APPENDIX A

CONTENTS

SPECIAL STUDIES

SPECIAL STUDIES

Special studies are focused planning documents that guide land use, development, infrastructure, and community priorities within a specific geographic portion of the Township, such as a neighborhood, corridor, or district. They may also address key topics and strategies to guide future decision-making.

Special studies are useful planning tools. They allow for greater detail in examining specific issues or areas than a Comprehensive Plan typically allows. ***These studies help translate high-level policy goals into practical strategies by offering tailored place-based recommendations that can guide ordinance updates, capital improvements, grant applications, and program development.***

They also help provide tangible examples to developers, decision-makers, and the community about the intent of the Comprehensive Plan's vision and goals. Recommendations are grounded in real-world conditions that offer feasible strategies that support implementation. The studies are particularly valuable in addressing complex or evolving topics that require investigation to inform sound decision-making.

The studies included in this plan:

- Provide a deeper understanding of specific issues or locations identified as priorities.
- Identify likely issues that will be encountered during development.
- Include technical analysis and more detailed mapping at a parcel level.
- Address street connectivity and access.
- Offer targeted strategies and recommendations.
- Inform future updates to Township policy and ordinances.

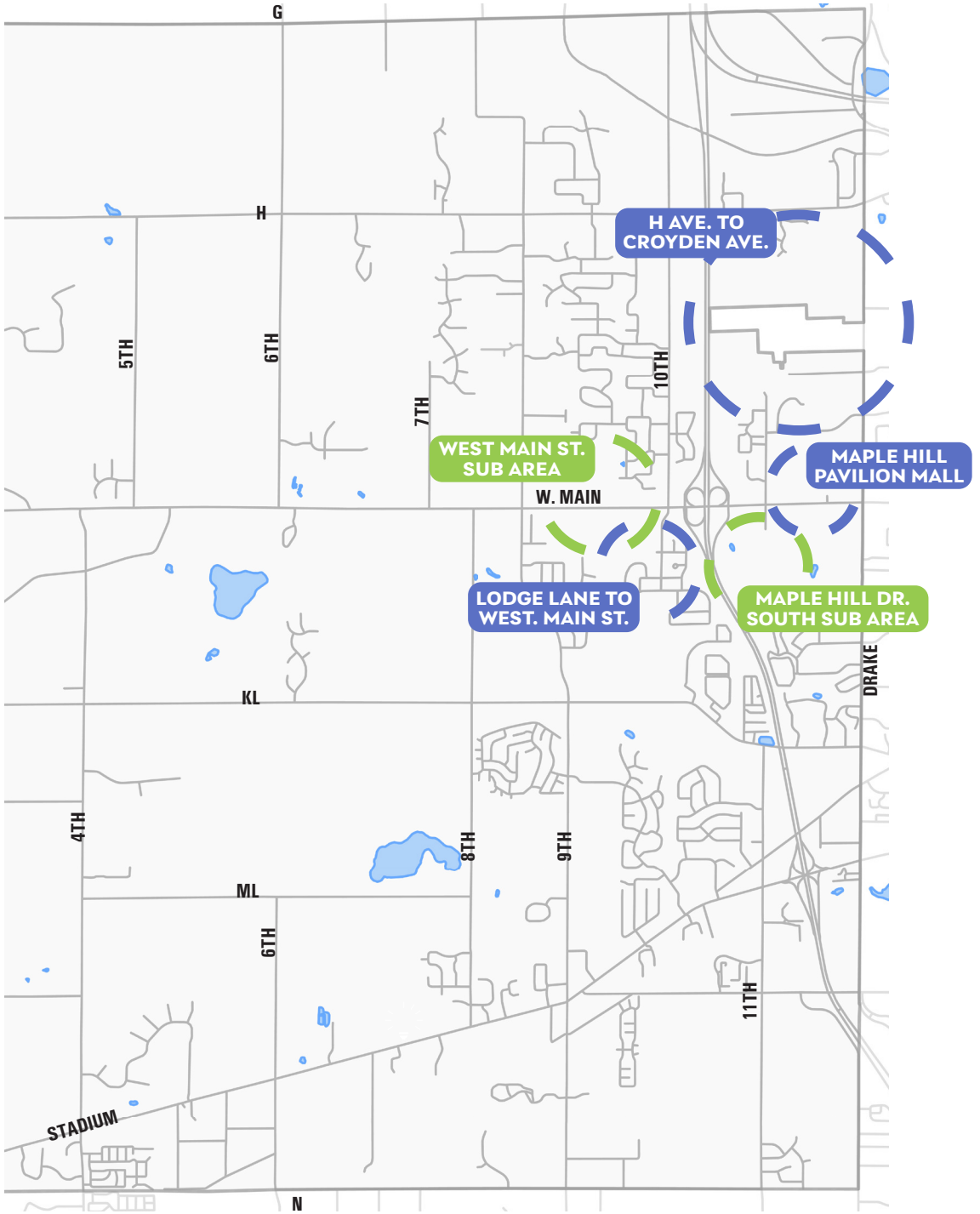
Two previously studied areas are incorporated into the 2045 Oshtemo Comprehensive Plan and are considered relevant for future development guidance:

- **West Main Street Sub-Area Plan (from 2011 Master Plan)**
- **Maple Hill Drive South Sub Area Plan (from 2017 Master Plan)**

Three new special studies were developed as part of the 2045 Oshtemo Comprehensive Plan effort. They provide a more focused, in-depth analysis of key planning topics identified as priorities during the planning process. These areas consist of:

- **Maple Hill Pavilion Mall**
- **H Avenue to Croyden Avenue**
- **Lodge Lane to West Main Street**

As Oshtemo continues to grow and change, additional studies may be conducted to explore emerging issues such as housing affordability, climate adaptation, or redevelopment opportunities. These studies could provide different ways to support the Township's long-term vision while responding to specific challenges and opportunities.



WEST MAIN STREET SUB - AREA PLAN

The West Main Street Sub-Area Plan focuses on the segment of M-43 between 9th Street and US-131, a strategically located but largely undeveloped corridor within Oshtemo Township. The plan serves as a more detailed supplement to the Township's 2011 Master Plan, intended to guide future growth, shape land use expectations, and address infrastructure needs in a context-sensitive manner.

Despite rapid commercial and residential development surrounding the area - particularly at 9th Street and along US-131 - the sub-area remains characterized by vacant parcels, steep topography, and scattered existing uses. The contrast between what the Township's current zoning permits, what has been proposed, and what residents desire has prompted the need for this detailed planning effort.

The plan envisions future development that integrates low-impact commercial and residential uses, reflects Oshtemo's rural character, and preserves quality of life for surrounding neighborhoods. To achieve this, the plan outlines a clear development vision, goals, and design principles supported by land use guidance and infrastructure recommendations.

Vision and Land Use Framework

The vision for the sub-area is to accommodate growth without compromising community character or overwhelming existing infrastructure. Commercial development is encouraged along the West Main frontage, but at a low intensity - emphasizing office uses and smaller-scale commercial rather than large retail or big-box formats. These uses are intended to maintain a visually cohesive corridor, especially on the south side, where steep slopes and wooded parcels present natural screening opportunities.

Behind the commercial frontage, the plan calls for Transitional Residential development that extends adjacent neighborhoods while buffering them from the impacts of the corridor. This area supports a mix of residential types - such as detached single-unit homes, duplexes, and housing for seniors - with a strong emphasis on open space preservation and site-sensitive design. Development in these areas is expected to occur through coordinated Planned Unit Developments (PUDs) to address internal connectivity, site layout, and access management holistically.

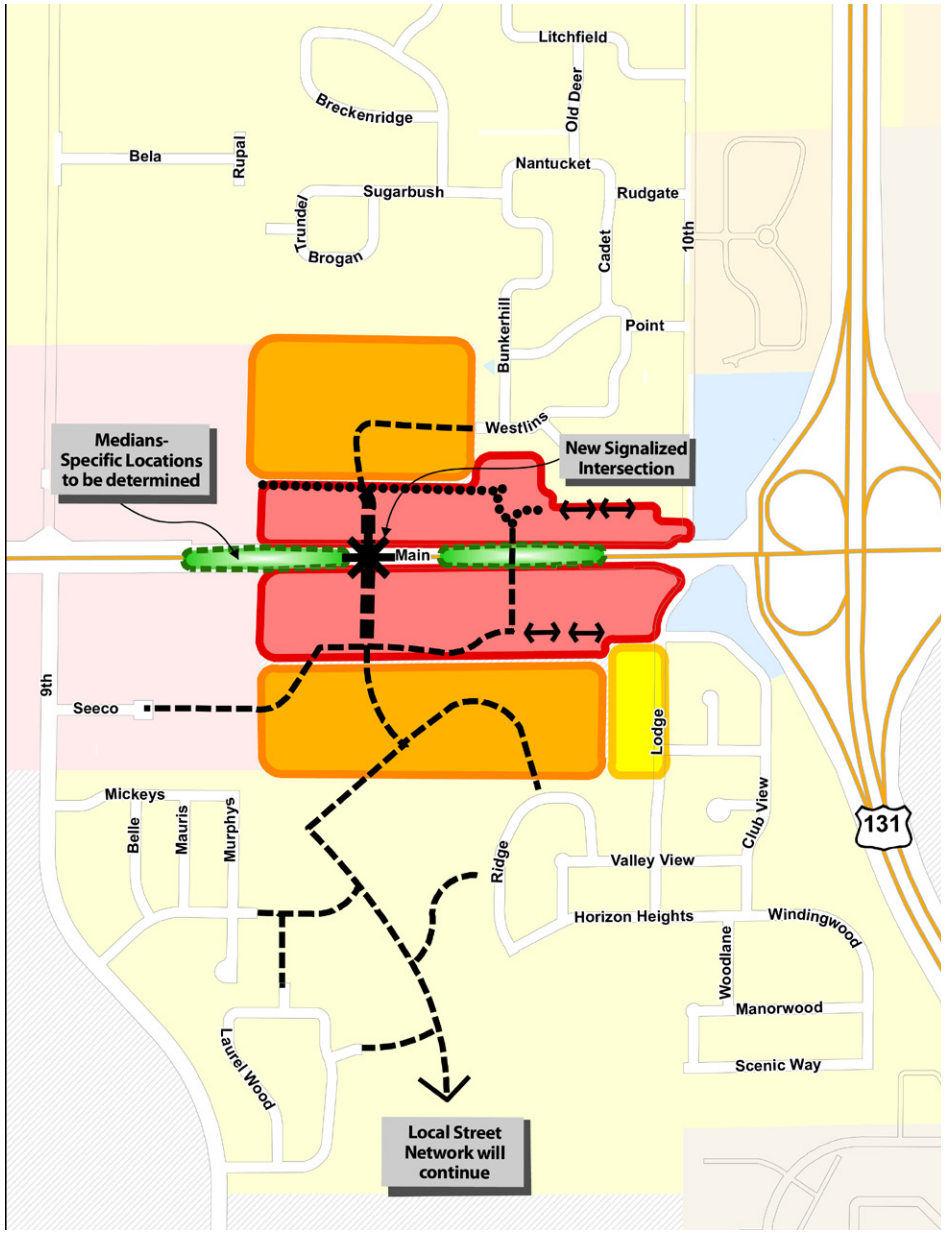
West Main Street Sub-Area Plan

Oshtemo Charter Township, Kalamazoo County, Michigan

LEGEND

- Low Density Residential
- Transitional Residential
- West Main Commercial
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Transitional Mixed Use
- General Commercial
- Sub Area

- New Intersection
- Proposed Service Road
- Proposed Local Road
- Proposed Local Collector
- Interconnected Parking Lots



N
W E
S

Base map Source: MiGCl v6b & v7b
Data Source: Oshtemo Township, 2008; McKenna Associates, 2010

0 1,000 2,000 FEET

Transportation and Connectivity

One of the plan's core strategies is establishing a comprehensive and coordinated local street network. At present, the corridor lacks internal roads and local connections. As development occurs, stub streets and outlots in adjacent neighborhoods will be extended to support east-west and north-south movement, similar to the nearby Westport Neighborhood pattern. New local streets will be designed to serve both commercial and residential uses while minimizing cut-through traffic, using routing and design measures to preserve neighborhood safety.

The Township's Access Management Plan plays a central role. Driveways along West Main will be limited, and shared service roads and access points will be required wherever feasible to reduce traffic conflict points. A new central signalized intersection between 9th and 10th Streets is proposed to improve traffic safety and enhance pedestrian crossings between the north and south sides of the corridor. Additional improvements - such as medians or boulevard treatments - may be implemented to restrict turning movements and improve circulation without compromising safety. In fact, during the summer of 2025, the Michigan Department of Transportation (MDOT) completed a roadway widening and access management project along M-43 (Main Street). The project, which includes the addition of one westbound lane along Main Street between Drake Road and US-131, is intended to alleviate safety concerns by closing two access driveways to the Maple Hill mall site.

Public Services and Environmental Considerations

While public water is available throughout the sub-area plan, sanitary sewer is only partially accessible, particularly on the south side where challenging topography complicates service expansion. The plan acknowledges these constraints and encourages phased development aligned with infrastructure availability. Developers are expected to coordinate sewer extensions and site engineering to accommodate future connections.

Stormwater management is a critical concern due to poor soil infiltration in the area. The plan promotes low-impact design strategies such as swales and rain gardens, along with shared stormwater systems that work with natural drainage patterns. These strategies are intended to minimize environmental impacts while supporting long-term site sustainability.

Implementation Tools and Flexibility

To ensure development aligns with the plan's vision, the Township may create a West Main Commercial zoning district or amend existing local business district regulations. The use of form-based standards is encouraged to maintain consistent building orientation, setbacks, and site design.

The Transitional Residential designation may be implemented through new zoning or overlay standards that ensure interconnectivity, preserve open space, and manage traffic impacts. In both cases, flexibility is retained to allow creative, coordinated development through the PUD process.

The plan also emphasizes ongoing collaboration with MDOT, the Kalamazoo County Road Commission, and area stakeholders. Additional efforts to understand this area and consider regional approaches to connectivity and stormwater management were continued in the 2011 sub-area plan. The 2045 Oshtemo Comprehensive Plan builds on these ideas further by looking at the street network as a whole, instead of one segment. It considers how to accomplish regional stormwater treatment with one, larger facility rather than individual property owners providing stormwater quality and quantity management on each site.

MAPLE HILL DRIVE SOUTH SUB - AREA PLAN

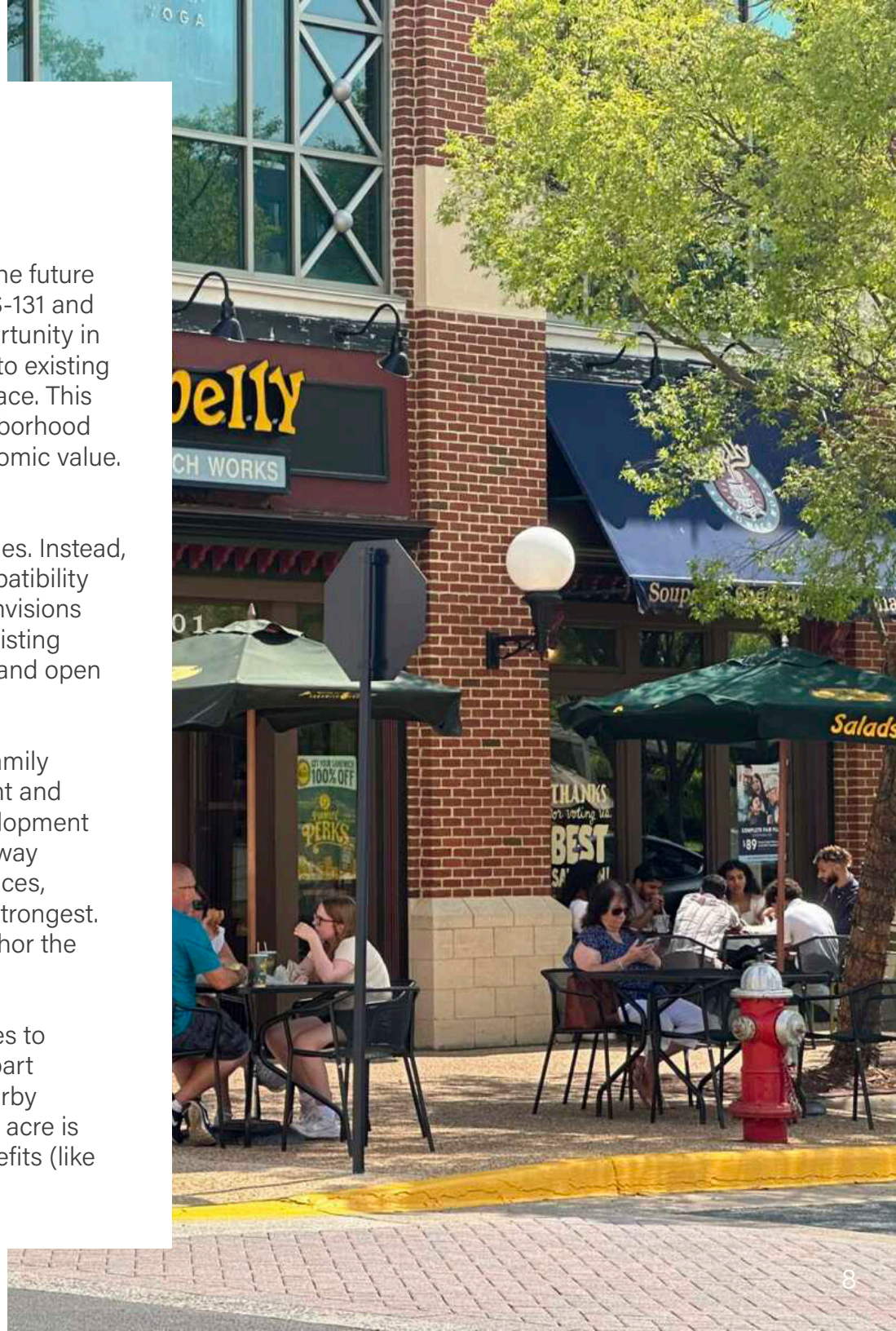
The Maple Hill Drive South Sub-Area Plan sets the vision for the future development of a large, mostly undeveloped area between US-131 and Drake Road, south of West Main Street. The site is a rare opportunity in Oshtemo - a sizable area with visibility, access, and proximity to existing infrastructure neighborhoods, commercial areas, and open space. This plan lays the groundwork for creating a new, mixed-use neighborhood that supports housing choice, walkability, and long-term economic value.

A Framework for Development

The plan doesn't prescribe exact land uses or zoning boundaries. Instead, it provides a flexible development framework focused on compatibility with surrounding areas and intentional design. The concept envisions a mix of uses, organized to create clear transitions between existing residential neighborhoods, new housing, commercial activity, and open space.

The southern portion of the site - adjacent to existing single-family homes - is reserved for lower-intensity residential development and preserved green space. These areas will help buffer new development and provide visual continuity. Toward West Main and the highway interchange, the plan allows for more intense uses such as offices, retail, or mixed-use buildings, where visibility and access are strongest. A central civic or public gathering space is encouraged to anchor the neighborhood and serve as a community focal point.

The plan supports a variety of housing types - from townhomes to apartments to small-lot detached homes - provided they are part of a walkable street network and respond appropriately to nearby development. An average net residential density of 6 units per acre is suggested, with flexibility to go higher if significant public benefits (like parks or public amenities) are included.



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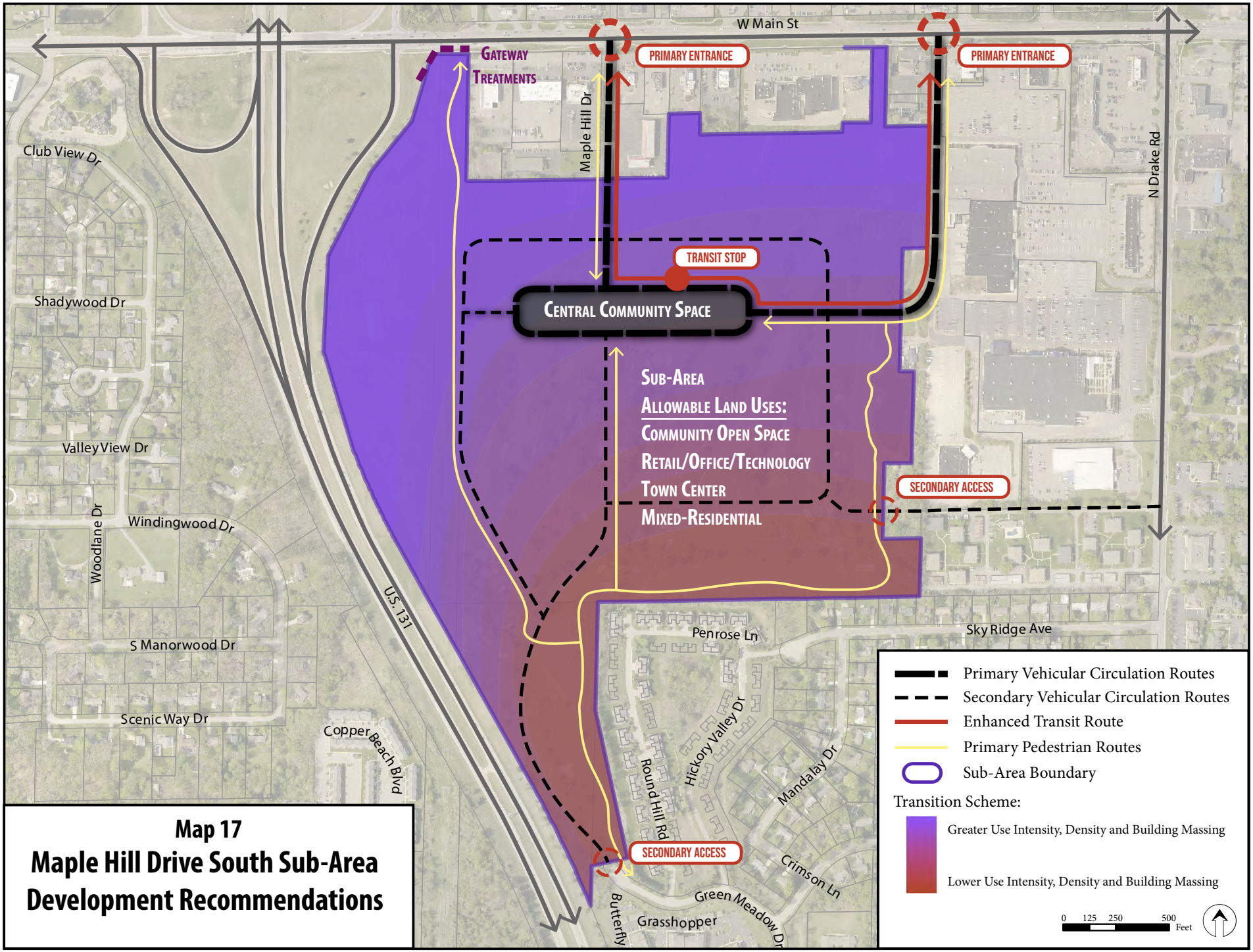


Map 17

Maple Hill Drive South Sub-Area Development Recommendations

Connectivity and Mobility

The plan places a strong emphasis on building a cohesive and connected local street network that extends and complements surrounding roads and neighborhoods. Internal streets should support local circulation without encouraging cut-through traffic, and should be designed to prioritize pedestrian safety and comfort.

Access to the site will primarily come from West Main Street, with potential connections to Drake Road and Green Meadow Drive as future development allows. These connections are critical to distributing traffic and providing flexible access. Within the site, streets should be walkable, tree-lined, and well-integrated with sidewalks and multi-use paths.

Equally important is non-motorized connectivity. The plan envisions an internal trail and sidewalk system that links neighborhoods to each other, to the central civic space, and to future regional trail corridors. Transit access is also supported, particularly with the potential for a Metro stop near the public plaza or commercial node.

Design and Implementation Considerations

Development of the Maple Hill Drive South Sub-Area Plan was shaped by community input gathered through a public open house and a visual preference survey. The success of this area will depend not just on what is built, but how it is designed. The plan emphasizes quality architecture, human-scaled design, variation in building form, and meaningful integration of open space. These elements are especially important near neighborhood edges and along primary streets where the character of development sets the tone for the entire district.

Feedback from the visual preference survey included the following:

Residential Development

Photo R-2: Rank #1 - Score 1.2

Photo R-4: Rank #2 - Score 0.5

Photo R-10: Rank #3 - Score 0.3

Photo R-1: Rank #4 - Score 0.1

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

Mixed-Use Development

Photo MU-4: Rank #1 - Score 1.2

Photo MU-3: Rank #2 - Score 1.0

Photo MU-2: Rank #3 - Score 0.2

Photo MU-6: Rank #4 - Score 0.1

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

Commercial Development

Photo C-7: Rank #1 - Score 0.9

Photo C-8: Rank #2 - Score 0.8

Photo C-2: Rank #3 - Score 0.1

Photo C-5: Rank #4 - Score 0.0

Photo C-1: Rank #5 - Score 0.0

Office Development

Photo O-5: Rank #1 - Score 1.0

Photo O-6: Rank #2 - Score 0.5

Photo O-2: Rank #3 - Score 0.4

Photo O-3: Rank #4 - Score 0.0

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

Streets/Sidewalks/Transit

Photo S-2: Rank #1 - Score 2.1

Photo S-4: Rank #2 - Score 1.1

Photo S-7: Rank #3 - Score 0.9

Photo S-6: Rank #4 - Score 0.5

Photo S-9: Rank #5 - Score 0.5

Public Amenities

Photo PA-4: Rank #1 - Score 1.9

Photo PA-6: Rank #2 - Score 1.6

Photo PA-9: Rank #3 - Score 1.4

Photo PA-1: Rank #4 - Score 1.4

Photo PA-8: Rank #5 - Score 1.2

Implementation is expected to occur incrementally. Recent adoption of the Mixed Use District (MUD) in 2024 provides a path forward for the property owners. The new zone district clearly defines design expectations, transitions, and site layout. Public infrastructure investment and collaboration with landowners, developers, and infrastructure agencies will be key.

The Maple Hill Drive South Sub-Area Plan provides a flexible but intentional path forward for one of Oshtemo's most promising development areas. It balances growth with community expectations, supports walkability and connectivity, and reinforces the Township's broader goals for high-quality, context-sensitive development.

Example: Outdoor shopping center

2025 SPECIAL STUDY

MAPLE HILL PAVILION MALL

TABLE OF CONTENTS

INTRODUCTION

As part of the 2045 Oshtemo Comprehensive Plan process, several Special Studies were prepared. These studies examined key areas of the Township more closely to better understand how the general recommendations contained in the Comprehensive Plan would apply specifically to a small geographic area. The intent is to demonstrate design and development best practices and serve as case studies to be applied throughout the Township.

The Maple Hill Pavilion Mall Special Study area was selected because it contains ***underutilized land in a location with robust existing infrastructure, proximity to green space and transit, and a lack of internal access to traffic signals.*** This ~70-acre area is bounded by West Main Street to the south, Maple Hill Drive to the west, Croyden Avenue to the north, and Drake Road to the east.

FIGURE 1: STUDY EXTENTS

EXISTING CONDITIONS

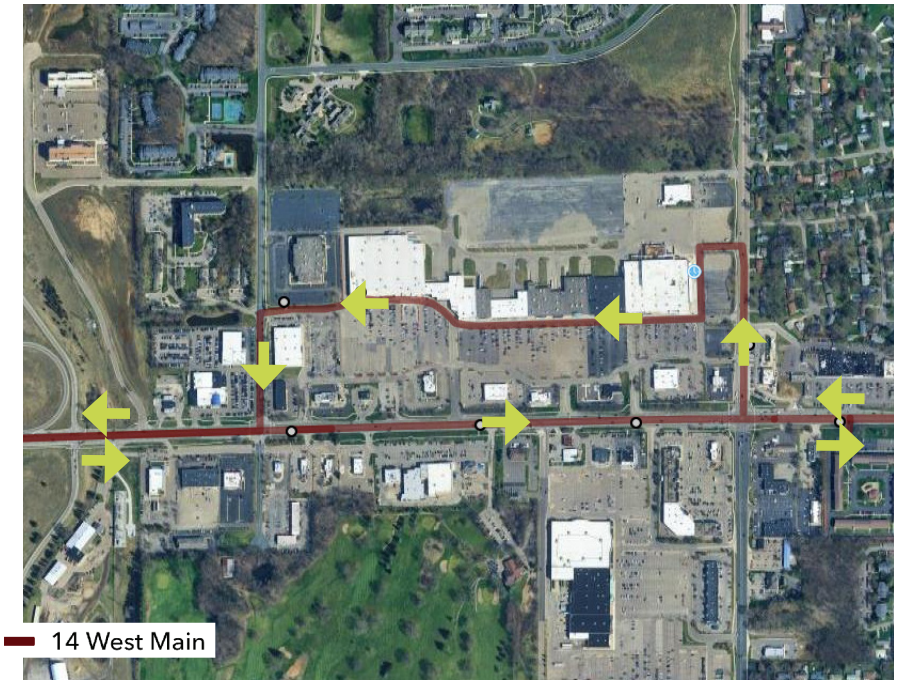
The Maple Hill Pavilion Mall and attached parcels are located on West Main Street. There is an assemblage of outlots (separate parcels with one building) and the larger “power strip” (multiple national chain stores with shared walls). Behind the mall, there is currently a large, vacant, underutilized paved surface lot. Although the mall itself remains active and successful, large, flat expanses of underutilized surface parking are located throughout. Limited internal connectivity has left portions of the site functionally obsolete and visually disconnected from surrounding uses.

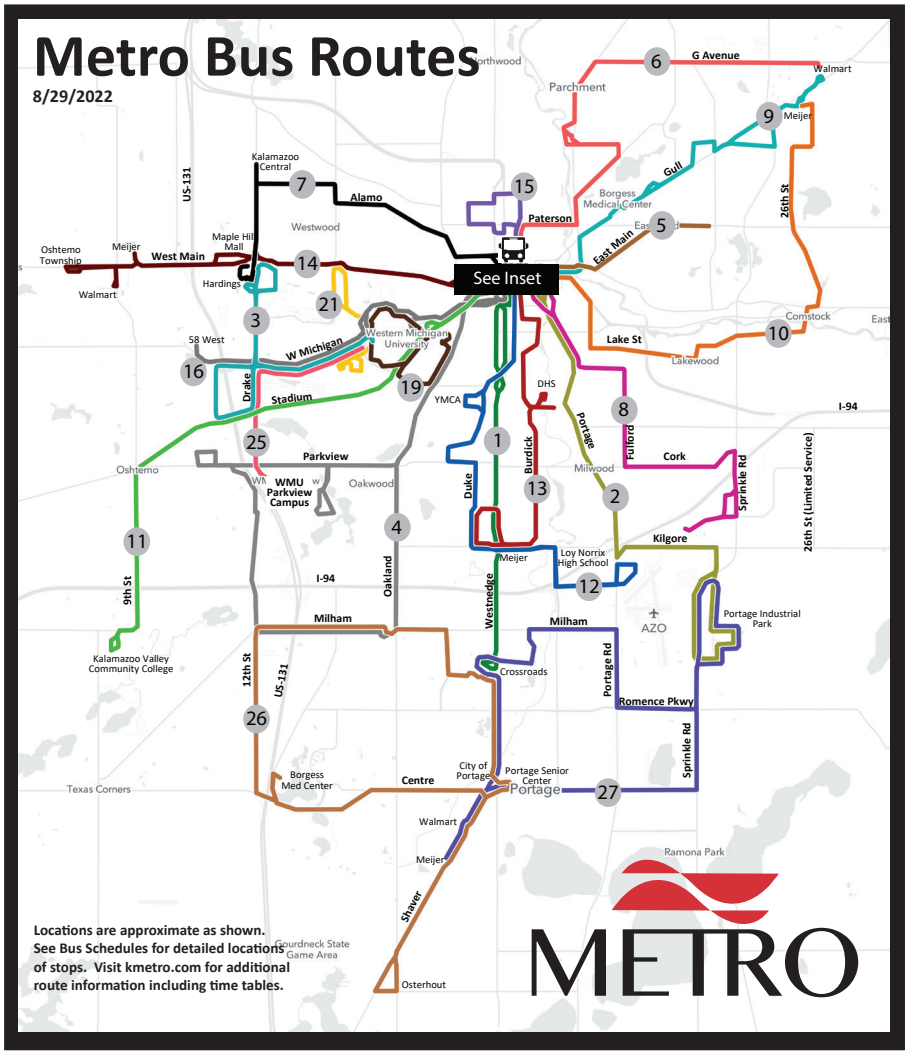
The Oshtemo Township Housing Plan 2023, conducted by the W.E. Upjohn Institute, identifies a pressing need for housing diversity in Oshtemo overall. Demographic data points to rising demand from young professionals, downsizing seniors, and smaller households. Future development should include a variety of housing types, including townhomes, cottage courts, small apartment buildings, and house-scale multiplexes.

This area is served by Metro, the Kalamazoo area's transit provider. **Route 14** extends from Downtown Kalamazoo to the Oshtemo Township Hall and Library complex (future HUB location). Route 3 (West Michigan) also touches the corridor and travels to Western Michigan University's campus.

Currently, hourly service is provided Monday – Saturday from 6:14 AM – 10:08 PM, with additional limited half-hour service during specified peak times. Sunday service is offered between 9:15 AM – 5:08 PM.

FIGURE 2: METRO ROUTES





Between 2019 and 2023, over 300 crashes occurred on West Main Street between Maple Hill Drive and Drake Road, with a heat map shown in Figure 3. Three crashes resulted in a severe injury, with one crash resulting in a fatality. One severe crash occurred when a driver struck a teenage female attempting to cross West Main Street just east of Maple Hill Drive. The driver hit the crossing female after permissibly proceeding through the signalized intersection, resulting in critical injuries to the crossing teenager.

The fatal crash also occurred at the signalized intersection of West Main Street and Maple Hill Drive when an eastbound driver attempted to perform a permissive left turn to Maple Hill Drive during nighttime. An opposing driver had not activated their headlights, and the turning driver did not see their vehicle as they proceeded into the intersection on a green light. The driver of the turning vehicle was killed.

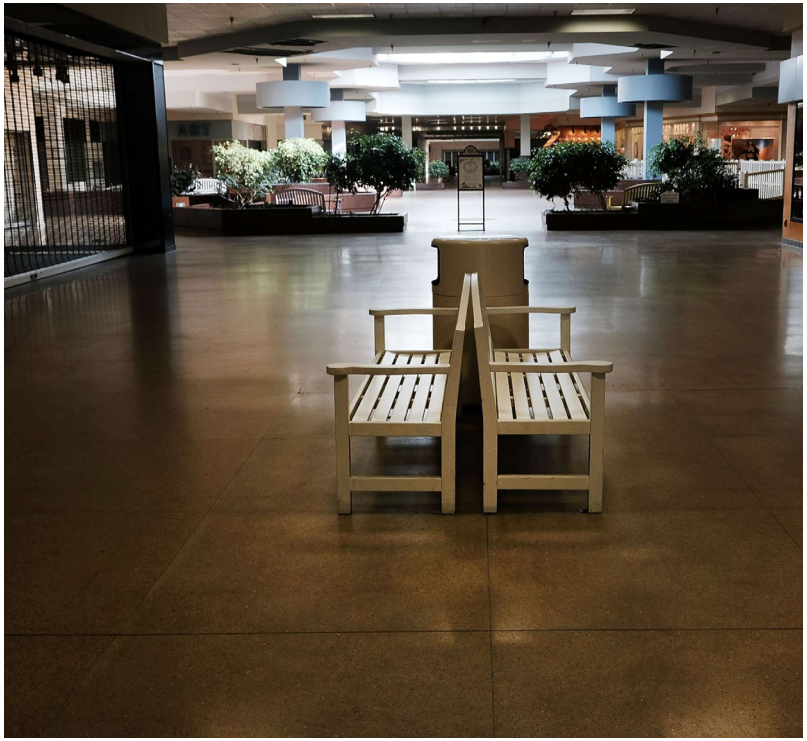
FIGURE 3: SEVERE AND FATAL CRASHES

Adverse safety outcomes can be partially attributed to the design of West Main Street, which accommodates high traffic volumes traveling at high speeds while simultaneously providing robust access to commercial destinations along the corridor. There are currently 12 driveways providing numerous individual access points to the entire mall site, inclusive of outlot development.

There is a strong emphasis on motor vehicles, both in the scale of the road and its operations. In contrast to limited-access facilities such as US-131, people walking, bicycling, or waiting for transit are present along the corridor and have exposure. The mixing of vulnerable road users with high speed vehicles makes this a dangerous area for people who are not in a car.

This area is fully serviced by public utilities. A storm water detention pond is provided in the northwest portion of the property, but this area was largely built up before robust storm water rules were put in place. As a consequence, nearly every foot of land on the approximately 70 acre-site, located between Maple Hill Drive, North Drake Road, West Main, and the Drake Farmstead, is comprised of asphalt paving and rooftops. There are minimal pre-treatment areas to remove sediment or slow the storm water or cool it before it enters the storm water system. While most of the site appears to drain towards the pond, there may be minor topographical constraints in the northern portion that will require grading or design adjustments during site planning.

The lifespan of suburban strip commercial development has not proven to be resilient as retail conditions change. When existing leases expire, tenants often move into newer buildings or downsize. Strategies to reposition existing mall sites into walkable, mixed-use areas have become increasingly common as a way to attract new tenants and leverage underutilized land to be more economically productive.



Example: The decline of the "indoor mall"

VISION, GOALS & OBJECTIVES

The Vision of the 2045 Oshtemo Comprehensive Plan is:
"Oshtemo is a community designed for everyone – we are connected, adaptable, and diverse, creating opportunities for shared experiences and recreation. Future decisions will support balanced growth and quality of life for residents, visitors, and businesses alike."

The Plan contains a series of Goals & Objectives. Those most applicable to this study have been identified, although it is likely that other objectives may apply. The Maple Hill Pavillion Mall study is intended to illustrate how some of the Goals & Objectives may be applied in Oshtemo Township.

GOAL 1- Cultivate a Strong Sense of Place and Belonging

Objective 1.3 Develop inclusive shared spaces throughout the Township to strengthen community connections and resident relationships.

The Special Study accomplishes this by:

- Creating a common green in the center of the site that can be activated by storefronts. *(see page 26)*
- Providing a shared green space near new residents. *(see page 26)*
- Developing a shared use path connecting through the site from West Main Street to the Drake Farmstead Park (S-N) and from Maple Hill Drive to North Drake Road (W-E). *(see page 26)*

GOAL 2 - Prioritize Housing for All

Objective 2.1 Expand housing options by encouraging a variety of housing types - such as accessory units, duplexes, quadplexes, townhouses, cottage courts, and apartments - in locations that align with the character of their surroundings, addressing the diverse needs of the community.

Objective 2.2 Incentivize the adaptive reuse of existing structures, such as converting vacant commercial buildings and parking lots into residential units, helping to meet housing demand by utilizing infill development and optimizing existing infrastructure.

The Special Study accomplishes this by:

- Demonstrating how different housing types (townhouses, small apartment buildings) can be placed on an existing, underutilized parking lot and could also replace a larger footprint commercial building with new homes. *(see page 26)*

GOAL 3: Foster a Connected, Accessible, and Resilient Transportation System

Objective 3.1 Establish and improve links between neighboring developments through meaningful connections with a focus on safety, access, reduced travel distances, and modal choice.

Objective 3.4 Establish consistent and connected sidewalk and biking networks that exceed the minimum ADA standards, ensuring reliable and safe facilities for all.

The Special Study accomplishes this by:

- Embracing the importance of multi-modal transportation in the Regional Corridor Place Type by connecting businesses and homes to transit and improving the connectivity of sidewalks and shared use paths. *(see pages 30-33)*
- Designing a "shared street" through the center of the site to calm traffic and slow traffic speeds. *(see page 31)*
- Breaking the large mall site into smaller blocks and creating new streets that connect to the larger network, including connecting Silk Road to Canterbury Avenue as a new W-E street. *(see page 31)*
- Eliminating curb cuts to reduce the number of conflict points for pedestrians along the sidewalk on West Main Street and turning movements, which can cause crashes. *(see pages 31 and 32)*

GOAL 4 - Facilitate Balanced Growth and Economic Vitality

Objective 4.1 Encourage the development of adaptable and flexible spaces throughout Oshtemo, fostering mixed-use environments that can evolve with community needs.

Objective 4.2 Align Township growth with infrastructure availability, environmental sensitivity, and community identity through strategic Place Types.

The Special Study accomplishes this by:

- Demonstrating how an auto-oriented mall site can be designed to become a more walkable urban place. *(see page 26)*
- Facilitating new development without requiring an investment in new underground utilities (i.e. water and sewer), and the addition of new rate payers to help invest in the system. *(see pages 26 and 27)*
- Providing smaller retail spaces as new investment opportunities for entrepreneurs and businesses to increase the amount of diverse offerings on the site. *(see pages 26 and 29)*
- Establishing "built in" customers by providing additional heads in beds in close proximity to shopping and transit. *(see page 26)*

Goal 5 - Safeguard Natural Features and Environmental Health

Objective 5.4 Protect surface and groundwater resources from negative impacts associated with development.

The Special Study accomplishes this by:

- Reducing the amount of impervious surface in the Maple Hill Pavilion area. *(see page 34)*
- Expanding a regional storm water detention facility to serve the entire area rather than requiring each site to have its own storm water facility. *(see page 26)*

Goal 6: Enhance Community Wellbeing and Safety

Objective 6.2 Integrate Crime Prevention Through Environmental Design (CPTED) principles into planning and development practices.

The Special Study accomplishes this by:

- Creating observable spaces in both the commercial (calm landscaped street) and residential areas (front porches, common green) where people can be seen and are not isolated. *(see page 26)*
- Improving accessibility to transit with safe walking routes from stores. *(see pages 30-33)*

Assumption Statement

Proposed improvements presented in this plan assume that the owners of the mall and affiliated properties would be receptive to the proposed changes, and/or that agreements with lessees would not prohibit the construction of new buildings, parking lot reconfiguration, or other alterations to the site. This study is a conceptual rendering of what could be possible if the land were unencumbered. Proposed improvements include a bus pull-out on West Main Street; it is recommended that this be coordinated with Metro and the Michigan Department of Transportation.

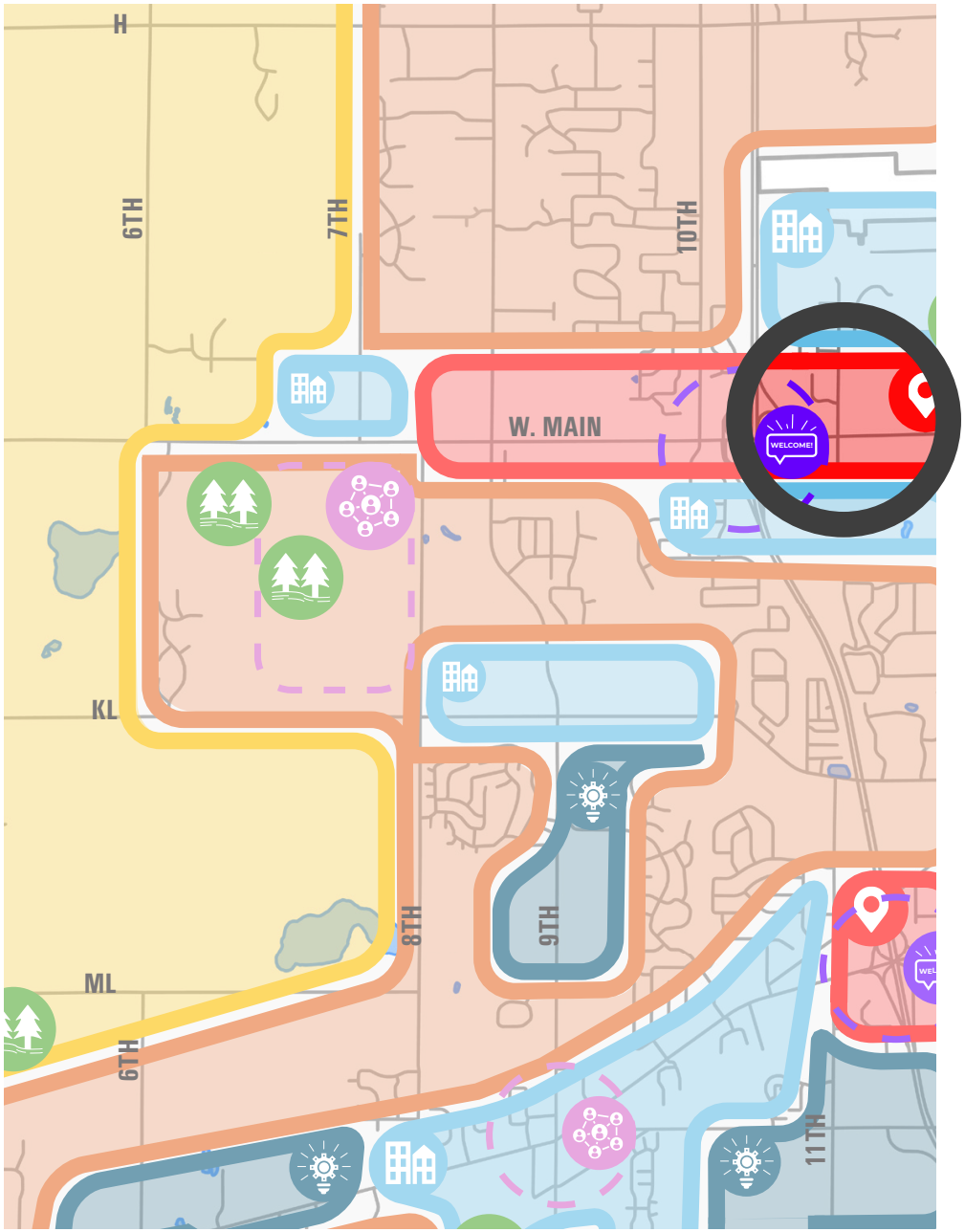
FUTURE USE

It has been shown that retrofitting suburban commercial sites offers communities the opportunity to introduce walkability, placemaking, missing middle housing, and internal circulation that aligns with public transit infrastructure and sustainability goals. Similarly, the redevelopment of this site represents a transformative opportunity to rebalance land use intensity, encourage diverse housing forms, and improve site circulation, safety, and multimodal connections in a prominent part of Oshtemo.

- As identified in the Comprehensive Plan, this location is in the designated **Regional Corridor Place Type** - an area envisioned for dense, mixed-use redevelopment that serves residents of both the Township and the broader region, providing abundant amenities and additional housing development with a variety of different options.

- The Master Streets Plan discusses transit-oriented development and walkability. Additional development in this area with transit can be mutually self-supporting. Transit can reduce the need to own a car, decreasing the number of necessary parking spaces and increasing the amount of money a person can spend on housing or other things because car ownership costs are avoided. It also increases the capacity of the road network when fewer cars are on the road.

FIGURE 4: PLACE TYPES



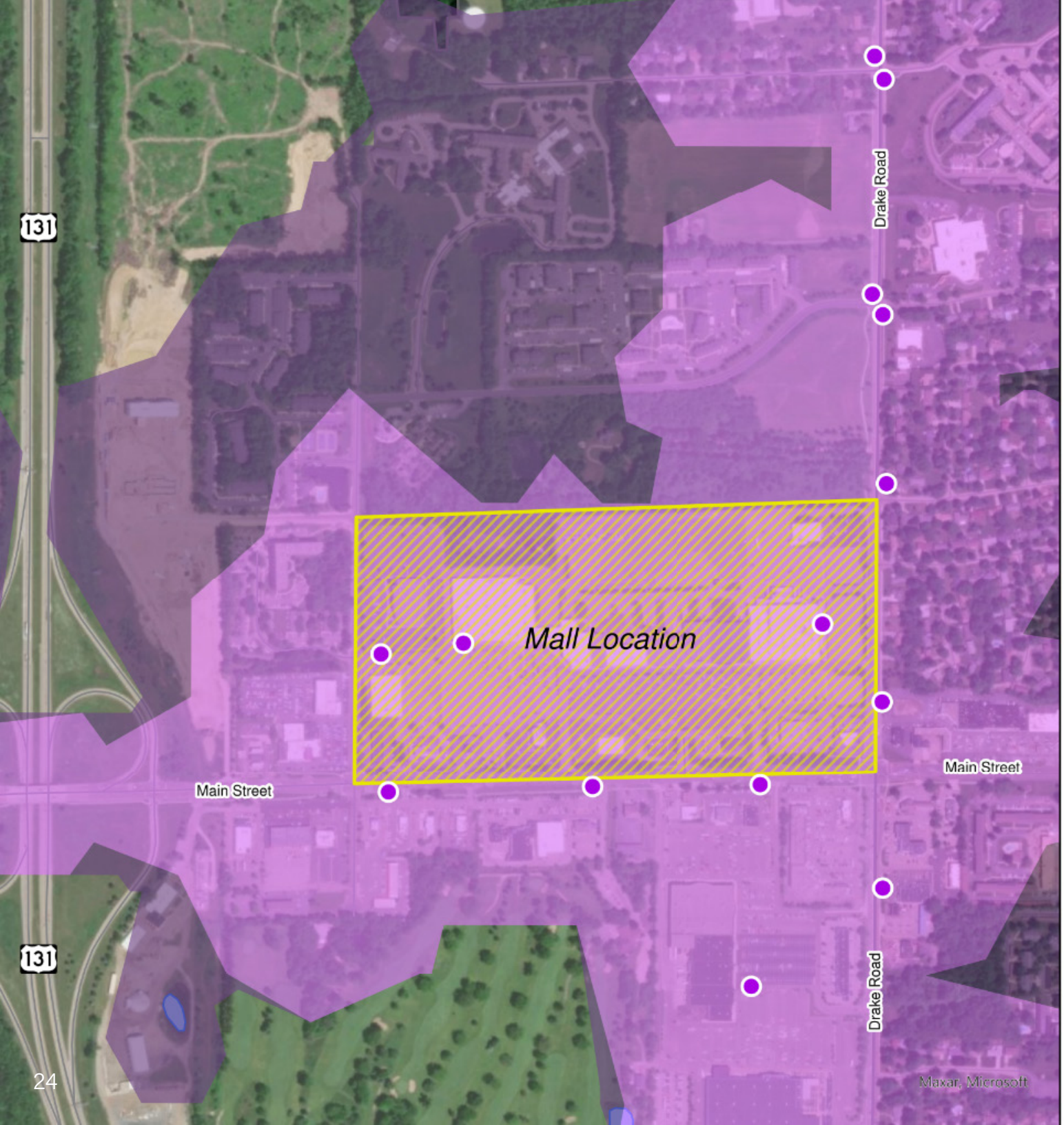


FIGURE 5:

Maple Hill Mall Transit Proximity

Oshtemo Township

LEGEND

- Half-Mile Transit Stop Walk Radius
- Quarter-Mile Transit Stop Walk Radius
- Transit Stops

N

0 0.1 0.2 Miles

Data Source: Oshtemo Township, 2024. Michigan Geographic Data Library, 2024. Progressive Companies, 2025.

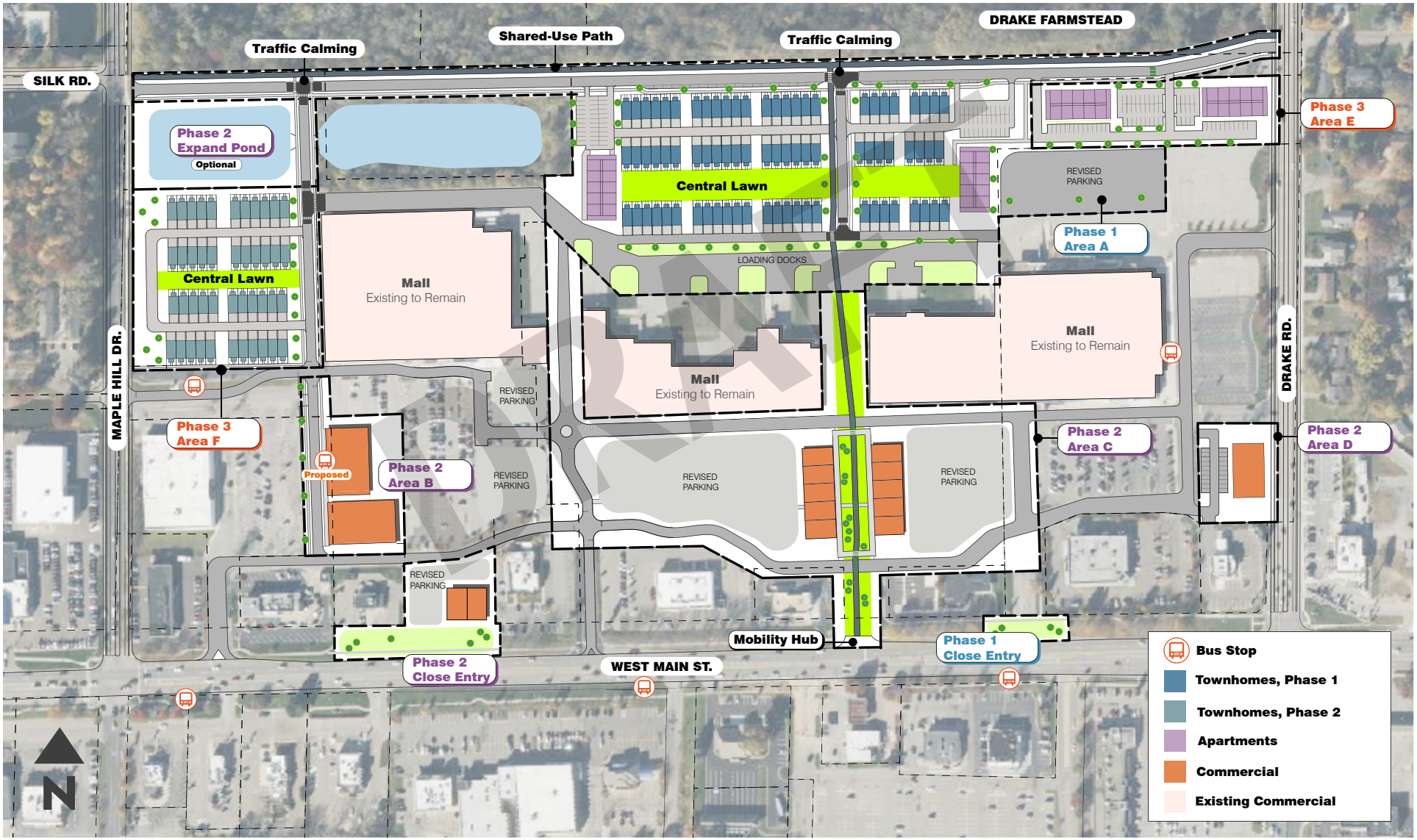
Greenspace is, of course, an important component for successful density. The site presents an opportunity to physically and visually connect to the Drake Farmstead through trails, green buffers, and context-sensitive design. Maintaining open viewsheds and creating walkable access points can help reinforce the Farmstead's presence while making it a shared amenity for new residents.

Integrating the historical and recreational value of the Drake Farmstead into the site plan supports the Township's goals for quality living and creating neighborhoods that are meaningfully connected to local assets.

Drake Farmstead Park; Oshtemo

CONCEPTUAL SITE DESIGN

FIGURE 6: CONCEPTUAL SITE DESIGN LAYOUT



DEVELOPMENT FRAMEWORK OVERVIEW

The proposed framework centers on a continuous North–South greenspace and shared-use path that connects West Main Street to the Drake Farmstead. Within and along this connecting greenspace are shared-use paths and sidewalks, small-scale commercial spaces, townhomes, and a residential central lawn. These are all human-scale elements that reduce the auto-oriented nature of the development and begin to create a more walkable, transit-friendly environment where people can feel a greater sense of place and community.

The full residential buildout will deliver approximately 122 townhomes and 120 multifamily units, for a total of 242 new residences. These are supported by associated park amenities at the Drake Farmstead, central lawns within each residential cluster, street trees, and an expanded stormwater pond.

A new street that connects Maple Hill Drive/Silk Road to Drake/Canterbury Avenue includes a separated East-West shared-use path and provides an important parallel street to West Main Street. Current internal circulation drives are proposed to become more formalized as streets, as recommended in the *Master Streets Plan* and the *Transportation and Mobility Ordinance.*

A key component of this concept plan is to remove one to two storefronts in the power strip to reduce the overall block size of the commercial development, provide visibility to the residences and park behind it, and provide a direct non-motorized North-South connection, which bifurcates the block and improves overall connectivity to and through the site. Along West Main, an enhanced transit stop would reinforce the multi-modal nature of the development.

The proposed commercial component will add approximately 48,000 square feet of new retail and service space. This is accomplished by building upon underutilized parking areas that are consistently vacant. These buildings enable smaller footprint spaces to provide greater flexibility in tenant types and may allow local small businesses to occupy space.

Nearly 250 residential units, 50,000 square feet of commercial space, a new east-west street, 2 shared-use paths, and 3 usable green spaces can be added without expanding the development footprint of the Maple Hill Pavilion Mall and related properties.

The proposed retrofitting capitalizes on existing water and sewer infrastructure, increases the number of people who can shop and use transit, and raises land values (and, by extension, property tax revenue). All these things financially benefit the economic stability and vibrancy of Oshtemo Township. This strategy also preserves the Countryside character of the western portion of the Township by directing development to appropriate locations.

How Could the West Main Corridor Change?

Different sites can accommodate different kinds of change. Knowing how land use, transportation, and green infrastructure work together to make a place more attractive and inviting, and incorporating this knowledge into plans and ordinances, provides a structure to guide both planning and implementation. There are five general ways in which sites will transform along West Main:

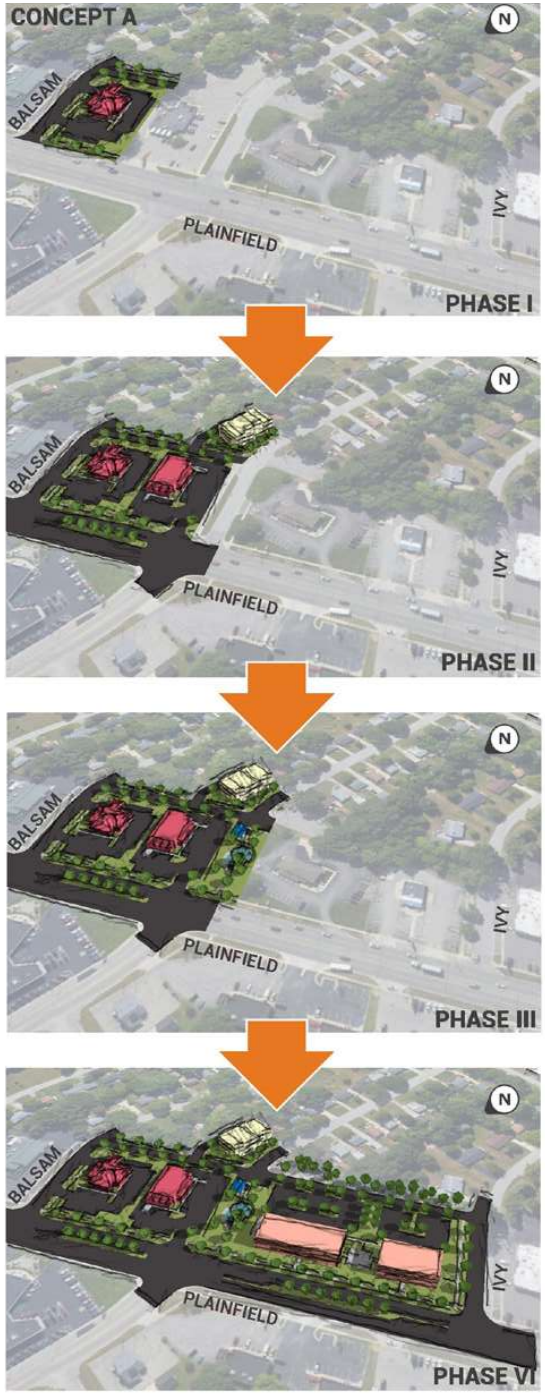
ADAPTIVE REUSE An existing building generally stays the same, but the land use changes.

GREENING An existing building generally stays the same, but the site changes with the addition of landscaping, trees, low-impact development, a park, or other "green" elements.

INCREMENTAL ADDITIONS An existing building remains, but it is expanded to conform more to the vision; for example, a strip mall adds small building wings into the front parking area, and protected outdoor seating is added.

SITE INFILL An existing building remains, but new stand-alone buildings are added to increase the site's density and/or use mix.

REDEVELOPMENT A site is vacant, existing buildings are razed, and new construction occurs on the property.



Reimagine Plainfield Plan

DEVELOPMENT PHASING

Suburban retrofitting does not occur overnight. It takes time and patience. There is a proverb that says, "The best time to plant a tree was 20 years ago. The second best time is now." The same is true with creating change in the built environment. We must start at some point, and there is no better time than the present. How might development occur on the Maple Hill Pavilion Mall site? This phasing plan reflects an example of a high-level development sequence, with each identified area representing a subzone of the broader site plan.

PHASE 1

Close Entry Off West Main
- Connect sidewalk
- Replace entry with vegetation and trees

Area A
- 78 townhomes
- Two 30-unit apartment buildings, each with a 1:1 parking ratio
- Central residential lawn
- New east–west street connecting Silk Road to Drake Road
- Shared-use path improving non-motorized access to the Farmstead
- Shared street where the North–South connector intersects the development
- Primary dock access to rear of mall

PHASE 2

Close Entry Off West Main
- Provide small retail
- Connect sidewalk
- Replace entry with vegetation and trees

Area B
- Two retail buildings totaling 28,000 SF
- Improved internal street with sidewalk and street trees connecting to adjacent residential areas

Area C

Selective demolition of mall structure to accommodate:
- One new North–South street
- One new North–South non-motorized path
- Expansion of centralized greenspace connecting West Main Street to The Farmstead
- Continuation of the shared-use path from Phase 1
- Nine small-format retail spaces (approx. 2,800 SF each)

Area D
- Closure of existing access drive on Drake Road
- Maintain vehicular access to Consumers Credit Union
- 9,000 SF of new retail (or an alternate option of one 30-unit apartment building)

PHASE 3

Phase 3 areas are optional, and shown to illustrate potential housing opportunities. Phase 3 will need to be coordinated with existing retail in these locations

Area E
- Demolition of existing retail structure
- Two new 30-unit apartment buildings with 1:1 parking
- Pedestrian connection to central lawn in Phase 1

Area F
- Demolition of existing theater
- 44 new townhomes and a second central lawn

TRANSPORTATION NETWORK

Appropriate locations for transportation and utility infrastructure have been identified and are intended to optimize connections, minimize the frequency of vehicular access to West Main Street, and align with the Township's goals for mobility, including:

1. Ensure safety for all road users.
2. Develop a connected transportation network.
3. Enhance non-motorized transportation and transit opportunities at the site.
4. Provide Complete Streets facilities across the transportation network.
5. Encourage economic growth and fiscal sustainability.

Mobility infrastructure within the proposed site development has been designed to encourage safe and comfortable access for all, regardless of mode of transportation. Particular consideration has also been given to alignment with the proposed boulevard configuration along West Main Street. However, some adjustments to MDOT's conceptual plans may be required to best accommodate intuitive access to proposed development along the site's 'spine' while simultaneously fostering safety for all road users accessing the site.

Drivers may be in direct conflict with users outside of a vehicle at each intersection and driveway along the corridor, with every interaction representing an opportunity for a severe or fatal crash due to the high rates of traffic speed. By closing driveways and consolidating access, conflicts between drivers traveling through the corridor, drivers accessing the site, and pedestrians and bicyclists on the sidewalk are minimized, improving safety and reducing turbulence in traffic flow.

The proposed site redevelopment, at full buildout, will retain:

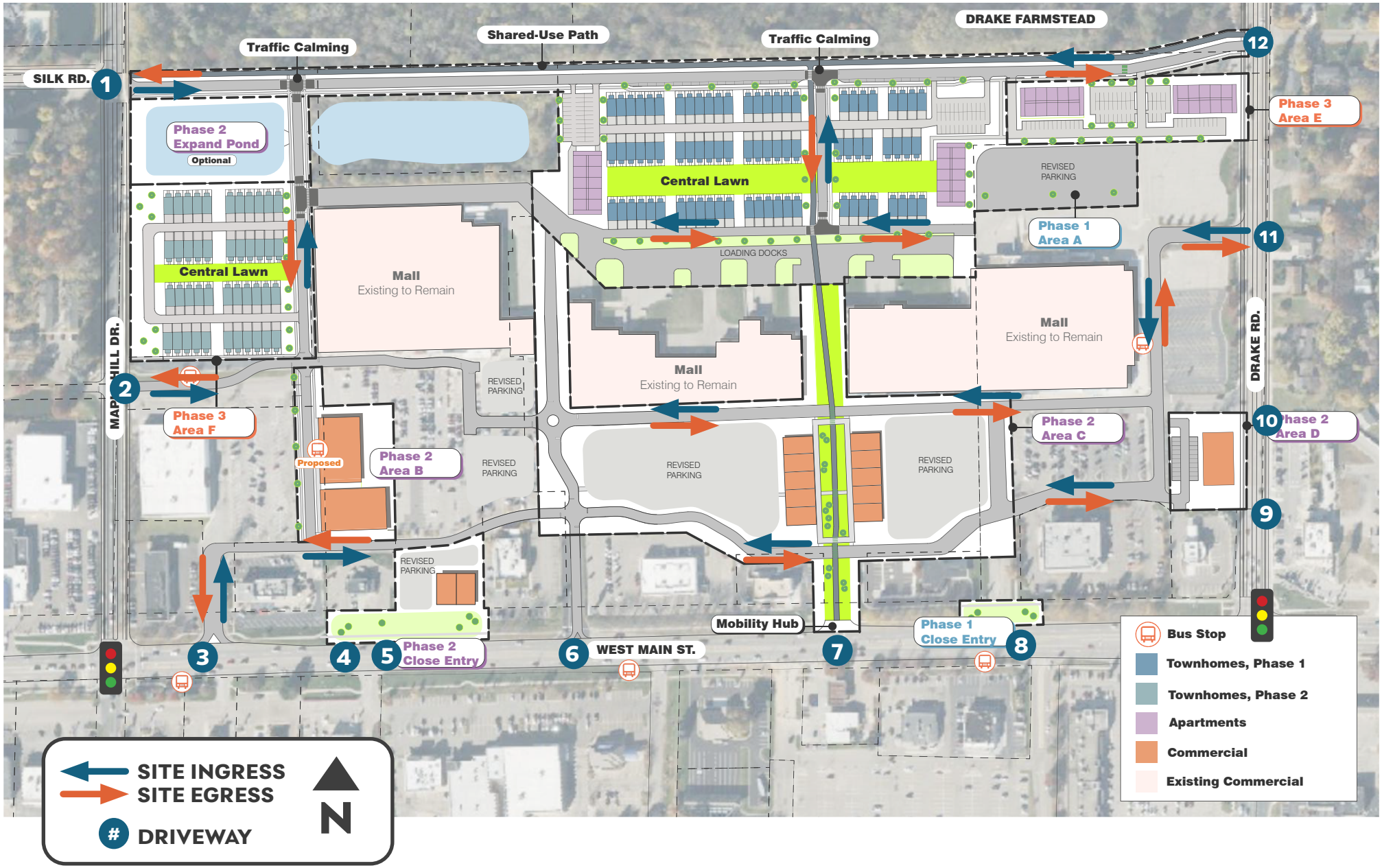
- Four unsignalized full-access points, two from Drake Road and two from Maple Hill Drive;
- Two right- and left-in, right-out only access points from West Main Street; and
- Potential signalized access point from West Main Street, in accordance with MDOT's boulevard plans for 2038.

Existing internal connectivity is largely maintained, although enhanced streetscape and pedestrian elements should be introduced to the network to better facilitate comfortable non-motorized mobility within the mall site.

Phased modifications to existing driveway access are proposed, although the exact timing of implementation may vary and may be performed in conjunction with the proposed boulevard reconstruction of West Main Street. Construction of an urban boulevard, which would restrict left turn access to several driveways along the mall site, is tentatively scheduled for 2038. Additional access management improvements, including the closure of access points to the mall site along West Main Street, were constructed in June of 2025.

An overview of proposed site access and internal circulation modifications is shown in Figure 7.

FIGURE 7: PROPOSED SITE ACCESS AND INTERNAL CIRCULATION



A summary of modifications to existing driveway access and its alignment with MDOT's boulevard plan (by numbered access drive) includes the following:

1. New access.
2. Full access is maintained.
3. Right-in, right-out only (RIRO) access is maintained. Boulevard construction would reinforce existing RIRO configuration by implementing a hardened and raised center median within the existing center turn lane at this location. Redundant access to existing commercial properties is provided from Driveways 2 and 6. Driveway closure is a long-term goal for the subarea.
4. Driveway should be closed. RIRO operations were implemented in 2025, and boulevard construction enforces RIRO movements by implementing a hardened and raised center median within the existing center turn lane at this location.
5. Driveway should be closed. RIRO operations were implemented in 2025, and boulevard construction enforces RIRO movements by implementing a hardened and raised center median within the existing center turn lane at this location.
6. RIRO access is maintained. Future improvements may include signalization or left-in access if traffic volumes increase at this access point, in accordance with the 2038 boulevard plan.
7. Driveway was closed in 2025. Redundant access to commercial properties is provided by Driveways 6 and 11.
8. Driveway should be closed. Redundant access to commercial properties is provided by Driveways 6 and 11.
9. Driveway should be closed. Redundant access to commercial properties is provided by Driveway 11.
10. Driveway should be closed. Redundant access to commercial properties is provided by Driveway 11.
11. Full access is maintained.
12. New street connection to North Drake Road, which provides a full east-west connection between Maple Hill Drive and Drake Road while also connecting Silk Road to Canterbury Avenue.

Modifications to existing internal circulation and site access are intended to encourage site utilization, promote non-motorized access and connectivity, and improve safety outcomes along West Main Street. The addition of new streets within the development is intended to improve connectivity internally to the site and benefit the broader network by providing alternative routes.

A shared-use path and linear park is proposed to provide non-motorized access to existing and redeveloped commercial destinations as well as proposed residential areas. Serving as the 'spine' of the mall site, this pathway provides seamless connectivity for people walking or bicycling from West Main Street and functions as a front yard for retail destinations that can be used for outdoor seating or events. Landscape and streetscape elements, such as trees, bushes, lighting, and seating, may be incorporated into the open space to serve shoppers and residents alike.

Drexel Boulevard Park, Chicago, IL

The opportunity for enhanced transit along the West Main Corridor, connecting this major shopping node to Western Michigan University, Kalamazoo College, and downtown Kalamazoo is significant. Future planning for this corridor should consider the possibility of a Bus Rapid Transit (BRT) line. This BRT line would be similar to the Laker Line in Grand Rapids. The Laker Line connects downtown Grand Rapids to the Grand Valley State University main campus in Allendale, running every 15 minutes. A BRT line on West Main would want to stay in the street to maintain efficient operations; therefore, it is recommended that an enhanced transit stop be created at the #7 drive location.

Preliminary analysis of the West Main Street corridor within the subarea was also performed using Streetlight mobility data. Streetlight harnesses location-based services to generate mobility data, including traffic volumes and speeds, origin-destination locations, and intersection performance metrics.

On an average day in 2024, approximately 35% of all vehicle trips – or 10,300 trips - within the subarea were trips to and from the mall site, while 65% were trips through the corridor, meaning that drivers did not stop at a destination between Maple Hill Drive and Drake Road. Transitioning these 'to' trips to a parallel service drive with access provided from Maple Hill Drive and Drake Road, while consolidating and eliminating access from West Main Street, could streamline vehicular operations along West Main Street while reducing conflicts between drivers going to the mall, drivers traveling through the corridor, and people walking and bicycling along the shared-use paths.

An approximate analysis that assumes diversion of the 'to' trips to a parallel service drive indicates that future traffic volumes on West Main Street could be significantly reduced. Using a traffic rate of change metric consistent with historical trends finds that future traffic volumes with trips diverted could be as low as 24,000 vehicles per day – significantly lower than the planning-level capacity of 36,800 vehicles per day for a four-lane arterial with a center turn lane. In other words, adding a clear parallel service route north of the mall site for 'to' trip utilization may eliminate the need for widening of West Main Street to six through lanes, which would increase future maintenance obligations, reduce the distance between people walking or bicycling and high-speed vehicle traffic, and increase crossing distances at signalized intersections.

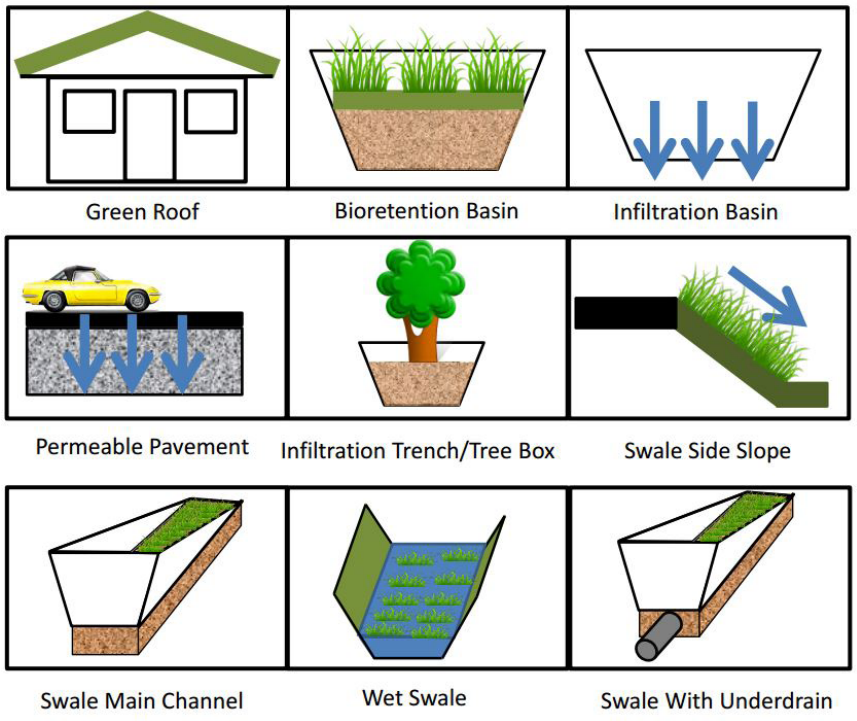
STORMWATER OPTIONS

As proposed, redevelopment on the mall site would not require additional stormwater management because plans include reduced impervious surface coverage. The existing stormwater pond on the northwest portion of the site was evaluated to determine if it could be modified and turned into a site amenity – like a pond with a trail around it. Unfortunately, the current pond is approximately 20 feet deep; the limited amount of land available is insufficient to balance the amount of storm water storage needed to make this an amenity area.

Another potential way to provide green infrastructure improvements is to remove the underutilized parking to the west of the existing pond. Additional land could be used for water quality improvements. A 3-foot-deep pond planted with native vegetation could treat a little over a half-inch of rain before discharging to the existing pond. In addition to slowing the flow of stormwater down to cool it and filter out contaminants before the water enters the stormwater system, this green space could provide opportunities for environmental education. [1]

It is recommended that proposed green spaces, new buildings, and new/reconstructed streets and parking lots be evaluated when they are designed to determine their suitability for green infrastructure. Bioretention (rain gardens) and bioswales should be considered in areas between new or existing sidewalks, where driveways are removed, and in the greenspace courtyards as part of residential projects. Green roofs can capture rain before it enters the stormwater system, and infiltration basins or permeable pavement could be installed to recharge groundwater.

[1] *Topographic and drainage-related constraints may also require further review under the Township's site plan review standards.*



REDEVELOPMENT TOOLS

Achieving implementation requires a variety of approaches. There are several tools available to Oshtemo Township leaders that can help make this vision for the Maple Hill Pavilion Mall site become a reality. The Zoning Ordinance is one of those tools, as are economic development programs. The Oshtemo Township Housing Plan recommends leveraging tools such as Housing Tax Increment Financing (HTIF) and Payment in Lieu of Taxes (PILOTs) to support redevelopment, particularly when affordability or public infrastructure upgrades are needed. The good news is that the estimated parcel value of $9.7 million reflects the strategic importance of the site and the level of private investment that could be leveraged with thoughtful public-private coordination.

PROPOSED ZONING MODIFICATIONS

Township staff and the Planning Commission will need to determine if ordinance amendments - such as allowing multi-unit housing by-right in the C district, or the creation of a new zone district- may be appropriate to encourage redevelopment and streamline approvals. To align private redevelopment efforts with Township goals, both incentive-based ("carrot") and regulatory ("stick") tools can be used:

1. Incentives:

a. Housing TIF to support eligible infrastructure and site costs.
b. Streamlined zoning tools for projects that meet Township priorities.
c. Density bonuses and/or enforced parking maximums for mixed-use or affordable housing projects.
d. Technical assistance to navigate Reciprocal Easement Agreements (REA) renegotiation and infrastructure upgrades.

2. Requirements:

a. Modify zoning use tables to increase the number and type of permissible uses.
b. Ordinance updates that require internal and external pedestrian connectivity and green infrastructure.
c. Driveway spacing and shared access requirements to improve access management.
d. Site plan review standards that ensure building placement, streetscape character, and transit facilities meet form-based and pedestrian-oriented design objectives.
e. Explore the use of a precise plat for new development to ensure that the public ROW is preserved by ordinance for the proposed street.

Zoning Ordinance changes should align with the Regional Corridor Place Type and Regional Connector Street Typology, as described in the 2045 Oshtemo Comprehensive Plan and Master Streets Plan.

MSHDA

The Michigan State Housing Development Authority (MSHDA) Housing Tax Increment Financing (TIF) program facilitates housing development by enabling communities to capture local and state property tax revenue increases generated by new housing projects. This program provides a financing tool for affordable and market-rate housing, supporting mixed-income developments and addressing local housing needs. Eligible projects include rental and owner-occupied housing, with a focus on promoting equity and long-term affordability.

PAYMENTS IN LIEU OF TAXES (PILOT)

Payments in lieu of taxes, or PILOTs, are programs, or agreements between local governments and individual nonprofit entities, such as developers of affordable housing, that partially offset the loss of property tax revenue arising from nonprofits' tax-exempt status. PILOTs are often voluntary and can be structured as a proportion of the amount of tax the entity would owe if not exempt, or as a function of its economic activity (for example, square footage or number of units), though in many jurisdictions the basis of the chosen structure is unclear. In Michigan, PILOTs for affordable housing are governed by Act 346 of 1966, as amended.

The Michigan State Housing Development Authority (MSHDA) offers model ordinances for local governments seeking to encourage affordable housing development with federal or state subsidy. Local governments can also use PILOTs as business incentives, giving businesses an abatement, or discount, on property taxes in exchange for locating or redeveloping within the jurisdiction.

COMMUNITY REVITALIZATION PROGRAM (CRP)

This program, administered by the Michigan Strategic Fund and the Michigan Economic Development Corporation, encourages the redevelopment of brownfield sites with gap financing in the form of grants, loans, or other economic assistance for eligible projects. The amount of support, up to 25 percent of project costs or $10,000,000, is based on a needs analysis. Applicants, including local partners and developers, work with the appropriate MEDC Community Assistance Team to develop applications and execute agreements. Funding criteria include whether a project supports local/regional economic development goals, revitalizes/activates a large site, addresses accessibility and multimodal transportation needs, promotes mixed-income neighborhoods, and/or is in a certified "Redevelopment Ready Community."

TAX INCREMENT FINANCING (TIF)

The West Main Corridor could be designated as a Corridor Improvement Authority (CIA). Act 57 of 2018, Part 6, an update of a 2005 statute, establishes a framework to help communities fund improvements in commercial corridors. It enables local governments to establish an Authority to revitalize outdated commercial zones. In theory, as growth and development occur within a corridor, the additional property tax revenue generated by those improvements is captured and put into a separate account. The captured tax increment then finances plans and projects that enhance and continue to spur reinvestment in the area.

Tax Increment Financing (TIF) programs benefit communities by targeting the returns on community investments to the places that generate them, rather than channeling them back into a general fund. The concept is that foregoing some property tax revenue in the short term will reap the long-term benefits of redevelopment and growth. In a corridor context, improvements also benefit surrounding properties, potentially increasing their value as well. It is recommended that if a CIA were to be created by Oshtemo Township, attempts should be made to establish a coordinated approach with the City of Kalamazoo and Kalamazoo Township.

The Township Board has discretion over the powers that it wishes to allow the CIA to have, and there are many (see Economic Development Toolkit table). A few eligible activities include:

- Make improvements to property (for example, façade or infrastructure improvements);
- Conduct market research and public relations campaigns; develop, coordinate, and conduct retail and institutional promotions, and sponsor special events and related activities;
- Improve land and plan/propose the construction, renovation, repair, remodeling, rehabilitation, restoration, preservation, or reconstruction of a public facility, an existing building, or a multi-family development;
- Plan, propose, and implement improvements to a public facility within the development area to comply with the barrier-free design requirements of the state construction code;
- Acquire and build public facilities.

One important definition to know is the term “public facility”. A “Public facility” means a street, plaza, pedestrian mall, and any improvements to a street, plaza, or pedestrian mall including street furniture and beautification, sidewalk, trail, lighting, traffic flow modification, park, parking facility, recreational facility, right-of-way, structure, waterway, bridge, lake, pond, canal, utility line or pipe, transit-oriented development, transit-oriented facility, or building, including access routes, that are either designed and dedicated to use by the public generally or used by a public agency.

What this means is that Oshtemo Township could work with MDOT or RCKC, as applicable, to include desired elements in future projects that would otherwise be unfunded and not included. These elements could include boulevards on West Main Street, construct a new street to connect Silk and Drake roads, build shared-use paths or enhanced transit stops, or a myriad of other recommendations contained in this Special Study.

Reimagine Plainfield Corridor Economic Development Toolkit					
	PROGRAMS AND TOOLS				
ELIGIBLE ACTIVITIES	CIA	BRA	PILOT	CRP	CDBG
Buy/own/lease/sell property	✓	✓			
Grant/acquire easements and options	✓				
Construct buildings	✓				
Rehabilitate buildings	✓				✓
Preserve/maintain buildings	✓			✓	
Façade improvements	✓			✓	✓
Infrastructure improvements	✓			✓	
ADA improvements	✓			✓	
Structural improvements	✓			✓	
Height improvements	✓			✓	
HVAC/lighting improvements	✓			✓	
Multifamily development	✓			✓	
Affordable housing development			✓	✓	✓
Mixed-use development	✓			✓	
Demolition	✓	✓			
Asbestos abatement		✓			
Environmental assessment	✓			✓	
Environmental remediation		✓			
Site prep/cleanup	✓	✓		✓	
Ramped or underground parking		✓		✓	
Stormwater management		✓		✓	
Improvements in the right-of-way	✓	✓			✓
Ped/bike infrastructure	✓	✓		✓	✓
Contract for broadband wifi	✓				
Long-term planning	✓				
Market research/advertising	✓				
CIA = Corridor Improvement Authority; BRA = Brownfield Redevelopment Authority; PILOT = Payment in Lieu of Taxes; CRA = Community Redevelopment Act; CRP = Community Revitalization Program; Community Development Block Grant					

Example from Reimagine Plainfield Plan

CONCLUSION

Oshtemo Township is seeking to be proactive in managing change within the community. Anticipating the need for suburban retrofitting and infill development in areas of the Township that already have existing development is a key strategy to continue assuring investment in areas where utility and transportation infrastructure are already present, and to minimize growth impacts on the western half of the Township (Countryside Residential Place Type).

Implementing suburban retrofit strategies at the Maple Hill Pavilion Mall will help achieve Comprehensive Plan goals. A future vision for the mall site positions it as an anchor within the community - a place that current and future residents can identify as definitively Oshtemo. The addition of green gathering areas, clustered residential units, and a stronger connection to and along the Drake Farmstead begins to knit together the various elements that make for a walkable community.

Leveraging under-utilized commercial properties to accommodate infill residential housing and mixed-use development will allow more people to be housed on land already committed to development. Additional "heads in beds" equate to more customers. Smaller-scale commercial spaces offer an alternative to large-format buildings, supporting retailers that are downsizing and small businesses. An emphasis on multi-modal facilities and connectivity provides additional value, because customers and employees can access this area without the financial burden of car ownership.

Perhaps most importantly, this opportunity is replicable in the parking lots of Walmart, Meijer, and other locations, thereby building a greater tax base without sacrificing green space.

Walmart, Oshtemo

This special study, particularly when combined with the H to Croyden special study, begins to mitigate future traffic congestion pressures on West Main Street by enhancing access, dispersing vehicles, and increasing proximity to destinations. Modifications to the Township's zoning ordinance to allow dense mixed-use development by-right is encouraged to attract infill projects. Additional value and revenue can be generated by repurposing existing assets. The creation of a Corridor Improvement Authority and the use of financing incentives can be leveraged to encourage additional private investment. This Special Study provides a number of different solutions and implementation strategies to ensure that Oshtemo truly becomes ***"a community designed for everyone."***

2025 SPECIAL STUDY

H AVENUE TO CROYDEN AVENUE

TABLE OF CONTENTS

INTRODUCTION

As part of the 2045 Oshtemo Comprehensive Plan process, several Special Studies were prepared. These studies examined key areas of the Township more closely to better understand how the general recommendations contained in the Comprehensive Plan would apply specifically to a small geographic area. The intent is to demonstrate design and development best practices and serve as case studies to be applied throughout the Township.

The H Avenue to Croyden Avenue Special Study area was selected because it is similar to other areas in the Neighborhood Residential Place Type. The area ***lacks street connectivity, contains large areas of undeveloped land, is in close proximity to shopping and transit, and is served by municipal infrastructure.*** The general area is bounded H Avenue to the north, US-131 to the west, Croyden Avenue to the south, and Drake Road to the east. The undeveloped area that was examined is approximately 370 acres, not including the City of Kalamazoo portion.

FIGURE 1: STUDY EXTENTS

EXISTING CONDITIONS

Although the existing area is relatively uncomplicated, a proactive approach to future development and infrastructure provision is necessary to mitigate challenges while achieving outcomes defined in the Comprehensive Plan to make it successful in the future.

BUILT ENVIRONMENT

The subarea is roughly bounded by H Avenue to the north, Drake Road to the east, Croyden Avenue to the south, and US-131 to the west. Existing traffic volumes vary significantly, ranging from approximately 6,000 vehicles per day on H Avenue to 12,000 vehicles per day on Drake Road. Several key destinations are located within or immediately adjacent to the subarea, including the Drake Farmstead Park and Kalamazoo Central High School.

Drake Road is a major north-south connector through the region, providing access to the US-131 interchange via West Main Street for residential and commercial locations within the subarea. The signalized intersection at West Main Street is heavily trafficked, and these significant volumes and high speeds make this intersection an area of concern for severe and fatal crashes.

The high traffic volumes on Drake Road and its and proximity to the US-131 interchange also contribute to an abundance of suburban-style commercial development and retail locations at or near this intersection. Between H Avenue and Canterbury Avenue, Drake Road features a three-lane cross-section with two through lanes and a center turn lane for vehicles, as well as a striped shoulder that may be used by bicyclists. South of Canterbury Avenue, which is maintained by the city of Kalamazoo, Drake Road is widened to include an additional vehicular through lane in each direction and the striped shoulder is terminated.

Residential subdivisions and apartment complexes are accessed from Drake Road, including the Wyatt student living complex and Westport Village subdivision. In general, one access point is provided to each residential development from a primary route, while some developments feature additional access points to lower-volume facilities.

In general, existing residential streets within the subarea – particularly those within the Westport Village subdivision – are approximately 25 feet wide with rolled curb. Sidewalk is provided on one side of the street. Landscaping, such as trees, may be provided, but is generally located within private property, not the street right-of-way (ROW).

It should be noted that the majority of the subarea that would lie between the extension of Grand Prairie Road and Beech Avenue is located in the City of Kalamazoo. As such, coordination with the City of Kalamazoo is recommended when discussing proposed streets. In addition, the City of Kalamazoo is in the process of considering the construction of a large sports facility in this area that could become a potential draw for transit service.

As shown in Figure 2, the area is currently zoned for a variety of residential densities, as well as "C" Local Business District. A unique aspect of this area is that the Drake Farmstead is identified in the Historic Overlay Zone.

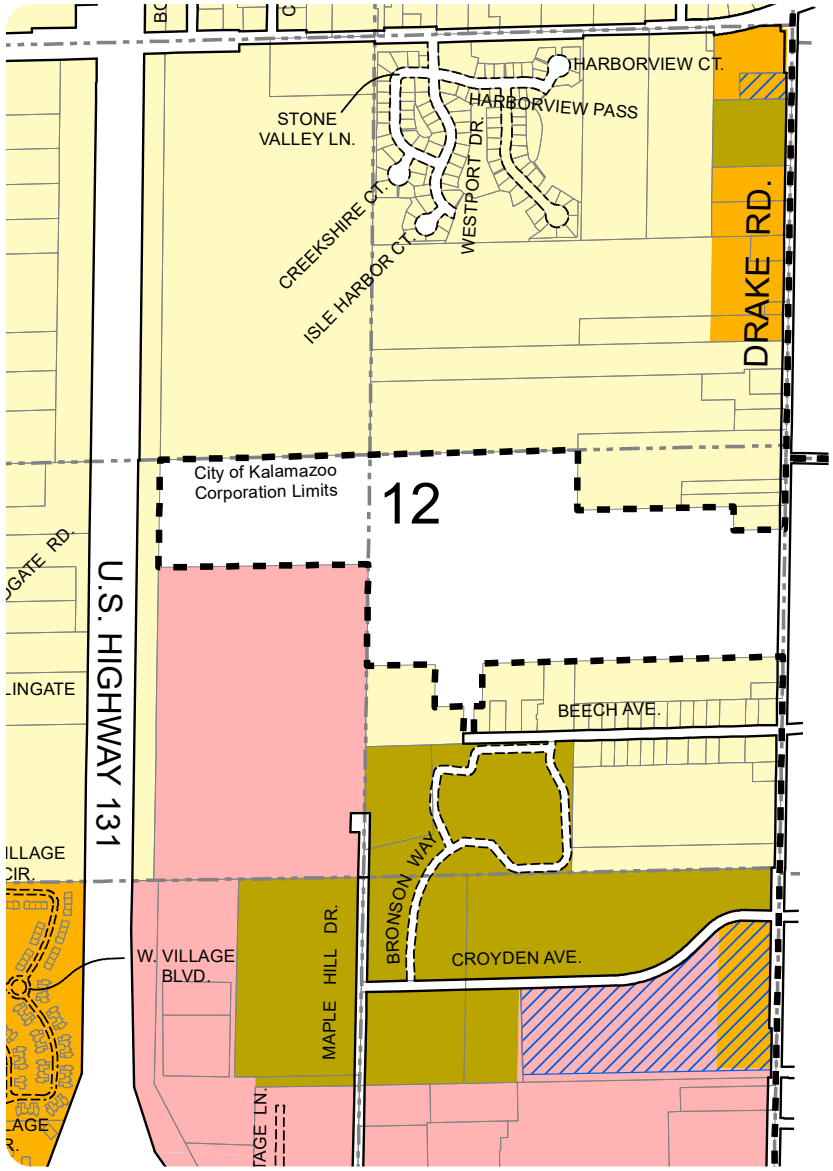


FIGURE 2: CURRENT SITE ZONING

LEGEND

- **R2** - *RESIDENCE DISTRICT*
- **R3** - *RESIDENCE DISTRICT*
- **R4** - *RESIDENCE DISTRICT*
- **C** - *LOCAL BUSINESS DISTRICT*
- **HISTORICAL OVERLAY ZONE**

NATURAL ENVIRONMENT

The undeveloped area that was examined is approximately 370 acres, not including the City of Kalamazoo portion. The area consists predominantly of wooded and agricultural land. The land is characterized by the following notable features:

Steep Slopes

Contours are depicted on Figure 3. Those shown in red were determined to have slopes of 20% or greater. Subdivision or condominium developments that have slopes of 20% or greater cannot be cleared or graded in any manner, according to the Township ordinance, which also requires that areas with slopes of 12% – 18% with erodible soils cannot have more than 50% of the slope cleared or developed.

Trees

The undeveloped land in this area is predominantly wooded or used for agriculture. The quality and size of trees could not be determined via the desktop review of the area.

Wetlands

The NWI map did not predict any regulated wetlands. In addition, no anecdotal information was revealed to indicate that smaller wetlands are located in the project area.

Natural Water Bodies

No obvious water bodies were noted in the undeveloped portions of this sub area, with the exception of the Drake Farmstead Park.

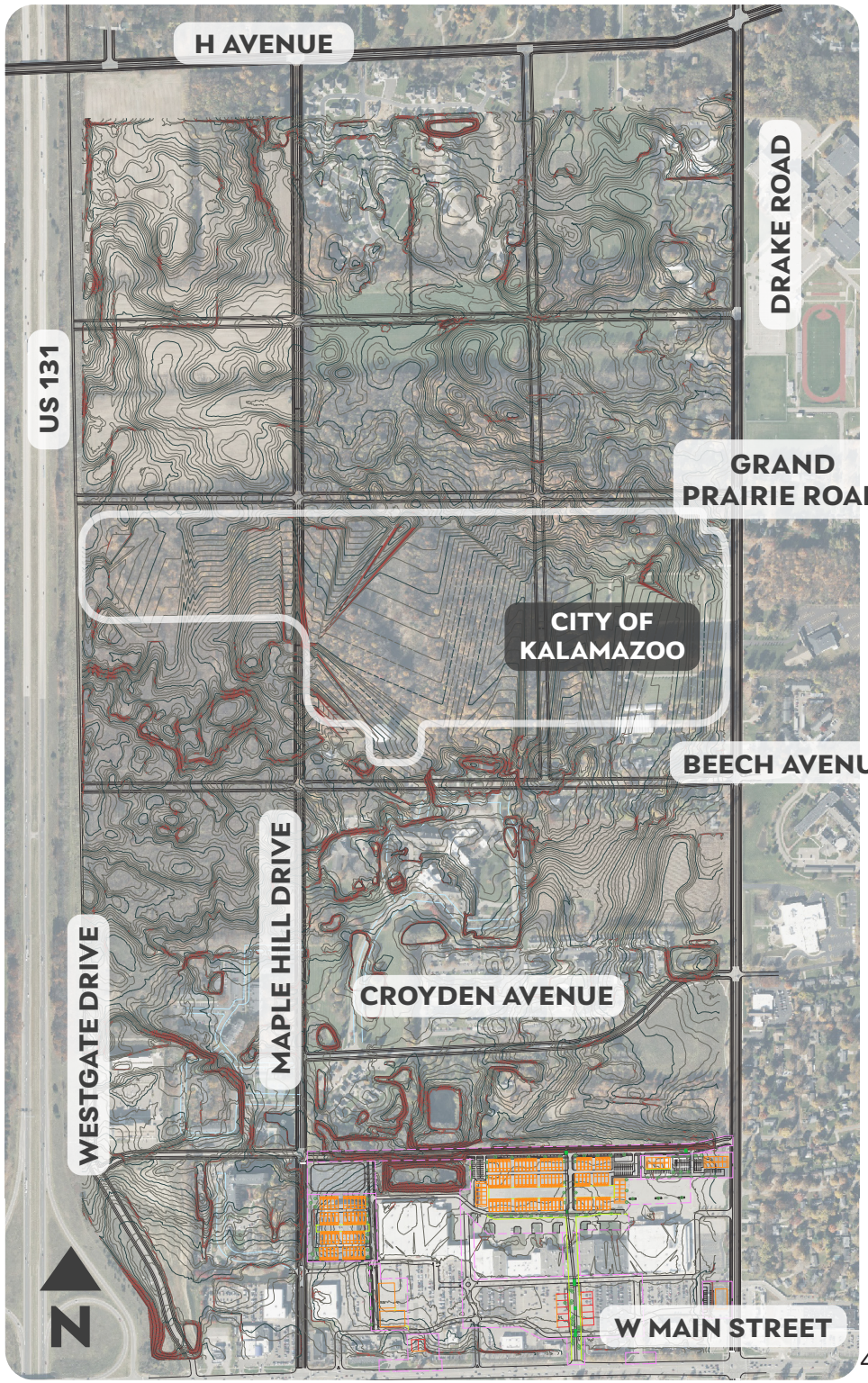


FIGURE 3: STEEP SLOPES

Soils

NRCS Soil Maps indicate the entire area to be loamy sands or sandy loams. While specific calculations for each area were not performed, there is a potential that these soils could be classified as erodible at slopes of 12% to 18%. However, these soils are generally suitable for storm water infiltration at lesser slopes. Prior to performing design, though, soil borings should be conducted to ensure that localized pockets of poor soils are not present at specific sites.

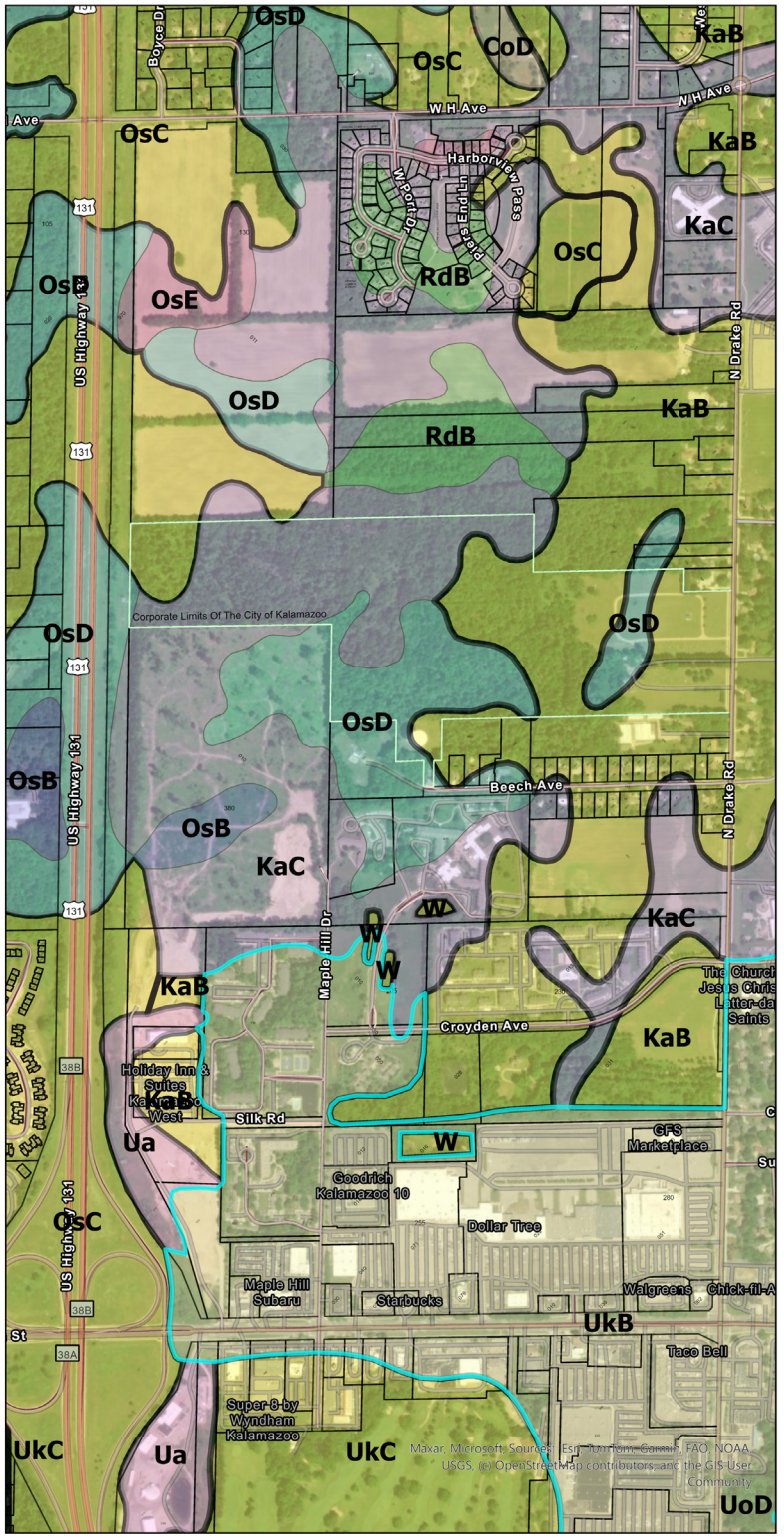


FIGURE 4: SOILS

LEGEND

CoD	*Colton-Duxbury complex*
KaB	*Kars fine sandy loam, 3-8% Slopes*
KaC	*Kars fine sandy loam, 8-15% Slopes*
OsB	*Oquaga very stony silt loam*
OsC	*Oshtemo sandy loam, 3-8% slopes*
OsD	*Oshtemo sandy loam, 8-15% slopes*
RdB	*Riddles loam*
W	*Well-graded sand*

VISION, GOALS & OBJECTIVES

The Vision of the 2045 Oshtemo Comprehensive Plan is: ***"Oshtemo is a community designed for everyone – we are connected, adaptable, and diverse, creating opportunities for shared experiences and recreation. Future decisions will support balanced growth and quality of life for residents, visitors, and businesses alike."***

The Plan contains a series of Goals & Objectives. Those most applicable to this study have been identified, although it is likely that other objectives may apply. The H Avenue to Croyden Avenue study is intended to illustrate how some of the Goals & Objectives may be applied in Oshtemo Township.

GOAL 1- Cultivate a Strong Sense of Place and Belonging

Objective 1.1 Utilize placemaking strategies to give Oshtemo a strong sense of place and create a welcoming and recognizable identity.

The Special Study accomplishes this by:

- Identifying locations for regional storm water ponds that can act as neighborhood parks. *(see page 53)*
- Providing locations for residential development that can support the retail/ mixed-use businesses along West Main Street, as well as transit. *(see page 50)*

GOAL 2 - Prioritize Housing for All

Objective 2.1 Expand housing options by encouraging a variety of housing types - such as accessory units, duplexes, quadplexes, townhouses, cottage courts, and apartments - in locations that align with the character of their surroundings, addressing the diverse needs of the community.

The Special Study accomplishes this by:

- Identifying locations for new residential development and potential barriers that could impede its success. *(see pages 50 and 54)*

GOAL 3: Foster a Connected, Accessible, and Resilient Transportation System

Objective 3.1 Establish and improve links between neighboring developments through meaningful connections with a focus on safety, access, reduced travel distances, and modal choice.

The Special Study accomplishes this by:

- Demonstrating how existing stub streets and the construction of new streets can capture trips now taken on West Main Street, lessening future congestion and creating a multi-modal network within the Township to facilitate the safe and efficient movement of people. *(see page 58)*
- Identifying preferred locations of new streets that connect to the larger network to ensure the creation of walkable neighborhoods in the Neighborhood Residential Place Type. *(see page 58)*

GOAL 4 - Facilitate Balanced Growth and Economic Vitality

Objective 4.2 Align Township growth with infrastructure availability, environmental sensitivity, and community identity through strategic Place Types.

The Special Study accomplishes this by:

- Proactively anticipating growth needs and taking appropriate action to understand constraints and opportunities for properties located within the Regional Corridor and Neighborhood Residential Place Types. *(see pages 51-54)*
- Facilitating new development where existing underground utilities (i.e. water and sewer) are located, and the addition of new rate payers to help invest in the system. *(see pages 49 and 50)*
- Understanding how local ordinances affect development potential and opportunity. *(see pages 65 and 66)*

Goal 5 - Safeguard Natural Features and Environmental Health

Objective 5.1 Develop appropriate policies around environmental protection through site analysis to ensure the preservation and enhancement of sensitive ecosystems and habitats during development.

Objective 5.4 Protect surface and groundwater resources from negative impacts associated with development.

The Special Study accomplishes this by:

- Understanding slopes and soil types common to Oshtemo Township and how those influence development projects. *(see pages 45 and 46)*
- Examining current ordinance provisions and how they may be revised to continue to protect the environment, while also being easier to administer. *(see page 65)*
- Emphasizing the use of a regional storm water detention facilities to serve regional areas rather than requiring each site to have its own storm water facility. *(see pages 53 and 54)*

Goal 6 - Enhance Community Wellbeing and Safety

Objective 6.4 Invest in the safety infrastructure needed to support the Township's growing population and maintain emergency responsiveness.

The Special Study accomplishes this by:

- Increasing the ability of emergency responders to access an existing neighborhood by increasing the number of ingress/egress points. *(see page 58)*

FUTURE USE

This portion of the site is located in the Neighborhood Residential and Neighborhood Mixed-Use Place Type designations.

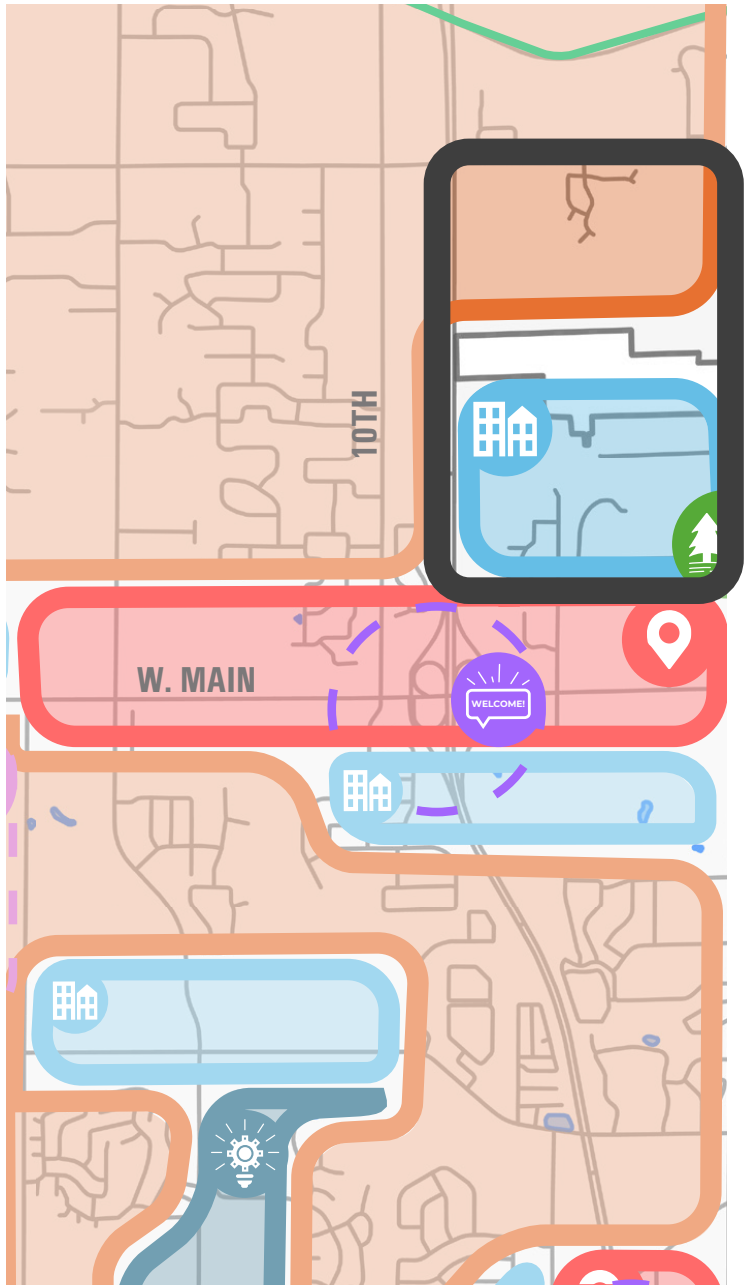
Neighborhood Residential makes up the majority of the undeveloped land in this area. The scale and variety of housing within Neighborhood Residential areas will reflect the character of the surrounding community, aligning thoughtfully with their specific location. ***These neighborhoods are places where residents of all life stages have easy access to parks, schools, and essential services. Their layout of streets and homes supports walkability, social interaction, and a shared sense of community.***

Neighborhood Mixed-Use is located in the southern portion of this section and emphasizes creating a human-scale environment that enhances quality of life by integrating local amenities with residential communities. The study examined how a more integrated street grid, the addition of new housing, and incorporating additional green spaces on the mall property could make the area more transit-supportive and pedestrian scaled. ***Neighborhood Mixed-Use areas should support moderate to moderately high residential densities that enable walkable, vibrant communities while maintaining a human-scale character.***

KEY

- Regional Corridors
- Neighborhood Mixed-Use
- Neighborhood Residential
- Innovation & Industry
- Parks & Preservation
- Gateways

FIGURE 5: PLACE TYPES



Recommended densities include:

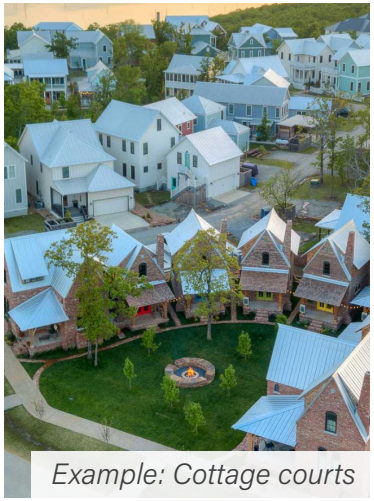
8 to 25 dwelling units per acre (du/ac) as a base range

- Lower end (8–12 du/ac): Suitable for a blend of townhomes, duplexes, and cottage courts
- Mid-range (12–16 du/ac): Supports fourplexes, apartments, and small mixed-use buildings
- Higher end (16–25+ du/ac): Appropriate for multi-story mixed-use buildings with residential above ground-floor commercial concentrated along Westgate Drive, in the vicinity of the mall site.

This range allows flexibility to accommodate missing middle housing types while supporting small-scale commercial and public amenities. Densities may vary within a site depending on building form, proximity to transit, and the integration of public gathering spaces or open, green areas. The intent is to ensure density is context-sensitive, encourages compact development patterns, and supports active streetscapes and accessible neighborhood services, all key goals of the Neighborhood Mixed-Use vision for Oshtemo Township.

Example: "Celadon" mixed-use development, Grand Rapids, MI

Example: Small apartment building



Example: Cottage courts

Example: Live/work mixed-use buildings

Example: Single-unit detached housing

DESIGN CONSIDERATIONS

The proposed framework centers on creating a continuous North–South and East-West gridded street pattern to provide connectivity and access between H Avenue, Drake Road, and Croyden Avenue wherever practicable. The Master Streets Plan, Section 3.3 Connectivity & Accessibility, provides guidance on building the street network. The area is recommended for residential development, the layout of which is to be based on the network. Land ownership patterns, too, are important as well. There are many large parcels owned by individuals that will allow for an orderly development pattern over time.

NATURAL FEATURES REQUIREMENTS

The Township's Subdivision and Site Condominium Ordinance contains natural features regulations pertaining to slopes, wooded areas, individual trees, water resources, and natural features connections. The H Avenue to Croyden Avenue Special Study area is not located within the Township's Natural Features Protection District. Applicable regulations [1] include:

Slopes

- Slopes greater than 18 percent – Development or vegetative clearing is prohibited on any land with a slope greater than 18 percent.
- No more than 50 percent of the slope area may be cleared or developed on slopes between 12 and 18 percent with erodible soils at a K factor of 0.24 or

Wooded Areas

- A minimum of 20% of the trees 8 inches in diameter at breast height (DBH), approximately 4.5 feet above the ground and in good health shall be preserved. [2]

Individual Trees

- Plans that would allow for the preservation of trees 12 inches in diameter at DBH outside of wooded areas and in good health are required, but if no viable alternative exists, the tree can be replaced at a ratio of one (1) caliper inch for every one (1) caliper inch of the tree removed.

[1] *Subdivision/Site Condominium Design Layout Standards (290.008.); Part I: Natural Features (outside of the Natural Features Protection District described in 290.008.J), Sections 1 – 5.*

[2] *Species native to Southwest Michigan shall be first choice in preservation with desirable non-invasive species native to the Midwest region as second choice.*

GRADING

Several proposed street connections will require significant grading efforts to achieve a desired horizontal slope of 4% or less. The Maple Hill Drive extension would traverse an area comprised of 11-12% slopes. The proposed extension of Beech Street to the west would cross slopes of over 12%.

The additional excavation and stabilization work necessary to achieve desirable slopes on newly-constructed streets would likely impact the cost of construction.

These costs could be mitigated somewhat through thoughtful planning and site rebalancing if the street were constructed at the same time that adjacent private properties were developed. Ordinance exceptions may be required, or an amendment to the ordinance allowing the ability to develop and rebalance where challenging topography exists should be a consideration.

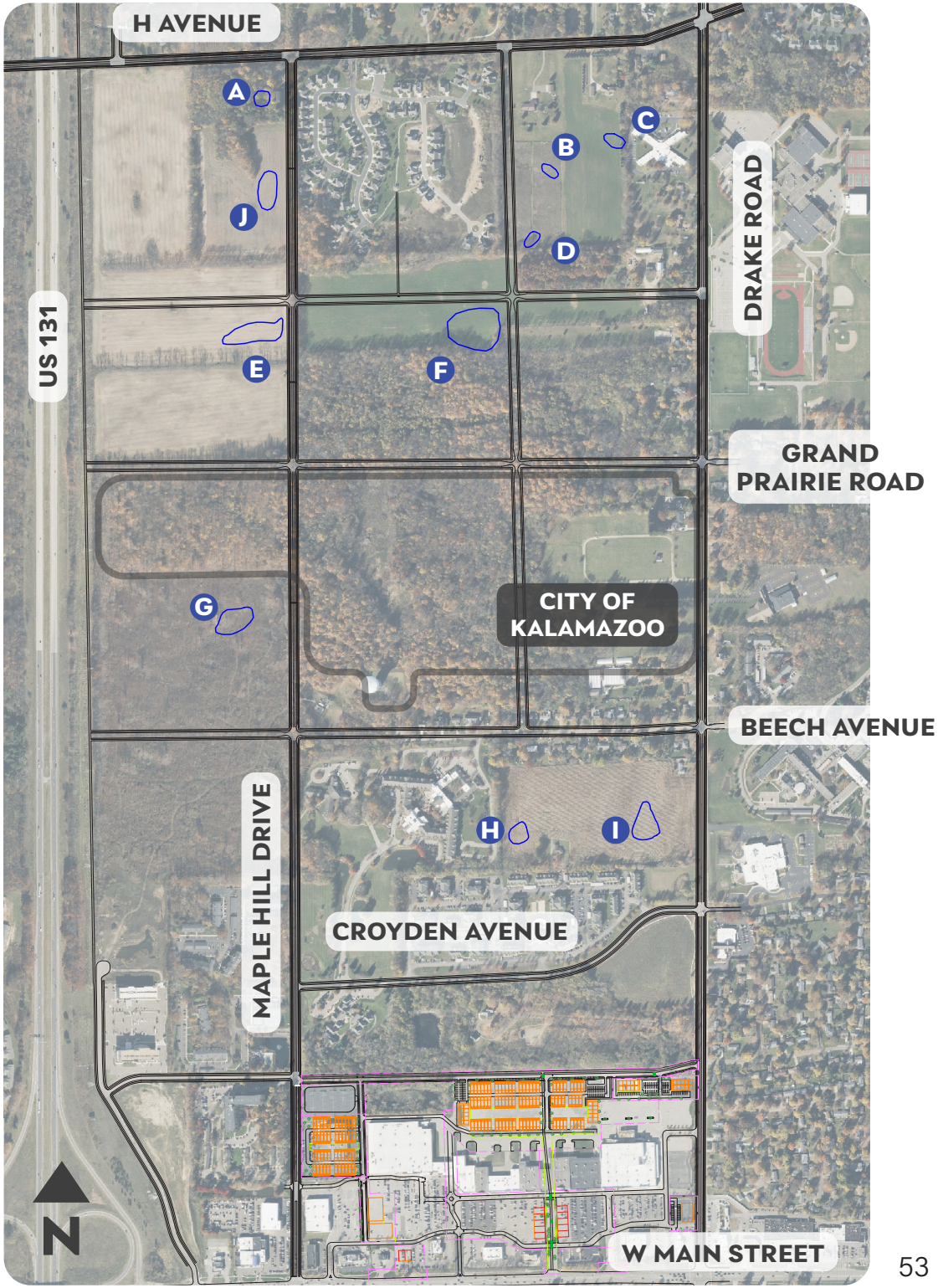
FIGURE 6: SITE TOPOGRAPHY

STORMWATER

Topography was analyzed to determine the potential for regional storm water ponds. As shown in Figure 7, the opportunity for regional ponds were identified throughout the area (shown in blue). To determine the low end and high end of development capacities for the area, the capacity of the ponds was tested against:

- Compact development patterns (high-density, 40 percent minimum green space at grade) using the 25-year, 24-hour storm as defined by National Oceanic and Atmospheric Administration (NOAA) Atlas 14 for Kalamazoo County.
- Low-density development patterns (90 percent minimum green space at grade) using the 100-year, 24-hour storm as defined by National Oceanic and Atmospheric Administration (NOAA) Atlas 14 for Kalamazoo County.

FIGURE 7: REGIONAL STORMWATER PONDS



Given the diverse soil conditions and slopes, an alternative method to develop the area is to base it on soil conditions. On Figure 4, the soils shown in bright yellow are generally the Type A soils with slopes of less than 12% percent. Type A soils are predominantly variations of sandy soils and sandy loams. These offer the best infiltration and lowest runoff rates. Under these conditions, approximately 25 percent of the site can be utilized for private development, while 50 percent remains for impervious surfaces. Twenty-five percent of the site could be utilized by buildings, driveways, and parking, while 25 percent of the site would accommodate streets, sidewalks, and stormwater detention. This is generally based on a 3-foot deep detention pond. If retention, allowing for infiltration of the stormwater into the underlying soils, was utilized, up to 31 percent of the site could be used for buildings, driveways, and parking. As noted, however, the soils information shown in Figure 4 represents general soil conditions. Clay pockets have been found in the area and soil borings must be performed to verify existing conditions.

Compact development clustered to preserve greater areas of sensitive natural areas would assist in providing balance to the area and reduce the overall footprint of development instead of simply having large lot development. This development form would be a good way to meet the objectives of the Neighborhood Residential Place Type, protect natural features, and meet storm water requirements. This form of development is recommended over standard dispersed lot subdivisions.

Creating regional storm water facilities would be another strategy to allow clustered development and create a larger green infrastructure amenity. Soil borings should be performed before entering full design of any development project to ensure that localized pockets of poor soils would not prohibit implementation of a regional storm water approach in targeted locations.

CHALLENGES

One of the purposes of this Special Study is to understand how to overcome challenges posed to development. This area was selected because of questions regarding property access, connectivity, environmental features, parking, and storm water management. Close examination of the H Avenue to Croyden Avenue area revealed the following key issues:

Grading Several proposed street connections will require significant grading efforts to achieve a desired horizontal slope of 4% or less, including the Maple Hill Drive extension. Significant topographical changes throughout the subarea should be expected to cause higher site preparation and development costs. Some areas will be severely limited or unbuildable due to the current slopes requirements. [3]

Trees Aerial photographs indicate substantial tree cover. To identify 8- and 12-inch-diameter trees, a tree inventory would be needed to develop most of the study area. Tree preservation requirements are designed to keep trees "in place," so the site layout must work around tree locations.

Ordinance requirements are not a physical constraint on the area's development per se, because the Planning Commission can recommend and the Township Board can adopt new development regulations. However, should the current regulations stay in place, it will be very difficult to develop portions of the study area. This will be a policy question to consider during an update to the Township's Zoning and Subdivision ordinances in the future.

[3] *A more extensive topographical survey would provide additional detail to assist in informing site design for individual parcel layouts.*

DEVELOPMENT FRAMEWORK

The proposed development framework identifies the components and approximate alignments of the desired street network and the challenges relevant to their implementation.

TRANSPORTATION NETWORK

Appropriate locations for transportation and utility infrastructure have been identified and are intended to optimize connections, minimize the frequency of vehicular access to West Main Street, and align with the Township's goals for mobility, including:

1. Ensure safety for all road users.
2. Develop a connected transportation network.
3. Enhance non-motorized transportation and transit opportunities at the site.
4. Provide Complete Streets facilities across the transportation network.
5. Encourage economic growth and fiscal sustainability.

Streets within the subarea are laid out in an orthogonal grid pattern, with some variations due to existing slopes and topography.

Street connections are intended to maximize accessibility and connectivity of future residential and commercial development. Most of the proposed streets are designed in accordance with the Neighborhood Street typology, while the proposed Maple Hill Drive extension is designed in accordance with the Neighborhood Connector typology, as defined in the Township's Master Streets Plan. A representative cross-section of each typology is shown on page 59.

Neighborhood streets are proposed to improve connectivity and accessibility within the subarea, diverting short, local trips away from arterial facilities such as West Main Street. Furthermore, proposed non-motorized facilities and low-stress streets seek to enable complete trips for local residents who wish to walk or bicycle to their destination. ***By improving connectivity throughout the subarea, future growth pressures on West Main are reduced, while residents are provided with more opportunities to complete a trip safely and comfortably.***

In addition to multiple smaller connections, the following key connections are proposed. The Maple Hill Drive connection will be designed utilizing the Neighborhood Connector typology, while all other proposed connections will be designed in accordance with the Neighborhood Street typology:

- Maple Hill Drive is extended from West Main Street to H Avenue
- Grand Prairie Road connects from Westgate Drive to Drake Road
- A northern connection from the Kal-Haven Trail to Westgate Drive.

A shared-use path is also proposed between Westgate Drive and the Kalamazoo River Valley Trail along the existing power line easement.

CONNECTIVITY

The proposed transportation network is anticipated to accommodate mobility both within the subarea and the surrounding region by multiple modes. Each proposed Neighborhood Street will accommodate bidirectional vehicular traffic. The narrow street widths and relatively minor anticipated traffic volumes will simultaneously allow each neighborhood street to function as a neighborhood greenway, where low-speed and low-volume routes are utilized in conjunction with additional traffic calming measures to provide a comfortable, low-stress routes for people on bicycles.

Continuous sidewalks will be provided on each side of the street to accommodate people on foot, which assists in advancing the Township goal to increase sidewalks by 20%. Lastly, street trees placed between the back of curb and sidewalk are important traffic calming elements, provide shade for pedestrians and cyclists, reduce air and noise pollution, and provide energy savings and increase property values for homeowners.

The proposed extension of Maple Hill Drive is designated as a Neighborhood Connector, which is intended to provide connections between places, such as residential neighborhoods and commercial destinations. As such, traffic volumes and speeds are anticipated to be slightly higher than streets designated as Neighborhood Streets. In order to facilitate safe and comfortable non-motorized trips along these connector routes, buffered and separated bicycle and pedestrian facilities are provided, along with a landscaped center median to calm traffic and manage conflict points.

TRAFFIC CALMING

Curb extensions are recommended for implementation within the subarea at each intersection of two Neighborhood Streets as well as the intersection of a Neighborhood Street with a Neighborhood Connector that includes on-street parking. Curb extensions, or bulb-outs, visually and physically narrow the roadway width at intersections, create shorter and safer crossings for people walking, and slow driver turning speeds. Curb extensions can also be used to provide 'daylight' at intersections for drivers, allowing them to identify opposing traffic more easily since parked vehicles cannot obstruct sight lines. Curb extensions may also be provided at mid-block locations and paired with a marked and signed pedestrian crossing.

Curb Extension

Mid-block traffic calming elements, such as speed tables, bumps, or humps may be introduced along Neighborhood Streets or Neighborhood Connectors to ensure alignment between driver operating speeds and posted speed limits. Speed tables are longer than speed bumps or humps and flattened, ensuring that the entire wheelbase of a vehicle is raised. Speed tables can be designed to accommodate through passage for emergency vehicles without requiring a speed reduction by placing gaps within the table spaced at the design vehicle's wheelbase width. Gaps in speed tables can also be utilized by people bicycling. Speed tables can also serve as a raised crosswalk and paired with curb extensions at desired crossing locations.

In locations where restricting cut-through vehicle traffic is desired, modal filters may also be implemented along Neighborhood Streets or Neighborhood Connectors. Alternatively referred to as traffic diverters, modal filters restrict vehicular traffic while permitting people walking or bicycling to pass through. Modal filters can be introduced on residential streets where robust vehicle alternatives exist. Neighborhood grids with modal filters experience fewer mobility-related injuries and deaths by minimizing driver speeds, restricting cut-through traffic, and encouraging greater levels of non-motorized activity.

Speed Table

Modal Filter

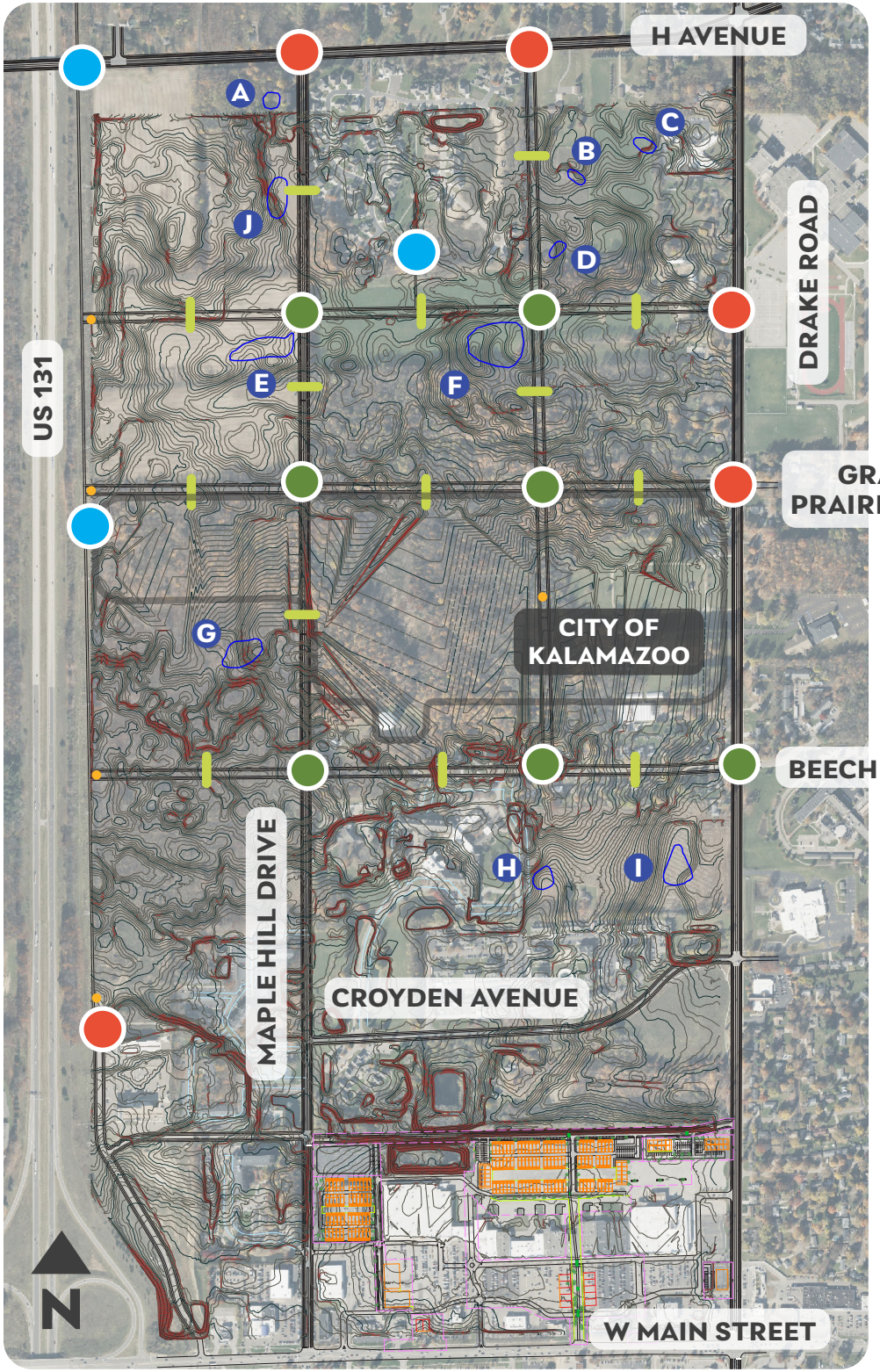
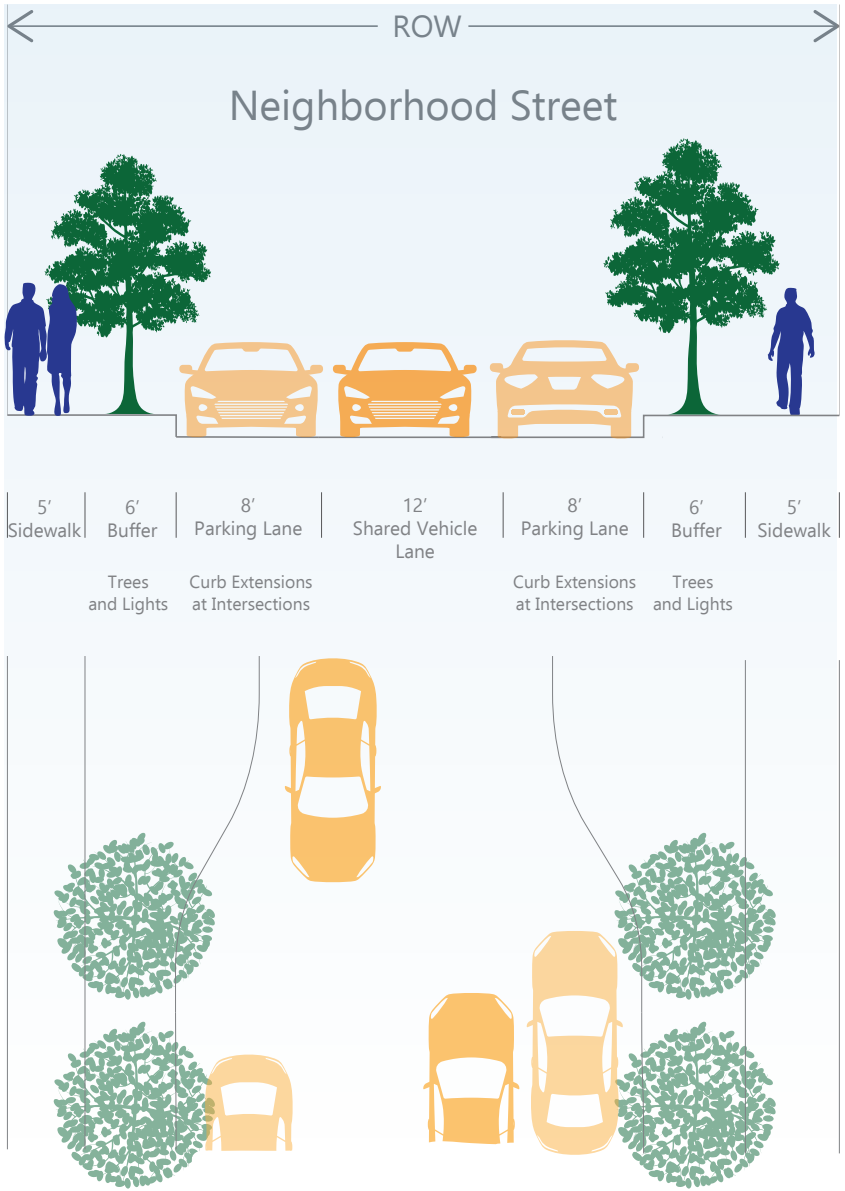


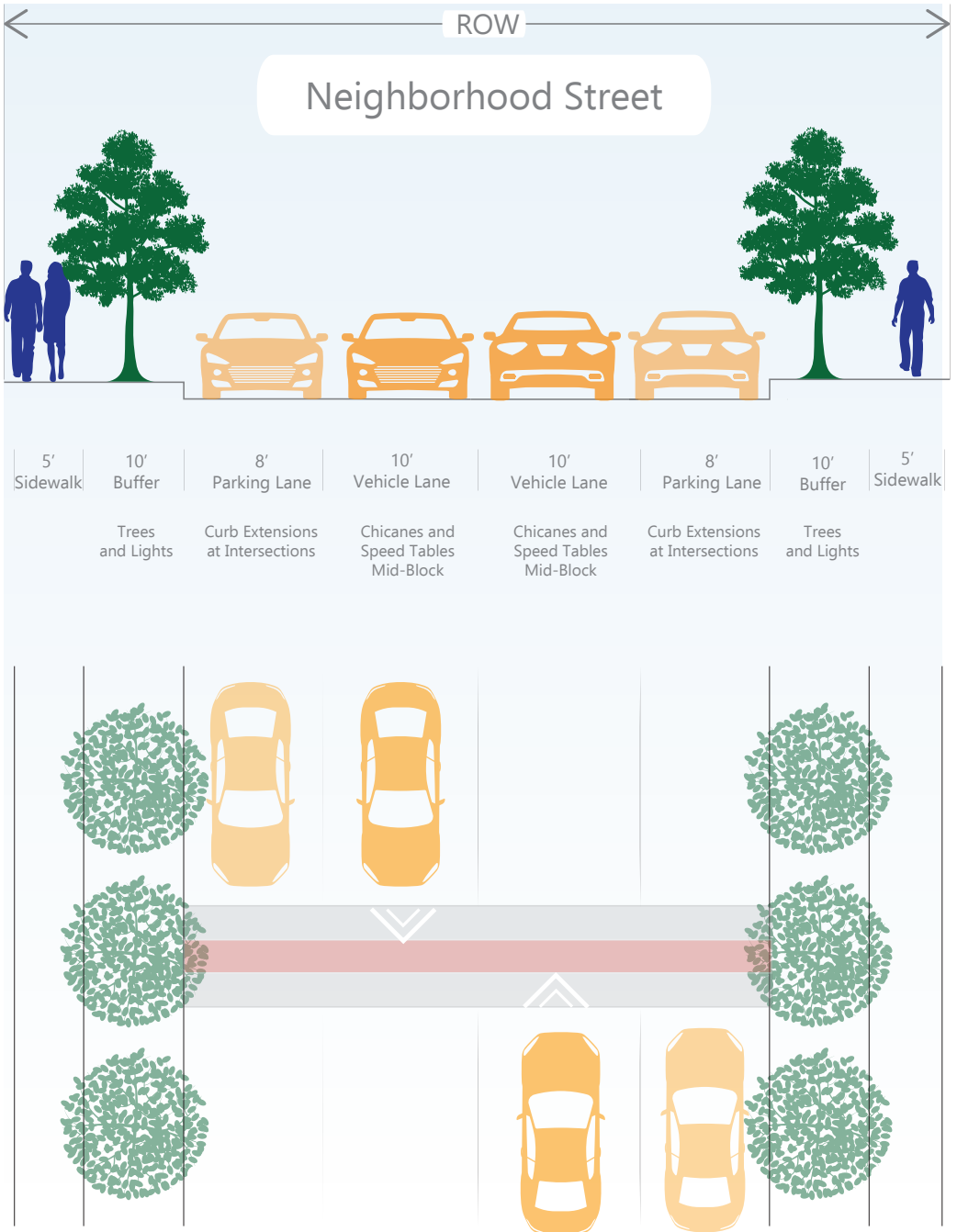
FIGURE 8: ALL SITE ELEMENTS

LEGEND

- All-Modes Connection to Network
- Non-Motorized Connection to Network
- Curb Extension, Traffic Circles/ Mini-Roundabouts at Intersection
- Detention Pond
- Traffic Calming
- Modal Filter

FIGURE 9: NEIGHBORHOOD STREET CROSS SECTIONS





RESIDENTIAL DESIGN

The design of a new residential subdivision can vary greatly. Current residential development patterns in Oshtemo have included standard single-family subdivisions with garage-forward homes, clustered development, and exclusive areas for multi-unit developments such as apartment complexes. The recommendations of the Neighborhood Residential Place Type suggest a different approach, that neighborhoods be comprised of a range of housing types that include detached single-unit structures as well as duplexes, townhomes, accessory dwelling units, and tri- or four-plexes. Neighborhoods should be walkable, de-emphasize the car, and green to provide shade, manage storm water, and assist in energy conservation. There are several key principles that should be used to achieve this vision.

BUILDING ORIENTATION

Homes should be oriented to streets. Front doors should be visible and approachable, connected with sidewalks. Ideally, front porches will be provided to create a welcoming atmosphere and provide "eyes on the street" where people feel that they can be seen - this is a natural crime deterrent and meets the Comprehensive Plan's goal of incorporating Crime Prevention Through Design (CPTED) principles.

These two examples illustrate the difference in the look and feel of an area simply by changing building orientation. This, too, has an impact on how people perceive their travel speeds when driving down the street and whether or not a pedestrian might feel comfortable walking on the sidewalk.

GARAGE PLACEMENT

The dominance of garage doors on the front of a residential structure can make a substantial difference in the look of a neighborhood. In the Master Streets Plan, the idea of a "Trick or Treat" neighborhood was introduced – where streets are connected so that a person does not need to travel out onto a major arterial to go to a neighbor's home that is only a few feet away. A similar concept applies here, too, where garage doors provide an unwelcoming façade to people in the neighborhood instead of a front door.

The example below shows two quadplexes, one front-loaded with garages and the other with parking located behind. In addition to lacking "eyes on the street," the amount of required paving in the front yard also impairs the livability of the neighborhood for the structure with the front-loaded parking.

How can we create walkable neighborhoods?

A key principle throughout the Comprehensive Plan and Master Streets Plan is to create walkable neighborhoods. Several key ingredients are necessary for walkability. Noted Urbanist Jeff Speck outlines four key elements:

Useful A walkable place ensures that essential amenities are within easy reach, making daily errands and activities accessible by foot. This means having a mix of housing, jobs, shops, and services located close together and organized so that walking is a practical choice.

Safe Walkability requires creating streets that are not only physically safe for pedestrians but also feel safe. This involves designing streets to slow down traffic, provide clear visibility, and protect pedestrians from vehicles through measures like sidewalks, crosswalks, and traffic calming strategies.

Comfortable Comfortable walking spaces feel like "outdoor living rooms," with buildings and landscaping creating a sense of enclosure and human scale. Factors like spatial definition (the ratio of building height to street width), shade, and trees can contribute to a comfortable walking experience.

Interesting A walkable environment should be engaging and visually appealing, encouraging people to explore and linger. This includes having interesting building facades, friendly faces, unique storefronts, and a variety of activities and features along the sidewalks.

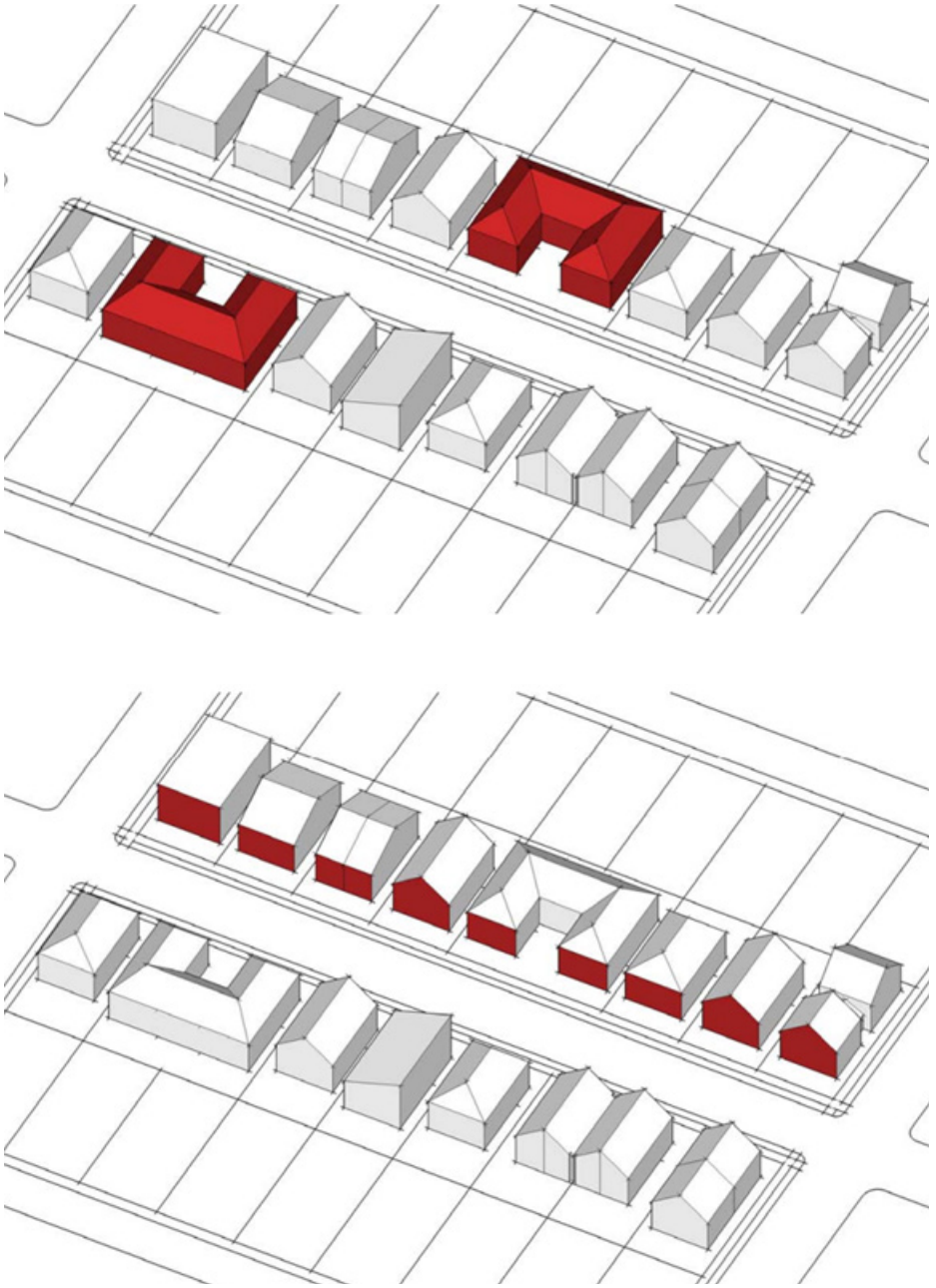
When an entire neighborhood is comprised of garage doors instead of front porches, even when sidewalks are provided, the walk can feel unsafe because the design is auto-oriented. A lack of street trees and blank facades can make the walk feel uncomfortable. And, a series of blank garage doors is definitely boring. To encourage people to walk and interact in their neighborhoods so that a true sense of community and belonging is created garage doors should be de-emphasized wherever possible.

BUILDING MASSING

In many "new" suburban neighborhoods, various housing types are segregated from one another – with duplexes located on one street, an apartment complex in the corner of a development, and single-family only blocks. Mixing housing types can work well together when designed correctly. The scale and proportion of various housing types should be carefully balanced with single detached structures. The benefit of this approach is that Oshtemo residents will be able to stay within their own neighborhoods as they go through various life stages. A range of price points and housing choices is also provided.

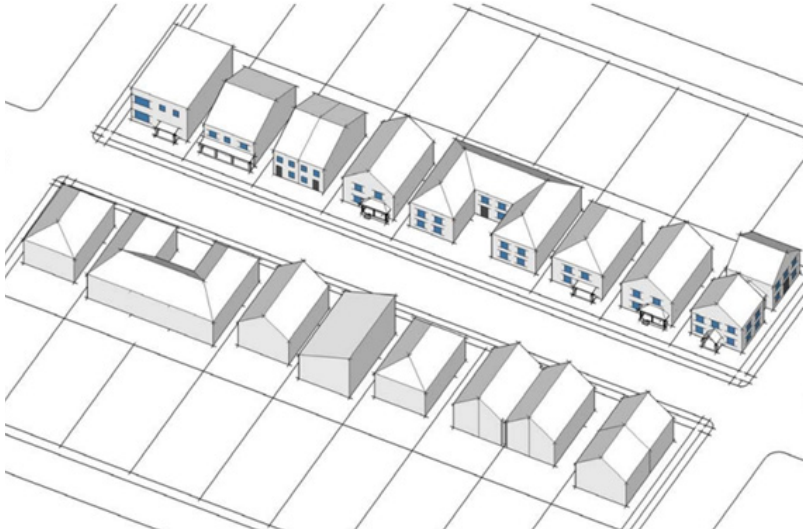
These images illustrate how a courtyard apartment building can be seamlessly incorporated into the design of a new residential neighborhood. (There are also duplexes included in the picture; can you find them?) A neighborhood does not need to be homogeneous in its housing types. It is important that the scale and massing of buildings are compatible with one another, so that when a person is walking or driving down the street the feeling of a standard rhythm of building fronts is maintained.

Thoughtful building massing can promote walkability and create appealing streetscapes. Walk-UPs (Walkable Urban Places), as named by Christopher Leinberger of The George Washington University School of Business found that for-sale residential homes sell for 56% more per square feet and apartments lease for 28% more in walkable neighborhoods. These places also perform substantially better than low-density development patterns in terms of tax base and ability to pay for infrastructure.



BUILDING ARTICULATION

Windows and doors on the front facade of a building should create lines of sight between the building and the street. Doorways, windows, and other openings in the façade of a building should be proportioned to reflect pedestrian scale and movement, and to encourage interest at the street level. This, of course, works alongside garage placement. No matter the type of house, these same rules should be consistently applied.



INTEGRATED OPEN SPACES

Each new neighborhood should have at least one park or square that is no smaller than 1/4 acre located near the center of the neighborhood. Green space for the sake of green space can be nice, but it is desired that new greenspaces in Oshtemo's neighborhoods serve a true function, as a place for community to come together to support the highest priority goal that residents cited during engagement efforts: create a sense of belonging.

Within proposed neighborhoods, a minimum percentage of the gross land area should be permanently dedicated to open space. Such open space could consist of green parks, squares, ponds, active recreation areas, and/or buffer areas. Buffer areas can provide a natural edge or greenbelt that separates the neighborhood from higher-intensity commercial mixed-use areas, natural features, or adjacent neighborhoods.

Thoughtful design of parks and greenspaces should be integral to site design efforts and not an after-thought for "leftover" space. These spaces should have great accessibility, be visible from homes with clear sightlines and provide a range of amenities.

IMPLEMENTATION

Several areas of improvement were identified in Township ordinances during the process of conducting this special study. While the specific issues identified apply to this study area, it is recommended that they be evaluated for the entire Township. The following changes should be looked at in conjunction with the Comprehensive Plan's recommendations to create a connected, gridded street network; provide a variety of different housing types; foster a vibrant, mixed-use walkable community; and design a community where everyone belongs.

In the Lodge Lane Special Study, a series of recommendations were made to amend the Subdivision and Site Condominium Design Layout Standards (Ordinance 290.008.), Natural Features section (Outside of the Natural Features Protection District) to better facilitate reasonable development, establish regional stormwater facilities, and protect the environment. Please refer to that study (page 71) for the recommended language. In addition, changes to Article 56 –Environmental Protection Requirements, Section 56.20 are also included.

LEVERAGING CODES

Local ordinances can be modified to address site development challenges, and also to protect and/or enhance the natural environment.

- Green Infrastructure incentives can be integrated into open space, porous surface, or green space requirements to improve the water quality of storm water discharge while providing unique site features. For example, a community may have a "greenspace" requirement to ensure that an entire commercial lot is not paved over. The definition of greenspace could include a green roof, planters, a green wall, bioswale, or porous pavers that offer pre-treatment for storm water before being discharged.

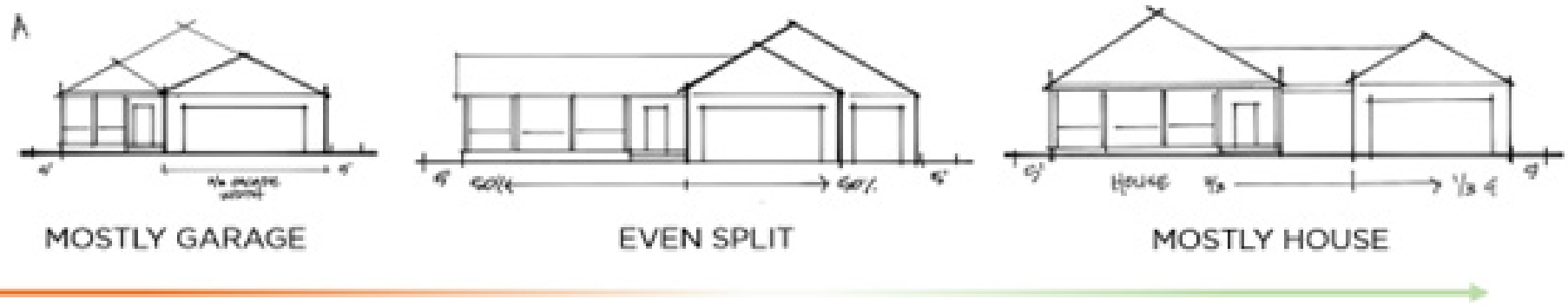
- Tree protection and storm water requirements can be used jointly to encourage tree protection on-site. Existing trees can receive storm water storage credit for their water uptake. Planting trees, particularly water-loving trees, could lower storm water requirements. The planted trees would be considered part of the storm water system that should be maintained under a maintenance agreement.

RESIDENTIAL PROVISIONS

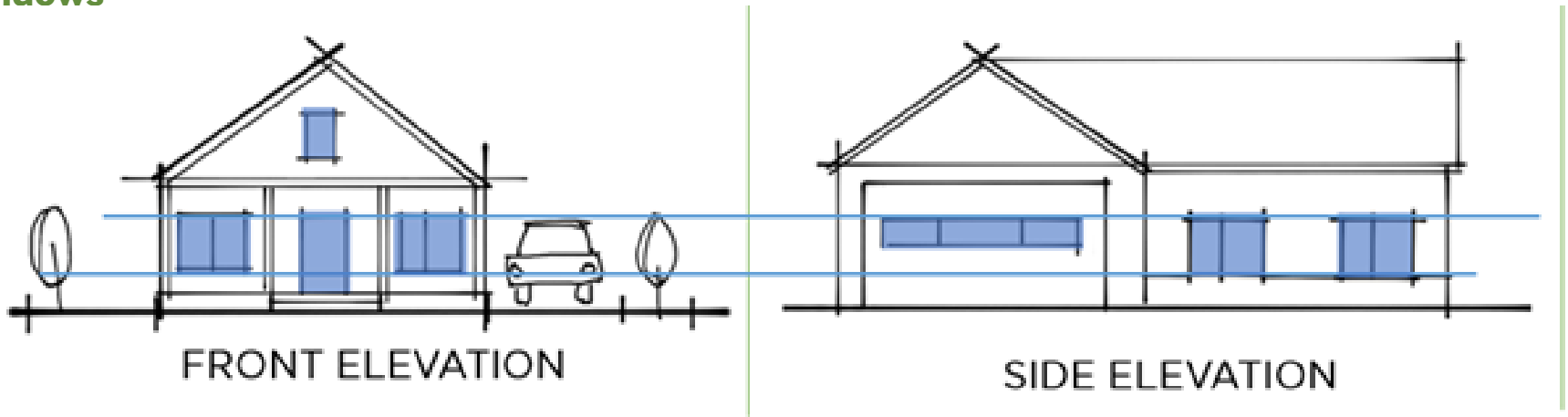
Oshtemo Township may wish to consider various text changes to its Zoning Ordinance to ensure that new neighborhoods provide a range of housing types, are more walkable, and are green. Here are a few examples:

- Create expectations for building design with incentivized housing density; the greater the diversity of housing types and levels of design, the more housing units would be allowed.
- Administrative approval for walkable neighborhoods that incorporate useful green spaces in the design of the site.
- Set building setbacks so that cars do not overhang sidewalks and that buildings address the street in a manner that provides a sense of enclosure (creating an outdoor "room"), which will provide both visual interest and assist in managing vehicular travel speeds.
- Encourage building entries to face the street.
- Require the planting of street trees in addition to sidewalks.
- Disincentivize the construction of garage-forward homes and encourage housing design to incorporate windows and front porches.
- Incorporate a minimum depth requirement for front porches so that they are truly usable and can become a gathering place for residents.

Percent Garage on Face of House



Windows



HOUSING INCENTIVES

To encourage a mix of housing types at a variety of different price points, it may be necessary to use a mix of financial tools to lower the overall cost of development. The following are a few examples of housing incentives that may be used in this area of Oshtemo Township to assist in defraying the costs of infrastructure, land, and/or construction when a builder seeks to construct new housing.

Kalamazoo County "Homes for All" Housing Millage

The County's Homes for All millage generates dedicated funding - over $26 million to date - for affordable multi family development, single family rehabilitation, and creative housing initiatives. In 2025, $2.1 million supports affordable rentals, $200,000 funds supportive services, and $500,000 fosters innovative housing models. This local capital aligns with Oshtemo's equitable, place based planning.

NEZ / PILOT / Local Tax Incentives

The 2045 Oshtemo Comprehensive Plan supports local mechanisms like Neighborhood Enterprise Zones (NEZ), Payment in Lieu of Taxes (PILOT), or local tax incentives. These tools can lower operating costs for affordable housing developers, improving feasibility for mixed income projects, adaptive reuse, and other developments that align with the goals of this Comprehensive Plan.

MSHDA Housing Tax Increment Financing (Housing TIF)

Established via 2023 amendments to Michigan's Brownfield Redevelopment Act, MSHDA's Housing TIF allows Brownfield Redevelopment Authorities to capture future tax increments for affordable housing development. Eligible projects (≤120% AMI) may also access construction and reimbursement loans, providing crucial gap funding for affordable and publicly accountable housing in Oshtemo Township. All tax increment financing plans will need to be coordinated through Kalamazoo County's Brownfield Redevelopment Authority.

STAKEHOLDER COORDINATION

Coordination with the City of Kalamazoo, Michigan Department of Transportation (MDOT), the Road Commission of Kalamazoo County (RCKC), the Kalamazoo County Drain Commissioners, Kalamazoo Township and local property owners will be required to implement this plan. The RCKC maintains jurisdiction over all public roadways within Oshtemo Township with the exception of state-owned routes and some border routes, including Drake Road. MDOT owns, maintains, and operates US-131, a limited-access freeway, and M-43 (West Main Street), a full-access urban arterial.

The central portion of this site is privately owned and in the City of Kalamazoo. Coordination with the City and the property owner will be necessary for proposed streets.

MDOT and RCKC define standards for all public roadways within the Township and generally do not fund the provision of non-motorized facilities between intersections. Sidewalks and shared-use paths are typically allowed within the road right-of-way (ROW) if funding and maintenance is provided by another agency or body. MDOT and RCKC do provide significant investment into pedestrian facilities at intersections, including ADA-compliant curb ramps, pushbuttons, and pedestrian signals.

Oshtemo's Master Streets Plan and Transportation and Mobility Ordinance both strongly encourage a context-sensitive approach to facility design to decrease the number of fatal and severe crashes in the community. These documents challenge the status quo "business as usual" approach that is typical of RCKC and MDOT practice. An educational effort is necessary to change the outdated mindset of transportation facility design.

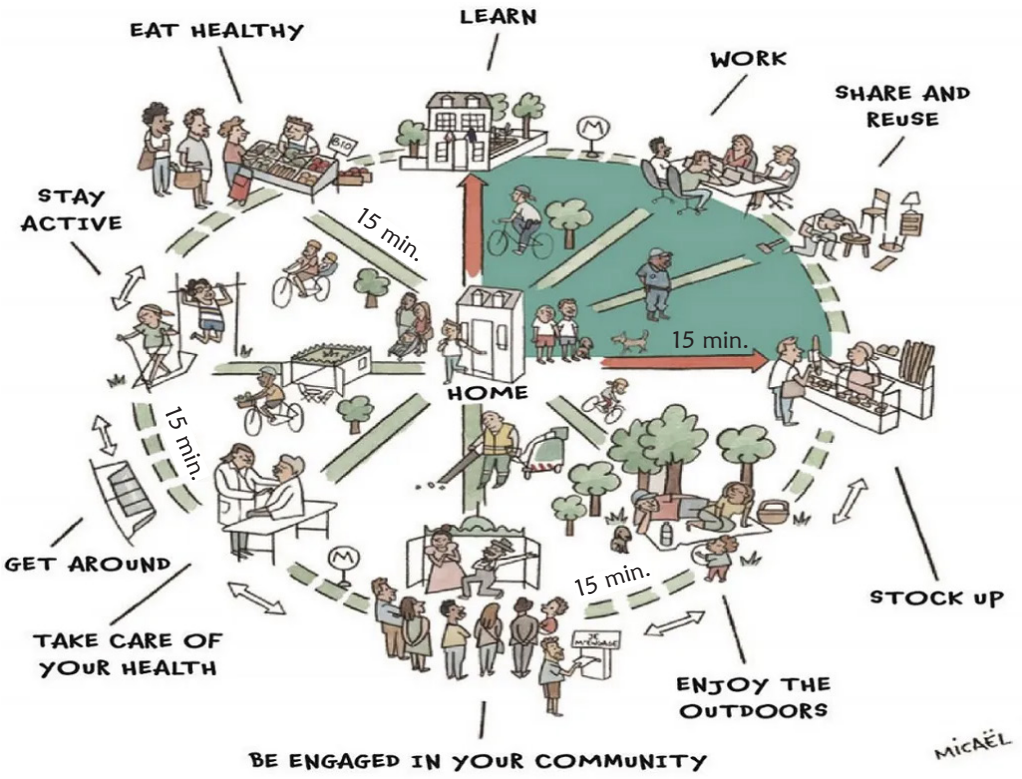
Coordination with local property owners would be required to ensure appropriate street connections are provided within the subarea during the development process, which may require ROW acquisition. Standard procedure for ROW acquisition, including a land survey, ROW plan and plat preparation, property appraisals, and acquisition, would need to be followed to complete proposed connections through existing private property.

CONCLUSION

Oshtemo Township is seeking to be proactive in managing change within the community. Anticipating the need for new streets, a regional approach to storm water management, and the construction of cluster neighborhoods with a range of housing choices in amenity-rich locations are key strategies to continue to ensure investment in areas where utility and transportation infrastructure are already present and to minimize growth impacts on the western half of the Township (Countryside Residential Place Type).

Focusing on areas where development and infrastructure already exist, rather than encouraging growth in areas where it does not, is a long-term strategy to support fiscal resiliency. The installation of the new interchange to the north will draw more people to the H to Croyden area. This should be viewed as an opportunity to strengthen the West Main Street commercial corridor and facilitate new infill development that can become more transit-supportive.

It is not common practice for housing developers to think about mixing housing types or to construct a gridded street network. As a result, it would be unsurprising to find resistance to these ideas. As demonstrated in the Comprehensive Plan and Master Streets Plan in numerous ways (see sidebars), residents' quality of life will be enhanced by utilizing approaches that produce better results. Using "carrots", such as bonus densities, can incentivize changes in behavior to advance Oshtemo's goals.



Balancing site constraints and the development capacity of the area is also important to ensure that future development occurs in appropriate locations. This Special Study provides a number of different solutions and implementation strategies to ensure that Oshtemo truly becomes ***"a community designed for everyone."***

2025 SPECIAL STUDY

LODGE LANE TO WEST MAIN

TABLE OF CONTENTS

INTRODUCTION

As part of the 2045 Oshtemo Comprehensive Plan process, several Special Studies were prepared. These studies examined key areas of the Township more closely to better understand how the general recommendations contained in the Comprehensive Plan would apply specifically to a small geographic area. The intent is to demonstrate design and development best practices and serve as case studies to be applied throughout the Township.

The Lodge Lane to West Main Special Study area was selected because it is ***experiencing growth pressures, has topographic constraints, lacks street connectivity, and has a need for a regional stormwater approach to better serve the area due to soil types.*** The general area is bounded by West Main Street to the north, 9th Street to the west, KL Avenue to the south, and US-131 to the east. The undeveloped area that was examined is approximately 80 acres in size.

FIGURE 1: STUDY EXTENTS

EXISTING CONDITIONS

Looking at this area from the sky (in Google Earth) the Lodge Lane/West Main area seems relatively uncomplicated. There are businesses and homes, trees, and a highway. A deeper examination reveals a complicated mix of development and natural features that require a proactive approach to development and infrastructure. [1]

BUILT ENVIRONMENT

The Lodge Lane/West Main area is located just west of the US-131, M-43 (West Main) interchange. The Annual Average Daily Traffic (AADT) volume on West Main is 22,000 cars per day in this location [2] , making it an attractive location for retailers and restaurants. However, the volume and speed of traffic make this an area of concern for turning movements and severe crashes. Streets within the Lodge Lane study area are laid out in an orthogonal grid pattern, with some variations due to existing slopes and topography, as presented in Figure 3.

Lodge Lane is the first street west of the interchange and connects to businesses fronting along West Main. Behind those businesses is a residential neighborhood that was initially developed in the 1960s and early 1970s. Neighborhood streets are about 22 feet wide, without curbs, and without sidewalks. The Lodge Lane/West Main intersection is the only point of egress for this subdivision of approximately 140 homes.

Sky King Meadows subdivision is located off of South 9th Street. This area has been developed in phases, starting in the early 2000's and continuing until recently. There are 2 access points from the neighborhood onto 9th Street and residential streets have been stubbed in anticipation of future connections. Neighborhood streets have a rolled curb and sidewalks throughout. No trees line any of the neighborhood streets.

A neighborhood to its south (Buckham Woods Drive) provides additional access to 9th Street, with Seymoure Street connecting the two, but it lacks sidewalks. Homes on Wood Hollow Drive are the newest addition to the neighborhood, on a circular street with two road stubs and a sidewalk provided for future connections. No trees line any of the neighborhood streets.

[1] *Site conditions were observed using aerial photographs, Oshtemo Township Geographic Information System files, National Wetlands Inventory (NWI) Maps and United States Department of Agriculture (USDA) Natural Resources and Conservation Service (NRCS) soil maps.*

[2] *The AADT increases on West Main to ~30,000 cars per day east of Lodge Lane through the interchange.*

NATURAL ENVIRONMENT

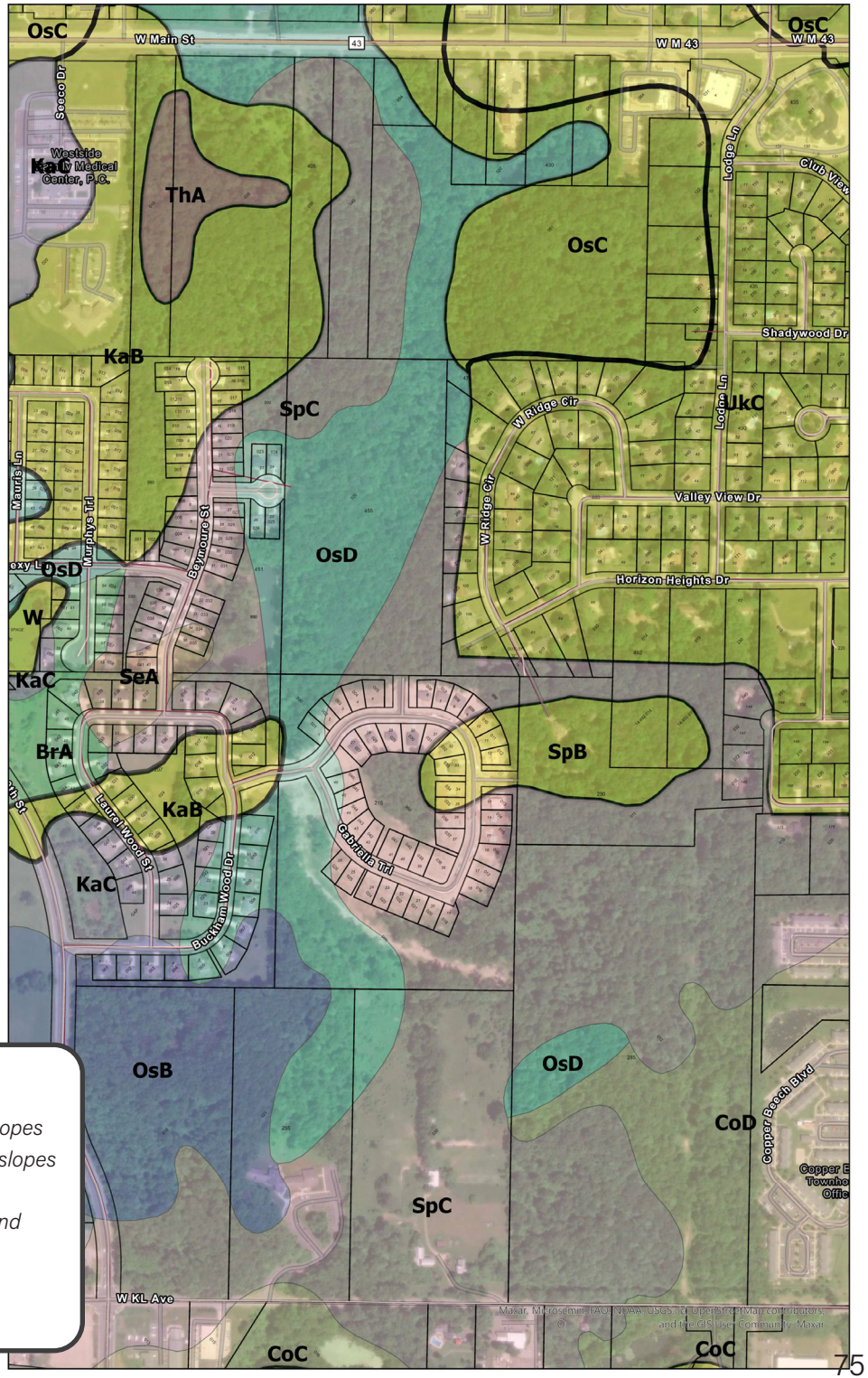
The undeveloped portions of the study area are approximately 80 acres in size. The area is predominantly wooded, and there are no water bodies in this area. Land is characterized by the following notable natural features:

Steep Slopes Figure 9 depicts land contours. Contours shown in red have slopes of 20% or greater. These are areas that cannot be cleared or graded in any manner, according to the Township ordinance, which also requires that areas with slopes of 12% – 18% with erodible soils cannot have more than 50% of the slope cleared or developed.

Wetlands The NWI wetlands maps do not depict regulated wetlands. However, anecdotal information indicates that smaller wetlands are in the project area.

Soils NRCS Soil Maps indicate the entire area to be loamy sands or sandy loams. These soils could be classified as erodible at slopes of 12% to 18%. At lesser slopes, these soils are generally suitable for stormwater infiltration. Deep pockets of clay have been identified in the area, though. Soil borings would be needed to ensure that localized pockets of poor soil are not present at specific sites.

FIGURE 2: SOILS



LEGEND

BrA	*Brockport silty clay loam soil type*	*SeA*	*Sleeth silt loam*
CoC	*Colrain stony fine sandy loam,*	*SpB*	*Spinks fine sand, 2-6% slopes*
CoD	*Colton-Duxbury complex*	*SpC*	*Spinks fine sand, 6- 18% slopes*
KaB	*Kars fine sandy loam, 3-8% Slopes*	*ThA*	*Thackery loam*
KaC	*Kars fine sandy loam, 8-15% Slopes*	*UkC*	*Kalamazoo fine loamy sand*
OsB	*Oquaga very stony silt loam*	*W*	*Well-graded sand*
OsC	*Oshtemo sandy loam, 3-8% slopes*		
OsD	*Oshtemo sandy loam,8-15% slopes*		

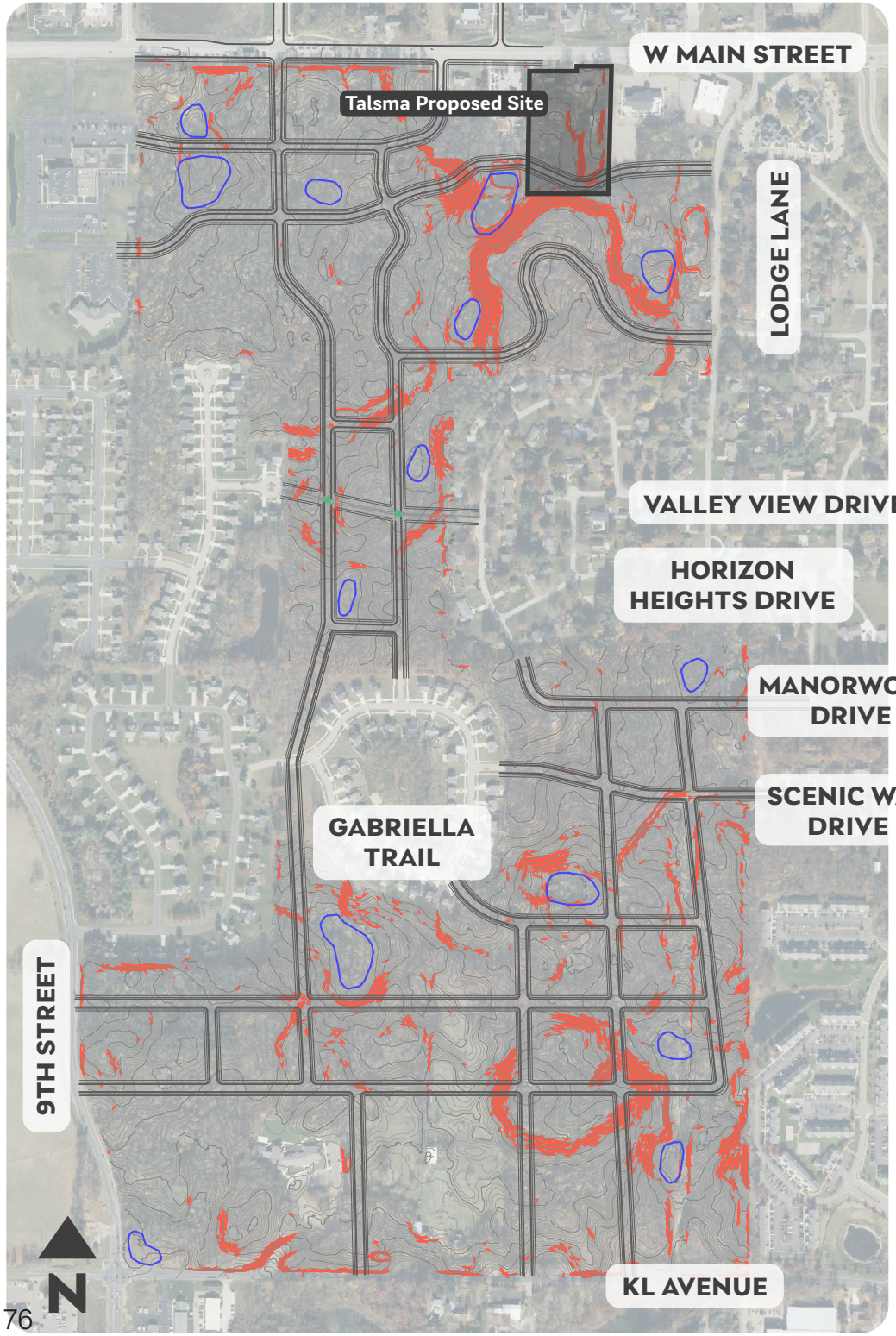
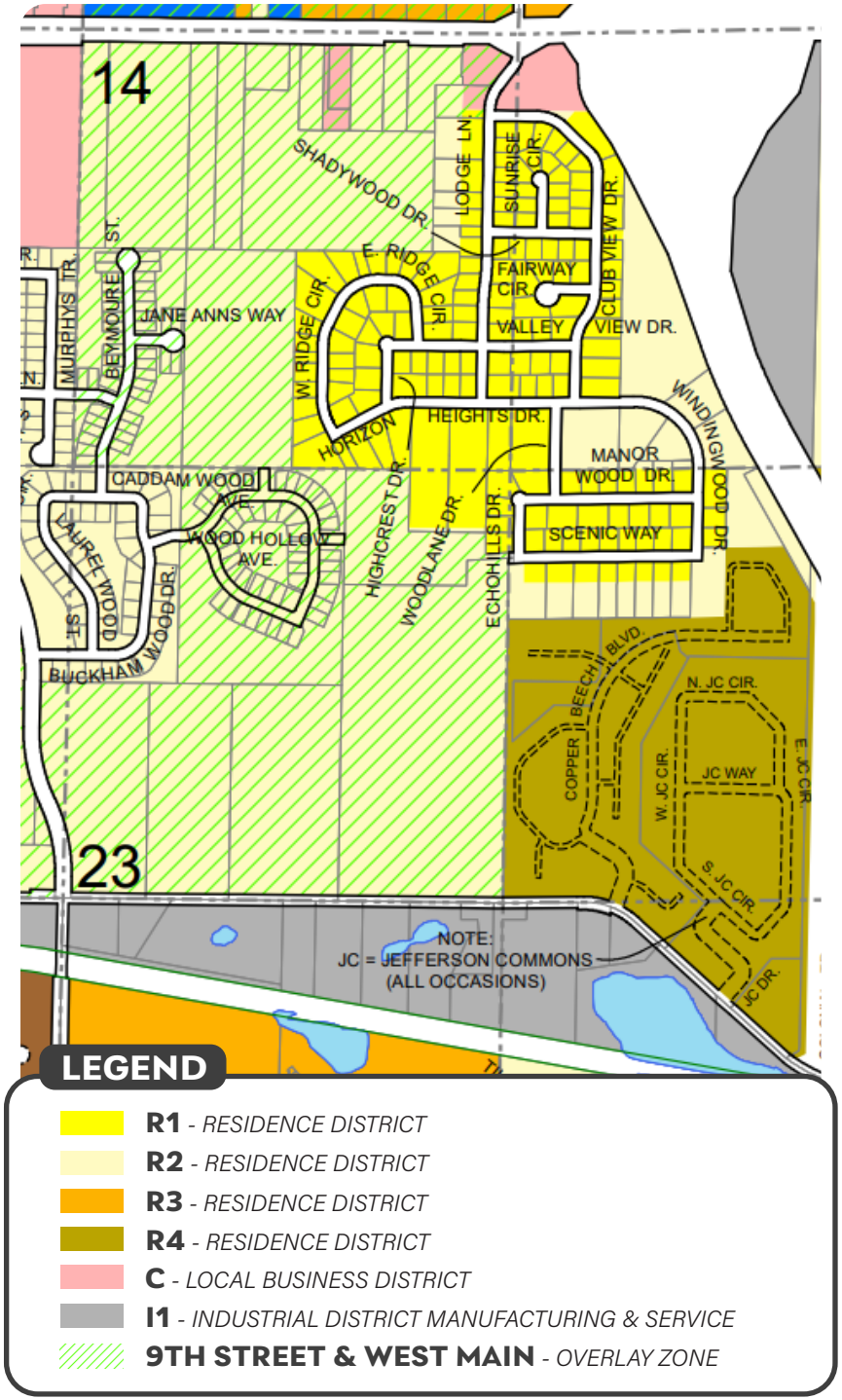


FIGURE 3: CURRENT SITE ZONING



VISION, GOALS & OBJECTIVES

The Vision of the 2045 Oshtemo Comprehensive Plan is: ***"Oshtemo is a community designed for everyone – we are connected, adaptable, and diverse, creating opportunities for shared experiences and recreation. Future decisions will support balanced growth and quality of life for residents, visitors, and businesses alike."***

The Plan contains a series of Goals & Objectives. Those most applicable to this study have been identified, although it is likely that other objectives may apply. The Lodge Lane to West Main study is intended to illustrate how some of the Goals & Objectives may be applied in Oshtemo Township.

GOAL 1- Cultivate a Strong Sense of Place and Belonging

Objective 1.1 Utilize placemaking strategies to give Oshtemo a strong sense of place and create a welcoming and recognizable identity.

The Special Study accomplishes this by:

- Supporting planned improvements by MDOT along West Main Street to add a landscaped median and boulevard. This addition can provide opportunities to create a gateway for the Township in addition to providing needed safety improvements. *(see page 89)*

GOAL 2 - Prioritize Housing for All

Objective 2.1 Expand housing options by encouraging a variety of housing types - such as accessory units, duplexes, quadplexes, townhouses, cottage courts, and apartments - in locations that align with the character of their surroundings, addressing the diverse needs of the community.

GOAL 3: Foster a Connected, Accessible, and Resilient Transportation System

Objective 3.1 Establish and improve links between neighboring developments through meaningful connections with a focus on safety, access, reduced travel distances, and modal choice.

The Special Study accomplishes this by:

- Demonstrating how existing stub streets and the construction of new streets can assist in diverting local traffic from West Main Street, creating a multi-modal network within the Township to facilitate the safe and efficient movement of people. *(see page 81)*
- Identifying preferred locations of new streets that connect to the larger network to ensure the creation of walkable neighborhoods in the Neighborhood Residential Place Type. *(see page 84)*

GOAL 4 - Facilitate Balanced Growth and Economic Vitality

Objective 4.2 Align Township growth with infrastructure availability, environmental sensitivity, and community identity through strategic Place Types.

The Special Study accomplishes this by:

- Proactively anticipating growth needs and taking appropriate action to understand constraints and opportunities for properties located within the Regional Corridor and Neighborhood Residential Place Types. *(see pages 80 and 83)*
- Facilitating new development where existing underground utilities (i.e. water and sewer) are located, and the addition of new rate payers to help invest in the system. *(see pages 95-97)*
- Understanding how local ordinances affect development potential and opportunity. *(see pages 98-101)*

Goal 5 - Safeguard Natural Features and Environmental Health

Objective 5.1 Develop appropriate policies around environmental protection through site analysis to ensure the preservation and enhancement of sensitive ecosystems and habitats during development.

Objective 5.4 Protect surface and groundwater resources from negative impacts associated with development.

The Special Study accomplishes this by:

- Understanding slopes and soil types common to Oshtemo Township and how those influence development projects. *(see pages 75 and 76)*
- Examining current ordinance provisions and how they may be revised to continue to protect the environment, while also being easier to administer. *(see pages 98 - 101)*
- Emphasizing the use of a regional storm water detention facility to serve the entire area rather than requiring each site to have its own storm water facility. *(see pages 93 and 94)*

Goal 6 - Enhance Community Wellbeing and Safety

Objective 6.4 Invest in the safety infrastructure needed to support the Township's growing population and maintain emergency responsiveness.

The Special Study accomplishes this by:

- Increasing the ability of emergency responders to access an existing neighborhood by increasing the number of ingress/egress points. *(see page 84)*

FUTURE USE

The 2045 Oshtemo Comprehensive Plan identifies this area in the Regional Corridors, Neighborhood Mixed-Use, and Neighborhood Residential Place Types. A community Gateway is identified around the US-131/West Main interchange.

Regional Corridors Identified as a critical area of economic activity, the West Main Street frontage will continue to be developed for commercial and mixed-use purposes. Multi-unit residential housing types are also encouraged. Infrastructure is present within the corridor, as well as multi-modal features including sidewalks, transit, and a future shared-use path.

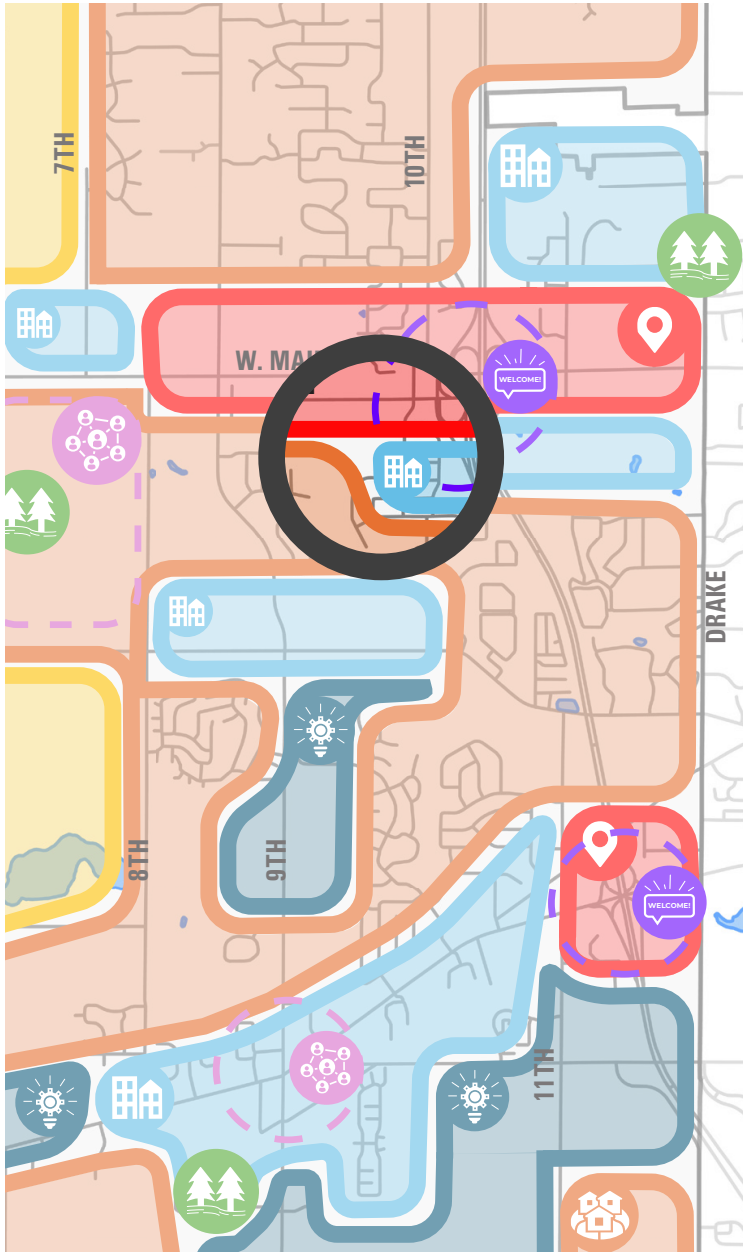
Neighborhood Mixed-Use These areas are intended to be more pedestrian-friendly, with mixed-use multi-story buildings that integrate ground-floor shops, cafes, or services with residential units above and public gathering spaces. Parking is located to the side or rear of buildings.

Neighborhood Residential It is desired in this place type that neighborhoods provide a broader range of housing types and that these areas are well-connected to non-motorized paths and amenities. Residential densities may be 1 – 25 units per acre, depending on location while providing for individual or shared green spaces.

Gateway The intent is to have the gateway location serve as a welcoming Township entrance with visual and functional placemaking elements such as signage, landscaping, multi-modal connectivity, street lighting and public art.

The area's natural features should be embraced as something to work with rather than conquer. It is important to note that for the Neighborhood Residential Place Type, modified approaches may be required due to the presence of wooded areas, steep slopes, and water features. Clustered residential development is recommended in these areas, as the landscape dictates. Where possible, large trees and/or groves of trees should be preserved to assist with soil stabilization and stormwater uptake.

FIGURE 4: PLACE TYPES



DESIGN CONSIDERATIONS

The proposed framework [3] centers on creating a continuous North–South and East-West gridded street pattern to provide connectivity and access between West Main Street and KL Avenue, 9th Street and Lodge Lane wherever practicable. The Master Streets Plan, Section 3.3 Connectivity & Accessibility, provides guidance on building the street network. Concepts, explained later in this study, include:

- Connect new streets to existing road ends.
- Create a street network of Arterials and Collectors to serve as the spine to which neighborhoods connect with local streets.
- Providing a minimum number of access points based on calculating links and nodes to achieve a street connectivity index of 1.6 in the Neighborhood Residential Place Type.
- Establish a maximum block size to maintain walkability and access.
- Install non-motorized connections, including locations where motorized access may not be possible.

The street network serves as the organizing concept for future development, within which residential development would occur. The area's topography guided street locations based on slope percentages, although a few difficult areas remain. Low areas that could either serve as stormwater retention areas or could potentially be wetlands were also identified and avoided.

[3] *Assumptions regarding street design and connectivity to the existing network were made, as follows:*

1. *Street design for all proposed routes in the Lodge Lane to West Main study area is intended to conform with the Neighborhood Street typology as defined in the Master Streets Plan. Preliminary locations for connections to existing residential streets were also identified.*
2. *Right of Way can be obtained from private property owners where necessary.*
3. *With the exception of the known stormwater ponds, no other regulated water features are located in the area. Ephemeral streams and small ponds could not be confirmed from review of aerial photos, particularly given the extent of tree canopy.*
4. *Soil types and contours are generally consistent with the maps provided by NRCS and Kalamazoo County.*

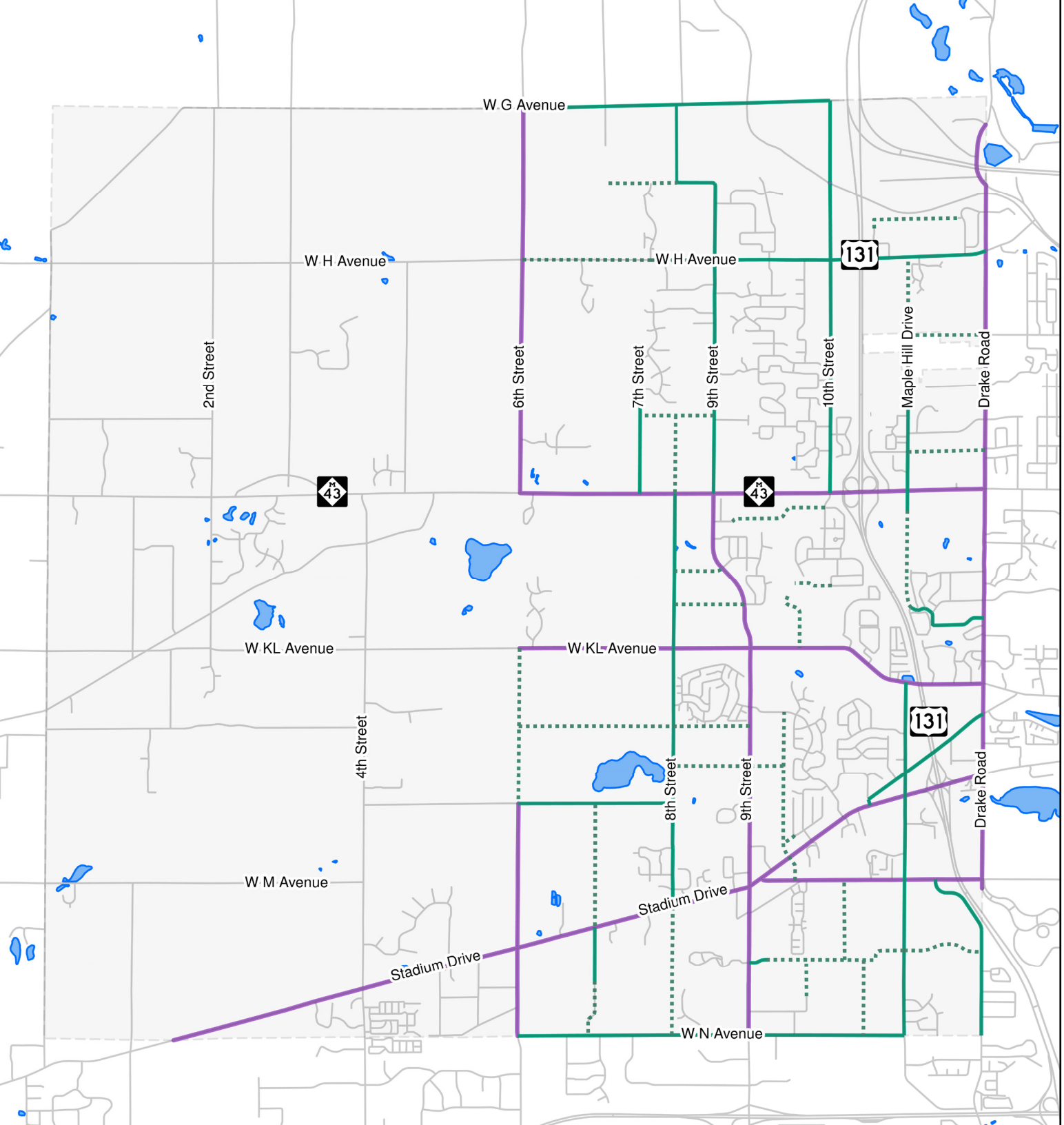


FIGURE 5:

Key Connections

Oshtemo Township

LEGEND

- Key Major Connector
- Key Minor Connector
- Proposed Key Minor Connector
- Other Roadways

0 0.5 1 Miles

N

Data Source: Oshtemo Township, 2024. Michigan Geographic Data Library, 2024. Progressive Companies, 2025.

Natural Features Requirements

The Township's Subdivision and Site Condominium Ordinance contains natural features regulations pertaining to slopes, wooded areas, individual trees, water resources, and natural features connections. The Lodge Lane to West Main Special Study area is not located within the Township's Natural Features Protection District. Applicable regulations [4] include:

SLOPES

- Development or vegetative clearing is prohibited on any land with a slope greater than 18%.
- No more than 50% of the slope area may be cleared or developed on slopes between 12 – 18% with erodible soils at a K factor of 0.24 or higher.

WATER RESOURCES

- An upland buffer of 50 feet measured horizontally from the ordinary high water mark is required for all development adjacent to a water resource (lake, pond, stream, river, wetland, 100-year floodplain).
- An upland buffer of 70 feet shall be required from the delineated edge of any wetland or floodplain.
- No development or use, except for low-impact pedestrian facilities (boardwalk, overlook, wood chip path) are permitted that will disturb, remove, fill, drain, dredge, clear, destroy, or alter any area, including vegetation, within water resources or their associated upland buffer.
- No fill material or debris shall be placed in the upland buffer.
- Historic drainage patterns and surface flow rates shall be maintained.

WOODED AREAS

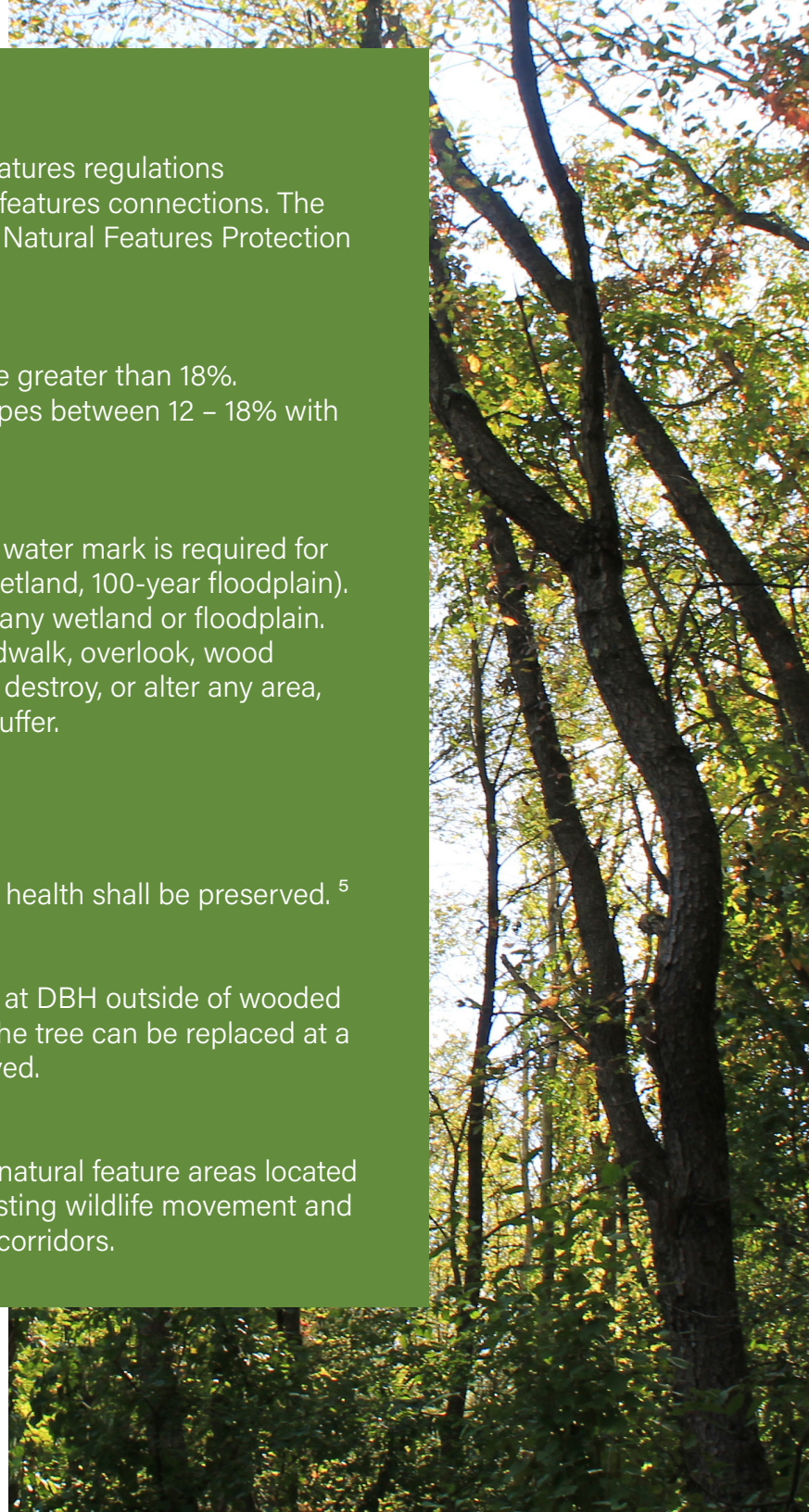
- A minimum of 20% of the trees 8 inches in diameter at DBH and in good health shall be preserved. [5]

INDIVIDUAL TREES

- Plans that would allow for the preservation of trees 12 inches in diameter at DBH outside of wooded areas and in good health are required, but if no viable alternative exists, the tree can be replaced at a ratio of one (1) caliper inch for every one (1) caliper inch of the tree removed.

NATURAL FEATURE CONNECTIONS

- Natural feature areas protected within a subject property will connect to natural feature areas located on adjacent properties, where present to allow for the continuance of existing wildlife movement and to enhance the opportunity to establish new connections and greenway corridors.



[4] *Subdivision/Site Condominium Design Layout Standards (290.008.); Part I: Natural Features (outside of the Natural Features Protection District described in 290.008.J), Sections 1 – 5.*

[5] *Species native to Southwest Michigan shall be first choice in preservation with desirable non-invasive species native to the Midwest region as second choice.*

CHALLENGES

One of the purposes of this Special Study is to understand how to overcome challenges posed to development. This area was selected because of questions regarding property access, connectivity, environmental features, parking, stormwater management and utility capacities. Close examination of the Lodge Lane/West Main revealed the following key issues:

Grading Several proposed street connections will require significant grading efforts to achieve a desired horizontal slope of 4% or less, including both proposed connections to Lodge Lane. Significant topographical changes throughout the subarea should be expected to cause higher site preparation and development costs. Some areas will be severely limited or unbuildable due to the current slopes requirements. [6]

Wetlands While no regulated wetlands were noted in this area from the State of Michigan database, anecdotal information from Township staff indicates wetlands are in the area. The presence of wetlands would trigger the Township ordinance provisions regarding water resources and natural feature connections.

Trees Aerial photographs indicate substantial tree cover. To identify 8- and 12-inch-diameter trees, a tree inventory would be needed to develop most of the study area. Tree preservation requirements are designed to keep trees "in place," so the site layout must work around tree locations.

Ordinance requirements are not a physical constraint on the area's development per se, because the Planning Commission can recommend and the Township Board can adopt new development regulations. However, should the current regulations stay in place, it will be very difficult to develop portions of Lodge Lane to West Main study area. This will be a policy question to consider during an update to the Township's Zoning and Subdivision ordinances in the future.

DEVELOPMENT FRAMEWORK

The proposed development framework addresses the desired street network components and the identified challenges to create a workable solution for the Lodge Lane to West Main area. Given the configuration of the undeveloped area and the distance between major arterials, the framework relies heavily on existing streets to provide necessary access to the greater region. Due to the proximity of US-131 and established development patterns, there are few connectivity options on the area's east end.

[6] *A more extensive topographical survey would provide additional detail to assist in informing site design for individual parcel layouts.*

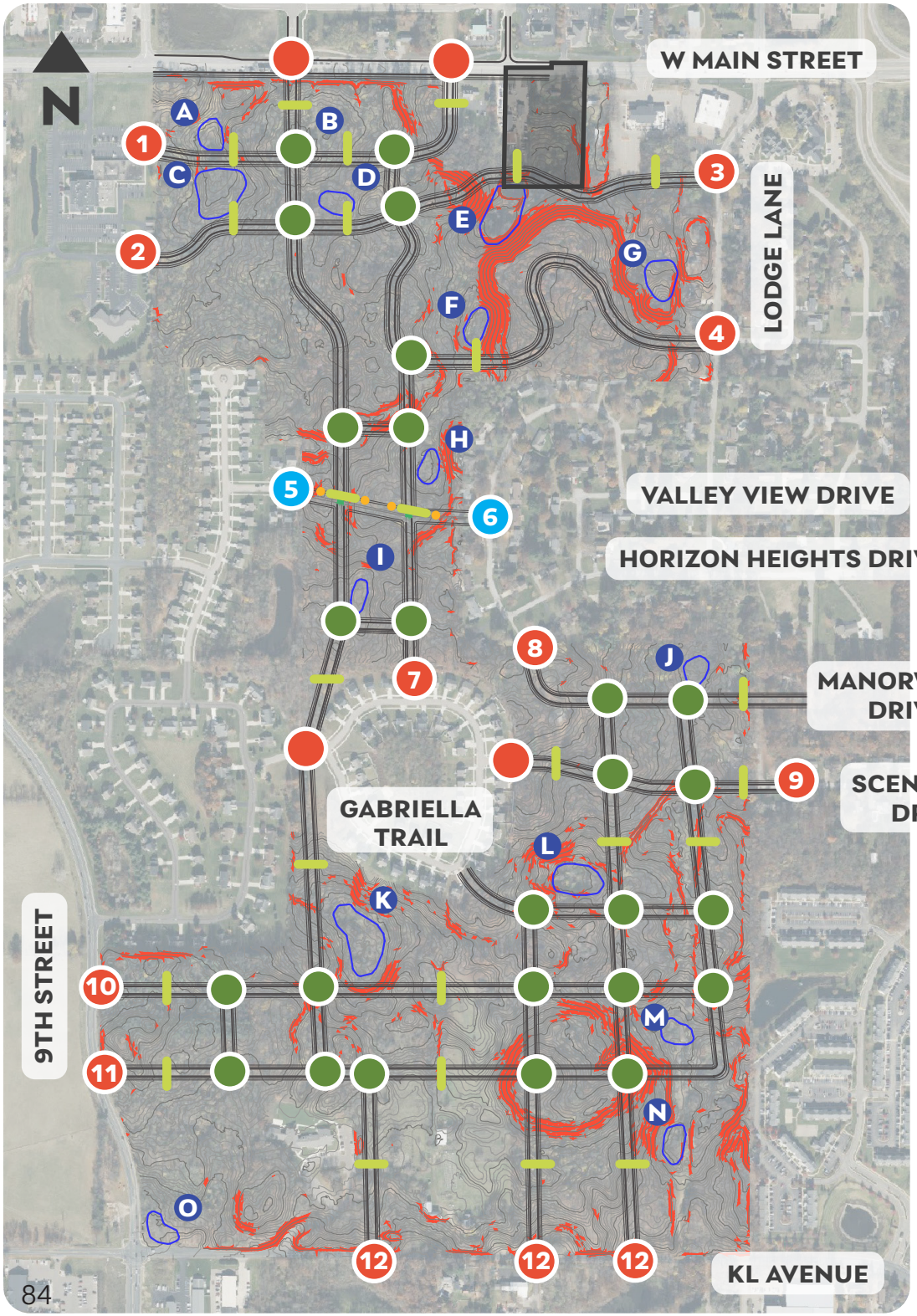


FIGURE 6: ALL SITE ELEMENTS

LEGEND

- X — *All-Modes Connection to Network*
- X — *Non-Motorized Connection to Network*
- *Curb Extension, Traffic Circles/ Mini-Roundabouts at Intersection*
- X — *Detention Pond*
- *Traffic Calming*
- *Modal Filter*
- *Talsma Proposed Site*

NOTES

1. *Northern Connection service drive*
2. *Southern Connection Seeco Drive*
3. *Connection to Lodge Lane, extension to Club View Drive*
4. *Connection to Lodge Lane, extension to Shadywood Drive*
5. *Connection to Jane Ann's Way*
6. *Connection to West Ridge Circle*
7. *Connection to Ben Street*
8. *Connection to West Ridge Circle*
9. *Connection to Scenic Way Drive*
10. *Connection to South 9th Street*
11. *Connection to South 9th Street*
12. *Connections to West KL Avenue*

TRANSPORTATION NETWORK

Neighborhood streets are proposed to improve connectivity and accessibility within the subarea, diverting short, local trips away from arterial facilities such as West Main Street. In addition, the proposed non-motorized facilities and low-stress streets enable complete trips for local residents who wish to walk or bicycle to their destination. By improving connectivity throughout the area, future congestion pressures on West Main will be reduced and emergency response times will be decreased, while residents are provided with more opportunities to complete a trip safely and comfortably.

In addition to multiple smaller connections, the following key connections are proposed:

- Seeco Drive to Lodge Lane and Club View Drive
- Wood Hollow Drive to Scenic Way Drive
- North south connection from West Main Street between 6221 and 6289 West Main Street to Wood Hollow Drive.
- North south connection from West Main Street south of 6400 West Main Street to West KL Avenue.
- East-west non-motorized connection between Jane Ann's Way and West Ridge Circle for use by people walking or bicycling.

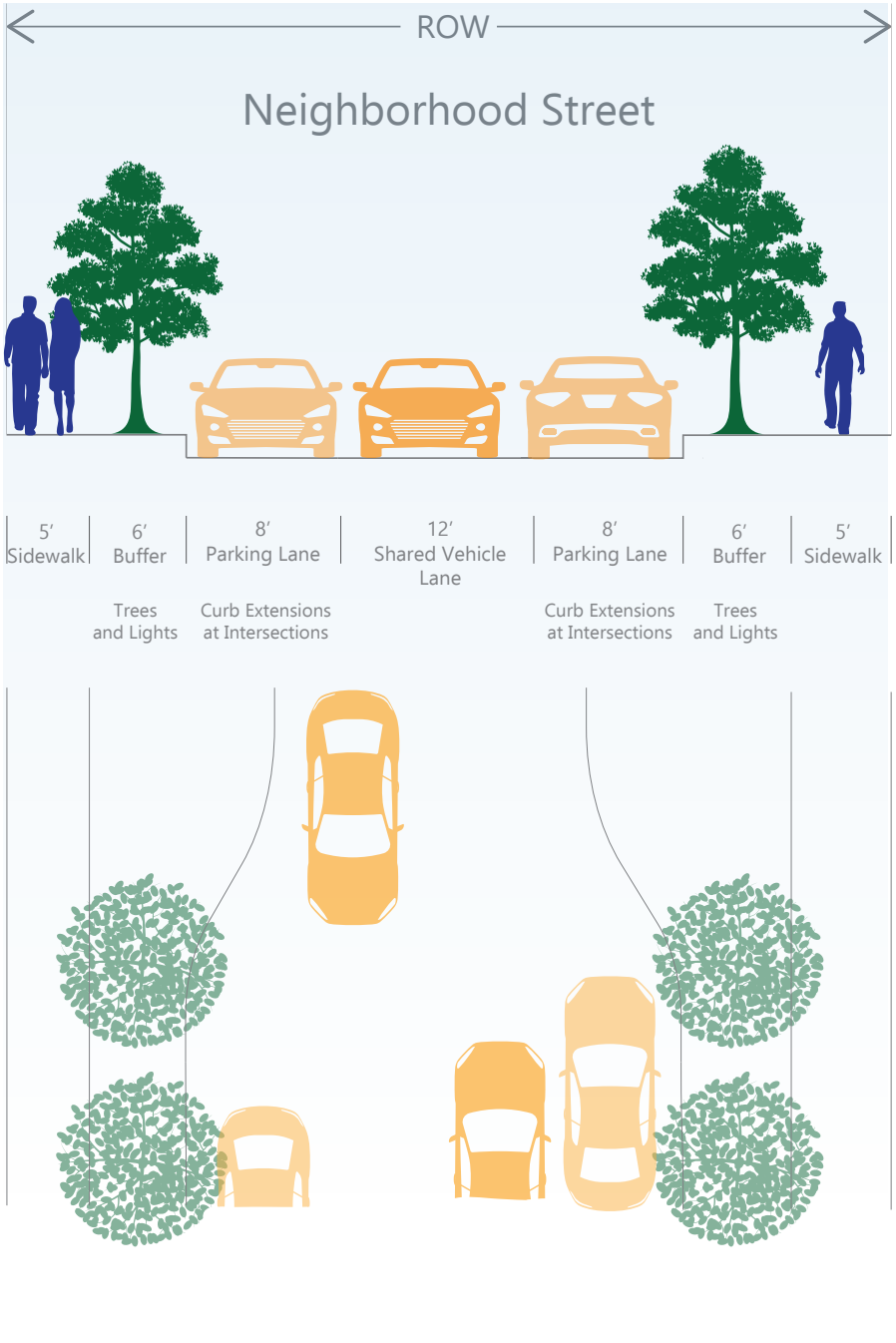
Street connections are intended to maximize accessibility and connectivity of future residential and commercial development. Each proposed street is designed in accordance with the Neighborhood Street typology as defined in the Master Streets Plan. A representative cross-section of each proposed street is shown on the following page.

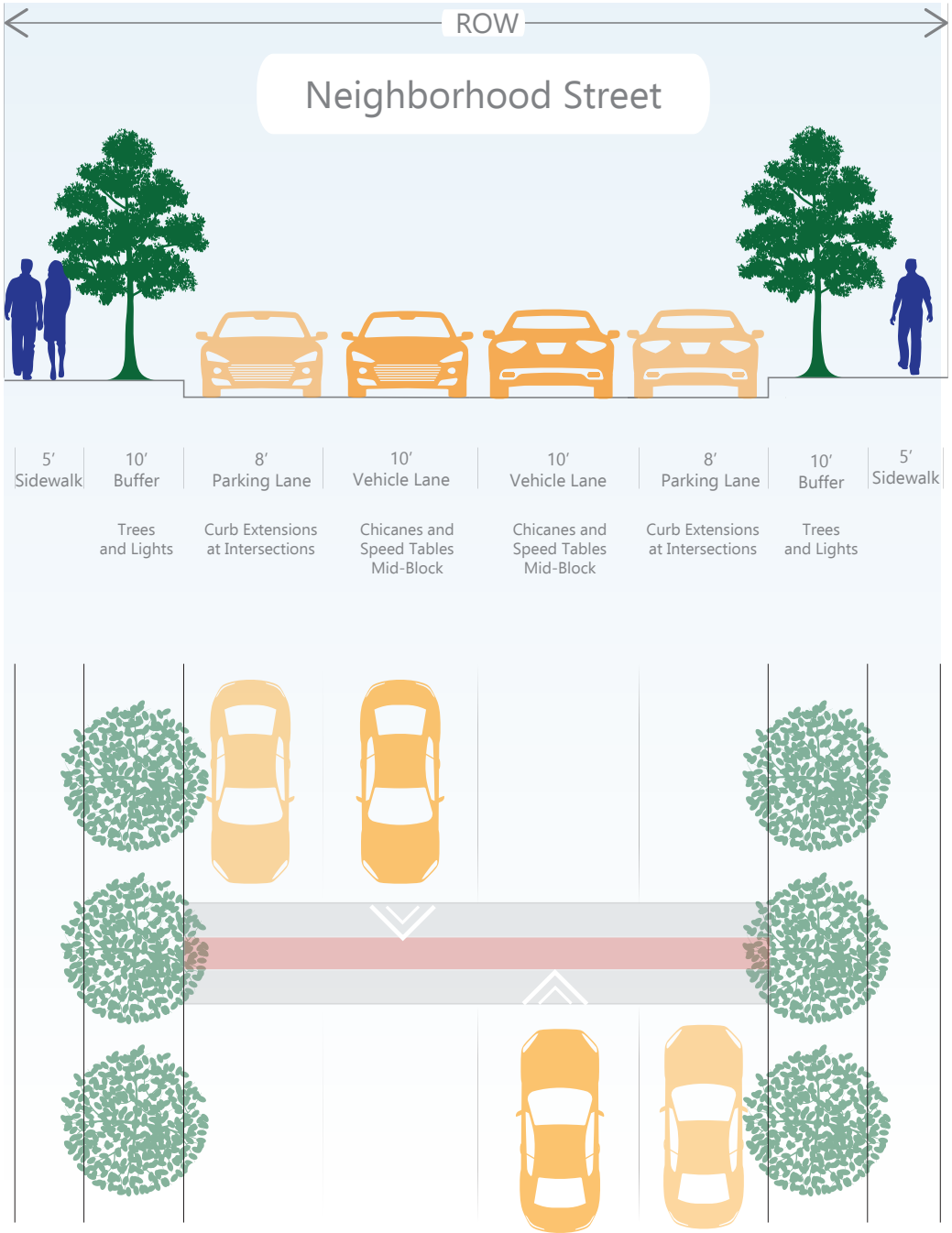
Each proposed street will accommodate bidirectional vehicular traffic, while the narrow street widths [7] and relatively minor anticipated traffic volumes will simultaneously allow each street to function as a neighborhood greenway, where low-speed and low-volume routes are utilized in conjunction with additional traffic calming measures to provide comfortable, low-stress routes for people riding bicycles.

Continuous sidewalks will be provided on each side of the street to accommodate people on foot, which assists in advancing the Township goal to increase linear feet of sidewalk by 20%. Lastly, street trees placed between the back of curb and sidewalk are important traffic calming elements, provide shade for pedestrians and cyclists, reduce air and noise pollution, provide energy savings and increase property values for homeowners.

[7] *Narrow streets can operate as a 'yield street,' where if a car is parked on the street a driver may need to pull over to allow an oncoming vehicle to proceed. These facilities improve driver awareness, slow vehicle speeds, and increase safety when compared to wider facilities.*

FIGURE 7: NEIGHBORHOOD STREET CROSS SECTIONS





ACCESS MANAGEMENT

Driveway Permitting and Opportunities for Access Management.

The existing driveway permitting process is defined in the Township's Access Management Plan, as amended September 9, 2003. The process requires a developer to present a conceptual site plan to the Township's Planning Department and applicable roadway authorities. The roadway agency having jurisdiction will review the site plan and provide recommendations for driveway design, location, and spacing between adjacent intersections and other commercial driveways. Guidelines for driveway spacing within the Township are shown below.

POSTED SPEED LIMIT (MPH)	RECOMMENDED DRIVEWAY SPACING
30	125
35	150
40	185
45	230
50	275

Recommended Driveway Spacing Distances

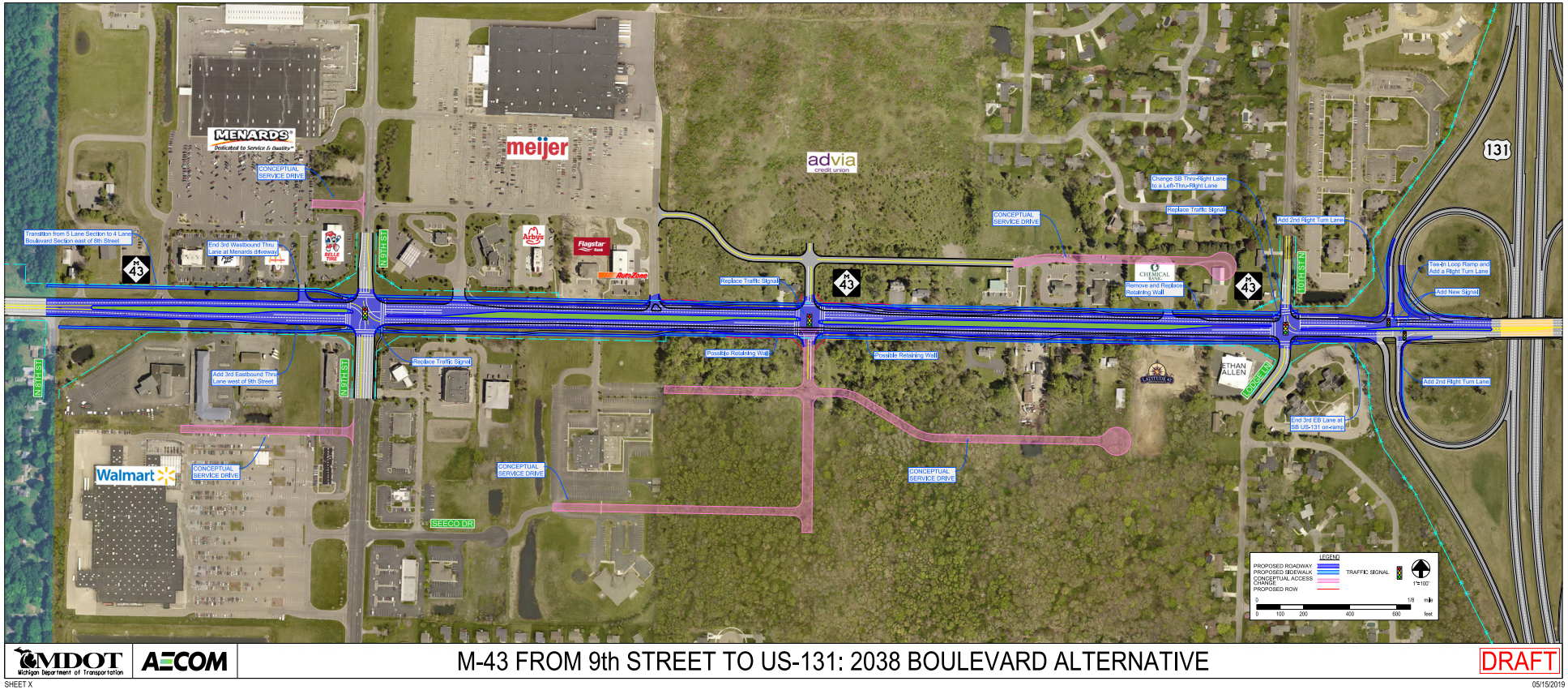
Existing commercial driveways within the Lodge Lane area do not satisfy the recommended criteria for spacing of a 50 MPH roadway. The 6025 West Main Street access driveway is located approximately 225 feet east of the 6101 West Main Street access driveway, less than the recommended spacing of 275 feet. A preliminary review of crash outcomes in the vicinity of the 6025 West Main Street access driveway indicates that seven crashes occurred in the past five years for which the cause may be partially attributable to the driveway location.

Because the existing driveway spacing does not satisfy the recommended guidelines, it is suggested that access consolidation be explored between commercial properties. The closure of the 6025 West Main Street access driveway would eliminate the spacing constraint, while reasonable access would be maintained to the property via the secondary driveway to Lodge Lane and the existing cross-access that is provided with the 6101 West Main Street property. If there are areas where it is desired to reduce curb cuts where the driveway spacing already meets the recommended guidelines, grants can be applied for to provide monetary incentivization.

FIGURE 8: PROPOSED ACCESS MODIFICATIONS

In addition to driveway closures and cross-access techniques, the use of medians in a boulevard cross-section also assists in managing turning movements and controlling access. West Main Street is proposed to have medians installed in 2032 to better manage access along the corridor and provide a gateway element into the Township.

This installation will improve safety as it will assist in reducing travel speeds, managing turning movements, and separating vehicle movements.



CONNECTIVITY

Increasing connectivity within the existing street network is a challenge in the Lodge Lane area, particularly for those wishing to complete a trip without a private vehicle. Currently, residents of Wood Hollow Drive seeking to complete a trip to the 6101 West Main Street property must utilize 9th Street and West Main Street – adding vehicle trips to busy roads already experiencing significant levels of congestion. In addition, there is not a connected, safe, or comfortable route for residents to access the business on foot or by bicycle. Additional gridded neighborhood streets would support further development, allow for more route choices, and reduce traffic by facilitating short, local trips.

TRAFFIC CALMING

Although improved connectivity is desired to increase accessibility to local destinations across all modes of transportation, it is also understood that more street connections may also lead to increased traffic on local residential streets. Additional design elements may be thoughtfully introduced to the residential system to restrict cut-through vehicular traffic and continue to allow full access for people walking and bicycling. These traffic calming elements may include, but are not limited to, curb extensions, traffic diverters or modal filters, and speed tables. [8]

[8] *Traffic calming devices should be designed using engineering best practices. Coordination with the Michigan Department of Transportation (MDOT), the Road Commission of Kalamazoo County, and acceptance of right-of-way acquisition from local property owners will be required to implement this plan.*

Installing traffic calming devices in the roadway will be contingent on the agency or association having jurisdiction over the proposed residential street network. It was rumored that owners of properties along Lodge Lane had deed restrictions preventing future use of the street as a right-of-way. While a full title search was not performed, a review of deeds for properties on the west side of Lodge Lane between Shadywood Drive and Club View Drive did not reveal any right-of-way restrictions.

Curb Extension

Modal Filter

GRADING

Several proposed street connections will require significant grading efforts to achieve a desired horizontal slope of 4% or less, as mentioned earlier. The two proposed connections to Lodge Lane would require modifications to existing slopes between 12% and 17%.

The additional excavation and stabilization work necessary to achieve desirable slopes on newly-constructed streets would likely significantly impact the cost of construction. Although alternative routing may be further investigated, the relatively significant topographical changes highlighted in the area, as well as the desire to appropriately align proposed streets with the existing network, will likely incur additional development costs.

PARKING

Requirements for off-street parking have recently been revised to incorporate parking maximums, which define the upper limit of off-street parking spaces that a private developer may provide. According to Oshtemo's zoning ordinance, revised in early 2025, a maximum of one parking space may be provided for every 300 sq. ft. of retail space. Although the ordinance removed provisions for parking reductions to properties with shared access to adjoining parcels, shared parking agreements may still be utilized between adjacent commercial destinations that feature variations in peak or operating hours. These agreements provide opportunities to better manage parking supply in areas of large demand.

Shared agreements require each business to mutually agree to an easement between properties as well as an understanding of cost share burdens in future maintenance obligations. This tool would allow maximum utilization for site expansion or minimize impervious surfaces in an area. For example, a good candidate of this approach may be the restaurant at 6101 West Main Street (Latitude Brewing) which heavily uses their on-site parking while 6025 W Main Street (Ethan Allen) seems to have different hours and parking space availability in the evenings.

The implementation of a parking maximum practice in Oshtemo is commended. Introducing parking maximums has been proven to optimize the amount of off-street parking provided by private developers, thereby reducing the amount of land covered by surfaces that are typically impervious, lowering the urban heat island effect, and reducing stormwater runoff and storage volume requirements.

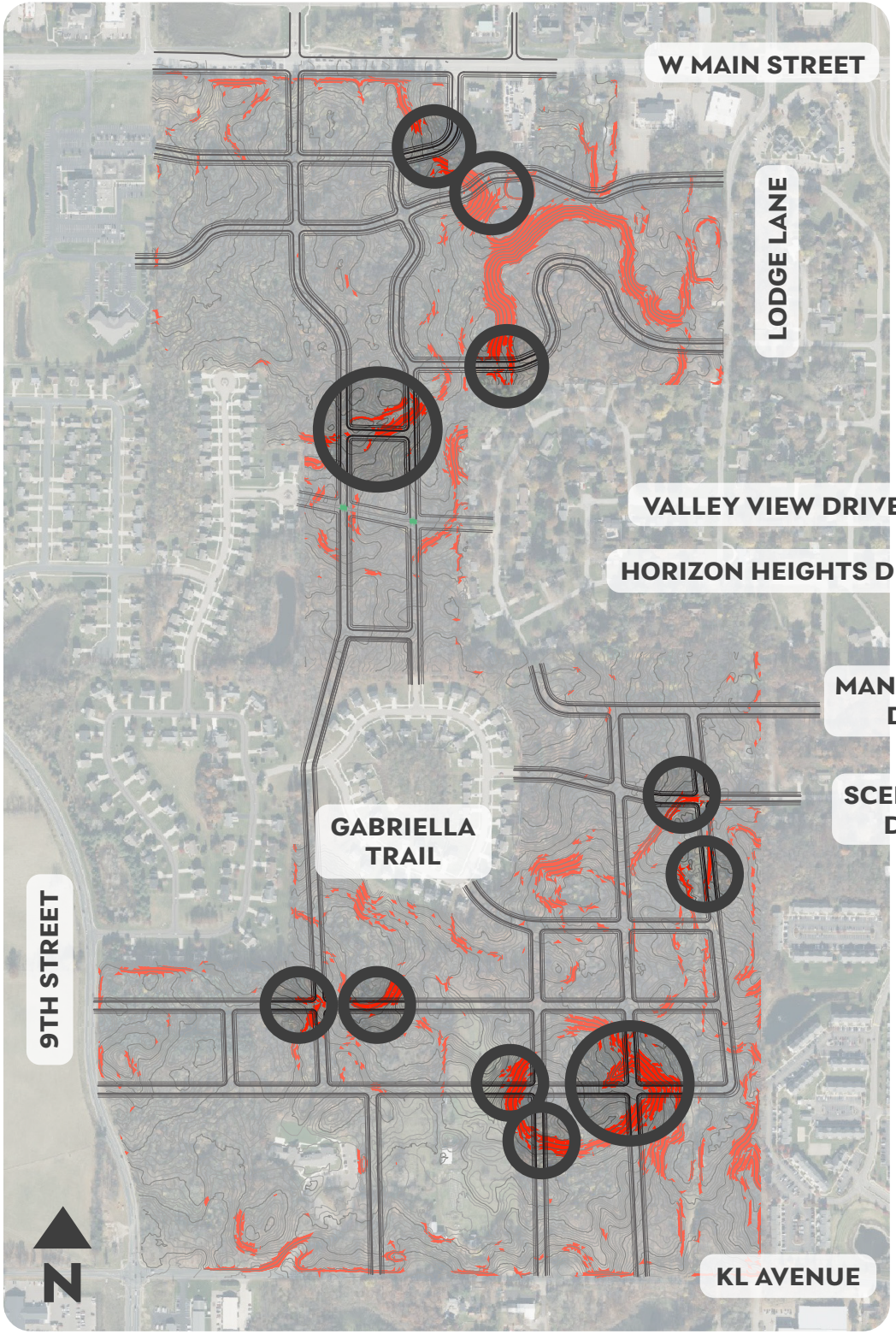


FIGURE 9: AREAS OF GREATEST GRADING IMPACT

LEGEND

- *Areas of Steep Slopes*
- *Areas of Greatest Grading Needed for Streets*

STORMWATER

Stormwater storage using regional ponds could facilitate a greater amount of developable land on a parcel than would otherwise be possible with individual on-site stormwater facilities, while also providing flood protection. For example, if the detention pond behind 6101 West Main Street (Latitude Brewing) could be eliminated with the installation of regional ponds, the restaurant could create an additional 20 parking spaces or expand the outdoor dining and entertainment space. This approach could also allow for more compact development in appropriate locations, such as along West Main Street, where transit service and commercial mixed-use are present.

Topography was analyzed to determine the potential for regional stormwater ponds. This was performed by identifying regional low areas and sizing ponds to address the runoff to each area. As shown in Figure 10, the opportunity for regional ponds were identified throughout the area (shown in blue). To determine the low end and high end of development capacities for the area, the capacity of the ponds was tested against:

- Compact (high-density) development patterns using the 25-year, 24-hour storm as defined by National Oceanic and Atmospheric Administration (NOAA) Atlas 14 for Kalamazoo County. [9]
- Low-density development patterns using the 100-year, 24-hour storm as defined by National Oceanic and Atmospheric Administration (NOAA) Atlas 14 for Kalamazoo County. [10]

[9] *Calculations for the 25-year, 24-hour storm have been generated, and a summary table can be provided upon request.*

[10] *Calculations for the 100-year, 24-hour storm have been generated, and a summary table can be provided upon request. Oshtemo stormwater management standards require that a stormwater system be designed to provide sufficient capacity to accommodate a 100-year storm as defined by the National Weather Service (NWS), which is NOAA Atlas 14. Although a time period is not defined, the 24-hour storm is the typical reference.*

Given the diverse soil conditions and slopes, an alternative method to develop the area is to base it on soil conditions. On Figure 2, the soils shown in bright yellow are generally the Type A soils with slopes of less than 12% percent. Type A soils are predominantly variations of sandy soils and sandy loams. These offer the best infiltration and lowest runoff rates. Under these conditions, approximately 25 percent of the site can be utilized for private development, while 50 percent remains for impervious surfaces. Twenty-five percent of the site could be utilized by buildings, driveways, and parking, while 25 percent of the site would accommodate streets, sidewalks, and stormwater detention. This is generally based on a 3-foot deep detention pond. If retention, allowing for infiltration of the stormwater into the underlying soils, was utilized, up to 31 percent of the site could be used for buildings, driveways, and parking. As noted, however, the soils information shown in Figure 2 represents general soil conditions. Clay pockets have been found in the area and soil borings must be performed to verify existing conditions.

However, given the steep slopes and wooded land restrictions, compact development clustered to preserve greater areas of sensitive natural areas would assist in providing balance to the area and reduce the overall footprint of development instead of simply having large lot development. This development form would be a good way to meet the objectives of the Neighborhood Residential Place Type, protect natural features, and meet stormwater requirements. This form of development is recommended over standard dispersed lot subdivisions.

Creating regional stormwater facilities would require coordination with MDOT (in the area around West Main), the Kalamazoo County Drain Commissioner, and local property owners. In addition, soil borings should be performed before entering full design of any development project to ensure that localized pockets of poor soils would not prohibit implementation of a regional stormwater approach in targeted locations.

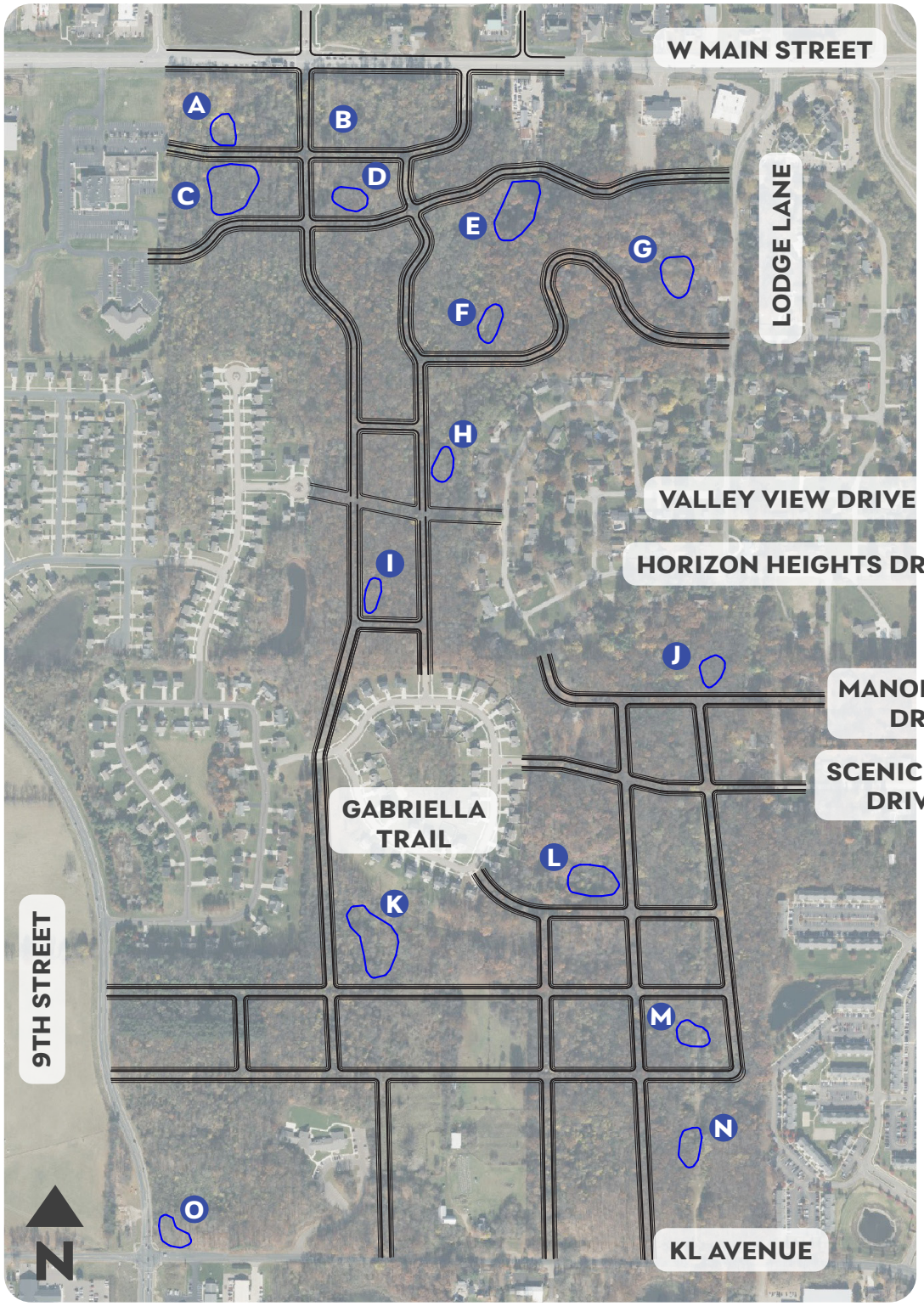


FIGURE 10: REGIONAL STORMWATER PONDS

LEGEND

X *Detention Pond*

What is a cluster development?

A residential cluster, or open space, development allows flexible design concepts and smaller lots. Residential units are grouped on a development site and the remaining land is held as open space or shared common areas. It may be used where a site has significant natural or environmental features, or where the developer wishes to provide unique amenities that would enhance the area. The advantages of cluster development include reduced infrastructure costs, efficient use of land, optimal stormwater management, and a greater sense of belonging with nearby neighbors.

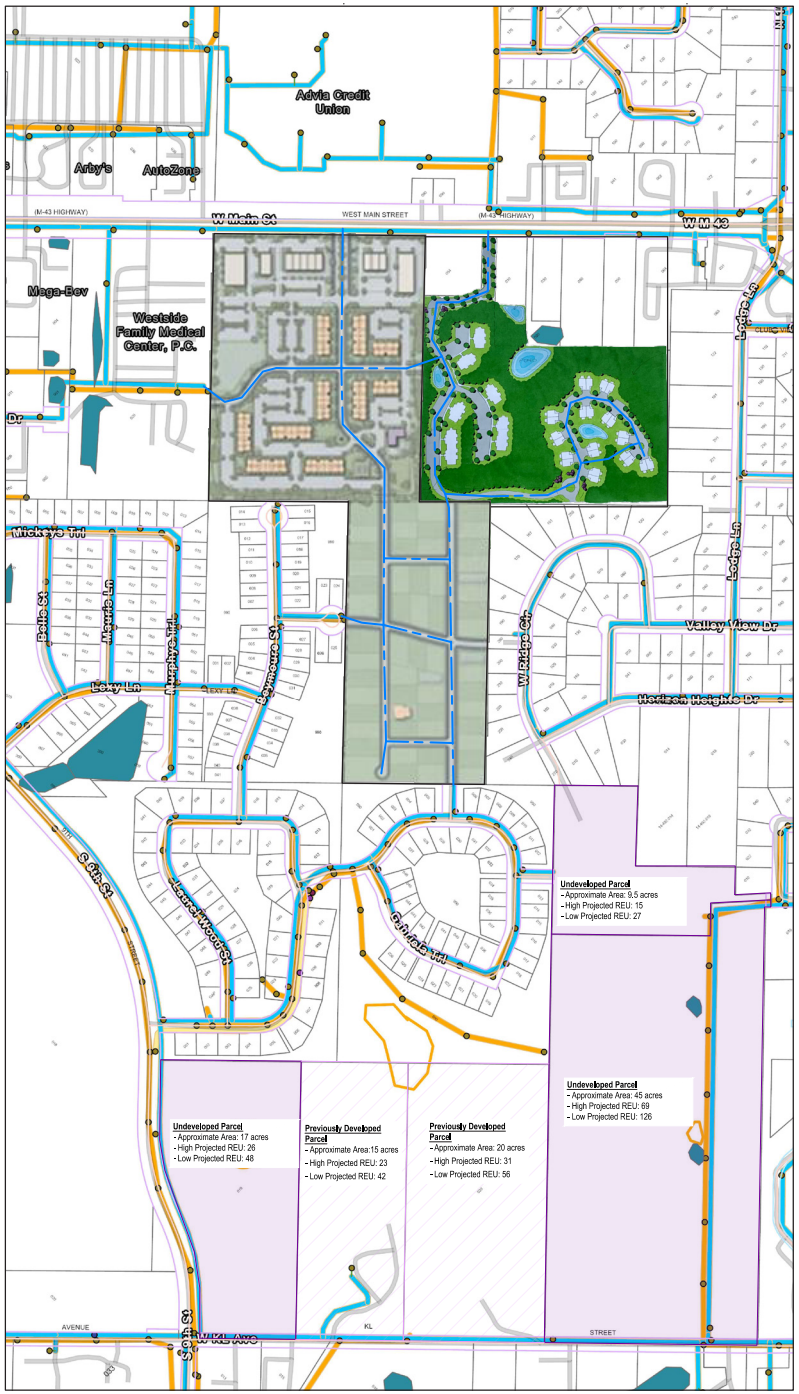
Example: Conservation Subdivision Design; Manitoba

SANITARY SEWER

Although site slopes are a challenge, a sanitary sewer can be provided to support development in the area. Slopes would likely need to be reduced to allow for gravity drainage rather than costly lift stations. A proposed sanitary sewer layout is presented in Figure 12. This preliminary design determined that there is sufficient drop across most of the area to accommodate a sanitary sewer line successfully.

Final site grading will likely solve the following two issues, but they should be noted. The area's natural contours are a challenge. There is also an anticipated issue of having sufficient soil cover over the pipe near the end of Point A, shown in Figure 12.

Residential Equivalent Units (REUs) are utilized to estimate the demand on a system. The low and high projected REU counts are based upon the density of currently developed parcels and the projected development of new parcels. All conversions are based upon single detached units and do not consider large apartment buildings. The low projected REU conversion is 1.53 REUs/acre and the high projected REU conversion is 2.80 REUs/acre. The main design factors that will influence the density of REU include housing type, lot size, and stormwater management.



POTENTIAL WATER MAIN LAYOUT

NORTH 1"= 300' 0 300'

FIGURE 11: POTENTIAL WATER MAIN LAYOUT

WATER MAIN NOTES:

1. ALL WATER MAIN SIZING WILL NEED TO BE DETERMINED IN FUTURE DESIGNS.
2. APPROXIMATE 9,700 FT OF WATER MAIN WOULD BE REQUIRED IN THE CURRENT LAYOUTS.
3. THE EXISTING CONNECTION POINTS ALLOW FOR GOOD LOOPING OF THE SYSTEM.
4. NATURAL CONTOURS CURRENTLY WILL CAUSE WATER MAIN TO BE EXPENSIVE BECAUSE OF ROUTING. ITS LIKELY THAT THE FINAL SITE DESIGN IN THIS AREA WILL ALSO SOLVE THE ISSUE.

PROJECTED REU NOTES:

1. THE LOW AND HIGH PROJECTED REU COUNTS ARE BASED UPON THE DENSITY OF CURRENTLY DEVELOPED PARCELS AND THE PROJECTED DEVELOPMENT PARCELS.
2. ALL CONVERSIONS ARE BASED UPON SINGLE FAMILY HOUSING AND NO MULTI-FAMILY.
3. LOW PROJECTED REU CONVERSION: 1.53 REU/ACRE
4. HIGH PROJECTED REU CONVERSION: 2.80 REU/ACRE
5. MAIN DESIGN FACTORS THAT WILL INFLUENCE THE DENSITY OF REU INCLUDE:
   - 5.1. HOUSING TYPE
   - 5.2. LOT SIZE
   - 5.3. STORM WATER MANAGEMENT

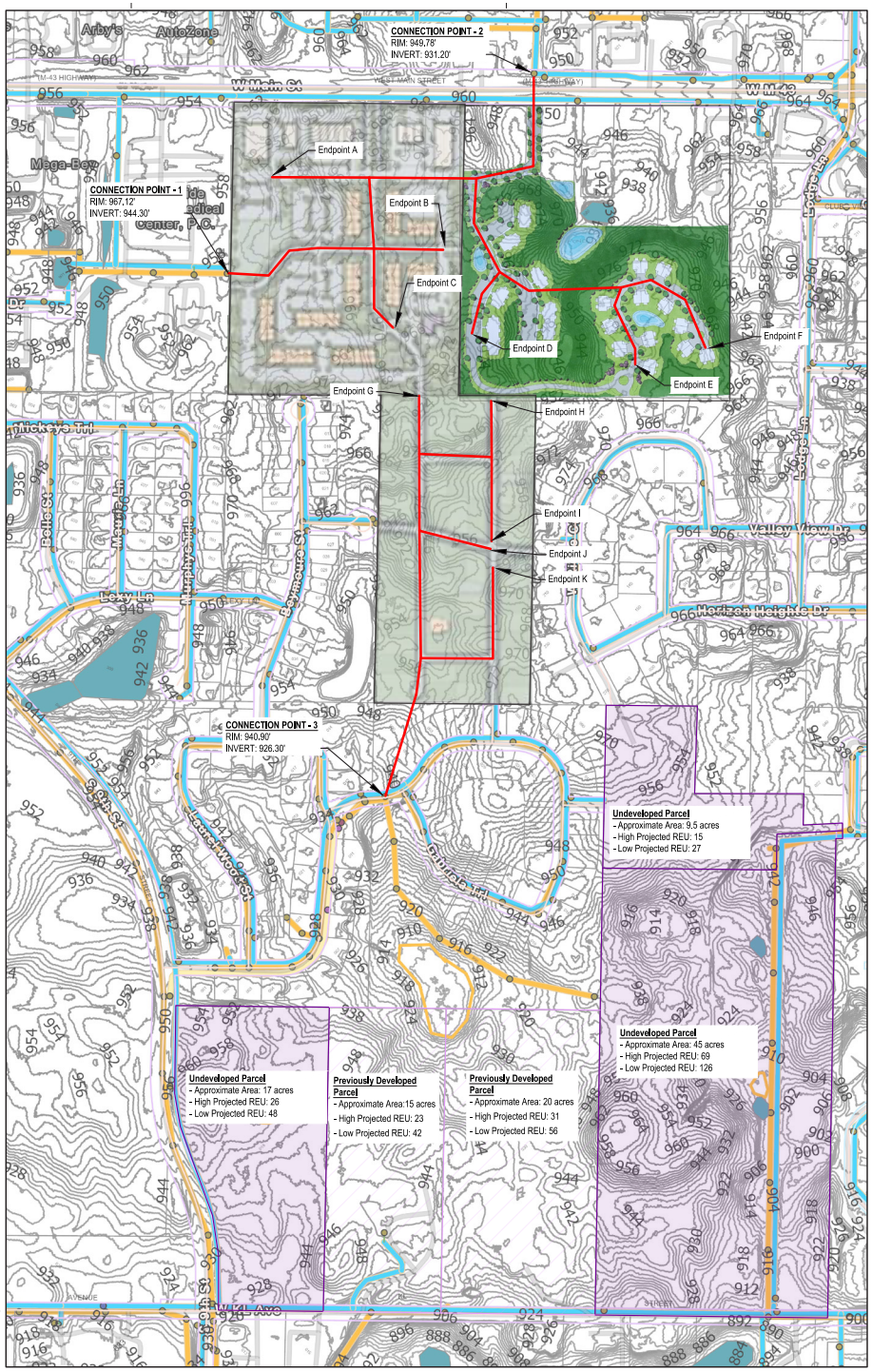


FIGURE 12: POTENTIAL SANITARY SEWER LAYOUT

SANITARY SEWER NOTES:

1. THERE IS SUFFICIENT DROP ACROSS A MAJORITY OF THE SITE TO ACCOMMODATE SANITARY SEWER.
2. SEWER SLOPES ABOVE 10 STATE STANDARDS MINIMUM SHOULD BE DESIGNED FOR COST SAVINGS IN EVENTUAL DESIGN.
3. THERE IS AN ISSUE OF COVER NEAR END POINT A THAT CAN BE FIXED WITH GRADING, ITS LIKELY THAT THE FINAL SITE DESIGN IN THIS AREA WILL SOLVE THE ISSUE.
4. NATURAL CONTOURS CURRENTLY ARE A DETERRENT TO THE SEWER LAYOUT. ITS LIKELY THAT THE FINAL SITE DESIGN IN THIS AREA WILL ALSO SOLVE THE ISSUE.

Connection Point	End Point	Assumed Sanitary Pipe Size (In)	Starting Invert	Approx. Length to Endpoint (Ft)	Required Pipe Slope (ft/100 ft)	Required Minimum Ending Invert	End Rim Elevation (Approx)	End Cover (Ft)
1	A	8	944.30	1400	0.40	949.90	950.00	0.10
	B	8	944.30	975	0.40	948.20	963.00	14.80
	C	8	944.30	1060	0.40	948.54	967.00	18.46
2	D	8	931.20	1360	0.40	936.64	970.00	33.36
	E	8	931.20	1970	0.40	939.08	972.00	32.92
	F	8	931.20	2135	0.40	939.74	970.00	30.26
3	G	8	926.30	1740	0.40	933.26	968.00	34.74
	H	8	926.30	2045	0.40	934.48	962.00	27.52
	I	8	926.30	2160	0.40	934.94	958.00	23.06
	J	8	926.30	1475	0.40	932.20	956.00	23.80
	K	8	926.30	1315	0.40	931.56	961.00	29.44

POTENTIAL SANITARY SEWER LAYOUT

NORTH 1"= 300' 0 300'

IMPLEMENTATION

Development in this Special Study area will be largely dependent upon the ability to construct a street network that provides access to the interior of the West Main/KL/9th Street/Lodge Lane superblock. Changes to local land development regulations will likely be required to facilitate the logical and orderly development of this area, which has been identified for new homes and businesses by the 2045 Oshtemo Comprehensive Plan.

The availability of public infrastructure, major roads, transit, and existing development that includes a Meijer store, Walmart, chain restaurants and retailers, health care, and other services along West Main Street and in the general vicinity make this a desirable location to focus development rather than encourage new construction in the western portion of Oshtemo (the Countryside Residential Place Type). Partnerships, too, will be required to facilitate implementation of the proposed development framework contained in this special study.

SUGGESTED ORDINANCE MODIFICATIONS

Several areas of improvement were identified in Township ordinances during the process of conducting this special study. While the specific issues identified apply to this study area, it is recommended that they be evaluated for the entire Township, with the potential exception of the Natural Features Protection District.

The following changes should be looked at in conjunction with the Comprehensive Plan's recommendations to create a connected, gridded street network; provide a variety of different housing types; foster a vibrant, mixed-use walkable community; and design a community where everyone belongs.

Specific ordinance changes should be examined to the ***Subdivision and Site Condominium Design Layout Standards*** (Ordinance 290.008.), Natural Features section (Outside of the Natural Features Protection District).

Slopes

Observation

Steep slope requirements are highly restrictive, starting with only allowing the removal of 50% of vegetation on slopes from 12% to 18% and no clearing of land where slopes are greater than 18%.

Suggestions

- A more common standard in many ordinances is that the removal of vegetation or disruption of areas with a 20% or greater slope is not permitted.
- This criterion should be used outside of the Natural Features Protection District, unless the Township feels that the same requirement could apply throughout the Township.
- A modification to consider would be to allow the clearing of vegetation after site-specific soil types have been determined, and an understanding of existing vegetation to be retained is documented. Many municipalities regulate the clearing or removal of vegetation according to land area. For areas of one acre or greater, and for any clearing within 500 feet of a natural water body, Federal Soil Erosion and Sedimentation Control requirements apply. A permit would need to be obtained regardless. Federal requirements also require stabilization practices during and after construction. This change would not be expected to pose a significant increase in the risk of slope instability during or after construction.

Water Resources – Buffers

Observation

Upland buffer requirements for all developments adjacent to a water resource are 50' to the ordinary high water mark or 70' to the delineated edge of any wetland or floodplain. These numbers do not offer flexibility beyond the installation of low-impact walkways and paths. The way the ordinance is written, it could preclude the installation of a native buffer strip/riparian buffer or the use of natural shoreline restoration techniques during development because those activities could be considered disruptive. Road or utility crossings, likewise, may need to occur, and no exceptions are provided. Unique site conditions may present another condition that requires accommodation.

Suggestions

- Flexibility in these requirements is suggested, with Administrative Approval allowed by either staff or the Planning Commission. Standards can be set to assist in guiding decision-making about exceptions.
- Provisions could be added to allow a decrease in required setbacks, using native planting and low-impact development techniques as an incentive to developers while increasing native plantings and providing natural filtration and infiltration to protect the natural feature.

Water Resources – Connections

Observation

Wetland connectivity requirements are ambiguous. It cannot be determined whether the provision pertains to habitat/wildlife connectivity or hydraulic connectivity.

Suggestions

- It is recommended that the provision's intent be determined and the ordinance clarified.
- Per the State Attorney General, a local municipality must use the same wetland definition as the State, although they can regulate a smaller size. Specific buffers to protect wetlands cannot be applied (although they can be for surface water and other natural features). Determination of exactly what the Township is looking to require will assist in determining the best way to meet the requirements in conjunction with State law.

Trees

Observation

The current ordinance states that "all trees 12 inches in diameter at DBH outside of wooded areas and in good health shall be identified on a subdivision plat or site condominium plan. Prior to the consideration of tree removal, the proprietor shall investigate alternative plans that would allow for tree preservation. These alternatives shall be discussed with Township staff for consideration. If no viable alternative exists, the proprietor shall replace the tree elsewhere on the site at a ratio of one (1) caliper inch for every one (1) caliper inch of the tree removed."

There is no discernment between quality trees (Oaks, Beech, Sycamore) and invasives or less desirable stock (Cherry, Tree of Heaven, Norway Maples). This is an onerous requirement for large sites, as developers have observed. Given the number of wooded locations in the study area, it could be prohibitive to a developer, especially prior to seeking Planning Commission approval. The question can also turn into a negotiation.

Recommendations

- A tree ordinance to protect quality trees could be written. The ordinance could offer tree preservation incentives by giving credit for existing quality trees to meet landscaping and buffer requirements.
- The percentage of expected tree canopy by zone district could be developed to focus on the replacement of older tree stock where development occurs, rather than trying to save existing trees that may die due to construction activity.
- Trees are important component for traffic calming, providing shade to increase pedestrian comfort, and increase curb appeal. Tree planting requirements should be introduced for street trees.
- Tailored approaches, not a "one size fits all" approach, are needed to demonstrate rough proportionality—showing a relationship between the tree requirement and the anticipated impact of the proposed project on the area, according to the Sixth Circuit Court of Appeals (F.P. Development, LLC v. Charter Township of Canton).

Stormwater

Storm Water 100-yr storm defined by NWS, change to NOAA Atlas 14

Observation

Township stormwater ordinances are ambiguous and have voids. There are currently areas in Oshtemo outside of the County Drain Commissioner's jurisdiction, and the Township does not hold a Municipal Separate Storm System (MS4) permit. Therefore, there are no current State or Federal stormwater requirements. Current Township rules appear to only address flood protection.

Recommendations

- Standard provisions in most stormwater ordinances typically cover minimum requirements for water quality and channel protection. Also missing are flood requirements defining the duration of a storm event and recommended methods to determine compliance with the code.
- It is recommended that a study be performed to determine the extent to which the Township should regulate storm water and procedures to make design and review easier of permit applications.
- With the recommendation of the Regional Detention Ponds, the ordinance should be revised to include requirements for regional stormwater facilities, including easements and maintenance agreements.
- In general, maintenance agreements for the stormwater system should be added to assist enforcement in the event that a system has been left unmaintained or to ensure that the system is not modified after obtaining occupancy.

LEVERAGING CODES

Oftentimes, a win/win/win scenario can be developed as the Township addresses natural features and stormwater management. There are instances where working to achieve one objective can actually achieve multiple objectives. Here are a few examples:

- Green Infrastructure incentives can be integrated into open space, porous surface, or green space requirements to improve the water quality of stormwater discharge while providing unique site features. For example, a community may have a "greenspace" requirement to ensure that an entire commercial lot is not paved over. The definition of greenspace could include a green roof, planters, a green wall, bioswale, or porous pavers that offer pre-treatment for stormwater before being discharged.
- Tree protection and stormwater requirements can be used jointly to encourage tree protection on-site. Existing trees can receive stormwater storage credit for their water uptake. Planting trees, particularly water-loving trees, could lower stormwater requirements. The planted trees would be considered part of the stormwater system that should be maintained under a maintenance agreement.

STAKEHOLDER COORDINATION

Coordination with the Michigan Department of Transportation (MDOT), the Road Commission of Kalamazoo County (RCKC) and local property owners will be required to implement this plan. The RCKC maintains jurisdiction over all public roadways within the study area with the exception of state-owned routes, including 9th Street, KL Avenue, and Lodge Lane. Within the study area, MDOT owns, maintains, and operates US-131, a limited-access freeway, and M-43 (West Main Street), a full-access urban arterial.

MDOT and RCKC define standards for all public roadways within the Township and generally do not fund non-motorized facilities, although sidewalks or shared-use paths are typically allowed within the road right-of-way (ROW) if funding and maintenance is provided by another agency or body. Curb ramp facilities may be provided by MDOT or RCKC at intersections.

Oshtemo's Master Streets Plan and Transportation and Mobility Ordinance both strongly encourage a context-sensitive approach to facility design to decrease the amount of fatal and severe crashes in the community. These documents challenge the status quo "business as usual" approach that is typical of RCKC and MDOT practice. An educational effort is necessary to change the outdated mindset of transportation facilities design.

Coordination with local property owners would be required to ensure appropriate street connections are provided within the subarea during the development process, which may require ROW acquisition. Standard procedure for ROW acquisition, including a land survey, ROW plan and plat preparation, property appraisals, and acquisition, would need to be followed to complete proposed connections through existing private property.

CONCLUSION

Oshtemo Township is seeking to be proactive in managing change within the community. Anticipating the need for new streets, a regional approach to stormwater management, and the construction of cluster neighborhoods in amenity-rich locations are key strategies to continue to assure investment in areas where utility and transportation infrastructure is already present and to minimize growth impacts on the western half of the Township (Countryside Residential Place Type).

The lack of connectivity in the Lodge Lane study area raises concerns about public safety, as more than 100 homes can be accessed by only one road. Natural disasters, an incident on West Main Street, or other unfortunate events could make it nearly impossible to reach some homes in the event of an emergency. The benefits of a connected network are many, but a redundant system that enhances public safety is the most crucial of all.

This special study illustrated the challenges associated with building in Oshtemo. Soil types make stormwater management difficult, given the large variations in strata. Hills and valleys, particularly combined with soil types, raise concerns about slope stability and erosion. Environmental conditions will influence development over time in this area and should not be overlooked to avoid future problems.

Innovative approaches, such as the use of green infrastructure and the development of regional stormwater facilities, can help mitigate some of these challenges. Zoning and subdivision standards should be reviewed to accommodate flexible approaches for managing environmental conditions. This Special Study provides a number of different solutions and implementation strategies to ensure that Oshtemo truly becomes ***"a community designed for everyone."***