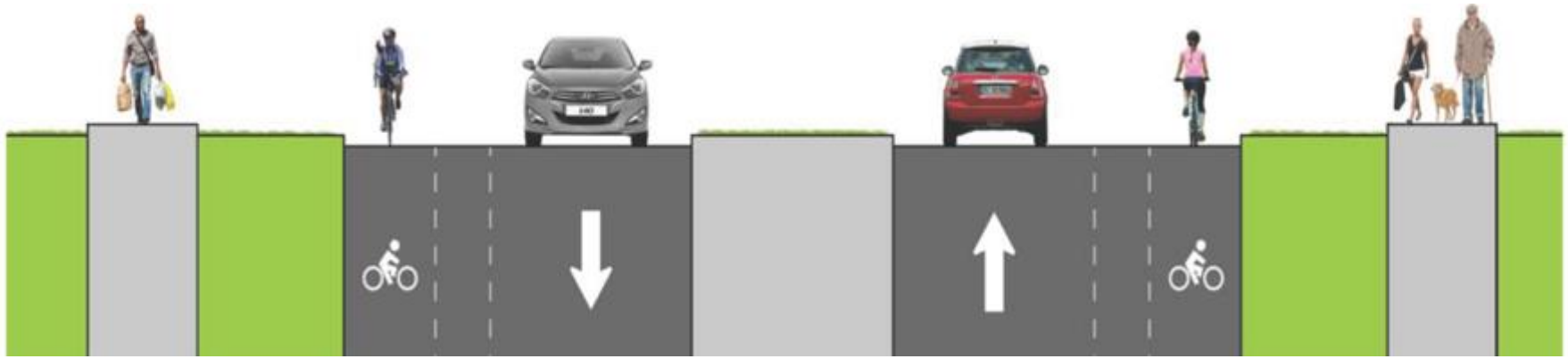

Walkability Study

City of Northville

September 20, 2021

V16

Prepared by:

City of Northville Michigan

Sustainability Team

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- Crash Data
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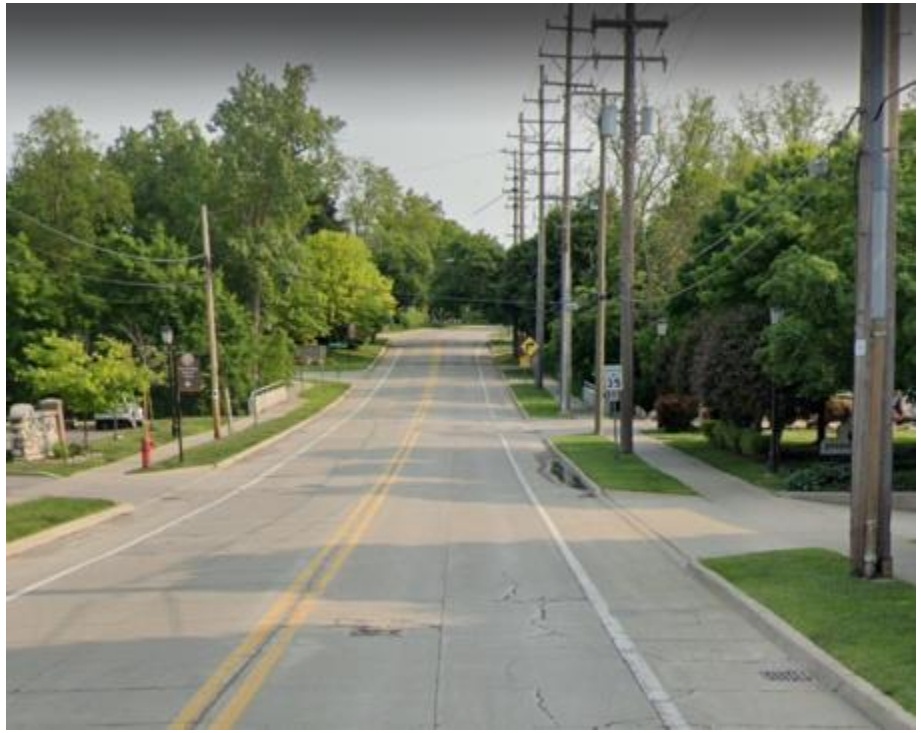


Introduction

Traffic planning for motorists can often be at odds with planning for pedestrians and cyclists. Harmonizing the needs of these three (motorists, pedestrians, cyclists) requires careful and simultaneous analysis of the public realm in the vicinity of the roads and intersections to ensure that sustainable solutions are provided.

Additionally, since walking versus driving is a choice, there needs to be an awareness of the physical attributes of the built environment that encourages and/or discourages walking/cycling choices. This approach is particularly important for the future development in Northville. If future residents of the new developments do not find it easy and/or desirable to walk, they will opt to make vehicle trips, increasing traffic and generating more competition for downtown parking spaces.

Mission and Scope

The intent of this study is to improve the pedestrian and cyclist experience by analyzing the existing and proposed streetscapes for the Master Plan Subareas as well as the streetscapes for major, proposed development sites in the City of Northville.

The scope of work includes the public road segments shown in **Figure 1**.

As a follow-up to this study, specific analysis of the walkability challenges and opportunities for proposed developments can be completed by either by the Sustainability Team or by a professional consultant, at the request of the City's boards and commissions.

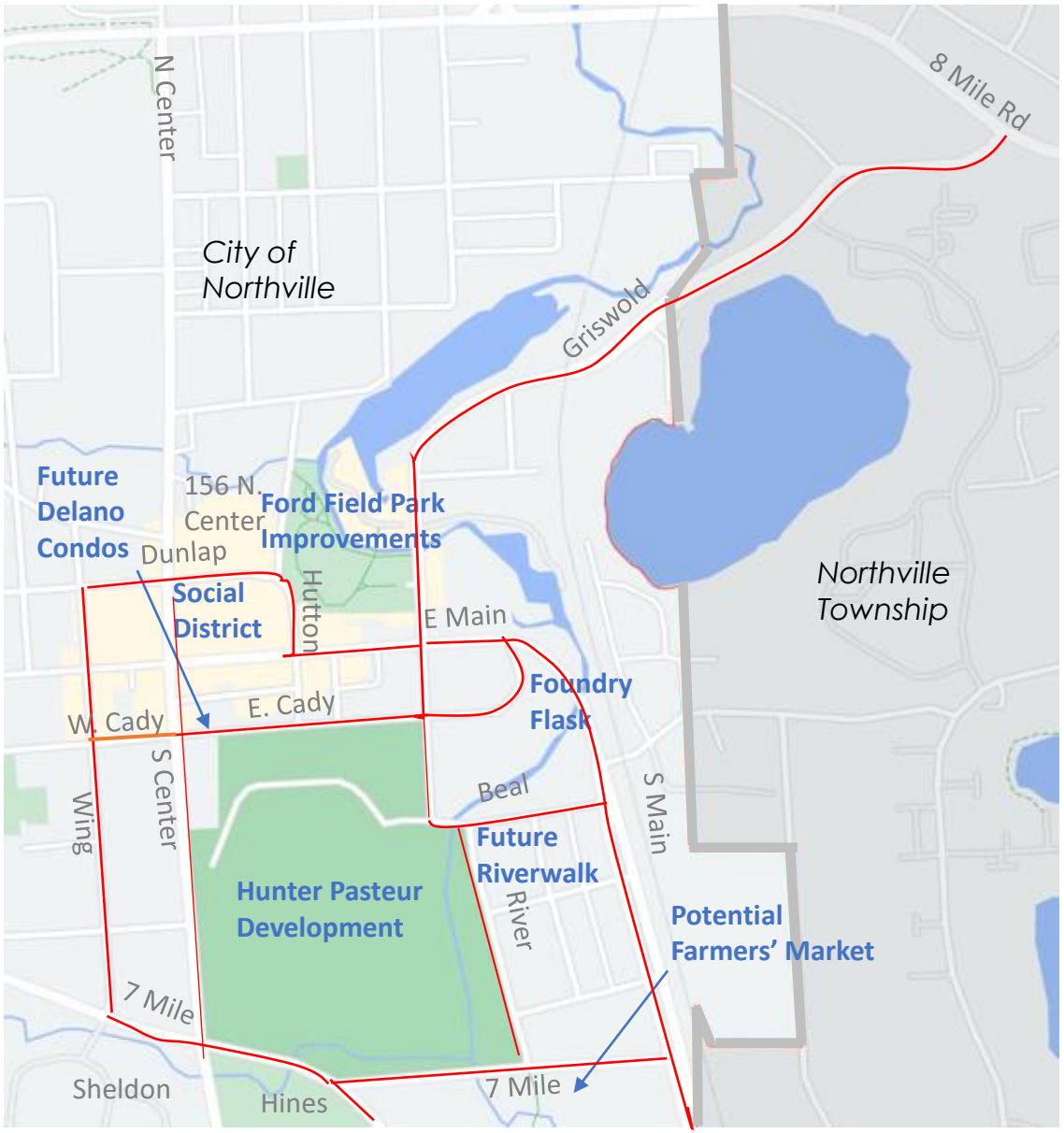


Figure 1. Road segments and intersections in red are included in the study.

Intended Use of the Study

City of Northville Michigan
Sustainability Team

- *To create awareness of walkability issues during site plan review processes*
- *As an input to the City and County's ongoing road construction programs*
- *As a supplement to conventional traffic management planning*
- *As an update to the City's current Non-Motorized Transportation Plan*
- *To provide information that could feed into public grant applications*
- *As a supplement to the Riverwalk Task Force's pathway planning*
- *As feedback to the City's boards and commissions with respect to the Social District's impact on the community*

Methodology

This study uses a methodology developed by Jeff Speck, who is a city planner, urban designer and nationally-recognized expert who advocates internationally for more walkable cities. On April 29, 2021, Mr. Speck conducted a webinar for evaluating roads with the goal of teaching communities how to implement portions of their own walkability studies. Mr. Speck expressed his permission to use his methodology, which is outlined as follows:

10 Things that Will Make Mobility Safer

1. No more driving lanes than needed
2. Lanes of the proper width
3. Few one-way streets
4. Continuous on-street parking
5. A useful bike network
6. Fewer centerlines, more parking stripes
7. Few swooping geometries
8. Fewer sidewalk curb cuts
9. No traffic signals that could be all-way stops
10. Proper crosswalks and beacons

Executive Summary of Findings (1 of 4)

E. Cady St.

Walkability is challenged due to the presence of a parking deck and multiple parking lots on the north and south side of the street. Rear views of buildings, lack of street trees, some lack of sidewalks, limited use of parallel parking spots and an office building with closed window shades at street level all negatively affect walkability.

Traffic calming measures are needed at Hutton and Church Streets to protect preschoolers and the new residents of the Downs development. Higher visibility crosswalks are recommended rather than current box style.

E. Cady St. east of Griswold has low walkability. There are no sidewalks. The shape of this segment of the road, coupled with the location of its intersection with S. Main, is problematic for pedestrians.

Griswold St.

Cyclist and pedestrian safety is negatively affected by gaps in sidewalk and bike path infrastructure.

Vegetation is encroaching into the bike paths. Paths and sidewalks are incomplete on the north portion of the street. The curving design of the street limits site distance for motorists to be able to see cyclists. Bike paths lack connectivity to regional pathways. High visibility crosswalk improvements should be coordinated with Northville's DPW, Wayne County, Ford Field and Riverwalk Task Force.

Executive Summary of Findings (2 of 4)

Beal St. With its mature trees, sidewalks, landscape buffer between the curb and street, and the proximity to the river, Beal St. has good walkability. Efforts to mitigate high volumes of traffic through this street should be promoted.

River St. The right of way for River Street is narrow, with sidewalks on only one side. A narrow area of grass exists between the curb and the sidewalk, but there is a lack of street trees within this buffer. Several mature trees (in various states of health) are on the west side of the street.

Widening the right-of-way for River St. and coordinating a west side path within the proposed park would improve walkability. The striping on the pedestrian crosswalk from River St. across 7 Mile Rd. is in poor condition. This crosswalk connects to Hine's regional park paths and will provide access to the proposed Farmers' Market.

S. Main St. Traffic volumes do not justify the need for 4 lanes with widths greater than 11 feet. This is one of the few areas of the city that is well-positioned to restripe and redeploy the streetscape in order to provide biking, pedestrian and parking capacity.

Walkability on S. Main St is poor due to the condition of the sidewalks, multiple curb cuts, lack of street parking and poor buffer conditions. A crosswalk for the Riverwalk between E. Ford Field and Foundry Flask requires professional evaluation.

Crash data at the intersection of S. Main and 7 Mile Rd. highlights safety problems.

Executive Summary of Findings (3 of 4)

7 Mile Rd. Cyclist and pedestrian safety is an issue. Crosswalks have low visibility and are missing at Hines. Vegetation encroaches into bike paths. Latest repaving efforts have altered bike path markings.

Connectivity of the Downs development with Hines should be considered to break up the superblock and improve intersection safety. Appropriate signage would improve motorist awareness of cycling lanes.

Wing St. The degree of walkability varies due to mixed land uses. Sidewalks are adequate with the exception of a single-loaded sidewalk south of Fairbrook Street. Wing St. north of W. Cady is designated as a sharrow, which is a shared cyclist/motorists street. The presence of street trees ranges from none to newly planted to mature.

The right-of-way is wide enough to accommodate parallel parking, but only a small portion, closer to the Post Office is striped and actively used. This increases the perceived lane width for drivers, which in turn, encourages higher speeds, which negatively impacts pedestrians and cyclists.

W. Cady St. (between S. Center and Wing St.) This area is adjacent to a parking lot. It contains sharrow markings for the cyclist route that provides connectivity between S. Center St. and Randolph St.

The road has only partial sidewalks. Pedestrian traffic is present due to close proximity of the parking lot to downtown, the Post Office and the Northville Square building. Walkability safety in this area is a concern.

Executive Summary of Findings (4 of 4)

S. Center St. The walkability of S. Center St. is currently poor.

S. Center serves as a regional thoroughfare for Sheldon Rd. and 7 Mile Rd. commuters. An examination of crash data suggests that intervention is needed to improve safety for pedestrians, cyclists and motorists. Crashes occur at both intersections and throughout S. Center.

The public realm lacks adequate street trees, and the lack of traffic calming infrastructure (e.g., wide lanes and vertical structures close to the street) deters motorists from traveling at posted speeds. For most of this street, no barrier exists between the pedestrian and the traffic. Walkability comfort and interest is compromised by the presence of large parking lots on much of the street.

Since the future development of this street is largely residential, consideration should be given to lowering the posted speed limit to 25 mph and also determining if parallel parking could be established. Additional alternatives include a boulevard and/or landscaped buffers between the curb and the sidewalk.

Road Segment Information (Key Public Roads)

City of Northville Michigan
Sustainability Team

Existing Conditions

- Land Use
- Lane widths and number of lanes
- On street parking assessment
- Sidewalks and bike paths
- Crosswalks
- Curve radius assessment

Analysis

- Challenges
- Opportunities

Legend for Non--Motorized Challenges

Excess no. of driving lanes

Potential excess lane width

Lack of on-street parking

BP Bike Path Issues

CC Curb cuts

P Parking lots and/or structures

Lack of Street Trees

M Maintenance

CWS Crosswalk Safety

MS Missing sidewalk

Regional Connectivity

East Cady St. Land Uses

North

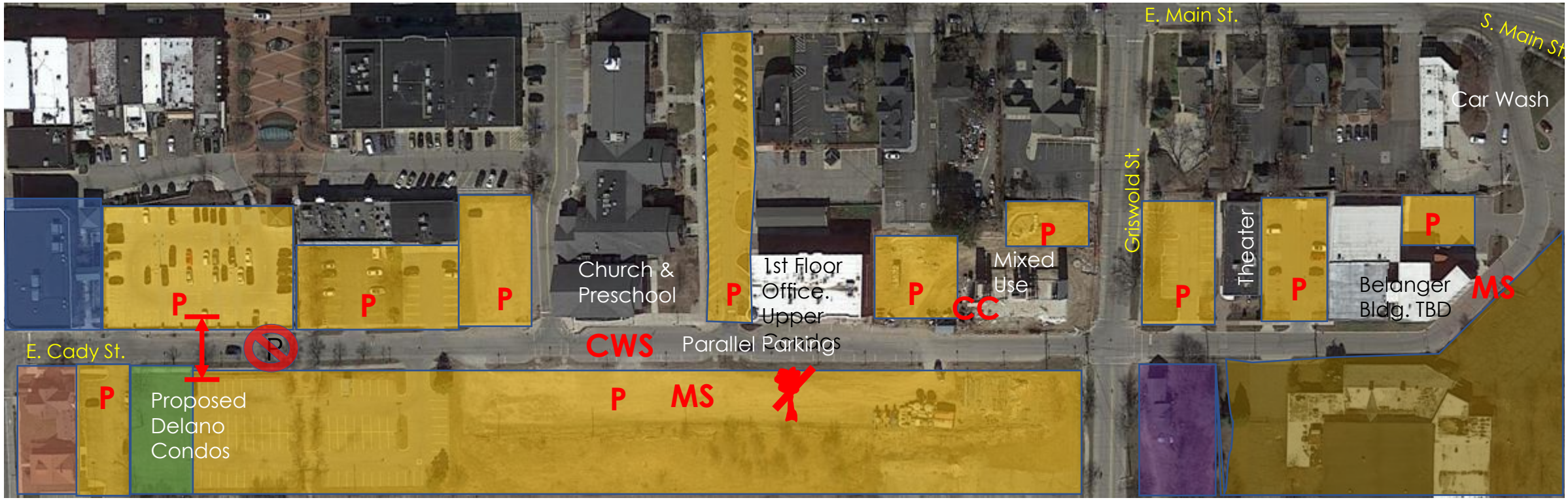


Figure 2B. E. Cady St. Land Uses

South

- Parking
- Commercial w/ Entrance Facing Street
- Retail/Service in Residential Building
- Residential
- Industrial
- Vacant Green

E. Cady St.

Figure 2B. E. Cady St. at S. Center facing east

E. Cady St.

Figure 2C. E. Cady and Hutton facing east

E. Cady St.

Figure 2D E. Cady St. - East of Hutton

E. Cady St. Crosswalks

Figures 2E–2H
E. Cady St. Crosswalks

Challenges/Opportunities

E. Cady St.

- Walkability is challenged due to the presence of a parking deck and multiple parking lots on the north and south side of the street. Rear views of buildings, lack of street trees, some lack of sidewalks, limited use of parallel parking spots and an office building with closed window shades at street level all negatively affect walkability.

- Traffic calming measures are needed at Hutton and Church Streets to protect preschoolers and the new residents of the Downs development.

- E. Cady St. east of Griswold has low walkability. There are no sidewalks. The shape of this segment of the road, coupled with the location of its intersection with S. Main is problematic for pedestrians.

Griswold North

Figure 3A. Griswold (Lake Shore Ln. to 8 Mile Rd.)

Figure 3B. Griswold (N. of Lake Shore Ln. & S. of 8 Mile Rd.)

- Single lane, boulevard street with limited-to-no sidewalks.
- Bike paths fairly consistent.
- Posted speed limit 35 mph. Street width 37'.

Griswold North (Lake Shore to Ford Field)

Figure 3C. Griswold (Lake Shore Ln. to Ford Field)

- Vegetation interfering with cyclist passage.
- Posted speed limit 35 mph.

Figure 3D. Griswold (Traveling south)

Figure 3E. Griswold and Main St. Crosswalks

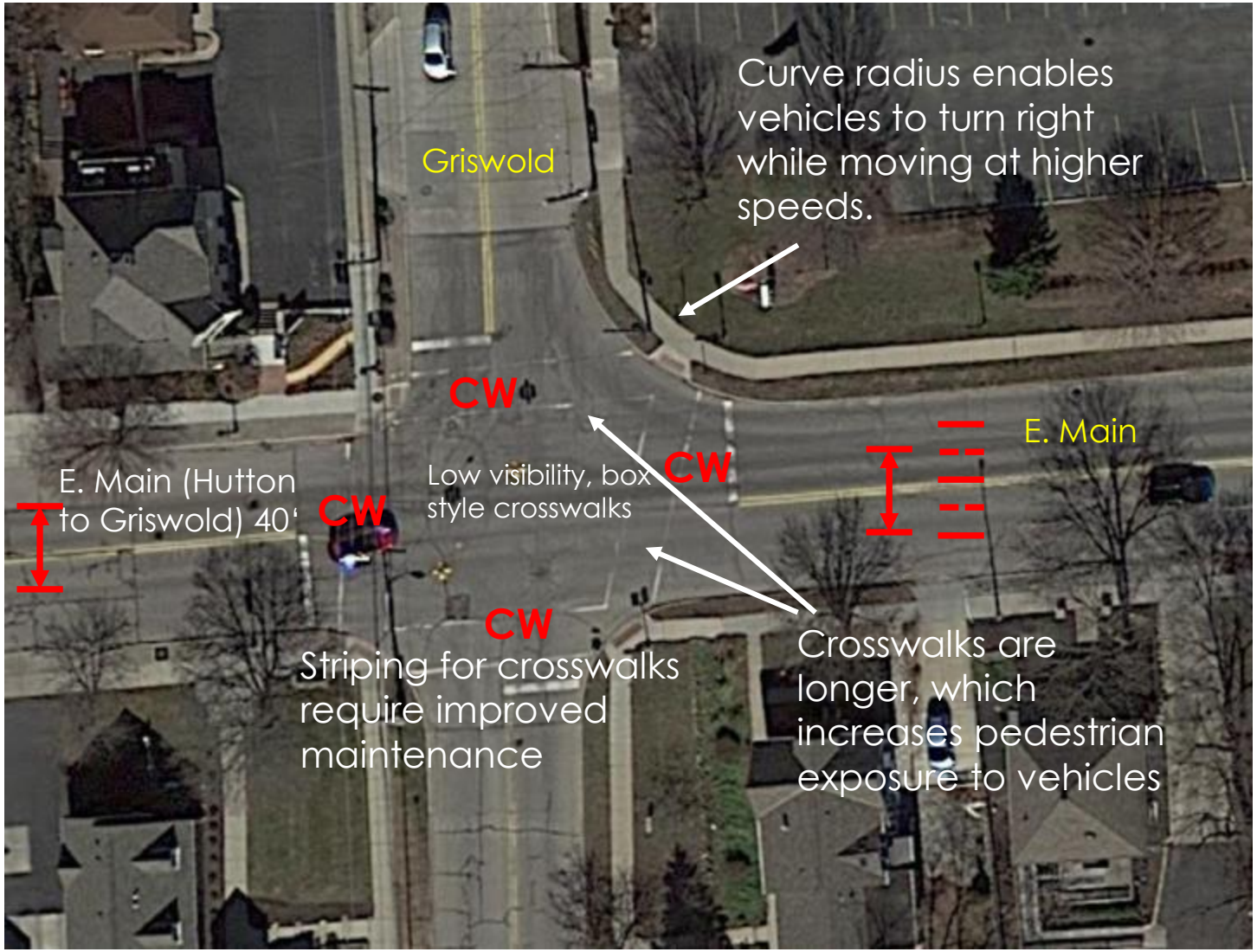
Connectivity between East and West Ford Fields

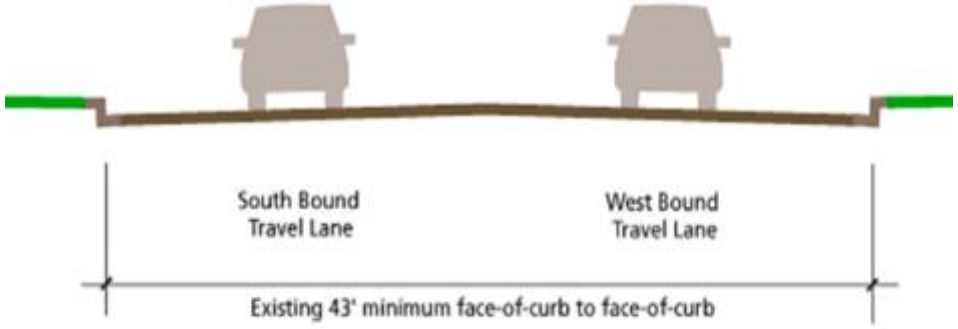
City of Northville Michigan
Sustainability Team

Figure 3F. Griswold between 2 parks

Figure 3G. Griswold showing lack of pedestrian crosswalks

Curve radius evaluation





E. Main Street from Beal to Griswold

typical existing cross section

Figure 3H. Intersection of of Griswold St. and E. Main St.

Griswold and Beal Streets

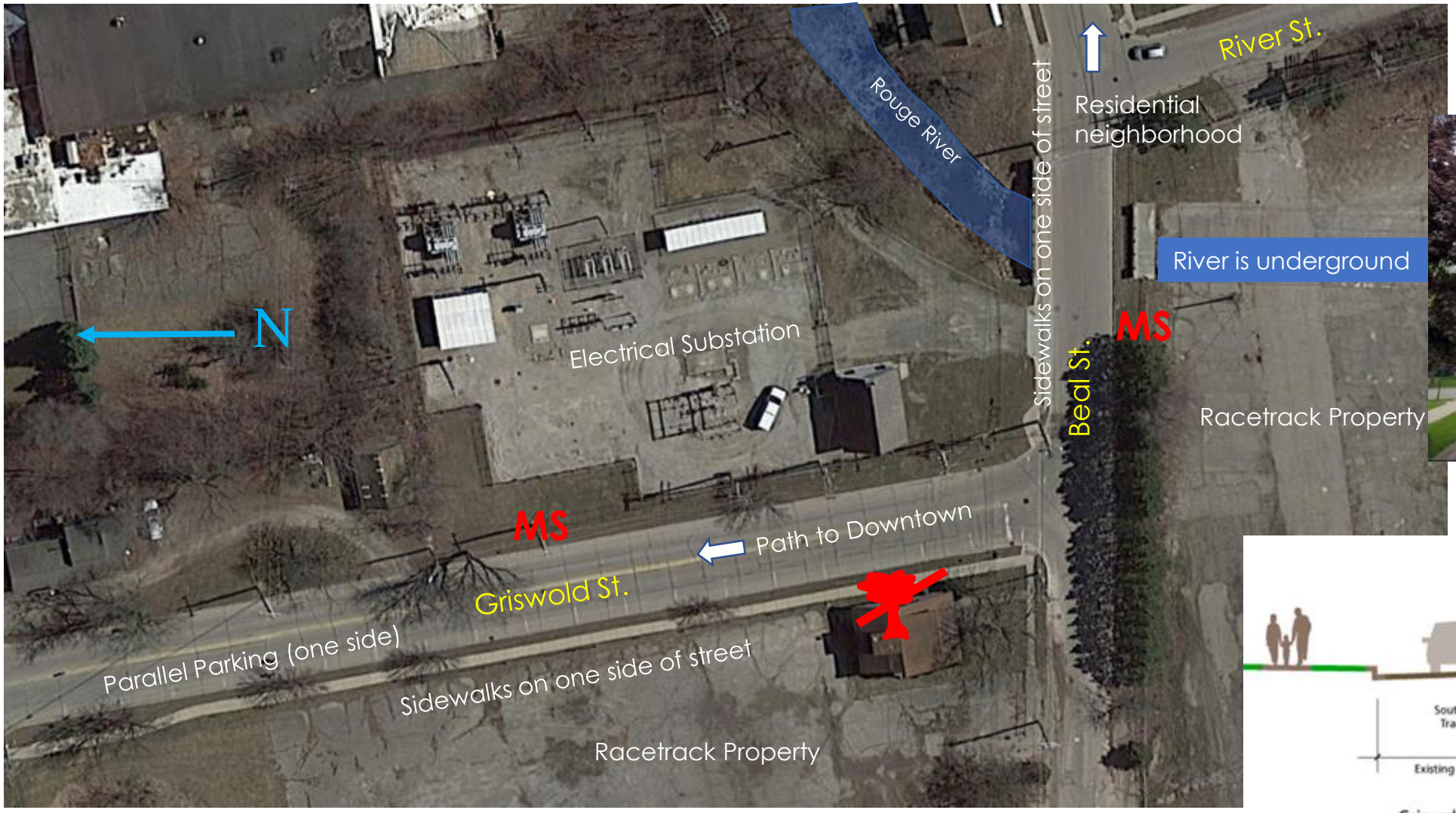


Figure 4A. Beal St.

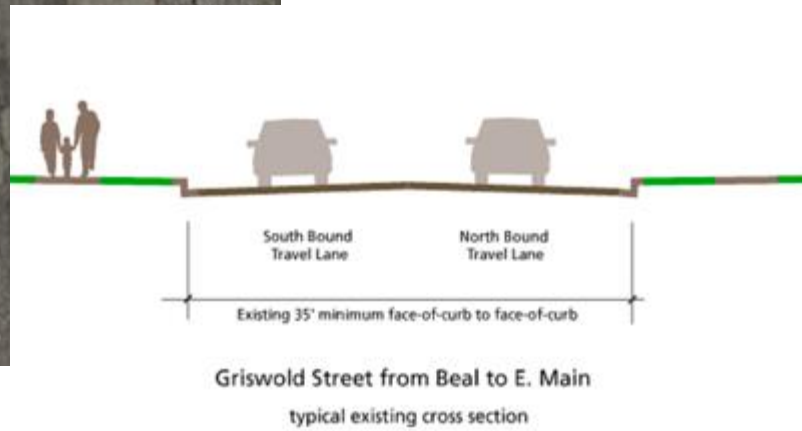


Figure 3I. Griswold St. east of Beal St.

Challenges/Opportunities

Griswold St.
Cyclist and pedestrian safety is negatively affected by gaps in sidewalk and bike path infrastructure.

Vegetation is encroaching into the bike paths. Paths and sidewalks are incomplete on the north portion of the street. The curving design of the street limits site distance for motorists to be able to see cyclists. Bike paths lack connectivity to regional pathways. Crosswalk improvements should be coordinated with Wayne County and Northville's Riverwalk Task Force.

Beal St.
With its mature trees, sidewalks and landscape buffer between the curb and the street, and the proximity to the river, Beal St. has good walkability. Efforts to mitigate high-volume quantities of traffic through this space should be promoted.

River Street

Figure 5A. River St. looking north

River St. and 7 Mile Rd. Crosswalk

Figure 5B. Incomplete, regional trailhead with no sidewalk connection

Figure 5C. Entrance to regional park system with no adjacent public parking

Challenges/Opportunities

City of Northville Michigan
Sustainability Team

River St.

The right of way for River Street is narrow, with sidewalks on only one side. A narrow landscape buffer exists between the curb and the sidewalk, but there is a lack of street trees within this buffer. Several mature trees (in various states of health) are on the west side of the street.

Widening the right of way for River St. and coordinating a west-side path within the proposed park would improve walkability.

The striping on the pedestrian crosswalk from River St. across 7 Mile Rd. is in poor condition. This crosswalk connects to Hine's regional park paths.

S. Main St.

Figure 6B. S. Main Street looking north.

S. Main St.

Figure 6B. Traffic volumes do not warrant 4 lane roads. Minimal infrastructure to protect pedestrians from vehicles. Wide lanes encourage speeds in excess of posted limits.

Curve Radius Evaluation

Figure 6C. The wide width of S. Main, coupled with a large curve radius, encourages higher-than-posted speeds. Limited visibility to E. Cady St. intersection creates less reaction time, which negatively affects pedestrian safety.

Figure 6D. S. Main entrance to downtown is a 4-lane curve (25 mph posted speed)

S. Main St.

Figure 6E. View of 7 Mile, S. Main and Northville Road Intersection.

Challenges/Opportunities

Sustainability Team

S. Main St.

Traffic volumes do not justify the need for 4 lanes with widths greater than 11 feet. This is one of the few areas of the city that is well-positioned to restripe and redeploy the streetscape in order to provide biking, pedestrian and parking capacity.

Other walkability concerns:

- Deterioration of the sidewalks and proximity to vehicular traffic
- Multiple curb cuts
- Lack of street parking and poor sidewalk to curb buffer conditions.
- Lack of street trees in sidewalk buffers
- Cyclist safety is a concern at S. Main and Doheny due to limited visibility.
- Crash data at the intersection of S. Main and 7 Mile Rd. highlights safety problems.

Professional design expertise is warranted to redesign the striping for paths and parking

7 Mile Road: S. Main to Hines Drive

Figure 7A. Regional bike paths converging with partially complete, non-motorized infrastructure

7 Mile Road and Hines Drive Intersection

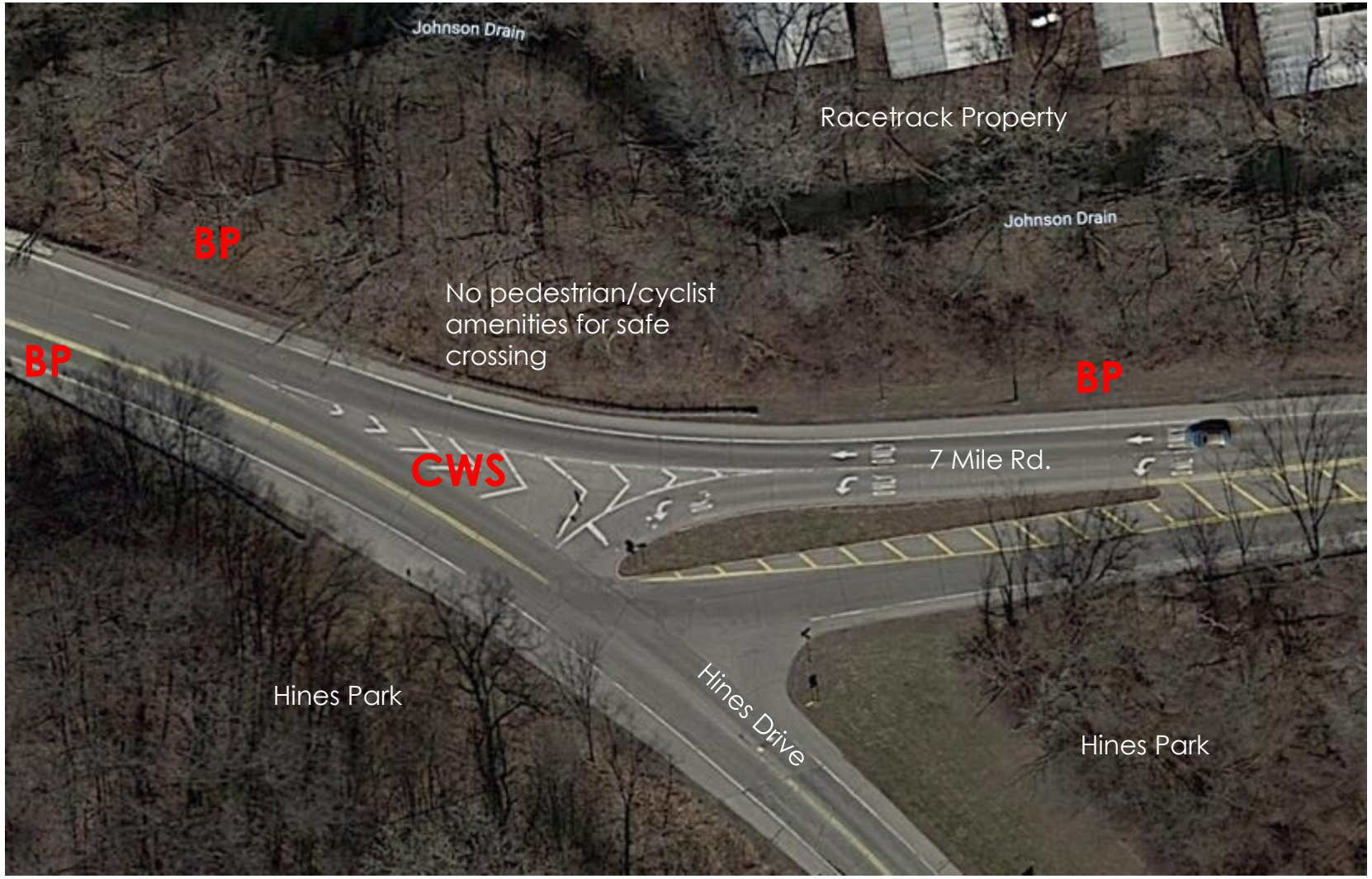


Figure 7B. Regional bike paths converging with partially complete, non-motorized infrastructure

7 Mile Road: Hines Drive to Wing St.

City of Northville Michigan
Sustainability Team

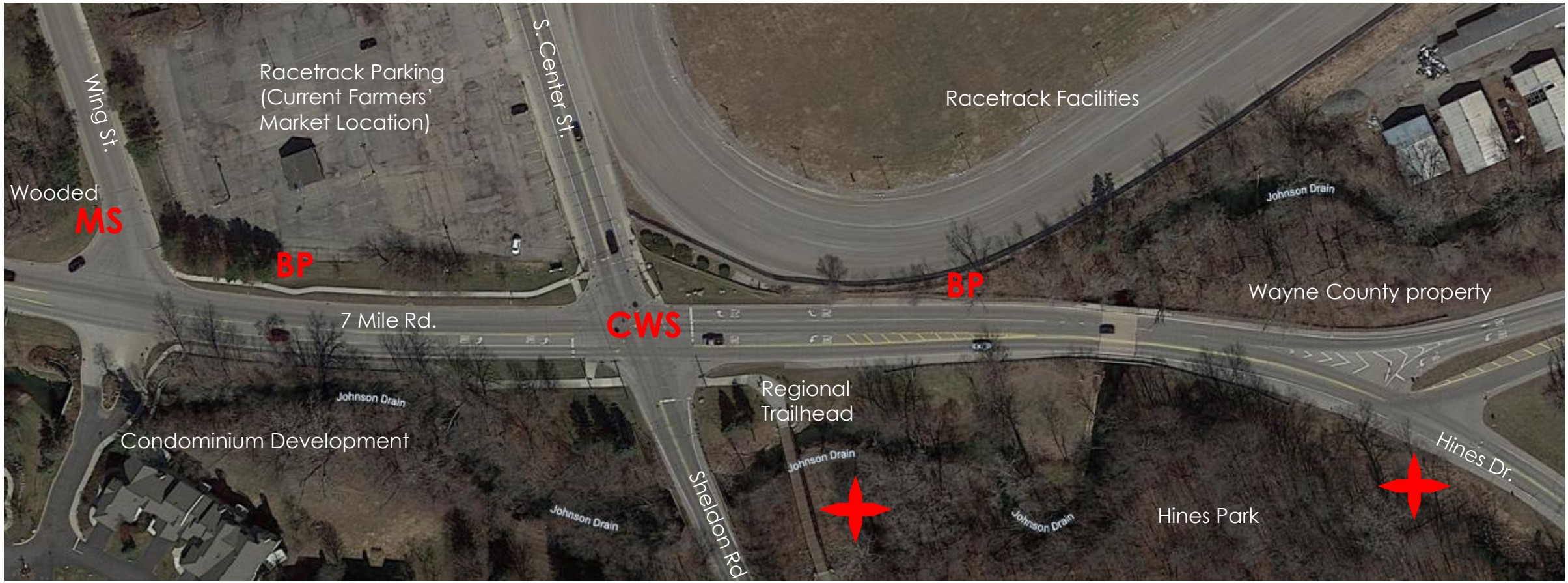


Figure 7C. Intersection Safety

Challenges/Opportunities

City of Northville Michigan
Sustainability Team

7 Mile Rd.

Cyclist/pedestrian safety is a major issue. Crosswalks have low visibility and are missing. Vegetation encroaches into bike paths. Connectivity of Downs development with Hines should be considered to break up the "superblock" and improve intersection safety. Appropriate signage would improve motorist awareness of cycling lanes.

Wing Street Land Uses

North

South

Figure 8A. Wing St. Aerial View

- Parking
- Commercial/Retail w/ Entrance Facing Street
- Retail/Service in Residential Building
- Commercial/Retail w/ Side Facing Street.
- Vacant
- Residential
- Civic

Wing Street

Figure 8B. Wing St. looking north

Figure 8C. Wing St. with parallel parking on both sides N. of West Cady Street

Challenges/Opportunities

City of Northville Michigan
Sustainability Team

Wing St.

Land uses for Wing St. include residential, parking, post office and commercial operating out of former residences. Homes are diverse, which increases walkability interest. As such, the degree of walkability varies.

Sidewalks exist on both sides of the street with the exception of a single-loaded sidewalk south of Fairbrook St. Street trees have a variable presence, ranging from none to newly-planted to mature.

Wing St. north of W. Cady is designated as a sharrow, which is a shared cyclist/motorists street. It is a segment which provides connectivity between S. Center and Randolph Streets

The right-of-way is ample enough to accommodate parallel parking, but only a small portion is striped and actively used. This increases the perceived lane width for drivers, which in turn, encourages higher speeds, which negatively impacts pedestrians and cyclists.

W. Cady St.

City of Northville Michigan
Sustainability Team

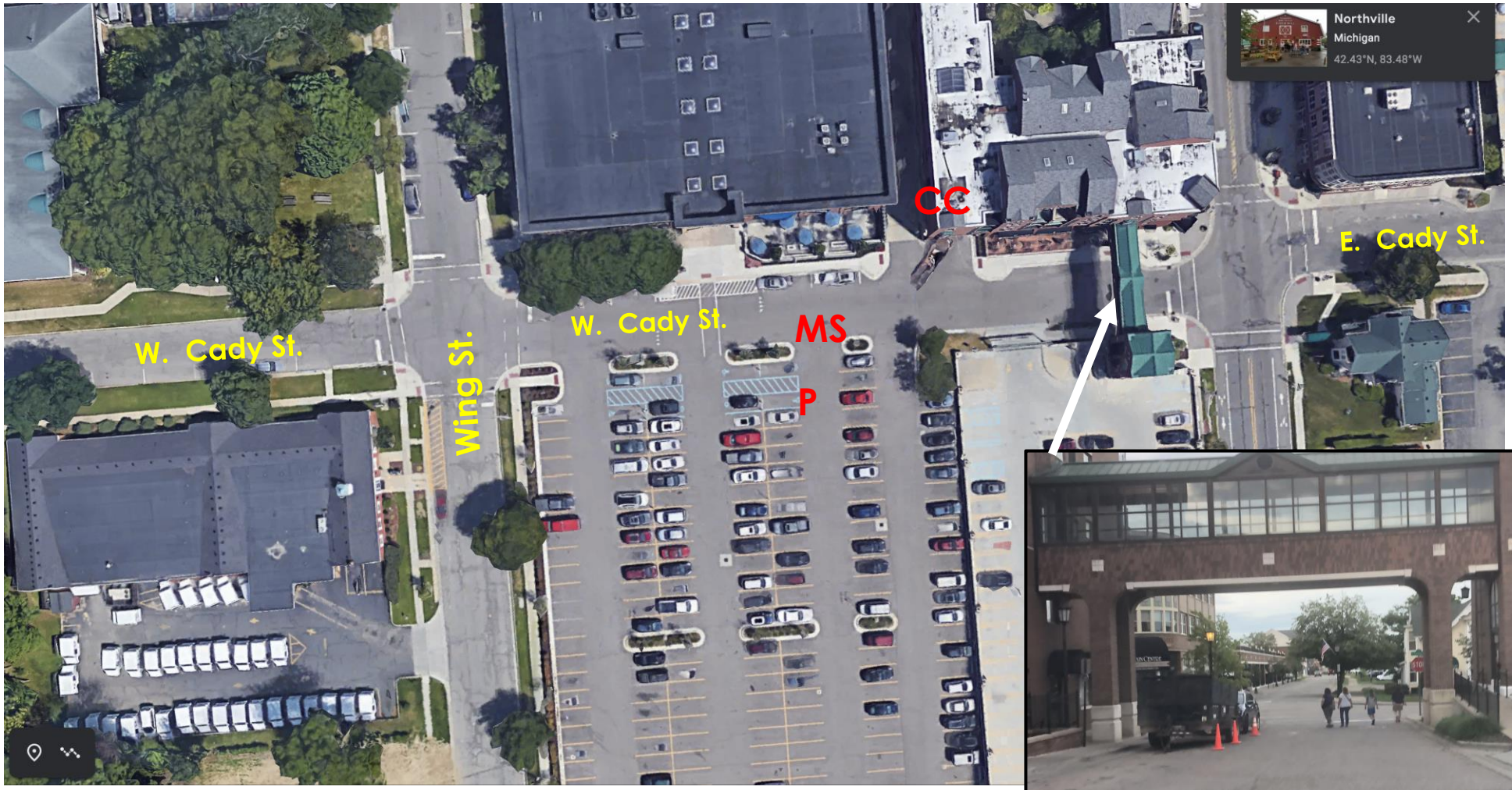


Figure 9A. W. Cady St. Wing Street Parking Area

Figure 9B. W. Cady St. looking east

Challenges/Opportunities

City of Northville Michigan
Sustainability Team

W. Cady St. (between S. Center and Wing St.)

This area is adjacent to a parking lot. It contains sharrow markings for the cyclist route that provides connectivity between S. Center St. and Randolph St.

There is a significant lack of sidewalks. Pedestrian traffic is high due to close-proximity of the parking lot to downtown, the Post Office and the Northville Square building. Walkability safety in this area is a concern.

S. Center St.

Figure 10A. S. Center Street Land Uses

- Parking
- Commercial/Retail w/ Entrance Facing Street
- Retail/Service in Residential Building
- Residential
- Vacant
- Commercial/Retail w/ Side Facing Street.

7 Mile Road and S. Center St. Crosswalks

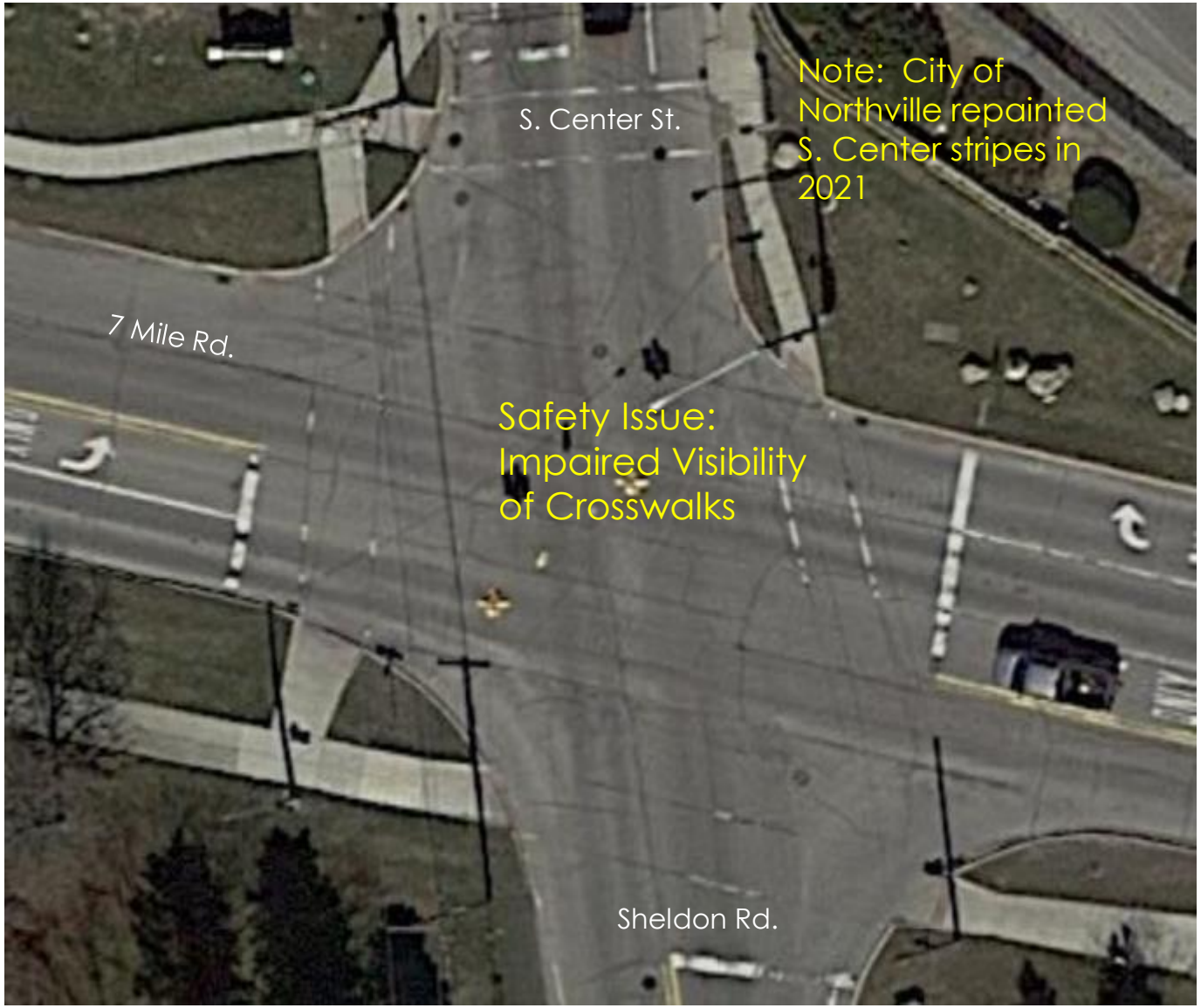
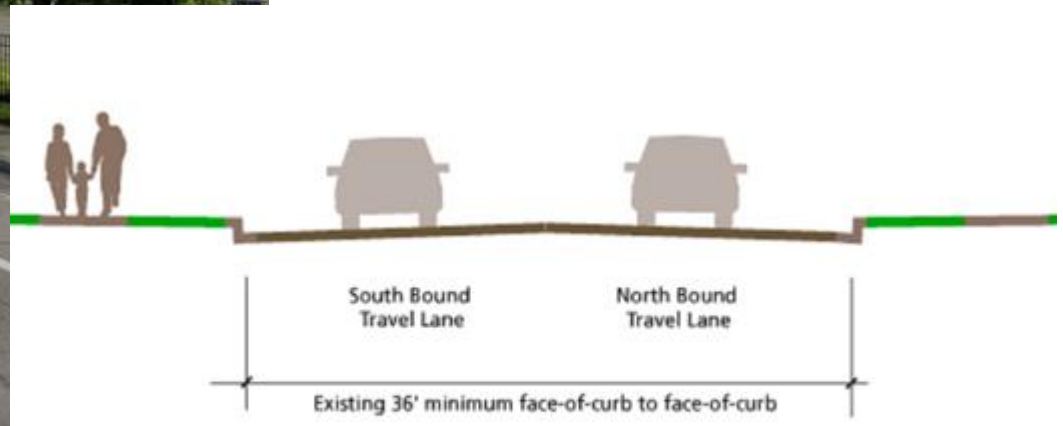


Figure 10B. S. Center & 7 Mile Intersection

S. Center St. (looking north)

Figure 10C. S. Center looking north

- Street width: 40'
- Lane width: 14'
- 6' Bike lane both sides
- No parallel parking
- Racetrack side - no buffer between sidewalk and curb
- Racetrack properties lack street trees
- Posted speed: 35 mph until Cady St., then 25 mph



S. Center Street from Seven Mile to Cady

typical existing cross section

Challenges/Opportunities

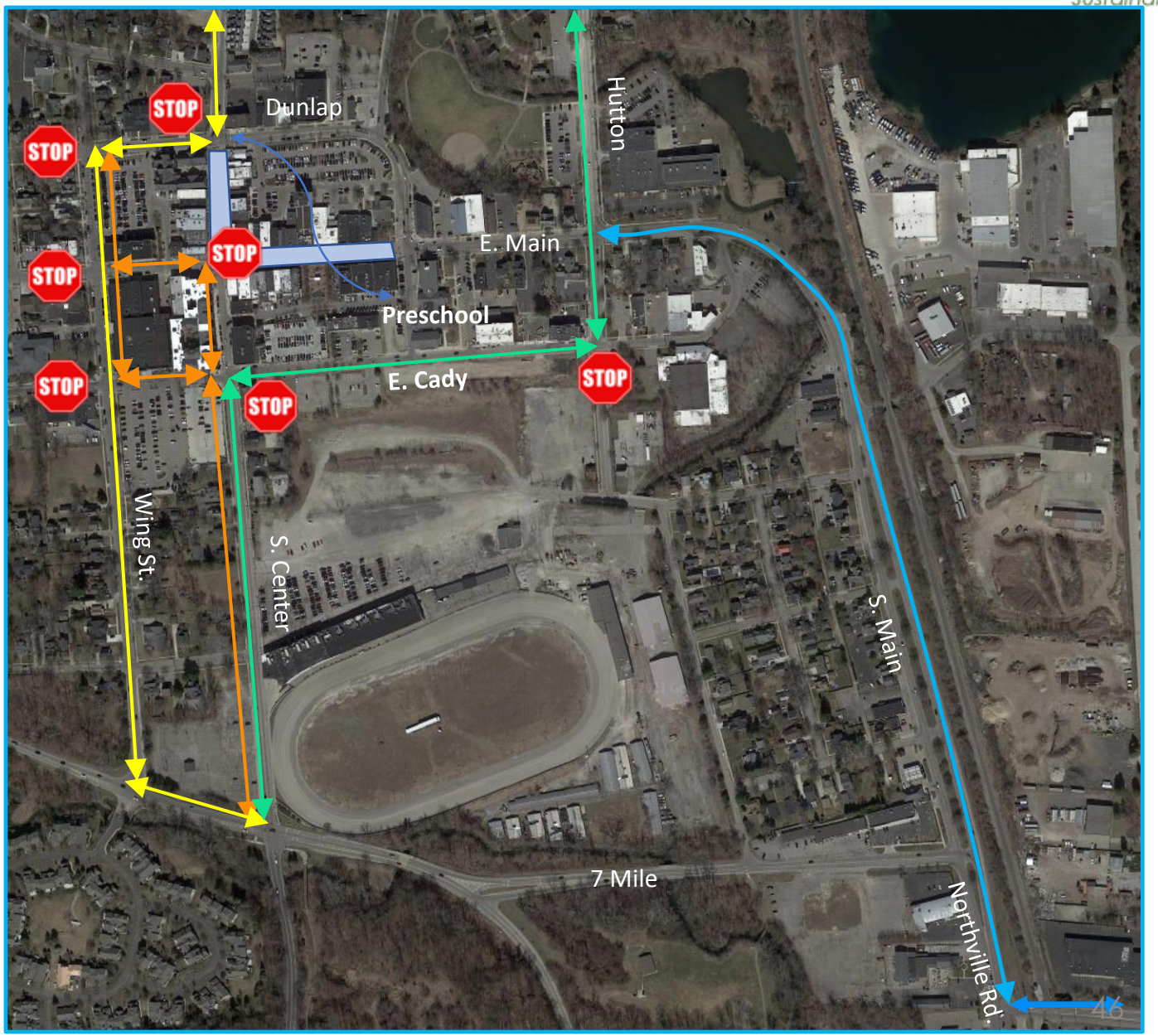
City of Northville Michigan
Sustainability Team

S. Center St.

- The walkability of S. Center St. is currently poor.
- Examination of crash data shows that intervention is needed to improve safety for pedestrians, cyclists and motorists. Crashes occur at both intersections and throughout S. Center.
- The public realm lacks adequate street trees, and the lack of traffic calming infrastructure (e.g., wide lanes and vertical structures close to the street) psychologically encourages motorists to travel at higher than posted speeds. For most of this street, no barrier exists between the pedestrian and the traffic. Walkability interest is compromised by the presence of parking lots on much of the street.
- Since the proposed development of this street is mainly residential, consideration should be given to lowering the posted speed limit to 25 mph and also to determining if parallel parking could be established.
- Additional traffic calming alternatives include a boulevard and/or landscaped buffers between the curb and the sidewalk.

Traffic Patterns In Response to Social District Closures

- N. Center & E. Main Closures
- S. Center to W. Cady, W. Main Bypasses
- Wing St. Bypass to N. Center
- E. Cady St. Bypass
- 7 Mile Rd. to Northville Rd. Bypass



Challenges/Opportunities

City of Northville Michigan
Sustainability Team

The Social District

- The closure of Main St. and N. Center has currently detoured north & southbound and east & west bound traffic through many alternative routes in the City.

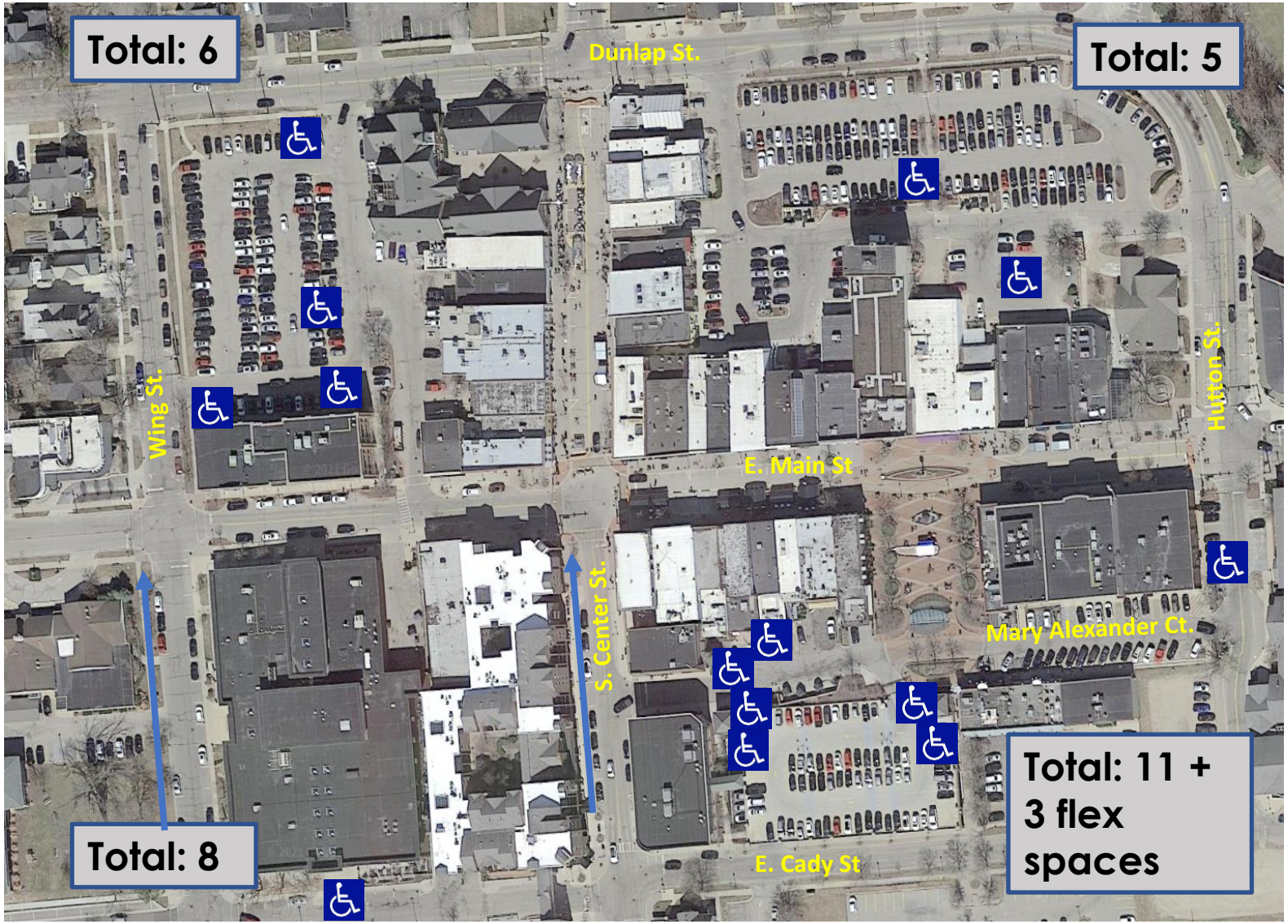
- This has increased traffic volumes on these alternate roads and intersections, including some residential neighborhoods.

- Drivers who are often impatient with having to navigate multiple stop signs do not acknowledge pedestrian presence at intersections. Walkability hazards have increased in these locations (Wing/W. Cady, Wing/Dunlap, Dunlap/N. Center, W. Cady/S. Center, Griswold/E. Cady).

- In these locations, this traffic impact has created a conflict across the social and economic pillars of sustainability. Deliberations on whether to extend the street closures should factor in these unintended impacts.

- The provision of adequate crosswalk safety infrastructure should be reviewed.

Handicapped Parking Within 4 Block Section of Downtown



Topography Challenges

Challenges/Opportunities

- Current inventory of handicapped parking is distant from some downtown locations.
- Pedestrians using canes or walkers have difficulty navigating long walks.
- Some of the handicapped spaces in the E. Cady/ S. Center parking deck are located far from the elevator, and the nearest access is to stairs.
- The closure of N. Center and Main Streets has impacted the opportunity for pedestrians who use canes and walkers to parallel park in front of downtown locations.
- The number and the location of handicapped spaces within parking lots should be re-evaluated.

Types of Interventions

City of Northville Michigan
Sustainability Team

Low Expense

- Restriping existing crosswalks
- Upgrade to high-visibility crosswalk
- In-street pedestrian crosswalk sign
- Green bike boxes
- Reduce posted speed limit
- Eliminate centerlines
- Add parallel parking

Moderate Expense

- Roadside plant maintenance
- Street trees
- Reduce 4-lane to 2 lanes and add non-motorized paths, parking

Moderate to High Expense

- Green buffer between curb and sidewalk
- Pedestrian islands
- Reconfigure streets
- Reconfigure intersections
- Construct new paths
- Coordinate capital improvements with adjacent cities
- Construct new bridges
- Construct roundabouts

APPENDIX

A1. Average Annual Daily Traffic Volume

A2. Traffic Volume Information from 2018 City of Northville Master Plan

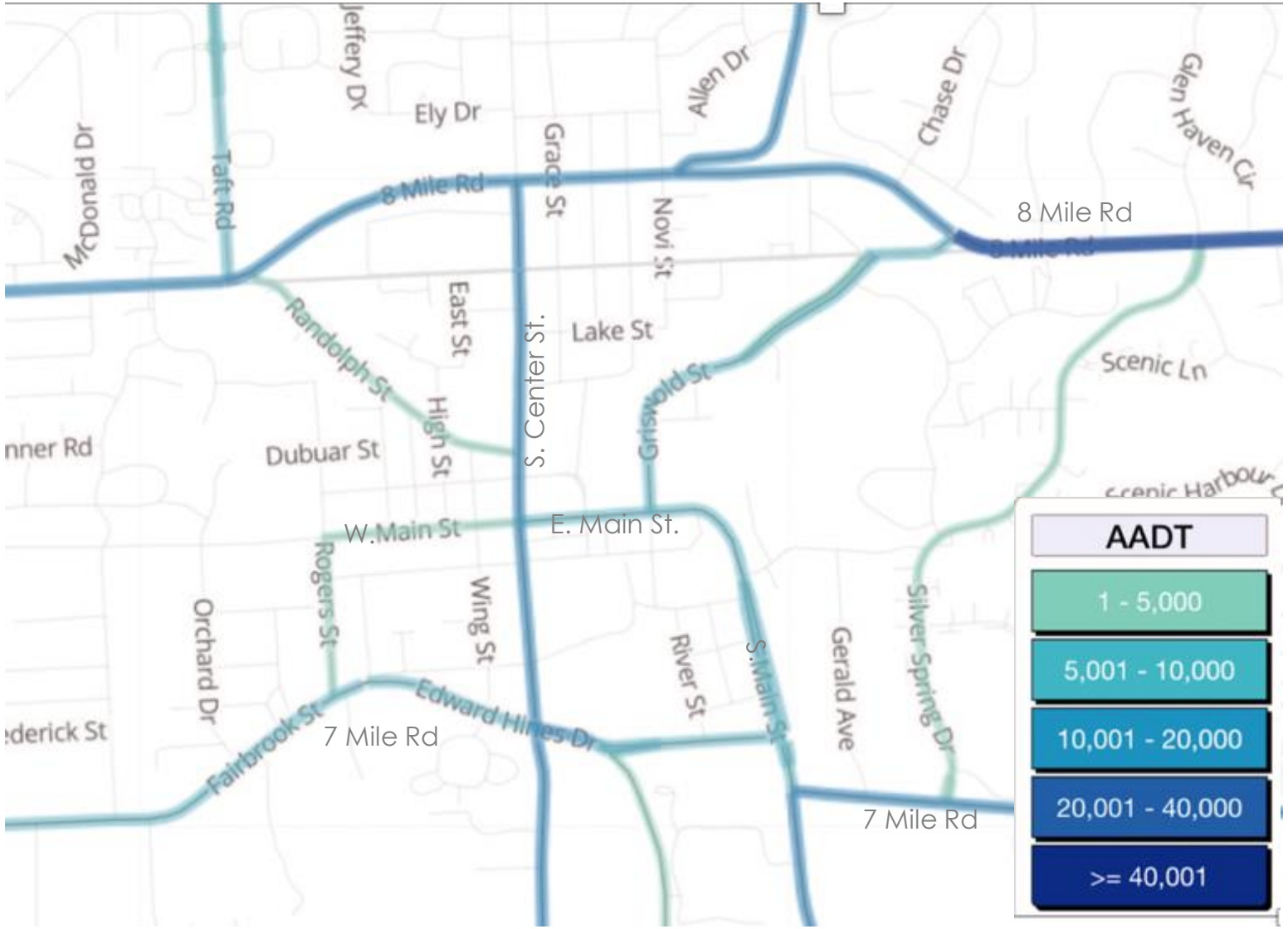
A3. Crash Locations and Severity

A4. Crash Data – SEMCOG and City of Northville

A5. SEMCOG High Priority Safety Locations

A6. Road Jurisdiction

A1.Average Annual Daily Traffic Volumes



Randolph, W. Main, Rogers, S. Hines

Griswold, E. & S. Main, Taft, 7 Mile

S. Center, 8 Mile Rd., Novi Rd., 7 Mile East

8 Mile Rd. East

Traffic Volumes. Source: SEMCOG Average Annual Daily Traffic Volumes for City of Northville, Oakland and Wayne Counties

A2. Traffic Volume Information from 2018 City of Northville Master Plan

Sustainability Team

AADT= Average Annual Daily Traffic

Road Name	Direction	Limits	Year	AADT
7-Mile	2-Way	Clement to Rogers	2009	7,450
7-Mile	2-Way	E.N. Hines Drive to Northville	2009	6,920
8-Mile	2-Way	Beck to Taft	2012	10,990
8-Mile	2-Way	Center to Novi	2004	10,208
8-Mile	EB	Center to Novi	2004	10,300
8-Mile	WB	Novi to Griswold	2013	27,220
8-Mile	2-Way	Taft to Center	2013	13,780
8-Mile	WB	East of Beck	2012	5,260
8-Mile	WB	East of Novi	2011	8,660
8-Mile	WB	East of Taft	2011	6,180
8-Mile	EB	West of Novi	2011	8,480
8-mile	EB	West of Taft	2011	6,020
8-mile/Baseline	EB	Novi to Griswold	2013	11,520
Beck	NB	8-Mile to 9-Mile	2010	9,460
Beck	SB	8-Mile to 9-Mile	2010	9,150
Beck	SB	North of 8-Mile	2012	11,300
Clement	2-Way	7-Mile to W. Main St.	2004	750
Edward Hines Drive	2-Way	Rogers to Sheldon	2009	7,180
Edward Hines Drive	2-Way	7-Mile to Northville Road	2011	2,270
Edward Hines Drive	2-Way	Sheldon to 7-Mile	2009	10,040
Griswold	2-Way	0.1 Mile SW of Northville Place	2010	5,729
Main Street	2-Way	Clement to Center	2003	1,350
Main Street	SB	7-Mile to Griswold	2001	5,340
Main Street	SB	7-Mile	2001	9,560
Main Street	NB	7-Mile (E) to 7-Mile (W)	2001	10,010
Main Street	NB	7-Mile (W) to Griswold	2001	6,460
Novi	2-Way	8-Mile to 9-Mile	2012	12,600
Novi	NB	8-Mile to 9-Mile	2010	7,570
Novi	SB	8-Mile to 9-Mile	2010	6,010
Novi	SB	North of 8-Mile	2011	4,860
Novi	NB	South of 8-Mile	2005	7,050
Sheldon*	2-Way	6-Mile to E.N. Hine Drive	2004	12,970
Taft	NB	8-Mile to 9-Mile	2010	2,970
Taft	SB	8-Mile to 9-Mile	2010	2,780
Taft	SB	North of 8-Mile	2011	3,600

*County road in Northville Township.

A3. Crash Locations and Severity

City of Northville Michigan
Sustainability Team

Source: SEMCOG Maps and Data: Crash Locations 2015-2019

A4. Crash Data

Sustainability Team

Table 1. Road Segments

Year	S. Center from Sheldon to Main Street	Griswold St. from E. Main to S. of Lake Shore	7 Mile Rd. from First St. to Sheldon	7 Mile from Hines to S. Center
2015	11	1	4	1
2016	16	4	2	6
2017	13	1	2	0
2018	11	3	2	1
2019	15	3	2	1
Total Severe or Fatal Injuries	0	1	1	0
Involving Pedestrian or Cyclist	0	0	0	1

Source: SEMCOG Data and Maps/Transportation Data/Crash and Road Data

Table 2. Intersections

Year	7 Mile & Center St.	Griswold St. & E Main St.	7 Mile & Hines Drive	7 Mile & Northville Rd	S. Main St. & 7 Mile Rd	S. Main & Doheny Dr
2015	9	3	1	0	12	0
2016	13	3	1	2	9	2
2017	5	5	1	2	10	2
2018	11	4	1	1	15	0
2019	8	5	0	1	7	1
Total Severe or Fatal Injuries	1	0	0	0	0	0
Involving Pedestrian or Cyclist	1	1	0	0	0	0

Source: SEMCOG Data and Maps/Transportation Data/Crash and Road Data

Table 3. No. of Crashes in Intersections

Year	Main St. and Center St.	S. Center and Cady St.	S. Center and Fairbrook St.
2016	0	3	3
2017	3	1	4
2018	4	5	1
2019	2	7	1
2020	0	0	3

Source: City of Northville Police Department

A5. SEMCOG High-Priority Safety Locations 2015-2019

Source: SEMCOG Accident Data

A6. Road Jurisdiction

Source: SEMCOG Data and Maps