CASCADE CHARTER TOWNSHIP

MASTER PLAN

Adopted by the Planning Commission on March 23, 2009
Adopted by the Township Board on April 22, 2009

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616.224.1500 phone . 800.224.1590 toll free . 616.224.1501 facsimile
549 Ottawa Avenue NW . Grand Rapids, MI 49503
williams-works.com

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CASCADE CHARTER TOWNSHIP MASTER PLAN

FOREWORD

The last time Cascade Charter Township updated its Master Plan was 1998 to 1999. The last decade of growth, development and redevelopment is evidence of a thriving community that attracts new residents to excellent schools, pristine natural features, and an extensive trail system connecting commercial areas to residential neighborhoods, parks, and open spaces. This blend of amenities is unique in the Grand Rapids metropolitan area, and is something residents desire to maintain and improve upon.

Beginning in January 2008, the Cascade Charter Township Planning Commission and Township Board engaged the services of the planning consulting firm, Williams & Works, to conduct a participatory planning process and develop a Master Plan that expressed the desires of the community. The planning process included monthly citizen advisory committee meetings, a Township-wide opinion survey, seven focus groups, two community visioning meetings, and a follow-up open house. Considering the survey results, over 700 residents shared their thoughts with the planners about the future of Cascade Charter Township.

Coordination with adjacent municipalities and agencies also occurred. Throughout the process, the Advisory Committee and planners involved the Gerald R. Ford International Airport, Grand Valley Metro Council, Kent County Extension, Michigan Department of Transportation, and the Kent County Road Commission. Also involved were members of the Downtown Development Authority, Parks and Recreation Advisory Committee, and the developers/managers of Centennial Park. Further, the Master Plan is meant to function within the framework of other Township and regional plans and policies, including the Centennial Park Master Plan, the Parks and Recreation Plan, and the Natural Features Inventory.

The vision for Cascade Charter Township was expressed by many residents over the course of the 18-month planning process. Similar to the Township itself, the vision is expansive, multi-dimensional and broad. Phrases used to express a desired future, or vision for Cascade Charter Township include:

- Small town with homey feel
- Cool town

- Safe
- Environmental stewardship
- Natural beauty
- Green infrastructure
- Vibrant
- Choices
- Our jewels: river, woods, farms, schools and high-end residential
- Planning for today and tomorrow
- Transportation choices
- Keep it "wild" with natural nature
- Green living
- More trees along 36th Street
- Annual celebrations
- Adequate staffing at Township to support community vision
- Economic, environmental and social sustainability
- Parks as assets, especially Tassell Park
- Well maintained open space in residential subdivisions

This Master Plan includes goals and objectives aimed at achieving the vision statements expressed above, as well as a future land use map that reflects the vision through the designation of new land uses, such as Farmland Preservation, Mixed Use and Village Commercial. These land uses, and the plan itself, express a desire for a community in harmony with nature that sustains a vibrant village, regional commercial needs, strong neighborhoods, and active lifestyles. By implementing this Master Plan, the Township will continue to provide safe, quality, and attractive, residential neighborhoods for families looking for an alternative to urban living.

STRUCTURE OF THE 2009 MASTER PLAN

The Goals, Objectives, and Implementation Steps contained in this Master Plan are separated into nine planning themes including:

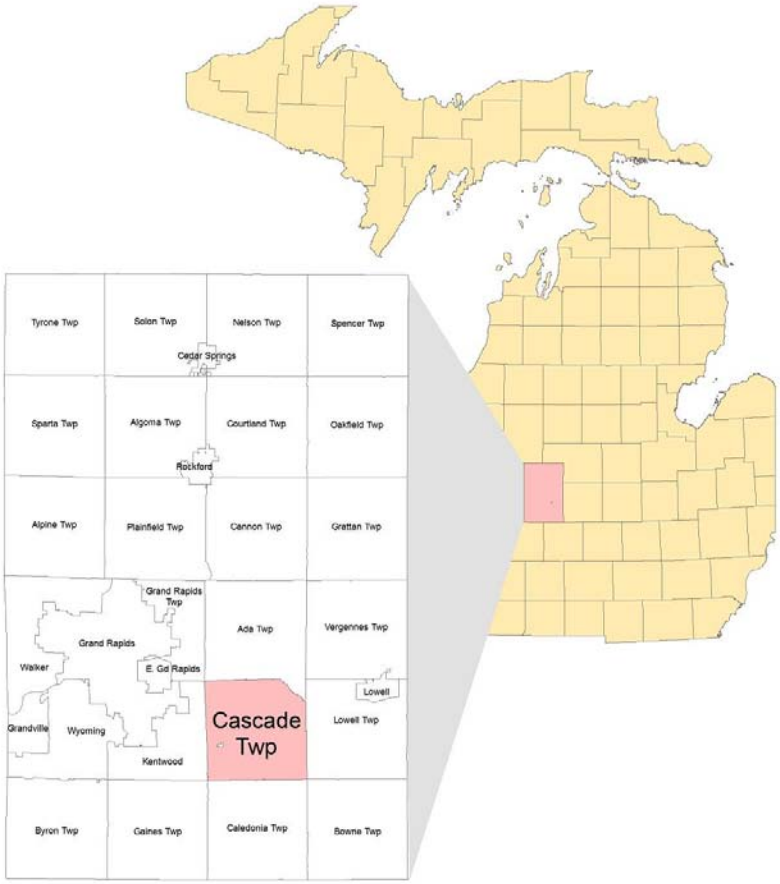
- Land Use
- Transportation
- Utilities
- Natural Features, Open Space, and Farmland Preservation
- Economic Development
- Cascade Village
- Sustainability
- Housing
- Public Education, Outreach and Coordinated Planning

Each theme contains a goal, several objectives, and several implementation steps necessary for achieving the goal statement within

the next 20-25 years. It is important to remember that the Master Plan is a blueprint expressing a desired future that may take years to achieve. The Master Plan should be used in the context of land use policy decisions to assist potential and current residents, decision-makers, and developers in understanding the level, type, and placement of development. The land use map depicts the preferred location for certain land uses while the accompanying land use descriptions describe preferred uses, densities, and the physical characteristics that should be incorporated into any development or redevelopment in the Township.

CHAPTER 1. INTRODUCTION

The fundamental purpose of a Master Plan is to enable a community to establish a direction for physical development, capital investment and growth. Therefore, a Master Plan represents a foundation policy statement about what a community is, what its residents value and what those residents and businesses hope the community will become. The Michigan Planning Enabling Act specifically gives the Township Planning Commission and the Township Board the authority to prepare and adopt a plan. Once prepared, adopted and maintained, this Plan will serve as an advisory guide for the physical conservation of certain areas and for the development of other areas.



Map 1. Location of Cascade Charter Township

This Plan represents the culmination of more than twelve months of work by numerous local residents and local officials. It reflects the community's deep concern for the natural beauty of its surroundings and a strong commitment to retain and strengthen local quality of life. The plan outlines the preferred future for the community and a comprehensive plan to realize it. The Plan is appropriately general, recognizing that planning for the future is a delicate blend of art and science and that sufficient flexibility will be needed to respond to the challenges of the future.

Cascade Charter Township's Master Plan was last updated in 1999. General planning practice and State statute suggest that Master Plans should be reviewed at about five-year intervals and the Township has been fairly vigilant in doing so. The former plan, approved in January 1999, reflected many current conditions and trends, so the effort to update it in 2008 enabled the community to focus on particular challenges rather than restrict the effort to a more general overview.

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

THE PLANNING PROCESS

The planning process involved four inter-related phases:

- Data Analysis – A Community Profile
- Public Participation – Creating a Policy Foundation
- Plan Preparation – Analyzing the Issues and Defining the Preferred Future
- Implementation Strategies – Getting There from Here

The Community Profile is the first part of this Master Plan, and contains the following key areas of focus:

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

Prior to the Data Analysis, the Township Planning Commission appointed a citizen input structure (Advisory Committee). The advisory committee included residents, business owners, public officials from the Township as well as the members of the Planning Commission, and various other boards, departments, and commissions serving the Township. The Advisory Committee was formed as an ad hoc entity to guide the planning process and to serve as a sounding board for the consultant throughout the process. Approximately 30 people served on the advisory committee, with 15 people attending meetings on a regular basis.

Phase 1 – Data Analysis

During the first phase, demographic, economic and land use data was gathered to support the Plan. The purpose of this effort was to develop a comprehensive impression of the patterns of growth and the challenges that will impact the Township. This phase culminated in the preparation of the Community Profile Report, which was completed in March 2008. This report served as a technical resource for the advisory

committee and the consultant. It also represents the Community Profile, which constitutes Section II (Chapters 2 through 8) of this Plan.

Phase 2 – Public Participation

The objective of the second phase was to establish a policy basis for the Township's planning and land use regulations. To do so, it was important to gather the opinions of community residents and determine in what direction they were looking for the future of their community. The Master Plan process employed several methods of acquiring community input: A Master Plan Advisory Committee, Focus Groups, Township Visioning Workshops and a Community Opinion Survey.

Master Plan Advisory Committee. The Master Plan Advisory Committee consisted of residents, Township Staff, members of the Planning Commission, Zoning Board of Appeal, Township Board, and Downtown Development Authority. Participation was open to the public, and all meetings were advertised. The advisory committee met monthly to discuss topics relevant to the Master Plan and provided guidance in developing the future land use map, and the goals, objectives, and implementation strategies.

Focus Groups. Seven focus groups were conducted that provided the advisory committee with relevant information on the following topics: utilities, open space, Cascade Road, Cascade Village, transportation, industrial development, and commercial/office development. Business owners, developers, realtors, residents, and other stakeholders were invited to attend the focus groups depending on their area of expertise and interest. In total, over 75 people participated in the focus groups. A focus group report is available at the Township Planning Department.

Township Visioning Workshops. Cascade Charter Township sponsored two community Visioning Workshops. These were public meetings intended to give community residents an opportunity to voice their opinion regarding important issues such as population growth, land use, traffic impacts and others. Over 40 people participated in the futuring workshops. A visioning workshop report is available at the Township Planning Department.

The workshops were held as follows:

- Monday, April 28, 2008, at the Wisner Center located at 2870 Jack Smith Avenue SE
- Tuesday, April 29, 2008, at the Buttrick Avenue Fire Station located at 2990 Buttrick Avenue SE

Community Opinion Survey. In March of 2008, the Planning Commission issued opinion surveys to a random sample of property owners in the Township to gather public opinions relative to growth and development. The use of a scientific survey enabled the advisory committee and Planning Consultant to determine if the input received truly reflects a consensus among Township residents. Using the Township's database of its 9,171 property owners, a random sample of 25% of the property owners was developed. A total of 2,300 survey forms were mailed and the Township received 647 responses, for a response rate of 28%. Survey questions focused on areas of identification, contemporary planning and zoning issues facing the Township, desired future growth and development, housing, traffic, environmental quality and recreation. The results of the community opinion survey were published in May 2008 and are summarized in Appendix A. A detailed survey report is available at the Township Planning Department.

Phase 3 – Plan Preparation

Goals & Objectives. Information gathered from the survey, focus groups and the futuring workshops were formed into several broad goal statements, which form the foundation of the Master Plan. Each goal is supported by several objectives that are intended as steps needed to accomplish each goal. The goals and objectives comprise Chapter 9 of the Plan. The third phase also involved drawing together the input from the previous two phases and preparing a Future Land Use Plan, which is reflected on Map 15. The future land use designations and map (Chapter 10) were developed in a series of interactive meetings of the advisory committee. To support the desired development patterns envisioned in the Future Land Use Map, the Map is supported with a collection of texts describing how specific areas of the Township should develop within the next twenty to twenty-five years.

Phase 4 – Implementation Strategies

The final phase of the planning process involved the development of specific implementation strategies to carry out the Plan. These are included in Chapter 11. At the conclusion of the fourth phase, the Planning Commission held a public hearing on the entire Plan.

Plan Adoption

On March 23, 2009, the Planning Commission adopted the 2009 Master Plan for Cascade Charter Township and on April 22, 2009 the Township Board also adopted the 2009 Master Plan for Cascade Charter Township.

Acknowledgements

An effective planning process includes the input from a broad range of individuals and agencies. The process that resulted in this plan is no exception. The members of the Planning Commission and Township Board, while central to the development of the plan, recognize the importance of the input and information provided by the citizens and business owners in the community. We gratefully acknowledge the contribution and insight of the following persons:

Jack Lewis*
Brian Logue*
Tom Mcdonald*
Chuck King
Ryan Coil*
Rob Beahan*
Claude Robinson
Roy D. Hawkins*
Ray James
Diane Richards
Joel Bergren
Mel Casey
Kristin Whalen
Steve Peterson*
Steve Waalkes*
Sue Williams*
Bernard Link*
Valerie Betten
Mike Scheid*
Thomas Zubel
Michelle Schellenberg
Karen McCarthy*
Steve Dewitt
Kathy Gatchilian
Deb Walsh
Barbara Schmid
Lynée Wells (consultant)

* denotes advisory committee members with active participation and who attended regular meetings.

CHAPTER 2. NATURAL RESOURCES

Cascade Charter Township is situated in Kent County, east of the City of Grand Rapids. The Thornapple River bisects the Township and provides for views and vistas as well as rolling topography. The Grand River is located along the northern boundary of the Township. Several inland lakes, wetlands, and streams are appreciated by Township residents for the habitat they provide as well as scenic beauty.

NATURAL FEATURES

The Township is experiencing strong growth pressures and the effects of growth and development are impacting its natural features.

SOILS

The soils in Cascade Charter Township are well suited to a variety of agricultural and development activities with general soil patterns consisting of six broad categories. In the western portion of the Township, the predominate soil types are Ithaca-Rimer-Perrington association soils, consisting of gently rolling, well drained to poorly drained loamy and sandy soils with silty and clayey deposits. Along the Thornapple River and to the east, soils become more mixed with Marlette-Perrington-Metea and Marlette-Chelsea-Boyer association soils ranging from rolling to steeply sloping sandy loams. On the far eastern portion of the Township, Capac-Parkhill-Marlette association soils may be found. With the exception of steep slopes and wetland areas, soils present few structural engineering challenges in most parts of the Township. However, as indicated below, heavy soils with slow percolation properties severely limit opportunities for on-site wastewater disposal in many areas of the Township.

The terrain of the Township is generally flat to slightly rolling. Steeper slopes are found along the Thornapple River valley, particularly in the southern tier of Sections near the River and its minor tributaries. Many areas of the Township, including those developed in residential land uses, are characterized by mature woodlands consisting of both hardwoods and conifers. Some areas originally cleared for agriculture have been allowed to return to fallow grasslands.

WATER AND WETLANDS

The Thornapple River flows northerly to a confluence with the Grand River in Ada Township, immediately north of Cascade Charter Township. The Grand River forms the northeastern boundary of the Township. The Thornapple River is also a significant natural feature in the community and residents and builders have sought development sites along the riverbank to take advantage of its scenic beauty. There are two important dams on the Thornapple that impact Cascade Charter Township. The first is above the confluence with the Grand River in Ada Township and the second is found about three miles south near the Cascade Road bridge. In addition to power generation

and flood control, both dams create sizable impoundment areas that offer recreational and aesthetic opportunities.

Pockets of wetlands are found throughout the Township, with significant areas associated with the Plaster Creek drainage area in Sections 7 and 18. In addition, significant perched and low-lying wetlands are found along the southern reaches of the Township along the Thornapple River. Map 2 illustrates the location of wetlands, water features and topography in the Township.

Wetlands include swamps, marshes, bogs and similar areas often found between open water and higher elevated areas. Wetlands are valuable natural resources that provide such important benefits as surface and ground water quality and storm water management. Wetlands improve water quality through filtration.

Wetlands are valuable natural resources that provide such important benefits as surface and ground water quality and storm water management.

The wetlands shown on Map 2, reflect the National Wetlands Inventory (NWI) prepared by the United States Department of the Interior. These are generalized areas, and accurate and reliable regional mapping of wetlands is limited. For example, the map shows many wetlands within the boundaries of the Gerald R. Ford International Airport when many of those wetlands have been mitigated and reconstructed following the standards and requirements of the Michigan Department of Environmental Quality. The most accurate delineation of wetlands is derived from on-site field inspection of a parcel.

The NWI map is based on interpretation of high altitude aerial photographs and should only be utilized as an "indicator map." In other words, if a development is proposed in an area where wetlands have been identified on the NWI map, an on-site investigation is typically warranted. This on-site investigation is necessary to first confirm and delineate the boundary of the wetland(s), and second, to determine if the wetland is regulated.

In Kent County, certain wetlands are regulated by the Michigan Department of Environmental Quality (MDEQ). According to the MDEQ, a permit to drain, fill or modify a wetland must be obtained if the wetland(s) is five acres or larger or if the wetland is located within five hundred feet of surface water (i.e. lake or stream). Wetlands that are smaller than five acres may be regulated by a local community ordinance.

A comparison of the Existing Land Use Map in Chapter 5 (Map 5) with the Wetlands Map (Map 2) reveals that development has occurred in areas that have designated wetlands. In these cases it is likely that this

development took place prior to the regulation of wetlands or a permit was granted for development within the wetland.

There are several small lakes in the Township, including Laraway Lake in Section 4, Walden Lake in Section 5, Wood Lake in Section 8, Quiggle Lake in Section 14 and an unnamed lake also in Section 8. Of these, Quiggle Lake is the largest with a surface area of about 22 acres. None of these lakes offers public access and most are fully developed with residential land uses.

Most local residential wells are developed in drift formations relatively vulnerable to nitrate contamination as development becomes more intense.

Although many areas of the Township are served by public water systems, groundwater is plentiful in those areas that do not have public water. The area is underlain by the Marshall Formation, a bedrock aquifer that extends through most of southern lower Michigan. This is an abundant source of ground water generally believed to be of high quality, although its high iron content may result in iron taste and staining concrete. Above the Marshall is the Michigan formation, which generally offers poorer water quality. However, most domestic wells are developed in even more shallow glacial drift aquifers. In Cascade Charter Township, most local residential wells are developed in drift formations relatively vulnerable to nitrate contamination as development becomes more intense.

THE ENVIRONMENT

Groundwater in many of the developed parts of Cascade Charter Township has shown the impacts of on-site domestic wastewater disposal and/or use of fertilizers. Elevated levels of nitrates have been reported within domestic drinking water wells in many areas for nearly a decade. These areas tend to coincide with the portions of the Township that have been developed for some time but still lack sanitary sewer facilities. Furthermore, the Kent County Health Department reports increasing problems with older on-site septic tank wastewater system failures in many areas. Many older septic tank drainfields no longer function properly, and in areas with small lot sizes and dense soils, homeowners find alternative locations for new drainfields difficult or are forced to invest in a mounded or engineered system, or connect to municipal services if available.

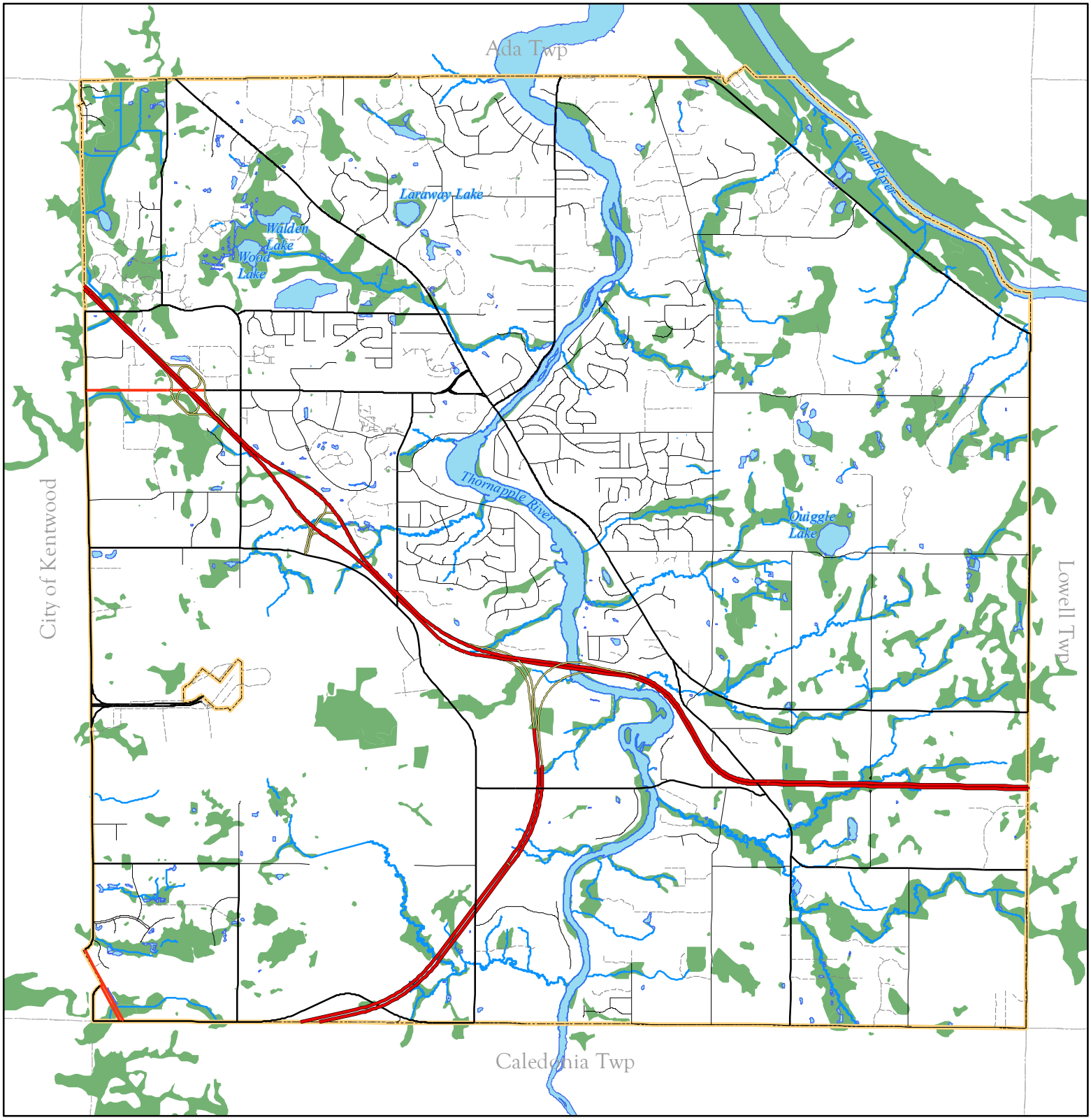
IMPLICATIONS

Soils and Groundwater

While the soils in the Township present few structural engineering challenges for development outside of wetlands, there are severe limitations for the continued use of on-site wastewater disposal systems.

Given the rate of growth in the Township, it is clear that significant expansions of the sanitary sewer system will be needed.

Well water is a lesser concern in the Township, provided potential threats to groundwater from septic tanks are addressed. High levels of nitrates and iron in wells will stimulate continued interest in public water supplies. Shallow wells in areas of small lots, combined with septic systems, can be a problem. As drinking water standards change, extending public water may be necessary.



Cascade Charter Township

Kent County, Michigan

Map 2
Wetlands Inventory

Legend

Potential Wetland Areas*

* Potential Wetland Areas consist of areas identified as wetlands by the National Wetland Inventory, areas containing hydric soils according to the SSURGO soils database, or areas identified as wetlands on the 1978 Land Use/Land Cover classification, as published by the Michigan Center for Geographic Information.

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

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

Wetlands shown in or around the airport may have been mitigated pursuant to Department of Environmental Quality standards and regulations.

N W E S

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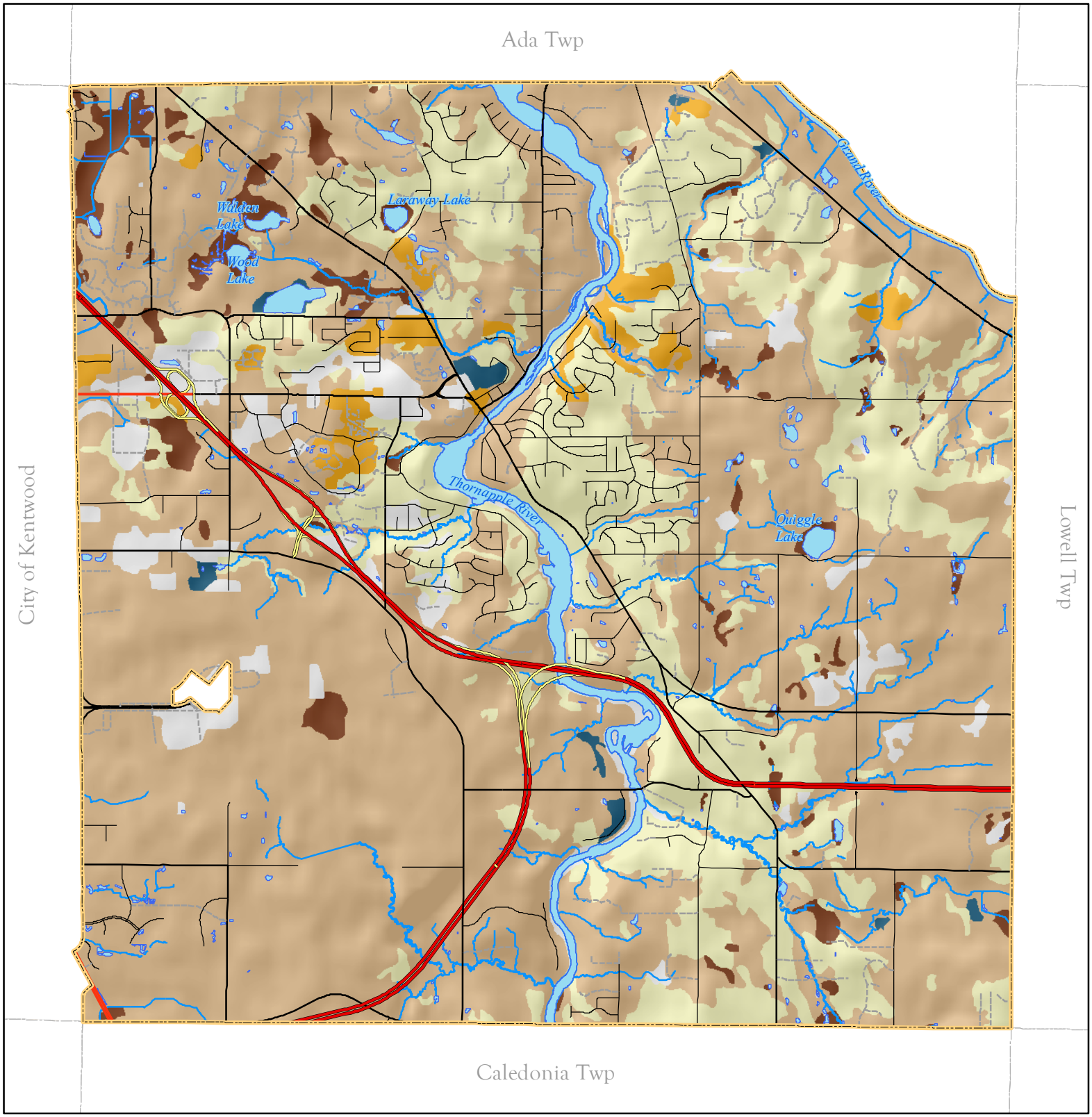

Cascade Charter Township

Kent County, Michigan

Map 3
Soil Textures

Legend

Texture

- Complex
- Sandy
- Gravel
- Loam
- Muck
- No Data

N
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CHAPTER 3. POPULATION

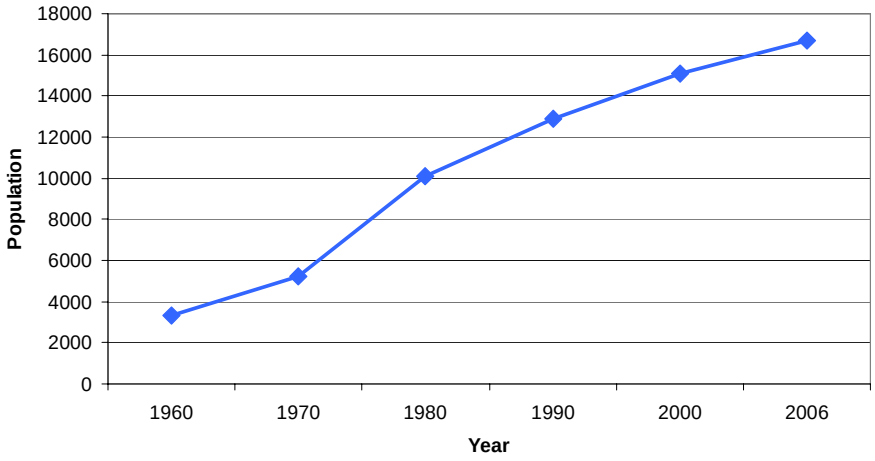
Population and demographic change are among the most important measures to express growth and its likely impact on land uses in a community. Therefore, it is helpful to recognize the Township's population and growth trends in preparing a realistic and meaningful Master Plan. This chapter describes the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

POPULATION GROWTH

It is appropriate to determine the overall growth the Township has experienced in the recent past. Like many metropolitan townships in Michigan, Cascade Charter Township was a rural bedroom community. Since 1960 the United States Census illustrates that the Township's population increased from 3,333 in 1960 to 16,682 in 2006, or by a total of 13,349, representing an approximate 400% increase. In other words, the Township has grown at an average annual rate of 8.7% over the last 46 years. These figures are reflective of large scale suburban growth that the Township experienced in the 1980s and 1990s.

Cascade Charter Township has grown by 13,349 persons, representing a 400% increase in population over the past 46 years.

Figure 3.1. Cascade Charter Township Population Growth: 1960 - 2006



Source: United States Census Bureau

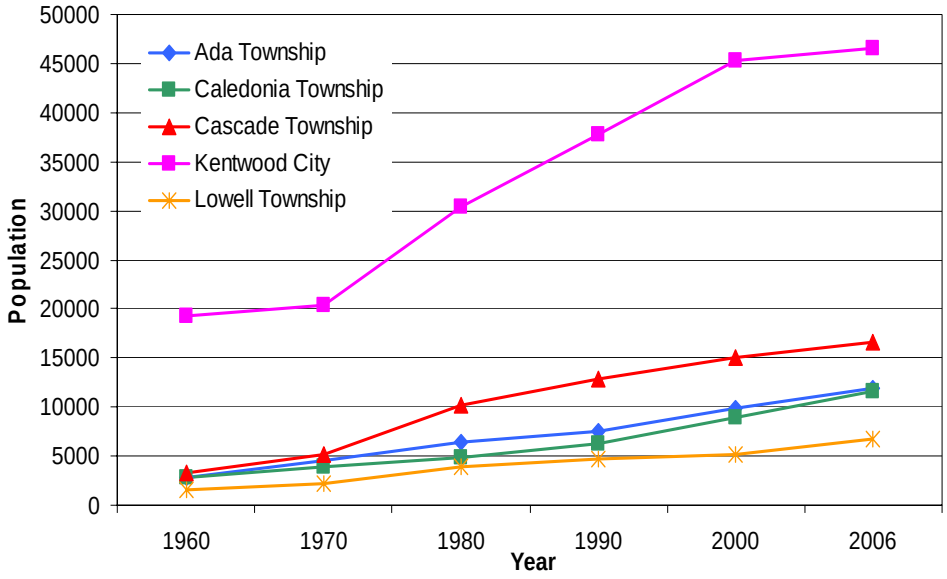
As shown in Figure 3.1 above, between 1970 and 1980, Cascade Charter Township grew from 5,243 to 10,120, or by 93%. During this same period, Kent County grew only by 8.1% and the City of Grand Rapids lost more than 15,800 persons, or about 8.7% of its population. Therefore, Cascade has seen a significantly greater rate of growth during this time period. This is possibly due to an in-migration of people

moving from the other areas in West Michigan or Kent County into Cascade Charter Township.

To further put Cascade's recent growth trends in perspective, it is appropriate to compare the Township with immediate neighboring communities. Figure 3.2 compares the 46-year population growth history of Cascade Charter Township with that of the surrounding townships and the City of Kentwood. It is evident that each of the communities also experienced a notable population increase between 1970 and 1980.

Between 1970 and 1980, Cascade Charter Township grew from 5,243 to 10,120, a 93% increase.

Figure 3.2. Comparative Population Growth in Area Communities including the City of Kentwood



Source: United States Census Bureau

Cascade Charter Township had a 17.39% growth rate between 1990 and 2000.

Table 3.1 Comparative Rates of Population Growth

Municipality	1990 Population	2000 Population	Increase	% Change
Ada Township	7,578	9,882	2,304	30.40%
Caledonia Township	6,254	8,964	2,710	43.33%
City of Kentwood	37,826	45,239	7,413	19.60%
Cascade Charter Township	12,869	15,107	2,238	17.39%
Lowell Township	4,774	5,201	427	8.94%

Source: United States Census Bureau

Of those communities southeast of Grand Rapids, Ada and Caledonia Townships experienced the highest percentage growth rates from 1990 to 2000, while the largely built-out City of Kentwood experienced a lower growth rate. Lowell Township showed the lowest rate of growth at only 8.94%. Cascade Charter Township's 17.39% growth rate was slightly below the 23.93% average growth rate of its neighbors. Further, both Ada and Caledonia Township gained more people than Cascade Charter Township during this timeframe.

POPULATION PROJECTIONS

To estimate future population growth, statistical averaging techniques were employed to project the Township's likely population growth to the year 2030. These techniques may be helpful, especially since the most recent Census information is eight years old and updated estimates are two years old. These approaches are intended to provide a very general sense of future growth. Future growth trends may not parallel historical statistical trends in communities such as Cascade that have experienced rapid rates of development, in part because developable acreage has been consumed over time. The following generalizations are limited in scope and are based on past trends documented by the United States Census Bureau and the Cascade Charter Township Building Department, and future projections from the Michigan Department of Transportation.

These projections for the Township have implications pertaining to future land use, the demand for various public services and capital improvements. They help provide an understanding of future Township growth and population. The following describes the projection techniques.

Constant Proportion. The constant proportion method projects the Township's population based on the share of Kent County it comprises in the 2000 Census. In early 2008, The Michigan Department of Transportation prepared population estimates for the counties in Michigan. This data source has been utilized to complete this table. In essence, it is assumed that Cascade Charter Township will continue to constitute 2.78% of Kent County. Applying this percentage to the projections provided by the Michigan Department of Transportation, the Township's population will be 16,982 in the year 2010; 18,112 in the year 2020; and 19,424 in the year 2030.

Constant Proportion Method

	2006 Population	Projection 2010	2020	2030
Kent County	599,526	610,315	651,274	700,515
Cascade Charter Township	16,682	16,982	18,112	19,492

Based on 2000 when Cascade constituted 2.78% of the County's population

Growth Rate. The Growth Rate method projects future population growth or decline based on the rate of growth in the Township in the past. Utilizing the growth rate method, the following assumes that growth in the future will occur at the same rate as has occurred annually between 1960 and 2006. According to the Census data, the Township experienced a 8.71% annual rate of growth during a 46-year period. Based on a continuation of this rate of growth, the Township's population will reach 22,494 by the year 2010; 42,086 by the year 2020; and 78,743 by the year 2030. As indicated in Figure 3.1, the rate of growth within the Township has been slowly leveling off since 1980 and if that trend continues, projecting growth at 8.71% annually may be aggressive.

Growth Rate Method

	Average Annual Growth Rate 1960 - 2006	2006 Population	Projection 2010	2020	2030
Cascade Charter Township	8.71%	16,682	22,494	42,086	78,743

Arithmetic Method. The Arithmetic Method is similar to the growth rate method in that population projections are based on the growth that occurred in preceding decades. This method uses the average increase in the number of persons per year, rather than growth rates. The following projections are based on the average increase of 290.19 persons annually between 1960 and 2006 in the Township. The result of this method projects the 2030 population to be 23,647 in the Township. Since this Township is comprised of an aging population, this method also has its limitations.

Arithmetic Method

	Average Annual Increase (Number of Persons)	2006 Population	Projection 2010	2020	2030
Cascade Charter Township	290.19	16,682	17,843	20,745	23,647

Building Permit. The Building Permit Method may be the most reliable projection method because it projects population trends based on current building permit data. It was determined that the Township has issued an average of about 123 building permits annually since 1982. This number may seem high considering the Township only issued 59 building permits in 2007; moreover, the number of building permits has varied from a low of 43 in 1982 to a high of 276 in 1985.

Assuming that the building activity will continue at this average rate, and utilizing the Township's average household size of 2.87 persons (2000 U.S. Census), future population figures can be estimated. This method predicts that the Township will increase approximately 354 persons per year. Using this figure, the Township's population using the building permit method will be 18,097 by 2010; 21,624 by 2030; and, 25,154 by 2030.

Building Permit

	Average No. of Permits/ Year[1]	Pph[2]	2006 Population	Projection 2010	2020	2030
Cascade Charter Township	123	2.87	16,682	18,094	21,624	25,154

(1) Based on 1982-2006 building permit data provided by the Cascade Charter Township Planning Department

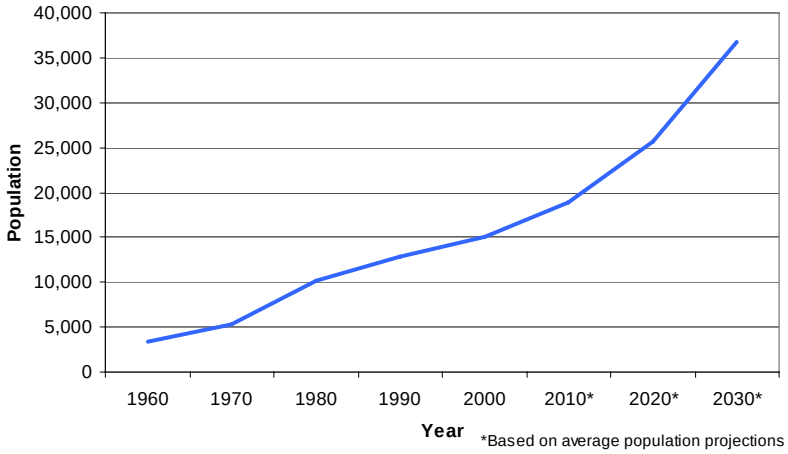
(2) Pph - Persons per household as per 2000 U.S. Census data.

To overcome some of the limitations of each of the projection techniques, the results from the four tables may be averaged. The following figure presents the average of each of the four techniques with a resulting set of projections for Cascade Charter Township.

Figure 3.3 Population Projection Averages

Method	2006 Population	Projection 2010	2020	2030
Constant Proportion Method	16,682	16,982	18,112	19,492
Growth Rate Method	16,682	22,494	42,086	78,743
Arithmetic Method	16,682	17,843	20,745	23,647
Building Permit Method	16,682	18,097	21,635	25,173
Average		**18,854**	**25,644**	**36,764**

Figure 3.4. Projected Cascade Population to 2030



In 2000, the median age of Cascade Charter Township residents was 41 years.

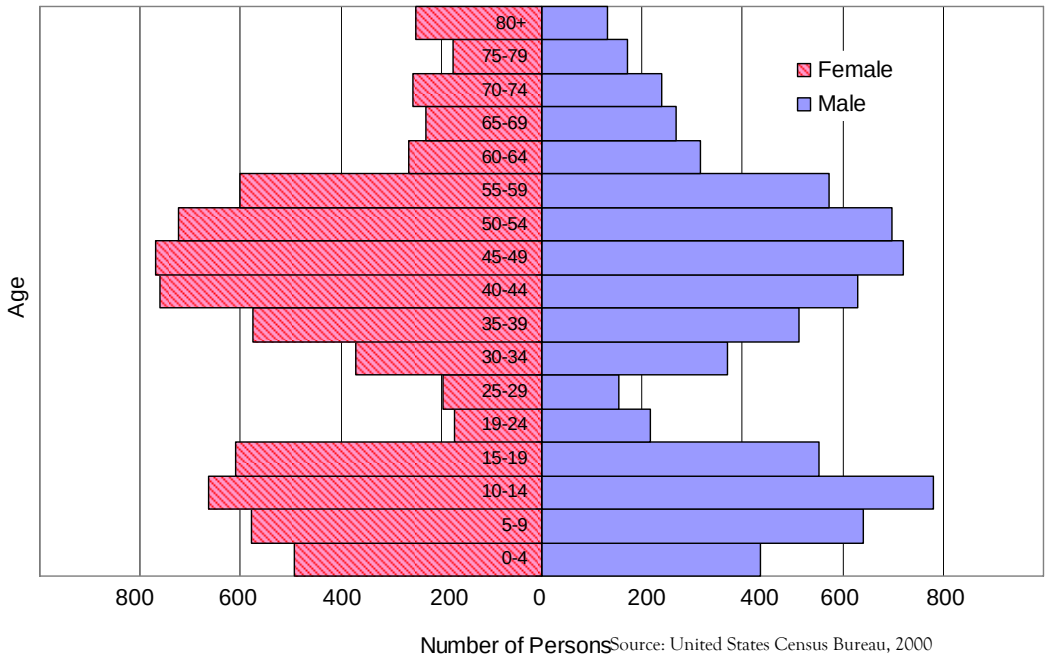
Each of the projection techniques assumes that the Township will continue historic patterns of growth. Other factors including regional and national economic conditions, changes in infrastructure, and even changes in market desires can influence population growth. However, the quality of the local public school district, the high-profile housing development, ample recreation opportunities, and a strong geographic location in the region should continue to have a positive influence on growth.

AGE CHARACTERISTICS

In addition to understanding population trends, it is important to examine the makeup of the current population. Contemplating age characteristics can assist in determining the type of housing demands and recreational facilities that may be needed. For example, if a large portion of the population were younger, the Township may benefit from additional park and playground facilities. Similarly, the rate of increase in a senior population may have implications for more senior living opportunities, such as condominiums, and public services.

In 2000, the median (middle) age of Cascade Charter Township residents was 41 years. This is older than Kent County (32.5 years), the State and the United States (35.5 and 35.3 years, respectively). The median age represents the mid-point in the range of all ages within the Township; one-half of the population is younger and one-half of the population older. The largest age cohorts were 45-49 years old, (1489 persons) followed by the 10-14 year old cohort, (1445). There are notably fewer persons in the remaining cohorts.

Figure 3.5. Cascade Charter Township Population Pyramid



Source: United States Census Bureau, 2000

As shown in Figure 3.5 above most of the population is in the 0-19 years and 30-60 years age groups. This would indicate a large family population. The 19-29 years age group however has the smallest population, indicating that the majority of college-age residents attend college away from the Township or cannot afford to live there on their own.

30.9% of the residents in Cascade Charter Township are between 45 and 64 years old.

The 25 to 44 years age group is significant, since this represents the bulk of the wage-earning population and is the main age division for family formations. The Census reveals that 23.6% of the Township's population falls in the 25 to 44 age group. These age groups tend to demand single-family housing, and school and recreational facilities for children. These age groups typically indicate future increases in the 5 to 19 years age groups, increased school enrollment, and a demand for family-oriented services, such as casual restaurants, cultural and entertainment venues, and recreational facilities.

Roughly 30.9% of the Township is aged 45 to 64. This age division is generally comprised of empty nesters and aging baby boomers and implies disposable incomes. Almost 11.6% of the Township is aged 55 to 64 years, and will likely enter retirement within the next ten years. Indicative of retirees and senior citizens, 8.76% of the Township is over 65 years of age (compared with 10.3% of Kent County). These figures, in addition to statistics on general aging, point toward a possible need

for increased senior living opportunities, public transportation, and passive recreational facilities, such as parks and pedestrian facilities that connect land uses and neighborhoods. In addition, other amenities may be warranted as the population ages, such as street signs with larger lettering; traffic lights that give more time for pedestrians to clear crosswalks; accessory apartments within or attached to single-family homes; benches in pedestrian areas; and abundantly lighted walking paths.

EDUCATIONAL ATTAINMENT

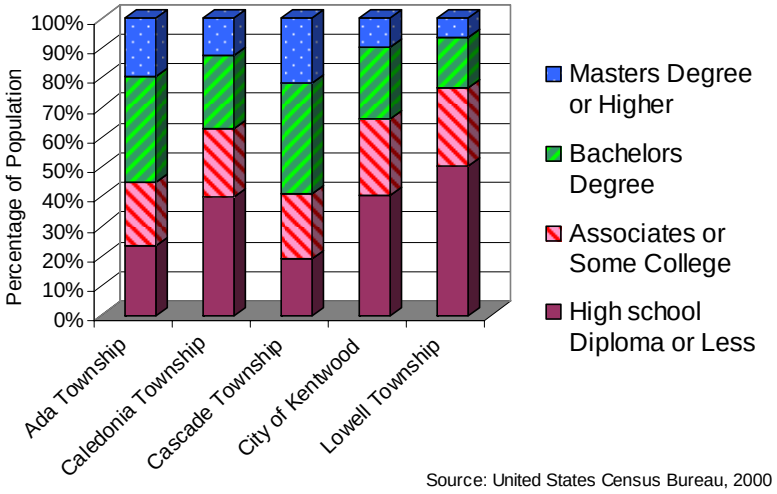
In addition to age characteristics, it is appropriate to catalog educational attainment trends in the community. Historically, there has been a correlation between educational attainment, incomes, housing values and characteristics.

The 2000 Census indicates that within Cascade Charter Township, approximately 96% of the population over 25 years of age have the equivalent of a high school education, with 55% having a bachelor's degree or higher. In Kent County, roughly 28.3% of the population have the equivalent of a high school education with 25.9% reporting a bachelor's degree or higher. Thus, a much greater percentage of Township residents have graduated high school and have attained a bachelor's degree or higher than County residents.

55% of the Township residents have a bachelor's degree.

Similarly, the 2000 Census reports that 31.3% of the population in Michigan have a high school education or similar equivalency, and 21.8% have at least a bachelor's degree. A higher percentage of the population in Cascade Charter Township have attained the equivalent of a high school education and have attained advanced degrees at the college, graduate, professional, and doctorate levels when compared with the State.

Figure 3.6. Education Attainment by Percentage



Source: United States Census Bureau, 2000

Additionally, Cascade residents (over 25 years old) have achieved a higher level of education than the surrounding communities. In Cascade, 20% of the residents report having a Masters Degree or higher, while only 17% in Ada, 11% in Caledonia, 11% in Kentwood, and 6% in Lowell Township report the same.

PLANNING IMPLICATIONS

Based on current trends, Cascade Charter Township's population is likely to increase, causing an increased need in housing that may alter the scenic rural characteristic enjoyed by residents today. The Township also will face challenges with an aging population that will require additional services not only within the Township, but also within the entire region. Additionally, as illustrated in Figure 3.6, persons between the ages of 20 and 29 are leaving not only the Township, but the state in general for opportunities elsewhere. Finally, the Township has a significant number of traditional families, resulting in a large number of school-aged children. Educational priorities and recreation opportunities may need to be enhanced to provide future generations with the quality of life many residents enjoy today.

CHAPTER 4. HOUSING AND ECONOMIC DEVELOPMENT

This chapter analyzes the housing and economic development trends within the community. Analysis of state equalized value trends is useful in estimating investment and land use patterns. This chapter will also analyze building permit trends, general housing characteristics and employment characteristics of the Township.

EQUALIZED VALUE GROWTH

Property values are a key measure of economic growth and the financial strength of a community, as they reflect both investment in new development and the degree of growth in the value of those investments. The Kent County 2007 Equalization Report supplies property value figures for the entire Township and may provide an illuminating impression of the character of a Township.

Cascade Township accounts for about 2.6% of the County's population and about 6.3% of its total real property value.

The total real property state equalized value (SEV)[1] for Cascade Charter Township for 1997 was $772.8 million, and in five years it had increased by over 38.4% to $1.1 billion. Since 2002, values have continued to climb in the Township: the 2007 total real property evaluation in the Township exceeded $1.4 billion. Cascade Charter Township ranks first among all Townships in Kent County for SEV totals, and fourth among all jurisdictions (Cities and Townships) in the state. Cascade Charter Township accounts for about 2.6% of the County's population (based on the 2000 Census) and about 6.3% of its total real property value.[2]

Table 4.1 and Figure 4.1 below compare the rates of overall SEV growth for Cascade Charter Township with that of other surrounding communities experiencing growth. From this data, it appears that Ada, Caledonia, and Lowell saw the greatest increase in equalized values between 1997 and 2007, and Cascade was slightly below the County averages.

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

2 Kent County Bureau of Equalization, *2007 Equalization Report*

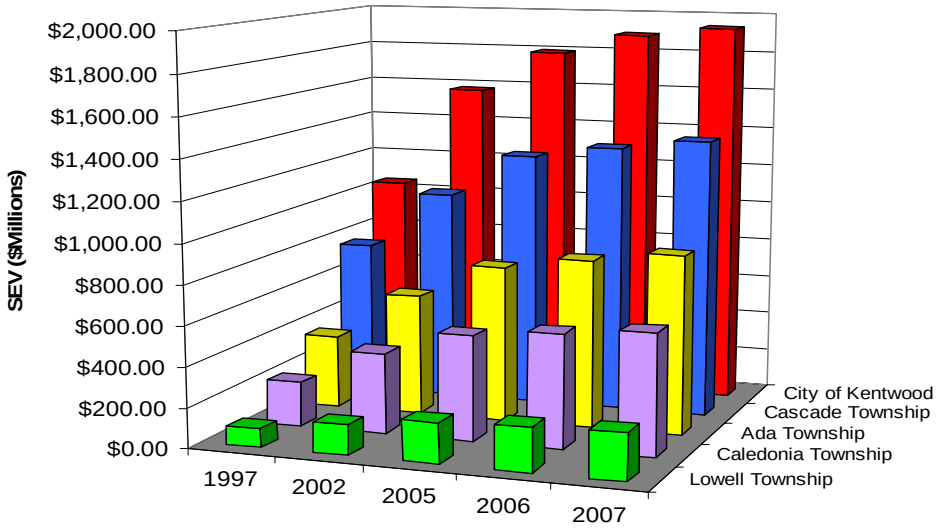
Table 4.1. Change in Total Real Property Equalized Values (in millions)

	1997	2002	2005	2006	2007
Cascade Charter Township	$772.78	$1,069.67	$1,287.19	$1,348.94	$1,401.28
Annualized rate of change	n/a	38.42%	20.34%	4.80%	3.88%
Ada Township	$366.07	$609.19	$782.66	$846.02	$896.46
Annualized rate of change	n/a	66.41%	28.48%	8.10%	5.96%
Caledonia Township	$222.34	$404.19	$525.17	$566.44	$604.72
Annualized rate of change	n/a	81.79%	29.93%	7.86%	6.76%
Lowell Township	$91.11	$149.81	$200.58	$217.23	$229.93
Annualized rate of change	n/a	64.43%	33.89%	8.30%	5.85%
City of Kentwood	$1,048.04	$1,577.39	$1,788.76	$1,891.44	$1,935.03
Annualized rate of change	n/a	50.51%	13.40%	5.74%	2.30%
Kent County	$10,892.44	$16,724.89	$20,291.82	$21,532.47	$22,482.88
Annualized rate of change	n/a	53.55%	21.33%	6.11%	4.41%

Source: Kent County Bureau of Equalization, 2007 Equalization Report

This table and Figure 4.1 compare rates of growth over the five-year period of 1997 through 2002, the three year period from 2002 to 2005, and annual growth in 2005, 2006, and 2007. Of the four communities included in this sample, the City of Kentwood is home to the largest values, due to the extent of properties and large-scale non-residential operations. However, since Cascade Charter Township has more undeveloped property, it experienced a greater rate of growth.

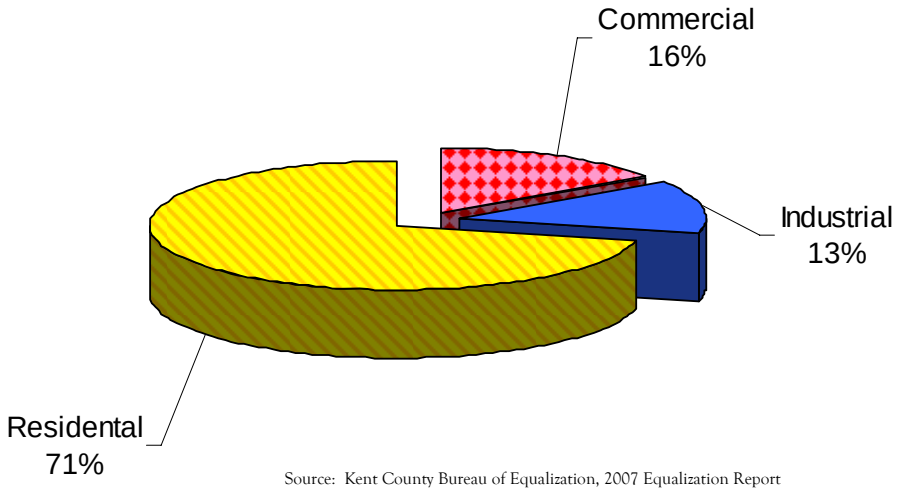
Figure 4.1. Comparison of 1997 – 2007 SEV



Source: Kent County Bureau of Equalization, 2007 Equalization Report

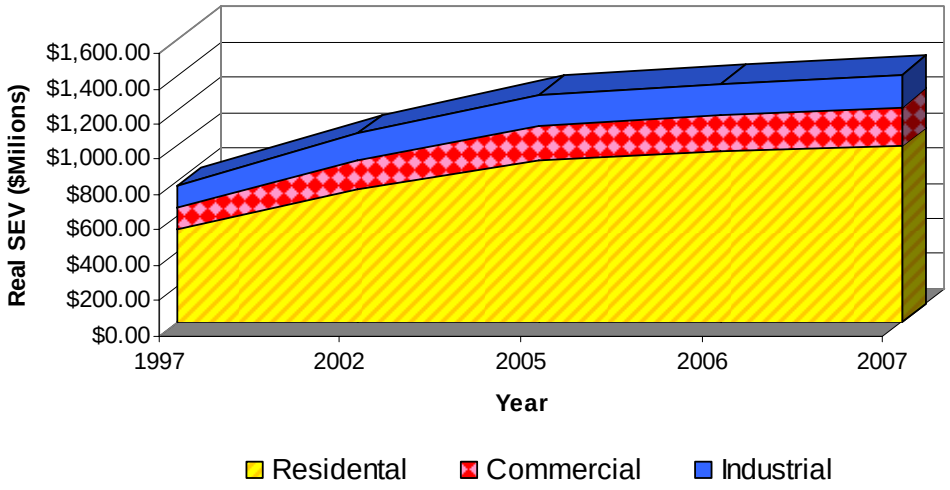
It is also important to further examine property values to consider the breakdown among land use categories, or property classifications, and the varying rates of growth in each classification. Cascade had no taxable agricultural land uses in 2007, while 71% was residential, 16% was commercial, and 13% was industrial. Given the rural character of the community, it is apparent that the majority of the undeveloped land is wooded, vacant land and is taxed at the highest and best use as residential. Additionally, the commercial and industrial uses are clustered along major thoroughfares.

Figure 4.2. Breakdown of Real 2007 SEV for Cascade



Source: Kent County Bureau of Equalization, 2007 Equalization Report

Figure 4.3. Breakdown of Real 1997 - 2007 SEV



Source: Kent County Bureau of Equalization, 2007 Equalization Report

The 2007 percentages reflected in Figure 4.2 were similar to figures from 1997. However, industrial decreased and residential increased slightly. Additionally, it is clear that all categories have seen increasing growth, with the bulk of development and increasing values being residential, as illustrated in Figure 4.3.

It is also interesting to observe what percentage of industrial and commercial properties comprise total SEV for area communities. Table 4.2 may indicate that a substantial number of people are employed in Cascade Charter Township, as 13% of its total property value is made up of industrial properties and more than 15% is made up of commercial properties.

Table 4.2. Comparison of Industrial and Commercial Real Property (% of Total SEV)

Community	1997		2007	
	Industrial	Commercial	Industrial	Commercial
City of Kentwood	17.67%	31.52%	18.70%	30.78%
Ada Township	13.64%	6.65%	14.41%	6.43%
Caledonia Township	2.26%	16.36%	3.69%	18.31%
Cascade Charter Township	15.82%	15.73%	13.10%	15.63%
Lowell Township	0.72%	8.20%	1.42%	10.76%

Cascade Charter Township offers many amenities in addition to a rural riverfront aesthetic and suburban lifestyle that acts as a magnet for growth.

The City of Kentwood includes Woodland Mall, which accounts for a large percent of the commercial property in the City. Cascade Township includes the Gerald R. Ford International Airport, which also contributes to the significant percent of industrial property.

It is clear from an examination of Figure 4.3 that Cascade Charter Township's tax base is heavily weighted toward residential development.

All of these figures indicate that the SEV in Cascade Charter Township has continued to rise, particularly residential SEV. Proximity to employment centers, ample expressway connections, award-winning schools, and other amenities, may be attributes that facilitate investment and rising property values. Cascade Charter Township offers these amenities in addition to a rural riverfront aesthetic and suburban lifestyle that certainly act as magnets for growth.

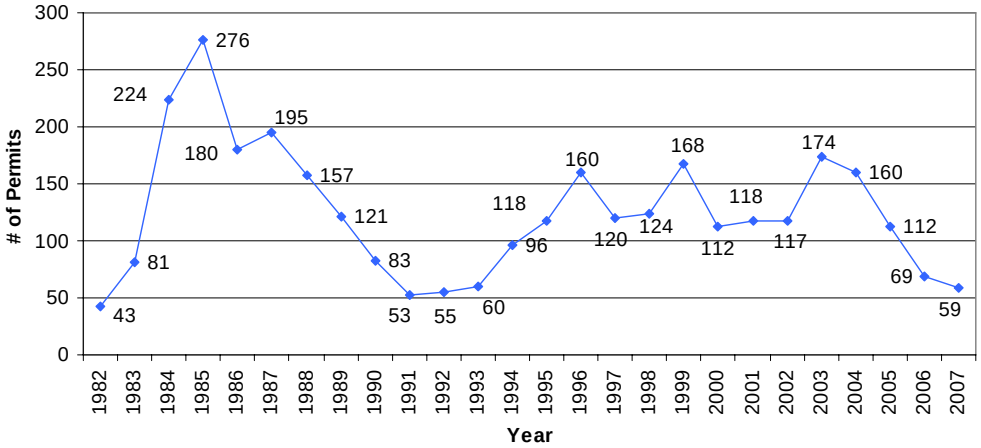
BUILDING PERMITS

Building permits are a good indication of investment in the community. As Figure 4.4 indicates, the number of new building permits issued in Cascade Charter Township over the past 25 years has fluctuated

greatly.[3] However, this is reflective of the overall economy, which has experienced rapid residential growth, but has leveled in the last 24 months.

Additionally, from 1990 to 2000 the number of single-family detached dwellings has increased almost 25%; however, the number of dwellings in multiple unit structures has increased only 8%. Single-family dwelling units now account for approximately 81.5% of the total number of residential dwellings.

Figure 4.4. Number of New Home Building Permits Issued 1982 -2007



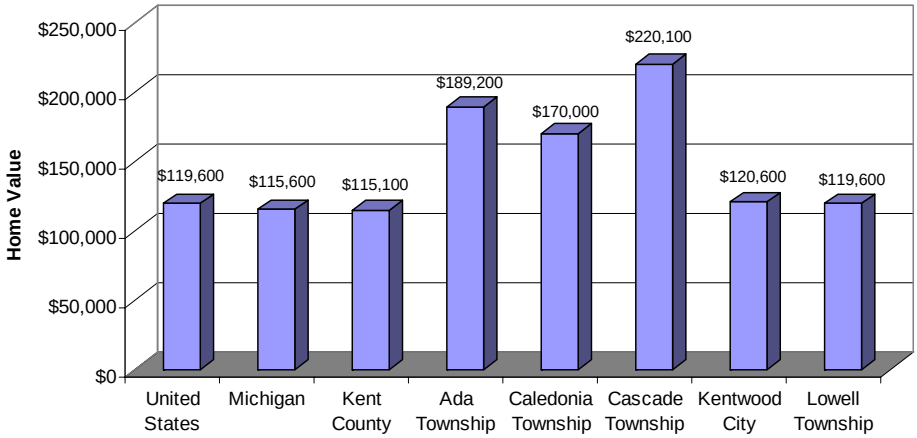
Source: Cascade Township Planning Department

HOUSING

According to the Census, the median (middle) dollar value of owner-occupied homes in the Township was $220,100 in 2000. Placing this figure in perspective, in Kent County overall, the median home value is $115,100. Figure 4.5 compares median home values in Cascade Charter Township, Kent County, the State of Michigan, the United States, and the surrounding communities.

[3] Cascade Township Planning Department.

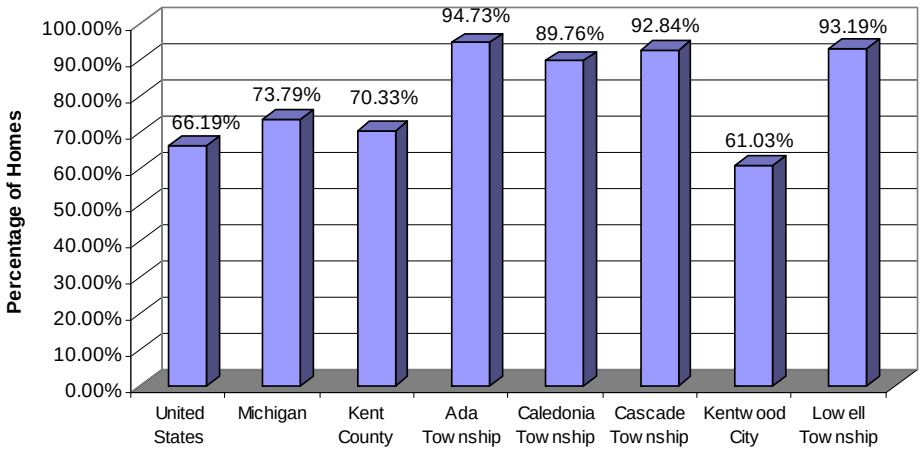
Figure 4.5. Comparison of Median Housing Values



Source: United States Census Bureau, 2000

In 2000, more than 92% of the total housing stock in the Township was made up of owner-occupied dwellings (compared to 70% of the County). As illustrated in Figure 4.6, other than Kentwood, this is consistent with the surrounding communities. Since rental properties typically change hands much more frequently, this suggests fairly established and stable residential neighborhoods.

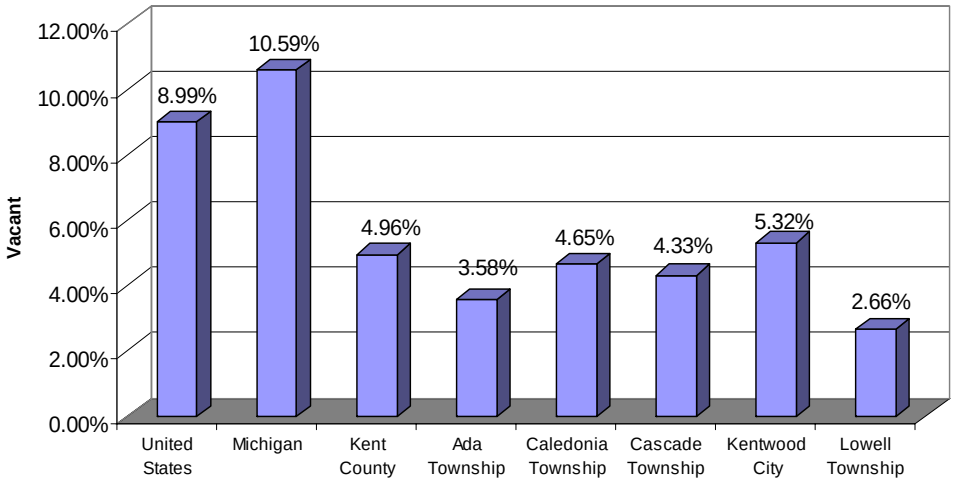
Figure 4.6. Comparison of Owner Occupied Dwellings



Source: United States Census Bureau, 2000

Also, the 2000 Census reported that only 4.33% of the Township's housing units were not occupied, suggesting a strong housing market, as vacancy rates around 10% can indicate neighborhood instability. Figure 4.7 below shows that this is consistent with many of the neighboring communities, and considerably better than the State or County as a whole.

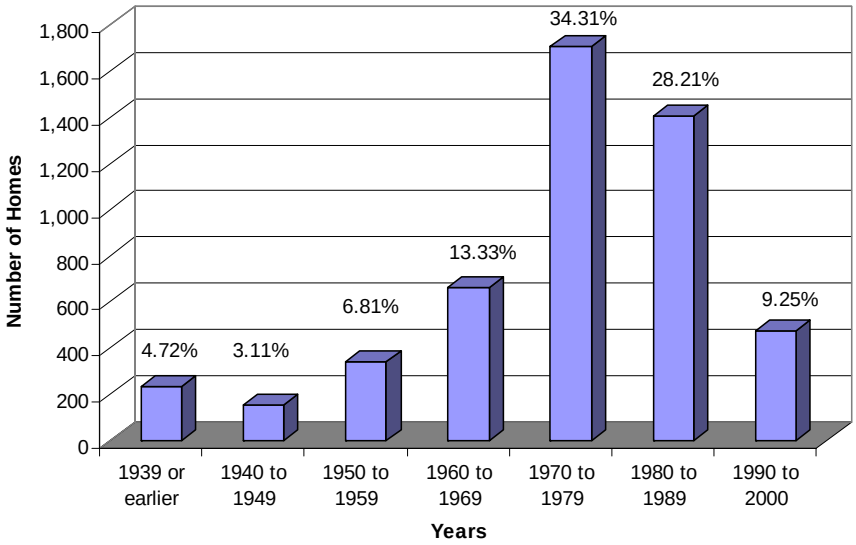
Figure 4.7. Comparison of Vacant Dwellings



Source: United States Census Bureau, 2000

Additionally, Cascade is comprised of a residential housing stock that is less than 40 years old. The census reports that 75% of the Township's housing units were constructed after 1970. Figure 4.8 below shows the breakdown of when housing units were constructed. It should be noted that there was a significant increase between the 1960 – 1969 figures and the 1970 – 1979 figures.

Figure 4.8. Construction of Housing Stock by Decade



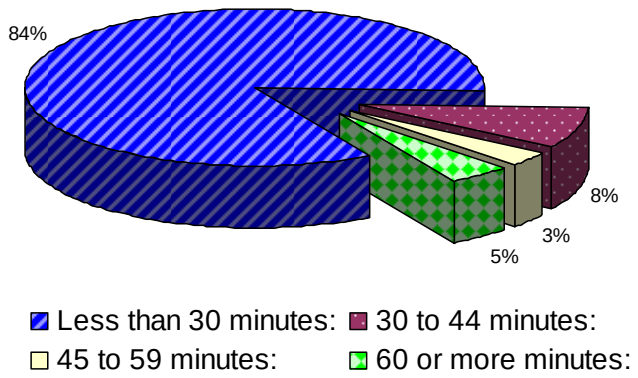
Source: United States Census Bureau

EMPLOYMENT

While the Township has more commercial and industrial development than many "bedroom communities," it can be assumed that most of the Township's residents find their employment outside of the community.

According to the 2000 census, 84% of the Township residents traveled less than 30 minutes to work; however, the median (middle) travel time was 21.1 minutes and 87% drove alone. With Cascade's proximity to the region's employment centers, the Township residents have a substantial selection of employment opportunities within a 20 to 30 minute drive.

Figure 4.9. Travel Time to Work



Source: United States Census Bureau, 2000

Employment within Cascade Charter Township is not reflective of employment within the larger County. The Table 4.3 below reflects a breakdown of occupation type for both the County and the Township with several types of occupations reported in the 2000 Census combined into six employment categories.

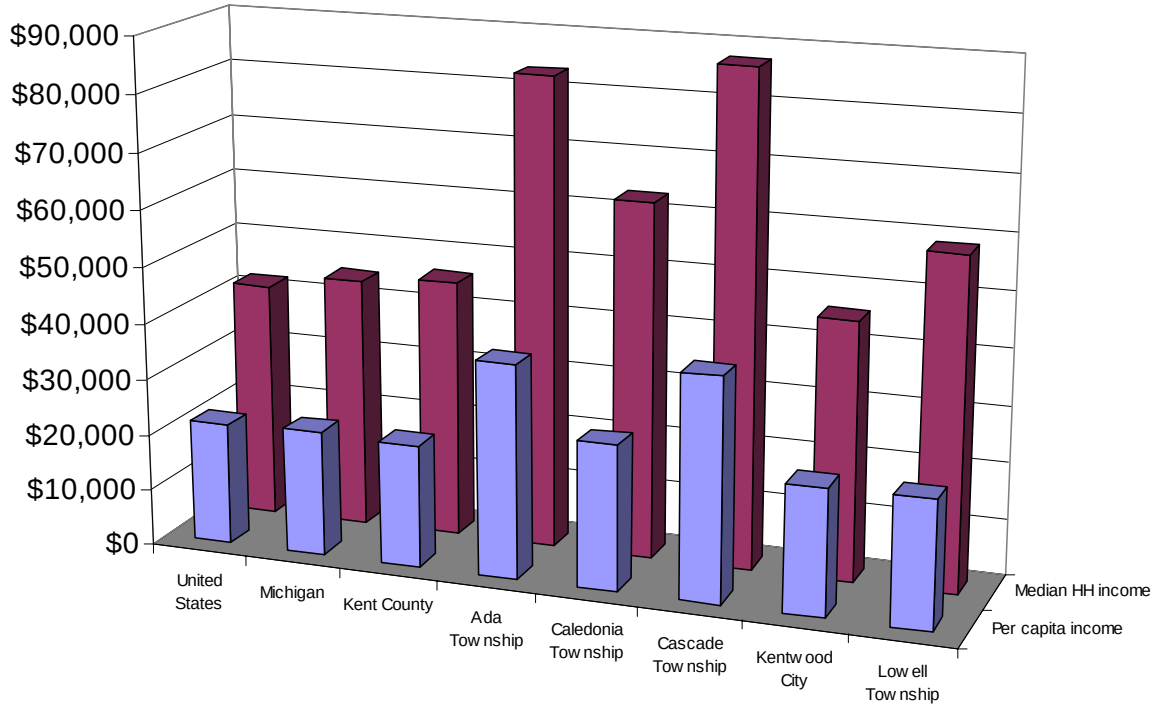
Table 4.3. Comparative Analysis of Employment

	Percentage of Total Employment	
Labor Categories	**Kent County**	**Cascade**
Execs, Professional, Admin	34.65%	47.59%
Technical and Skilled	29.30%	21.63%
Sales and Office	18.62%	17.99%
Service Occupations	13.47%	10.69%
Genl. Labor/ Transportation	3.41%	1.85%
Farm/ Forestry and Fishery	0.56%	0.25%

The categories with higher earning levels (executives and professionals and sales and office) comprised 34.65% of the workforce in the larger county as compared to 47.59% in Cascade Charter Township, while lower income industries such as general labor, transportation and many service sector jobs are higher in the County than the Township.

The 2000 Census reports that the median (middle) household income for Cascade Charter Township residents was $87,290. This translates to a per capita income of $39,470 for Township residents. By comparison, Kent County showed a median household income of $45,980 and a per capita income of $21,629. With the exception of Ada Township, the surrounding townships showed noticeably lower median household and per capita incomes compared to Cascade Charter Township. Figure 4.10 below illustrates the median household income and per capita income for Cascade Charter Township, Kent County, State of Michigan, the United States, and the surrounding communities.

Figure 4.10. Median Household and Per Capita Incomes

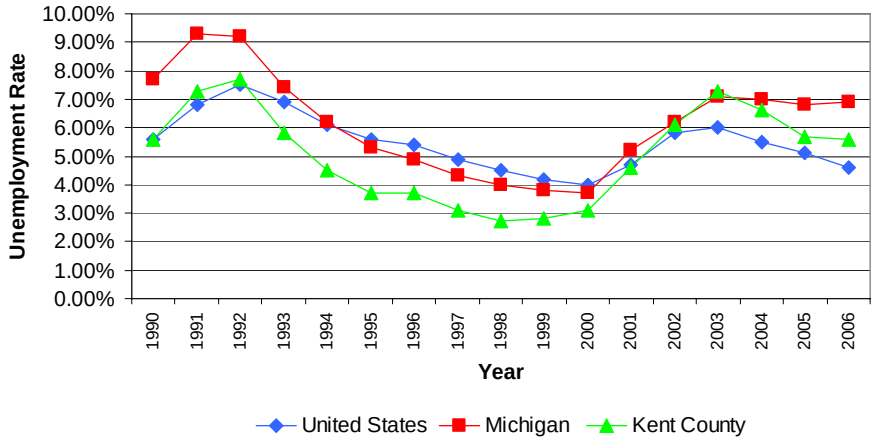


Source: United States Census Bureau, 2000

While the Township's unemployment rates are not available, the Kent County unemployment rate for 2007 was 5.9%, lower than the statewide average of 7.2%, but higher than the national average of 4.7%. In 2007, the State of Michigan had the highest average unemployment rate in the nation. Figure 4.11 reflects the annual rates of unemployment for the past 16 years for the United States, the State of Michigan and Kent County.[4]

[4] Michigan Department of Career Development, Labor Market Information, website.

Figure 4.11. Unemployment Rates 1990 – 2006



Source: Michigan Department of Career Development

The Kent County unemployment rate steadily dropped from about 3.5% in 1996 to 2.8% in 1999. The year 2000 unemployment rate of 3.1% indicated the first increase in four years and signaled the beginnings of a softened economy. By 2007, the rate in the County had peaked to 7.1%. Since then, the rate for the County has improved, but still ranges above 5% while the State has continued to hover around 7%.

PLANNING IMPLICATIONS

Cascade Charter Township is largely residential with a workforce population that commutes to other employment areas. Commercial areas around Cascade Road and 28th Street have expanded in recent years and further industrial growth around the Gerald R. Ford International Airport will continue to balance out the tax base. Commercial and industrial growth is likely a result of population shifts out of the City of Grand Rapids and into the suburban areas during the late 1960's and into the 1970's. New commercial and industrial/employment development lags behind residential development. To capture some of the workforce that commutes to other areas, increased emphasis should be put on attracting higher paying technical, service, and professional jobs within the Township. Additionally, increasing the existing advanced industrial base will also help the Township diversify its tax base and provide more services to residents. New types of housing opportunities will supply options for the 20-29 year cohort and the aging senior population.

CHAPTER 5. LAND USE AND DEVELOPMENT PATTERNS

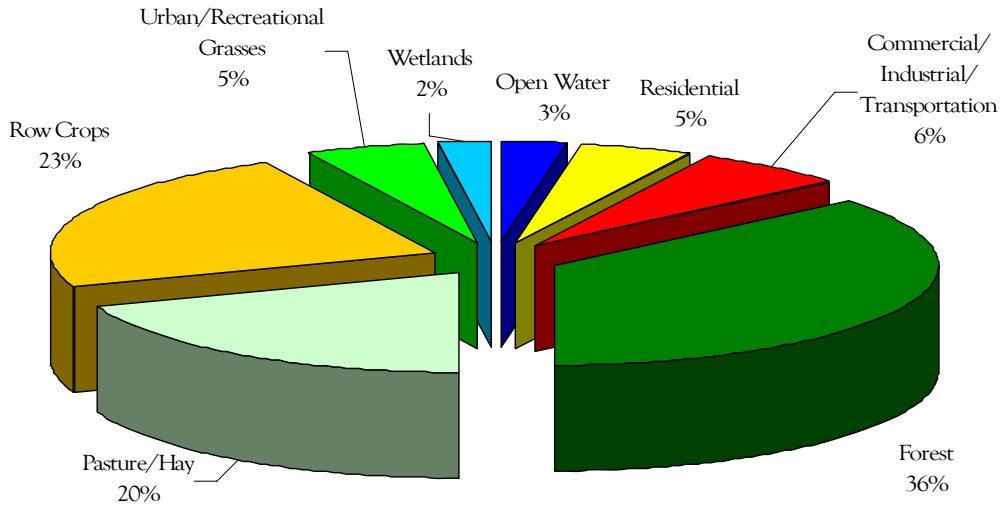
Cascade Charter Township is bounded by Ada Township and the Grand River to the north, the City of Kentwood to the west, Caledonia Charter Township to the south and Lowell Charter Township to the east. The Township has an area of approximately 34.8 square miles. It is divided by the Thornapple River, which flows from south to north where it empties into the Grand River, in Ada Township.

Cascade Charter Township contains a variety of land uses, from wooded and rural areas to residential, commercial and industrial areas. The Township is also home to Gerald R. Ford International Airport, which is the second-busiest airport in the state of Michigan. In recent years, the Township has emerged as a strong second-tier suburb of Grand Rapids. This pattern is likely to continue due to the completion of M-6, which opened in 2004. M-6 provides another east-west corridor through the southern portion of the metropolitan area, which has led to increased growth.

LAND COVER

Land cover describes the vegetation or land use that occupies the land in a given community. Cascade Charter Township's land cover information was derived from LandsatTM (Thematic Mapper) satellite imagery, and was interpreted using an automated computer based process. This was followed by an accuracy assessment of the satellite data that involved the use of aerial photographs to judge the quality of

Figure 5.1
1992 Land Cover in Cascade Charter Township



the computer-based interpretation. This information is useful in determining the distribution of vegetation and development patterns throughout the Township. The National Land Cover Dataset (NCLD) includes 21 classes of land cover type, which have been consolidated into eight categories for the purposes of this analysis. The smallest "on the ground" unit of measure for the NLCD is 30 meters square.

In 1992, nearly 80% of the Township was a mix of forested areas, row crops and pasture/hay.

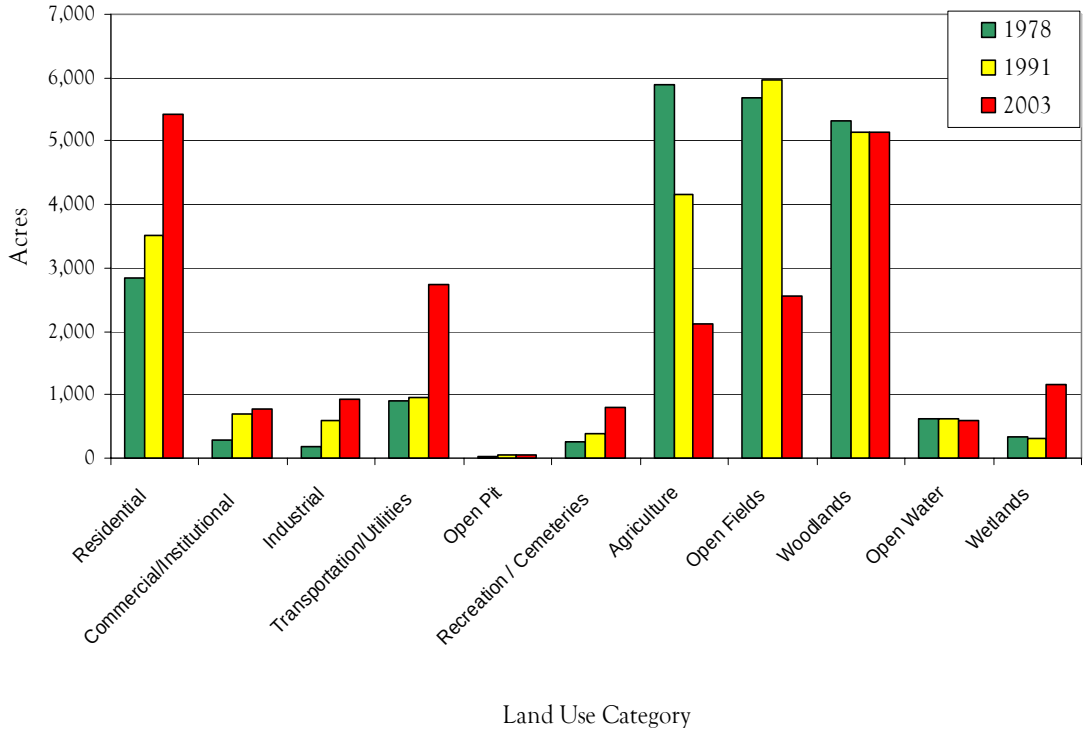
Map 4 illustrates the land cover make-up of Cascade Charter Township based on the 1992 NLCD. In 1992, nearly 80% of the Township was a mix of forested areas, row crops and pasture/hay, which is defined as "areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops." The remainder of the Township was classified as Commercial/ Industrial/ Transportation (6%), residential (5%), and urban and recreational grasses (5%). Wetlands and open water comprised approximately 5% of the Township's land cover.

LAND USE CHANGE

Map 5 illustrates land use patterns in Cascade Charter Township in 1978, 1991 and 2003. The 1978 Land Use map has been derived from computerized mapping efforts of the Michigan Resources Information System (MIRIS) in 1978. An objective of MIRIS was to create a "statewide computerized database of information pertinent to land utilization, management, and resource protection activities."[5] The 1991 update of the land use map was prepared by Grand Valley State University's Annis Water Resources Institute (AWRI). The 2003 Land Use map reflects an update of the 1991 AWRI data by REGIS, and is based on 2003 digital orthophotography.

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

Figure 5.2
Land Use Change in Cascade Charter Township: 1978-2003



Residential land uses increased by 2,593 acres, or 91.2%, from 1978 to 2003.

Figure 5.2 above, illustrates the change in land uses in Cascade Charter Township from 1978 to 2003. Not surprisingly, the Township has seen the greatest increase in residential land uses, which increased by 2,593 acres, or by 91.2%, from 1978 to 2003. This can be attributed to the population growth the Township has experienced over the last three decades.

Also notable is the increase in the transportation/utilities land use category, which increased by 1,849 acres, or 191.6%, from 1978 to 2003. Much of this difference can be attributed to the continued growth and expansion at Gerald R. Ford International Airport, and the construction of M-6, which reaches its eastern terminus with I-96 in Cascade Charter Township.

Interestingly, the increase in land uses classified as residential and transportation/utilities is somewhat proportional to the decrease in lands classified as agricultural and open field. This suggests that the bulk of the Township's growth has occurred in undeveloped areas. As growth continues, the Township may want to encourage more efficient growth and redevelopment patterns into areas that have already become urbanized and are served with utilities. Table 5.1 contains a breakdown of Land Uses in the Township from 1978 to 2003.

Table 5.1. Land Use In Cascade Charter Township 1978-2003

	1978		1991		2003	
Land Use	**Acres**	**Percent**	**Acres**	**Percent**	**Acres**	**Percent**
Residential	2,843	12.71%	3,509	15.70%	5,436	24.36%
Commercial/Institutional	288	1.29%	691	3.09%	768	3.44%
Industrial	168	0.75%	582	2.60%	929	4.16%
Transportation/Utilities	901	4.03%	943	4.22%	2,750	12.32%
Open Pit	36	0.16%	63	0.28%	54	0.24%
Recreation/Cemeteries	267	1.19%	393	1.76%	796	3.57%
Agriculture	5,887	26.32%	4,160	18.61%	2,129	9.54%
Open Fields	5,692	25.45%	5,954	26.64%	2,551	11.43%
Woodlands	5,327	23.82%	5,133	22.96%	5,144	23.05%
Open Water	610	2.73%	610	2.73%	604	2.71%
Wetlands	346	1.55%	314	1.40%	1,152	5.16%

LOCATION OF NEW DEVELOPMENT

In 1978, the bulk of Cascade Charter Township's residential land uses was in the northwestern portion of the Township, largely near the Thornapple River. With the exception of the Gerald R. Ford International Airport, the southern and western halves of the Township were predominately wooded and agricultural. Most of the commercial land uses were located along the still-expanding 28th Street corridor. Cascade Charter Township's industrial areas were relatively small and located near the airport. In 1980, Cascade Charter Township had a population of 10,120.

The 1991 Land Use map reflects the population growth the Township experienced from 1980-1990, when the Township population grew to 12,869 residents. Residential development was still concentrated north of I-96 near the Thornapple River, and the primary growth areas were located in the northern and western portions of the Township.

During this time period, commercial land uses expanded along the 28th Street corridor and along Patterson Avenue south of the airport. Industrial uses, also located on Patterson Avenue near the airport, expanded as well.

By 2003, Cascade Charter Township's population had increased from 12,869 in 1990 to over 15,000. Residential land uses continued to

expand in the northwest portions of the Township north of I-96. In addition, significant residential growth occurred in the southeast portions of the Township, south of I-96 and east of M-6.

Commercial land uses expanded along the 28th Street corridor, and limited commercial growth also occurred along Cascade Road, north and east of 28th Street. Industrial uses expanded as well, primarily along Patterson Avenue near the airport. The airport itself also underwent an expansion in 1997, with the addition of an 8,500 foot north-south runway. A parking lot expansion began in 2008, which includes a 4,800 space parking structure.

A GENERAL BUILD-OUT ANALYSIS

"A build-out analysis is a powerful tool for illustrating the potential impact of master plans and zoning policy if all buildable lands are developed at the maximum permitted density."[6] This section evaluates the current zoning conditions in Cascade Charter Township, and considers the impacts future growth will have on the community by performing a build-out analysis.

A build-out analysis is essentially an evaluation of the current zoning situation in a community.

Background

A build-out analysis is essentially an evaluation of the current zoning situation in a community. It acts "…as a snapshot, worse-case scenario tool for planning. The analysis can assist local governments by showing what growth the locality will allow in the future under current zoning designations."[7] The resulting information can then be used to estimate the impacts of future growth on the community in question. The primary output from the analysis is the maximum number of dwelling units that can be built in each zoning district. Future population estimates for the community can then be derived from the number of potential dwelling units, and compared with population projections for the area. This comparison allows one to judge the ultimate results of the area's current zoning.

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

---

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

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

Methodology

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

Table 5.2. Developable Land Based on Residential Zoning District

Mapped Residential Districts	Developable Acres	Minus 15 % for Infrastructure (acres)
ARC - Agricultural Rural Conservation	5,324	4,525
R-1 – Single Family Residential	1,557	1,323
R-2 - Single Family Residential	97	82
Total	**6,978**	**5,930**

The second step in the process is to determine the number of potential dwelling units allowed by zoning standards at build-out. To derive this number, the total developable net area in each district is divided by the minimum lot area allowed in the given district (Table 5.3). The Township's Subdivision Ordinance requires different minimum lot areas based on the amount of open space that is proposed. For the purposes of this analysis, we have used the minimum lot areas that result when the developer proposes that 25%-49% of the developable acreage is left as public or private open space without water and sewer services.

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

	(total size In acres)	(lot size in square feet)	(Potential number of lots)
ARC - Agricultural Rural Conservation	4,525	100,000	1,971
R-1 Single Family Residential	1,323	40,000	1,440
R-2* Single Family Residential	82	15,000	238
Total	**12,649**		**3,649**

* Water and Sewer services are required in this instance.

The third and final step in the analysis is to determine the total population resulting from the number of potential lots, or the potential population at build-out. This is accomplished my multiplying the number of lots by 2.8,[8] the average number of people per household in the Township. Since over 90% of the Township consists of single-family homes, we have assumed that one home will be placed per lot in each of the residential zoning districts.

Table 5.4 Population at Build-out Based on Zoning District

Mapped Residential Districts	Potential Number of lots	Number of additional residents at Build-out
ARC - Agricultural Rural Conservation	1,971	5,518
R-1 Single Family Residential	1,440	4,032
R-2 Single Family Residential	238	666
Total	**3,649**	**10,156**

The resulting calculations show that under current zoning, Cascade Charter Township would have a population of 25,263 persons at build-out, which is an increase of 67.2%. Based on the rates of growth described in Chapter 3, and given current zoning, the Township would reach full build-out in about 20-25 years. This is consistent with the projected population figures in Chapter 3 and means that the current zoning in the Township can accommodate the projected residential growth for the next 20-25 years.

As Cascade Charter Township begins to look at alternative future land use patterns, it may be helpful to revisit the build-out analysis and consider existing patterns as well as planned new growth. However, care should be taken when interpreting these results. This analysis should be seen only as a theoretical model of Cascade Charter Township's current zoning map. As with most models, there are many variables and assumptions built into the analyses that are not necessarily reflective of the real world situation.

As the Township continues to develop, opportunities for redevelopment may occur in areas currently being used as commercial or industrial facilities, and land that is currently zoned as ARC, R-1 or R-2 may be rezoned to Planned Unit Development, which may result in a higher residential density than would be permitted under conventional zoning.

[8] United States Census Bureau, 2000

LAND USE CONFLICTS/TRANSITION AREAS

The land use and zoning patterns of neighboring communities complement those in Cascade Charter Township. Lands surrounding the Township vary from industrial to rural. To the north of the Township is Ada Township. Ada Township is mainly a rural community, but is also home to Alticor's world headquarters. The population in Ada Township is just over 11,000 according to 2006 Census estimates. Along its border with Cascade Charter Township, Ada Township is currently zoned for residential land uses, along with some office uses along Cascade Road.

To the south of Cascade Charter Township is Caledonia Township, located at the edge of Kent County. Caledonia Township is a predominately rural community, but has seen growth in recent years, fueled in part by the continued expansion of the Grand Rapids metropolitan area. Along its border with Cascade Charter Township, planned land uses in Caledonia Township include low density residential, institutional uses, and highway commercial uses along Broadmoor Avenue.

To the east is Lowell Township, where a large portion of land uses are agricultural in nature. Like many other communities in the area, Lowell Township has seen significant population growth in recent years, mostly in the northern portion of the Township along M-21 and near the City of Lowell. Along its border with Cascade Charter Township, Lowell Township is currently zoned primarily for agricultural uses, and low density residential uses, just south of the Grand River.

To the west is the City of Kentwood, which is more densely developed than Cascade Charter Township's other neighbors, due to its proximity to Grand Rapids and history as a first-tier suburb. Along the border of Cascade Charter Township, planned land uses consist of low density residential to the north, commercial and multi-family residential around 28th Street, and industrial to the south near the airport.

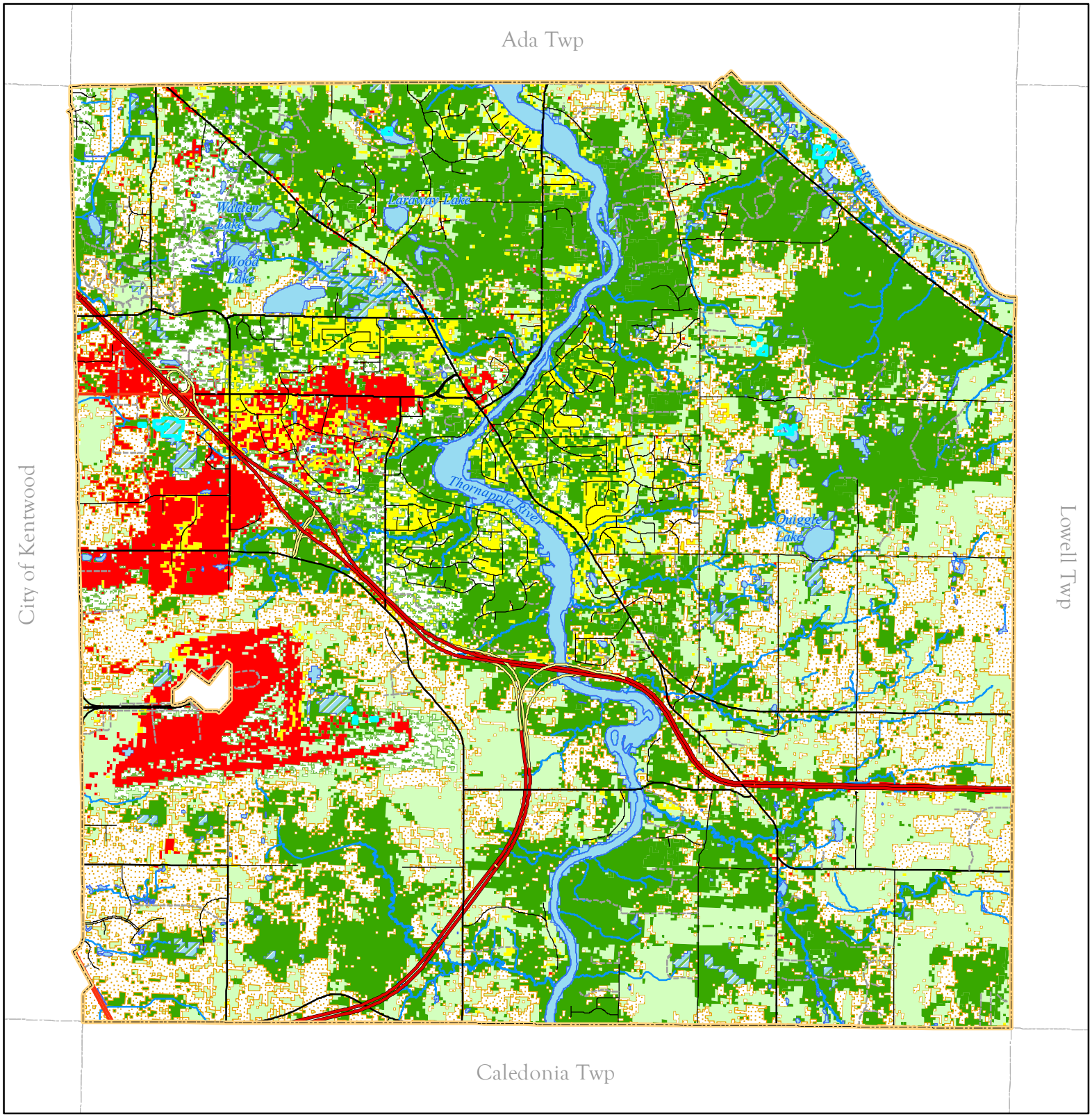
Along the Township's borders, most neighboring uses are compatible. However, the Patterson Avenue corridor presents a unique challenge in that the current and planned land uses range from low density residential, to high-density residential, to commercial, industrial, and mixed use. As development occurs along this boundary, as well as all others, the Township must work cooperatively with the neighboring community to ensure that developments are compatible.

PLANNING IMPLICATIONS

Cascade Charter Township boasts a strong diversity of land uses, from wooded and rural areas to high-density residential, commercial, and industrial uses, and Gerald R. Ford International Airport. With the notable exception of the airport in the southwest portion, most of the Township can be characterized as being of a rural and low density residential in nature.

Land use patterns in the Township have changed significantly with the construction of single-family housing and continued expansion of the airport. This pattern is likely to continue over the long term due to the completion and increased use of M-6, which terminates at an interchange with I-96 in the middle of the Township. M-6 has one interchange near the Township boundary in Caledonia at Broadmoor Avenue, and this interchange may fuel growth pressure that will have an effect on Cascade Charter Township.

The build-out analysis indicates that based on past growth rates, the Township will reach full build-out in 25-30 years, much of which could occur in agricultural areas, woodlands or other open spaces. Unless care is taken to plan for and accommodate this growth, it will eventually undermine the quality of the natural features and community services that currently makes Cascade a desirable community in which to live.



Cascade Charter Township

Kent County, Michigan

Map 4
1992 Land Cover

Legend

- Open Water
- Residential
- Commericial/Industrial/Transportation
- Forest
- Pasture/hay
- Row Crops
- Urban/Recreational Grasses
- Wetlands

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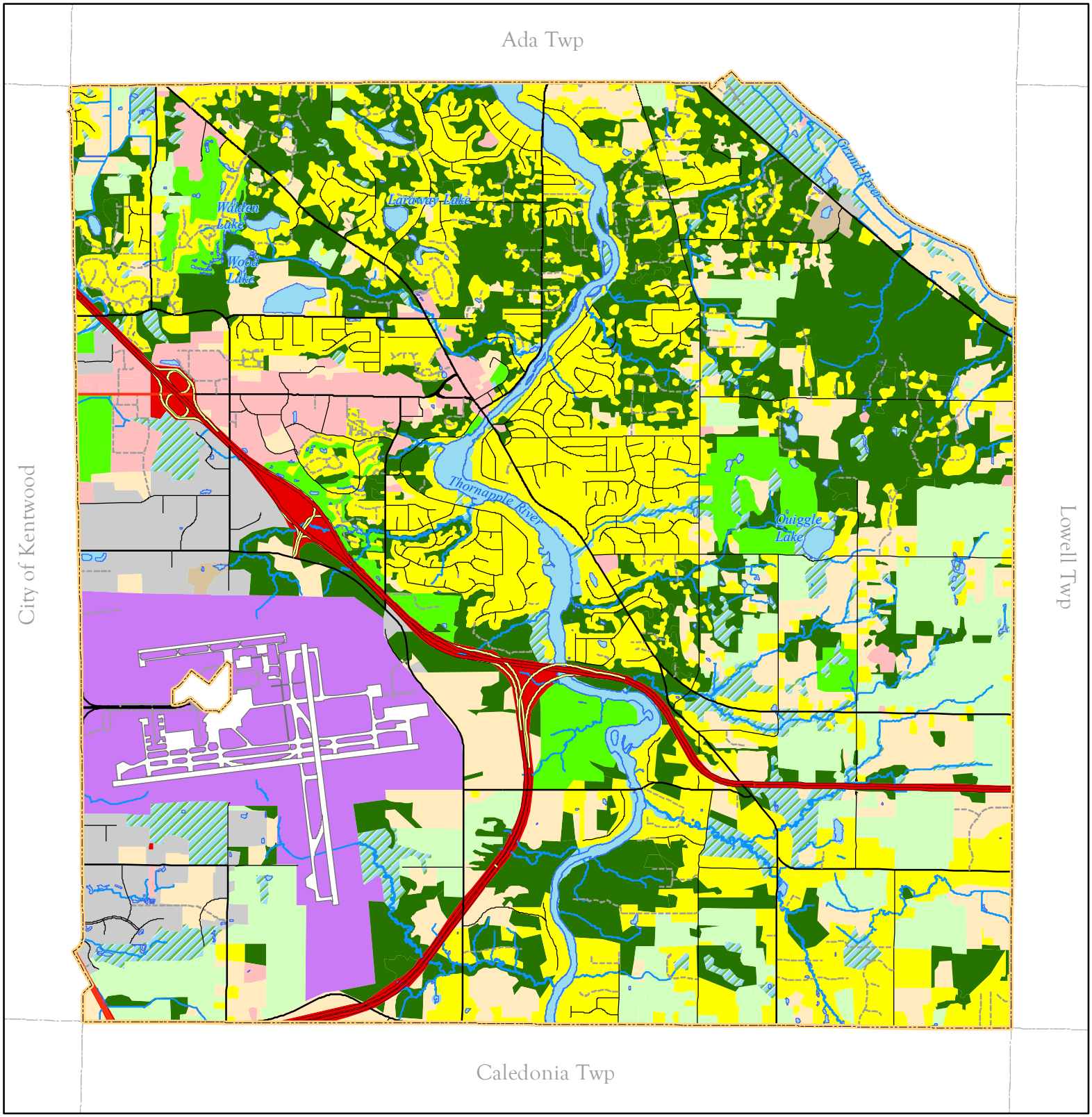

Cascade Charter Township

Kent County, Michigan

Map 5
2003 Land Use

Legend

- Residential
- Commercial / Institutional
- Industrial
- Transportation / Utilities
- Open Pit
- Outdoor Recreation / Cemeteries
- Agriculture
- Air Transportation
- Open Fields
- Woodlands
- Open Water
- Wetlands

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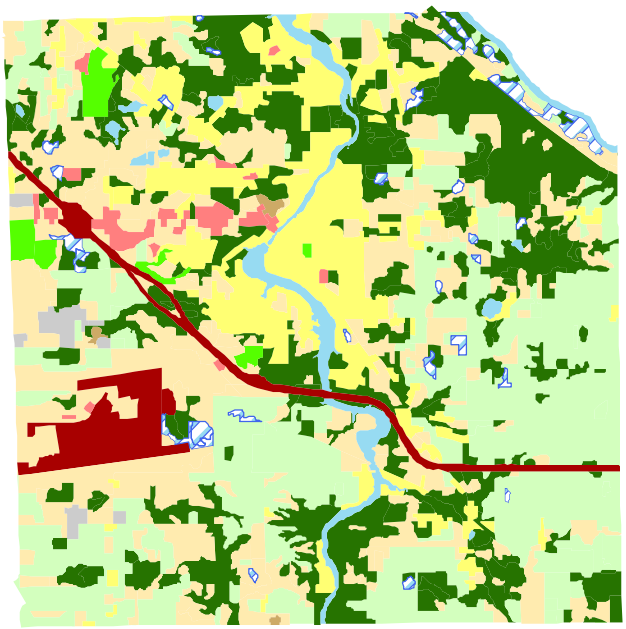
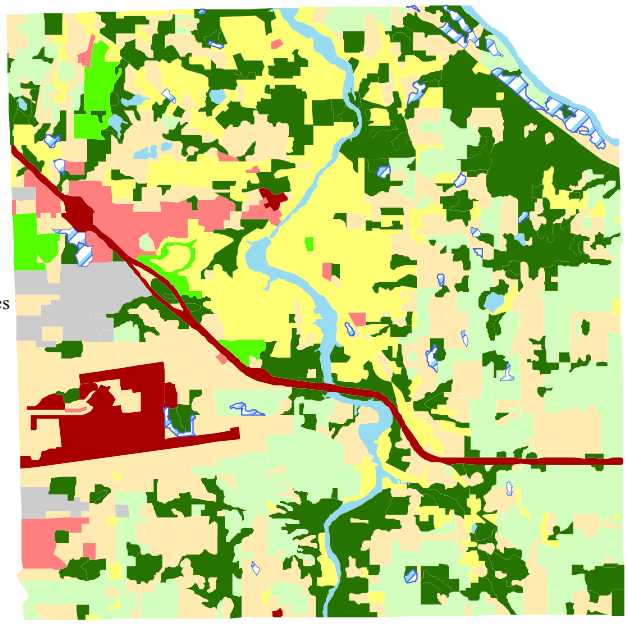


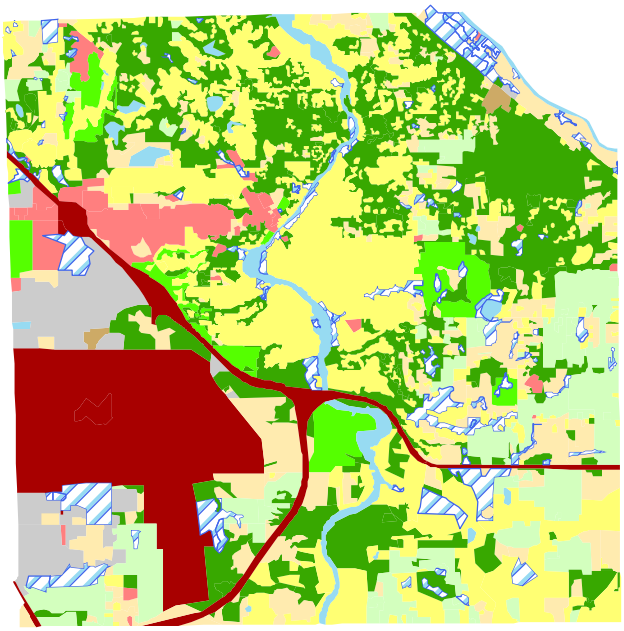
Land Use - 1978

- Residential
- Commercial and Institutional
- Industrial
- Transportation, Communication, and Utilities
- Extractive
- Recreation
- Agricultural
- Rangeland
- Forest
- Open Water
- Wetlands

Land Use - 1991

- Residential
- Commercial and Institutional
- Industrial
- Transportation, Communication, and Utilities
- Extractive
- Recreation
- Agricultural
- Rangeland
- Forest
- Open Water
- Wetlands





Land Use - 2003

- Residential
- Commercial and Institutional
- Industrial
- Transportation, Communication, and Utilities
- Extractive
- Recreation
- Agricultural
- Rangeland
- Forest
- Open Water
- Wetlands

Cascade Charter Township

Kent County, Michigan

Map 6 - Land Use Change, 1978-2003

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CHAPTER 6. COMMUNITY FACILITIES AND SERVICES

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

This chapter of the Community Profile portrays education opportunities within the region and describes local school enrollment and trends. In addition, parks and recreation areas are catalogued. Finally, the chapter discusses public safety facilities that serve the community.

EDUCATIONAL FACILITIES

Private and Charter Schools

Private school facilities can provide local residents with a unique educational opportunity. While no private schools are located within Cascade Charter Township, several are within a short distance from the Township's boundaries and may serve the community residents. The private schools closest to the Township include Ada Christian School at 7192 Bradfield St SE in Ada, Dutton Christian School at 6729 Hanna Lake Rd in Caledonia, and Faith Reformed Christian School at 3596-76th St in Caledonia. Other schools in Grand Rapids, Kentwood or other nearby communities may also serve the residents of Cascade Charter Township.

Library

Cascade Charter Township is home to the Cascade Charter Township Library, located at 2870 Jack Smith Ave SE. The Cascade Charter Township Library, part of the Kent District Library, began as a weekly bookmobile stop for the County library in 1965. The library did not find a permanent home until 1972 when the Cascade branch opened in the old Township hall. In 1979 the library moved into the new Township hall on Thornhills and remained there until the construction of a new facility in 1996. At that time, the Cascade branch expanded from 6,000 square feet to over 20,000 square feet.

The Cascade Public Library was constructed in 1996 and contains over 20,000 square feet of space.

The branch was remodeled in 2006 to add new services[9]. Its amenities include wireless internet, public computers, study rooms, a community meeting room and many others.

Higher Learning Institutions

Although no institution of higher learning (a facility educating beyond a high school level) exists in the Township, several colleges and universities are located within a short driving distance. These include, Grand Valley State University, Calvin College, Aquinas College, Cornerstone University, Grand Rapids Community College, and other smaller institutions. In addition, institutions in Kalamazoo, such as Kalamazoo College, Michigan State University, and Western Michigan University, are within an hour's drive. The Gerald R. Ford International Airport also houses the Kent Intermediate School District Technical Center Aviation Maintenance Technology program. Davenport University is located in Caledonia Township, near the Cascade Charter Township southern boundary line. All of these academic establishments provide educational opportunities for, and may provide employment to, Township residents.

Public Schools

In addition to the private schools serving the Township, three public school districts serve Cascade Charter Township. Cumulative total enrollment of the three districts is approximately 17,631 students. Map 7 illustrates school district boundaries within the Township. The following summarizes characteristics of those districts serving the Township without schools within the boundaries of the Township.[10]

District	Enrollment	Number of Schools in District
Caledonia	3,681	9
Forest Hills	9,966	19
Lowell	3,936	7

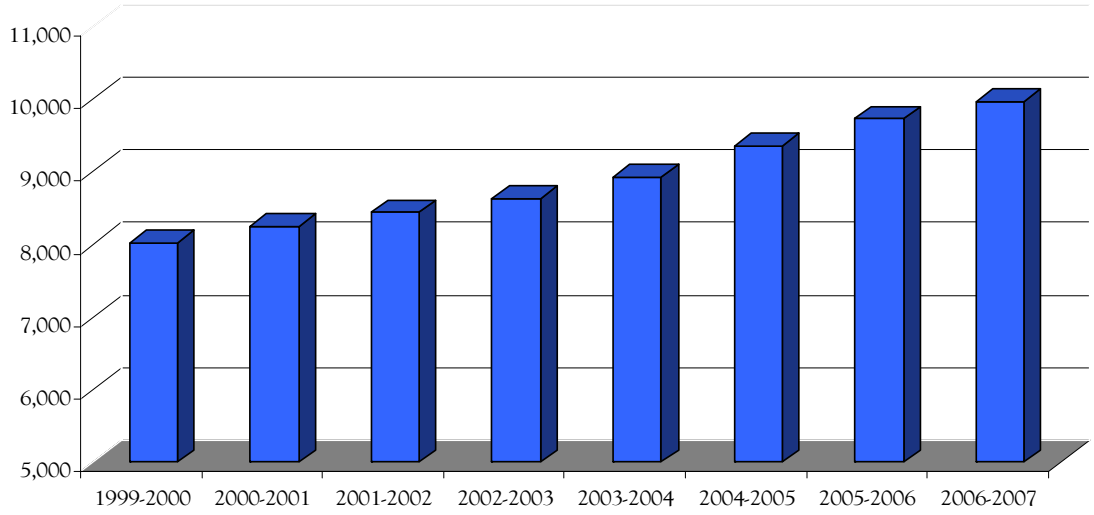
Forest Hills Public Schools

Though three districts serve the community, the bulk of residential neighborhoods in the Township are within the boundaries of Forest Hills Public Schools (FHPS). FHPS school district comprises approximately sixty-seven square miles, of which about nineteen square

[9] Kent District Library website (www.kdl.org)
[10] Respective Superintendent offices

miles are in Cascade Charter Township. According to the district's website, the ratio of students to teachers is currently around 24:1 overall[11], providing students with a constructive learning environment.

Figure 6.1. Enrollment in Forest Hills Public School District



District enrollment trends may provide insight as to the type of growth the Township is experiencing. Generally, the size of the American household has decreased over the last fifty years. This trend has meant that in some growing communities, school enrollment has remained relatively stable, since families are having fewer children. In the Forest Hills district, however, enrollment numbers over the past seven years reveal that growth in enrollment has been steady. Between 2000 and 2005, FHPS saw an increase in students of around 24%[12].

The state-of-the-art Fine Arts Center hosts a variety of local and national performances.

To accommodate this growth and the growth of preceding years, several new schools have been constructed, and several improvements are anticipated for the future. Since 2000, the district has seen the construction of Goodwillie Environmental School (2000), Alternative Pathways High School (2000), Knapp Forest Elementary (2003), Eastern High/Middle School (2004) and the Transitions Center (2005). In addition to the school facilities, a new operations/food service building was completed in 2000, and a state-of-the-art Fine Arts Center was completed in 2004.

[11] www.fhps.us

[12] Enrollment figures were taken from Forest Hills Public Schools 2006-2007 Fi nancial Report

Forest Hills Public Schools Fine Arts Center. Completed in 2004, the FHPS Fine Arts Center was one of the first facilities of its type to be certified for Leadership in Energy and Environmental Design (LEED) by the United States Green Building Council. This state-of-the-art facility includes a 4,500 square-foot stage, 1,220 seats, a multi-use lobby designed to accommodate dinner seating, small business conferences and trade shows and six community classrooms. In addition to hosting performances produced by the schools, the center also hosts international touring performances, which in the past have included *Miss Saigon* and *Lord of the Dance*.

Caledonia Public Schools

Caledonia Community Schools, rated in the top 16% of public schools in the country, comprises approximately 100 square miles, of which about eleven square miles are in Cascade Charter Township. Most of the area in Cascade Charter Township is in the southern portion and includes the airport. According to the district's website, the ratio of students to teachers is currently around 19.1:1 overall. Like Forest Hills, Caledonia Community Schools have experienced a steady increase in enrollment over the past several years. To accommodate this increase and changes in technology, Caledonia opened a new high school facility, a second middle school, an early childhood center, and a new community resource facility during the last three years.

The new high school complex was completed in 2004 to address an increasing student population, technology changes, and consolidate resources.

The new high school is broken into three concepts: educating the body, educating the mind, and educating the soul. To educate the body, the district constructed two gym areas, one of which is a competitive gym capable of seating 4,000 people. The other is a field house gym that includes a two lane walking/ jogging track on the second floor, a mat/weight room, and an aerobic fitness room. To educate the mind, a media center was constructed as the central point of the academic area. This area includes:

- Natural lighting in all classrooms
- 5 computer labs
- Science classrooms located for easy access to natural wetlands and woodlands
- Wireless technology available throughout the building
- 2 forum classrooms for large group instruction, presentation, and project work
- Agri-science greenhouse
- TV production studio
- A geothermal system to heat and cool the school
- 300 wells in a closed water loop
- Censored lighting system throughout the building

In an effort to educate the soul, Caledonia constructed an area designed so all students can experience the arts, either as audience members or participants. This area includes an auditorium with a 1,000 seat capacity, metal and wood shops, a CAD lab, scene shop, two visual arts classrooms, and a computerized Graphic Arts Studio.

Lowell Public Schools

Lowell Area Public Schools have also experienced a steadily increasing student population to approximately 4,000 students in their four elementary schools, Lowell Middle School, Lowell High School, and Unity High School. The Lowell High School Freshman Center provides an in depth transition from the middle school environment into high school by providing extra activities for freshman. Freshman are divided into two different teams for English, science, social studies, and math, and the teachers meet with each other to discuss the progress of each student in each of the different curriculums. The district encompasses approximately 136 square miles, 4 of which are in the eastern portion of Cascade Charter Township. The Wittenbach/Wege Agri-science and Environmental Center also works closely with regional schools to educate students on natural resource protection, wild life habitat, and related topics.

RECREATIONAL PARK FACILITIES

Cascade Charter Township Park is one of several recreational facilities enjoyed by Township residents

Cascade Charter Township maintains three recreation facilities comprising approximately 126 acres. It also accommodates other facilities maintained by private enterprises. These facilities provide the opportunity for cross-country skiing, picnicking, golfing, walking, bicycling, camping, snowshoeing, and competitive sports, and provide an aesthetic amenity for residents. Recreational facilities are illustrated on Map 7. This section provides a brief inventory of recreation opportunities in the Township.

Cascade Charter Township Facilities

The following facilities are owned and maintained by Cascade Charter Township:

Cascade Charter Township Park. Located approximately one mile south of 28th Street, this 55-acre park offers a variety of recreational opportunities including two baseball/softball diamonds, a multi-purpose field for soccer/football, a one-mile pedestrian path, four horseshoe pits, a sand volleyball court and a 18-hole Frisbee golf course.

The park also has two large play systems and a swing set for children, with a shelter adjacent to the play area. A pavilion and a gazebo offer additional shelter and are located at either end of the park. Picnic tables are located at several spots throughout the park, including the three shelters. Restroom facilities are also available.

Michael McGraw Park. Through a generous donation from Michael McGraw in 2002, Cascade Charter Township acquired property on the Grand River, in the northeast corner of the Township that also borders a larger 120-acre parcel donated to Ada Township. This 68-acre parcel is located 1.1 miles east of Buttrick Avenue on Grand River Drive. This park is mostly within the 100-year floodplain of the Grand River, and will remain largely undeveloped, in its natural state.

Along the bank of the river is a paved asphalt trail for pedestrians or bicyclists. The trail is, at this time, the only way into the park, until the Township secures access for vehicle traffic across a railroad line that runs parallel to Grand River Drive.

Museum Gardens Park. The Museum Gardens Park is located at the northwest corner of Cascade Road and Thornapple River Drive. The garden incorporates the original Cascade Town Hall and is planted with many beautiful perennials, trees, shrubs and annuals. Benches are placed around the garden and on the patios to enable admirers and pedestrians to sit and enjoy their surroundings. The property, once the site of a gas station in the village for many years, was transformed into the garden in the fall of 1997. Its location makes it an ideal rest stop for persons traveling through the village on the pedestrian pathway.

Leslie E. Tassell Park. A 3.2-acre park on the Thornapple River, just south of Cascade Road, Leslie E. Tassell Park was completed in 2002. The park, situated beneath a variety of mature hardwood trees and beautiful landscaping, boasts an interactive fountain, sculptures, a fire pit, two shelters and a public restroom. Picnic tables and benches are located throughout the park.

Leslie E. Tassell Park is located along the Thornapple River, near the Cascade Road and Thornapple River Drive pathways. It was completed in 2002.

This park provides residents with opportunities for fishing, canoeing and kayaking, relaxing along the bank of the river or picnicking. The park is also located near the Cascade Road and Thornapple River Drive pathways, allowing easy access by foot or bicycle.

NON-MOTORIZED TRAILS

36th Street Pathway

In 1996, a 2.5- mile asphalt path was constructed along the north side of Cascade Road. It runs west from the village to Hall Street and has been enormously popular to pedestrians, bicyclists and rollerbladers. The success of the path inspired a special election for construction of additional pathways, and in 1999-2000, the Township completed five new paths. This system is connected to the original path by the sidewalks in the village, creating a continuous path that is approximately eight and a half miles long. The location of these paths and their length is presented in Table 6.1.

Burton Street Pathway

Table 6.1. Pathways in Cascade Charter Township

Pathway	Distance
Burton Street	2.0 Miles
Buttrick Avenue	3.1 Miles
Cascade Road	4.1 Miles
Laraway Lake	1.2 Miles
Orange Street	0.2 Miles
Peace Street	0.1 Miles

Cascade Road Pathway

Spaulding	1.6 Miles
Thornapple River Drive	2.1 Miles
Thorncrest	0.1 Miles
Thornhills Avenue	0.7 Miles
Wycliff	0.2 Miles
30th Street	1.2 Miles
36th Street	0.7 Miles
Total Miles	**17.3 Miles**

Private Facilities

In addition to these publicly owned and maintained facilities, private recreation lands may also foster scenic views, leisure, and community pride. The following are privately maintained and operated recreational facilities in Cascade Charter Township: Watermark Country Club, Centennial Country Club, Quail Ridge Golf Course, and The Golf Club at Thornapple Pointe. There are also many other facilities in the Township that help meet the recreational needs of local residents.

PUBLIC SAFETY SERVICES

Police and fire services are necessary for any community, as they protect the general welfare, help alleviate crime, and provide treatment when needed. Cascade Charter Township is currently served with public safety services necessary to meet the needs of its burgeoning population.

Police Protection

The Kent County Sheriff's Department meets public safety needs in Cascade Charter Township. The Township contracts with the County for police protection and law enforcement. Although there are no police stations located in the Township, the East Precinct located at 877 Forest Hills Avenue in Ada Township serves Cascade Charter Township. The East Precinct provides Cascade, Grand Rapids, and Ada Townships with an enhanced staffing program. Patrol coverage in the East Precinct is based on a roaming patrol of all three townships. Any additional costs required to operate this enhanced program is shared between the three townships and is based on the percentage of calls taken within each township.

The Township Fire Department is equipped with the latest technology to protect the Township's residents

Fire Protection

Two fire stations serve the Township. The department employs 17 full time fire fighters. Both stations are staffed 24-hours a day, 7 days a week, and 365 days a year. In addition to the fire fighters, the department employs 20 on-call members that support the full-time staff.

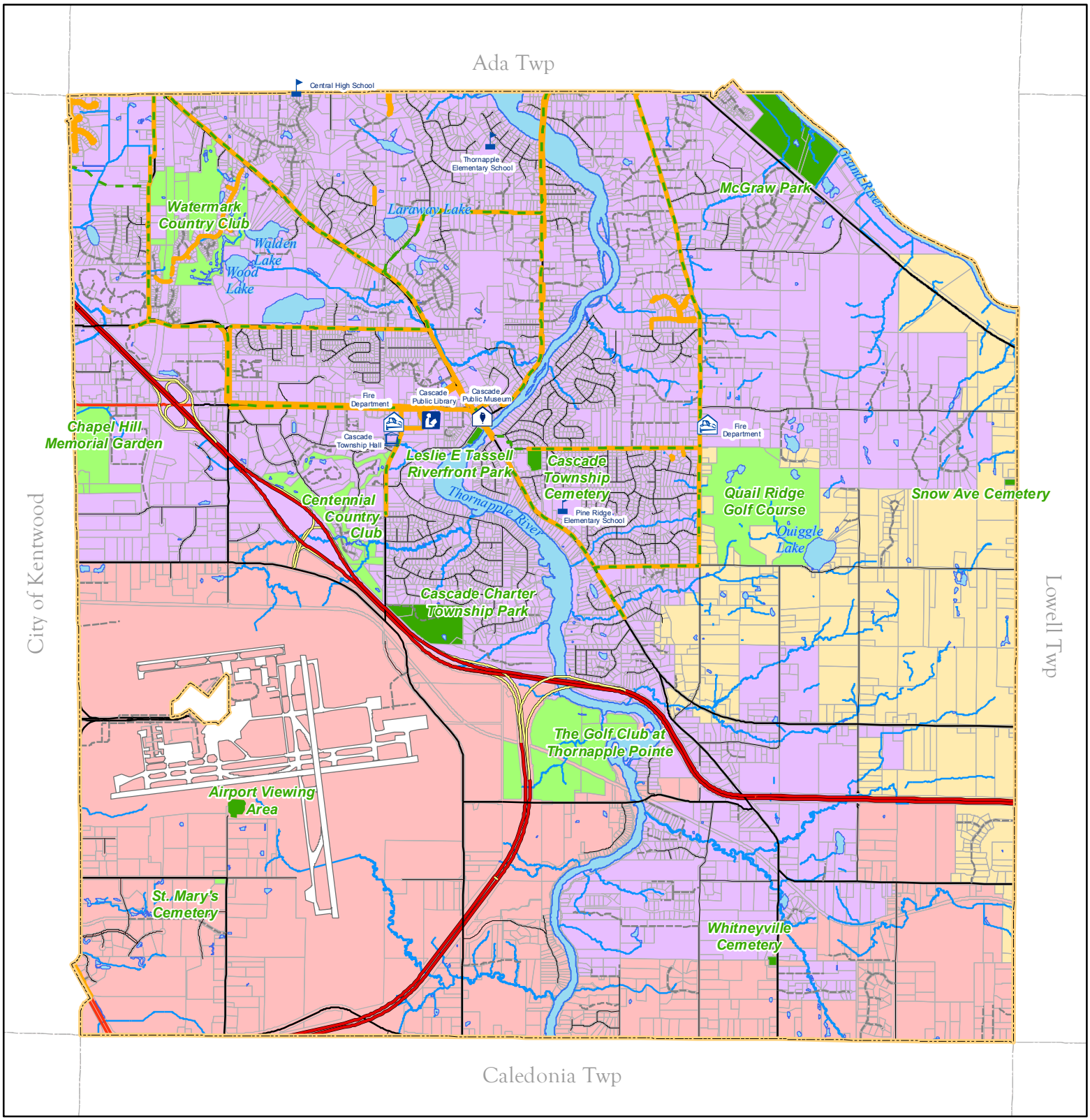
The department is equipped with state-of-the-art technology, such as Automatic External Defibrillators and Thermal Imaging Cameras, which can detect fires inside walls and other areas not seen by the human eye. In addition, in cooperation with the Dutton and City of Kentwood Fire Departments, the Township has formed the TRI-COM Hazardous Material Emergency Response Team. Its members have been trained through the Michigan State Police Hazardous Material Training Center.

The Gerald R. Ford International Airport has an Aircraft Rescue and Fire Fighting division that, on a limited basis, responds to specialized chemical applications as well as aircraft incidents.

PLANNING IMPLICATIONS

Cascade Charter Township's continued growth will continue to create a need for high-quality community facilities and services. However, with additional population comes an additional demand on the revenue available to support those services. The residential development in the Township implies a need to ultimately address the cost-revenue ratio for the Township and other municipal services. Residential uses require between $1.10 and $1.30 in municipal services (i.e., schools, police, fire, roads, parks, etc.) for every $1.00 contributed in tax base. This suggests that the Township should diversify the tax base and consider growth or redevelopment of industrial and commercial uses, or ultimately need to face the prospect of higher local tax rates to support the higher demands for services.[13]

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



Cascade Charter Township

Kent County, Michigan

Map 7
Community Facilities

Legend

- Library
- Township Hall
- School
- Museum
- Fire Department
- Trails & Bikeways
- Sidewalks
- Public Recreation
- Privately Owned Recreation
- Caledonia Community Schools
- Forest Hills Public Schools
- Lowell Area Schools

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CHAPTER 7. UTILITIES

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

WATER SUPPLY SYSTEM

A safe, secure, plentiful and reliable source of water is vital to a community's growth and development. Potable water for drinking, sanitation, fire suppression and industrial uses are a hallmark of modern society. Cascade Charter Township contracts its public water service from the City of Grand Rapids. Public water service is extended throughout most of the western and central portions of the Township up to Buttrick Avenue (see Map 8). The Township has contracted for sufficient capacity to meet the long term needs of the community. However, despite the elevated nitrate levels in domestic wells, many residents have been unwilling to bear the expense of connecting to the municipal water system.

Expansion of the water supply system is expected to occur along major streets into new areas of the Township, and infill on smaller streets adjacent to existing water service. Extensions along Thornapple River Drive, 28th Street, 36th Street, Grand River Drive, and Cascade Road will extend water service into the south and central-east areas of the Township. This could open these areas up for new growth, including potential industrial growth near the Gerald R. Ford International Airport. Further expansion of the water supply system north across the river in the next 5-10 years is also possible.

SANITARY SEWER SYSTEM

Most of the areas in the northwest area of the Township and around the Gerald R. Ford International Airport are served by public sanitary sewers (see Map 9). The Township has contracted with the City of Grand Rapids wastewater system for sanitary sewage collection and treatment sufficient to serve the long term needs of the Township. However, while the Township has available capacity, the collection

system has not been fully extended into many of the older portions of the Township.

New extensions of the collection system are typically undertaken in response to resident requests stemming from failing septic tank drainfields. These are implemented by the Township with the costs supported by special assessment on the benefiting properties. Extensions may provide public sewer connections for new development. Additional connections within existing neighborhoods adjacent to existing sewer mains are also likely.

STORMWATER MANAGEMENT

In February 2007, the Township adopted a Storm Water Management Plan and amended Ordinance No. 7 of 2002, the Storm Water Ordinance. The Storm Water Management Plan inventories existing drainage deficiencies and provides a basis for appropriate storm water strategies. Recommendations are included in the plan, with many recommendations identifying methods for stream bank restoration. The stormwater zone map was modified and an emphasis was placed on increasing on-site infiltration when soils allow. The Storm Water Ordinance regulates new development in the Township.

DRY UTILITIES

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

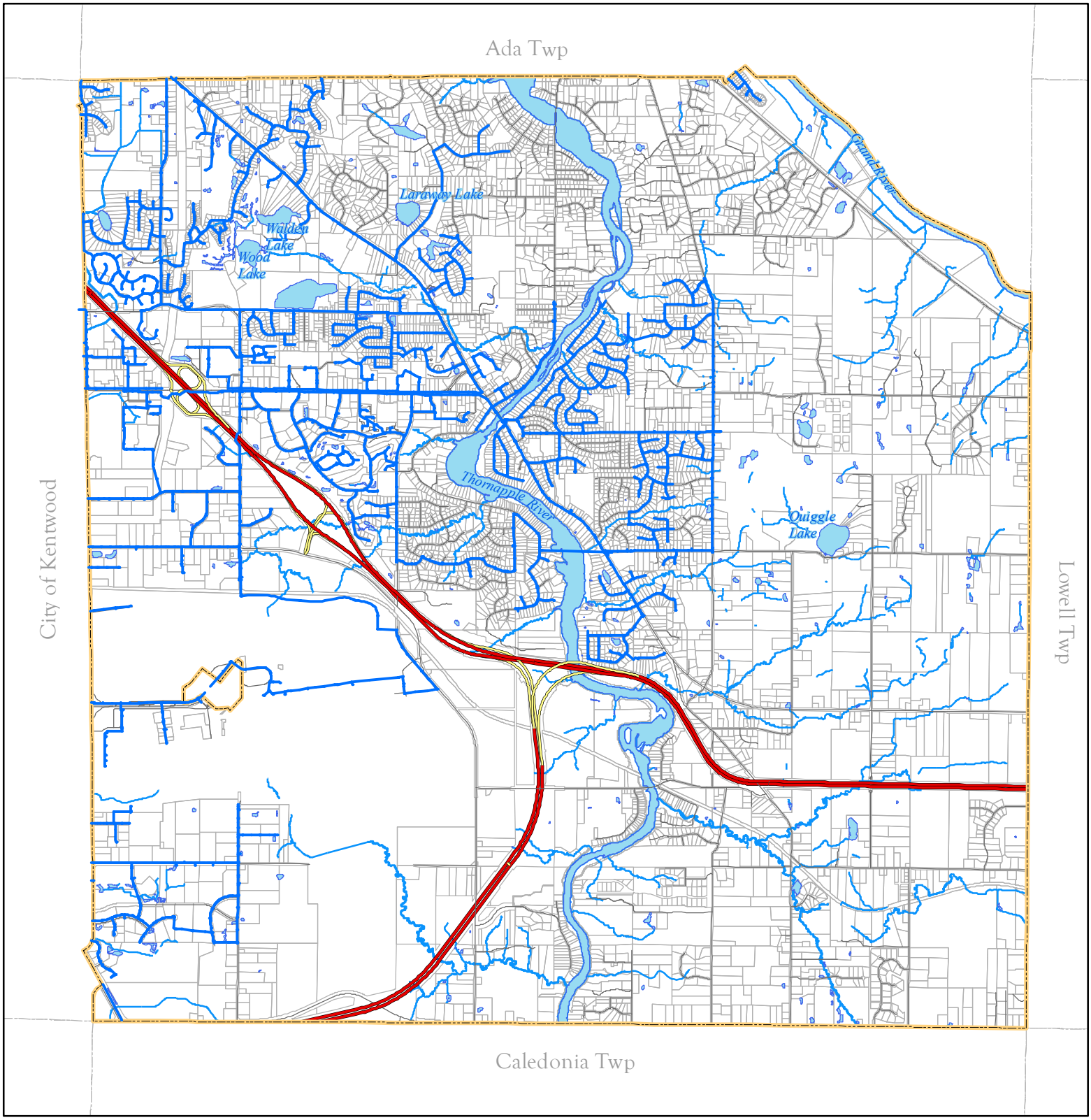
Natural Gas. Natural gas, which is a combustible mixture of Methane, Ethane, Propane, and Butane, is one of the principle sources of energy for many of our day-to-day needs. Most of the developed areas of Cascade Charter Township are serviced by DTE Energy, which extends services based on developer and consumer need.

Electric. Consumers Energy provides electric service in Cascade Charter Township to more than 7,500 residential, commercial and industrial locations. The utility monitors electric usage in the Township and plans electric system improvements and maintenance when needed. The Township considers utilities to be an essential service and reflects that in the Township zoning ordinance.

Fiber Optics. Currently used primarily in telecommunications, fiber-optic technology uses hair-width strands of nearly pure glass and beams of light to transmit data, rather than traditional copper wires and electrical signals. This combination of low heat generation and low interference results in exceptionally high bandwidth. It is a relatively new technology, and therefore is prohibitively expensive for many businesses, although the service is available within the region, currently fiber optics is not available for residential use in Cascade Charter Township.

Cable. Cable internet dedicates channels normally used for television to data transmission. The result is an "always on" internet connection with a relatively high bandwidth. Cable television and internet services are available in most of the developed areas of the Township; the availability of these services is limited in undeveloped areas. Cable service is provided by Comcast. However, it is expected that cable services will be expanded as development continues.

DSL (Digital Subscriber Line). DSLs work by "converting" a phone line into a three-channel data delivery system. One of these lines remains dedicated to the telephone and/or fax machine, and the other two lines are used by the computer to send and receive data. What results is a medium to high-speed internet connection that requires no additional infrastructure and is slightly less expensive than cable. Unfortunately, the range of DSL is limited to the distance a residence is from a "switch" (usually not more than 18,000 feet). Therefore, it is likely that DSL is currently available only around the developed sections of Cascade Charter Township. As with cable services, DSL services will become increasingly available as development continues.



Cascade Charter Township

Kent County, Michigan

Map 8
Water Supply

Legend

Watermain

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W
E
S

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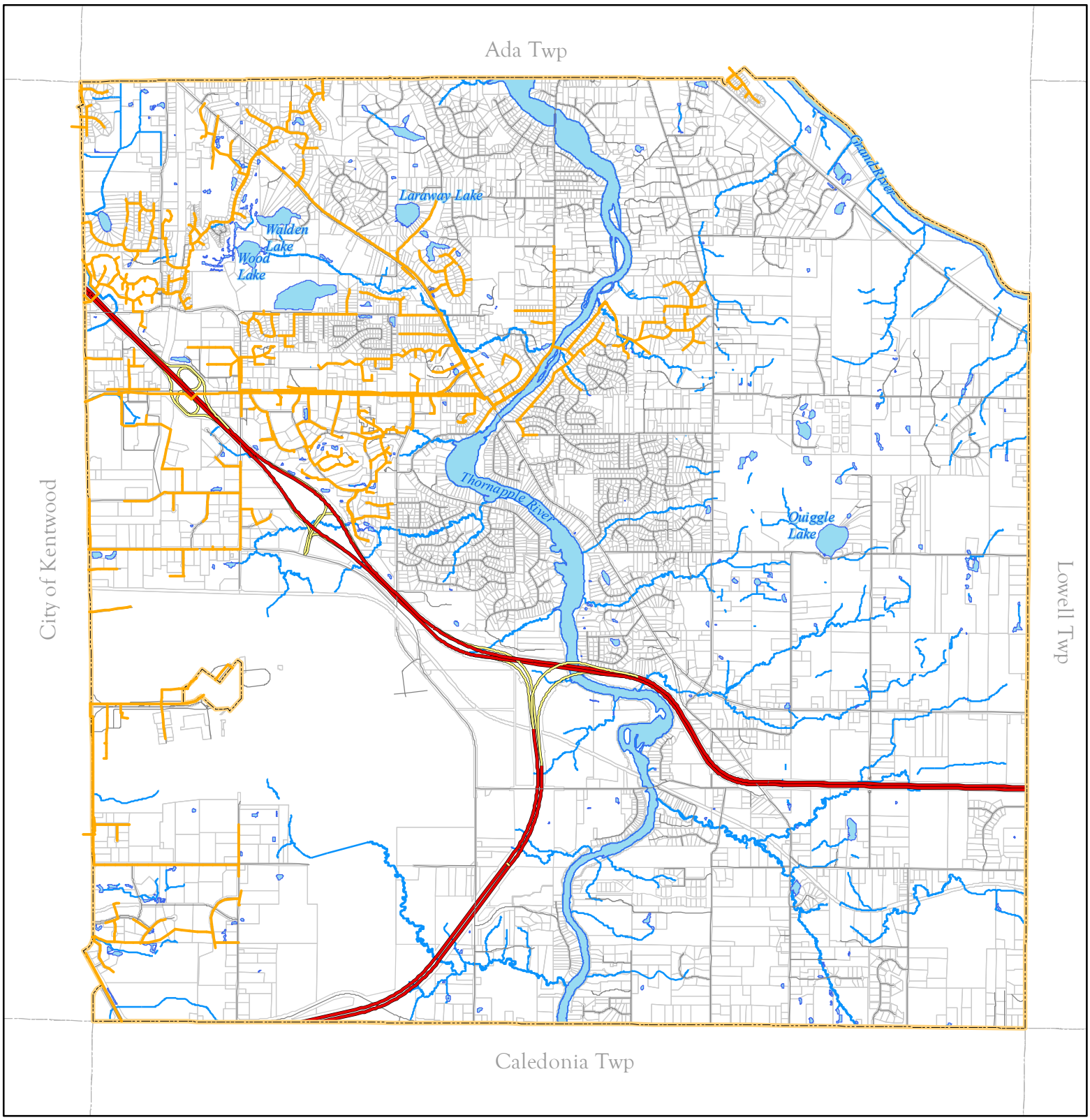

Cascade Charter Township

Kent County, Michigan

Map 9
Sewer Supply

Legend

Sewer

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CHAPTER 8. TRANSPORTATION

A safe and well-balanced transportation network is essential to the health of any municipality, as it links activities and land uses within a community and in the broader region. In addition, features of transportation resources typically play a critical role in determining the nature and intensities of land uses in a community.

The Township's transportation system ranges from rural routes to congested commercial corridors and interstates.

Like many other elements within Cascade Charter Township, the transportation system ranges from rural routes to congested commercial corridors and interstates. Proximity to I-96 and M-6 provides motorists with convenient access to the greater Grand Rapids metro area and beyond. Another highly important aspect of the Township's transportation system lies in the Gerald R. Ford International Airport, which is located in the southwestern portion of the Township. The airport's continued growth will impact the land uses and transportation patterns within the community.

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

COMMUTING PATTERNS AND LAND USE

The 2000 Census reveals that 87% of Cascade Charter Township's 11,251-person workforce over 16 years of age traveled alone to work in a private automobile. Mean travel to work time for a Cascade resident in 2000 was 21 minutes, similar to Kent County's average time of 20.7 minutes. For comparison, the average commute time for the State of Michigan and the United States in 2000, respectively, was 24.1 and 25.5 minutes. Less than one percent of Cascade's residents used public transportation while traveling to places of employment and 0.8% walked to work.

In 2000, 87% of the Township's 11,251-person workforce over 16 years of age traveled alone to work in a private automobile.

Clearly, the automobile is overwhelmingly the most used form of transportation in Cascade Charter Township. This is likely due to disposable incomes, low and moderate density land use patterns and the segregation of land uses. The latter two are common attributes of most rural and suburban communities that preclude the feasibility of walking to meaningful destinations, since most land uses are too far apart (in other words, dwellings are separated from places of employment and services by distances which make walking to these places undesirable). Additionally, The Rapid only serves a small portion of the community, in the southwest area of the Township.

This sprawling pattern is emerging in Cascade Charter Township, which is driven by current zoning that groups similar land uses together. While this ensures land use compatibility, it places service commercial uses away from residential uses. Walking from residential areas to commercial areas for daily needs is unlikely for most residents. Continuing to provide non-motorized forms of transportation and mixed-use development can help improve regional air quality and help combat obesity, which may lead to heart disease, diabetes, certain cancers, high blood pressure and other health maladies.[14]

CLASSIFICATIONS

An approach to gaining a better understanding of transportation networks has been to categorize roads into "classifications" pursuant to the road's function, character or capacity. Kent County roads are divided into two broad categories – primary and secondary (local). Primary roads are designed and intended to serve as major collectors of regional traffic. Local roads include other section-line collector roads and residential streets. Map 10 illustrates roadway classifications according to the Kent County Road Commission.

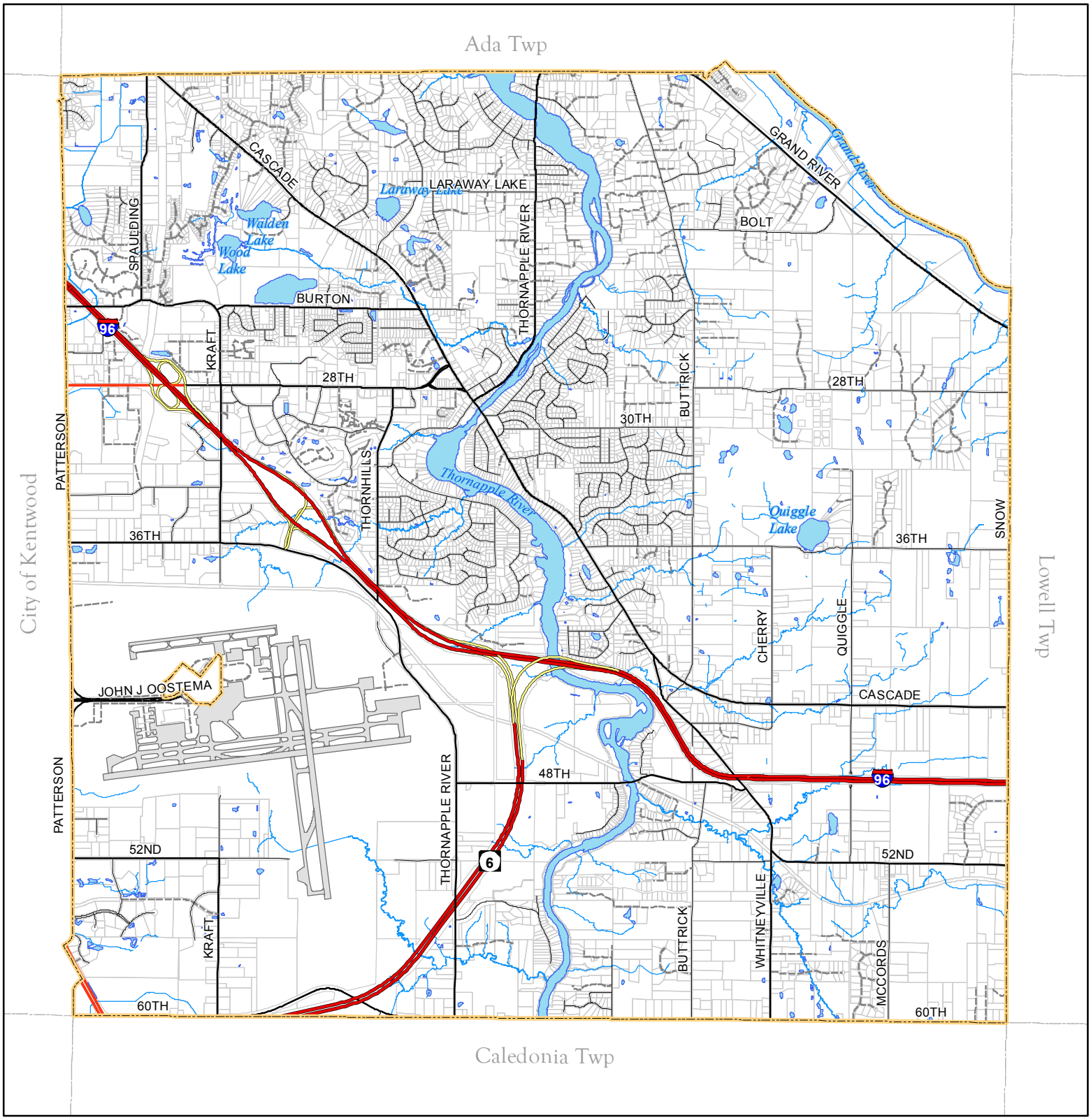
As land abutting these roadways develops, the placement of curb cuts needs to be strategic to guarantee motorist safety and adequate clear vision distances.

Many of the county local roads are rolling, two-lane, high-speed highways cutting through rural lands. As land abutting these roadways develops, the placement of curb cuts needs to be strategic to guarantee motorist safety and adequate clear vision distances. In the future, as the Township develops, the roadways should be aligned as much as possible to minimize the possibility of hazardous turning movements.

TRAFFIC VOLUME

Several of the roadways that traverse Cascade Charter Township are critically important to the regional transportation network. Many of these thoroughfares experience relatively large amounts of traffic, as Table 8.1 expresses. For example, a segment of 28th Street near Kraft Avenue experiences an average of around 47,000 vehicles per day. Patterson Avenue – which serves as a primary connector to Gerald R. Ford International Airport – witnesses as much as 33,000 vehicles per day. In the northeast portion of the Township, Cascade Road near Spaulding experiences more than 25,000 vehicles per day.[15] These roads (28th Street, Patterson and Cascade) are among the busiest roads in the Township.

[14] Grand Valley Metro Council 2030 Long Range Transportation Plan
[15] Grand Valley Metro Council REGIS Traffic Count Database; counts taken between 1998 and 2004.



Cascade Charter Township

Kent County, Michigan

Map 10
Roadway Classifications

Legend

Roadway Classifications

- Private
- County Local
- County Primary
- State Highway
- Limited Access Highway / Interstate
- On/off Ramp

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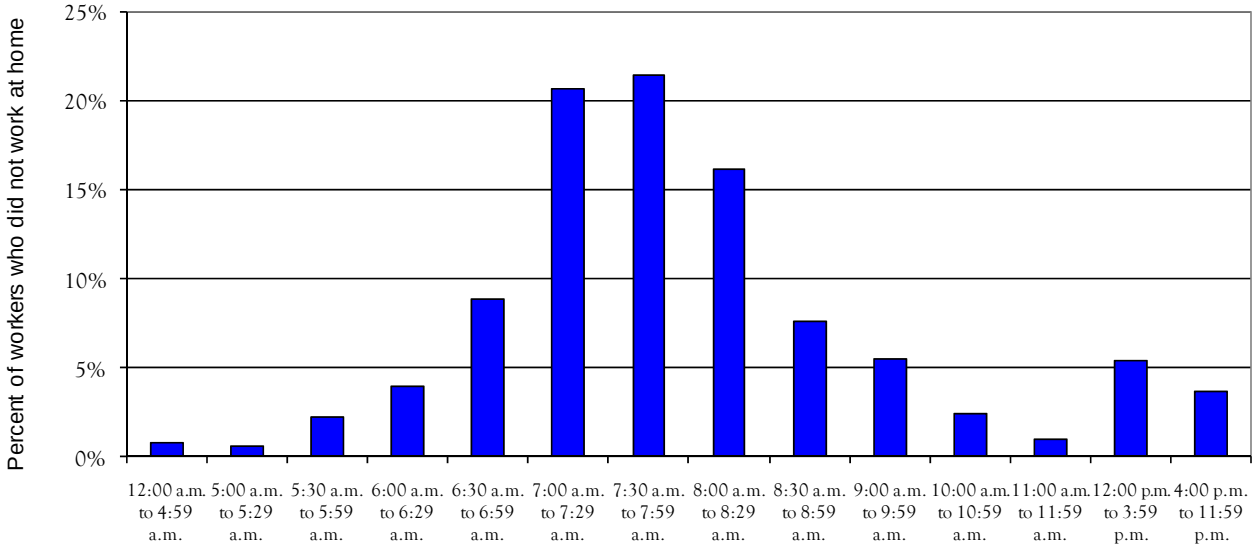
Approximately seven miles of I-96 are contained within Cascade Township and this segment's traffic volumes are around 43,000 trips per day.

Generally, traffic on the Township's roads flows smoothly and there are few congestion concerns. Vehicular traffic flow is heaviest towards western and central portions of the Township, since these areas have absorbed most development. Currently, there are four crossings over the Thornapple River, at Thornapple River Drive, Cascade Road, I-96 and 48th Street. As development continues to push eastward, the Township may have to consider additional crossings as traffic conditions warrant.

During peak travel times, motorists on I-96, Cascade Road, Patterson Avenue and M-11 (28th Street) occasionally experience congestion, with vehicle crashes, construction projects or poor weather conditions being typical culprits. I-96 has emerged as a significant route in Michigan, connecting the metropolitan areas of Grand Rapids with central and eastern Michigan. Locally, the expressway serves as the foremost east-west connection between the Township and the remainder of metropolitan Grand Rapids. Approximately seven miles of I-96 are contained within Cascade Charter Township and this segment's traffic volumes are around 43,000 trips per day.[16]

The peak travel times during the morning commute expectedly coincide with the standard workday, with the greatest percentage of residents leaving their homes for work at around 8 am. Figure 8.1 illustrates morning commute peak travel times.[17]

Figure 8.1 Time Leaving Home to go to Work



[16] GVMC Traffic Count Database, 2006.
[17] Census 2000

The Grand Valley Metropolitan Council (GVMC) and the Kent County Road Commission have conducted traffic counts for many of the roads in Cascade Charter Township. The following lists average daily traffic volumes for selected segments of roadway in the Township.

Table 8.1. Selected Daily Traffic Volumes

	From/Direction	To	Average Daily Count	Year of Count
M-6	M-37	I-96	23,418	2006
I-96	M-6	M-50	43,410	2006
Cascade Road	West	Spaulding	23,532	2007
	East	Snow	3,111	2007
	East	Old 28th	22,935	2007
	West	Quiggle	2,655	2007
	West	Laraway Lake	18,666	2005
28th Street	West	Cascade	36,081	2006
	East	Thornhills	24,623	2006
	East	Kraft	47,282	2005
Patterson Ave	South	28th / M-11	21,900	2007
	South	36th	33,826	2006
	North	52nd	25,370	2005
	North	60th	5,628	2007
Buttrick Ave	North	28th	2,638	2006
	South	30th	2,291	2006
	South	Cascade	1,027	2006
Thornapple River	North	36th	6,545	2006
	North	48th	7,043	2006
	North	Cascade	8,153	2005
	North	Laraway Lake	11,361	2005
36th Street	East	Cascade	3,840	2005
	West	Kraft	3,676	2006
	East	Quiggle	1,216	2006
	West	Thornapple River	9,098	2006

In many cases, traffic volumes have increased since 2000, although the rate of increase varies significantly. According to traffic counts, data compiled by the Kent County Road Commission between 2000 and 2007, traffic at the intersection of Cascade Road and Laraway Lake has increased by about 8%, or only about 1% per year. However, the intersection of 28th street and Kraft Avenue increased by 82% between 2000 and 2005, which equates to an annual increase in traffic of about 16%, or about 21,000 vehicles. Table 8.2 illustrates the increase in traffic volumes at selected intersections, compared to the 1997 data in the 1999 Master Plan.

Table 8.2 Change in Traffic Volume at Selected Locations in Cascade Charter Township			
	1999 Master Plan	2009 Master Plan	% Change
Cascade at Spaulding	12,820	23,532	84%
28th at Kraft	19,203	47,282	146%
Patterson at 36th	33,716	33,826	0%
Thornapple River at Laraway Lake	5,698	11,361	99%
Buttrick at Cascade	1,589	1,027	-35%
52nd at Patterson	10,432	7,860	-24%
Thornapple River at 36th	9,379	6,545	-30%

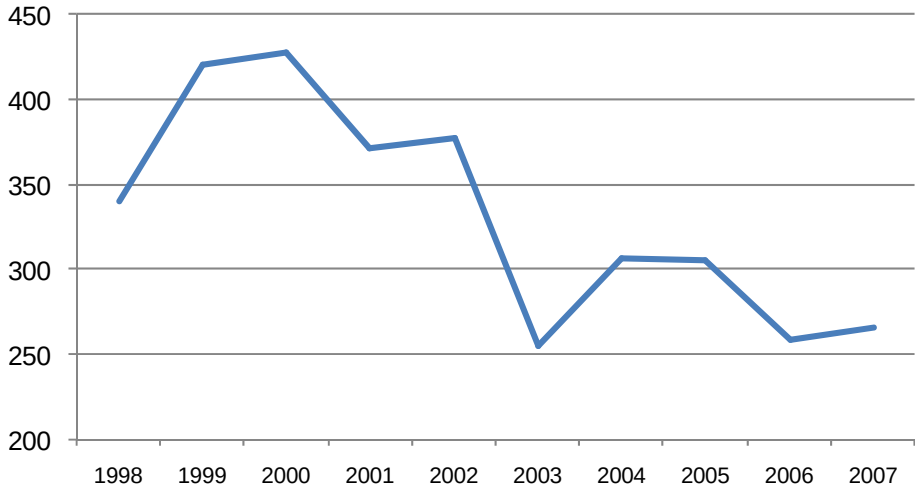
The data in Table 8.2 suggests that the traffic volumes on the Township's major roads are increasing significantly while volumes on secondary roads have not changed significantly. The increase in traffic along such key roads as 28th Street, Cascade Road and Patterson Avenue can be explained by the growth of commercial and industrial uses along these roads, which draws traffic from the entire metropolitan area. However, areas around local secondary streets are at or nearing build-out, and since these are primarily residential areas, most of the traffic is local and has not grown significantly over the last eleven years.

At this time, it appears that most of the traffic control in the Township is adequate. However, as the Township continues to expand to the south and east, additional strain will be placed on the existing transportation network, and additional traffic control measures will need to be carefully implemented to ensure the safety of Township residents, workers and visitors. Map 11 illustrates traffic volumes of selected locations in Cascade Charter Township.

TRAFFIC ACCIDENTS

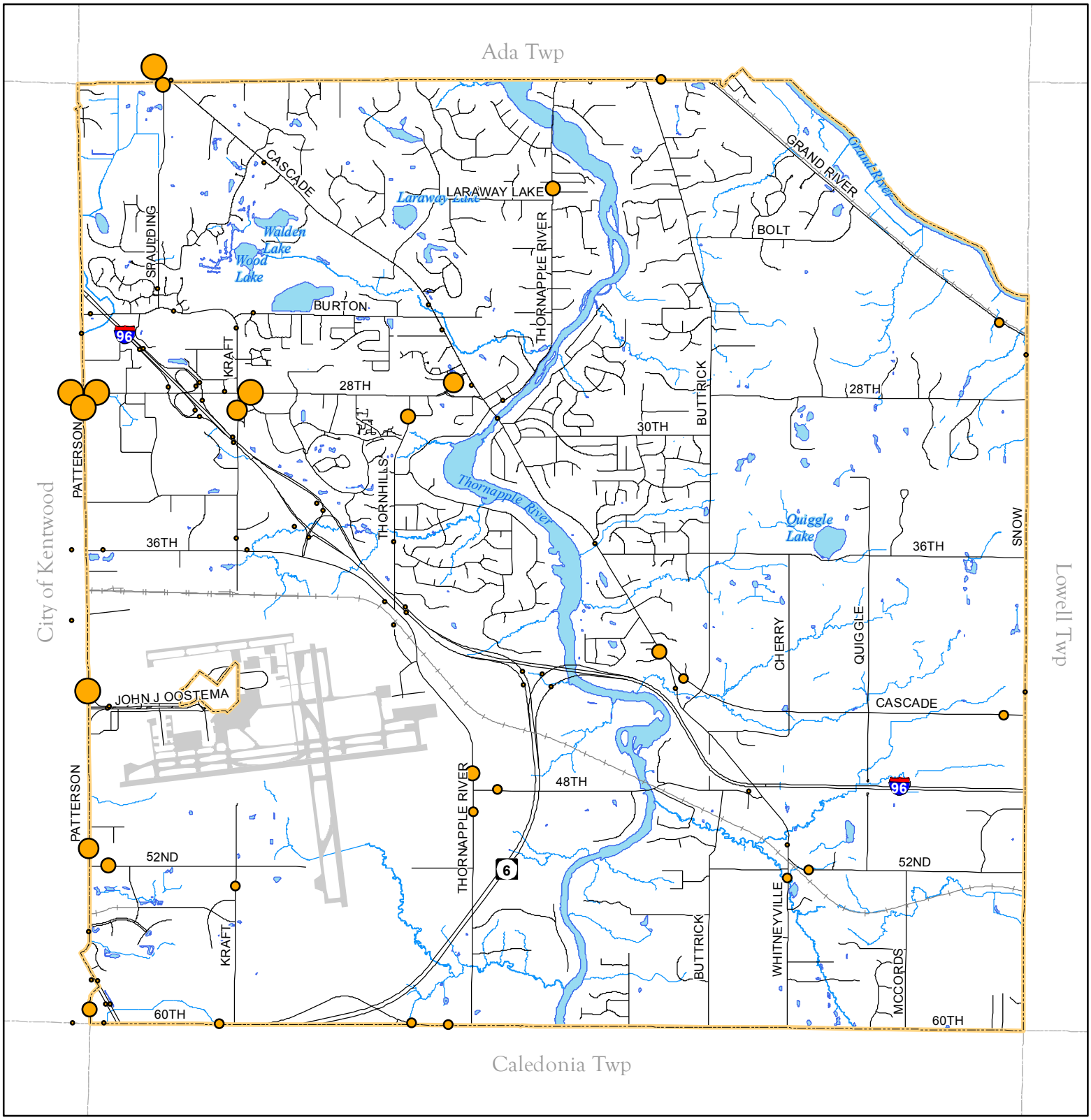
Figure 8.2 illustrates the number of automobile accidents in Cascade Charter Township from 1998 to 2007. While there is a large degree of fluctuation in the data, it can be concluded that the general trend over the last ten years illustrates an overall decrease in traffic accidents. This is notable because the traffic volume on many Township roads has increased as population has increased. Therefore, the general decrease in accidents can be attributed, at least partially, to improved traffic control and management in the Township.

Figure 8.2 - Traffic Accidents
in Cascade Charter Township, 1998-2007



Source: Cascade Charter Township

However, a disproportionate number of accidents in the Township occur at a relatively small number of intersections. For example, of all the accidents in the Township that have occurred between 1998 and 2007, 67.1% occurred at intersections with 28th Street, and nearly one-third (29.2%) of all accidents occurred at the 28th Street / I-96 interchange. Additionally, slightly more than one third (34.2%) of all accidents in the Township occurred at intersections with Patterson Avenue. Map 12 illustrates the locations of auto accidents in the Township from 1998 – 2007. Clearly, the Township must strive to improve these heavily-traveled road segments.



Cascade Charter Township

Kent County, Michigan

Map 11
Traffic Volumes

Legend

24 Hour Traffic Count (2-Way)

- 0 - 1000
- 1001 - 5000
- 5001 - 10000
- 10001 - 25000
- 25001 or more

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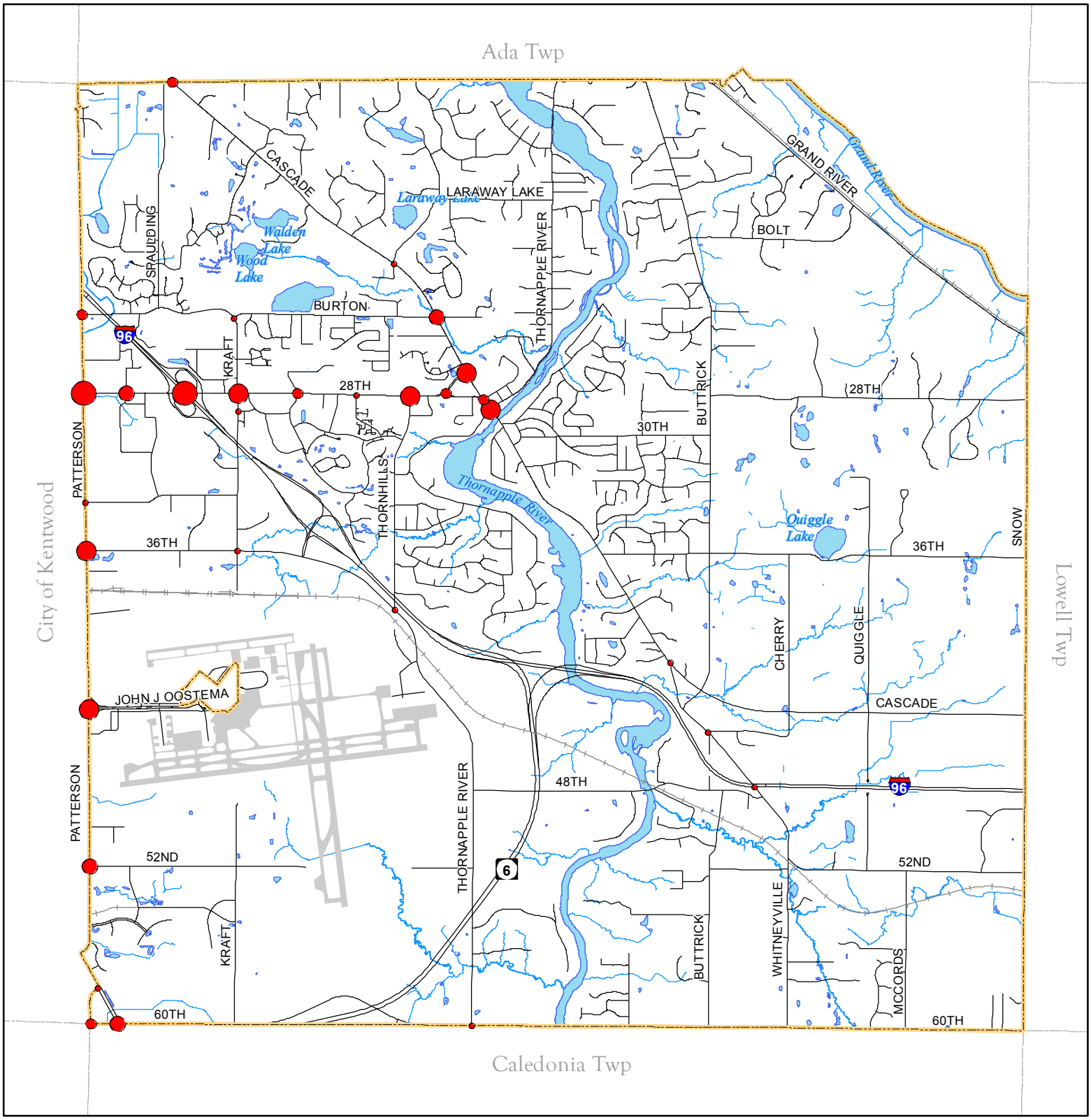

Cascade Charter Township

Kent County, Michigan

Map 12
Auto Accidents, 2000-2007

Legend

Auto Accidents, 2000-2007

- 1 - 25
- 26 - 50
- 51 - 100
- 101 - 250
- 251 - 973

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ROAD SURFACE CONDITIONS

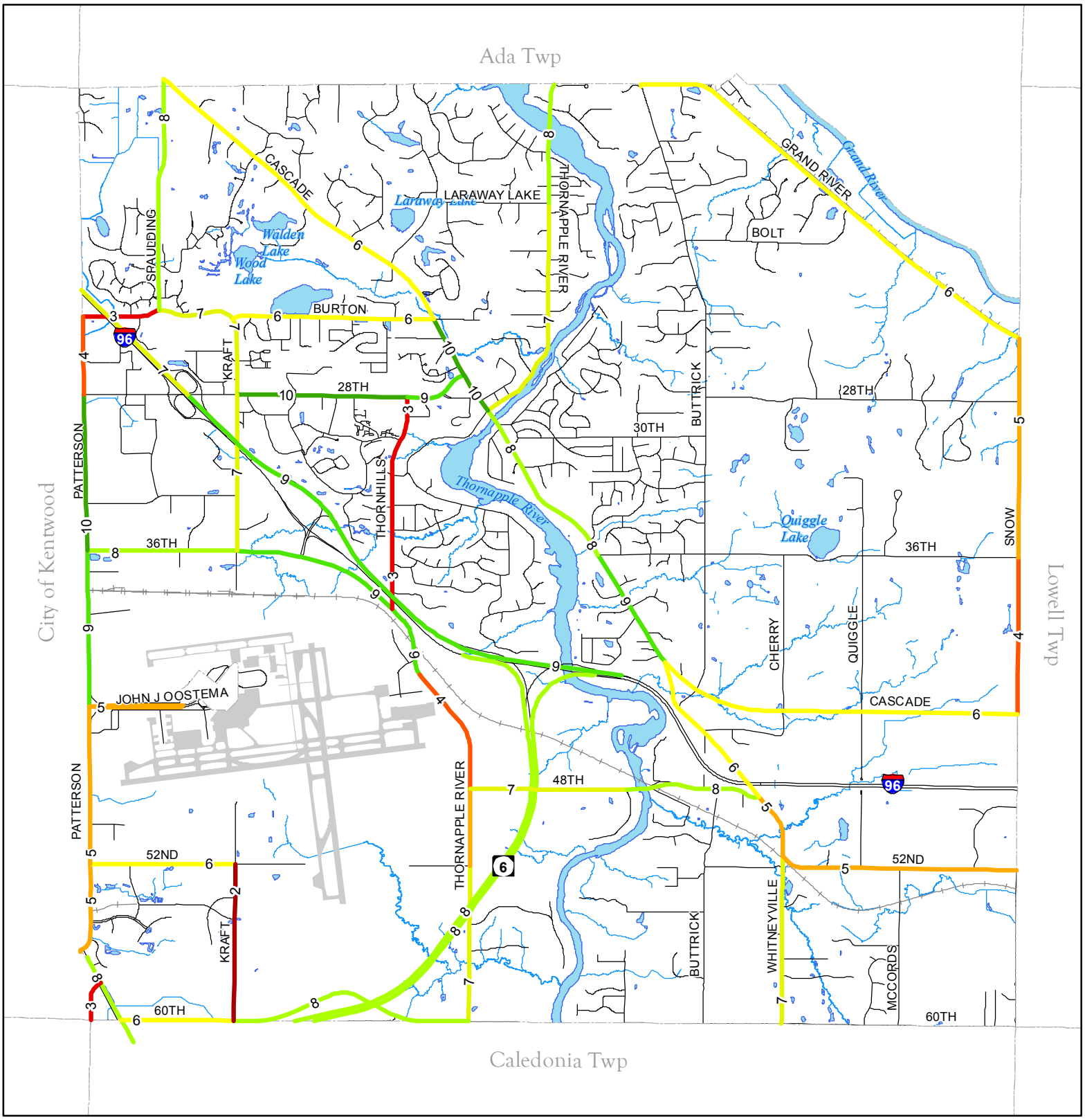
Map 13 illustrates the condition of most County Primary roads, State highways and interstates in the Township using the PASER road rating system. The PASER (Pavement Surface Evaluation and Rating) system was developed by the University of Wisconsin-Madison Transportation Information Center to evaluate the surface condition of concrete and asphalt roadway pavement. The PASER system uses a 1 to 10 rating scale, with 10 representing a new road and 1 representing a failed road. The ratings are assigned by monitoring the type and number of visual defects along a road segment while driving. The PASER system interprets these observations into a condition rating.

Roads in the best condition according to the PASER system are:

- Patterson Avenue between John J. Oostema Blvd and 28th St. (PASER rating: 9 and 10)
- 28th Street between Kraft Ave and Thornhills Ave (PASER rating: 10)
- Westbound I-96 between M-6 and 28th Street (PASER rating: 9)
- 36th Street between Kraft and Thornapple River Dr (PASER rating: 9)
- Thornapple River Dr between 36th Street and Air Cargo Drive (PASER rating: 9)
- Cascade Road between 36th Street and Whitneyville Avenue (PASER rating: 9)
- Cascade Road between 28th Street and Thornapple River Drive (PASER rating: 10)

In 2007, roads in the worst condition according to the PASER system are:

- Kraft Avenue between 52nd Street and 60th Street (PASER rating: 2)
- Thornapple River Drive between 28th Street and 36th Street (PASER rating: 3). This was improved in 2008.
- Patterson Avenue between Broadmoor Avenue and the Township's southern boundary (PASER rating: 3)



Cascade Charter Township

Kent County, Michigan

Map 13
PASER Road Conditions

Legend

GVMC Pavement Condition Network 2007*

- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Failed Road ↑ ↓ New Road

* Some roads may have been improved since 2007

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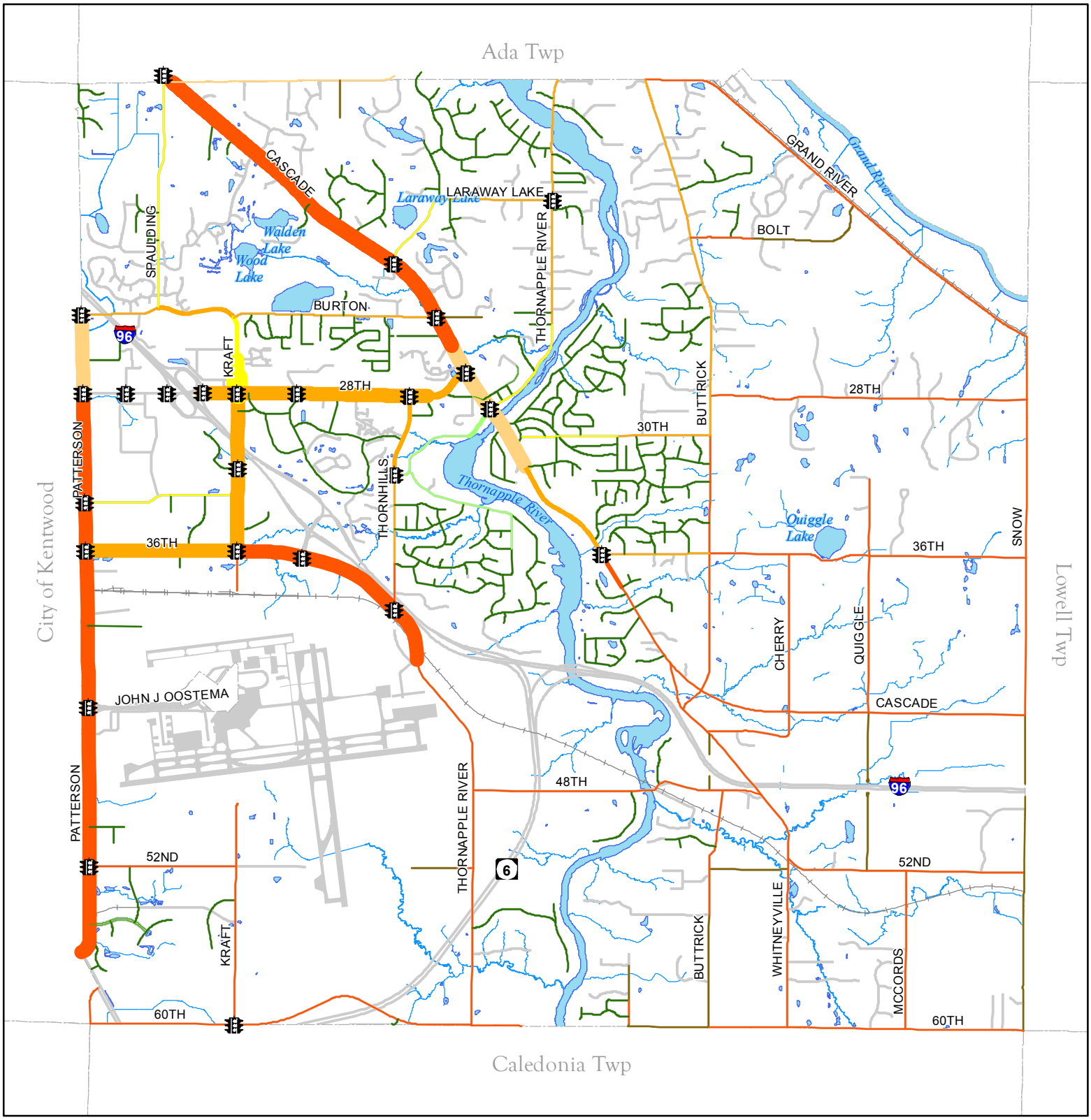

Cascade Charter Township

Kent County, Michigan

Map 14
Road Widths & Speed Limits

Road Width

- 1 Lane
- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- Traffic Signals
- No Data

Speed Limit

- Speed Limit: 25
- Speed Limit: 30
- Speed Limit: 35
- Speed Limit: 40
- Speed Limit: 45
- Speed Limit: 55

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ROAD IMPROVEMENTS

The following road projects are scheduled to take place in Cascade Charter Township in 2008:

- 28th Street / Kraft Avenue – Signal improvements
- Cascade Road / 28th Street – Signal improvements
- Thornapple River Drive / Thornhills Avenue from I-96 to 28th Street – road surface and sidewalk improvements

The Kent County Road Commission is planning several improvements to Cascade Township Roadways

Additionally, the Kent County Road Commission Long-Range Strategic Plan identifies improvements planned at the following locations:

- Whitneyville Road from Cascade Road to 52nd –Reconstruction
- Thornapple River Drive from 48th to 52nd - Reconstruction
- 52nd Street from Patterson to Kraft - Expansion
- Kraft from 52nd to 60th - Reconstruction

TRAFFIC SPEEDS AND CONTROL

Map 14 illustrates the locations of signalized intersections in Cascade Charter Township, as well as the width and speed limits of County roads. Nearly all of the traffic signals in the Township are located in the northwestern portion, which is also where the bulk of the Township's commercial and residential development is located.

Most of the rural roads in the Township have a speed limit of 55 miles per hour, with about 49 miles of Township roads having this speed limit.

The majority of Township roads consist of two lanes. The only 5-lane roads in the Township are portions of Patterson Avenue, 28th Street, Cascade Road, 36th Street, and Kraft Avenue. As the Township's residential development continues to push eastward, it is clear that improvements will be needed to key roads to accommodate the higher traffic volumes.

While additional signage and traffic control devices may be needed at future high-volume intersections and in neighborhoods that are growing quickly, it appears that existing traffic control in the Township is sufficient. Additionally, it appears that existing speed limits are also appropriate.

However, the Township should work with MDOT and the Kent County Road Commission to analyze different configurations for the 28th Street / I-96 interchange. While the existing roadway may be adequate to handle the volume of traffic, improvements are needed to reduce the number of auto accidents at this location. It should be noted that any future interchange with I-96 in the Township has been removed from this Master Plan since MDOT has abandoned the concept. The 36th Street and 28th Street interchanges will be the only two in the Township.

AIR, RAIL AND PUBLIC TRANSPORTATION

Air Transportation

Cascade Charter Township is home to Gerald R. Ford International Airport, the second-busiest airport in Michigan. It serves approximately 5,500 passengers daily, and approximately 2 million visitors passed through the airport in 2007. The airport covers approximately 3,200 acres, and contains two concourses with thirteen gates in the passenger terminal building.

Gerald R. Ford International airport, Michigan's second-busiest, covers approximately 3,200 acres.

The airport's traffic has steadily increased over the last forty years. In 1997, a new 8,500-foot north-south runway was constructed. In 2001, the primary east-west runway underwent a complete reconstruction. 2008 began with the construction of a new 4,900-space parking structure.

Public Transportation

The Cities of Grand Rapids, East Grand Rapids, Grandville, Kentwood, Walker, and Wyoming under Act 196 of the Public Acts of the State of Michigan formed the Interurban Transit Partnership (ITP) in January 2000. The formation of ITP played a fundamental role in expanding public transportation in the Grand Rapids metro area.[18] Presently, ITP is usually referred to as "The Rapid."

Two of The Rapid's fixed routes, 5 and 17, serve Cascade Township.

The Rapid provides fixed-route services to Cascade Charter Township and the Cities of Grand Rapids, East Grand Rapids, Grandville,

[18] Grand Valley Metro Council 2030 Long Range Transportation Plan

Kentwood, Walker, and Wyoming and the Townships of Gaines and Alpine.

Cascade Charter Township is served by fixed routes 5 and 17. Route 5 serves the industrial area north of the airport, and follows Patterson Ave to 33rd St, east to Kraft Ave, south to 36th and west into the City of Kentwood. Route 17 serves Gerald R Ford International Airport. Both routes terminate at the Rapid Central Station, located in downtown Grand Rapids.

The Rapid also serves Cascade Charter Township in the form of Go! Buses. This is a demand-response service offered to seniors and those with disabilities, and offers service within a 180-square mile area around Grand Rapids. Cascade Charter Township pays a portion of Go! Bus service, depending on how many trips are within the Township's boundaries.

Rail Transportation

In terms of rail connections, a railroad spur is located in the southwest corner of the Township, south of 52nd street near Patterson Road. The spur consists of rights-of-way for the rail line, or sufficient building setbacks enabling potential future rail service. Recent efforts by the Township to encourage the maintenance of rights-of-way for future rail service have been successful and enforcement should be continued.

PLANNING IMPLICATIONS

Given the natural obstacles that fragment the Township and its established patterns of development, a few key roadways will continue to carry the bulk of local traffic. This implies increasing levels of congestion on some roadways, but may also suggest that volumes on non-through routes will remain relatively manageable. Alternative means of transportation are necessary to offset reliance on the automobile. These alternative means of transportation may include busing, biking, walking and rail service.

Additionally, the Township will have to address the relatively high number of traffic accidents along roads such as 28th Street and Patterson Avenue. While it is likely that these locations will continue to see the bulk of the accidents due to their higher capacity, the Township should work to ensure that its roadways are as safe as possible.

CHAPTER 9. GOALS AND OBJECTIVES

Goals are intended to describe a desirable end state or condition of the Township about twenty-five years into the future.

As a result of the input the Township received from the visioning workshops, community survey, and advisory committee meetings, nine broad goal statements have been developed. Each goal is supported by more specific objectives, and these statements comprise the policy foundation of the Master Plan. The goals are intended to describe a desirable end state or the condition of the Township about twenty-five years into the future. They are intentionally general but are felt to be attainable through concerted effort. The objective statements tend to be more specific and may be regarded as milestones in the journey to achieve the larger goal.

An effective goal serves as a useful guide for policy decisions by the Planning Commission, Township staff and the Township Board. For a goal to be useful, it should meet the following criteria:

- **Define a desired end.** A goal statement should describe a desired end state, outcome or result. The statement may be worded in either the present or future tense, but if the future tense is used, it should be stated as a prediction, rather than a hope.
- **State in positive terms.** For a goal to be effective, it should state a positive outcome, as opposed to avoidance of an undesirable result. It is tempting to state goals as the reversal of an undesirable trend, such as "Cascade Charter Township will limit significant additional development in woodlands and natural areas." This statement, however, does not address the idea of preservation, nor does it address the underlying issue: protection of woodlands for the benefit of future generations.

Clear and meaningful goals provide the policy foundation for the Master Plan.

- **Bold, but realistic.** For a statement to be meaningful, it needs to require effort to achieve. If goals were achieved without effort, they would simply be re-statements of current trends. On the other hand, a goal also needs to be realistic. Goals that are impossible to achieve will languish, resulting in community frustration and acrimony.
- **Reflect a consensus.** Most importantly for goal setting, the goal must reflect a community consensus on a particular issue. Since implementation of these goals will require broad community support, the goals need to reflect community ideas and values. A statement that does not reflect the ideas and values of a broad section of the community is doomed to failure.

Goal 1: Land Use

Cascade Charter Township will preserve its character by managing growth to foster development that preserves and complements the natural features of the community. Appropriately scaled residential, commercial, industrial and office development that is carefully integrated with natural features will be encouraged where served by public utilities and effective roadway connections.

Land Use Objectives:

1. Utilize the Master Plan to guide growth and development and avoid land use conflicts.
2. Ensure that all new development and redevelopment conforms to current plans and ordinances in the Township.
3. Establish and implement zoning and other regulatory measures to encourage housing that addresses all life cycle needs in a manner that is harmonious with the natural environment.
4. Continue to facilitate commercial and mixed uses along primary transportation corridors and centers such as I-96, 28th Street and Centennial Park.
5. Encourage innovation and creativity in design, landscaping, and development techniques.
6. Ensure adequate buffers are either in place or developed between potentially incompatible land uses.
7. Work cooperatively with Gerald R. Ford International Airport to improve citizen involvement in, and understanding of airport operational, development, and environmental issues.
8. Monitor trends and needs in industrial, retail, and office development for the purpose of modifying regulations to assure the goals of the Township are achieved.

Goal 2: Transportation

A network of roadways, pedestrian paths, non-motorized trails, and other transit services in Cascade Charter Township will be expanded and maintained to safely and effectively serve the needs of the Township and the region, by providing efficient and aesthetically attractive linkages between neighborhoods, shopping, and employment centers. Expansions to the transportation system will be completed in accord with the Township's land use objectives.

Transportation Objectives:

1. Enhance the visual quality and safety of 28th Street and Cascade Road by encouraging the reduction of curb cuts, improving the non-motorized paths system accessing businesses along the corridor, and installing a green median as a gateway to the Township.
2. Actively participate in transportation and mass transit planning and implementation to serve the needs of Township residents and workers.
3. Promote the interconnectedness of new and redeveloping residential, commercial and industrial development to promote alternative means of transportation to the vehicle.
4. Recognize that roadways are an essential element to a thriving community providing opportunities for vehicular, as well as alternative means of transportation in an attractive and safe manner.
5. Ensure the continued safety and accessibility of private roads.
6. Increase the number of miles of non-motorized paths along community arterial roadways.
7. Encourage traffic reduction in the Township.
8. Implement effective access management techniques to optimize the carrying capacity of arterial roads in the Township.
9. Work with the CSX railroad, the Grand Valley Metro Council, and regional townships and municipalities to work toward a long range commuter rail connecting Lansing, Grand Rapids, Cascade Charter Township and Holland.

Goal 3: Utilities

Utilities will be provided in a rational and sequential manner to promote the continued protection of groundwater and to encourage development that supports the land use goals of the Township. Additional connections to existing utility lines will be encouraged or required to further the public health benefits that public systems offer. High quality municipal services will be ensured though the Township's on-going active participation in the Utility Advisory Board.

Utilities Objectives:

1. Consider utility extensions to areas planned and/or zoned for industrial development as a tool to further economic development.

2. Work cooperatively with the Utility Advisory Board to promote the rational and sequential expansion of utility systems with equitable and predictable financial structures.
3. Consider mechanisms to help advance the connection to municipal water and sewer systems by residential users.
4. Encourage the utilization of privately owned alternative clean energy systems within the Township.
5. Focus new utility extensions to areas where growth is to be encouraged.
6. Establish mechanisms to monitor the effectiveness of on-site wastewater systems and to promote connections to public water and wastewater systems.

Goal 4: Natural Features, Open Space and Farmland Preservation

Cascade Charter Township will continue to protect and enhance the natural environment by preserving the rolling woodlands, meadows, wetlands and farmlands and the clean waters of the Thornapple River and its tributaries.

Natural Features, Open Space and Farmland Preservation Objectives:

1. Preserve farmland throughout the Township for its aesthetic qualities as well as food production potential.
2. Enhance public outreach materials to better explain the benefits of open space and cluster development options for preserving significant open spaces and natural areas of the Township.
3. Work cooperatively with the surrounding jurisdictions and others to encourage connectivity to other park and trail systems within the greater Grand Rapids metro area.
4. Strive to provide a park, green space, natural area, or recreational opportunity within every Section of the Township and accessible to all Township residents.
5. Create programs and regulations to protect areas identified as having important natural features in the natural resources inventory.
6. Establish mechanisms to encourage the designation of scenic easements within private development projects and along certain roadways.
7. Establish incentives to encourage connectivity between natural open spaces, structured parks, residential developments, and Cascade Village.

8. Establish mechanisms to assure the inclusion and maintenance of open and natural areas in private development.
9. Protect natural tree lined areas along scenic corridors.
10. Evaluate appropriate programs to permit transfers of development rights and open space design development techniques.

Goal 5: Economic Development

Cascade Charter Township will encourage a balance of economic opportunities including retail, industrial, office, service, and similar uses in locations that will enhance the quality of life within the Township. The 28th Street corridor will maintain its competitive edge as a desirable location to do business.

Economic Development Objectives:

1. Pursue economic development incentives, such as cost sharing of utility extensions, in areas planned for industrial development that are within the utility service boundaries.
2. Continue to streamline the approval process for the construction and development of businesses and industries within the Township, and include flexibility of landscaping, parking, and dimensional standards.
3. Work cooperatively with local and state agencies to provide incentives for alternative energy and technology-based industries.
4. Ensure the local availability of goods and services through zoning standards that are compatible with small-scale business ventures.
5. Foster a business friendly environment where current and potential entrepreneurs can access information and develop strong businesses meeting local needs.
6. Continue to require a high-level of design and improvements to commercial areas through sign regulations, access management, and landscaping requirements.

Goal 6: Cascade Village

Cascade Village will be a destination having its own unique identity as a shopping and gathering area in the Township. The Village will be a hub of social activity, place of historical significance, and an anchor for the 28th Street and Cascade Road commercial corridors.

Cascade Village Objectives:

1. Reinforce the existing commercial boundaries through visible wayfinding indicators such as signs, consistent plantings, architectural elements, or site requirements such as light poles, fences, or similar features.
2. Improve pedestrian accessibility and connectivity within and through the Village area.
3. Encourage residential development in and around the Village area as a means to support the businesses.
4. Continue to enforce the existing design and building requirements that create a common, yet unique building form and massing throughout the Village area without limiting architectural character or creativity.

Goal 7: Sustainability

Cascade Charter Township will enhance economic opportunities and community well-being while protecting and restoring the natural environment upon which people and economies depend. Growth and development will meet the needs of the present without compromising the environmental, economic, and social attributes of the Township to be enjoyed by future generations.

Sustainability Objectives:

1. Promote educational opportunities that provide information about energy conservation and retrofitting homes and businesses for greater energy efficiency.
2. Identify and remove limitations to ecologically-friendly development in the Township.
3. Work with industry leaders to explore new materials and alternative construction practices to establish standards to reduce energy consumption and improve environmental quality.
4. Establish programs to reduce energy costs for community operated facilities.
5. Establish programs to explore and encourage the creation of alternative clean energy within the Township.
6. Become a leader in green building through promotion of ecologically-friendly building and development standards.

Goal 8: Housing

Cascade Charter Township will have a diverse selection of quality housing choices for current and future residents providing life-long

housing opportunities for young and old. Encouraging housing in areas served by utilities, roads, schools, and services will help protect farmland, natural areas and open spaces by making use of existing available infrastructure. Residential neighborhoods will be formed in safe, compact and walkable patterns consisting of a range of housing types and offering services and recreational amenities to support healthy and active lifestyles.

Housing Objectives:

1. Direct new residential development to areas of the Township served by municipal water and sewer.
2. Allow for attached residential housing types, including retirement housing, in proximity of 28th Street and Cascade Village due to the availability of goods and services in that area.
3. Recognize that traditional subdivision forms in areas served by public roads and municipal water and sewer, and within a certain distance to schools and services, are a reasonable land use.
4. Discourage traditional subdivision forms, as opposed to open space subdivision forms, in areas of the Township identified as having important natural features, significant topography, poor soils, etc.
5. Discourage new residential development from locating outside of the utility service areas and in areas known for poor water quality or ground water contamination.

Goal 9: Public Education, Outreach and Coordinated Planning

The citizens of Cascade Charter Township will have a basic understanding of land use, planning issues and the need to maintain balance between competing goals. Long and short range land use, transportation and recreation planning will be done in coordination with adjacent municipalities and the County.

Public Education, Outreach and Coordinated Planning Objectives:

1. Maintain a high level of enforcement of the Zoning Ordinance.
2. Educate residents of the varied attributes of different parcels of land and the benefits and constraints to development in certain locations of the Township.
3. Consider having a local high school student sit on the Planning Commission.
4. Improve tracking and mapping of Planned Unit Developments.

5. Educate residents about programs for preserving open space, including scenic and conservation easement programs, purchase of development rights, donations, bargain sale or other means.

CHAPTER 10. FUTURE LAND USE

STRATEGIES

The Cascade Charter Township Master Plan reaffirms the land use decisions and patterns of growth from the 1999 Comprehensive Plan, while making many important land use modifications channeling growth to areas with available infrastructure. By concentrating residential land uses near the Village area and in walking distance to 28th Street, alternative modes of transportation are supported by future residents who may be future users of transit systems. In this era of increasing energy costs, the Township is interested in supporting a strong network of interconnected non-motorized trails, sidewalks, and bike lanes to increase the potential for walkable neighborhoods.

Similar to the 1999 Plan, the 2009 Master Plan calls for a general growth limit at the utility service boundary that bisects sections 2, 11, 14, 23 and 26 and the Thornapple River in the southern portion of the Township (see Map 15, Future Land Use Map). The area east of (outside of) the utility service boundary is planned for low density, residential development, agricultural and agricultural support services, as well as the potential for permanently preserved agricultural land.

Farmland Preservation. One important step toward preserving farmland is for the Township to participate in the Kent County Purchase of Development Rights program. This permits a landowner to receive state and federal funding with an approved application. This program allows the purchase of the development rights from private property owners through grants, donations, bonds, special assessments, or general appropriations. Likewise, landowners will have the option to sell their development rights (calculated as the difference between the agricultural value of the land and the fair market value) to a public entity. Under part 362 of PA 451 (1994), land will be preserved for agricultural use and open space, while in exchange, landowners may continue to farm their land, rent the land to another farmer, or sell the land for the remaining agricultural values.

Mixed Use. Another strategy of the future land use plan is the creation of a Mixed Use land use category. Currently, the Township does not have a land use district where office/service and retail commercial uses could combine with residential uses. In recent years, the planning profession has seen a movement from single use zoning to mixed use zoning in an effort to provide walkable communities with less dependence on the automobile.

Industrial. The Township has one industrial zoning district, allowing for both heavy industrial and light industrial uses. Office uses are not permitted as a "stand alone" use in the industrial district. Over the course of the last decade, the United States, and Michigan in particular, has seen a reduction in manufacturing and processing industries. Industry is becoming more "clean" in terms of operations, and these new industries require less land area because their impacts are less intense. Introducing a light industrial district that allows for smaller lot sizes and blends office and retail/restaurant uses is recommended as it better responds to the anticipated land use needs in the future.

Centennial Park. Recently, the Township engaged the services of a designer to provide a master plan for Centennial Park. The plan calls for the creation of an overlay zoning district to require certain site features as well as allow for varied land uses in addition to office uses, such as fitness centers, child care, skilled nursing facilities, restaurants and retail establishments. The future land use plan corresponds to the findings of the Centennial Park Master Plan and calls for mixed use in portions of Centennial Park.

FUTURE LAND USE DESCRIPTIONS

FARMLAND PRESERVATION

Description: This land use category is intended to accommodate farming and agricultural support services and also recognize the desire by homeowners for a rural environment relatively close to urban amenities. Residential densities should be very low, with an emphasis on preserving large parcels of land for agricultural uses and to preserve rural character.

The most important factors informing the decision to designate particular parcels of land as Farmland Preservation are: (1) the United States Department of Agriculture's classification as prime agricultural soils. These are soils that are considered to "produce the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment.[19]" (2) The relative size and contiguity of highly productive soil classifications within the designated land area creates the opportunity for greater economies of scale in agricultural production, as well as for the suppliers of agricultural goods and services. (3) The results of the Township-wide community survey indicate that 64% of residents are very concerned or somewhat concerned about the loss of farmland.

[19] Soil Survey of Kent County, Michigan. P. 90

Locations: Farmland preservation land uses are located east of Quiggle Road, adjacent to Lowell Township in portions of sections 13, 23, 24 25 and 26.

Desired Uses and Densities: As mentioned, agricultural and agricultural support services are encouraged, as well as very low density residential. Subdivisions and site condominiums should be allowed as a special land use, with standards in place to ensure adequate buffering, preservation of open space, deep setbacks from roadways, and preservation of natural features as identified in the Natural Feature Inventory. This land use category is not intended to be served by municipal water or sewer. Private roads maybe permitted as a special land use where natural features, steep slopes or other mitigating factors make private roads beneficial for preserving rural character. Density would be one dwelling unit per 2.3 acres, or more; or in conservation clusters that result in the preservation of significant open lands and overall densities of .4 unit per acre.

RURAL RESIDENTIAL

Description: The rural residential land use designation is intended primarily to address the need for scattered single-family development in relatively rural and low density patterns and provide opportunity for agricultural activity. These areas are not intended to be served with public utility systems that would promote greater densities. As with the 1999 Land Use Plan, this area is not intended as a growth area.

Location: The rural residential land use designation is identified as that area north and south of the Farmland Preservation areas, but east of the utility service boundary. The rural residential land use designation is located in portions of section 2, 11, 12, 13, 14, 23, 25, 26, 27, 34, 35, and 36.

Desired Uses and Densities: The primary land use within this area will be single family homes developed on lots of 2.3 acres, or more; or in conservation clusters that result in the preservation of significant open lands and overall densities of .4 unit per acre. Such clustering may be accomplished to preserve and enhance the natural features of a particular site and are not intended to be rural subdivisions. Agricultural operations and landscaping operations, except concentrated feeding operations, are also encouraged. Public parks and natural land conservancies will also be encouraged pursuant to the Natural Features Inventory. Private roads would be considered as a special land use under certain circumstances, such as for the preservation of large stands of trees, or to preserve steep slopes, where drainage and run-off is a concern, or where important natural features

have been identified in the Natural Features Inventory. Subdivisions and site condominiums should be allowed as a special land use, with standards in place to ensure adequate buffering, preservation of open space, deep setbacks from roadways, and preservation of natural features as identified in the Natural Features Inventory.

SUBURBAN RESIDENTIAL

Description: A significant portion of the Township has been developed as suburban style single family residential neighborhoods as a result of historic planning efforts by the Township. These communities are relatively homogeneous in form and land uses, scaled primarily for passenger car travel and developed primarily for families with small and school-age children. New suburban residential areas should incorporate pedestrian access connecting cul-de-sac subdivisions to the Township's non-motorized trail system, when available or planned. New development within the suburban residential areas should also provide an internal trail or sidewalk system to encourage walking, biking, and healthy neighborhoods.

Location: The suburban residential land use category is located in the central portion of the Township and within the utility service boundary.

Desired Uses and Densities: The primary land use within this area will be single family homes developed in subdivisions or site condominiums on lots ranging from 1/3 acre to 1 acre (i.e. 1 to 3 dwelling units per acre) or in conservation clusters that result in the preservation of significant open lands and overall densities of 3 or more dwelling units per acre. The Township should explore different tools that will provide for the extension of utilities as the result of new development. Such tools may include requiring utility extensions when existing utilities are close by, allowing options for developers to choose from in those areas that are further out but still inside the utility boundary, and other tools with the goal of increasing the number of homes connected to municipal water and sewer helping to maintain quality ground water supplies and encourage sequential development within the utility boundary. Traffic patterns will be established to safely move vehicles through local streets to connectors and to arterials while minimizing vehicle/pedestrian conflicts. A network of pedestrian and bike trails, sidewalks, clear pedestrian crossings and traffic calming techniques will be utilized to promote safe non-motorized and motorized transportation. The neighborhood character will also be enhanced with sidewalks, street trees and street lights. In addition to single family homes, suburban residential neighborhoods may include schools, neighborhood parks, churches and similar uses that support quality residential neighborhoods. Police and fire service to these

neighborhoods is a primary concern and measures should be taken periodically to assure proper coverage of these services. Private roads should be considered under certain circumstances, such as for the preservation of large stands of trees, or to preserve steep slopes, where drainage and run-off is a concern, or where important natural features have been identified in the Natural Feature Inventory.

COMMUNITY RESIDENTIAL

Description: The community residential land use designation is intended for attached or detached single family and multi-family housing. A project should be designed and developed to provide attractive, up-scale master planned living environments with amenities such as open spaces, walking paths, street trees, street lighting and attractive architectural style. Buildings and structures should be designed to minimize bulk and massing of attached living units.

Location: The community residential land use area primarily serves as a transition from commercial/mixed use and suburban residential uses along 28th Street. However, there are two areas where this use is proposed along the south side of Cascade Road north of Burton.

Desired Uses and Densities: Uses may include attached and detached residential dwellings, including projects that incorporate a variety of housing options, as well as assisted living and retirement communities. Master-planned retirement communities may also incorporate low-impact commercial uses internal and integrated within the development such as personal service establishments (barber shop or hair salon), post office, financial institution and other necessary uses for the convenience of the residents but not available for use by the general public. Development within the community residential area should include a walking system that connects to any existing or planned non-motorized pathway. The Township desires for the community residential areas to be served by mass transit in the future. Water and sewer must be available for new development or redevelopment in this land use category. Additionally, any natural features should be preserved and protected in projects located in the community residential land use area. Only public roads would be permitted in the community residential land use category. Allowable densities would range between 4-6 dwelling units to the acre.

VILLAGE COMMERCIAL

Description: This land use designation is intended to foster a pedestrian-scale, local shopping district confined to the parcels currently zoned for commercial use. It is not the intent of this land use plan to expand commercial uses either north or south along Cascade Road.

The village commercial area is intended to be a walkable commercial district, where architectural style is paramount, but not rigid. Low shrubbery, picket fences and other features should be in place along the roadway to delineate the use and create interest for pedestrians.

Location: The village commercial land use category is located at the heart of Cascade Charter Township where Cascade Road, 28th Street and the Thornapple River converge. It is not the intent of this land use category to expand beyond the current commercially-zoned properties along Cascade Road.

Desired Uses and Densities: Desired uses include retail commercial, personal service establishments, eating and drinking establishments, financial institutions, and convenience stores with or without fuel stations. Residential uses are also planned, including above retail or office uses. Townhome, retirement centers, assisted living, and other elderly care facilities are also recommended. Other uses should be phased out and encouraged to locate to a more automobile-oriented commercial corridor. Residential densities would be 6-8 dwelling units to the acre. Pedestrian/bicycle circulation plans should be prepared for new development that includes access from sidewalks and non-motorized paths to any building entry. Bicycle racks are encouraged. Traffic calming, crosswalk demarcations, countdown walk signs, plantings and signage are encouraged at 28th Street and Cascade Road at the Village to create a sense of place for shopping, strolling, biking, and walking. Water and sewer must be available for development in this land use category. Additionally, any natural features should be preserved and protected in projects located in the village commercial land use area. The Township hopes that the village commercial area is served by mass transit in the future.

GENERAL COMMERCIAL

Description: This land use designation is intended to provide goods and services to meet the needs of the immediate neighborhood and the larger region. Facilities will be developed in harmony with the area's natural features and in a scale and form to encourage pedestrian access and to minimize auto-pedestrian conflicts. Cross-access easements and access roads will be encouraged to reduce the proliferation of curb-cuts. In addition, landscape standards and signage limitations will be utilized to promote attractive and functional developments. The current three acre minimum lot area requirement may be reduced for projects that incorporate certain green/eco-friendly building technologies, or provide a specific amount of green space, such as 35%.

Location: The general commercial land use designation includes properties fronting 28th street from Cascade Village west to the Township boundary.

Desired Uses: Uses include retail, office, personal services, professional services, automobile repair, convenience stores with or without fuel pumps, drive-though establishments, eating and drinking establishments, fitness centers, financial institutions, automobile sales, and other similar uses. Water and sewer must be available for development in this land use category. Additionally, any natural features should be preserved and protected in projects located in the general commercial land use area. The Township hopes that the general commercial area is served by mass transit in the future.

HIGHWAY COMMERCIAL

Description: The highway commercial land use category calls for more intense land uses in terms of traffic generation and building height. This use would include hotels, eating and drinking establishments, and convenience shopping capturing consumers from the region. Multi-story development, up to 5-stories, may be permitted based on locational factors. Additional height in excess of 5-stories may be considered in areas with elevation differences along the highway, while less height may be appropriate in areas where the highway commercial land use abuts residential uses. Maximum floor area may also be restricted to encourage taller buildings.

Careful planning and design should occur with any new mixed use or large-scale commercial projects to ensure that traffic safety and on-site traffic flow is considered, appropriate access management techniques have been incorporated into site planning and building height would not interfere with Federal Aviation Administration requirements or other height requirements of the Gerald R. Ford International Airport. Minimum lot area requirements could be reduced for projects that incorporate certain green/eco-friendly building technologies at the time of site plan review, or provide a minimum amount of green space, such as 35%. Architectural standards are appropriate to ensure buildings over 3 stories incorporate step-backs, vertical and horizontal design elements, and varied building materials to minimize bulk and massing.

Location: This use is located west and east of the I-96 interchange along 28th street.

Desired Uses: Desired uses include hotels, eating and drinking establishments, convenience shopping, fitness centers, and offices. Water and sewer must be available for development in this land use

category. The Township hopes that the highway commercial area is served by mass transit in the future.

MIXED USE

Description and Desired Uses: The mixed use land use is intended to provide for offices, light industrial, townhome and other types of attached residential development, and retail/commercial uses. The intent is to allow for uses in a master-planned project, giving a greater potential for walkable neighborhoods. Mixed use residential areas are especially desirable where future mass transportation can serve the area.

Location: The mixed use land use category is planned for the northern portion of Centennial Park, the southern portion of Meadowbrooke and along the already developed office park on Cascade Road.

Densities: Within the mixed use category, residential densities would be 6-8 dwelling units to the acre. Density bonuses may be available for development that incorporates certain green/eco-friendly building technologies at the time of site plan review and approval. Building heights would be the lesser of 40' or 3 stories where surrounding uses and buildings are of comparable heights; however, along Cascade Road where the mixed use area is already developed, existing building heights would remain unchanged.

HEAVY INDUSTRIAL

Description and Desired Uses: This land use designation is intended to provide employment for area residents, manufacture goods and provide services to meet the needs of the larger West Michigan Region. Facilities will be developed with appropriate utility and transportation connections and in harmony with the area's natural features. Industrial uses may include warehousing, manufacturing and assembly, mini-storage, contractor's offices and yards, and shipping facilities. In the vicinity of the airport, industrial land uses should be compatible with the airport and aviation requirements. The Township supports industrial uses near the airport having direct access to the airport property to facilitate greater interconnectedness, growth of transportation-related industry, and limit off-site vehicular movement/trips. Truck traffic leaving industrial land uses will be directed efficiently to regional arterials without traversing residential areas. Landscape credits, credits for energy efficient design, or other types of credits may be offered that may reduce the current front yard setback requirements, landscaping requirements, and/or lot area requirements.

Location: There are three main heavy industrial areas of the Township adjacent to the airport. The first area is south of 36th Street and north of the rail line, a second area is north of 48th Street and west of M-6, and the third area is north and south of 52nd Street in the southwest portion of the Township.

LIGHT INDUSTRIAL

Description and Desired Uses: Light industrial development is characterized by small-scale industrial activities, such as research and development, office, warehouse, retail, shipping, showrooms, eating, and drinking establishments provided that such uses conform to performance standards established by the Township and serve a local need. Non-light industrial uses in the light industrial land use area are not intended to be regional commercial areas, but instead meet the needs of area employers. Any light industrial uses next to residential uses should include transition areas to buffer the use and any potential adverse effects. The light industrial district includes retail and eating and drinking establishments to help foster an employment area where workers can walk to or have easy access to places to shop and eat during breaks.

Location: There are two light industrial areas planned in the Township. The first area is located north of 36th Street and west of I-96. The second area is located south of 48th Street and west of M-6.

COMMUNITY FACILITIES

Description and Desired Uses: The community facilities land use designation includes Township parks and open space, cemeteries, wetlands, drainage facilities or other Township-owned property for community-wide use.

GATEWAYS

Description and Desired Uses: Community gateways have been identified to help promote Cascade Charter Township as a destination, as well as to develop the identity of the main commercial corridors where residents and businesses interact and relate. These gateways could include signage, monuments, roundabouts, landscaping, boulevards, or a combination of all, and may be used to announce community events, to promote local businesses, and to beautify and unify the corridor. Local businesses may sponsor a gateway. Gateways are located at Township boundaries along major roadways, as well as within the Cascade Village area and east of the I-96 interchange at 28th Street.

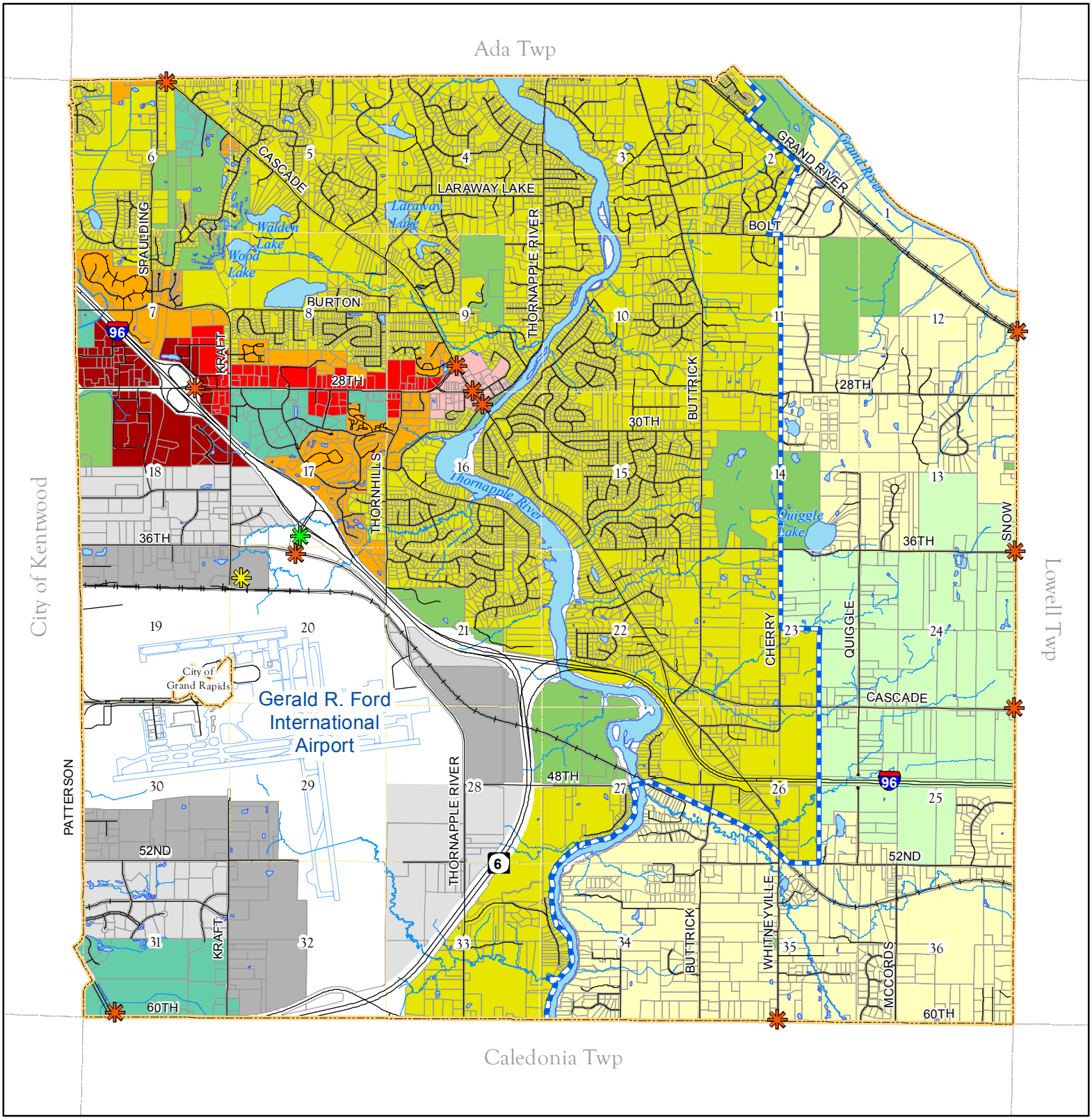
An example of a gateway area is Cascade Road at 28th Street. To slow traffic and provide a more pedestrian friendly walking experience, the

current 5-lane section could be reduced to allow for either bump-outs or a center curbed median where hardscape or landscape elements, combined with signage, could signal the arrival to the Township's primary community shopping district. A center median also provides a resting spot for pedestrians when they cross Cascade Road in the event they cannot cross the entire right-of-way in one traffic light cycle. Regardless of the improvement to the gateway, efforts should be made to ensure the continued flow of vehicles through the corridor, especially during peak travel times.

ZONING PLAN

The following table includes the zoning plan for Cascade Charter Township.

Land Use Category	**Corresponding Zoning District**	**Notes**
Farmland Preservation	ARC	A new zoning district should be developed apart from the ARC district for Farmland Preservation.
Rural Residential	ARC	
Suburban Residential	R1/R2/ARC	Portions of the Suburban Residential land use category are within the R1 and R2 zoning districts.
Community Residential	R2/To Be Determined	The R2 district is a benchmark for the community residential land use; however, a separate zoning district is warranted that can include provisions for mixing uses within retirement facilities and design standards for attached residential housing.
Village Commercial	B1	
General Commercial	B2	
Highway Commercial	ES	
Mixed Use	O/To Be Determined	The current office district would be amended to enhance the current use mix.
Heavy Industrial	I	
Light Industrial	To Be Determined	A new light industrial district would include office and some commercial uses serving the needs of employers and employees of the immediate area.
Community Facility	R1/ARC	



Cascade Charter Township

Kent County, Michigan

Map 15
Future Land Use

Legend

- Gateway Feature
- Park 'n' Ride
- Rail Station
- Utility Service Area
- Farmland Preservation
- Rural Residential
- Suburban Residential
- Community Residential
- Village Commercial
- General Commercial
- Highway Commercial
- Mixed Use
- Heavy Industrial
- Light Industrial
- Community Facility / Golf Course

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Williams & Works
engineers . planners . surveyors
a tradition of service
616.224.1500 phone . 616.224.1501 facsimile
549 Ottawa Avenue NW . Grand Rapids, MI 49503

April 22, 2009

CHAPTER 11. IMPLEMENTATION

This chapter serves as an initial plan of action for the Township, and most of the implementation strategies will require significant public and private investment. All of the following strategies are significant, as they contribute individual elements that will help build the overall vision expressed by the planning participants—a vision that is expressed in the goals and objectives of this Master Plan.

Therefore, the following strategies are established to implement the goals, objectives and land use recommendations of this Plan. It is recognized that many strategies will be long-term in nature and that many entities, in addition to Cascade Charter Township, will need to cooperate in order to fully implement this Plan. The Township's role is that of a facilitator for some of the strategies listed in this Chapter.

It is also recognized that this Master Plan was developed during a national recession. Undoubtedly, these uncertain economic times may impact the Township's financial capacity to carry out all of the implementation steps within the suggested timeframe. Therefore, the Planning Commission is encouraged to work together with the Township Board to annually develop a work plan addressing certain implementation steps, if and when feasible. To assist the Planning Commission in developing its work plan for year 2009, the Advisory Committee prioritized certain implementation steps, which the Township may begin when feasible.

Primary responsibility for implementing this Plan lies with the Township Board of Trustees, Township Planning Commission and Township staff. In order for the future land use plan to serve as an effective guide for the continued preservation and growth in the Township, it must be implemented. This is done through a number of methods, which are described in this chapter.

LAND USE AND ZONING

Amend Zoning Ordinance: The Zoning Ordinance establishes the regulations for all development in the Township. This implementation step contemplates a comprehensive evaluation of the entire Zoning Ordinance, including regulations for cell towers, wind turbines, helipads, and stormwater to determine if the existing regulations are keeping pace with current technologies and development forms. The Zoning Ordinance should be analyzed to determine modifications that would implement the Township's goals, objectives and future land use plan as contained in this Master Plan. Amending the Zoning Ordinance

will include a revision of the Zoning Map, as appropriate, to support the future land use map and a revision to some zoning classifications to include the new future land use designations outlined in Chapter 10. Mixed Use, Light Industrial, Heavy Industrial, Community Residential, and Farmland Preservation are new land use categories that should be incorporated into the Zoning Ordinance in a manner that would result in development corresponding to the land use descriptions, desired uses and densities as set forth in Chapter 10. In addition, the ordinance should be evaluated for flexibility to address innovative development techniques and for its ability to control inefficient development patterns.

Adhere to Land Use Plan: As with any land use decision, the future land use plan contained in Chapter 10 of this Master Plan, should be considered by local decision-makers. According to the Michigan Zoning Enabling Act, zoning should be based on a plan for a community, and that plan is the future land use plan. Any rezoning request, site plan review, special land use or other land use approval should be carefully weighed against the goals, objectives, strategies and future land uses outlined in this 2009 Master Plan amendment.

TRANSPORTATION

Private Road Ordinance: Currently, private roads are permitted throughout Cascade Charter Township when built and approved in accordance with Township standards. Complaints are frequently made to the Township about road maintenance, even though the responsibility of maintaining these roads does not fall within the Township's purview, and is instead the responsibility of a developer or association or other designee. Private roads can be a less expensive alternative to building a road to Kent County Road Commission standards and should only be considered when steep slopes or important natural features need to be preserved. The private road ordinance should be amended to restrict private roads to special land uses in the farmland preservation and rural residential land use areas when key natural features need to be preserved. This tool will be a disincentive to development in these areas of the Township aimed for preservation or low density residential development.

Round-a-bouts at intersections can improve traffic flow without requiring traffic to stop.

Study Township Incorporation: In the context of transportation management and road design, the Township has little control over the look/design of public roadways, posted speeds, and timing of improvements. All public roads that are not state highways in the Township are controlled and maintained by the Kent County Road Commission. If interested in greater local control, the Township could

pursue incorporation and accept control and maintenance responsibilities of its roadways. Additional responsibilities associated with incorporation may include the provision of all local services to include police, fire, roads and solid waste. To begin the process toward exploring the potential for incorporation, a first step would be to create an ad hoc committee to conduct a cost-benefit analysis and feasibility study. The study should provide a clear understanding of the benefits and constraints to incorporation, as well as impact to residents, which will enable local decision-makers and residents to fully understand the impact such a decision would have on local government, level of service, and associated costs.

Traffic Study for Gateway Features: Participants in the focus groups for Cascade Road and Cascade Village expressed dissatisfaction with the "highway" (Cascade Road) that bisects the Village. To many, it creates an unsafe environment for pedestrians and bicyclists. To soften the "highway feel" of Cascade Road within the Village, the Township should explore installing gateway features that are specifically designed in such a manner that would slow speeds and create a more pedestrian-friendly environment (also see Gateway Plan in the Cascade Village section). A first step toward implementing this strategy would be a traffic study at key intersections to determine the feasibility of integrating a boulevard or raised landscape area, roundabout, or other traffic management feature coupled with crosswalks, signalization and countdown signs to help facilitate safer pedestrian and bicycle use along the roadways.

Bricked Crosswalks at major intersections can improve pedestrian accessibility and visibility.

The areas that should be prioritized for study include:

- Cascade Road and 28th Street
- Cascade Road and Old 28th Street
- Thornapple River Drive and Cascade Road

It is important to note that Cascade Road is an integral thoroughfare for the efficient flow of traffic within the Township and is a designated County primary road. Therefore, any improvement should continue to facilitate appropriate traffic flow, especially at peak times, while accommodating the pedestrian and bicyclist.

Traffic Study at Hall and Cascade Road: Traffic resulting from the high school, and challenges with two traffic signals in close proximity, results in congestion at the intersection of Hall and Cascade Road. The intersection at Spaulding and Cascade Road, while not in Cascade Charter Township, should be studied concurrently and in collaboration with Ada Township. Current traffic counts should be taken to determine existing level of service and new recommendations can be made for improving traffic flow and congestion in this area.

Traffic Study at 28th Street and Patterson: Results of the 2008 community-wide survey indicated that 28th Street and Patterson is perceived to be one of the most congested intersections in the Township. The intersection at 28th and Patterson was studied by MDOT, and improvements were made in conjunction with the 36th Street and I-96 interchange projects several years ago. While the new 36th Street interchange was meant to reduce congestion on 28th Street by distributing traffic, only assumptions about the impact of new commercial development were used to determine future level of service at the intersection. Now that the intersection is relatively built-out, the Township should encourage MDOT to update the traffic study. Current traffic counts should be taken to determine existing levels of service and new recommendations should be made for improving traffic flow and congestion at 28th Street and Patterson.

Park n' Ride: A park n' ride facility is desired at the 36th Street interchange with I-96. With increasing energy costs, providing a park n' ride facility in the Township, especially along I-96 at this new interchange, is appropriate. Other nearby park n' ride lots are in Lowell and Grand Rapids, and are frequently full. Developing a park n' ride facility would require collaboration with MDOT and depending on the exact location, might require collaboration with the airport. Regardless of the exact location, such a facility should be open and visible, well-signed (especially on I-96), have adequate lighting and other security measures, have limited environmental impact and benefit daily commuters.

Safe Routes to School: The Township could work with the three school districts to form a multi-agency committee to begin a Safe Routes to School program. Grant funding is available for sidewalks, trails, lighting, signage, etc. to ensure that children have safe walking paths from home to school. Additionally, new residential developments should be encouraged to provide safe walking paths, or "short cuts," from the development to area schools, when feasible. Bus shelters and other amenities should be considered for school-aged children. This is consistent with the Township's vision for walkability.

Study Future Regional Commuter Rail: The Township could work with area municipalities and townships, the Grand Valley Metro Council, regional planning authorities, and the CSX Railroad, to study the feasibility of a commuter rail line spanning Holland and Lansing. A potential rail station has been identified at Kraft and the existing CSX railroad in the Township. It is believed that rail services would provide a cost effective, viable alternative to long range commuting, especially given the rail line is in place and new rail way acquisition may not be necessary.

UTILITIES

Well and Septic Cost Study: In an effort to see more households connect to municipal water and sewer, the Township should prepare a report that details the true costs of owning and operating an on-site septic system and well, versus the costs of connecting to municipal water and sewer. Initial costs of connecting to the municipal sewer system may be prohibitive for some homeowners; however, once all costs are factored in to the equation, including annual maintenance, pumping, supplies, energy costs, land area, replacement, and time spent maintaining the system, municipal utilities (if available) may be less costly over the long run. Additionally, municipal water and sewer may increase the property value. All of these factors could be included in a study that would educate homeowners about the true expense of these systems. This knowledge, as well as a step by step guide to hiring a contractor and connecting to municipal services, may convince some homeowners to connect, if and when utilities are available. The results of the study should be easy to read and understand, and widely publicized in the Advance, the Township Website, and the Township Newsletter.

Expansion of municipal water and sewer can speed up development and give Cascade Township a competitive edge.

Time-of-sale Inspection Program for On-site Wastewater Treatment Systems: Protecting groundwater quality ranked high among Township residents when polled as part of the 2008 community-wide survey. Over 60% of the housing stock was built before 1990 and almost 82% of households are served with on-site septic systems. According to the Kent County Health Department, most septic failures occur when the system is between years 14-28 of its lifespan. Therefore, there is a valid concern that on-site septic systems in the Township need to be monitored with greater oversight. Many communities are taking steps to ensure that septic systems are inspected, instead of relying solely on the County Health Department. The benefit of a time of sale inspection program is that if any repairs are required, the cost for such repair can be negotiated between the buyer and seller. Another benefit of a time of sale inspection program is that it would only require septic systems to be inspected when the property changed hands.

The Township could take a leadership role and develop a time of sale inspection program and inspection process, and/or work with Kent County to begin such a program for Cascade Charter Township or county-wide. This cooperative effort would be proactive to minimize environmental and safety impacts resulting from a failing septic system.

Utility Expansion: Some industrial areas south and east of the airport are not served by municipal water and sewer. Without utilities, these

areas may be restricted and will be at a disadvantage when competing for new development. Industrial users often cannot wait for a utility study, design or installation when looking to relocate or expand. Many communities are competing for few industrial companies looking to locate in West Michigan. For Cascade Charter Township to stay competitive, the Township, together with the property owners, may need to take the lead to expand utilities to these underserved areas.

A preliminary engineering plan would determine routes for extension of water and sewer lines, identify capacity issues, and explore funding options, grants available, timing and phasing. This task includes coordination with the City of Grand Rapids, Cascade Charter Township, and current property owners in the expansion area.

Methods to finance utility extensions may include: utilizing the general fund, utilizing special assessments, establishing a local development finance authority to capture tax increment that would finance a bond issue, or user pay, which is the current Township policy.

Capital Improvements Programming: The Capital Improvements Program (CIP) is another tool that can be used to implement the Master Plan. The CIP is a budgeting process used to determine public improvement needs of the Township such as the Township's share of road costs, utilities, storm water management, erosion control, parks and public buildings. Costs for these projects are determined as well as priorities for implementation and methods of financing. The CIP should incorporate capital projects that are consistent with, and supportive of, the objectives and strategies of the Master Plan.

Michigan Planning Enabling Act, Act 33 of 2008 provides the authority for the Planning Commission to produce a Capital Improvement Plan. Such a Plan is required when a Township owns or manages a utility system. Therefore, in Cascade Charter Township, developing a capital improvements plan is optional. The six year CIP is supplemented by a capital improvements budget that pertains to the first year of the CIP and focuses on the current operating budget.

Both the CIP and the capital improvements budget represent sound planning and management techniques that improve the efficiency and economy of government. These techniques establish a budget cycle that addresses the future expenditures of funds for public services in advance of the need for these services.

Developing a Capital Improvements Plan would be a cooperative effort of Township staff, the Township Manager, Planning Commission and Township Board.

NATURAL FEATURES, OPEN SPACE, AND FARMLAND PRESERVATION

The zoning ordinance should be amended to allow roadside stands, farm markets, and other agritourism businesses.

Farmland Preservation and PA 116:
The land designated as Farmland Preservation amounts to 1652 acres, or approximately 8.86% of total land area within the Township. While the area identified is relatively small in comparison to other more rural townships in Kent County, it is an important part of a multi-township agricultural land area that includes Lowell, Bowne, and Caledonia Townships. This area includes prime and productive agricultural lands and is an important part of southeastern Kent County's economy.

Utilizing the Kent County Purchase of Development Rights Program and PA 116 for farmland preservation is an important and desirable land preservation option in Cascade Township. These land preservation techniques are intended to preserve agricultural productivity and viability within the Township by allowing for enough land to support agricultural industry services and economies of scale. The area designated for farmland preservation is seen on the Future Land Use Map (map 15). The narrative description of the Farmland Preservation land use category is located in Chapter 10, page 89.

Protecting agricultural land is important to residents of Cascade Charter Township. The results of the Township-wide community survey indicate that 64% of residents are very concerned or somewhat concerned about the loss of farmland and 52% of respondents believe that preserving farmland should be a top priority in Cascade Charter Township. Further testament of the desire to protect farmland is the Township's desire to limit any utility extensions into the farmland preservation area. Instead, utilities should only be extended within the utility service boundary as identified on the Future Land Use Map (map 15).

One very important step toward the preservation of this land use designation as a strictly Farmland Preservation area is for the Township to participate in the County Purchase of Development Rights program to receive State and Federal funding. This will allow the purchase of the development rights of private property via funds collected through grants, donations, bonds, special assessments, or general appropriations. Likewise, landowners will have the option to sell their development rights (calculated as the difference between the agricultural value of the land and the fair market value) to a public entity. Under part 362 of PA 451 (1994), this ensures the land will be preserved for agricultural use and open space, while, in exchange, landowners may continue to farm their own land, rent the land to another farmer, or sell the land for the remaining agricultural value.

In addition to the Purchase of Development Rights (PDR) program, the zoning standards must reflect the Township's desire to protect local farmland from excessive development. There are a number of techniques available to the Township that will help to preserve the character and productivity of the farmland preservation land use designation while still providing property owners with options for some development. The Township should forward a copy of the land use map and narrative, goals and objectives, and implementation chapters of the Master Plan to the Kent County Purchase of Development Rights program to be qualified for the program.

The zoning ordinance should be amended to allow roadside stands, farm markets, and other agritourism businesses. The ordinance should also regulate new subdivisions and site condominiums as Special Land Uses in the farmland preservation area.

The costs and benefits to the Purchase of Development Program, and other farmland preservation tools, should be provided to interested residents facilitating informed decision-making.

Explore Assessing Strategies: As required by law, properties are taxed to the highest and best use. High property taxes in agricultural areas can force property sales and the eventual loss of agricultural land to development. The Township may wish to explore alternative assessing strategies for farmland preserved under PA 116 since development rights would be removed, and highest and best use change.

Natural Feature Overlay: The zoning ordinance may be amended to include a natural feature overlay encompassing the areas identified on the 2006 Natural Feature Inventory. The overlay ordinance provisions may include required setbacks from natural features, tree clearing and tree replacement requirements, and standards for site preparation and contouring.

Rural Road Overlay: The zoning ordinance may be amended to include a rural road overlay for certain roadways that are heavily wooded and/or contain important natural features at the right-of-way. The overlay would restrict tree clearing within 35-50' of the right-of-way in an effort to maintain the wooded character of the roadway.

Tassell Park Expansion: Work with the Parks and Recreation Board to develop a long range plan for the expansion of Tassell Park along the river crossing Cascade Road and continuing north along Thornapple River Drive. The expansion may include such features as a boardwalk, seating area, landscaping and interpretative signage. The Township

may wish to explore utilizing a lease/purchase arrangement with property owners along the river north of Cascade Road.

ECONOMIC DEVELOPMENT

Utility Extension: Please see *Utility Expansion* under Utilities.

Formal Business Organization: The Township could work with local business owners to assist the Cascade Business Association in programs to assist in business retention, recruitment, and job training. The Association could serve as a hub for commercial activity in the Township and work with the Downtown Development Authority to plan for and help execute annual events.

Farmer's Market: The Township could work with the Cascade Business Association and other local businesses to study the potential for locating a weekly farmer's market in the Cascade Village area to support area farmers and growers. The Township could determine which morning or evening would work best given the other markets in the area, primarily in Lowell and Ada. Locating the market in the Village is appropriate given that it is centrally located, connected to the non-motorized trail, has ample parking, and results in patrons being able to shop at other stores in the Village area while they visit the farmer's market.

Promote Local Businesses: The Township newsletter and website could be sponsored by a local business each month in an effort to educate residents about the economic benefits of shopping at locally-owned businesses. Studies have shown that when people buy from locally-owned businesses, only .27 cents of every dollar leaves the community compared to .57 cents of every dollar that leaves the community when shopping at national chain stores. Businesses would apply for the opportunity to be featured on the website or in the newsletter.

CASCADE VILLAGE

Photo simulation of residential uses above existing commercial uses.

Amend Design Standards: The design standards for Cascade Village should be amended to require a percent of transparency along the first floor, side or rear parking, and modified setbacks to permit buildings closer to the rights-of-way.

Village Gateways Plan: A gateways plan would establish a common design theme for all Township gateways, helping to advertise Cascade Village as a retail and entertainment destination. At Cascade Village, a gateways study should be conducted that would include an analysis of traffic patterns to determine appropriate roadway modifications that create a safer walking and biking environment along and across Cascade Road. (See also Traffic Study for Gateway Features in the Transportation section.) Roadway modifications that should be studied include a roundabout, raised median, lane reduction, signalization, and the use of textured pavement. Additionally, the angle of Old 28th Street and Cascade Road should be studied to determine measures for realigning the intersection to enhance visibility.

SUSTAINABILITY

Energy Efficient Design Policy: Several communities, including the cities of Grand Rapids, East Grand Rapids and Auburn Hills, have adopted a policy requiring that all new municipal buildings, or additions thereto be built to the standards established by the United States Green Building Council for Leadership in Energy and Efficient Design. The Township may consider a similar policy in an effort to set an example for development in Cascade Charter Township, particularly a policy that encourages energy efficiency and environmental stewardship.

The Township could also educate residents about recycling locations in the County, as well as ways to "pre-cycle", reuse common household items, and reduce consumption.

Public Education: The Township could utilize its newsletter, website, and other community-wide events to educate residents about energy efficient design and living. Topics may include recycling, landscaping for water conservation, retrofitting the home for energy efficiency, energy efficient building materials, shopping local, green cleaning, and commuting habits.

Recycling: Since residents contract for individual solid waste service, the Township could explore hosting an annual "dumpster day," where large items can be deposited, including hazardous materials, and/or electronics. This "dumpster day" would be geared more toward recycling and be different from the spring and fall clean up days with Ada Township. The Township could also educate residents about

recycling locations in the County, as well as ways to "pre-cycle", reuse common household items, and reduce consumption.

Zoning Ordinance Review: A review of the Zoning Ordinance could be conducted to identify provisions that result in inefficient site design and development. Excessive parking standards, limitations on locating alternative energy such as solar panels or wind generators, and excessive lot area or buffering requirements contribute to inefficient forms of development. Inefficient forms of development can result in additional run-off that pollutes streams and rivers, a greater reliance on the automobile, and disincentives for alternative energy. The review would identify provisions in the current ordinance that should be modified, including reducing the parking space requirements for new and existing development, strengthening storm water management requirements, and providing incentives for efficient building and site design.

HOUSING

Concentrate Growth Within Utility Boundary: To accomplish the housing goals, adherence to the Master Plan is necessary. Residential and non-residential growth should be encouraged within the utility service boundary. This boundary is supported by a widespread desire among Township residents to limit the number of new well and septic systems and will increase the number of municipal utility users helping to spread the costs of operating these systems to more users. Since services such as non-motorized trails, infrastructure, utilities, schools, and other community facilities are centralized and predominately west of the Thornapple River, growth should be encouraged in this area of the Township and discouraged (but not prohibited) where such services are not available.

Housing should be concentrated in appropriate areas to protect open space and allow for the connection to non-motorized trails.

Amend Zoning Ordinance. Amending the zoning ordinance to include a community residential district, mixed-use district and residential above retail or office uses in the Village will help provide more and different housing options in areas proximate to Township services. These new zoning districts should include modest design standards to promote a quality built environment that is compatible with the dominant surrounding architectural styles. New development should attempt to increase the opportunities for expanding the non-motorized trail network and incorporate transit-oriented design features such as bus stops and shelters, access management, and mixed-use buildings.

Connectivity Index: A Connectivity Index is a mathematical equation determined by dividing the number of links (street segments) by the number of nodes (cul-de-sacs and intersections). An index between 1.2 and 1.4 is acceptable and ensures that some roads within a development will be connected to other perimeter roads. The zoning ordinance could

be amended to require any new residential site condominium or subdivision developments meet a connectivity index between 1.2 and 1.4.

PUBLIC EDUCATION, OUTREACH, COORDINATED PLANNING

Staffing: While the Zoning Ordinance establishes the rules for development, enforcing it requires resources, both human and financial. The Township should ensure adequate staff is available to the Planning Department for enforcement. This will help ensure there is sufficient staff to investigate, track and respond to complaints as necessary.

Tracking Software: The Township has several approved Planned Unit Developments. Since each Planned Unit Development has a particular set of development requirements and standards, they can be difficult to track. Often, a Planned Unit Development is amended, and each amendment must be tracked. To ease tracking these projects, the Assessing and Planning Departments should work together to determine a tracking process using the BS and A software. This way, any staff person would be able to gather pertinent information about a Planned Unit Development and have an easily accessible record of its approval and any amendments over time.

A development process manual would detail the steps necessary for development in the Township.

Development Process Manual: A development process manual would detail the steps necessary for development in the Township. The review and approval process for rezonings, variances, site plan review, Planned Unit Development, subdivisions, site condominiums, and private roads would be included in the manual. Additionally, the Township could establish standards for the layout of a site plan, as well as requirements that amendments be clouded, numbered, and described on the site plan. The manual would include the process for connecting to municipal services, approval processes and the steps required for securing building and occupancy permits, as well as inspections.

Redesign Township Website: The Township website should be redesigned to be more user-friendly. Links to any news or publications should be provided in the department pages, as well as on the home page. The home page should have links to current events or issues happening in the Township. A frequently asked questions page would be helpful, especially for new residents informing them of utility information, roads, schools, parks, etc. Information about well and septic maintenance could be provided. The website should also have a link to agendas and minutes accessible from the home page and provide other useful links to area recreational, cultural, and governmental resources and amenities.

Annual Planning Meetings: In an effort to support regional planning and information exchanges, the Township Planning Commission may consider holding annual planning meetings with the following entities:

- Gerald R. Ford International Airport
- Adjacent Townships
- Zoning Board of Appeals
- Township Board

A joint meeting with the Planning Commission, Zoning Board of Appeals and Township Board could be used to review the Master Plan Implementation Steps checklist (see page 114) and set planning goals each fiscal year.

Implement/Coordinate Other Township Plans: In 2008, the Township finalized the Centennial Park Master Plan and the Parks and Recreation Plan. Additionally, the Downtown Development Authority has a development plan in place for utilizing tax increment financing. This Master Plan intends to serve as an umbrella for all existing planning documents in the Township and recognizes that implementing the objectives of all existing Township plans is necessary. By way of example, this Master Plan supports the concept of the Centennial Park overlay and developing appropriate zoning and site development standards consistent with the Centennial Park Master Plan.

IMPLEMENTATION TABLE

TOPIC	IMPLEMENTATION ACTION	TIMEFRAME	PRIORITY 1 = HIGHEST (AS DETERMINED BY ADVISORY COMMITTEE)	POTENTIAL FUNDING SOURCE	POTENTIAL PARTNER	DATE ACCOMPLISHED
Land Use and Zoning	Amend Zoning Ordinance	1-3 years	1	General Fund	Planning Commission, ZBA, Township Board, residents, business owners, and developers	
	Adhere to Land Use Plan	On-going		n/a		
Transportation	Private Road Ordinance	1-3 years		General Fund	Planning Commission	
	Study Township Incorporation	1-3 years		General Fund	Township Board	
	Traffic Study for Gateway Features	1-3 years		General Fund, KCRC	Planning Commission, DDA, Township Board	
	Traffic Study at Hall and Cascade Road	1-3 years		General Fund, KCRC	Planning Commission, Township Board	
	Traffic Study at 28th Street and Patterson	2-3 years		MDOT	Township Board	
	Park n' Ride	1-3 years	2	MDOT, Gerald R. International Airport, General Fund	Planning Commission, Township Board, MDOT, Gerald R. Ford International Airport	
	Safe Routes To School	1-5 years		MDOT	School Districts	

TOPIC	IMPLEMENTATION ACTION	TIMEFRAME	PRIORITY 1 = HIGHEST (AS DETERMINED BY ADVISORY COMMITTEE)	POTENTIAL FUNDING SOURCE	POTENTIAL PARTNER	DATE ACCOMPLISHED
	Study Future Regional Commuter Rail	On-going		MDOT, USDOT, GVMC	Adjacent municipalities, GVMC, Regional Planning Commissions, City of Grand Rapids	
Utilities	Well and Septic Cost Study	1-3 years	3	General Fund, EPA	Township Engineer	
	Time of Sale Inspection Program	3-5 years		EPA	Kent County Health Department, Realtors, Kent County Commission	
	Utility Expansion	1-5 years	2	Special Assessment, TIF, General Fund, Hook Up Fees	Township Engineer, City of Grand Rapids, Township Board, Property Owners	
	Capital Improvement Program	On-going		n/a	Planning Commission, Township Board, Township Engineer	
Natural Features, Open Space, Farmland Preservation	Farmland Preservation and PA 116	On-going	3	Kent County, USDA, MAPF	Kent County Extension	
	Explore Assessing Strategies	On-going		n/a	Township Assessor, Kent County Extension	
	Natural Feature Overlay	1-3 years		n/a	Planning Commission	
	Rural Road Overlay	1-3 years		n/a	Planning Commission	

TOPIC	IMPLEMENTATION ACTION	TIMEFRAME	PRIORITY 1 = HIGHEST (AS DETERMINED BY ADVISORY COMMITTEE)	POTENTIAL FUNDING SOURCE	POTENTIAL PARTNER	DATE ACCOMPLISHED
	Tassell Park Expansion	1-5 years		Open Space Millage or Recreation Millage, General Fund	Parks and Recreation Board, Planning Commission, Township Board, DNR	
Economic Development	Utility Extension	1-5 years		Special Assessment, TIF, General Fund, Hook Up Fees	Township Engineer, City of Grand Rapids, Township Board, Property Owners	
	Formal Business Organization	2-8 years		Area Philanthropic Organizations	Business Owners	
	Farmer's Market	3-9 years		Area Philanthropic Organizations	Business Owners	
	Promote Local Businesses	On-going		Local First, Area Philanthropic Organizations	Local First, Business Owners	
Cascade Village	Amend Design Standards	1-3 years	3	General Fund	Planning Commission	
	Village Gateways Plan	1-3 years	3	General Fund	Planning Commission, KCRC	
Sustainability	Energy Efficient Design Policy	1-2 years		n/a	Township Board	
	Public Education Program	On-going		General Fund	Township Board	
	Recycling	On-going		General Fund	Township Board	
	Zoning Ordinance Review	1-3 years		General Fund	Planning Commission	
Housing	Concentrate Growth Within Utility Boundary	On-going		n/a	Planning Commission	
	Amend Zoning Ordinance	1-3 years		General Fund	Planning Commission, Township Board	

TOPIC	IMPLEMENTATION ACTION	TIMEFRAME	PRIORITY 1 = HIGHEST (AS DETERMINED BY ADVISORY COMMITTEE)	POTENTIAL FUNDING SOURCE	POTENTIAL PARTNER	DATE ACCOMPLISHED
	Connectivity Index	1-3 years		n/a	Planning Commission	
Public Education, Outreach, Coordinated Planning	Staffing	On-going		General Fund, Permit Fees	Township Board	
	Tracking Software	On-going		General Fund, Permit Fees	Staff	
	Development Process Manual	2-5 years		General Fund, Permit Fees	Staff, Planning Commission	
	Redesign Township Website	1-2 years		General Fund	Township Board	
	Annual Planning Meetings	On-going		n/a	Staff, Township Board, ZBA, Planning Commission	