



NONMOTORIZED CONNECTIVITY STUDY

YORK CHARTER TOWNSHIP | WASHTENAW COUNTY, MI

OCTOBER 2021

ACKNOWLEDGMENTS

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Introduction

The York Nonmotorized Transportation Study was initiated to explore opportunities to better link different areas within the Township that people work, live, and visit through bicycle and pedestrian facilities. Through this process, the project team evaluated existing roadway conditions, explored alternatives for facility designs, and recommended a framework tailored to the needs and preferences of the community. All recommendations provided in this study are based on best practices and technical guidelines for transportation design.

The timing of this study aligns with the Washtenaw County transportation millage that will dedicate 20% of all future revenues towards nonmotorized projects. This feasibility study, which includes clear policy objectives and design preferences for proposed nonmotorized improvements, puts York Township in a better position to access those funds in the future for implementation.

PURPOSE OF STUDY

Nonmotorized transportation is increasingly becoming a priority for all types of communities across the State of Michigan, as more people realize the benefits it provides to their communities. Though York Township has a distinctly rural character compared to nearby cities like Saline, Milan, Ann Arbor, and Ypsilanti, the benefits of providing for nonmotorized transportation are similar. The design of systems will differ between different types of communities, but the overall goals of nonmotorized transportation planning—creating safer, healthier, and more equitable communities—remain the same.

The first goal is to provide increased mobility options for those who cannot (or do not want to) drive. These may include seniors and children, but also those without reliable access to a car. Increasing bicycle and pedestrian networks, especially between key destinations such as job centers, commercial areas, and schools, improves mobility and reduces reliance on cars. It can also help improve safety in key areas, such as school zones and neighborhoods, where people are already more likely to walk. The second goal is to provide recreational amenities, something that is very compatible with a rural Township. York has a number of outstanding recreational areas, and scenic rural character that make it attractive for recreational trails. Shared use paths, bikeways, and/or regional trails all increase the quality of recreational space within a municipality, and can be enjoyed by both residents and visitors alike.

Rural areas have different roadway and user characteristics that require specific design guidelines for nonmotorized transportation. While roads may not see the consistent traffic volumes as a busy downtown street, traffic counts, traffic speeds, and roadway characteristics must all be considered when designing an appropriate system. This plan evaluates those key factors and reviews them through the lens of rural nonmotorized planning.

MULTIMODAL FACILITY TYPES

The following types of bikeways are the most suitable for consideration in York Township:

- Shared Use Path / Trail – More separation better for beginner cyclists and provides pedestrian space.
- Shared Lanes – Good for cyclists who are comfortable riding with vehicle traffic.
- Paved Shoulders – Allows some separation along bike routes. Must be installed without “rumble strips.” Pedestrians can also use paved shoulders for refuge on routes without sidewalks.
- Bike Lanes – Marked and signed as dedicated biking facilities. Not intended to provide pedestrian refuge.

Shared Use Path / Trail

Design Requirements:

Min	Target	Max
8 ft	10 ft	12 ft

Summary Notes:

Tree lawn separation of 6 to 10 feet is desirable. 2 foot buffer / clearance is minimum in constrained right of way. to right-of-way dimensions.



Shared Lanes

Design Requirements:

Min	Target	Max
9 ft	10 ft	14 ft

Summary Notes:

Replaces vehicle lane. Paved shoulder, marked shared lane, or bike lane is preferred.



Paved Shoulders

Design Requirements:

Min	Target	Max
3 ft	5 ft	varies

Summary Notes:

AASHTO allows paved shoulders of a minimum 3 feet with closed drainage in retrofit projects.



Bike Lanes

Design Requirements:

Min	Target	Max
4 ft	5 ft	6 ft

Summary Notes:

Include bike lane marking.





Public Engagement

York Township invited the public to engage in round table discussions to gather input for the future of biking along the three corridors included in this study. More than 40 residents were involved in the process, including Planning Commissioners and Township Board Members. The primary areas the Township sought feedback around were destinations and connections, residents service, and agricultural preservation. The round tables included a discussion of barriers, assets, and safety concerns as well as preferences and perceptions for bike accommodations.



ROUND TABLE #1: DESTINATIONS AND CONNECTIONS GROUP

The following points summarize the take-aways from the first round table discussion.

- Most people had experience riding for social or recreational purposes, but acknowledged biking was a mode of transportation.
- In favor of wide shoulders on Platt but not a trail into farmland.
- Viewed Sandra-Richardson Park as the hub of Township nonmotorized activity
- Recognized the need for community-wide support for implementation – the Township needs a “Champion.”
- Noted the best place to spend the money is where the majority of Township residents lived – on the north side of the Township.
- The Willis Road S-curve and the Willis and Platt railroad crossings were noted as safety concerns.

ROUND TABLE #2: WILLIS ROAD / RESIDENTS GROUP

The following points summarize the take-aways from the second round table discussion.

- There were many daily cyclists in this group.
- Many participants would (and have) used bicycles to get to town but noted increase in vehicle speeds and distracted driving, particularly on Willis Road.
- Many would use a path to ride into Saline and to get to parks if it were safer.
- The connection on Platt to Milan was noted as desirable, but secondary to the connection along Willis into Saline.
- More than 80% of participants preferred a connection along Platt to Carpenter.
- Platt Road into Ann Arbor was also noted as a useful connection.
- Connections to schools and to the Ann Arbor Area Transit Authority system was also noted as desirable.
- Concerns were expressed for the potential loss of trees with pathway implementation.
- The Platt Road rail crossing was a noted safety concern.



ROUND TABLE #3: PLATT ROAD / AGRICULTURE GROUP

The following points summarize the take-aways from the third round table discussion.

- Participants biked for exercise and desired connections to Sandra-Richardson Park and Mooreville Preserve.
- Participants were not opposed to developing non-motorized facilities and acknowledged a benefit to Township residents that might want to use the facilities.
- Participants liked the idea of utilizing funding that was dedicated to nonmotorized infrastructure development, but were less inclined to spend Township money that could go to other objectives that would serve a larger user base.
- This group also preferred Platt over Carpenter because Carpenter is a truck route.
- The main safety concerns noted were distracted drivers and portions of road with no shoulder and very close drainage ditches to the paved roadway.

CONCLUSION

Overall, the participants in the round tables seemed to be optimistic about potential to incorporate nonmotorized and bicycle transportation options in the Township. There was broad consensus for the implementation of a bikeway along Willis Road that will service the largest portion of the Township population. There was less support expressed for Platt Road. Participants expressed a desire to preserve agricultural character in the Township and supported a “light touch” with respect to improvements. It was generally acknowledged that Platt served the most direct connection between Township and regional destinations. Carpenter Road was generally accepted as a reasonable alternative route to Platt but not necessarily as a desirable alternative. Participants seemed to prefer Carpenter for the development of regional biking infrastructure like a shared use path or bike lanes.

The main concerns expressed about constructing bike accommodations were from property owners that wanted to limit the impacts on their properties from future improvements. For the most part, these property owners seemed to understand that the right-of-way could be utilized for installation of bike facilities without acquisition, but it is clear that additional outreach should be conducted to individual property owners throughout facility design and construction.



Multimodal Connectivity Framework

The multimodal connectivity framework presents preferred facility types for connecting east-west and north-south in York Township. These alignments will serve as the spoke for the future development of York's local biking connections to the regional system.

CONTEXT

York Township is a rural residential area with easy access to nearby commercial and job centers. The three road segments studied during this project are not only key routes within the Township, but connect with key community assets. Platt Road is characterized by rural land uses and existing and proposed recreational areas, providing North-South connections to Sandra Richardson Park and the Saline River. In addition, Platt provides key connections to commercial areas just outside of the Township including downtown Milan and the Toyota Research and Development and Technical Center. Willis is a more modern residential area, which provides key connections to subdivisions and Saline. Carpenter is similar in land use characteristics to Platt and Willis, with more residential areas north of Stony Creek.

SAFETY

There are several safety concerns that should be considered in the design of nonmotorized network, aside from traffic counts and speed limits. First, there is an at-grade railway crossing on Willis between Carter Dr and Paddock Ln. The crossing is near perpendicular for bikes (which is preferred), but signage and the condition of the bike lane surface will need to be considered to ensure the crossing is as safe as possible for bicyclists. Additionally, between Moon Rd. and the western border of the Township there is an S-curve on Willis Road with limited site distance and no shoulders or sidewalks; further limiting safe nonmotorized travel.

Another challenge is the number of and frequency of driveways and curb-cuts on Willis, Platt and Carpenter. Platt and Carpenter have a similar number of driveways. Each driveway creates a point of conflict between drivers and nonmotorized users, which is a key safety concern. In addition, on Platt many of these drives are gravel, which can be a hazard to bicyclists when crossing.

Of the three roads, Willis has the best pavement conditions, lowest speed limit, and lowest traffic volumes. Platt and Carpenter have higher speed limits (55 mph), but Platt is in poorer condition. Platt Road is a county designated no-truck route. Review of crash data indicate more crashes on Platt Road than on Carpenter. For all roads, traffic is heaviest on the segments that lead to and from US-23 interchanges off of Willis Road.

Platt Road also has an at-grade railway crossing north of Willow Road. The railroad crosses at a sharp angle, measuring approximately ten degrees, which can be highly dangerous for cyclists due to the propensity for tires to get caught in a track. This crossing should be redesigned so that bicycles can cross at an angle less than 45 degrees. Markings and crossing signs should also conform to the Manual of Uniform Traffic Control Devices.

Finally, intersections are always a challenge for bicyclists and pedestrians, but especially at high volume intersections like Willis and Platt. Both roads widen at this intersection to accommodate traffic coming to and from the Toyota R&D Center and US-23. In addition, using Carpenter as the preferred North-South alignment would require having pathways cross over on- and off-ramps from US-23.



WILLIS RAIL CROSSING



PLATT RAIL CROSSING

CHARACTER AREAS

The York Nonmotorized Feasibility Study primarily focuses on two bicycle routes within the Township: Platt Road (North-South) and Willis Road (East-West). A second alternative for North-South connections within the study area, along Carpenter Road, was also studied. Platt Road is characterized as more of rural, recreational area, while Willis is more of a modern, residential area with subdivisions. Each provide direct, efficient connections to community assets, neighboring communities, and recreational areas. Carpenter Road is more like Willis in land uses, but it is east of US-23 and serves a larger role in the regional vehicle network than Platt. Carpenter is also further removed from Township destinations and would require upgrades to bridges crossing US 23. The Character Areas shown on the adjacent map divide the routes into eight segments, aligned with the existing roadway conditions of pavement width, speed limits, and traffic count.

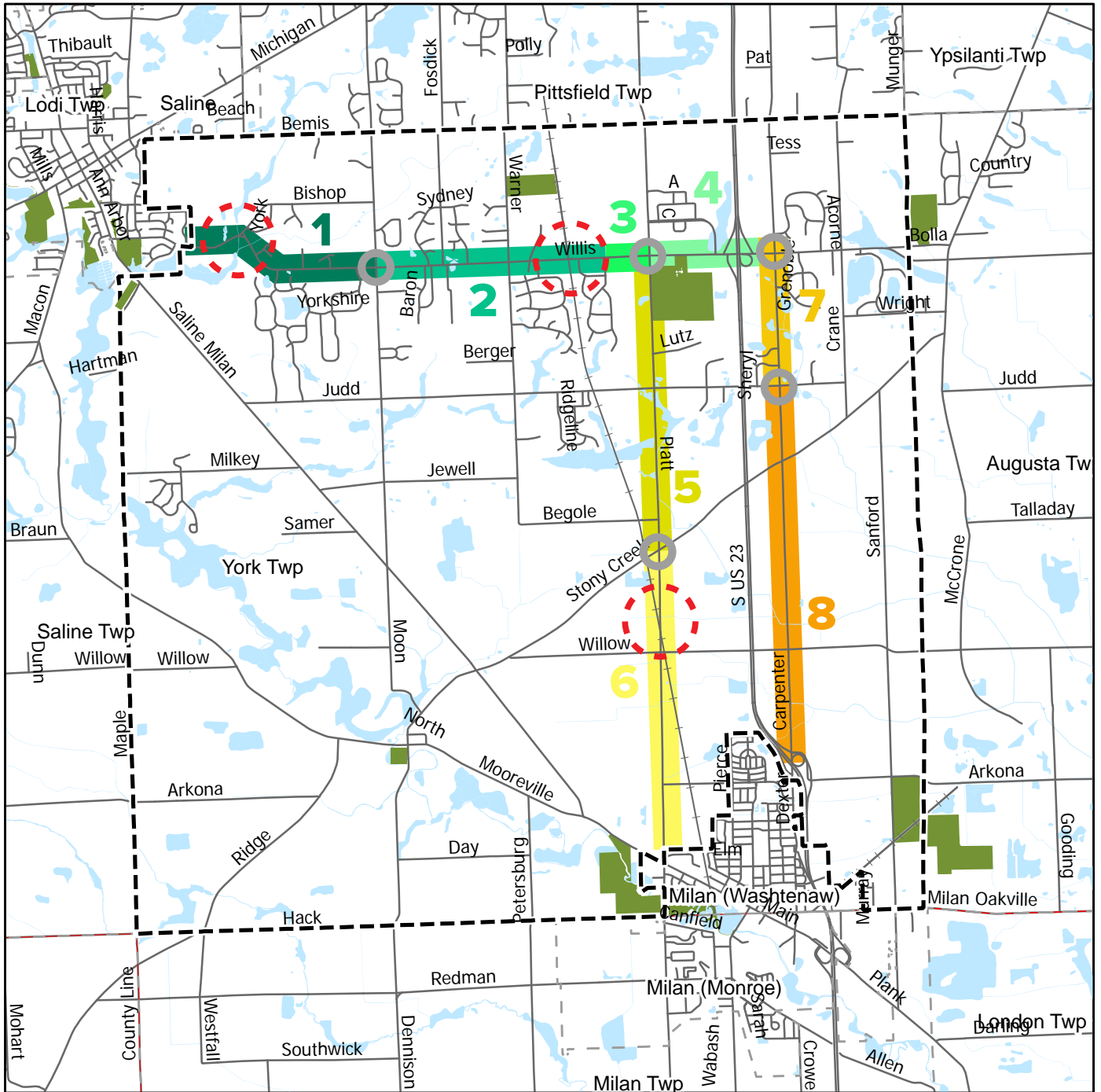
- Character Area 1: Willis (E Of Saline Milan / W Of Moon Rd.)
- Character Area 2: Willis (E Of Moon / W Of Emerson)
- Character Area 3: Willis (E Of Emerson / W Of Platt)
- Character Area 4: Willis (E Of Platt / W Of Carpenter)
- Character Area 5: Platt (S Of Willis / N Of Stony Creek)
- Character Area 6: Platt (S Of Stony Creek / N Of Greentree)
- Character Area 7: Carpenter (S Of Willis / N Of Judd)
- Character Area 8: Carpenter (S Of Judd / N Of Arkona)

CONNECTIVITY

Each of the proposed primary alignments have direct connections to parks and open spaces, residential areas, and nearby commercial centers in Saline and Milan. Platt Road provides direct access to Sandra Richardson Park and the Saline River, as well as the Toyota R&D Center north of Willis. Both roads also provide opportunities to connect to existing nonmotorized facilities. On Willis, there is a stretch of on-road bike lanes provided starting at the Saline border, though that bike lane is not directly connected to an existing larger bike network. The best regional bicycle facilities are provided to the north in Pittsfield Township, with off-road paved paths provided along Platt and W Textile. Overall, while there isn't an established nonmotorized network in this part of Washtenaw County, each of the three roads being considered as part of this study fit within a preferred alignment for better regional connectivity identified by Washtenaw County, with Platt being the most preferred of the three for bike infrastructure.

CONNECTIVITY PRINCIPLES FOR NONMOTORIZED FACILITIES IN YORK TOWNSHIP

- Create choices for mobility
- Make travel by bicycle safe for residents of all ages
- Increase recreational amenities in the Township
- Create opportunities for healthy and active living
- Combine construction of nonmotorized facilities with education and encouragement programs for residents
- Include bike route signing, crossing signing, throughout the Township
- Provide bike parking at Township facilities and encourage bike parking at businesses



Connectivity Plan

York Charter Township, Michigan

October 15, 2021

LEGEND

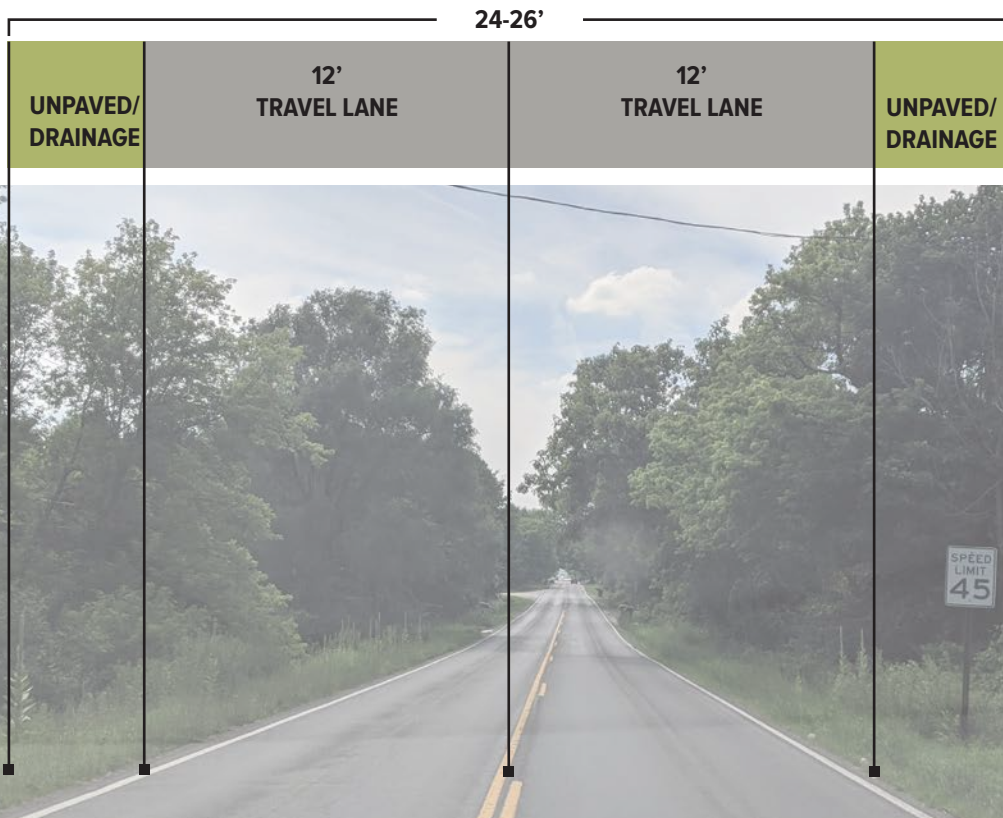
- Character Areas
- Transitions
- Safety Improvements
- Roads
- Parks
- Wetlands
- Railroad



Source: Michigan Center for Geographic Information, Version 17a.

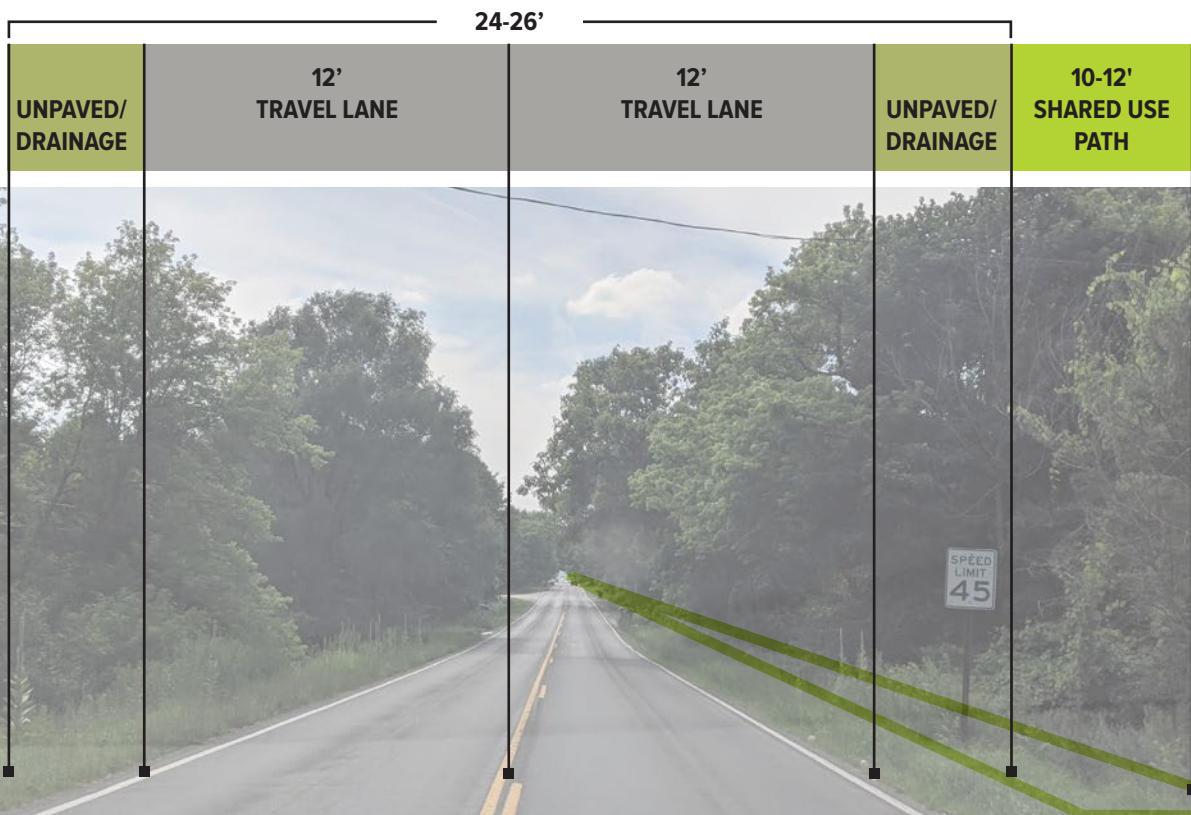


1



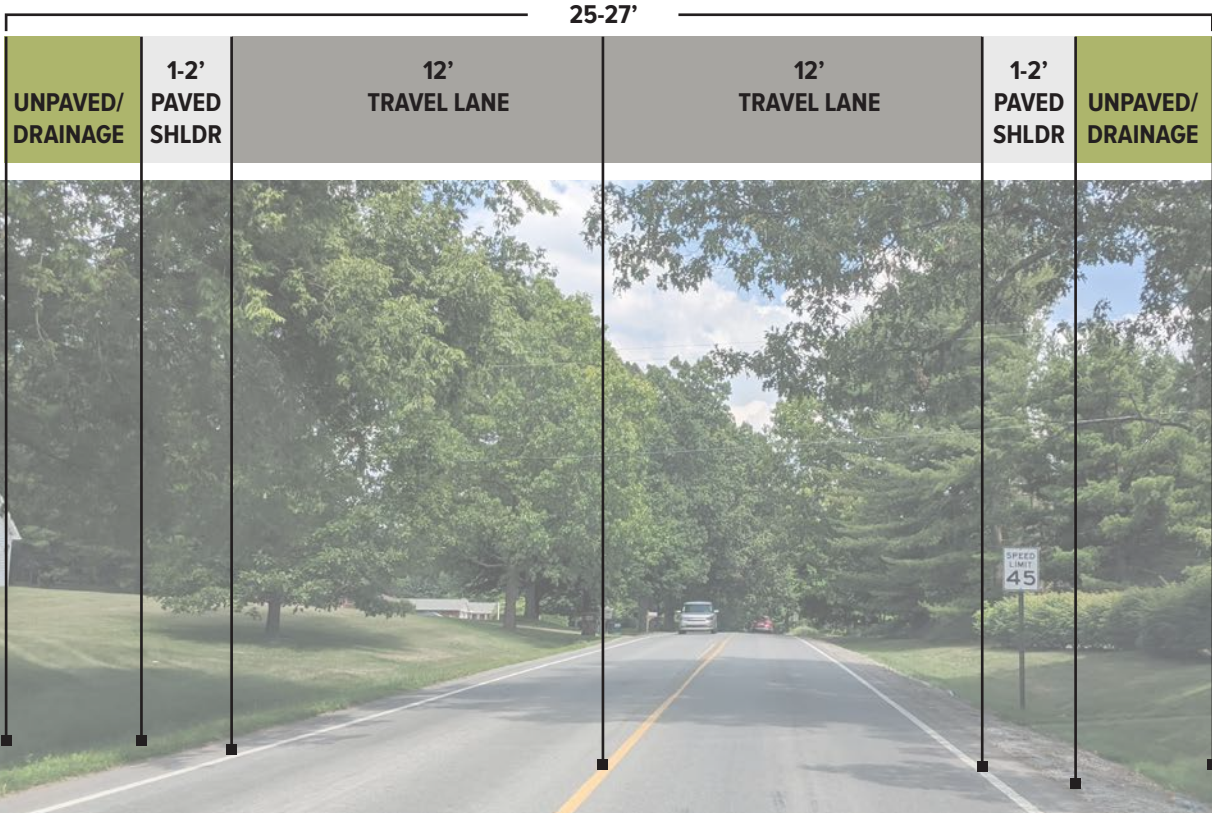
WILLIS (E OF SALINE MILAN / W OF MOON RD.)

EXISTING



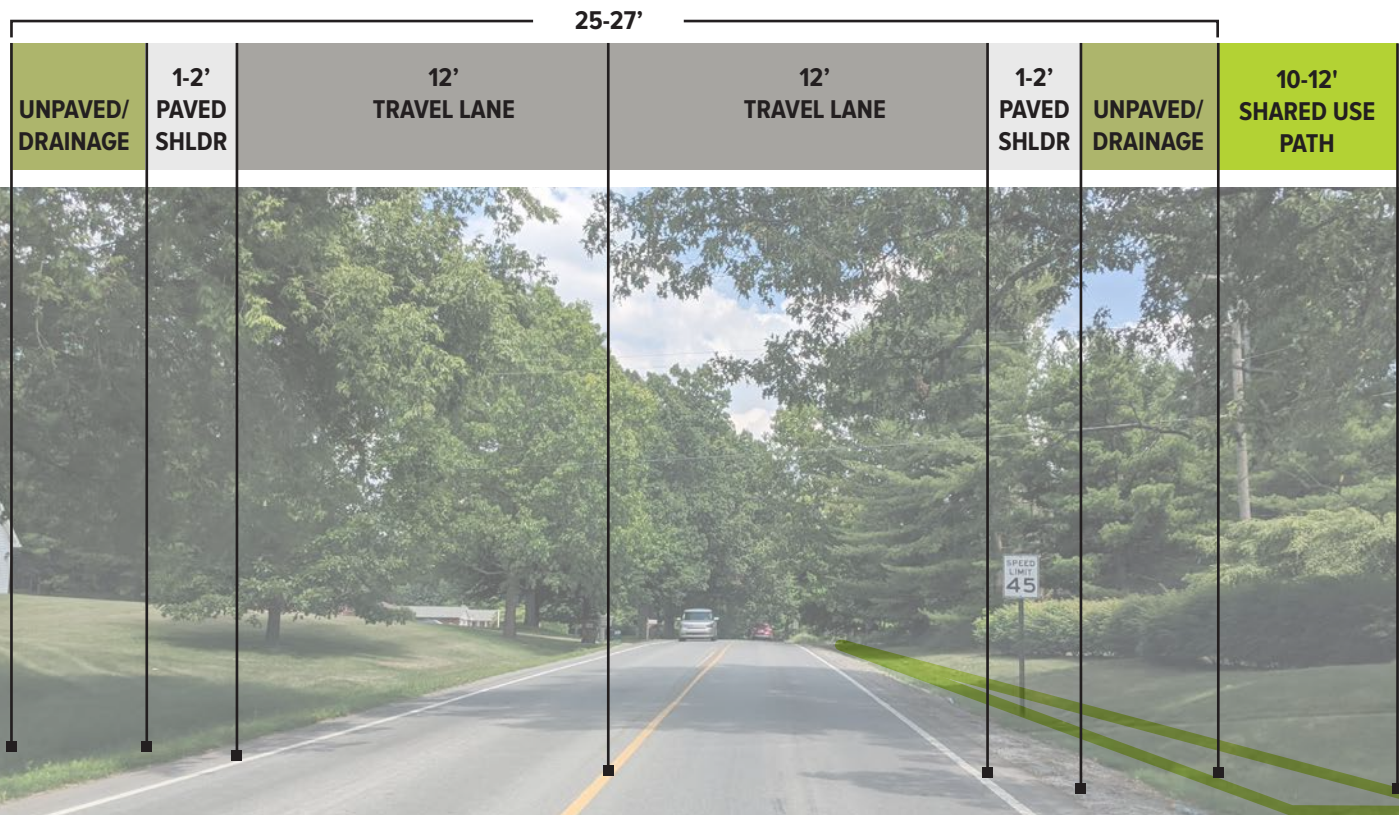
WILLIS (E OF SALINE MILAN / W OF MOON RD.)

PREFERRED ALT.



WILLIS (E OF MOON / W OF EMERSON)

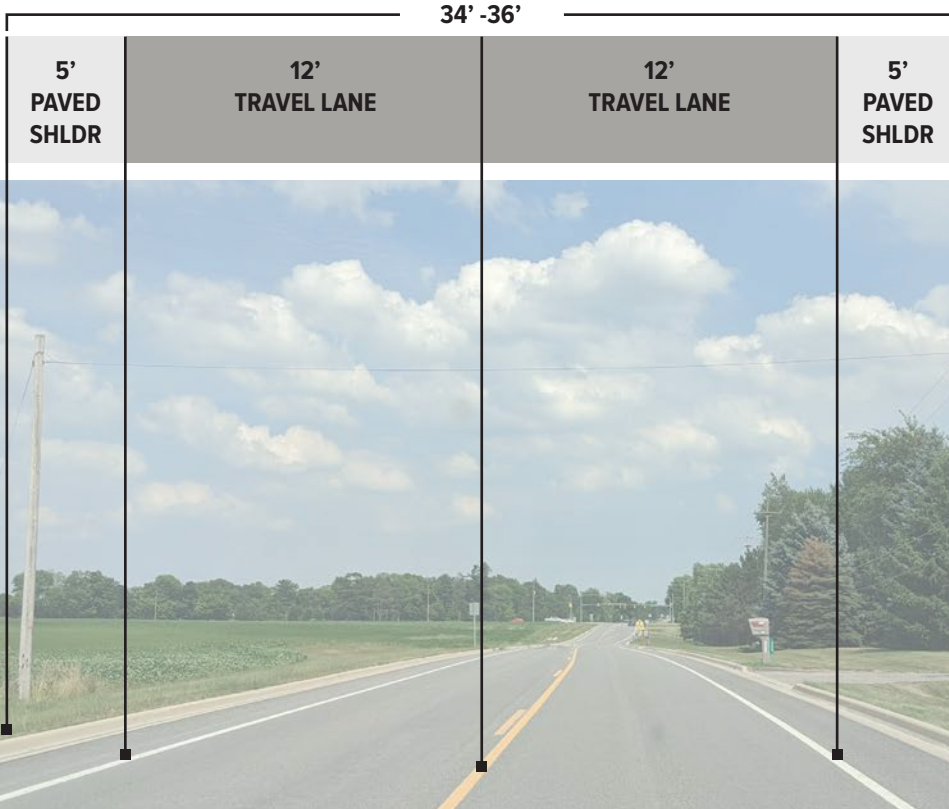
EXISTING



WILLIS (E OF MOON / W OF EMERSON)

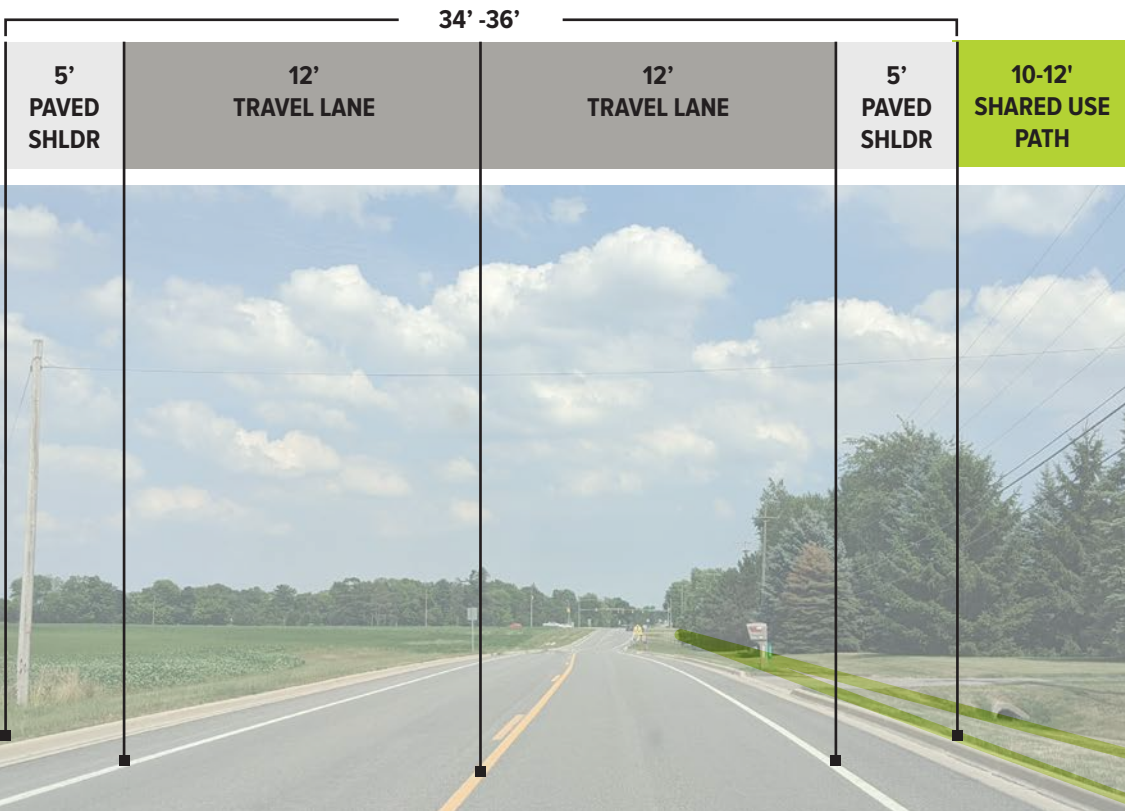
PREFERRED ALT.

3



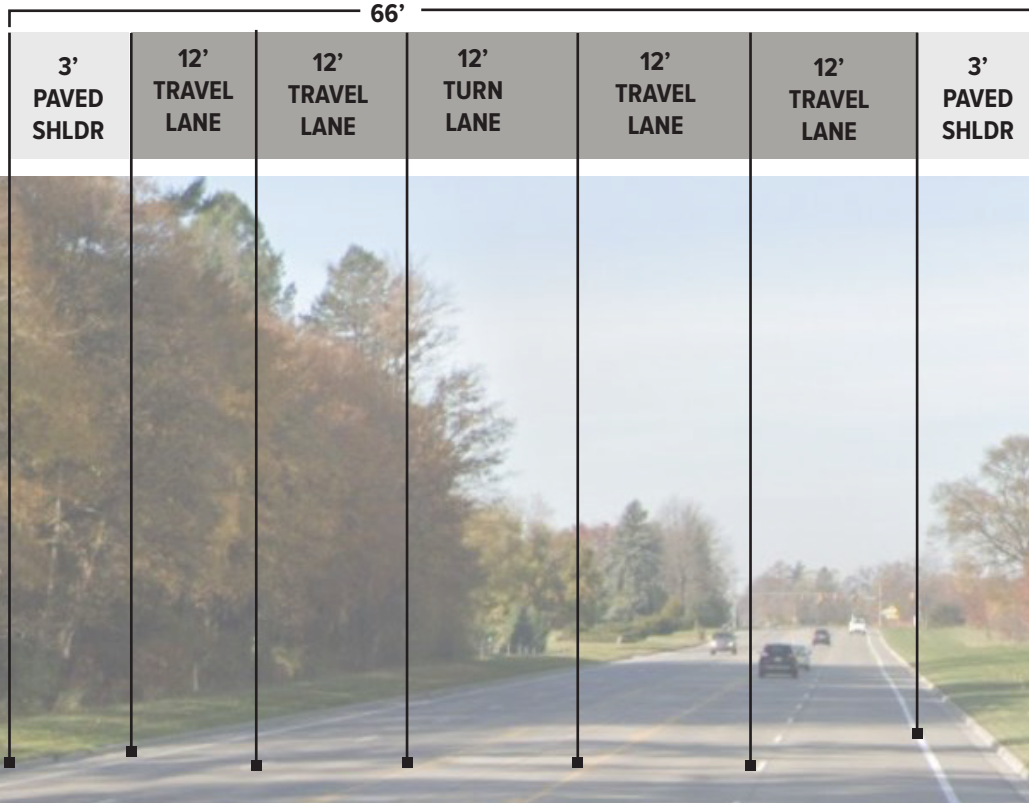
WILLIS (E OF EMERSON / W OF PLATT)

EXISTING



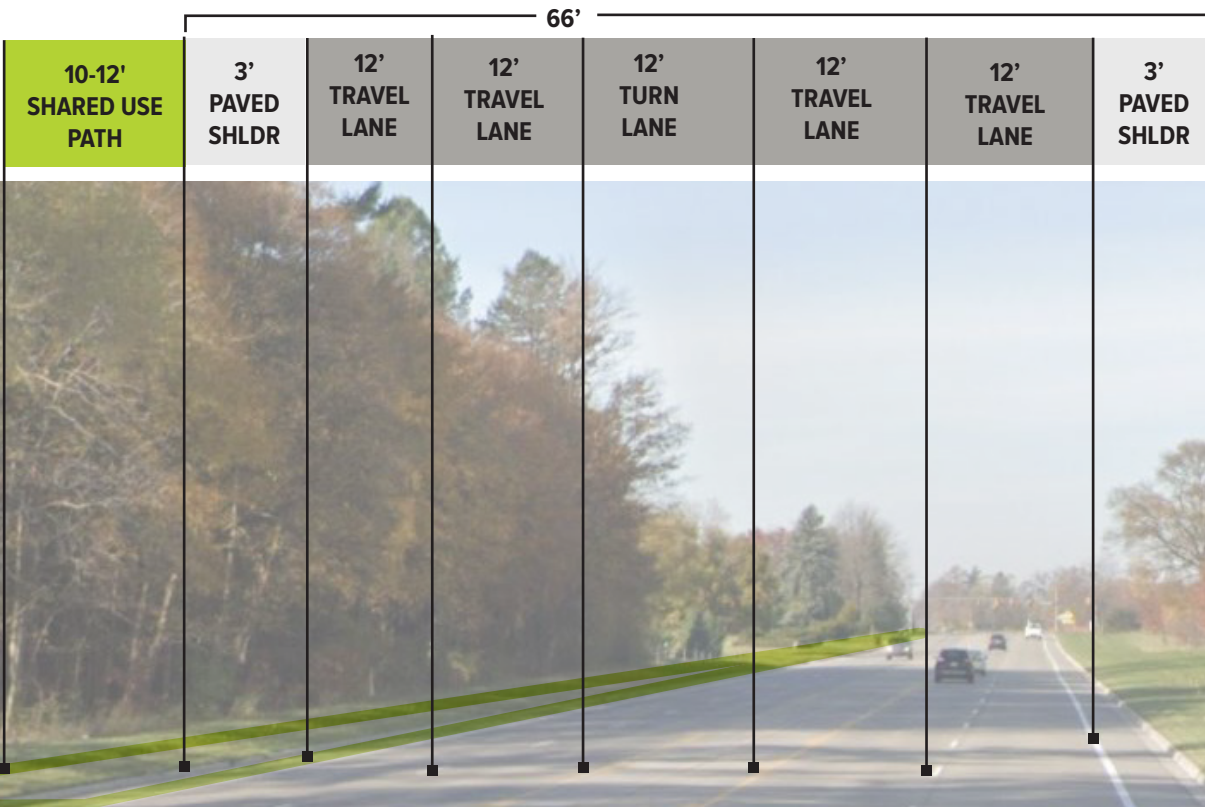
WILLIS (E OF EMERSON / W OF PLATT)

PREFERRED ALT.



WILLIS (E OF PLATT / W OF CARPENTER)

EXISTING



WILLIS (E OF PLATT / W OF CARPENTER)

PREFERRED ALT.

25-27'

UNPAVED/ DRAINAGE	1-2' PAVED SHLDR	12' TRAVEL LANE	12' TRAVEL LANE	1-2' PAVED SHLDR	UNPAVED/ DRAINAGE
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PLATT (S OF WILLIS / N OF STONY CREEK)

EXISTING

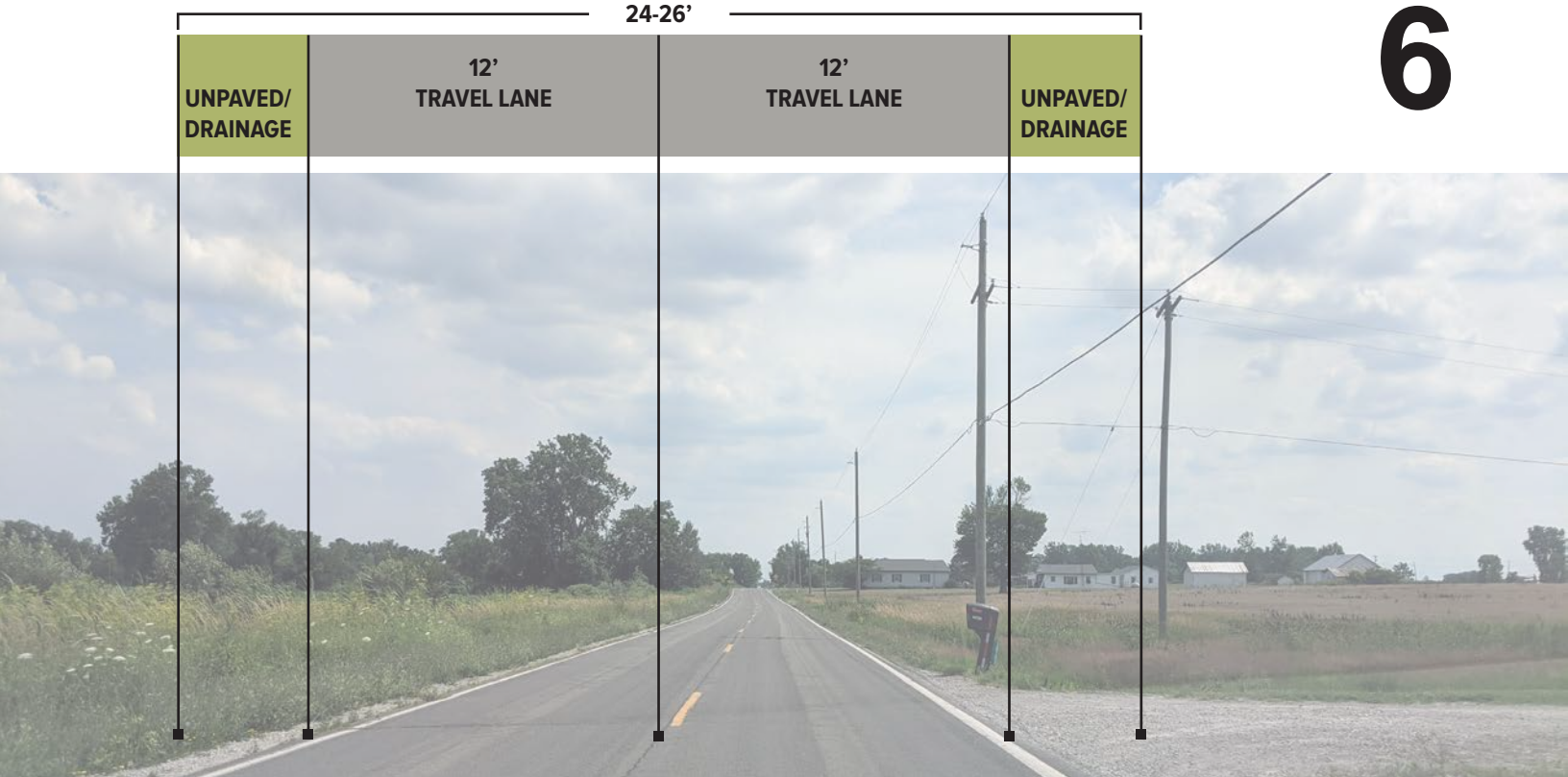
31-34'

UNPAVED/ DRAINAGE	5' PAVED SHLDR	12' TRAVEL LANE	12' TRAVEL LANE	5' PAVED SHLDR	UNPAVED/ DRAINAGE
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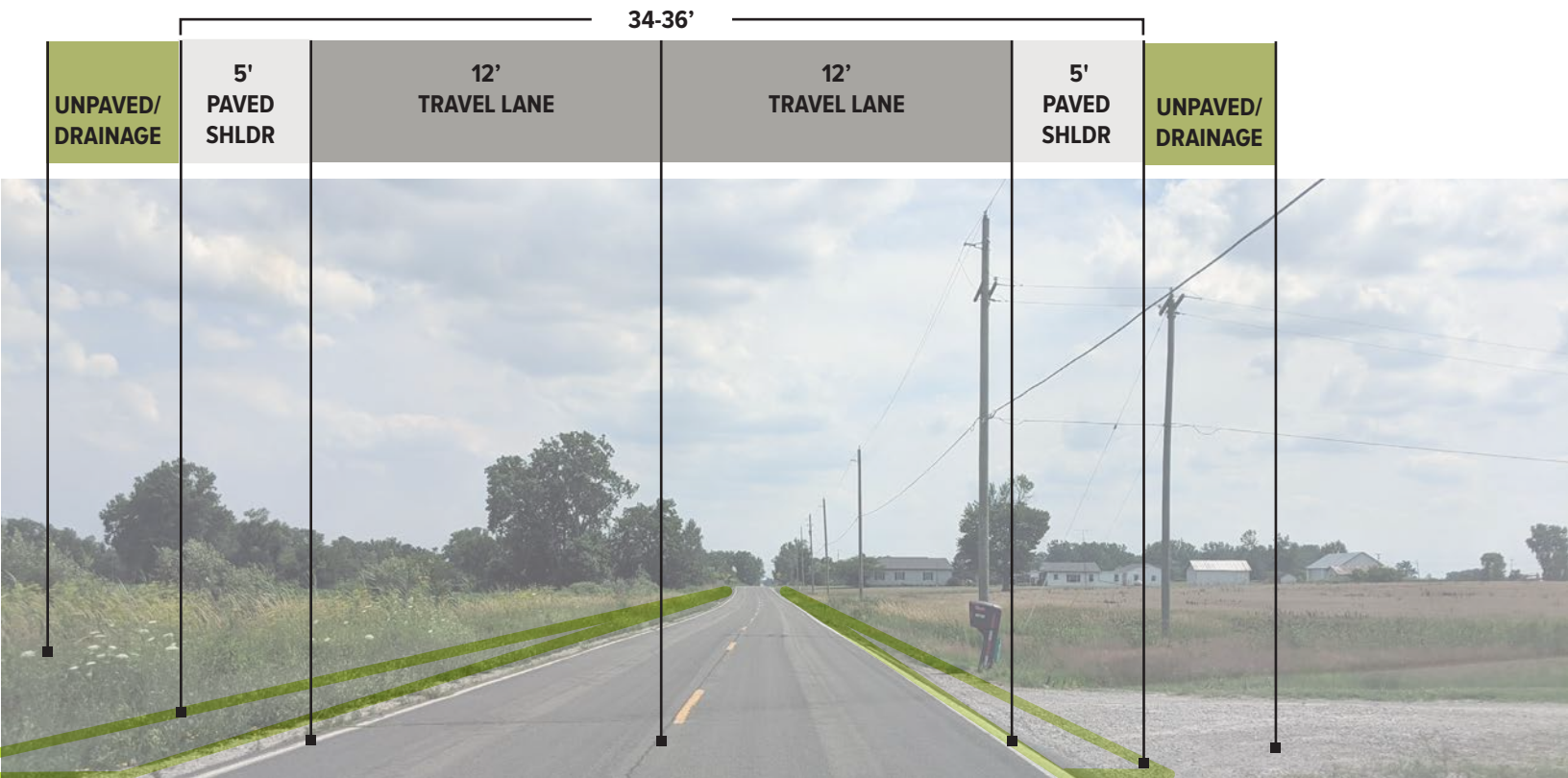
PLATT (S OF WILLIS / N OF STONY CREEK)

PREFERRED ALT.



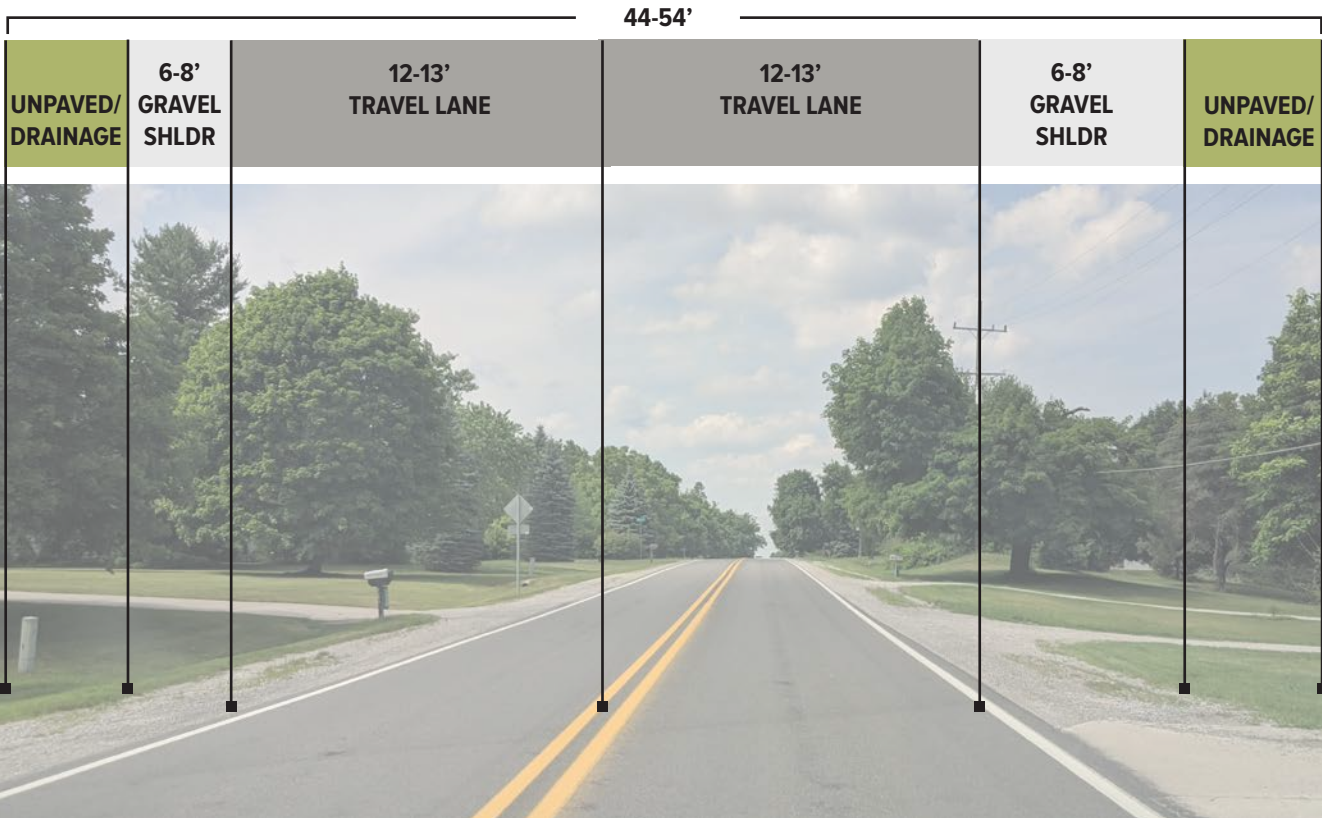
PLATT (S OF STONY CREEK / N OF GREENTREE)

EXISTING



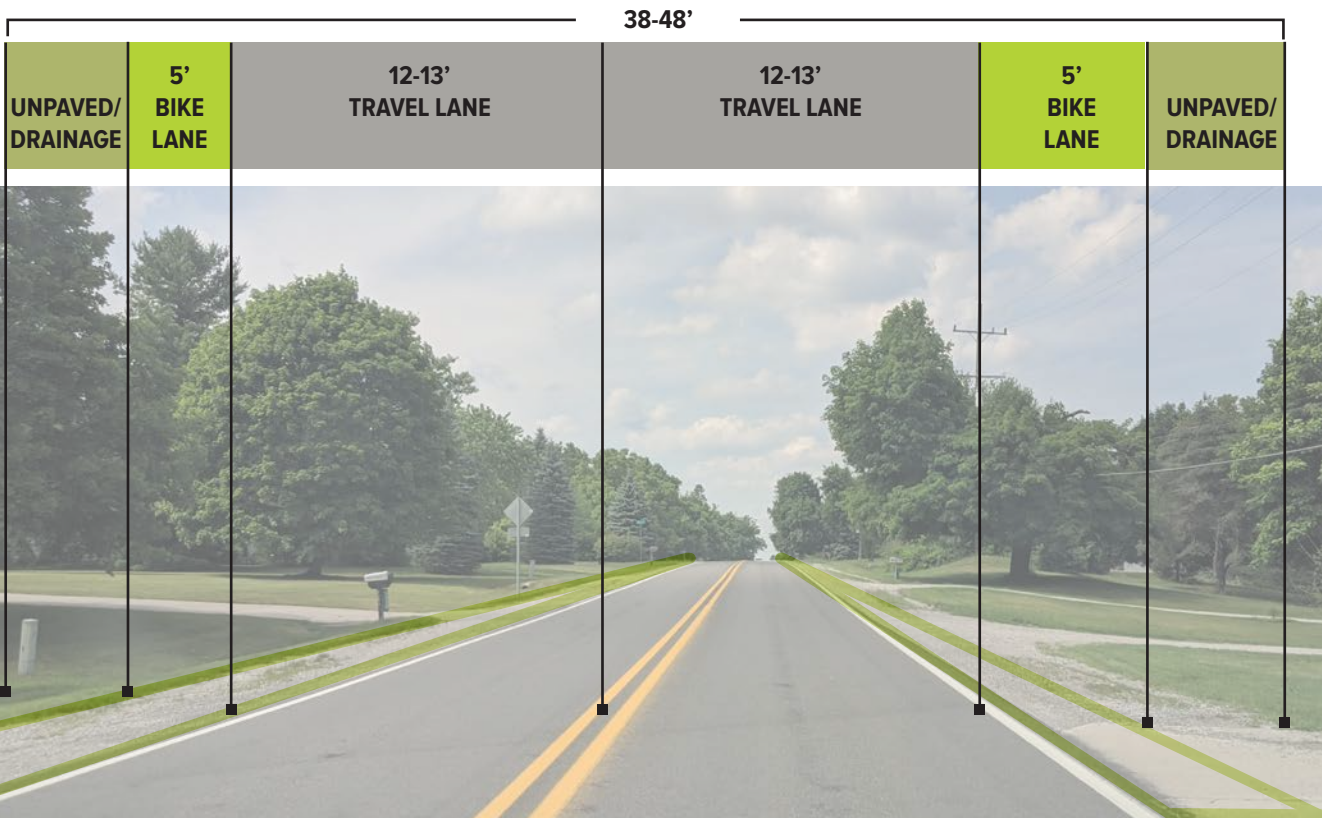
PLATT (S OF STONY CREEK / N OF GREENTREE)

PREFERRED ALT.



CARPENTER (S OF WILLIS / N OF JUDD)

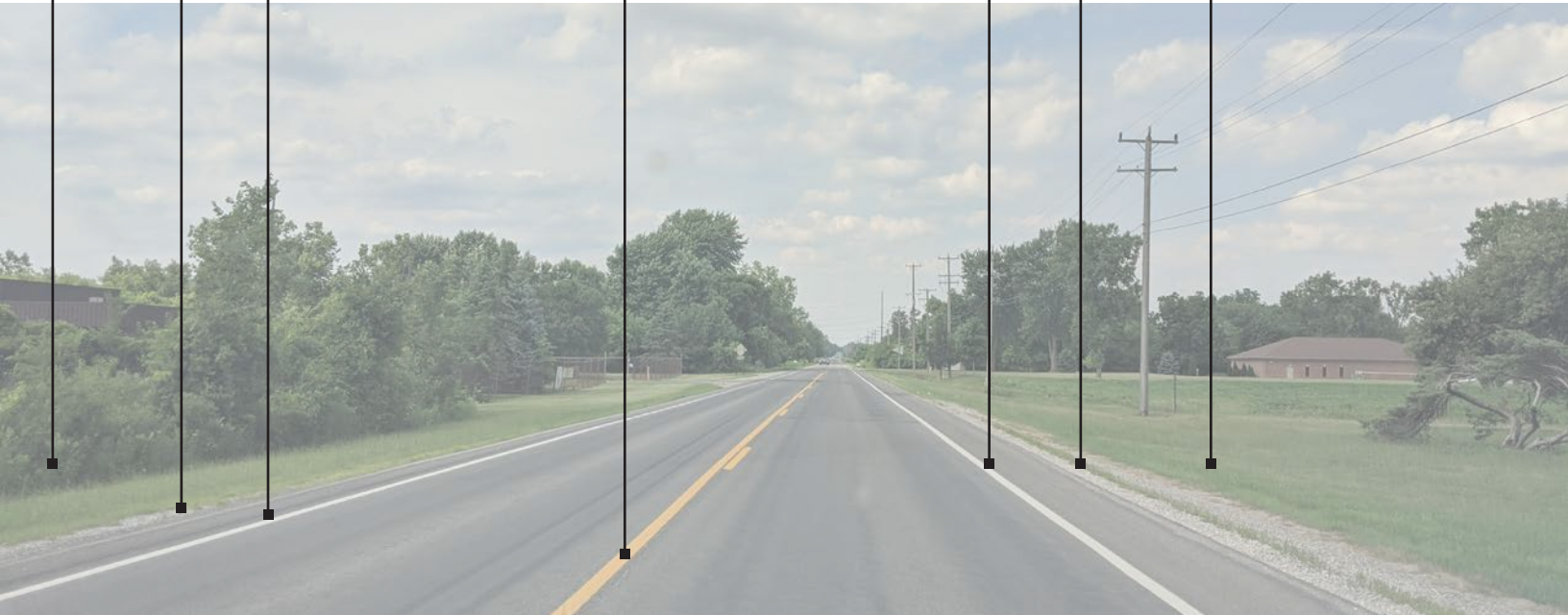
EXISTING



CARPENTER (S OF WILLIS / N OF JUDD)

PREFERRED ALT.

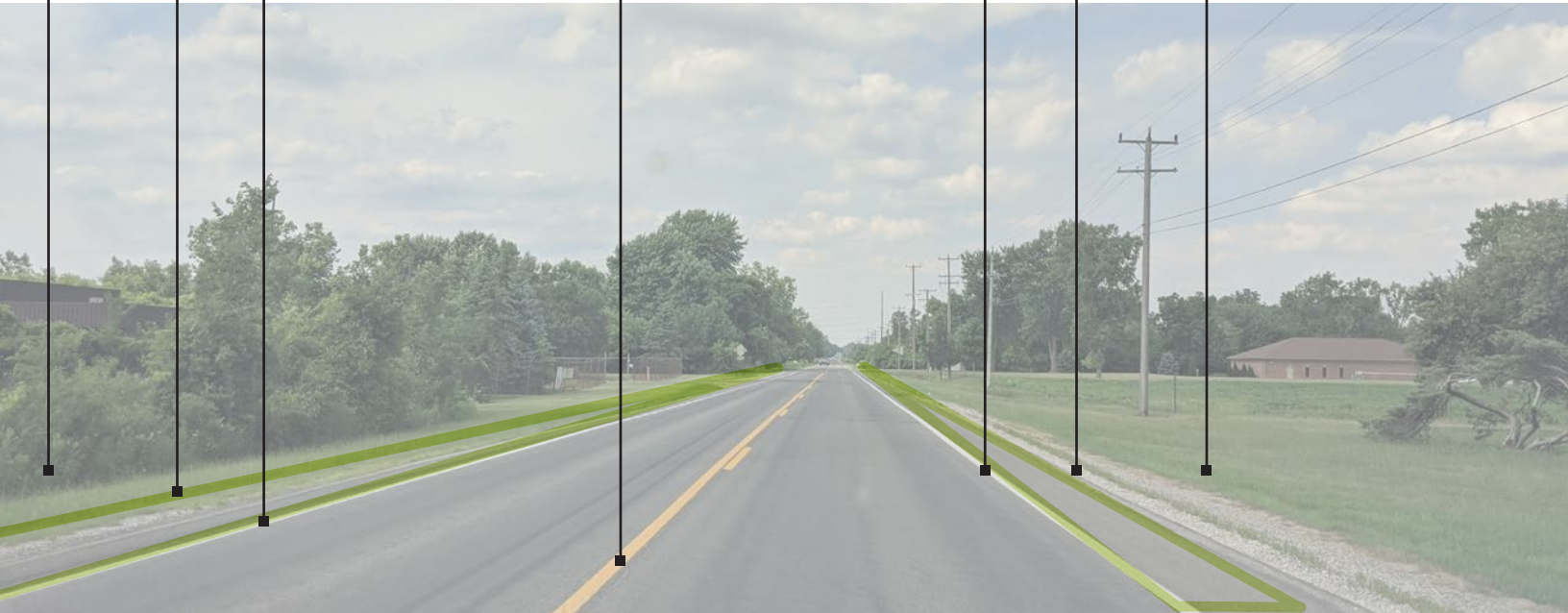
25-27'



CARPENTER (S OF JUDD / N OF ARKONA)

EXISTING

29-30'



CARPENTER (S OF JUDD / N OF ARKONA)

PREFERRED ALT.



Phasing

The implementation of the Nonmotorized plan is divided into three sections, roughly aligned to the three corridors included in the study – Willis, Platt, and Carpenter.

PHASING PRIORITIES

York Township is a rural residential area with easy access to nearby commercial and job centers.

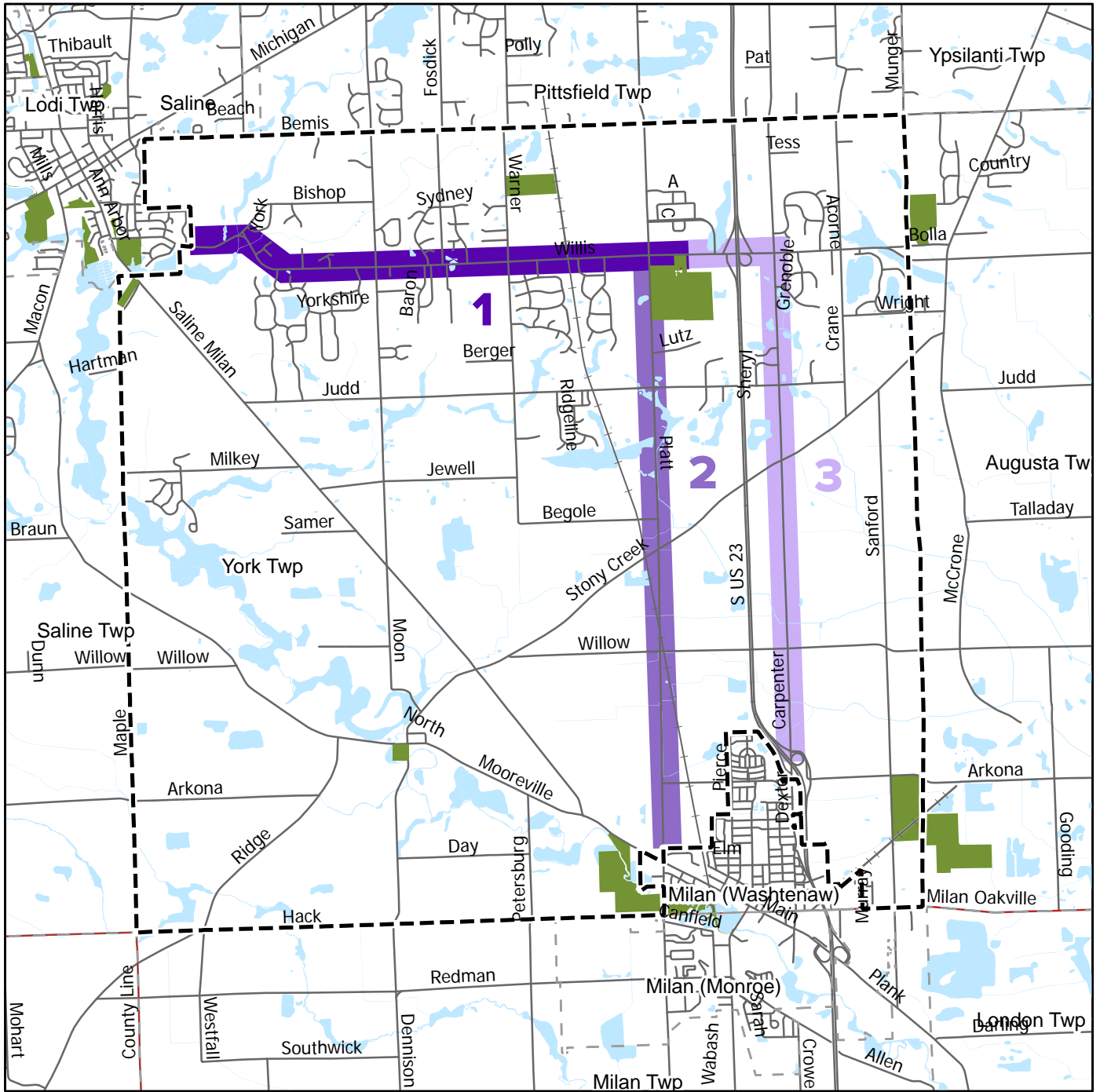
The following three phasing priorities are noted on the Phasing Priorities Map:

- Phase 1, Willis Road, will service northern part of the Township, address two safety concerns, link the Willis Road entrance of Sandra-Richardson Park, the Toyota R&D Center, and Saline destinations to the south. Estimated Cost: \$2,200,000. Distance: 4.61 Miles.
- Phase 2, Platt Road, will service southern part of the Township, address the most difficult railroad crossing safety concern, link the Platt Road entrance of Sandra-Richardson Park, the Toyota R&D Center, and Milan destinations to the south. Estimated Cost: \$268,000. Distance: 4.51 Miles.
- Phase 3, Carpenter Road, was studied as an alternative to Platt, and it remains a viable alternative, but it does not provide the desired connections. This Phase also includes Willis Road east of the Willis entrance to Sandra-Richardson Park. Notably, this connection would require a retrofit of the Willis Road bridge and traverses the highest traveled segment of roadway in the study area. Estimated Cost: \$298,000. Distance: 3.8 Miles.

NOTES FOR DESIGN AND IMPLEMENTATION OF KEY FACILITIES

The following notes are best practices for implementing bicycle facilities from AASHTO's guidelines for implementation: preferred alternative.

- Bike lane implementation as part of resurfacing, reconstruction, and routine maintenance overlays. Many communities have coordinated their bikeway plans and their street repaving programs to create bike lanes through the reallocation of street space during routine paving projects.
- "Complete Streets" Policies. Integration of bikeways in routine public works projects including highway and transit projects. Cost-effective improvements can be made by systematically including bikeways in projects as a matter of policy.
- Bikeway implementation via private-sector development activity. New developments, including mixed-use projects, residential developments, and urban infill projects provide significant opportunities for requiring bike connections and accommodations through the local planning process.
- Bikeway implementation in coordination with major capital projects. Bikeways can successfully be included in bridges, freeways, light rail projects, transit stations, and other capital projects.
- Development of shared use paths in corridors with utilities or other infrastructure improvements. Co-location of water, sewer, communications, power, and other utilities can create cost-sharing and revenue opportunities for bikeways.
- Rails-to-Trails and Rails-with-Trails Projects. Active, abandoned, and rail-banked corridors are frequently used to create shared use paths.



Phasing Priorities

York Charter Township, Michigan

October 15, 2021

LEGEND

- Phasing Priorities
- York Township Boundary
- County Boundary
- Roads
- Parks
- Wetlands
- Railroad



Source: Michigan Center for Geographic Information, Version 17a.



Character Area / Segment	Segment Length	Traffic Count	Speed Limit	ROW Width	Safety Concerns*
1 Willis	1.54 mi.	2,500	45 mph	66 ft.	S-Curve in Road; High-speeds
2 Willis	1.73 mi.	5,100	45 mph	66 ft.	Railroad Crossing; High-speeds
3 Willis	0.34 mi.	5,100	45 mph	66 ft.	High-speeds
4 Willis	1.00 mi.	11,900	45 mph	66 ft.	US 23 Crossing; High-speeds
5 Platt	2.24 mi.	6,900	55 mph	66 ft.	Railroad Crossing; High-speeds
6 Platt	2.27 mi.	3,000 to 3,800	55 mph	66 ft.	Railroad Crossing; High-speeds
7 Carpenter	1.00 mi.	4,200	55 mph	100 ft.	High-speeds
8 Carpenter	2.80 mi.	3,700 to 4,300	55 mph	100 ft.	High-speeds

IMPLEMENTATION TABLE

The Implementation table above summarizes the preferred recommendations and phasing priority for each road segment in the study. By prioritizing these improvements in this order, the Township will get the biggest “bang for the buck.” The total system runs 12.92 miles and would have an estimated cost of \$3,706,040 for the preferred alternative.

Character Area / Segment	Preferred Alternative	Cost Per Mile**	Estimated Cost	Priority Phase	Lower Cost Option
1 Willis	Shared Use Path	\$550,000	\$847,000	1	Paved Shoulder
2 Willis	Shared Use Path	\$550,000	\$951,500	1	Paved Shoulder
3 Willis	Shared Use Path	\$550,000	\$187,000	1	Paved Shoulder
4 Willis	Shared Use Path	\$550,000	\$550,000	3	Paved Shoulder
5 Platt	Paved Shoulder	\$134,000	\$300,160	2	Shared Lane / Bike Route Signs
6 Platt	Paved Shoulder	\$134,000	\$304,180	2	Shared Lane / Bike Route Signs
7 Carpenter	Bike Lane	\$149,000	\$149,000	3	Paved Shoulder
8 Carpenter	Bike Lane	\$149,000	\$417,200	3	Paved Shoulder

* High-speeds are noted as a safety concern on all roadways, in general, roads under 25 mph would be considered the safest for shared bicycle and vehicle traffic. Roadways, like the ones in this study, with posted speeds above 35 mph are good candidates for dedicated bicycle accommodations.

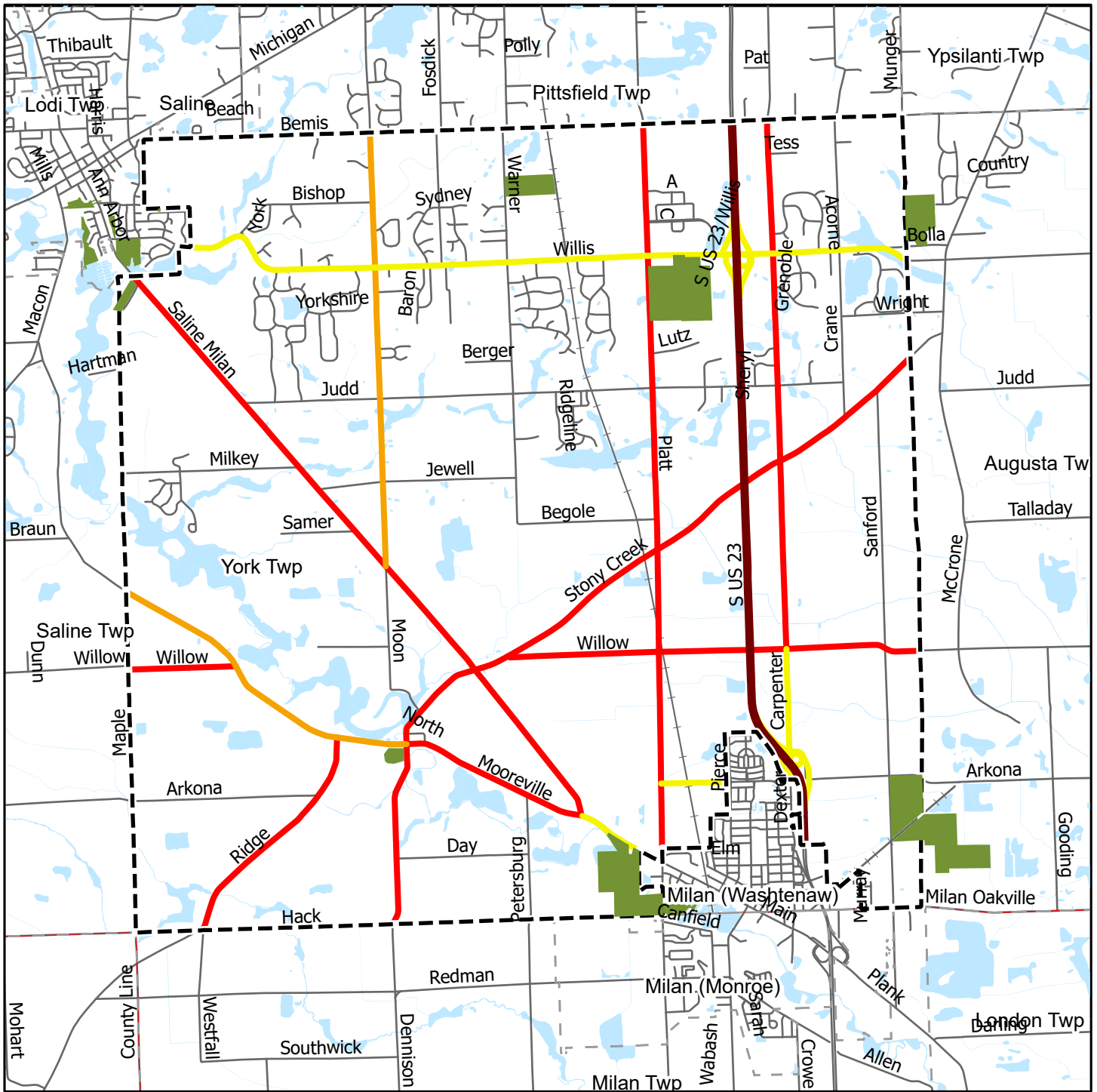
** Sources for cost per mile based on average samples from 2013 Pedestrian Bicycle Information Center study, which has been adjusted for present day value at 1.5% inflation. Assume the cost for paved shoulder is equivalent to 90% of bike lane costs.

Existing Conditions Maps

Speed Limits

Traffic Counts and Crashes

Transportation Strategy - 2019 Master Plan



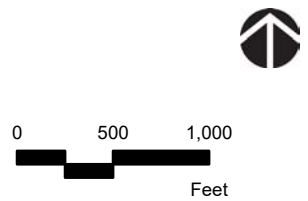
Speed Limits

York Charter Township, Michigan

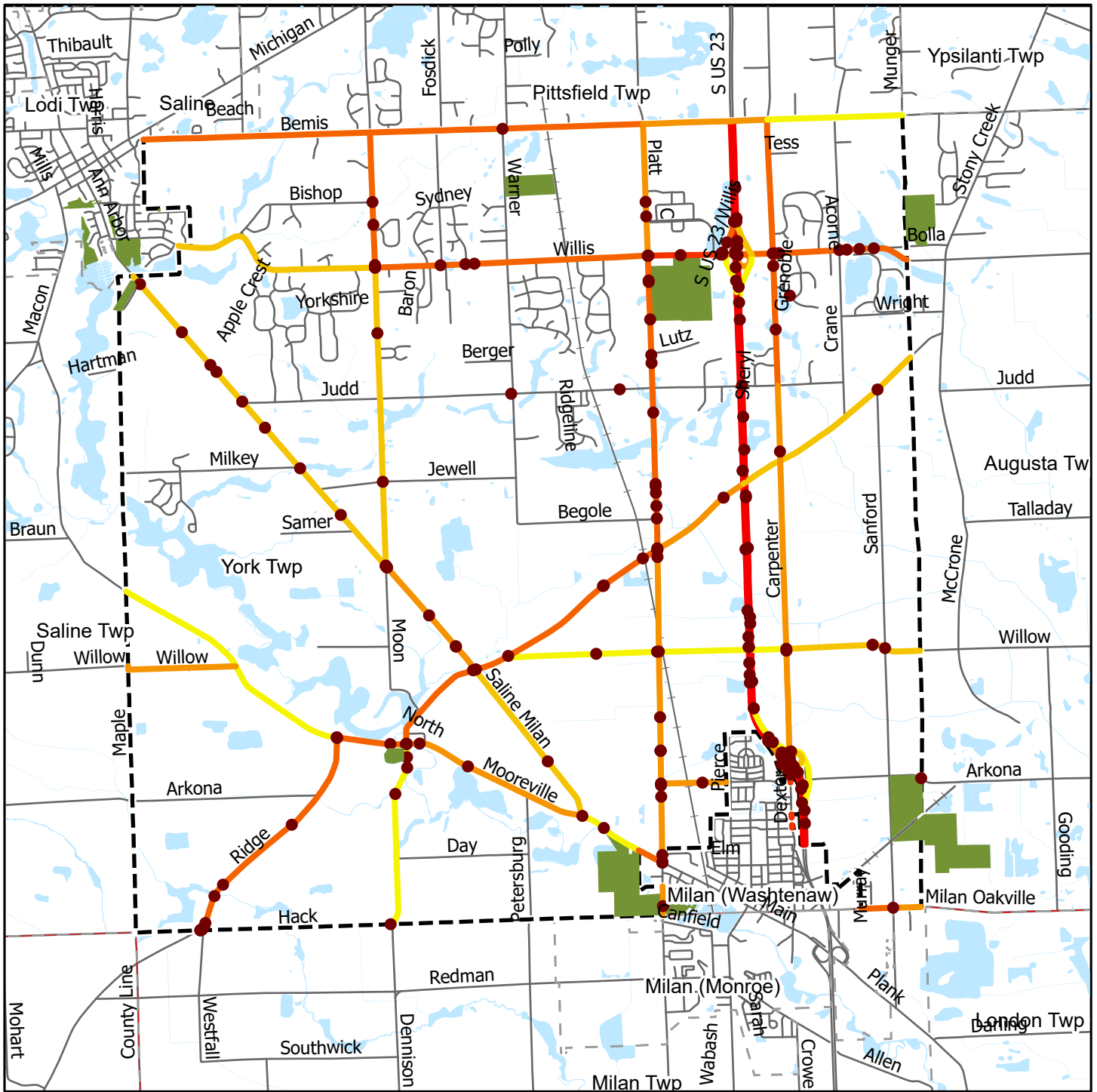
October 15, 2021

LEGEND

- | | |
|------------------------------------------------|---------------------------------------------------|
| Posted Speed Range | — Roads |
| █ 35 - 45 | █ Wetlands |
| █ 46 - 50 | █ Railroad |
| █ 51 - 55 | █ Parks |
| █ 56 - 70 | |



Source: Michigan Center for Geographic Information, Version 17a.



Traffic Counts and Crashes

York Charter Township, Michigan

October 15, 2021

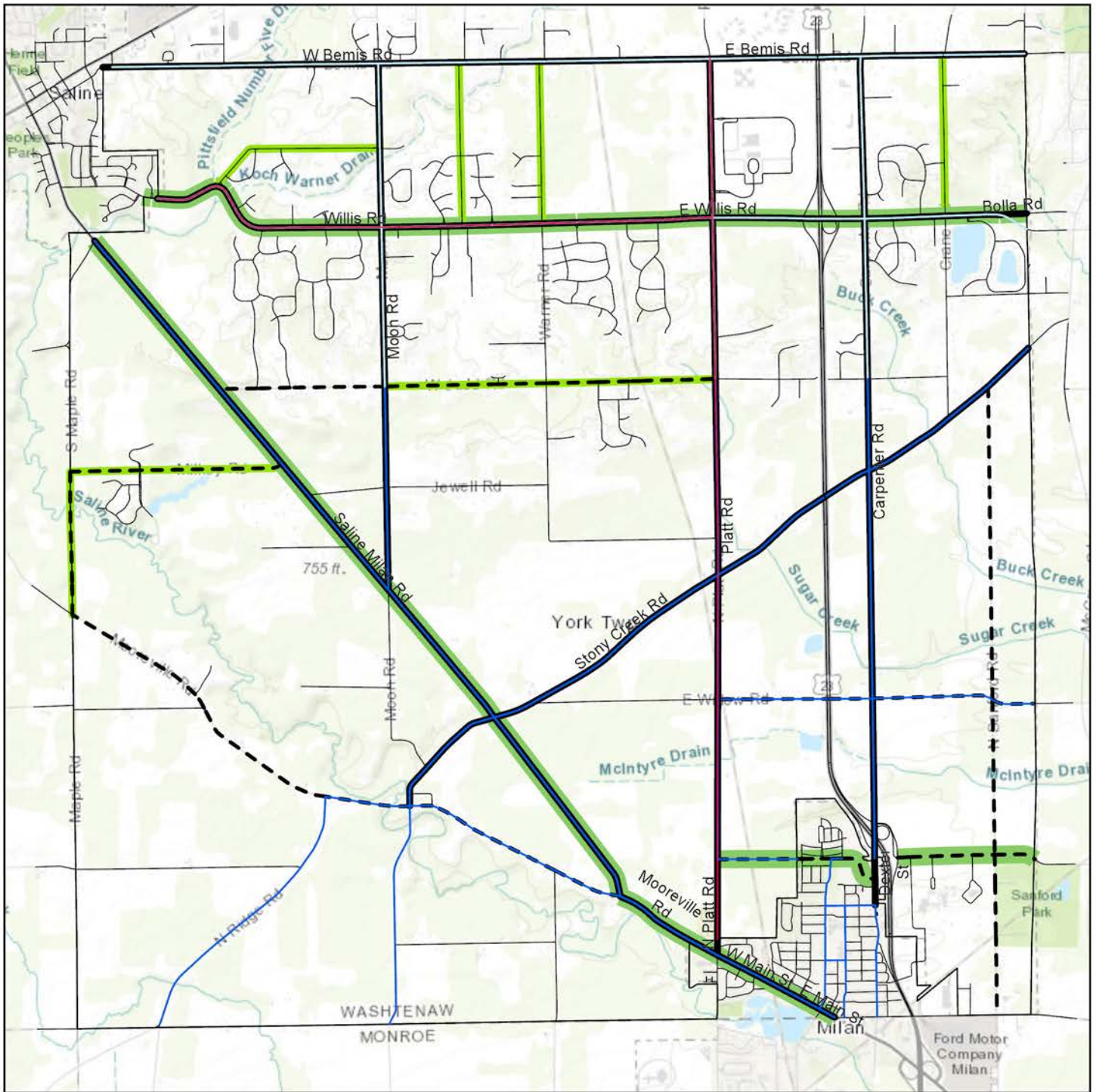
LEGEND

- 2016 Vehicle Crash Locations
- 2016 AADT
- 161 - 1872
- 1873 - 2647
- 2648 - 4358
- 4359 - 8134
- 8135 - 16466
- 16467 - 34853
- Roads
- Wetlands
- Railroad
- Parks



Source: Michigan Center for Geographic Information, Version 17a.





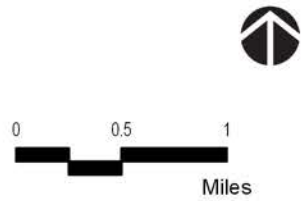
Transportation Strategy

York Township, Washtenaw County

January 01, 2019

LEGEND

- Local Roadway
- Collector Roadway
- Primary Roadway
- Local Priority Bike Path
- Landscape Corridor
- Scenic Roadway
- Nonmotorize Facility Needs
- Urban Nonmotorized Facility Deficiencies
- Community Boundary



Sources: Roads York Township 2017, Municipal Boundary SEMCOG accessed 2018, Non-Motorized Pathway Washtenaw County 2018, Base Map Michigan Center for Geographic Information, Version 17a.



NOTES:



NONMOTORIZED CONNECTIVITY STUDY

YORK CHARTER TOWNSHIP | WASHTENAW COUNTY, MI