



GRAND LEDGE PUBLIC SCHOOLS

M-43 CONNECTION



Speakers & Presenters

Grand Ledge Public Schools

- **John Ellsworth** - *Director of Communications*
- **Dr. Michael Johnson** – *Bond Supervisor*

GMB Architecture + Engineering

- **Travis Vruggink** – *Project Engineer*

Wade-Trim

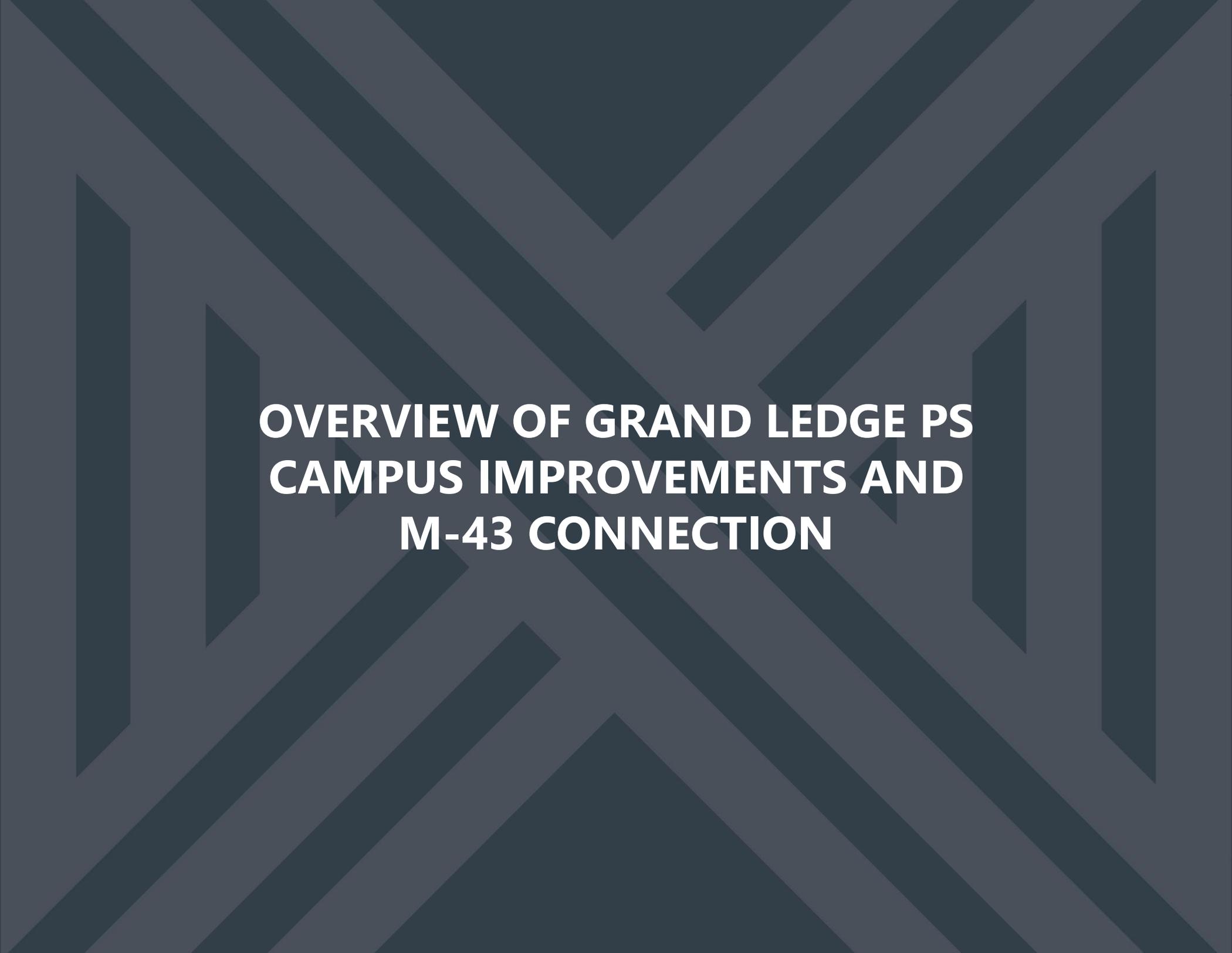
- **Aimee Giacherio** - *Traffic Engineer*

Michigan Department of Transportation

- **Greg Losch** – *Lansing TSC Manager*
- **Greg Waite** – *Transportation Engineer*
- **Melissa Longworth** – *Operations Engineer*
- **Miranda Spare** – *Contracts Engineer*

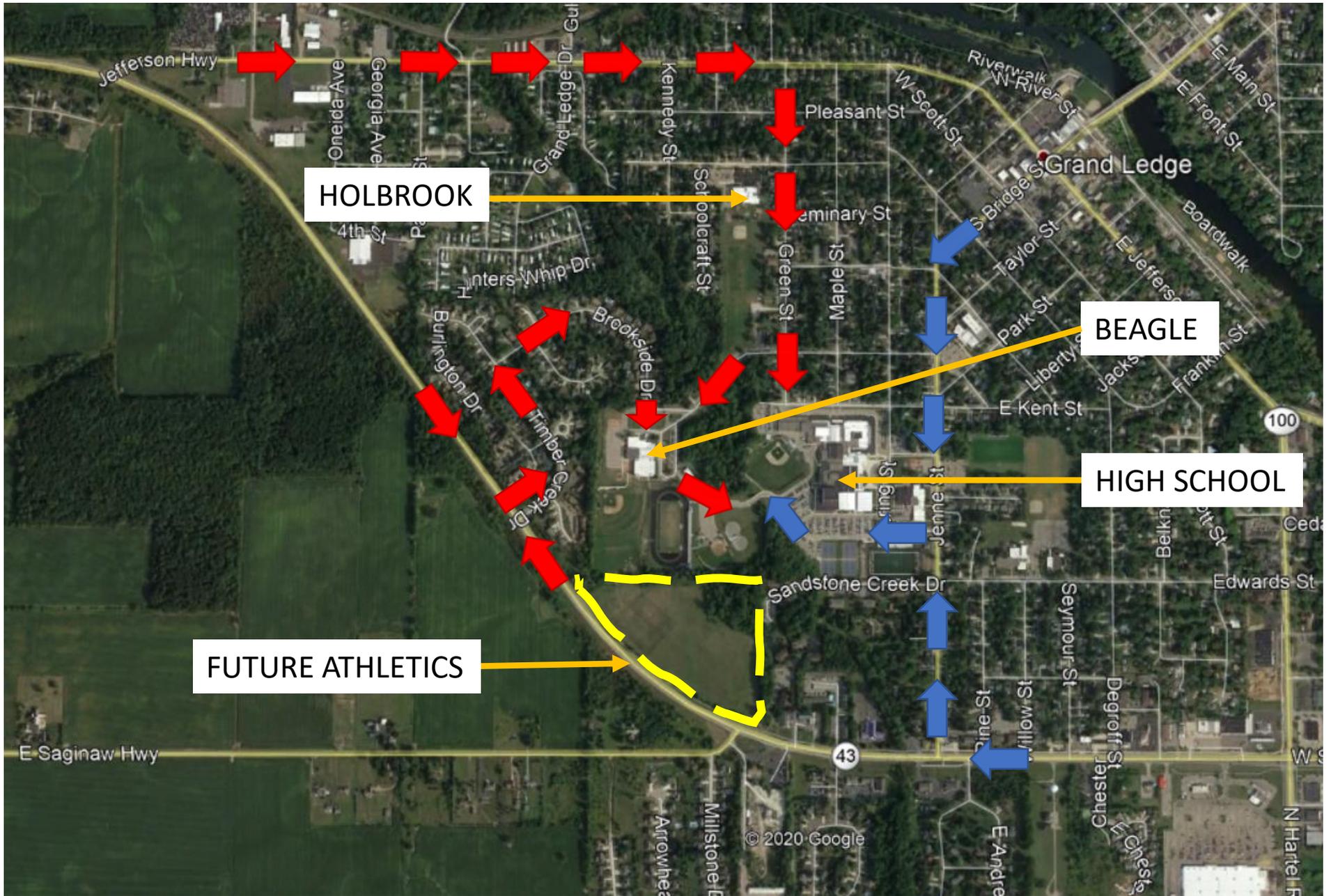
Agenda

- A. Overview of Grand Ledge PS Campus Improvements and M-43 Connection**
- B. The Process for New Drive Approach**
- C. Initial Drive Connection Ideas**
- D. Summary of Traffic Data**
- E. Drive Connection Alternatives**
- F. Why a Roundabout?**
- G. Super Loads / Special Traffic**
- H. Common Themes & Questions**
- I. Question and Answer Session**



**OVERVIEW OF GRAND LEDGE PS
CAMPUS IMPROVEMENTS AND
M-43 CONNECTION**

AERIAL PLAN





**THE PROCESS FOR NEW
DRIVE APPROACH**

The Process for New Drive Approach

- **New drive location plan**
- **Contact MDOT to determine feasibility of connection**
- **Traffic Data / Study**
- **Selecting location and type of connection**
- **Geometric Designs and Layout**



INITIAL DRIVE CONNECTION IDEAS

Drive Connection Alternatives

- **Simple drive connection to be expanded later**
- **“T” Intersection with Traffic Signal**
- **“T” Intersection with RH slip lane**
- **Indirect Left**
- **Saginaw Highway Connection**
- **Roundabout**



SUMMARY OF TRAFFIC DATA

TRAFFIC DATA COLLECTION

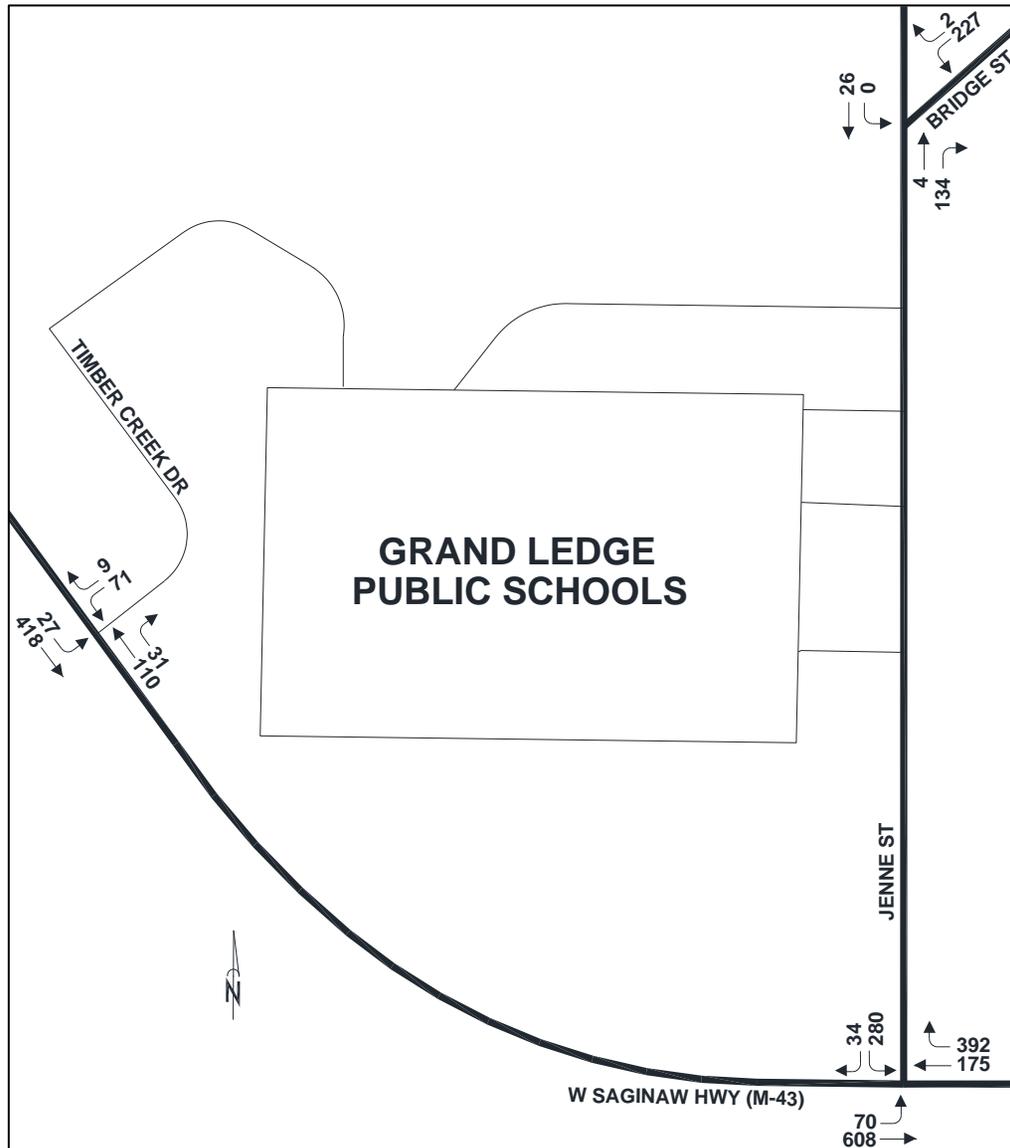
Existing Traffic Counts

- **M-43 & Timber Creek Drive**
- **M-43 & Jenne Street**
- **Jenne Street & Bridge Street**

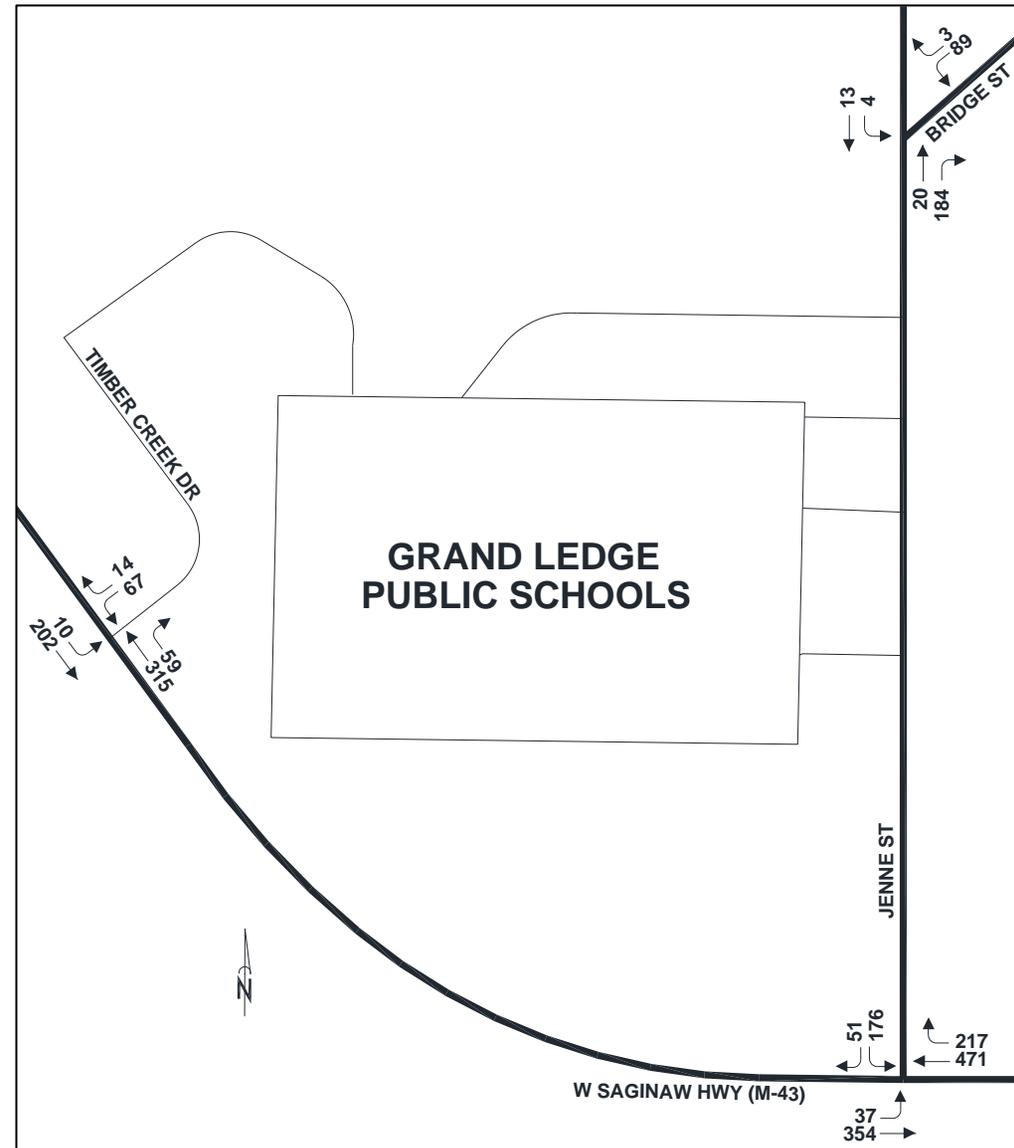
- **Collected on Thursday, April 11, 2019**
- **Collected from 6:45-9:00 AM & 1:30-4:30 PM**
- **Collected via video camera**

TRAFFIC DATA

AM PEAK HOUR



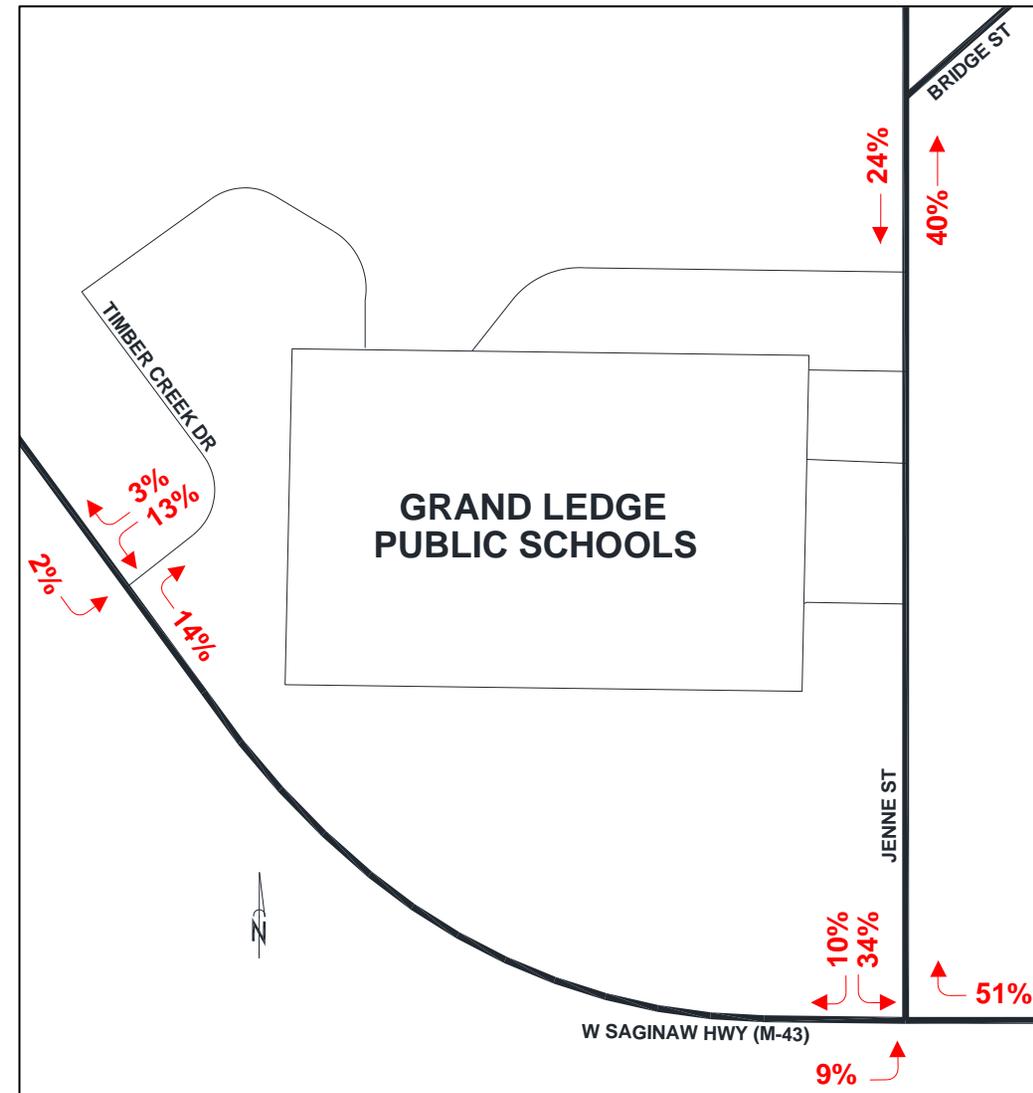
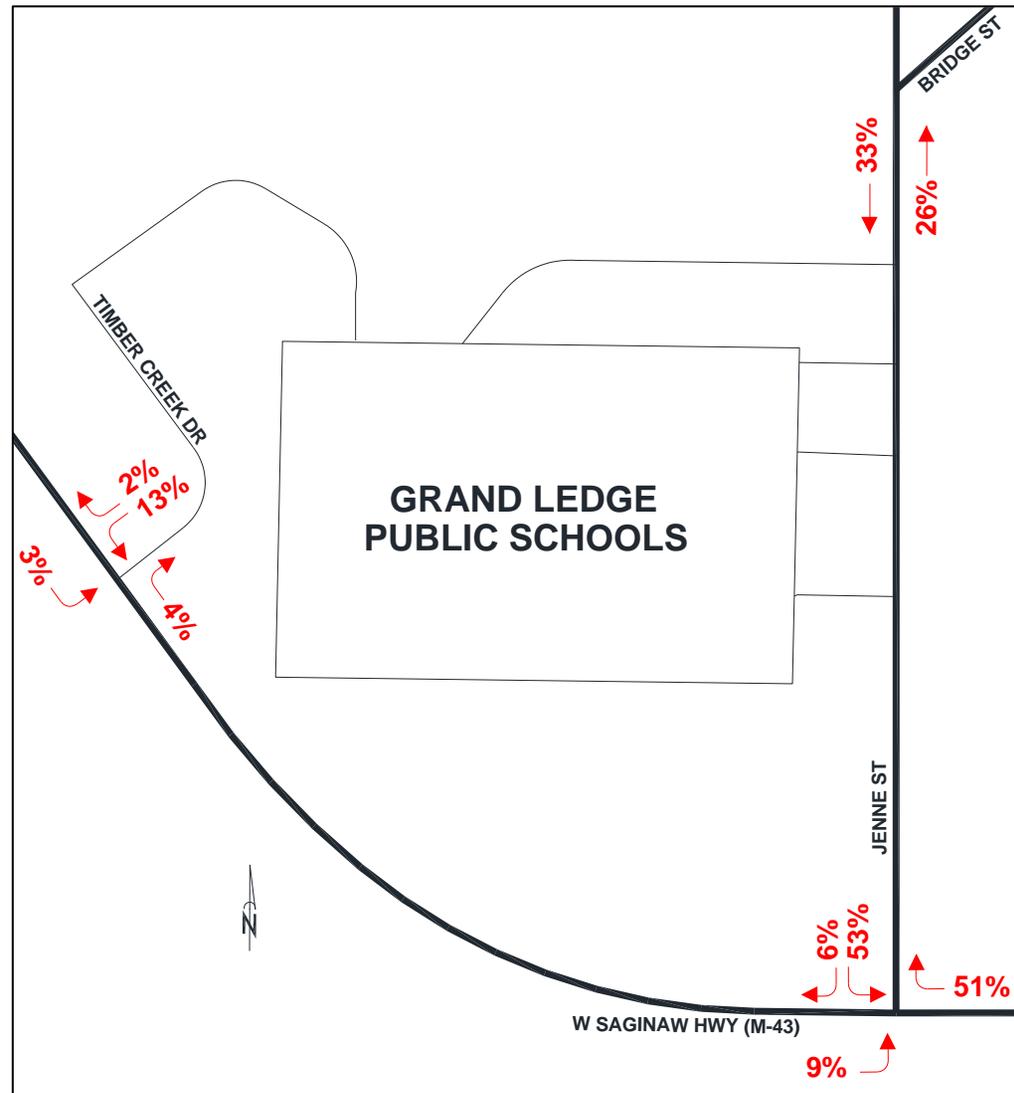
PM PEAK HOUR



TRAFFIC DISTRIBUTION

AM PEAK HOUR

PM PEAK HOUR



TRIP GENERATION

- **Based on ITE Trip Generation Manual, 10th Edition**
- **Primary users of the new M-43 access would be the high school and the relocated middle school**

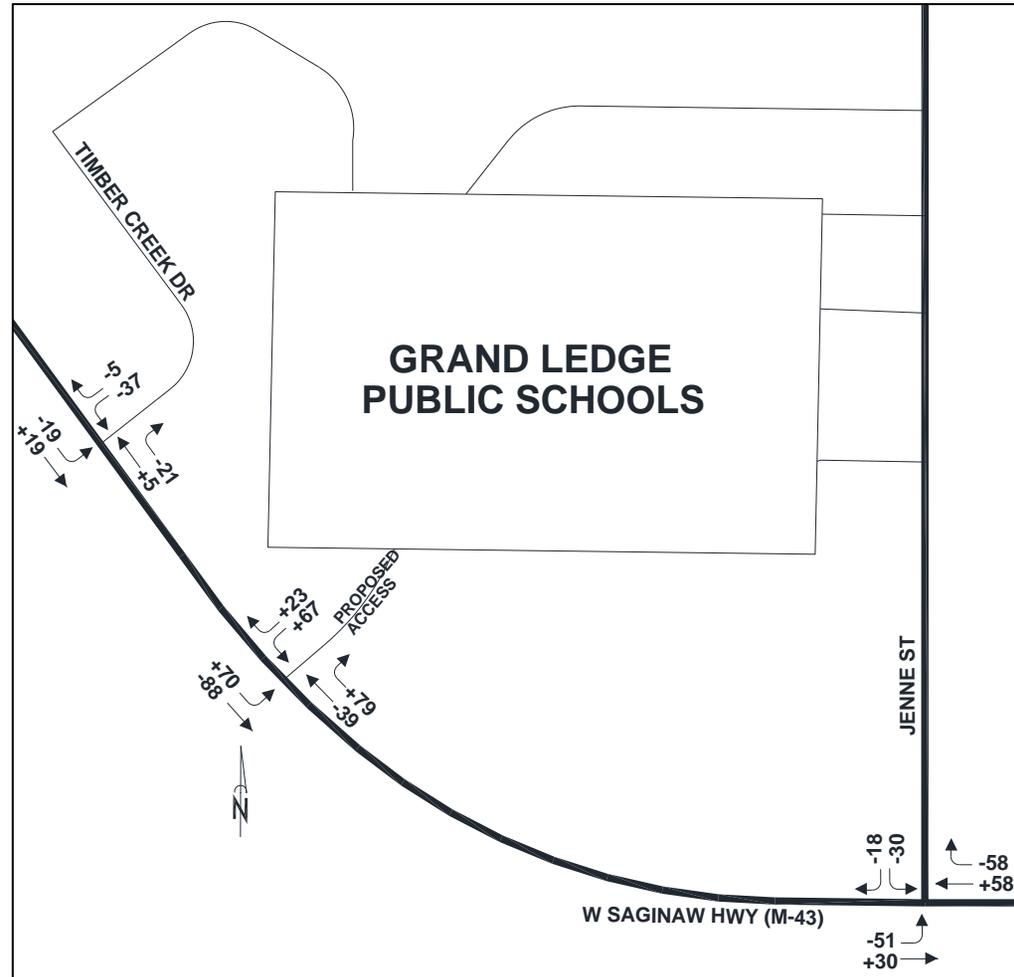
School	Size	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Middle School	791 students	459	248	211	277	127	150
High School	1,640 students	853	572	281	541	173	368
TOTAL		1,312	820	492	818	300	518

TRAFFIC DISTRIBUTION ASSUMPTIONS

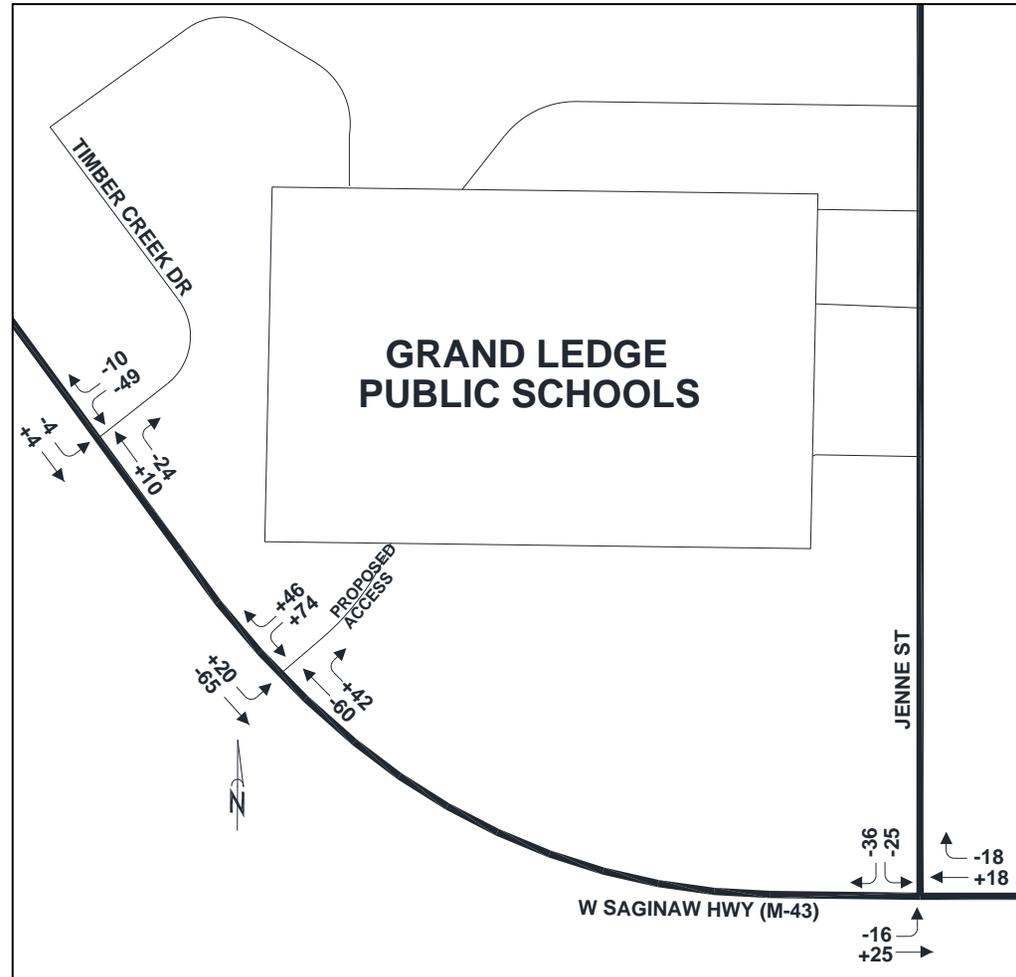
- **All middle school traffic along M-43 would use the new M-43 access.**
- **All existing school traffic using Timber Creek Drive would shift to the new M-43 access.**
- **All high school traffic to/from the west on M-43 would use the new M-43 access.**
- **Approximately 20% of the high school traffic to/from the east on M-43 would use the new M-43 access.**

HIGH SCHOOL TRAFFIC REDISTRIBUTION

AM PEAK HOUR

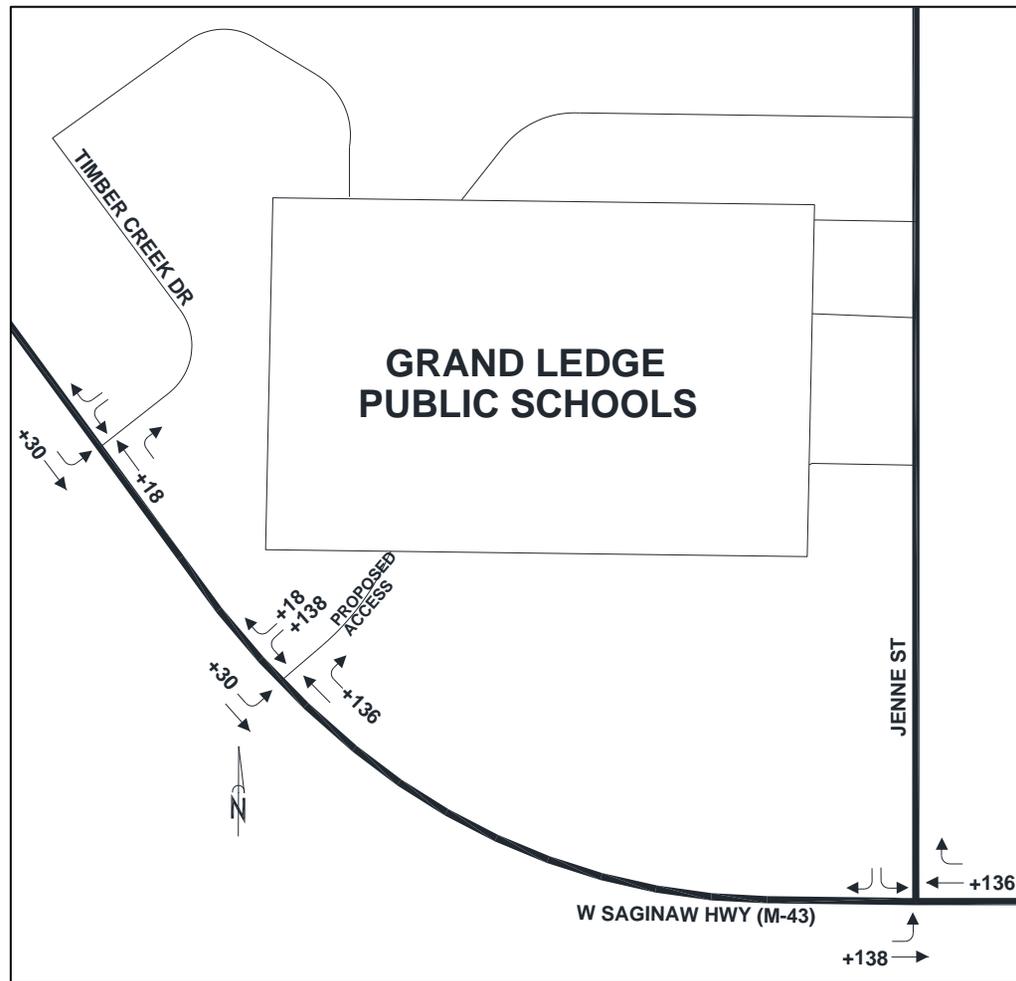


PM PEAK HOUR

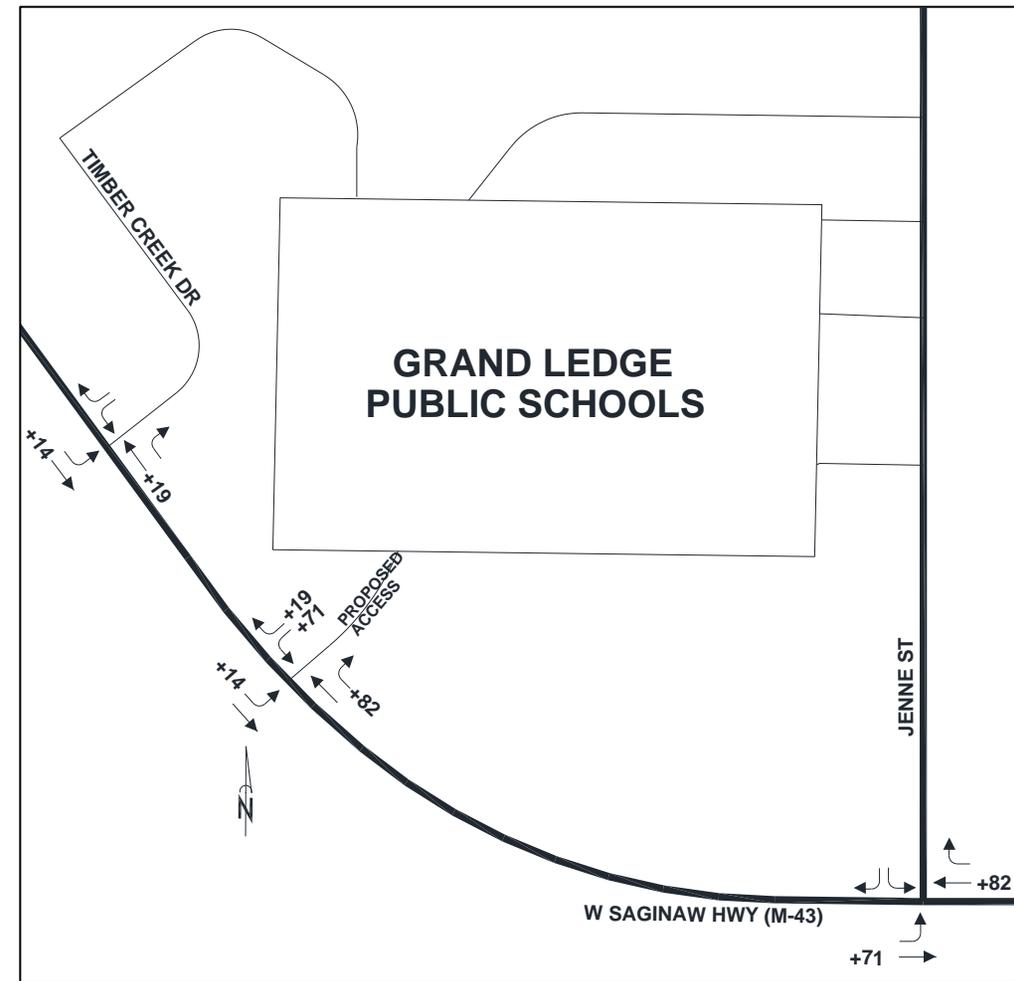


MIDDLE SCHOOL TRAFFIC GENERATION

AM PEAK HOUR

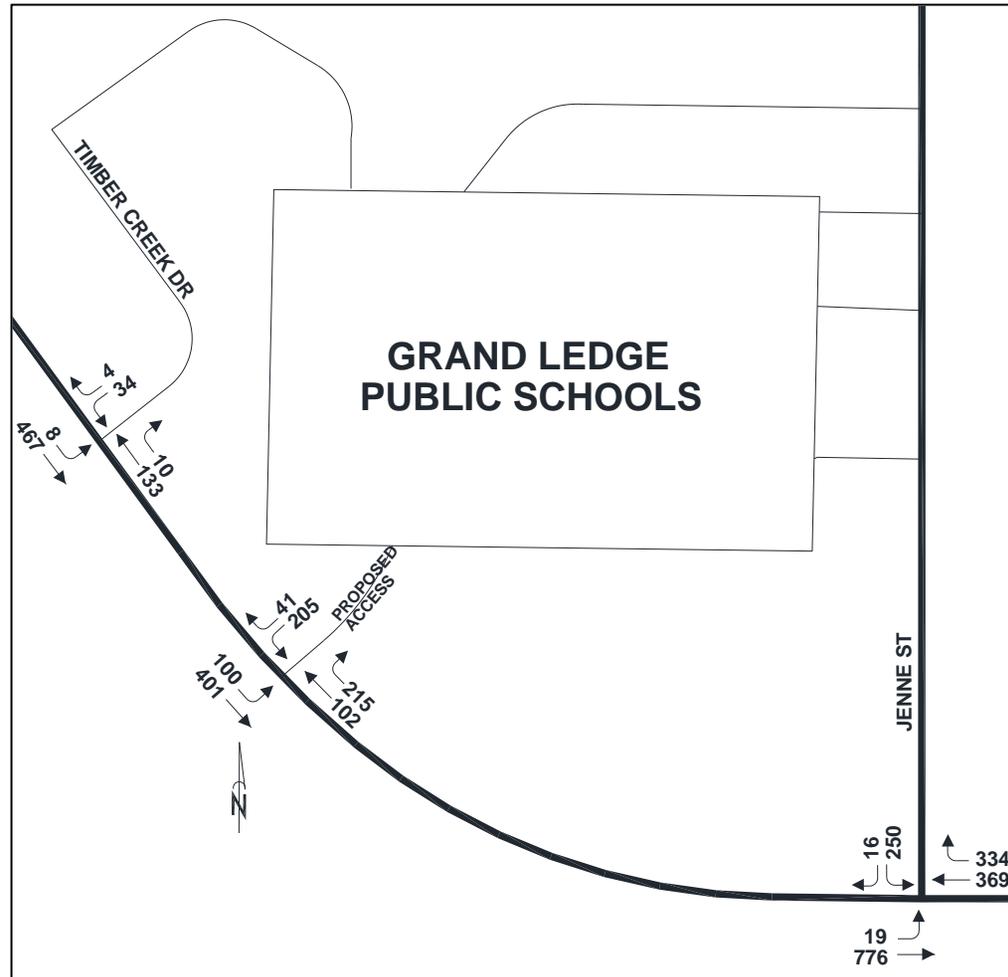


PM PEAK HOUR

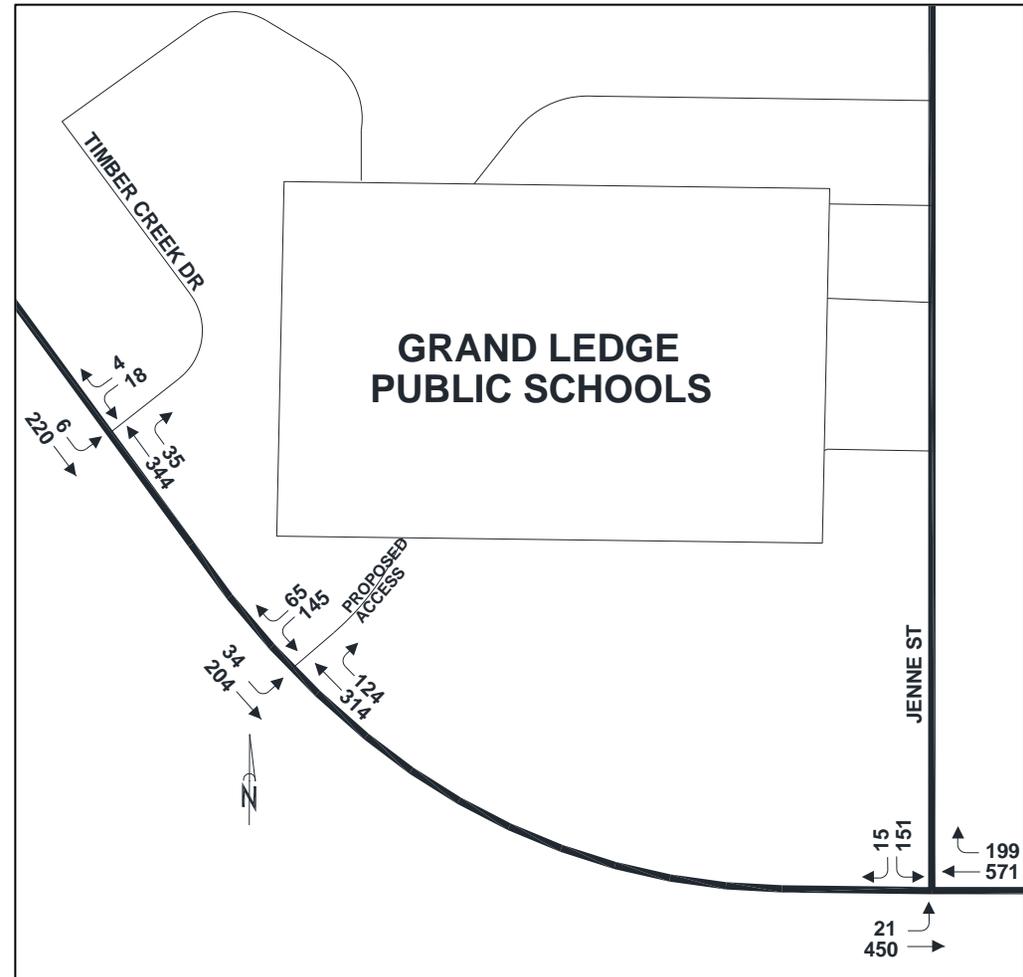


FINAL TRAFFIC VOLUMES FOR NEW M-43 ACCESS⁸

AM PEAK HOUR



PM PEAK HOUR





DRIVE CONNECTION ALTERNATIVES

- **Standard Driveway – Stop Sign**
- **Standard Driveway - Traffic Signal**
- **Divided Highway/Indirect Left**
- **Old Saginaw Highway Connection**
- **Roundabout**



WHY NOT A STOP SIGN?

Standard Drive with Stop Sign



Safety Concerns

- Conflict Points – Vehicle/Pedestrian
- Sight Lines Limited

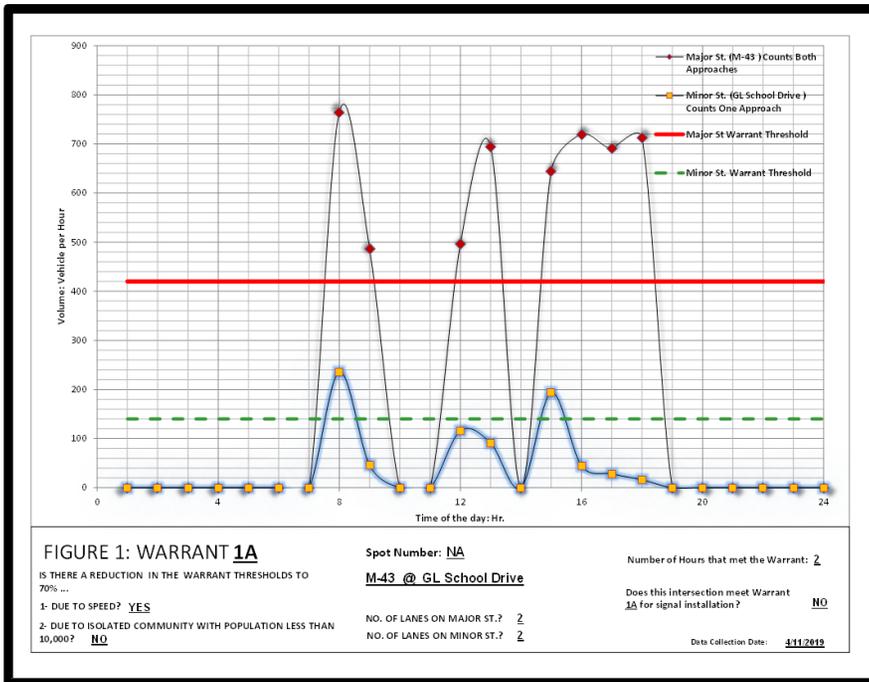
Peak Traffic Concerns

- Queuing Length on Side Street
- Poor LOS/Mainline Accessibility
- Left Turning Traffic Out
- Sporting Events



▶ WHY NOT A SIGNAL? ◀

Standard Drive with Traffic Signal



Safety Concerns

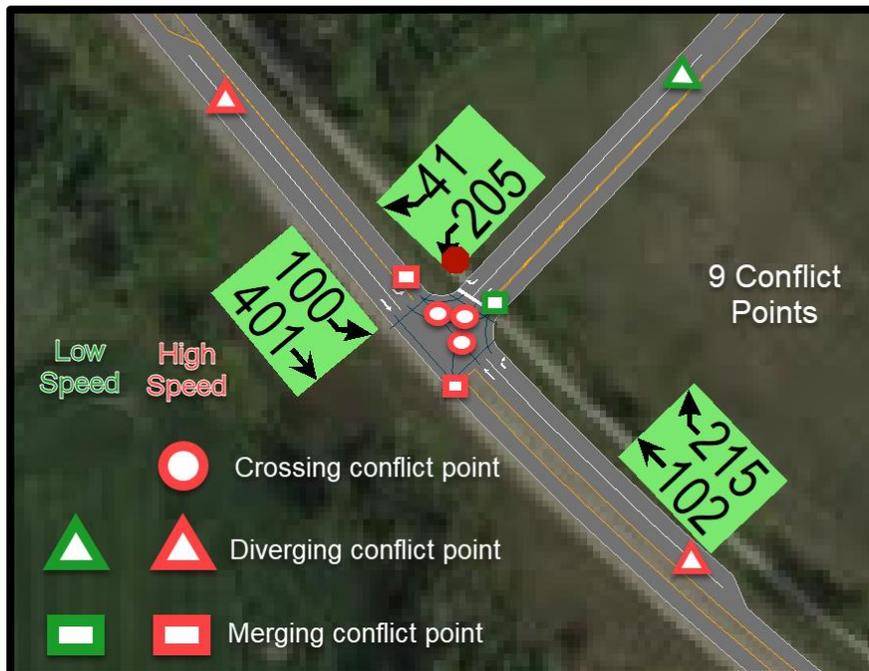
- Conflict Points – Vehicle/Pedestrian
- Sight Lines Limited
- Increase in Crashes

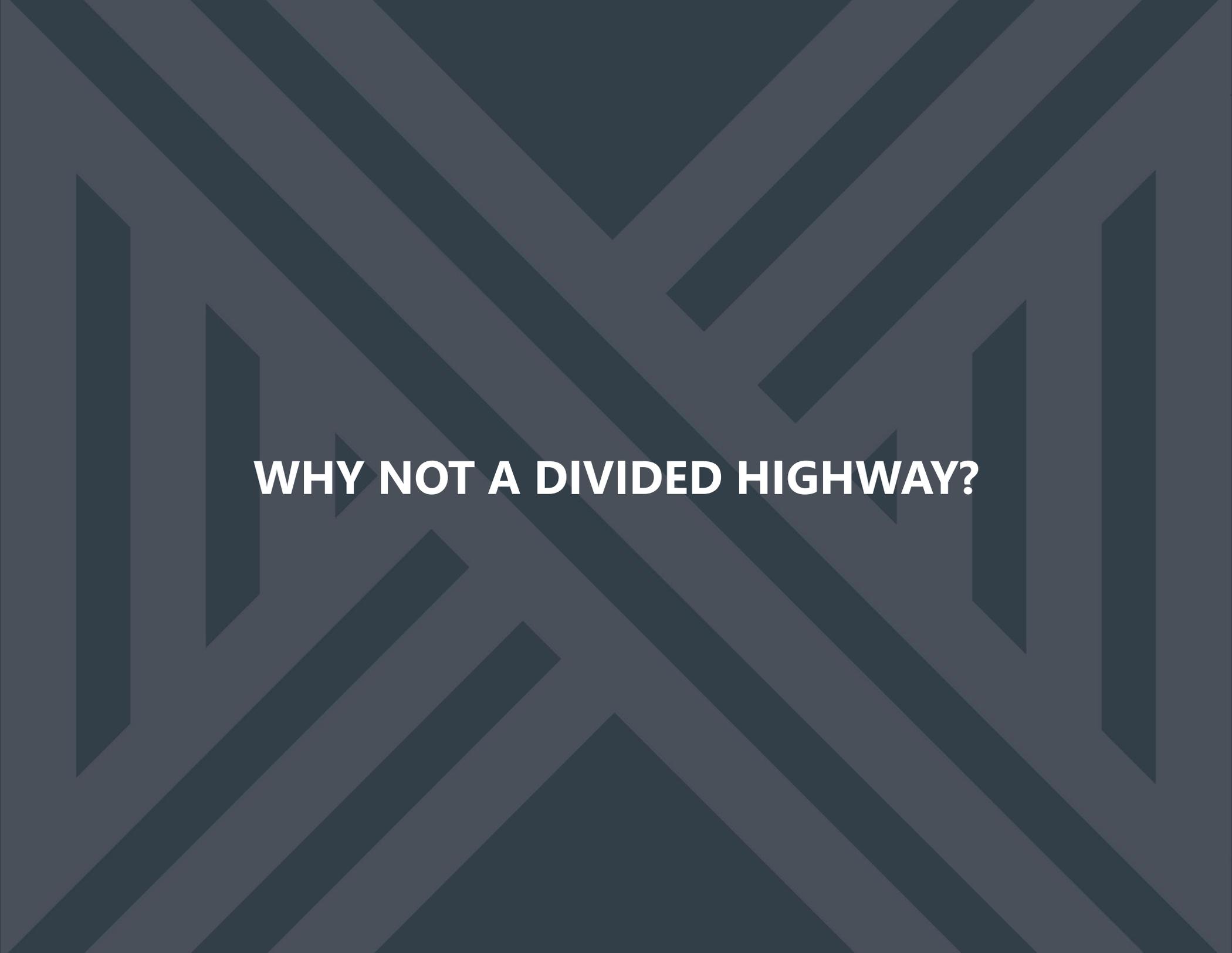
Poor Operation for Off Peak Travel

- Increase Delay - Detection
- Events May Require Enforcement

Long Term Maintenance

- Hardware
- Power Outages





WHY NOT A DIVIDED HIGHWAY?

Divided Highway/Indirect Left

Safety Concerns

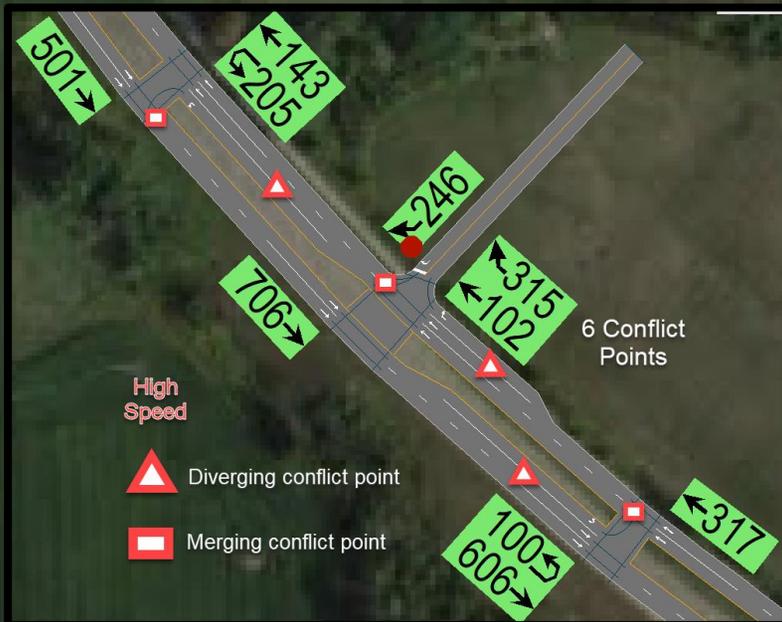
- Conflict Points – Vehicle/Pedestrian
- Sight Lines Limited
- Daily Queuing Across Mainline

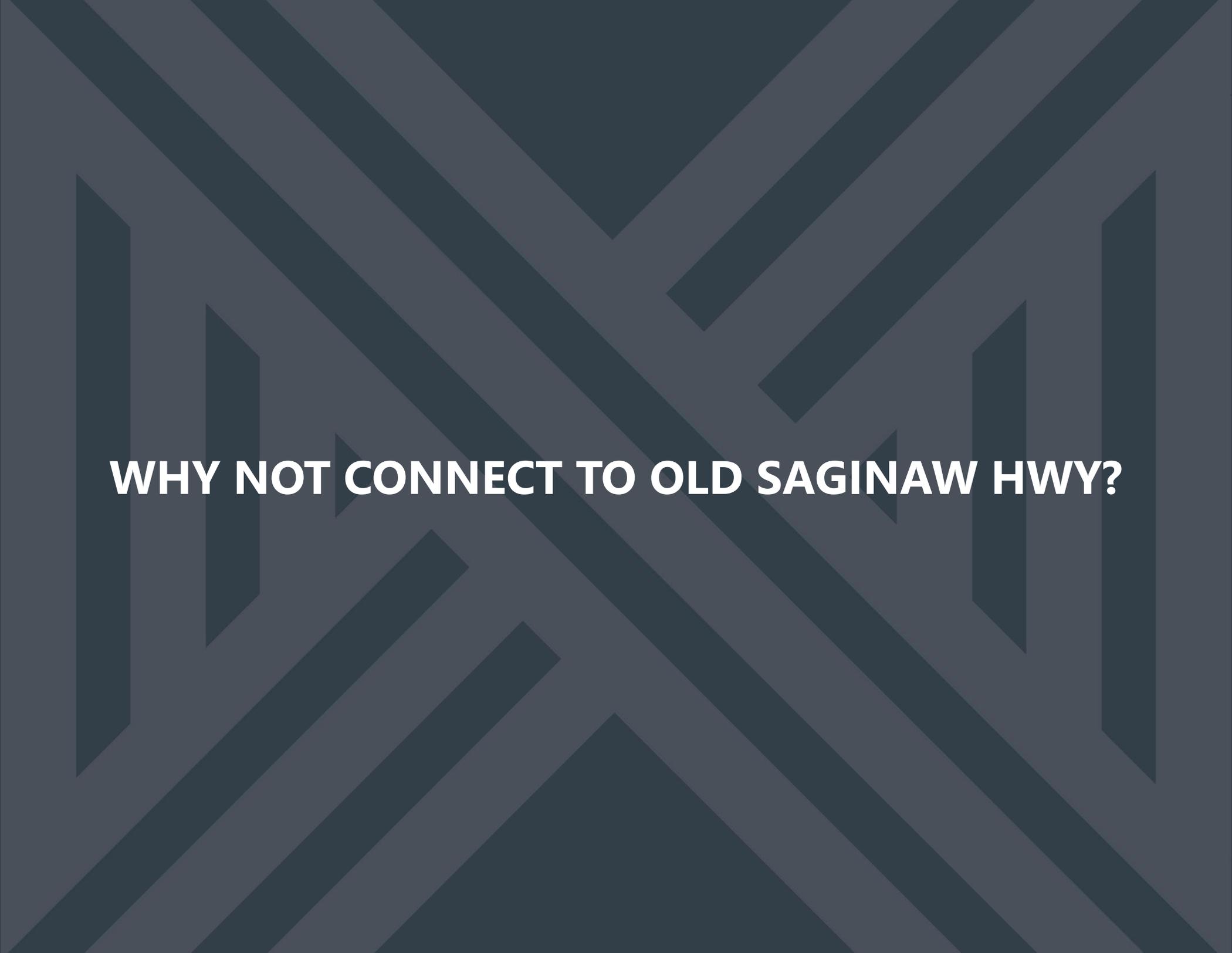
Peak Traffic Concerns

- Queuing Length on Side Street
- Sporting Events

Larger Roadway Impact

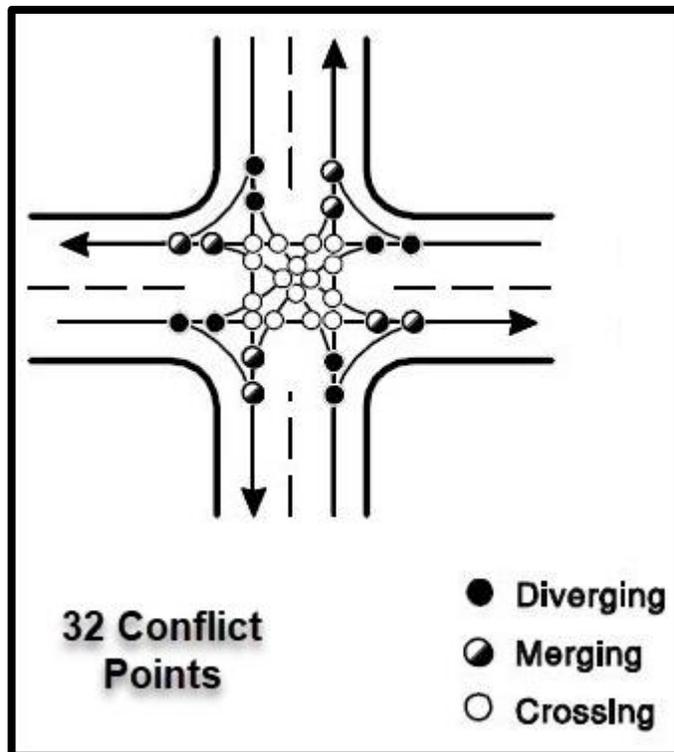
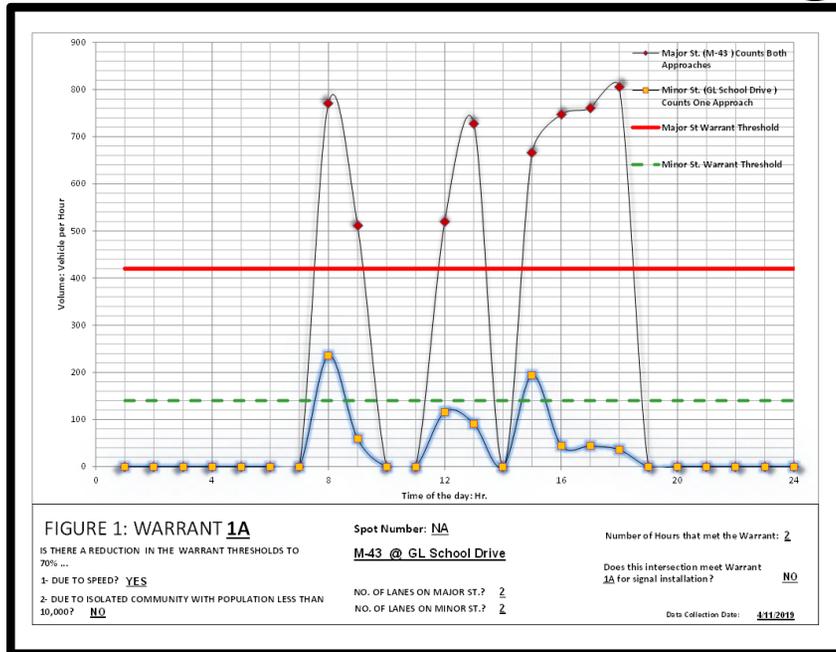
- Construction Duration
- Cost to School
- Environmental Impact





WHY NOT CONNECT TO OLD SAGINAW HWY?

Connection to Old Saginaw Hwy



Safety Concerns

- Conflict Points – Vehicle/Pedestrian
- Sight Lines Limited
- Increase in Crashes

Poor Operation for Off Peak Travel

- Increase Delay - Detection
- Events May Require Enforcement

Long Term Maintenance

- Hardware
- Power Outages

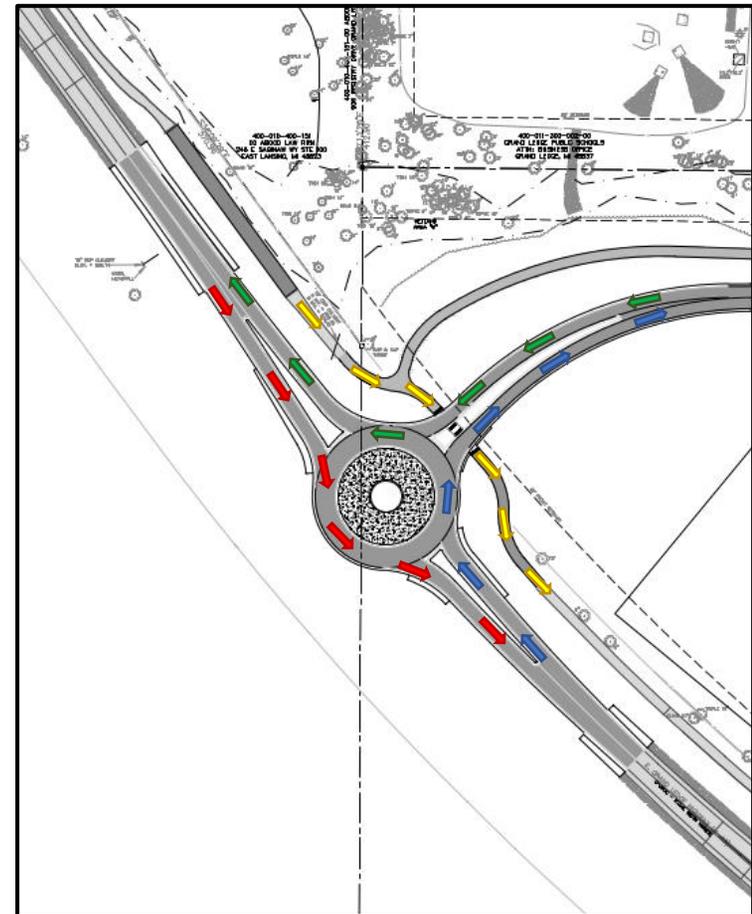
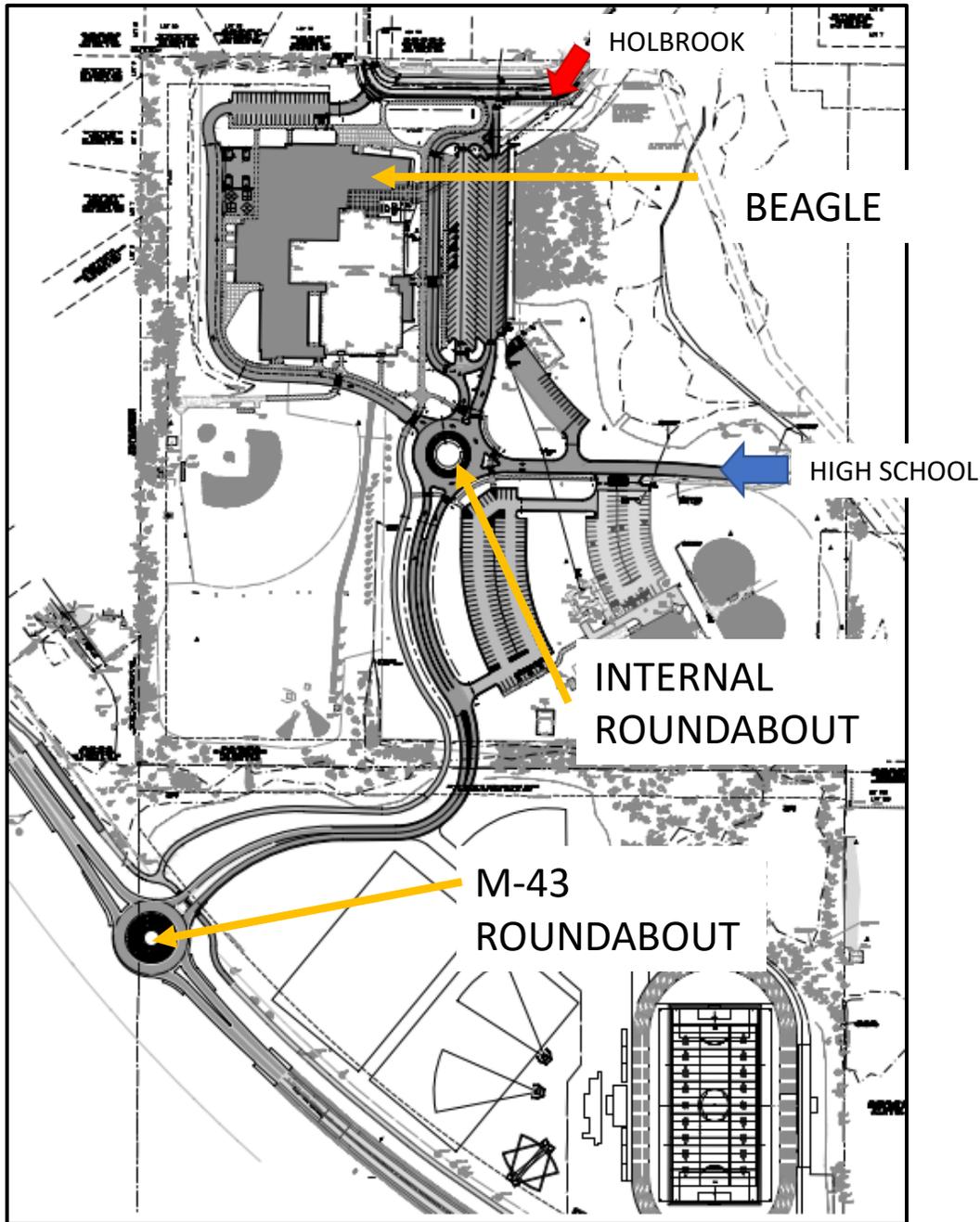
Site Development Restrictions

- Environmental Impact
- Property Usage



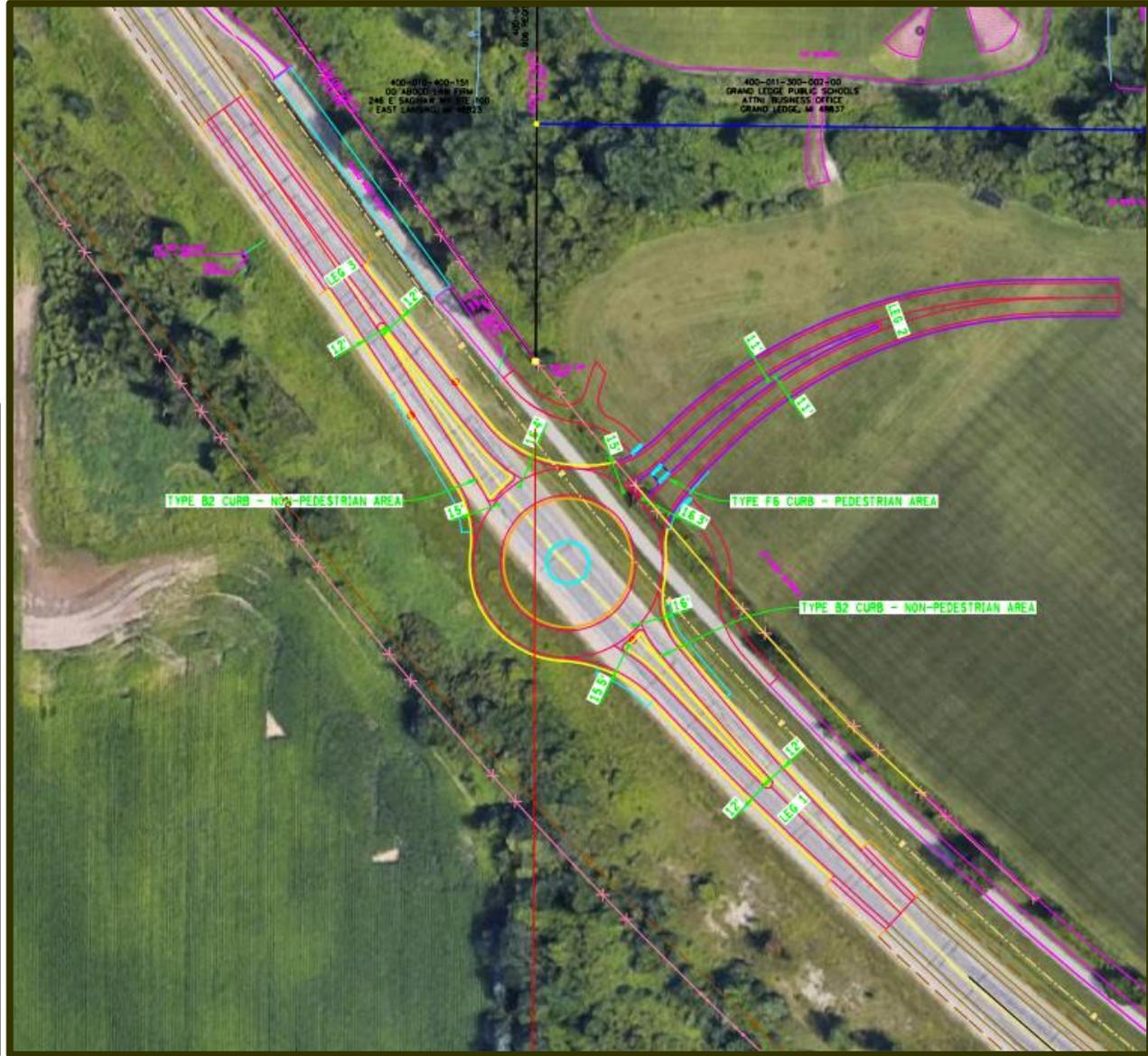
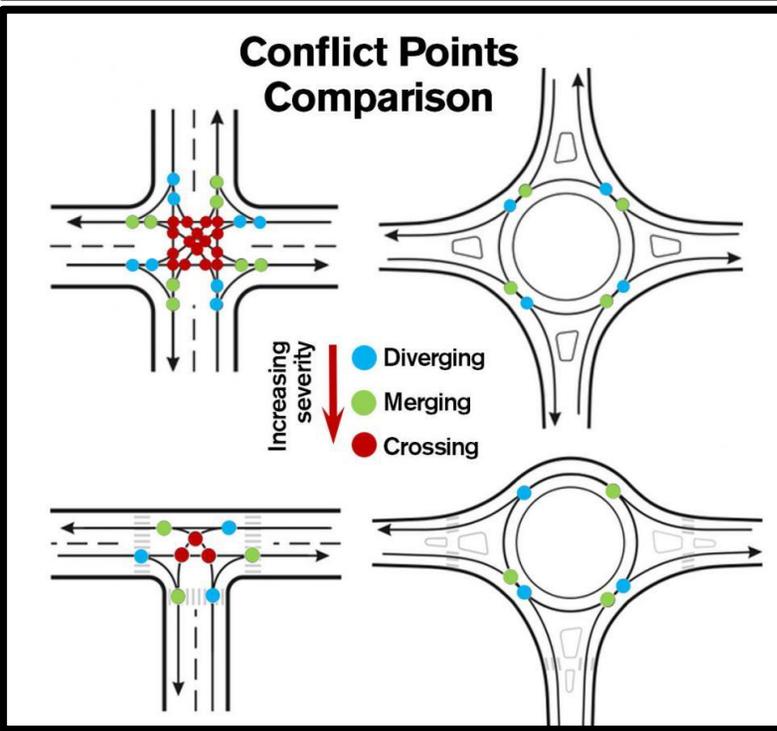
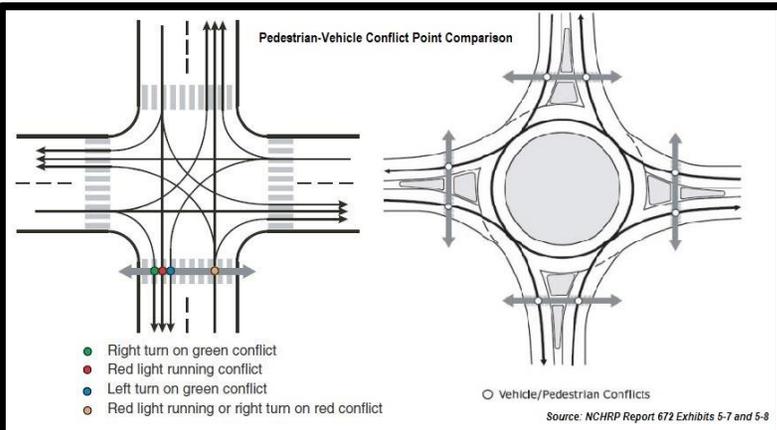
WHY A ROUNDABOUT?

OVERALL GLPS CIRCULATION PLAN



ENLARGED PLAN

PLAN FOR ACCESSING M-43



Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Eastbound M-43	None	7.76		7.76	3.70		A		A
2	Westbound M-43	None	4.47		4.47	1.34		A		A
3	GLPS Driveway	None	4.24		4.24	0.99		A		A

ROUNDBABOUT INFORMATIONAL VIDEO



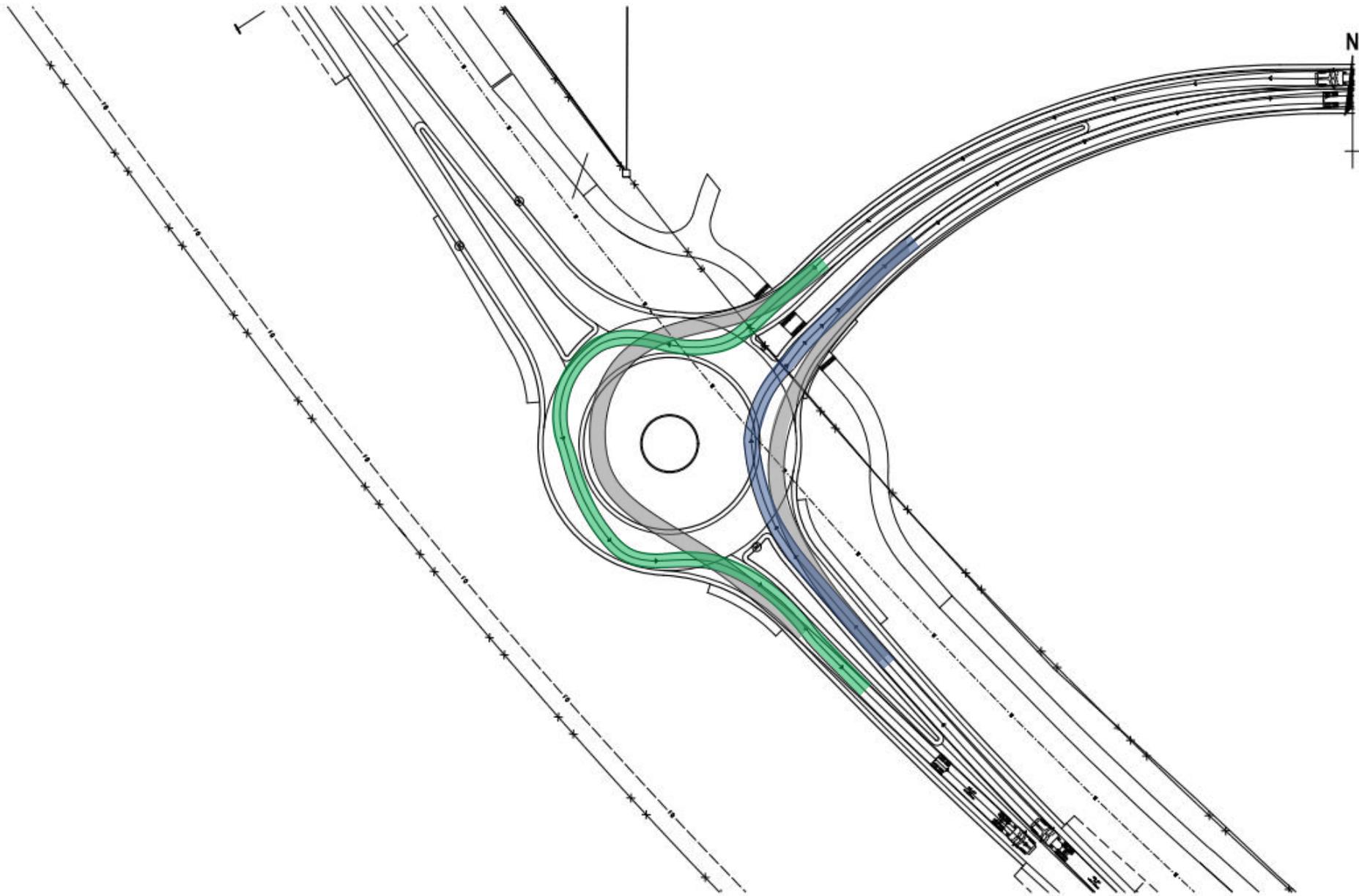
Modern Roundabouts | A Safer Choice



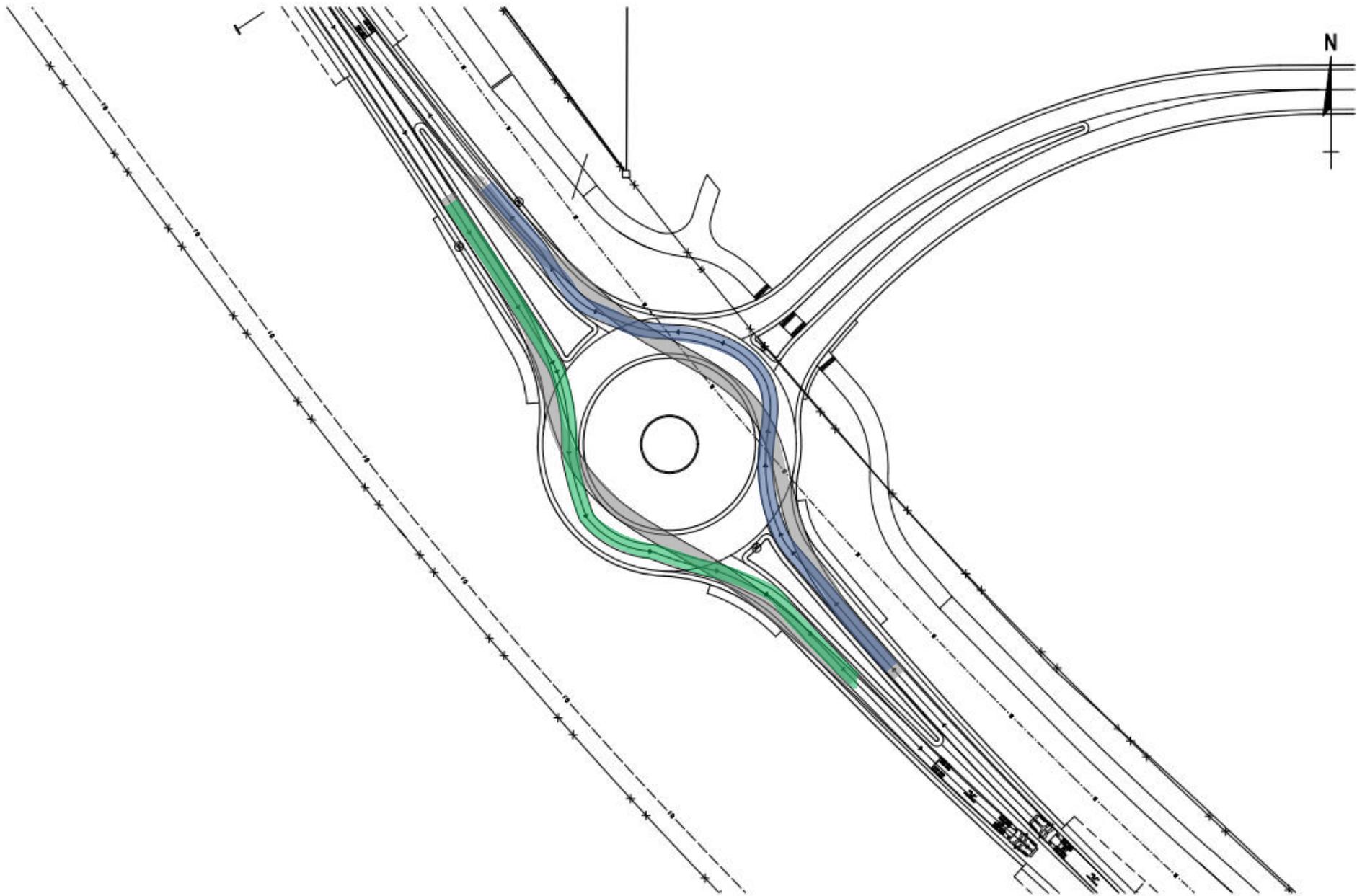


SUPER LOADS / SPECIAL TRAFFIC

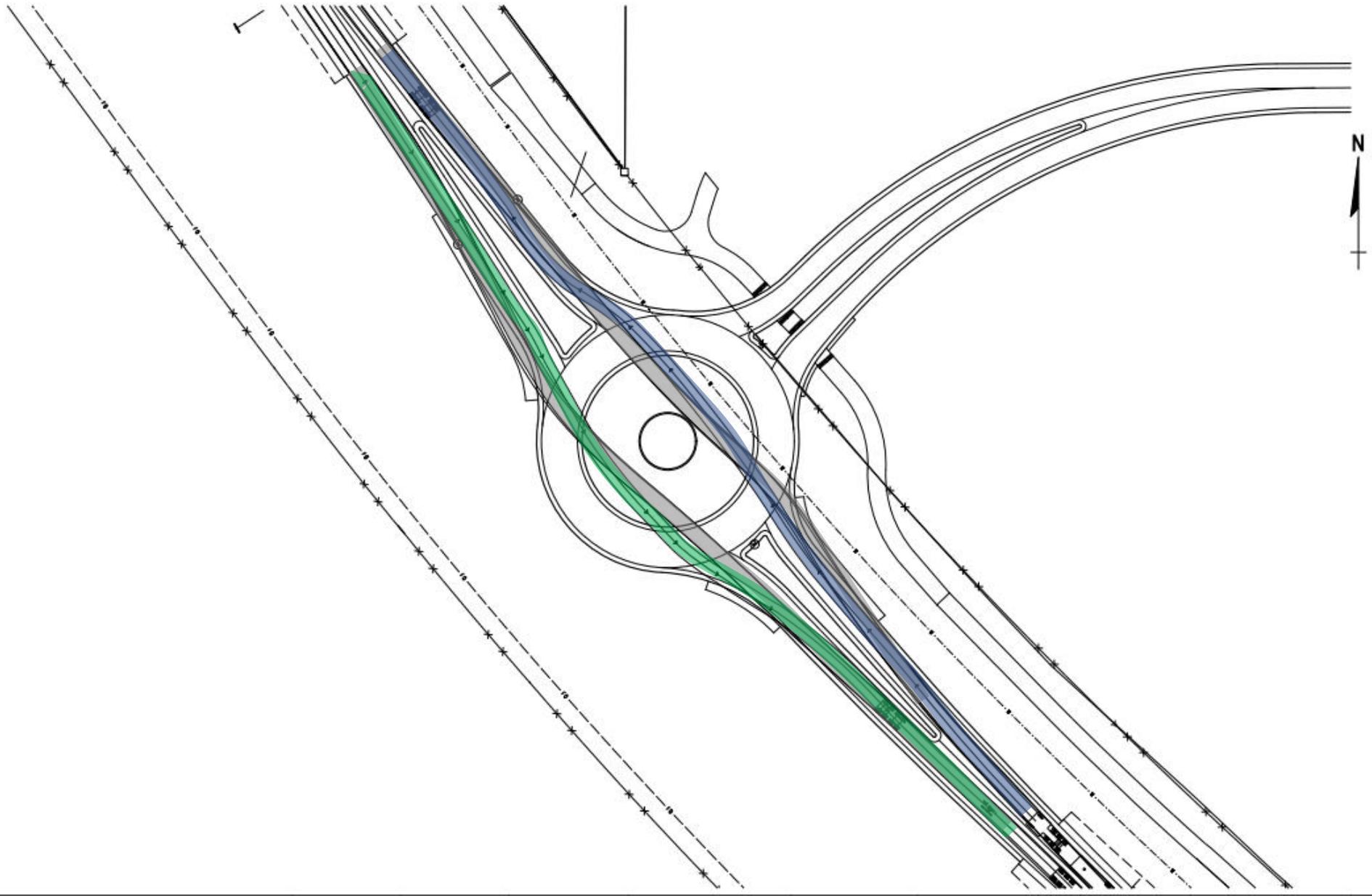
WB-67 TURNING ANALYSIS



WB-67 TURNING ANALYSIS



SUPERLOAD TURNING ANALYSIS





**COMMON THEMES
AND QUESTIONS**

COMMON QUESTIONS

- **Why is GLPS building the roundabout? Why aren't their other solutions being considered for the intersection? Indirect left or a traffic signal?**
- **Whose jurisdiction is the road and the roundabout? What about the limited access ROW?**
- **Will the roundabout be able to pass the proper size trucks, riverboat, super load? How about emergency vehicles such as fire trucks and ambulances?**
- **Will the roundabout result in calming traffic?**
- **Will the roundabout fit within the ROW?**
- **Will the non-motorized trail be negatively impacted?**
- **Can there be access or a leg developed to the south of M43?**
- **Will drivers divert through local roads to avoid a roundabout?**



Q & A



Grand Ledge
Public Schools
A Community Committed to Excellence

G  **MB**