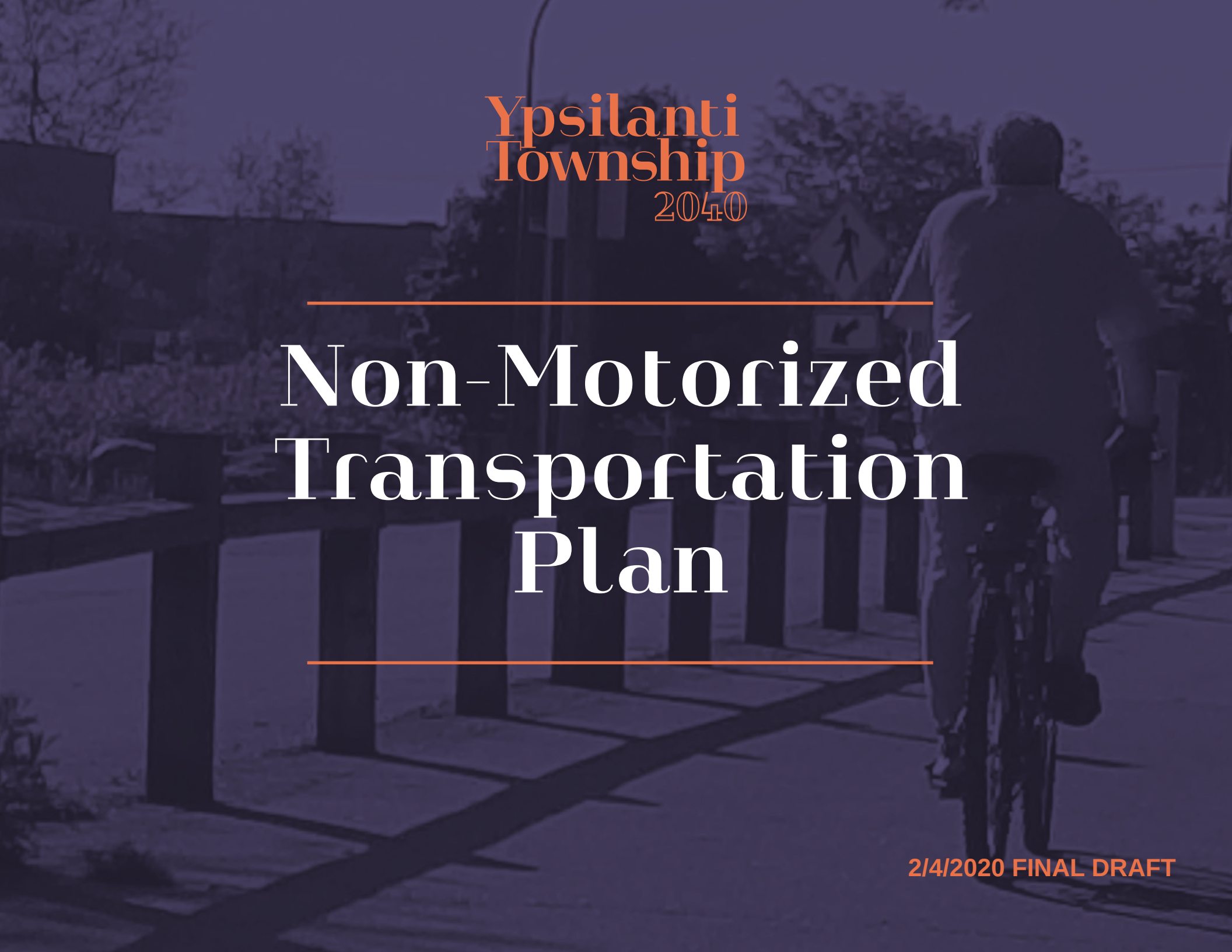

Ypsilanti Township 2040

Non-Motorized Transportation Plan

2/4/2020 FINAL DRAFT

ACKNOWLEDGMENTS

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with assistance from

Carlisle Wortman

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Executive Summary

Ypsilanti Township is at a critical juncture in its history. The once sleepy community is rapidly changing and growing; rural landscapes are giving way to suburban developments, industrial bedroom neighborhoods are looking to their past for guidance on how travel to school, places of worship, work, and shopping, and suburban-style commercial districts are struggling to attract patrons on overburdened streets. As more residents are attracted to the Township on a daily basis, the common theme is a desire for walkability, and the chance to leave the car behind, even if only on occasion, as they go about their daily routine.

Ypsilanti Township is in both a difficult and enviable position as they look to develop non-motorized systems across the community. The Township can boast of over 30 miles of multi-use trails, nearly 10 miles of bike lanes, and well over 200 miles of sidewalks. Some portions of the Township are so highly developed that adding new features will take significant reconfiguration. Other areas remain relatively open, and trail development simply requires the will to make it happen. Most interestingly, the natural features of the Township, including over 5 miles of public lakeshore and riverfront access, provides an opportunity to develop multi-modal transportation options that few other communities can consider.

This Plan will look at existing conditions in the community, identifying how development patterns on both a local and regional scale have impacted non-motorized facility development.

From there, the Plan will review local, regional, and state planning efforts to see how trail development in Ypsilanti Township fits with the surrounding system and future plans for development.

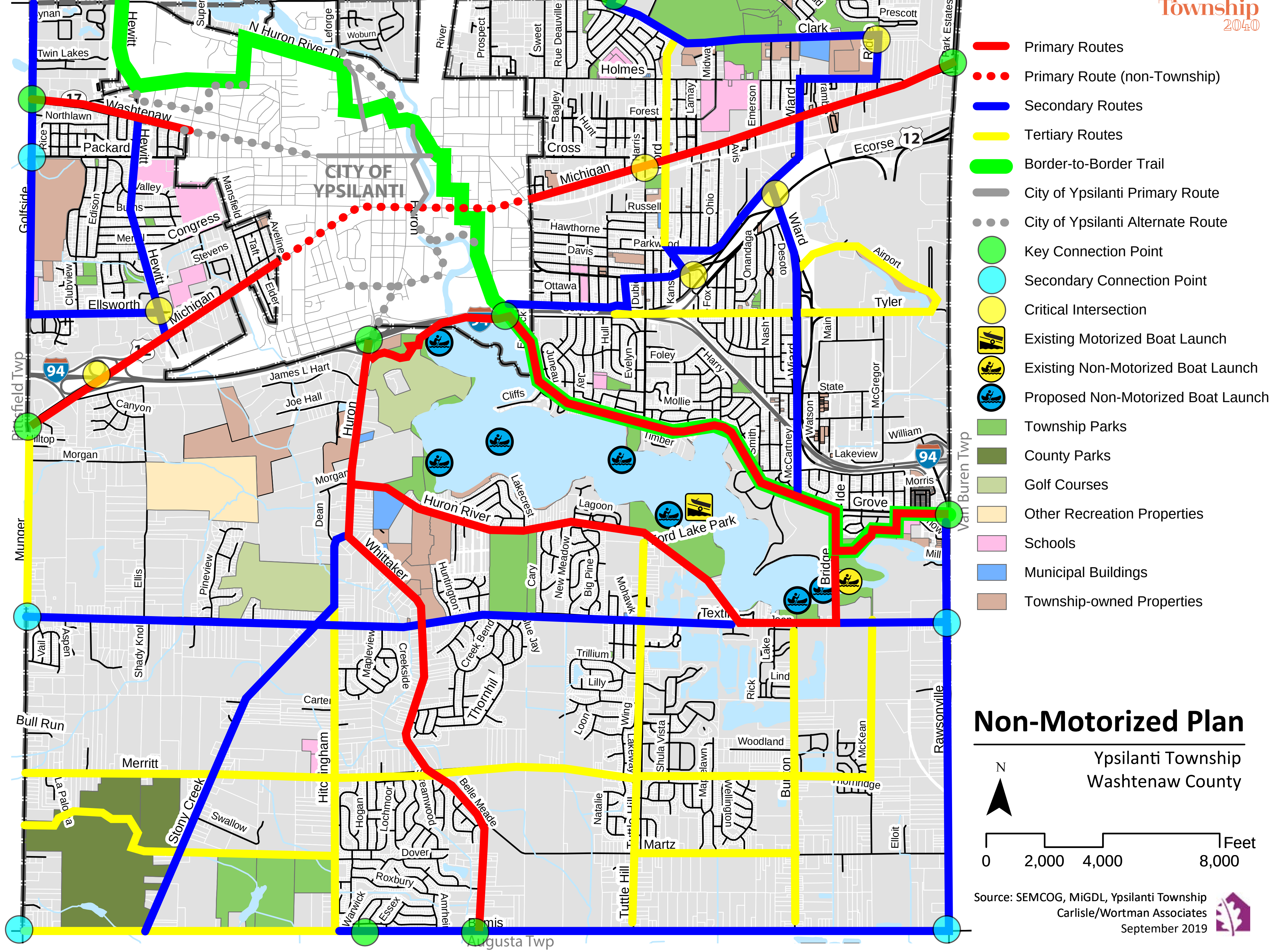
Next, each section of the community will be examined and a vision for non-motorized development will be provided. The Plan strives to create a vision that is practical and financially attainable. It will identify priority projects and lay out the opportunities and challenges each segment will face. The Plan will also address the scope of each project and anticipated costs, using 2019 cost estimates as a reference point.

Finally, the Plan will provide suggestions for strategies to help with implementation of the vision.

Going forward, it will be important to treat this Plan as a living document. The recommendations are based on conditions that existing in 2019; situational changes that cannot be anticipated now can have dramatic impacts on development in the future. The Township should review the Plan on a regular basis and make adjustments as needed to reflect on-the-ground realities in specific areas and across the region.

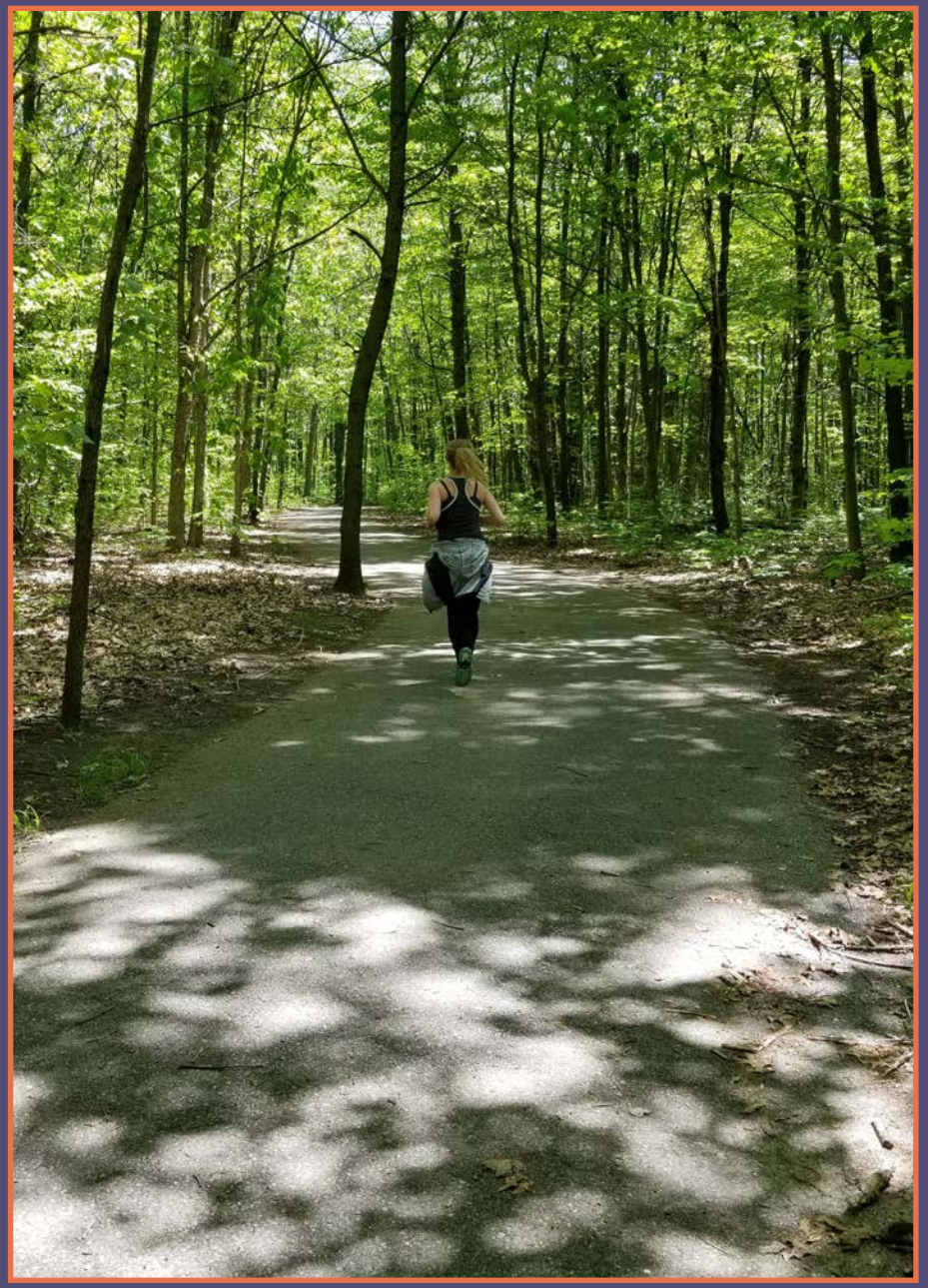

Pathways at North Hydro Park

Figure 1. Ypsilanti Township Non-Motorized Plan



Bike trail on EMU Campus
Image Source: YpsiIsReal.com

Ypsilanti Township Non-Motorized Plan



A jogger utilizing the multi-use trails at Ford Heritage Park.

Vision, Goals & Objectives

Ypsilanti Township's vision for non-motorized transportation is:

Make the utilization of non-motorized transportation a safer, easier, and more enjoyable option for residents to use as they go about their daily lives.

Four principal goals are identified to achieve this vision:

1. Network development
2. Regulations and maintenance
3. Education, encouragement, and enforcement
4. Funding, coordination, and implementation

Goal 1: Develop an interconnected network of pedestrian and bicycle facilities to support bicycling and walking as viable transportation modes.

- Provide safe travel to key destinations including residential areas, schools, parks, commercial districts, and community facilities.
- Provide a well-defined separation of pedestrians, bicycles, and cars on major streets with the use of designated bicycle facilities including off-the-road and on-the-road pedestrian and bicycle accommodations.
- Coordinate the provision of pedestrian and bicycle facilities such as bike lane striping during road resurfacing or reconstruction work.

Goal 2: Incorporate the Non-motorized Plan recommendations into Ypsilanti Township's planning processes, ordinances, and plans.

- Incorporate the Non-motorized Plan into a Township Complete Streets ordinance.
- Incorporate the Non-motorized Plan into Ypsilanti Township's 2040 Master Plan and Parks & Recreation Master Plan.
- Review and modify sidewalk and street standards to accommodate pedestrian, bicycle, and vehicular uses and to meet guidelines.
- Incorporate bicycle parking requirements into zoning ordinance regulations for non-residential development.
- Develop a uniform signage and way finding system for the non-motorized network to identify pedestrian and bicycle facilities as well as destinations and community facilities.
- Identify and designate pedestrian and bicycle routes and create a map for distribution.

Goal 3: Promote bicycling and walking in Ypsilanti Township by improving awareness of bicycle and pedestrian facilities and opportunities.

- Develop a safety and education campaign targeting pedestrians, bicyclists, and motorists to raise awareness of the system and encourage its appropriate use.
- Coordinate with the Ypsilanti Township Parks Commission and community organizations to develop and/or strengthen pedestrian and bicycle education programs which would teach safety skills such as bike rodeos, bike classes, and individual training.
- Promote bicycling as transportation to and from schools.
- Support and encourage participation by all Ypsilanti Township-area schools in the federal Safe Routes to School Program.
- Work with the Ypsilanti Township Police Department to raise awareness of the non-motorized plan and encourage enforcement of pedestrian, bicycle, and vehicular laws.
- Make bicycling and walking resources available through the Ypsilanti Township website.
- Apply to become a Bicycle Friendly Community (BFC) through the League of American Bicyclists' award program.

Goal 4: Ensure implementation of this plan.

- Convene a standing Ypsilanti Township Non-motorized Transportation Advisory Committee to focus on Plan implementation and obtain funding for projects and programs.
- Communicate and coordinate non-motorized projects and efforts with adjacent communities and county agencies.
- Continue to seek grant funding or other funding sources.
- Monitor and evaluate the effectiveness of non-motorized facilities.
- Consult the Non-Motorized Plan with all transportation projects.

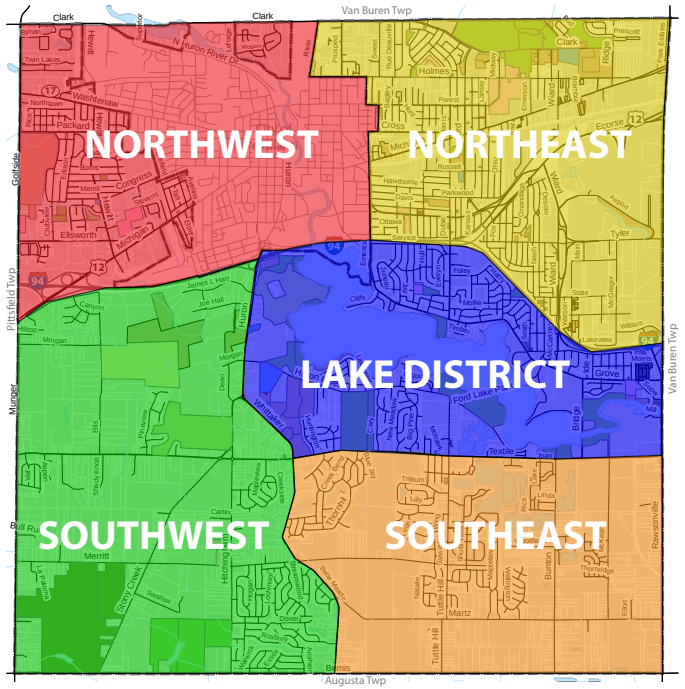
Township Quadrants

Ypsilanti Township can be roughly broken into five quadrants based on geography, physical components, housing stock, or other key distinctive features. Each quadrant presents its own unique opportunities and challenges. The goal of this plan is to create a trail system that stitches these disparate neighborhoods together into a cohesive whole. The neighborhoods, and their key distinctive features, are as follows:

- **Northwest:** The smallest area in terms of land mass, this section encompasses the City of Ypsilanti and many projects in this area would require cooperation between the City and Township. Neighborhoods are older, and non-motorized transportation facilities are dominated by sidewalks.
- **Northeast:** Like the northwest, the neighborhoods here are older and denser. The prime commercial corridors of Ecorse and Michigan Avenue, originally designed for automobile traffic, are beginning to be reimagined to encourage walkability. Freeways present formidable barriers to both motorized and non-motorized mobility. The new American Center for Mobility (ACM) is a huge game changer, representing an influx of new residents and workers, and necessitating creative methods of bypassing barriers.
- **Southwest:** An interesting mix of rural and suburban character, the southwest quadrant retains much of its agricultural heritage. It contains some of the Township's premier recreation destinations. New developments provide opportunities to expand the non-motorized network at little to no cost to the Township.
- **Southeast:** The southeast quadrant has seen some of the most intensive housing development in recent years. As these subdivisions were developed, they were required to incorporate non-motorize facilities into their plans. The southeast quadrant is the prime connecting point to rapidly developing Van Buren Township in Wayne County, and to school facilities in Augusta Township to the south.
- **Lake District:** The downtown of Ypsilanti Township, the Lake District is dominated by Ford Lake, numerous parks, the Ypsilanti Township governmental offices, and the rapidly developing commercial corridor along of South Huron Street and Whittaker Road.

A comprehensive non-motorized plan and detailed plans for each quadrant is provided on the following pages.

Figure 2. Ypsilanti Township Quadrants



Girls walking the trails at North Bay Park. Image Source: Heather Roe

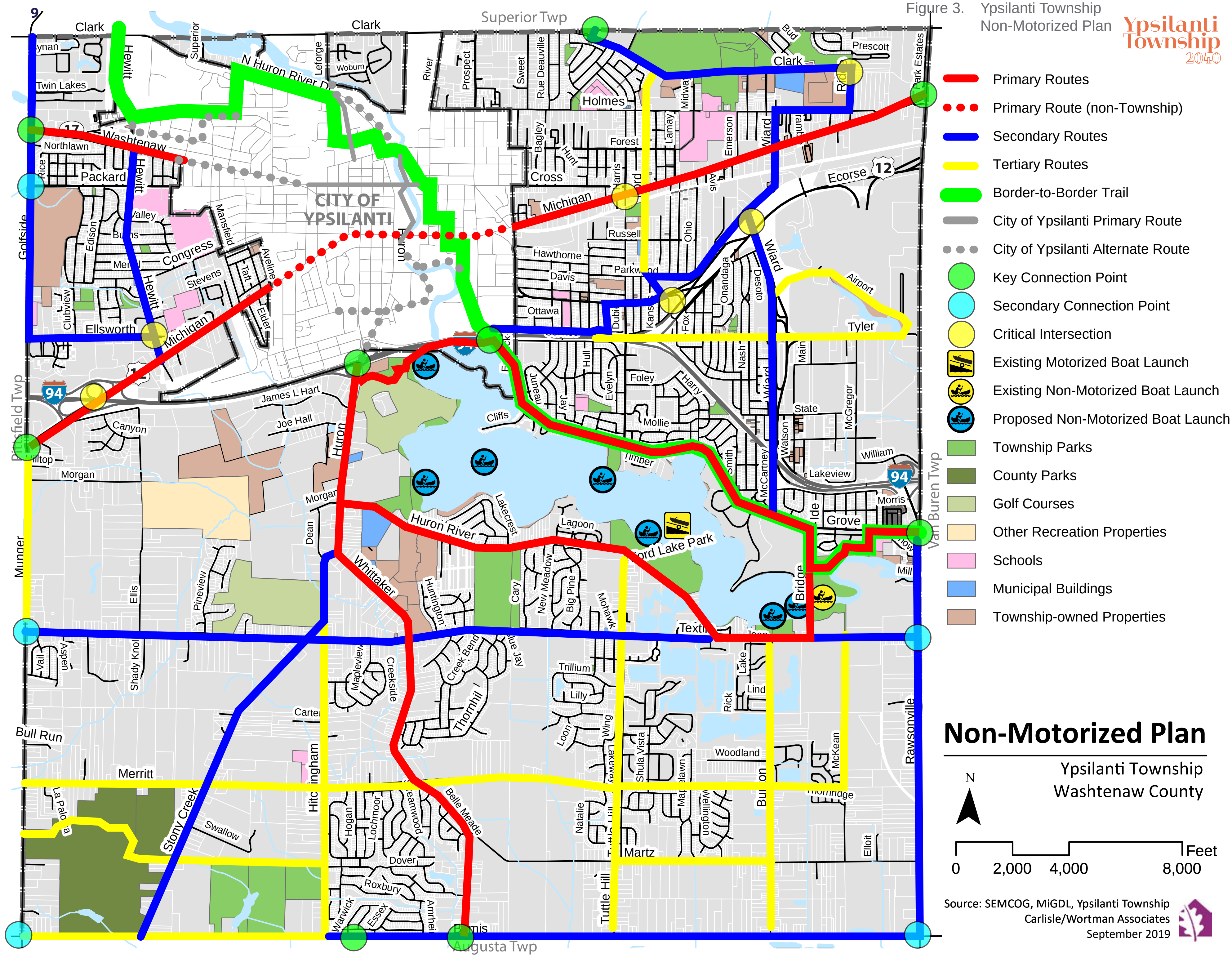


Figure 3. Ypsilanti Township Non-Motorized Plan

The Non-Motorized Plan relies on a hierarchy of trails, pathways, and sidewalks that will enable Township and area residents to move freely throughout the community with minimal disruptions. While these routes are designated as primary, secondary, and tertiary routes, a route designation does not necessarily describe the type of non-motorized facility used. Instead, these designations provide the Township with a loose platform which can be used to prioritize development projects.

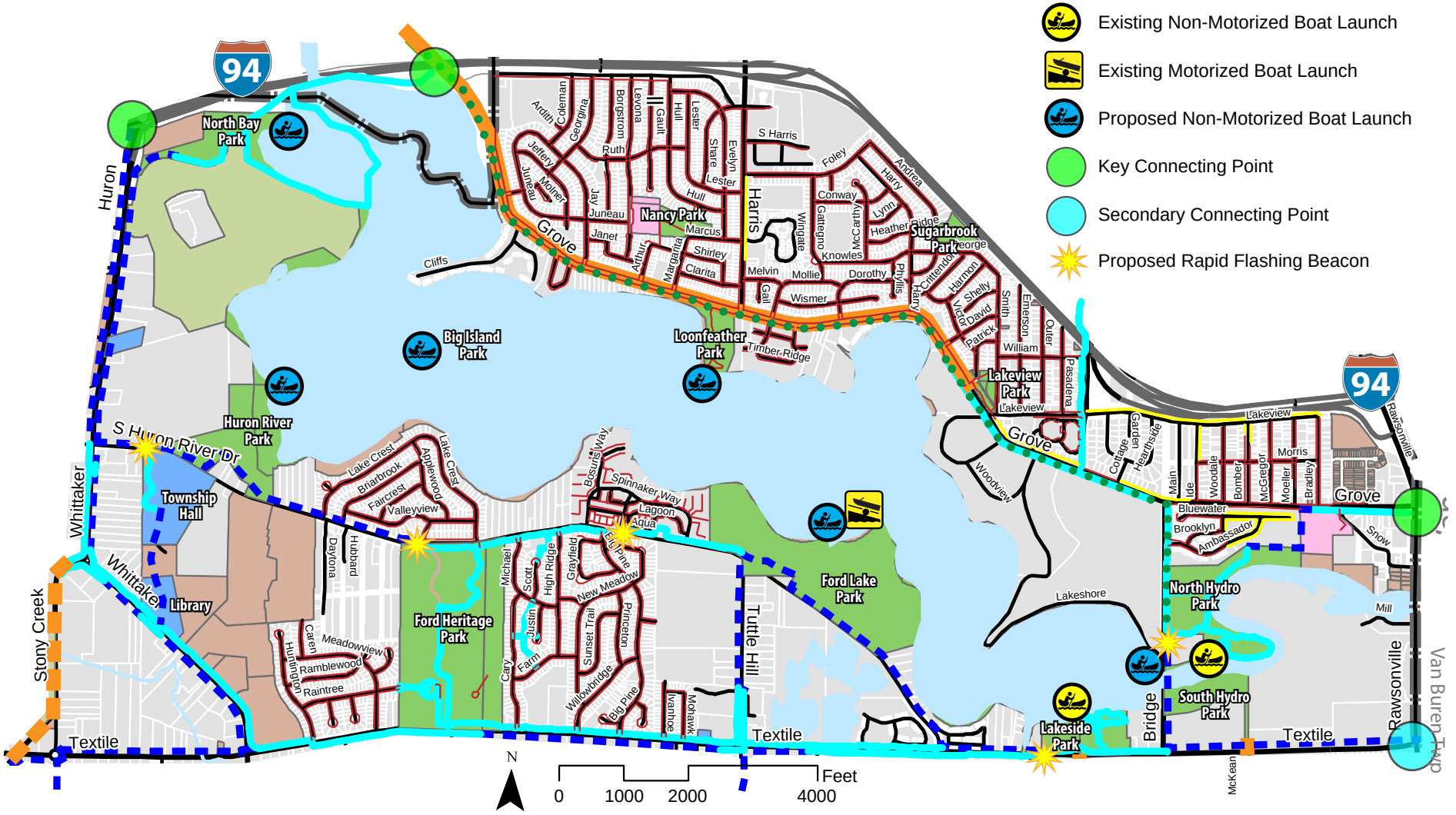
With this in mind, there are four prime routes, described as:

1. **The Lake Loop** which utilizes multi-use paths to connect the Civic Center, parks, and Ford Lake via Huron River Drive, Bridge, Grove, and South Huron Streets;
2. **Whittaker Drive** which extends south from the commercial district to the Lincoln Community School District campus;
3. **The Michigan Avenue Corridor**, which uses sidewalk networks, bike lanes, and potential future road diets to accommodate pedestrian and bicycle traffic; and
4. **The Border-to-Border Trail**, which makes up the northern half of the Lake Loop and which has a significant portion of its alignment outside of the Township borders.

Secondary routes use a combination of bike lanes and multi-use paths to form trail "circles" around the Township and form connections to adjacent communities. Tertiary routes act as collector routes, pulling residents from subdivisions and neighborhoods onto the main trail systems.

This document should be viewed as a living document. As new opportunities arise, the plan can and should be modified to reflect the new realities of the situation.

Figure 4. Lake District Detail Plan



Existing Multi-Use Path
Proposed Multi-Use Path
Existing Bike Lane
Proposed Bike Lane
Existing Sidewalk
Proposed Sidewalk
Border-to-Border Trail
Township Parks
Schools
Municipal Buildings
Golf Course (Private)
Township-owned Properties

Proposed Non-Motorized Facilities
Lake District

Ypsilanti Township, Washtenaw County

With eight parks, Ford Lake, the Border-to-Border Trail, and the Township Core all present in a roughly 6.4 square mile area, the Lake District is considered the heart of the Township. The Township has a long-standing goal of creating a non-motorized route around Ford Lake, tying the north and south sides of the Township together at their most valuable natural resource, and helping to energize Ypsilanti Township's primary commercial corridor.

Over nine miles of trails have already been constructed in the district, but many of the trails are fragmented or require pedestrians or cyclists to cross busy streets. This plan closes those gaps and provides contiguous routes throughout the region.

Proposed pathways take advantage of existing park properties whenever possible to reduce the need for costly easements. While it would be ideal to be able to provide routes on both sides of the streets, financial and political realities dictate that some of these alignments be limited to one side of a road, and that road crossings are required. Where crossings are necessary (e.g. South Huron River Drive at Ford Heritage Park), rapid flashing beacon lights and pavement markings should be installed, with pedestrian-level street lighting incorporated to illuminate users in low-light situations. Traffic calming measures such as bump-outs, refuge islands, and in-street signage may also be considered. A description of preferred and required crosswalk treatments is included beginning on page 66.

As this district will experience the highest level of use overall, the majority of facility treatments are ten-foot wide asphalt or concrete multi-use trails. The existing bike lane along Grove Road is adequate to accommodate bike traffic for now, but if the road is slated for renovations in the future, a transition to multi-use trail for this stretch would provide consistent surfacing and a more comfortable ride overall. Bike lanes are proposed for Stony Creek Drive to provide a route to Rolling Hills County Park.

The Lake District also includes several high priority projects of special note. The first, and by far most critical, is the crossing over I-94 at South Huron Road. Ypsilanti Township has reached an agreement with the City of Ypsilanti, Washtenaw County Parks and Recreation Commission (WCPARC), Washtenaw County Road Commission (WCRC), and the Michigan Department of Transportation (MDOT) to reconfigure the existing bridge, removing one lane of traffic and adding a protected bicycle and pedestrian route. The project has applied for grant funding and is expected to be started in 2021.

A solution for the Grove Road crossing at I-94 has been discussed for several years as well. While sidewalks are provided on the north/east side of the road and bike lanes are available on both sides, traffic speeds on this stretch are high and crossing the bridge feels unsafe. A simple improvement such as amplifying bike lane markings over the bridge would improve the crossing experience. A hard barrier, with lane realignment and all non-motorized traffic shifted to one side of the bridge, would be even more effective, but would take cooperation from the same organizations involved in the South Huron Crossing.

Rawsonville Road is slated for significant work beginning in 2020 and as part of that work, sidewalks are scheduled for installation on the east side of the road. Ypsilanti Township completed construction of a section of the Border-to-Border Trail from Rawsonville to Rawsonville Elementary along Grove Road in 2019. Studies completed earlier in the year showed different alternatives for connections to North Hydro Park; those options are still under evaluation. As this area of the path network is finalized, it will be important to work with MDOT and Van Buren Township to ensure that modern, safe crossing options such as pedestrian controlled crossing signals are provided across Rawsonville and Grove.

Finally, Ford Lake itself forms a non-motorized transportation alternative for kayakers and canoeists. Currently kayakers have limited access to the lake; only North Hydro Park, which sit east of the dam, and Ford Lake Park, which sits west of the dam, provide docks which allow any real access to the lake and river. Adding launches at other lakeside parks, and opening up the Eastern Michigan University dock at Lakeside Park to public use, could greatly help to increase boating on the lake. Adding a kayak/canoe livery at Ford Lake Park would further increase interest in boating on the lake. Finally, adding a dedicated portage point on Bridge Road would expand the reach of the Huron River Water Trail, and potentially bring significant numbers of kayaking enthusiasts to the area.

LAKE DISTRICT

Table 1. Implementation Schedule: Lake District

FACILITY TYPE	PRIORITY	ROUTE DESCRIPTION	PROJECT LENGTH	CHALLENGES	OPPORTUNITIES	ESTIMATED COST
Crossing	1	10 to 12-foot wide grade crossing over I-94 on west side of bridge. The route will link the City and Township of Ypsilanti at Huron and Hamilton Streets	2,640-feet	Will require intergovernmental cooperation and permits.	Feasibility study and agreements between City, Township, and MDOT have been completed.	$ 300,000 design; construction cost TBD
Multi-Use Trail	1	East side of S Huron east to Grove Street via North Bay Park trail; south side of Grove Street east to Bridge via B2B; east side of Bridge Street south to Textile; north side of Textile west to S Huron River Drive; north side of S Huron River Drive west to S Huron; east side of S Huron north to North Bay Park.	16,170-feet	Steep sections of existing trail in North Bay Park will need to be addressed; Bridge section along Bridge Street; Potential easements required along S Huron River Drive.	Chance to connect eight parks with Civic Center and the Border-to-Border Trail. 65% of trail already constructed.	$ 3.0 - $ 3.5 million
Multi-Use Trail	1	West side of S Huron from Whittaker to I-94	4,420-feet	Steep side slopes at points will likely require easements.	Sections can be built as part of ongoing development.	$ 750,000 - $1.25 million
Multi-Use Trail	2	Extend eastern trail in North Hydro Park to Grove Road west of Rawsonville Elementary; along south side of Grove Road to Rawsonville Road.	2,900-feet	Will likely require easements. Narrow lot frontages may require path to stay within right-of-way.	Township-owned land available for ~1,200 feet of path. School property available for ~600 feet.	$ 500,000 - $ 700,000
Crossing	2	Rawsonville Road crossing. Project would include improved lighting, cross-walk signal, and pavement markings.	80-feet	Will require intergovernmental cooperation and MDOT permits.	Build off of work planned by MDOT for Rawsonville corridor. Assumes additional path development in Van Buren Township on east side of road.	$ 75 - 100,000
Multi-Use Trail	2	East side of Whittaker from Stony Creek to S Huron River Drive	1,550-feet	In current configuration would require easements.	Assumes future redevelopment of parcels. As area is developed, trail cost becomes responsibility of developer.	$ 200,000 - $ 300,000
Multi-Use Trail	3	North side of Textile Road from Rawsonville Road to Bridge Road.	3,800-feet	Will require easements.	Generally all vacant or industrial parcels provides ability to pull trail significantly off from road edge.	$ 700,000 - $ 900,000
Multi-Use Trail	3	West side of Tuttle Hill from S Huron River Drive to Brookwood Ave.	2,000-feet	Will require easements. Drainage swales and steep drop-offs from side of road. Heavily wooded.	Build off of existing pathway to south. Largely vacant land would require easement but could provide picturesque route to primary loop.	$ 300,000 - $ 500,000
Crossing	3	S Huron River Drive at Tuttle Hill	90-feet	Location on curve will require HAWK signal or similar crossing signal.	Connect to existing trail through Ford Lake Park.	$ 50 - 75,000

FACILITY TYPE	PRIORITY	ROUTE DESCRIPTION	PROJECT LENGTH	CHALLENGES	OPPORTUNITIES	ESTIMATED COST
Multi-Use Trail	3	South side of Textile Road immediately west of Tuttle Hill and east side of Tuttle Hill south to Colony Park Drive	1,560-feet	-	Undeveloped parcels currently for sale. Trail development is responsibility of developers.	$ 200,000 - $ 300,000
Multi-Use Trail	3	South side of Textile west of Tuttle Hill to Cherrywood Drive.	3,650	Drainage swales, heavy brush and vegetation.	Undeveloped parcels currently for sale. Trail development is responsibility of developers.	$ 550,000 - $ 750,000
Multi-Use Trail	3	North side of Textile from Whittaker to Stony Creek Drive.	3,700-feet	Will require easements. Drainage swales and bridge over county drain.	-	$ 550,000 - $ 750,000
Multi-Use Trail	3	South side of Whittaker from Stony Creek to Textile Road.	2,940-feet	Will require easements.	Connects existing trail fragments.	$ 500,000 - $ 700,000
Bike lane	3	Stony Creek Road from Whittaker Road to Textile Road.	3,300-feet	High-speed road; buffered bike lane preferred option, which would require wider shoulders.	-	$ 94,000 - $ 150,000
Water Trail	3	New accessible kayak or canoe facilities	7 launches	May require significant development prior to installation (e.g. Huron River Park). Accessible launches may not be feasible at all locations.	Greatly expands access to prime amenity.	$ 40,000 - $ 100,000 per site plus associated development costs
Water Trail	3	Improve portage facilities on Bridge Road at north side of bridge near North Hydro Park. Install new crossing lane with user controlled rapid flashing beacon lights.	80 feet	Will require easements. If accomplished, will still require a 1,500 foot portage. May wish to consider an alternate route to South Hydro Park.	Provides better accessibility to Ford Lake and downriver for Huron River Water Trail boaters.	$ 50,000 plus associated development costs

Figure 5. Northwest Quadrant Detail Plan

Ypsilanti Township 2040

- Key Connecting Point
- Secondary Connecting Point
- Existing Multi-Use Path
- Proposed Multi-Use Path
- Existing Bike Lane
- Proposed Bike Lane
- Existing Sidewalk
- Proposed Sidewalk
- City of Ypsilanti Existing NM Route
- City of Ypsilanti Alternative Route
- City of Ypsilanti Proposed Bike Lane
- Border-to-Border Trail
- Township Parks
- Schools
- Municipal Buildings
- County Parks
- Golf Course (Private)
- Township-owned Properties

Proposed Non-Motorized Facilities
Northwest Quadrant

Ypsilanti Township, Washtenaw County

Non-motorized infrastructure improvement in the northwest is primarily limited to sidewalk infill. Limited space on some streets (e.g. the Northlawn area) and the presence of swales may make sidewalk development impossible without significant additional storm sewer updates.

Priority projects for the quadrant should focus on filling in gaps along major streets, e.g. Hewitt, Washtenaw, and Congress. Complete sidewalk systems along these streets are critical to ensure flow between the cities of Ann Arbor and Ypsilanti, Ypsilanti Township, and Pittsfield Township.

Potential redevelopment of the golf course on Golfside Road would have a significant impact on trail feasibility in the area. Currently, Golfside is a relatively narrow street with mature trees on either side of the road and terrain challenges at several points. If the golf course were to be converted to housing, it would be expected that the new subdivision would include multi-use paths fronting Golfside. Unless a major change like this occurs, however, bike paths and/or sharrows would be the practical option from Ellsworth Road to Packard Street and even then should only occur when the road is repaved. A discussion of bicycle lanes and shared-road alternatives begins on page 70.

US-12 has long been planned as major non-motorized route, with some grandiose visions of a trail running from Detroit to New Buffalo and potentially on to Chicago. While a project of that scale goes well beyond the scope of this plan, it does not change the fact that the highway is well suited as a formal bike route. US-12 has wide shoulders and bike lanes are already in place from Hewitt east to West Ainsworth in the City of Ypsilanti.

Focusing on trail alignment heading west, a continuation of existing bike lanes on expanded shoulders would be the most practical solution. Restriping around the freeway ramps would be required to make those crossings safe. Any work on this trail will require, at a minimum, coordination with Pittsfield Township, MDOT, WCRC, and WCPARC. Should momentum for the project build, this route could become a major trail on par with the Great Lake-to-Lake Trail which runs from Port Huron to South Haven.

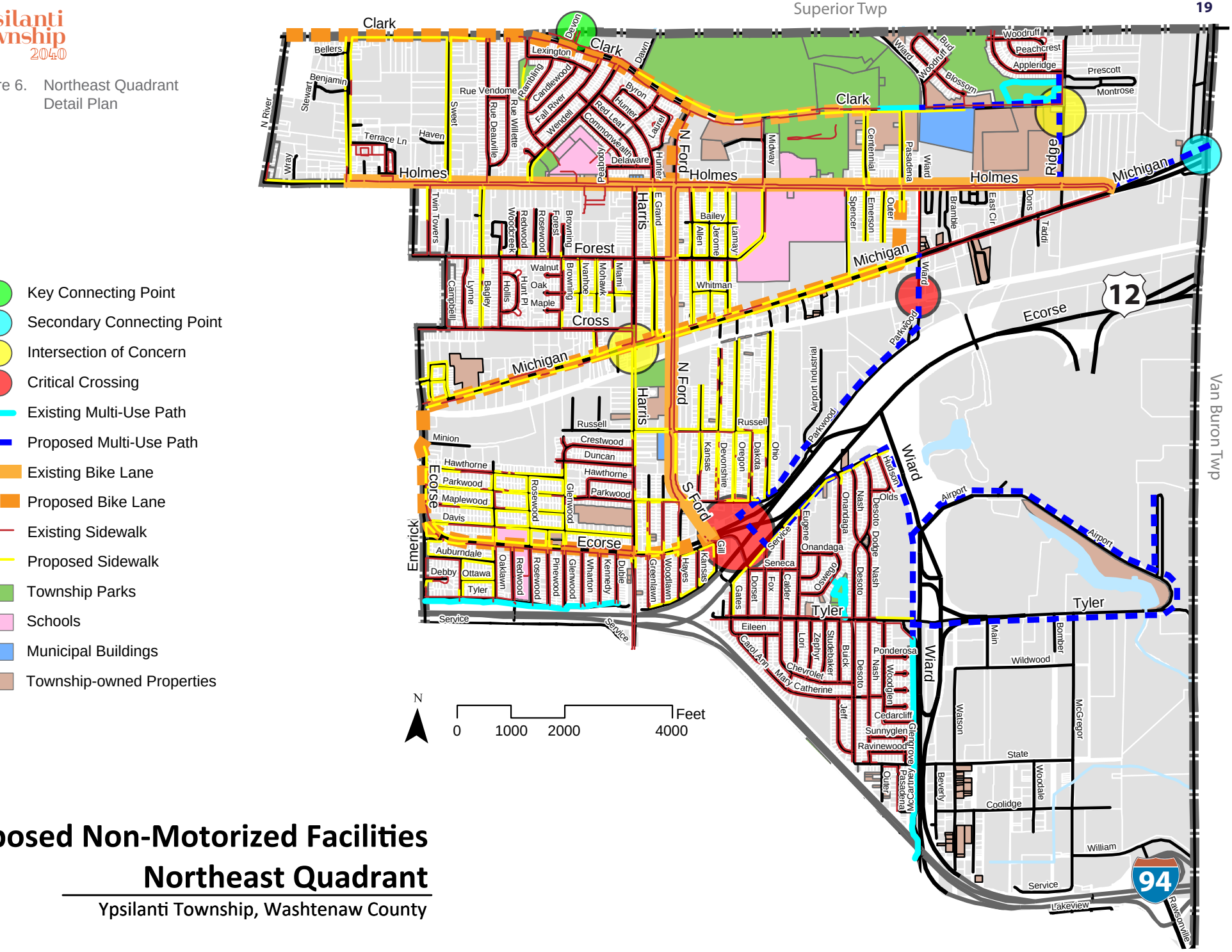
NORTHWEST QUADRANT

Table 2. Implementation Schedule: Northwest Quadrant

FACILITY TYPE	PRIORITY	ROUTE DESCRIPTION	PROJECT LENGTH	CHALLENGES	OPPORTUNITIES	ESTIMATED COST
Sidewalk	1	Washtenaw Avenue north and south side from Golfside to Hewitt, south side only from Hewitt to Berkley	4,560 feet	Lack of right-of-way; existing facilities encroaching on ROW; large number of driveway crossings. Would likely require intergovernmental cooperation	Redevelopment of entire corridor with improved streetscape and pedestrian facilities	Varies; total streetscape redesign $1.8 - 5.4 million; sidewalk only $140,000 - 280,000
Bike Lane	1	Washtenaw Avenue from Golfside to Berkley.	10,100 feet	High speed road would require buffered lanes; possible road diet necessary; large number of driveway crossings. Would require intergovernmental cooperation with City of Ypsilanti, WCRC.	Redevelopment of entire corridor with improved streetscape and pedestrian facilities	Varies; total streetscape redesign $1.8 - 5.4 million; bike lane only $200,000 - 500,000
Sidewalk	2	Packard Street from Golfside to City limit at Kewanee Street, north and south side of road	4,800 feet	Lack of right-of-way; existing facilities encroaching on ROW; large number of driveway crossings; creek crossing		$145 - 290,000
Bike Lane	2	W Michigan Avenue from City border at Warner Ave to Township border at Munger Road	5,050 feet	-	Adequate space to develop off-road multi-use trail in future	$101 - 252,000
Sidewalk	2	W Michigan Avenue from City border at Warner Ave to S Hewitt	5,700-feet	Numerous drive crossings, possible lack of ROW in places	Adequate space to develop off-road multi-use trail in future	$171 - 342,000
Bike Lane	2	N Hewitt from Washtenaw to Packard and Ellsworth to Michigan Ave	2,000 feet	Lack of right-of-way; would likely require road diet similar to stretch between Ellsworth and Packard	Opportunity to create consistent traffic flow along Hewitt Road corridor	$288 - 394,000
Bike Lane	3	Golfside between Packard and Ellsworth, east side of road; coordinate with Pittsfield Township to incorporate both sides of road	5,400 feet	Steep terrain & mature trees, possible lack of ROW, may require road widening	If golf course is developed for housing, have multi-use trail built along road frontage	$250 - 500,000
Sidewalk	Ongoing	Local neighborhood infill and new walks	~117,000 linear feet	Lack of ROW; lack of space in front of house; extremely narrow lot sizes; terrain/swale conflicts; trees		$ 1.7 - 2.9 million

The Wolf Pack Cruiserz Bicycle Club at Gault Village. Image Source: Second Wave Media

Figure 6. Northeast Quadrant Detail Plan



Proposed Non-Motorized Facilities
Northeast Quadrant

Ypsilanti Township, Washtenaw County

Like the Northwest, the Northeast Quadrant is characterized by older, denser neighborhoods than the southern quadrants. The sidewalk network is fairly well developed in some portions of the area, but almost non-existent in others. Addressing these gaps, and similar gaps in other quadrants, must be an ongoing priority for the Township.

What differentiates the Northeast from the Northwest quadrant is the number of critical intersections that must be addressed. The Northeast includes a large percentage of individuals who rely on mass transit, cycling, or walking to complete their daily tasks. The presence of two highways, two high speed commercial corridors, a rail line, and large industrial complexes to the east has lead to conflicts between motorized and non-motorized groups, with deadly results on several occasions.

The intersection which connect the West Willow neighborhood to neighborhoods to the north are of particular concern. The Ecorse Road / South Ford Boulevard / Dorset Avenue intersection has experienced a number of serious incidents over the years (see Figure 10 on page 34). A study by MDOT, WCRC, and the Township is currently underway and has proposed three alternative design solutions to improve connectivity along this corridor. The option that is ultimately accepted by the three organizations will have significant impact on walkability and safety for decades to come. In our opinion, Alternative A best addresses the safety concerns and needs of the community, and offers the a number of opportunities for user-friendly non-motorized facility design.

The Ridge and East Clark Road intersection has had fewer incidents and of much less severity, but still stands out in comparison to surrounding areas. The area is fairly densely populated, with subdivisions continuing north into Superior Township, and well served by parks and sidewalks. While the path near the Community Center is wide enough to be considered a multi-use pathway, the remaining walks are all fairly narrow (5-feet or less) and cannot easily accommodate both foot and bicycle travel. Widening the pathway to 10-feet along Clark from the Community Center to the east, and continuing the path north on Ridge to Appleridge Street would eliminate much of the bicycle/vehicle conflicts. From the Community Center to the west, a combination of bike lanes and new sidewalk adjacent to the golf course is recommended.

The third intersection of concern is at Harris Road and Michigan Avenue / US-12. Lack of sidewalks south of the intersection may be a contributing factor to the number of incidents. Ypsilanti Township has been actively working to add sidewalks in this area, and pedestrian activated crossing lights are installed at the intersection, both of which should greatly reduce further accidents.

The development of the American Center for Mobility (ACM) and future development of the Yankee Air Museum are driving factors behind the following transportation recommendations. As more workers move into the area, there will be an increased demand for improved connections to shopping, food, and entertainment. Development of a railroad crossing at Parkwood/ Wiard is discussed at length in the Ypsilanti 2040 Comprehensive Plan. It would provide improved access to Michigan Avenue for West Willow residents and ACM workers looking for restaurants or other amenities, and could completely revitalize the commercial corridor.

The Placemaking Plan for the East Michigan Avenue and the Ecorse Road corridors, adopted by Ypsilanti Township in 2018, lays out a series of non-motorized improvements to create vibrant places on both streets. Minor improvements include filling sidewalk gaps, improving and providing additional street lights along both corridors. The mid-block crossing on East Michigan Avenue, just east of Wiard Road is slated for improvements. Finally, the plan calls for road diets on both East Michigan Avenue and Ecorse Road to create pedestrian-friendly corridors with bicycle lanes, on-street parking, and bus pick up/ drop off areas.

As previously described, connection with Superior Township is addressed in the northeast corner of the Township via multi-use trails up to Appleridge Road. More importantly, a bike lane and sidewalk combination along the border between the two townships would provide linkages at Devon Street, Nottingham Drive, and MacArthur Boulevard, greatly improving flow between existing and planned subdivision developments.

Finally, the US-12 route running eastward into Van Buren and Canton Townships would require significant planning and cooperation between the communities. Utility corridors east of Ridge Road offer intriguing connection possibilities between US-12 and Mott Road, but would require negotiations with DTE Energy. If the US-12 route gains traction across the area, this route should be investigated thoroughly. For now, it remains a low priority connection.

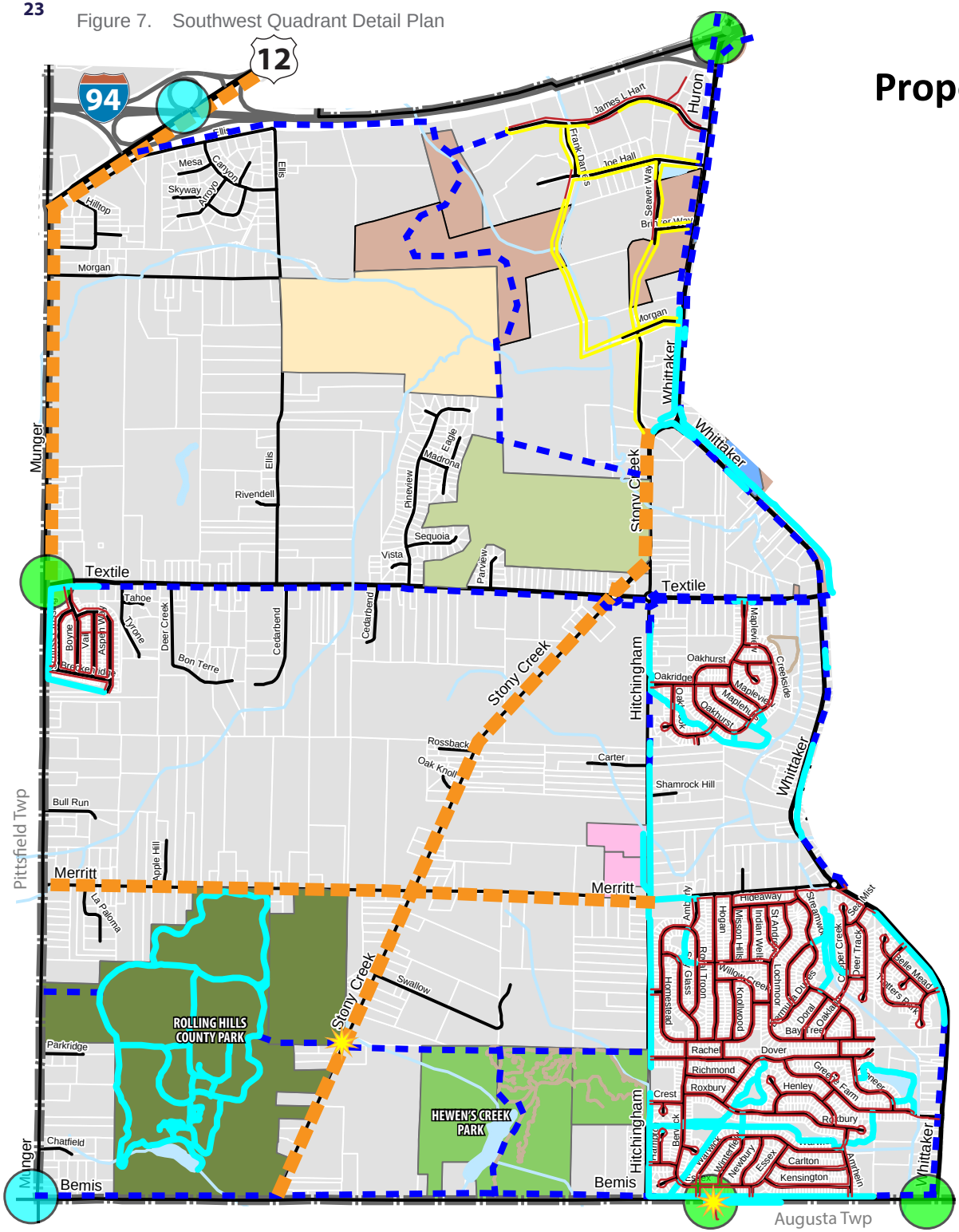
NORTHEAST QUADRANT

Table 3. Implementation Schedule: Northeast Quadrant

FACILITY TYPE	PRIORITY	ROUTE DESCRIPTION	PROJECT LENGTH	CHALLENGES	OPPORTUNITIES	ESTIMATED COST
Crossing	1	US-12 / Ecorse / Dorset / S Ford Blvd intersection reconfiguration.	-	Requires MDOT, WCRC, and Township coordination; multiple crossing lights	Opportunity to correct historically dangerous intersection	TBD
Crossing	1	Wiard/Parkwood Road at railroad. Includes 7,000 feet of multi-use trail from Dorset to Michigan Avenue.	7,000	Will require coordination with railroad, MDOT, other officials, and would only be completed as part of greater road expansion project	Opportunity to improve connection to and revitalize Michigan Ave	TBD
Bike Lane	1	Michigan Avenue from Wiard west to City border	9,700 feet	Requires MDOT coordination	Could be part of a greater Michigan Avenue reconfiguration effort	$ 190,000 - $ 450,000
Sidewalk	1	Infill and new walks along Michigan Avenue from Wiard to City border	16,000 feet	Numerous driveways; business encroachment on ROW	Could be part of a greater Michigan Avenue reconfiguration effort	$ 240,000 - 400,000
Bike Lane	2	North Ford Road from Clark to Holmes	1,500 feet			$ 30,000 - $ 70,000
Bike Lane	2	Ecorse Road from Michigan Avenue to South Ford Road	6,700 feet			$ 130,000 - $ 330,000
Multi-Use Trail	2	Wiard Road from just south of Tyler north to US-12 Service Drive	3,800 feet		Chance to provide non-motorized access to historically underserved neighborhood.	$ 550,000 - $ 750,000
Multi-Use Trail	2	Wiard/US-12 Service Drive to Dorset Ave. Final configuration will be impacted by MDOT road reconfiguration study	3,400 feet			$ 550,000 - $ 750,000
Sidewalk and Bike Lane	2	Wiard Road north of Michigan Avenue to Holmes	1,200 feet		Bike lanes may be simple sharrows, which could reduce costs.	$ 42,000 - $ 90,000

FACILITY TYPE	PRIORITY	ROUTE DESCRIPTION	PROJECT LENGTH	CHALLENGES	OPPORTUNITIES	ESTIMATED COST
Multi-Use Trail	2	Ridge Road from Holmes to Appleridge	2,100 feet		Forms improved connection to Superior Township	$ 350,000 - $ 450,000
Bike Lane	2	Clark Road from Community Center to North Prospect	9,200 feet			$ 180,000 - $ 460,000
Multi-Use Trail	3	Tyler / Airport Road loop with connection to new Yankee Air Museum campus	13,000 feet	Wiard Road crossing; industrial properties	Chance to connect ACM campus and museum to surrounding community	$ 2.4 - $ 3.0 million
Multi-Use Trail	3	Expand sidewalk to 10-foot width north of Clark Road from Ridge west to Wiard	2,500 feet		All Township property	$ 350,000 - $ 500,000
Multi-Use Trail	3	North side of E Michigan Avenue from Holmes Road east to Township border	2,000 feet	Would only be of value if Van Buren and Canton Townships create similar trail		$ 300,000 - $ 400,000
Sidewalk	3	North side of Clark Road from Community Center to Dawn Street	3,430 feet			$ 50,000 - $ 85,000
Sidewalk	Ongoing	Local neighborhood infill and new walks	~93,000 linear feet	Conditions vary dramatically from street to street. ROW access may be limited, trees and built structures blocking ROW in some spots		$ 1.4 - 2.3 million

Figure 7. Southwest Quadrant Detail Plan



Ypsilanti Township 2040

Proposed Non-Motorized Facilities
Southwest Quadrant

Ypsilanti Township, Washtenaw County

N

0 1000 2000 4000 Feet

- Existing Multi-Use Path
- Proposed Multi-Use Path
- Proposed Bike Lane
- Proposed sidewalk
- Existing sidewalk
- Township Parks
- Schools
- County Parks
- Other Recreation Properties
- Township-owned Properties
- Key Connecting Point
- Secondary Connecting Point
- Proposed Rapid Flashing Beacon

The Southwest Quadrant has the luxury of being able to take advantage existing subdivision facilities and proposed roadwork projects to form a comprehensive network.

Bemis Road is slated for major construction in the next few years, including paving and installation of trail facilities. This roadwork provides an opportunity for the Township to work closely with the WCRC to design and construct an extension of the existing trail system from Hitchingham eastward to the Township border. This could represent a significant overall cost savings and minimize the length of disruption to residents.

The primary attraction in this area is Rolling Hills County Park. The park itself has over four miles of non-motorized trails. Creating connections from the Greene Farms subdivision to these facilities is a priority for the area. A trail running through the northern section of Hewen's Creek Park and meeting up at Stony Creek Road will require careful planning and treatment; the trail should be designed to harmonize with the surrounding landscape. An eight to ten-foot wide crushed limestone treatment would be appropriate here. Easements would be required for the western portion of the trail, and cooperation with WCPARC will also be necessary.

Primary connections are noted on the southern border with Augusta Township. These connection points would link students in Ypsilanti Township with the Lincoln Consolidated Schools campus.

Another important link is at Textile Road leading towards Pittsfield Township. This link would give residents access to Pittsfield's rapidly developing trail system, as well as to entertainment, food, and shopping options along Carpenter Road.

Construction of 10-foot wide multi-use pathways is limited to the south side of Textile Road and infill along Hitchingham and Whittaker Roads.

A large innovation and employment district lies just west of South Huron Street. This district currently provides a limited sidewalk network which should be expanded as parcels are developed for corporate use. These sidewalks would connect to the multi-use paths proposed for South HuronStreet.

This quadrant also includes several Township-owned parcels which offer the opportunity for off-road trail development. A two-part pathway would be located primarily within Township property, with connections to US-12 via Ellis Road to the north and west, Stony Creek Road to the southeast, and South Huron Street to the north. The routes would require easements along the southeast edge of the Washtenaw Sportsmen's Club, on MDOT property north of Ellis Road, and would also require permission to follow the utility easement north of Pine View Golf Course.

Alignments along Stony Creek, Merritt, and Munger are recommended as bike lanes. High posted speed limits along these roads would normally suggest that multi-use trail facilities would be a better alternative, but the ability to travel along Hitchingham and connect via the proposed Hewen's Creek path make safety paths along those roads an expensive luxury. Public comment should be sought after the Bemis and Hewen's Creek connections are complete to determine if Stony Creek Road requires a more robust treatment.

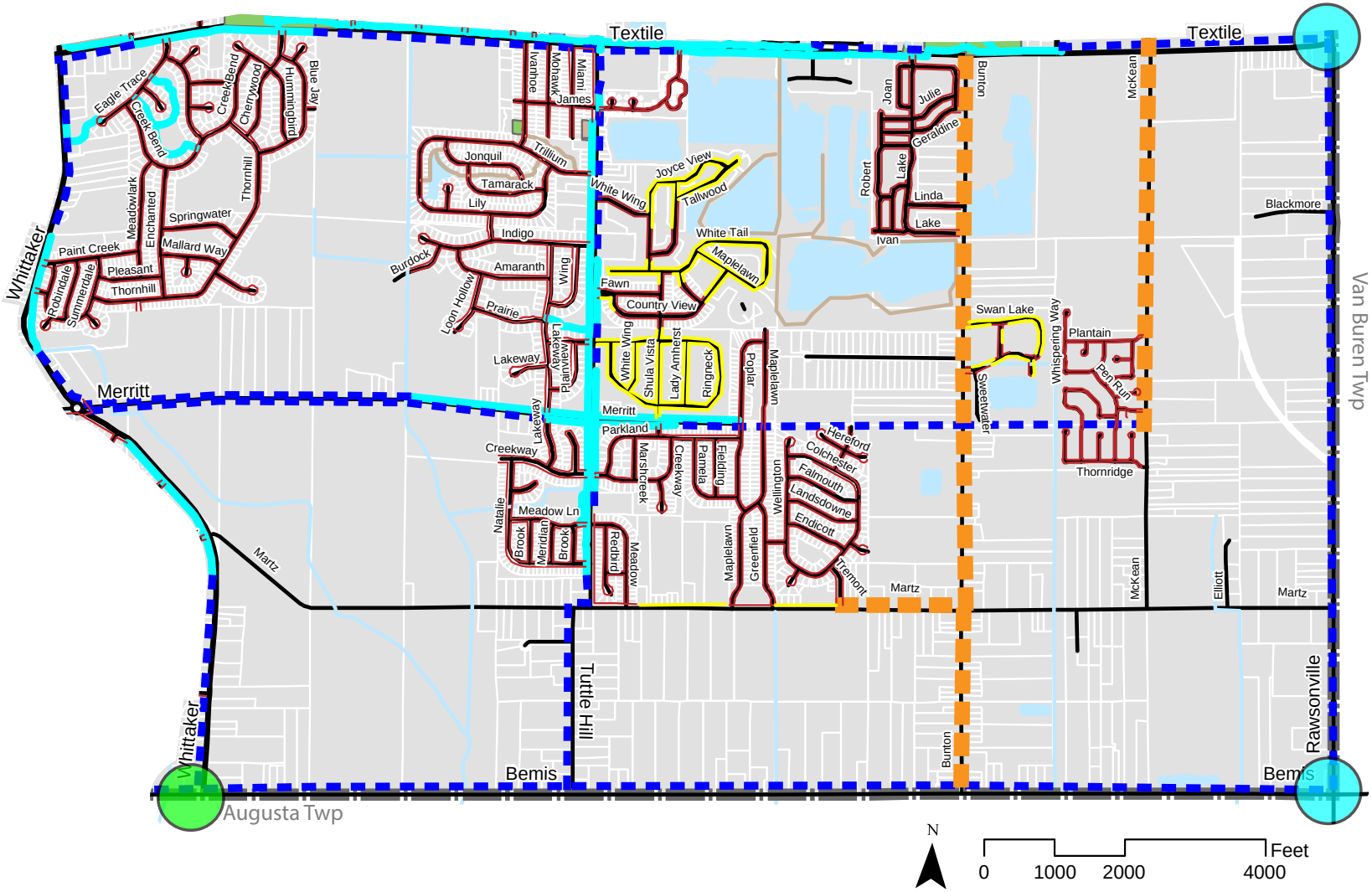
SOUTHWEST QUADRANT

Table 4. Implementation Schedule: Southwest Quadrant

FACILITY TYPE	PRIORITY	ROUTE DESCRIPTION	PROJECT LENGTH	CHALLENGES	OPPORTUNITIES	ESTIMATED COST
Multi-Use Trail	1	East side of Whittaker Road from Textile to Merritt	3,500 feet	Easements likely	Able to take advantage of existing pathways	$ 500,000 - $ 700,000
Multi-Use Trail	1	West side of Whittaker Road from Merritt to Bemis	2,900 feet	Easements likely	Able to take advantage of existing subdivision pathways	$ 500,000 - $ 650,000
Multi-Use Trail	1	Infill along Hitchingham Road	1,100 feet	Easements likely	Able to take advantage of existing pathways	$ 150,000 - $ 250,000
Multi-Use Trail	1	Bemis Road from Munger to Hitchingham	10,600 feet		Coordinate efforts with planned road construction for significant cost savings. Connects to existing trail networks.	$ 1.8 - $ 2.0 million
Multi-Use Trail	2	South side of Textile Road from Munger to Whittaker	12,600 feet	Stream crossing; some easements may be required; trees and wetlands		$ 2.2 - $ 2.4 million
Bike Lane	2	Stony Creek Road from Textile to Bemis	12,900 feet	Road widening required		$ 600,000 - $ 1.0 million
Multi-Use Trail	2	North side of Hewen's Creek Park from Hitchingham to Stony Creek; spur from parking area north to main trail	8,600 feet	Will require easements; wet terrain and sensitive ecosystems	Primarily Township-owned property. Can use routes that are already established. Can use crushed limestone for lower up-front costs	$ 1.5 - $ 1.7 million
Bike Lane	3	Merritt Road from Hitchingham to Munger	10,500 feet	Existing road in poor condition, road widening required		$ 500,000 - $ 900,000

Bike trail near EMU campus. Image Source: City of Ypsilanti

Figure 8. Southeast Quadrant Detail Plan



Existing Multi-Use Path

Proposed Multi-Use Path

Proposed Bike Lane

Existing Sidewalk

Proposed Sidewalk

Existing Rustic Trail

Key Connecting Point

Secondary Connecting Point

Proposed Non-Motorized Facilities
Southeast Quadrant

Ypsilanti Township, Washtenaw County

The Southeast Quadrant again relies on large-scale road construction projects and existing subdivision pathways to form a complete network. Construction projects along Bemis and Rawsonville, described earlier, provide opportunities for coordinated efforts with the WCRC and potential cost savings.

In-fill of existing asphalt multi-use trails would mostly be provided by subdivision developers; sections along Merritt, Textile, and Tuttle Hill would fall under the responsibility of Ypsilanti Township. "Proposed sidewalks" in this quadrant are simply those which had not been installed by the time this report was created. Their construction would remain the responsibility of the developer.

Bike lanes on Bunton, McKean, and Mertz are supplemental routes to the proposed multi-use trails and, as such, are considered low priority. Each subdivision is connected in at least one point to a multi-use trail, providing excellent coverage for residents of the area.

SOUTHEAST QUADRANT

Table 5. Implementation Schedule: Southeast Quadrant

FACILITY TYPE	PRIORITY	ROUTE DESCRIPTION	PROJECT LENGTH	CHALLENGES	OPPORTUNITIES	ESTIMATED COST
Multi-Use Trail	1	North side of Bemis Road from Whittaker to Rawsonville	17,200 feet		Part of planned construction along Bemis Road; could represent significant cost savings	$ 3.2 - $ 3.4 million
Multi-Use Trail	1	Infill on west side of Tuttle Hill from Textile to Martz	3,200 feet		Takes advantage of existing trails. Some segments responsibility of developer	$ 500,000 - $ 600,000
Multi-Use Trail	2	Infill on one or both sides of Textile Road from Whittaker to Rawsonville. North side infill ~7,850 feet, south side infill ~11,250 feet	19,120 feet total	Easements possible in spots; heavy vegetation; terrain issues	Chance to create contiguous path on one or both sides of Textile.	$ 3.6 - $ 3.8 million (depends on scope of project)
Multi-Use Trail	3	North side of Merritt from Whittaker to Tuttle Hill	5,000 feet	Heavy vegetation in points, stream crossing		$ 900,000 - $ 1.2 million
Multi-Use Trail	3	North side of Merritt from Tuttle Hill to McKean.	5,700 feet		Some portions responsibility of developers	$ 950,000 - $ 1.2 million
Multi-Use Trail	3	Tuttle Hill from Martz to Bemis	2,800 feet	Easements likely	Would connect subdivisions to southern pathway	$ 380,000 - $ 560,000
Sidewalk	3	Martz Road from Meadow to Maplelawn and Greenfield to Tremont	1,330 feet	Easements required unless sites are sold and redeveloped	Sidewalk proposed to retain stylistic continuity; may be opportunity to add multi-use trail	$ 120,000 - $ 240,000
Bike Lane	3	Martz Road between Treemont and Bunton	2,500 feet	No shoulder		$ 50,000 - $ 120,000
Bike Lane	3	Bunton Road between Textile and Bemis	10,500 feet	No shoulder		$ 210,000 - $ 525,000
Bike Lane	3	McKean Road between Textile and Pen Run	5,200 feet	No shoulder		$ 100,000 - $ 250,000
Multi-Use Trail	3	Rawsonville Road between Bemis and Textile	10,600 feet	Would likely be on east side of Rawsonville (Van Buren Township). West side presents topography and wetland issues)	Part of planned construction along Rawsonville	$ 1.8 - $ 2.0 million

Father and daughter enjoying the trails at Ford Heritage Park.

Existing Conditions

A resident enjoys his daily dog walks along the trails at North Bay Park.

Ypsilanti Township's development history has had a significant impact on walkability and connectivity in the Township. Ford Lake and I-94 form a clear dividing line, with denser and more urban patterns to the north and suburban patterns to the south.

North of I-94, the majority of development took place immediately following World War II. Homes are small and closely spaced. Most streets have sidewalks, and speed limits are generally slow. Significant sidewalk gaps remain, especially west of the City of Ypsilanti and along Michigan Avenue to the east.

South of the highway, the Township was primarily rural with large lots and high speed roads. As new subdivisions began to be developed in the 1980s and 1990s, sidewalks were added, but frequently there were no connections made between developments. Roads which were already designed to accommodate high-speed traffic now have to contend with high volumes of traffic as well.

The Township has made efforts to address this divide. Over 30 miles of multi-use trails can be found throughout the community, with the Border-to-Border trail acting as a prime driver for further trail development. Township Ordinance requires subdivisions to provide multi-use trails along primary roads, creating the basis for a connected network. The Township has been working closely with state, county, and the City of Ypsilanti to address connectivity over I-94, and continues to work towards completing a contiguous non-motorized loop around Ford Lake.

The combination of trails, sidewalks, and existing park pathways form the beginnings of a solid community-wide non-motorized trail network.

Figure 9. Hawthorne Avenue, Creek Bend Drive, and Stony Creek Drive illustrate some of the different neighborhood styles found throughout Ypsilanti Township.

Image Source: Google Streetview

ROAD NETWORK

Assessing the suitability of the road network for safe pedestrian or bicycle use involves the consideration of many factors including traffic volumes, car speeds, presence of on-street parking, traffic mix such as presence of trucks, sight distances, and number intersections and entrances.

Michigan roadways are classified by the Michigan Department of Transportation (MDOT) according to a hierarchical functional system which determines whether a road is eligible for federal aid. This road classification also corresponds to roadway traffic volumes. Federal aid roads include all principal arterials, minor arterials, and urban collectors (Figure 10). Ypsilanti Township's road network includes five classes of roads as described below.

- Interstates or Freeways are part of the larger National Highway System. Interstates are owned by the state in which they were built, but must meet federal standards for construction and operation. Interstate 94 (I-94) belongs in this category.
- Principal arterial roads run relatively long distance and service travel movements to important traffic generators. In Ypsilanti Township, US-12, Michigan Avenue, Packard Street, Wiard Road, and Washtenaw Avenue belong to this category.
- Minor arterial roads are similar but with trips being carried shorter distance to lesser traffic generators. They include Ecorse, Golfside, Hewitt, North Prospect, Superior, Textile, and Whittaker Roads, Bridge, East Cross, Grove, Huron Streets, East Forest Avenue, and portions of Lamay Avenue, Ford Boulevard, and Clark, and Harris Roads.
- Major collector roads funnel traffic from residential areas to arterial roads, with some providing direct access to residences. They include Hitchingham, Holmes, Ridge, Stony Creek, Tyler, and Tuttle Hill Road, South Congress Street, Airport and South Huron River Drive, McGregor and William Avenues, and portions of North Ford Boulevard and Clark, North Harris, Merrit, and Munger Roads.
- Local roads are neighborhood streets that provide access to residences and include all other streets in Ypsilanti Township.

Annual Average Daily Traffic counts (AADT) measures the total volume of vehicle traffic of a highway or road for a year divided by 365 days. The principal arterial roads mentioned above have high traffic volumes, with the heaviest traffic levels noted along South Huron. Overall, traffic levels in the Township are comparable to those seen in neighboring communities. Of the 123 stations monitored by MDOT in Ypsilanti Township, only thirteen locations experienced over 20,000 trips per day, while three were over 30,000. By comparison, Pittsfield Township had twenty seven stations with over 20,000 trips and four stations with over 30,000 trips per day, while Canton Township had twenty locations exceeding 20,000 trips per day, eight over 30,000, five over 40,000, and one monitoring station over 50,000.

While compiling data for this plan, discrepancies were noted between AADT levels reported by MDOT, WCRC, and SEMCOG. As new vehicular and non-motorized projects are considered, it will be imporant for the Township to work closely with the appropriate transportation authorities to ensure that trip counts and other pertinent data are current and accurate.

Ten Most Heavily Traveled Roads (excluding I-94)

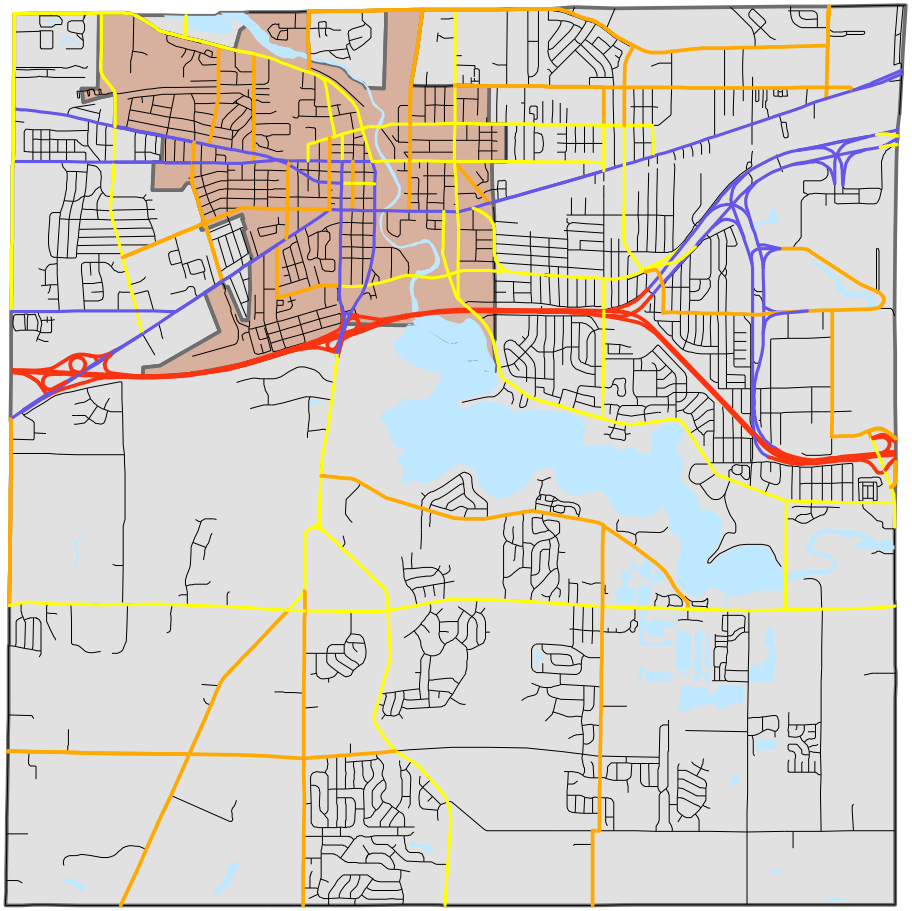
1. Huron Street at James L. Hart Parkway - 39,868
2. Huron Street at South Huron River Drive - 30,449
3. Washtenaw (M-17) at Courtland Street - 29,047
4. Michigan Avenue (US-12) northeast of Munger Road - 27,558
5. US-12/M-17 at Onondaga Avenue - 26,250
6. Michigan Avenue at South Hewitt Road - 25,744
7. Rawsonville Road south of I-94 - 24,162
8. Hewitt Road at Ardis Drive - 16,573
9. Clark and Golfside - 13,117
10. Ellsworth and Golfside - 12,700

I-94 ranges from 117,293 to 105,986 AADT, with the heaviest traffic at the South Huron / east I-94 ramp.

Note: Where monitoring stations were closely spaced, e.g. on S Huron where multiple stations were placed between I-94 and S Huron River Drive, the highest value only is recorded and subsequent instances are skipped.

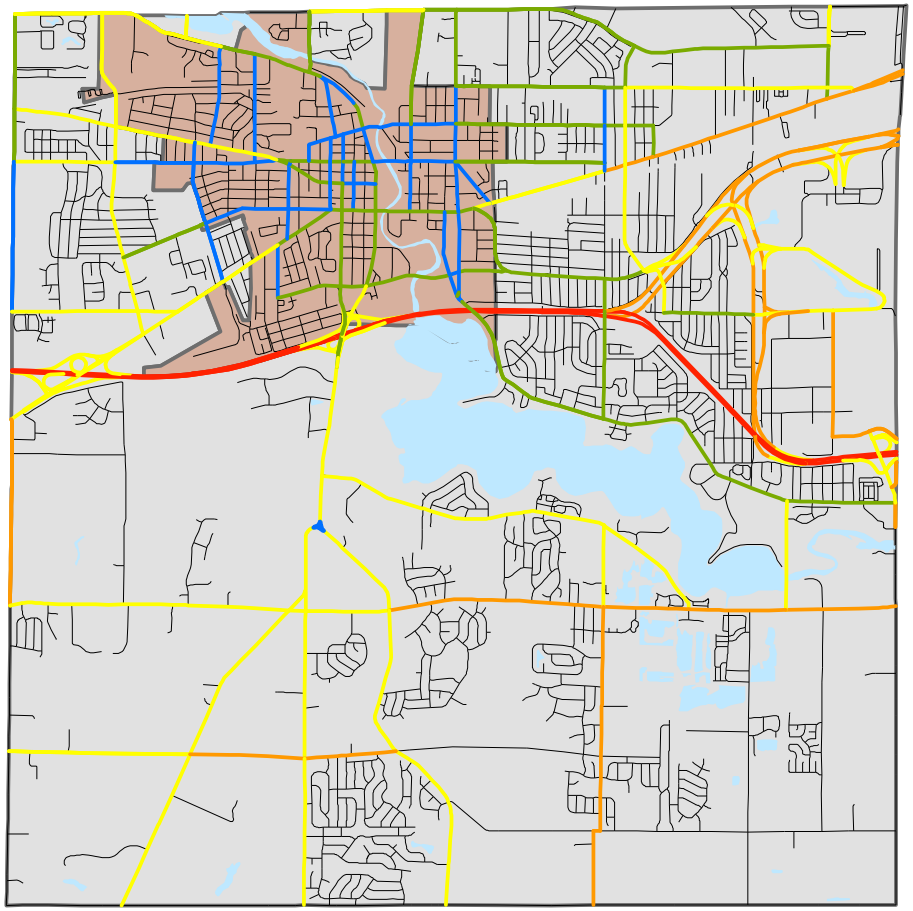
Source: Michigan Department of Transportation

Figure 10. National Functional Classification



Interstate or Freeway
Major collector
Minor arterial
Other principal arterial
Local streets

Figure 11. Posted Speed Limits



70 mph
50 - 55 mph
40 - 45 mph
30 - 35 mph
25 mph or under

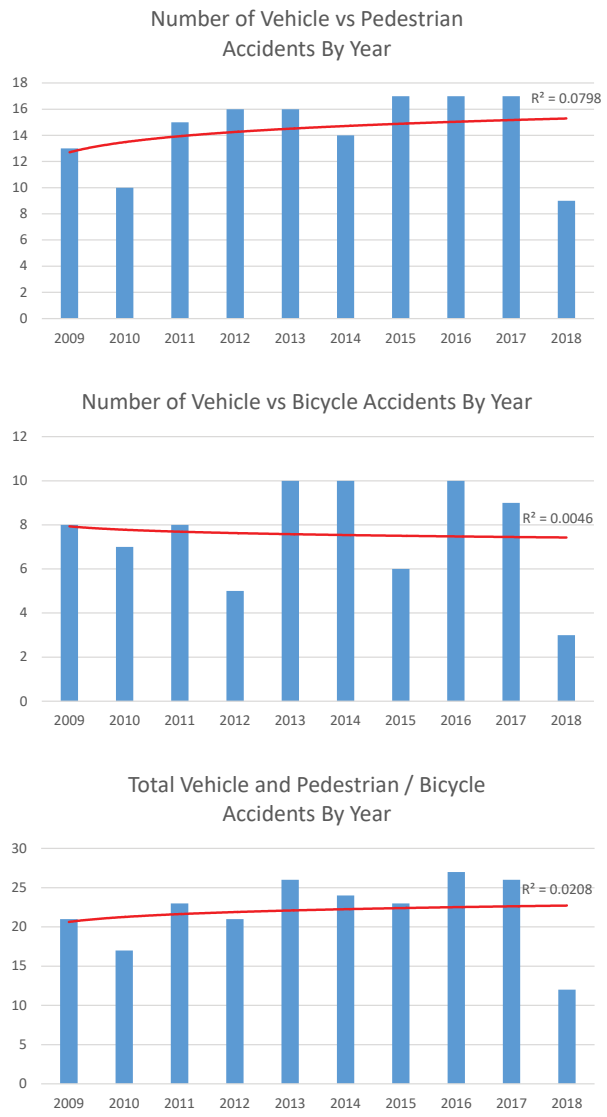
0 0.5 1 2 Miles

Source: SEMCOG

Bicycle/pedestrian versus vehicle accidents are a growing problem in the Township, particularly in the northeast quadrant of the community. According to SEMCOG, there have been a total of 220 vehicular accidents involving pedestrians (144 incidents) and bicyclists (76 incidents) since 2009. Thirty-eight of the accidents have resulted in severe injuries; sixteen have resulted in fatalities. By calculating the trendlines for bicycle and pedestrian accident rates, we can anticipate a continued rise in pedestrian accidents and a leveling out of bicycle-related incidents. Accident rates will likely continue to rise. As the Township provides facilities for bicycles and pedestrians, the number of incidents may continue to increase due to the presence of additional cyclists and pedestrians in new locations. The severity of these accidents will be lessened, however, with the introduction of properly designed facilities.

Dedicated bike lanes offer greater separation and safety between bicyclists and motorists and may be the most suited bicycle improvement on roads that are not only busy but that also see frequent crashes. Traffic volumes and speeds are the top considerations in determining the suitability of on-street bicycle facilities for a given roadway. According to the National Association of City Transportation Officials (NACTO), conventional bike lanes are most helpful when traffic volumes for a given street exceed 3,000 AADT, and speed limits are greater than 25 mph. For streets with high traffic volume, regular truck traffic, high parking turnover, or speed limits greater than 35 mph, greater separation between bicycles and motorized vehicles is recommended.

Figure 12. Accident Levels by Year



Source: SEMCOG

Dangerous Intersections

Most dangerous intersections overall (both bicyclists and pedestrians):

1. Dorset & US-12: 10 incidents
2. Golfside & Washtenaw: 9 incidents
3. I-94 & Michigan Ave: 7 incidents
4. Ellsworth & Hewitt: 5 incidents
5. Clark & Ridge: 5 incidents

Most dangerous intersections for bicyclists:

1. Dorset & US-12: 8 incidents
2. I-94 & Michigan Ave: 5 incidents
3. Campbell & Michigan: 3 incidents

Most dangerous intersections for pedestrians:

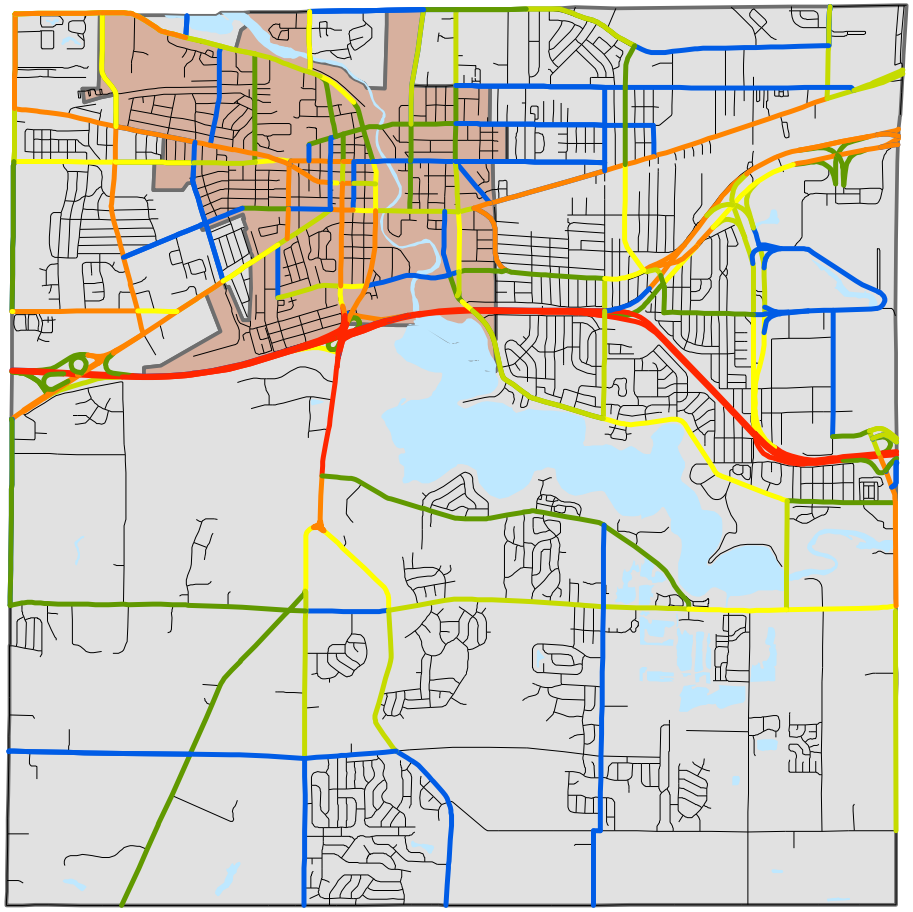
1. Golfside & Washtenaw: 7 incidents
2. Clark & Ridge, Ellsworth & Hewitt, Harris & Michigan, Mott & Ridge: 4 incidents

Intersections with the most severe accidents (Class-A incidents or fatalities):

1. I-94 & Wiard: 3 incidents, 2 fatal
2. Dorset & US-12: 3 incidents, 1 fatal
3. Michigan & Wiard: 3 incidents, 1 fatal

Source: SEMCOG

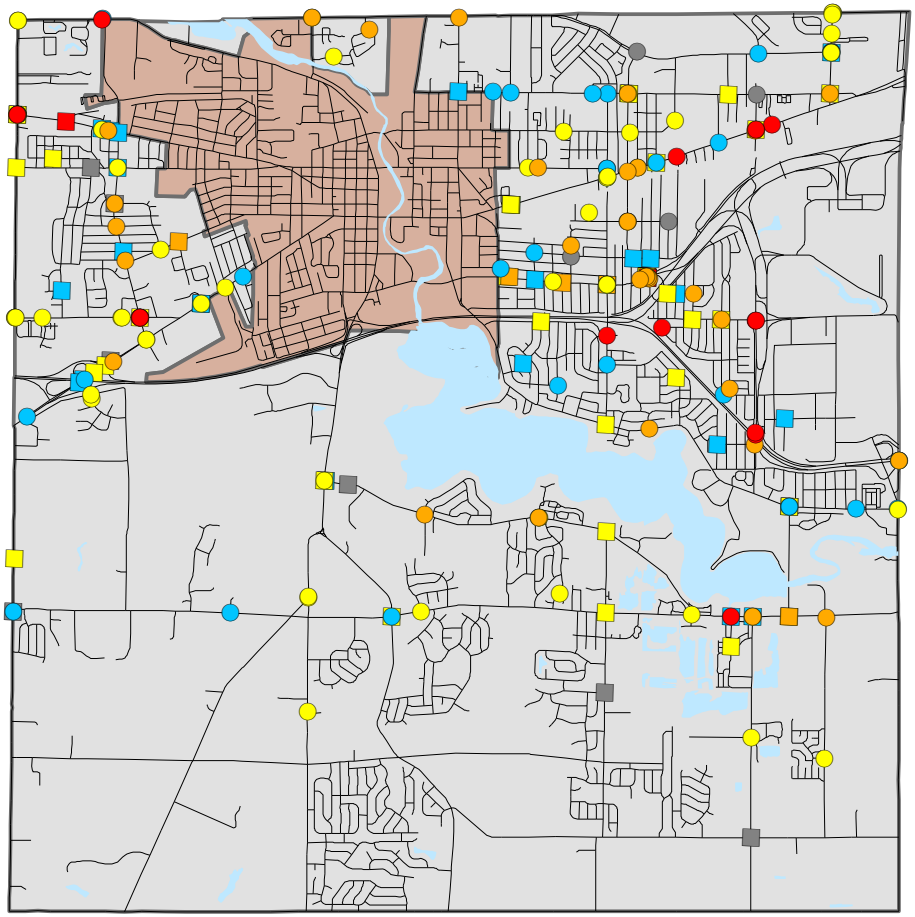
Figure 13. Traffic Volume (AADT)



Vehicles Per Day
- > 30,000
- 12,001 - 30,000
- 9,001 - 12,000
- 6,001 - 9,000
- 3,001 - 6,000
- 0 - 3,000

Source: SEMCOG, MDOT
Note: Traffic levels shown in graphic are approximations based on WCRC and MDOT data.

Figure 14. Vehicular and Bicycle/Pedestrian Accident Locations



Source: SEMCOG

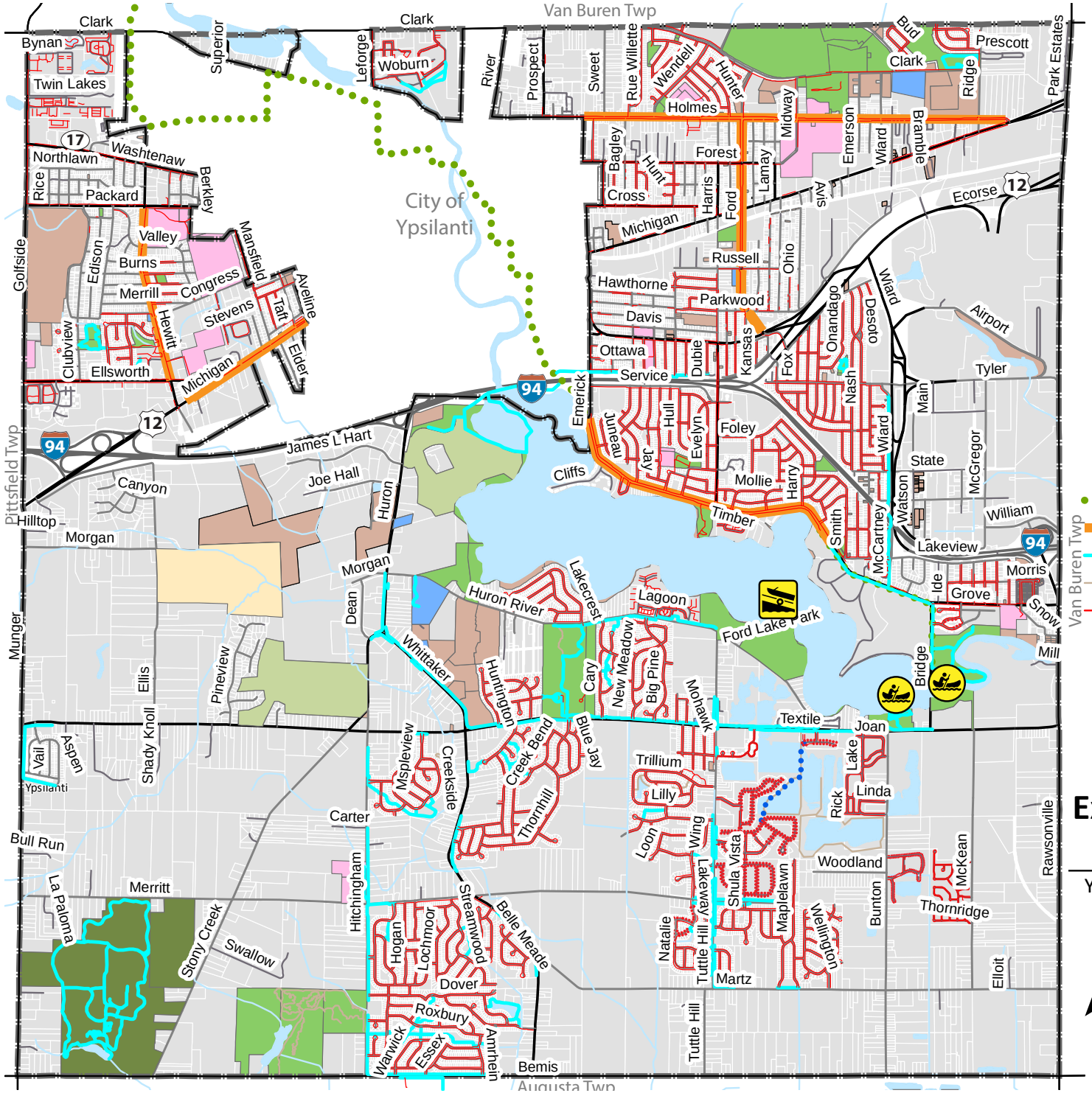
- Bicycle-related accident
- Pedestrian-related accident
- A crash in which a fatality occurred.
- A-level - a crash in which a serious injury occurred.
- B-level - a crash in which a minor injury occurred.
- C-level - a crash in which a possible injury occurred.
- PDO - a crash which resulted in property damage only (no injuries).

0 0.5 1 2 Miles

Source: SEMCOG

Ypsilanti Township 2040

Figure 15. Existing Non-Motorized Facility Network



- Border-to-Border Trail
- Bike Lanes
- Multi-use Path
- Rustic Path
- Sidewalk
- Township Parks
- Schools
- Municipal Buildings
- County Parks
- Golf Courses
- Other Recreation Properties
- Township Owned Properties

Existing Non-Motorized Facility Network

Ypsilanti Township, Washtenaw County

N

0 2,000 4,000 8,000 Feet

Source: SEMCOG, MiGDL, Ypsilanti Township
Carlisle/Wortman Associates
October, 2018

SIDEWALKS

Ypsilanti Township's sidewalk network is well developed near the north shore of Ford Lake and in newer subdivisions south of the lake. West of the City of Ypsilanti and in older neighborhoods which historically served as bedroom communities to the City, sidewalk development is more sporadic. Significant gaps occur throughout the northern half of the Township, and are especially notable along the Michigan Avenue and Ecorse Road corridors.

The Township Subdivision Regulations Ordinance requires sidewalks along all access drives in cluster housing and multiple-family developments, and along any roads internal to the development. Sidewalk construction in existing neighborhoods would be the responsibility of the Township. Existing swales and narrow right-of-ways may make adding walkways challenging in some circumstances.

MULTI-USE PATHS

Like sidewalks, Township Ordinance requires new developments to include 8-foot wide (minimum) multi-use paths on both sides of all major and secondary thoroughfares. Ten foot wide bike paths are required along county primary roads where designated in the Comprehensive Plan. Several subdivisions have included internal multi-use trails within their boundaries.

A number of parks have extensive trail networks, most notably Ford Heritage, North Hydro, North Bay, and Rolling Hills County Park. These park trail networks form important connectors between neighborhoods.

Existing routes along Textile, Tuttle Hill, Whittaker, and Grove provide the longest stretches of non-motorized facilities in the Township. Because much of network has relied upon developers for completion, trail construction is spotty. Numerous gaps reduce the ability of riders to utilize the trails as a transportation alternative, and prevent connection between neighborhoods and destinations. Major gaps along Huron River Drive and Bridge Street currently break up an otherwise contiguous loop around Ford Lake, while a complete lack of facilities along Huron Road and the I-94 bridge crossing currently prevent connection between the City and Township.

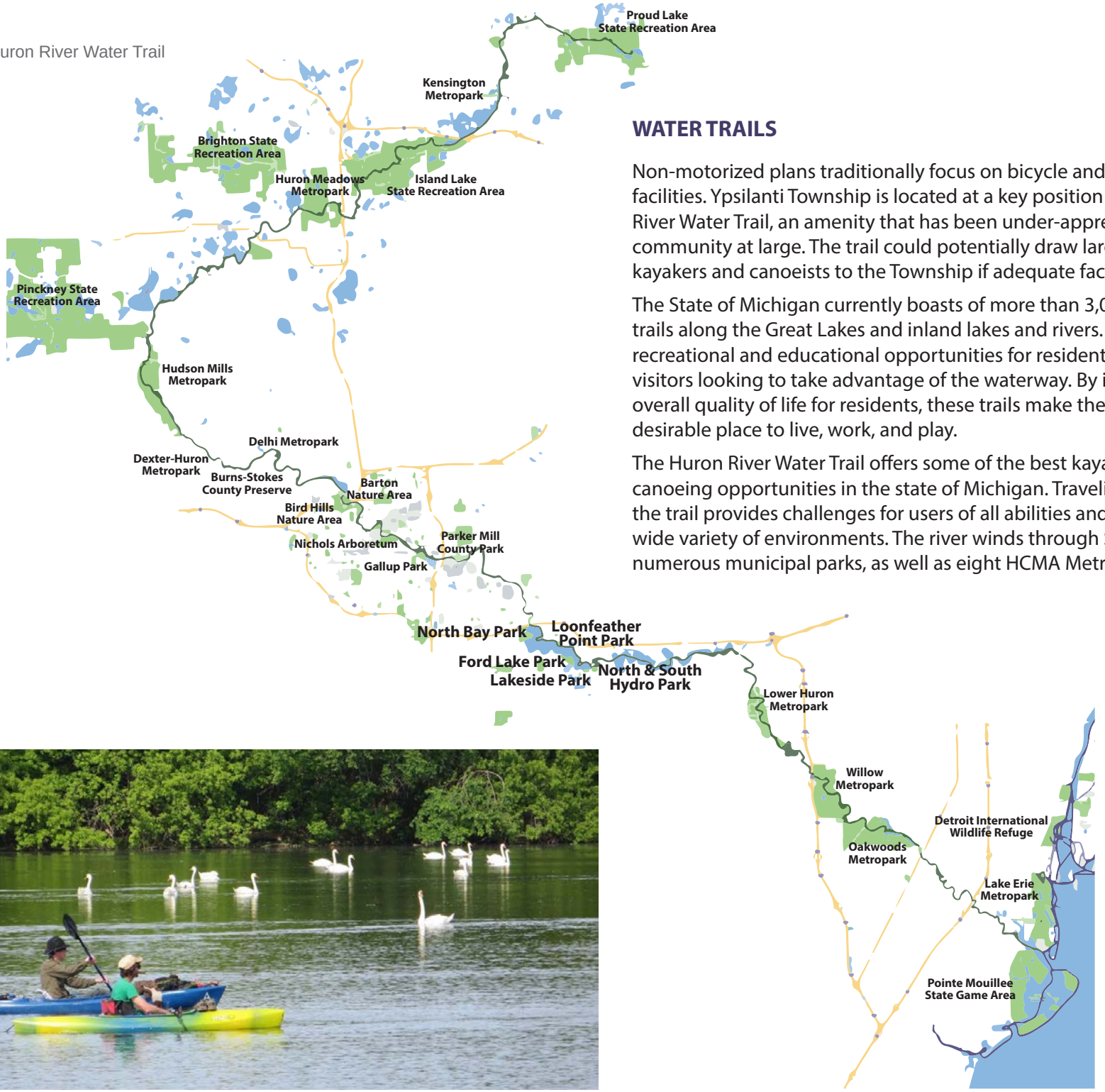
BIKE LANES

Bike lanes provide residents a protected non-motorized transportation alternative which does not have the same limitations of multi-use trail development. Because bike lanes utilize existing transportation infrastructure, dedicated easements are not required. Installation costs can be significantly less, and the impact on the surrounding environment is less dramatic. In Ypsilanti Township, many roads would require some level of widening to accommodate bike lanes, however, which would increase costs.

Conventional bike lanes do not offer the same level of protection for users as a multi-use trail, however, and inexperienced riders may be less comfortable on a bike lane. Buffered lanes may be an acceptable middle ground. They provide higher levels of protection than conventional bike lanes, but still provide cost savings and require less space than multi-use trails.

The Township currently has bike lanes on Grove between Smith and the City limits, on Michigan Avenue west of the city to east of Hewitt, and on Ford Road south of Holmes to I-94. Expansion of the bike lane network, taking into account posted speed limits, crash data, and other pertinent information, would be appropriate.

Figure 16. Huron River Water Trail



WATER TRAILS

Non-motorized plans traditionally focus on bicycle and pedestrian facilities. Ypsilanti Township is located at a key position on the Huron River Water Trail, an amenity that has been under-appreciated by the community at large. The trail could potentially draw large numbers of kayakers and canoeists to the Township if adequate facilities are provided.

The State of Michigan currently boasts of more than 3,000 miles of water trails along the Great Lakes and inland lakes and rivers. Water trails offer recreational and educational opportunities for residents and attract visitors looking to take advantage of the waterway. By improving the overall quality of life for residents, these trails make the community more desirable place to live, work, and play.

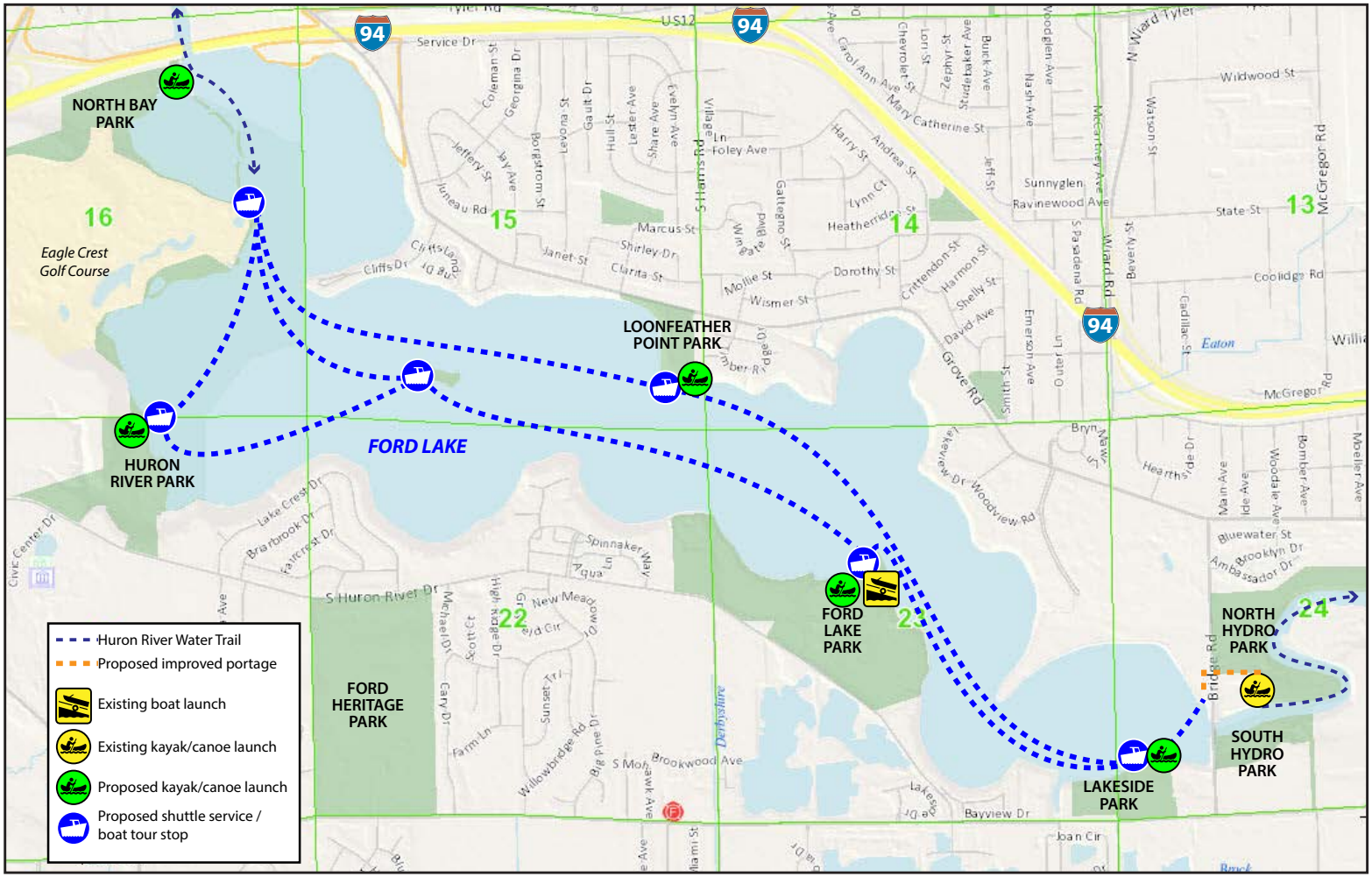
The Huron River Water Trail offers some of the best kayaking and canoeing opportunities in the state of Michigan. Traveling over 104 miles, the trail provides challenges for users of all abilities and passes through a wide variety of environments. The river winds through State, County, and numerous municipal parks, as well as eight HCMA Metroparks.

Kayakers enjoying a trip on Ford Lake near North Bay Park

Ypsilanti Township currently has boat / kayak launches at North Hydro, Ford Lake, and Lakeside Parks. The Lakeside Park launch is operated by and reserved for use by the Eastern Michigan Rowing crew. Providing additional launch points and rental opportunities in Township-owned parks would greatly increase the visibility of the community and could attract new visitors and residents to the Township.

Development of a seasonal water shuttle service or boat tour between the Township's lakeside parks would provide an experience unique in southeast Michigan. By providing unprecedented access to underutilized parks, such a service could spur development of both the parks and adjacent properties.

Figure 17. Conceptual Boat Service Route and Boat Launch Locations



REGIONAL SETTING

Regionally, Ypsilanti Township is an important destination for cyclists because of its position as the starting point for the Border-to-Border (B2B) Trail. The connection with Van Buren Township is especially key; as trails are developed in Van Buren and connections between the two townships are established, Ypsilanti Township's centralized location will make it attractive to riders looking to go west towards Ann Arbor or east towards MetroParks (Lower Huron, Willow, and Oakwoods), Lake Erie, and potentially to Detroit. West of Ann Arbor, the B2B will connect to Ingham and Jackson Counties, meeting up with the Lakelands Trail in Stockbridge and continuing aspart of the Great Lakes to Lakes Trail from South Haven to Port Huron. Additional major routes, such as the I-275 Metro Trail, would provide links to networks including the Hines Park Bikeway, a 19.5-mile long route which travels from Northville to Dearborn. Van Buren has proposed a number of trail developments, with their most recent plan indicating four potential connecting points with Ypsilanti Township.

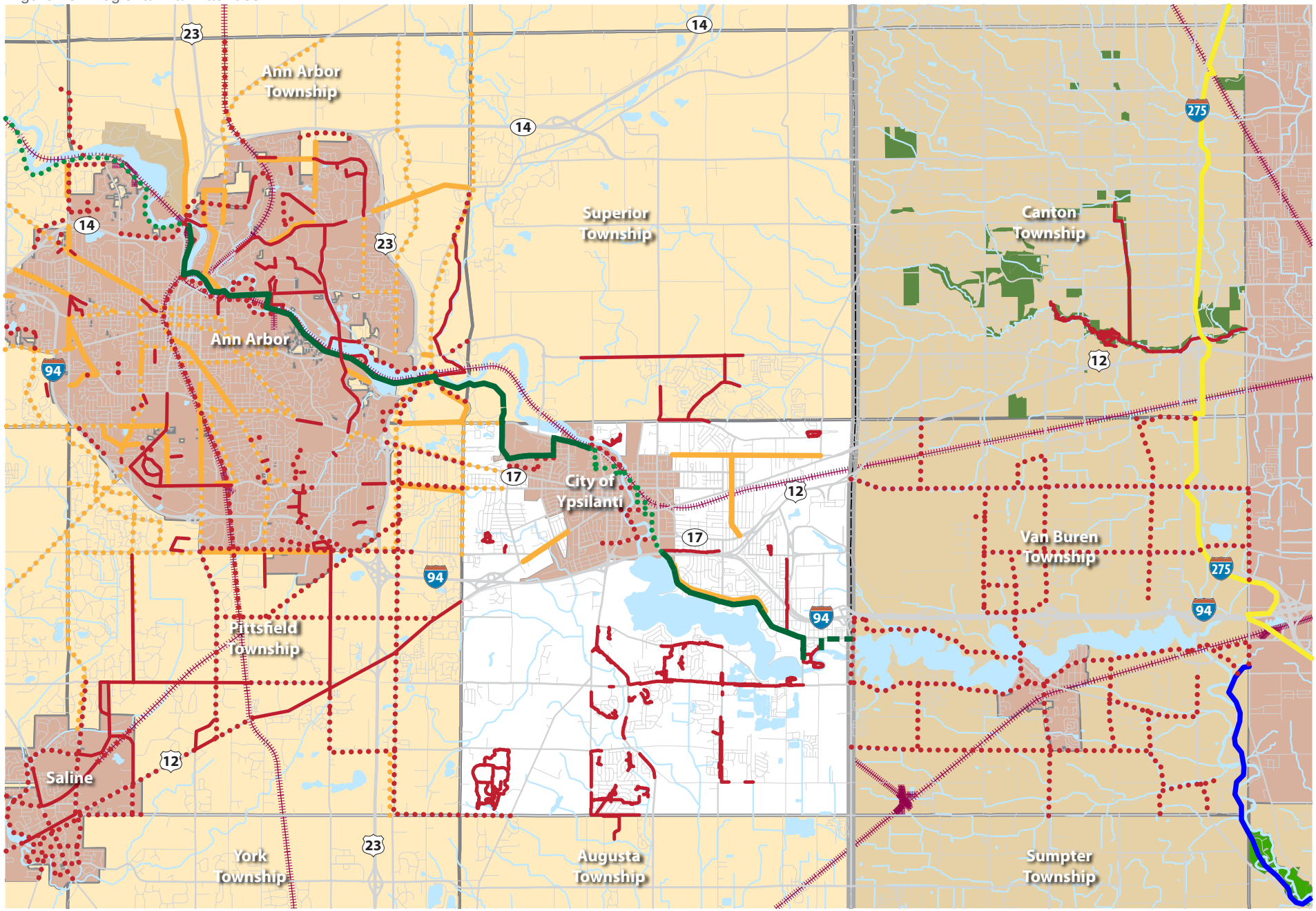
To the south, Augusta Township is in the preliminary stages of developing their own trail network. Augusta is evaluating potential routes which could connect the Lincoln Consolidated Schools campus with Ypsilanti Township. This connection is vitally important to Ypsilanti Township, as the majority of students in the large subdivisions south of Ford Lake attend these schools.

Pittsfield Township has constructed roughly ten miles of ten-foot wide pathways since 2009. The Platt Textile Greenway was completed in 2019 and several other projects have been proposed, including phase two of the Platt Road Greenway which runs south of Michigan Avenue.

Proposed trail facilities west of the Township could connect to the City of Saline through Pittsfield Township via US-12. Should this route be completed, a future link to the Village of Manchester and the proposed Watkins Lake State Park / Manchester to Brooklyn trail could come into play. The Watkins Lake trail would ultimately act as an Iron Belle Trail bypass, providing unprecedented trail access for riders from Jackson, Wayne and Washtenaw Counties.

As mentioned in the previous section, the Township is strategically placed to be an important destination for water enthusiasts as well. Given the proper amenities, visitors from across southeast Michigan, as well as communities from across the state, could consider Ypsilanti Township a prime boating destination.

Figure 18. Regional Trail Facilities



LOCAL DESTINATIONS

The "Township Core" (see Figure 23 on page 52) roughly follows South Huron Street to Whittaker Road, acting as the de facto downtown for Ypsilanti Township. The Core offers access to shopping, parks and recreation, governmental, and other community facilities. Seven parks border Ford Lake and the Huron River and connect with this Township Core, making the waterfront one of the most important destinations in the Township.

Other Township destinations include the following:

Schools:

Ypsilanti Public Schools

- Ford Early Learning Center
- Erickson Elementary
- Holmes Elementary
- Ypsilanti Community High School

Lincoln Consolidated Schools

- Childs Elementary *(just south of Ypsilanti Township on Bemis Road)*

Van Buren Public Schools

- Rawsonville Elementary

Eastern Michigan University (City of Ypsilanti)

Washtenaw Community College (City of Ypsilanti)

Community Facilities:

- Civic Center
- Ypsilanti District Library
- Vietnam Veteran's Memorial
- Post Office

Community Parks and Recreation Facilities:

- Appleridge Park
- Big Island Park
- Bud & Blossom Park
- Burns Park
- Clubview Park
- Community Center Park
- Fairway Hills Park
- Ford Heritage Park
- Ford Lake Park
- Green Oaks Golf Course
- Grove Road Overlooks
- Harris Park
- Hewen's Creek Park
- Huron River Park
- Lakeside Park
- Lakeview Park
- Loonfeather Point Park
- Nancy Park
- North Bay Park
- North Hydro Park
- Pines Park
- Rambling Road Park
- South Hydro Park
- Sugarbrook Park
- Tot Lot Park
- Watertower Park
- Wendell Holmes Park
- West Willow Park
- 430 S Harris Road (undeveloped)
- Ypsilanti Township Community Center

Other Recreation Facilities and Attractions:

- Rolling Hills County Park
- Eagle Crest Golf Course & Resort
- Pine View Golf Course
- Washtenaw Sportsman's Club
- Detroit Greenfield KOA Campground
- Yankee Air Museum

Major Shopping and Retail Districts:

- Township Core (S Huron)
- Michigan Avenue
- Ecorse Avenue
- Washtenaw Avenue
- City of Ypsilanti

Major Businesses and Employers:

- American Center for Mobility
- Ford Rawsonville Plant
- Eby Brown

USER TYPES

The needs and preferences of bicyclists vary depending on a bicyclists' skill level and the type of trip the individual wishes to take. Ypsilanti Township aims to provide comfortable and direct bicycling routes for existing bicyclists and to encourage other residents and visitors to ride for transportation and for recreation. Addressing the concerns of casual riders as well as more experienced riders will encourage more people to include bicycling in their daily lives.

Studies have shown that bicycle users and pedestrians share destinations and trip purposes common to other road users and, as a result, use all types of streets. Different types of users, however, generally prefer different types of streets. The American Association of State Highway Transportation Officials (AASHTO, 2012) recognizes different types of riders which are described in the margin to the right. Casual and less confident riders often prefer quiet neighborhood streets or recreational pathways. On the other hand, serious commuting and experienced riders can generally be found on major roads.

National studies have shown that on-road bicycle facilities for experienced riders and casual adult riders are generally safer than a sidewalk because they provide greater driver visibility. This is especially true at intersections and driveways, where conflicts with vehicles are most likely to occur.

Since bicyclists vary in skill and experience, the emphasis must be on establishing minimum standards which accommodate a full range of users while optimizing safety for all. The selection of non-motorized route corridors and facility development depends on a combination of several factors including the existing road network as well as potential destinations, scenic, and recreation amenities.

Types of Riders

TYPE A RIDERS: Experienced and confident riders generally use their bicycles as they would a car. They ride for convenience and speed and want direct access to destinations with a minimum of detour or delay. They are typically comfortable riding alongside a car; however, they need sufficient operating space on the traveled way or shoulder to eliminate the need for either them or a passing car to shift position. While comfortable on most streets, some prefer on-street bike lanes, paved shoulders, or shared use paths when available. Experienced riders avoid riding on sidewalks, which have speed and sight line limitations.

TYPE B RIDERS: Casual or less confident riders may also use their bicycles for transportation purposes, for example, to get to the store or to visit friends, but prefer to avoid roads with fast and busy car traffic unless there is ample roadway width to allow easy overtaking by faster cars. Thus, casual riders are more comfortable riding on neighborhood streets and shared-use paths and prefer designated facilities such as bike lanes on busier streets. If no on-street facilities are available, they may opt to ride on sidewalks.

EXISTING POLICIES & LAWS

As mentioned earlier in this plan, Ypsilanti Township Subdivision Regulations Ordinance includes provisions for sidewalk and bike path construction. Article IV, Section 04.04 describes the design standards for Sidewalks, Pedestrian Through-Block Connectors, and Bikepaths, while Article XXI, Section 2114.5 provides general provisions for sidewalks and safety paths.

State law allows bicycles to ride on sidewalks and all public roads except where restricted or on limited-access highways. Therefore, bicyclists are found in travel lanes on streets, road shoulders, bike lanes, sidewalks, and shared-use paths or trails across the state. The paragraphs below describe the state laws that govern the non-motorized network in Ypsilanti Township

Michigan Barrier Free Public Act and the American with Disabilities Act

Ypsilanti Township is required to meet the requirements of the Michigan Barrier Free Public Act of 1966 and MDOT standards for construction of sidewalks and ramps. These laws conform with regulations established by the Americans with Disabilities Act (ADA) of 1990. In addition, the Township is required to bring non-compliant curb ramps into compliance throughout the area as part of a transition plan.

The United States Access Board published revised Architectural Barriers Act (ABA) Standards 2015. These guidelines cover pedestrian access to sidewalks and streets, including crosswalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public right-of-way. The ABA requires that buildings and facilities that are designed, constructed, or altered with Federal funds, or leased by a Federal agency, comply with Federal standards for physical accessibility. The standards are limited to new and altered buildings and in newly leased facilities.

The Department of Justice published revised, enforceable accessibility standards called the 2010 ADA Standards for Accessible Design. Compliance with the 2010 Standards was required for new construction and alterations as of March 2012, and is also the compliance date for using the 2010 Standards for program accessibility and barrier removal. Assessing the suitability of the road network for bicycle use and bike lane striping is one of the first steps in selecting non-motorized transportation improvements. When evaluating roadway corridors for bicycle use, roadway width, number of travel lanes, presence of on-street parking, traffic volumes, car speeds, presence of large trucks, and pedestrian activity are among the many factors that should be considered.

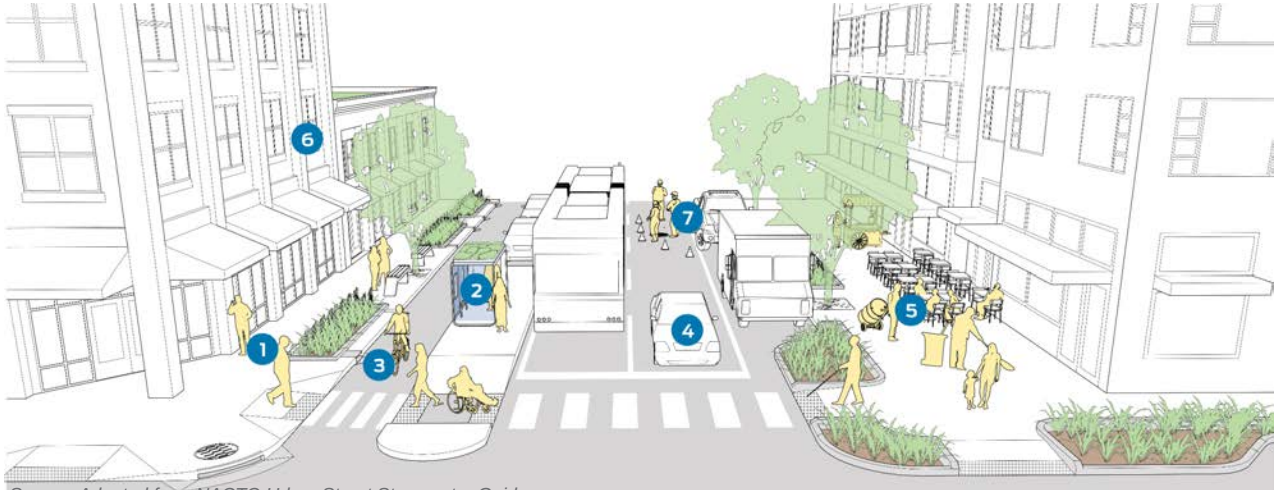
Complete Streets

In 2010, the State of Michigan legislature signed into law the Complete Streets amendments to the State Trunkline Highway System Act (Act 51 of 1951) and the Planning Enabling Act (Act 33 of 2008). The law provides an approach to transportation planning and design that considers all street users – pedestrians as well as motorists and bicyclists of all ages and abilities – during the various planning and design stages of a transportation project. It also requires that the Michigan Department of Transportation (MDOT) and local municipalities consider the community's goals and desires for road projects within their boundaries. The goals, objectives and projects articulated in this plan should be considered as part of any MDOT project in Ypsilanti Township.

The law requires Complete Streets policies to be sensitive to the local context, and consider the functional classification of roadways, cost, and the mobility needs of all legal users. Examples of complete streets facilities include curb ramps, well-marked crosswalks, longer crossing times, and bike lanes that are free of obstacles. The Complete Streets legislation also identified non-motorized facilities contributing to complete streets as eligible for funding as well as allowing agencies to enter into agreements to provide maintenance for facilities constructed to implement a Complete Streets policy.

In response to Complete Streets legislation at the state level, many municipalities have adopted Complete Street resolutions or ordinances. Ypsilanti Township has not, as of yet, adopted such a resolution or ordinance. If the Township chooses to enact a Complete Streets policy, the graphic below shows street user considerations that should be part of that policy. More information on local Complete Streets Ordinances can be found in the Implementation Chapter.

Figure 19. Complete Streets & Green Infrastructure



Source: Adapted from NACTO Urban Street Stormwater Guide
https://nacto.org/publication/urban-street-stormwater-guide/streets-are-ecosystems/complete-streets-green-streets/

STREET USER CONSIDERATIONS

1. *People Walking*

- Ponding of stormwater, especially near intersection crossings and ramps, creates barriers. For people using mobility devices, stormwater on the street functionally and significantly prevents access.
- Large or fast runoff streams also create barriers and degrade walking comfort.
- Drainage grates, lips, high storm drains, and large seams sited in or near pedestrian crossings introduce hazards.

2. *People Using Transit*

- People riding transit are also pedestrians and interact similarly with stormwater. Puddles or streams can impede walking and wheelchair access to transit stations and bus stops.
- Rider comfort is enhanced by shelter, shade, and greenscape at the transit stop. Improving rider comfort and experience is critical to growing transit as a mode.

- Greenery and trees make the walking environment more inviting and pleasant by reducing temperature, attenuating noise, and improving air quality.
- Green infrastructure can be used to calm traffic and improve safety conditions.
- High-quality public gathering spaces with natural features improve mental health, and create opportunities for community development.
- GSI can be integrated into transit facilities, including boarding bulbs and islands, to improve passenger comfort and natural drainage near stops.
- Transit shelter and facility roofs—usually owned or overseen by public agencies—can incorporate green features.

3. *People Bicycling*

- Ponding of stormwater impedes safe and enjoyable bicycling where drainage is insufficient or ineffective.
- Wet pavement may discourage riders who are concerned about mud and spray. An extended drainage period may displace bicycle trips into other transportation modes.
- Stormwater infrastructure design is safety-critical: poorly placed or antiquated storm drains poses hazards to cyclists, e.g. slick surfaces, debris, and the potential for wheels to become stuck in grates.

4. *People Driving Vehicles*

- Flooded streets can become impassable for motor vehicles. Puddles and pooled water can create poor or dangerous driving conditions, with splashing, poor visibility due to reflections, and unpredictable swerving to avoid water.
- Poorly draining streets hinder curbside access for vehicle entry and loading.

- Green stormwater infrastructure can improve drainage and increase bicycling comfort and access during and after storms of any size.
- Permeable pavements can be implemented on bikeways and raised cycle tracks to reduce the period of time required for pavement to dry.
- Planters or vegetation may be incorporated into protected bikeway buffer elements to increase rider comfort and reduce stress.
- Green infrastructure that captures runoff and reduce flooding promotes safer driving conditions.
- Design green infrastructure with sensitivity to context; implement GSI with other changes that reduce vehicle speed and improve visibility. People driving cars, especially in adverse conditions, may drive their vehicle into a stormwater facility; damage can be costly to repair.

5. *People Conducting Business*

- Curbside access is critical, regardless of travel mode or trip purpose; people making freight deliveries or doing business by foot, bike, handtruck, transit, or motor vehicle all need to access the curb in order to reach their destinations.
- Deliveries are essential to businesses and cities' economies, requiring thoughtful integration into street design and urban life. Flooded streets that impede freight movement take an economic toll.

Figure 6. People Residing

- Insufficient stormwater management can cause flooding in homes and businesses. Property owners incur financial losses from flooded buildings, and insurance rates can rise after repeated claims.
- Chronically wet basements and houses reduce property values and deter potential buyers. Flooding can cause mold, which can lead to increases in respiratory problems.
- People may use downstream water bodies for recreational activities. Poor water quality in lakes, rivers, and streams poses a public health risk and limits opportunities to use waterfronts for recreation.

Figure 7. People Working

- City crews and utility companies require periodic access to elements within the street to perform routine or emergency maintenance, such as sewers, cleanouts, and subsurface utility lines.
- Pavements cuts impact drainage and accessibility.
- Snow clearance and storage during winter months impact street operations.

- The success and vitality of commercial districts and neighborhood storefronts depend upon the ability of workers, visitors, and essential services to be able to access and use streets comfortably.
- Economic performance is tied to the comfort and attractiveness of streets—"Green" urban environments, e.g. planters, street trees, or stormwater infrastructure, perform better than streets without green improvements.
- Green stormwater infrastructure can be an asset to property owners. GSI works with gray infrastructure to mitigate flood risk, especially with careful siting guidelines and design strategies.
- Street trees and greenscape have been shown to increase property values.
- GSI can be implemented in collaboration with private properties to direct right-of-way runoff to bioretention areas beyond the right-of-way.
- Runoff from buildings and structures can be captured and infiltrated into right-of-way green infrastructure.
- Green infrastructure must be designed with maintenance in mind; crews must be able to access and navigate equipment around green elements.
- Green infrastructure must be implemented with consideration for existing or planned subsurface lines (see Retrofitting Streets for Stormwater).
- Vegetated strips provide linear space for snow storage.

Placemaking Plan for Ecorse Road and East Michigan Avenue

In 2018, Ypsilanti Township adopted a corridor plan for Ecorse Road and East Michigan Avenue focused on land use and zoning, connectivity and circulation, urban design, placemaking, and beautification. The vision is for both corridors to become a choice location for businesses, visitors and residents through quality development, business incubation, reinvestment and creation of anchors and safety improvements. The plan includes road diets on both Ecorse and East Michigan Avenue to create pedestrian-friendly corridors with bicycle lanes, on-street parking, and bus pick up/drop off areas. Other implementation actions include filling sidewalk gaps, improving and providing additional street lights on both corridors, as well as improving the existing mid-block crossing on East Michigan Avenue.

Figure 20. Michigan Avenue Street Section

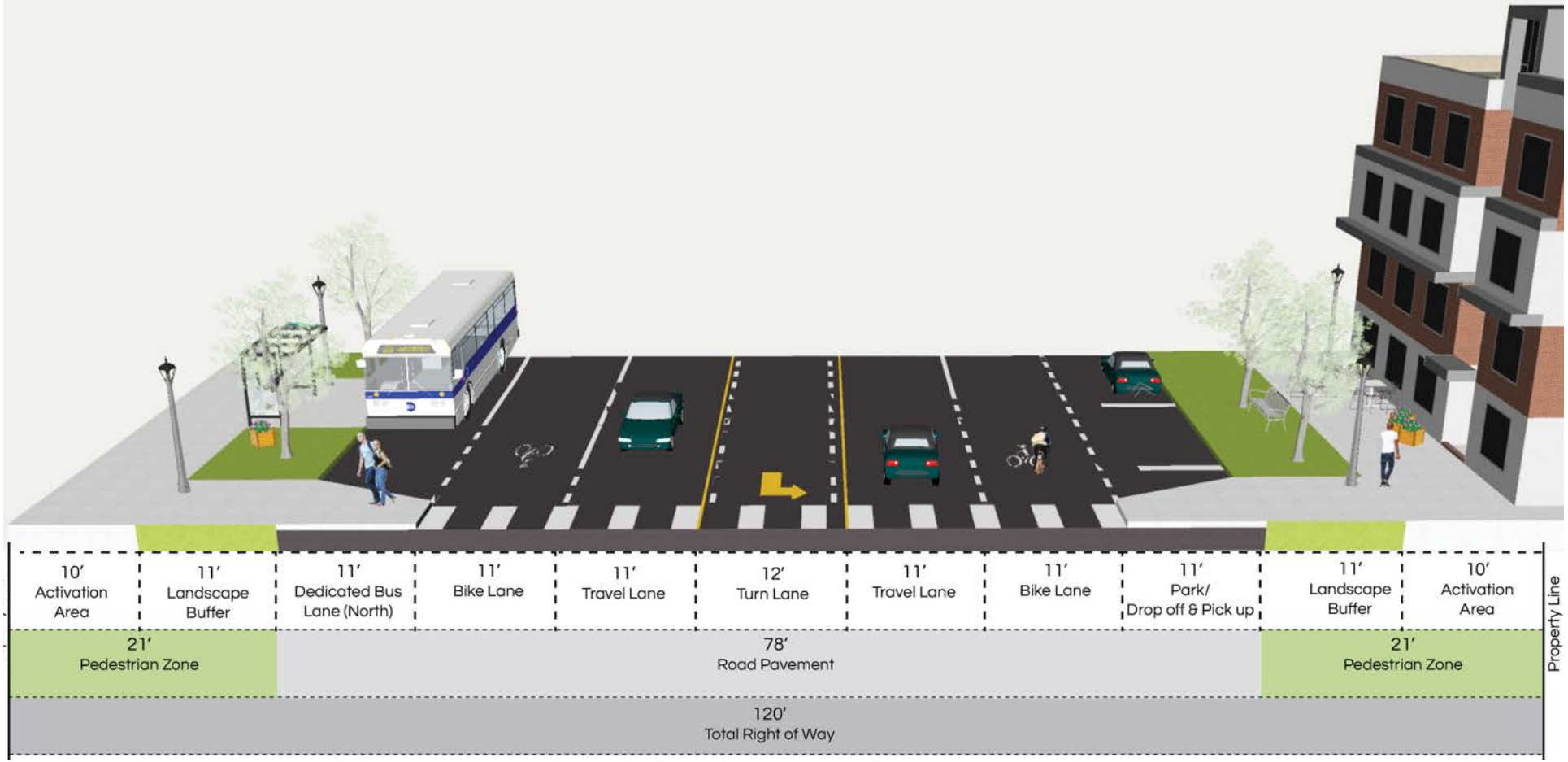
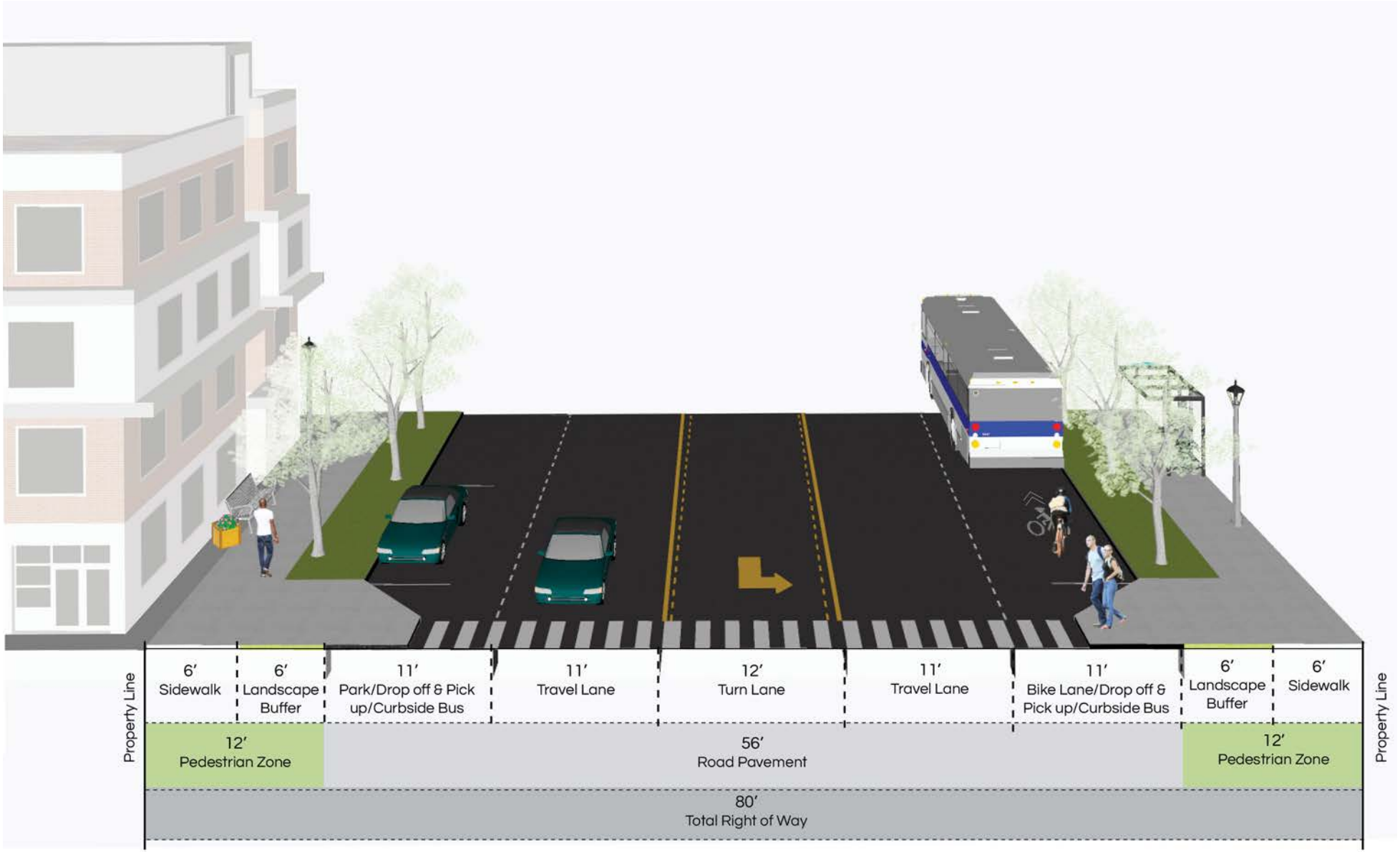


Figure 21. Ecorse Street Section



Planning Context

Residents using North Bay Park's trail system just south of I-94

Non-motorized transportation systems are tremendous community assets that promote healthier communities and increase recreation opportunities. Non-motorized networks can also attract visitors and increase property values, thereby boosting local and regional economies. These benefits can improve overall quality of life, while fostering greater economic and environmental sustainability.

Effective non-motorized transportation planning requires a review of existing planning efforts and looks to complement and enhance ideas that are completed or under development. Connectivity to surrounding communities, attractions, and amenities requires a thorough understanding of the activities planned by the Township's immediate neighbors as well as grander plans for the region as a whole. This final section of the Ypsilanti Township Non-motorized plan examines local, state, and regional programs which promote non-motorized transportation and describes non-motorized transportation facility planning and development at the state and regional levels.

YPSILANTI TOWNSHIP PLANNING EFFORTS

2019–2023 Parks & Recreation Master Plan

The recently completed **2019 – 2023 Parks and Recreation Master Plan** demonstrated strong resident support for the development of a comprehensive bicycle and pedestrian network. Input was gathered from residents through a combination of surveys, open houses, and other community events. 91% of survey respondents indicated that access to paths and trails is "very important". Multi-use walking trails and rustic walking paths were the top two requested amenities. 82% stated that they would like to see the Township's trail system expanded.

Despite access to the Huron River Water Trail via Ford Lake, residents were not as adamant about water trail development as they were about pedestrian and bicycle facilities. Only 36% of respondents indicated that they canoed or kayaked on a regular basis. Still, while water trail development was not the top priority for every respondent, several written comments suggest a desire to see improved access to and better visibility of Ford Lake.

A number of survey and open house participants stressed the importance of providing adequate maintenance on both existing and new trails. This was consistent with the main theme of the plan, which stressed improving existing park facilities and providing better ongoing maintenance to ensure the parks met the needs of residents for years to come.

Recreation Plan Comments : Non-motorized Facilities

- *I use the B to B trail from Stockbridge to Belleville for transportation and recreation.*
- *Metropark Trails such as Lower Huron, Dexter, and Kensington Metroparks - would love something close to home like this.*
- *I bike the B to B trail weekly in different parts of the county. Especially Ypsilanti Township.*
- *Related; little access to Huron River and Ford Lake beyond Ford Lake Park. Visibility of river and lake is terrible. Cannot see lake from I-94 nor from Grove. Same at parks.*
- *(I would like to see trail development) Only if it provides access to those many neighborhoods that currently have no safe passage for pedestrians/cyclist to get to them.*

Ypsilanti 2040 Master Plan

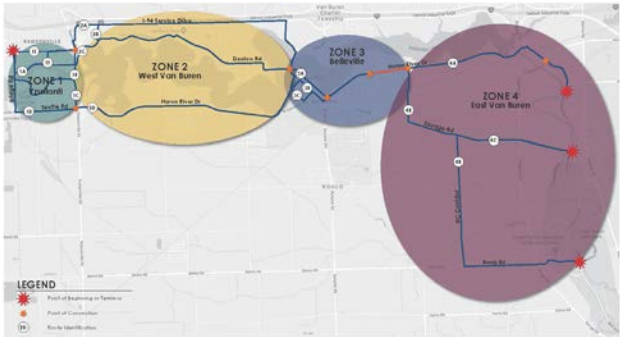
Ypsilanti Township is in the final stages of completing its Comprehensive Master Plan. The plan found that existing non-motorized facilities, including sidewalks, bike paths, and bike routes, do not provide access for all Township residents. During the planning process, many residents stated that they would bicycle to work if safe, reliable options were available. The plan calls for creation of bike paths or routes linking neighborhoods, shopping areas, and employment areas, and funding and implementation of proposed routes annually.

Conceptual routes in the Township Core form links between parks and the Civic Center campus, and bolster existing routes in the Innovation and Employment district and Mixed-use Core. The non-motorized connection across I-94 is a critical component, forming a link between the City of Ypsilanti and Ypsilanti Township and encouraging increased commerce and cooperation between the two communities. Outside of the Township Core, improved facilities along the Michigan Avenue and Ecorse Road corridors are suggested.

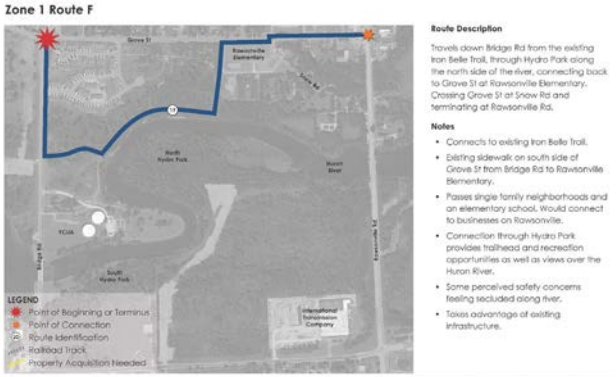
Washtenaw to Wayne County Iron Belle Trail Connection Alignment Study

Ypsilanti Township, the City of Belleville, and Van Buren Township commissioned the Washtenaw to Wayne County Iron Belle Trail Connection Alignment Study to evaluate potential routes from Ypsilanti Township to Belleville. The study used a 10 part scoring system to consider 288 possible route combinations before settling on a route running through North Hydro Park with a connection back to Grove Street. The path would continue north of Belleville Lake to Belleville, at which point it would travel south of the lake along Huron River Drive. The eastern terminus would be at South Metro Parkway, where it would connect with the Metropark trail system. The route would pass through six parks along the way and would form a vital link for the Iron Belle Trail.

Figure 22. Proposed alignments from the Washtenaw to Wayne County Iron Belle Trail Connection Alignment Study



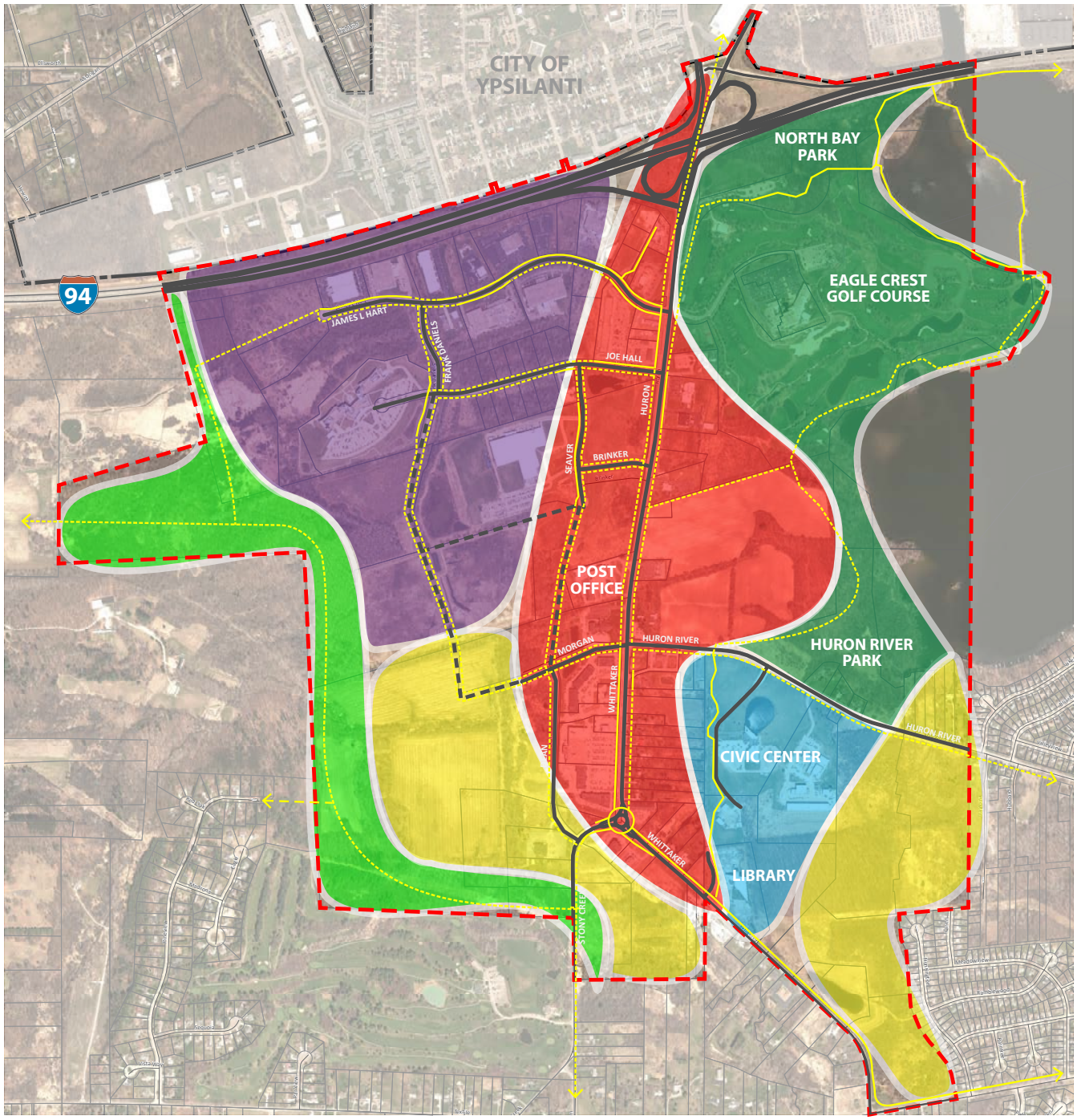
Planning Process



Rte #	Route Description	Residential Access	Commercial Access	Trailhead Opp.	Connectivity	Rec. Opp	Safety	Scenic Variety	Viability of Long Term Maint	Feasibility of Development	Property Acquisition Feasibility	TOTAL SCORE
1	Hydro Park											
1F	Rawsonville Rd to Hydro Park, following Huron River to Rawsonville Elementary, back to Grove St	5	5	8	10	10	6	7	9	10	18	88

Source: Washtenaw to Wayne County Iron Belle Trail Connection Alignment Study, PEA Inc

Figure 23. Ypsilanti Township Core Future Land Use Study



FUTURE LAND USE - TOWNSHIP CORE

Ypsilanti Township, Washtenaw County

Mixed-use Core:
Uses with a community-wide draw – such as hotels, restaurants, shopping, and public parks, spaces, and buildings, including government offices and a community center.

Residential:
Residential areas designed to complement and bring vitality to the mixed use core. Types of homes could include single-family residential, attached residential and multiple-family.

Institutional:
The Civic Center, Library and Vietnam Veterans Memorial are located here. Complementary institutional uses - such as other government offices, parks, event space – should be located here.

Innovation & Employment:
Major employment area with road and utility infrastructure for a combination of technology, office, craft manufacturing or light industrial uses.

Open Space & Recreation:
North Bay Park, Eagle Crest Golf Course and Huron River Park are located here. These entities are an open space system that should be linked by trails and give the public access to Ford Lake.

Buffer Zone:
The existing wetlands and woodlands in this area should be preserved as a natural system and a buffer between the existing neighborhoods to the south and the more intense land uses in the Township Core.

- Township Border
- Township Core Boundary
- Existing Road
- Proposed Road
- Existing Non-motorized Route
- Proposed Non-motorized Route

N

0 500 1,000 1,500 2,000 Feet

Carlisle/Wortman Associates
February 2019

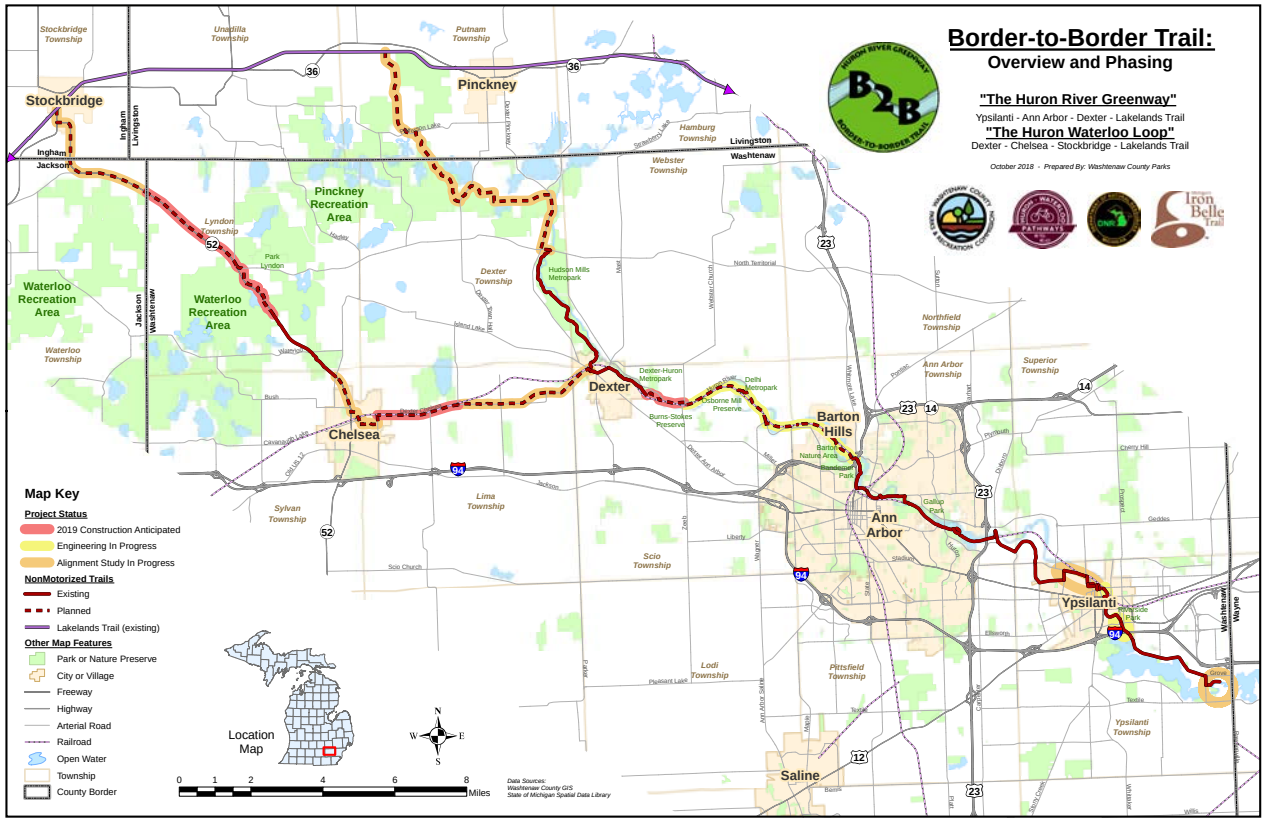
Source: Ypsilanti 2040 Master Plan

RELATED PLANNING EFFORTS

Ypsilanti Township recognizes the economic, social, and environmental benefits presented by non-motorized transportation, and is committed to continued development of pedestrian and bicycle facilities and programs. Trail planning presents a continually moving target for municipal administrators with new routes constantly in the works. A number of regional planning efforts have been completed in recent years with direct implications on future planning in Ypsilanti Township.

The following paragraphs describe these efforts.

Figure 24. Border-to-Border Trail Alignment



Source: Washtenaw County Parks and Recreation

Washtenaw County

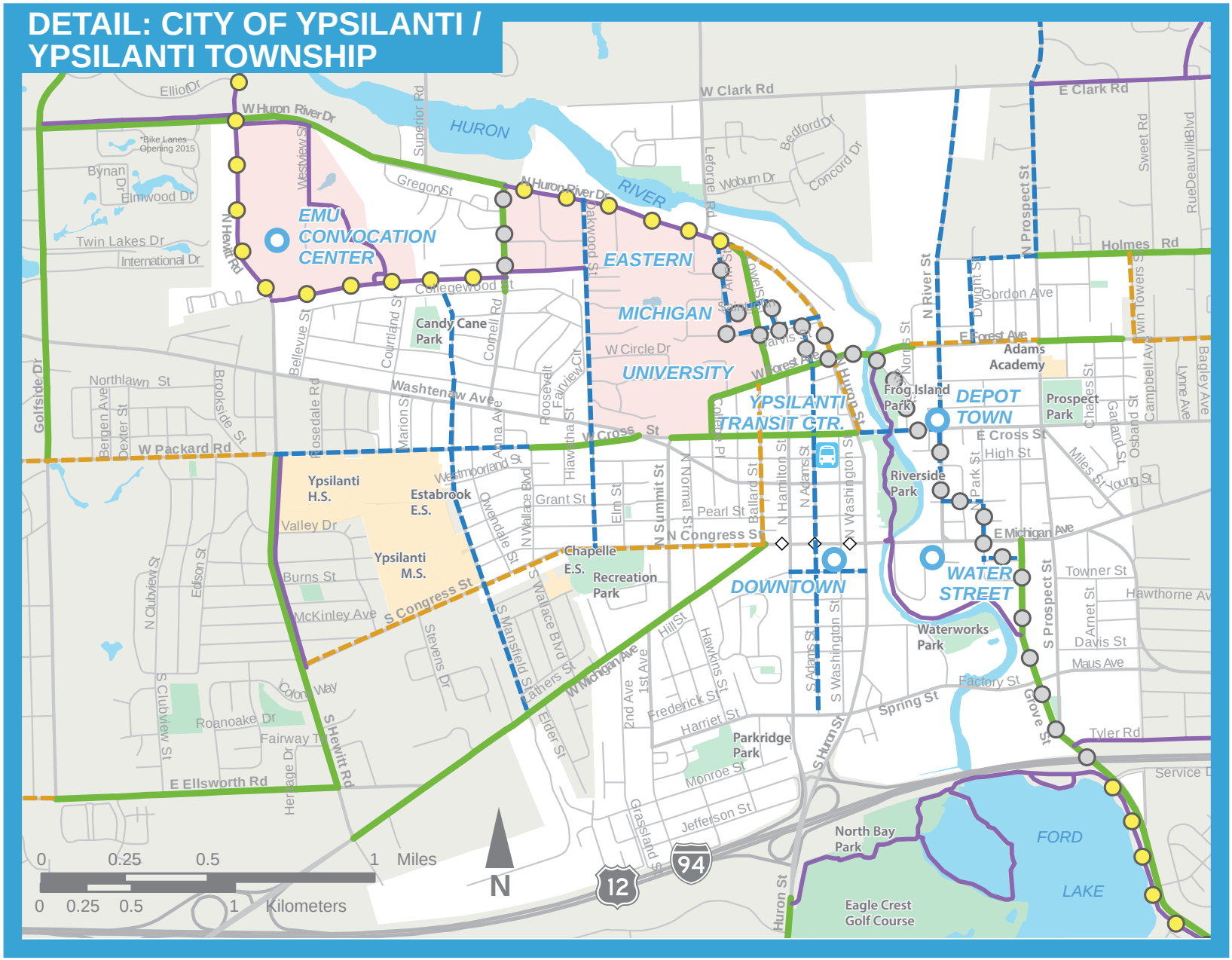
Washtenaw County Parks & Recreation

The Washtenaw County Parks and Recreation Commission (WCPARC) has made tremendous strides in developing non-motorized transportation facilities in Washtenaw County, with several projects that directly impact Ypsilanti Township residents. Their main efforts have focused on the development of the Border-to-Border Trail along the Huron River connecting the cities of Ann Arbor and Ypsilanti. Additional projects form connections to neighboring Livingston and Jackson Counties, and could eventually link to Ypsilanti Township as well.

The Border-to-Border Trail (B2B) represents the primary connector for non-motorized transportation in the county. When completed, the B2B will run 70 miles through 13 Washtenaw Communities. The B2B runs from Ypsilanti Township northwest through Ypsilanti, Ann Arbor, and Dexter, with long range plans envisioning connections to the Mike Levine Lakelands State Trail in Ingham and Livingston County. As a part of the Iron Belle Trail system, the B2B provides a jumping point to thousands of miles of non-motorized pathways within the state and beyond. The WCPARC is actively working with state and local officials to address gaps and other connectivity issues in the B2B.

Other projects in the preliminary stages of evaluation by WCPARC and local officials include potential routes from Jackson County. If these routes come to fruition, they would pass through Watkins Lake State Park and County Preserve, the Village of Manchester, and the cities of Saline and Milan before reaching Ypsilanti Township.

Figure 25. Border-to-Border Trail Detail Map



Adapted from Washtenaw County Parks and Recreation Map

Washtenaw Area Transportation Study

The Washtenaw Area Transportation Study (WATS) is a multi-jurisdictional agency responsible for transportation planning in Washtenaw County. WATS has prepared two documents directly applicable to non-motorized planning in Ypsilanti Township. The ***2018 Non-motorized Transportation Plan*** looks specifically at non-motorized transportation infrastructure while the ***2045 Long Range Plan*** considers overall regional transportation development. The latter plan, adopted by the WATS Policy Committee on March 20, 2019, was developed by a coalition of local municipalities including Ypsilanti Township. The new plan is a major overhaul of the original 2006 study, and includes an inventory of existing walking and bicycling facilities and identifies non-motorized transportation deficiencies across the County.

The plan identifies seven major goals, five of which directly relate to non-motorized transportation issues as follows:

1. **Equity:** WATS continues to seek ways to invest in environmental justice, low opportunity, and very low opportunity areas in an effort to disrupt the effects of historic injustice. Significant sections of Ypsilanti Township fall in the "low" and "very low" categories of the Opportunity Index;
2. **Safety:** Track the number and rate of roadside crashes, reduce the five year average for pedestrian and cyclist injuries, and adopt a "Vision Zero" philosophy which aims to eliminate all transportation related fatalities by designing systems that protect users;
3. **Environment:** Reduce the total number of Vehicle Miles Traveled (VMT) in an effort to reduce greenhouse gas emissions, and has pledged to invest 10% of Surface Transportation Block Grant funds into non-motorized options;
4. **Linking Transportation and Land Use:** Increase the percentage of work trips accessible within 30 minutes, noting that biking and walking trips have the highest share of trips within this range; and
5. **Access & Mobility:** Measure the overall coverage of local bike and pedestrian networks, encourage "Complete Street" development, and increases the availability of non-motorized facilities.

Under regional priorities, the plan highlights the Huron I-94 non-motorized crossing, noting the disruptive nature of the freeway and its role in disconnecting Ypsilanti Township and City of Ypsilanti residents. The report concludes, "Every effort should be made to construct this project and connect these communities."

WATS also highlights the importance of the B2B and connected trails. WATS has funded portions of the trail through Surface Transportation Program (STP) funds and showed support for the project by signing letters of support for federal Transportation Alternatives Program (TAP) funds.

Finally, the study highlights a number of paving and/or reconstruction projects that could allow for non-motorized facility investment at a significantly reduced cost. Notable projects include paving and reconstruction of Bemis Road, roadway rehabilitation of Hewitt

Figure 26. Detail: Pedestrian Facility Deficiencies (top) and Bike Facility Deficiencies (bottom)

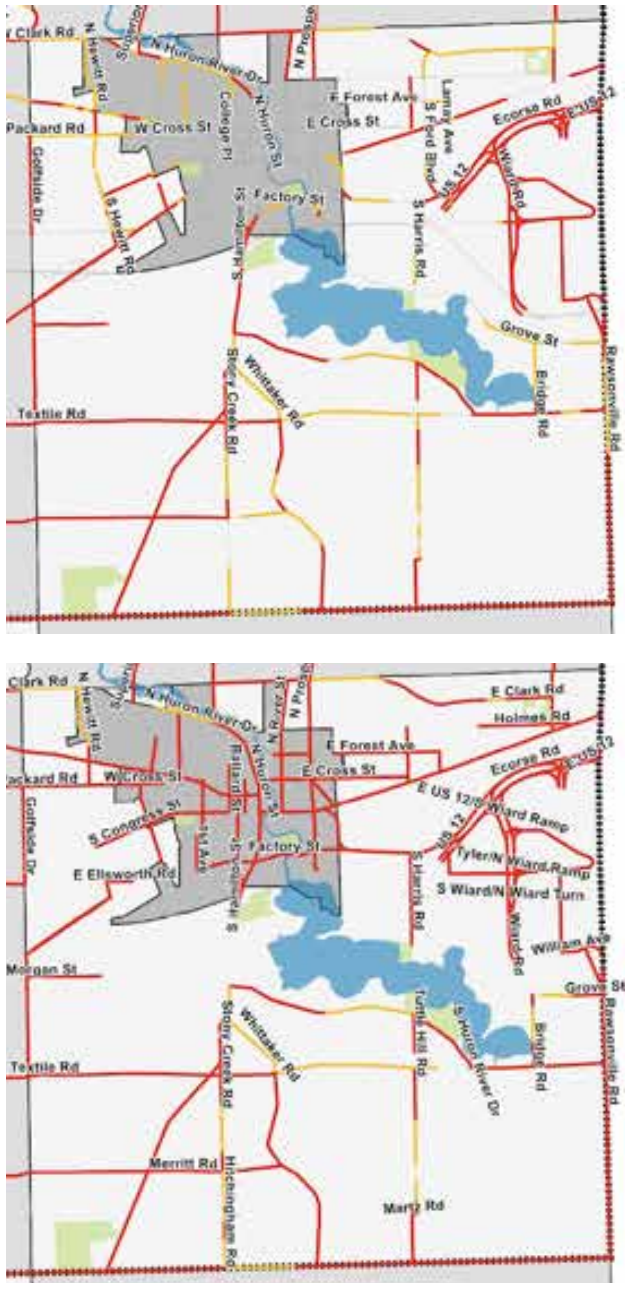
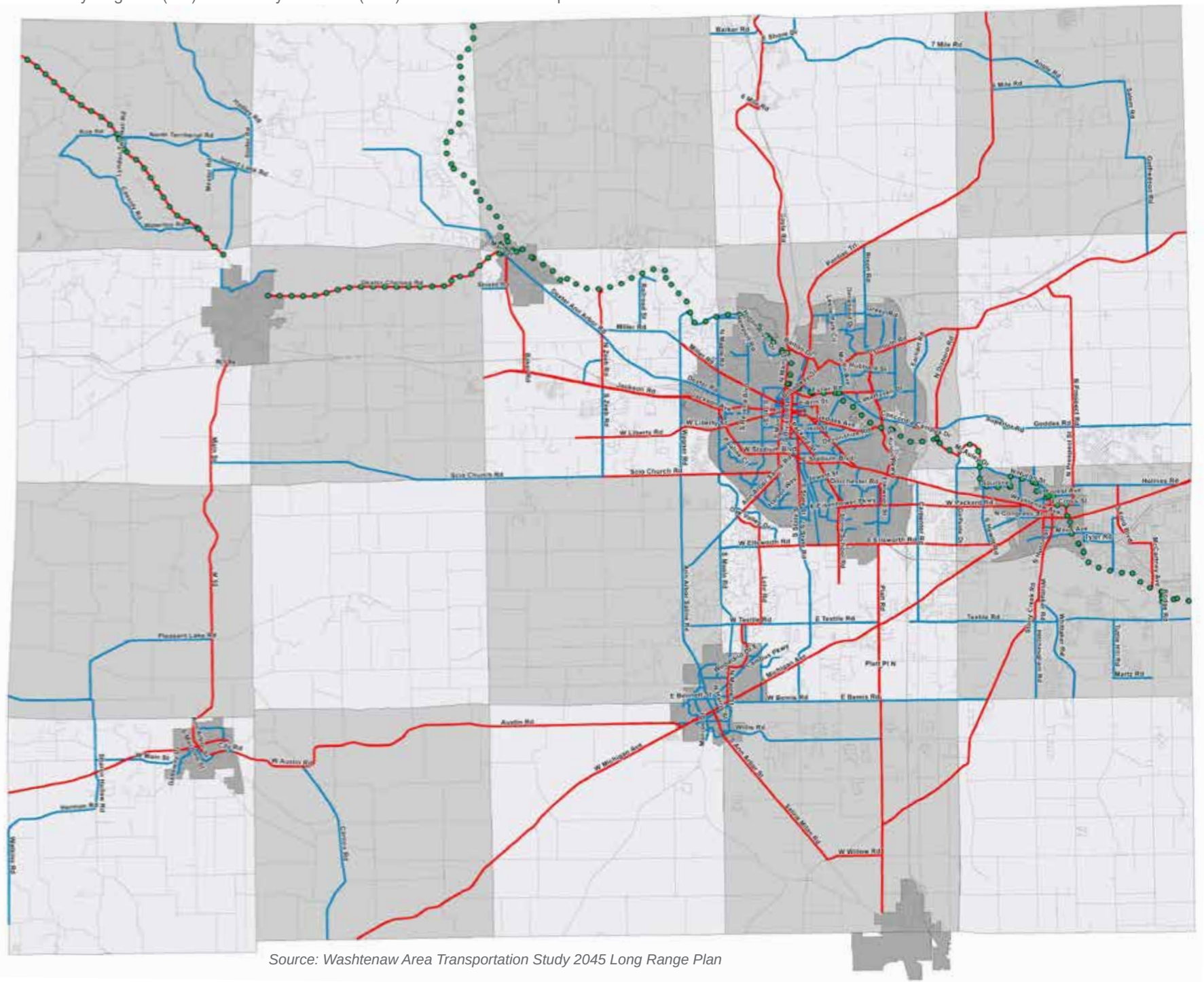


Figure 27. Primary Regional (red) and Locally Identified (blue) Non-Motorized Transportation Routes



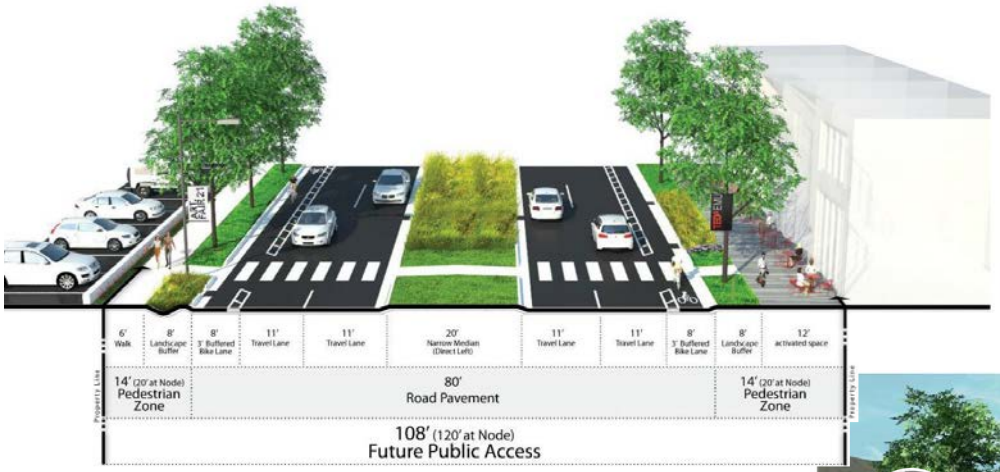
Source: Washtenaw Area Transportation Study 2045 Long Range Plan

Reimagine Washtenaw

In 2009, a coalition of the Cities of Ann Arbor and Ypsilanti, Pittsfield and Ypsilanti Townships, MDOT, Washtenaw County Office of Community and Economic Development, Ann Arbor Area Transportation Authority, and Washtenaw Area Transportation study partnered to evaluate opportunities to transform Washtenaw Avenue from an auto-centric thoroughfare into a mixed-use corridor with efficient mass transit and safe non-motorized facilities. The corridor improvement study recommended adoption of Complete Street policies, focusing on streetscape and non-motorized infrastructure that provide a "sense of place". Pedestrian and bicycle safety are addressed through signalized intersections, mid-block crossings, and clearly designated bicycle facilities.

In Ypsilanti Township, the number of vehicle travel lanes would remain the same, but a narrow median would be introduced to improve traffic flow and provide safer pedestrian crossings. Travel lanes would be reduced to 11-foot width with continuous sidewalks and buffered bike lanes. Signalized intersections at Golfside, Fountain Square, and Hewitt, and potential neighborhood connections are suggested for Collegewood and Maubetsch. Implementation of the recommendations would be phased over several decades as opportunities arise and public access can be accommodated. Sidewalk construction in selected areas of the Township is expected to begin in 2020.

Figure 28. Conceptual Treatment for Washtenaw Avenue at Golfside Drive



Source: ReImagine Washtenaw

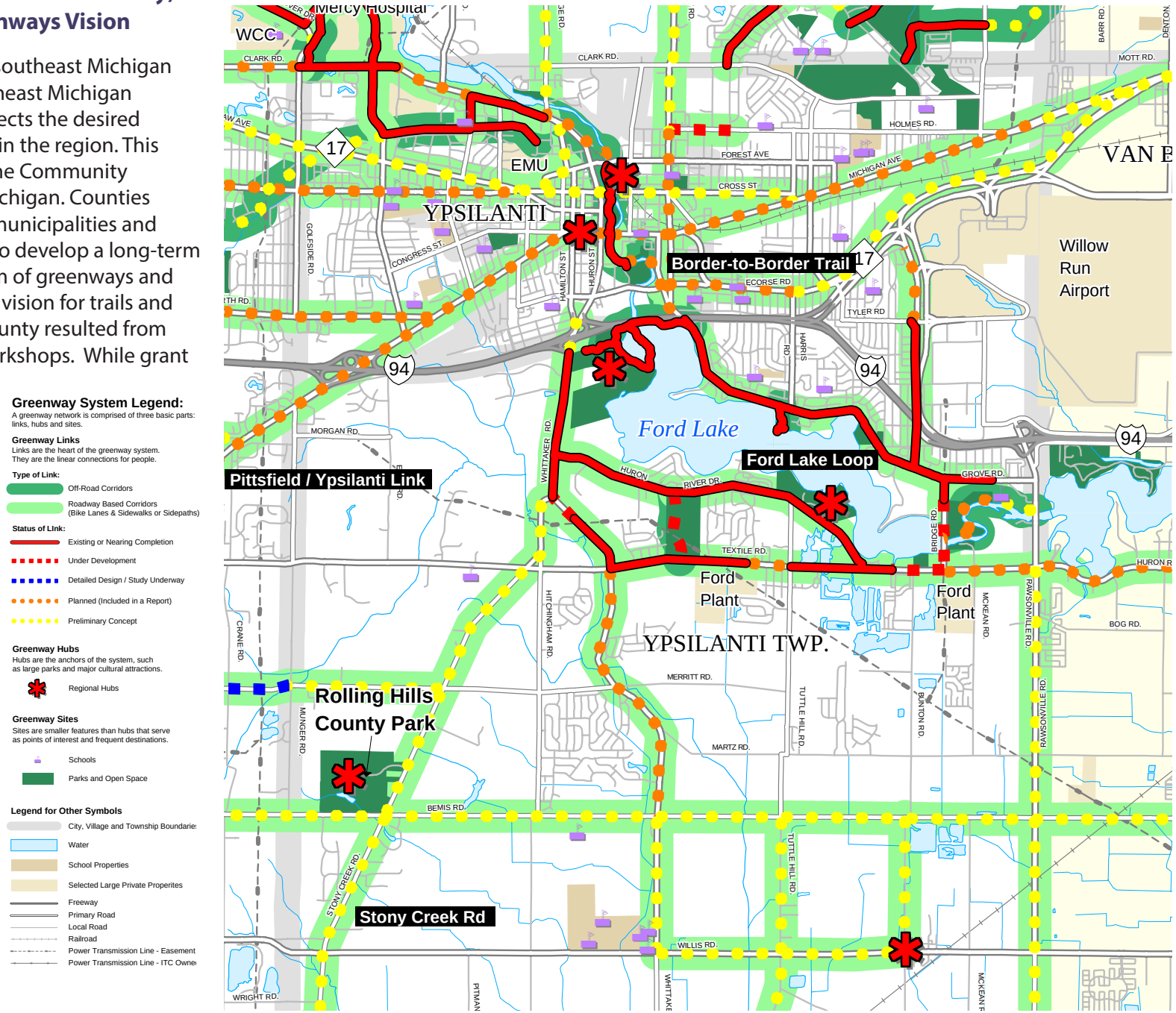
Source: Adapted from ReImagine Washtenaw

Southeast Michigan (Washtenaw County) Regional Trails and Greenways Vision

The seven-county region of southeast Michigan developed an updated Southeast Michigan Greenways Vision, which reflects the desired non-motorized connections in the region. This initiative was facilitated by the Community Foundation for Southeast Michigan. Counties worked together with local municipalities and community interest groups to develop a long-term vision for a connected system of greenways and non-motorized facilities. The vision for trails and greenways in Washtenaw County resulted from input gathered at several workshops. While grant funding was completed in 2006, the foundation continues to share their greenway experience with interested communities.

The RTGV highlights the non-motorized loop surrounding Ford Lake, and reinforces support for connections to Van Buren Township. Connections to Augusta Township to the south are also proposed, providing important links to the Lincoln Consolidated Schools campus.

Figure 29. Ypsilanti Township Regional Trails and Greenways Vision



Source: Southeast Michigan Regional Trails and Greenways Vision, Greenways Collaborative

STATE OF MICHIGAN

State of Michigan - Iron Belle Trail

First announced in 2012, the Iron Belle Trail (IBT) system is the longest designated state trail in the United States. The trail, which is approximately 68% complete as of 2019, will provide a 1,273 mile hiking and 791 mile biking route winding from Belle Isle in Detroit to Ironwood in the far northwest corner of the Upper Peninsula. The trail takes advantage of existing multi-use trail systems, and fills gaps between communities where needed. The hiking portion of the IBT passes directly through Ypsilanti Township as part of the Border-to-Border trail.

The IBT is an important leg in the North Country Trail, the 4,600 mile trail system which spans from eastern New York to central North Dakota. Michigan's section of the trail is the longest in the North Country system. The North Country trail enters the state well west of Ypsilanti Township, but is directly accessible by following the IBT to Homer, Michigan, where the two trails intersect. The Michigan Department of Transportation (MDOT) maintains the bike trail along US-2 in the Upper Peninsula, while the Michigan Department of Natural Resources (MDNR) and local municipalities are responsible for the bike sections in the Lower Peninsula. Volunteers from the North Country Trail Association perform maintenance on the hiking trails on certain sections of the trail, and may be available for periodic assistance on the Township portion of the trail.

Since its inception in 2012, $68 million has gone toward a variety of projects to develop and construct sections of the IBT, including more than $40 million in federal grants, $25 million in state grants and more than $3 million in local funds. The MDNR offers a mini-grant program to assist with engineering and design assistance, development costs, and trail signage and marketing. Proposed projects must be on the planned trail route. The maximum ask amount is $50,000.

The **Michigan Fitness Foundation** is home to the **Iron Belle Trail Fund Campaign (IBTFC)**. The campaign has raised money from private donors and philanthropy groups across the state to fund development of the trail. The majority of funding from this campaign has gone to more rural areas; Donors typically require that spending happen in their home regions. While the IBTFC has not been involved in IBT development in southeast Michigan to date, the potential for funding through this campaign is possible if a partnership with a donor group can be established.

Figure 30. Iron Belle Trail Proposed Alignment

Source: Michigan Department of Natural Resources

2040 State Long-Range Transportation Plan

The Michigan Department of Transportation (MDOT) 2040 State Long-Range Transportation Plan indicates that paved shoulders four feet or greater in rural areas and bicycle lanes in urban areas are considered suitable bicycle facilities. More than 44 miles of marked bike lanes and 3,160 miles of paved shoulders have been developed as of 2015. Rail-to-trail facilities also continue to grow as the result of partnerships between governmental agencies, nonprofit groups, and other interested parties. The state saw a nearly 4% increase in rail trails between 2010 and 2015, with 2,386 miles now open to the public.

MDOT has also implemented road diet programs on more than 55 miles of trunkline across the state. They now consider any road with an Average Annual Daily Traffic (AADT) level of less than 10,000 vehicles as a candidate for a road diet. Michigan Avenue and Ecorse Road, two streets which had been considered prime candidates for road diets, both exceed this threshold.

Community and Economic Benefits of Bicycling in Michigan

MDOT's Community and Economic Benefits of Bicycling in Michigan found that cycling provides an estimated $668 million per year in economic benefits to Michigan's economy. Case studies in Ann Arbor and four other cities were used to quantify the effects on employment, retail revenue, tourism, overall health benefits, and increased productivity.

2010 Complete Streets Legislation (Public Act 135) and MDOT's 2012 Complete Streets Policy are designed to enable coordination between agencies and ensure network connectivity. Since their inception, more than 100 communities have adopted complete street policies, including the cities of Ypsilanti and Ann Arbor. This legislation also required the creation of a Complete Streets Advisory Council. The council provides education and advice to local communities regarding development of complete street policies.

State Trails Implementation Plan

The MDNR's State Trails Implementation Plan of 2014 provides guidance on a variety of motorized and non-motorized trail systems in the state. Priorities for the plan include:

- Developing funding sources and mechanisms for trail maintenance, acquisition, and development;
- Ensuring sustainability by maintaining trails according to established guidelines;
- Expanding trails to ensure broader public access to trail systems;
- Linking trails, trail users, and adjoining communities to enhance local prosperity, and;
- Develop and enhance trail partnerships and collaborations.

Image Source: Michigan Department of Natural Resources

Southeast Michigan Council of Governments 2014 Bicycle and Pedestrian Travel Plan for Southeast Michigan / SEMCOG 2045

In 2014 SEMCOG and MDOT jointly adopted the **Bicycle and Pedestrian Travel Plan for Southeast Michigan**. This plan focuses on integrating individual trail systems into one cohesive network. The plan provides valuable statistics regarding bike commute trips and pedestrian trends; it notes, for example, that bicycle trips as a form of commuting increased by over 200% between 1994 and 2005.

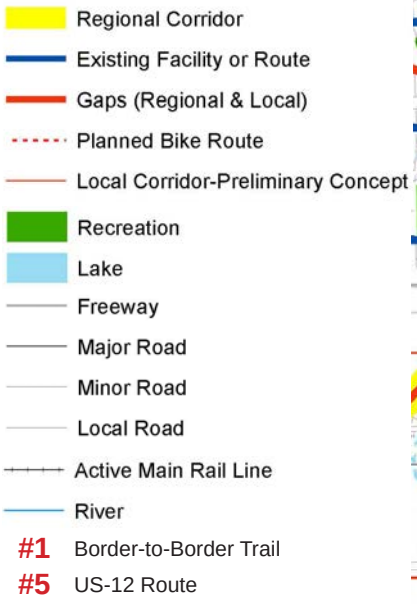
Washtenaw County has the second largest trail network in the seven-county SEMCOG region, behind Oakland County. The main discrepancy between the two counties is in built and planned safety paths; Oakland has over five times as many shared use paths as Washtenaw. The plan identifies deficiencies in both the pedestrian and bicycling networks, and specifically calls out the B2B, noting major crossing issues at I-94 and Grove Roads and a lack of pedestrian facilities on Huron River Road.

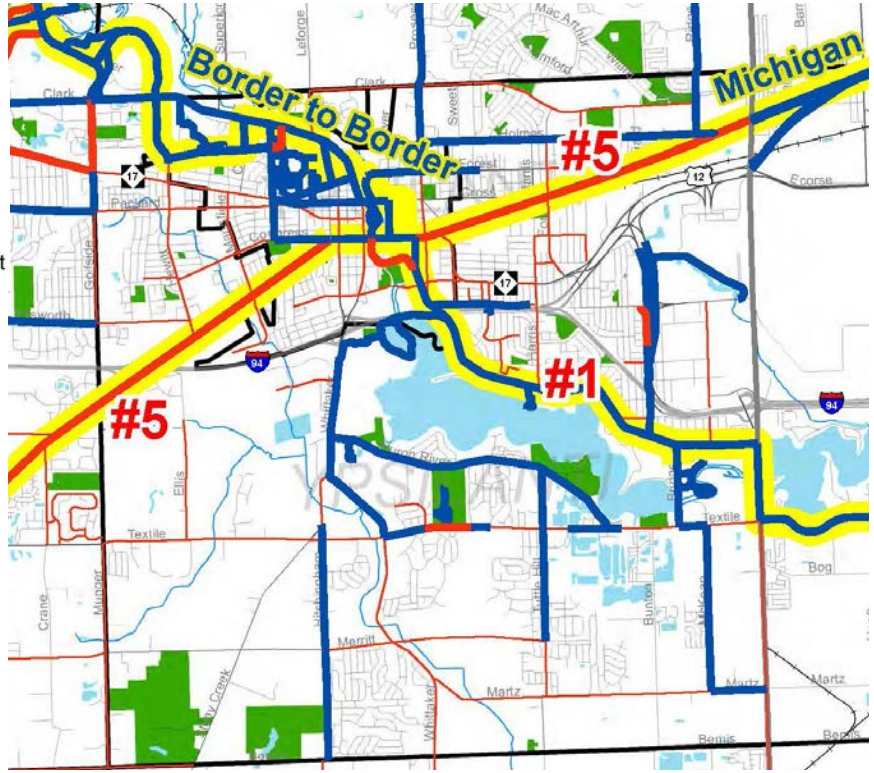
The plan offers a variety of strategies for regional implementation and emphasizes the importance of timing; using an excerpt from Oakland County's Complete Streets General Guidelines, it demonstrates the importance of incorporating bicycle and pedestrian projects as part of greater streetscape planning and design. As the project progresses, opportunities for input decrease while cost of implementation increases dramatically. This is important for the Township to consider as various WATS projects are implemented over the coming years.

In 2018, SEMCOG released two reports, an implementation report and the **2045 Regional Transportation Plan for Southeast Michigan**. The reports detail progress made on the region's bicycle and pedestrian network, and references the addition of 109 miles of shared-lane markings, 105 miles of local bike routes, 57 miles of shared-use paths, 47 miles of conventional bike lanes, and 24 miles of protected bike lanes. The implementation report responds to planning efforts first completed in 2006 and later updated in 2014, and incorporates a number of different initiatives, including the Washtenaw County Regional Trails and Greenways Vision.

The 2014 plan identifies a number of potential routes, trail gaps, and other non-motorized opportunities on a county by county basis. The primary focus in Ypsilanti Township is on the Border-to-Border Trail. Identified as route one in Figure 21, the plan calls for improved facilities along Grove Road, new connections on Rawsonville Road, and added wayfinding signage along the trail. I-94 crossings at Huron and Grove Roads are noted as significant problem areas as which require attention. A second route (route 5 in Figure 21) follows the US 12 / Michigan Avenue corridor, linking the Hines Drive and I-275 Metro Trails in Plymouth to the Lenawee County line and the M-52 Road Corridor. SEMCOG envisions this trail becoming part of the US Bicycle Route 36, which currently runs from Chicago to the Michigan state line.

Figure 31. Detail: Regional Transportation Plan





Adapted from: SEMCOG 2014 Bicycle and Pedestrian Travel Plan for Southeast Michigan - Washtenaw County Map

OTHER PLANS

Van Buren Township Parks and Recreation Master Plan

Van Buren Township's most recent recreation plan references the 2002 Greenways and Trails Master Plan which establishes the creation of a linked non-motorized pathway system throughout the Township. The plan recommends three treatment levels for the pathway system: Class I would be 10 to 12-foot wide multi-use pathways, Class II are bicycle lanes, and Class III bike routes. Two primary connections to Ypsilanti Township are proposed. A Class I route would be installed on Ecorse Road, while a Class III bike route is proposed for Rawsonville Road with a pathway north of the river extending to North Hydro Park. A Class I route is shown running along Huron River Drive, but does not continue through to Textile in Ypsilanti Township. The Five-Year Capital Improvement Plan recommends construction of pathways in Riggs Heritage Park with connections to Lower Huron MetroPark, but does not provide funding for other proposed routes.

2006 – 2030 Western Wayne County Transportation Improvement Study

This study of Plymouth and Canton Townships primarily focuses on motorized transportation enhancements. Still, it devotes a significant portion of the text to non-motorized pathway development, and acknowledges the need for additional non-motorized facilities both as a way to ease vehicular congestion and to meet the demand of local residents. The report notes that each community is in different stages of development, with Canton having the most ambitious vision at the time. It further states that the majority of off-street non-motorized paths in the region are limited to internal park trails and residential developments, which frequently do not connect with existing on-street sidewalk networks and bike lanes, with the notable exception of the I-275 Bikeway. The study highlights the potential for non-motorized development along the US-12 corridor

Washtenaw Bicycling and Walking Coalition

The Washtenaw Bicycling and Walking Coalition (WBWC) is a group dedicated to increasing the quality and quantity of bicycling and walking opportunities in Washtenaw County through advocacy and education. The group is comprised of local organizations, agencies, retail stores, as well as individual cyclists and walkers.

Image Source: Empowering Michigan / DTE

HEALTH AND ACTIVE COMMUNITY PROGRAMS

Several significant programs promoting pedestrian and bicycle friendly communities in Michigan, Washtenaw County, and locally have come together to create incentives and facilitate non-motorized transportation planning and development.

Image Source: Michigan Safe Routes to School

Promoting Active Communities

The Promoting Active Communities (PAC) program is an online assessment and award system funded in whole or in part by the USDA's Supplemental Nutrition Assistance Program Education through the Michigan Department of Health and Human Services and the Michigan Fitness Foundation. It was developed in collaboration with the Community Economic Development Association of Michigan, Michigan Association of Planning, Michigan Department of Education, Michigan Department of Health and Human Services, Michigan Department of Transportation, Michigan Land Use Institute, Michigan Municipal League, Michigan State University Extension, mParks, and the Safe Routes to School National Partnership. The program is part of a state initiative on physical activity to help Michigan communities make changes to their policies, promotion strategies, and the physical design of their communities to make it easier for community residents to be physically active.

The PAC assessment is a self-assessment tool that enables communities to examine their policies, programs, and built environments. The assessment, which requires teamwork between community leaders and citizens, generates ideas for community improvements. Participants complete six modules covering core community readiness, parks and recreation, schools, neighborhoods, commercial districts, and transportation infrastructure. Upon completion, every community is eligible to earn one of five award levels from the Governor's Council and Michigan Department of Community Health, based on their assessment score.

Michigan Fitness Foundation – Safe Routes to Schools

The Michigan Fitness Foundation (MFF) Safe Routes to School program provides expertise and assistance in the form of grants to develop solutions which encourage students to walk and bike to school. The Minor Grant program focuses on programming opportunities. Applicants can apply for up to $5,000 per school or $25,000 per districts that serve at least one grade in the K-8 range. Non-profits with an approved working partnership with the school are also eligible.

Major grants are used to identify and correct barriers walking or biking. Barriers can be physical or behavioral, and could include projects such as crosswalk updates, multi-use pathways, sidewalk installation, signage, and traffic calming measures. Eligible communities may apply for up to $200,000 in infrastructure funding and an additional $8,000 in programming funding for each school that serves at least one grade K–8.

Image Source: Michigan Safe Routes to School

Bicycle Friendly Communities Campaign

The League of American Bicyclists sponsors the Bicycle Friendly Communities offers award which recognizes communities that provide safe and plentiful bikeways, access to safe and convenient bike parking, and encourage "share the road" programs for non-cyclists. The five-level award system (bronze, silver, gold, platinum, and diamond) reflects the level of investment in non-motorized transportation infrastructure and programming. As of fall of 2018, 464 communities across the United States had been recognized. Michigan communities recognized by the program include Ann Arbor, Battle Creek, Houghton, and Marquette (silver level), and East Lansing, Flint, Grand Rapids, Kalamazoo, Lansing, Midland, Portage, and Ypsilanti (bronze level). Sault Ste. Marie received an Honorable Mention award in 2018.

Program to Educate All Cyclists

The Program to Educate All Cyclists (PEAC) is a non-profit organization based in Ypsilanti that was developed to teach children with disabilities to become cyclists. PEAC runs summer programs for children with disabilities throughout southeast Michigan. Programs include Family Rides in the Willow Metropark, the Active Transportation Program which teaches young adults how to more independently walk, bike, and use transit, Summer Cycling, 2x2 Visual Impairment Cycling, and private lessons. PEAC also holds special events throughout the year such as Celebration of Cycling, Hand Cycle Racing, and their annual "Pints for PEAC". There may be opportunities to collaborate with the program and host events or programs in one of the Township's parks or other facilities.

Washtenaw County Public Health Building Healthy Communities Program

Washtenaw County Public Health Department's (WCPHD) "Building Healthy Communities initiative" aims to make policy and environmental changes to communities in ways that make it easier for residents to be physically active, obtain healthful foods, and not smoke. Funded by the Michigan Department of Health and Human Services, the program's goal is to reduce cardiovascular disease, obesity, and other chronic conditions. WCPHD works with partners and residents to implement local projects where they are most needed and can be most effective.

Past projects have helped launch non-motorized planning initiatives and development and construction of walking and biking trails. WCPHD has assisted nearby communities with designing and distributing walking maps, promoting events such as community walks, and installing bike parking and pedestrian-oriented benches. Ypsilanti Township should consider reaching out to WCPHD for assistance developing similar events and programs.

Washtenaw County Community Health Improvement Plan

The Washtenaw County Health Improvement Plan (HIP) is an on-going collaboration of local agencies, coalitions, and the Washtenaw County Public Health Department. In recent years, HIP has shifted their research to focus on health equity and community engagement issues. HIP has held community engagement sessions in marginalized areas including the West Willow neighborhood, seeking to identify barriers and opportunities for health development. HIP's "Health Equity & Community Voice" notes the disparities in overall health between whites and people of color, and emphasizes the importance of engaging with community members to help develop programs and infrastructure. It further notes that "Recent investments by Habitat For Humanity, Washtenaw County Office of Community Economic Development, and Ypsilanti Township have made improvements to housing conditions, the Community Resource Center, walking trails, and other neighborhood elements, but there is a need for more."

"Building a Healthier Washtenaw" identifies physical activity as a means to improve health for county residents. The report recommends increasing the proportion of residents with pedestrian sidewalks, paths, or trails in or near their neighborhood from 78 to 86 percent, and developing surveillance for bikeable communities.

By expanding access to non-motorized transportation infrastructure and programs, residents may be more inclined to walk or bike to more places thereby improving their health and well-being.

Implementation

Crushed limestone trails at Clubview Park connect the surrounding neighborhoods.

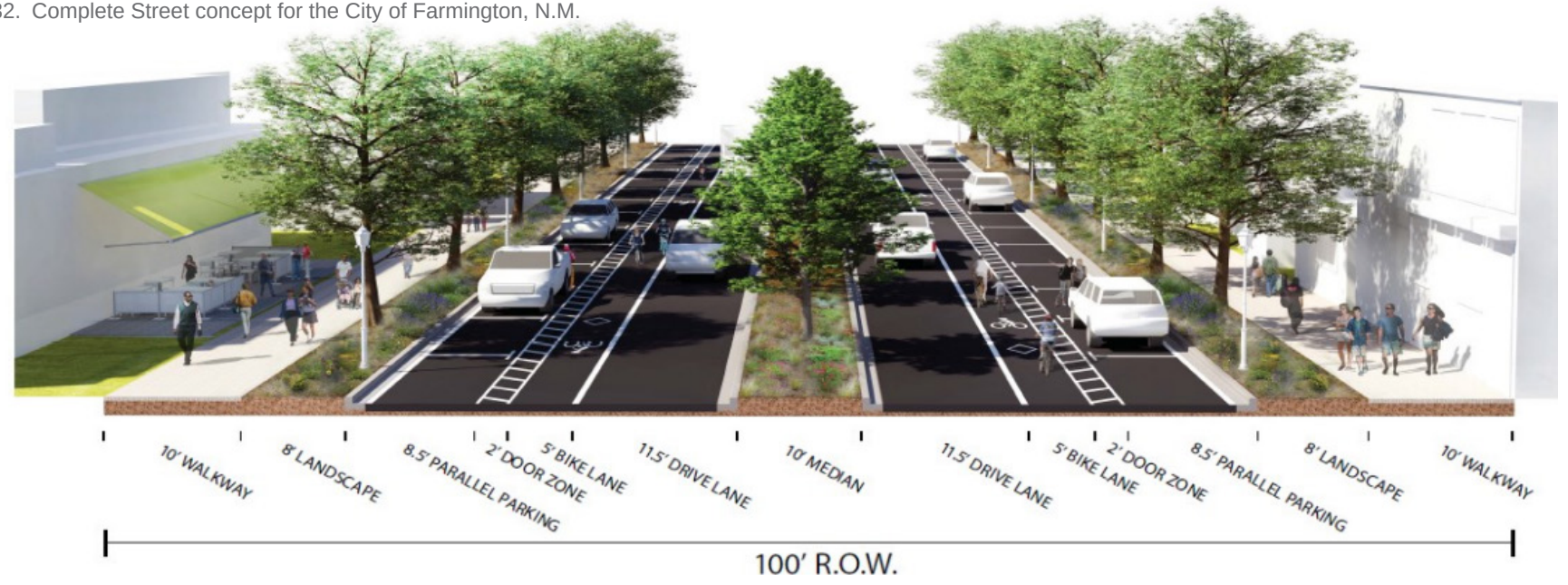
This section of the plan details the manner in which the network of non-motorized facilities may be implemented. It provides a snapshot of the different conditions seen around the Township, potential treatments for each condition, as well as an overview of funding opportunities. Costs for each type of treatment is included in the implementation tables found in the previous chapter.

Complete Street Ordinance

In order to become more competitive for grants, Ypsilanti Township should consider adopting a Complete Street Ordinance, which would require any street improvements or projects in the Township to all street users – pedestrians, motorists and and bicyclists of all ages and abilities – during all planning and design. The Complete Street Ordinance would include:

- A vision for how and why Ypsilanti Township will create complete streets
- Specifications that users include people of all ages and abilities walking, biking, and using transit as well as motor vehicles
- Applies to all aspects - design, planning, maintenance, and operations - of new and retrofit projects
- A clear procedure that any exceptions must be approved by the Township Board
- Street connectivity and a comprehensive, integrated network for all transportation types
- Coordination with adopted policies of all agencies responsible for roads in Ypsilanti Township
- Use of latest/best design guidelines balanced by user needs
- Direction that Complete Street solutions will complement the context of the community
- Performance standards with measurable outcomes
- Specific next steps for implementation of the policy

Figure 32. Complete Street concept for the City of Farmington, N.M.



Facility Structure & Design Alternatives

A variety of non-motorized facilities and accommodations are recommended to form the proposed interconnected network. The following pages provides an overview of many of the design components that must be factored in to non-motorized facility development. A fully comprehensive description of all design considerations goes beyond the scope of this document; Each type or combination of facilities will need to be selected based on further evaluation of the selected roadway or area.

It is also important to remember that with the exception of US-12 and I-94, all Ypsilanti Township roads fall under the jurisdiction of the Washtenaw County Road Commission (WCRC). Many of the Township's roads would require widening to accommodate proposed non-motorized facilities. Any road configuration adjustments will require approval by and cooperation with the WCRC.

The primary references for establishing the standards for non-motorized facility development are:

- Guide for the development of Bicycle Facilities (AASHTO, 1999, 2012);
- Michigan Manual on Uniform Traffic Control Devices (MMUTCD) (MDOT, 2013); and
- Selecting Roadway Design Treatments to Accommodate Bicycles (FHWA, 1994).

Based on the review of current standards for non-motorized facility development, there are six primary types of facilities proposed for Ypsilanti Township:

1. Sidewalks for pedestrian use,
2. Crosswalks for pedestrian use,
3. Refuge islands and bump outs for pedestrian use,
4. Shared roadways for bicycle use,
5. Bicycle lanes for bicycle use, and
6. Shared-use pathways for pedestrian and bicycle use.

Sidewalks

Sidewalks are for pedestrians and are located within road rights-of-way. They usually consist of concrete pavement and are separated from the roadway by a landscaped area. In Ypsilanti Township, most existing sidewalks are four or five feet wide, with some separation from the roadway. Any new sidewalk construction must comply with current ADA standards; Four-foot wide walks are the minimum, but would would require five-foot passing spaces to be compliant. Six-foot wide walks meet universal design requirements, and are required by some grant programs including those administered by the Michigan Department of Natural Resources (MDNR). Walks must also be connected to road crossings via ADA-compliant ramps.

For much of the area, sidewalk maintenance is the responsibility of the Township, although repair and maintenance is handled by homeowner associations in some of the newer subdivisions. Ypsilanti Township does not have an ordinance requiring snow removal from sidewalks.

Tactile paving, also known as braille strips, alerts visually impaired users of approaching intersections, grade changes, or other hazards, and is required at crosswalk intersections. Different types of tactile paving indicates different hazards; for Ypsilanti Township, blister strips would be the most common form, indicating road crossings. While buff-colored paving may be acceptable in some circumstances, high contrast colors is preferred for most instances.

Figure 33. Types of Tactile Paving

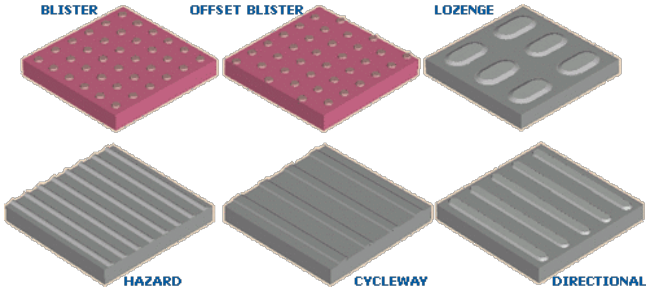


Figure 34. Tactile Paving in Practice

Crosswalks

Crosswalks offer a higher degree of safety by separating pedestrians from vehicular traffic and providing strong visual cues to drivers about potential pedestrian/vehicle conflicts. The placement and style of crosswalk is dependent upon on a number of factors, with the levels and frequency of vehicular and pedestrian traffic being the primary drivers.

There are two primary forms of crosswalks or intersections. Controlled intersections are found on high speed and high volume roads with regular pedestrian traffic. These intersections are signalled with stop lights or stop signs, which allow non-motorized users to cross in designated areas with relative safety.

Where pedestrian activity is more sporadic and/or vehicular levels are lower, uncontrolled intersections may be appropriate. A mid-block crosswalk would be an example of an uncontrolled intersection. Depending upon the road characteristics and level of pedestrian activity, treatments such as medians, refuge islands, signage, or other alert utilities such as rapid flashing beacons may be desireable or necessary to increase pedestrian visibility and safety.

Figure 35. Recommended Sight Distances for Uncontrolled Intersections

Vehicle Speed (MPH)	Stopping Sight Distance (feet)
15	70
20	90
25	115
30	140
35	165
40	195
45	220
50	245
55	285

Source: AASHTO Green Book

Visibility is the most crucial component of any crosswalk design. High visibility crosswalks can be marked with paint or by an epoxy material with reflective glass beads. "Ladder designs" (aka zebra stripes) offer higher visibility than traditional parallel line crosswalks and are considered a better alternative for high speed or heavy volume roads.

Sight distance is critical for both drivers and pedestrians, especially for uncontrolled intersections. Approaching vehicles should have an unobstructed view of the intersection with sufficient distance available to allow the driver to anticipate and avoid potential collisions. The required distance is a function of speed; the higher the traffic speeds, the greater the required visibility. Figure 35 provides recommended sight distances for uncontrolled intersections.

Crosswalk visibility can be enhanced through proper signage, safety signals, street marking, and lighting. While a number of high-tech lighting alternatives such as in-pavement flashers have been developed in recent years, a combination of properly placed traditional overhead lighting and pavement marking can be as effective as higher cost solutions.

According to the Virginia Tech Transportation Institute, 20 lx (a unit of illuminance) is required for motorists to detect a pedestrian in a crosswalk. To achieve this level of lighting, light fixtures should be placed 10 feet from the crosswalk, in between the approaching vehicle and the crosswalk.

Figure 36. Examples of Overhead Light Placement

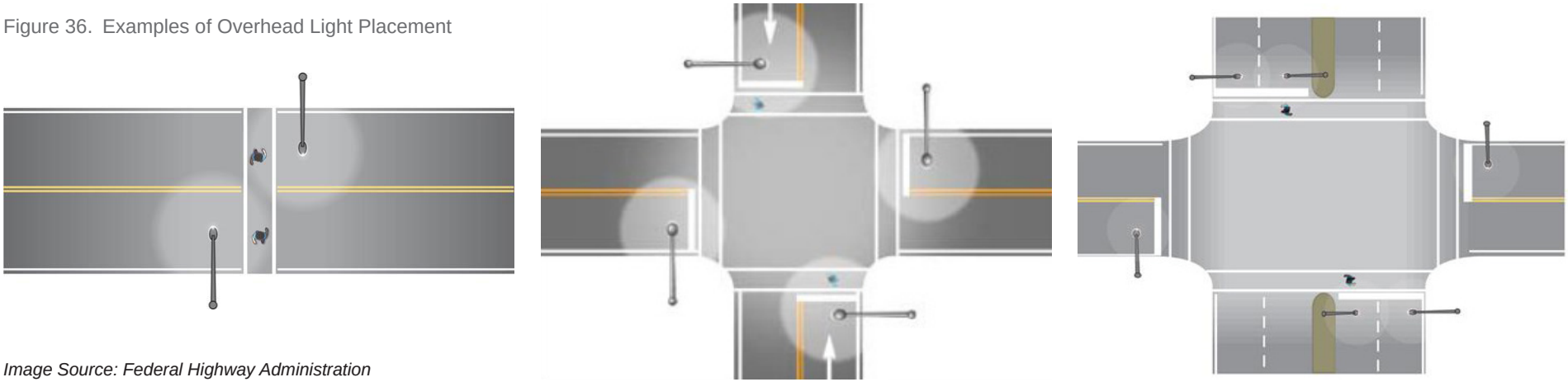


Image Source: Federal Highway Administration

Advance stop or yield lines provide additional protection for pedestrians by requiring drivers to stop further back from the crosswalk. On multi-lane roads, pedestrians using a crosswalk may be screened from view by stopped cars. The added distance afforded by yield lines provides an enhanced sight line for both the pedestrian and the driver, reducing the threat of collision.

Figure 37. Advance Stop / Yield Line

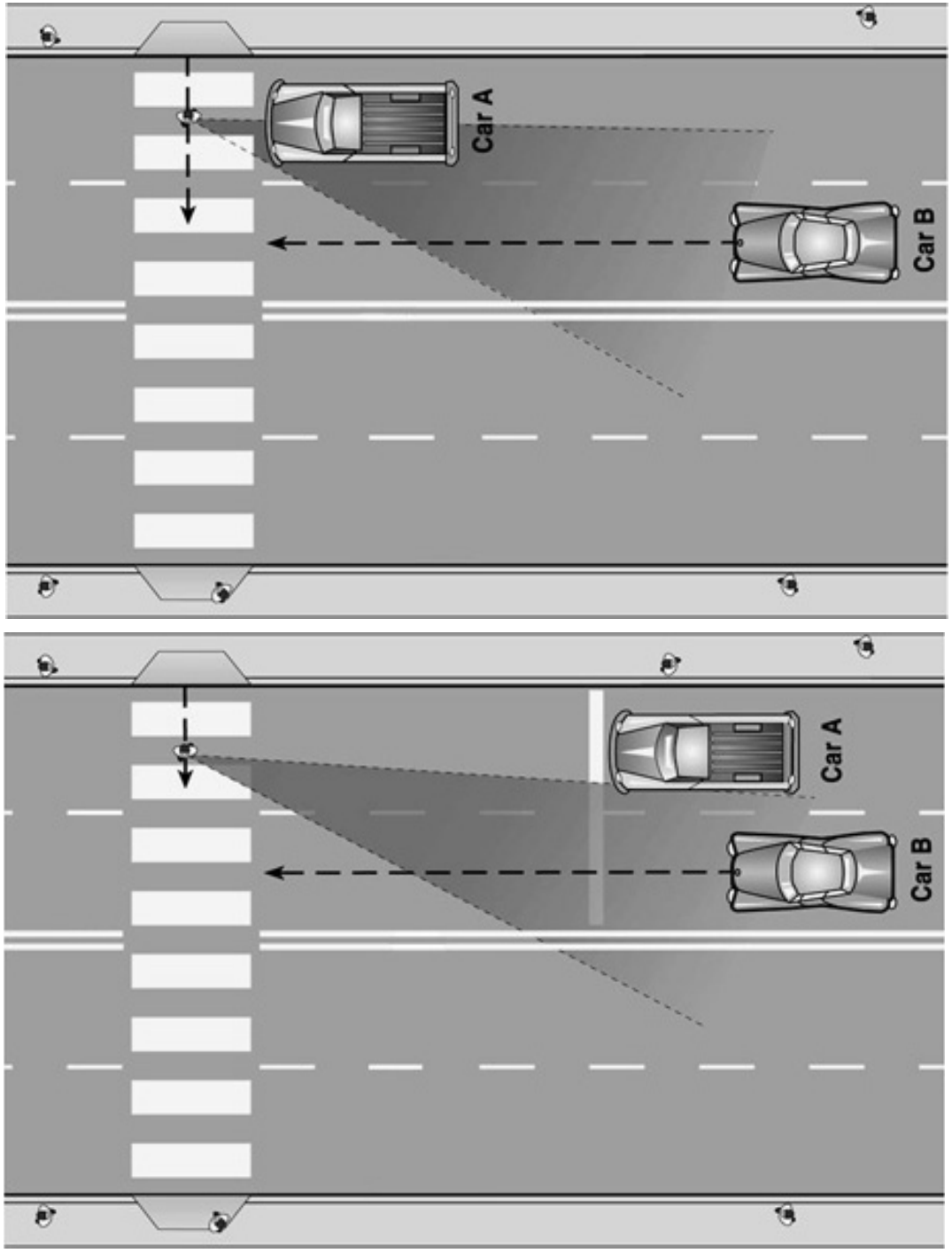


Image Source: Safe Routes to School

Refuge Islands and Bump Outs

On roads with three or more traffic lanes, or where high speeds and traffic volumes make crossings dangerous and/or uncomfortable for users, the Township should consider the addition of ***refuge islands***.

Refuge islands can come in a variety of configurations but are typically curbed or marked with bollards. Islands should be at least six-feet wide with a preferred width of 8 to 10 feet. The ideal length for a refuge is 40 feet.

The island should include a cut-through equal to the width of the crosswalk. A nose which extends past the crosswalk is required to protect users waiting on the median; the nose also slows turning drivers.

Islands may include vegetation to enhance visual appeal. This option requires additional maintenance, however, and must be carefully designed to ensure visibility is not impaired.

Bump-outs or curb extensions reduce the travel distance for pedestrians and create visual cues which slow drivers. They can be applied to a variety of situations, from busy urban street corners to midblock crossings in more rural settings. Bump-outs offer added space for lighting, signage, and other site amenities such as bus shelters and benches.

Figure 38. Refuge Island

Figure 39. Mid-block Bump Out

Image Source: Federal Highway Administration

Bicycle Lanes

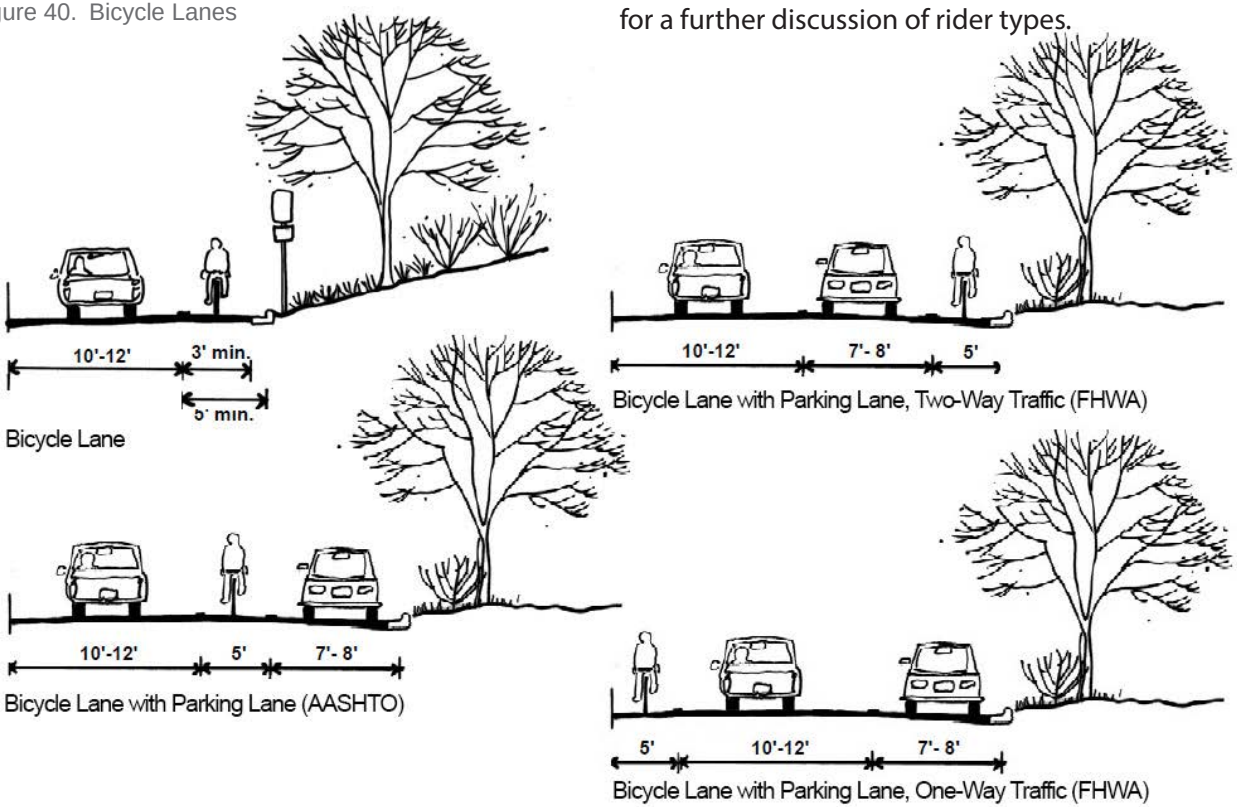
Bicycle lanes include designated lanes on roadways that incorporate striping, signage, and pavement markings for the preferential or exclusive use of bicyclists. They are typically delineated by pavement markings and should be one-way, a minimum of five feet wide to the face of the curb. A minimum of three feet rideable surface should be provided where the joint between the gutter pan and pavement surface is smooth. If the joint is not smooth, four feet rideable surface should be provided. Similarly, bicycle lanes should be a minimum of four feet wide on streets without curbs.

The Township may consider reducing travel lane widths to 10 or 11 feet and striping a broken line indicating the area where motorists should be prepared to see bicyclists. Most Township roads would also need to be widened anywhere from six to eight feet to accommodate bike lanes on both sides of the road. The resulting three- to five-foot marked lane would increase the safety of bicyclists.

According to the Federal Highway Administration (FHWA 2015), bicycle lanes are appropriate on roadways having daily volumes that exceed 10,000 or car speeds that exceed 30 mph. While they definitely serve experienced and confident (Type A) riders, bicycle lanes will attract and serve less experienced (Type B) riders as well. See page 44 for a further discussion of rider types.

AASHTO and FHWA take different approaches to the placement of bike lanes where on-street parking is permitted. AASHTO states that a five foot wide bicycle lane should always be placed on the right side of the street between the parking lane and the motorized vehicle lane. FHWA guidelines, on the other hand, recommends bike lanes on the left side of the street on one way streets with cars parked on the right; for two way streets, the bike lane is between the parked car and the curb. The configuration recommended by AASHTO is more prevalent in Michigan.

Figure 40. Bicycle Lanes



Bike lanes can be configured in a variety of ways, from simple lane stripes to highly complex raised cycle tracks. The advocacy organization People for Bikes describes *fifteen* different types of bike lanes. In practice, however, there are three basic types of bike lanes for consideration: on-road bike lanes, buffered bike lanes, and protected bike lanes.

Traditional bike lanes are relatively inexpensive, but offer the least amount of protection. Commonly seen around Michigan, traditional bike lanes require no special considerations for maintenance other than standard road repair and touch-up of paint as necessary.

Buffered bike lanes offer additional protection by providing space between traffic and the cyclist. This added space equates to significantly higher construction costs. Buffered bike lanes are used at I-94 bridge crossing at Ann Arbor-Saline Road, and could be an acceptable alternative for the Michigan Avenue/I-94 interchange.

Protected bike lanes offer the highest level of protection by separating cyclists and vehicles by bollards, curbs, or other physical barriers. Expensive to install, this option is best suited for urban settings. In rural or suburban settings, shared-use off-road pathways would offer the same or higher levels of protection for approximately the same cost.

An important consideration in the design of bicycle lanes is the location of bicycle lanes at intersections. Guidance for pavement markings and signs at intersections is contained in the Michigan Manual on Uniform Traffic Control Devices (MMUTCD). For more information, see:

https://mdotjboss.state.mi.us/TSSD/getCategoryDocuments.htm?categoryPrjNumbers=1403862&category=Pedestrian/Bicyclist

Figure 41. Types of Non-Motorized Treatments

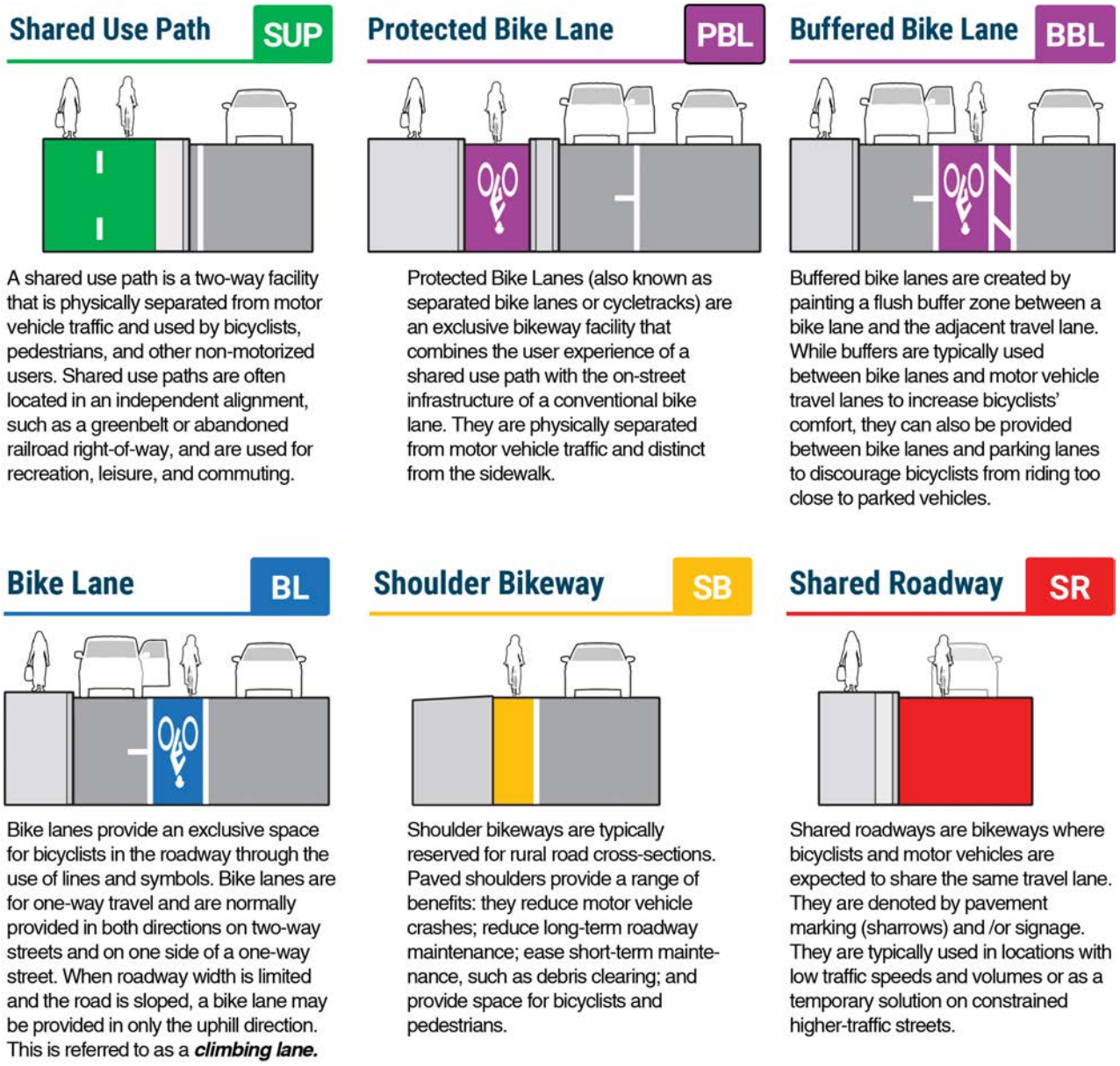


Image Source: City and County of Honolulu, Hawaii

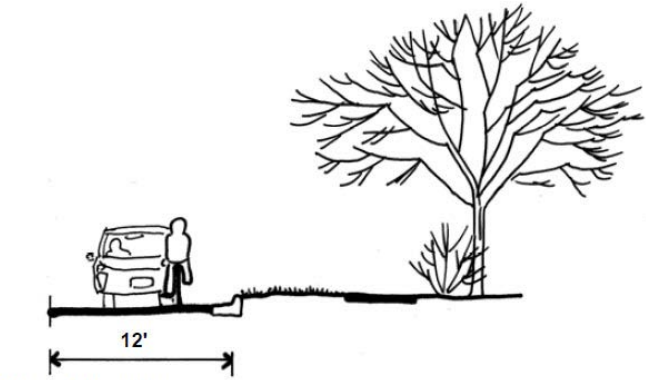
Shared Roadways

Shared roadways include roads upon which a bicycle may be legally used and marked as a bike route. According to the Federal Highway Administration (1994), shared roadways are appropriate on local roads having low daily volumes or speeds of less than 30 mph. They serve all types of riders. Most Township streets are currently suitable for shared roadway bicycling with no additional improvements necessary.

Shared roadways are also appropriate in locations where it is not feasible to add pavement at the edge of a roadway to create a bike lane and at roadway intersections. A ***sharrow*** may also be used to mark the shared roadway. Sharrows are chevrons pointing in the direction of vehicle traffic to indicate where a bicyclist may ride. They provide a visual cue that bicycles are expected and indicate the location to ride on the roadway. They are typically used on roadways where there is not enough space for bicycle lanes or which connect gaps between other bicycle facilities.

The effectiveness of sharrows as compared to dedicated bike lanes remains a question. According to a 2016 Transportation Research Board study, streets marked with sharrows had higher incidences of injuries than comparable streets with bike lanes. The study also noted that bike ridership was significantly higher along routes with dedicated bike lanes. (Ferenchak 2016)

Figure 42. Shared Roadway



Shared Roadway

Figure 43. Sharrow

Image Source: NACTO

Shared-use Off-Road Pathways

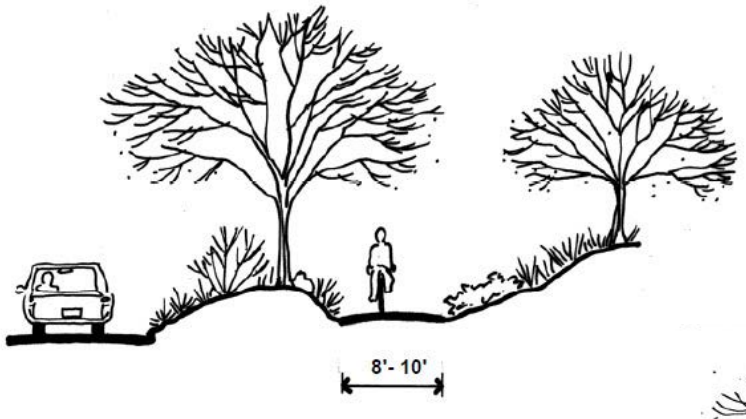
For the average citizen, a shared-use pathway is the standard vision for non-motorized transportation. Shared-use off-road pathways, also known as multi-use paths or safety paths, are physically separated from motor vehicular traffic by an open space. The path may be within the road right-of-way or within a park or easement. Paths are normally two-way facilities.

The AASHTO (2012) recommended pavement width is 10 feet, but 8 feet may be considered where path usage is low, where space is limited or where pathways are located on both sides of roadways. Similarly, 12 feet may be considered a better suited width where path usage is expected to be high, such as in an urban situation. A minimum of a 2-foot clear zone needs to be maintained along both sides of a pathway, with an 8 foot vertical clearance.

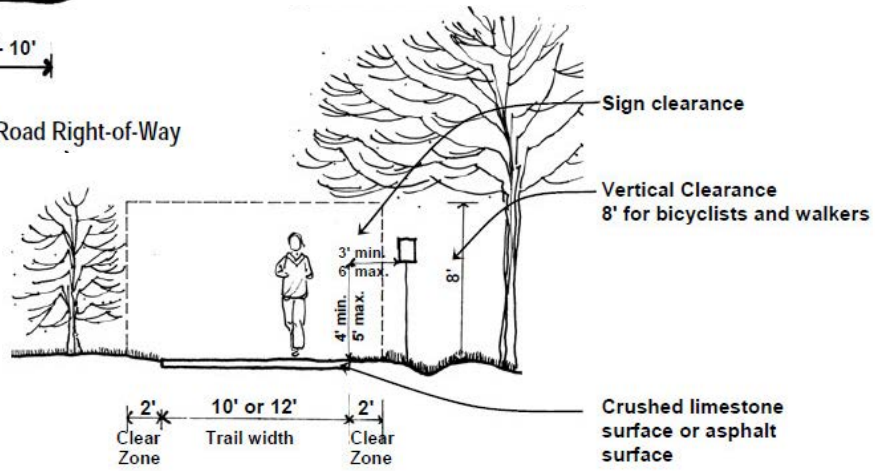
Shared-use paths are commonly seen as asphalt trails, although crushed limestone or concrete are occasionally used depending on the setting. A further discussion of surface types is provided on page 77.

Because of easement requirements and the complexity of construction, shared-use paths are one of the most expensive non-motorized options. Costs range widely depending on circumstances, and can range from as low as $250,000 per mile to as high as $1.0 million per mile. Special facilities such as boardwalks, bridges, or retaining walls can drive costs beyond those levels. For purposes of this plan, proposed shared-use paths are valued at $1.0 million per mile.

Figure 44. Shared-use Off-Road Pathways (Multi-use Trails)



Off-road Shared-Use Pathway within a Road Right-of-Way



Off-road Shared-Use Pathway outside of Roadways

OTHER CONSIDERATIONS

Other design issues should be considered with the implementation of non-motorized facilities throughout Ypsilanti Township. They include the pavement markings of bike lanes, the use of uniform signage, and the elimination of road hazards.

Pavement Markings and Signage

A bike lane should be painted with standard pavement symbols to inform bicyclists and motorist of the presence of the bike lane. The standard pavement symbols are a bicycle symbol and a directional arrow (white and reflectorized) (MMUTCD, 2011). They are placed at the beginning and ending points of bike lanes as well as at regular intervals of about 750 feet. Bike lane signs should be placed at about the same location of the pavement markings.

There are three primary types of signs utilized along designated routes. They include:

1. Route signs that help identify connecting non-motorized routes,
2. Warning signs which advise non-motorized users and motorists of facilities and crossings, and
3. Regulatory signs which inform bicyclists of specific traffic laws and regulations such as "Stop" and "Bike Lane Ends."

Directional signs and wayfinding maps should be placed along pathways and bike routes, and at key locations around the Township. Providing these features can improve non-motorized travel, safety, and help ensure efficient connections to destinations.

Figure 45. Wayfinding Signage

Figure 46. Standard Regulatory Sign Examples

Source: MMUTCD, 2011

See also: https://mdotcf.state.mi.us/public/tands/Details_Web/mdot_signing_design_placement_application_guidelines.pdf

Rectangular rapid flashing beacons (RRFB) are user-activated warning lights that supplement traditional signs at uncontrolled intersections or at mid-block crossings. The highly visible amber lights have been effectively utilized around southeast Michigan by a number of communities.

Studies provided to the FHWA found that RRFBs increased yield rates from 18 percent to 81 percent. Four beacon systems increased yied rates further to 88 percent. The Manual on Uniform Traffic Control Devices issued a new interim approval to RRFBs in March of 2018.

Per the FHWA, purchase and installation costs for the systems run approximately $10,000 to $15,000. Because of the high posted speed limits on most of Ypsilanti Township's roads, RRFBs are recommended for all mid-block crossings.

Figure 47. Accessible Drinking Fountain

Figure 48. RRFB at a Mid-Block Crossing

Site Amenities

Benches, shelters, water fountains, and trees play important roles in non-motorized networks. Benches and shelters make trail facilities more accessible to non-traditional users such as seniors and individuals with disabilities by providing resting points along the route. Trees and shelters provide refuge from the hot sun in summertime and cold winds in winter, and can be placed to serve both the trail users and mass transit patrons.

Placement of site amenities should consider user visibility and traffic flow. Shelters, trees, and other vegetation should be placed in a fashion that ensures users remain clearly visible to motorists. Benches and water fountains should not protrude into the pedestrian/cyclist traffic areas; accessible pillar-style drinking fountains provide adequate clearance to accommodate wheelchair users while still allowing visually impaired users to detect the fountain with a cane.

Bike racks placed near bus shelters can encourage mass transit use for long distance travel while enabling cycling at local levels. Shelter construction should be considered for primary routes throughout the Township, especially along South Huron.

Figure 49. Hybrid Bike-Bus Shelter

Source: Velodome, Inc.

Road Hazards

Because most roads have been designed without bicycle travel in mind, there are often many ways they should be improved to safely accommodate bicycle travel. Some of the common hazards to safe bicycle travel include wheel eating drainage grates, rail crossings, and poor pavement conditions.

Drainage grate inlets and utility covers can be problematic to bicyclists and pedestrians, and should be kept out of bicyclists' expected path. Newly constructed or repaired inlets are required to have a bicycle-safe grate. Curb inlets should be used wherever possible to completely eliminate exposure of bicyclists to grate inlets. A temporary correction recommended by AASHTO involves welding steel cross straps perpendicular to the parallel bars to provide safe openings.

Bike wheels can get caught between the rails at rail crossings and are especially dangerous where bikes are not crossing the tracks at a 90 degree angle. Fortunately, there are relatively few tracks in the Township borders. Even so, this condition should be carefully monitored, especially if the recommended crossing between West Willow and Michigan Avenue is implemented.

Figure 50. Typical Road Hazards

Pavement Types

Pavement surface irregularities are also dangerous to bicyclists. Pavement surfaces should be free of irregularities such as gaps in longitudinal paving joints, potholes, and bumps. The presence of debris along curbs due to the failure of routinely sweeping pavement edges reduces the operating space for bicycles and can also create dangerous situations. On older pavements it may be necessary to fill joints, adjust utility covers or, in extreme cases, overlay the pavement to make it suitable for bicycling.

In general, *consistency* of pavement is more important than the *type* of pavement. The plan recommends three general pavement types for Ypsilanti Township pathways. Each type of pavement has its pluses and minus, but the common thread is that regular, ongoing maintenance is key to ensuring the long-term viability of a pathway or trail.

Asphalt has long been the standard surface type for urban and suburban settings due to its durability, ease of installation, and relatively low cost per linear foot. In recent years, asphalt prices have risen dramatically, to the point where per unit costs for asphalt is close to or higher than concrete. Asphalt must be patched yearly to control cracking, and complete replacement may be required as early as twelve years after installation.

Like asphalt, ***concrete*** is frequently used, most often for sidewalks and similar walkways. It is rarely seen used on multi-use trails due to increased cost of installation. Concrete's durability is much higher than asphalt, however, and yearly maintenance costs are lower on average.

Low initial cost and low environmental impact makes ***crushed limestone*** an outstanding choice for more natural settings. If properly graded and compacted, crushed limestone paths are considered ADA compliant due to their firm and slip-free surfaces. Regular maintenance is critical, however; limestone will be overgrown by aggressive weeds in a relatively short period of time, and can be prone to washout unless the site is adequately prepared. Maintenance costs drive the long-term costs up to levels near that of asphalt or concrete. Note that gravel is not the same thing as crushed limestone; gravel paths are made of larger sized aggregate which is not passable by wheelchairs, and is not ADA compliant.

A fourth category of pavement that is not recommended by this plan but which may warrant further investigation is ***permeable pavement***. Permeable pavement comes in three basic categories; permeable asphalt or concrete, pavers, or permeable rubber surfacing. All three categories have higher initial costs and require significantly higher levels of maintenance than standard asphalt or concrete paths.

Companies are now offering pour-in-place mixes comprised of recycled rubber and an adhesive mixture, similar to playground surfacing, which has the same permeability factor as crushed limestone. Per foot costs are comparable to concrete and asphalt. The durability of the product is uncertain, however, and the costs for maintaining such surfaces are unknown. This type of surface may be worth exploring for relatively short, highly visible projects, where the efficacy of the product can be monitored and evaluated.

Figure 51. Asphalt Surfacing

Figure 52. Concrete Surfacing

Figure 53. Crushed Limestone Surfacing

Figure 54. Permeable Asphalt

Figure 55. Permeable Pavers

Figure 56. Permeable Recycled Rubber Paving

Funding Sources

The following programs are potential funding opportunities for developing pedestrian and non-motorized transportation facilities. The type of projects allowed depends on the program; for example, MDOT requires a minimum 10-foot wide pathway and will not fund aggregate pavements, while MDNR will allow for narrower paths and aggregate trails in appropriate situations. Categories range from planning, design, and construction of pedestrian or bicycle facilities to design of public spaces, educational programs, research, and methods for reducing air pollution.

MAP-21 (Moving Ahead for Progress in the 21st Century Act) is the most recent federal transportation funding law. It consolidates transportation funding programs that were available under the previous funding law including the **Transportation Enhancement** program, the **Safe Routes to School** program, and the **Recreation Trails** program into a program called **Transportation Alternatives Program (TAP)**. This singular program is the largest federal source for trail funding.

Transportation Alternative activities are projects that "expand travel choices and enhance the transportation experience by integrating modes and improving the cultural, historic, and environmental aspects of our transportation infrastructure." Activities which may apply to Ypsilanti Township include:

- Construction of on-road and off-road facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, including sidewalks (in conjunction with other non-motorized improvement projects), bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act; and
- Construction of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs.

Transportation Enhancement and Safe Routes to School (K – 8th grade) funds are distributed through a partnership between SEMCOG and MDOT. Each project are jointly evaluated by SEMCOG and MDOT staff to determine eligibility, consistency with TAP program requirements, and how well the project meets SEMCOG's Creating Success goals.

Ypsilanti Township is not eligible to directly apply for TAP or Safe Route to School funding, but may collaborate with an eligible agency such as the WCRC, the City of Ypsilanti, or local school districts. Applications must be submitted through the Michigan Department of Transportation's online grant system (MGS). A minimum 20 percent local match is required for proposed projects and applications are accepted online; competitive bids typically include a higher local match. Note that MDOT may allow planning and design expenditures to count towards the required match. Additional information is available at:

http://www.semcog.org/TAPCall.aspx

Revenues from the **Michigan Transportation Fund (MTF)** are generated from state gas and value taxes. The funding is divided among MDOT, road commissions, cities, and villages. Each Act 51 agency is required by law to spend at a minimum an average of one percent of their Act 51 dollars on non-motorized improvements for 10 years subsequent to Act 51 award. This amount can be used to provide portion of a match for federal funds.

This funding is provided to areas that are not in compliance with air quality standards or are in a maintenance area for air quality non-attainment issues. Congestion Mitigation/Air Quality (CMAQ) projects are awarded competitively and jointly between MDOT and the Southeast Michigan Council of Governments (SEMCOG). Applicants must demonstrate that they reduce emissions in order to be considered eligible for funding as determined by the Federal Highway Administration. Southeast Michigan is a designated non-attainment area. Additional information is available at:

http://www.michigan.gov/mdot/0,4616,7-151-9621_11041_60661---,00.html

State grants are available to local units of government for acquisition and development of land and facilities for outdoor recreation such as shared-use paths. 2019 priorities were trails, wildlife/ecological corridors, and projects located within urban areas. The **Michigan Natural Resources Trust Fund (MNRTF)** provides funding for the purchase and development of land for natural resource based preservation and recreation. Goals of the program are to:

- Protect natural resources and provide for their access, public use and enjoyment,
- Provide public access to Michigan's waters, particularly the Great Lakes and facilitate their recreation use,
- Meet regional, county, and community needs for outdoor recreation opportunities,
- Improve the opportunities for outdoor recreation in urban areas, and
- Stimulate Michigan's economy through recreation related to tourism and community revitalization.

Grant proposals must include a local match of at least 25 percent of the total project cost. Development project grants have a minimum of $15,000 and a maximum of $300,000. There is no minimum or maximum for acquisition projects. Applications are due April 1. Program information is available at:

http://www.michigan.gov/dnr/0,4570,7-153-58225_58301---,00.html

The Land and Water Conservation Fund (LWCF) is a federal appropriation to the National Park Service, who distributes funds to the Michigan Department of Natural Resources for development of outdoor recreation facilities. The focus of the program has recently been on trailway systems and other community recreation needs such as playgrounds, picnic areas, athletic fields, and walking paths. The match percentage must be 50 percent of the total project cost. Applications are due April 1. Additional information is available at:

http://www.michigan.gov/dnr/0,4570,7-153-58225_58672---,00.html

Advocacy Advance is the partnership of the Alliance for Biking & Walking and the League of American Bicyclists. They work to boost local and state bicycle and pedestrian advocacy efforts. This grant is intended to help advocacy organizations take advantage of unexpected opportunities to win, increase, or preserve funding for biking and walking. These grants are available to non-profit groups; however, partnerships with local governments are encouraged. Eligible activities include campaigns centered around transportation bonds or ballot initiatives, campaigns to attain and spend public funding, campaigns to preserving existing allocations of public funding at risk of being cut, and development of specialized tools and materials to reach targeted audiences who may influence the decision for increased funding on biking and walking. For additional information, see:

https://www.advocacyadvance.org/

Connecting Communities is a grant program operated by the WCPARC that provides supplemental funding for the development of non-motorized trails or similar projects. In 2016, Washtenaw County residents passed a four-year road and trails millage of which 20% will be allocated to WCPARC for the development of non-motorized trails, including the Border-to-Border Trail. The Parks and Recreation Commission voted to use 1/3 of its allocation to reinstate the Connecting Communities initiative. The program is active from 2017 through 2020.

The program is open to all municipalities and public entities in Washtenaw County. Projects should support the Parks and Recreation Commission's primary goal of providing valuable, non-motorized connections between communities and activity centers thus offering a healthy alternative for recreation, transportation, fitness, and energy conservation. Additional information can be found at:

https://www.washtenaw.org/953/Connecting-Communities-Grants

The **Iron Belle Trail Fund Campaign** is a major fund-raising effort seeking to raise $155 million in private funds to support completion of the IBT. The Campaign has traditionally focused on efforts in northern and western Michigan, especially in communities that have been historically underserved by traditional recreation grant programs. If private partners and an appropriate project can be located, however, the Campaign is willing to consider expansion into southeast Michigan. Additional information is available at:

https://www.michigan.gov/dnr/0,4570,7-350-79133_79206_83634_83663-470750--,00.html

Community Development Block Grants (CDBG) may be available for sidewalk infill and road crossing projects in older and lower income areas. CDBG Entitlement Grants are administered by Washtenaw County and distributed to eligible projects throughout the district. Low to moderate income Census tracts found within the Township would qualify for funding. CDBG funds in Washtenaw County have been distributed for sidewalk improvements in Pittsfield Township, the City of Northville, and other communities as recently as 2019.

https://www.hudexchange.info/programs/cdbg-entitlement/

Ypsilanti Township should investigate **additional sources of funding**. Seeking donations, attracting sponsors, holding fund-raising events, and seeking out other revenue sources are methods that should be pursued aggressively to raise funding for walk- and bike-way development.

The boardwalk at North Bay Park

Appendix

Figure 57. Proposed Bridge Treatment Over I-94 at S Huron St

Huron Street / I-94 Bridge Crossing Study

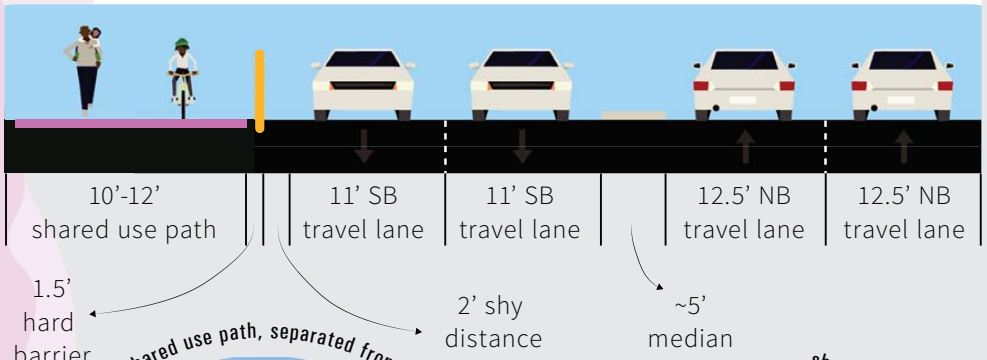
Alternative 1

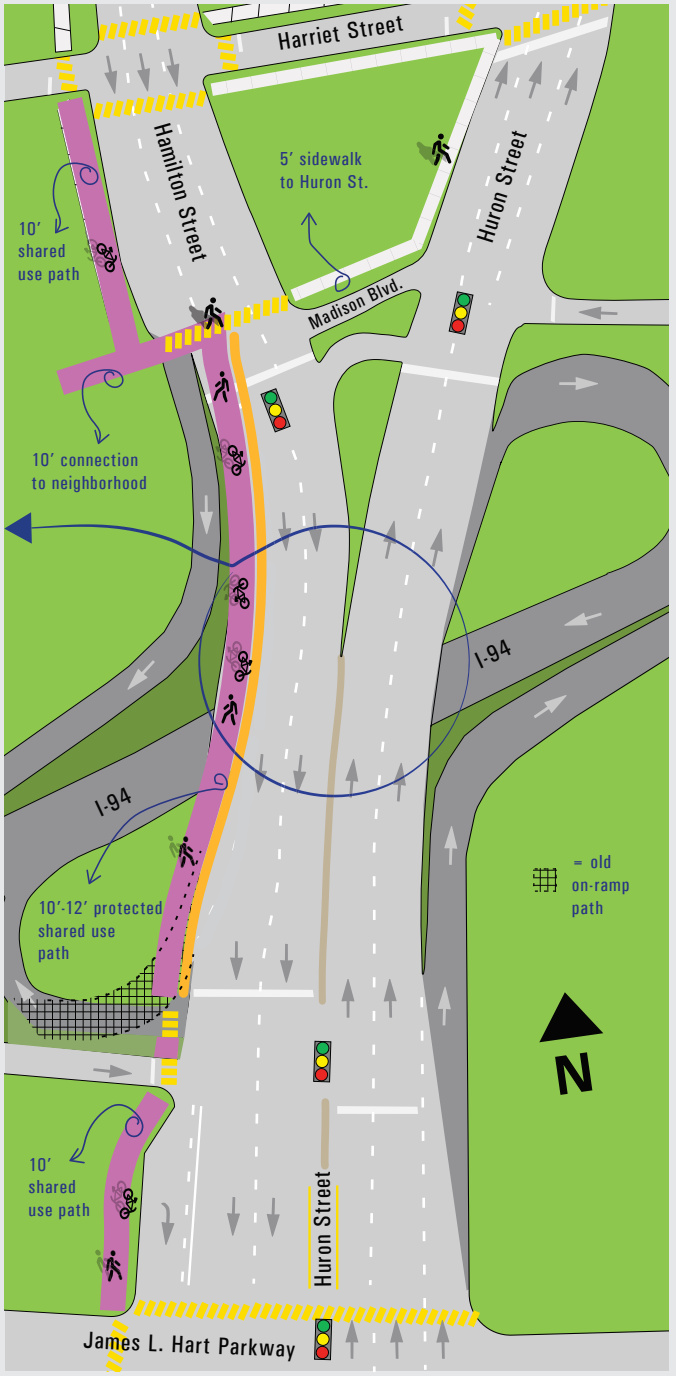
Shared Use Path on West Side

Key Improvements

* 10'-12' shared use path
* Hard barrier on outside of path
* Pedestrian signals
* Reconfigured southwest on-ramp
* Better sidewalk connections

Cross section at center of bridge

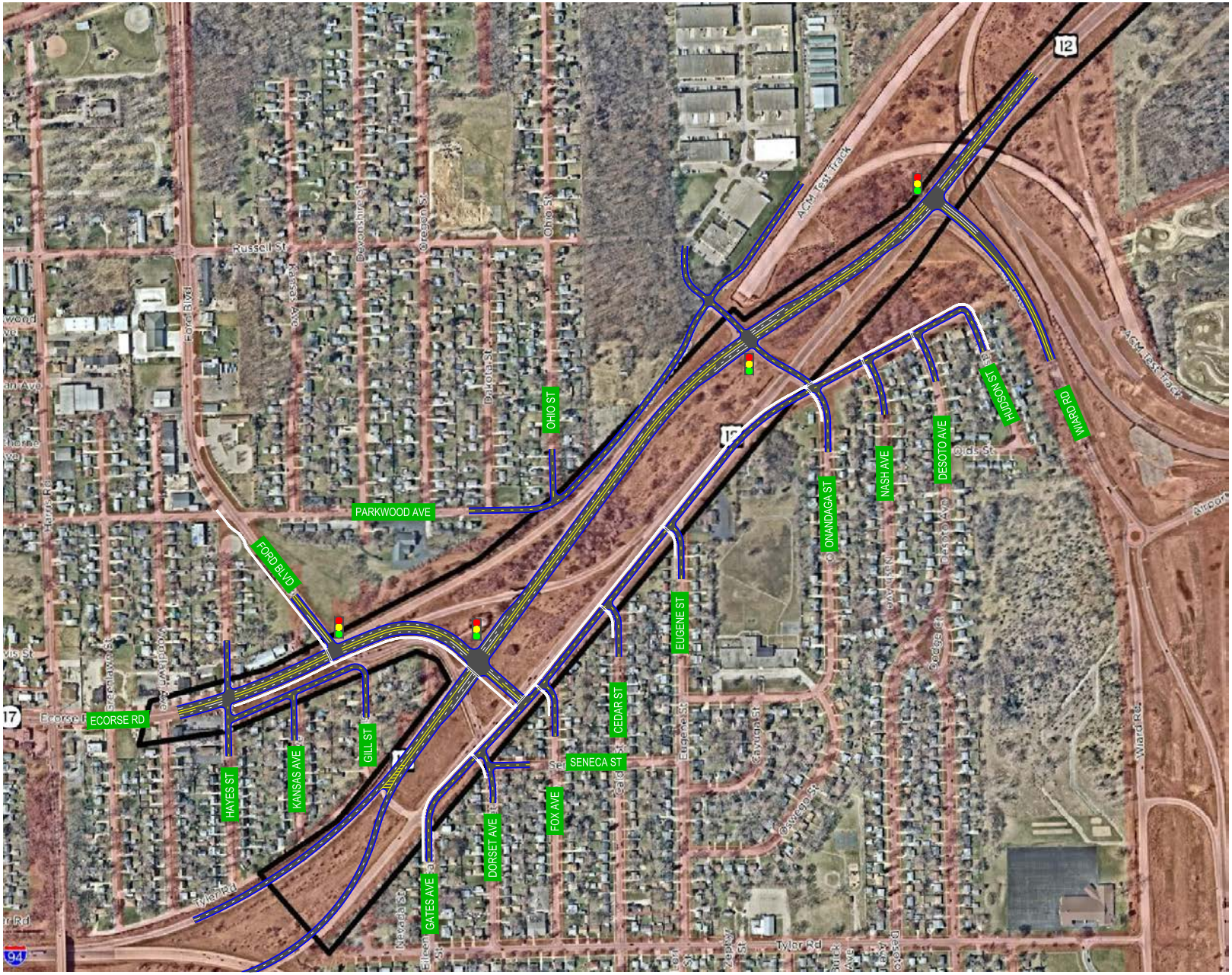




Washtenaw Area Transportation Study
miwats.org

OFFICE OF COMMUNITY & ECONOMIC DEVELOPMENT

Figure 58. Alternative A: Proposed Road Treatment Dorset / Ecorse / West Willow Area



MDOT Michigan Department of Transportation

WASHTENAW COUNTY ROAD COMMISSION

US-12 TRANSPORTATION IMPROVEMENT STUDY

OPTION A
5 LANE HIGHWAY
WITH TRAFFIC SIGNALS

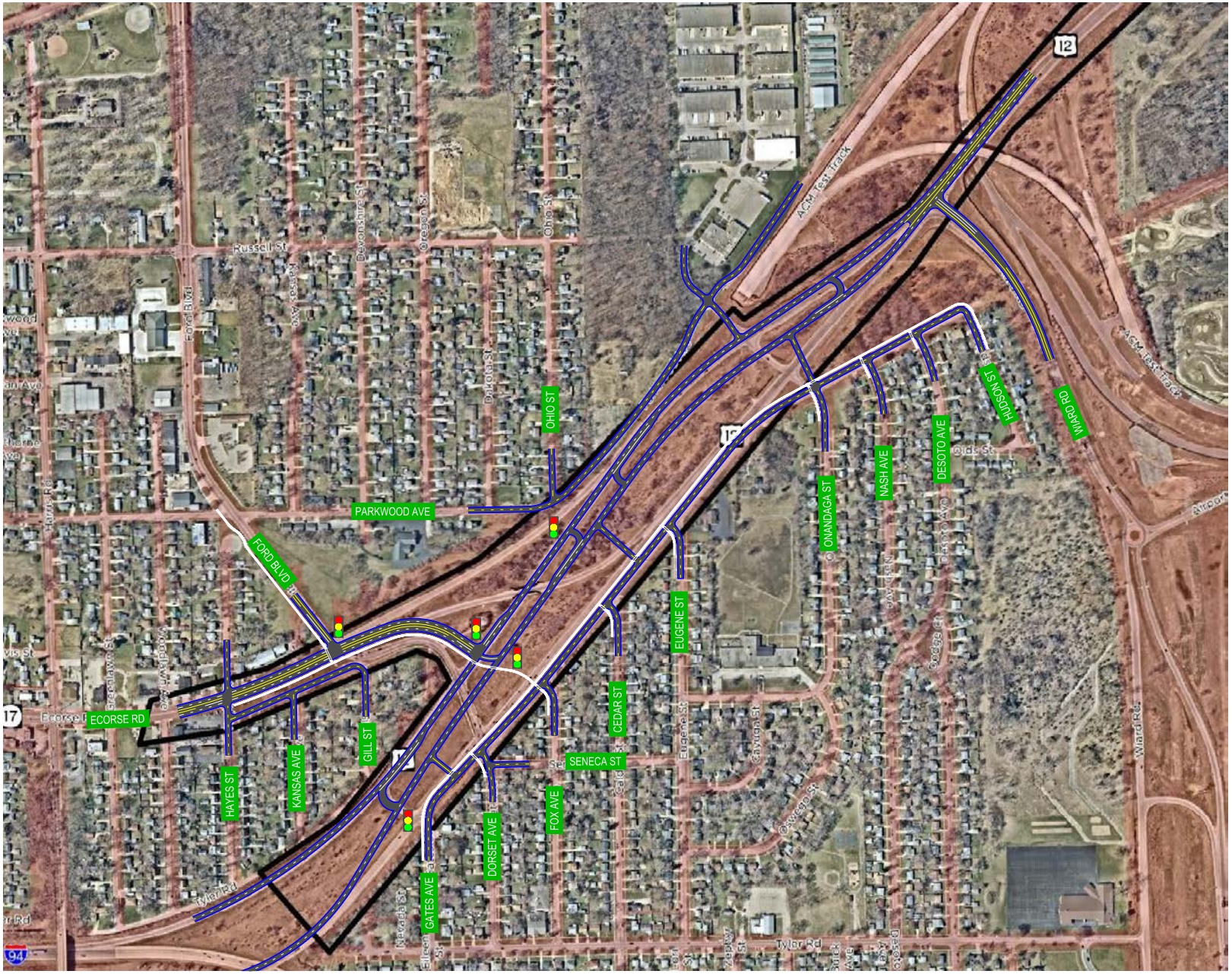
LEGEND

- STUDY AREA
- PUBLIC ROAD RIGHT OF WAY
- TRAFFIC SIGNAL
- PEDESTRIAN FACILITY

N

OHM Advancing Communities

Figure 59. Alternative B: Proposed Road Treatment Dorset / Ecorse / West Willow Area



MDOT Michigan Department of Transportation

WASHTENAW COUNTY ROAD COMMISSION

US-12 TRANSPORTATION IMPROVEMENT STUDY

OPTION B
4 LANE BOULEVARD WITH TRAFFIC SIGNALS

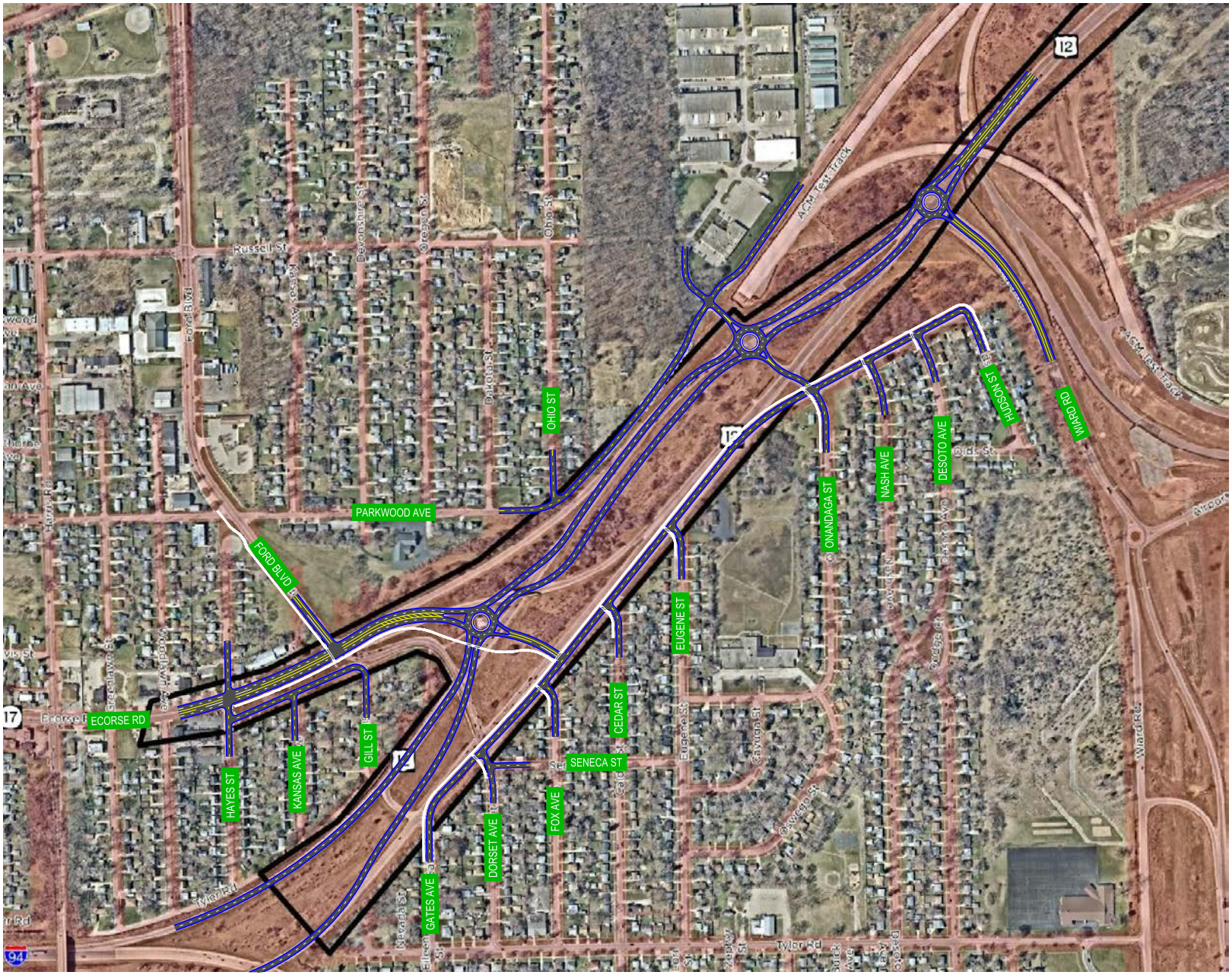
LEGEND

- STUDY AREA
- PUBLIC ROAD RIGHT OF WAY
- TRAFFIC SIGNAL
- PEDESTRIAN FACILITY

N

OHM Advancing Communities

Figure 60. Alternative C: Proposed Road Treatment Dorset / Ecorse / West Willow Area



MDOT Michigan Department of Transportation

WASHTENAW COUNTY ROAD COMMISSION

US-12 TRANSPORTATION IMPROVEMENT STUDY

OPTION C
4 LANE BOULEVARD WITH ROUNDABOUTS

LEGEND

- STUDY AREA
- PUBLIC ROAD RIGHT OF WAY
- PEDESTRIAN FACILITY

N

OHM Advancing Communities

Figure 61. Preferred Alignment - B2B / Iron Belle Trail at North Hydro Park

Planning Process

Zone 1 Route F

Route Description

Travels down Bridge Rd from the existing Iron Belle Trail, through Hydro Park along the north side of the river, connecting back to Grove St at Rawsonville Elementary. Crossing Grove St at Snow Rd and terminating at Rawsonville Rd.

Notes

- Connects to existing Iron Belle Trail.
- Existing sidewalk on south side of Grove St from Bridge Rd to Rawsonville Elementary.
- Passes single family neighborhoods and an elementary school. Would connect to businesses on Rawsonville.
- Connection through Hydro Park provides trailhead and recreation opportunities as well as views over the Huron River.
- Some perceived safety concerns feeling secluded along river.
- Takes advantage of existing infrastructure.

Rte #	Route Description	Residential Access	Commercial Access	Trailhead Opp.	Connectivity	Rec Opp	Safety	Scenic Variety	Viability of Long Term Maint	Feasibility of Development	Property Acquisition Feasibility	TOTAL SCORE
1	Hydro Park											
1F	Rawsonville Rd to Hydro Park, following Huron River to Rawsonville Elementary, back to Grove St	5	5	8	10	10	6	7	9	10	18	**88**

Why are Bicycle Lanes Being Installed?

Bicycle lanes are being installed on some roads in Michigan to provide multiple benefits:

- Help establish order in the roadway by providing a designated place for bicyclists and motorists, enhancing safety for everyone.
- Improve travel behavior and predictability on roadways.
- Further the development of Complete Streets as promoted by state law and State Transportation Commission policy.
- Improve safety for bicyclists.

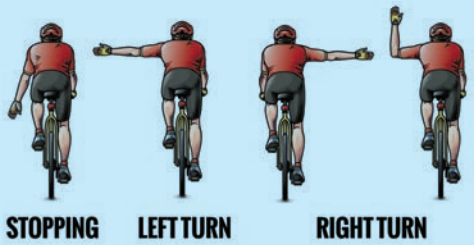
Driver Reminders

- Don't drive or park in a bicycle lane.

- Always look for bicyclists before opening your car door.
- Bicycles have all of the rights and duties applicable to the driver of a vehicle.
- Bicyclists are not required to use a bicycle lane and may leave a bicycle lane to turn left or to avoid hazards.
- Bicyclists are permitted on all roadways unless specifically prohibited, like limited access highways.
- Drivers must avoid distractions and be aware at all times. Driving the speed limit decreases the chances of a fatality.
- Drivers should pass bicyclists at a safe distance and always yield to them before turning.

Tips for Bicyclists

Bicyclists are reminded to use hand signals to inform others of their intent.



GRAPHIC COURTESY LEAGUE OF MICHIGAN BICYCLISTS

Bicyclists are also encouraged to wear bright colors so they are visible. It is illegal to ride a bicycle without a headlight or a rear reflector when it is dark. Remember to always ride with traffic.

For more bicycling information go to www.michigan.gov/mdot-biking

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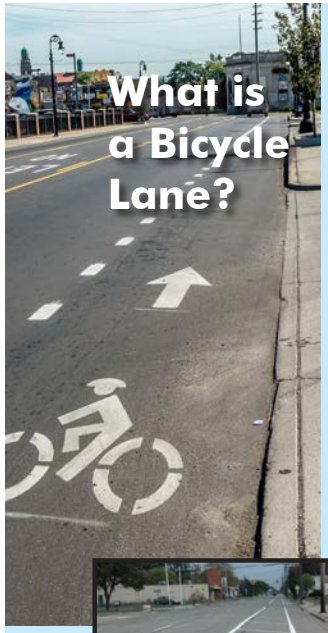
graphics/bureaus/transporation planning/statewide planning/what evry drvr shld kno.indd 1/17 rld

What every MICHIGAN driver SHOULD know about BICYCLE LANES



What is a Bicycle Lane?

A bicycle lane is a portion of a street for bicyclists.

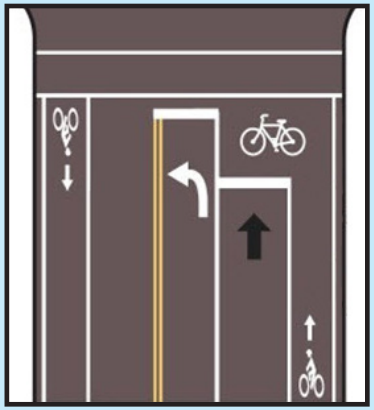
Bicycle lanes are typically on the right side of the road and are designated with bicycle pavement markings and arrows that direct cyclists in the direction to travel.

A ***buffered bicycle lane*** is a conventional bicycle lane accompanied by a buffer space, separating the bicycle lane from the adjacent motor vehicle lane.

A ***separated bicycle lane*** (also known as a cycle track or a protected bicycle lane) has many of the design elements of a buffered bicycle lane, but also includes a barrier (planters, parked cars, curb, or vertical posts) between the bicycle lane and the travel lane for cars.

What every MICHIGAN driver SHOULD know about BICYCLE LANES

Some bicycle lanes ***use shared lane markings*** (sharrows), or ***bike boxes*** when a bicycle lane ends. While motorists are always required to share the road, when a sharrow is used it alerts drivers that they are likely to encounter bicyclists in the lane. Sharrows also indicate the proper lane position for bicycles to make them more visible to drivers. At an intersection a ***bike box*** creates a space in front of a travel lane and ahead of stopped motorists for bicyclists to wait for a green signal. The bike box can improve bicyclist visibility and provides them a head start ahead of motorized traffic to reduce conflicts with turning vehicles at these locations.



Green pavement markings are used to bring attention to the transition areas or possible conflict points. All road users should exercise heightened awareness in these locations.

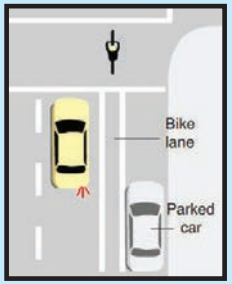
How Should Motorists and Bicyclists Operate when on a Roadway with a Bicycle Lane?

It is illegal to drive or park in a bicycle lane. A driver may cross into a bicycle lane only when turning. This means that drivers are to make turns from the travel lane and not the bicycle lane. It is also illegal to park in a marked bicycle lane, except where permitted by official signs.

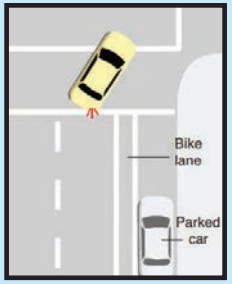
Bicyclists are reminded to follow the rules of the road and obey all traffic control devices, including signals and stop signs.

How do Motorists Make Right Turns when a Bicycle Lane is Present?

1) When turning right, a motorist should always yield to bicyclists going straight. Never pass a bicyclist and then "hook" them by making a turn immediately in front of them.



2) Once the bicyclist passes through the intersection, the motorist should then make their right turn.



WALK SAFE

PEOPLE WHO WALK SHOULD FOLLOW THESE SAFETY TIPS TO PREVENT SERIOUS INJURY OR DEATH.

Pedestrians must:

- Use sidewalks whenever available.
- Obey traffic signals, signs, and markings.
- Cross streets at a corner, using traffic signals and crosswalks whenever possible.
- Walk facing traffic as far to the left as possible if you must walk along the roadway.

Pedestrians should:

- Always stop at the edge of a parked car, curb, or vehicle before walking out into traffic.
- Look left-right-left before crossing a street and continue looking while crossing.
- Make eye contact with drivers prior to crossing roadways.
- Be visible: wear reflective clothing and lights at night and wear bright colors during the day.
- Never allow children under age 10 to cross the streets alone. Young children do not have the skills to accurately judge traffic risks.

For specific state laws applicable to pedestrian safety, visit the Walk Safe website at: **www.michigan.gov/walksafe**.

PEOPLE WHO DRIVE SHOULD FOLLOW THESE SAFETY TIPS TO PREVENT SERIOUS INJURY OR DEATH.

Drivers must:

- Stop before entering the marked crosswalk limit line.
- Stop before entering the intersection if there is no crosswalk or limit line.
- Obey traffic signals, signs, and markings.
- Yield to pedestrians in crosswalks, intersections, and all traffic controlled areas.
- Obey the posted speed limit.

Drivers should:

- Never pass vehicles stopped at a crosswalk. There may be people crossing that you can't see.
- Avoid distractions.
- Stay alert and take extra caution at intersections, especially when making turns.
- Make eye contact with pedestrians waiting to cross roadways.
- Be extra cautious when backing up—pedestrians can move into your path.

For specific state laws applicable to pedestrian safety, visit the Walk Safe website at: **www.michigan.gov/walksafe.**

MICHIGAN OHSP Office of Highway Safety Planning

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