, agricultural use is found scattered throughout the study area (accounting for approximately 17% of the study area). Vacant or undeveloped lands comprise approximately 25% of the study area. Other land uses within the study area include Public, Semi-Public and Utilities (3%), Commercial (1%), and Industrial (<1%).

Map 2
Existing Land Use Map



Source:
Made Tim, April 2017
Michigan Geographic Framework, v14.



Public Water and Sanitary Sewer Availability

At present, only a small portion of the study area has access to public water service. Generally, these public water lines have been extended into the study area in response to water well contamination from the KL Avenue landfill. An even smaller portion of the study area has access to public sanitary service. **Map 3** shows the locations of existing public water and sanitary sewer lines in the study area.

Rural Natural Features







At the end of 2016, the W.E. Upjohn Center for the Study of GIS and Geographical Change at Western Michigan University conducted a mapping study for Oshtemo Township related to natural features. The goal of the project was to accurately locate natural features that contribute to the quality of life and rural character of Oshtemo Township. Community resources were identified through the use of quality data sources and state-of-the-art geographic information science techniques. Special emphasis was given to the delineation of natural features and areas that would have an affect on community planning and zoning decisions.

The natural resource inventory covered the following elements:

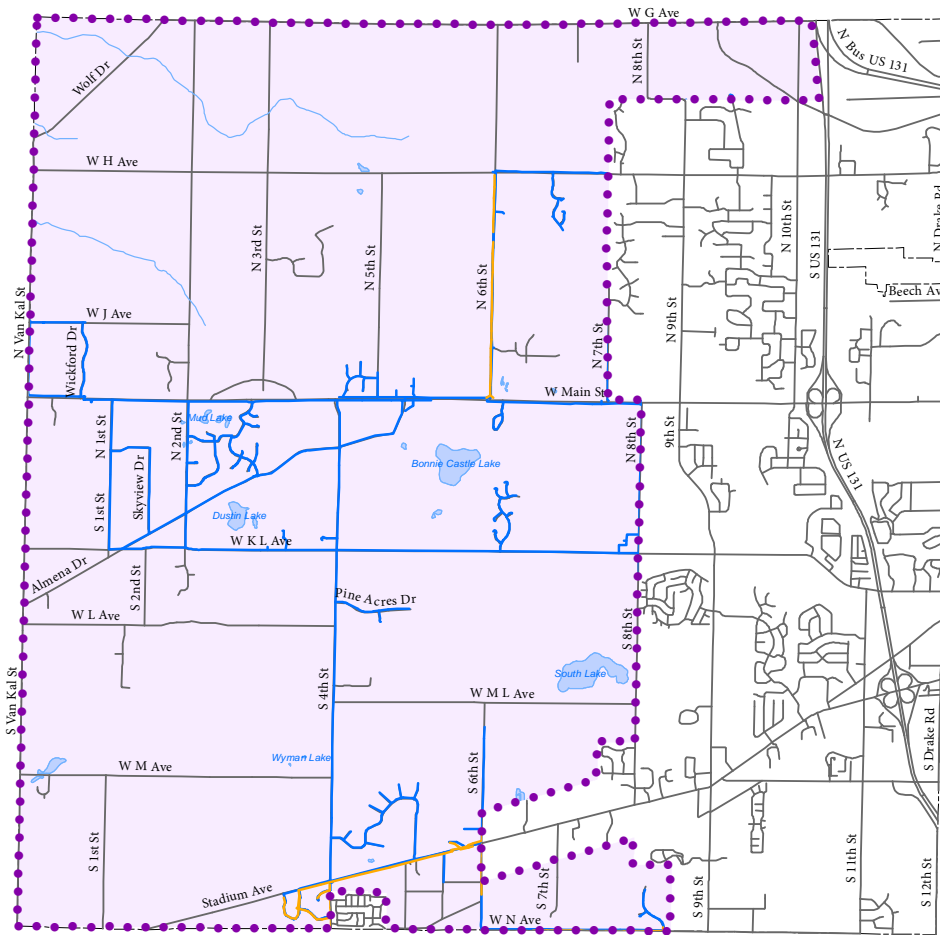
- Existing protected areas and greenspace
- Hydrology
- Topography
- Soils
- Vegetation
- Viewsheds

Using the natural features GIS data as developed by the W.E. Upjohn Center, a series of maps have been prepared, which are included and described on the following pages. The complete W.E. Upjohn Center natural features report is included in the **Appendix**.

**Map 3
Public Utilities**

-  Public Water Mains
-  Public Sanitary Sewer Mains
-  Approximate Study Area Limits
-  Township Limits
-  Rivers and Streams
-  Water Bodies

Sources:
Oshtemo Township, 2016.
Michigan Geographic Framework, v14.



Hydraulic resources are illustrated on **Map 4**, including rivers, lakes, wetlands, and groundwater recharge areas (groundwater recharge is the process by which groundwater resources are replenished through drainage from the soil). The benefits of these hydraulic resources are numerous, including the provision of wetland habitat, improved water quality, and the recreational value of water bodies.




Steep slopes within Oshtemo Township, as derived either through a Digital Elevation Model or soil surveys, are illustrated on **Map 5**. Slopes and varied topography may provide visual aesthetic appeal, while steep slopes pose limitations to development. Improper development within steep slope areas can also lead to hazards such as erosion and sedimentation.

According to the natural features report, the soils in Oshtemo Township are generally sandy loams, which means that they have high value for agricultural production, but present a number of limitations to development. **Map 6** illustrates the soil erodibility or “K” factor within Oshtemo Township. The K factor considers the susceptibility of a particular soil to erosion and the rate of water runoff from that soil. Soils with low K factor values resist erosion, while soils with higher K factor values are more susceptible to erosion.


Soils in Oshtemo Township which present septic tank limitations are illustrated on **Map 7**. Due mostly to poor filtration and slow percolation, these soils represent limitations to septic tank absorption fields, where effluent from a septic tank can be distributed into the soil.


Map 8 illustrates the areas in Oshtemo Township that have dense forest cover (greater than 65% forest cover density) and those dense forest areas which are visible from a public road. In addition to visible forested areas, **Map 9** also shows rolling hill locations (slopes greater than 12%) which are visible from public roads. These areas provide important woodland habitat and contribute to scenic beauty.

Map 4 Hydrologic Resources Map

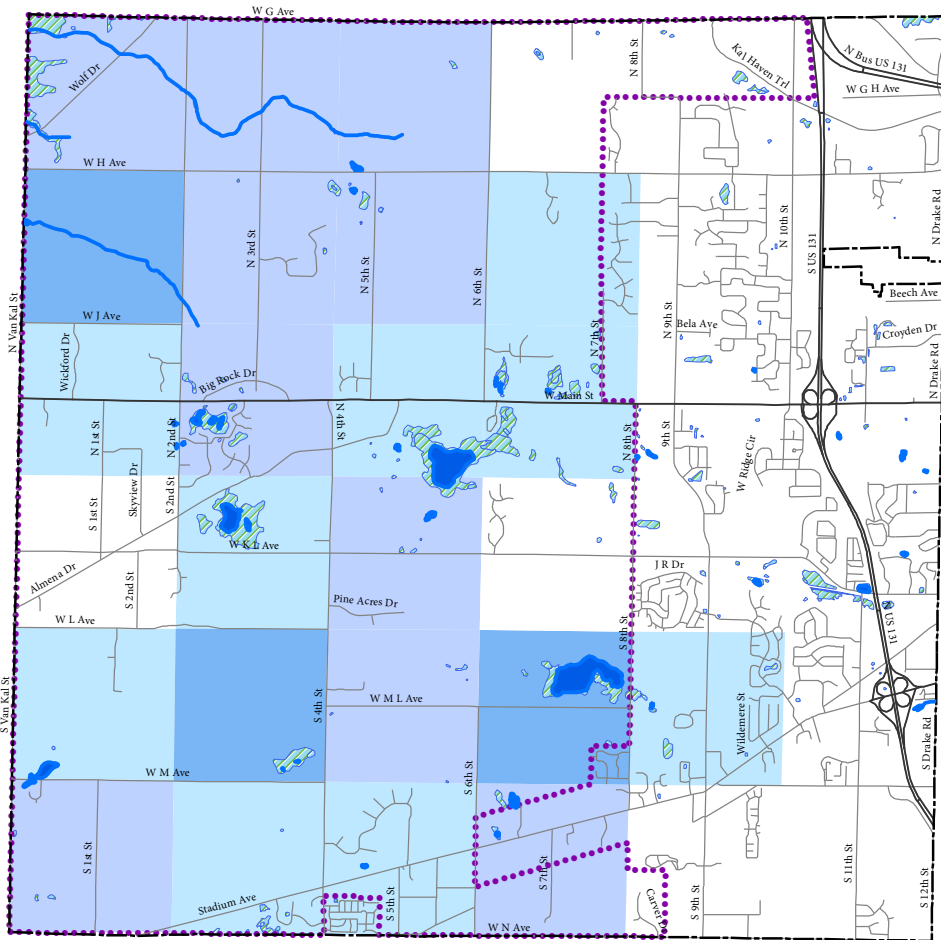
-  Rivers
-  Lakes
-  Wetlands

Water Recharge Areas:



-  15"
-  16"
-  17"



-  Approximate Study Area Limits


Source:
Final Report: GIS Services for Planning
and Natural Features Preservation
Oshtemo Township, MI
By W.E. Upjohn Center



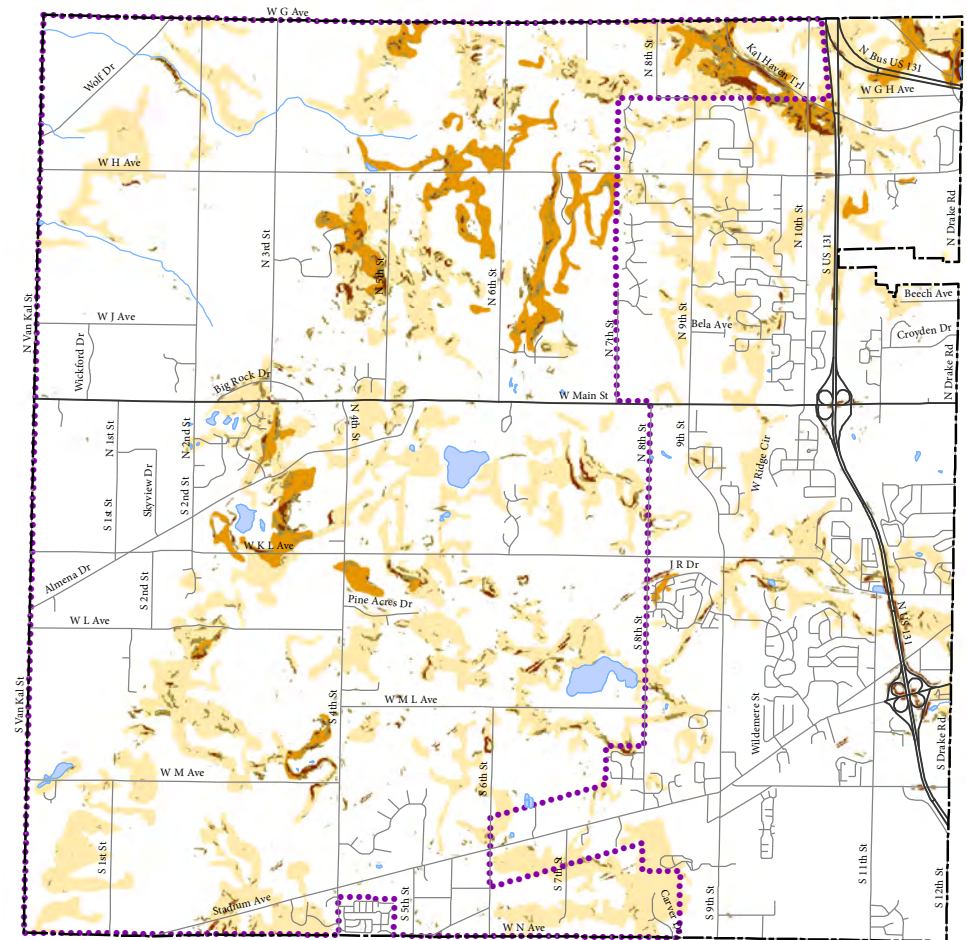
Map 5 Steep Slopes Map

- ### DEM Derived Slope
-  18 - 25%
 -  > 25%

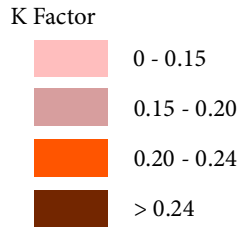
- ### Soil Survey Slope Classes
-  D: 12 - 18%
 -  E: 18 - 45%


-  Approximate Study Area Limits

Source:
Final Report: GIS Services for Planning
and Natural Features Preservation
Oshtemo Township, MI
By W.E. Upjohn Center



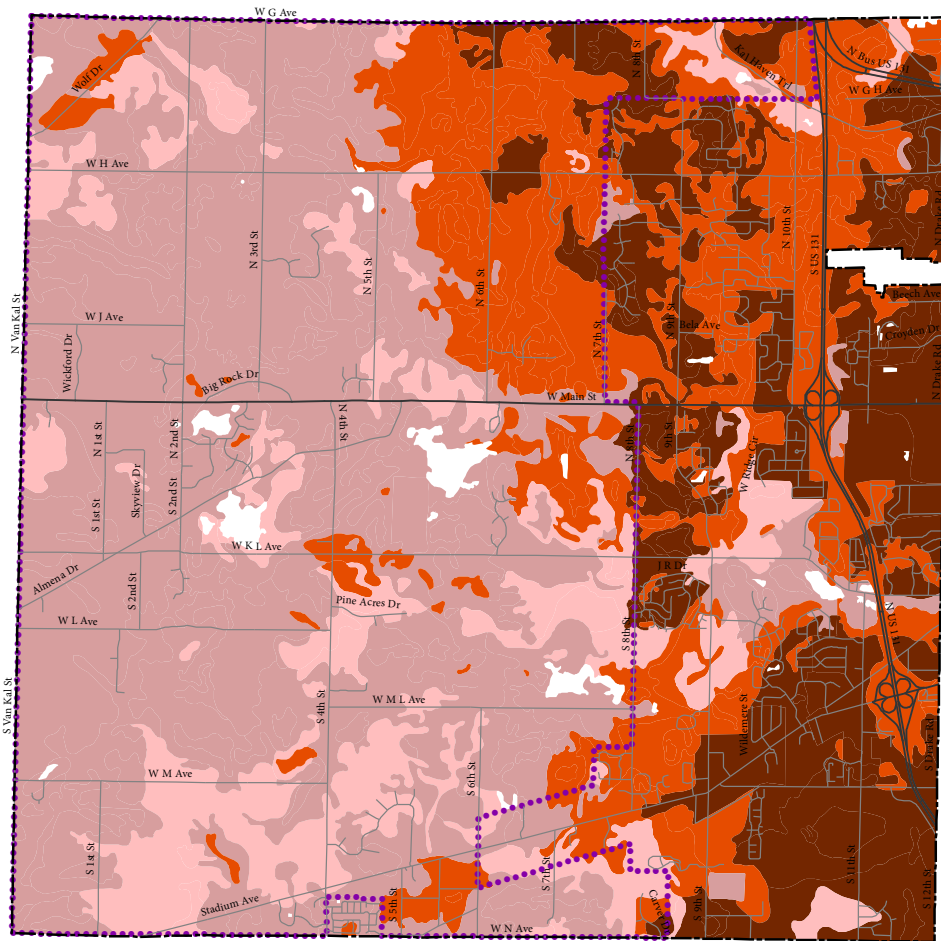
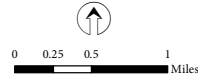
Map 6 Soil Erodibility "K" Factor Map*



 Approximate Study Area Limits

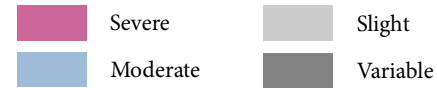
Source:
Final Report: GIS Services for Planning
and Natural Features Preservation
Oshtemo Township, MI
By W.E. Upjohn Center


*For a detailed explanation, refer to the methodology used in the W.E. Upjohn Center Report.



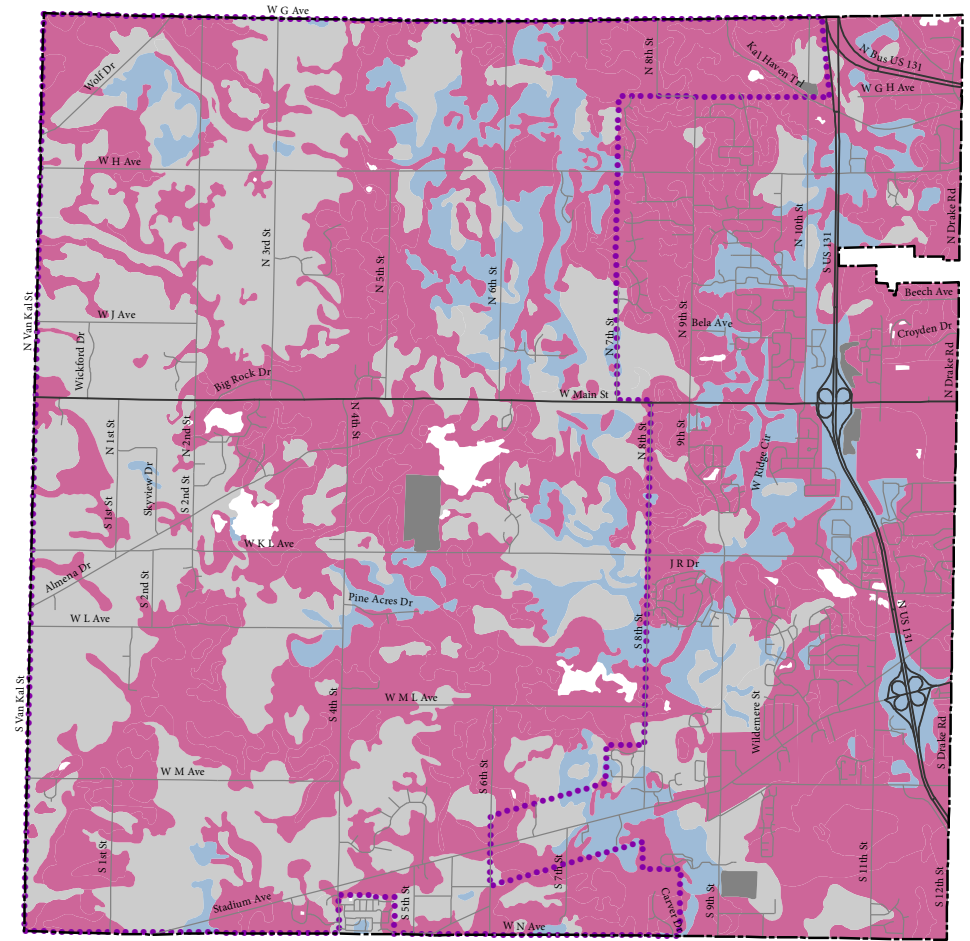
Map 7 Septic Tank Limitations Map

Septic System Limitations:

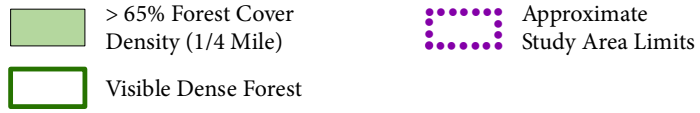


 Approximate Study Area Limits

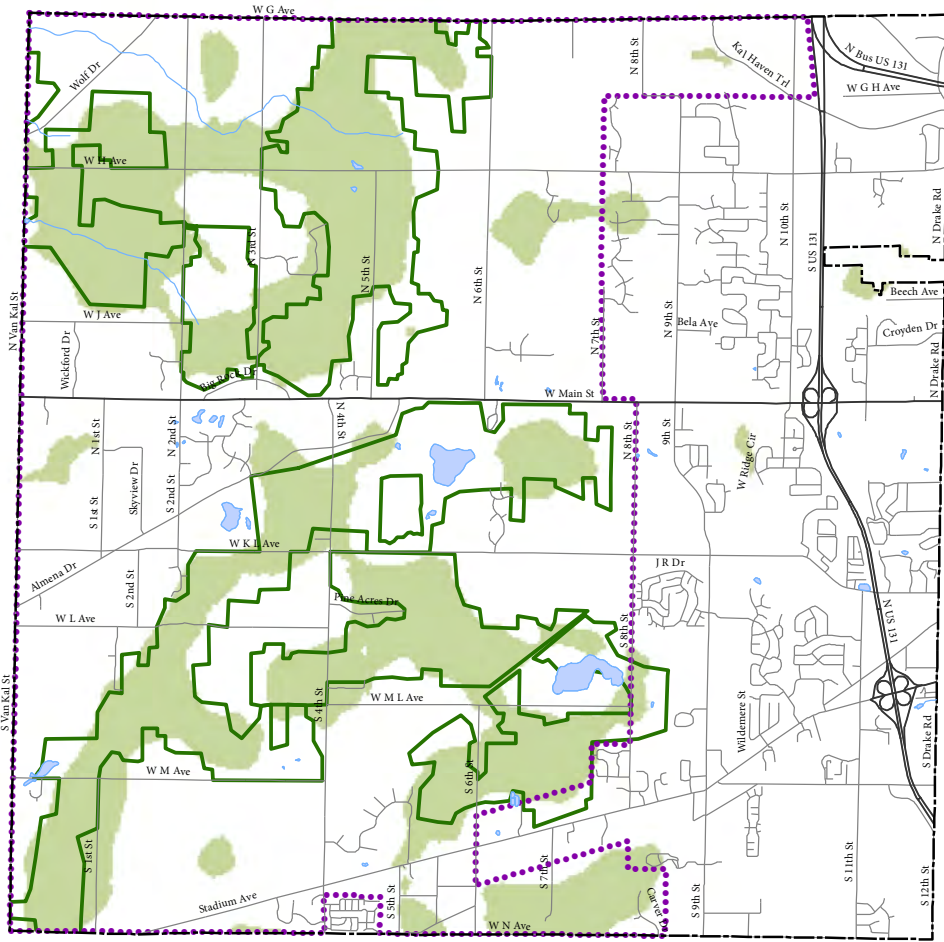
Source:
Final Report: GIS Services for Planning
and Natural Features Preservation
Oshtemo Township, MI
By W.E. Upjohn Center



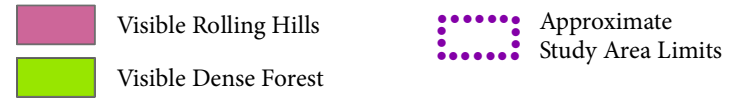
Map 8
Dense Forests Map



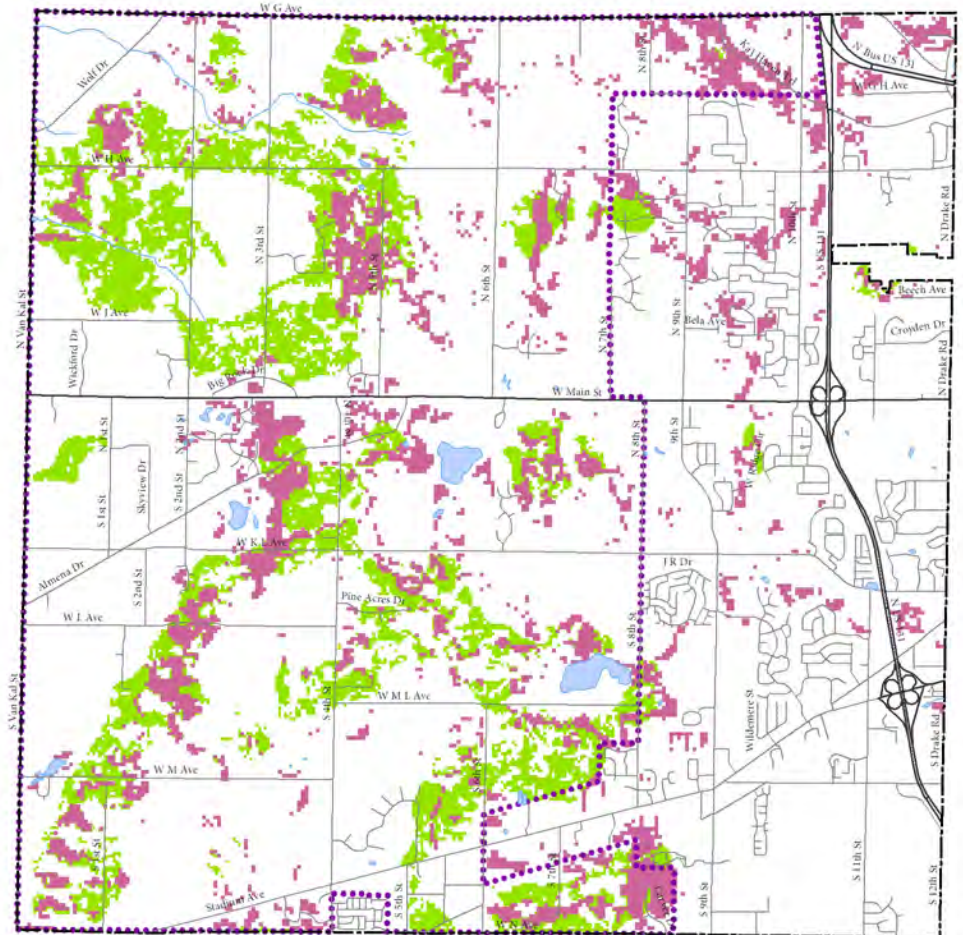
Source:
Final Report: GIS Services for Planning
and Natural Features Preservation
Oshtemo Township, MI
By W.E. Upjohn Center



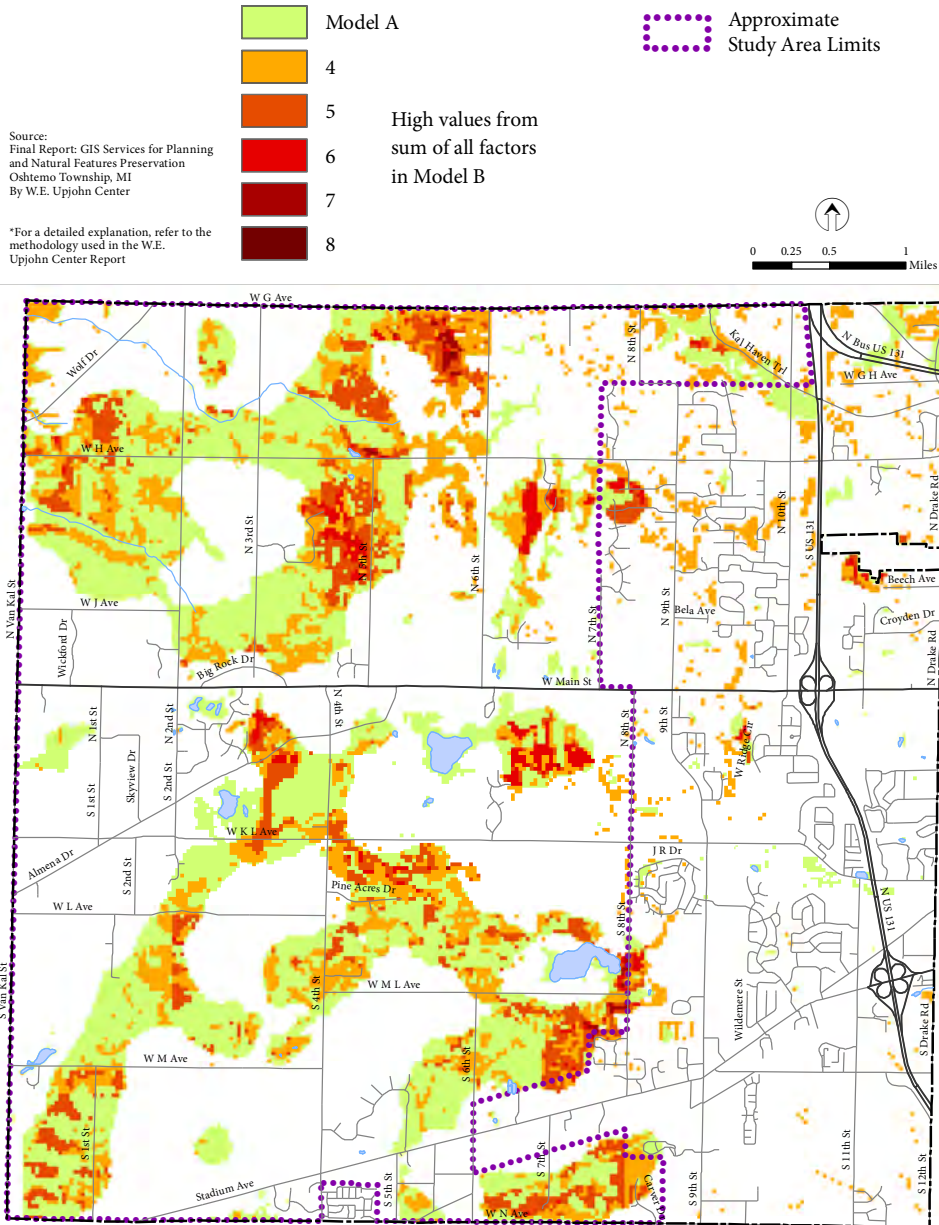
Map 9
Visible Rolling Hills and Dense Forests Map



Source:
Final Report: GIS Services for Planning
and Natural Features Preservation
Oshtemo Township, MI
By W.E. Upjohn Center



Map 10
High Value Resources Map*



As a means to quantify the combination of natural resources in the Township, the W.E. Upjohn report mapped “high value resources,” representing an aggregation of the resources and limitations to development including wetlands, high groundwater recharge, moderate slope, important agricultural land, high soil erodibility, severe limitations to septic, dense forest, visibility of dense forest, and visibility of rolling forested hills. These high value resources are illustrated on **Map 10**.

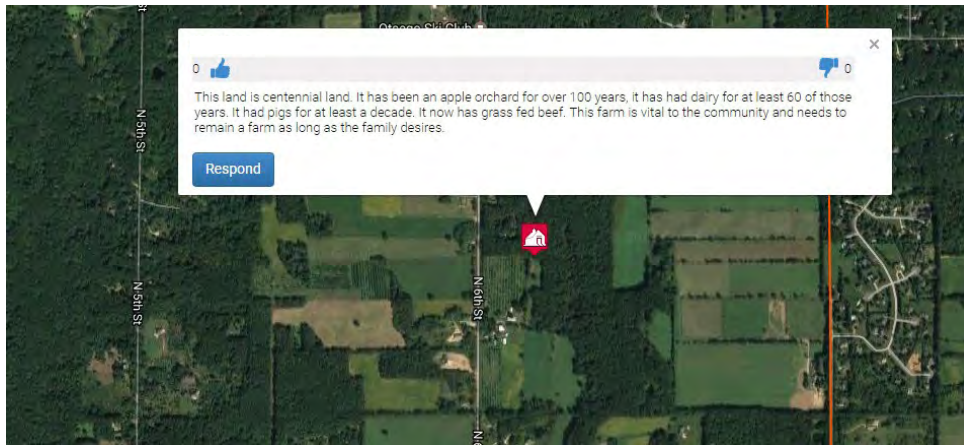
Community Input

Community Remarks Online Mapping Tool

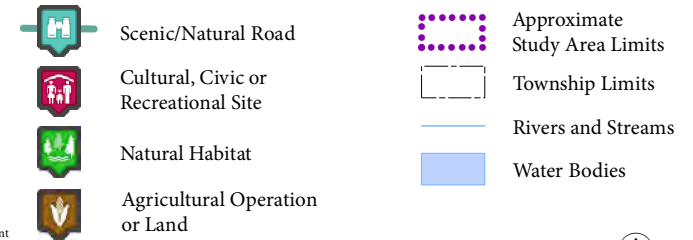
To engage residents, property owners and other community stakeholders in the development of the Rural Character Preservation Strategy, Community Remarks, a “comment mapping” web-based survey instrument was developed. This engagement tool allowed for citizens to conveniently post their ideas, comments, and concerns to the website and relate them to a specific geographic area. Several topic areas were pre-established as a guide for the type of comments that the Township was looking to receive. These topics included:

- Natural Resources
- Historic and Cultural Resources
- Transportation
- Agricultural Production
- Viewsheds
- Recreation
- Land Use and Development
- Economy

The availability of the community comment map was widely advertised, including a mailer which was sent to all property owners within the study area in late 2016.



Map 11 Sites of Importance Noted on Community Comment Map*



*As identified on community comment map engagement tool.

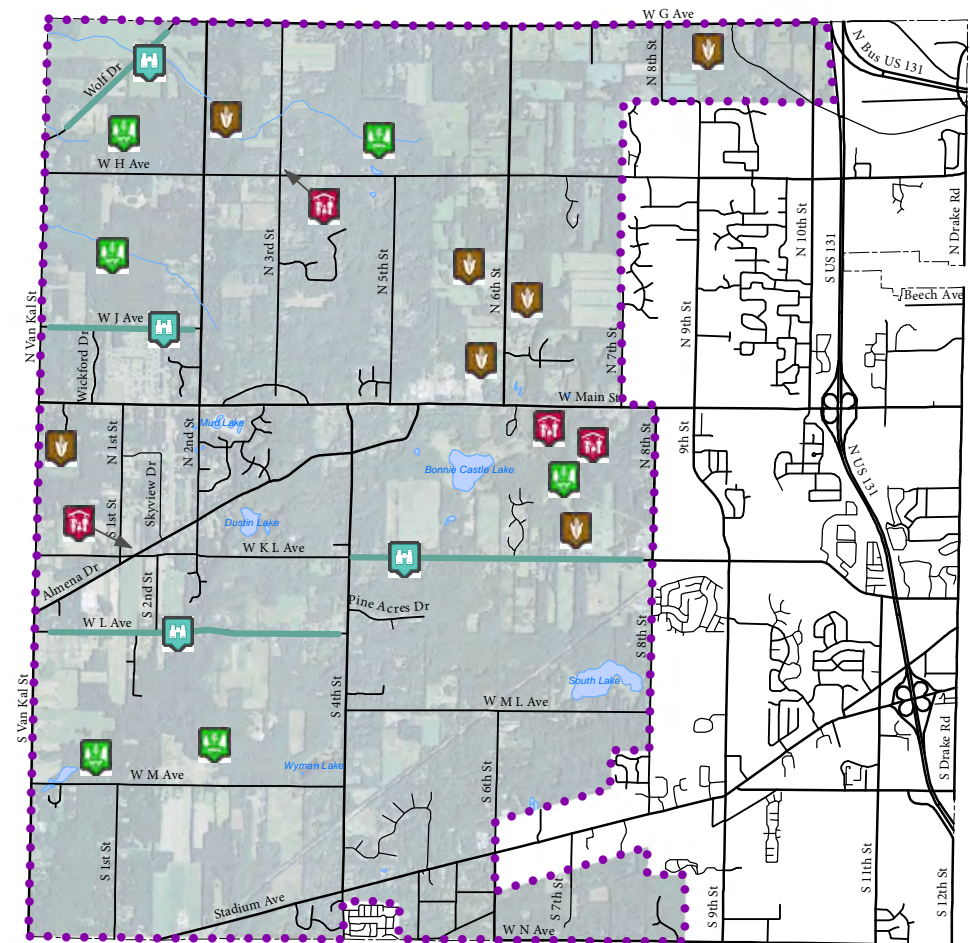
Base Data Source:
Michigan Geographic Framework, v14.



Based on the comments received through the community comment tool, a summary Sites of Importance Map has been prepared and is included in this section (**Map 11**). As can be seen, a variety of specific locations in the study area were identified as sites of importance which contribute to rural character. Several stretches of scenic/natural roads were identified, including Wolf Drive in the northwestern corner of the Township, West J Avenue, West KL Avenue, and West L Avenue. Six specific locations were identified as providing important natural habitat, scattered throughout the study area. Similarly, several locations containing existing agricultural operations or land were identified. Finally, several cultural, civic or recreational sites were identified as being important to rural character. These sites included a church, Township Hall and recreational areas.

A variety of other general comments were submitted on the community comment map tool. Related to the topic of natural features, common themes included:

- Continue and protect important farmland
- Protect forested areas which provide important natural habitat
- Concern about subdivision/condominium development in pristine natural areas
- Respect private property rights, including farmers right to use and sell land



Related to transportation, beyond the identification of stretches of scenic/natural roads, several locations were identified as being dangerous, having traffic concerns, or generally in need of improvement. These included Van Kal Street, between West KL Avenue and M-43, the intersection of Van Kal at Almena, the curve on Almena, south of M-43, the intersection of M-43 and 6th Street, and the intersection of 2nd and West J Avenue.

In general, related to the topic of agricultural production, there was clear support for the continuance and protection of important farmland within the study area.

Related to the topic of land use and development, common themes included:

- Concern about subdivision/condominium development in pristine natural areas
- Support for protection of important natural areas such as forested lands
- Concern about the “parcelization” of large lots into smaller lots for development, which can’t be undone
- Some support for clustered residential development which keeps agricultural land and/or open space

Rural Character Alternatives Workshop

In the Winter of 2017, a Rural Character Alternatives Workshop was held at the Township Hall. In total, more than 60 interested citizens attended the workshop.

Rural Character Compatible Use Survey

A key component of the workshop was a survey related to rural character compatible uses. Attendees were given a short survey that listed a variety of types of rural (or potentially rural) uses, such as farm stands, wedding barns, and seed supply stores. Respondents were asked if such uses are not appropriate in the study area, appropriate in the study area with no limitations, or appropriate in the study area with limitations. For each use, they were also asked to indicate potential negative impacts

Table 4
Rural Character Compatible Use Survey Results
Rural Character Alternatives Workshop, February 2017

Response	Land Use								
	Agri-Tourism	Agri-Business	Winery/Brewery/Tasting Room	Race Courses	Farm Implement Sales	Storage/Warehousing	Shooting Ranges/Game Clubs	Commercial/Riding Stables	Greenhouses/Plant Nurseries
	% of Votes	% of Votes	% of Votes	% of Votes	% of Votes	% of Votes	% of Votes	% of Votes	% of Votes
Not Appropriate in Study Area	8%	29%	6%	67%	24%	22%	57%	2%	0%
Appropriate in Study Area Generally with No Limitations	29%	12%	27%	4%	25%	12%	2%	42%	37%
Appropriate in Study Area but with Limitations	63%	59%	67%	29%	51%	67%	41%	56%	63%

that may result from such uses (i.e., traffic, property values, public services).

Table 4 is a summary of the results of this exercise. Of the land uses listed in the survey, the ones which were voted as being “most appropriate” (highest percentage of votes as appropriate, either appropriate with no limitations or appropriate with limitations) within rural areas included: Greenhouses/Plant Nurseries (100%); Commercial/Riding Stables (98%); Winery/Brewery/Tasting Room (94%); and, Agri-Tourism (92%). The land uses which were voted as being “least appropriate” (highest percentage of votes as not appropriate) within rural areas included: Race Courses (67%); and, Shooting Ranges/Game Clubs (57%).

Residential Design Alternatives Exercise

A second key exercise asked attendees to work in groups to evaluate four alternative residential design concept plans for a 96 acre site in a rural location (the site was not located in Oshtemo Township). The four design alternatives each employed different approaches to development of the site, as described and illustrated in this section.

Alternative A sought to maximize density as allowed by current Oshtemo Township zoning, with no provision for open space.

- 53 total lots
- Approx. minimum lot sizes of 1.5 acres
- 0% preserved open space

Alternative B sought to maximize density as allowed by the Oshtemo Township zoning ordinance's "open space" development option.

- 90 total lots
- Approx. minimum lot sizes of 0.5 acres
- 40% preserved open space

Alternative C employed the "large lot/low density" approach to rural preservation, ensuring a low overall density, large lots and generous setbacks.

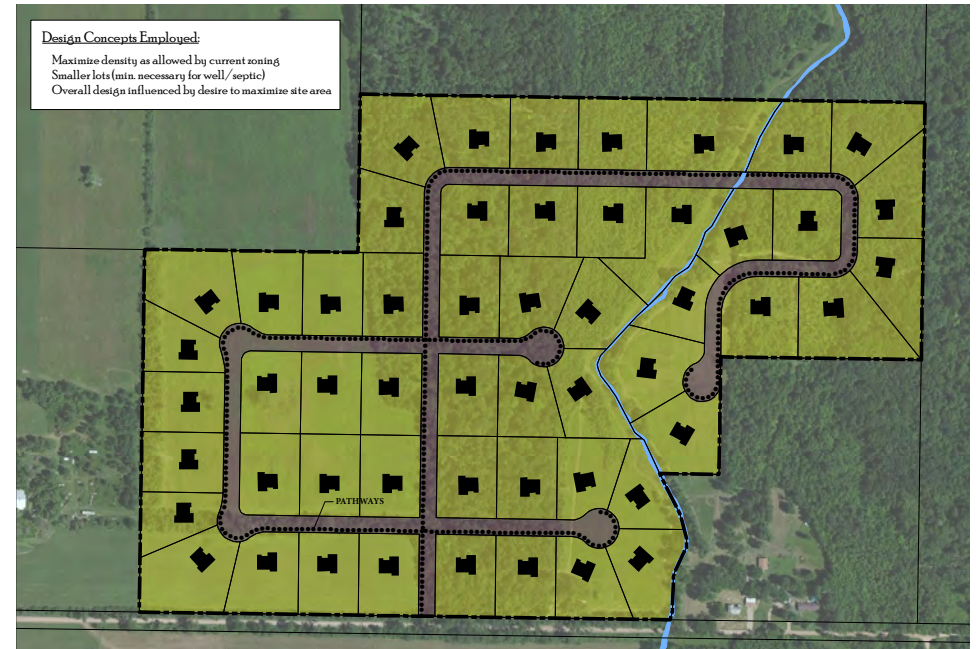
- 25 total lots
- Approx. minimum lot sizes of 3 acres
- 7% preserved open space

Alternative D sought a low overall density but proposed smaller lot sizes in order to preserve site features such as agricultural land and woodlands.

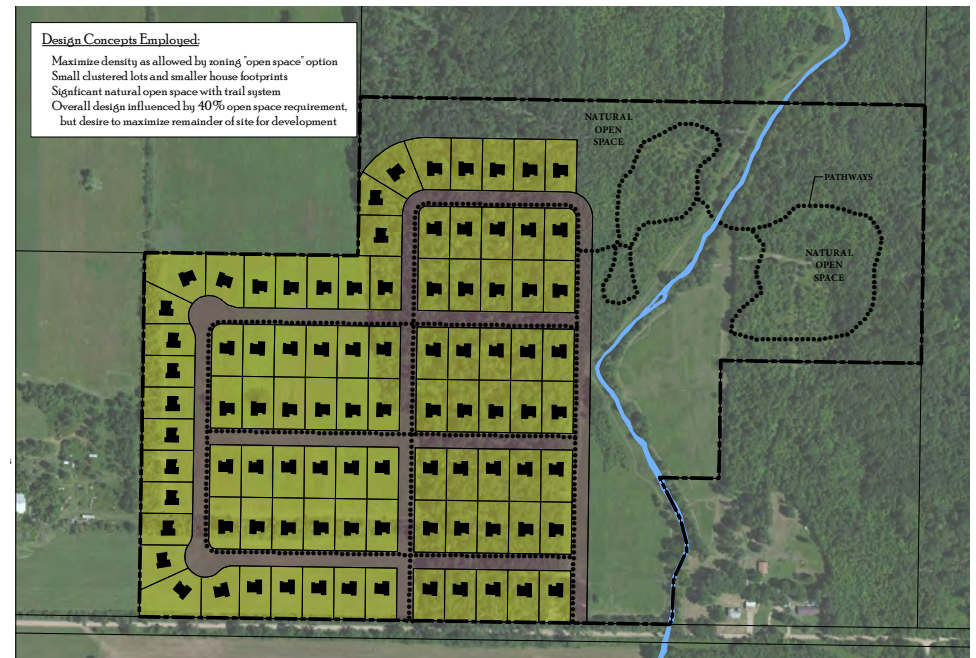
- 25 total lots
- Approx. minimum lot sizes of 1.5 acres
- 50% preserved open space

Small groups (10 total) were each provided with an evaluation worksheet, which prompted the group to work together to rank each alternative based on specific objectives, such as farmland preservation or natural resource protection. On the whole, Alternative D received the broadest support as the alternative which was most effective at preserving rural character.

Design Alternative A



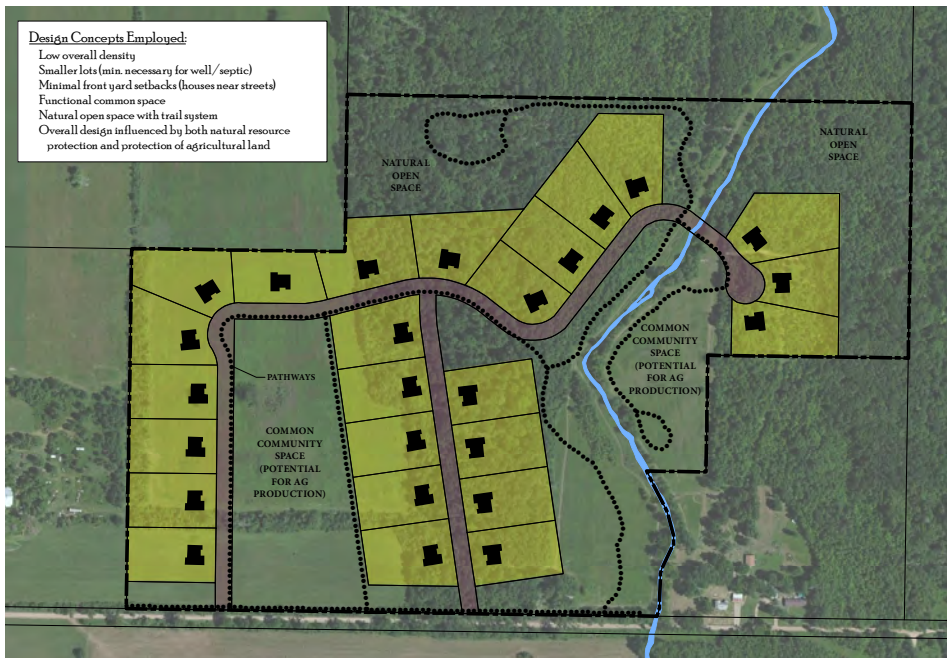
Design Alternative B



Design Alternative C



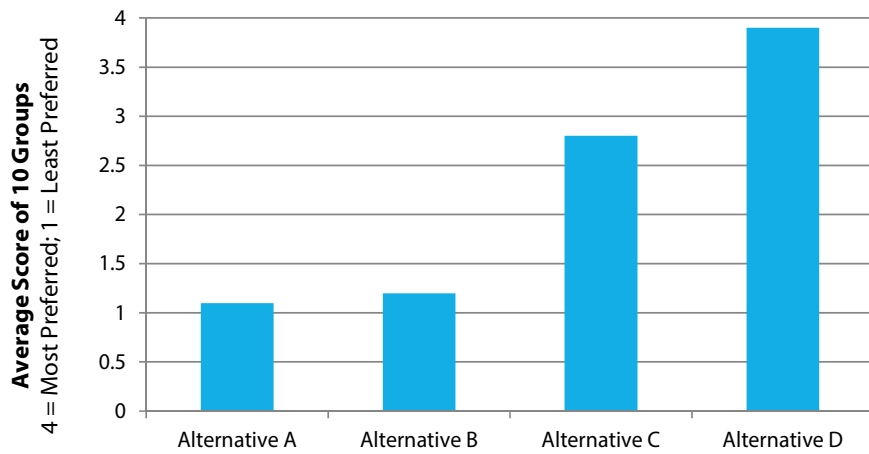
Design Alternative D



Below is a summary of each group's general findings (see also **Figure 6**).

- Group 1 – Overall, this group indicated a preference for Alternatives C and D that “look more rural residential for both the residents and surrounding neighbors.
- Group 2 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives C, A and B
- Group 3 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives C, B and A
- Group 4 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives C, A and B
- Group 5 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives C, A and B
- Group 6 – This group determined that all but one alternative (Alternative D) “even approaches preservation of rural character”
- Group 7 – Alternative C was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives D, A and B (tie for A and B)
- Group 8 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives C, B and A
- Group 9 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives B, C and A
- Group 10 – Alternative D was ranked as most effective at preserving natural resources, agricultural production/farmland, scenic viewsheds, and recreation. Alternative C was ranked as most effective at preserving private property rights, motorized transportation (traffic flow, efficiency, safety), and efficiency/capacity of community services.

Figure 6
Residential Design Alternatives Evaluation Results



Rural Character Preservation Strategic Plan

Oshtemo Township has long recognized the value of the agricultural lands, natural habitats, and rural countryside of the western portion of the Township. The 2011 Master Plan confirmed the Township’s vision for this area and plans for it to remain “rural residential.” Throughout the course of this planning process, the citizens and stakeholders of the Township were clear in their desire to maintain the exceptional rural character of this area, preserving it for future generations. Based upon the existing conditions findings, the desires of the community as uncovered during the various engagement efforts, and direction provided by Township leaders and staff, this section outlines a vision and strategic plan for rural character preservation in Oshtemo Township.

This section first establishes a vision statement as the foundation for rural character preservation within the study area, followed by a series of goals that more specifically define what rural character means to the community. A series of policies are then introduced, which provide more specific statements that seek to clarify the intent of each goal. Finally, action strategies are outlined, which serve as practical and trackable means for achieving the goals.

Rural Character Vision Statement for the Study Area:

APPRECIATE, PRESERVE, PROTECT AND ENHANCE THE NATURAL AND BUILT ENVIRONMENT OF RURAL OSHTEMO TOWNSHIP IN A WAY THAT HONORS ITS TRADITIONAL RURAL LIFESTYLE, NATURAL HABITATS AND ENVIRONMENTALLY SENSITIVE LANDS, AGRICULTURAL LANDS AND ENTERPRISES, HISTORIC AND CULTURAL RESOURCES, SCENIC VISTAS, AND RECREATIONAL AMENITIES, WHILE ALLOWING FOR LIMITED AND COMPATIBLE LOW-DENSITY RESIDENTIAL DEVELOPMENT, AS WELL AS LIMITED SERVICE USES.

Rural Character Goal Statements

Five overarching rural character goals have been established for the study area, which embody the Township’s desires related to the following categories of rural character: Rural Development and Services; Agricultural Lands and Enterprises; Natural Environment and Open Space; Historic and Cultural Resources; and, Recreation. In support of the goals for each category, a series of policies have been established. Additionally, selected policies are illustrated on the graphic included later in this section (**Figure 7**).

Rural Development and Services (RDS) Goal

Provide for development of low density residential land use that is both compatible with, and enhances, the rural agrarian lifestyle and natural environmental character of the study area. Further, allow for limited service uses that support the needs of residents and the agricultural economy of the study area.

Rural Development and Services (RDS) policies

Policy RDS-1: Consistent with the Oshtemo Township Future Land Use Plan, direct higher density residential, commercial, industrial and other urban land use and development to the eastern portion of Oshtemo Township where such use is most appropriate and can be accommodated by existing public facilities and services.

Policy RDS-2: Support low density, rural compatible residential development in a manner which minimizes any loss of the study area's rural character.

Policy RDS-3: Minimize the conversion of agricultural and/or environmentally significant land into residential development within the study area.

Policy RDS-4: The design of new residential developments shall incorporate existing, desirable landscape elements, whether natural or man-made, such as farmland, scenic views, open space, wetlands, stream corridors, and steep slopes.

Policy RDS-5: The removal or disturbance of significant and/or sensitive natural features associated with development activity, such as large trees, woodlands, wetlands, steep slopes, or floodplains, shall be avoided.



Policy RDS-6: Site design treatments, including building architecture, materials, signage, and other site amenities, shall be specifically chosen for consistency with the rural agrarian lifestyle of the study area, rather than a suburban, "anywhere USA" style.

Policy RDS-7: Consistent with the Oshtemo Township Future Land Use Plan, encourage farm and agricultural-related businesses, as well as locally oriented service establishments, to be located within strategic nodes or hamlets within the study area. Specifically, these nodes shall include Stadium Drive at 5th Street and West Main Street at Almena Drive.

Policy RDS-8: Limit public infrastructure investment within the study area to only that which is necessary to support the health, safety and welfare of the area, and where such investment does not lead to new development which is out of character with the study area.

Agricultural Lands and Enterprises (AG) Goal

Recognize, preserve, protect, and expand the study area's important and valued agricultural lands and enterprises.

Agricultural Lands and Enterprises (AG) policies

Policy AG-1: Facilitate a vibrant local agricultural economy by supporting existing farmlands and agricultural enterprises through land use policies, development codes and incentives that encourage the continued use of land for farming.

Policy AG-2: Protect agricultural lands and enterprises within the study area from conflicting development through stringent zoning controls and the directing of higher density urban growth to the eastern portion of Oshtemo Township.

Policy AG-3: Promote sustainable agricultural practices, with its emphasis on environmental stewardship, wholesome food production, and a locally-oriented customer base.

Policy AG-4: Allow and encourage small-scale farming activities and the keeping of horses or other livestock within the study area.

Policy AG-5: Encourage and promote agricultural tourism within the study area, at an appropriate scale and intensity that limits impacts to adjacent properties, public services and the natural environment.

Policy AG-6: Support the existence and expansion of the local foods movement within the study area, through the allowance of farmers markets, food stands and food cooperative facilities.



Natural Environment and Open Space (NE) Goal

Strive for the protection of important natural resources and open spaces that contribute to the health of natural systems, wildlife habitats, community character, and quality of life.

Natural Environment and Open Space (NE) Policies

Policy NE-1: Protect sensitive and other environmentally significant areas, such as water resources, wetlands, woodlands, floodplains, scenic vistas, and wildlife habitats.

Policy NE-2: Work to create and preserve a connected system of open spaces and natural corridors within the study area.

Policy NE-3: Support and facilitate the acquisition of important open spaces for the benefit and enjoyment of the public and for the long-term quality of the community.

Policy NE-4: Commit to a network of natural beauty roads to support rural character and a healthy natural environment, through the establishment of natural buffer strips along the edges of primary and secondary roadways.

Historic and Cultural Resources (HC) Goal

Recognize, protect and promote the historic character and assets found within the study area.

Historic and Cultural Resources (HC) Policies

Policy HC-1: Allow and encourage the appropriate adaptive reuse of historic farm buildings and other historic structures.

Policy HC-2: Promote public and private partnerships that seek to conserve the historic assets of the study area.

Policy HC-3: Ensure that the design of buildings, signage, and other development amenities is consistent with the study area's historic agrarian character.

Policy HC-4: Support the efforts of local community groups to promote community spirit and celebrate the historic rural character of the study area through community events and similar activities.

Recreation (REC) Goal

Provide for a system of passive open spaces, low-intensity recreational facilities, and non-motorized connections within the study area for the long-term benefit of area residents and the Township as a whole.

Recreation (REC) Policies

Policy REC-1: Continue to cooperate with neighboring jurisdictions and regional entities in the provision of regional recreational facilities, greenways and non-motorized networks.

Policy REC-2: Support and facilitate the acquisition of significant natural lands and the establishment of additional passive outdoor recreation activities within the study area.

Policy REC-3: The design of recreational facilities should incorporate, where possible, the preservation and use of existing points of historic and scenic interest.

Policy REC-4: Encourage the inclusion of open spaces, low-intensity recreational facilities, and bicycle and pedestrian linkages, in conjunction with new and established developments.



Figure 7
Oshtemo Township Rural Character Preservation Strategy
Selected Illustrated Policies

Rural Development and Services (RDS)



Policy RDS-2: Support low density, rural compatible residential development in a manner which minimizes any loss of the study area's rural character.



Policy RDS-3: Minimize the conversion of agricultural and/or environmentally significant land into residential development within the study area.



Policy RDS-4: The design of new residential developments shall incorporate existing, desirable landscape elements, whether natural or man-made, such as farmland, scenic views, open space, wetlands, stream corridors, and steep slopes.



Policy RDS-5: The removal or disturbance of significant and/or sensitive natural features associated with development activity, such as large trees, woodlands, wetlands, steep slopes, or floodplains, shall be avoided.

Agricultural Lands and Enterprises (AG)



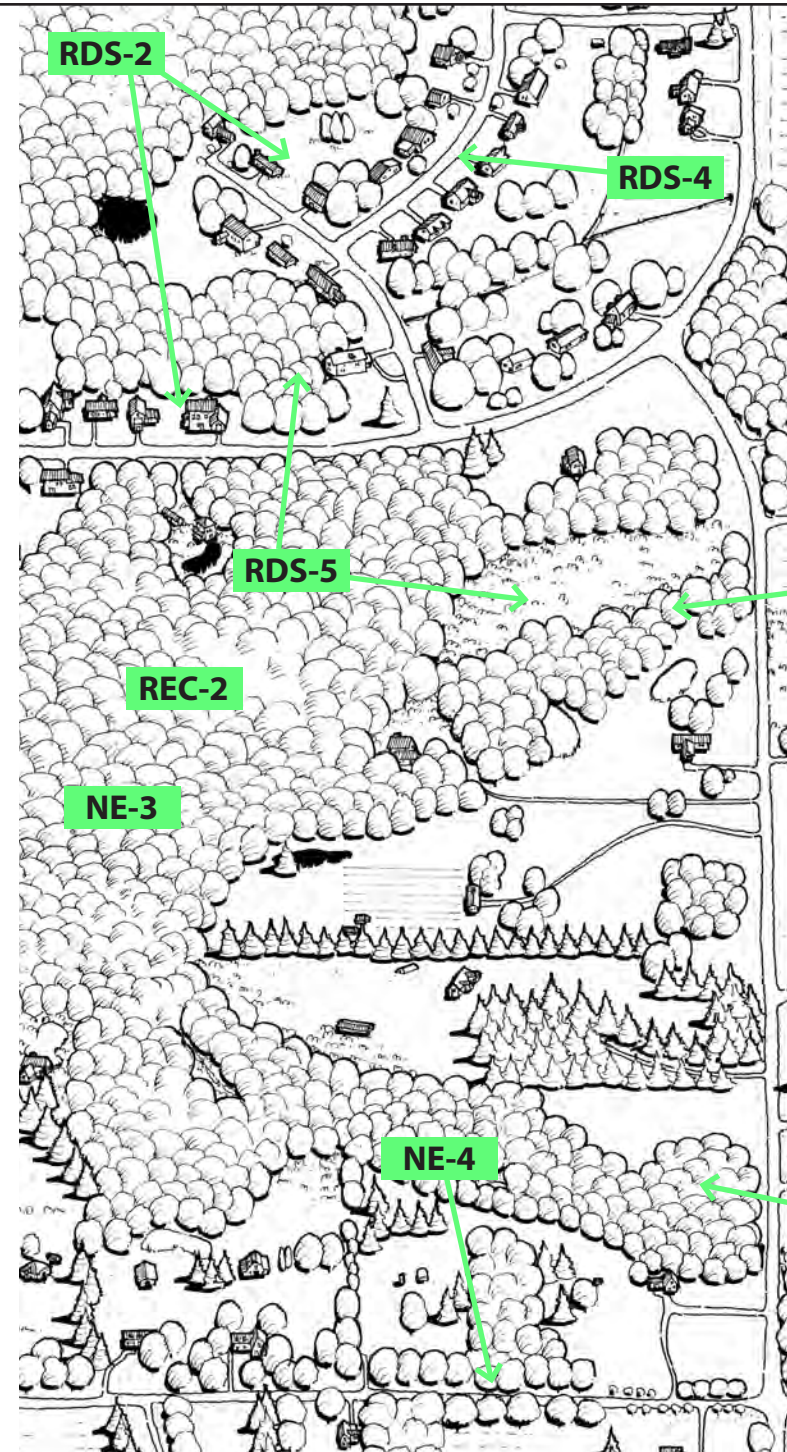
Policy AG-1: Facilitate a vibrant local agricultural economy by supporting existing farmlands and agricultural enterprises through land use policies, development codes and incentives that encourage the continued use of land for farming.

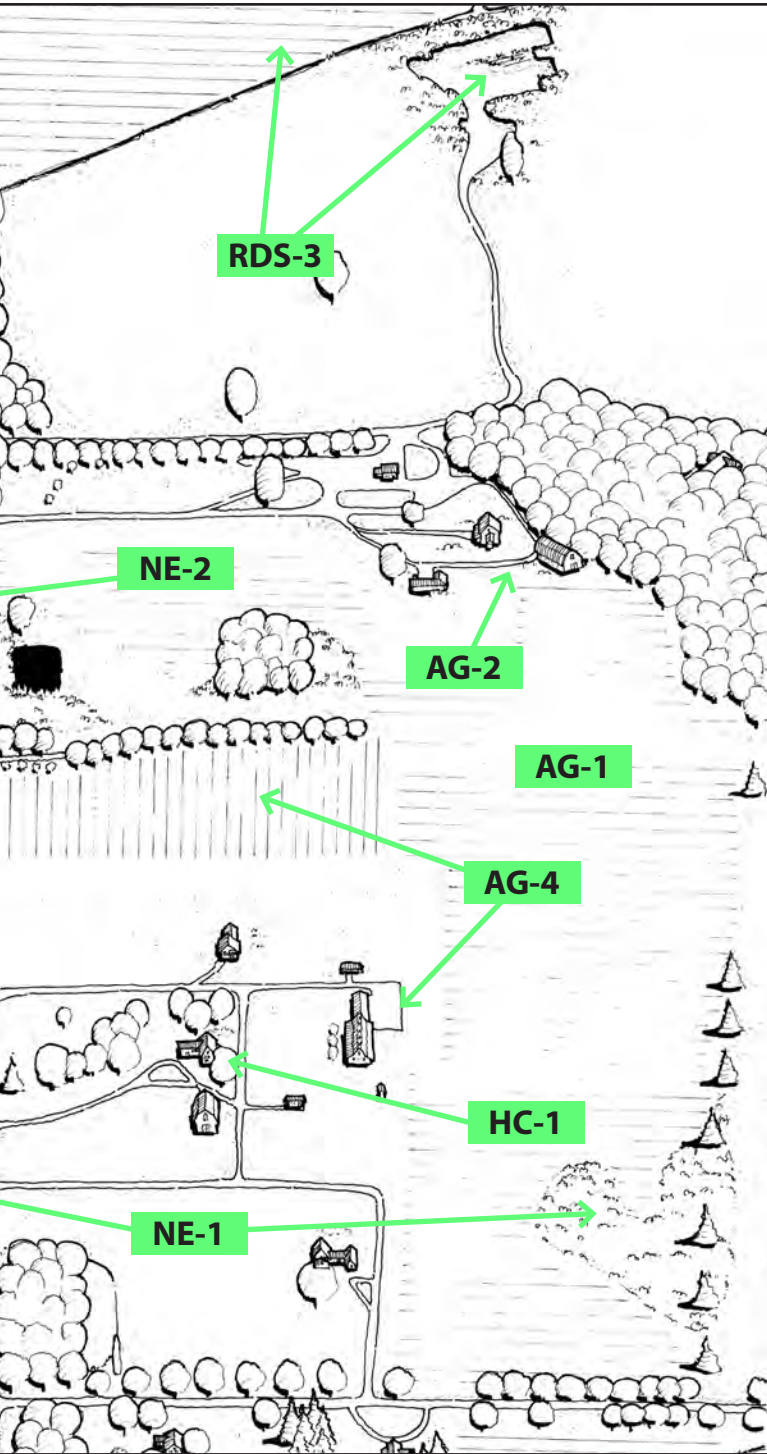


Policy AG-4: Allow and encourage small-scale farming activities and the keeping of horses or other livestock within the study area.



Policy AG-2: Protect agricultural lands and enterprises within the study area from conflicting development through stringent zoning controls and the directing of higher density urban growth to the eastern portion of Oshtemo Township.

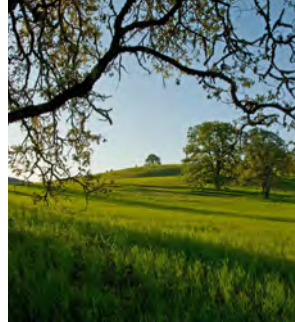




Natural Environment and Open Space (NE)



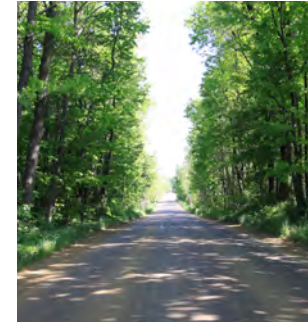
Policy NE-1: Protect sensitive and other environmentally significant areas, such as water resources, wetlands, woodlands, floodplains, scenic vistas, and wildlife habitats.



Policy NE-3: Support and facilitate the acquisition of important open spaces for the benefit and enjoyment of the public and for the long-term quality of the community.



Policy NE-2: Work to create and preserve a connected system of open spaces and natural corridors within the study area.



Policy NE-4: Commit to a network of natural beauty roads to support rural character and a healthy natural environment, through the establishment of natural buffer strips along the edges of primary and secondary roadways.

Historic and Cultural Resources (HC)



Policy HC-1: Allow and encourage the appropriate adaptive reuse of historic farm buildings and other historic structures.

Recreation (REC)



Policy REC-2: Support and facilitate the acquisition of significant natural lands and the establishment of additional passive outdoor recreation activities within the study area, utilizing a variety of funding for this purpose, including Federal, State, local and private sources.

Rural Character Action Strategies

Following the categories established for the rural character goals and policy statements, a series of action strategies are outlined below. These action strategies are intended to be practical steps which will aid in the implementation of the overall vision for preserving rural character in the study area. Also included is a map which provides a geographic reference for selected action strategies (**Map 12 - Action Strategies**).

Rural Development and Services (RDS) Action Strategies

Action Strategy RDS-1: Evaluate potential zoning ordinance amendments to the AG District to specifically establish a very low density sliding-scale approach to the number of new building sites allowed, based on the size of the parent parcel.

Action Strategy RDS-2: Evaluate and consider increasing the overall minimum lot size within the RR District from 1.5 acres to as much as 3 acres. Consideration may also be given to the creation of two separate RR Districts, based upon an investigation of current parcelization conditions, with one having a more restrictive minimum lot size.

Action Strategy RDS-3: Amend the Open Space Community Development Option within the zoning ordinance to require at least 50 percent of the parent parcel to be preserved as open space.

Action Strategy RDS-4: Amend both the Open Space Community Development Option and the Open Space Preservation Residential Development Option within the zoning ordinance to incentivize exceptional design and community benefits through a density bonus.

Action Strategy RDS-5: Explore the merger of the two open space development options within the zoning ordinance into a single open space development option.

Action Strategy RDS-6: Review the zoning ordinance and map to ensure that land is available to accommodate a planned mixture of farm service business and other locally oriented service establishments within the strategic nodes or hamlets located at Stadium Drive at 5th Street and West Main Street at Almena Drive.

Action Strategy RDS-7: Develop rural character design standards as a guide for the design and layout of non-residential development within the study area.

Action Strategy RDS-8: Work with road jurisdictions to formulate a transportation network that accepts limited congestion and travel delays on major roadways to minimize the widening of secondary roads, paving of gravel roads, other similar road construction projects that would negatively impact natural resources, neighborhoods, and overall rural character.

Action Strategy RDS-9: Investigate the establishment of a purchase of development rights program, land banking program, tax policy changes, or other incentives to encourage the owners of large, undeveloped properties to keep them as preserved open space.

Agricultural Lands and Enterprises (AG) Action Strategies

Action Strategy AG-1: Review and amend the zoning ordinance, as necessary, to allow agri-tourism and agri-business within the AG and/or RR Districts, with appropriate development restrictions to ensure compatibility with adjacent land uses and available public services. Specific uses to consider are those which were supported by the community as listed in Table 4.

Action Strategy AG-2: Review and amend the zoning ordinance, as necessary, to clarify and ensure that the open space development options allow for required open spaces to be utilized for agricultural purposes.

Action Strategy AG-3: Investigate the use of tax abatements as an economic development incentive for new investments in agriculture.

Action Strategy AG-4: Support the agricultural community in the use of existing legislative tools and techniques such as the Farmland and Open Space Preservation Act and farmland conservation easements.

Action Strategy AG-5: Consider the allowance of alternative energy facilities (solar/wind) within the AG District as a means to support environmental sustainability and provide supplementary income to property owners.

Natural Environment and Open Space (NE) Action Strategies

Action Strategy NE-1: Support and explore a variety of mechanisms for open space acquisition, to include land dedication, conservation easements, and outside funding for the public purchase of environmentally significant lands.

Action Strategy NE-2: Develop and adhere to storm water best management practices to minimize the negative impacts that development can have on runoff and water quality.

Action Strategy NE-3: Develop and adopt restrictions within the subdivision and site condominium ordinance, consistent with the extent of the High Value Resources Map (**Map 10**), which would protect the most critical concentrations of natural resources within the study area.

Action Strategy NE-4: Consider the adoption of a tree-protection ordinance that minimizes the impact of development and protects existing viewsheds along county roads.

Action Strategy NE-5: Require a natural features inventory as part of the site plan review and approval process.

Action Strategy NE-6: Determine which roads should be designated as natural beauty roads within the study area and adopt provisions within the zoning ordinance that limit or prohibit the removal of native or natural vegetation within the required front setback areas along such roads.

Action Strategy NE-7: Develop a plan to inventory, evaluate, protect, and enhance the green infrastructure system of Oshtemo Township, consisting of a series of interconnected habitats, natural features, and related amenities.

Historic and Cultural Resources (HC) Action Strategies

Action Strategy HC-1: Expand the Township's website for educational purposes to include information on historical places and structures within the study area.

Action Strategy HC-2: Support the efforts of the agricultural community, preservation groups, historical societies and other community groups to develop and promote cultural and heritage tourism opportunities.

Action Strategy HC-3: Work with the Oshtemo Historical Society to develop a program to recognize outstanding preservation work of individual historic buildings and places including barns and farm houses.

Action Strategy HC-4: Support the efforts of local property owners in the nomination of eligible historic properties to the National Register of Historic Places.

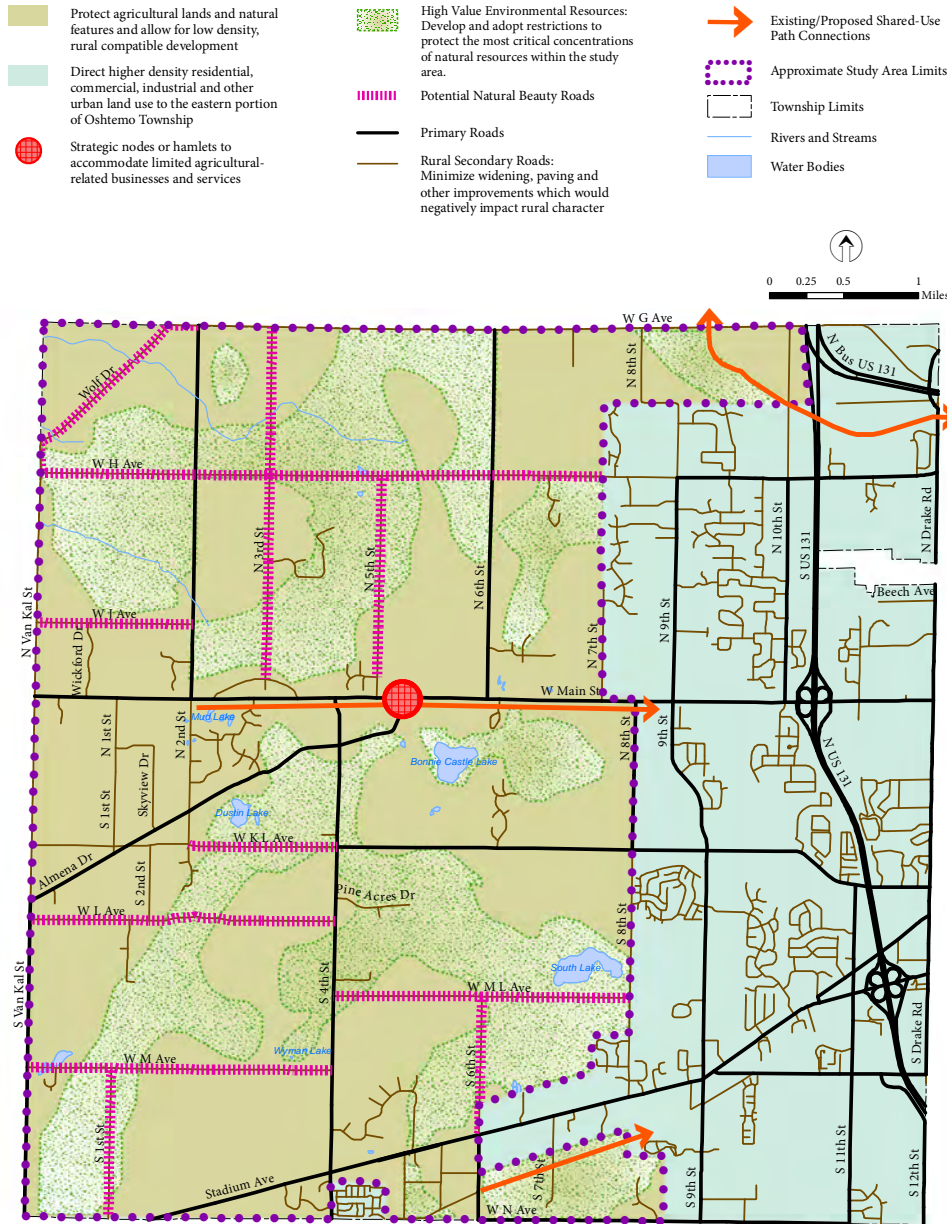
Recreation (REC) Action Strategies

Action Strategy REC-1: Maintain and implement a 5-year DNR approved Recreation Plan to be used as a short term and long term guide for recreation improvements and to ensure eligibility for certain State recreation grant opportunities.

Action Strategy REC-2: Maintain and implement a Non-Motorized Facilities Plan to be used as a short term and long term vision for non-motorized networks within Oshtemo Township and connections to the region.

Action Strategy REC-3: Seek and secure funding from Federal, State, local and private sources for the acquisition and/or development of passive recreational facilities, greenways, and non-motorized facilities within the study area.

Map 12 Rural Character Action Strategies



Action Strategy Implementation Matrix

Table 5 has been prepared as an implementation matrix, which can be utilized by Township leaders as a guide to execute the strategies contained in this plan. It includes a listing of all action strategies, a general priority for the strategy, an approximate timeframe for completion, and the responsible leaders and participants for the strategy. A key explaining the table can be found immediately below.

Implementation Matrix Key

PRIORITY	
A	Most Important
B	Very Important
C	Important

ABBREVIATIONS	
TB	Township Board
PC	Planning Commission
PARKS	Parks Committee/Friends of the Parks
TS	Township Staff
KCRC	Kalamazoo County Road Commission
MDOT	Michigan Department of Transportation
PO	Property Owners

**Table 5
Rural Character Action Strategies - Implementation Matrix**

Strategy ID	Action Strategy	Priority	Timeframe	Responsibility	
				Project Lead	Other Participants
RURAL DEVELOPMENT AND SERVICES (RDS)					
RDS-1	Evaluate potential zoning ordinance amendments to the AG District to specifically establish a very low density sliding-scale approach to the number of new building sites allowed, based on the size of the parent parcel.	A	1-2 years	PC, TS	TB
RDS-2	Evaluate and consider increasing the overall minimum lot size within the RR District from 1.5 acres to as much as 3 acres. Consideration may also be given to the creation of two separate RR Districts, based upon an investigation of current parcelization conditions, with one having a more restrictive minimum lot size.	A	1-2 years	PC, TS	
RDS-3	Amend the Open Space Community Development Option within the zoning ordinance to require at least 50 percent of the parent parcel to be preserved as open space.	B	1-2 years	PC, TS	TB
RDS-4	Amend both the Open Space Community Development Option and the Open Space Preservation Residential Development Option within the zoning ordinance to incentivize exceptional design and community benefits through a density bonus.	A	1-2 years	PC, TS	TB
RDS-5	Explore the merger of the two open space development options within the zoning ordinance into a single open space development option.	C	2+ years	PC, TS	TB
RDS-6	Review the zoning ordinance and map to ensure that land is available to accommodate a planned mixture of farm service business and other locally oriented service establishments within the strategic nodes or hamlets located at Stadium Drive at 5th Street and West Main Street at Almena Drive.	B	1-2 years	PC, TS	TB
RDS-7	Develop rural character design standards as a guide for the design and layout of non-residential development within the study area	C	2+ years	PC, TS	
RDS-8	Work with road jurisdictions to formulate a transportation network that accepts limited congestion and travel delays on major roadways to minimize the widening of secondary roads, paving of gravel roads, other similar road construction projects that would negatively impact natural resources, neighborhoods, and overall rural character.	A	Ongoing	TS	TB, PC, KCRC, MDOT
RDS-9	Investigate the establishment of a purchase of development rights program, land banking program, tax policy changes, or other incentives to encourage the owners of large, undeveloped properties to keep them as preserved open space.	A	1-2 years	TS	TB, PC
AGRICULTURAL LANDS AND ENTERPRISES (AG)					
AG-1	Review and amend the zoning ordinance, as necessary, to allow agri-tourism and agri-business within the AG and/or RR Districts, with appropriate development restrictions to ensure compatibility with adjacent land uses and available public services. Specific uses to consider are those which were supported by the community as listed in Table 4.	B	1-2 years	PC, TS	TB
AG-2	Review and amend the zoning ordinance, as necessary, to clarify and ensure that the open space development options allow for required open spaces to be utilized for agricultural purposes.	B	1-2 years	PC, TS	TB
AG-3	Investigate the use of tax abatements as an economic development incentive for new investments in agriculture	C	2+ years	TB	PC, TS, PO
AG-4	Support the agricultural community in the use of existing legislative tools and techniques such as the Farmland and Open Space Preservation Act and farmland conservation easements.	A	Ongoing	TS	PO
AG-5	Consider the allowance of alternative energy facilities (solar/wind) within the AG District as a means to support environmental sustainability and provide supplementary income to property owners.	B	1-2 years	PC, TS	TB

**Table 5
Rural Character Action Strategies - Implementation Matrix (cont.)**

Strategy ID	Action Strategy	Priority	Timeframe	Responsibility	
				Project Lead	Other Participants
NATURAL ENVIRONMENT AND OPEN SPACE (NE)					
NE-1	Support and explore a variety of mechanisms for open space acquisition, to include land dedication, conservation easements, and outside funding for the public purchase of environmentally significant lands.	B	Ongoing	TB	PC, TS
NE-2	Develop and adhere to storm water best management practices to minimize the negative impacts that development can have on runoff and water quality.	A	1-2 years	PC, TS	TB
NE-3	Develop and adopt restrictions within the subdivision and site condominium ordinance, consistent with the extent of the High Value Resources Map (Map 10), which would protect the most critical concentrations of natural resources within the study area.	A	1-2 years	PC, TS	TB
NE-4	Consider the adoption of a tree-protection ordinance that minimizes the impact of development and protects existing viewsheds along county roads.	C	2+ years	PC, TS	TB
NE-5	Require a natural features inventory as part of the site plan review and approval process.	C	2+ years	PC, TS	TB
NE-6	Determine which roads should be designated as natural beauty roads within the study area and adopt provisions within the zoning ordinance that limit or prohibit the removal of native or natural vegetation within the required front setback areas along such roads.	A	1-2 years	PC, TS	TB
NE-7	Develop a plan to inventory, evaluate, protect, and enhance the green infrastructure system of Oshtemo Township, consisting of a series of interconnected habitats, natural features, and related amenities.	A	1-2 years	PC, TS	TB
HISTORIC AND CULTURAL RESOURCES (HC)					
HC-1	Expand the Township's website for educational purposes to include information on historical places and structures within the study area.	B	1-2 years	TS	PO
HC-2	Support the efforts of the agricultural community, preservation groups, historical societies, and other community groups to develop and promote cultural and heritage tourism opportunities.	B	Ongoing	TS	PO
HC-3	Work with the Oshtemo Historical Society to develop a program to recognize outstanding preservation work of individual historic buildings and places including barns and farm houses.	C	2+ years	TS	PO
HC-4	Support the efforts of local property owners in the nomination of eligible historic properties to the National Register of Historic Places.	B	Ongoing	TS	PO
RECREATION (REC)					
REC-1	Maintain and implement a 5-year DNR approved Recreation Plan to be used as a short term and long term guide for recreation improvements and to ensure eligibility for certain State recreation grant opportunities.	B	At least every 5 years	PR, TS	TB
REC-2	Maintain and implement a Non-Motorized Facilities Plan to be used as a short term and long term vision for non-motorized networks within Oshtemo Township and connections to the region.	B	At least every 5 years, or as necessary	PR, TS	TB
REC-3	Seek and secure funding from Federal, State, local and private sources for the acquisition and/or development of passive recreational facilities, greenways and non-motorized facilities within the study area.	B	Ongoing	TS	TB, PC, PR

Maple Hill Drive South Sub-Area Plan

OSHTEMO TOWNSHIP MASTER PLAN UPDATE 2017



To engage community members, the Maple Hill Drive South Sub-Area planning process included a Visual Preference Survey. This image was the highest ranked image in the Public Amenities category.

Introduction

This Maple Hill Drive South Sub-Area Plan, adopted by the Oshtemo Township Planning Commission on _____, 2017, is hereby incorporated as a sub-area plan of the Oshtemo Township Master Plan 2011. A sub-area plan is an individual component of the overall Master Plan that provides a deeper evaluation of a specific area, such as a local business district or a neighborhood. A sub-area plan includes a vision, goals, principles, and future land use map just like the overall Master Plan, although in more detail than the Township-wide Plan.

The Oshtemo Township Master Plan 2011 specifically calls out the Maple Hill Drive South area as a sub-area (refer to Figure 8.1, Future Land Use) and recommends that a detailed sub-area plan be developed. As noted in the Master Plan 2011, the Maple Hill Drive South area is currently comprised of an existing golf course and smaller adjacent properties, and has strong potential to accommodate new development due to its location near West Main Street and US-131. Although the existing golf course is a “man-made” green space area, it exists as the only significant green space within this heavily developed portion of the Township. Given the strong potential for redevelopment of the site, it is critical to undertake a sub-area study, where a preferred development character can be identified, consistent with community goals and market demand.

Study Area Context

The Maple Hill Drive South Sub-Area is located within the eastern portion of Oshtemo Township along the south side of West Main Street (M-43), between the US-131 interchange and the Township's border with the City of Kalamazoo (Drake Road forms the city-township boundary). More specifically, the sub-area is located to the south of West Main Street at the southern terminus of Maple Hill Drive. US-131 forms the sub-area's western boundary, while existing residential neighborhoods are located adjacent to the south. Existing commercial development, accessed by either West Main Street or Drake Road, is located immediately adjacent to the sub-area to the north and east. The sub-area location is shown on **Map 13**.

In total, the Maple Hill Drive South Sub-Area comprises approximately 143 acres of land.

Existing Conditions Assessment

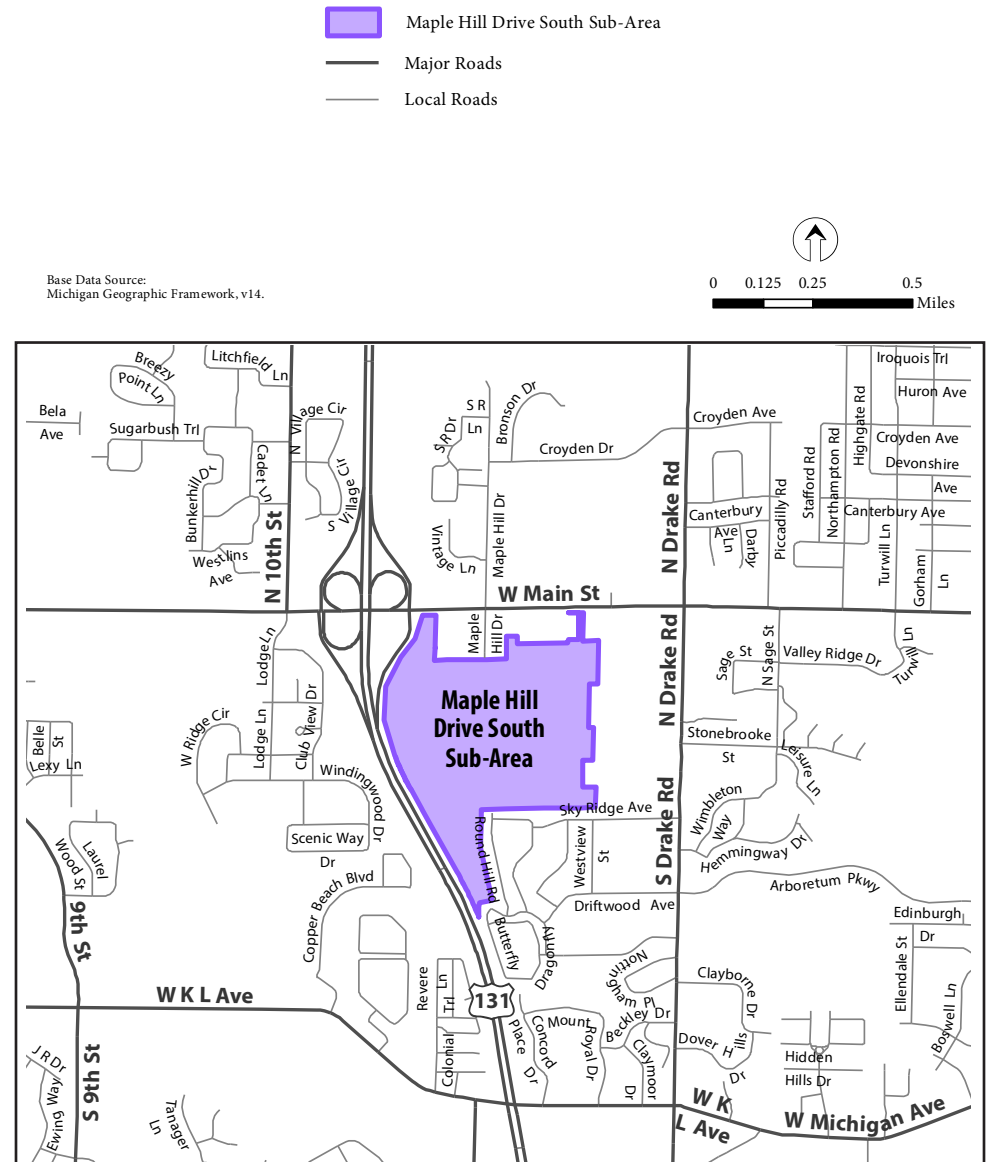
Existing Land Use Pattern

The sub-area consists of six separate parcels of land, including:

- Three parcels which combine to make up the Prairies Golf Club
- Two Consumers Energy electrical utility corridor parcels
- One parcel owned by the Michigan Department of Transportation (MDOT) and used as a maintenance garage

The commercial areas adjacent to the sub-area to the north (fronting West Main Street) and east (fronting Drake Road) include primarily automobile-oriented development, strip centers, and big box retail, along with adjacent outlots developed as service and retail uses. To the south is a mix of established low and medium density residential development. These include single-family detached subdivisions and residential attached condominiums. Multiple-family apartment complexes are slightly further to the south of the sub-area. The existing land use pattern of the sub-area and vicinity is shown on **Map 14**.

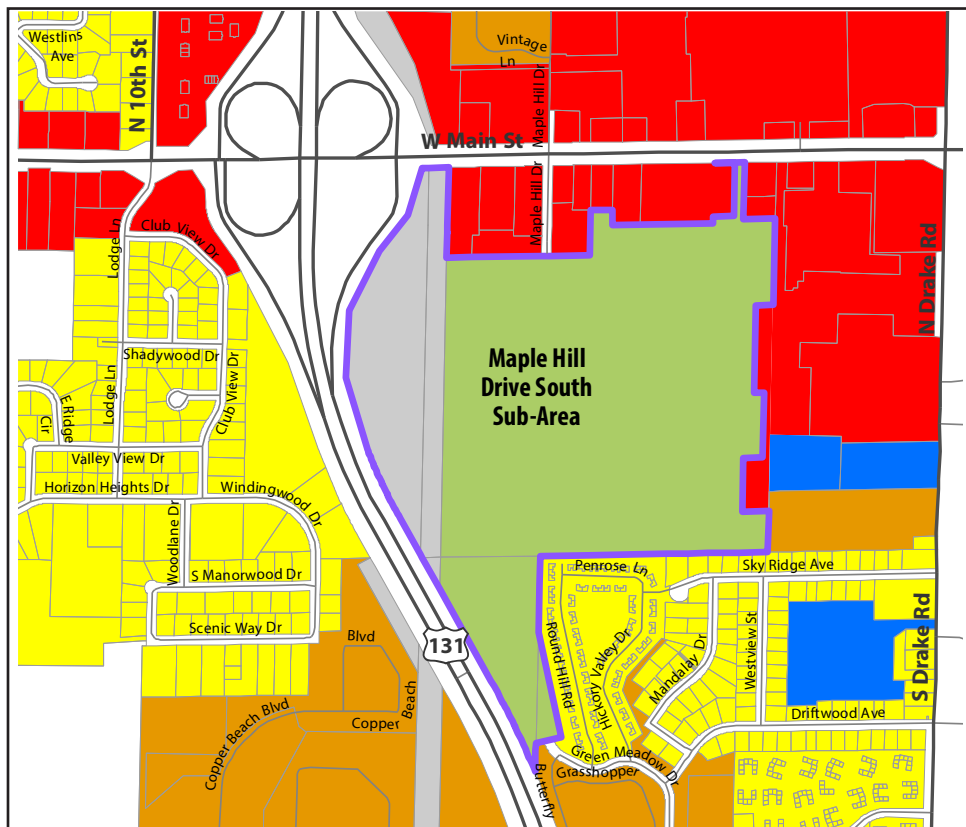
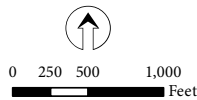
Map 13
Maple Hill Drive South Sub-Area Location Map



Map 14
Existing Land Use Pattern

- Low Density Residential (Single-Family Detached or Attached)
- High Density Residential (Multiple-Family Residential, Senior Housing, etc.)
- Institutional
- Golf Course
- Utilities
- Commercial, Service, Office, etc.
- Vacant Lands
- Maple Hill Drive South Sub-Area
- Major Roads
- Local Roads
- Property Lines

Data Sources:
Wade Trim, May 2017
Michigan Geographic Framework, v14.



Given its close proximity to the sub-area, it is important to note a new commercial development currently under construction. This project, called Westgate, is located just north of the sub-area. Access to the development will be provided by West Main Street and Maple Hill Drive, and the project will also have frontage along US-131. The development will consist of several large big box retail stores, smaller retail stores, offices, three hotels, and several restaurants.

Existing Zoning Pattern

The Maple Hill Drive South Sub-Area is presently zoned a combination of several zoning districts. The largest portion of the sub-area, generally encompassing the central portion of the golf course, is zoned R-2: Residence District, while the southern portion of the golf course is zoned R-4: Residence District. The MDOT maintenance garage site is presently zoned I-1: Industrial District. Finally, small segments of the sub-area near West Main Street are zoned C: Local Business District. **Map 15** shows the existing zoning pattern of the sub-area and vicinity.

Public Services/Infrastructure

Vehicular Transportation

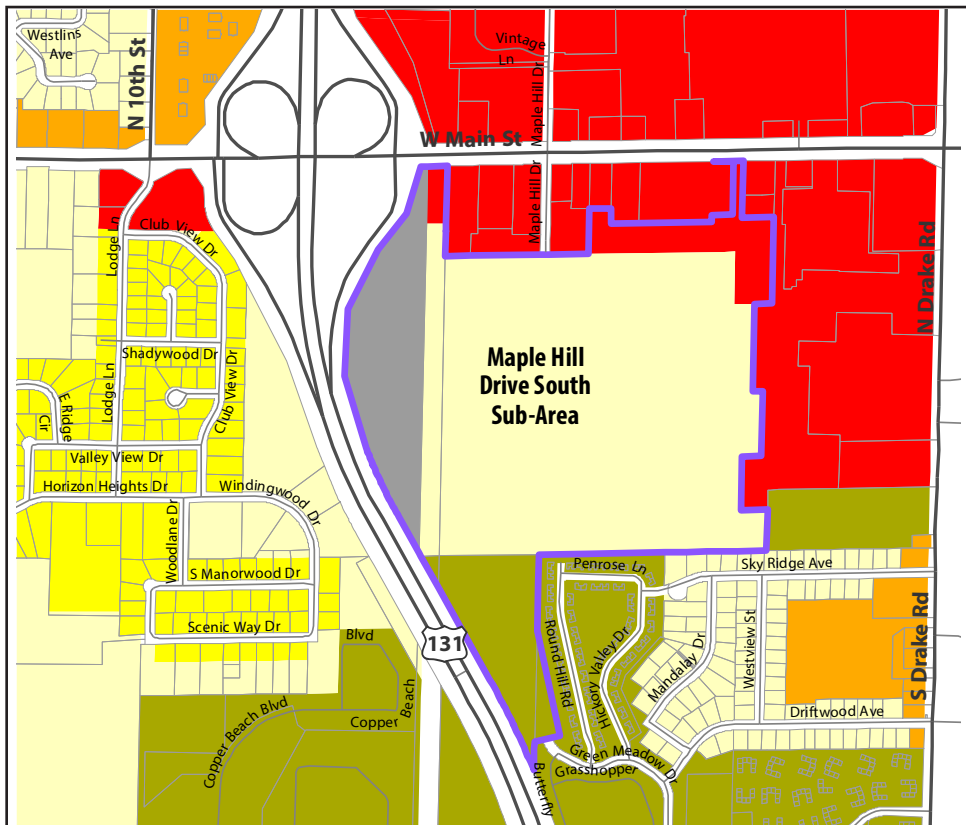
The primary vehicular routes providing access to the sub-area are West Main Street (M-43) to the north and North Drake Road to the east. Immediately to the west of the sub-area is US-131, a limited access interstate freeway with a controlled access interchange at West Main Street. Near the sub-area, West Main Street is a five-lane road (center turn lane) with a speed limit of 45 miles per hour. In 2015, according to MDOT, West Main Street had an average daily traffic count (AADT) of 29,900 vehicles.

Maple Hill Drive intersects West Main Street just to the north of the sub-area (at a signalized intersection) and terminates into a cul-de-sac at the northern edge of the sub-area. To the north, across West Main Street, Maple Hill Drive provides access to numerous commercial and residential developments, including the new Westgate development noted earlier.

Map 15 Existing Zoning Pattern



Data Sources:
Oshtemo Township Zoning Map
Michigan Geographic Framework, v14.



East of Maple Hill Drive along West Main Street, an existing driveway (unsignalized intersection) provides access to the existing golf course clubhouse. Just beyond that driveway is a signalized intersection with an unnamed service road, which provides access to the commercial properties immediately adjacent to the sub-area to the east.

Approximately one-quarter mile to the east of the sub-area is Drake Road, a County Primary Road. Drake Road is a five-lane road (center turn lane).

Several residential streets are located to the south of the sub-area, including Skyridge Avenue, Penrose Lane, and Green Meadow Road; however, none of these streets extend within, or provide access to, the sub-area.

Public Transit

The sub-area is served by the Metro Transit (KMetro) bus system. Several bus lines serve the sub-area, including: Route 14, West Main; Route 3, West Michigan; and Route 7, Alamo. KMetro's ten year vision (adopted in 2015) includes a recommendation to convert two of these routes into "high frequency fixed routes." According to KMetro, a high frequency fixed route would operate at 15 minute intervals in the busiest travel times. Faster, more predictable service would attract new riders and save all passengers significant amounts of time that they spend waiting for buses (these routes currently operate on 30 minute intervals for trips and have an unpredictable finish time). Riders would be able to make more trips in less time and have a higher level of mobility.

Non-Motorized Transportation

The sub-area is not currently served by non-motorized transportation routes such as trails or sidewalks. Presently, sidewalks are located along both sides of West Main Street to the north of the sub-area. No sidewalks are located on the west side of Drake Road near the sub-area. However, a planned 10-foot wide pathway along Drake Road is expected to be constructed in 2018. The existing residential neighborhoods to the south of the sub-area are not served by sidewalks. The nearest regional trail route is the Kal-Haven Trail, which is located approximately 2 miles north of the sub-area.

Utilities

The Maple Hill Drive South Sub-Area and properties in the vicinity are presently served by a network of public water and sewer utilities (see **Map 16**).

Public water mains run along both West Main Street and Drake Road near the sub-area. A 12-inch diameter water main extends to the north edge of the sub-area along Maple Hill Drive, and an 8-inch water main extends into the sub-area along the golf course clubhouse driveway. An 8-inch water main also extends near the southern edge of the sub-area along Round Hill Road.



Public sanitary sewer mains run along both West Main Street and Drake Road near the sub-area. An 8-inch diameter sanitary sewer main extends to the north edge of the sub-area along Maple Hill Drive. An 8-inch sanitary sewer main also extends to the southern edge of the sub-area along Round Hill Road.

Natural Features

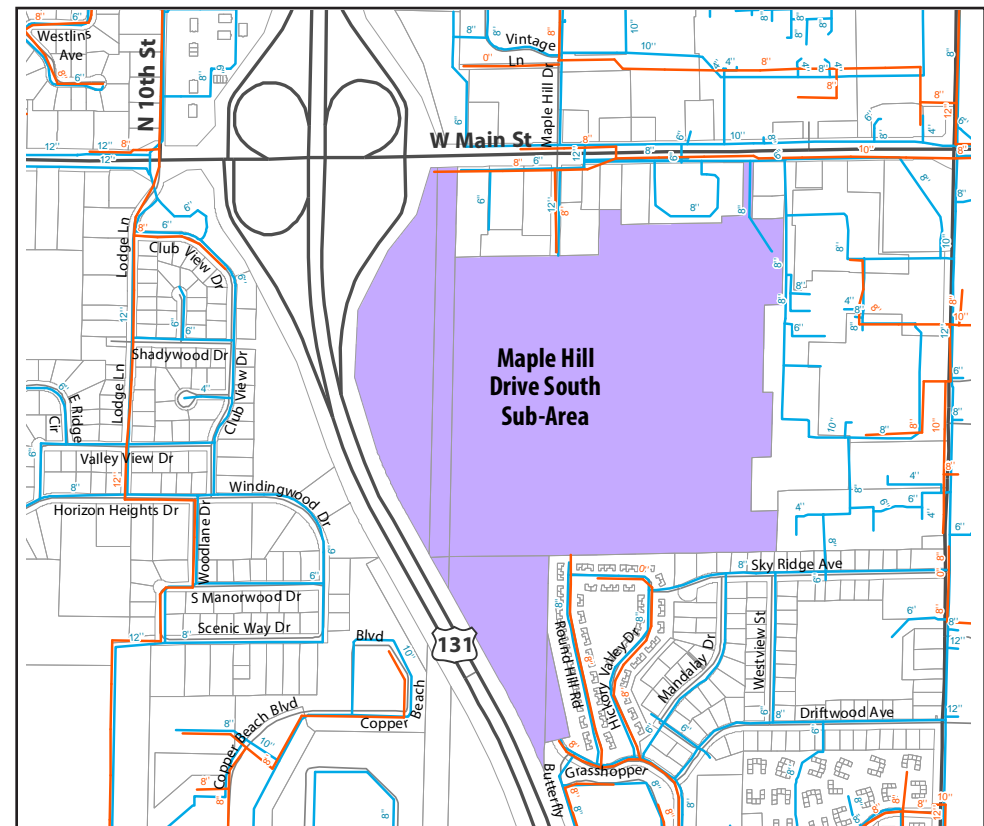
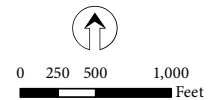
An existing golf course occupies much of the sub-area and features open space, trees and vegetation. Although man-made, the golf course is an important green space area, given its significant size and because it is the only such area in the vicinity of the sub-area.

In terms of development constraints, the Maple Hill Drive South Sub-Area does not presently contain natural features that would prohibit or significantly hinder construction activity. The site is generally flat, with a few small ponds and some tree rows (part of the existing golf course). No streams or creeks extend through or near the sub-area. According to the National Wetlands Inventory, no wetlands are found in the sub-area. According to FEMA, no portion of the sub-area is within a 100-year floodplain.

Map 16 Public Utilities

-  8" Public Water Mains
-  8" Public Sewer Mains
-  Maple Hill Drive South Sub-Area
-  Major Roads
-  Local Roads
-  Property Lines

Data Sources:
Oshtemo Township, December 2016
Michigan Geographic Framework, v14.



Community Input

The primary means of community input in the Maple Hill Drive South Sub-Area planning process was a workshop held in March 2017. The purpose of the workshop was to inform and engage community members as part of the planning process to craft development preferences for the Maple Hill Drive South Sub-Area. In total, more than 50 interested citizens attended the workshop. Later in the planning process, an open house was held, where the draft plan was presented to the public for review and comment.

Visual Preference Survey

One key element of the workshop was a visual preference survey, a technique for obtaining feedback related to physical design character through the ranking of a series of representative images. **Table 6** provides a snapshot of the average score for each photo, as voted by the workshop attendees. Additionally, image sheets displaying the ranked images for each category are included in this section.

In general, the visual preference survey results revealed a clear preference for lower-density residential development as opposed to higher-density residential development. Most preferred was single-family attached or detached development with densities of less than 8 units per acre. There was a general distaste for conventional multiple family development (apartments) and multi-story (3+ stories) high density residential development.

Mixed-use development that scored well included those that exhibited high quality building architecture and site amenities, were 2-3 stories in height, and had ground level retail with upper story residential/office. The most favored commercial images were those that featured local commercial establishments with high quality building architecture, site amenities, and landscaping. Big-box and strip commercial development was less preferred. Streets that incorporated pedestrian, bicycle and non-motorized amenities were most preferred. Images which featured public amenities, such as sidewalk cafes and community green space, were overwhelmingly preferred. The detailed results of the visual preference survey are provided in the **Appendix**.

Table 6
Visual Preference Survey Image Scores by Category

Residential		Mixed Use		Commercial	
Photo Number	Photo Avg. Score	Photo Number	Photo Avg. Score	Photo Number	Photo Avg. Score
R-2	1.2	MU-4	1.2	C-7	0.9
R-4	0.5	MU-3	1.0	C-8	0.8
R-10	0.3	MU-2	0.2	C-2	0.1
R-1	0.1	MU-6	0.1	C-5	0.0
R-8	-0.2	MU-1	-0.1	C-1	0.0
R-9	-0.5	MU-7	-0.2	C-3	-0.3
R-7	-0.5	MU-5	-0.3	C-9	-0.3
R-3	-0.7	MU-10	-0.4	C-10	-0.4
R-5	-1.1	MU-9	-0.5	C-6	-0.8
R-6	-1.3	MU-8	-0.7	C-4	-1.5

Office		Streets/Sidewalks /Transit		Public Amenities	
Photo Number	Photo Avg. Score	Photo Number	Photo Avg. Score	Photo Number	Photo Avg. Score
O-5	1.0	S-2	2.1	PA-4	1.9
O-6	0.5	S-4	1.1	PA-6	1.6
O-2	0.4	S-7	0.9	PA-9	1.4
O-3	0.0	S-6	0.5	PA-1	1.4
O-10	-0.1	S-9	0.5	PA-8	1.2
O-9	-0.2	S-8	0.4	PA-2	0.9
O-8	-0.7	S-5	-0.2	PA-3	0.9
O-4	-0.8	S-10	-0.2	PA-7	0.3
O-7	-0.8	S-3	-0.4	PA-10	-0.5
O-1	-1.8	S-1	-0.5	PA-5	-0.6

While the visual preference survey revealed a preference for lower-density single-family development, the location of the sub-area (along major transportation routes and in close proximity to established commercial and higher intensity development) supports a denser residential product. Also, the Township Future Land Use Map directs higher intensity development toward this eastern edge of the Township, nearest the City of Kalamazoo. Given these factors, there is an opportunity to allow for increased residential densities within the sub-area.

Residential Development

Photo R-2: Rank #1 - Score 1.2



Photo R-4: Rank #2 - Score 0.5



Photo R-10: Rank #3 - Score 0.3



Photo R-1: Rank #4 - Score 0.1



Photo R-8: Rank #5 - Score -0.2



Mixed-Use Development

Photo MU-4: Rank #1 - Score 1.2



Photo MU-3: Rank #2 - Score 1.0



Photo MU-2: Rank #3 - Score 0.2



Photo MU-6: Rank #4 - Score 0.1



Photo MU-1: Rank #5 - Score -0.1



Commercial Development

Photo C-7: Rank #1 - Score 0.9



Photo C-8: Rank #2 - Score 0.8



Photo C-2: Rank #3 - Score 0.1



Photo C-5: Rank #4 - Score 0.0



Photo C-1: Rank #5 - Score 0.0



Office Development

Photo O-5: Rank #1 - Score 1.0



Photo O-6: Rank #2 - Score 0.5



Photo O-2: Rank #3 - Score 0.4



Photo O-3: Rank #4 - Score 0.0



Photo O-10: Rank #5 - Score -0.1



Streets/Sidewalks/Transit

Photo S-2: Rank #1 - Score 2.1



Photo S-4: Rank #2 - Score 1.1



Photo S-7: Rank #3 - Score 0.9



Photo S-6: Rank #4 - Score 0.5



Photo S-9: Rank #5 - Score 0.5



Public Amenities

Photo PA-4: Rank #1 - Score 1.9



Photo PA-6: Rank #2 - Score 1.6



Photo PA-9: Rank #3 - Score 1.4



Photo PA-1: Rank #4 - Score 1.4



Photo PA-8: Rank #5 - Score 1.2



However, sufficient protections would need to be implemented, such as a transition scheme consisting of the establishment of low-density uses and/or open space buffers, to ensure an appropriate relationship with adjacent low-density residential development to the south. Both the establishment of lower-density residential uses within the sub-area and the protection of existing low-density residential uses adjacent to the sub-area were highly desired by visual preference survey participants.

Design Exercise

A second key component of the community workshop was a design exercise, where small groups (eight total) were formed and asked to identify design concepts and ideas for future development within the study area. To support this effort, small groups were given large aerial photographs of the study area, along with pre-established categories with precedent descriptions/imagery for land use types, building types and circulation route types. Below is a summary of the key themes or “shared values” that emerged as a result of this exercise.

Land Uses

While the details of each group’s site design plan differed in the layout and scale of development on the site, overall, the plans had the following in common:

- A buffer consisting of open space and complimentary recreational uses, e.g. playgrounds, parks, trails, etc. should be located along the south property line between the site and the neighborhoods to the south
- Commercial and retail uses, including mixed-use buildings, should be located along the north property line (which is consistent with existing land uses on Main Street)
- A mixture of office and mixed-use buildings should be located to the west, adjacent to US-131



One of the small group concept plans prepared during the design exercise.

Connections and Mobility

While the plans differed in how the site should be accessed or how the street network should traverse the site, several themes came out of the design process. The following provides a summary of how the design proposals dealt with connections and mobility.

- All eight groups suggested a street connection to the site from the north (Main Street) through an extension of existing streets and driveways into the site
- While three plans proposed extending the street network to make a connection to the existing neighborhoods south of the site, the majority of the plans proposed the creation of a large buffer area along the southern border
- Half of the plans proposed a street connection to the existing commercial area (and ultimately Drake Road) to the east
- Several plans suggested the creation of pedestrian trails and bicycle lanes on the site, potentially connecting into the existing street network of the neighborhoods to the south

The detailed results of the design exercise are provided in the **Appendix**.

Vision, Goals, and Principles

The Oshtemo Township Master Plan 2011 contains Goals and Objectives to describe the vision for the Township as a whole and how to achieve them. These overall goals also apply to the Maple Hill Drive South Sub-Area and will help shape the development that occurs. However, due to the unique circumstances in this sub-area, the vision, goals, and principles established herein for the sub-area will further guide future land use and development.

The vision, goals, and policies established herein depict the ideal future of the Maple Hill Drive South Sub-Area. The vision is forward-looking, anticipating that development or redevelopment will not occur immediately, but rather, will occur in line with market demand over a longer period of time, five to ten years into the future, or beyond. This plan recognizes that the existing uses currently present within the sub-area,

including the Prairies Golf Club and the MDOT maintenance garage, remain viable at the present time. However, the plan is proactive and seeks to guide future development or redevelopment of the sub-area if and when it occurs.

Vision for the Sub-Area

The long-term vision for the Maple Hill Drive South Sub-Area is to develop as an attractive and economically vibrant mixed-use district, consisting of a planned mixture of commercial, office and technology, residential, and public use, which features high quality and uniform building and site design standards, and which complements and is compatible with adjacent uses. Further, the sub-area will provide residents and visitors with a unique opportunity to meet their needs for housing, employment, services, entertainment, and recreation.

Without standards or controls, this area would likely develop at an elevated intensity due to the high traffic levels on West Main Street and the amount and success of surrounding commercial development. Uncontrolled development would likely be detrimental to the Township, especially to those residents who live south of this area. Therefore, clearly stating a vision for future land use and establishing goals and standards for improvement in this area is critical to the success of the Township's overall plan for growth and development.

Goals and Principles for the Sub-Area

Goals and principles have been established for this sub-area which describe in greater detail how the vision for future development will be accomplished. The goals and principles are organized into overarching categories: Community Life, Physical Character, Land Use, and Access.

Future market conditions may change, development trends may evolve, and new ideas may emerge that were not anticipated; this plan is flexible enough to accommodate such changes. Regardless of the different uses developed in this area, the consistency will be in these goals and principles -- they will ensure that this sub-area develops consistently with the vision outlined by the community.

Community Life Goal and Principles

Development in the Maple Hill Drive South Sub-Area will occur in a manner that enhances the existing quality of life of all those who live, work, and play in Oshtemo Township.

- Protect the integrity and quality of life of existing and future neighborhoods and surrounding residential areas through land use transitions and open space buffers.
- Open spaces and community gathering spaces should be provided within the sub-area to be used as locations to stimulate social interaction, civic events, and recreational activity.
- A distinct identity should be developed for the sub-area to promote a sense of place for the new community.
- Public spaces, such as parks and non-motorized facilities, will be encouraged within the sub-area. The use of Zoning incentives will be considered to foster the development of public spaces.

Physical Character Goal and Principles

Site and architectural design within the Maple Hill Drive South Sub-Area shall follow exceptional and complementary standards to ensure long-term appeal, and create a unique and memorable experience for visitors and residents. Form and character standards shall be established so that appearance becomes as important as the specific uses established in this area. However, such standards must be flexible enough to allow for various aesthetic interpretations.

- Building design shall be elevated with varied building heights, architectural character, and high-quality building materials that provide visual interest at a pedestrian scale.
- The physical height and bulk of buildings shall reduce in size from north to south, providing compatibility in size to the adjacent residential neighborhoods or a substantial open space buffer that helps to mitigate impacts.
- Varied styles of residential development are encouraged to attract residents of diverse ages, incomes, and lifestyles.



High-quality site and architectural design will ensure long-term appeal, and create a unique and memorable experience for visitors and residents.

- The design, layout, and amenities provided within the development shall balance both pedestrian and vehicular needs, and shall work to enhance aesthetic appeal and the overall experience for both residents and visitors.
- A streetscape aesthetic shall be designed that includes public elements and integrated signage within the sub-area.
- Sustainable development principles, such as the use of storm water best management practices and the incorporation of “green” building design, will be encouraged and incentivized, in order to enhance the quality of the natural environment and limit off-site impacts.
- The western portion of the sub-area, with high visibility from US-131 and West Main Street, shall showcase strong unified design and architectural standards, with the potential for the incorporation of gateway features highlighting entry into Oshtemo Township.

Land Use Goal and Principles

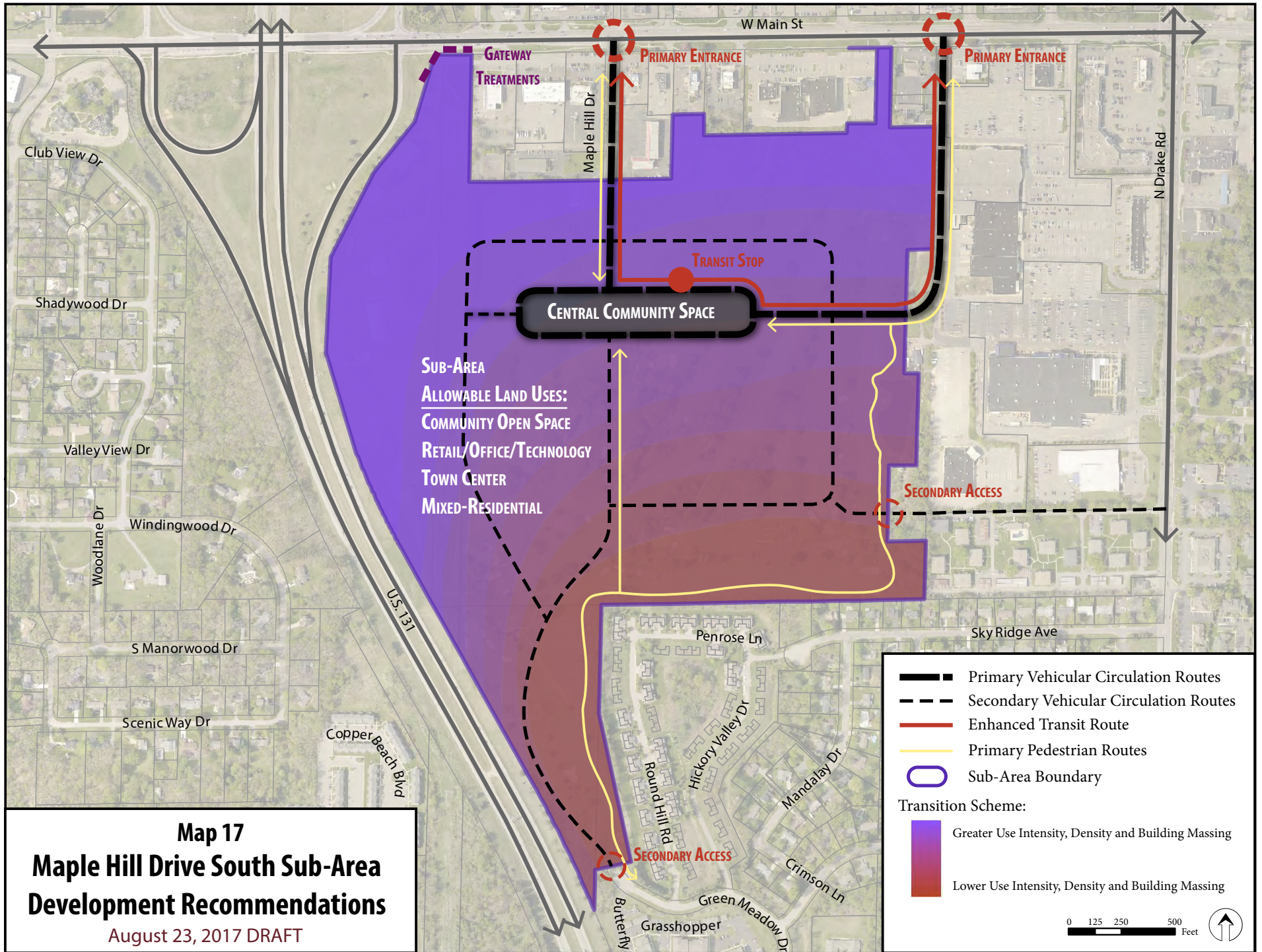
Future development in the Maple Hill South Sub-Area will include a mix of uses, complementing the commercial character of the area while respecting adjacent residential development.

- Uses in the sub-area will include a compatible mix of residential, non-residential and public space.
- Development in the sub-area shall include passive open spaces, and will be designed to be reflective of the existing landscape and natural features (tree rows, ponds, etc.) of the site. Active plazas and civic spaces shall also be integrated into the overall development.
- To ensure compatibility with adjacent development, a transitional land use scheme shall be employed, with the least intensive and lowest density land uses to be located along the southern edge of the sub-area (adjacent to established residential areas), transitioning to more intensive and higher density land uses where adjacent to the freeway and existing commercial areas.
- The southern edge of the sub-area shall be exclusively occupied by residential land uses, to ensure compatibility with adjacent established residential areas. Further, if the height and bulk of any proposed residential construction is not equivalent to the existing development, a natural greenspace buffer/ vegetative screen shall be provided.

Access Goal and Principles

A safe, efficient, and balanced multi-modal transportation network will be established within the Maple Hill Drive South Sub-Area. The primary vehicular access to the sub-area will be provided from West Main Street; however, local connections to adjacent development should also be established.

- Ensure future development complies with the Township’s Access Management Plan.
- Require efficient vehicular and pedestrian interconnections between the varied development sites within the sub-area.



- Design the local transportation network in a manner that discourages direct connections between commercial development and adjacent neighborhoods limiting through traffic.
- Coordinate with MDOT and the Road Commission of Kalamazoo County to ensure future road improvements are consistent with this and other plans of the Township, including the Non-Motorized Facilities Plan.
- Opportunities for enhanced transit service within the sub-area should be explored and accommodated.
- Facilitate the establishment of a pedestrian and bicycle transportation network within the sub-area, with strategic connections to the broader non-motorized transportation network.
- Parking areas should be designed and located with care, to avoid overparking the site and to ensure the focus remains on the buildings and not the parking areas. Shared parking will be strongly encouraged.
- Sidewalks should be provided on every street to promote safe and efficient pedestrian routes within the development.

Development Recommendations

Development recommendations for the sub-area, related to land use, density, circulation and connections, are further described below and are illustrated on **Map 17**.

Land Use Types

To allow flexibility in future development of the site, this sub-area plan does not specifically delineate the geographical extent of land uses that would comprise the overall mixed-use development. However, consistent with the previously listed Land Use Goals and Principles, the following specific land use types would be encouraged:

Community/Open Space

The integration of community and open space uses within the development is critical to ensure an exceptional environment for visitors and



Mixed-use buildings could contain first-floor commercial, retail, and/or office uses, with upper floor office and/or residential uses.

residents. A central community space area is recommended as a sub-area focal point; this space would be designed to accommodate more active community functions, such as civic events, recreation, and entertainment. Passive open space areas are also recommended to serve as buffers and places to experience and enjoy nature.

Retail/Office/Technology

Particularly given its high visibility from US-131 and West Main Street, the sub-area is highly suitable to accommodate mixed-use or stand-alone buildings that would include retail, restaurant, entertainment, office, and technology use.

Town Center

A “town center” is envisioned as a central focal point, with compact, mixed-uses that will provide a nucleus to attract future growth. Development will allow for a mix of uses both vertically within buildings and horizontally within blocks. For example, mixed-use buildings could contain first-floor commercial, retail, and/or office uses, with upper floor office and/or residential uses. Mixed-use blocks allow for single-use buildings in a range of land uses within one block. Commercial uses, professional offices, entertainment facilities and cultural centers are encouraged. Pedestrian-oriented design is of paramount importance to create a sense of place.

Mixed Residential

The sub-area is anticipated to accommodate a wide variety of residential styles. This could include higher density residential land uses within the town center and/or where adjacent to the existing commercial development on West Main Street. Such high density residential use could be accommodated within the upper levels of mixed-use buildings or stand-alone buildings. Or, more traditional residential uses that will serve as a buffer between mixed-uses within the sub-area and the adjacent neighborhoods south of the sub-area. Varied styles and types of residential use, from small lot detached homes to attached dwelling units, are expected to be accommodated, in a coordinated, pedestrian-oriented setting.

Density

The overall recommended net density for the Maple Hill Drive South Sub-Area is 6 dwelling units per acre. Where extraordinary public benefit is provided, such as the inclusion of significant open space or civic amenities, the granting of a density bonus may be considered by the Township. Implementation of density bonuses will likely be devised on a sliding scale based on either the amount of land dedicated to a public purpose or the complexity of the public use.

Building Scale

Within the sub-area, the scale of mixed-use or stand-alone buildings is proposed to be the greatest where adjacent to established commercial areas along West Main Street and along the US-131 frontage. Within the town center component of the development, buildings should maintain a massing similar to traditional small-town downtowns. A building scale transition scheme should be employed throughout the sub-area, with the scale of buildings in the southern edge being similar to and compatible with adjacent residential development to the south.

Circulation and Connections

A conceptual internal circulation plan for the sub-area with proposed connections to adjacent properties is shown on **Map 17**. These recommendations are further summarized below.

Vehicular Circulation and Connections

The primary vehicular access to the sub-area would occur through two entrances from West Main Street. Coordination with MDOT would need to occur to ensure safe and efficient access to the site through appropriate intersection design and signalization. Additionally, the eastern-most of the two proposed primary access drives extends beyond the sub-area into an adjacent private property. Coordination with this adjacent property owner would need to occur, and consideration should be given to making this a public road that would be dedicated to the Road Commission of Kalamazoo County.

Secondary vehicular access to the sub-area is recommended to occur from the south via Green Meadow Drive. In addition to providing access to the sub-area itself, this secondary vehicular access would serve an added benefit of offering access to West Main Street for the residents to the south, including the Canterbury House Apartments. Once this access through the sub-area to West Main Street is established, the Township will work with the Road Commission of Kalamazoo County to close the connection between Green Meadow Drive and Driftwood Avenue, a local residential street, which is commonly used as a cut-through to Drake Avenue.

Secondary vehicular access into the sub-area is also recommended from Drake Road to the east, via an existing, privately owned access drive serving an adjacent apartment complex. Coordination with the adjacent property owner would need to occur, and consideration should be given to making this a public road that would be dedicated to the Road Commission of Kalamazoo County.

Transit Connection

Map 17 shows a recommended transit route extending into the sub-area via West Main Street, with a transit stop near the central community green space. This is likely to be a KMetro bus route extension/modification of its current Route 14 along West Main Street.

Non-Motorized Circulation and Connections

The establishment of an interconnected non-motorized circulation system, consisting of sidewalks, multi-use trails, crosswalks and pedestrian amenities (benches, bicycle racks, etc.), is critical for the success of the sub-area. Primary pedestrian routes recommended for the sub-area are conceptually identified in **Map 17**. Connections to existing pedestrian networks outside of the sub-area, such as to the neighborhoods to the south will be required.

Implementation/Zoning Plan

To implement the Maple Hill Drive South Sub-Area Plan, an overlay zone with design guidelines related to building form within the sub-area is recommended to be developed and adopted by the Township. The overlay zone would provide guidance on uses, densities, and other bulk requirements for the sub-area. The overlay zone would likely include regulations pertaining to the following:

- Applicability of overlay zone
- Uses permitted
- Development standards, including building and site orientation, setbacks, minimum/maximum heights, required open space, parking, etc.
- Private/common open space standards
- Incentives for public spaces/uses, through residential density and commercial square foot bonuses
- Review and approval procedures and standards

Design guidelines would also be included as part of the overlay zone, which would provide direction on more subjective issues such as the general aesthetics of architectural character, building materials, signage, and landscape elements.

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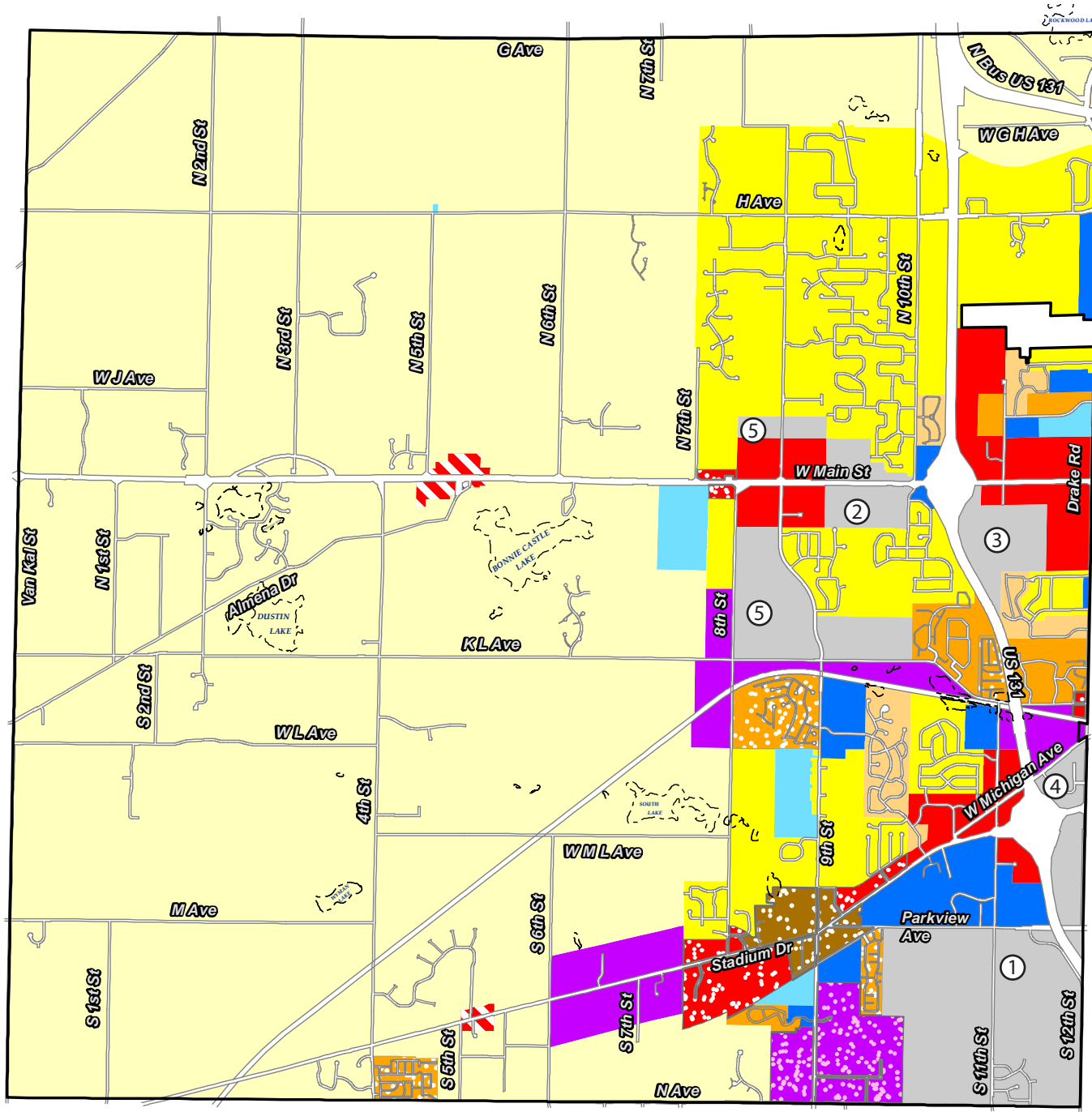
Image Source: Bing Maps

Future Land Use

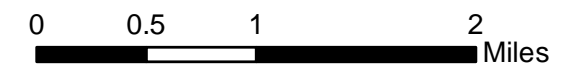
The Future Land Use Plan and Map (**Map 18**) defines the vision for land development in Oshtemo Township based on sound planning principles and community input, which guided this desired future. It builds on the historic development patterns of the community, factoring in the objective to preserve unique environmental features and to protect the rural character of the community. At the same time, it provides for anticipated development within the Township in appropriate places for growth.

As an update to the 2011 Master Plan, only minor modifications were made to the Future Land Use Plan and Map. These modifications reflect the desired future land use patterns for areas of the Township that have either experienced some transition of land uses since the adoption of the 2011 Plan or are areas where a new direction is warranted.

Map 18 Oshtemo Township Future Land Use Map Proposed 2017 Update



- Water Body
- Classifications:
- Rural Residential
 - Low Density Residential
 - Medium Density Residential
 - High Density Residential
 - Manufactured Residential
 - Village Core
 - Transitional Office
 - Neighborhood Commercial
 - Local Commercial
 - General Commercial
 - Research Office
 - General Industrial
 - Public/Government
- Sub-Areas:
- ① Genesee Prairie
 - ② West Main Street
 - ③ Maple Hill Drive South
 - ④ Century Highfield
 - ⑤ 9th Street



Future Land Use Designations

Thirteen future land use categories have been created to designate the desired land use pattern for the Township. Each of the districts is described in more detail in the Plan, and are summarized in the following Future Land Use Matrix. The Future Land Use Matrix compares each of the designations based on several criteria of concern to this Plan.

Rural Residential (14,467 acres)

Development Intensity: Low

The Rural Residential land use designation is the largest designation in the Township. In many ways, it is also the most diverse and the most important.

The current land use pattern within the Rural Residential designation includes residential, agricultural, and some limited commercial land uses. Low density subdivision / neighborhood development is permitted and is encouraged to utilize open space cluster development practices in order to protect and preserve the natural features in this area and the rural character it defines. Other residential uses consist of scattered-site development at low density. Units typically are served by private wells and septic systems. (Although public utilities have been extended west into portions of the Rural Residential area, this was done to address environmental concerns and not to facilitate development.)

Rural Residential Desired Future Development Pattern

- Low density residential development
- Utilization of Rural Character Preservation Strategies, such as:
 - Utilization of conservation / open space subdivisions to protect sensitive landscapes
 - Utilization of programs available – purchase of development rights, transfer of development rights, conservation easements – to protect natural features
 - Setback from natural features (surface waters, wetlands)
 - Building pad site selection based on minimal disturbance to natural features
 - Tree lines and other vegetation along road frontages selectively cleared if at all to minimize impact on rural character along County Roads

Small agricultural uses are scattered throughout this area and are an important part of the rural character of the community. These include family farms, orchards, fruit farms, and other similar operations. Because the Township does not have many significantly sized parcels and due to the value of the land, agriculture will not expand significantly in the future. However, it is an important part of the Township's history and rural character, and pre-existing farms are encouraged to continue. In addition, supporting the rural character through the allowance of agri-businesses and agri-tainment uses should be considered.



Low density residential development sensitive to natural features may occur in the rural residential designation.

There are also a number of small commercial properties scattered throughout this area that are well-established and have been located at these sites for many years. They are important to the community, many are zoned appropriately, and the Plan does not desire to remove them. These include farm stands as well as commercial uses serving the local and regional market. Besides these pre-existing uses however, the Plan does not call for any additional commercial uses in this area outside of the Neighborhood Commercial District.

Low Density Residential (2,630 acres)

Development Intensity: Low

This designation represents the majority of the neighborhoods in the Township as well as those areas planned for future neighborhood development, which will be single-family residential in nature. In time, it is envisioned that all portions of this designation will be served by public water and sewer service. Presently, portions of this area are provided with such services while other areas are served with private well and/or septic systems.

In addition to new Low Density Residential (LDR) developments, many LDR areas were developed quite a few years ago. In some instances, new development has occurred around these neighborhoods that is not consistent with single-family development. When this occurs, it is essential that adequate buffers and protection are provided to ensure the neighborhood is insulated from the effects of the adjacent uses. Examples of such buffers include enhanced setbacks, berms, landscaped green space, natural or artificial screening, or a more moderate intensity development / land use serving as a transition (such as an office or senior housing).

Of course, where the adjacent new development is a LDR neighborhood, such measures are not necessary. In other instances of older LDR areas, housing and property maintenance must be monitored and enforced so as to maintain property values in the neighborhood and not detract from the quality of the surrounding community.

Low Density Residential Desired Future Development Pattern

- Low density residential development
- Single-family residential development in connected, coordinated neighborhoods
- Preservation and protection of existing neighborhoods and residential developments from incompatible land uses
- Integration of new development into an interconnected street network
- Residential areas connected with trails and walkways
- Parks and open space included with neighborhood development to provide small recreation areas for residents

As development continues in the Township and neighborhoods are built on the available parcels in and amongst the existing neighborhoods, an interconnected street network should be established and/or maintained. Many of the existing developments have stub streets or outlots extending to undeveloped parcels providing opportunities for such a network to be established. By using these stub streets and outlots, providing for additional access points, and applying the street connectivity index (found in Chapter 5, Transportation & Community Services, of the 2012 Master Plan), the Township will ensure a safer, more efficient transportation system for its residents. As these neighborhoods connect and a street network is created, the Township's responsibility will be to ensure the network design is safe for neighborhood residents and does not become a popular, high-speed bypass, or convenient short-cut for the general population. This is accomplished through site layout, transportation planning, and as necessary, traffic calming measures (i.e. speed bumps, bump-outs, traffic circles, etc.).

Medium Density Residential (215 acres)

Development Intensity: Medium

The Medium Density Residential designation is very similar to the Low Density Residential designation. It is intended for residential development and includes areas of existing and potential future development. Development will be served by public water and sewer. The primary differences between the Low Density Residential designation and the Medium Density Residential designation is the increased density and the inclusion of two-family to four-family dwelling units and senior-oriented housing.

Like the Low Density Residential designation, concerns about adjacent development and interconnectivity within and between developments remain important. In many instances, Medium Density Residential is used as a buffer between higher intensity development and lower density residential neighborhoods. This only increases the need for sufficient buffers between uses to minimize impacts. Also, with increased density comes increased traffic. Providing and maintaining connections within and between neighborhoods is therefore a key priority here as well.

Medium Density Residential Desired Future Development Pattern

- Medium density residential development
- Two to four family residential development in coordinated communities
- Senior-oriented housing
- Preservation and protection of existing neighborhoods and residential developments
- Integration of new development into an interconnected street network
- Residential areas to be connected with trails and walkways
- Parks and open space included with neighborhood development to provide small recreation areas for residents



Duplex condominium units provide alternative residential options for township residents.

High Density Residential (248 acres)

Development Intensity: High

High Density Residential development in Oshtemo Township includes primarily apartment complexes of various configurations and sizes. All areas are on public water and sewer. Although these complexes vary in age, there was a substantial increase in the number of units in the past 10 years. Due to the significant amount of this development already present in the community, little additional land is set aside for this designation. Redevelopment and rehabilitation of the existing High Density Residential areas is envisioned.

For some of the older complexes, property maintenance is an issue that the Township needs to continue to monitor closely. These properties shall be maintained so as not to become blighting influences and detract from the quality of the community. (This is a priority for all areas in the Township but is of greatest concern where there is a high concentration of renters.) In addition, this ensures that the housing units remain compliant with code standards and provide quality housing conditions as residents move in and out.

Where new development encroaches on lower density residential developments, adequate buffers must be provided to ensure any impacts from the proposed development is not a detriment to the adjacent properties.

High Density Residential Desired Future Development Pattern

- High density residential development
- Apartment complexes, duplexes, townhomes, and similar developments in well-designed, coordinated communities
- Complexes buffered from adjacent development to prevent impacts from adjacent properties
- Well maintained and monitored properties providing quality housing options to residents of community
- Open space, parks, and community amenities providing recreational opportunities to residents
- Connections to pedestrian and trail network as well as to public transit system

High density residential units in the township provide living options predominantly for students and seniors.



Manufactured Residential (215 acres)

Development Intensity: High

The Manufactured Residential designation represents the existing Manufactured Home Parks in the Township. Four such parks currently exist; two are fully developed and two have not built the entire facility that was originally proposed and approved. But, none of the four parks are at full capacity and therefore no additional land has been designated for this use type.

Public/Government District (206 acres)

Development Intensity: Medium

The primary uses found in this district are publicly owned properties like Township parks, libraries, cemeteries and governmental buildings. The placement of this district within the Future Land Use Map is to identify those areas of the Township where these types of uses are expected to continue well into the future.

Manufactured Residential Desired Future Development Pattern

- Continued maintenance and upkeep of parks consistent with original approvals and Michigan Manufactured Housing Commission standards
- Open space, parks, and community amenities providing recreational opportunities to residents
- Connections to pedestrian and trail network, as well as to public transit system, as available

Public/Government Desired Future Development Pattern

- Connections to pedestrian and trail networks, as well as to public transit system, for easy access to these public uses.
- Consider new locations for park facilities in the eastern portion of the Township to provide access to underserved residential populations.

Transitional Office (417 acres)

Development Intensity: Medium

There are several areas in the Township that could benefit from a district that serves as a buffer between existing commercial uses and/or transportation networks and adjacent residential uses. The use of a Transitional Office District is intended to mitigate the compatibility issues that often arise between higher intensity development and residential uses.

Development envisioned for the Transitional Office District include primarily office and institutional uses. Office uses include financial institutions, professional service firms, medical facilities, and personal service establishments. This category may include buildings occupied by single professional business or a larger multi-tenant office building. Institutional uses include churches, schools, daycare centers, libraries, post offices and other public buildings, and public recreation. The District would also include medium density residential uses, such as duplexes and senior-oriented complexes.

For all areas carrying this designation, access management will be a high priority, especially along the primary roadways of the Township. In addition, regulations will need to be considered relating to size of construction and site development to ensure compatibility with adjacent residential uses and in keeping with the intent of the District as a buffer from higher intensity uses. Ensuring that development is coordinated and consistent, such as through the Planned Unit Development (PUD) process, will assist with quality, design, and function that is desired for these areas.

Transitional Office Desired Future Development Pattern

- Office, institutional, and/or medium density residential located in well-planned developments
- Protection of the existing character of the area in which it is located through design, layout, and operation
- Incorporation of access management standards
- Successful buffers and/or transitions between adjacent land uses

Village Core (119 acres)

Development Intensity: High

The Village Core designation is located within the boundary of the Downtown Development Authority (DDA) for Oshtemo Township and where the historic “village” of Oshtemo used to reside. This area was the site of the original settlement in the Township and served for many years as the heart of the community.

The Village Core has been the subject of a considerable amount of evaluation and analysis over the past 15 years. In that time, the DDA was created and a Development Plan prepared; a Character Plan crafted to establish a vision for the future built environment, and a Form Based Code prepared to implement that vision; and a Streetscape Plan prepared for aesthetic and pedestrian right-of-way improvements within the district.

The work of the DDA has just begun. It is their hope, as well as the Township’s, that properties in this area will redevelop, and the Village will become a unique place, identifiable within Oshtemo. By creating a walkable, mixed use, compact village center, it is desired for this area to once again serve this role.

The Master Plan supports the findings and conclusions of the plans prepared for the Village Core and incorporates them by reference. It is envisioned that as sites redevelop within this area, it will be done consistent with these documents.

Village Core Desired Future Development Pattern

- Development consistent with the goals and requirements of the Village Theme Development Plan, as amended over time and any supporting guidelines or regulations
- Mixed uses with higher density residential, commercial, and retail uses
- High-quality architectural design standards, consistent with the unique character of the village
- Convenient and safe pedestrian routes between activity centers
- Uniform streetscape improvements and sidewalks



The Village Core classification seeks higher density, mixed-use, pedestrian-oriented development with uniform streetscape amenities.

Neighborhood Commercial (51 acres)

Development Intensity: Low

In support of the Rural Character Preservation Strategy, neighborhood commercial areas will be in strategic locations within the western portion of the Township. Low intensity commercial and retail establishments are permitted that would accommodate a planned mixture of farm service business and other locally oriented service establishments. The intent is to provide services, like a small convenience store, that will support and be compatible with nearby residential development.

Neighborhood Commercial Desired Future Development Pattern

- Be located on an arterial or a major collector street
- Be located in the rural portion of the Township to serve rural residents
- Designed to be compatible with adjacent land uses in building scale and site development
- Utilize access management techniques like shared curb cuts to reduce impact on road system

Local Commercial (186 acres)

Development Intensity: Medium

Controlling the pattern of commercial development is a critical step toward eliminating the sprawling tendencies of many commercial strip malls and big box retail establishments. The desire to curb commercial sprawl was identified through the public input process. In order to differentiate between the types of commercial development present in the Township, two specific commercial designations were created, including the Local Commercial designation.

The purpose of the Local Commercial designation is to provide low volume commercial businesses that mix well with a variety of land uses including residential, industrial, and general commercial. These uses are not high-volume / high-traffic uses with a significant number of cars

Local Commercial Desired Future Development Pattern

- Low intensity, small scale commercial uses such as offices or specialty/destination stores
- Shared parking and access, particularly along primary roads and highways
- Adequate buffers and screening from adjacent development, as necessary to protect adjacent properties

coming and going, drive-through service, and/or automobile service. (These elements or characteristics can detract from the residential character or pedestrian orientation of the surrounding area and are therefore not present in the Local Commercial designation). Examples of uses that could be found in a Local Commercial designation include professional offices, unique shops such as antique shops and specialty food shops, and generally low volume enterprises that do not operate 24 hours a day.

General Commercial (564 acres)

Development Intensity: High

The intent of the General Commercial areas is to serve both the residents of the community as well as the regional market and transient customers. Uses like big box retail, shopping centers, and auto-oriented uses would be permitted in this district.

Despite the very high intensity of existing uses present throughout this designation, the sites have been well managed and maintained to minimize the impacts of that intensity. Maintenance of these sites is paramount. Maintaining and improving on existing access management issues are also a primary concern due to the high traffic volumes and turning conflicts created by the multiple driveways onto the abutting roads. As sites develop and redevelop, opportunities to improve access situations and address other site issues of concern must be considered.



General Commercial areas in the township serve both the local and regional markets.

General Commercial Desired Future Development Pattern

- Commercial uses serving local and regional markets
- Use of the Planned Unit Development (PUD) technique to ensure consistent, cohesive development
- Implementation of the Access Management Plan as sites are developed and redeveloped
- Sidewalks, pathways, and other considerations for pedestrians internal to sites
- Use of creative/innovative stormwater management techniques and practices

As the Township works to become more pedestrian friendly, convenient, and accessible, these are areas that fall short and require attention. As possible and practical, the Township should work with property owners and developers to integrate sidewalks, pathways, and other pedestrian friendly measures into plans for these designated areas in order to better balance the needs of the pedestrian with those of the motorist.

Use of the Planned Unit Development (PUD) mechanism shall be encouraged in this area to ensure coordinated and integrated developments.

Research Office (243 acres)

Development Intensity: Medium

The Research Office designation is located on 9th Street at the southern gateway to the Township and has traditionally served as an important job center. The Future Land Use Plan encourages the continued evolution of this area as an employment hub that provides high quality job opportunities to residents. Uses might include offices, research and development, life science, corporate center, light industrial with limited impact outside the building, indoor recreation facilities, public or quasi-public institutions, financial institutions, and health care facilities.

As large parcels are developed, it is encouraged that the Planned Unit Development (PUD) tool be used. This will result in coordinated, consistent development addressing issues such as site layout, drainage, access, parking, utilities, lighting, design, signage, screening, and landscaping consistent with the desires for premier development as expressed during the public input process. Because the South 9th Street corridor is both an important gateway into the Township and also leads into the Village Core from the south, special attention should be paid to the design and layout of properties adjacent to 9th Street.

Access management principles should be applied along 9th Street as well to limit access points and encourage shared driveways and development of service drives and a local street network.

Research Office Desired Future Development Pattern

- Low intensity development of employment centers including offices, research and development, life science, corporate centers, light industrial uses with limited impact outside the building, indoor recreation facilities, public and quasi-public institutions, financial institutions, and health care facilities
- Use of the Planned Unit Development (PUD) technique on larger sites ensure consistent, cohesive development
- Enhanced setbacks, landscaping, and design along 9th Street frontage
- Use of shared access points and service drives to limit driveways on 9th Street and other primary roads, as applicable
- Screening and/or buffers provided to prevent impacts on adjacent residences



A mix of technology, research, office, recreation, and industrial uses exist in the Research Office designation.

General Industrial (464 acres)

Development Intensity: Medium

The General Industrial designation is the primary designation for industrial development in the Township and a source for many important higher wage jobs in the community. The designation includes both light and general industrial uses (including those industrial uses described in the Research Office Industrial designation above), warehouse and distribution facilities, heavy commercial, and storage facilities. They are in various locations around the Township where such development has already occurred, such as along KL Avenue, Stadium Drive, and 8th Street. It is intended that future development be consistent with the development that already exists. Heavy industrial uses should be located on large parcels where significant setbacks from property lines, particularly from street rights-of-way and residential properties can be achieved to effectively screen these uses from view.

General Industrial Desired Future Development Pattern

- Industrial development at a low to moderate intensity consistent with surrounding character and uses bringing jobs and employees to the community
- Heavy commercial (such as auto repair and contractor yards) and industrial uses on large lots with generous setbacks to maintain the rural character
- Where large parcels are developed into multiple uses, use of the PUD technique to ensure coordinated development and application of access management standards
- Providing sufficient buffers and screening to prevent impacts on adjacent property owners

Sub-Areas

The Future Land Use Map also identifies several sub-areas that have been identified for more detailed analysis. In total, five sub-areas have been identified, as follows:

1. Genesee Prairie
2. West Main between 9th Street and US-131
3. Maple Hill Drive South
4. Century Highfield
5. 9th Street

The Maple Hill Drive South Sub-Area Plan is included in this 2017 Master Plan Update report. The other four sub-area plans were prepared and included as part of the 2011 Master Plan; these sub-area plans are unchanged and remain as an integral component of the Township's Future Land Use Plan.

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Appendix

ESRI TAPESTRY SEGMENTATION PROFILES
W.E. UPJOHN CENTER NATURAL FEATURES REPORT
RURAL CHARACTER WORKSHOP SUMMARY
MAPLE HILL SUB-AREA WORKSHOP RESULTS SUMMARY



LifeMode Group: Senior Styles

Retirement Communities

9E

Households: 1,451,000

Average Household Size: 1.86

Median Age: 52.0

Median Household Income: \$35,000

WHO ARE WE?

Retirement Communities neighborhoods are evenly distributed across the country. They combine single-family homes and independent living with apartments, assisted living, and continuous care nursing facilities. Over half of the housing units are in multiunit structures, and the majority of residents have a lease. This group enjoys watching cable TV and stays up-to-date with newspapers and magazines. Residents take pride in fiscal responsibility and keep a close eye on their finances. Although income and net worth are well below national averages, residents enjoy going to the theater, golfing, and taking vacations. While some residents enjoy cooking, many have paid their dues in the kitchen and would rather dine out.

OUR NEIGHBORHOOD

- Much of the housing was built in the 1970s and 1980s—a mix of single-family homes and large multiunit structures that function at various levels of senior care.
- Small household size; many residents have outlived their partners and live alone.
- Over half of the homes are renter occupied.
- Average rent is slightly below the US average.
- One in five households has no vehicle.

SOCIOECONOMIC TRAITS

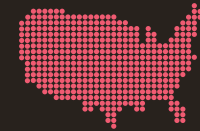
- Brand loyal, this segment will spend a little more for their favorite brands, but most likely they will have a coupon.
- Frugal, they pay close attention to finances.
- They prefer reading magazines over interacting with computers.
- They are health conscious and prefer name brand drugs.



Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GfK MRI.



Retirement Communities



AGE BY SEX (Esri data)

Median Age: **52.0** US: 37.6

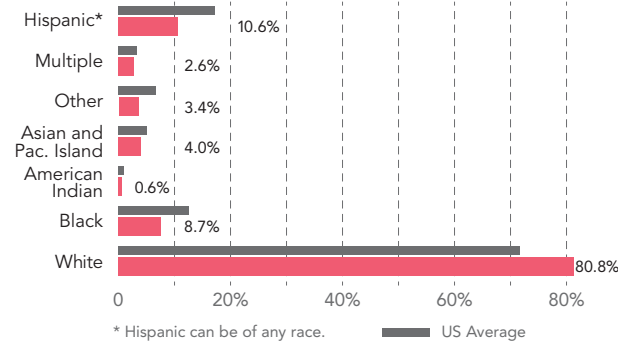
I Indicates US



RACE AND ETHNICITY (Esri data)

The Diversity Index summarizes racial and ethnic diversity. The index shows the likelihood that two persons, chosen at random from the same area, belong to different race or ethnic groups. The index ranges from 0 (no diversity) to 100 (complete diversity).

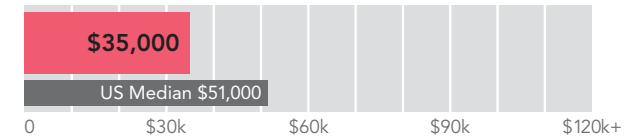
Diversity Index: **46.4** US: 62.1



INCOME AND NET WORTH

Net worth measures total household assets (homes, vehicles, investments, etc.) less any debts, secured (e.g., mortgages) or unsecured (credit cards). Household income and net worth are estimated by Esri.

Median Household Income

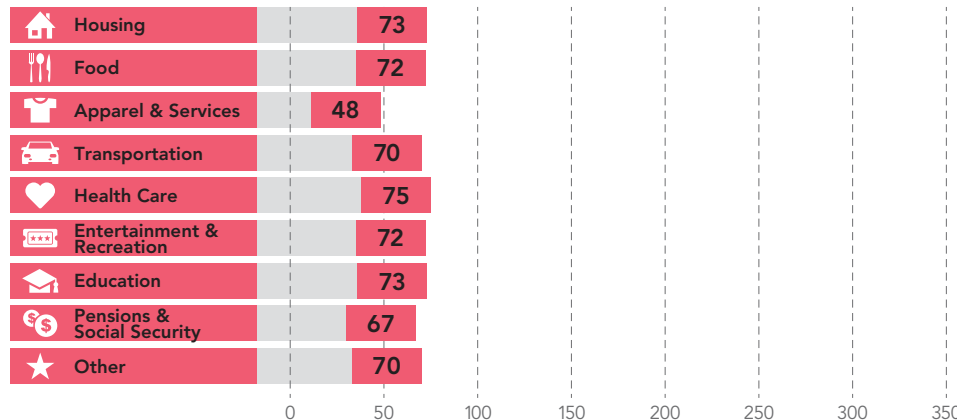


Median Net Worth



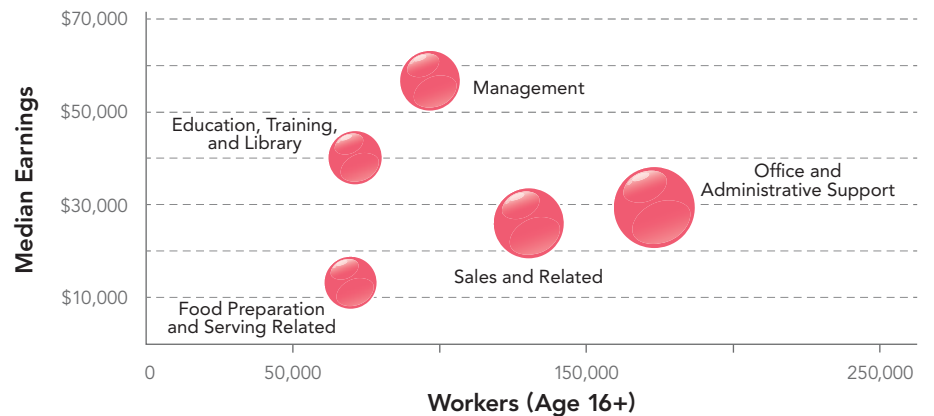
AVERAGE HOUSEHOLD BUDGET INDEX

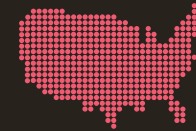
The index compares the average amount spent in this market's household budgets for housing, food, apparel, etc., to the average amount spent by all US households. An index of 100 is average. An index of 120 shows that average spending by consumers in this market is 20 percent above the national average. Consumer expenditures are estimated by Esri.



OCCUPATION BY EARNINGS

The five occupations with the highest number of workers in the market are displayed by median earnings. Data from the Census Bureau's American Community Survey.





MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- Enjoy hard-cover books, book clubs, crossword puzzles, and Sudoku.
- Contribute to political organizations and other groups.
- Entertainment preferences: bingo, opera, and the theater.
- Watch QVC, Golf Channel, CNN, and sports on TV.
- Like to travel—including visits to foreign countries.
- Shop at large department stores for convenience.

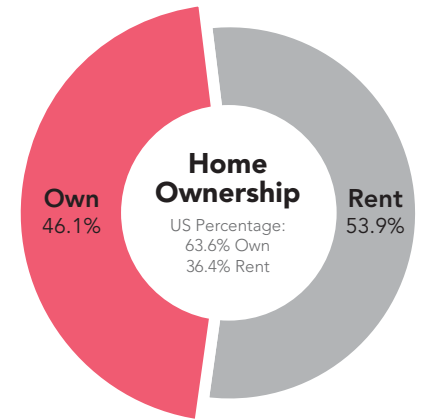
HOUSING

Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.



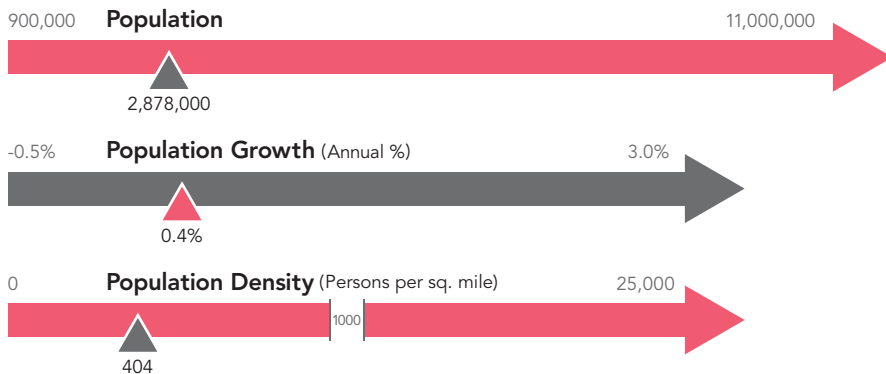
Typical Housing:
Multiunits;
Single Family

Average Rent:
\$980
US Average: \$990



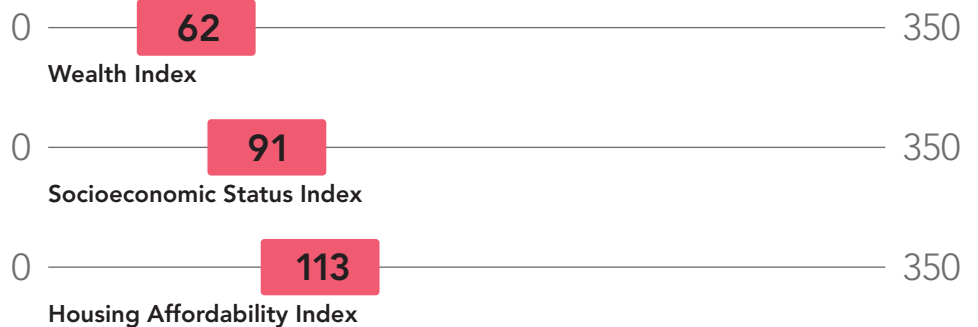
POPULATION CHARACTERISTICS

Total population, average annual population change since Census 2010, and average density (population per square mile) are displayed for the market relative to the size and change among all Tapestry markets. Data estimated by Esri.



ESRI INDEXES

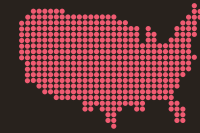
Esri developed three indexes to display average household wealth, socioeconomic status, and housing affordability for the market relative to US standards.





LifeMode Group: Senior Styles

Retirement Communities

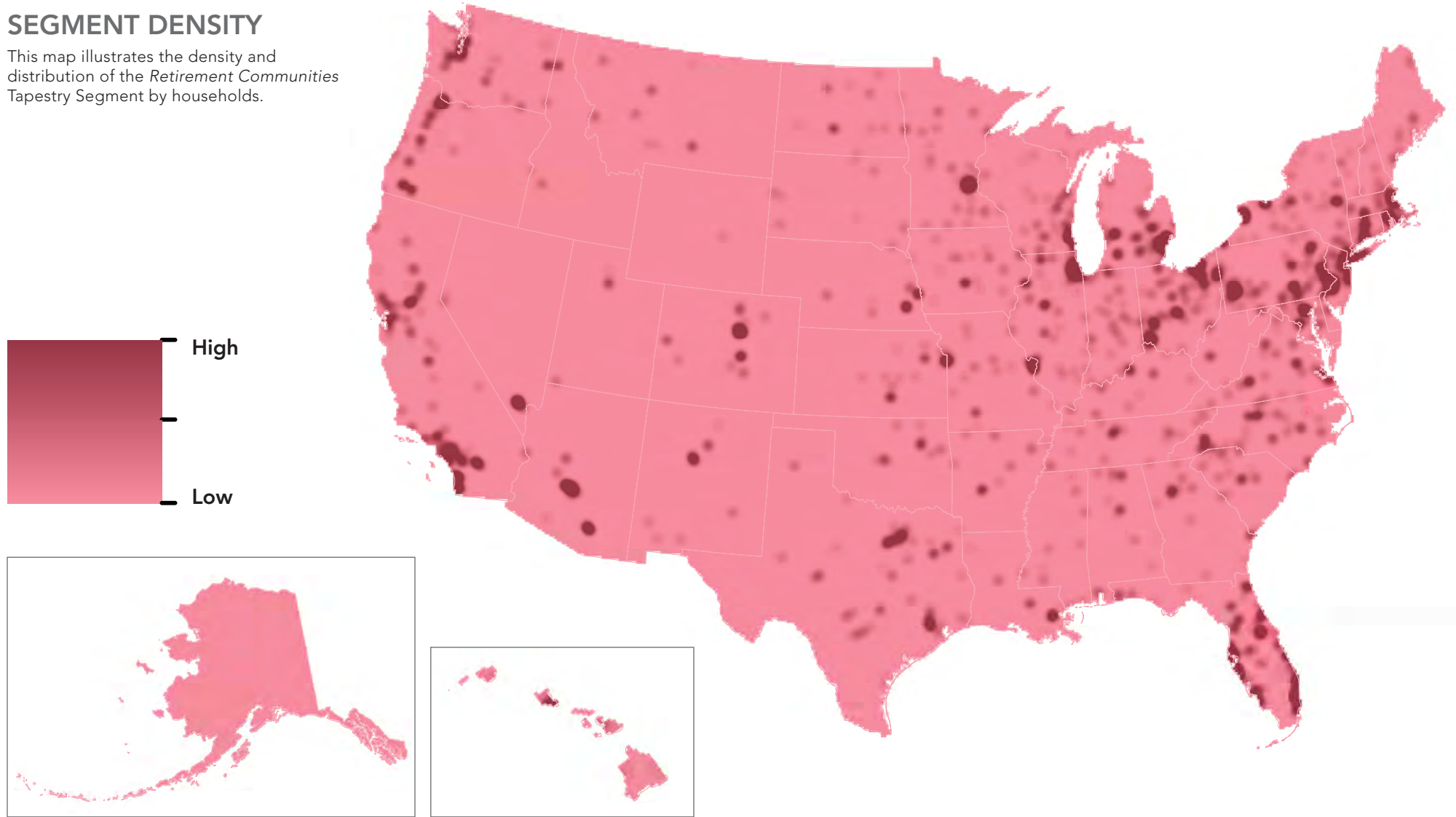


TAPESTRY
SEGMENTATION

esri.com/tapestry

SEGMENT DENSITY

This map illustrates the density and distribution of the *Retirement Communities* Tapestry Segment by households.



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LifeMode Group: Affluent Estates

Exurbanites

1E

Households: 2,320,000

Average Household Size: 2.48

Median Age: 49.6

Median Household Income: \$98,000

WHO ARE WE?

Ten years later, *Exurbanites* residents are now approaching retirement but showing few signs of slowing down. They are active in their communities, generous in their donations, and seasoned travelers. They take advantage of their proximity to large metropolitan centers to support the arts, but prefer a more expansive home style in less crowded neighborhoods. They have cultivated a lifestyle that is both affluent and urbane.

OUR NEIGHBORHOOD

- Established neighborhoods (most built between 1970 and 1990) found in the suburban periphery of large metropolitan markets.
- A larger market of empty nesters, married couples with no children; average household size is 2.48.
- Primarily single-family homes with a high median value of \$346,000 (Index 195), most still carrying mortgages.
- Higher vacancy rate at 9%.

SOCIOECONOMIC TRAITS

- Residents are college educated; more than half have a bachelor's degree or higher; almost 80% have some college education.
- This labor force is beginning to retire. 1 in 3 households currently receive Social Security or retirement income. Labor force participation has declined to less than 60% (Index 94).
- Unemployment remains low at 5.5% (Index 64); more of the residents prefer self-employment (Index 184) or working from home (Index 181).
- Consumers are more interested in quality than cost. They take pride in their homes and foster a sense of personal style.
- *Exurbanites* residents are well connected, using the Internet for everything from shopping to managing their finances.
- Sociable and hardworking, they still find time to stay physically fit.



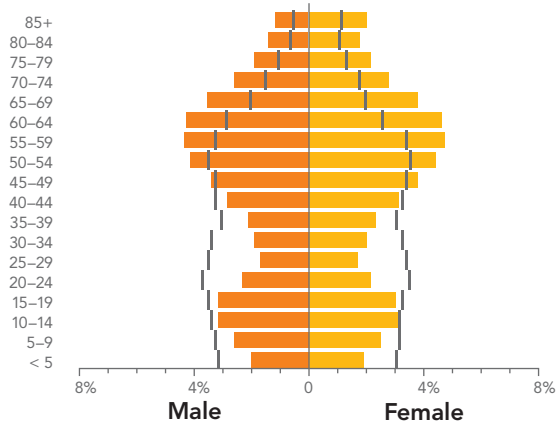
Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GfK MRI.



AGE BY SEX (Esri data)

Median Age: **49.6** US: 37.6

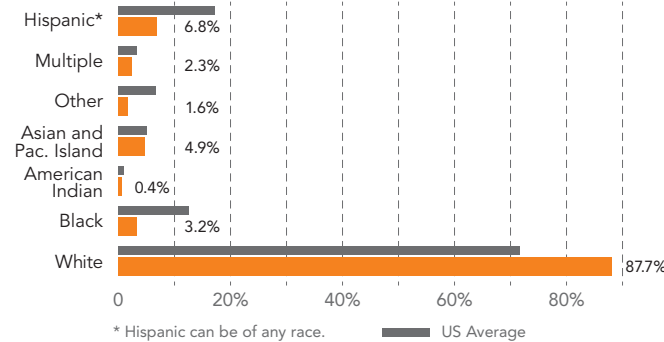
I Indicates US



RACE AND ETHNICITY (Esri data)

The Diversity Index summarizes racial and ethnic diversity. The index shows the likelihood that two persons, chosen at random from the same area, belong to different race or ethnic groups. The index ranges from 0 (no diversity) to 100 (complete diversity).

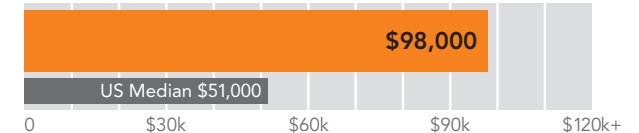
Diversity Index: **32.6** US: 62.1



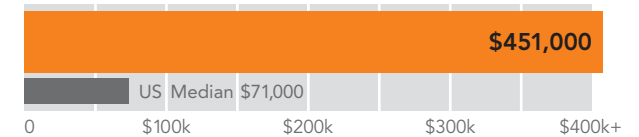
INCOME AND NET WORTH

Net worth measures total household assets (homes, vehicles, investments, etc.) less any debts, secured (e.g., mortgages) or unsecured (credit cards). Household income and net worth are estimated by Esri.

Median Household Income

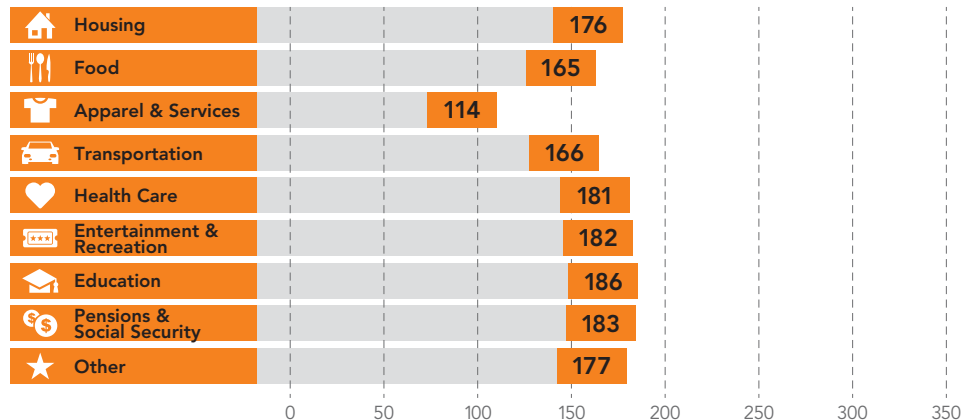


Median Net Worth



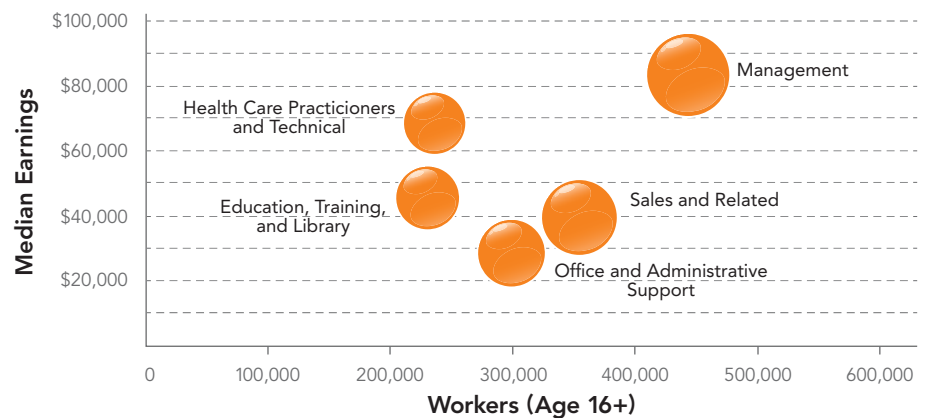
AVERAGE HOUSEHOLD BUDGET INDEX

The index compares the average amount spent in this market's household budgets for housing, food, apparel, etc., to the average amount spent by all US households. An index of 100 is average. An index of 120 shows that average spending by consumers in this market is 20 percent above the national average. Consumer expenditures are estimated by Esri.



OCCUPATION BY EARNINGS

The five occupations with the highest number of workers in the market are displayed by median earnings. Data from the Census Bureau's American Community Survey.





MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- *Exurbanites* residents' preferred vehicles are late model luxury cars or SUVs.
- They are active supporters of the arts and public television/radio.
- Attentive to ingredients, they prefer natural or organic products.
- Gardening and home improvement are priorities, but they also use a number of services, from home care and maintenance to personal care.
- Financially active with wide-ranging investments, these investors rely on financial planners, extensive reading, and the Internet to handle their money.

HOUSING

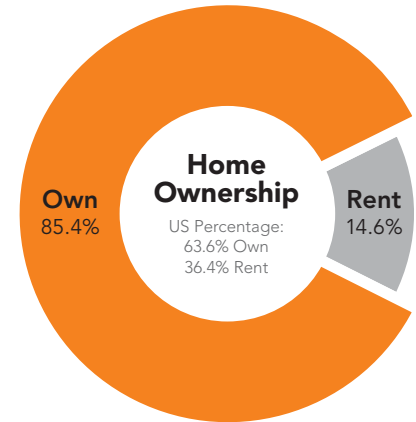
Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.



Typical Housing:
Single Family

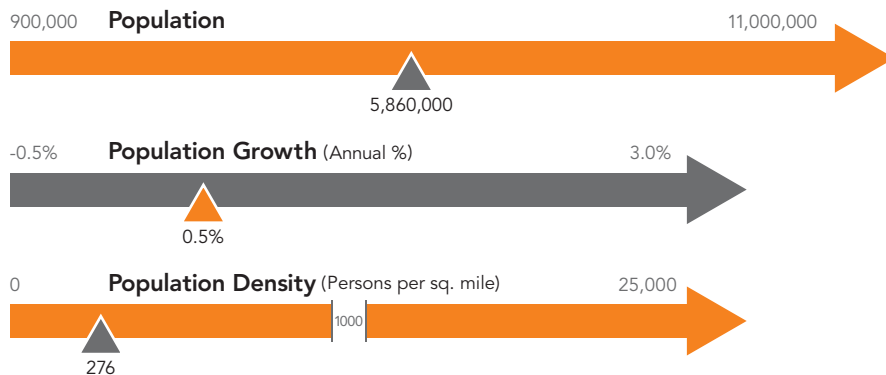
Median Value:
\$346,000

US Median: \$177,000



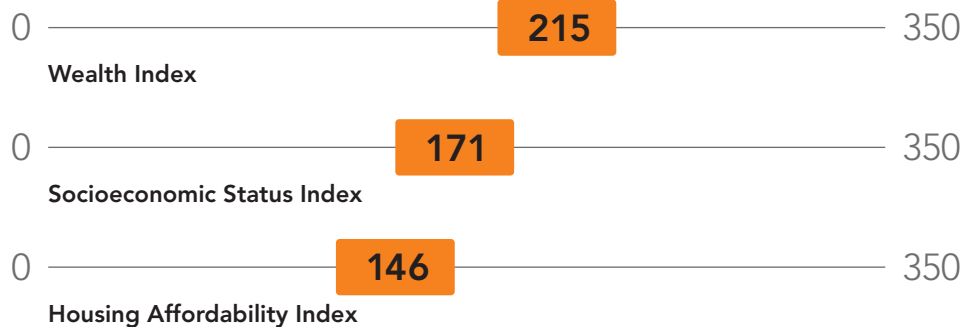
POPULATION CHARACTERISTICS

Total population, average annual population change since Census 2010, and average density (population per square mile) are displayed for the market relative to the size and change among all Tapestry markets. Data estimated by Esri.



ESRI INDEXES

Esri developed three indexes to display average household wealth, socioeconomic status, and housing affordability for the market relative to US standards.



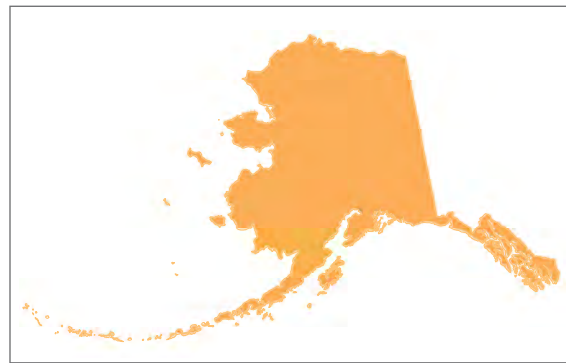
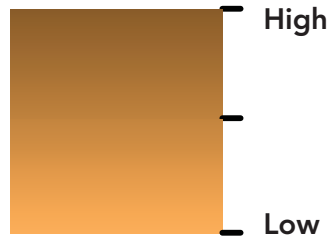
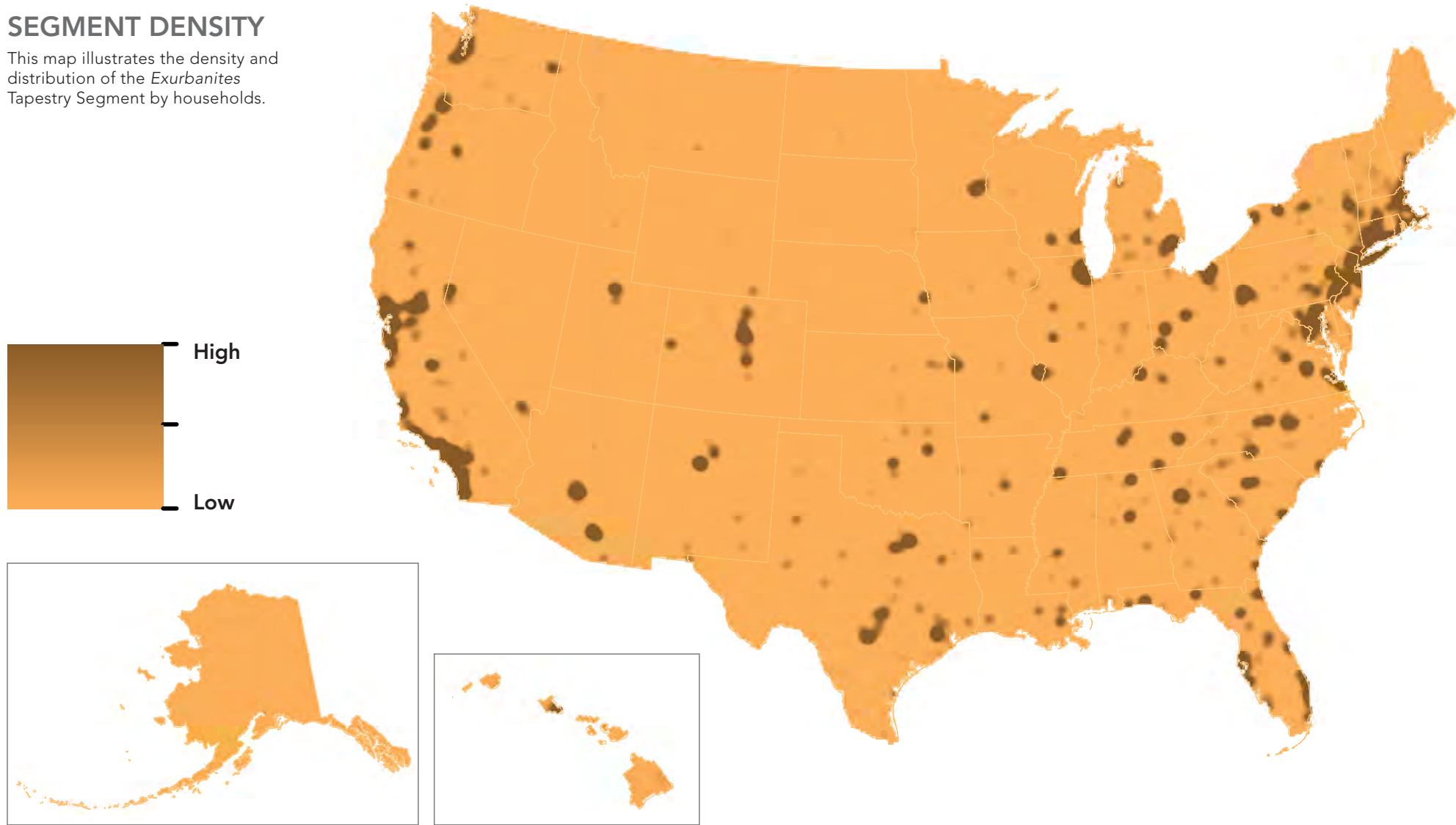


Exurbanites



SEGMENT DENSITY

This map illustrates the density and distribution of the *Exurbanites* Tapestry Segment by households.



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LifeMode Group: Family Landscapes
Middleburg

4C

Households: 3,319,000

Average Household Size: 2.73

Median Age: 35.3

Median Household Income: \$55,000

WHO ARE WE?

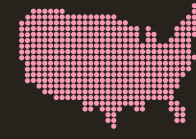
Middleburg neighborhoods transformed from the easy pace of country living to semirural subdivisions in the last decade, when the housing boom reached out. Residents are conservative, family-oriented consumers. Still more country than rock and roll, they are thrifty but willing to carry some debt and are already investing in their futures. They rely on their smartphones and mobile devices to stay in touch and pride themselves on their expertise. They prefer to buy American and travel in the US. This market is younger but growing in size and assets.

OUR NEIGHBORHOOD

- Semirural locales within metropolitan areas.
- Neighborhoods changed rapidly in the previous decade with the addition of new single-family homes.
- Include a number of mobile homes (Index 152).
- Affordable housing, median value of \$158,000 (Index 89) with a low vacancy rate.
- Young couples, many with children; average household size is 2.73.

SOCIOECONOMIC TRAITS

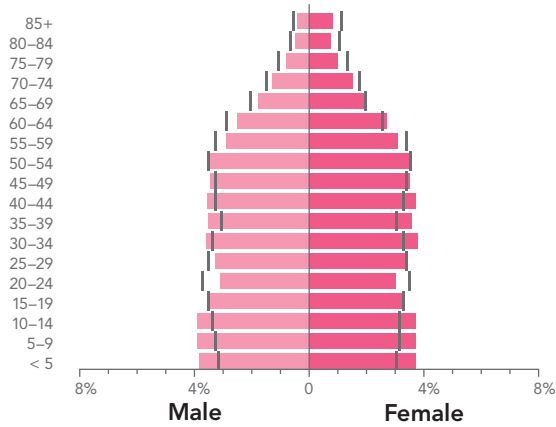
- Education: 66% with a high school diploma or some college.
- Unemployment rate lower at 7.4% (Index 85).
- Labor force participation typical of a younger population at 66.7% (Index 106).
- Traditional values are the norm here—faith, country, and family.
- Prefer to buy American and for a good price.
- Comfortable with the latest in technology, for convenience (online banking or saving money on landlines) and entertainment.



AGE BY SEX (Esri data)

Median Age: **35.3** US: 37.6

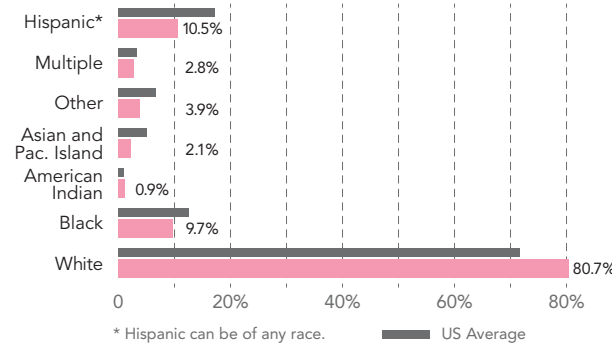
I Indicates US



RACE AND ETHNICITY (Esri data)

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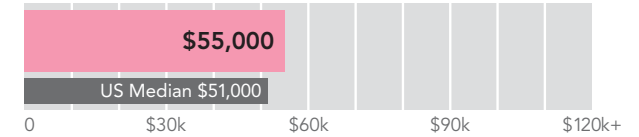
Diversity Index: **46.3** US: 62.1



INCOME AND NET WORTH

Net worth measures total household assets (homes, vehicles, investments, etc.) less any debts, secured (e.g., mortgages) or unsecured (credit cards). Household income and net worth are estimated by Esri.

Median Household Income

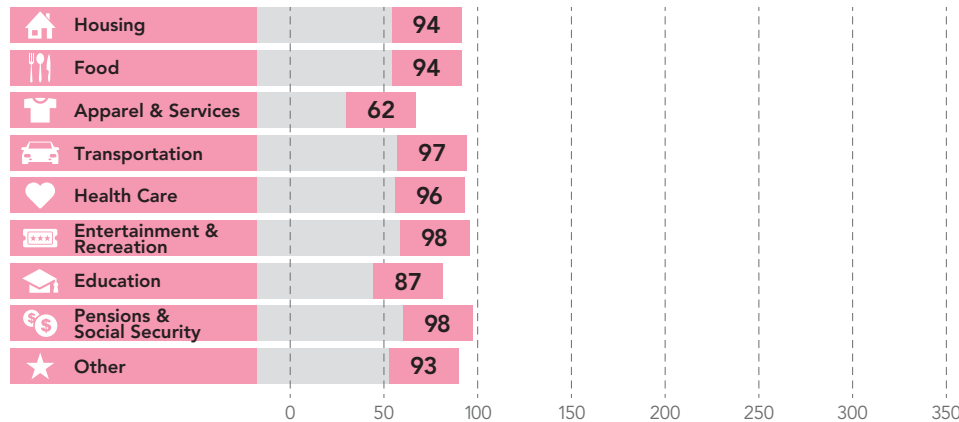


Median Net Worth



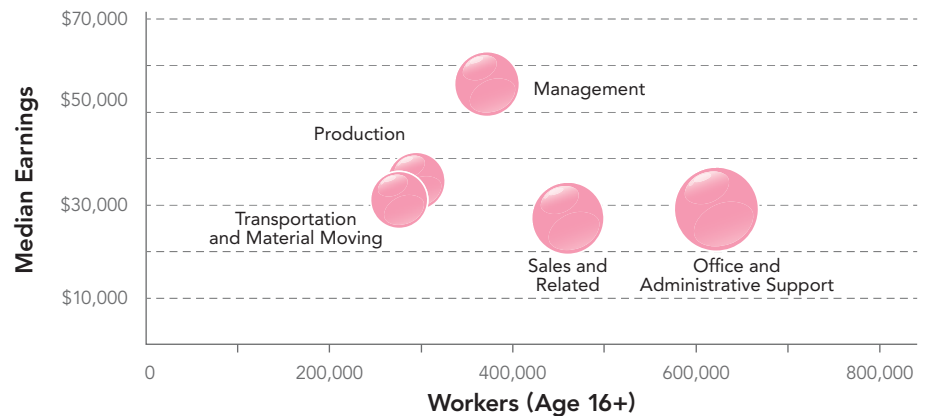
AVERAGE HOUSEHOLD BUDGET INDEX

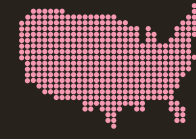
The index compares the average amount spent in this market's household budgets for housing, food, apparel, etc., to the average amount spent by all US households. An index of 100 is average. An index of 120 shows that average spending by consumers in this market is 20 percent above the national average. Consumer expenditures are estimated by Esri.



OCCUPATION BY EARNINGS

The five occupations with the highest number of workers in the market are displayed by median earnings. Data from the Census Bureau's American Community Survey.





MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- Residents are partial to trucks, SUVs, and occasionally, convertibles, or motorcycles.
- Entertainment is primarily family-oriented, TV and movie rentals or theme parks and family restaurants.
- Spending priorities also focus on family (children's toys and apparel) or home DIY projects.
- Sports include hunting, target shooting, bowling, and baseball.
- TV and magazines provide entertainment and information.
- Media preferences include country and Christian channels.

HOUSING

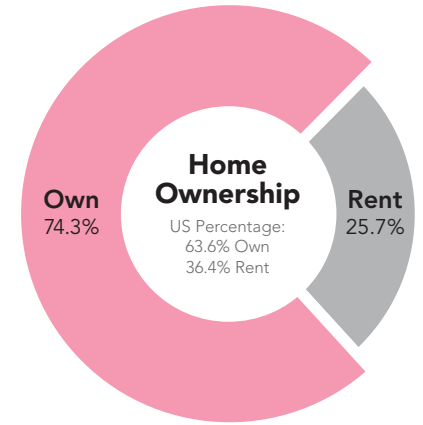
Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.



Typical Housing:
Single Family

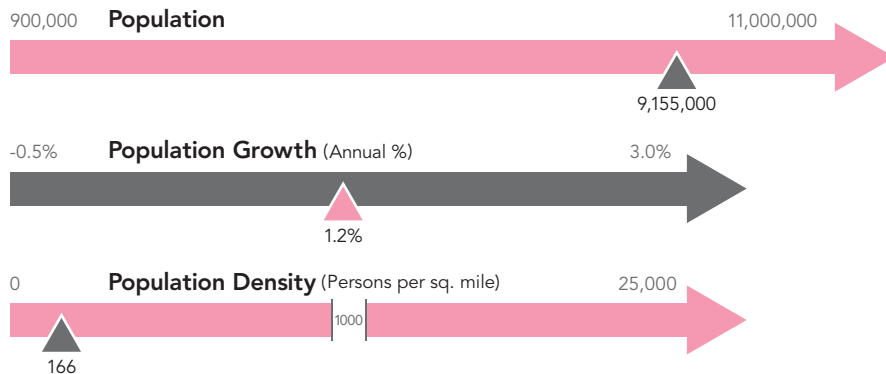
Median Value:
\$158,000

US Median: \$177,000



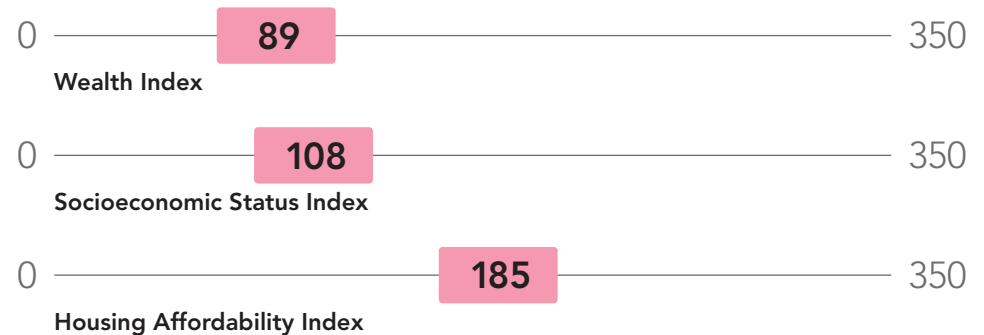
POPULATION CHARACTERISTICS

Total population, average annual population change since Census 2010, and average density (population per square mile) are displayed for the market relative to the size and change among all Tapestry markets. Data estimated by Esri.



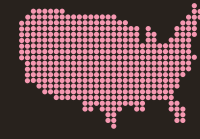
ESRI INDEXES

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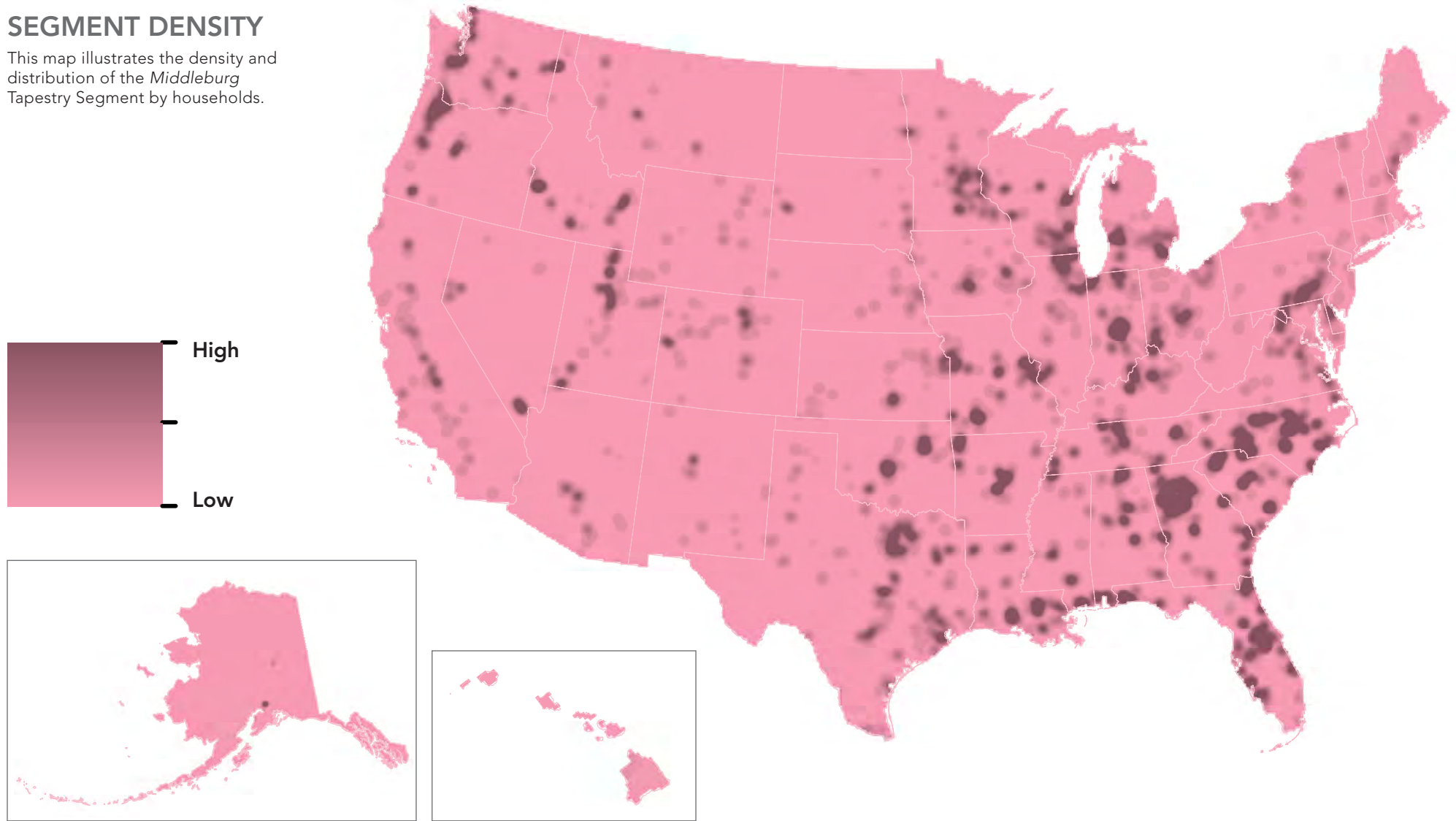


Middleburg



SEGMENT DENSITY

This map illustrates the density and distribution of the *Middleburg* Tapestry Segment by households.



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LifeMode Group: Cozy Country Living

Green Acres

6A

Households: 3,794,000

Average Household Size: 2.69

Median Age: 43.0

Median Household Income: \$72,000

WHO ARE WE?

The *Green Acres* lifestyle features country living and self-reliance. They are avid do-it-yourselfers, maintaining and remodeling their homes, with all the necessary power tools to accomplish the jobs. Gardening, especially growing vegetables, is also a priority, again with the right tools, tillers, tractors, and riding mowers. Outdoor living also features a variety of sports: hunting and fishing, motorcycling, hiking and camping, and even golf. Self-described conservatives, residents of *Green Acres* remain pessimistic about the near future yet are heavily invested in it.

OUR NEIGHBORHOOD

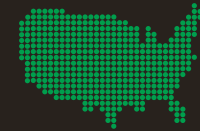
- Rural enclaves in metropolitan areas, primarily (not exclusively) older homes with acreage; new housing growth in the past 10 years.
- Single-family, owner-occupied housing, with a median value of \$197,000.
- An older market, primarily married couples, most with no children.

SOCIOECONOMIC TRAITS

- Education: 60% are college educated.
- Unemployment is low at 6% (Index 70); labor force participation rate is high at 67.4% (Index 108).
- Income is derived not only from wages and salaries but also from self-employment (more than 15% of households), investments (30% of households), and increasingly, from retirement.
- They are cautious consumers with a focus on quality and durability.
- Comfortable with technology, more as a tool than a trend: banking or paying bills online is convenient; but the Internet is not viewed as entertainment.
- Economic outlook is professed as pessimistic, but consumers are comfortable with debt, primarily as home and auto loans, and investments.



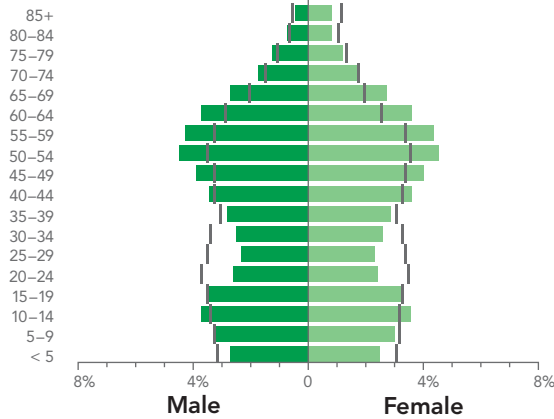
Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GfK MRI.



AGE BY SEX (Esri data)

Median Age: 43.0 US: 37.6

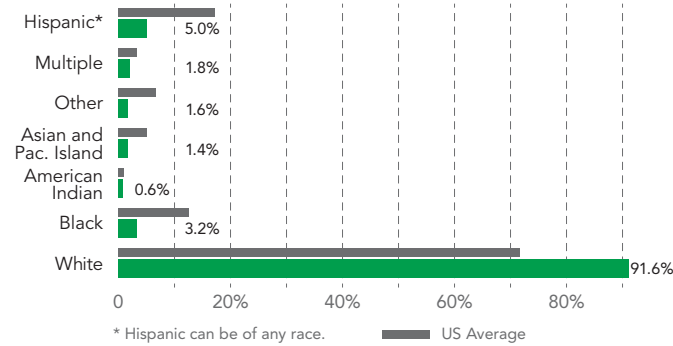
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RACE AND ETHNICITY (Esri data)

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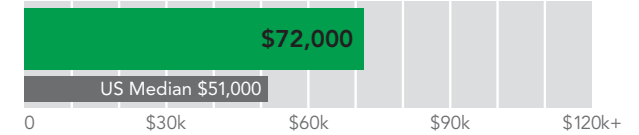
Diversity Index: 24.0 US: 62.1



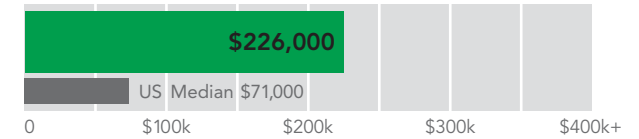
INCOME AND NET WORTH

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Median Household Income

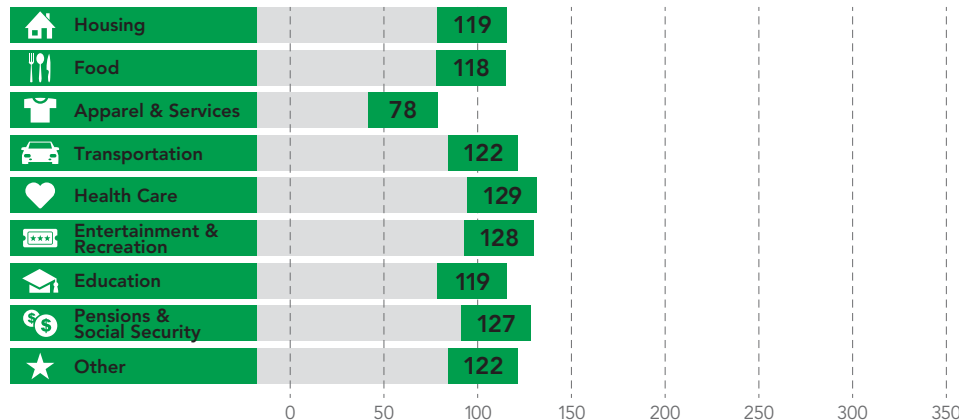


Median Net Worth



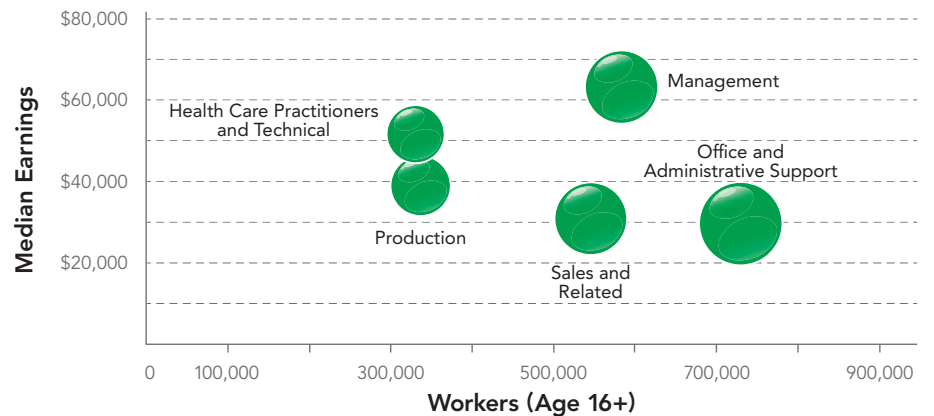
AVERAGE HOUSEHOLD BUDGET INDEX

The index compares the average amount spent in this market's household budgets for housing, food, apparel, etc., to the average amount spent by all US households. An index of 100 is average. An index of 120 shows that average spending by consumers in this market is 20 percent above the national average. Consumer expenditures are estimated by Esri.



OCCUPATION BY EARNINGS

The five occupations with the highest number of workers in the market are displayed by median earnings. Data from the Census Bureau's American Community Survey.





MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- Purchasing choices reflect *Green Acres*' residents country life, including a variety of vehicles from trucks and SUVs to ATVs and motorcycles, preferably late model.
- Homeowners favor DIY home improvement projects and gardening.
- Media of choice are provided by satellite service, radio, and television, also with an emphasis on country and home and garden.
- *Green Acres* residents pursue physical fitness vigorously, from working out on home exercise equipment to playing a variety of sports.
- Residents are active in their communities and a variety of social organizations, from fraternal orders to veterans' clubs.

HOUSING

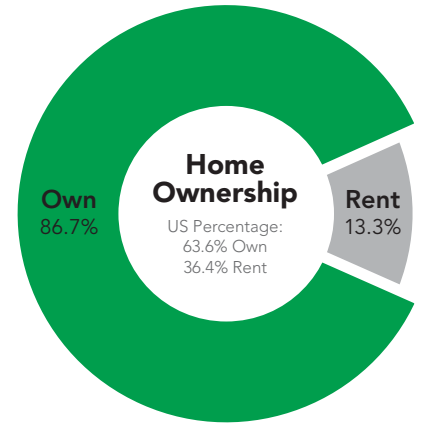
Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.



Typical Housing:
Single Family

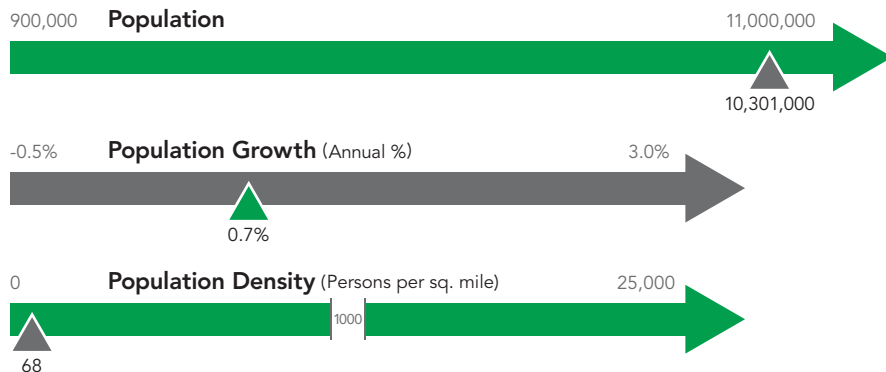
Median Value:
\$197,000

US Median: \$177,000



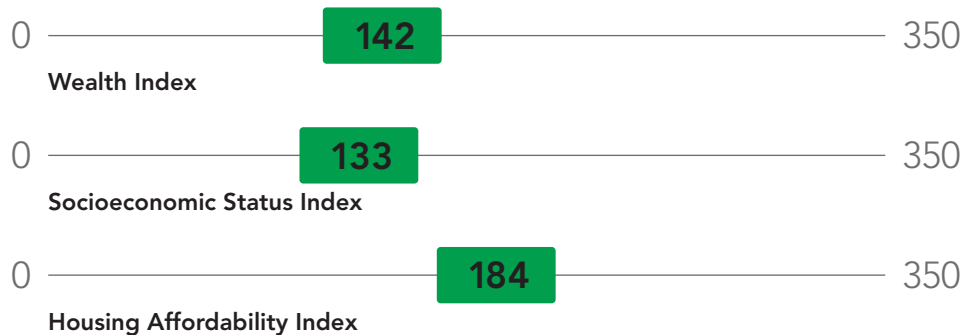
POPULATION CHARACTERISTICS

Total population, average annual population change since Census 2010, and average density (population per square mile) are displayed for the market relative to the size and change among all Tapestry markets. Data estimated by Esri.



ESRI INDEXES

Esri developed three indexes to display average household wealth, socioeconomic status, and housing affordability for the market relative to US standards.



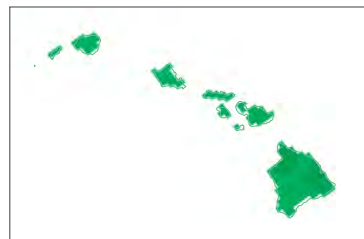
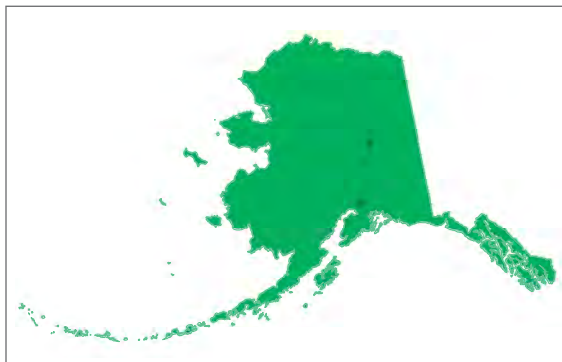
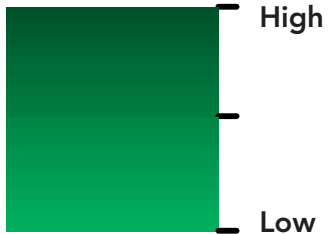
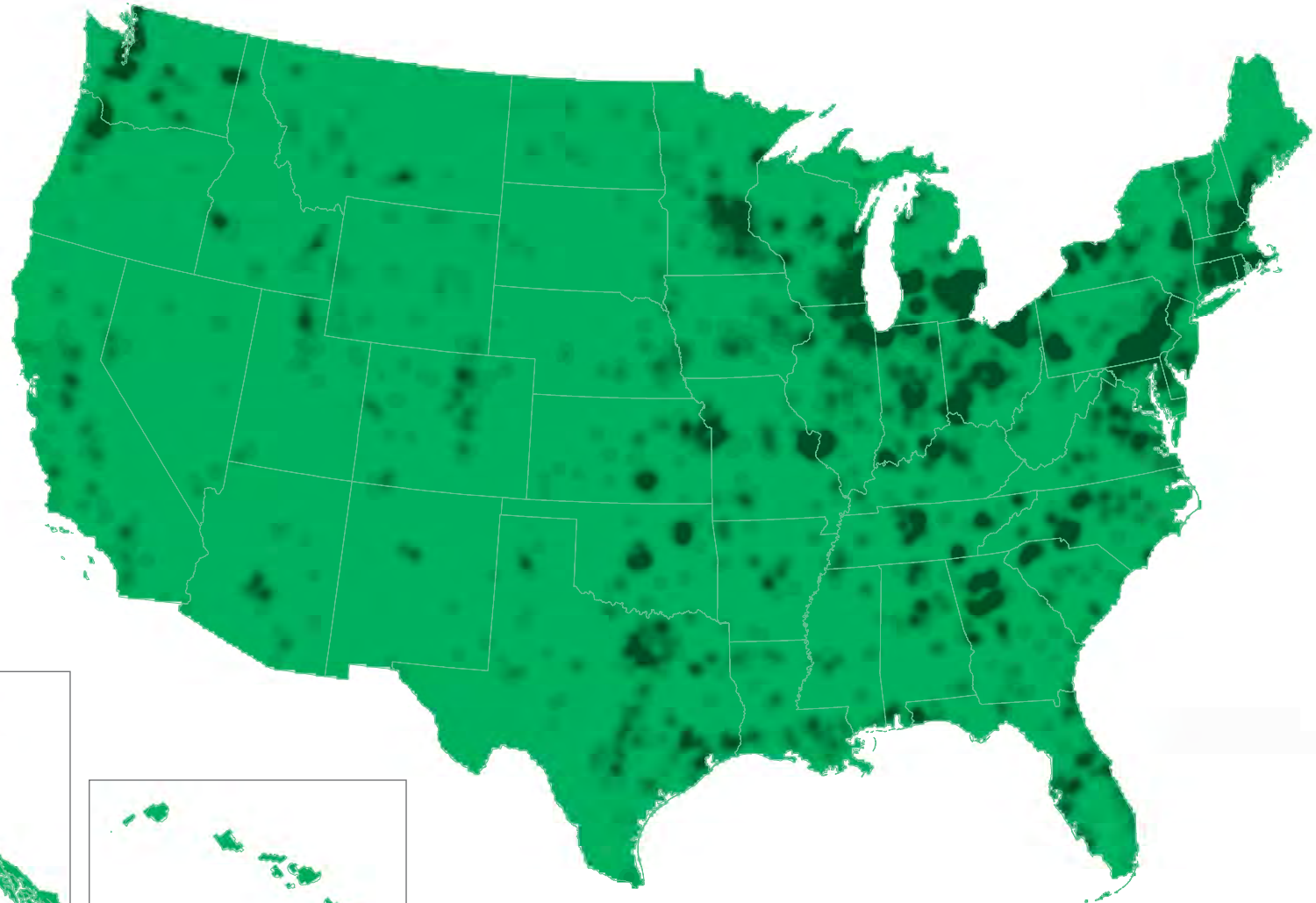


Green Acres



SEGMENT DENSITY

This map illustrates the density and distribution of the *Green Acres* Tapestry Segment by households.



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LifeMode Group: Middle Ground

Old and Newcomers

8F

Households: 2,774,000

Average Household Size: 2.11

Median Age: 38.5

Median Household Income: \$39,000

WHO ARE WE?

This market features singles' lifestyles, on a budget. The focus is more on convenience than consumerism, economy over acquisition. *Old and Newcomers* is composed of neighborhoods in transition, populated by renters who are just beginning their careers or retiring. Some are still in college; some are taking adult education classes. They support environmental causes and Starbucks. Age is not always obvious from their choices.

OUR NEIGHBORHOOD

- Metropolitan city dwellers.
- Predominantly single households (Index 148), with a mix of married couples (no children); average household size lower at 2.11.
- 54% renter occupied; average rent, \$800 (Index 88).
- 45% of housing units are single-family dwellings; 44% are multiunit buildings in older neighborhoods, built before 1980.
- Average vacancy rate at 11%.

SOCIOECONOMIC TRAITS

- Unemployment is lower at 7.8% (Index 91), with an average labor force participation rate of 62.6%, despite the increasing number of retired workers.
- 30% of households are currently receiving Social Security.
- 28% have a college degree (Index 99), 33% have some college education, 10% are still enrolled in college (Index 126).
- Consumers are price aware and coupon clippers, but open to impulse buys.
- They are attentive to environmental concerns.
- They are more comfortable with the latest technology than buying a car.



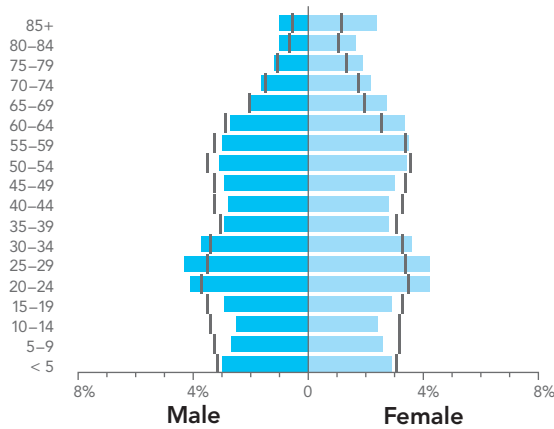
Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GfK MRI.



AGE BY SEX (Esri data)

Median Age: **38.5** US: 37.6

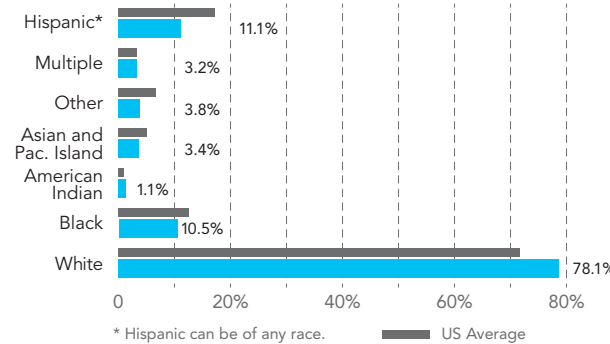
I Indicates US



RACE AND ETHNICITY (Esri data)

The Diversity Index summarizes racial and ethnic diversity. The index shows the likelihood that two persons, chosen at random from the same area, belong to different race or ethnic groups. The index ranges from 0 (no diversity) to 100 (complete diversity).

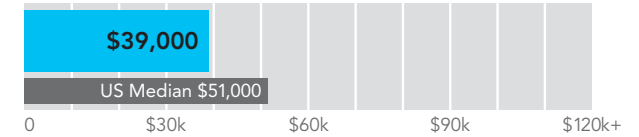
Diversity Index: **50.1** US: 62.1



INCOME AND NET WORTH

Net worth measures total household assets (homes, vehicles, investments, etc.) less any debts, secured (e.g., mortgages) or unsecured (credit cards). Household income and net worth are estimated by Esri.

Median Household Income

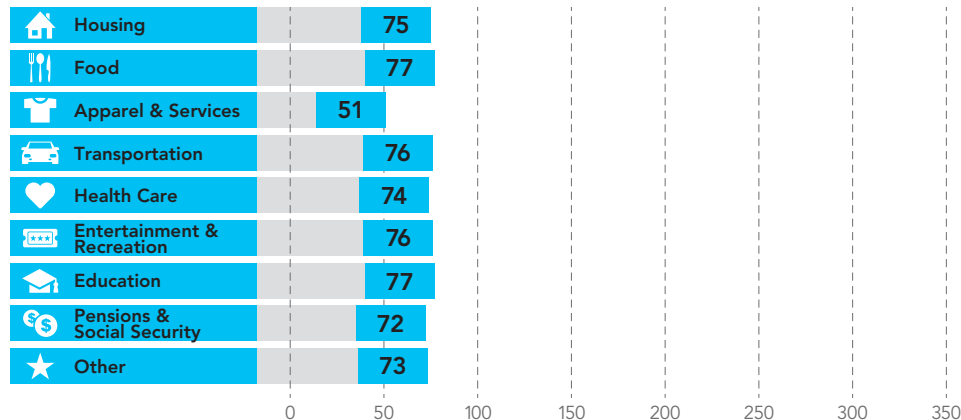


Median Net Worth



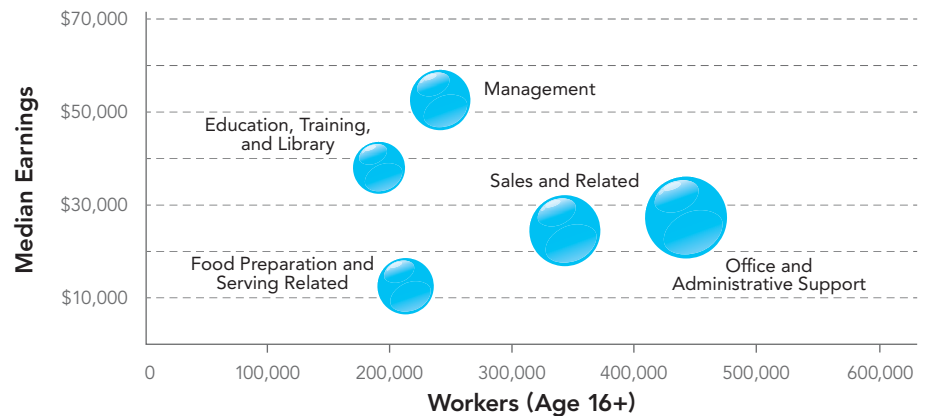
AVERAGE HOUSEHOLD BUDGET INDEX

The index compares the average amount spent in this market's household budgets for housing, food, apparel, etc., to the average amount spent by all US households. An index of 100 is average. An index of 120 shows that average spending by consumers in this market is 20 percent above the national average. Consumer expenditures are estimated by Esri.



OCCUPATION BY EARNINGS

The five occupations with the highest number of workers in the market are displayed by median earnings. Data from the Census Bureau's American Community Survey.





MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- Residents are strong supporters of environmental organizations.
- They prefer cell phones to landlines.
- Entertainment features the Internet (dating sites and games), movies at home, country music, and newspapers.
- Vehicles are basically just a means of transportation.
- Food features convenience, frozen and fast food.
- They do banking as likely in person as online.

HOUSING

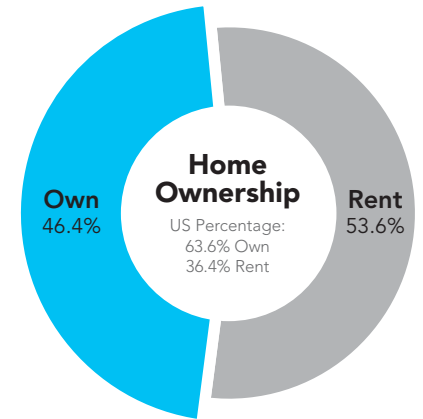
Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.



Typical Housing:
Single Family;
Multiunits

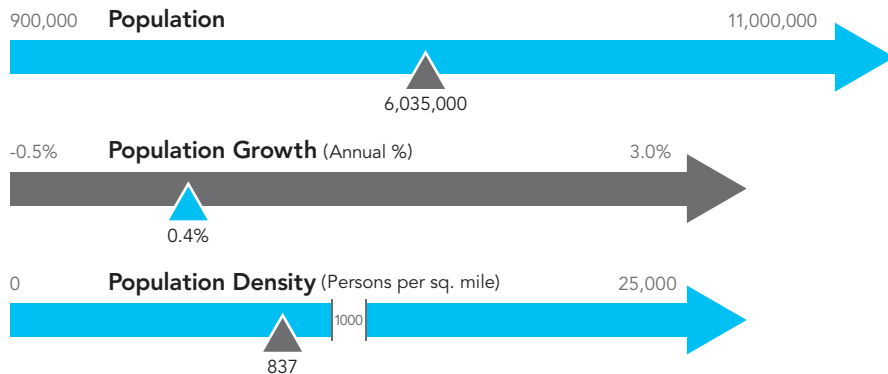
Average Rent:
\$850

US Average: \$990



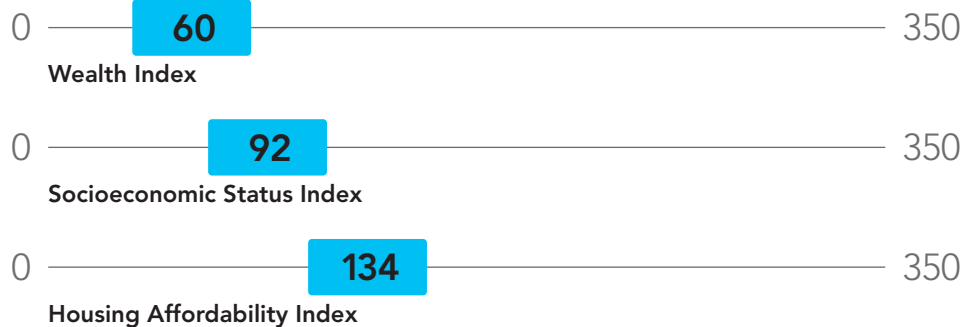
POPULATION CHARACTERISTICS

Total population, average annual population change since Census 2010, and average density (population per square mile) are displayed for the market relative to the size and change among all Tapestry markets. Data estimated by Esri.



ESRI INDEXES

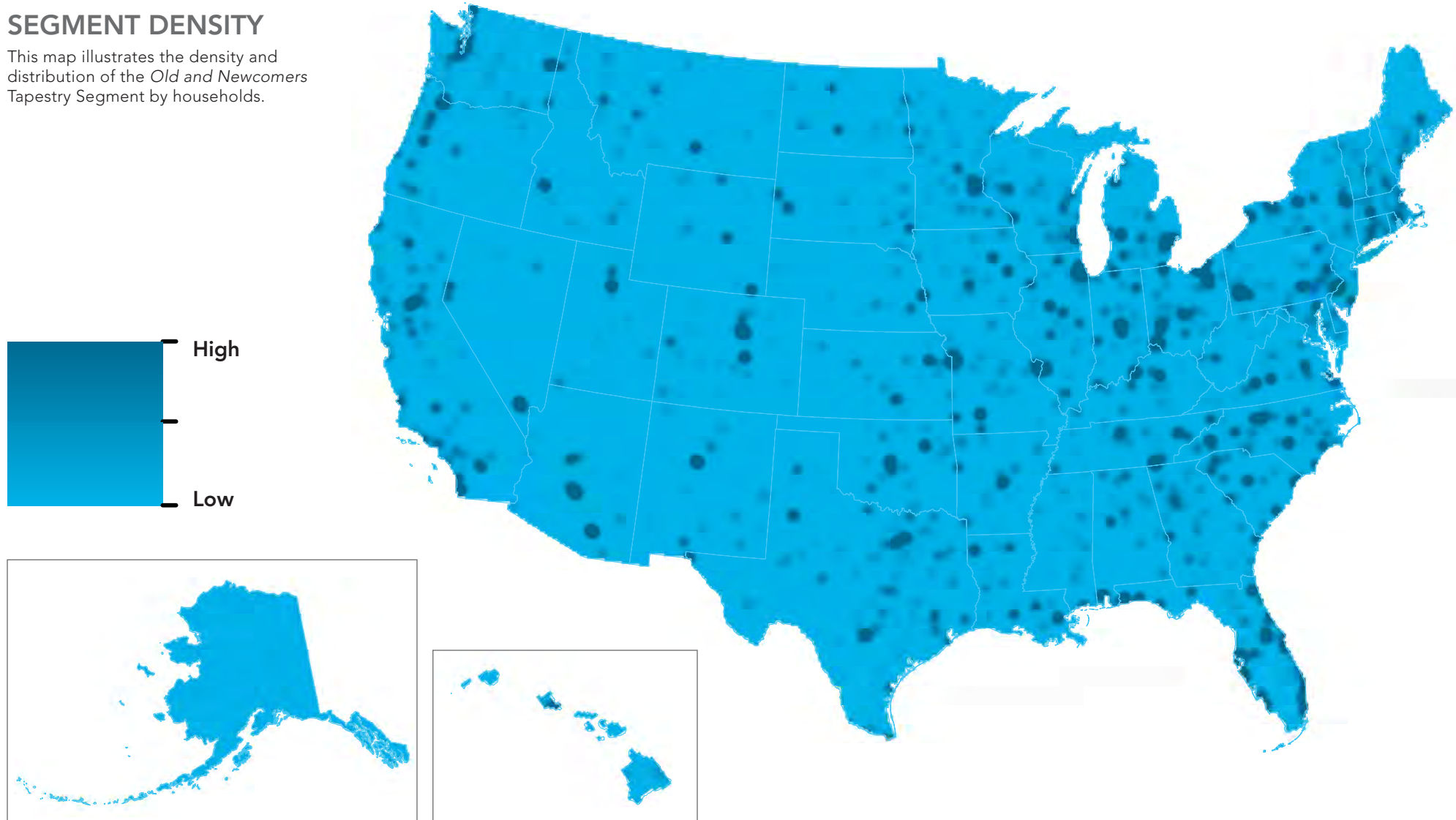
Esri developed three indexes to display average household wealth, socioeconomic status, and housing affordability for the market relative to US standards.





SEGMENT DENSITY

This map illustrates the density and distribution of the *Old and Newcomers* Tapestry Segment by households.





LifeMode Group: Scholars and Patriots

College Towns

14B

Households: 1,104,000

Average Household Size: 2.12

Median Age: 24.3

Median Household Income: \$28,000

WHO ARE WE?

About half the residents of *College Towns* are enrolled in college, while the rest work for a college or the services that support it. Students have busy schedules, but make time between studying and part-time jobs for socializing and sports. Students that are new to managing their own finances tend to make impulse buys and splurge on the latest fashions. This digitally engaged group uses computers and cell phones for all aspects of life including shopping, school work, news, social media, and entertainment. *College Towns* are all about new experiences, and residents seek out variety and adventure in their lives.

OUR NEIGHBORHOOD

- These are nonfamily households with many students living alone or with roommates for the first time.
- This segment is a mix of densely developed student housing and dorms with local residences.
- Off-campus, low rent apartments comprise half of the housing stock.
- Over three-quarters of the households are renter occupied, with one in ten remaining vacant.
- One-third of homes are single family; mostly occupied by local residents who own their homes.
- This market is bike and pedestrian friendly.

SOCIOECONOMIC TRAITS

- Their limited incomes result in thrifty purchases.
- They do not eat the healthiest foods, nor do they see a doctor regularly.
- They dress to impress with the latest fashions of the season.
- They prefer environmentally friendly products and vehicles that get good gas mileage.
- They're heavily influenced by celebrity endorsements and trends in magazines.
- They feel anything that can be done online is easier than in person.
- They have liberal political views.

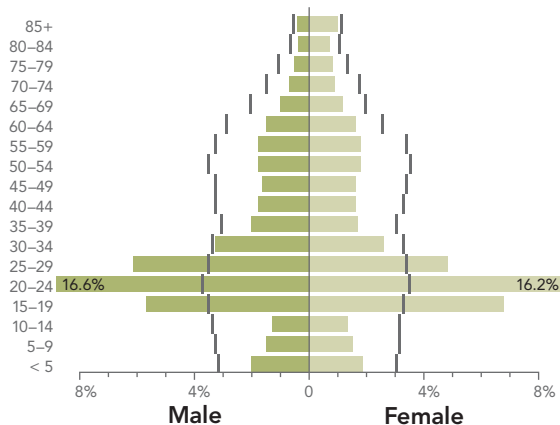


Note: The Index represents the ratio of the segment rate to the US rate multiplied by 100. Consumer preferences are estimated from data by GfK MRI.

AGE BY SEX (Esri data)

Median Age: **24.3** US: 37.6

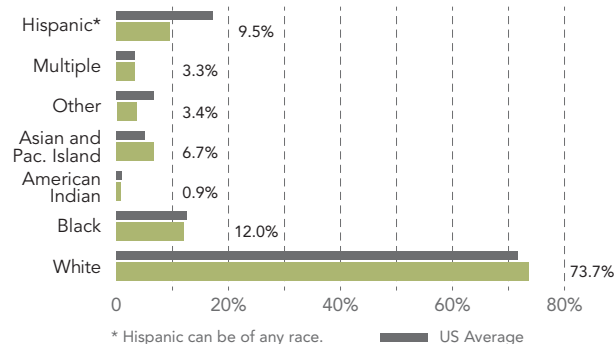
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RACE AND ETHNICITY (Esri data)

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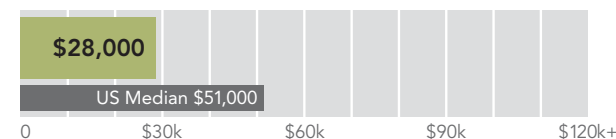
Diversity Index: **53.5** US: 62.1



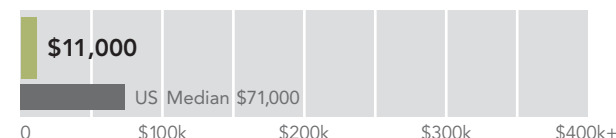
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Median Household Income

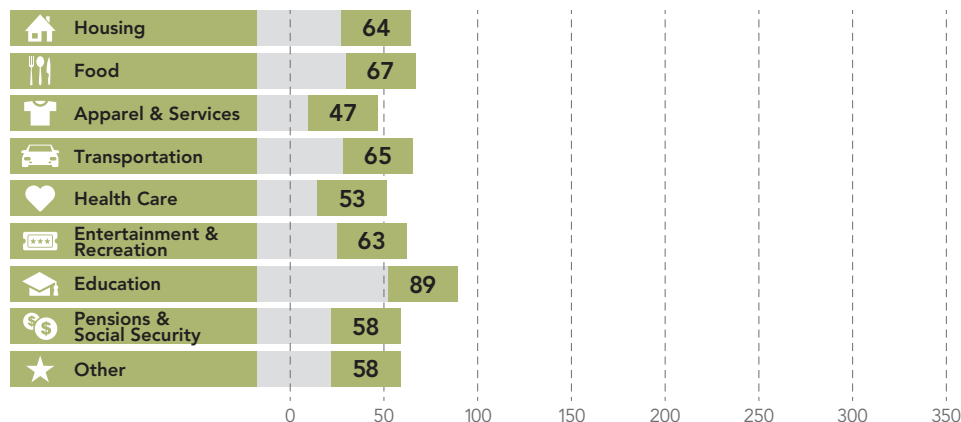


Median Net Worth



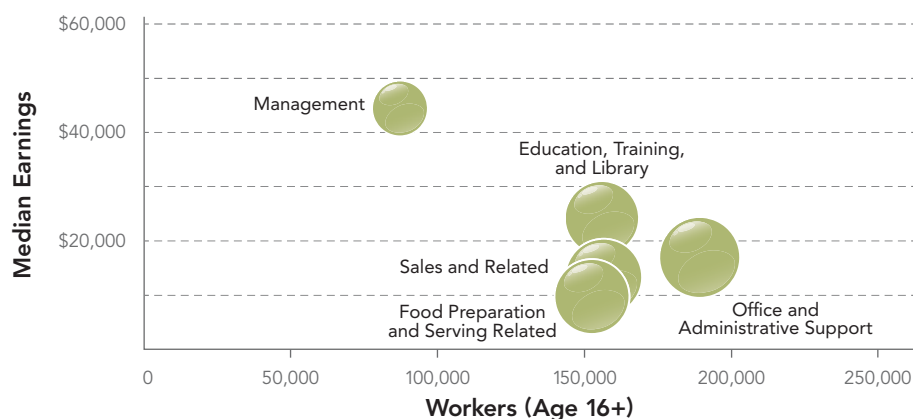
AVERAGE HOUSEHOLD BUDGET INDEX

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OCCUPATION BY EARNINGS

The five occupations with the highest number of workers in the market are displayed by median earnings. Data from the Census Bureau's American Community Survey.





MARKET PROFILE (Consumer preferences are estimated from data by GfK MRI)

- Own a laptop and a portable MP3 player.
- Watch movies and TV programs online; MTV and Comedy Central on TV.
- Use the Internet for social media connections, blogging, paying bills, and downloading music.
- Have cell phones only (no landlines) and enjoy customizing them.
- Popular activities: backpacking, Pilates, and Frisbee.
- Go out to the movies and out for drinks.

HOUSING

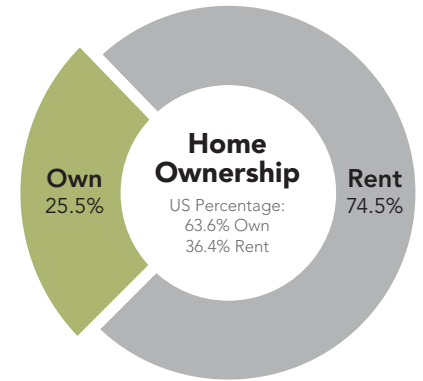
Median home value is displayed for markets that are primarily owner occupied; average rent is shown for renter-occupied markets. Tenure and home value are estimated by Esri. Housing type and average rent are from the Census Bureau's American Community Survey.



Typical Housing:
Multiunit Rentals;
Single Family

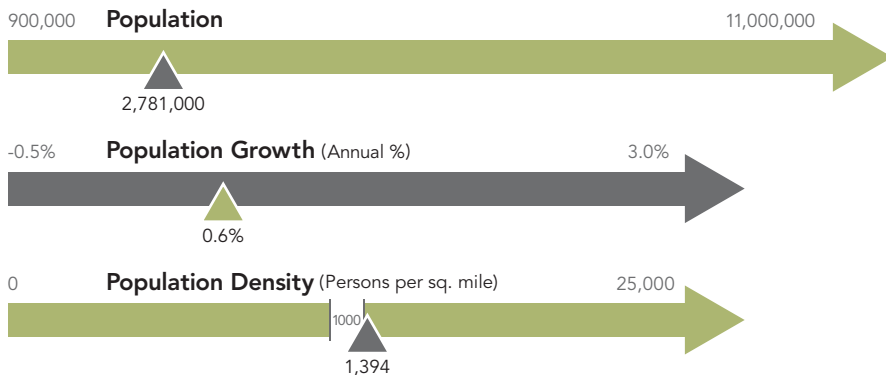
Average Rent:
\$890

US Average: \$990



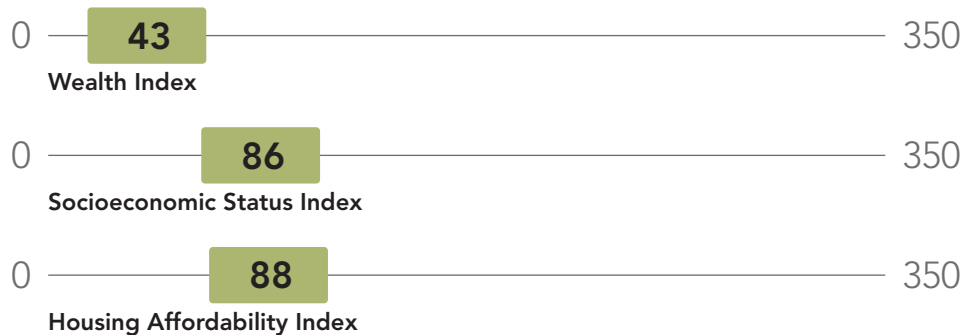
POPULATION CHARACTERISTICS

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ESRI INDEXES

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College Towns



SEGMENT DENSITY

This map illustrates the density and distribution of the *College Towns* Tapestry Segment by households.



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**Final Report:
GIS Services for Planning
and Natural Features Preservation
Oshtemo Township, MI**

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Western Michigan University
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1903 West Michigan, Kalamazoo, MI 49008-5424
Phone 269-387-3364
cgc-upjohncenter@wmich.edu**

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INTRODUCTION

The overarching goal of this project was to accurately locate natural features that contribute to the quality of life and rural character of the Charter Township of Oshtemo, MI. The data development, analysis and mapping process generally followed the procedures for community resource inventory and mapping of potential conservation lands as articulated by Randall Arendt's (Linked Landscapes, 2004). Community resources were identified through use of quality data sources and state-of-the-art geographic information science techniques in consultation with community partners. Special emphasis was given to delineating features and areas that will affect community planning and zoning decisions.

Data was downloaded from the most recent editions of public spatial data resources available from the State of Michigan and various federal agencies. Detailed descriptions of each data source are available at the end of this document. Public data was supplemented with data from the Charter Township of Oshtemo Zoning and Planning Office as necessary.

Analysis included data in six major categories:

- Existing protected areas and greenspace
- Hydrology
- Topography
- Soils
- Vegetation
- Land use

RESOURCE INVENTORY

Existing Protected Areas and Greenspace

The Charter Township of Oshtemo has no large tracts of protected area (Figure 1). The Conservation and Recreation Lands database lists nine properties available as greenspace. However, two of these are golf courses and one is a managed university property. There is one small property with a conservation easement. In addition to CARL designated properties, the township planning members have designated twenty-four other environmentally sensitive properties for special consideration. In a previous study supported by the Southwest Michigan Land Conservancy for the purpose of identifying natural corridors for wildlife, a natural corridor boundary file was created to inform planning and zoning decisions. This boundary covers 26 percent of the township area and is concentrated in the central western portion of the township (Figure 1).

Hydrology

- **Surface Water and Wetlands**

Two hundred and five individual lakes and wetlands are identified by the National Wetland Inventory (Figure 2). Most of these are quite small and are contiguous to one another. The largest wetland complexes are associated with Dustin, South and Bonnie Castle lakes. Given the age of the data (2010) and the manmade nature of some of the smaller wetlands included in the dataset, verification of the habitat quality and natural character of these

wetlands should be confirmed before they are directly used for planning decisions. There are few streams and rivers in the township. However, portions of three branches flow through the northwest corner of the township.

- **Groundwater Recharge**

Clean accessible groundwater is a critical quality of life indicator in rural areas of the township that do not have access to public drinking water system. Groundwater recharge estimates, by section, were accessed from the U.S. Geological Survey Michigan Water Science Center (Figure 2). Because of sandy soils and high permeability, the township generally has high annual groundwater recharge potential from 12-17 inches/year (+/- 2.44 inches/year). Lower values are consistently found in the eastern part of the township where development has increased the amount of impervious surface. There are no specific standard cutoffs for when groundwater recharge should be protected. However, many communities guide development by requiring developers to retain a certain percentage of groundwater recharge capability in new developments through limiting the percentage of a lot that can be impervious surface, etc. Examples of such development guidelines are included in the Environmental Law and Policy document cited at the end of this document.

Topography

- **Slope from Digital Elevation Model (DEM)**

Slopes of over 25% are considered generally unfit for development. The National Elevation Dataset (NED) was used to map elevation at a resolution of 1/3 arc-second (approx. 10 meters). Cell by cell slope estimates were generated using TntMIPS GIS software. Locally high slopes are shown in Figure 3 in very dark brown. These high slope areas are scattered throughout the county. Three prominent areas are in the northeast sections of the township, the uplands surrounding Dustin Lake and wetlands, and the uplands around Wyman Lake.

- **Slope from Soil Survey (SSURGO)**

Classified slope estimates are associated with each soil series designation in the Soil Survey Geographic database (SSURGO). National Resource Conservation Service (NRCS) designates any slope over 15% to be “hilly” and over 30% to be “steep”. The SSURGO slope designation E (slopes from 18-45%) is considered useful for applying zoning and/or development rules (Figure 3) because most of the DEM derived >25% slope estimates fall that class. Slope classes of D and E (12-45% slope) were used to designate rolling hills for visibility analysis (below). The NRCS designates any slope over 8% consistently to be “rolling”.

Soils

The SSURGO database was used to map soils that are designated as important to the agricultural community or have specific limitations to development. Because the soils in the Charter Township of Oshtemo are generally sandy loams, they have high value locally as an agricultural resource and present a number of limitations to development that should be considered during planning and zoning.

- **Prime Farmland**

The United States Department of Agriculture (USDA) defines prime farmland as the land best suited to food, feed, forage, fiber, and oilseed crops. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment. There are several examples of ways to use zoning conventionally and unconventionally to protect agricultural land (Carver and Yahner, 2014). Michigan is among the top 10 states to have lost prime farmland to development in the last few decades. Much of the prime farmland in Oshtemo Township is in the north and central portions of the east side of the township (Figure 4). Two other prime farmland areas are clear in the farthest northwest section and in the southwest portion of the township.

- **Farmland of Local Importance**

The USDA defines Farmland of Local Importance as areas where less than 50 percent of the components in the soil (SSURGO) map unit are of prime or statewide importance but the total of land of prime, statewide, and/or local importance is 50 percent or more of the map unit composition. For extended definitions see the NRCS Interpretive Groups description. While the official definition (above) is confusing, it essentially identifies soils that do not qualify for prime or statewide importance status but are still used locally to produce high value food, fiber or horticultural crops. In the Charter Township of Oshtemo nearly all of the farmland in the east half of the township is considered either Prime or Local Importance (Figure 4).

- **Soil Erodibility**

Soil erodibility has implications for most types of land use. Most planners use the soil erodibility factor (K) that was originally developed as the erodibility factor for the Universal Soil Loss Equation. The “K factor” considers the susceptibility of a particular soil to erosion and the rate of water runoff from that soil. A more detailed description is available in the Metadata document for this project. Soils with low K values (less than 0.15) resist detachment. There are few very low erosion soils in Oshtemo Township (Figure 5). Most Oshtemo Township soils are sandy, coarse-textured soils that still have fairly low K values (0.15-0.20) because there is low water runoff expected even though the soils are easily detached. Medium textured soils produce moderate runoff and are moderately susceptible to detachment and occur for the most part in the eastern third of the township. There are no highly erodible soils (over 0.40) in the township.

- **Limitations of Soils to Select Uses**

Limitations to select development uses were extracted from the appropriate soil survey manuals. All descriptions below are copied verbatim from Soil Survey documentation. Extended limitation descriptions are available in the metadata documentation.

- **Limitations to Shallow Excavations:** In the Charter Township of Oshtemo nearly every soil series is considered to have severe limitations to shallow excavations because of the sandy nature of the soil (Figure 6) and the potential for cut banks to cave during excavation.
- **Limitations to Dwellings with Basements:** Approximately 10-20 percent of the township is rated as having severe limitations to construction of dwellings with basements based strictly on soil

characteristics (Figure 7). Limitations are described fully in the geodatabase and metadata documentations, but typically include concerns about slope, possible ponding of water and shrink-swell characteristics of the soils. The spatial pattern of severity is in a clear southwest to northeast pattern indicative of the underlying Kalamazoo Moraine. Approximately half the township is considered to have moderate limitations for dwellings with basements.

- **Limits to Lawn and Landscape:** The same soils with severe limitations to construction of basements have severe limitations for lawns and landscaping due to slope, stoniness, ponding and droughtiness (Figure 8). Detailed limitation descriptions for each soil series are available in the geodatabase. Most of the township is considered to have moderate limitations for lawns and landscaping.
- **Limitations to Septic Tank Absorption:** Approximately one third of the township (Figure 9) has severe limitations to septic tank absorption fields, where effluent from a septic tank can distributed into the soil through subsurface tiles or perforated pipe. Detailed limitation descriptions for each soil series are available in the geodatabase, but most limitations are due to poor filtration and slow percolation.

Vegetation

The National Land Cover Dataset was used to access information on land use and land cover at 30m resolution for the US. Across the Midwestern United States, urban sprawl has reduced the amount of forested land that many native species depend upon for habitat. In this analysis, areas with high forest cover were identified as critical for maintaining diversity of native species, integrity of fresh water resources and contributing to the aesthetic quality of Oshtemo Township. High forest cover areas were described as those areas that are at least 65% forested at the quarter mile. Some justification for this figure is elaborated below. While most of the data included in this report is from official government sources, quantifying high density forest is an imprecise science at best and we have created some general data layers to serve merely as indicators.

Our estimates were derived from forest fragmentation studies that have shown (since the early research in the 1990's in premier research journals like *'Science'*) that success of many native and migratory species in the Midwest is tied to a high percentage of forest landscape. In Robinson (1995), for example, nesting success in migratory birds was significantly higher as percent forest cover increased. Similarly, a study in Ecological Applications found that, "the conservationists' primary focus should be on preventing a decrease in forest cover... They should not be misled... to think that the negative effects of forest loss can somehow be countered by careful consideration of the spatial pattern of remaining forests." In this analysis, landscapes with 56% forest or less were considered to be of concern. This Ecological Applications study has been cited 428 times in other peer reviewed journal articles and is an important foundational document in this type of research. The most recent citation was in a review article of all literature surrounding the implications of loss of habitat (percent forest), increasing habitat fragmentation (size of forest fragments), and configuration of habitat fragments (Hadley and Betts, 2016).

Habitat quality is a profoundly complicated issue and we have taken only the most general approach by designating areas of high forest cover as higher quality habitat. This portion of the analysis could be much more in-depth, but considering the limited role that township zoning can actually play in determining habitat quality in the region, it was considered sufficient at this time.

- **High Percentage of Forest**

High forest cover areas were described as those areas that are at least 65% forested within a quarter mile. In the Charter Township of Oshtemo there are two fairly large continuous tracts of land for which over 65% of the area is forested (Figure 10). The first is a circular tract in the northwest quarter of the township. The second covers portions of the south central and south west portions of the township. Approximately 20-30% southern dense forest has been lost since 1992, while the northern tract has remained much more stable.

Viewshed

Two types of visible features were considered important to retaining the rural character and scenic beauty of the township.

- **Dense Forest**

Any pixel with high cover (>65% forest within ¼ mile) visible from at least one road centerline in the township. Most of the dense forest in the county is visible from at least one road and the patterns seen in dense forest are clearly evident in the visible dense forest layer (Figure 11).

- **Forested Rolling Hills**

Any forested pixel (NLCD 2011) with greater than 12% slope (SSURGO Soil Class “rolling” designation) visible from at least one road centerline in the township. Visibility of forest rolling hills is scattered throughout the township, with at least one large patch of such landscape in each quadrant of the township (Figure 11).

COMBINATION MODELS

In an attempt to better quantify the combination of resources across the township, two combination models are discussed.

Model A: Forested, Steep or Wetland

Land that is heavily forested (>65% at a quarter mile radius), steeply sloped (>18% slope) or considered wetland is a priority for conservation. Results are shown in Figure 12, Model A.

Model B: Combination of All Factors

Model B represents an aggregation of the resources and limitations to development discussed in this analysis including: wetlands, high groundwater recharge, moderate slope, important agricultural land, high soil erodibility, severe limitations to septic, dense forest, visibility of dense forest and visibility of rolling forested hills.

As can be seen in Figure 13, most of the high value combination of resources (greater than 4 resources present) occur within those areas defined by model A.

FINAL RECOMMENDATIONS

When communities establish conservation priorities, primary conservation areas typically include lands with severe environmental constraints that make them generally unfit for development. Wetlands and slopes greater than 25 percent are two common conditions for establishing primary conservation areas. The Charter Township of Oshtemo has a very small percentage of land area that is considered unfit for development based on these criteria. However, it is clear that a wide variety of natural resources exist and should be protected. In addition, some of the natural character of the township poses limitations to development. In Oshtemo Township, as is typical, these resources (considered secondary conservation areas) are totally unprotected and undelineated, which leaves them open to development of one kind or another based on zoning. It is the mapping of these resources that is vitally important to any community interested in conserving an interconnected network of open space and generally protecting its natural features. Therefore, it is the secondary conservation areas that are the focus of these recommendations.

Northwest Quadrant:

In the Northwest quadrant of the township, groundwater recharge and forest density is high. One area just west of 5th Street has high slopes and a number of small wetlands. The visibility of dense forest and rolling hills are also high, and so it could be argued that this area has some of the highest quality 'rural character' in the township. Limitations to development are few in this quadrant, so zoning regulations are particularly critical if a large area of long term contiguous forest is to be preserved.

Northeast Quadrant:

The Northeast quadrant of the township is a mix of locally important agricultural soils, especially to the north and west, and high development pressure and increase in impervious surface to the south and east. There is generally low forest density and low groundwater recharge, but soils are highly erodible and pose limitations for a number of land uses. These limitations are particularly evident near the Kal-Haven Trail and between 6th and 7th streets. These same high slope areas provide forested rolling hills for travelers along most of the roads in this area. Slope and agricultural soils should be considered in zoning.

Southwest Quadrant:

The Southwest quadrant of the township is diverse in terms of resources. There is a line of dense forest from the southwest corner of the township to the corner of M43 and 4th Street, angling from that intersection south of Stadium and 8th Street. This corridor, shaped like an inverted V, has high forest cover, high visible forest and rolling hills, high groundwater recharge, moderate slopes and limitations to development based on soil characteristics. Between the legs of this V are some locally important soils and small patches of rolling hills. The eastern leg of this V has lost substantial forest due to development pressure in the past.

Southeast Quadrant:

While the Southeast quadrant of the township has the most contiguous prime farmland in the township, those soils also have the highest erodibility factor. Development pressure in the area is high and there are high

percentages of impervious surface. This area is associated with low slopes, low forest density and low groundwater recharge. Regardless of general erodibility, limitations to development based on soil characteristics are fairly low in this quadrant.

Limitations

Limitations of this analysis concern quality of available data from state and federal data sources. For example, the National Wetland Inventory data included wetlands that were manmade. Because we limited our analysis to widely accepted state and federal data sources, the analysis is limited to that data's quality.

FIGURES

Figure 1. Existing protected areas and greenspace. Natural corridor boundaries from SWMLC assessment.

Figure 2. Hydrologic resources including water recharge, wetlands, lakes and river systems.

Figure 3. Slope as derived from digital elevation models and SSURGO slope classes.

Figure 4. Soil series that are classified as important agricultural resources.

Figure 5. Soil erodibility “K” factor as defined by NRCS for use with the RUSLE.

Figure 6. Limitations to shallow excavations due to soil characteristics. ‘Severe’ limitation dominate the township, mostly due to the risk of cave-ins.

Figure 7. Limitations to buildings with basements due to soil characteristics.

Figure 8. Limitations to lawn and landscaping due to soil characteristics.

Figure 9. Limitations to septic tank absorption fields due to soil characteristics.

Figure 10. Areas of high forest density overlap clearly with the SWMLC assessment of natural corridors. Large forest areas have been lost, especially in the southern part of the township.

Figure 11. Rolling hills and dense forest visible from the township’s roads add to the ‘rural character’ of the area.

Figure 12. Two potential combination models are presented below. Model A highlights areas with rolling hills, dense forest and wetlands only. Model B represents the sum of all resources and limitations to development including: wetlands, high groundwater recharge, moderate slope, important agricultural land, high soil erodibility, severe limitations to septic, dense forest, visibility of dense forest and visibility of rolling forested hills.

Figure 13. Most high value combinations of resources occur within the areas delineated by Model A (rolling, forested or wetland) with the exception of small high value patches in areas of the township with high urbanization pressure.



Figure 1.
Existing protected areas and greenspace. Natural corridor boundaries from SWMLC assessment.



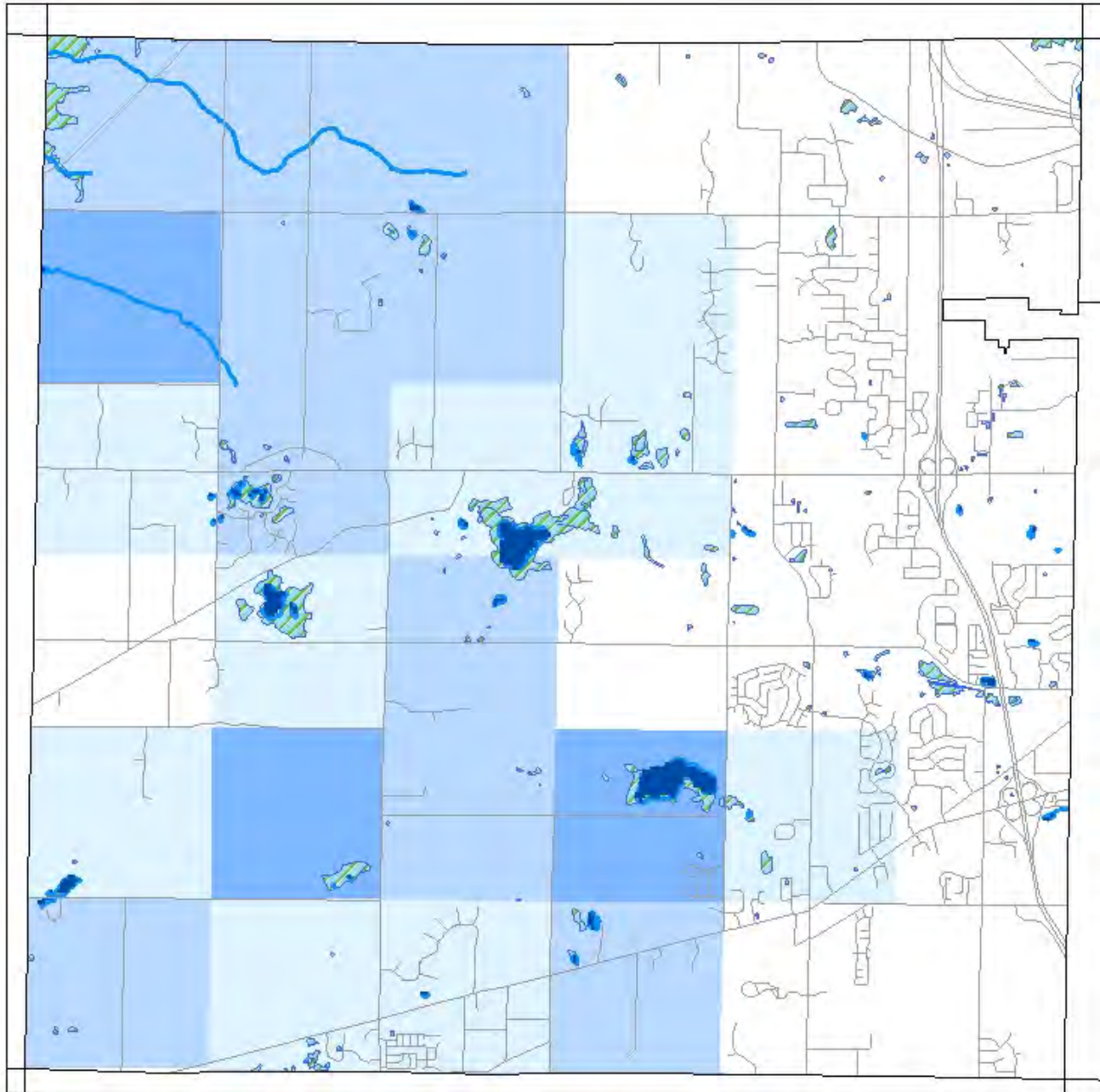
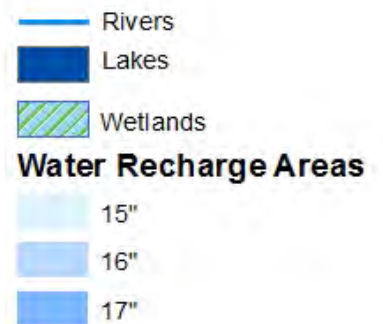


Figure 2.
Hydrologic resources including
water recharge, wetlands, lakes and
river systems.



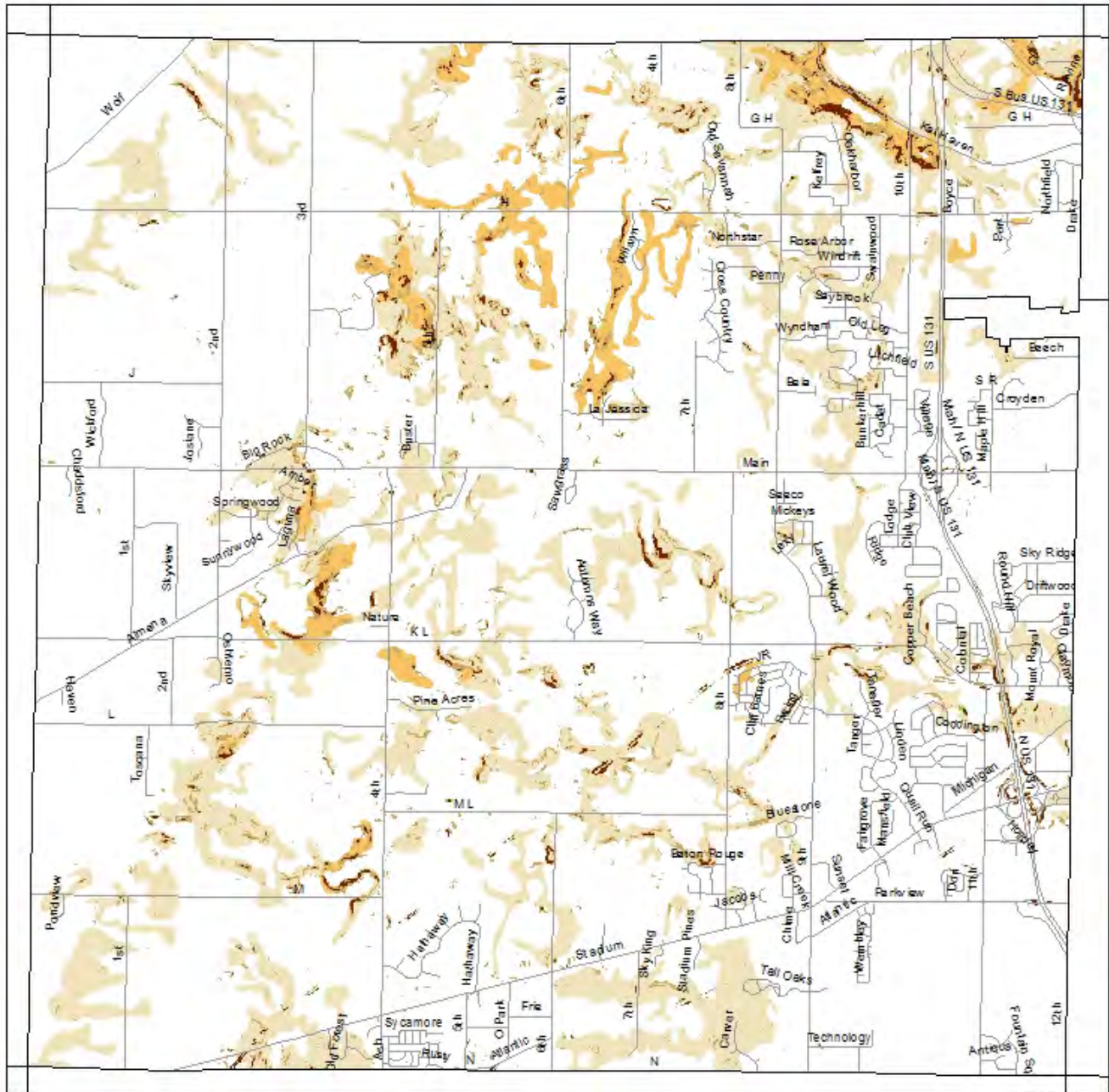


Figure 3.
Slope as derived from digital elevation models and SSURGO slope classes.

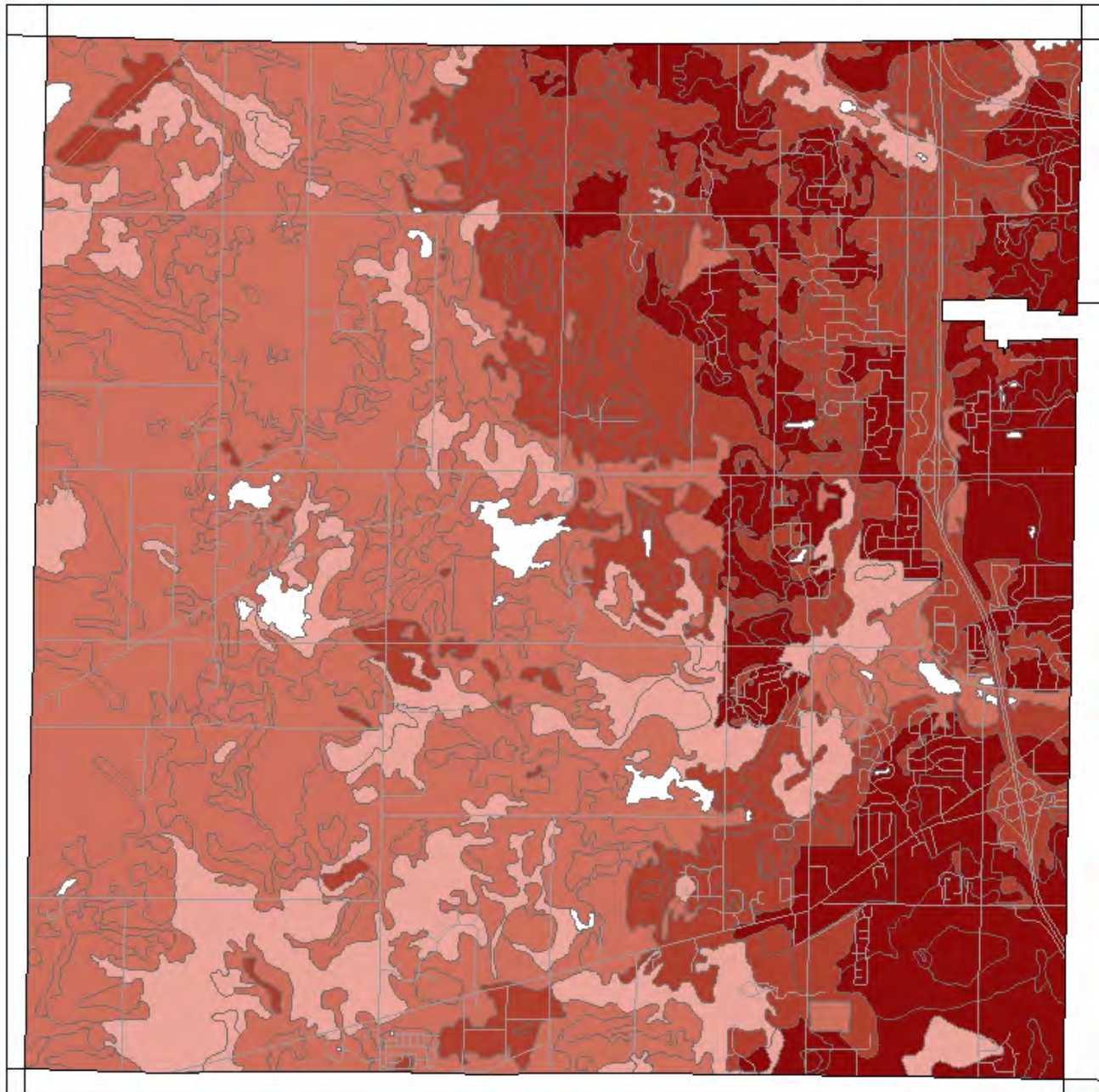
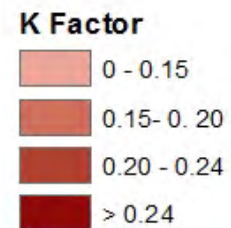


Figure 5.
Soil erodibility “K” factor as defined
by NRCS for use with the RUSLE.



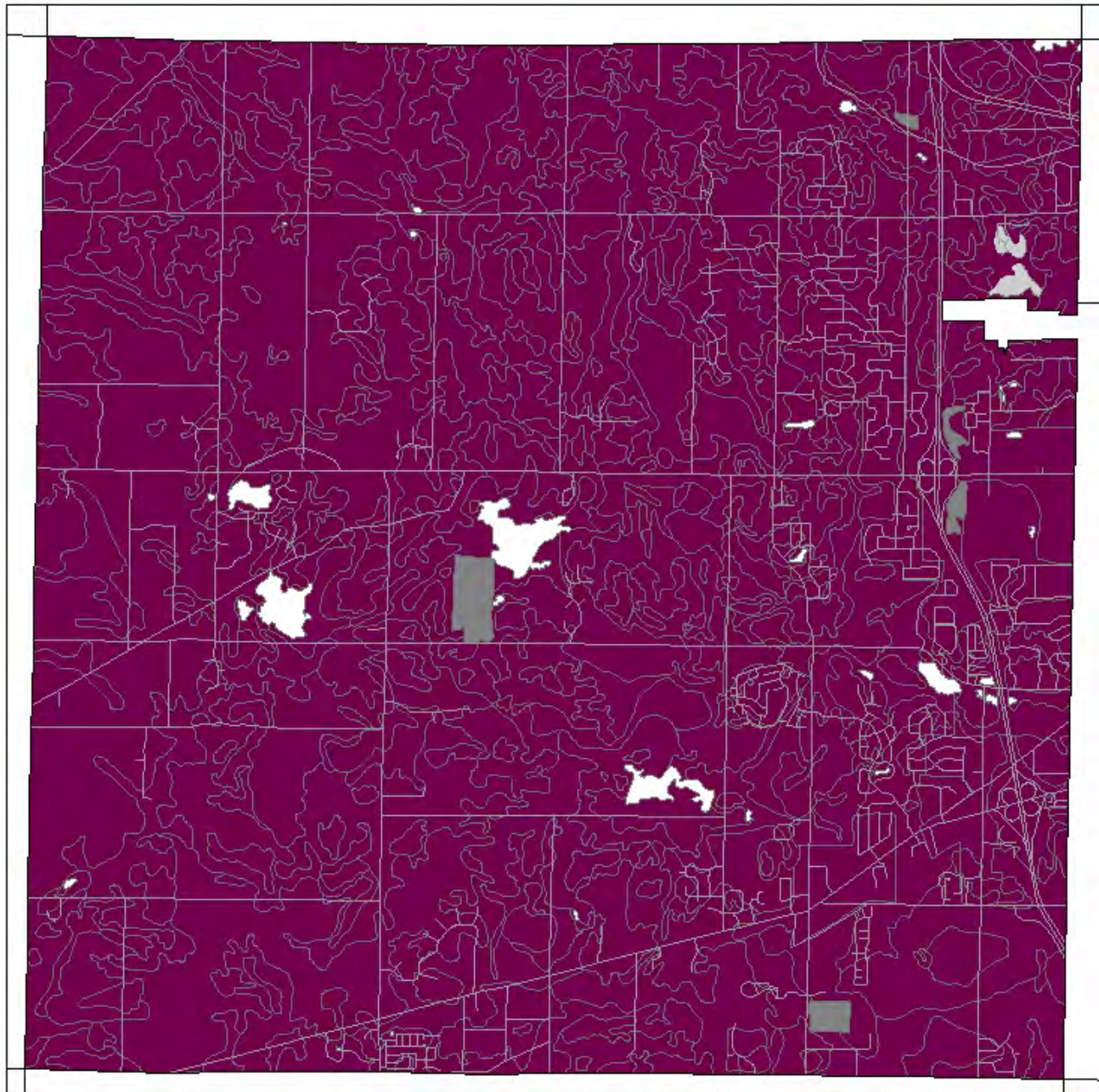


Figure 6.
Limitations to shallow excavations due to soil characteristics. 'Severe' limitation dominate the township, mostly due to the risk of cave-ins.

Shallow Excavations Limitations

- Severe
- Slight
- Variable

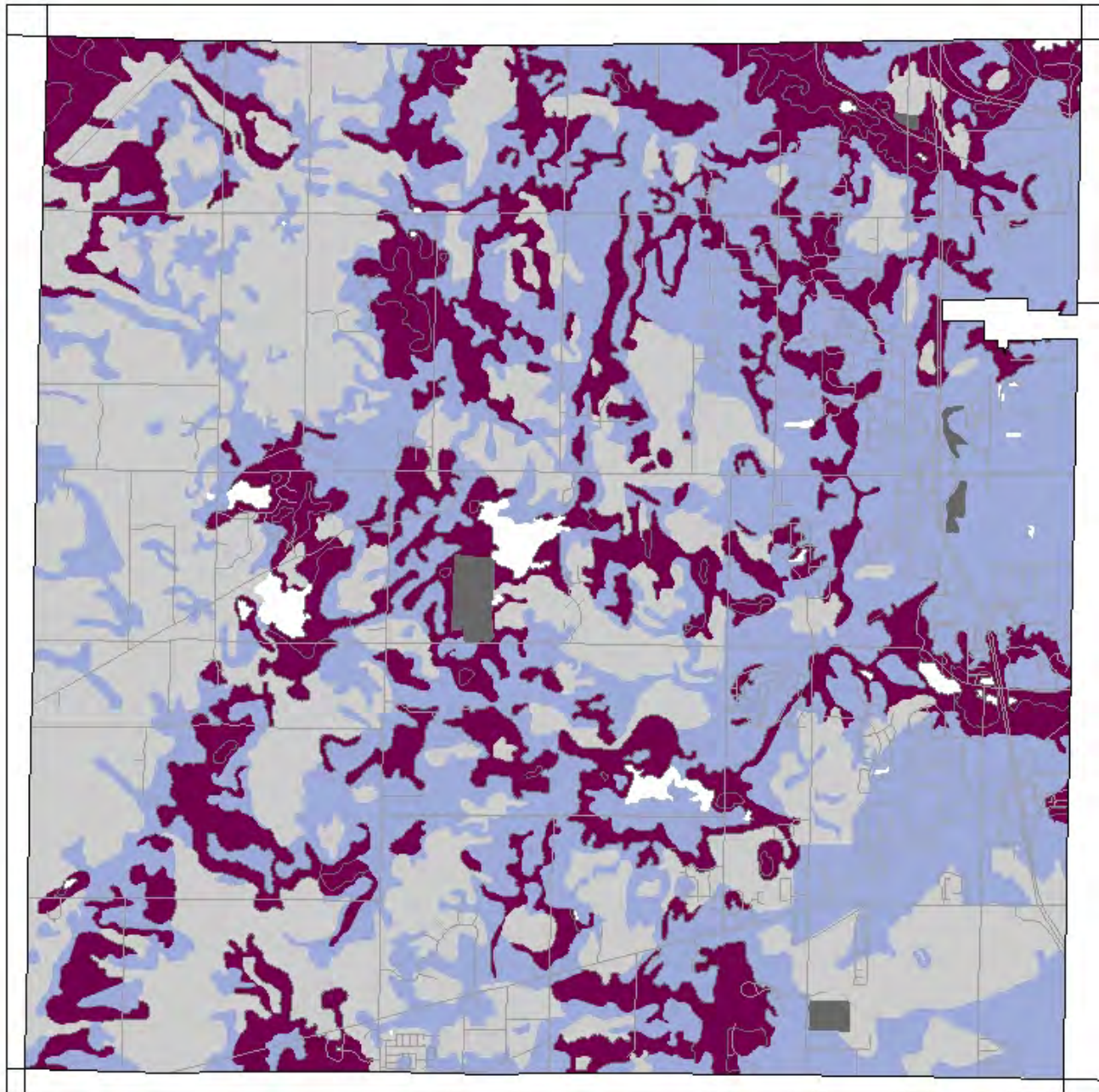


Figure 7.
Limitations to buildings with
basements due to soil
characteristics.

Basement Limitations

- Severe
- Moderate
- Slight
- Variable



Figure 8.
Limitations to lawn and landscaping
due to soil characteristics.

Lawn Limitations

- Severe
- Moderate
- Slight
- Variable

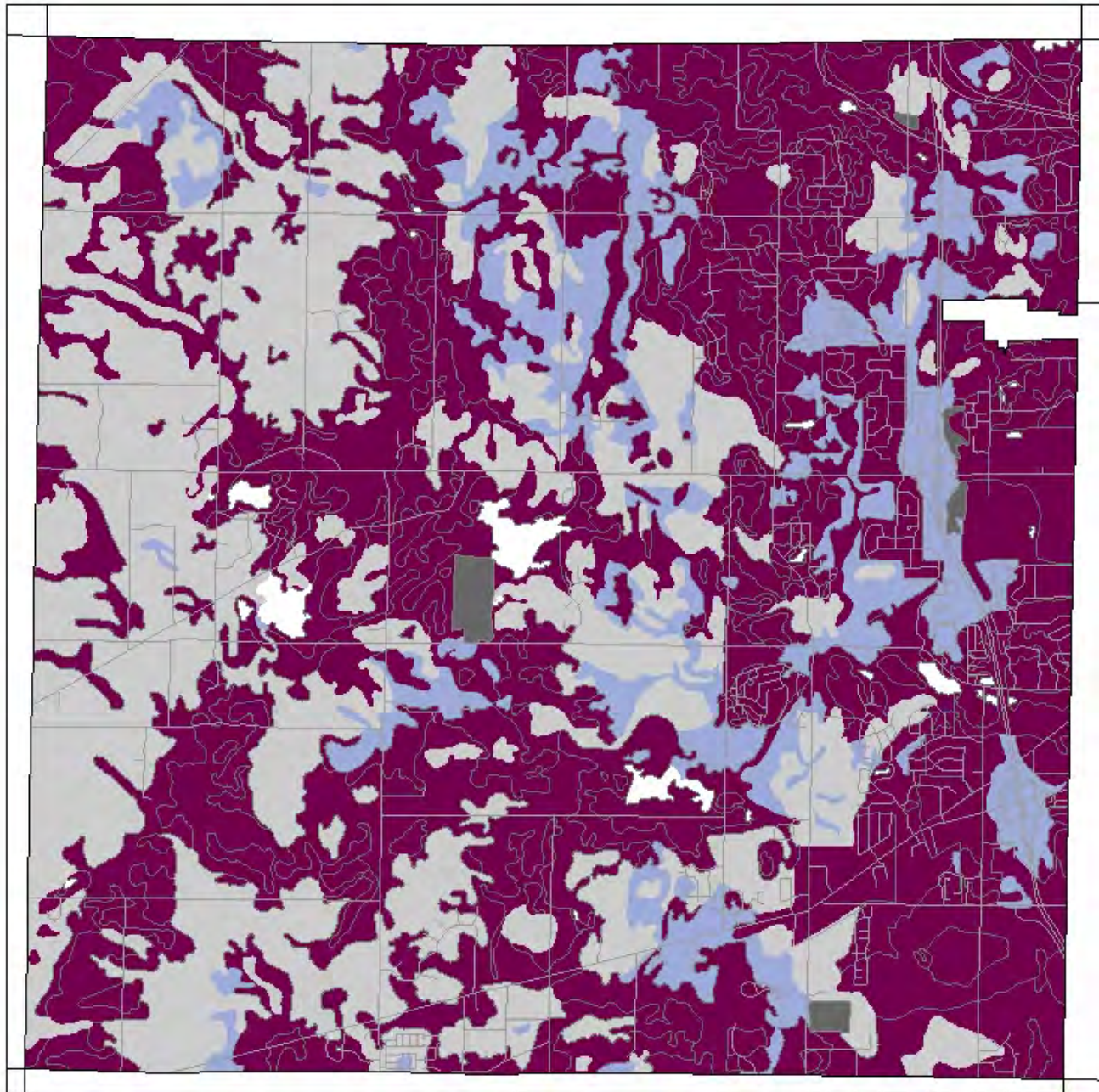


Figure 9.
Limitations to septic tank
absorption fields due to soil
characteristics.

Septic System Limitations

- Severe
- Moderate
- Slight
- Variable

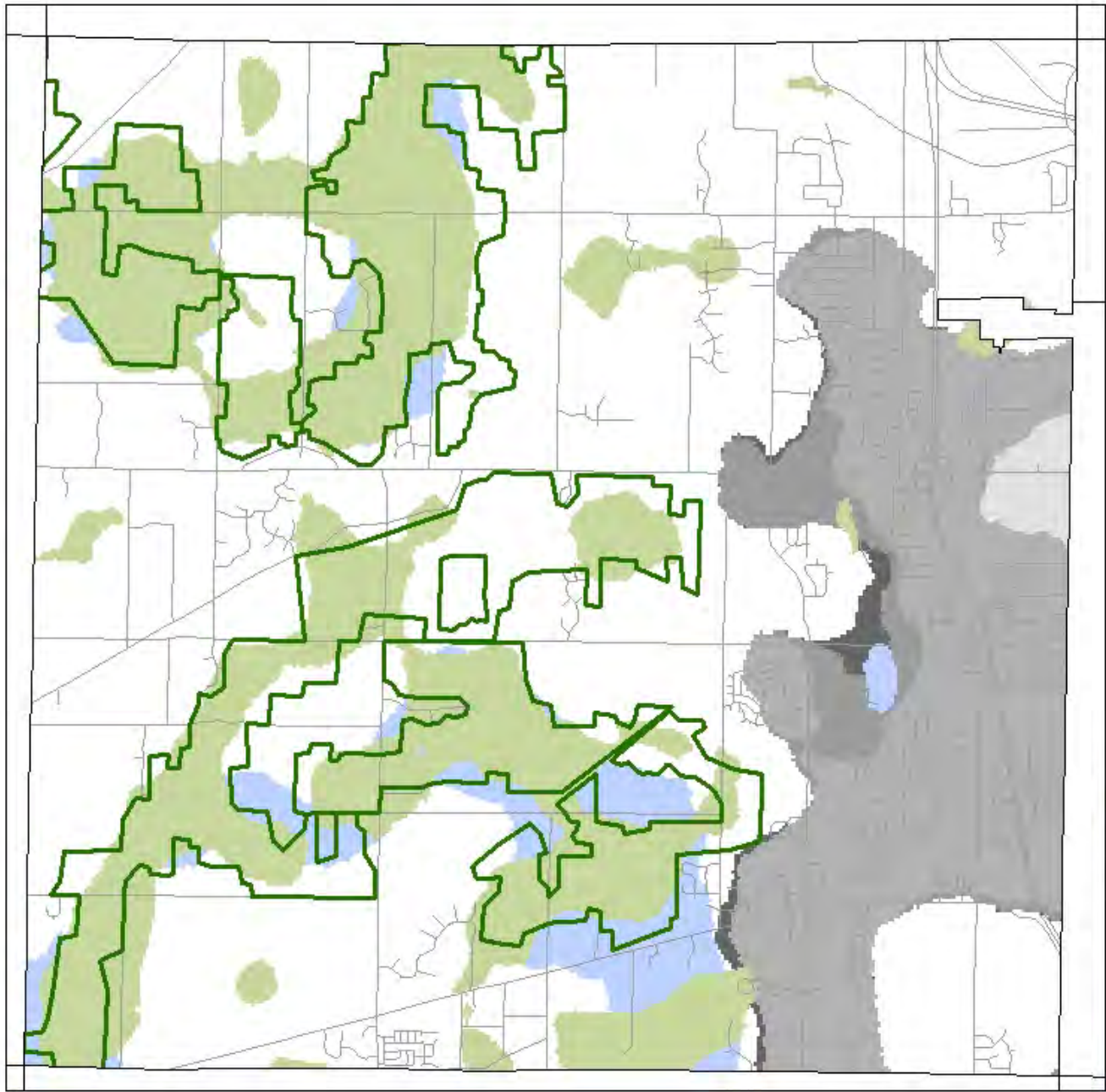
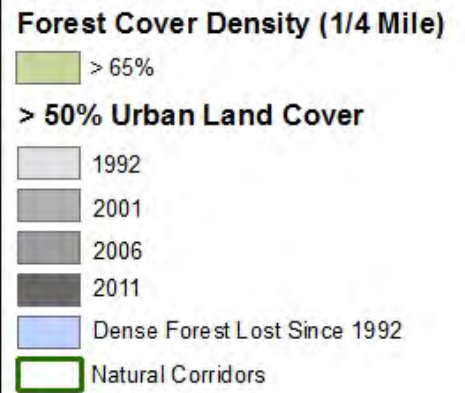


Figure 10.
 Areas of high forest density overlap clearly with the SWMLC assessment of natural corridors. Large forest areas have been lost, especially in the southern part of the township.



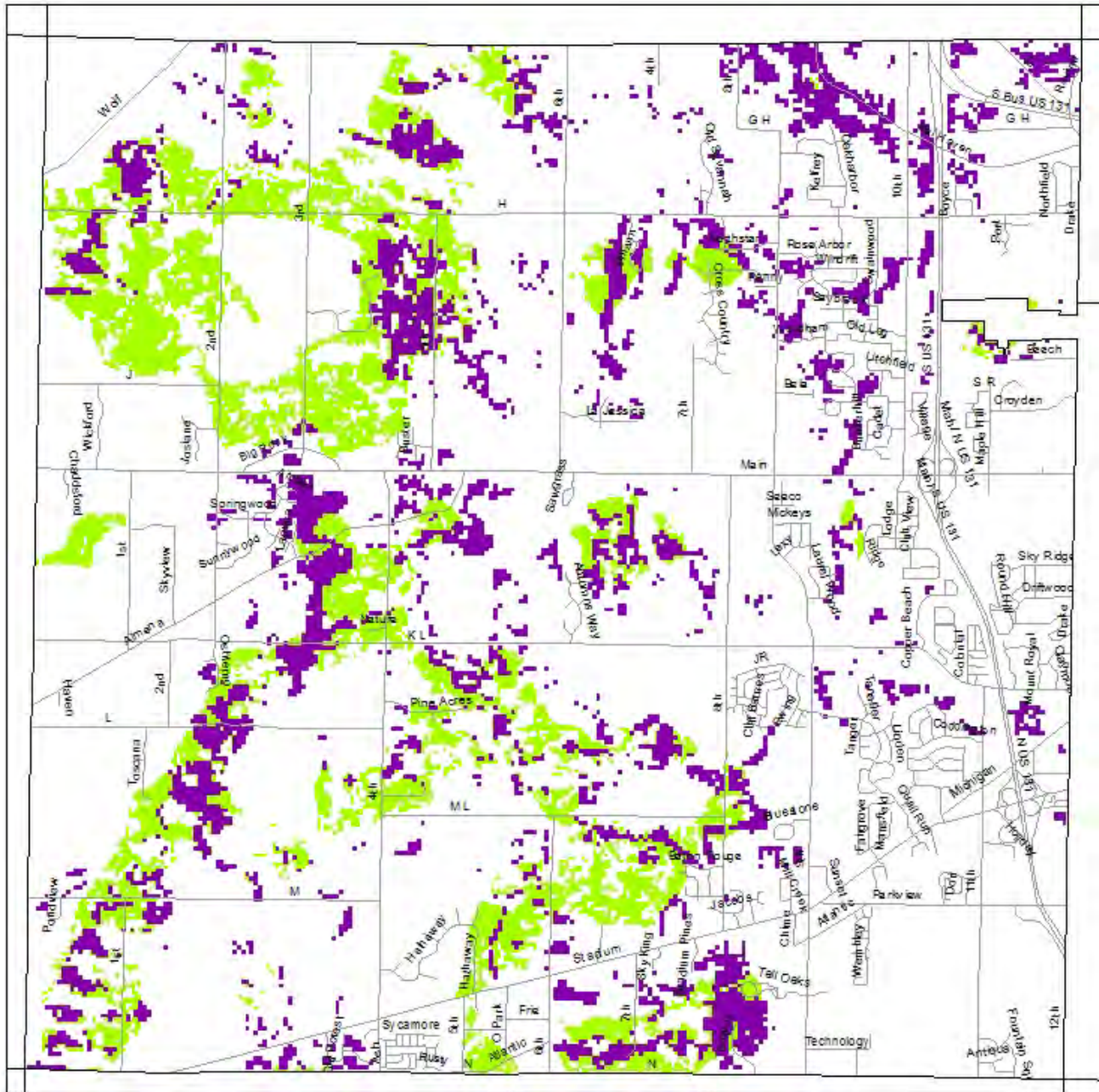
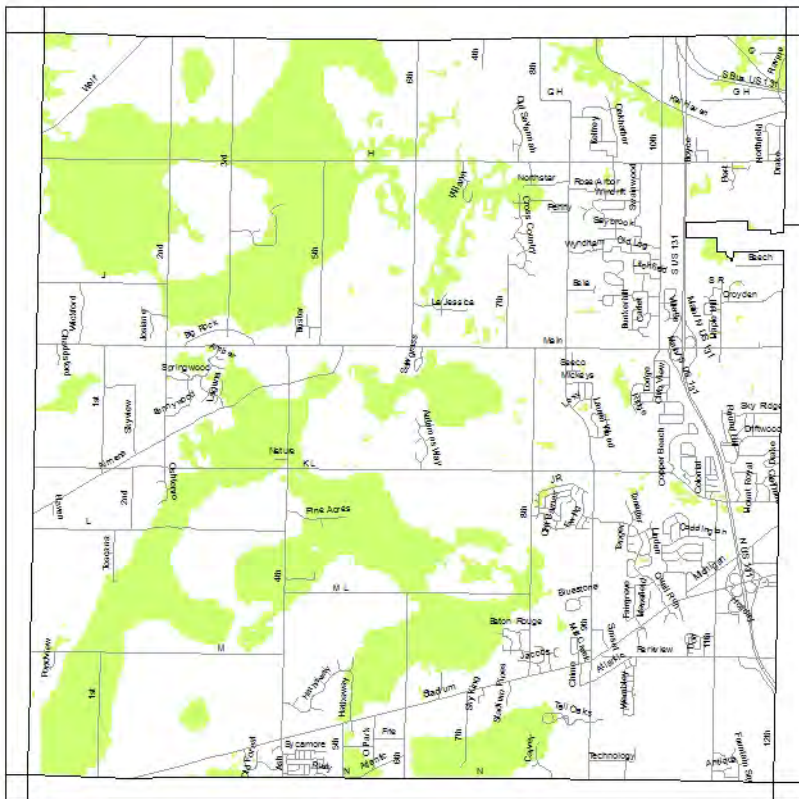


Figure 11.
Rolling hills and dense forest visible from the township's roads add to the 'rural character' of the area.

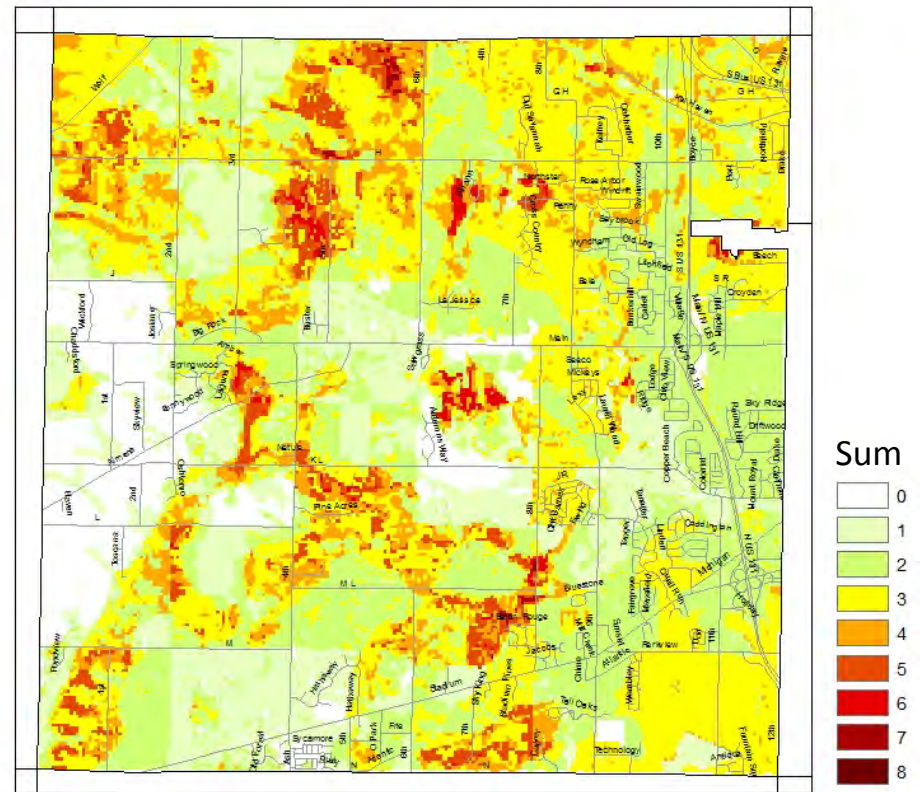
Figure 12.

Two potential combination models are presented below. Model A highlights areas with rolling hills, dense forest and wetlands only. Model B represents the sum of all resources and limitations to development including: wetlands, high groundwater recharge, moderate slope, important agricultural land, high soil erodibility, severe limitations to septic, dense forest, visibility of dense forest and visibility of rolling forested hills.

Model A Rolling, Steep or Wetland



Model B Combination of All Factors



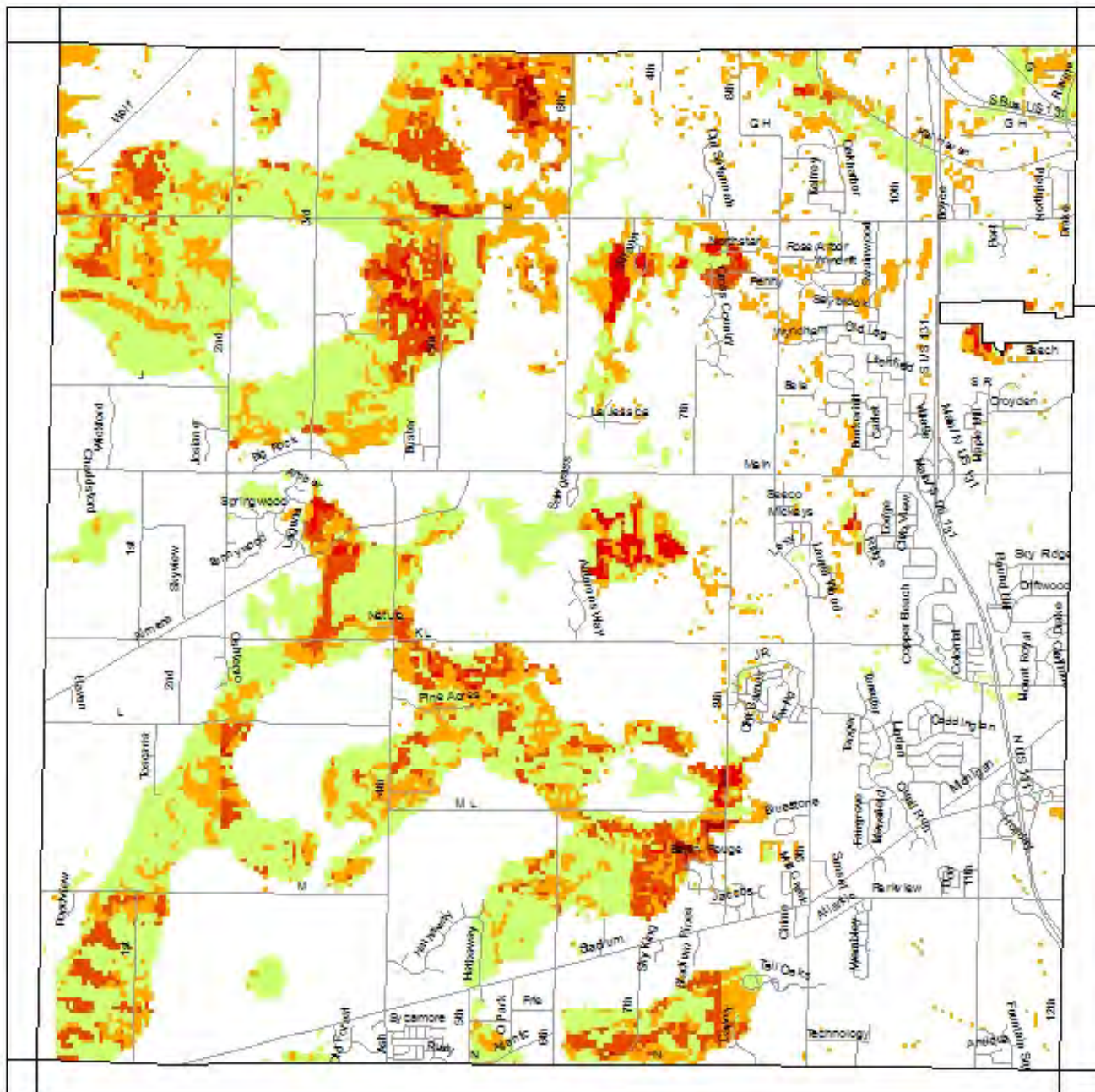
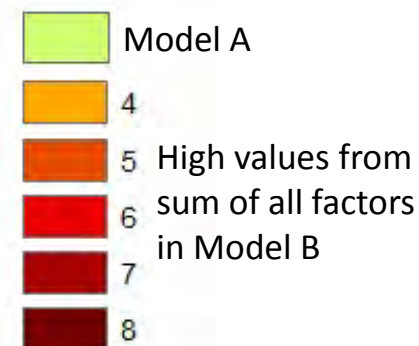


Figure 13.

Most high value combinations of resources occur within the areas delineated by Model A (rolling, forested or wetland) with the exception of small high value patches in areas of the township with high urbanization pressure.



METADATA AND CITATIONS

This section provides detailed descriptions of the data, variables and agencies responsible for each dataset used in the analysis. In some cases, additional citations provide examples of preservation strategies for townships.

Arendt, Randall. 2004. Linked landscapes: Creating greenway corridors through conservation subdivision design strategies in the northeastern and central United States. *Landscape and Urban Planning* 68 (2–3): 241–269.

Hydrology

Estimated Groundwater Recharge

- This dataset provides an estimate of annual groundwater recharge. Accuracy of the recharge estimate is +/- 2.44 inches/year. Horizontal positional accuracy is +/- 50 meters.
- The highest groundwater recharge in the township (3 sections with estimated recharge of 17” per year) were included in the analysis.
- Many communities guide development by requiring developers to retain a certain percentage of groundwater recharge capability in new developments through limiting the percentage of a lot that can be impervious surface, etc. Several suggestions and examples are included in the Environmental Law and Policy document cited below.

Citation:

Environmental Law and Policy Center. 2011. Land Use Tools to Protect Groundwater: Preserving Recharge: Part 2 of 4 in a Series. Supported by the Gaylord & Dorothy Donnelley Foundation <http://elipc.org/wp-content/uploads/2008/06/ELPC-Land-Use-Tools-Part-2-Final-July-2011.pdf>
U.S. Geological Survey Michigan Water Science Center, Groundwater Inventory and Mapping Project. “Michigan Estimated Groundwater Recharge” [shapefile]. Michigan Center for Geographic Information. June 30, 2005.
<http://www.mcgi.state.mi.us/mgdl/?rel=thext&action=thmname&cid=19&cat=Estimated+Groundwater+Recharge> (October 7, 2016).

Metadata:

http://www.mcgi.state.mi.us/mgdl/ground_water/Estimated%20Groundwater%20Recharge/metadata/estimated%20annual%20groundwater%20recharge.htm

National Wetlands Inventory

- NWI provides information about wetland type and geographic extent.
- All NWI designated wetlands were included in the analysis.

Citation:

U.S. Fish and Wildlife Service, Division of Habitat and Resource Conservation. “Kalamazoo NWI” [shapefile]. Michigan Center for Geographic Information. October 1, 2010.
<https://www.mcgi.state.mi.us/mgdl/?rel=cext&action=Kalamazoo> (September 30, 2016).

Metadata:

http://www.mcgi.state.mi.us/mgdl/National_Wetlands_Inventory/metadata/Metadata_NWI.xml

Michigan Geographic Framework Hydrography (v14a) 11/7/16

Citation:

Center for Shared Solutions and Technology Partnerships. "Michigan Geographic Framework: Kalamazoo County" [shapefile]. Michigan Center for Geographic Information. June 1, 2014.

<https://www.mcgi.state.mi.us/mgdl/?rel=cext&action=Kalamazoo> (November 7, 2016).

Metadata: <http://www.mcgi.state.mi.us/mgdl/framework/metadata/Kalamazoo.html>

Topography and Viewshed **Digital Elevation Model (DEM)**

- The National Elevation Dataset (NED) provides a digital map of elevation. Resolution: 1/3 arc-second (approx. 10 meters). Horizontal/Vertical accuracy: N/A
- Elevation data was used to calculate cell by cell slope estimates in TntMIPS GIS software.
- Slopes of over 25% are considered a limitation to development (Arendt, 2004) and were included in the analysis.
- Additional slope classes were obtained from the soil survey classes. See below.

Citation:

U.S. Geological Survey. "USGS NED n43w086 1/3 arc-second 2013 1 x 1 degree" [GridFloat]. November 1, 2013. <http://prd-tnm.s3.amazonaws.com/index.html?prefix=StagedProducts/Elevation/13/GridFloat/> (November 1, 2016).

Soils

- SSURGO SOILS provides information about soil features at or near the surface. Dataset includes soil map and points of sample locations with descriptions. Soil delineation boundaries and features are shown with a horizontal accuracy of +/- 80 feet.
- The National Resource Conservation Service (NRCS) designates any slope over 15% to be "hilly" and over 30% to be "steep". Slope classes of E (18-45% slope) were considered in the initial analysis as a limitation to development.
- Slope classes of D and E (12-45% slope) were used to designate rolling hills for visibility analysis. The National Resource Conservation Service (NRCS) designates any slope over 8% consistently to be "rolling".
- The United States Department of Agriculture (USDA) defines prime farmland as the land best suited to food, feed, fiber, and oilseed crops. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment. There are several examples of ways to use zoning conventionally and unconventionally to protect agricultural land (Carver and Yahner, 2014).
- Farmland of local importance is defined where less than 50 percent of the components in the soil (SSURGO) map unit are of prime or statewide importance but the total of land of prime, statewide, and/or local importance is 50 percent or more of the map unit composition. For extended definitions see Interpretive Groups description cited below.

Citation:

Carver AD, Yahner, JE. 2014. Defining Prime Agricultural Land and Methods of Protection. Agronomy Guide: Extension work in Agriculture and Home Economics, state of Indiana, Purdue University,

and U.S. Department of Agriculture cooperating; H. A. Wadsworth, Director, West Lafayette, IN. Issued in furtherance of the acts of May 8 and June 30, 1914.

Natural Resource Conservation Service. NSSH Part 622: Interpretive Groups.

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054226

Natural Resource Conservation Service. Online Soil Survey Manual – Chapter 3. Examination and Description of Soils.

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/publication/?cid=nrcs142p2_054253

Natural Resource Conservation Service. “SSURGO SOILS” [shapefile]. Michigan Center for Geographic Information. March 20, 2000. <https://www.mcgi.state.mi.us/mgdl/?rel=cext&action=Kalamazoo> (September 30, 2016).

Metadata: http://www.dnr.state.mi.us/spatialdatalibrary/metadata/SSURGO_metadata.htm#2

Viewshed

- A visibility analysis was conducted for Oshtemo township. An estimated height of forest (60ft) was added to the DEM for all cells labeled as forested in the 2011 data. This enhanced DEM was the base for visibility analysis. All grid cells visible from the township road network (extracted from the county Geographic Framework) were noted.
- Two types of visible features were considered important to retaining the rural character and scenic beauty of the township.
 - Forested rolling hills --- Any forested pixel (NLCD 2011) with greater than 12% slope (SSURGO Soil Class Designation) visible from at least 1 road centerline in the township.
 - Dense forest --- Any pixel with high forest cover (>65% forest within ¼ mile) visible from at least 1 road centerline in the township.

Vegetation and Land Use

National Land Cover Dataset

- This data provides information on land use and land cover at 30m resolution for the US.
- NLCD 1992, 2001, 2006 and 2011 were included as base layers to the analysis.
- Derivative products from USGS include a 2001 Tree Canopy layer and Impervious Surface percentages in 2006 and 2011.
- Across the Midwestern United States, urban sprawl has reduced the amount of forested land that many native species depend upon for habitat. In this analysis, areas with high forest cover were identified as critical for maintaining diversity of native species, integrity of fresh water resources and contributing to the aesthetic quality of Oshtemo Township. High forest cover areas were described as those areas that are at least 65% forested at the ¼ mile and ½ mile scale . These figures were derived from forest fragmentation studies that have shown (since the early research in the 1990’s in premier research journals like ‘Science’) that success of many native and migratory species in the Midwest is tied to a high percentage of forest landscape. In Robinson (1995), for example, nesting success in migratory birds was significantly higher as percent forest cover increased.
- Similarly, a study in Ecological Applications found that “the conservationists’ primary focus should be on preventing a decrease in forest cover... They should not be misled... to think that the negative effects of forest loss can somehow be countered by careful consideration of the

spatial pattern of remaining forests.” In this analysis, landscapes with 56% forest or less were considered to be of concern. This Ecological Applications study has been cited 428 times in other peer reviewed journal articles and is an important foundational document in this type of research. The most recent citation was in a review article of all literature surrounding the problem the implications of loss of habitat (percent forest), increasing habitat fragmentation (size of forest fragments), and configuration of habitat fragments (Hadley and Betts, 2016).

- Habitat quality is a profoundly complicated issue and we have taken only the most general approach by designating areas of high forest cover as higher quality habitat. This portion of the analysis could be much more in-depth, but considering the limited role that township zoning can actually play in determining habitat quality in the region, it was considered sufficient at this time.

Citations:

- Hadley, AS, Betts, MG. 2016. Refocusing Habitat Fragmentation Research Using Lessons from the Last Decade. *Current Landscape Ecology Reports*. 1(2): 55-66.
- Robinson SK, Thompson FR 3rd, Donovan TM, Whitehead DR, Faaborg J. 1995. Regional forest fragmentation and the nesting success of migratory birds. *Science*. 1995 Mar 31;267(5206):1987-90.
- Trzcinski MK, Fahrig L, Merriam G. 1999. Independent effects of forest cover and fragmentation on the distribution of forest breeding birds. *Ecological Applications*. 9(2):586-593.
- U.S. Geological Survey. “NLCD 1992 Land Cover Conterminous United States” [ArcGIS GRID]. Multi-Resolution Land Characteristics Consortium (MRLC) Viewer. October 11, 2000. <http://www.mrlc.gov/viewerjs/> (October 21, 2016).
- U.S. Geological Survey. “NLCD 2001 Land Cover Version 2.0” [ArcGIS GRID]. Multi-Resolution Land Characteristics Consortium (MRLC) Viewer. February 11, 2011. <http://www.mrlc.gov/viewerjs/> (October 21, 2016).
- U.S. Geological Survey. “NLCD 2006 Land Cover” [ArcGIS GRID]. Multi-Resolution Land Characteristics Consortium (MRLC) Viewer. February 11, 2011. <http://www.mrlc.gov/viewerjs/> (October 21, 2016).
- U.S. Geological Survey. “NLCD 2011 Land Cover (2011 Edition, amended 2014) - National Geospatial Data Asset (NGDA) Land Use Land Cover” [ArcGIS GRID]. Multi-Resolution Land Characteristics Consortium (MRLC) Viewer. October 10, 2014. <http://www.mrlc.gov/viewerjs/> (October 21, 2016).

Kalamazoo County Geographic Framework 10/3/16

Citation:

Center for Shared Solutions and Technology Partnerships. “Michigan Geographic Framework: Kalamazoo County” [shapefile]. Michigan Center for Geographic Information. June 1, 2014. <https://www.mcgi.state.mi.us/mgdl/?rel=cext&action=Kalamazoo> (October 3, 2016). Metadata: <http://www.mcgi.state.mi.us/mgdl/framework/metadata/Kalamazoo.html>

Van Buren County Geographic Framework 11/12/16

Citation:

Center for Shared Solutions and Technology Partnerships. "Michigan Geographic Framework: Van Buren County" [shapefile]. Michigan Center for Geographic Information. June 1, 2014. <https://www.mcgi.state.mi.us/mgdl/?rel=cext&action=Van+Buren> (November 12, 2016). Metadata: http://www.mcgi.state.mi.us/mgdl/framework/metadata/Van_Buren.html

Soil Erodibility Index

- Description of the soil erodibility factor (K) from the Technical Guide to RUSLE use in Michigan, NRCS-USDA State Office of Michigan.
 - "K factor" is the soil erodibility factor which represents both susceptibility of soil to erosion and the rate of runoff, as measured under the standard unit plot condition. Soils high in clay have low K values, about 0.05 to 0.15, because they resistant to detachment. Coarse textured soils, such as sandy soils, have low K values, about 0.05 to 0.2, because of low runoff even though these soils are easily detached. Medium textured soils, such as the silt loam soils, have a moderate K values, about 0.25 to 0.4, because they are moderately susceptible to detachment and they produce moderate runoff. Soils having a high silt content are most erodible of all soils. They are easily detached; tend to crust and produce high rates of runoff. Values of K for these soils tend to be greater than 0.4.
 - Organic matter reduces erodibility because it reduces the susceptibility of the soil to detachment, and it increases infiltration, which reduce runoff and thus erosion. Addition or accumulation of increased organic matter through management such as incorporation of manure is represented in the C factor rather than the K Factor. Extrapolation of the K factor nomograph beyond an organic matter of 4% is not recommended or allowed in RUSLE. In RUSLE, factor K considers the whole soil and factor Kf considers only the fine-earth fraction, the material of <2.00mm equivalent diameter. For most soils, $Kf = K$.
 - Soil structures affects both susceptibility to detachment and infiltration. Permeability of the soil profile affects K because it affects runoff.
 - Although a K factor was selected to represent a soil in its natural condition, past management or misuse of a soil by intensive cropping can increase a soil's erodibility. The K factor may need to be increased if the subsoil is exposed or where the organic matter has been depleted, the soil's structure destroyed or soil compaction has reduced permeability. A qualified soil scientist can assist in making this interpretation.
- K factor values were taken directly from the Michigan State University On-Line Soil Erosion Assessment Tool: <http://www.iwr.msu.edu/rusle/about.htm>
 - While this tool does not directly describe how the K factor is calculated, it is generally determined by using calculated from the field Kf (kffact) in the gSSURGO horizon table (chozion). Each map unit in SSURGO has one or more components and each component has one or more layers or horizons. To flatten these one-to-many relationships Esri calculated an average value of horizons weighted by thickness for each component and the average value of the components weighted by component percentage to determine the final value for each map unit. (Description taken from new ESRI soil erodibility baselayer).

Limitations of Soils to Select Uses

- Limitations to select development uses were extracted from the appropriate Soil Survey manuals. All descriptions below are copied verbatim from Soil Survey documentation. Limitation descriptions:
 - **Slight:** If soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome.
 - **Moderate:** If soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations.
 - **Severe:** If soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possible increased maintenance are required.
- **Limitations to Shallow Excavations:** Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by a very firm dense layer, stone content, soil texture, and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.
- **Limitations to Dwellings with Basements:** Dwellings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single family dwellings no higher than three stories. Ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrink-swell potential, and organic layers can cause the movement of footings. A high water table, large stones, slope and flooding affect the ease of excavation and construction.
- **Limits to Lawn and Landscape:** Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.
- **Limitations to Septic Tank Absorption:** Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation. Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Oshtemo Township Rural Character Alternatives Workshop

Results Summary

Prepared by Wade Trim, March 15, 2017

Background

On Thursday, February 23, 2017, from 7:00 to 9:00 p.m., a Rural Character Alternatives Workshop was held at the Oshtemo Township Hall. The purpose of the workshop was to inform and engage community members as part of the planning process to develop a Rural Character Preservation Strategy for the western portion of Oshtemo Township. This Rural Character Preservation Strategy will be a component of the Township's updated Master Plan. In total, more than 50 interested citizens attended the workshop, most of whom provided their names and e-mail addresses (refer to the enclosed Workshop Sign-in-Sheet). The workshop was facilitated by Wade Trim, a planning consultant assisting the Township in the project effort.

Agenda

The workshop began with introductions and a brief presentation by Wade Trim explaining the purpose and expected outcomes of the Rural Character Preservation Strategy. Wade Trim then provided a presentation of the natural features mapping project for Oshtemo Township, which was recently completed by the W.E. Upjohn Center for the Study of GIS and Geographical Change at Western Michigan University. Wade Trim then provided an overview of the Community Remarks interactive map tool that was made available to interested citizens as another means to engage the community and collect feedback about rural character elements which are important to be preserved (the interactive map tool was launched in December 2016 and will remain active through March 2017). Prior to taking a short break, Wade Trim provided a brief presentation on the currently adopted zoning ordinance requirements currently applicable within the western portion of the Township.

Rural Character Compatible Use Survey

After the break, Wade Trim led the workshop participants through two exercises. The first was an individual exercise related to Rural Character Compatible Uses. Attendees were given a short survey that listed a variety of types of rural (or potentially rural) uses, such as farmstands, wedding barns, and seed supply stores. Respondents were asked if such uses are not appropriate in the study area, appropriate in the study area with no limitations, or appropriate in the study area with limitations. For each use, they were also asked to indicate potential negative impacts that may result from such uses (i.e., traffic, property values, public services).

Residential Design Alternatives Exercise

For the second exercise, attendees worked in small groups (tables) to critique Residential Design Alternatives. Each group was given four alternative residential design concept plans for a 96 acre site in

a rural location (the site was not located in Oshtemo Township). The four design alternatives each employed different approaches to development of the site, as follows:

- Alternative A sought to maximize density as allowed by current Oshtemo Township zoning, with no provision for open space.
 - 53 total lots
 - Approx. minimum lot sizes of 1.5 acres
 - 0% preserved open space
- Alternative B sought to maximize density as allowed by the Oshtemo Township zoning ordinance's "open space" development option.
 - 90 total lots
 - Approx. minimum lot sizes of 0.5 acres
 - 40% preserved open space
- Alternative C employed the "large lot/low density" approach to rural preservation, ensuring a low overall density, large lots and generous setbacks.
 - 25 total lots
 - Approx. minimum lot sizes of 3 acres
 - 7% preserved open space
- Alternative D sought a low overall density but proposed smaller lot sizes in order to preserve site features such as agricultural land and woodlands.
 - 25 total lots
 - Approx. minimum lot sizes of 1.5 acres
 - 50% preserved open space

Groups were each provided with an evaluation worksheet, which prompted the group to work together to rank each alternative based on specific objectives, such as farmland preservation or natural resource protection.

Workshop Results

Rural Character Compatible Use Survey

The detailed results of the Rural Character Compatible Use Survey are enclosed. Below is a summary table providing the results of the survey by land use related to appropriateness within rural areas. Of the land uses listed in the survey, the ones which were voted as being "most appropriate" (highest percentage of votes as appropriate, either appropriate with no limitations or appropriate with limitations) within rural areas included: Greenhouses/Plant Nurseries (100%); Commercial/Riding Stables (98%); Winery/Brewery/Tasting Room (94%); and, Agri-Tourism (92%). The land uses which were voted as being "least appropriate" (highest percentage of votes as not appropriate) within rural areas included: Race Courses (67%); and, Shooting Ranges/Game Clubs (57%).

Response	Land Use									
	Agri-Tourism	Agri-Business	Winery/Brewery/Tasting Room	Race Courses	Farm Implement Sales	Storage/Warehousing	Shooting Ranges/Game Clubs	Commercial/Riding Stables	Green-houses/Plant Nurseries	
	% of Votes	% of Votes	% of Votes	% of Votes	% of Votes	% of Votes	% of Votes	% of Votes	% of Votes	
Not Appropriate in Study Area	8%	29%	6%	67%	24%	22%	57%	2%	0%	
Appropriate in Study Area Generally with No Limitations	29%	12%	27%	4%	25%	12%	2%	42%	37%	
Appropriate in Study Area but with Limitations	63%	59%	67%	29%	51%	67%	41%	56%	63%	

Residential Design Alternatives Exercise

A total of 10 small groups were formed to work together to complete the evaluation of the four residential design alternative concepts. Due to differences in methods that were used to complete the evaluation worksheet, below is a summary of each group’s general findings. However, on the whole, Alternative D received the broadest support as the Alternative which was most effective at preserving rural character.

- Group 1 – Overall, this group indicated a preference for Alternatives C and D that “look more rural residential for both the residents and surrounding neighbors.”
- Group 2 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives C, A and B.
- Group 3 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives C, B and A.
- Group 4 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives C, A and B.
- Group 5 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives C, A and B.
- Group 6 – This group determined that all but one alternative (Alternative D) “even approaches preservation of rural character.”
- Group 7 – Alternative C was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives D, A and B (tie for A and B).
- Group 8 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives C, B and A.

- Group 9 – Alternative D was ranked as most effective at preserving the various components of rural character listed on the worksheet, followed by Alternatives B, C and A.
- Group 10 – Alternative D was ranked as most effective at preserving natural resources, agricultural production/farmland, scenic viewsheds, and recreation. Alternative C was ranked as most effective at preserving private property rights, motorized transportation (traffic flow, efficiency, safety), and efficiency/capacity of community services.

Enclosures:

1. Workshop Sign-in-Sheet
2. Residential Design Alternatives
3. Rural Character Compatible Use Survey Results Summary

Oshtemo Township

Rural Character Preservation Strategy

Rural Character Workshop:
Design Alternatives Exercise

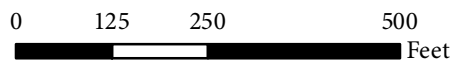
Alternative A

Project Statistics:

Total Area = 96 acres
SF Development Sites = 53
Density = 0.55 units per acre
Typical Min. Lot Size = 1.5 acres
Common Open Space = 0 acres
Open Space Ratio = 0%
Road R.O.W. = 11.1 acres

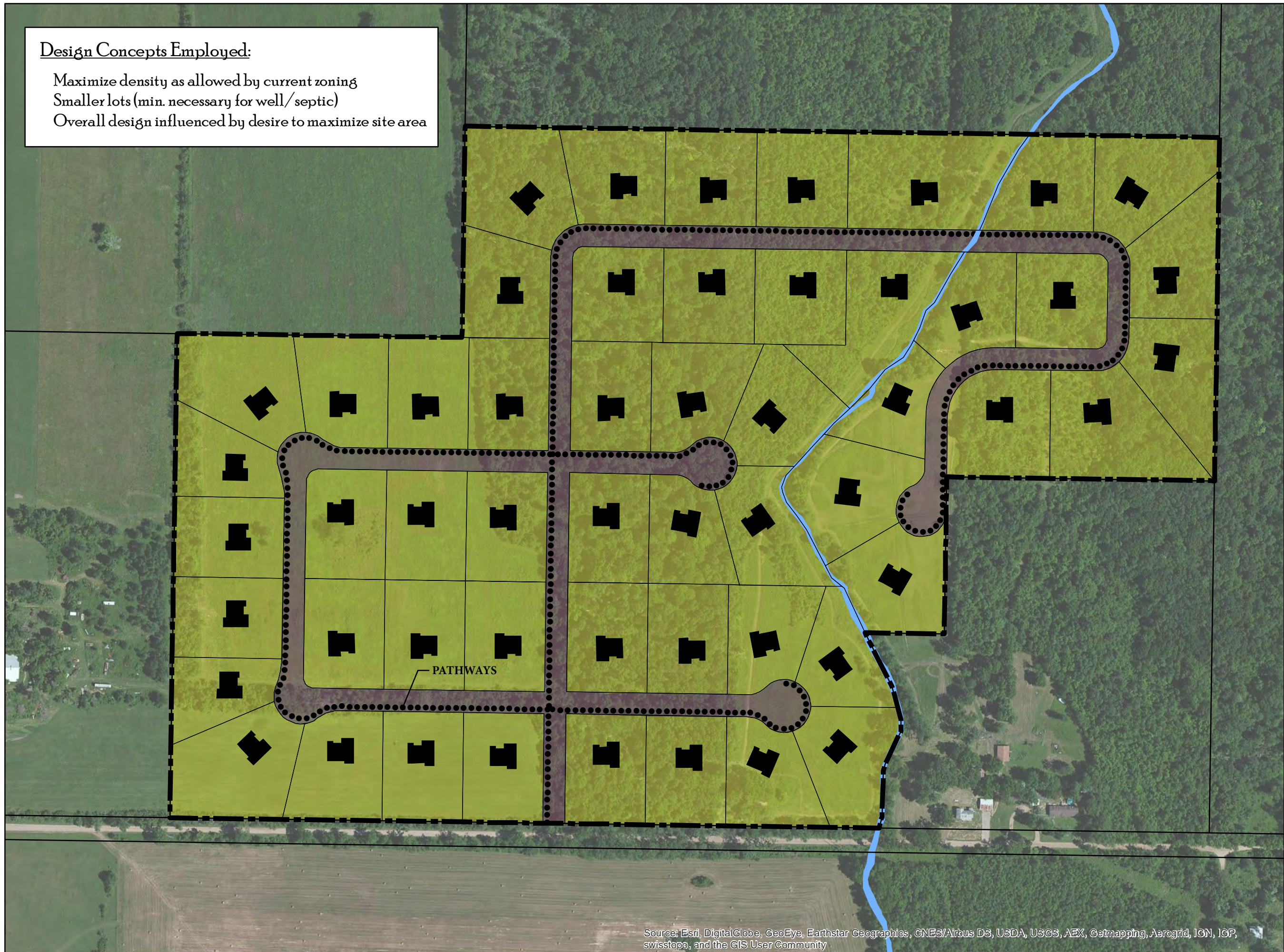
*The project site is not located within Oshtemo Township.

1 inch = 250 feet



Design Concepts Employed:

Maximize density as allowed by current zoning
Smaller lots (min. necessary for well/septic)
Overall design influenced by desire to maximize site area



Oshtemo Township

Rural Character Preservation Strategy

Rural Character Workshop:
Design Alternatives Exercise

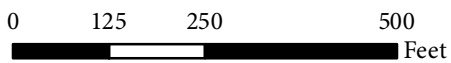
Alternative B

Project Statistics:

Total Area = 96 acres
SF Development Sites = 90
Density = 0.94 units per acre
Typical Min. Lot Size = 0.5 acres
Common Open Space = 38 acres
Open Space Ratio = 40%
Road R.O.W. = 11.9 acres

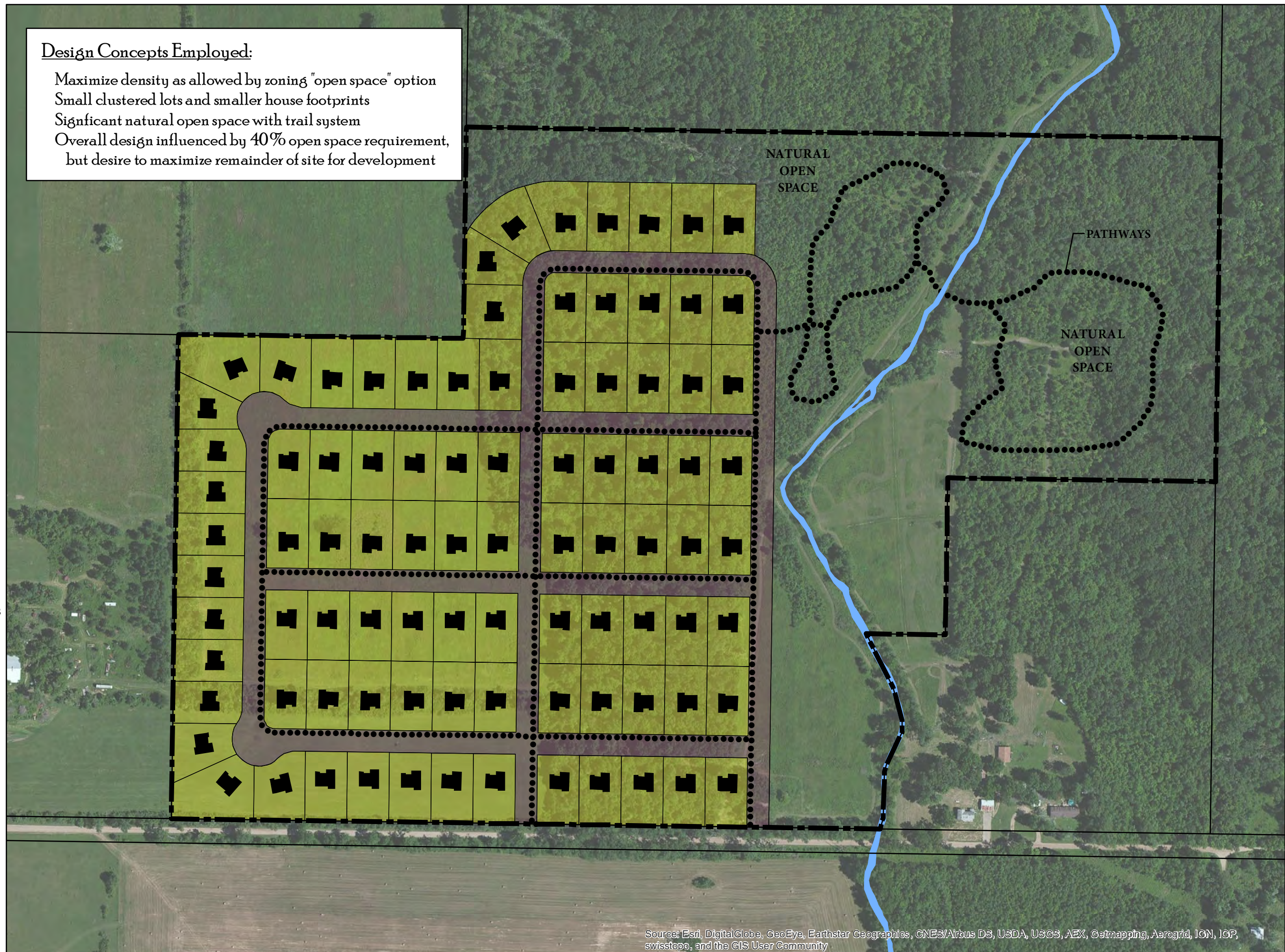
*The project site is not located within Oshtemo Township.

1 inch = 250 feet



Design Concepts Employed:

Maximize density as allowed by zoning "open space" option
Small clustered lots and smaller house footprints
Significant natural open space with trail system
Overall design influenced by 40% open space requirement, but desire to maximize remainder of site for development



Oshtemo Township

Rural Character Preservation Strategy

Rural Character Workshop:
Design Alternatives Exercise

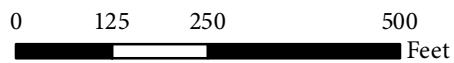
Alternative C

Project Statistics:

Total Area = 96 acres
SF Development Sites = 25
Density = 0.26 units per acre
Typical Min. Lot Size = 3 acres
Common Open Space = 7 acres
Open Space Ratio = 7.3%
Road R.O.W. = 7.6 acres

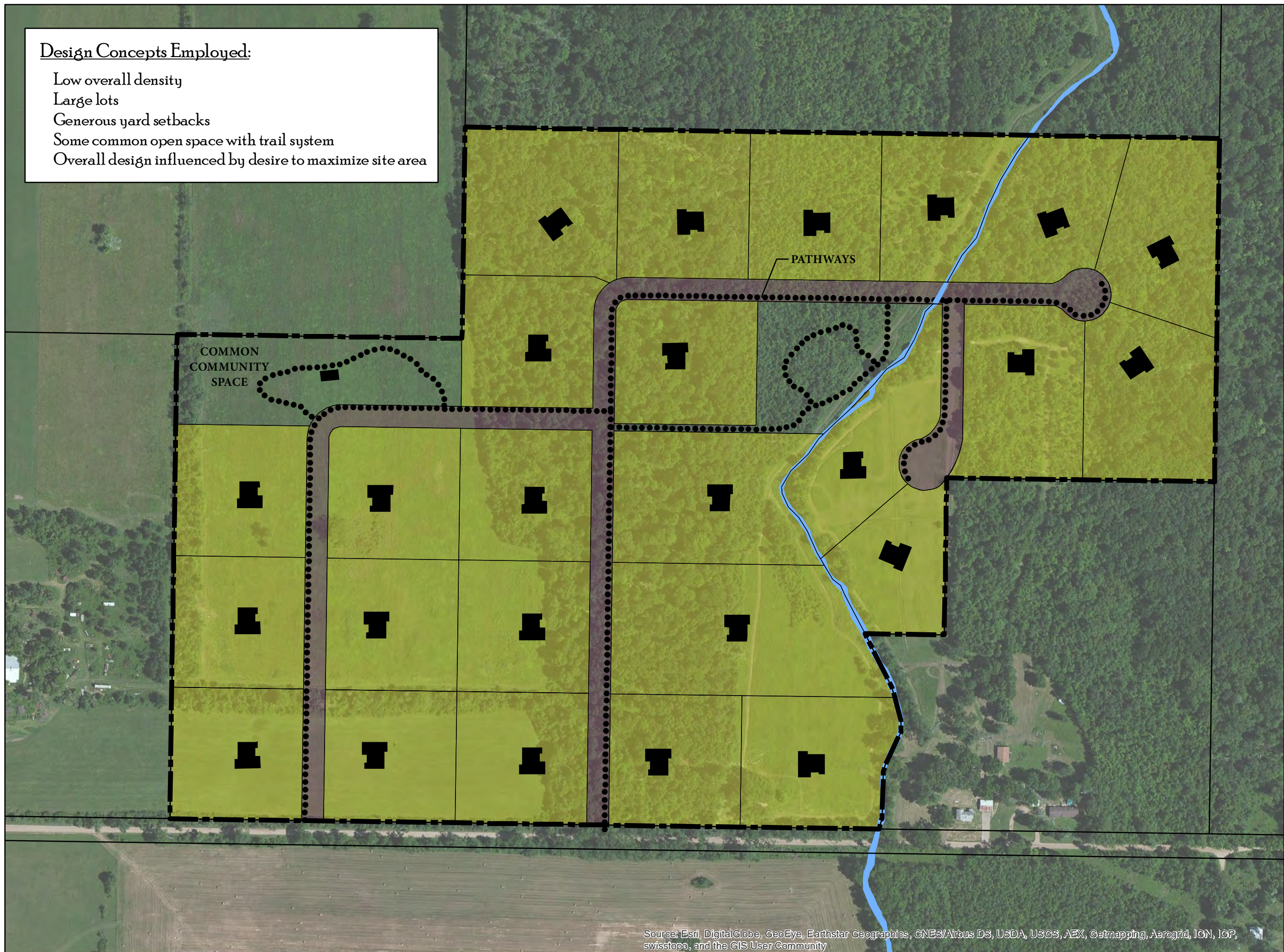
*The project site is not located within Oshtemo Township.

1 inch = 250 feet



Design Concepts Employed:

- Low overall density
- Large lots
- Generous yard setbacks
- Some common open space with trail system
- Overall design influenced by desire to maximize site area



Oshtemo Township

Rural Character Preservation Strategy

Rural Character Workshop:
Design Alternatives Exercise

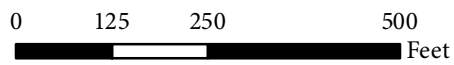
Alternative D

Project Statistics:

Total Area = 96 acres
SF Development Sites = 25
Density = 0.26 units per acre
Typical Min. Lot Size = 1.5 acres
Common Open Space = 50 acres
Open Space Ratio = 52%
Road R.O.W. = 6.6 acres

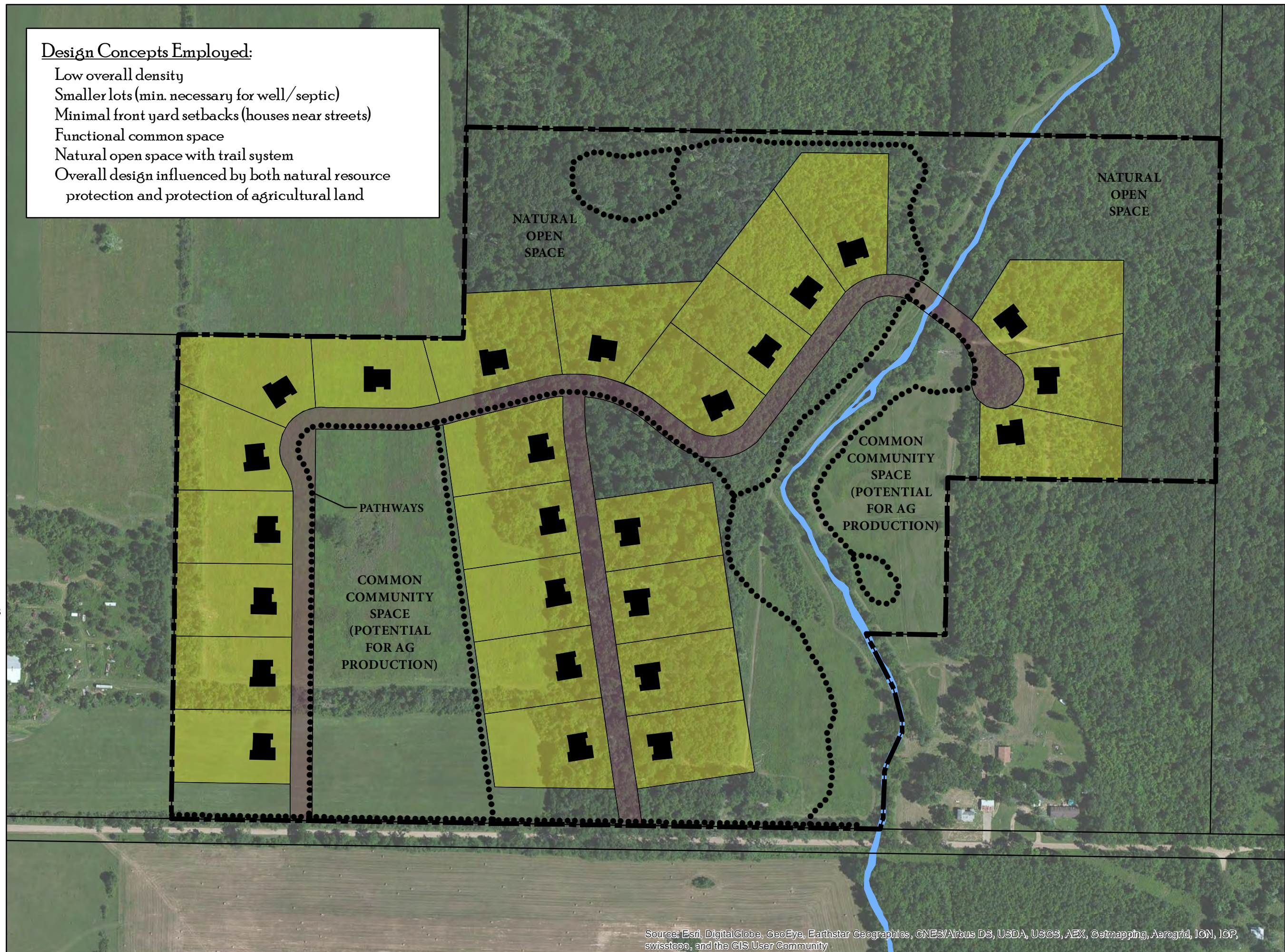
*The project site is not located within Oshtemo Township.

1 inch = 250 feet



Design Concepts Employed:

- Low overall density
- Smaller lots (min. necessary for well/septic)
- Minimal front yard setbacks (houses near streets)
- Functional common space
- Natural open space with trail system
- Overall design influenced by both natural resource protection and protection of agricultural land



Rural Character Compatible Use Survey Results Summary

Results Summary

Prepared by Wade Trim, March 15, 2017

Participants at the Rural Character Alternatives Workshop were asked to complete a survey related to the compatibility of specified uses within rural areas. In total, 51 responses were received. Below is a summary of the responses.

Land Use: Agri-Tourism (i.e., corn maze, hay rides, barn weddings)

<u>Response:</u>	<u>Total Votes:</u>
Not Appropriate in Study Area	4
Appropriate in Study Area Generally with No Limitations	15
Appropriate in Study Area but with Limitations (please list)	32

Listed Limitations:

- Frequency of use. Traffic density not clogging roadways yet some additional, seasonal peaks are expected.
- Safe transport, parking adequate, limited hours of operation.
- Vehicle congestion
- Size requirements, sound control, environmental care.
- Hours of operation, noise limits, no lights after dark.
- To where, how often, noise control. Barn-farmland there and existing.
- Must be farm district.
- If there's enough acreage to shield neighbors from noise.
- Hours limited - no late hours for businesses which could impact neighborhood with loudness = music for example or fireworks.
- Depends on how many-what the density is.
- Hours, noise, Sundays?
- Hours, noise.
- Limit size of parking lot, require significant setback from adjacent uses based on size of land use.
- Hours of operation, noise, size.
- Limit to areas with minimal human habitation.
- Adequate parking
- Noise limitations i- for example, a motor bike track (dirt bike) size of events.
- Limited timeframes. Limitation on number of people accommodated. Parking, toilet.
- Not a nuisance to neighbors – i.e., hours of operation, number of people allowed.
- Hours of operation, traffic, noise restrictions.

- Activity of services to accommodate visitors and buffer traffic and business activity from neighbors.
- Small scale.
- Topography, size (maximum).
- Time allowed open, noise.
- Seasonal with permits i.e., special exception for specific occasions.
- Hours of operation, noise, size/traffic impact, light pollution
- Hours of operation, noise/music, animals/waste.
- Make sure adjacent landowners are not negatively impacted (i.e., limit hours, traffic, etc.)

Potential Negative Impacts: Total Votes:

Traffic	44
Noise/Air Pollution	34
Health/Safety/Welfare	13
Property Values	10
National Environment Loss	19
Farmland Loss	11
Public Services	8
No Negative Impact	7
No Impacts Noted	0

Land Use: Agri-Businesses (i.e., livestock auction, processing of farm products such as bottling, meat, fruits)

Response:

Not Appropriate in Study Area	<u>Total Votes:</u> 15
Appropriate in Study Area Generally with No Limitations	6
Appropriate in Study Area but with Limitations (please list)	30

Listed Limitations:

- Watchout for semi-truck traffic. Smell and noise of a slaughter house. However, a farm family road site fruit stand is a-okay.
- No large scale actions with loud speakers.
- Appropriate siting and infrastructure. Limit hours of operation. Adequate transportation.
- Maximum and minimum size, sound control, environmental care, scent control.
- Depends on size. Need to break down – divide types of business.
- Small only, cider mills, fruit stands, square feet limitations.
- Currently. Our land is all except for 30 acres in PA116 for 20 years or better.
- Depending on size and type.

- Smell, noise, hours, location, size.
- Limit size of building and parking lot, require significant setbacks from adjacent land uses. Not livestock auction.
- Limits in size.
- Limit to areas with minimal human habitation.
- Mega farms – large livestock.
- Would need larger acreage for dense animal operations, non animal farming would fit.
- NMumber of animals, odors.
- Sales of livestock but processing would have big limitations.
- Proportion to land size (i.e., high volume/concentration) animal/business in small condensed area (mega pig farm, etc.)
- Limited to the actual site and what is around the land.
- Needs to be on major roadways.
- A tough call, depends on density of area.
- Size and intensity of operation (could tilt towards industrial land use)
- Dependant upon product – big discrepancy between cattle and cider.

Potential Negative Impacts:

	<u>Total Votes:</u>
Traffic	30
Noise/Air Pollution	42
Health/Safety/Welfare	29
Property Values	33
National Environment Loss	29
Farmland Loss	13
Public Services	6
No Negative Impact	1
No Impacts Noted	3

Land Use: Winery/Brewery Tasting Rooms (for products grown on site)

<u>Response:</u>	<u>Total Votes:</u>
Not Appropriate in Study Area	3
Appropriate in Study Area Generally with No Limitations	14
Appropriate in Study Area but with Limitations (please list)	34

Listed Limitations:

- Limit in size. Adequate water supply and sanitary waste disposal.
- As long as a part of natural setting.
- Size standards, sound control, environmental care.
- Small businesses, family owned.
- More commercial area for this.

- Traffic, health and safety, parking spaces.
- Square foot limitations so it does not become so large as to affect neighborhood.
- Noise, hours, appropriate location.
- But not close to residential areas, schools, churches.
- Limit size of building and parking lot, require significant setbacks from adjacent land uses. Not livestock auction.
- Size, noise, hours of operation, code compliance history.
- Limit to areas with minimal human habitation.
- Hours of operation.
- Parking
- Size of operation.
- Size of operation.
- Adequate parking, not disruptive to neighbors, limit hours of operation could minimize impact.
- Traffic, odors.
- Meet all site plan requirements.
- Not aware or knowledgeable of potential negative impacts.
- On major roadways.
- Small scale.
- Size, locations.
- Aesthetic requirements and size limitations.
- Size of business.
- Can become too commercial and big, but okay as a general concept.

Potential Negative Impacts: Total Votes:

Traffic	18
Noise/Air Pollution	14
Health/Safety/Welfare	11
Property Values	11
National Environment Loss	13
Farmland Loss	6
Public Services	6
No Negative Impact	4
No Impacts Noted	9

Land Use: Race courses (mud runs, dirt bike tracks, etc.)

Response: Total Votes:

Not Appropriate in Study Area	33
Appropriate in Study Area Generally with No Limitations	2
Appropriate in Study Area but with Limitations (please list)	14

Listed Limitations:

- Adequate safety features.
- During business hours or a decibel rating for sound/such as certain setbacks from neighbor properties for sound.
- Noise is a big issue here. Allow non-motorized only?
- Specific hours of operation.
- Area of activity positioned to total area of land so as to buffer noise/land erosion/traffic, etc.
- Approval at ½ mile or more due to noise, erosion.
- Size, hours of operation, noise, dust containment of activities to the site (motor cross, etc. trespass risk), limitation on earth moving/artificial landscape/constructed ramps and jumps).

Potential Negative Impacts:

	<u>Total Votes:</u>
Traffic	37
Noise/Air Pollution	45
Health/Safety/Welfare	32
Property Values	37
National Environment Loss	35
Farmland Loss	25
Public Services	8
No Negative Impact	0
No Impacts Noted	4

Land Use: Farm implement sales / farm related retail sales

Response:

Not Appropriate in Study Area	<u>Total Votes:</u> 12
Appropriate in Study Area Generally with No Limitations	13
Appropriate in Study Area but with Limitations (please list)	26

Listed Limitations:

- Kept clean (no junk parts...). Little or no repairs (oils into ground and water).
- Only along major shopping established areas.
- Size limit, sound control, environmental care.
- No large sales lots.
- Hours of operation.
- Traffic, parking.
- Limitation of square foot to dealership.
- Noise, location.

- Small – roadside OK. Scale must be considered.
- Limit to areas with minimal human habitation.
- Parking
- Size of business
- Hours of operation
- Area/volume of business proportional to total area so as to buffer traffic and retail/marketing signage/lights, etc. or landscape views (natural).
- Must not make the area seem commercial, small company.

Potential Negative Impacts: Total Votes:

Traffic	32
Noise/Air Pollution	19
Health/Safety/Welfare	10
Property Values	28
National Environment Loss	18
Farmland Loss	10
Public Services	7
No Negative Impact	3
No Impacts Noted	8

Land Use: Storage/warehousing

Response:

Not Appropriate in Study Area	<u>Total Votes:</u> 11
Appropriate in Study Area Generally with No Limitations	6
Appropriate in Study Area but with Limitations (please list)	34

Listed Limitations:

- Limited in size. Five acres of mini storage buildings is not pretty. However, ½ would be okay.
- Must be nestled in existing lands.
- Size standards, environmental care, TCU ratio
- Large number of storage lockers not appropriate. Use of existing barns or good looking buildings.
- Hours of operation, lighting at night disturbs area houses.
- Special use only.
- Farm areas.
- Size capped.
- Limiting on location to main roads or places for low use.
- Location, hours.
- Only in structures previously used for farming.

- OK if local.
- Limit to areas with minimal human habitation.
- Must have police force to patrol.
- Large warehousing.
- Depends on size, use.
- It should not be obvious or look like a commercial operation – limited signage.
- Building size, what is being stored.
- Commercial size buildings might be a visible distraction. Would have to be designed for the said property.
- Business activity, buildings, proportional to total area.
- Must not look like they started a large business in a community.
- Ok on I-94 corridor.
- Small scale, aesthetic handling of storm water runoff (increased by large buildings)
- Aesthetic considerations.
- Limited amount of total acres in township.

Potential Negative Impacts: Total Votes:

Traffic	33
Noise/Air Pollution	16
Health/Safety/Welfare	14
Property Values	36
National Environment Loss	28
Farmland Loss	21
Public Services	5
No Negative Impact	2
No Impacts Noted	7

Land Use: Shooting ranges/game clubs

<u>Response:</u>	<u>Total Votes:</u>
Not Appropriate in Study Area	29
Appropriate in Study Area Generally with No Limitations	1
Appropriate in Study Area but with Limitations (please list)	21

Listed Limitations:

- Appropriate buffer from neighbors. Adequate size of site.
- Again, if out of sight and secluded.
- Safety should be first.
- Limit where shooting – not at houses. Good for land or not.
- During business hours and a decibel rating for property.
- Limit to areas with minimal human habitation.

- Noise
- Primary shooting area proportional to safety and buffer areas of neighbors.
- Limit on hours of operation, kind to local neighbors.
- No canned hunting.
- Shooting ranges – location, topography, size, shape, hours of operation.
- I would like to get rid of the one that exists on Van Kal
- Appropriate barriers for stopping rounds from leaving site needed, noise, hours of operation. Better is a club versus open usage.

Potential Negative Impacts: Total Votes:

Traffic	20
Noise/Air Pollution	39
Health/Safety/Welfare	34
Property Values	35
National Environment Loss	18
Farmland Loss	14
Public Services	3
No Negative Impact	0
No Impacts Noted	6

Land Use: Commercial/riding stables

Response:

Not Appropriate in Study Area	<u>Total Votes:</u> 1
Appropriate in Study Area Generally with No Limitations	21
Appropriate in Study Area but with Limitations (please list)	28

Listed Limitations:

- Out of sight and secluded.
- Size standards, sound control, environmental care.
- Limit size of business, too big and it will disrupt native animals and people.
- Farm areas.
- Location, hours, noise.
- Limit size of venture and parking lot, require setbacks from adjacent land uses.
- Limit to areas with minimal human habitation.
- Parking
- Size limitations. Number of horses/stables.
- Number of horses would depend on acreage.
- Hours of operation, number of animals.
- Site plan approval
- Do not impact natural features.

- Size, location of site, disposal of waste, number of horses, etc.
- Aesthetic considerations.
- Size limitations, nuisance, odors, waste disposal, hours of operation.

Potential Negative Impacts: Total Votes:

Traffic	17
Noise/Air Pollution	16
Health/Safety/Welfare	7
Property Values	12
National Environment Loss	16
Farmland Loss	6
Public Services	1
No Negative Impact	9
No Impacts Noted	9

Land Use: Greenhouses/plant nurseries

Response:

Not Appropriate in Study Area	<u>Total Votes:</u>
Appropriate in Study Area Generally with No Limitations	0
Appropriate in Study Area but with Limitations (please list)	19
	32

Listed Limitations:

- Run off pollutants are a known problem with these.
- Size limitations/area of site. Water supply and waste handling.
- Secluded areas.
- Size standards, environmental care and practices.
- Farm areas.
- Size capped.
- Limitations on lights.
- Limit size of building.
- Smaller size limits.
- Parking
- Size of business.
- Greenhouse size limitations.
- Adequate parking, hours of operation depending on how close to neighbors.
- Do not impact natural features.
- Size, location of site, density of greenhouses/nurseries, public service (water).
- Size limitations.

Potential Negative Impacts: Total Votes:

Traffic	23
Noise/Air Pollution	7
Health/Safety/Welfare	5
Property Values	12
National Environment Loss	13
Farmland Loss	6
Public Services	1
No Negative Impact	5
No Impacts Noted	16

Other Land Use (Suggested by Respondent): Single-Family Housing Development

Response: Total Votes:

Not Appropriate in Study Area	0
Appropriate in Study Area Generally with No Limitations	0
Appropriate in Study Area but with Limitations (please list)	2

Listed Limitations:

- Very specific guidelines so there are no too many homes near each other. Preservation of natural area within, sound environmental practices. Avoid overcrowding.
- 50% common land (open). Minimum lot size 0.75 acres. Good drainage. Septic tanks. Public water mains.

Potential Negative Impacts: Total Votes:

Traffic	2
Noise/Air Pollution	1
Health/Safety/Welfare	0
Property Values	2
National Environment Loss	1
Farmland Loss	2
Public Services	0
No Negative Impact	0
No Impacts Noted	0

Other Land Use (Suggested by Respondent): Affordable/Manufactured Housing

Response: Total Votes:

Not Appropriate in Study Area	0
Appropriate in Study Area Generally with No Limitations	0
Appropriate in Study Area but with Limitations (please list)	1

Listed Limitations:

- None

Potential Negative Impacts: Total Votes:

Traffic	1
Noise/Air Pollution	0
Health/Safety/Welfare	0
Property Values	0
National Environment Loss	0
Farmland Loss	1
Public Services	0
No Negative Impact	0
No Impacts Noted	0

Other Land Use (Suggested by Respondent): Turning Business into Ag/Turning Residential into Ag

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

0
1
0

Listed Limitations:

- None

Potential Negative Impacts: Total Votes:

Traffic	0
Noise/Air Pollution	0
Health/Safety/Welfare	0
Property Values	0
National Environment Loss	0
Farmland Loss	0
Public Services	0
No Negative Impact	0
No Impacts Noted	1

Other Land Use (Suggested by Respondent): Nature Area/Park/Walking Paths

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

0
6
0

Listed Limitations:

- None

Potential Negative Impacts: Total Votes:

Traffic	2
Noise/Air Pollution	0
Health/Safety/Welfare	0
Property Values	0
National Environment Loss	0
Farmland Loss	1
Public Services	0
No Negative Impact	3
No Impacts Noted	2

Other Land Use (Suggested by Respondent): Multiple Family Residential

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

0
0
1

Listed Limitations:

- Too many people per space.

Potential Negative Impacts: Total Votes:

Traffic	1
Noise/Air Pollution	0
Health/Safety/Welfare	1
Property Values	1
National Environment Loss	0
Farmland Loss	1
Public Services	0
No Negative Impact	0
No Impacts Noted	0

Other Land Use (Suggested by Respondent): Nudist Colony

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

1
0
0

Listed Limitations:

- None

Potential Negative Impacts: Total Votes:

Traffic	0
Noise/Air Pollution	0
Health/Safety/Welfare	0
Property Values	0
National Environment Loss	0
Farmland Loss	0
Public Services	0
No Negative Impact	0
No Impacts Noted	1

Other Land Use (Suggested by Respondent): Mining

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

1
0
0

Listed Limitations:

- None

Potential Negative Impacts: Total Votes:

Traffic	0
Noise/Air Pollution	0
Health/Safety/Welfare	0
Property Values	0
National Environment Loss	0
Farmland Loss	0
Public Services	0
No Negative Impact	0
No Impacts Noted	1

Other Land Use (Suggested by Respondent): Small Business – Light Industry

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

1
0
0

Listed Limitations:

- None

Potential Negative Impacts: Total Votes:

Traffic	1
Noise/Air Pollution	1
Health/Safety/Welfare	1
Property Values	1
National Environment Loss	1
Farmland Loss	1
Public Services	0
No Negative Impact	0
No Impacts Noted	0

Other Land Use (Suggested by Respondent): Schools/Churches

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

1
0
0

Listed Limitations:

- None

Potential Negative Impacts: Total Votes:

Traffic	1
Noise/Air Pollution	1
Health/Safety/Welfare	0
Property Values	1
National Environment Loss	1
Farmland Loss	1
Public Services	0
No Negative Impact	0
No Impacts Noted	0

Other Land Use (Suggested by Respondent): Rustic Wedding Event Center

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

1
1
0

Listed Limitations:

- None

Potential Negative Impacts: Total Votes:

Traffic	0
Noise/Air Pollution	0
Health/Safety/Welfare	0
Property Values	0
National Environment Loss	0
Farmland Loss	0
Public Services	0
No Negative Impact	1
No Impacts Noted	0

Other Land Use (Suggested by Respondent): Solar Farm

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

0
1
0

Listed Limitations:

- None

Potential Negative Impacts: Total Votes:

Traffic	0
Noise/Air Pollution	0
Health/Safety/Welfare	0
Property Values	0
National Environment Loss	0
Farmland Loss	1
Public Services	0
No Negative Impact	0
No Impacts Noted	0

Other Land Use (Suggested by Respondent): Wind Farm

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

0
0
1

Listed Limitations:

- 600 foot offsets

Potential Negative Impacts:

	<u>Total Votes:</u>
Traffic	0
Noise/Air Pollution	0
Health/Safety/Welfare	0
Property Values	0
National Environment Loss	0
Farmland Loss	0
Public Services	0
No Negative Impact	0
No Impacts Noted	1

Other Land Use (Suggested by Respondent): Auto Garages/Repairs

Response:

Not Appropriate in Study Area
Appropriate in Study Area Generally with No Limitations
Appropriate in Study Area but with Limitations (please list)

Total Votes:

1
0
0

Listed Limitations:

- None

Potential Negative Impacts:

	<u>Total Votes:</u>
Traffic	0
Noise/Air Pollution	0
Health/Safety/Welfare	0
Property Values	0
National Environment Loss	0
Farmland Loss	0
Public Services	0
No Negative Impact	0
No Impacts Noted	1

Oshtemo Township Maple Hill Drive Sub-Area Workshop

Results Summary

Prepared by Wade Trim, April 19, 2017

Background

On Thursday, March 30, 2017, from 6:00 to 8:00 p.m., a Maple Hill Drive Sub-Area Workshop was held at the Oshtemo Township Hall. The purpose of the workshop was to inform and engage community members as part of the planning process to develop development preferences for the Maple Hill Drive Sub-Area. This Maple Hill Drive Sub-Area Development Preferences will be a component of the Township's updated Master Plan. In total, more than 50 interested citizens attended the workshop, most of whom provided their names and e-mail addresses (refer to the enclosed Workshop Sign-in-Sheet). The workshop was facilitated by Wade Trim, a planning consultant assisting the Township in the project effort.

Agenda

The workshop began with introductions and a brief presentation by Wade Trim explaining the purpose and expected outcomes of the Maple Hill Drive Sub-Area Development Preferences Workshop. Wade Trim then provided a presentation of the planning drivers affecting the nation, state, and locale for consideration as the attendees thought about the future development of the Maple Hill Drive Sub-Area.

Visual Preference Survey

Wade Trim led the workshop participants through two exercises. The first was a Visual Preference Survey. Attendees were shown a PowerPoint presentation consisting of over 60 photos of a variety of development types (residential, commercial, office, mixed use, streetscape and public amenities) of different scale, density, bulk, etc. For each photo, respondents were asked to rate their preference for the type of development shown on a score sheet, using a scale of -3 to +3, ranging from a score of -3 (least desirable), 0 (neutral), to +3 (most desirable). The goal of the survey was to gauge the type of development that respondents believed would be appropriate in the study area.

Maple Hill Sub-Area Design Small Group Exercise

After a short break, Wade Trim presented the second exercise, where attendees worked in small groups (tables) to develop a more refined development strategy for the study area. Each group was given a large map of the study area and an envelope containing photos of various development types (residential, commercial, office, recreational, etc.). The groups were to tape the photos or draw on their study area map where they thought the various development types should be located. The groups were also asked to draw on their map where potential street connections and pedestrian transportation facilities, i.e. trails, should occur.

Workshop Results

Maple Hill Sub-Area Visual Preference Survey

The detailed results of the Maple Hill Sub-Area Visual Preference Survey are enclosed. Below is a summary table providing the results of the survey , which consists of the average score for each photo and shows the general preference for the design type displayed in the photo.

Residential	Photo Average Score	Mixed Use	Photo Average Score	Commercial	Photo Average Score
R-1	0.1	MU-1	-0.1	C-1	0.0
R-2	1.2	MU-2	0.2	C-2	0.1
R-3	-0.7	MU-3	1.0	C-3	-0.3
R-4	0.5	MU-4	1.2	C-4	-1.5
R-5	-1.1	MU-5	-0.3	C-5	0.0
R-6	-1.3	MU-6	0.1	C-6	-0.8
R-7	-0.5	MU-7	-0.2	C-7	0.9
R-8	-0.2	MU-8	-0.7	C-8	0.8
R-9	-0.5	MU-9	-0.5	C-9	-0.3
R-10	0.3	MU-10	-0.4	C-10	-0.4

Office	Photo Average Score	Streets/Sidewalks /Transit	Photo Average Score	Public Amenities	Photo Average Score
O-1	-1.8	S-1	-0.5	PA-1	1.4
O-2	0.4	S-2	2.1	PA-2	0.9
O-3	0.2	S-3	-0.4	PA-3	0.9
O-4	-0.8	S-4	1.1	PA-4	1.9
O-5	1.0	S-5	-0.2	PA-5	-0.6
O-6	0.5	S-6	0.5	PA-6	1.6
O-7	-0.8	S-7	0.9	PA-7	0.3
O-8	-0.7	S-8	0.4	PA-8	1.2
O-9	0.2	S-9	0.5	PA-9	1.4
O-10	-0.1	S-10	-0.2	PA-10	-0.5

A brief summary of the most- and least-preferred photos by category, along with a summary sheet displaying the images by rank, is provided below:

Residential

The photos of residential development types that received the highest average scores were photos number R-2 and R-4. Photo R-2 shows a high density, single family, detached residential neighborhood while photo R-4 shows a medium density, single family, detached residential neighborhood. Both photos show development within a suburban context.

The photos that received the lowest average scores, or those voted as least preferred, were the following:

- Photo number R-3: shows a four-story, medium to high density, multi-family residential development, common in a suburban context.
- Photo number R-5: shows a two-story, medium to high density, multi-family residential development, common to an urban context.
- Photo number R-6: shows a three-story, high density, multi-family residential building, commonly found in a suburban context.
- Photo number R-7: shows a two-story, attached, single-family rowhouse development with basement level garages.
- Photo number R-9: shows a three-story, medium to high density, multi-family residential development, commonly found in a suburban context.

Residential Development - Results

Photo R-2: Rank #1 - Score 1.2



Photo R-9: Rank #6 - Score -0.5



Photo R-4: Rank #2 - Score 0.5



Photo R-7: Rank #7 - Score -0.5



Photo R-10: Rank #3 - Score 0.3



Photo R-3: Rank #8 - Score -0.7



Photo R-1: Rank #4 - Score 0.1



Photo R-5: Rank #9 - Score -1.1



Photo R-8: Rank #5 - Score -0.2



Photo R-6: Rank #10 - Score -1.3



Mixed-Use

Within the Mixed-Use category of photos, the photos with the highest average scores were photo numbers MU-3 and MU-4. Photo MU-3 represents a low density (2-story) building containing commercial/retail on the first-floor and other uses on the second floor. This building is constructed of brick and has a small-town, downtown feel. Photo MU-4 is representative of a development type known as a “lifestyle center”, which according to the ICSC, is a “shopping center or mixed-use commercial development features upscale national-chain specialty stores with dining and entertainment in an outdoor setting.” The scale of the development is low (2-stories) and is pedestrian focused.

The photos with the lowest average scores in the Mixed-Use category were numbers MU-8 and MU-9. Photo number MU-8 depicts a four-story, brick, high density mixed use building with a first-floor institutional use and upper floor residential uses. This building is common in an urban context. Photo number MU-9 depicts a three-story, mixed-use development with first-floor small-scale office or commercial and upper level residential. The development has a residential feel and appears to be located within a suburban context.

Mixed Use Development - Results

Photo MU-4: Rank #1 - Score 1.2



Photo MU-7: Rank #6 - Score -0.2



Photo MU-3: Rank #2 - Score 1.0



Photo MU-5: Rank #7 - Score -0.3



Photo MU-2: Rank #3 - Score 0.2



Photo MU-10: Rank #8 - Score -0.4



Photo MU-6: Rank #4 - Score 0.1



Photo MU-9: Rank #9 - Score -0.5



Photo MU-1: Rank #5 - Score -0.1



Photo MU-8: Rank #10 - Score -0.7



Commercial

Within the Commercial category, the photos that received the highest average scores were photo numbers C-7 and C-8. Photo C-7 shows a development that currently exists within Oshtemo Township. This development type consists of multiple pedestrian-scale, 1-story buildings containing retail uses. The buildings have a residential feel, are surrounded by landscaping and green space, and are connected by a system of sidewalks. Photo C-8 represents a lifestyle-center development, as described above.

The photos within the Commercial category that received the lowest average scores are photo numbers C-4 and C-6. Photo number C-4 depicts a big box retail store that has been upgraded with a brick façade, and architectural treatments such as dormers to provide a more residential appeal. Photo number C-6 shows a two-story, potentially mixed-use or completely commercial development, made with an exterior insulation finish system (EIFS), commonly found in a suburban context.

Commercial Development - Results

Photo C-7: Rank #1 - Score 0.9



Photo C-3: Rank #6 - Score -0.3



Photo C-8: Rank #2 - Score 0.8



Photo C-9: Rank #7 - Score -0.3



Photo C-2: Rank #3 - Score 0.1



Photo C-10: Rank #8 - Score -0.4



Photo C-5: Rank #4 - Score 0.0



Photo C-6: Rank #9 - Score -0.8



Photo C-1: Rank #5 - Score 0.0



Photo C-4: Rank #10 - Score -1.5



Office

Within the Office category, the photos that received the highest average scores were photos numbers O-5 and O-6. Photo number O-5 represents a standard, single-occupant, low-density office building, most commonly found in a suburban context. Photo number O-6 represents a medium density, office condominium park, where each single-occupant building is connected to a neighboring building by a common wall. The office condominiums in the photo appear residential in nature and are commonly found in a suburban context.

Photos number O-1, O-4, O-7, and O-8 received the lowest average scores. Photo number O-1 depicts a standard, industrial building. Photos O-4 and O-8 depict a three-story, office building, commonly found in a suburban office park. Photo number O-7 shows a hospital building.

Office Development - Results

Photo O-5: Rank #1 - Score 1.0

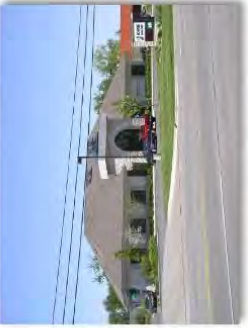


Photo O-9: Rank #6 - Score -0.2



Photo O-6: Rank #2 - Score 0.5



Photo O-8: Rank #7 - Score -0.7



Photo O-2: Rank #3 - Score 0.4



Photo O-4: Rank #8 - Score -0.8



Photo O-3: Rank #4 - Score 0.0



Photo O-7: Rank #9 - Score -0.8



Photo O-10: Rank #5 - Score -0.1



Photo O-1: Rank #10 - Score -1.8



Streets/Sidewalks/Transit

The most popular photos in the Streets/Sidewalks/Transit category were as follows:

- Photo number S-2: shows a wide, meandering sidewalk/pedestrian trail.
- Photo number S-4: shows an on-street, dedicated bicycle lane in a neighborhood.
- Photo number S-6: shows a roundabout, commonly used as a traffic control and calming technique.
- Photo number S-7: shows a landscaped chicane (sidewalk bump out), commonly used as a traffic calming technique.
- Photo number S-9: shows a landscaped median with a crosswalk through it.

The least popular photo in the Streets/Sidewalks/Transit category was S-1, which shows various transit options, common to an urban context, such as bus rapid transit (BRT), and a dedicated bicycle lane.

Streets/Sidewalks/Transit - Results

Photo S-2: Rank #1 - Score 2.1



Photo S-8: Rank #6 - Score 0.4



Photo S-4: Rank #2 - Score 1.1



Photo S-5: Rank #7 - Score -0.2



Photo S-7: Rank #3 - Score 0.9



Photo S-10: Rank #8 - Score -0.2



Photo S-6: Rank #4 - Score 0.5



Photo S-3: Rank #9 - Score -0.4



Photo S-9: Rank #5 - Score 0.5



Photo S-1: Rank #10 - Score -0.5



Public Amenities

The Public Amenities photos depict various community aesthetic amenities, such as public art, streetscaping, benches, clock towers, street banners, etc. In the Public Amenities category, the following photos received the highest average scores:

- Photo number PA-1: shows a landscaped circle in the sidewalk, surrounded by street plantings and benches.
- Photo number PA-2: shows public art (statutes).
- Photo number PA-3: shows wayfinding signage.
- Photo number PA-4: shows a street café.
- Photo number PA-6: shows a town square with open green space, benches, a clock tower, and small bandstand.
- Photo number PA-8: shows a bricked seating area surrounding an outdoor fireplace.
- Photo number PA-9: shows a small park with a fountain and pergolas.

Photos number PA-5 and PA-10 received the lowest average scores within the Public Amenities category. Photo number PA-5 shows a typical small-town downtown scene with wide sidewalks, architectural light poles, and a sandwich board sign. Photo PA-10 shows a community amphitheater.

Public Amenities - Results

Photo PA-4: Rank #1 - Score 1.9



Photo PA-2: Rank #6 - Score 0.9



Photo PA-6: Rank #2 - Score 1.6



Photo PA-3: Rank #7 - Score 0.9



Photo PA-9: Rank #3 - Score 1.4



Photo PA-7: Rank #8 - Score 0.3



Photo PA-1: Rank #4 - Score 1.4



Photo PA-10: Rank #9 - Score -0.5



Photo PA-8: Rank #5 - Score 1.2



Photo PA-5: Rank #10 - Score -0.6



Residential Design Alternatives Exercise

A total of 8 small groups were formed to work together to complete the evaluation of the four study area design alternative concepts. Below is a summary of each group's general findings.

- Group 1 – This group preferred maintaining a vegetative buffer and green space along the southern property line. Commercial and Office uses (mixed use, office buildings, retail) would be located along the west property line close to the US-131 off-ramp and along the north property line (Main Street). The middle of the property would include multi-family and higher density single-family residential uses and formal public amenities such as parks. This group also included an internal street network, with two connections to the neighborhoods to the south into the cul-de-sac on Sky Ridge Avenue and Green Meadow Drive.
- Group 2 – This group preferred maintaining a vegetative buffer and green space along the southern property line with office buildings located along the west property line adjacent to the US-131 off-ramp. Multi-family residential uses would be located behind the office uses, internal to the site, with higher density single family residential and parks and green space also located internal to the site. Retail and mixed use buildings would be located to the north and east sides of the site. This group also included a street network, with connections from Main Street on the northeast and northwest sides of the property. Additionally, included was a non-motorized trail that from the northwest side of the property at Main Street, through the site, and making a connection with Green Meadow Drive just south of the site.
- Group 3 – This group preferred maintaining a vegetative buffer, as well as more formal recreational uses, i.e. playgrounds, along the south property line. Higher density single-family residential uses would be located internal to the site and along the north property line. Some retail uses would be located along the west property line adjacent to US-131. This group included street connections from the existing drives off Main Street to the site. Other street connections included a connection from the site to the commercial properties to the east and to Green Meadow Drive on the south, but only if the Green Meadow Drive and Driftwood Avenue intersection is closed.
- Group 4 – This group preferred a circular internal street network in the site, with a mix of single- and multi-family uses and parks and playgrounds along the south and east side of the site. Commercial uses would be located along the north and west sides of the site. Commercial uses would include mixed use, city center, small retail shops and exclude big box retail. A greenway would be located on the west side of the site, adjacent to US-131. The site would have two street connections from the existing street/driveway from Main Street and a potential connection from the site to the commercial area to the east.
- Group 5 – This group preferred maintaining a transitional buffer to the south of the site, adjacent to the existing neighborhoods. Commercial uses would be located along the west side of the site, adjacent to US-131. An open space area would be located in the middle of the site, surrounded by a mix of medium density residential and office uses. The site would be accessed

from three street connections to Main Street on the north, and specifically, no access to the neighborhoods to the south.

- Group 6 – This group prefers to see the site’s continued use as a golf course, with commercial uses located along the north side of the site and office uses on the west side. Two street connections from the existing drives off Main Street would only connect to the proposed uses.
- Group 7 – This group preferred an open green space in the middle of the site, surrounded by a circular drive, with access points to the north and the east. Surrounding the green space would be medium density housing on the south, commercial mixed uses on the north, and office uses and green space on the west. An on-street bike trail would be integrated into the site.
- Group 8 – This group preferred a mix of open space and recreational uses along the south side of the site. A mix of single- and multi-family residential would be located on the north and northeast sides of the site. A mix of commercial and office uses would be located on the west side of the property, along with green space and recreational uses. A street connection from the existing drive to the north would go through the property, connecting with Green Meadow Drive to the south.

Below is a summary of the key themes or “shared values” that emerged across the 8 small groups.

Land Uses

While the details of each group’s site design plan differed in the layout and scale of development on the site, overall, the plans had the following in common:

- A buffer consisting of open space and complimentary recreational uses, e.g. playgrounds, parks, trails, etc. should be located along the south property line between the site and the neighborhoods to the south.
- Commercial and retail uses, including mixed use buildings, should be located along the north property line (which is consistent with existing land uses on Main Street).
- A mixture of office and mixed use buildings should be located to the west, adjacent to US-131.

Connections and Mobility

While the plans differed in how the site should be accessed or how the street network should traverse the site, several themes came out of the design process. The following provides a summary of how the design proposals dealt with connections and mobility.

- All eight plans suggested a street connection to the site from the north (Main Street) through an extension of existing streets and driveways into the site.
- While three plans proposed extending the street network to make a connection to the existing neighborhoods south of the site, the majority of the plans proposed the creation of a large buffer area along the southern border.
- Half of the plans proposed a street connection to the existing commercial area (and ultimately Drake Road) to the east.

- Several plans suggested the creation of pedestrian trails and bicycle lanes on the site, potentially connecting into the existing street network of the neighborhoods to the south.

Enclosures:

1. Residential Design Alternatives – Small Group Concepts

Group #1



Maple Hill Drive South Sub-Area

Maple Hill Drive South Sub Area

1 inch = 175 feet

0 87.5 175 350 Feet

Group #2




BLVD.

TRAIL
NON-MOTOR

Maple Hill Drive South Sub-Area
Maple Hill Drive South Sub Area

1 inch = 175 feet
0 87.5 175 350 Feet



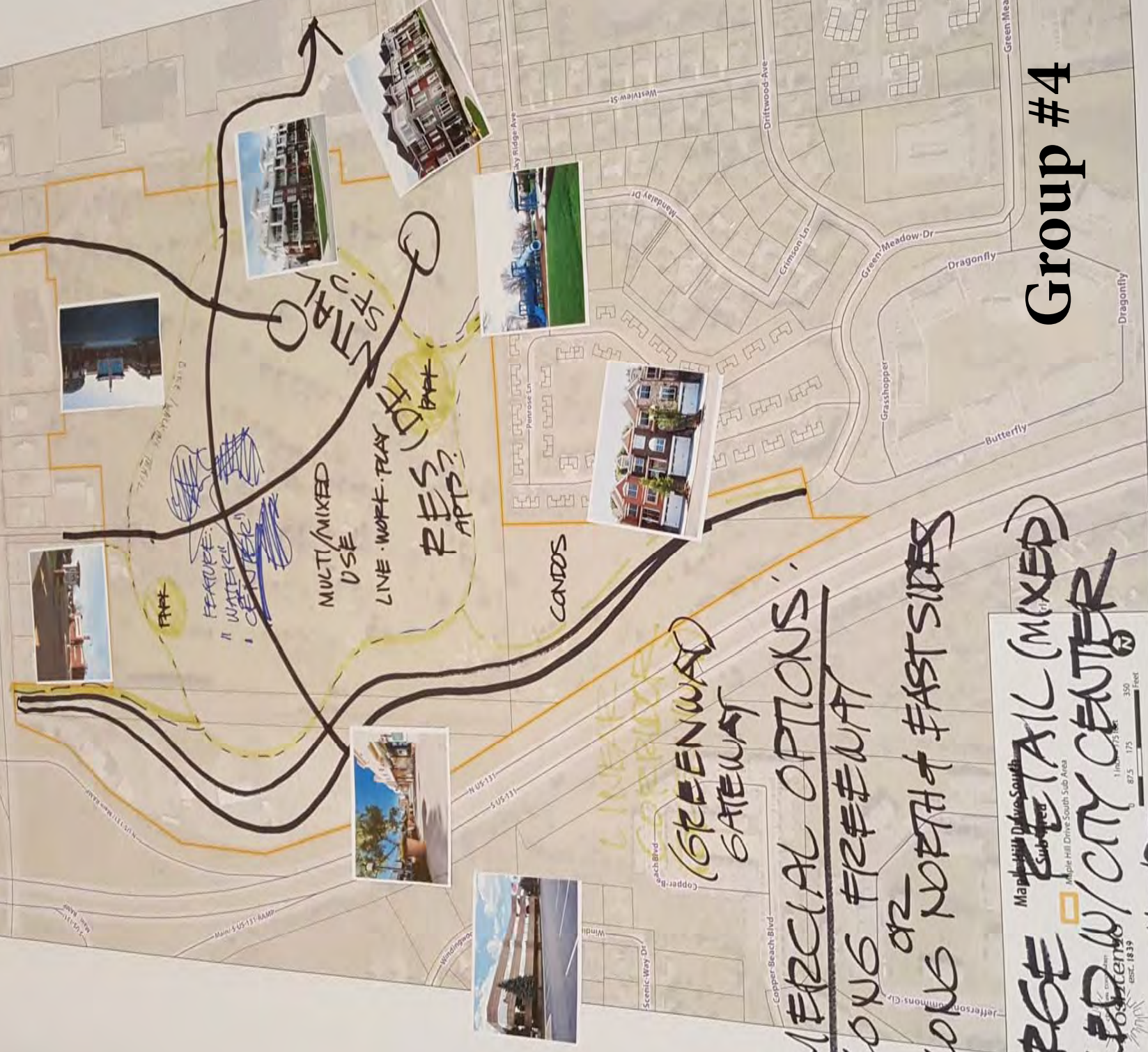
Group #3

Maple Hill Drive South
Sub-Area

Maple Hill Drive South Sub Area



Group #4



GREENWAY GATEWAY

COMMERCIAL OPTIONS

ALONG FREEWAY OR ALONG NORTH EAST SIDES

LARGE RETAIL (MIXED)

MIXED/CITY CENTER

SMALL STOPS

NO LARGE BIG BOX

DIFFERENT OPINIONS IN GROUP = ?

Group #5



Maple Hill Drive South
Sub-Area

Maple Hill Drive South Sub Area



1 inch = 175 feet
0 87.5 175 350
Feet



Group #6



Golf Course



Maple Hill Drive South Sub-Area

Maple Hill Drive South Sub-Area

Scale: 1 inch = 175 feet

0 87.5 175 350 Feet

oshtemo INC. 1834

Group #7



Maple Hill Drive South
Sub-Area
Maple Hill Drive South Sub Area

Group #8



Woodlands
type
Circles?

Community

Community


or a lot
off
court

Green
Woods
Bicycle
Path

Open
Space
Park
Sound Barrier Wall

W-5-131
S-5-131

Maple Hill Drive South Sub-Area
Maple Hill Drive South Sub Area



1 inch = 175 feet
0 87.5 175 Feet

