



# Cascade Township Master Plan 2024

Draft - May 2024

**Cascade's Commitment:**

*"Provide the resources, staffing, and organizational structure to execute the desires of residents to preserve the natural beauty and community character of Cascade."*

## **Acknowledgments**

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# Master Plan Overview

01



## What is a Master Plan?

At its core, a Master Plan is a policy-guiding document that provides a clear consensus vision and direction for preservation, targeted development, redevelopment, and infrastructure investment. A Master Plan is an important community tool that serves as the foundation for policy making as it relates to economic development, land uses, zoning, preservation mechanisms, and more.

Cascade Township intends this Master Plan to be:

- A solid foundation for amendments to the Township zoning ordinance that more accurately relates to the Township's goals and objectives.
- A direct reflection of priorities as identified by the Township's community members and taxpayers.
- A base for policies to preserve and enhance the Township's natural character, neighborhoods, rural areas, woodlands and natural spaces, agricultural lands, and other features.
- A clear direction for appropriate land uses and development.
- A comprehensive guide to development processes, policies, and strategies.



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## The Legal Basis for a Master Plan

Michigan Planning Enabling Act of 2008 and Zoning Enabling Act of 2006, as amended, expressly authorizes local units of government to engage in planning and zoning. For communities to engage in planning, a Planning Commission is to be adopted. The Act also requires the Planning Commission to “make careful and comprehensive surveys and studies of present conditions and future growth within the planning jurisdiction and due regard to its relation to neighboring jurisdictions”.

The Cascade Township Master Plan presents the Township’s vision for the future. It serves as a policy guide for the community, and informs the decisions of Township officials and administrators, governmental agencies, organizations, and private individuals. It is designed to provide a roadmap for future development and to ensure that new growth is consistent with the Township’s goals and objectives.

# Cascade Township Strategic Plan

Prior to the development and adoption of this Master Plan document, Cascade Township embarked on a multi-year public engagement-driven process to develop a comprehensive Township-wide Strategic Plan. The Strategic Plan differs from this Master Plan in that the Strategic Plan serves as a short and mid-term articulation of the Township's immediate high priorities for each department, board, commission, and subcommittee. The Plan was adopted in September 2022. One of the highest priorities identified by the Township Strategic Plan was to update of the Cascade Township Master Plan, to more accurately describe the Township's goals, objectives, and desired land use fabric.

Through a multi-phased robust public engagement program, the following major themes of importance to the community were identified:

- Parks and Trails
- Land Use and Economic Development
- Cascade Village Character and Development
- Preservation
- Roads and Safety

The major themes and priorities listed above are continually referenced and utilized as the primary foundation for the recommendations in this Master Plan.

Further information pertaining to public engagement results from the Strategic Plan can be found in the Public Input Chapter of this document.





# Organization of the Master Plan

The Master Plan is composed of the following chapters:

## Goals

Goals are broad statements within the plan that provide visionary guidance, while objectives are actionable items to support the Township in reaching their stated goals.

## Public Input

This portion of the Cascade Township Master Plan provides an overview of the public engagement that was undertaken through the Strategic Plan process. In order to develop the goals, objectives, and strategies of this Plan, public input is crucial. A robust public engagement program was undertaken through the Cascade Township Strategic Plan process held during 2021 and 2022.

## Action Plan

This chapter provides the roadmap for preservation, development, and redevelopment areas within the Township. In general, Cascade Township is invested in:

- Preserving the existing character of the Township, including existing neighborhoods and residential spaces, agricultural lands, and natural features such as the Thornapple River and woodlands.
- Providing a foundation for flexible land uses to energize redevelopment activities in targeted areas.
- Requiring higher standards for development and redevelopment activities.
- Limiting the sprawl of industrial, commercial, and airport facilities.

This Master Plan incorporates a Zoning Plan, which outlines the recommended changes to the Zoning Ordinance to better implement the vision of this Plan.

## Community Setting & Existing Land Uses

This component of the Cascade Township Master Plan focuses on the existing components of the community. These components include population trends, including age and other demographics, housing, sustainability, education, employment, and transportation.











# Goals, Objectives & Strategies

02

## Cascade Township's Goals

The goal statements in this Chapter provide the foundation upon which subsequent policy decisions will be created. Cascade Township's goals provide a fundamental statement of community values, personal values, governmental values, and a community-wide vision. To guide the formulation of specific policy decisions, the Township established a more detailed set of goals and objectives and strategies for pursuing them.

Cascade Township presents the following set of specific goals, which are derived from the statements of community values. A solid foundation for amendments to the Township zoning ordinance that more accurately relates to the Township's goals and objectives.

<b>GOAL - PG 11</b>	Preserve and strengthen residential neighborhoods.
<b>GOAL - PG 12</b>	Preserve open space and natural areas.
<b>GOAL - PG 14</b>	Enhance the viability of Township businesses.
<b>GOAL - PG 16</b>	Maintain and expand a diverse park and trails system.
<b>GOAL - PG 18</b>	Maintain and enhance essential public services.
<b>GOAL - PG 20</b>	Provide and support an efficient, safe, and environmentally sensitive road, pedestrian, and bike network.
<b>GOAL - PG 22</b>	Promote efficient and sustainable growth principles.





## GOAL

Preserve and strengthen residential neighborhoods.

### OBJECTIVE

Maintain a community of desirable and attractive residential neighborhoods.

#### Strategies:

- Prevent inconsistent land uses from encroaching into residential areas.
- Continue to support the designation and preservation of legacy neighborhoods and residences.
- Encourage cluster developments and other compact residential choices closer to shopping, dining, and other commercial services.
- Ensure that the Future Land Use Map has a clear direction for residential densities and housing typologies which will result in density steered toward appropriate areas of the Township.

### OBJECTIVE

Ensure new residential developments meet high standards of visual attractiveness, health and safety, and environmental sensitivity.

#### Strategies:

- Minimize erosion and the intrusion of roads, pathways, houses, and driveways into wetlands, floodplains, and woodlands in residential developments.
- Continue to require the planting of trees along rights of way, and the replacement of trees when they are damaged, destroyed, or diseased.
- Encourage residential design that enhances use of outdoor areas for recreation and community walkability.
- In all subdivisions and residential developments, encourage layouts which maintain maximum green space and/or common open space.



## GOAL

Preserve open space and natural areas.

### OBJECTIVE

Adopt policies and programs that maximize the preservation of open spaces, natural areas, other undeveloped areas, and agricultural land uses in the Township.

#### Strategies:

- Continue to develop and implement Township policies regarding the protection of open space land and natural areas via zoning, the public purchase of land, conservation easements, development rights, and other appropriate techniques.
- Encourage landowners to donate natural areas or open spaces to the Township, and to place their properties under the protection of the Farmland and Open Space Preservation (Part 361) or the Conservation and Historic Preservation Easement (Part 21) of PA 451 of 1994 Natural Resources and Environmental Protection Act, where appropriate.
- Encourage landowners to donate land or development rights to non profit land trusts, as appropriate.
- Continue to coordinate efforts to support and promote the preservation of open space and environmentally sensitive lands in the Cascade recreation areas through donations of land with natural, open space and ecological and/or historical significance.
- Preserve the ecological integrity of the Township through zoning, voluntary agreements with landowners, donation of land to the Township, or the purchase of land, scenic easements, and development rights, where appropriate.
- Develop requirements in the zoning ordinance to protect significant mature trees.
- Work with applicable Township Boards, Committees, Commissions, and other reviewing bodies or entities to encourage or require developers and builders to maximize the amount of land left in a natural state.

**OBJECTIVE****Conserve wetlands, floodplains, and other water retention areas.****Strategies:**

- Identify and maintain an inventory of all wetlands, floodplains, and other water retention areas.
- Continue to communicate and coordinate with the Michigan Department of Environment, Great Lakes and Energy (EGLE) on activities affecting lakes, streams, and wetlands.
- Discourage development within wetlands, floodplains, floodplain fringe areas, and other applicable water retention areas.

**OBJECTIVE****Preserve, protect, and maintain the Thornapple River and Cascade Dam.****Strategies:**

- Identify and develop applicable Township policies as to ensure that the Thornapple River is protected from pollution, erosion, and other negative impacts.
- Continue relationships with appropriate local and State agencies to improve and maintain the Cascade Dam.
- Ensure that technology and infrastructure is appropriately reviewed and updated as to ensure the Cascade Dam is continuously monitored and updated as needed and applicable.
- Engage with Riverfront property owners, as applicable, to preserve and protect the Township's riverfront areas.
- Continue partnerships with property owners below the Cascade Dam to ensure that hazard policies are carried through.
- Incrementally review and update the Cascade Township Emergency Action Plan (EAP) as needed.

**OBJECTIVE****Link open spaces and natural areas into a network of continuous greenways throughout the Township.****Strategies:**

- Continue to use and implement the Cascade Township Parks and Recreation Master Plan, as well as other applicable greenspace preservation goals and plans as a guide for determining how natural areas can be linked into continuous greenways throughout the Township.
- Utilize land planning methods, purchases of land and development rights, and plat, site plan, and other review processes to create and maintain continuous greenways.
- Continue to support the efforts of the Cascade Township Parks Committee and Trail Committee to implement parks and trails connections and maintenance activities.
- Continue efforts to raise funding and apply for State, local, and regional grant opportunities for the establishment, acquisition, and maintenance of parks and trails.

**OBJECTIVE****Preserve greenbelts, open spaces and natural areas and create pathways by the use of planned unit development or other suitable zoning strategies for new residential developments.**





## GOAL

Enhance the viability of township businesses.

### OBJECTIVE

Upgrade and enhance commercial areas.

#### Strategies:

- Improve and enhance the 28th Street Corridor by implementing the recommendations of this Zoning Plan.
- Encourage redevelopment of the designated mixed-use areas in the Future Land Use Plan.
- Energize redevelopment and site improvement efforts by utilizing the Downtown Development Authority (DDA) Development and TIF Plans. This includes exploring opportunities for public/private partnerships.
- Evaluate opportunities for walkable design in commercial areas, including wayfinding solutions that improve usability, as applicable.

### OBJECTIVE

Develop Cascade Village

#### Strategies:

- Implement specific zoning strategies, as defined in this Zoning Plan, to achieve the desired built environment of the Cascade Village area.
- Continue to invest in public/private partnership opportunities to enhance collaboration between the Township, DDA, and business owners/property owners.
- Continue to work with other public agencies, such as the Kent County Road Commission, to design and achieve a Cascade Village vision that is reflective of what is feasible.



## OBJECTIVE

Improve the attractiveness of the Township's entrances and transportation corridors.

### Strategies:

- Investigate grant-based funding opportunities, or DDA funding (where applicable), to improve landscaping along major thoroughfares.
- Create well-designed entrances along the main roads entering the community.
- Promote opportunities for public art.

## OBJECTIVE

Promote economic development.

### Strategies:

- Communicate with and utilize the resources of the Michigan Economic Development Corporation, Downtown Development Authority and other applicable bodies to encourage economic development.
- Provide businesses with the information necessary to invest in the community.
- Continue to adopt Township ordinances and zoning practices to facilitate efficient decision-making and to incorporate greater land use flexibility where appropriate.





## GOAL

Maintain and expand a diverse park & trails system.

### OBJECTIVE

Continue to expand the Cascade Township parks and recreational system to meet the recreational needs of residents.

#### Strategies:

- Pursue acquisitions that target current and future demands of residents.
- Employ acquisition strategies that leverage available dollars to secure maximum property for the value.
- Support Pedestrian/Bicycle Pathway linkages to parks and recreation facilities.
- Provide accessible facilities and leisure opportunities for all.



## OBJECTIVE

Develop and support Cascade Township park and recreation programming that is diverse, widely distributed, fiscally responsible, and represents community needs.

### Strategies:

- Support any continuing efforts to pursue public input in determining park and recreation development needs.
- Utilize cooperative methods of providing and expanding recreation facilities by working with local recreation associations, schools, businesses, Kent County, and neighborhood groups and associations.
- Maintain coordination between the Township Board and Parks Committee to maximize the potential benefits and enhance stewardship of open space, natural areas and park lands.
- Encourage developers to incorporate parks and recreation amenities in new developments to complement the efforts of the Park Committee.
- Continue to promote fiscal responsibility through partnerships and collaborative opportunities, grant support, sponsorships, and donations, and encouraging volunteerism.
- Provide resources to maintain and develop a diverse parks and recreation system to deliver a high quality of life for our community residents and necessary support for maintenance and operation of these amenities.
- Continue to implement the Cascade Township Parks and Recreation Master Plan.





## GOAL

Maintain essential public services.

### OBJECTIVE

Ensure that any future development is consistent with the Township's present or planned capacity for sewage treatment, public water, and other utility systems.

#### Strategies:

- Focus any growth to areas within the Utility Service Boundary area, designated in the Future Land Use Plan, to ensure efficient and fiscally responsible use of public services.
- Routinely assess the demands on the utility systems from developments to determine available capacity for future development.
- Routinely inventory water, sewer, and other utility systems capacity.
- Maintain and upgrade the infrastructure (water, sewers, community facilities) of the Township through the Capital Improvements Program's systematic scheduling of infrastructure construction, maintenance, and renovation.



## OBJECTIVE

Maintain police, fire, and ambulance service to all areas of the community.

### Strategies:

- Continue working relationships with applicable public agencies, such as the Township Fire Department, to ensure that future development is right-sized for emergency service response time.
- Offer transparent support with the Police Department to ensure all areas of the Township are maintained as safe areas for residents and visitors.

## OBJECTIVE

Use land use policies to assist the public school districts which are a valued community asset that contribute to make Cascade Township a desirable place to live.

### Strategies:

- Continue and/or initiate land use policies that attract families.
- Support the collaboration with the School District(s) to coordinate park facilities and programs.
- Support street and pathway improvements that provide safe access routes for school children.





## GOAL

Provide and support an efficient, safe, and environmentally sensitive road, pedestrian, and bike network.

### OBJECTIVE

Evaluate the existing network and identify improvements including safety, environment, aesthetics, and traffic congestion that can be solved at acceptable cost.

#### Strategies:

- Continue to coordinate with County, regional and state entities to develop strategies to improve traffic flow.
- Consider zoning and other design strategies such as Complete Streets as effective means of ensuring safe and efficient travel for all modes of transportation.
- Ensure that all existing development, redevelopment, and new development is consistent with the Township's existing road and pedestrian network.
- Support a road system that is consistent with the intended land uses of this Plan, and prevent substantial connections that can cause negative impacts on rural landscape.

## OBJECTIVE

### Support the Township's Complete Streets Ordinance.

#### Strategies:

- Share the Township's vision and continue to work with the Michigan Department of Transportation (MDOT) and the Kent County Road Commission.
- Review current policies to identify inconsistencies and impediments to implementing the Complete Streets ordinance.
- Conduct planning, regulatory, and physical audits of current street designs as needed and financially feasible.
- Coordinate the Pedestrian-Bicycle Pathway Plan with Safe Routes to School policies and other Township plans.
- Ensure that all new private roads are built and maintained to all required minimum standards for roads as adopted by the Kent County Road Commission and Cascade Township.
- Continue to foster partnerships with the Kent County Sheriff's office and police force in Cascade Township to ensure that motorists are adequately reacting to speed limit requirements in residential neighborhoods.

## OBJECTIVE

### Expand and improve the Pedestrian/Bicycle Pathway Plan.

#### Strategies:

- Continue to implement the requirement for sidewalks as determined necessary.
- Continue to implement the pedestrian/bicycle pathway system through site plan review.
- Investigate alternative surfacing materials to reduce the amount of impervious surface materials used in the construction of the pedestrian/bicycle system.
- Continue to investigate strategies for safe and efficient travel for bicyclists and pedestrians.
- Coordinate the Pedestrian/Bicycle Pathway Plan with parks, schools, preserves, neighborhoods, and other destinations.
- Ensure that opportunities for new crosswalks and bike paths crossing streets are adequately assessed, prioritize new crosswalks, and ensure that all existing crosswalks and associated signage are well maintained and updated when necessary.
- Continue to seek opportunities and support connections to regional trails, such as the Grand River Greenway Trail.





## GOAL

Promote efficient and sustainable growth principles.

### OBJECTIVE

Maintain open spaces and natural features in suburban and rural areas of the Township.

#### Strategies:

- Continue to develop zoning standards and Township policies that encourage open spaces and preservation of natural features.
- Continue to encourage and support voluntary citizen land conservancy efforts which maintain the Township's open spaces, natural features, and rural areas.

### OBJECTIVE

Define an urban services district to promote walkable community development and dynamic community improvement through redevelopment.

#### Strategies:

- Promote land use policies that emphasize infill development.
- Investigate opportunities to maximize the use of existing infrastructure through development and redevelopment within the utility service area.
- Investigate additional strategies to provide incentives for development and redevelopment within the utility service boundary.

## OBJECTIVE

Implement sustainable energy and environmental practices throughout the Township utilizing the most current best practices.

### Strategies:

- For Cascade Township procurement purposes, when equivalent products or services are available, preference should be given to the more sustainable services or products.
- Allow and plan for zero-emission vehicle (ZEV) charging stations, where applicable.
- Establish a minimum level of LEED certification or the equivalent for all projects undertaken by the Township.
- Establish ordinances providing incentives for development that emphasize redevelopment, infill development, alternative energy, and building material reuse.
- Explore methods through ordinances or by providing incentives, such as through the DDA, for existing businesses to upgrade their parking lots and landscaping to increase tree cover and shade to be energy efficient and environmentally friendly.
- Explore incentives for new or redeveloped projects to be LEED certified or equivalent.
- Consider alternative energy in site plan and construction of new development.

## OBJECTIVE

Continue to develop Township policies that limit sprawl and support greenspace preservation.

### Strategies:

- Use the tools and recommendations of this Action Plan to ensure that growth and sprawl is appropriately managed in the Township.
- Moving into the future, ensure that Cascade Township is keeping abreast of current tools, resources, and policies that relate to farmland and rural preservation.

## OBJECTIVE

Prepare and implement a redevelopment strategy.

### Strategies:

- Eliminate inflexible or obsolete zoning regulations that do not participate in the redevelopment goals of the Township.
- Identify priority redevelopment sites in the Township.
- Expand public participation, as applicable.
- Develop policies and processes that define the approach to PUD redevelopment.





# Public Input

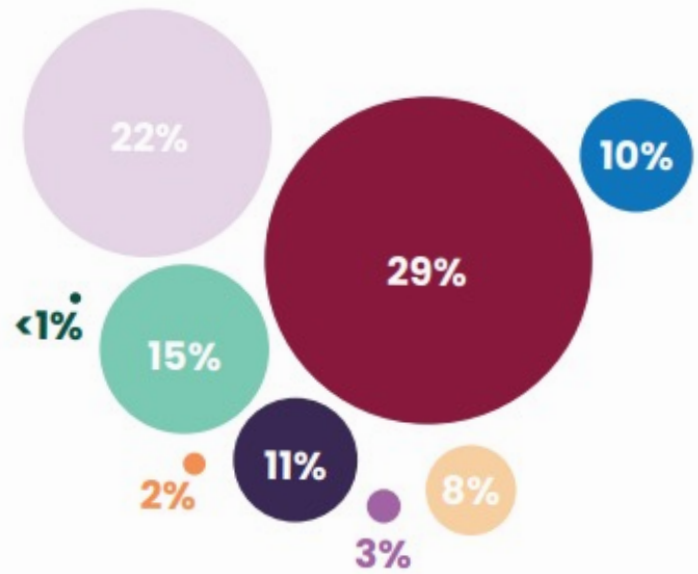
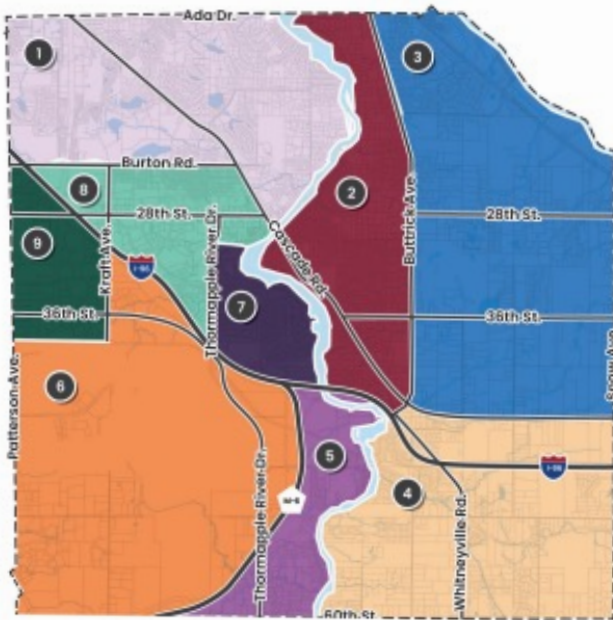
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## Community Outreach Summary

Cascade Township embarked on the public engagement process during the Strategic Plan project, adopted in Summer 2022. The Strategic Plan was developed over the course of a year, using a public process. The process included two online surveys, a series of public focus groups, and workshops with the Township Board, Planning Commission, Downtown Development Authority, Parks Committee and Township Staff. In total, nearly 2,000 people were engaged in the Strategic Planning process.

Below includes a list of key themes, ideas, concerns, and feedback received from the community.



Cascade Township mailed and advertised a survey to each address in the Township. The image includes a geographic breakdown of where in the Township the most survey responses came from. As the graphic shows, the most survey responses (29%) were received from Area #2 as noted in the associated map.

## Cascade's Top Issues of Concern

1. Too Much Traffic Speeding on Major Roads
2. Lack of a Village Area
3. Too Much Traffic Speeding in Neighborhoods/Residential Areas
4. Lack of River/Lake Preservation Efforts
5. Too Much Congestion along Township's Major Roads
6. Decreased Personal Safety
7. Not Enough Parks/Natural Areas
8. Loss of Character Due to Rapid Growth
9. Lack of Pathway Maintenance
10. Too Much Traffic Congestion in Neighborhoods/Residential Areas

## Cascade's Top Priorities

1. Creating a "Downtown" Village
2. Not Raising Taxes
3. Allocating and Planning Residential Growth in Appropriate Areas
4. Creating a Community Gathering Space
5. Improving Existing Parks
6. Encouraging and Supporting Commercial Development in Appropriate Areas
7. Investing Resources into Improving and Enhancing Streetscapes
8. Cleaning up the Thornapple River
9. Creating More Parks
10. Pedestrian Facilities





## Focus Groups

The following public focus groups were held as part of the Strategic Planning Process:

- **Downtown/Village (March 24, 2022)**  
 Participants discussed the boundaries of the “Cascade Village”, and how the Village area could be enhanced. Key topics included redevelopment, beautification, complete streets, bicycle and pedestrian safety, community events, and business attraction and retention.
- **Parks and Trails (March 29, 2022)**  
 Participants discussed the recreation and preservation needs of the Township, including new parks amenities that are desired, the need for additional recreational programming, and opportunities to develop new parks as the Township grows.
- **Growth Management and Preservation (April 14, 2022)**  
 Participants discussed how to accommodate growth pressure while preserving the natural features of the Township. Specific areas were identified for future growth, and we as areas to be protected from future growth.
- **Roads and Streets (April 21, 2022)**  
 Participants discussed the safety and efficiency of the Township’s transportation system. Dangerous or congested intersections were identified, as were places where pedestrian or bicycle infrastructure is needed. Representatives of the Kent County Road Commission were on hand to answer questions and provide context.









BARBER - SHUFFY AREA  
DO NOT FEED OR SWIM  
FROM BARBER STREET  
PARKING AT AREA SHOWN



# Action Plan

044



## Introduction

This portion of the Master Plan Update serves as an initial plan of action for the Township; implementing the goals, projects, actions, and future land use categories outlined during the process. Each implementation step is categorized into the plan themes as well as the Cascade Village.

It is the intent of this Plan to set a foundation for Township decision-making as it relates to planning and zoning matters. The 2022 Cascade Township Strategic Plan includes an extensive list and analysis of the short- and mid-term priorities and projects for each Board, Commission, and Committee in Cascade Township. Further, the Zoning Plan and the Future Land Use Plan are written with extensive content so as to establish a clear direction for the intended patterns and characteristics of the built environment. As such, the primary implementation measure for this Master Plan is to update the Cascade Township Zoning Ordinance to be more aligned with the Township's vision for the future.



## Responsibility & Partners

Primary responsibility for implementing this plan rests with the Township Board, the Planning Commission, and Township staff. Many entities and organizations will need to cooperate in order to fully implement policies, recommendations, and vision.

## Planning Principles

Consistent with the Goals and Objectives in this plan, Cascade Township intends to remain an attractive, desirable, predominantly residential community with an emphasis on providing a high quality of life for its residents. Focused development patterns and targeted density, coupled with the preservation of natural resources and the provision of recreational opportunities, the goal of this Future Land Use Plan is to ensure that the Township is well-positioned to continue to offer residents the best possible blend of amenities and character.



# Future Land Use Plan

It is envisioned that Cascade Township will continue to remain a livable community with high quality of life. The Table below includes a summary of all Future Land Use categories outlined in this Section.

FUTURE LAND USE CATEGORY	PERMITTED LAND USES	PERMITTED HOUSING TYPOLOGIES	MAXIMUM NUMBER OF STORIES (BY HEIGHT)	MAXIMUM DENSITY (BY RIGHT)
Farmland Preservation	Agriculture / Agri-tourism, Residential	Single-Family detached	2.5	See table below
Rural Preservation	Agriculture Residential	Single-Family detached	2.5	See table below
Suburban Residential	Residential	Single-Family detached	2.5	See table below
Community Residential	Residential	Single-Family detached, two-family attached	2.5	6 units per acre
28th Street Mixed Use	Commercial Office	-	2.5	Residential not permitted
Cascade Village	Commercial Office, Residential	Upper floor residential units, missing middle housing	2.5	6 units per acre
Centennial Mixed Use	Residential Office	Multi-family buildings	2.5	6 units per acre
Arboretum Mixed Use	Commercial Office, Residential	Single-family detached, missing middle housing	2.5	6 units per acre
Meijer Area Mixed Use	Commercial Office, Hotel	-	4	Residential not permitted
Southwest Mixed Use	Residential Commercial, Light Industrial Office	Multi-family buildings, missing middle housing	3	8 units per acre
Starr-Glenwood Mixed Use	Residential Office, Light Industrial	Multi-family buildings, missing middle housing	3	6 units per acre
Waterfall Shoppes Mixed Use	Commercial Office	-	2.5	Residential not permitted
Airport	Airport	-	FAA requirements	Residential not permitted
Industrial	Industrial	-	2	Residential not permitted
Golf Course/Open Space	Golf Courses, Parks	-	Varies by district	Residential not permitted
Cemetery	Cemetery	-	Varies by district	Residential not permitted
Public/Semi-Public	Civic Buildings, Parks	-	Varies by district	Residential not permitted

## Permitted Density

The table below includes additional details as to the permitted maximum density by right in the single-family residential future land use categories. In general, the maximum density in these districts are largely dependent on the amount of open space provided per development. These are requirements outlined in the Cascade Township Zoning Ordinance and Subdivision Ordinance.

FUTURE LAND USE CATEGORY	CORRESPONDING ZONING DISTRICT	PROPOSED TYPE OF SUBDIVISION	MAXIMUM PERMITTED DENSITY (BY RIGHT)
Farmland Preservation	FP, Farmland Preservation	No open space	1 unit per every 4.6 acres (approx.)
		At least 50% of gross acreage left as protected farmland	1 unit per every 1.15 acres (approx.)
Rural Preservation	ARC, Agricultural/Rural Conservation	No open space	1 unit per every 4.6 acres (approx.)
		At least 25% of the developable acreage left as public or private open space	1 unit per every 2.3 acres (approx.)
		At least 50% of the developable acreage left as public or private open space	1 unit per every 1.15 acres (approx.)
		At least 50% of the developable acreage is dedicated as public open space	1 unit per acre
Suburban Residential	R-1, Single Family Residential	No open space	1 unit per every 1.8 acres (approx.)
		At least 25% of the developable acreage left as private open space.	1 unit per every 0.9 acres (approx.)
		At least 25% of the developable acreage is dedicated as public open space	1.2 units per acre (approx.)
		At least 25% of the developable acreage left as public or private open space with public sewer and/or water	1.7 units per acre (approx.)
		At least 25% of the developable acreage left as public or private open space with public sewer and water	2 units per acre
		At least 50% of the developable acreage is left as public or private open space	2.07 units per acre (approx.)
		At least 50% of the developable acreage is left as public or private open space with public sewer and water	3 units per acre
	R-2, Single Family Residential	No open space	1.2 units per acre (approx.)
		*At least 25% of the developable acreage left as public or private open space	2.9 units per acre (approx.)
		*At least 50% of the developable acreage is left as public or private open space	4.6 units per acre (approx.)





## Farmland Preservation

The highest priority of this Plan is to support and encourage the preservation of rural character and the continuation of agricultural production processes in the Township. The Farmland Preservation Future Land Use designation is intended to support the continued agricultural activities with the Township as well as to establish mechanisms to support farmland succession efforts. Municipal utilities are not planned to expand into these areas.

Farmland Preservation areas are largely concentrated on the east portion of the Township, between I-96 and 36th Street, between Cherry Avenue and Snow Avenue.

### APPROPRIATE LAND USES

Land uses appropriate for the Farmland Preservation designation include farms and farmland, including both crop growing and livestock raising activities, with associated residential homes. Other types of land uses, such as agri-tourism uses (e.g., cider mills, u-pick operations, etc.) may also be appropriate in this area.

### APPROPRIATE ZONING DISTRICTS

FP, Farmland Preservation



## Rural Preservation

Similar to the intent of the Farmland Preservation Future Land Use category, Rural Preservation areas are envisioned to support the preservation of rural character in the Township, while preventing suburban sprawl into the eastern portion of the Township. In these areas, Cascade's natural character, most notably the rolling hills and dense woodlands, should be protected and preserved in every way possible. Rural Preservation areas are planned to stretch north-south in the Township, spanning from the Grand River on the north side, to the southern Township boundary. The westernmost boundary of these areas include the Thornapple River, south of I-96 and both Buttrick and Cherry Avenues, north of I-96.

### APPROPRIATE LAND USES

Land uses that are most appropriate for the Rural Preservation District include single-family homes and residential land uses on large lots. Accessory buildings, such as pole barns or small hobby farms are also appropriate development/land uses within this District. Utility extensions are not planned for these areas.

### APPROPRIATE ZONING DISTRICTS

ARC, Agriculture/Rural Conservation Zoning District





## Suburban Residential

A majority of Cascade Township's housing stock is located within the Suburban Residential Future Land Use designation. The general character of these areas includes higher density residential development on smaller lot sizes. Suburban Residential areas generally located within close proximity to commercial centers and hubs within the Township, as well as close access to community amenities such as parkland and golf courses.

Suburban Residential areas are intended to encompass and support the preservation of existing residential neighborhoods where traditional neighborhood design is encouraged.

### APPROPRIATE LAND USES

Land uses that are most appropriate for the Suburban Residential Future Land Use areas include residential land uses and neighborhoods. Any future (re)development in these areas should incorporate sidewalk infrastructure on both sides of the street, non-motorized neighborhood connections (as applicable), and multiple street connections onto major thoroughfares. Existing natural features, such as woodlands, should be preserved to the highest extent possible. Township or County owned parks and/or trails are also appropriate here.

### APPROPRIATE ZONING DISTRICTS

R-1, Single-Family Residential  
R-2, Single-Family Residential



## Community Residential

The Community Residential Future Land Use category is intended to encompass both attached and detached residential housing in Cascade Township. Community Residential areas are more appropriate adjacent to commercial amenities and public facilities, such as parks and schools. The Community Residential designation is also intended to serve as a residential transition between the higher intensity commercial land uses along the 28th Street Corridor and the Suburban Residential (single-family detached) land uses.

### APPROPRIATE LAND USES

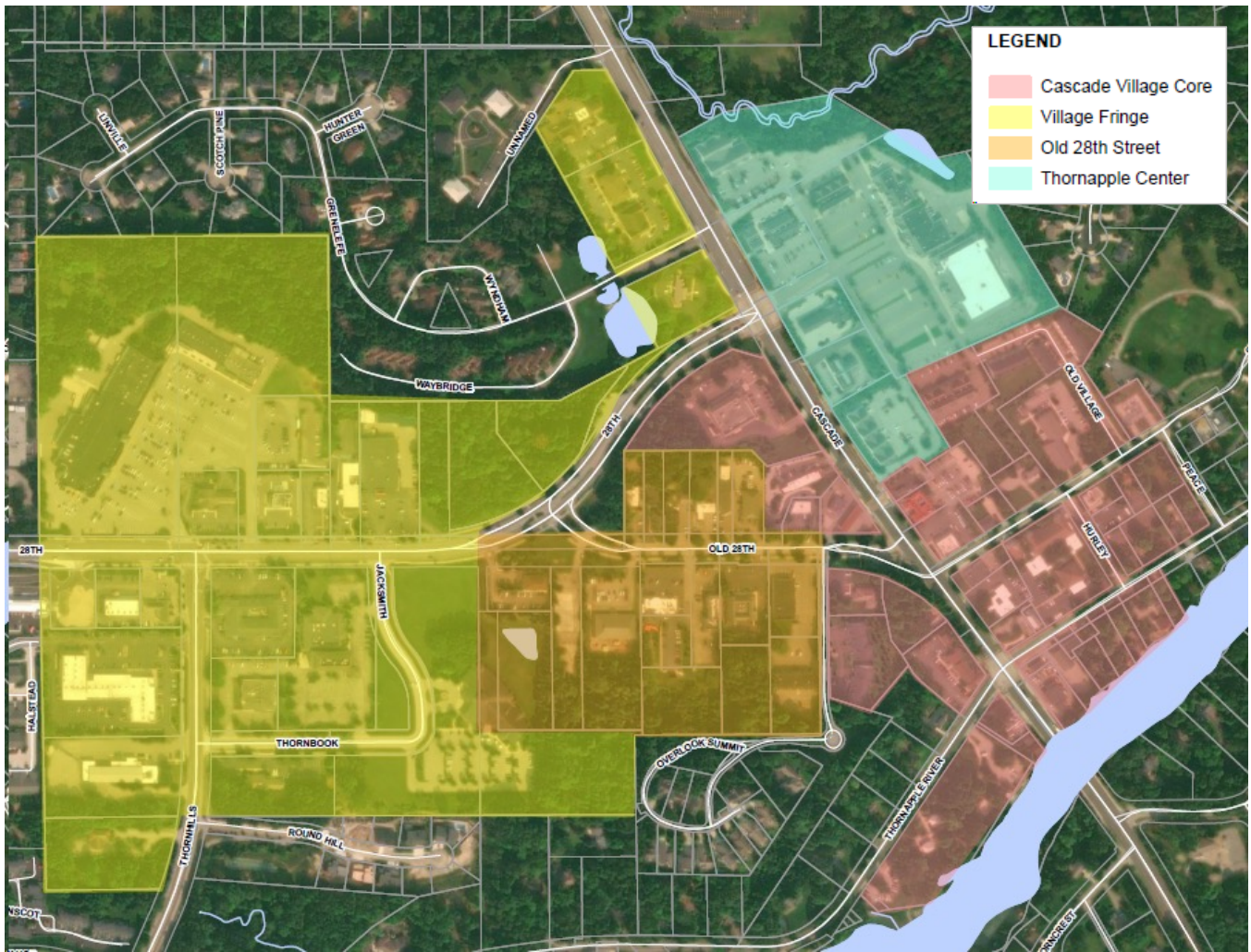
Residential development, varying in housing typologies and higher density, are appropriate here. Development types can include attached condominium units, attached single-family homes, detached single-family homes, and other similar land uses.

Natural features, such as woodlands and ponds, should be preserved with (re)development activities. Further, residential developments should include sidewalks and non-motorized facilities that connect to the Townshipwide system, or to adjacent neighborhoods. Further, new residential development proposals should include greenspace, open space, active, or passive recreation space. Water and sewer connections are appropriate for this District, where they may not already exist.

### APPROPRIATE DISTRICTS

PUD, Planned Unit Development





## Cascade Village

This Future Land Use Plan includes the Cascade Village area, spanning east-west from (approximately) Thornhills Avenue to the end of 28th Street at Cascade Road and Thornapple River Drive. However, it is recognized that the whole area includes several unique characteristics that should be explored separately through this Plan and subsequent zoning decisions. Therefore, the Cascade Village area is comprised of four (4) hubs, or mixed-use centers. These include:

- Cascade Village Core
- Thornapple Center
- Village Fringe
- Old 28th Street

The 4 mixed-use centers listed above are generally intended to include mixed-use developments, whether they are horizontal mixed uses (e.g., commercial adjacent to office, adjacent to residential) or vertical mixed uses (e.g., ground floor commercial and upper floor residential). Further, each of the mixed-use centers is envisioned to represent the Township’s most robust and highest quality building and site design requirements. The Cascade Village area, within its entirety, should be connected by pedestrian and/or bike infrastructure and incorporate existing public uses, such as the Kent District Library and Friendship Park.

### APPROPRIATE DISTRICTS

B-1, Village Business  
(Future form-based zoning districts)





Gaslight Village in the City of East Grand Rapids, Michigan, includes the planned building type, architectural style, scale, and massing intended for the Cascade Village Core.



## Cascade Village Core

As a high priority for the Township throughout the duration of this Plan, the Cascade Village core area is envisioned to be the Township's walkable, bikeable, and welcoming traditional Village area. Traditional colonial/cottage style architecture is envisioned, with high quality building and site design elements. Higher density buildings are appropriate in this area, with minimal setbacks, rear or side parking, and other traditional site design features.

The main walkable core of Cascade Village is intended to be located around the intersection of Cascade Road and Thornapple River Drive. This is the area where most shopping, dining, and recreation activity is intended to take place.

The Cascade Village Core area supports walkable and engaging streetscapes with varied storefronts, restaurants, public spaces, and activities. Residential housing is encouraged with a mix of townhomes, upper-story lofts, and apartments. Easy access to on-street parking should be prioritized in development. Off-street parking and other essential infrastructure should be hidden from the street. All buildings should be constructed at a human-scale for size and massing.





Mashpee Commons, in Cape Cod, MA, is an example of the planned traditional/cottage-like architecture style envisioned for Thornapple Center.



## Thornapple Center

Thornapple Center is one of the areas within the Cascade Village Future Land Use category that is primed for redevelopment. Current conditions of this area include a vast underutilized parking area and several successful commercial businesses. Thornapple Center is not connected by sidewalk or bike infrastructure and does not offer many cross-connections between parking lots to adjacent areas within the Village Core to the south.

However, the current layout of the Thornapple Center site sets the stage for grid-like structure, fully connected by a pedestrian network and usable public space for gathering, shopping, dining, and other recreational activities. The future vision for this area includes a walkable and bikeable urban center with residential land uses and commercial land uses intermingled. Commercial land uses can include restaurants, offices, retail stores, and other similar type uses.

The residential land uses in the Thornapple Center area are envisioned to include a mix of housing typologies. This includes residential units above a commercial storefront in a vertical mixed-use building, or “missing middle” residential structures.



South Main Street in the City of Plymouth, MI is an example of horizontal mixed-use development. Note the sidewalks, streetlamps, buried utilities, minimal signage, street trees, reduced building setbacks, and other similar placemaking features.

## Village Fringe

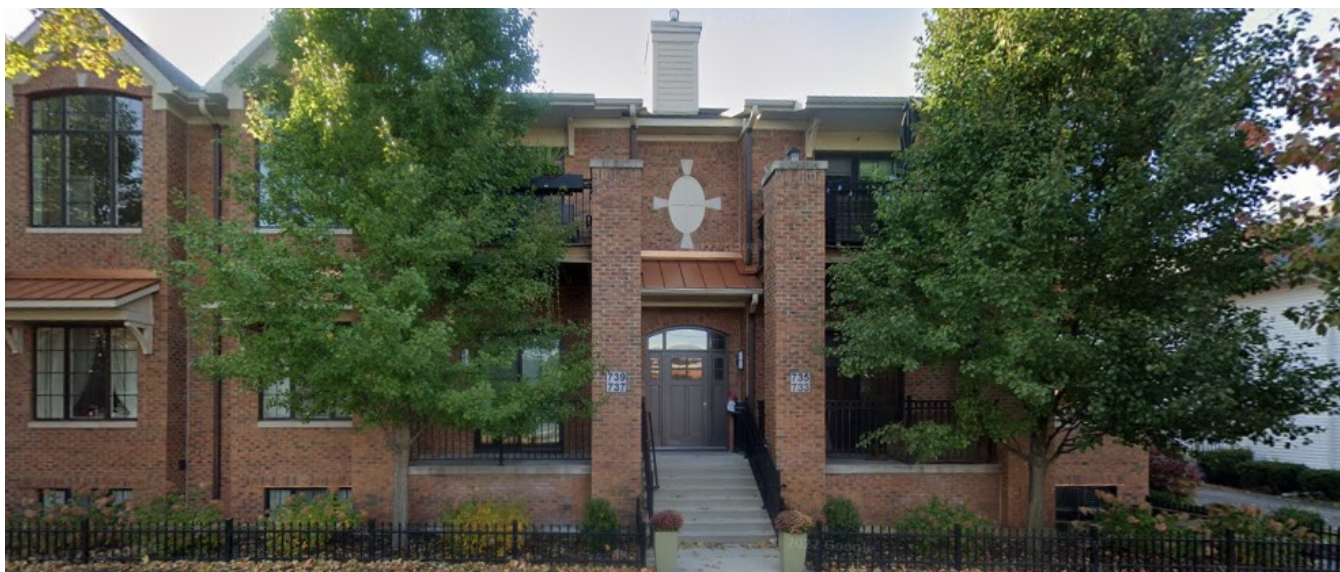
Further west on 28th Street, up to the “D&W Fresh Market site” (approximately near Thornhills Avenue) as well as the immediately adjacent residential neighborhoods, are intended to be comprised of a different land use fabric. Horizontal mixed uses and higher density residential (e.g., single family attached and detached) land uses are more appropriate than vertical mixed-use buildings. The Village Fringe area supports infill development along 28th Street that is more consistent with the goals and vision of this Plan.

Buildings and structures should be situated closer to the street (as applicable), with rear or side parking. Cross-access between parking lots and shared parking agreements are encouraged here. Developments should also include specific design elements that serve as a placemaking concept – to notify pedestrians and motorists they have “arrived” at the Cascade Village. Sidewalks and mobility improvements should also be a priority in this area.

In terms of residential development, single-family detached homes and single-family attached homes are both appropriate residential land uses within this category. This is intended to encompass the existing single-family attached units, as well as residential neighborhoods that are located within close proximity to the Village Core. These residential areas can be enhanced throughout the duration of this Plan by implementing pedestrian infrastructure to connect these neighborhoods to the Cascade Village area.







An example of adjacent residential development in Gaslight Village, City of East Grand Rapids, MI.

## Old 28th Street

Surrounding the Old 28th street Corridor is intended to become a mixed-use area with a shifted focus on residential components. Those who reside within this area will have primary walkable and bikeable access to the Village core at Thornapple River Drive and Cascade Road.

This area is intended to have more residential development, likely small-scale attached single-family residential dwelling units, with some commercial businesses adjacent. This area should also be walkable and provide pedestrian and bike access (as applicable) to the Village Core and further “up the hill” to the Kent District Library and other businesses.



EXISTING CHARACTER OF 28TH STREET

## 28th Street Mixed Use

Perhaps the highest traffic volume corridor in the region, 28th Street is largely known for its chain/big box establishments, traffic congestion, and suburban architecture with vast parking lot areas. The easternmost portion of the 28th Street Corridor is located within Cascade Township, spanning east-west from Patterson Avenue to Cascade Road. Current conditions include commercial development varying in size and age.

The 28th Street Future Land Use category envisions a modern land use and architectural fabric to the 28th Street Corridor. This includes mixed uses, permitting commercial, medical, and office uses. Further, this Plan envisions the 28th Street Corridor to redevelop (or infill development) into a Corridor with cross-access between businesses, right-sized parking areas, high quality landscaping, attractive signage, and high-quality building and site design. This includes building materials constructed from brick, masonry, stone, siding, and other applicable materials. Further, (re)development sites should include robust frontage, parking lot, and general site landscaping elements.

### APPROPRIATE LAND USES

Permitted land uses in this designation include commercial, medical, and office. Hotels are not planned land uses in this area. New developments, infill development, and redevelopment sites should be connected to water and sewer infrastructure, if it does not already exist. Existing mature growth trees and appropriate greenspaces should be preserved to the highest extent possible. Sidewalk connections should be required in these areas.

### APPROPRIATE ZONING DISTRICTS

PUD, Planned Unit Development



PLANNED CHARACTER FROM THE CITY OF NOVI, MI





EXISTING CHARACTER OF STARR-GLENWOOD



PLANNED CHARACTER



PLANNED CHARACTER

## Starr-Glenwood Mixed Use

Redevelopment Mixed Use areas are generally planned to generate redevelopment activities in specific areas surrounding the 28th Street Corridor. Redevelopment activities can include permitting additional land uses (e.g., commercial and residential) to create a mixed-use environment with infill development, or repurposing/converting existing buildings into new land uses.

Most notably, Redevelopment Mixed Use areas are planned for the “Starr Triangle” encompassing the Cascade Office Park and on the east side of Hotel Avenue spanning to Glenwood Hills.

### APPROPRIATE LAND USES

Land uses that are appropriate for the Redevelopment Mixed Use designation include office uses, maker spaces or light industrial, commercial uses, and, in certain situations, multi-family residential uses or mixed-housing typologies. Hotels and lodging land uses are not planned for these areas. Water and sewer connections are appropriate for this District, where they may not already exist. Existing mature growth trees and natural spaces should be preserved. Further, new residential development proposals should include greenspace, open space, active, or passive recreation space.

### APPROPRIATE ZONING DISTRICTS

PUD, Planned Unit Development



## Centennial Mixed Use

The overall goal of the Centennial Mixed Use designation is to re-energize the declining office park land uses in the Township. Currently, Centennial Park is the local for Cascade Township Hall, and other office businesses and buildings. The Centennial Mixed Use area is envisioned to emerge into a walkable mixed use node within the Township. This land use designation is located south of 28th Street, from Kraft Avenue to Thornhills Avenue.

### APPROPRIATE LAND USES

In Centennial I Mixed Use areas, appropriate land uses include offices and medical facilities. Residential developments with mixed housing typologies may also be appropriate in this area. Hotels and lodging land uses are not planned for these areas. Water and sewer connections are appropriate for this District, where they may not already exist. Existing mature growth trees and natural spaces should be preserved for any new development or redevelopment activities. Further, new residential development proposals should include greenspace, open space, active, or passive recreation space.

### APPROPRIATE ZONING DISTRICTS

Centennial Park Overlay  
PUD, Planned Unit Development







## Arboretum Mixed Use

The Arboretum Mixed Use area is intended to encompass the commercial node surrounding the Cascade Road and Hall Road area. Current conditions include small commercial businesses surrounded by residential land uses. The Township should continue to support these local businesses, but also offer opportunities for mixed use development and growth. Any new commercial development should be at a small-scale intended to serve adjacent residential homes.

### APPROPRIATE LAND USES

Land uses that would be appropriate in this area include small offices and small-scale local commercial businesses and single-family residential development (attached or detached). New residential developments should incorporate sidewalks and non-motorized infrastructure on both sides of the street and connecting to main thoroughfares. Hotels and lodging facilities are not appropriate.

New commercial development should also include robust landscaping elements and right-sized parking areas located on the side or rear of the building. All buildings should be appropriate scale and massing as the



surrounding area and constructed with high quality building materials. Cross-access between businesses should be encouraged. Existing mature growth trees should be preserved to the highest extent possible.

### APPROPRIATE ZONING DISTRICTS

O, Office  
B-2, General Business  
PUD, Planned Unit Development

## EXISTING CHARACTER OF MEIJER AREA



## Meijer Area Mixed Use

The Meijer Area Mixed Use designation is intended to include the current Meijer store located on 28th Street and immediate parcels north of the store. Development activities here can include infill development or redevelopment of existing structures, as applicable. Existing conditions in this area include commercial businesses, hotels, and offices.

### APPROPRIATE LAND USES

Land uses appropriate for this area include commercial and retail businesses, medical facilities, general office land uses, or hotel and lodging land uses. New development and redevelopment structures and buildings should be attractive and include high quality building materials with robust aesthetic elements, such as frontage landscaping, parking lot landscaping, attractive signage, and others. All development in this area should be connected to public utilities.

### APPROPRIATE ZONING DISTRICTS

B-2, General Commercial

## PLANNED CHARACTER







## Southwest Mixed Use

The Southwest Mixed Use area is located on the south westernmost corner of the Township. This area is unique in that it borders several adjacent municipalities, the City of Kentwood, Gaines Township, and Caledonia Township. This area is generally industrial in nature but is planned to accommodate mixed uses throughout the duration of this Plan. This area likely experiences heavier truck traffic and traffic during peak hours, as it is a location for places of employment in the area.

### APPROPRIATE LAND USES

Appropriate land uses in the Southwest Mixed Use designation include light industrial businesses, hotels, retail and commercial businesses, higher density residential, and office. Offering flexibility in land uses is intended to be responsive to market demands in the area, while balancing the Township's goals for preservation of residential and rural character. New development in this area should be constructed of high-quality building materials, such as brick, stone, or siding. Roads and driveways should be constructed to withstand frequent heavy vehicle traffic. Further, new development should include robust landscaping and signage elements. All new developments should be connected to public utilities.

### APPROPRIATE ZONING DISTRICTS

TI, Transitional Industrial  
 B-2, General Business  
 O, Office  
 PUD, Planned Unit Development



## EXISTING CHARACTER OF WATERFALL SHOPPES



## Waterfall Shoppes Mixed Use

The Waterfall Shoppes Mixed Use area encompasses an existing commercial and retail hub in Cascade Township. This area is a popular regional destination for general commercial activities. The area experiences high traffic volumes, frequent loading and unloading activities for big box retail stores, vast parking lots, and other similar features consistent with suburban commercial development on a large scale. The overarching vision for the future of this area is to support and maintain economic activities to occur in this area, but also open the door for potential infill development or redevelopment, as applicable or appropriate.

### APPROPRIATE LAND USES

The land use vision of the Waterfall Shoppes Mixed Use designation includes commercial and retail businesses, restaurants, medical buildings, and offices. Hotels and other lodging facilities are not planned for this area. Development should include robust parking lot landscaping plans, high quality building and site design, cross-access between businesses, shared parking areas, and other applicable elements that are appropriate for suburban commercial development. All development in this designation should be connected to public utilities. Existing trees and other natural elements should be preserved to the highest extent possible. Signage, lighting, and other site features should be attractive, consistent, and constructed of high-quality materials.

### APPROPRIATE ZONING DISTRICTS

B-2, General Commercial  
PUD, Planned Unit Development





## Airport

The airport Future Land Use category encompasses the existing Gerald R. Ford International Airport. In general, the Airport is regulated by the State of Michigan and the Federal Aviation Administration (FAA). The future land use plan for this area is intended to remain as an airport, with associated applicable aeronautical uses accessory to operations. Cascade Township does not envision a geographic expansion of the airport into other parcels or areas within the Township.

The primary intent of the Airport Future Land Use category and corresponding zoning district (listed below) is to accommodate and promote aeronautical progress for the public good and to facilitate adequate provisions for a system of transportation pursuant to MCL 125.3203.1, while protecting the public health and welfare of Cascade Township citizens.

Additionally, in a legal opinion generated by municipal attorneys at Foster Swift, "Activity at a publicly owned airport under control of an airport authority created by the Airport Authorities Act (Capital Regional Airport in Lansing) which are aeronautical uses are exempt from zoning, though non-aeronautical uses of such an airport are subject to zoning. Further, local zoning cannot conflict with adopted airport zoning. 7 Section 18 of P.A. 23 of 1950 Extra Session, as amended (the Airport Zoning Act, MCL 259.448 et. seq.). (Section

15 (MCL 259.445) provides for airport zoning to be a part of local zoning.)" With this, any land surrounding the airport that is subject to Township local zoning is planned to remain as undeveloped open space, greenspace, or greenway – as the Future Land Use map indicates.

Further, the Future Land Use Map indicates the approximate areas for the Airport Safety Zones. According to the FAA, safety zones are "a trapezoidal area off the end of the runway end that serves to enhance the protection of people and property on the ground in the event an aircraft lands or crashes beyond the runway end." These Zones underlie a portion of the approach closest to the airport. The Airport Safety Zones have limitations on obstructions, such as residential, industrial, or commercial development, for the primary purpose of the protection of people and property on the ground. These areas are approximated on the Future Land Use Map.

### APPROPRIATE ZONING DISTRICTS

AC, Airport Commerce District  
Overlays A, B, and C



## Industrial

The industrial 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. Industrial activities within the Township are concentrated on the north and west side of the Airport, south of I-96.

Industrial areas are not intended or envisioned to expand as a component of this Future Land Use Plan. Industrial land uses are not intended or supported to expand east of the Airport.

### APPROPRIATE LAND USES

General industrial activities, such as manufacturing, warehousing, assembly, mini storage, research and development, and other similar industrial businesses and land uses are appropriate here. Any new development and redevelopment activities should consist of attractive building facades, landscaped frontages, sites, and parking lots, appropriate lighting, and other applicable site design elements.

### APPROPRIATE ZONING DISTRICTS

Ti, Transitional Industrial  
I, Industrial





## Golf Course or Open Space

Currently, Cascade Township has several privately-owned golf courses within its borders. While it is understood that these golf courses will likely remain for the foreseeable future, it is best practice to identify future land uses that may be most appropriate for golf courses, should the properties ever be purchased or sold. As such, this Plan envisions the Township's golf courses to remain as undeveloped land, as open space, greenspace, or parkland.

Further, passive open space is intended and planned for the area east of the Airport, between I-96 and the airport property. It is also recognized that with FAA regulations, development is also not appropriate for this area. The general intention for this area is undeveloped open space, greenspace, or parkland. Passive recreation uses, such as walking or bike trails, may also be appropriate.

### **APPROPRIATE LAND USES**

Golf courses, open space, parks, walking trails, bike trails, or other similar uses.

### **APPROPRIATE ZONING DISTRICTS**

ARC, Agriculture Rural Conservation FP, Farmland Preservation



## Cemetery

Heavily regulated by the State of Michigan, cemeteries in Cascade Township are planned, and required, to remain as cemeteries in perpetuity. As such, the Future Land Use for cemeteries is not planned to change from current conditions. Cemeteries in the Township should be appropriately maintained in quality condition, with appropriate accessory buildings and uses.

### APPROPRIATE LAND USES

The only appropriate land use is a cemetery and related activities. However, with any new cemetery development in the Township, various site elements should be considered as a component of that development. This includes the assessment of new walking paths or bike paths within the site (and connecting to the Townshipwide network, as applicable), appropriate site lighting and parking areas, attractive signage, and quality structures.

### APPROPRIATE ZONING DISTRICTS

ARC, Agriculture Rural Conservation  
FP, Farmland Preservation





## Public/Semi-Public

Publicly or privately owned facilities provide recreational, educational, governmental, and other services to the community. The Township continues to encourage opportunities to enrich the lives of its citizens by offering varied services.

It should also be noted that the Township owns several properties along the Thornapple River. Public access is not always available in those areas.

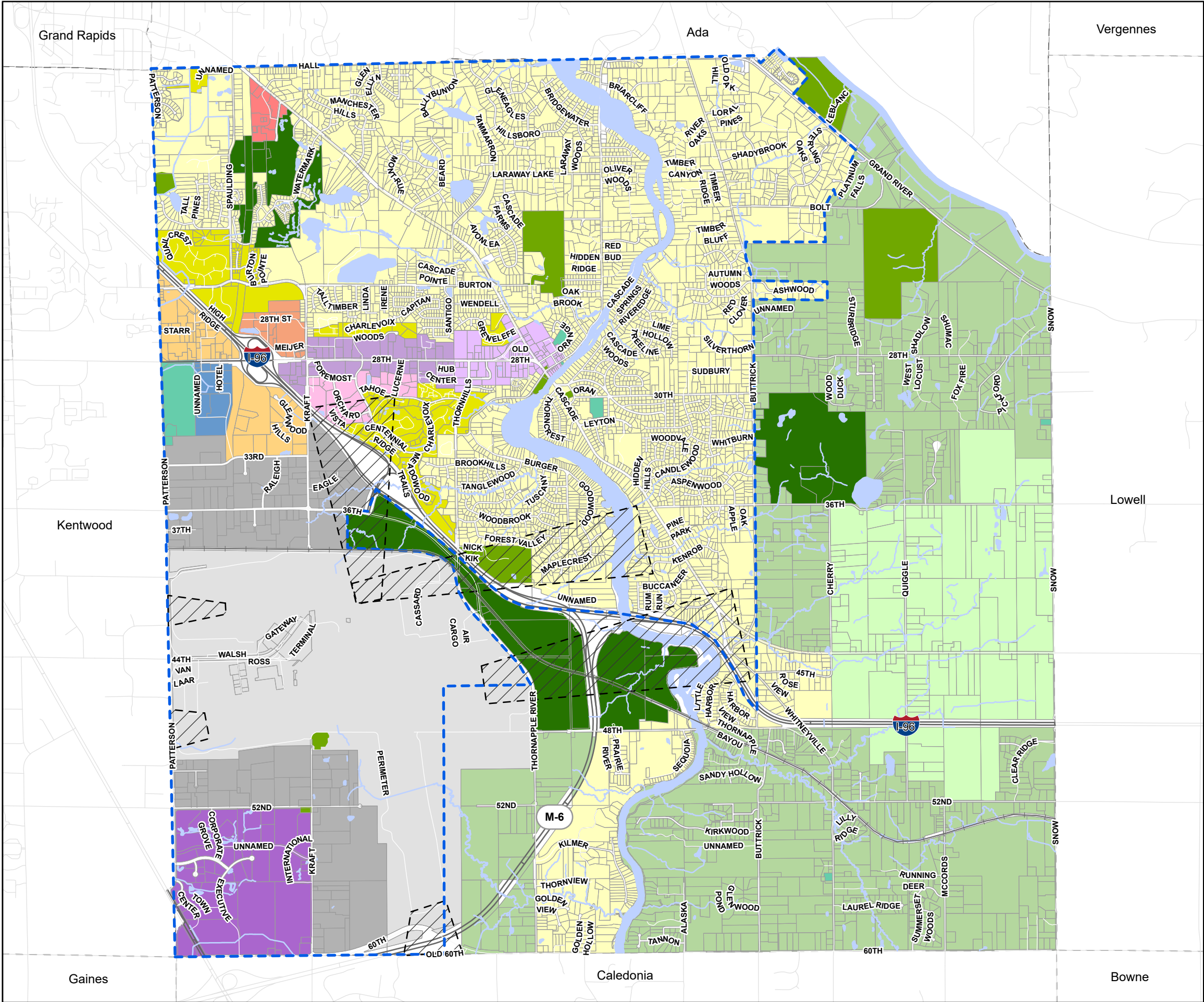
### **APPROPRIATE ZONING DISTRICTS**

All

# DRAFT Future Land Use

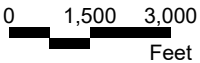
Cascade Township, Kent County, Michigan

December 15, 2023



## LEGEND

- Farmland Preservation
- Rural Preservation
- Suburban Residential
- Community Residential
- 28th Street Mixed Use
- Cascade Village
- Centennial Mixed Use
- Arboretum Mixed Use
- Meijer Area Mixed Use
- Southwest Mixed Use
- Starr-Glenwood Mixed Use
- Waterfall Shoppes Mixed Use
- Airport Zone
- Industrial
- Golf Course or Open Space
- Cemetery
- Public/Semi-Public
- Airport Safety Zone (Approx.)
- Utility Service Boundary



Basemap Source: Michigan Center for Geographic Information, Version 17a.  
Data Source: County or Local Community Source. McKenna 2020.



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## Zoning Plan

The Zoning Ordinance is the major tool available to local governments to implement the land use mapping element of the Master Plan. The future land use classifications and corresponding descriptions of those classifications form the basis for evaluation of future land use and the corresponding development associated with that use. The Master Plan provides general land use allocations while the Zoning Map has precise boundaries and permitted uses adopted as law.

A Zoning Plan is required by the Michigan Planning and Zoning Enabling Acts. Section 33(d) of the Michigan Planning Enabling Act, PA 33 of 2008, as amended, requires that the Master Plan prepared under that act shall serve as the basis for the community's Zoning Plan. The Michigan Zoning Enabling Act, PA 110 of 2006, as amended, requires a zoning plan to be prepared as the basis for the zoning ordinance. The Zoning Plan must be based on an inventory of conditions pertinent to zoning in the municipality and the purposes for which zoning may be adopted.

The following table presents the Cascade Township Zoning Districts that apply to each of the Future Land Use designations. Where new regulations are recommended to implement the Master Plan, the "new district" or "district revisions" descriptions have also been added to the table.

Not all of the Master Plan's future land use categories will match up with the current location or regulations of the Zoning District to which they most closely correspond. Zoning Ordinance text amendments, map amendments or new Zoning Districts will be necessary to implement the Future Land Use Plan. The key recommended revisions the Zoning Ordinance are discussed in the following pages.



## Relationship Between Future Land Use & Zoning

FUTURE LAND USE CATEGORY	ZONING DISTRICT
Farmland Preservation	FP, Farmland Preservation
Rural Residential	ARC, Agriculture/Rural Conservation
Suburban Residential	R-1 & R-2, Single Family Residential
Community Residential	PUD, Planned Unit Development
Cascade Village	B-1, Village Business VO, Village Office/Service NEW Form Based Code
28th Street Mixed Use	PUD, Planned Unit Development
Centennial Mixed Use	CPO, Centennial Park Overlay PUD, Planned Unit Development O, Office
Arboretum Mixed Use	O, Office B-2, General Business PUD, Planned Unit Development
Meijer Area Mixed Use	B-2, General Business ES, Expressway Service PUD, Planned Unit Development
Southwest Mixed Use	TI, Transitional Industrial B-2, General Business O, Office PUD, Planned Unit Development
Starr-Glenwood Mixed Use	O, Office PUD, Planned Unit Development
Waterfall Shoppes Mixed Use	B-2, General Business PUD, Planned Unit Development
Airport Zone	AC, Airport Commerce
Industrial	TI, Transitional Industrial I, Industrial
Golf Course or Open Space	ARC, Agriculture/Rural Conservation All Districts
Cemetery	ARC, Agriculture/Rural Conservation All Districts
Public/Semi-Public	All Districts



## Agriculture and Rural District Recommendations

The following includes zoning recommendations as it relates to rural preservation and agricultural preservation in the Township.

### District Recommendations

The Township should evaluate the FP, Farmland Preservation and ARC, Agricultural/Rural Conservation zoning districts to ensure they are adequately protecting rural character and natural features. Specifically, the minimum lot sizes should be evaluated to ensure that land cannot be excessively split, resulting in higher housing densities than can be supported by infrastructure, degradation of natural features, and reduction in cultivated land.

Additionally, Planned Unit Developments should not be approved outside of the Utility Service Boundary. Zoning, in particular housing density limits, in the rural portion of the Township should be designed to preserve character, and then strictly enforced.

### Private Road Restrictions

Private roads in rural areas split up farmland and allow unsustainable housing densities. Rather than create dead-ends leading into woods and former farmland, the Township will encourage housing in the rural areas to be located along existing thoroughfares, preserving unbroken stretches of farmland or natural space. An outright prohibition on private roads in the FP and ARC Districts should be considered. The Township should review and update private road standards and requirements as a result of this Plan also considering the requirements and capabilities of the Fire Department.

While discouraging the construction of private roads is recommended in the FP and ARC districts, private roads are commonly found throughout Cascade Township in other suburban residential areas. As such, all private roads within the Township, wherever located, should be constructed and maintained to all applicable standards for public roads, as designated by the Kent County Road Commission. Any new private roads in the Township should to adhere to the Road Commission's requirements for public road design, access, width, surface materials, maintenance, and other elements.





### Thornapple Crescent Greenway

Cascade Township envisions that the area between Gerald R. Ford International Airport and the I-96 and M-6 freeways should be preserved as a natural area, with opportunities for passive recreation, such as bike paths and nature trails. This area should be branded as the Thornapple Crescent Greenway.

The Greenway is an opportunity to preserve natural features and green space because the land envisioned for the greenway is inappropriate for most private development. This is due to the following factors.

- Much of the land is owned by public/ quasi-public entities such as MDOT, the Kent County Road Commission, and Kent County. This creates an opportunity for public uses, such as recreation and natural preservation, and an impediment to private development.
- Because of the nearby runway of Gerald R. Ford International Airport, air traffic flies low over the Crescent, creating negative impacts that make housing development impractical. Non-residential development such as industrial or commercial is also burdened by the low-flying aircraft, and site design limitations dictated by the needs of aviation safety.
- Previous PFAS use at the airport creates concerns about new or increasing underground blooms of the forever

chemical, making the groundwater risky for use in wells. Meanwhile, public water infrastructure does not exist in the area, and extensions would be expensive, taking away from other infrastructure priorities.

- Noise and air pollution from the nearby highways would burden residential development. Commercial and industrial development may benefit from proximity to freeways, but the lack of exits in the area negates that potential advantage. There is only one exit on I-96 easily accessible from the Crescent (36th Street) and no convenient exits on M-6.
- Preserving green space in the Thornapple Crescent will reduce runoff pollution into the Thornapple River by limiting impervious surfaces.
- The road network in the area is inefficient and insufficient for intense development. Because of the highways, the Thornapple River, and the airport, there are only four roads into the Crescent – 36th Street from the west, Thornapple River Drive from the north and south, and 48th Street from the east. Aside from 36th Street (and its entrance to I-96 and connection to Patterson Avenue), this road network is insufficient for intensive development.

With those impediments in mind, the Township envisions partnering with the public and private landowners in the area to create a connected swath of public green space running from Cascade Recreation Park to 60th Street.



## Residential District Recommendations

The following recommendations pertain to the R-1 and R-2 Districts.

### Neighborhood Design

To continue to provide high quality of life and preserve the existing character of residential spaces, it is important to consider the character, design, and function of neighborhoods in Cascade Township. As such, some of the key factors that are generally considered as best practices for neighborhood design include:

### Neighborhood Design Guidelines

Connecting neighborhood streets to one another, and to Township thoroughfares, is generally encouraged when appropriate. Some primary purposes of a connected street system are to:

- Facilitate traffic flow
- Alleviate traffic congestion
- Reduce the number of trips
- Long-term cost savings for road maintenance and municipal infrastructure

In general, and where applicable, neighborhood streets should be designed in a way to minimize cut-through traffic, but allow for access to community gathering places, such as playgrounds, parks, and more.

Neighborhood street designs should offer more than one entry and exit route and connections to adjacent neighborhoods but can also include cul-de-sac and dead-ends as needed and applicable. Refer the image example of recommended street design. Notice the image example includes multiple connections to arterial roads simultaneously placed with cul-de-sac, and connections to other neighborhood streets.

Also noted in this example, is that although there are multiple street connections to arterial roads and to adjacent neighborhoods, a motorist would not use these neighborhood streets for cut-through access. This type of design promotes enhanced safety and privacy for residents.





## Commercial District Recommendations

Continue to monitor market trends as they relate to commercial development within the Township. A Zoning Ordinance update following the Master Plan should also consider reviewing requirements for both the B-2 and ES Districts and how they may be condensed or consolidated.

Also, consider developing additional requirements within the Township's base zoning requirements to enhance aesthetics and character in the following areas:

- Landscaping: particularly parking lot landscaping, tree preservation/replacement, and frontage landscaping.
- Signage: review current signage requirements for commercial districts to ensure that the Ordinance supports the desired results for sign aesthetics.
- Lighting: All outdoor lighting standards should also be consistent with the desired general aesthetics in the Township's commercial areas.
- Sustainability: consider any additional requirements for (re)development activities to support green infrastructure elements and sustainable design features, as applicable.
- Parking: review current parking requirements in the Township to ensure that the Township does not require excessive parking for commercial developments. This can lead to underutilized parking areas and impervious surfaces.

## Mixed Use District Recommendations

The following includes zoning and policy recommendations as it relates to the various planned mixed-use areas within the Township. It is recognized that these areas are predominantly PUDs, aside from the Cascade Village area. Refer to the PUD recommendations described further in this Chapter for more information on PUD agreement modifications, recommendations, and redevelopment. Further, refer to the Future Land Use Chapter for more information on the planned density and height requirements and limitations for the mixed use districts.

### Cascade Village

In order to preserve and enhance the historic charm of Cascade Village, while also promoting the Township’s brand and character to visitors to the 28th Street corridor, the Township will expand the purview of the Architectural Review Committee and adopt enhanced architectural regulations into the Zoning Ordinance.

In addition to the updated architectural standards in the Zoning Ordinance, administered by the Planning Commission and the Architectural Review Committee, the Downtown Development Authority will develop a program to subsidize improvements to existing buildings and sites to enhance their design and contribution to the intended character.

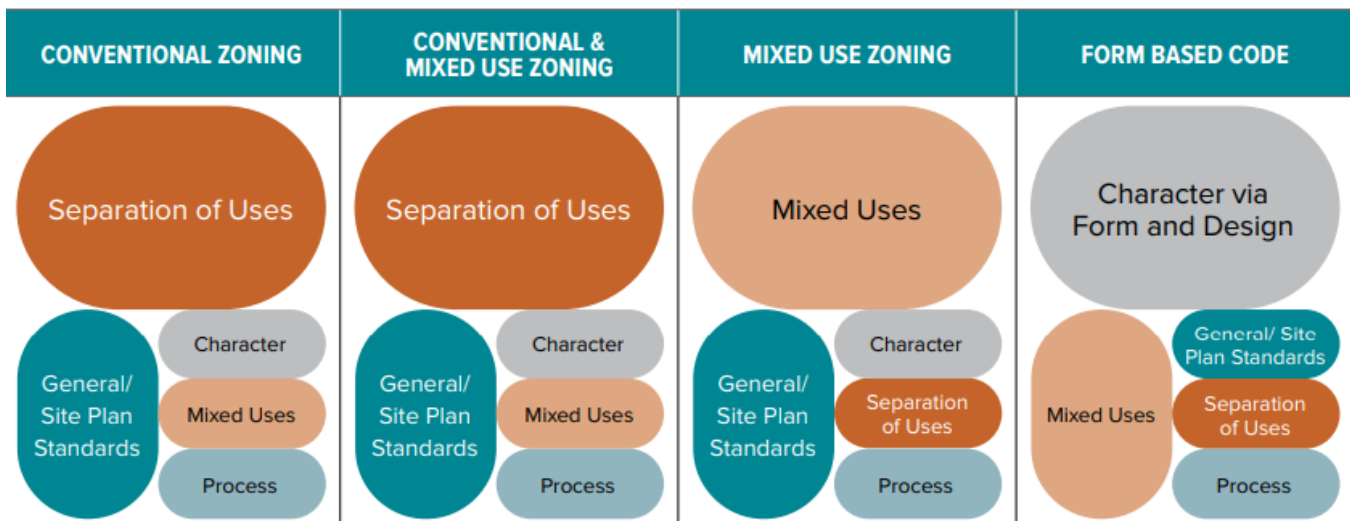
In addition to the zoning recommendations as outlined below, the Township should also consider combining and condensing the applicable zoning districts in the Cascade Village area, the B-1 Village District and the VO, Village Office/Service District. With the emphasis shifting toward mixed-uses in this area, it is likely that the VO District is no longer applicable to the Township’s goals.

### Form-Based Code

To implement the intended aesthetic character and energize redevelopment efforts to targeted areas within the Village Core mixed-use centers, a form-based code is recommended. In general, a form-based code is a type of zoning tool utilized to regulate the form and function of a building and site, over the use of the site – which tends to be the focus on traditional development under conventional zoning.

We recommend four (4) form-based code sub-districts to be established for the following mixed-use centers in Cascade Village:

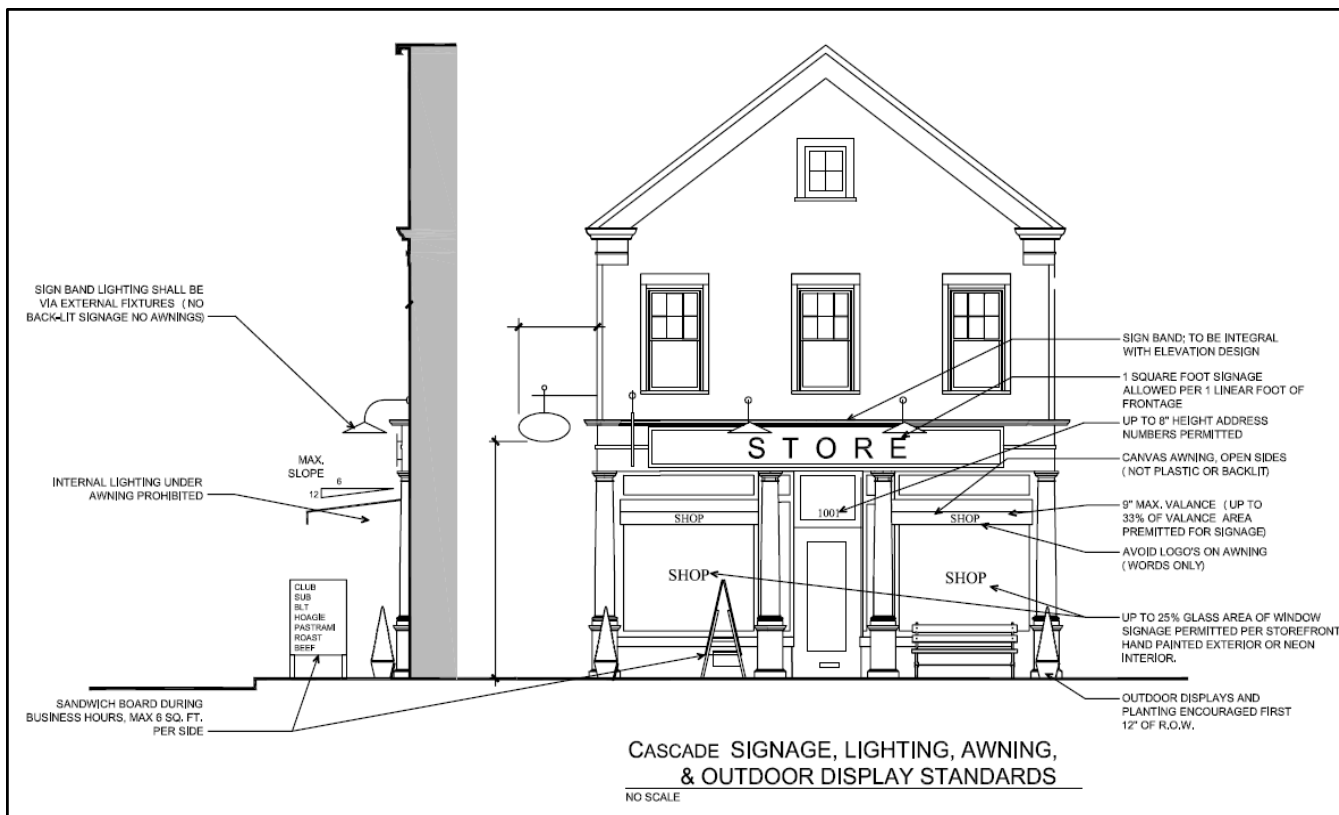
- Village Core
- Village Fringe
- Old 28th Street
- Thornapple Center



The image above describes the differences between conventional zoning, mixed use zoning, and form based code. As shown, form based code requirements include heavy restrictions and robust standards as they relate to form and character, building, and site design with less emphasis on land use.



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## Village Core

In the Village Core, the existing B-1 District architectural standards will be enhanced to promote a unified feel for the Village, while still allowing creativity.

The following general architectural standards are strongly encouraged for development in the Cascade Village Core. To create an architectural style that is harmonious with adjacent structures, sensitive to the natural environment, and supports a recognizable Township identity, general architectural standards are proposed to provide a reasonable range of exterior facade alternatives.

The following general architectural standards are strongly encouraged for development in Cascade Village Core.

- Storefronts, where applicable, should always be located at grade-level and consist of a minimum of 60% window area.
- Exterior finish materials on all facades shall be limited to brick, cut stone, wood siding or shingles, cementitious siding or shingles, or other rusticated elements.
- All window glass shall have a minimum transparency of 80%.
- Allow any natural color of primary materials such as stone or brick to dominate the majority of façade surface as its base color.
- Use accent colors for elements such as pilasters, horizontal bands, cornices, and window frames to complement the shade of the base color.
- Flat roofs should conceal rooftop mechanical equipment.
- All wall openings should be square or vertical in proportion.
- Doors and windows that operate as sliders should be prohibited along frontages.
- Balconies and porches should be constructed of painted wood or decorative iron or steel.
- Locate the main entrance and any signage of all buildings so as to address a street (not at the rear of building or addressing a parking lot).
- Construct all facades and facade segments parallel with a street at the corresponding frontage line.





### Village Core – Continued

- Create a sense of scale and proportion with the street level façade by using storefront spacing that provides for a visually interesting facade.
- All building windows should be operable, except storefront windows.
- Provide awnings or building overhangs to shade storefront glass.
- For storefront and display windows along frontages, provide and maintain display windows free from visual obstructions such as signs, logos, advertisements, window screens, security grille, blinds or window covering.
- Employ awning and canopy materials such as canvas, metal, or glass. Vinyl and plastic are not encouraged.
- Use awnings to define individual storefront openings only.
- Outdoor seating and dining areas should be encouraged wherever feasible.

### Village Fringe

The Village Fringe standards will be less prescriptive but will endeavor to create a unified appearance for the gateway to the Village. The architectural standards for the 28th Street Corridor will be designed to prevent the proliferation of corporate architecture, to promote the unique character of 28th Street, even for chain and national businesses. We recommend the following general zoning standards for the Village Fringe area:

- Reduced building setbacks, as applicable.
- Robust frontage landscaping requirements, including street trees, and streetlamps.
- Emphasis on infill development.
- Cross-access connections and shared parking lots between businesses.
- Sidewalks on both sides of the street and connections to buildings.
- Front or side rear parking lots only.
- Robust signage standards.
- Buildings to be constructed from brick, stone, attractive siding, or other similar materials consistent with the Village Core requirements.

## Old 28th Street

With a shifted focus and emphasis on residential development along Old 28th Street, architectural standards along Old 28th Street should be consistent with the Village Core and Village Fringe areas but allow for some flexibility in design as it relates to residential land uses. General recommendations for architectural standards include:

- Balconies and patios should be required for all residential units.
- Buildings should be constructed from high-quality materials, such as brick, stone, or siding that is consistent with the Village Core.
- Rooftop outdoor spaces for residential buildings should be encouraged.
- Setbacks should be minimal.
- Sidewalks should be installed on both sides of the street.
- Signage and lighting should be attractive and consistent with the Village Core design guidelines.
- Residential parking, such as garages, should be attached to the principal building.
- Parking areas should be located primarily at the side or rear of buildings.
- Main entrances into commercial businesses or offices should be fronting Old 28th Street.

## Thornapple Center

This area is currently a PUD within the Township and is likely not intended to change. In general, the following recommendations are intended to enhance the Thornapple Center area to transform into a mixed-use hub that is well-connected and encompasses a variety of land uses that create a livable center in the Township.

- A mix of mixed-use buildings and residential-only buildings, as to not saturate the commercial or retail market in the Village.
- Enhanced usable public space.
- Sidewalk connectivity throughout the development that connects to other areas of the Village.
- Enhanced cross-access and street network to reduce the emphasis on automobile travel and traffic and improve pedestrian travel.
- Buildings should be constructed from high quality materials, such as brick, stone, or siding that is consistent in character with the Village Core.
- Robust standards for signage within the development that is consistent with the Village Core.





## Planned Unit Developments

As of the creation and adoption of this plan, there are 99 Planned Unit Developments (PUDs) active in Cascade Township. While the PUD tool has allowed the Township to ensure that development is creative and high-quality, the existing agreements also create impediments to redevelopment.

While the Township does not envision substantial change to the PUDs in the Suburban Residential Future Land Use category, there are a number of PUDs in the 28th Street corridor, and in the other Mixed Use Future Land Use categories, where the envisioned character and land use differs from what is planned for in the PUD Agreement.

Therefore, in order to implement this Plan, the Township will need to negotiate with property owners to amend existing PUD Agreements to allow new uses in the existing PUDs and require high-quality design.

The Township's priorities in amending PUDs should include:

- Add residential as a permitted land use (where envisioned by this Plan in the Future Land Use Chapter), with the densities described by this plan, or as allowable based on the Density Bonuses described further in this Chapter.
- Allow increased building height, but only as specifically designated by this plan, or as described in the Density Bonuses as further described in this Chapter.
- Require green space and recreational amenities to reduce impervious surface and provide higher quality of life for residents and employees of the Mixed Use areas.
- Require improved pedestrian and bicycle connectivity, including connections to the Township's pathway system.
- Require architectural design consistent with architectural vision described further in this Chapter.
- Requiring proof of documentation regarding maintenance agreements for roads that comply with standards as regulated by Cascade Township and/or the Kent county Road Commission.

## Density Bonuses

In general, the housing density limits described in this Plan should be treated as prescriptive, not merely guidelines. In order to protect Cascade's character and ensure that infrastructure is sufficient as the Township grows, the planned housing density in each Future Land Use category should be strictly enforced and incorporated into the Zoning Ordinance.

However, in certain areas, there are opportunities to exceed the envisioned density through upgraded quality, investment in public services by developers, and donations to the Township's Green Space Preservation Fund as an offset to increased density in the developed portion of the Township.

The Township should develop a system to be incorporated into the Zoning Ordinance that reflects the following priorities:

### **ESSENTIAL PRIORITY: FIRE DEPARTMENT CAPACITY**

In order to allow a density bonus, the Township must ensure that the Cascade Fire Department and its mutual aid partners in neighboring communities can adequately service the size of the buildings and the number of residents. This may mean requiring developers to pay into a fund to support the enhancement of the vehicles and equipment available to the Fire Department.

Further, with the Township's current agreements with neighboring community Fire Departments (e.g., City of Kentwood), the Township should be mindful while reviewing and approving medium to high density residential developments to ensure that the development located is located within the 4-minute response time area. This is especially significant for senior living developments and facilities.

### **HIGH PRIORITY: RECREATION, PRESERVATION, AND GREENSPACE**

Higher density development in the 28th Street corridor and its surroundings may be necessary to accommodate growth and redevelopment, while ensuring that the eastern portion of the Township stays rural and natural. The Township envisions a direct connection between those two goals, by requiring a donation to the Green Space Preservation Fund, or in lieu of that, a donation to a new Parks and Recreation Fund or to the Pathways System. Payments into these funds are essential in order to access a density bonus.



**HIGH PRIORITY: HOMEOWNERSHIP**

Among the pressing concerns of the housing market, both locally and nationally, is a lack of available entry-level residential units available for purchase. Similarly, there is a lack of smaller housing units available for retirees to “downsize” from a family size house and have opportunity to age in place. Often, the same type of housing unit – a condominium in an attractive neighborhood – can achieve both goals.

Recognizing the market gap, the Township plans to prioritize housing developments that feature homeownership for density bonuses, while those that feature a rental structure will generally be required to stay within the envisioned maximum density allowed by right, as described by this Plan.

**MEDIUM PRIORITY: OUTDOOR AMENITIES FOR RESIDENTS**

One of the potential downsides of density is the lack of outdoor amenities amongst large buildings and parking lots. The Township will ensure that developments that exceed the envisioned density will have outdoor opportunities like green space, recreational facilities, community gardens, dog parks, balconies, patios, and rooftop decks.

**MEDIUM PRIORITY: ENVIRONMENTAL SUSTAINABILITY**

Long-term sustainability is important to the Township, especially when approving large developments. Considering this, the Township will encourage high density developments to achieve LEED certification, incorporate green stormwater infrastructure, exceed Township landscaping standards, provide electric vehicle charging stations, and reduce impervious surface.

**MEDIUM PRIORITY: MIXED USES**

Higher population density requires amenities and retail that do not require a car, in order to avoid burdening the road network (which is already congested in many locations along the 28th Street corridor), and to promote quality of life and walkability. Therefore, developments with a mix of uses could be prioritized for density bonuses.

**MEDIUM PRIORITY: CONNECTED ROAD NETWORKS**

Disconnected transportation networks cause congestion and social isolation. Developments seeking density bonuses will need to create connected networks of roads, bicycle pathways, and sidewalks, including connecting to adjacent neighborhoods and thoroughfares.

**OTHER PRIORITY: IN-UNIT AMENITIES**

While not as high a priority as the issues above, the Township will also work to ensure high density developments contain quality units, with multiple bedrooms, in-unit laundry, quality finishes, and time-saving appliances. Common space amenities such as package lockers, bicycle storage, and fitness centers are also encouraged and supported.

## Hotels

The I-96 – 28th Street interchange, along with the Gerald R. Ford International Airport, makes Cascade Township a target for chain hotels. While many of these properties tend to be of high quality when they first open, over time, they deteriorate, lose their national brand, and are replaced by new “inventory.”

Hotels – some of which have transitioned to substandard housing – represent a disproportionate share of emergency calls by Township first responders.

In light of this concern, the Township should pursue the following zoning policies with regard to hotels:

- The proliferation of hotels should be controlled by requiring Special Use permits, limiting them to the ES Expressway Service District, and containing new hotels to the northeast corner of the interchange, near Meijer.
- Hotels should not be added as a permitted use to any new PUDs where they are not already permitted.
- The number of hotels in the Southwest Mixed Use area should be monitored closely. Limits on the number of hotels should be included in any approved PUDs in that area when possible.
- Use standards designed to ensure lasting quality of hotel properties should be adopted and enforced on new hotel construction.
- Operational standards for hotels should be adopted to prevent the conversion into substandard housing.



## Greenspace Preservation

Cascade Township values its unique natural features, including hills, woodlands, rivers, wetlands, and lakes, as well as its farmland and remaining rural areas. In order to ensure that growth pressure does not overwhelm and degrade the natural features and green space, the Township will pursue the following policies:

### Utility Service Boundary

The urban service boundary demarcates the line where the Township will limit the provision of public utilities such as water and sewer. This boundary will help the Township focus development efforts inward rather than sprawling out, allowing more cost-effective delivery of public services and the preservation of open space and natural resources. The Township has committed to reviewing the urban service boundary every five years, concurrent with the Master Plan, in an effort to be responsive to changing conditions and needs. When reviewing proposed updates, the following criteria must be considered:

- Whether the amount of available land within the urban services district is adequate for all land use types for the ensuing 20 years.
- Current demographic and economic projections.
- The ability of the Township to maintain acceptable levels of service and quality of life for existing and new residents.
- Analyses of soil type, vegetation, topography, availability of public water and sewer services, existing property lines, existing land use, and potential for development.
- Proposed boundaries are preferred along roads or other natural boundaries.

In the event there is a request from a private property owner or developer to amend the boundary. The applicant must provide the following for consideration:

- Location in relation to the existing urban services area.
- Documentation from the applicant there are no other suitable development sites within areas already served by utilities.
- Documentation that a compelling public health and/or safety issue exists for which the only solution is amending the urban services district boundary.
- Weigh the benefits and economic burdens for the Township.

Much of the western two-thirds of the Township is within the Urban Services District. Many of the residential developments therein are served by both water and sewer services, although some do exist without one or both of those services. As long as capacities for both systems are adequate and quality of service will not drop as a result of increased development, expansion of the utility systems within the urban services district can be accommodated without further amendment of the urban service boundary.

The Utility Service Boundary in this plan designates the envisioned limits of public water and sewer infrastructure – and the density and intensity that it supports. The Utility Service Boundary should be strictly enforced. Public water and sewer should be built out within the boundary, but not beyond it.

## Right-Sized Infrastructure Investment

Infrastructure investments should focus on the parts of the Township planned for development and growth. Pathways, sidewalks, crosswalks, stormwater infrastructure, road capacity, and public water/sewer are all needed in those areas.

Infrastructure investment in the rural parts of the Township should be targeted and focus on quality-of-life improvements, such as bicycle pathways, nature preserves, and parks. Road capacity increases, including highway interchanges, are highly discouraged, and public water and sewer are prohibited beyond the Utility Service Boundary.

## Green Space Preservation Fund

Around the time of the adoption of this plan, the Township created a Green Space Preservation Fund. Resources in the fund will be used to acquire property or conservation easements in the rural portion of the Township. The Township itself will contribute to the fund, but the fund could also be augmented by voluntary donations, or by required donations by developers looking to access the density bonuses described in this Chapter.

## Park Target Areas

The Park Target Areas map designates various parts of the Township as Park Target Areas. These areas are chosen because they lack existing parks, have natural features that could be used for passive recreation, or for other strategic reasons. While the Township may or may not be interested in acquiring any specific parcel in the Target Area, opportunities for acquisition should be evaluated against the Parks Committees Acquisition Framework, or template, and the Township should not hesitate when appropriate opportunities present themselves.

## Thornapple Crescent Greenway

As described in more detail in this Chapter, the area east of Gerald R. Ford International Airport is unsuited for development and also contains vulnerable natural features. The Township envisions the Thornapple Crescent Greenway, a connected stretch of public green space and recreation, taking shape in that area.

## Other Zoning Recommendations

Throughout the duration of this Plan, Cascade Township should consider the review and update of Township planning and zoning processes. This includes a review and update of procedures, roles, responsibilities, review entities, decision making criteria, and other applicable themes related to site plan review, special land use review, and pre-application conferences.



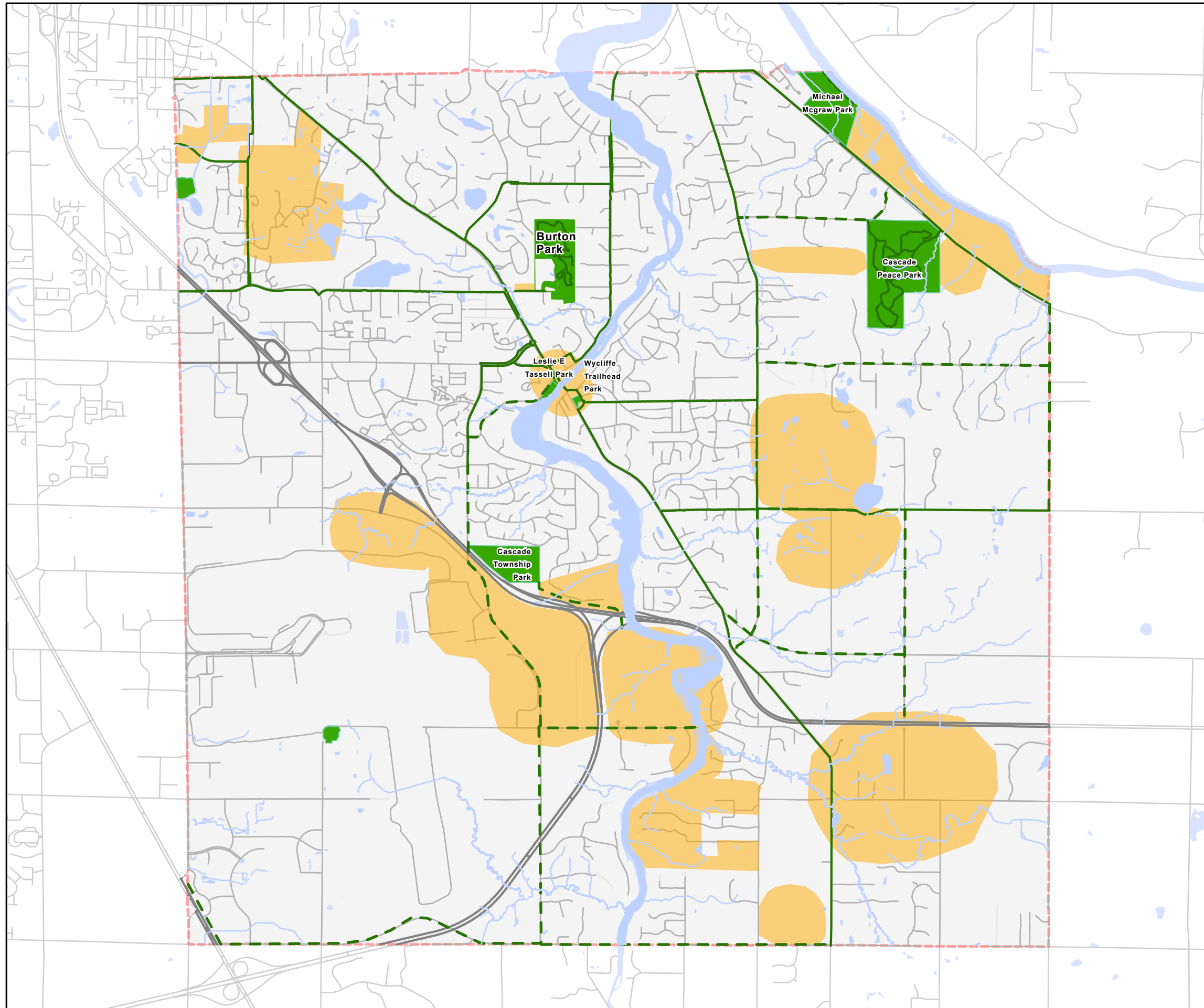




# Park and Greenspace Target Areas

Cascade Township, Kent County, MI

February 16, 2024



## LEGEND

- Parks and Preserved Land
- Park or Greenspace Target Area
- Existing Non Motorized Trails
- Proposed Trail Extensions
- Cascade Township Boundary
- Bodies of Water



Basemap Source: Michigan Center for Geographic Information, Version 17a.  
Data Source: GVMC 2021. McKenna 2024.

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## Site Plan Review and Procedures

An additional recommendation to implement this Master Plan is to have a more clear and defined development and site plan review process. Not only is it important to have zoning regulations that achieve the desired built environment for site development and appropriate land uses, but it is also imperative to articulate clear and concise decision-making criteria for the Planning Commission (and when applicable, the Township Board) to follow.

Cascade Township will implement process for any development or redevelopment, applicants and/or their representatives are encouraged to contact Township Planning Services staff and schedule a Conceptual Review meeting prior to formal application. Depending on the scope of the proposed development, the meeting may also include other Township staff (e.g., Engineering Services, Building & Inspection Services, and/or Fire Department).

The Conceptual Review meeting is intended to provide applicants and developers general information regarding the development review process and applicable design guidelines for a future project in our community. This informal meeting with staff is intended to promote a smooth review and approval process.

This Chapter presents a set of development criteria that can be used to evaluate how well site plan proposals meet the Township's zoning requirements as well as how well each proposal meets the Township's goals and objectives of this Plan. The following pages include an example, or model, evaluation checklist for Cascade Township development and site plan reviews.

# Development Project Evaluation Checklist

Project Name: \_\_\_\_\_

Reviewer: \_\_\_\_\_

Review Date: \_\_\_\_\_

**GOAL #1:**

**PRESERVE AND STRENGTHEN RESIDENTIAL NEIGHBORHOODS**

**YES NO N/A**

Will this project positively influence (on-site or neighboring) property values?

*Approximate average new unit value:* \_\_\_\_\_

Does this project provide increased levels of attractiveness, health, safety, and environmental sensitivity to residential users?

*Approximate acreage of features:* \_\_\_\_\_

**GOAL #2:**

**PRESERVE OPEN SPACE AND NATURAL AREAS**

Does this project preserve open spaces, natural areas, and agricultural land?

*Approximate acreage:* \_\_\_\_\_

Does this project preserve water retention or wetland areas?

*Type of feature to be preserved:* \_\_\_\_\_

Does this project provide continuous greenway connections and help connect open spaces and natural areas?

*Approximate miles of greenway:* \_\_\_\_\_

Does this project contain on-site water filtration features and encourage water infiltration rather than water detention?

*Feature type:* \_\_\_\_\_

Does this project use Planned Unit Development or other zoning strategies to preserve natural features and landscapes?

*Approximate acres preserved:* \_\_\_\_\_



**GOAL #3:**

**ENHANCE THE VITALITY OF TOWNSHIP BUSINESSES**

Does this project reuse or redevelop an existing commercial site?

**YES**      **NO**      **N/A**

*Current use of site:* \_\_\_\_\_

Is the project site within one of the mixed-use districts?

*Mixed Use District:* \_\_\_\_\_

Will the project enhance the Township’s vision of vibrancy and commercial viability?

Are beautification efforts proposed with this project that will upgrade the attractiveness of the Township’s entrances or major transportation corridors?

*Type of improvement:* \_\_\_\_\_

Are new businesses, which have the potential to expand the Township’s tax base, an anticipated result of this proposed project

*Number of anticipated new business licenses:* \_\_\_\_\_

**GOAL #4:**

**MAINTAIN AND EXPAND A DIVERSE PARKS SYSTEM**

Does the project provide direct or indirect (e.g. Pedestrian Bicycle Pathway) linkages to parks and recreation facilities?

*Approximate acreage of additional parks:* \_\_\_\_\_

Does this project provide additional public or private parkland and amenities for active or passive recreational use?

*Approximate number of people served:* \_\_\_\_\_

**GOAL #5:**

**MAINTAIN ESSENTIAL PUBLIC SERVICES**

Does the project require utility services extend utility services beyond the Township’s current service area or outside the urban services area?

Does the proposed project require increasing response times in the area serviced in the area serviced by emergency services?

*Approximate acreage of newly developed land:* \_\_\_\_\_

Does the project utilize or follow land use policies that assist public school districts by providing resources or supporting infrastructure, such as walkable routes to school or athletic fields/facilities for school use?

*Type of policy:* \_\_\_\_\_

Has the project been reviewed for appropriateness with the plans of adjoining communities, schools, and other agencies?

*Coordinated projects:* \_\_\_\_\_

**GOAL #6:**

**PROVIDE AND SUPPORT AN EFFICIENT, SAFE, AND ENVIRONMENTALLY SENSITIVE ROAD, PEDESTRIAN, AND BIKE NETWORK**

**YES NO N/A**

Does the project relieve, rather than strain, transportation concerns such as congestion, safety, and ease-of-use?

Does the project minimize or reduce local road improvement costs for the Township?

*Approximate miles of road maintenance relieved:* \_\_\_\_\_

Does the project incorporate complete streets principles?

Does the project expand or improve upon the Township’s Pedestrian/ Bicycle Pathway Plan?

*Approximate miles of pathways:* \_\_\_\_\_

**GOAL #7:**

**PROMOTE EFFICIENT AND SUSTAINABLE GROWTH PRACTICES**

Does the project incorporate sustainable energy and environmental practices?

Does the proposal incorporate LEED or other types of certification?

Does the project incorporate alternative energy such as solar power?

If an existing building is to be demolished will building materials be used or recycled?

For site renovation or rehabilitation, does the project upgrade parking lots and landscaping to increase tree cover to be energy efficient and environmentally friendly?

Does the project comply with Township growth management policies?

Does the project improve the environment by incorporating green infrastructure such as bio-swales, pervious paving, and vegetative buffers?

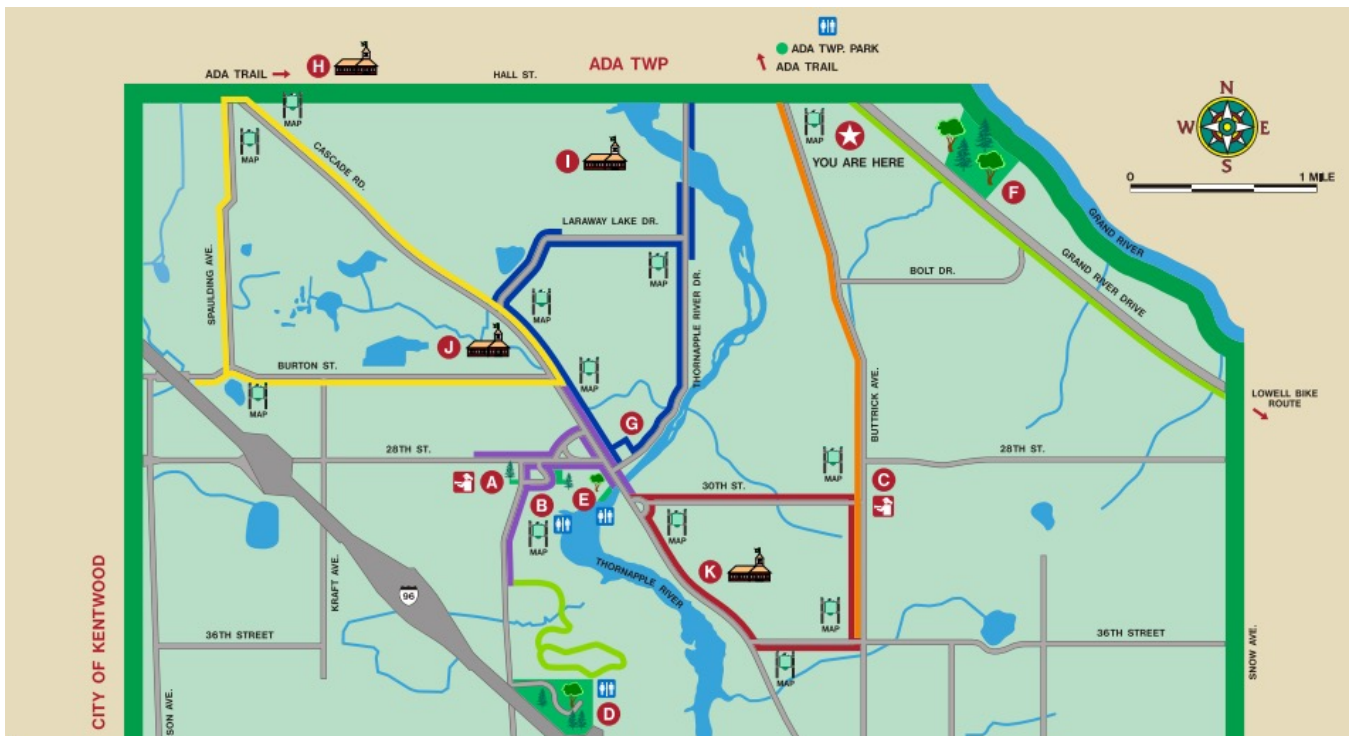
Does the project maintain or preserve natural features?

*Approximate acres of natural features preserved:* \_\_\_\_\_

Does the proposed development occur within the Township’s Urban Service Boundary?

Does the project create new or improved developments that reinforce sustainable practices?

Is the project within a Township identified priority redevelopment area?



## Future Road, Bicycle, and Pedestrian Network

The future transportation plan sets forth recommendations for the development of public right-of-way in a manner consistent with and supportive of recommendations for future land use.

This chapter proposes a Future Transportation Plan that maintains the existing functional classification designations, and implementing Township plans, such as the 5 Year Parks and Recreation Master Plan. Future Transportation Plan recommendations focus on pathways, crossing improvements, gateway creation, and creating complete streets with pedestrian, bus transit, and bicycle facilities. The network is designed to establish easy to navigate connections for people to walk, bike, drive,

and take transit in their neighborhoods and around the Township.

Throughout the duration of this Plan, the Township should continue to implement the various planned bike path and trail projects as identified in the 5-Year Parks and Recreation Master Plan, as well as determine which additional types of non-motorized infrastructure can be implemented along other corridors in the Township for an enhanced network. In general, all types of bike infrastructure and facilities will require continued collaboration with the Kent County Road Commission to determine feasibility.





## Mode Activation

Improvements to the pedestrian and bicycle pathway network in Cascade Township with new connections to employment and shopping destinations will support residents' health and wellness. With bicycle network improvements, more Township residents will be able to make safe, short trips to parks, schools, and even entertainment and shopping, all without getting in the car.

The pathway plan currently focuses on off-street shared use pathways and on-street paved shoulders for connections. Looking forward, Cascade Township should work to identify streets that can be formalized with on-street bike lanes and marked shared lanes. Non-motorized facilities should be designed to meet current recommended design practices of the American Association of State Highway Transportation Officials (AASHTO) or the National Association of City Transportation Officials (NACTO).

## Shared Use Paths and Trails

Shared use paths and trails are paved concrete or asphalt paths wide enough to accommodate both pedestrians and bicyclists. They are typically a minimum of 10 feet wide with two (2) feet of clearance on either side of the path. Shared use paths offer cyclists a safe place to bike off-street when there is no space for a bike lane, or it is unsafe to bike on the street.



### Bike Lanes and Paved Shoulders

Bike lanes create a dedicated space for cyclists on a roadway. They are appropriate on streets with moderate to heavy traffic. Bike lanes are indicated by on-street markings, which can be supplemented with signage. Bike lanes reinforce proper roadway etiquette, raise the visibility of bicyclists, and help both bicyclists and drivers behave predictably when sharing road space. For safe cycling, bike lanes should be four (4) feet to six (6) feet wide. Buffered bike lanes and protected bike lanes can be designed to provide additional separation from vehicle traffic for on-street cyclists.









# Community Setting

05

## Introduction

The existing conditions chapter provides an overview of the Township’s population demographics, housing makeup, educational attainment, employment sectors and current transportation availability. This chapter focuses on “Cascade Today” in order to establish the current composition of the community.

## Regional Location

Cascade Township is located in Kent County, Michigan. Kent County is located in West Michigan, just east of the shore of Lake Michigan. Cascade Township is located to the east of the City of Grand Rapids. The Township can be described as a “bedroom community” of the City of Grand Rapids, where most residents commute to their employment destinations and live within the Township. The Township is mostly comprised of residential land uses, with both neighborhood residential and rural residential character. It should also be noted that a portion of the Township includes the easternmost portion of the 28th Street Corridor, where regional shopping destinations are located.

Cascade Township also includes two major highway corridors, I-96 and M-6. Both highways are significant connectors to the West Michigan region. However, the only ramp to enter and exit onto the highway system in the Township is located at 28th Street on the west side of the Township.

The Gerald R. Ford International Airport is also located in Cascade Township. The Airport is a popular regional destination in West Michigan.





# Cascade Population Trends & Projections

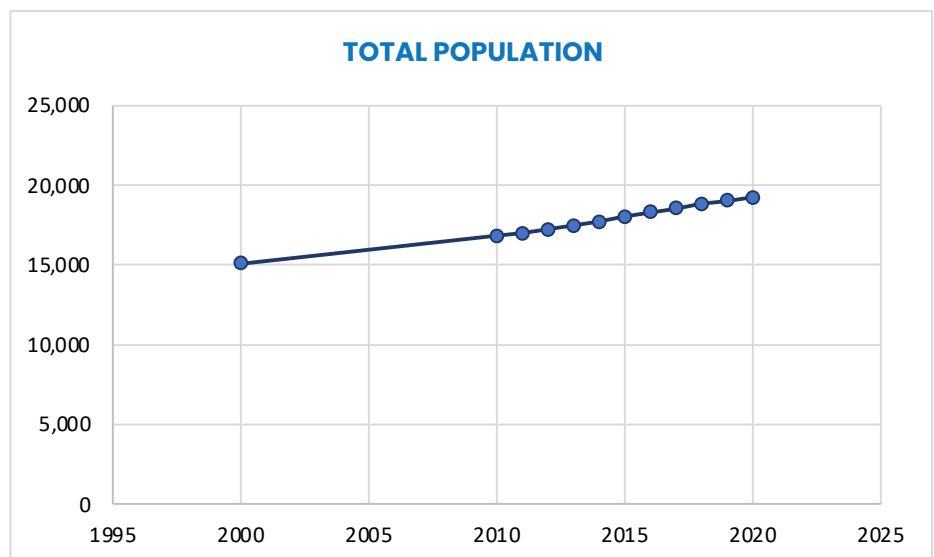
Historic populations trends help to determine the overall growth of a place over time. Similar to many suburban communities outside of city centers, Cascade Township has experienced steady population growth since 2000. The stable population growth can indicate a healthy community where those who move into the Township tend to stay in the Township for many years.

The Table to the right describes the population of Cascade Township over time.

**Table 1. Total Population of Cascade Township (2000, 2010–2020)**

YEAR	TOTAL POPULATION
2000	15,107
2010	16,819
2011	16,988
2012	17,222
2013	17,464
2014	17,715
2015	18,043
2016	18,313
2017	18,552
2018	18,823
2019	19,028
2020	19,220

Source: U.S. Census Bureau Decennial Survey, American Community Survey





## Population Projections

Population projections help to determine the potential for future growth based upon data from the past and also helps to determine if there is a need for more or new specific housing types. Cascade Township has had modest population growth over the last 40 years, which is reflected in the projection for 2040 (see Table 2 below).

In order to project the population in the future, a Cohort-Component Population Projection was utilized. Cohort-Component Population Projections are developed using the following methodology:

**COHORT-COMPONENT:** The population is divided into ten-year age cohorts, using US Census data. At each ten-year interval, individual age cohorts are moved up the ladder. For instance, the group that was 30-40 years old in 2010 became the 40-50-year-olds in 2020, minus those who die during that time frame based on the mortality rate for their age group.

To calculate the number of people aged 0-10, the population of women of childbearing age was calculated and a 10-year birthrate per thousand (from the Michigan Department of Community Health) applied to give the number of births. **By using the average death and birth rates, we predict how many people should be living in the Township in 2020, if no one had moved in or out of the county.**

**NET MIGRATION CALCULATION:** To account for migration, the population projection also includes a net migration factor. The net migration factor was calculated by comparing the population we would have predicted from 2010, to the actual population in 2020, which we now know. The Cohort-Component Analysis **predicted a Township population of 18,823, but the actual population was 19,220.** Therefore, the analysis estimates **a net gain of 397 people** who migrated to the Township. 397 people represents a **2.1% net migration rate.** If that net migration rate were to continue over the next 10-20 years, Table 2 represents the population the Township could expect to see:

**Table 2. Population Projections for 2030 and 2040**

	2020	2030 (PROJECTED)	2040 (PROJECTED)
Cascade Township	19,220	21,745	24,103

Source: US Census, ESRI, McKenna Calculation

## Alternative Migration Rates

The current net migration rate might not stay the same over the next decades. Table 3 below shows how the population will change if the migration rate stays the same, slows down, or becomes positive (more people move in than move out). We include a 10% net migration rate as a “stress test” to understand what the upper limit of the Township’s population growth could be. If we plan for this “Extreme Growth” scenario, we can ensure that the Township has planned for enough housing to manage very high growth rates.

The table includes five scenarios.

- Out-Migration (-8% Net Migration Rate)
- Reduced Out-Migration (-4% Net Migration Rate)
- Zero Net Migration (0% Net Migration Rate)
- Continued Positive Net Migration (+2.1% Net Migration Rate)
- Extreme Growth (+10% Net Migration Rate)

**Table 3. Alternative Migration Rates**

NET MIGRATION RATE	2020 POPULATION	2030 POPULATION (PROJECTED)	2040 POPULATION (PROJECTED)
Out-Migration (-8%)	19,220	19,863	20,196
Reduced Out-Migration (-4%)	19,220	20,608	21,702
Zero Net Migration (0%)	19,220	21,354	23,262
Continued Positive Net Migration (+2.1%) (Actual 2010-2020)	19,220	21,745	24,103
Extreme Growth (+10%)	19,220	23,217	27,401

Source: US Census, ESRI, McKenna Calculation



We have further broken down that migration rate into individual age groups, so that we can see which groups had the biggest change between predicted and actual change. Table 4 (below) demonstrates the migration rate for each age group. It also demonstrates the general rate of change from 2010–2020 in Cascade Township’s side-by-side with Michigan’s rate of change for comparison. Overall, Cascade Township is experiencing higher population growth than the State amongst all age groups, with the exception of those age 80 years or older.

**Table 4. Change in Age Structure**

	2010	2020			ACTUAL % CHANGE	
	CASCADE TOWNSHIP	CASCADE TOWNSHIP (PREDICTED)	CASCADE TOWNSHIP (ACTUAL)	MIGRATION RATE	CASCADE TOWNSHIP	MICHIGAN
Total Population	16,853	18,823	+14.0%	+2.1%	+14.0%	+0.2%
0-9 years	2,439	2,518	2,444	-2.9%	+0.2%	-10.5%
10-19 years	2,674	2,419	3,098	+28.1%	+15.8%	-14%
20-29 years	1,093	2,665	1,289	-51.6%	+17.9%	+7.3%
30-39 years	1,934	1,081	1,941	+79.5%	+0.4%	-3.3%
40 to 49 years	2,691	1,902	2,970	+56.2%	+10.4%	-23.4%
50 to 59 years	2,910	2,618	2,977	+13.7%	+2.3%	-2.1%
60 to 69 years	1,598	2,725	2,278	-16.4%	+42.6%	+28.2%
70 to 79 years	841	1,380	1,640	+18.8%	+95.0%	+24.3%
80+ years	673	1514	583	-61.5%	-13.3%	+8.8%

Source: US Census Bureau



## Aging Cascade

### Age by Gender & Median Age

Age by gender and median age is a metric used to help determine if and where to locate parks, trails, transit, and other public services to serve the needs of residents from cradle to grave. In 2020, Cascade Township was generally older than the State of Michigan, with a considerable percentage of residents between the ages of 40 and 70 years old.

The Township's median age is 42.6 years old. As such, it is likely that a notable portion of the Township is comprised of families with children around middle school or high school age. Families with children this age are often referred to as the "family forming" age group. Implications of having a population that skews within this age range include a higher need for parks and recreation services, higher needs for school services and enrollment, neighborhood developments with sidewalks and other amenities, and other activities for entertainment, such as breweries, restaurants, shopping centers, and other similar development.

**Table 5. Age by Gender and Median Age in Cascade**

AGE IN YEARS	MALE	FEMALE
Under 5 years	484	597
5 to 9 years	757	606
10 to 14 years	843	989
15 to 19 years	577	689
20 to 24 years	263	277
25 to 29 years	453	296
30 to 34 years	243	302
35 to 39 years	819	577
40 to 44 years	566	804
45 to 49 years	729	871
50 to 54 years	518	742
55 to 59 years	946	771
60 to 64 years	689	680
65 to 69 years	468	441
70 to 74 years	344	477
75 to 79 years	390	429
80 to 84 years	152	199
85 years and older	76	156
Total population	9,317	9,903
Median age (years)	42.6	

Source: U.S. Census Bureau American Community Survey 5-year

# Housing

## Median House Value & Average Household Size

Median house value is a metric used to help determine the worth of existing housing stock in the market. Overall, median housing values are higher in Cascade Township, indicating generally that Cascade Township is a desirable place to live and has quality housing stock. However, this can also indicate that housing may not be affordable in the Township for younger families looking for their first homes, or aging seniors who are interested in downsizing and living on a fixed retirement income.

- Average household size is a metric used to help plan for certain uses, including schools, parks, and services. As of 2020, Cascade Township had a slightly larger average household size (2.64 people) than the State of Michigan’s average household size of 2.45 people, indicating that there is likely a larger portion of households with children or multiple generations in Cascade Township, compared to the State as a whole.
- However, it is important to note that average household size in Cascade Township has decreased slightly from 2014 to 2020, potentially indicating a decline in the number of these types of households within the Township itself.

**Table 6. Home Values of Owner-Occupied Housing Units, 2020**

HOME VALUE	OWNER-OCCUPIED HOUSING UNITS
Less than \$10,000	0
\$10,000 to \$14,999	35
\$15,000 to \$19,999	11
\$20,000 to \$24,999	17
\$25,000 to \$29,999	0
\$30,000 to \$34,999	0
\$35,000 to \$39,999	0
\$40,000 to \$49,999	0
\$50,000 to \$59,999	44
\$60,000 to \$69,999	0
\$70,000 to \$79,999	15
\$80,000 to \$89,999	15
\$90,000 to \$99,999	434
\$100,000 to \$124,999	151
\$125,000 to \$149,999	132
\$150,000 to \$174,000	176
\$175,000 to \$199,999	193
\$200,000 to \$249,999	573
\$250,000 to \$299,999	1,033
\$300,000 to \$399,999	1,443
\$400,000 to \$499,999	850
\$500,000 to \$749,999	860
\$750,000 to \$999,999	276
\$1,000,000 to \$1,499,999	115
\$1,500,000 to \$1,999,999	51
\$2,000,000 or more	19

Source: U.S. Census Bureau American Community Survey 5-year estimates, 2020

**Table 7. Average Household Size in Cascade Township, 2014–2020**

YEAR	2014	2015	2016	2017	2018	2019	2020
Average Household Size	2.76	2.77	2.73	2.68	2.67	2.62	2.64

Source: U.S. Census Bureau American Community Survey 5-year estimates, 2014–2020





## Owner Occupied & Vacant Dwellings

The percentage of owner-occupied dwellings and vacancy rate helps to indicate the housing mix of owners and renters. As of 2016, Cascade Township had a higher percentage of owner-occupied dwellings than the State of Michigan, and the United States, as well as fewer vacant units.

Consistent with the other population and housing trends presented in this Chapter, the higher percentage of owner-occupied units as well as the lower percentage of vacant units indicates that Cascade Township is a desirable community where individuals likely settle for many years throughout several stages of life.

## Age of Housing Stock

The age of the housing stock in a community can have implications on the need for redevelopment efforts, or indicate that new housing units may be appropriate to replace aging ones. In general, homes aged 30 years or more tend to have a higher need for redevelopment/update activities, or structural challenges.

The Table below indicates that a majority of the Township's housing stock is aged between 24 and 63 years of age. As such, the Township may be interested in considering programs to assist homeowners, developers, or property owners in updating aging homes, as applicable.

**Table 8. Age of Occupied Housing Stock in Cascade Township, 2020**

YEAR STRUCTURE BUILT	NUMBER OF OCCUPIED HOUSING UNITS
2014 or later	371
2010 to 2019	206
2000 to 2009	996
<b>1980 to 1999</b>	<b>2,422</b>
<b>1960 to 1979</b>	<b>2,711</b>
1940 to 1959	442
1939 or earlier	119

Source: U.S. Census Bureau American Community Survey 5-year estimates, 2020

## Education

### Educational Attainment

Educational attainment is a metric that drives employer siting and business locations, indicates purchasing power, and helps presume housing preferences. Educational attainment continues to grow in Cascade Township. In 2020, 75% of residents obtained some type of degree after high school.

### Employment & Income Occupations

The occupational composition of a place is a metric that helps to reveal the local industry types and makeup. In 2020, there was a much greater percentage of Township residents that worked in education and social services, health care; professional, scientific, management, and administration; and finance, insurance, and real estate. Significant percentage of Township residents worked in manufacturing. In general, these types of employment sectors include higher paying professions.

It should be noted that the Table below does not necessarily indicate what types of jobs are available in the Township, but merely the main sectors and industries that which Township residents are employed.

**Table 9. Educational Attainment in Cascade Township, 2020**

YEAR STRUCTURE BUILT	NUMBER OF OCCUPIED HOUSING UNITS
Less than 9th grade	117
9th to 12th grade, no diploma	166
High school graduate (includes equivalency)	1,129
<b>Some college, no degree</b>	<b>1,820</b>
<b>Associate's degree</b>	<b>1,062</b>
Bachelor's degree	5,387
Graduate or professional degree	3,457

Source: U.S. Census Bureau American Community Survey 5-year estimates, 2020

**Table 10. Educational Attainment in Cascade Township, 2020**

SECTOR	NUMBER	PERCENTAGE
Agriculture, Forestry, Fishing and Hunting, and Mining	15	0.2%
Construction	278	3.0%
Manufacturing	1,564	16.8%
Wholesale Trade	310	3.3%
Retail Trade	826	8.9%
Transportation and Warehousing, and Utilities	278	3.0%
Information	232	2.5%
Finance and Insurance, and Real Estate and Rental and Leasing	1,089	11.7%
Professional, Scientific, and Management, and Administrative and Waste Management Services	1,293	13.9%
Education Services, and Health Care and Social Assistance	2,057	22.1%
Arts, Entertainment, and Recreation, and Accommodation and Food Services	568	6.1%
Other services, except Public Administration	670	7.2%
Public Administration	121	1.3%

Source: U.S. Census Bureau American Community Survey 5-year estimates, 2020

## Unemployment

Unemployment statistics are utilized to determine the health of the local economy and the growth of the local business community. Consistent with the other data as described above in this Chapter, Cascade Township had a lower unemployment rate than the State of Michigan or the United States as a whole in 2020. With the total population of 19,220, the unemployment rate in Cascade Township is only approximately 1.3%.

## Household Income

Median household income is a metric used to help determine the broad demographic makeup of a community and the demand for certain types of housing, employment, and services. The median household income in Cascade Township was \$112,981 in 2020. This was higher than both Kent County's (\$65,722) and the State of Michigan (\$59,234).

Again, consistent with the other demographic trends as noted above, such as housing values, home ownership rates, low unemployment rates, and other similar trends, household incomes in Cascade Township tend to trend higher than average.

**Table 11. Employment Status in Cascade Township, 2020**

EMPLOYMENT STATUS	NUMBER OF PEOPLE AGED 16 YEARS AND OVER
In labor force	9,542
Civilian labor force	9,542
Employed	9,301
Unemployed	241
Armed Forces	0
Not in labor force	4,972

Source: U.S. Census Bureau American Community Survey 5-year estimates, 2020

**Table 12. Annual Household Income in Cascade Township, 2020**

ANNUAL INCOME	NUMBER OF HOUSEHOLDS
Less than \$10,000	136
\$10,000 to \$14,999	88
\$15,000 to \$14,999	385
\$25,000 to \$34,999	268
\$35,000 to \$49,999	496
\$50,000 to \$74,999	734
\$75,000 to \$99,999	909
\$100,000 to \$149,999	1,448
\$150,000 to \$199,999	877
\$200,000 or more	1,926

Source: U.S. Census Bureau American Community Survey 5-year estimates, 2020



# Transportation & Mobility

## Work Travel

Travel time to work is a metric used to help determine the relationship between where people live and where people work in a community. As of 2020, 82.8% of residents traveled less than 30 minutes to work, indicating that most people work near Cascade Township, likely within the City of Grand Rapids and other adjacent communities. In general, longer travel times to work can indicate a desirable community where people are willing to drive longer commutes to get to work if that means they are able to live in Cascade Township. Further, longer commute times also is related to Cascade’s reputation as a “bedroom community” to the City of Grand Rapids, where most people travel outside of the Township for work.

## Traffic Volume

Traffic volume changes on the same road segments over time help indicate future traffic demand, mode shift, and growth areas. Traffic volumes are steadily increasing throughout the Township, with the exception of declines in some areas near Cascade Village. This is especially important for the growth and development of the Cascade Village area, where pedestrian mobility is emphasized over motorist traffic.

**Table 13. Travel Time to Work in Cascade Township, 2020**

TRAVEL TIME TO WORK	PERCENTAGE OF WORKERS 16 YEARS AND OLDER
Less than 10 minutes	15.6%
10 to 14 minutes	13.7%
15 to 19 minutes	18.4%
<b>20 to 24 minutes</b>	<b>29.1%</b>
<b>25 to 29 minutes</b>	<b>6.0%</b>
30 to 34 minutes	7.8%
35 to 44 minutes	2.4%
45 to 59 minutes	2.5%
60 or more minutes	4.6%

Source: U.S. Census Bureau American Community Survey 5-year estimates, 2020

**Table 14. Traffic Volume in Cascade Township**

LOCATION	ANNUAL AVERAGE DAILY TRAFFIC COUNT		ANNUAL GROWTH IN TRAFFIC VOLUME
	2019	2022	2022
28th Street West of Kraft Avenue	26,664 (2018)	31,038	+4%
<b>Patterson Avenue South of 36th Street</b>	<b>26,256</b>	<b>32,024</b>	<b>+7%</b>
Cascade Road West of Spaulding Avenue	16,977	18,128	+2%
<b>Thornapple River Drive North of Laraway Lake Drive</b>	<b>9,962</b>	<b>8,389</b>	<b>-6%</b>
Cascade Road East of Whitneyville Ave	2,763	2,979	+3%
Patterson Avenue North of 52nd Street	19,656	22,744	+5%
Thornapple River Drive South of 36th Street	10,936	10,410	-2%

Source: Grand Valley Metro Council



## Environment & Natural Features

Cascade Township has plentiful natural features that greatly contribute to the Township's natural character and make the Township a desirable place to live and recreate. Aside from the rolling hills, where the Township gets its name, the Township also is home to several other notable natural features that help to create the picturesque scenery. These include:

- 1,710 Acres of wetlands
- 671 Acres of water
- 264 Feet of elevation change
- 2 rivers (Thornapple River & Grand River)
- 5 Lakes



## Agriculture/Prime Farmland

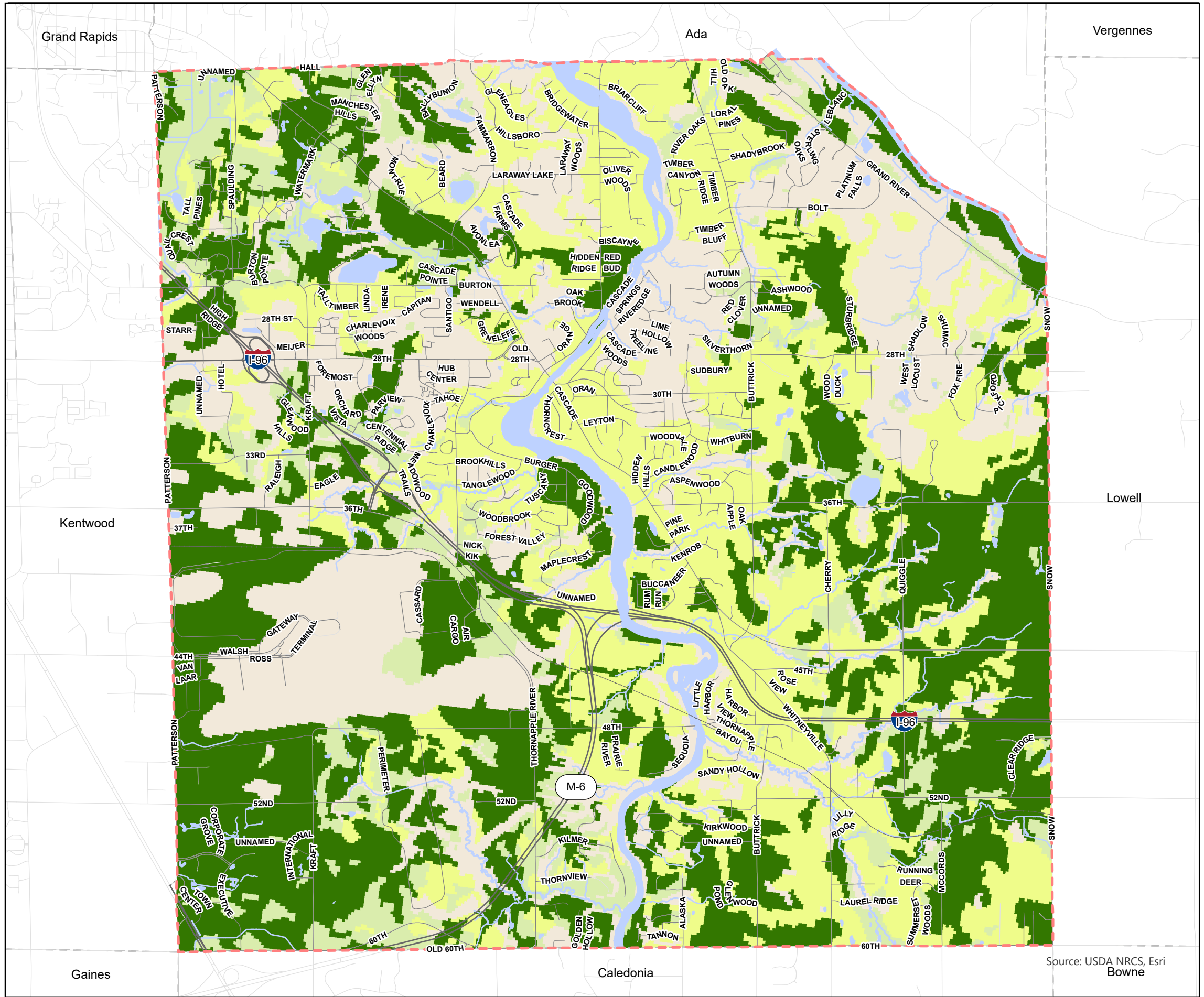
As described in the Future Land Use Plan, a majority of the land use fabric and development patterns in the east portion of the Township are classified as agricultural lands and rural residential land uses. According to the USDA and NRCS, several classifications of farmland can be found in the Township. These include:

- Prime Farmland
- Farmland of Local Importance
- Farmland of Statewide Importance
- Farmland of Unique Importance
- Not Prime Farmland

According to both the USDA (United States Department of Agriculture) and the NRCS (Natural Resource Conservation Service), the prime farmland areas within Cascade Township are located on both the west and east sides of the Airport and the easternmost portion of the Township, approximately from 36th Street to 52nd Street. Surrounding the prime farmland areas include farmland of unique importance. Farmland of unique importance is used for the production of specific high value food and fiber crops.



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# Prime Farmland

Cascade Township, Kent County, MI

December 15, 2023

## LEGEND

- Prime Farmland
- Farmland of Local Importance
- Farmland of Statewide Importance
- Farmland of Unique Importance
- Not Prime Farmland



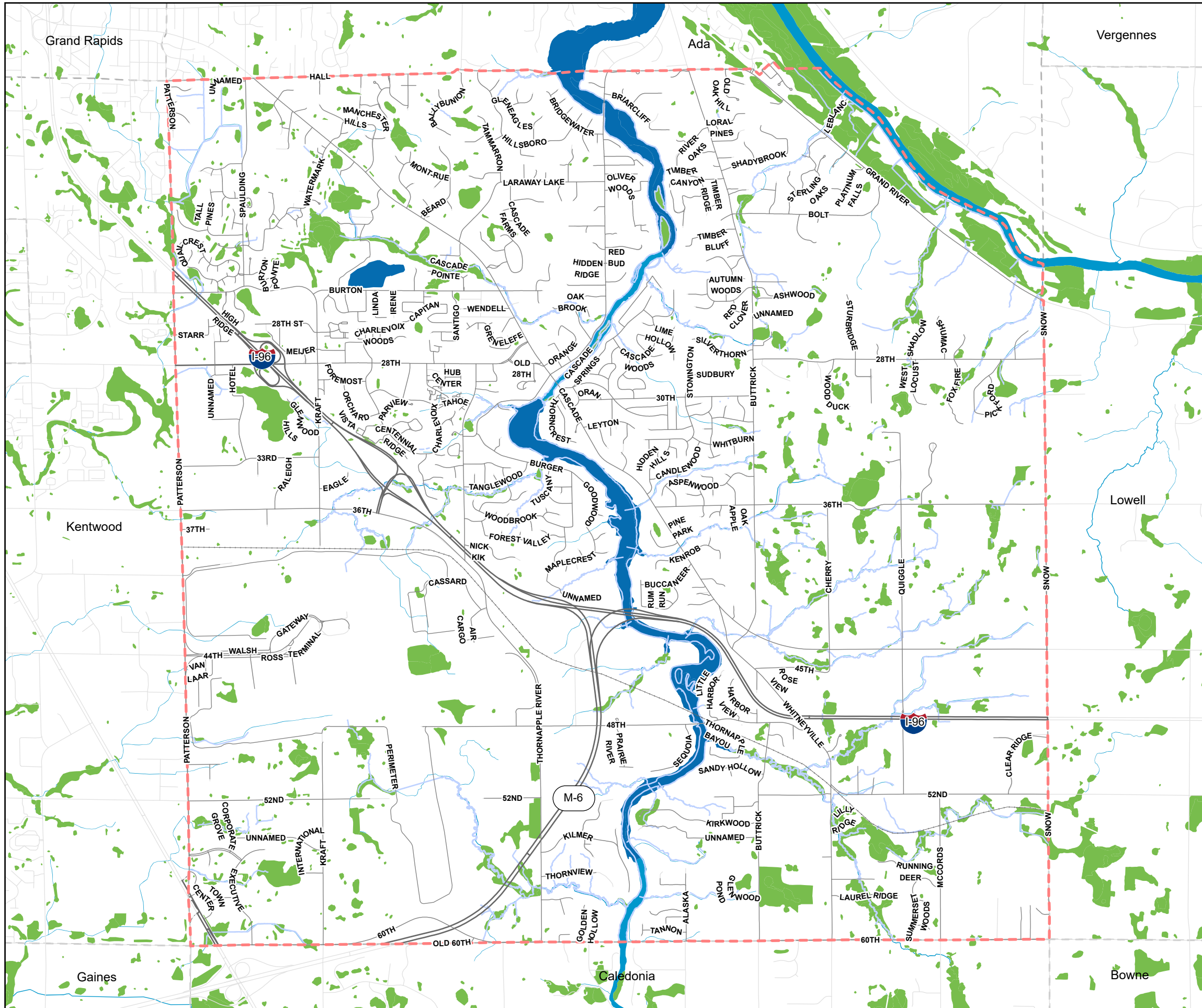
Basemap Source: Michigan Center for Geographic Information, Version 17a.  
Data Source: GVMC 2023, McKenna 2023.

Source: USDA NRCS, Esri  
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# Wetlands

Cascade Township, Kent County, MI

December 15, 2023

## LEGEND

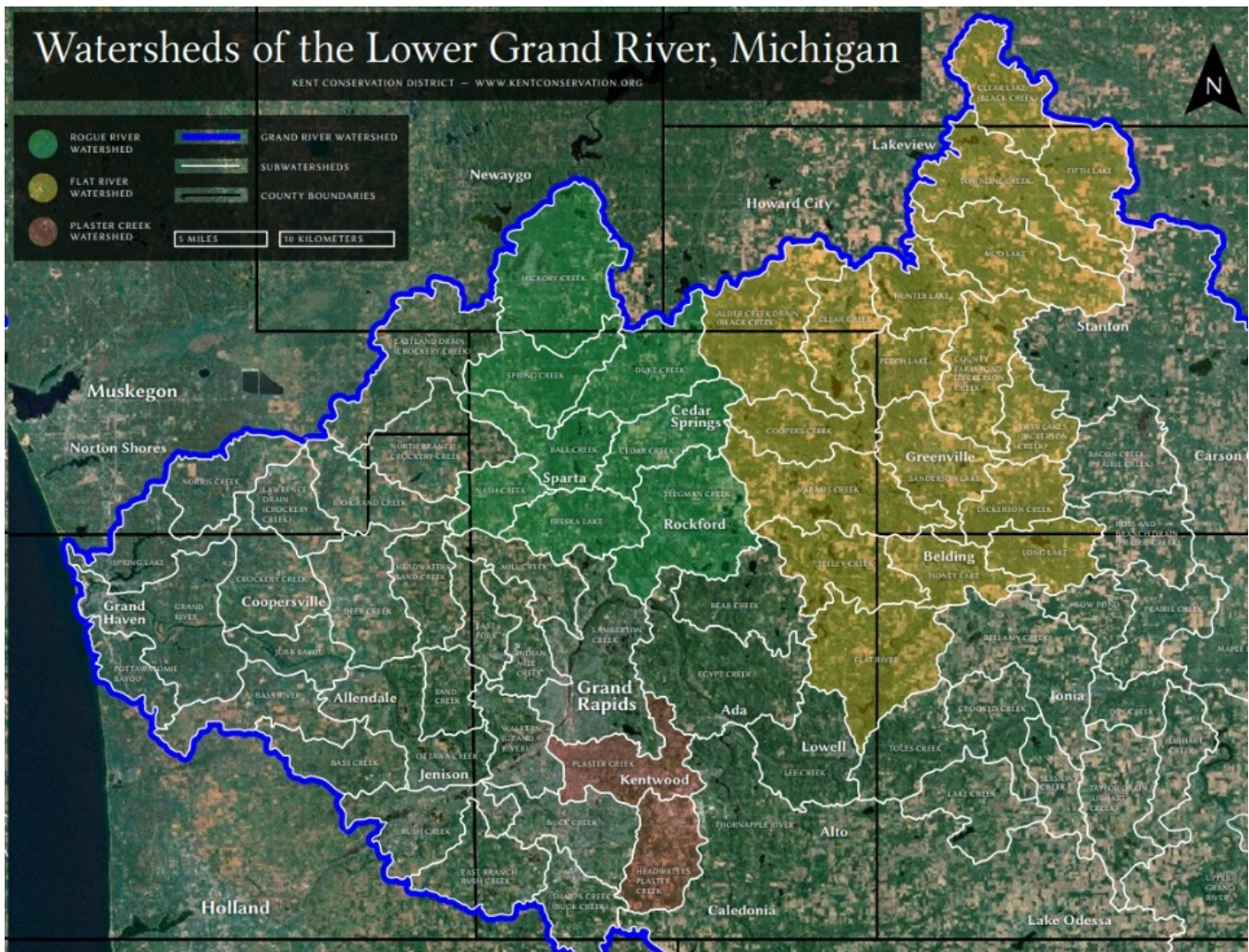
- Marine
- Estuary
- Marsh, Swamp, Bog, Prairie
- River
- Lake, Reservoir
- RiversStreams



Basemap Source: Michigan Center for Geographic Information, Version 17a.  
Data Source: GVMC 2023. McKenna 2023.

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## Lakes & Rivers

Adding to the natural character and scenic beauty of the Township, Cascade Township has a number of lakes within its borders. Some of the most notable lakes include:

- Wood Lake
- Walden Lake
- Laraway Lake
- Little Plaster Creek
- Quiggle Lake

Most of the lakes within Cascade Township are located in the northwest portion of the Township, near the Thornapple River. Most of the land uses surrounding the lakes in the Township are residential, open space, or woodlands.

Another important natural feature in Cascade Township includes two major rivers – the Thornapple River, which spans north-south through the entirety of the Township and the Grand River, which runs east-west on the

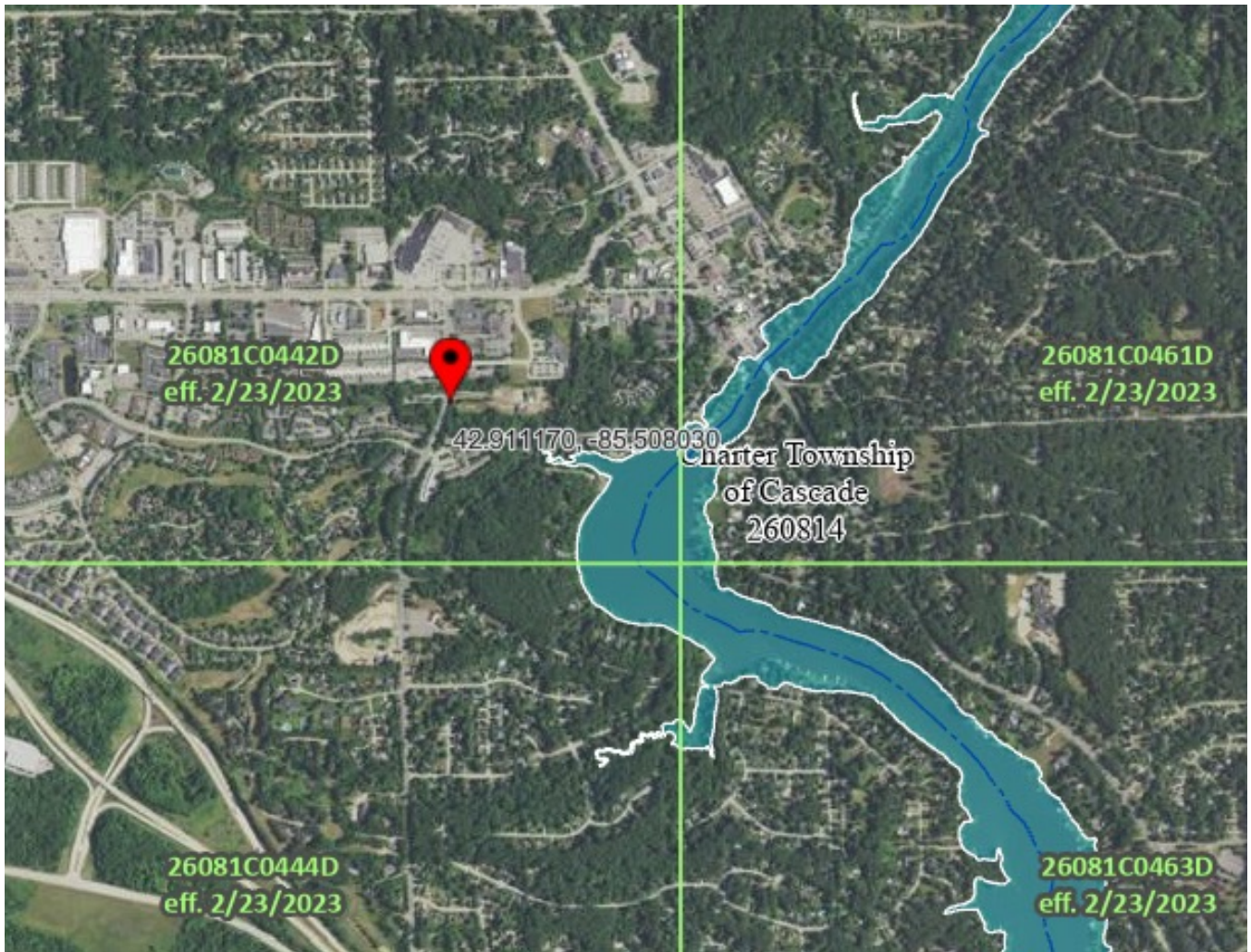
northeast portion of the Township, creating the Township boundary. Both rivers are important regional assets in West Michigan. The Grand River is the State’s largest river system that flows from Lake Michigan in the Grand Haven area, east and south, to the Jackson area. In total, the Grand River is approximately 252 miles in length.

The Thornapple River runs approximately 88 miles in length, and spaces from Eaton County to central Michigan. The Thornapple River is mostly surrounded by agricultural lands and serves as an important resource for agricultural activities and operations.

Cascade Township is located in the Grand River Watershed, as designated by the Kent Conservation District. Further, several subwatersheds are located in the Cascade Township area, the Plaster Creek Watershed, the Lee Creek Watershed, and the Egypt Creek Watershed.



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## Floodplain

With the two major rivers and multiple lakes within the Township's boundaries, properties surrounding the Thornapple River are largely designated as "Zone A," according to FEMA. Flood Zone A indicates areas with 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Understanding where areas of potential flood zones and flooding areas is important to planning for future land uses in the Township to ensure that development would not be impacted (or have lesser impact) by flooding events, as well as to identify areas that may be targeted for open space preservation or parks and/or trails.







# Existing Land Uses

06

## Introduction

Land use in Cascade Township has reached new levels of development pressure as a result of residential and commercial growth over the past decade. With Township preservation efforts, infill development is a viable option to pursue in the future.

# Existing Land Use Fabric

Rural Residential and Single-Family Residential development comprises the most land in Cascade Township, followed by Industrial land uses, and then Commercial land uses. Throughout the duration of this Plan and explained further in the Future Land Use Chapter, the Township is interested in the preservation of the single-family residential and rural residential land uses, while balancing that with redevelopment efforts in Commercial and Industrial areas.

This Chapter describes each of the general existing land uses in the Township.

## AGRICULTURE, RURAL RESIDENTIAL, AND OPEN SPACE

Much of the Township existing land uses falls within this category. In general, these areas can be described as open space or wooded areas, large lot single-family homes, and agriculture operations. A large swath of these land uses are concentrated on the eastern portion of the Township, from north to south.

## NEIGHBORHOOD RESIDENTIAL

In addition to the large lot single-family rural residential character, the Township's housing stock is largely comprised of neighborhood residential homes. These areas can be described as a traditional neighborhood design, with smaller lot sizes, moderate setbacks, and connected neighborhood streets. Neighborhood residential land uses are concentrated mostly on the northwest portion of the Township on both sides of the Thornapple River.

## COMMERCIAL/SERVICE BASED

The Township also includes a few prominent areas of commercial and service land uses. Commercial land uses are primarily located along the 28th Street Corridor, and the immediate periphery. Additionally, a small pocket of commercial land uses are located in the Cascade Road/Hall Road intersection. In general, commercial land uses have been classified as retail businesses, big box stores, grocery stores, and some office buildings.

## INDUSTRIAL

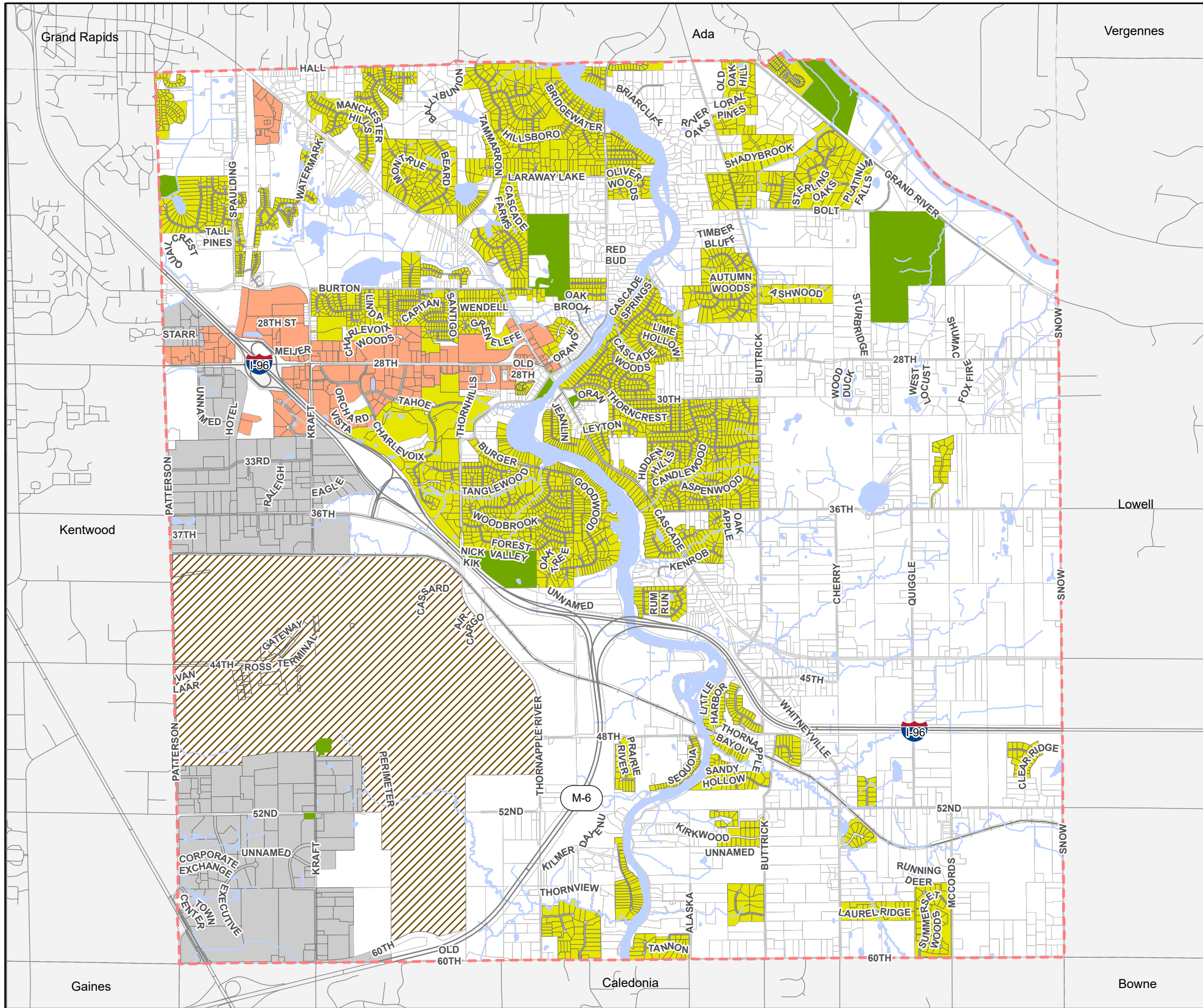
On both the north and south sides of the Airport are areas of Industrial land uses. Industrial land uses are comprised of manufacturing, warehousing, and other similar type businesses. Industrial land uses are primarily for the assembling, manufacturing, and production of goods with accessory offices.

## AIRPORT

As previously noted, the Gerald R. Ford International Airport is located in Cascade Township. The Airport is a popular regional airport in West Michigan.



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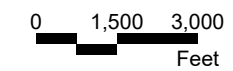
# Existing Land Use

Cascade Township, Kent County, MI

December 15, 2023

## LEGEND

- Agriculture, Rural Residential, & Open Space
- Neighborhood Residential
- Commercial/Service Based
- Industrial
- Airport



Basemap Source: Michigan Center for Geographic Information, Version 17a.  
Data Source: GVMC 2023. McKenna 2023.

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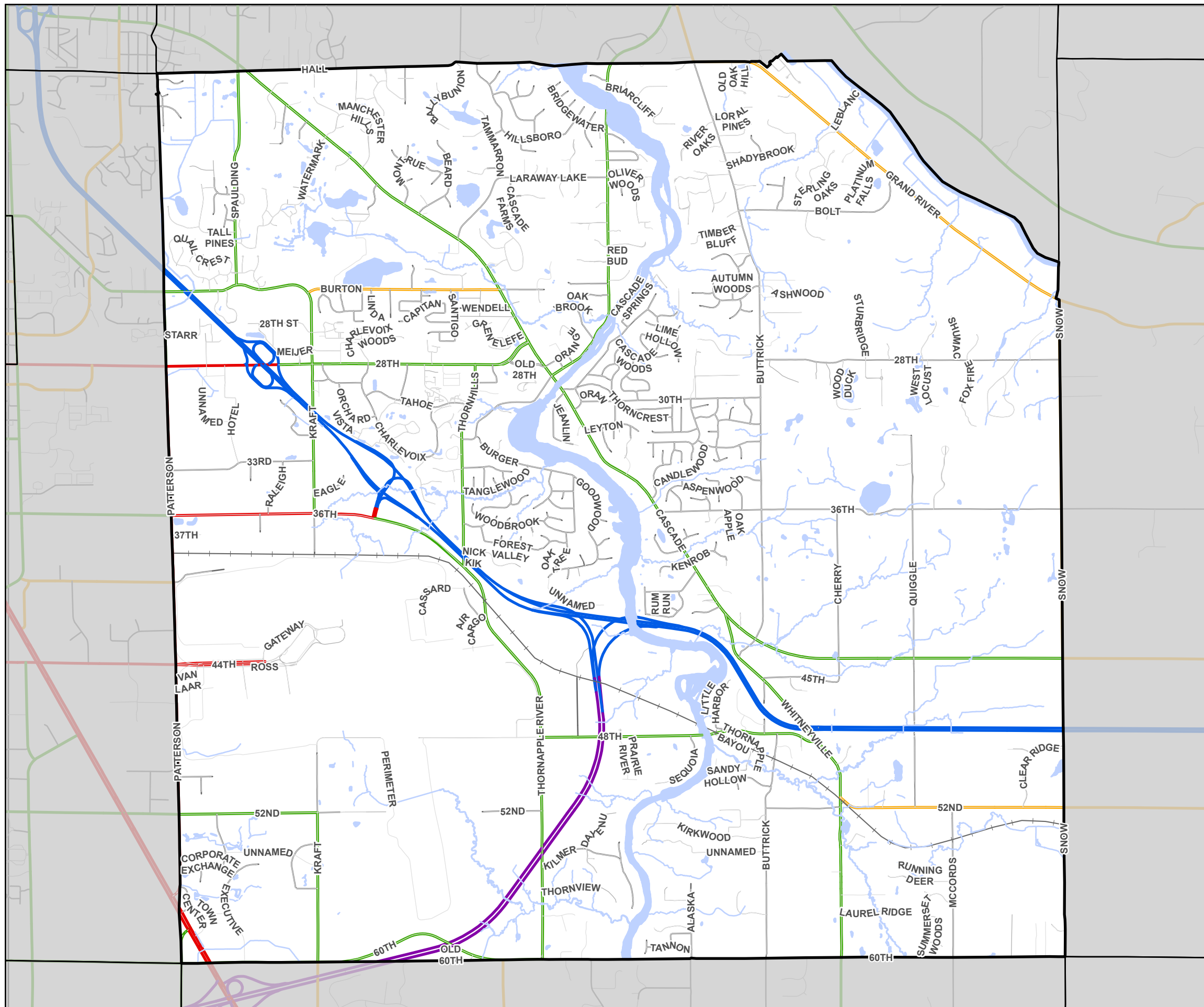
# Road Classification

Cascade Township, Kent County, MI

December 15, 2023

## LEGEND

- Interstate
- Other Freeway
- Other Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local
- Non-Certified



Basemap Source: Michigan Center for Geographic Information, Version 17a.  
Data Source: GVMC 2023. McKenna 2023.



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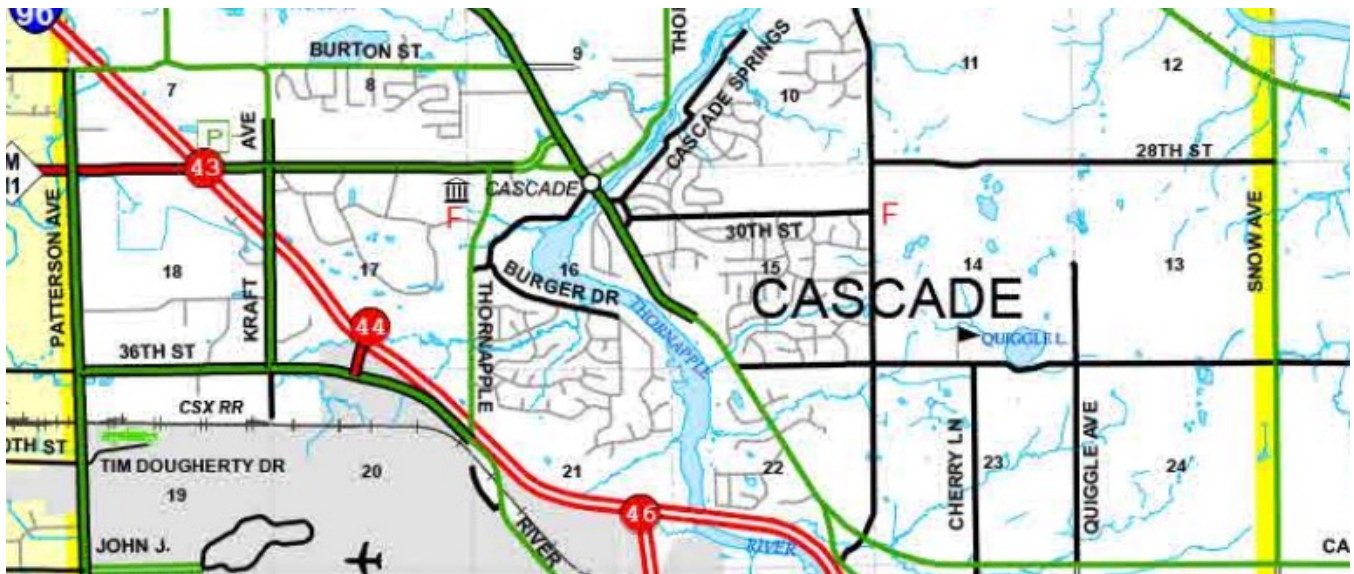


## Road Classification System

Roads provide a means for people to get from one place to another, primarily by automobile, but also by bike, foot, and other means. Roads connect people and places to one another. These stretches of public ground serve other purposes as well. Roads and road rights-of-way provide locations for public utilities such as gas, electric, and telephone lines. Roads provide the means by which emergency and public services are delivered to residents. Finally, roads provide access to parcels of land, thereby increasing the utilization potential of both vacant and agricultural lands.

Because of the many functions of the road system, transportation has a significant impact on the economy, environmental quality, energy consumption, land development, and the general character of the Township. Therefore, it is important that land use planning and the transportation system be coordinated in order to manage the Township's development patterns.





## Regional Transportation Network

There are several major regional thoroughfares and road corridors in Cascade Township. First, the I-96 Interstate, which runs 192 miles east-west from Detroit to Muskegon is located within Cascade Township. I-96 is one of the State's most frequently traveled highways because of the access from the Detroit area, through Lansing and Grand Rapids, to Muskegon. There is one ramp to enter/exit I-96 in Cascade Township – to 28th Street. The I-96

Second, the M-6 highway is also located in Cascade Township. M-6 is approximately 20 miles long and is also an east-west highway that provides access south of I-96. Ultimately, the M-6 Corridor's easternmost point is located within Cascade Township and provides access from Cascade Township to the City of Hudsonville to the West in Ottawa County. This highway connection is important to the West Michigan regional network – as it provides highway access to suburban communities south of the City of Grand Rapids.

Lastly, the easternmost segment of the 28th Street, or M-11, Corridor is located within Cascade Township. Although Cascade Township's portion is only the final few miles of the Corridor, 28th Street is perhaps one of the most significant arterial roads within the West Michigan region. In general, 28th Street provides access from Cascade Township to the City of Walker to the west. The Corridor is mostly known in the region for popular shopping, dining, and other automobile-oriented destinations.

## Township Road Network

According to the Michigan Department of Transportation (MDOT), “One of Michigan’s primary federal data reporting requirements to the Federal Highway Administration (FHWA) is to determine what roads are eligible to receive federal funds. This is determined by assigning a highway functional classification to every public road in Michigan. The Michigan Department of Transportation (MDOT) calls the federal highway functional classification system the National Functional Classification (NFC). The addition of “National” to functional classification is intended to distinguish it from the State of Michigan’s classification system used for distributing Act 51 funds.”

- According to the National Functional Classification (NFC) system, Cascade Township’s roads generally are classified into the following categories:
- Interstate: This includes the I-96 Corridor, which is an interstate highway.
- Freeway: This includes M-6, which is a frequently traveled freeway in the West Michigan region.
- Principal Arterial: These roads are comprised of 28th Street and 36th Street within Cascade Township. In general, Principal Arterial streets are designed to serve to connect neighboring cities and urban areas. They are of regional significance and often of statewide importance.
- Minor Arterial: Minor arterials connect the cities and towns inside and outside the region. They interconnect the rural centers in the region to one another. Examples of Minor Arterials in Cascade Township include Cascade Road and Thornapple River Drive.

- Major Collector: A paved County Highway serving County areas not on arterial routes, larger towns not directly served by the higher systems and other traffic generators of equivalent intra-county importance. Major Collectors in Cascade Township includes Grand River Drive and Burton Street.
- Local: Local roads provide maximum property access with lower traffic volumes and low speeds, and have little through-traffic (mobility). Some examples of Local Roads in Cascade Township include Buttrick Avenue, Quiggle Avenue, and Cherry Avenue
- Non-Certified: These roads are generally comprised of private residential streets and other similar local streets that are not traveled by the general public to get from one place to another.

Road classifications are significant to a community Master Plan for the following reasons:

- Road classifications are used for funding distribution (e.g., more frequently traveled routes and regional routes often receive more funding for improvement projects).
- Development patterns are often dependent on road functions and level of service.
- Road classifications can help to create an accurate depiction of existing development patterns and planning for future capacity.
- Road classifications often indicate characteristics of the built environment, such as speed limits, traffic counts, intersections, likelihood of congestion during peak hours, and other factors.
- Provide information on road jurisdiction agencies.



## County and Regional Road Agencies

Unlike a city or village, Cascade Township does not have jurisdiction over its own roads. A majority of the Cascade Township's roads are owned and maintained by the Kent County Road Commission. The Kent County Road Commission handles general road improvements, maintenance, snow removal, sidewalk maintenance, and other similar activities. The Michigan Department of Transportation has jurisdiction over I-96, M-6, and a portion of 28th Street corridors in the Township.

Additionally, Cascade Township is a member of the Grand Valley Metro Council (GVMC), which is a metropolitan planning organization (MPO) in the Grand Rapids urbanized region. In terms of transportation, the GVMC "provides a forum for continuing, comprehensive, and cooperative regional multi-mode transportation planning processes. The Department is involved in regional planning, management and operations, air quality, data collection and distribution, public involvement and education, and interaction with various joint programs of GVMC, Kent and Ottawa Counties, the State of Michigan, and the US Department of Transportation."

## Railroads

A portion of the CSX rail line is also located within Cascade Township. Overall, the CSX Transportation network encompasses about 20,000 route miles of track in 23 states, the District of Columbia and the Canadian provinces of Ontario and Quebec. CSX provides service for freight transportation as well as for traditional passenger rail.



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# Appendix

07



# Appendix A: Airport Layout Plan





**RS&H Michigan, Inc.**  
 436 S Main St  
 Plymouth, Michigan 48170  
 734-456-7060  
 www.rsandh.com

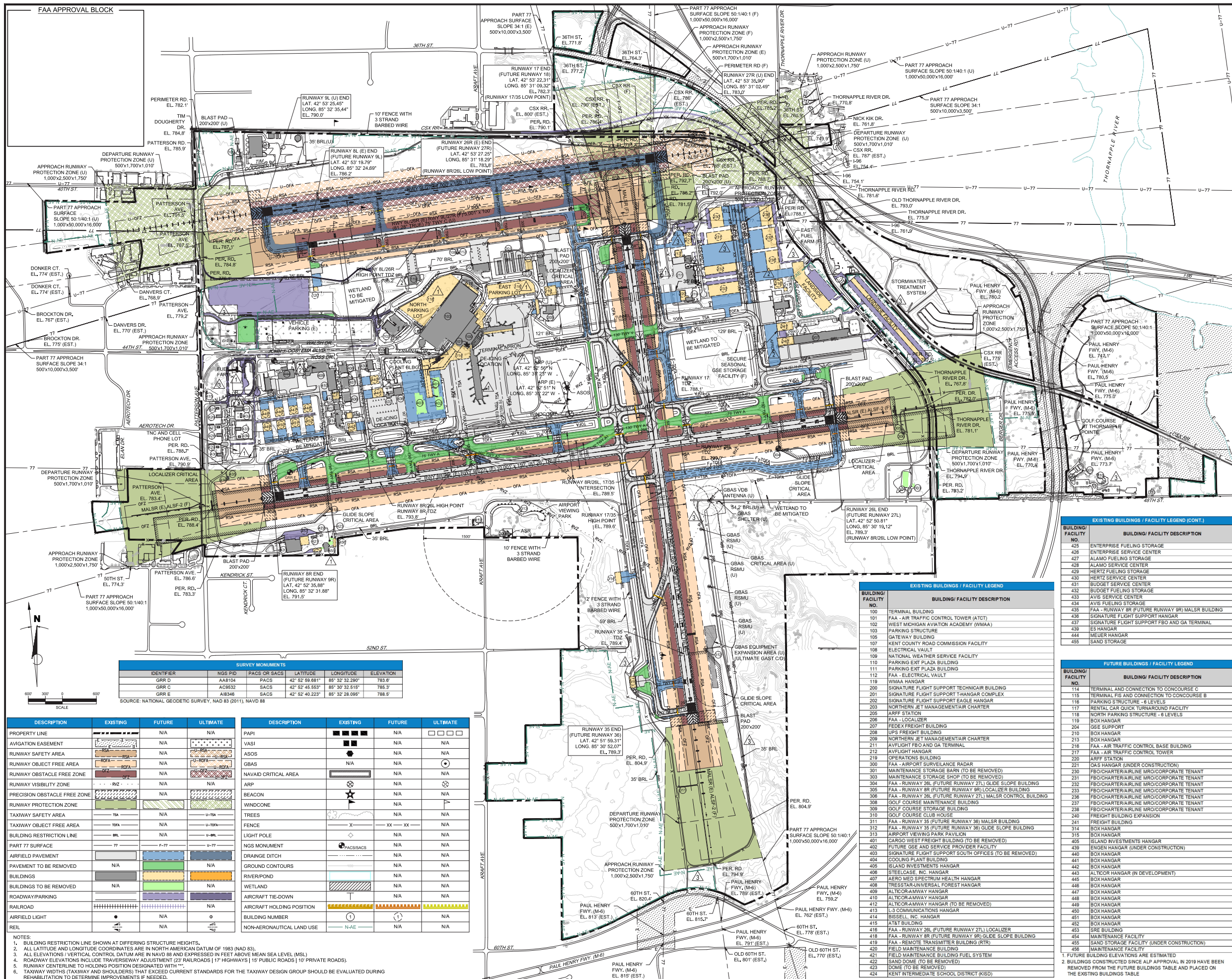


**GERALD R. FORD INTERNATIONAL AIRPORT**

5500 44TH Street SE  
 Grand Rapids, MI 49512

**AIRPORT LAYOUT PLAN**

CONSULTANTS



**SURVEY MONUMENTS**

IDENTIFIER	NGS PID	PACS OR SACS	LATITUDE	LONGITUDE	ELEVATION
GRR D	A18104	PACS	42° 52' 59.881"	85° 32' 29.7"	783.9'
GRR C	AC6532	SACS	42° 52' 45.553"	85° 30' 32.515"	785.3'
GRR E	A18348	SACS	42° 52' 40.223"	85° 32' 28.095"	788.5'

SOURCE: NATIONAL GEODETIC SURVEY, NAD 83 (2011), NAVD 88

DESCRIPTION	EXISTING	FUTURE	ULTIMATE	DESCRIPTION	EXISTING	FUTURE	ULTIMATE
PROPERTY LINE	---	N/A	N/A	PAPI	■ ■ ■ ■	N/A	□ □ □ □
AVIGATION EASEMENT	---	N/A	N/A	VASI	■ ■ ■ ■	N/A	N/A
RUNWAY SAFETY AREA	---	N/A	N/A	ASOS	●	N/A	N/A
RUNWAY OBJECT FREE AREA	---	N/A	N/A	GBAS	●	N/A	N/A
RUNWAY OBSTACLE FREE ZONE	---	N/A	N/A	NAVAID CRITICAL AREA	---	N/A	N/A
RUNWAY VISIBILITY ZONE	---	N/A	N/A	ARP	⊗	N/A	⊗
PRECISION OBSTACLE FREE ZONE	---	N/A	N/A	BEACON	★	N/A	N/A
RUNWAY PROTECTION ZONE	---	N/A	N/A	WINDCONE	---	N/A	N/A
TAXIWAY SAFETY AREA	---	N/A	N/A	FENCE	X	XX	XX
TAXIWAY OBJECT FREE AREA	---	N/A	N/A	LIGHT POLE	○	○	○
BUILDING RESTRICTION LINE	---	N/A	N/A	NGS MONUMENT	●	N/A	N/A
PART 77 SURFACE	---	---	---	DRAINAGE DITCH	---	N/A	N/A
AIRFIELD PAVEMENT	---	---	---	GROUND CONTOURS	---	N/A	N/A
PAVEMENT TO BE REMOVED	---	---	---	RIVER/POND	---	N/A	N/A
BUILDINGS	---	---	---	WETLAND	---	N/A	N/A
BUILDINGS TO BE REMOVED	---	---	---	AIRCRAFT TIE-DOWN	---	N/A	N/A
ROADWAY/PARKING	---	---	---	AIRCRAFT HOLDING POSITION	○	○	○
RAILROAD	---	---	---	BUILDING NUMBER	○	○	○
AIRFIELD LIGHT	---	---	---	NON-AERONAUTICAL LAND USE	---	N/A	N/A
REL	---	---	---				

NOTES:  
 1. BUILDING RESTRICTION LINE SHOWN AT DIFFERING STRUCTURE HEIGHTS.  
 2. ALL LATITUDE AND LONGITUDE COORDINATES ARE IN NORTH AMERICAN DATUM OF 1983 (NAD 83).  
 3. ALL ELEVATIONS VERTICAL CONTROL DATUM ARE IN NAVD 88 AND EXPRESSED IN FEET ABOVE MEAN SEA LEVEL (MSL).  
 4. ROADWAY ELEVATIONS INCLUDING TRAVELWAY ADJUSTMENT (23 RAILROADS) (17 HIGHWAYS) (15 PUBLIC ROADS) (10 PRIVATE ROADS).  
 5. RUNWAY CENTERLINE TO HOLDING POSITION DESIGNATED WITH "X".  
 6. TAXIWAY WIDTHS (TAXIWAY AND SHOULDERS) THAT EXCEED CURRENT STANDARDS FOR THE TAXIWAY DESIGN GROUP SHOULD BE EVALUATED DURING REHABILITATION TO DETERMINE IMPROVEMENTS IF NEEDED.

**EXISTING BUILDINGS / FACILITY LEGEND (CONT.)**

BUILDING/FACILITY NO.	BUILDING/FACILITY DESCRIPTION
425	ENTERPRISE FUELING STORAGE
426	ENTERPRISE SERVICE CENTER
427	ALAMO FUELING STORAGE
428	ALAMO SERVICE CENTER
429	HERTZ FUELING STORAGE
430	HERTZ SERVICE CENTER
431	BUDGET SERVICE CENTER
432	BUDGET FUELING STORAGE
433	AVIS SERVICE CENTER
434	AVIS FUELING STORAGE
435	FAA - RUNWAY 8R (FUTURE RUNWAY 9R) MALSR BUILDING
436	SIGNATURE FLIGHT SUPPORT HANGAR
437	SIGNATURE FLIGHT SUPPORT FBO AND GA TERMINAL
438	ES HANGAR
444	MEIER HANGAR
455	SAND STORAGE

**EXISTING BUILDINGS / FACILITY LEGEND**

BUILDING/FACILITY NO.	BUILDING/FACILITY DESCRIPTION
100	TERMINAL BUILDING
101	FAA - AIR TRAFFIC CONTROL TOWER (ATCT)
102	WEST MICHIGAN AVIATION ACADEMY (WMAA)
103	PARKING STRUCTURE
106	GATEWAY BUILDING
107	KENT COUNTY ROAD COMMISSION FACILITY
108	ELECTRICAL VAULT
109	NATIONAL WEATHER SERVICE FACILITY
110	PARKING EXIT PLAZA BUILDING
111	PARKING EXIT PLAZA BUILDING
112	FAA - ELECTRICAL VAULT
119	WMAA HANGAR
200	SIGNATURE FLIGHT SUPPORT TECHNICAL BUILDING
201	SIGNATURE FLIGHT SUPPORT THANGAR COMPLEX
202	SIGNATURE FLIGHT SUPPORT EAGLE HANGAR
203	NORTHERN JET MANAGEMENT/ AIR CHARTER
205	ARFF STATION
206	FAA - LOCALIZER
207	FEDEX FREIGHT BUILDING
210	UPS FREIGHT BUILDING
209	NORTHERN JET MANAGEMENT/ AIR CHARTER
211	AVFLIGHT FBO AND GA TERMINAL
212	AVFLIGHT HANGAR
219	OPERATIONS BUILDING
300	FAA - AIRPORT SURVEILLANCE RADAR
320	FAA - RUNWAY 35 (FUTURE RUNWAY 36) MALSR (TO BE REMOVED)
303	MAINTENANCE STORAGE SHOP (TO BE REMOVED)
304	FAA - RUNWAY 26L (FUTURE RUNWAY 27L) GLIDE SLOPE BUILDING
305	FAA - RUNWAY 8R (FUTURE RUNWAY 9R) LOCALIZER BUILDING
306	FAA - RUNWAY 26L (FUTURE RUNWAY 27L) MALSR CONTROL BUILDING
308	GOLF COURSE MAINTENANCE BUILDING
309	GOLF COURSE STORAGE BUILDING
310	GOLF COURSE CLUB HOUSE
311	FAA - RUNWAY 35 (FUTURE RUNWAY 36) MALSR BUILDING
312	FAA - RUNWAY 35 (FUTURE RUNWAY 36) GLIDE SLOPE BUILDING
313	AIRPORT VIEWING PARK PAVILION
401	CARGO WEST FREIGHT BUILDING (TO BE REMOVED)
402	FUTURE GSE AND SERVICE PROVIDER FACILITY
403	SIGNATURE FLIGHT SUPPORT SOUTH OFFICES (TO BE REMOVED)
404	COOLING PLANT BUILDING
405	ISLAND INVESTMENTS HANGAR
406	STEELCASE, INC. HANGAR
407	AERO MED SPECTRUM HEALTH HANGAR
408	TRESTAR/UNIVERSAL FOREST HANGAR
409	ALTCOR-AMWAY HANGAR
410	ALTCOR-AMWAY HANGAR
412	ALTCOR-AMWAY HANGAR (TO BE REMOVED)
413	L-3 COMMUNICATIONS HANGAR
414	BISSELL, INC. HANGAR
415	AT&T BUILDING
416	FAA - RUNWAY 26L (FUTURE RUNWAY 27L) LOCALIZER
418	FAA - RUNWAY 8R (FUTURE RUNWAY 9R) GLIDE SLOPE BUILDING
419	FAA - REMOTE TRANSMITTER BUILDING (RTB)
420	FIELD MAINTENANCE BUILDING
421	FIELD MAINTENANCE BUILDING FUEL SYSTEM
422	DOME (TO BE REMOVED)
423	DOME (TO BE REMOVED)
424	KENT INTERMEDIATE SCHOOL DISTRICT (KISD)

**FUTURE BUILDINGS / FACILITY LEGEND**

BUILDING/FACILITY NO.	BUILDING/FACILITY DESCRIPTION
114	TERMINAL AND CONNECTION TO CONCOURSE C
115	TERMINAL PIS AND CONNECTION TO CONCOURSE B
116	PARKING STRUCTURE - 6 LEVELS
117	RENTAL CAR QUICK TURNAROUND FACILITY
118	NORTH PARKING STRUCTURE - 6 LEVELS
119	BOX HANGAR
204	GSE SUPPORT
210	BOX HANGAR
213	BOX HANGAR
216	FAA - AIR TRAFFIC CONTROL BASE BUILDING
217	FAA - AIR TRAFFIC CONTROL TOWER
220	ARFF STATION
221	OAS HANGAR (UNDER CONSTRUCTION)
230	FBO/CHARTER/AIRLINE MRO/CORPORATE TENANT
231	FBO/CHARTER/AIRLINE MRO/CORPORATE TENANT
232	FBO/CHARTER/AIRLINE MRO/CORPORATE TENANT
233	FBO/CHARTER/AIRLINE MRO/CORPORATE TENANT
234	FBO/CHARTER/AIRLINE MRO/CORPORATE TENANT
237	FBO/CHARTER/AIRLINE MRO/CORPORATE TENANT
238	FBO/CHARTER/AIRLINE MRO/CORPORATE TENANT
240	FREIGHT BUILDING EXPANSION
241	FREIGHT BUILDING
314	BOX HANGAR
315	BOX HANGAR
405	ISLAND INVESTMENTS HANGAR
439	ENGEN HANGAR (UNDER CONSTRUCTION)
440	BOX HANGAR
441	BOX HANGAR
442	BOX HANGAR
443	ALTCOR HANGAR (IN DEVELOPMENT)
445	BOX HANGAR
446	BOX HANGAR
447	BOX HANGAR
448	BOX HANGAR
449	BOX HANGAR
450	BOX HANGAR
451	BOX HANGAR
452	BOX HANGAR
453	SRE BUILDING
454	MAINTENANCE FACILITY
455	SAND STORAGE FACILITY (UNDER CONSTRUCTION)
456	MAINTENANCE FACILITY

1. FUTURE BUILDING ELEVATIONS ARE ESTIMATED.  
 2. BUILDINGS CONSTRUCTED SINCE AIP APPROVAL IN 2019 HAVE BEEN REMOVED FROM THE FUTURE BUILDINGS TABLE AND PLACED ON THE EXISTING BUILDINGS TABLE.

**REVISIONS**

NO.	DESCRIPTION	DATE
C-284, C-295, C-303, C-307, C-308, C-309, C-314, C-316, C-331		
△	AVFLIGHT FBO HANGAR AND PARKING LOTS, ES HANGAR, APRON, AND PARKING LOTS, AVFLIGHT FUEL FARM	8/19/20
△	MEIER HANGAR AND PARKING LOTS, EASEMENTS, WMAA HANGAR AND PARKING LOTS, EASTERN DEVELOPMENT AREA (SITE 4), ECONOMY LOT EXPANSION, SOUTH PERIMETER ROAD AND FENCE HEIGHT UPDATES, GOLF COURSE CLUBHOUSE EXPANSION, SITE 13 LAND RELEASE, GATE 4 AND GATE 30 IMPROVEMENTS	12/1/22
△		2/10/23

DATE ISSUED: OCTOBER 2019

REVIEWED BY: ADN

DRAWN BY: MJ

DESIGNED BY: TJM

AEP PROJECT NUMBER  
**210-0005-000**

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SHEET TITLE

**AIRPORT LAYOUT PLAN**

SHEET NUMBER

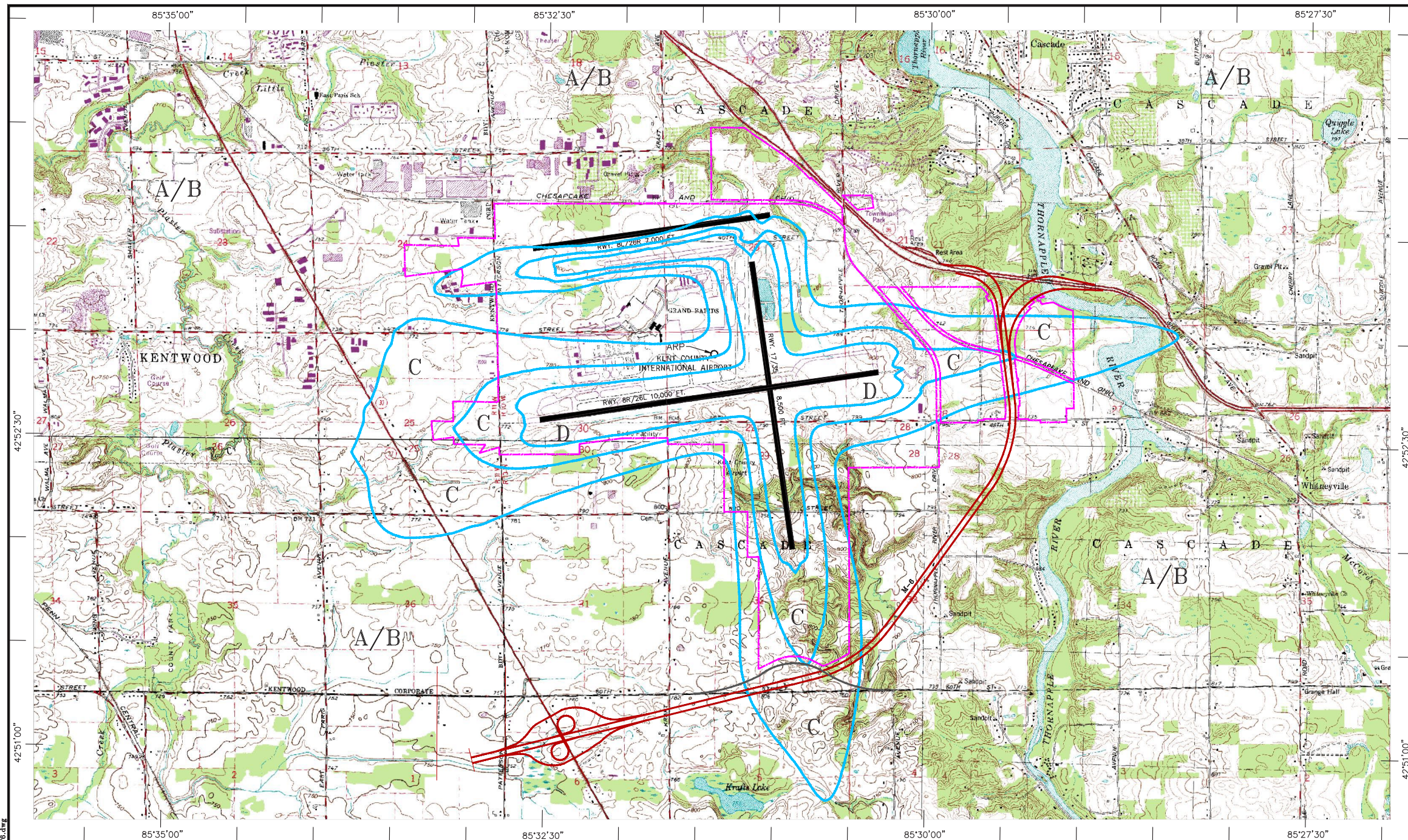
**4 OF 30**

STATE ID NO. 41-10



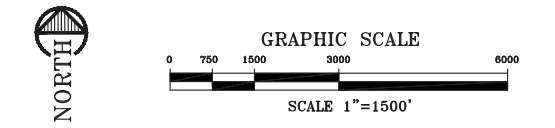
# Appendix B: Airport Approach Plan





- GENERAL NOTES:
- FOR CONFIGURATION AND DIMENSIONS OF APPROACHES, SEE STANDARD APPROACH DRAWING ST-R-107 (RULES AND REGULATIONS OF THE MICHIGAN AERONAUTICS COMMISSION, AS REVISED).
  - ALL ELEVATIONS ABOVE MEAN SEA LEVEL (AMSL), AND ARE BASED ON U.S.G.S. DATUM.
  - THE ESTABLISHED ELEVATION OF THE AIRPORT IS 794 AMSL. THE RADIUS OF THE INNER HORIZONTAL SURFACE IS 3 MILES. THE OUTER RADIUS OF THE CONICAL SURFACE IS 6.32 MILES. THE INNER HORIZONTAL SURFACE ELEVATION IS 943 AMSL. THE OUTER HORIZONTAL SURFACE IS 1294 AMSL. THE RADIUS POINT FOR ALL CONICAL SURFACES IS THE AIRPORT REFERENCE POINT.
  - ELEVATIONS SHOWN ON AERIAL CONTOURS ARE ALLOWABLE HEIGHTS OF OBJECTS ABOVE MEAN SEA LEVEL IN AREAS INDICATED.
  - ORIGINAL BASE MAP IS USGS QUADRANGLE SHEET. CONTOUR INTERVAL IS 10'.
  - ALL DIMENSIONED MILES ARE STATUTE MILES.
  - AIRPORT REFERENCE POINT (ARP)
  - BASE MAP DEPICTS LATITUDE AND LONGITUDE GRID REFERENCE POINTS TO THE NEAREST 30 SECOND INTERVAL.

SPECIAL NOTES:  
FOR INSTRUCTIONS ON HOW TO USE KENT COUNTY INTERNATIONAL AIRPORT ZONING PLANS, CONSULT WITH AIRPORT PLANNING ENGINEER. (616) 233-6000.



- LEGEND
- AIRPORT BOUNDARY
  - Land CONTOURS

NOISE CONTOURS INDICATED ARE 2005 CONTOURS

- MAP BACKGROUND CONSIST OF PORTIONS OF U.S.G.S. QUADRANGLE MAPS OF GRAND RAPIDS EAST, CASCADE, CALEDONIA, AND ALTO.
- THIS SHEET HAS BEEN PREPARED BY, AND REFLECTS LAND USE POLICIES ESTABLISHED BY THE COUNTY OF KENT UNDER THE AUTHORITY OF SECTION 13 OF THE AIRPORT ZONING ACT, P.A. 23 OF 1950 AS AMENDED BY P.A. 158 OF 1976.

G:\Facilities Management\Engineering\AUTOCAD\ZONING\Airport\_Zoning\_Plans\_2015\Z15SHT6.dwg

LAND USE GUIDANCE CHART I: - AIRPORT NOISE INTERPOLATION

LAND USE GUIDANCE ZONES (LUG)	NOISE EXPOSURE CLASS	INPUTS: AIRCRAFT NOISE ESTIMATING METHODOLOGIES				HUD NOISE ASSESSMENT GUIDELINES	SUGGESTED NOISE CONTROLS
		LDN DAY-NIGHT AVE. SOUND LEVEL	NEF NOISE EXPOSURE FORECAST	CNR COMPOSITE NOISE RATING	CNEL COMMUNITY NOISE EQUIVALENT LEVEL		
A	MINIMAL EXPOSURE	0	0	0	0	* CLEARLY ACCEPTABLE*	NORMALLY REQUIRES SPECIAL CONSIDERATIONS
		55	20	90	55		
B	MODERATE EXPOSURE	55	20	90	55	*NORMALLY ACCEPTABLE*	LAND USE CONTROLS SHOULD BE CONSIDERED
		65	30	100	65		
C	SIGNIFICANT EXPOSURE	65	30	100	65	*NORMALLY ACCEPTABLE*	NOISE EASEMENTS, LAND USE, AND OTHER COMPATIBILITY CONTROLS RECOMMENDED
		75	40	115	75		
D	SEVERE EXPOSURE	HIGHER	HIGHER	HIGHER	HIGHER	*CLEARLY UNACCEPTABLE*	CONTAINMENT WITHIN AIRPORT BOUNDARY OR USE OF POSITIVE COMPATIBILITY CONTROLS RECOMMENDED

LAND USE GUIDANCE CHART II

LAND USE NAME	SUGGESTED LUG ZONES	LAND USE NAME	SUGGESTED LUG ZONES
MANUFACTURING <sup>2</sup>	A-D	TRADE (4)	A-D
FOOD AND KINDRED PRODUCTS - MANUFACTURING	A-D	WHOLESALE TRADE	A-D
TEXTILE MILL PRODUCTS - MANUFACTURING	A-D	RETAIL TRADE - BUILDING MATERIALS, HARDWARE, AND FARM EQUIPMENT	A-C
APPAREL AND OTHER FINISHED PRODUCTS MADE FROM FABRICS, LEATHER, AND SIMILAR MATERIALS - MANUFACTURING	A-D	RETAIL TRADE - GENERAL MERCHANDISE	A-C
LUMBER AND WOOD PRODUCTS (EXCEPT FURNITURE) - MANUFACTURING	A-D	RETAIL TRADE - FOOD	A-C
FURNITURE AND FIXTURES - MANUFACTURING	A-D	RETAIL TRADE - AUTOMOTIVE, MARINE CRAFT, AIRCRAFT, AND ACCESSORIES	A-C
PAPER AND ALLIED PRODUCTS - MANUFACTURING	A-D	RETAIL TRADE - APPAREL AND ACCESSORIES	A-C
PRINTING, PUBLISHING, AND ALLIED INDUSTRIES	A-D	RETAIL TRADE - FURNITURE, HOME FURNISHINGS, AND EQUIPMENT	A-C
CHEMICALS AND ALLIED PRODUCTS - MANUFACTURING	A-D	RETAIL TRADE - EATING AND DRINKING	A-D
PETROLEUM REFINING AND RELATED INDUSTRIES (3)	A-D		
RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS - MANUFACTURING	A-D	SERVICES (4)	A-B
STONE CLAY AND GLASS PRODUCTS - MANUFACTURING	A-D	FINANCE, INSURANCE, AND REAL ESTATE SERVICES	A-B
PRIMARY METAL INDUSTRIES	A-D	BUSINESS SERVICES	A-B
FABRICATED METAL PRODUCTS - MANUFACTURING	A-B	REPAIR SERVICES	A-C
PROFESSIONAL, SCIENTIFIC, AND CONTROLLING INSTRUMENTS; PHOTOGRAPHIC AND OPTICAL GOODS; WATCHES AND CLOCKS - MANUFACTURING	A-B	PROFESSIONAL SERVICES	A-C
MISCELLANEOUS MANUFACTURING	A-D	CONTRACT CONSTRUCTION SERVICES	A-C
		GOVERNMENTAL SERVICES	A-B
TRANSPORTATION, COMMUNICATION, AND UTILITIES	A-D	EDUCATIONAL SERVICES	A-B
RAILROAD, RAPID RAIL TRANSIT, AND STREET RAILWAY TRANSPORTATION	A-D	MISCELLANEOUS SERVICES	A-C
MOTOR VEHICLE TRANSPORTATION	A-D		
AIRCRAFT TRANSPORTATION	A-D	CULTURAL, ENTERTAINMENT, AND RECREATIONAL	A
MARINE CRAFT TRANSPORTATION	A-D	CULTURAL ACTIVITIES AND NATURE EXHIBITIONS	A-C
HIGHWAY AND STREET RIGHT-OF-WAY	A-D	PUBLIC ASSEMBLY	A-C
AUTOMOBILE PARKING	A-D	AMUSEMENTS	A-C
COMMUNICATION	A-D	RECREATIONAL ACTIVITIES (5)	A-C
UTILITIES	A-D	RESORTS AND GROUP CAMPS	A-C
OTHER TRANSPORTATION, COMMUNICATION, AND UTILITIES	A-D	PARKS	A-C
		OTHER CULTURAL, ENTERTAINMENT, AND RECREATIONAL	A-B
RESIDENTIAL	A-B		
HOUSEHOLD UNITS	A	UNDEVELOPED LAND AND WATER AREAS	A-D
SINGLE UNITS - DETACHED	A	UNDEVELOPED AND UNUSED LAND AREA (EXCLUDING NONCOMMERCIAL FOREST DEVELOPMENT)	A-D
SINGLE UNITS - SEMI-ATTACHED	A-B	NONCOMMERCIAL FOREST DEVELOPMENT	A-D
SINGLE UNITS - ATTACHED	A	WATER AREAS	A-D
TWO UNITS - SIDE-BY-SIDE	A	VACANT FLOOR AREA	A-D
TWO UNITS - ONE ABOVE THE OTHER	A	UNDER CONSTRUCTION	A-D
APARTMENTS - WALK UP	A-B	OTHER UNDEVELOPED LAND AND WATER AREAS	A-D
APARTMENTS - ELEVATOR	A-C		
GROUP QUARTERS	A-B		
RESIDENTIAL HOTELS	A-B		
MOBILE HOME PARKS OR COURTS	A		
TRANSIENT LODGINGS	A-C		
OTHER RESIDENTIAL	A-C		
RESOURCE PRODUCTION AND EXTRACTION	A-D		
AGRICULTURE	A-D		
AGRICULTURAL RELATED ACTIVITIES	A-D		
FORESTRY ACTIVITIES AND RELATED SERVICES	A-D		
FISHING ACTIVITIES AND RELATED SERVICES	A-D		
MINING ACTIVITIES AND RELATED SERVICES	A-D		
OTHER RESOURCE PRODUCTION AND EXTRACTION	A-D		

- REFER TO LAND USE GUIDANCE CHART-I.
- ZONE "C" SUGGESTED MAXIMUM EXCEPT WHERE EXCEEDED BY SELF GENERATED NOISE.
- ZONE "D" FOR NOISE PURPOSES; OBSERVE NORMAL HAZARD PRECAUTIONS.
- IF ACTIVITY IS NOT IN SUBSTANTIAL, AIR CONDITIONED BUILDING, GO TO NEXT HIGHER ZONE.
- REQUIREMENTS LIKELY TO VARY - INDIVIDUAL APPRAISAL RECOMMENDED.

**GERALD R. FORD INTERNATIONAL AIRPORT**  
 5500 44TH ST SE GRAND RAPIDS, MICHIGAN 49512  
 KENT CO. DEPT. OF AERONAUTICS  
 FACILITIES DEPARTMENT

**AIRPORT ZONING PLANS**

**ZONING (LAND USE MAP)**

Z15SHT6.dwg	SHT NO
3. 00-00-00	6/8
2. 00-00-00	
1. 03-25-15	
DATE REVISED	MKH







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