M-51 from Indiana State Line to M-60BR
US-12 from 3rd Street to Cass County Line

Public Open House #1

City of Niles, Niles Township, Berrien County

Wednesday, July 18, 2018

The AECOM Team:
AECOM, Bergmann Associates and SME

MDOT
Michigan Department of Transportation

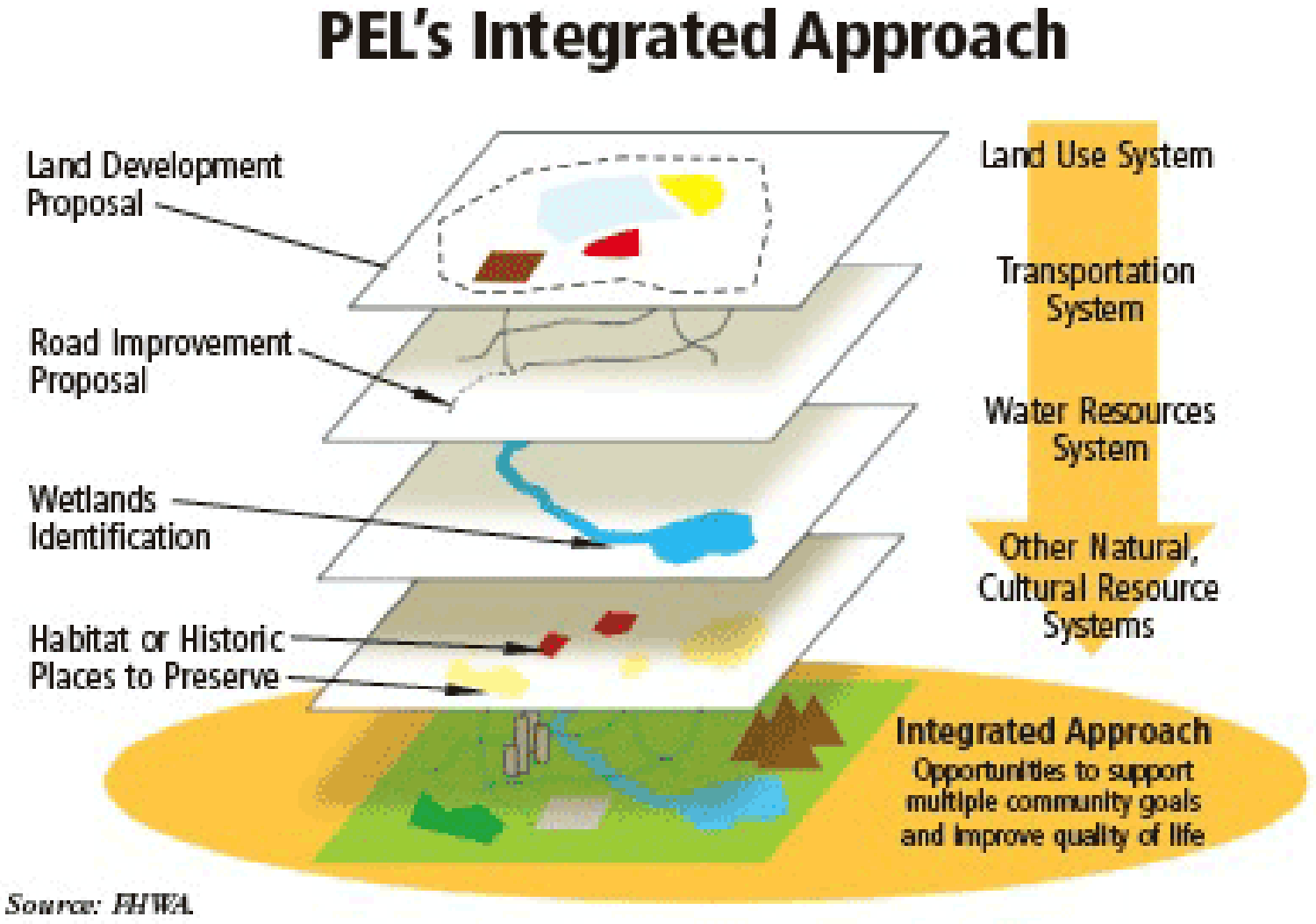
Public Open House #1 – Agenda

- Project Background, Process and Schedule
- Purpose & Need
- Project Overview
  - Existing Bridge Condition
  - Traffic and Safety Review
  - Stakeholder/Public Involvement
- Development of Alternatives
  - Alternatives Overview
  - Alternatives Analysis
- Where do we go from here?

Project Background

- MDOT has initiated a feasibility study for the US-12/M-51 interchange
- Study initiated because of aging US-12 bridges over M-51
- Study includes examination of traffic operations and how to best configure the interchange to accommodate future transportation needs
- Stakeholder and public involvement is a key component of the study
- Study includes pavement improvement analysis on M-51 from Indiana State Line to M-60BR

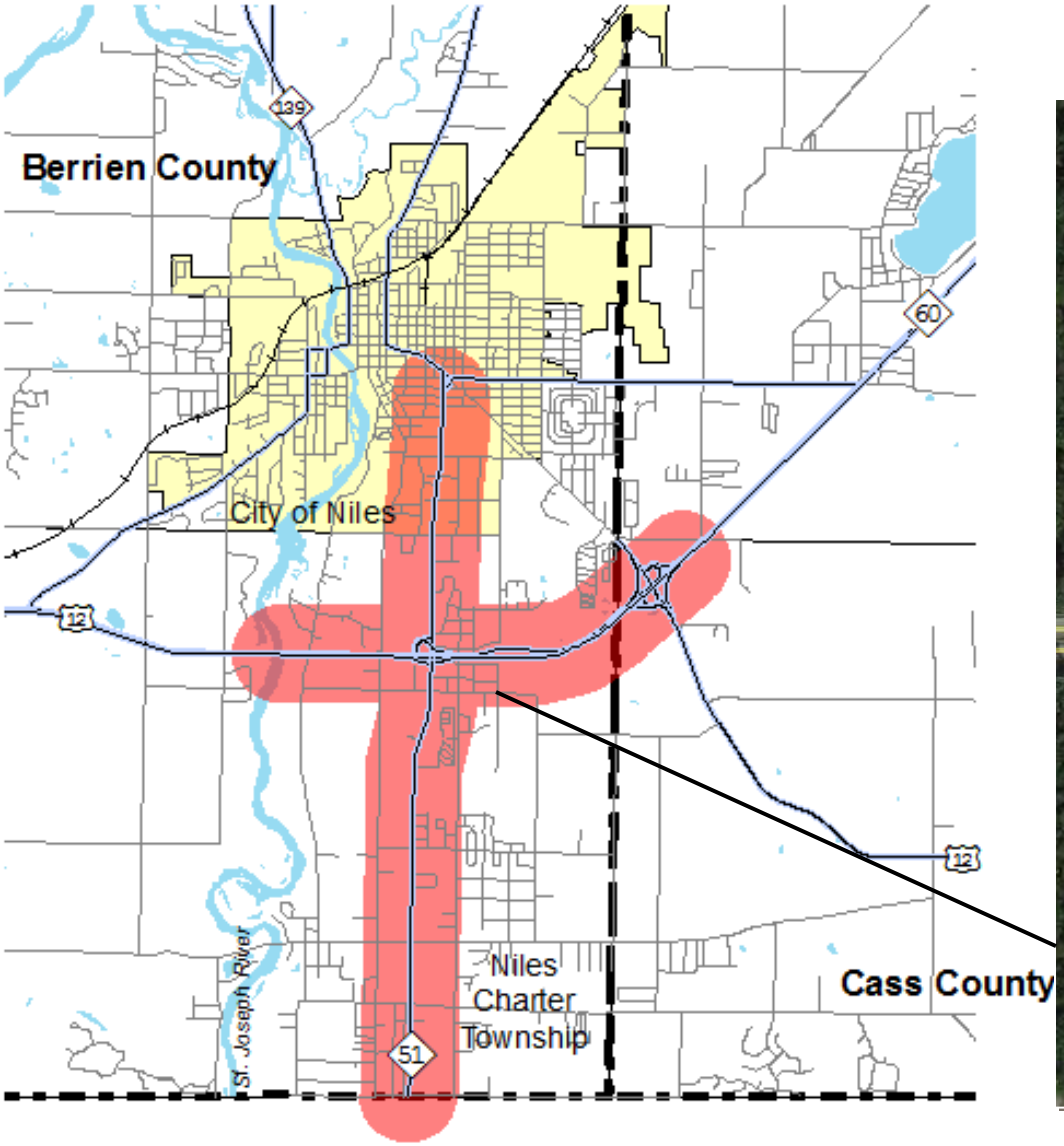
Project Process

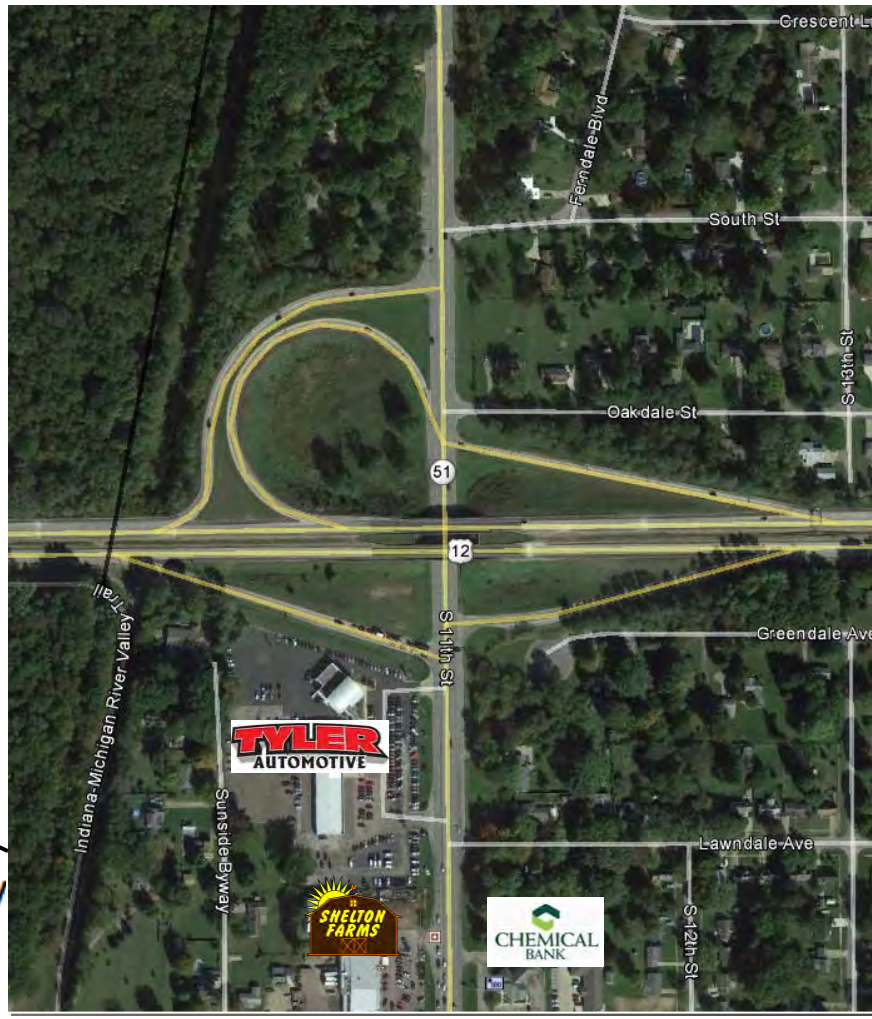


Project Schedule

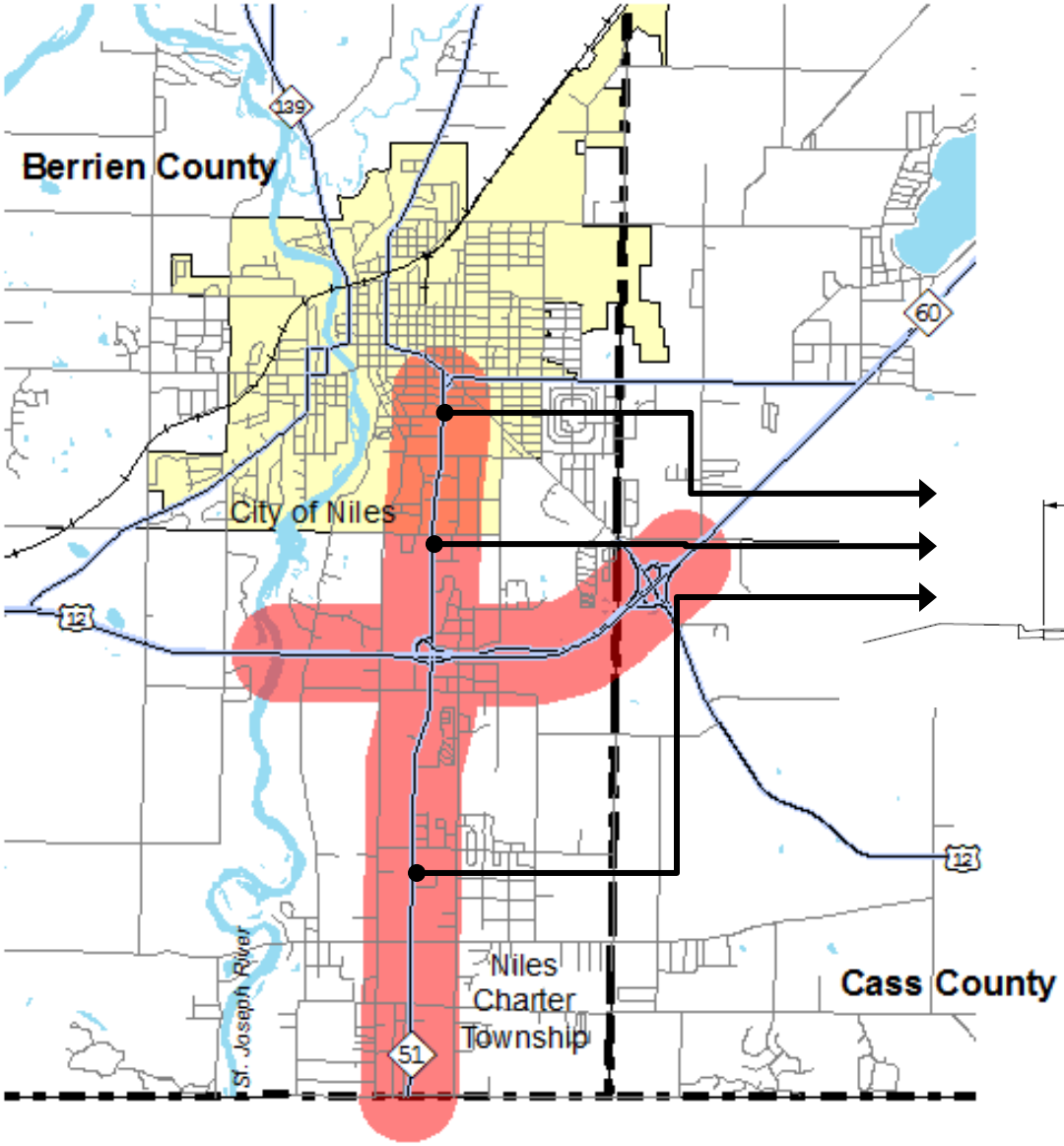
- **Stakeholder Meeting #1** (May 16, 2018)
  - Discuss issues and brainstorm ideas
- **Interchange Traffic Analysis** (June 2018)
- **Public Meeting #1** (July 18, 2018)
  - Present project purpose, schedule, and interchange alternatives
- **Drainage/Geotechnical Deliverables** (July 2018)
  - Review of drainage/geotechnical findings
- **Refine Cost Estimates for Interchange Alternatives** (July-August 2018)
- **M-51 Pavement, Utilities, & Interchange Concept Meeting** (July 2018)
  - Review of conceptual design options
- **Stakeholder Meeting #2** (September 5, 2018)
  - Present refined preliminary alternatives
- **Progress Meetings** (September 2018)
  - Review of progress on all aspects
- **Preliminary Scoping Report** (October 2018)
  - Draft report due for review
- **Stakeholder Meeting #3** (October 2018)
  - Finalize project alternatives
- **Public Meeting #2** (November 2018)
  - Present recommended option
- **Finalize Scoping Report** (February 2019)
  - Final report due to MDOT

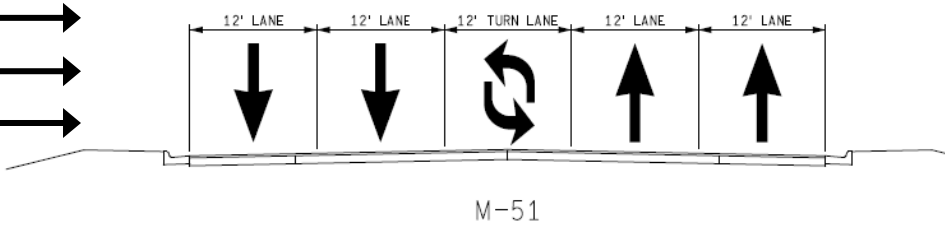
Map of Project Area





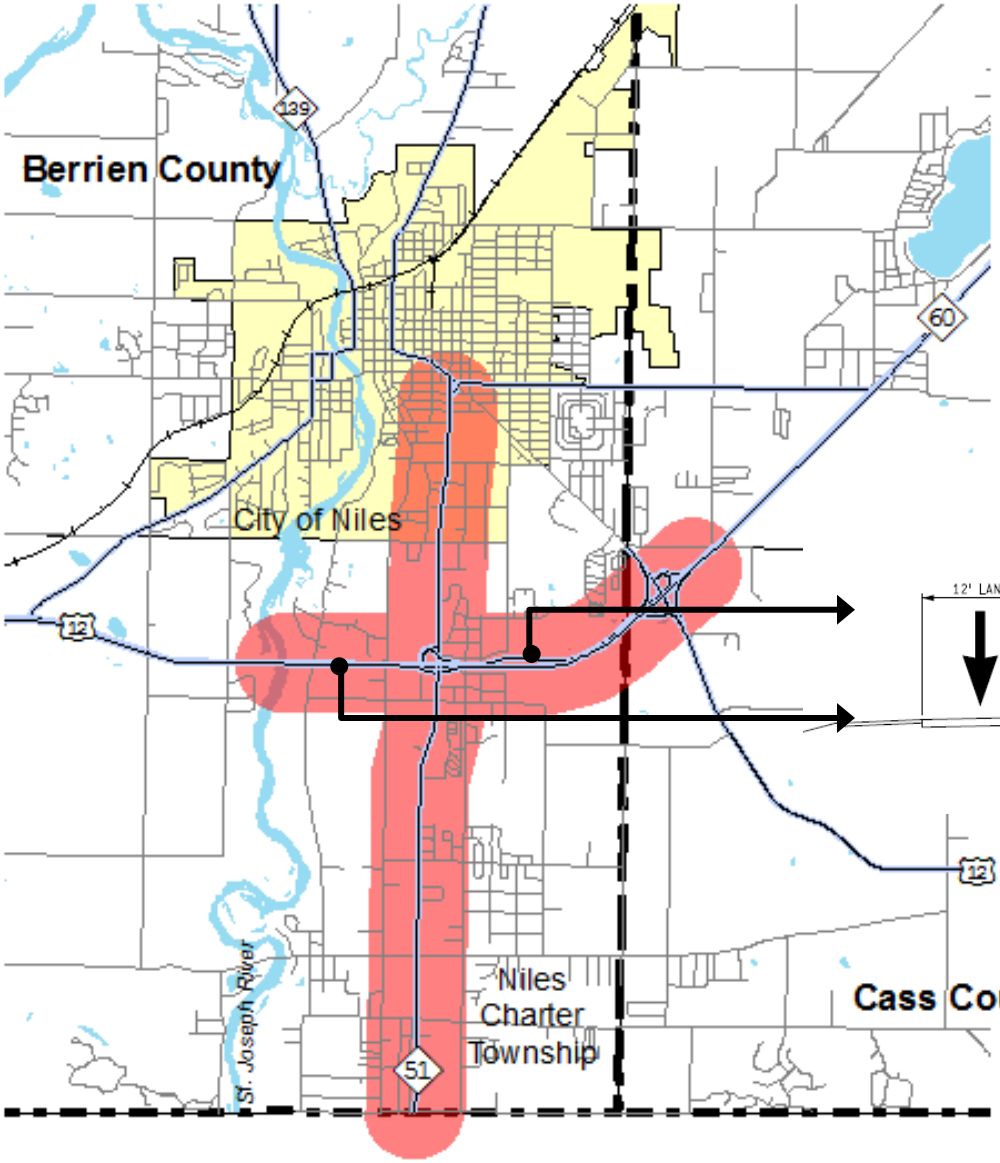
Existing Laneage – M-51

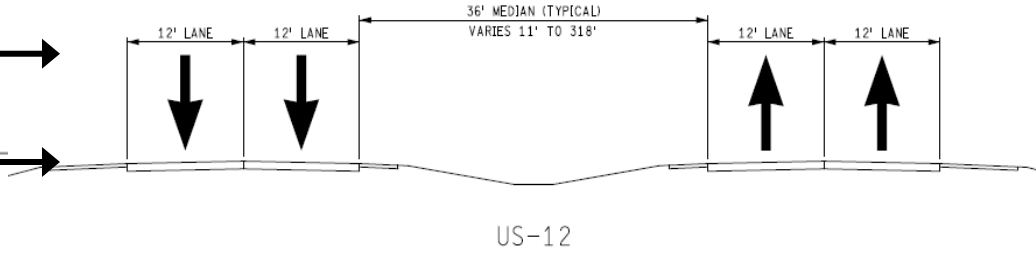




M-51

Existing Laneage – US-12





M-51 Pavement Conditions

US-12 Bridge Condition

- Existing bridges are in need of replacement

Piers

- Exposed Rebar
- Cracking Concrete
- Concrete Surface Flaking Off

Deck Surface

- Cracking
- Leaking

Deck Underside

- Minor rust stains on permanent metal decking
- False bottom to catch crumbling concrete

Beams

- Section Loss (i.e. rust)
- Pack Rust at majority of beams

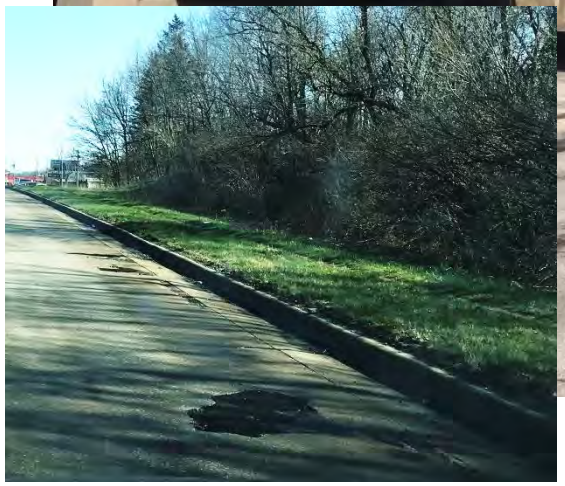
Bridge Railing

- Exposed Rebar
- Cracking Concrete
- Concrete Surface Flaking Off

Bridge Approaches

- Settlement
- Pavement Cracking
- Patch Deterioration

Walkability is a Concern

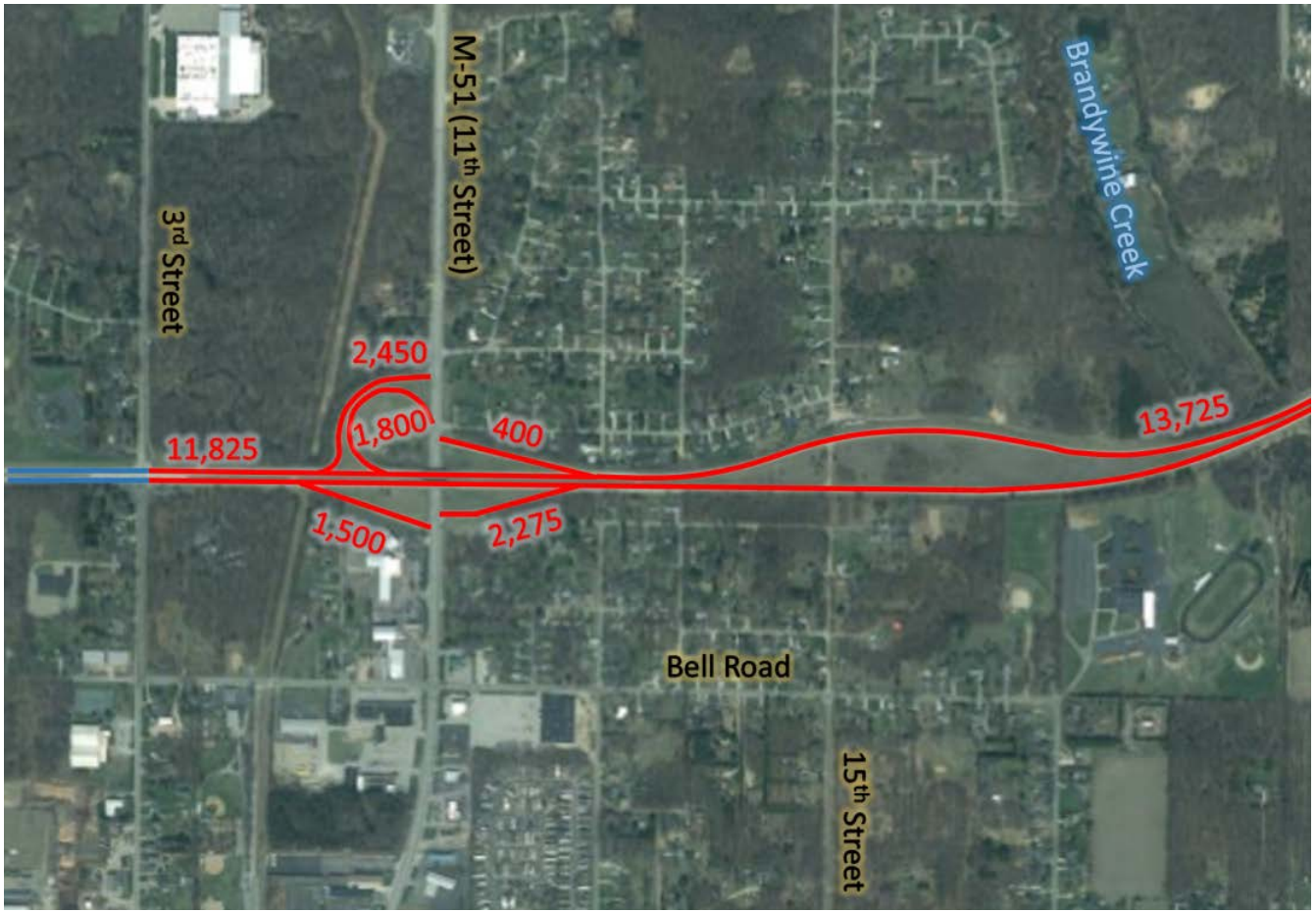


- Add sidewalk along M-51, including through interchange area

Walkability is a Concern

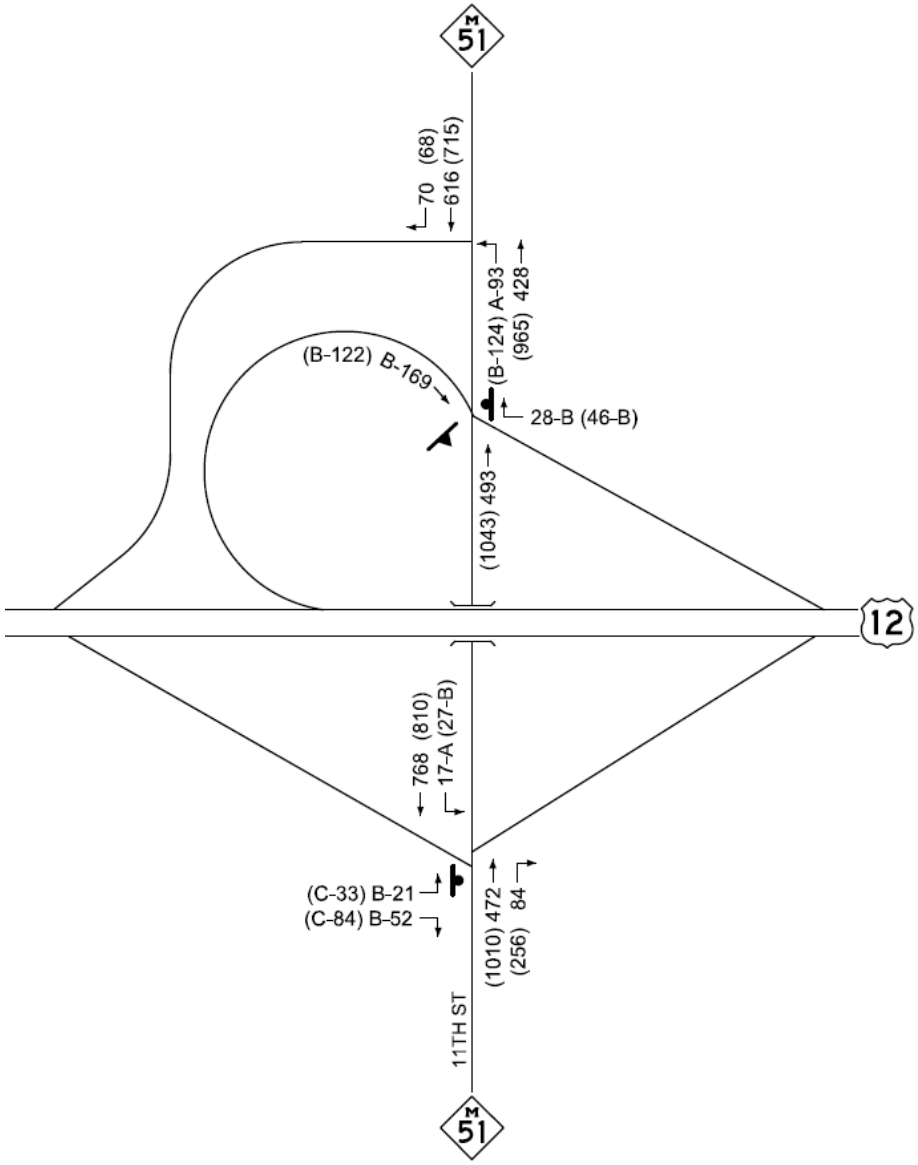
- Add sidewalk ramps and marked crosswalks

Existing Traffic Volumes (2018)



Peak-Hour Traffic

- Existing (2018) Level of Service is "A" and "B" range (acceptable)
- Projected (2043) Level of Service is "B" and "C" range (acceptable)



US-12 @ M-51 Crashes (2015-2017)

Crash Type/ Location	Angle	Rear-End	Fixed Object	Side Swipe	Other	Total
EB US-12 Off-ramp @ M-51	2	9	1	0	6	18
EB US-12 On-ramp @ M-51	1	0	2	0	0	3
WB US-12 Off-ramp @ M-51	0	4	4	3	5	16
WB US-12 On-ramp @ M-51	2	2	0	0	6	10

- No significant crash patterns at the US-12/M-51 interchange

M-51 Intersections Crashes (2013-2015 vs 2015-2017)

- 3 intersections had large crash reductions (shaded in table), 2013-2015 vs. 2015-2017
- Bulk of the reduced crashes were rear-end type on M-51, likely due to signal timing optimization in 2016
- 2015 - 2017: Angle crash patterns on M-51 at Silverbrook and at Fort

M-51 in NILES CRASH HISTORY COMPARISON AND AVERAGE CRASH RATES COMPARISON, 2013-2015 vs 2015-2017

M-51 Intersection	Total Crashes		Crash Rate[2]	
	2013 - 2015	2015 - 2017	2013 - 2015	2015 - 2017
M-51 (11th) @ Silverbrook	65	51	2.18	1.71
M-51 (11th) @ Fort[1]	34	34	1.34	1.34
M-51 (11th) @ Bell	63	50	1.95	1.55
M-51 (11th) @ Chestnut	51	47	1.77	1.63
M-51 (11th) @ Fulkerson	39	16	1.52	0.63
M-51 (11th) @ Bertrand	30	31	1.21	1.21
TOTAL CRASHES	282	229		

[1] Overhead flashing beacon.

[2] Crashes per 1 million entering vehicles.

Source: Crash Data-Traffic Crash Analysis Tool 2.0, Traffic Improvement Association

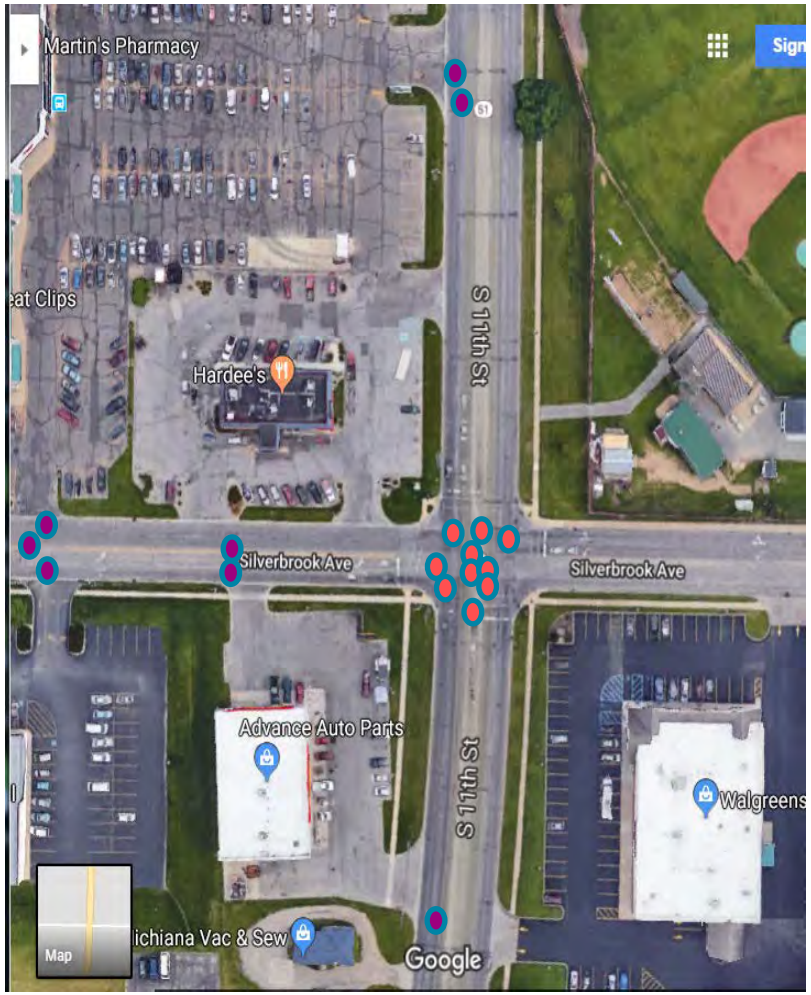
Source: Crash Rates-Crash Analysis Process, SEMCOG, Appendix A, January 2016

Large crash reduction

M-51 @ Silverbrook Ave Crashes (2015-2017)

- Angle crash pattern:
  - 10 intersection Angle crashes
  - 8 driveway-related Angle crashes

M-51 @ Silverbrook Ave – 18 Angle Crashes (10 intersection, 8 driveway)



Intersection Angle Crash

Driveway-related Angle Crash

M-51 @ Fort St Crashes (2015-2017)

- Angle crash pattern:
  15 Angle crashes
- 6 intersection Angle crashes, mostly SB-to-EB
- 9 driveway Angle crashes (5 at Taco Bell driveway)
- 17 driveways are located within 250 feet of the intersection

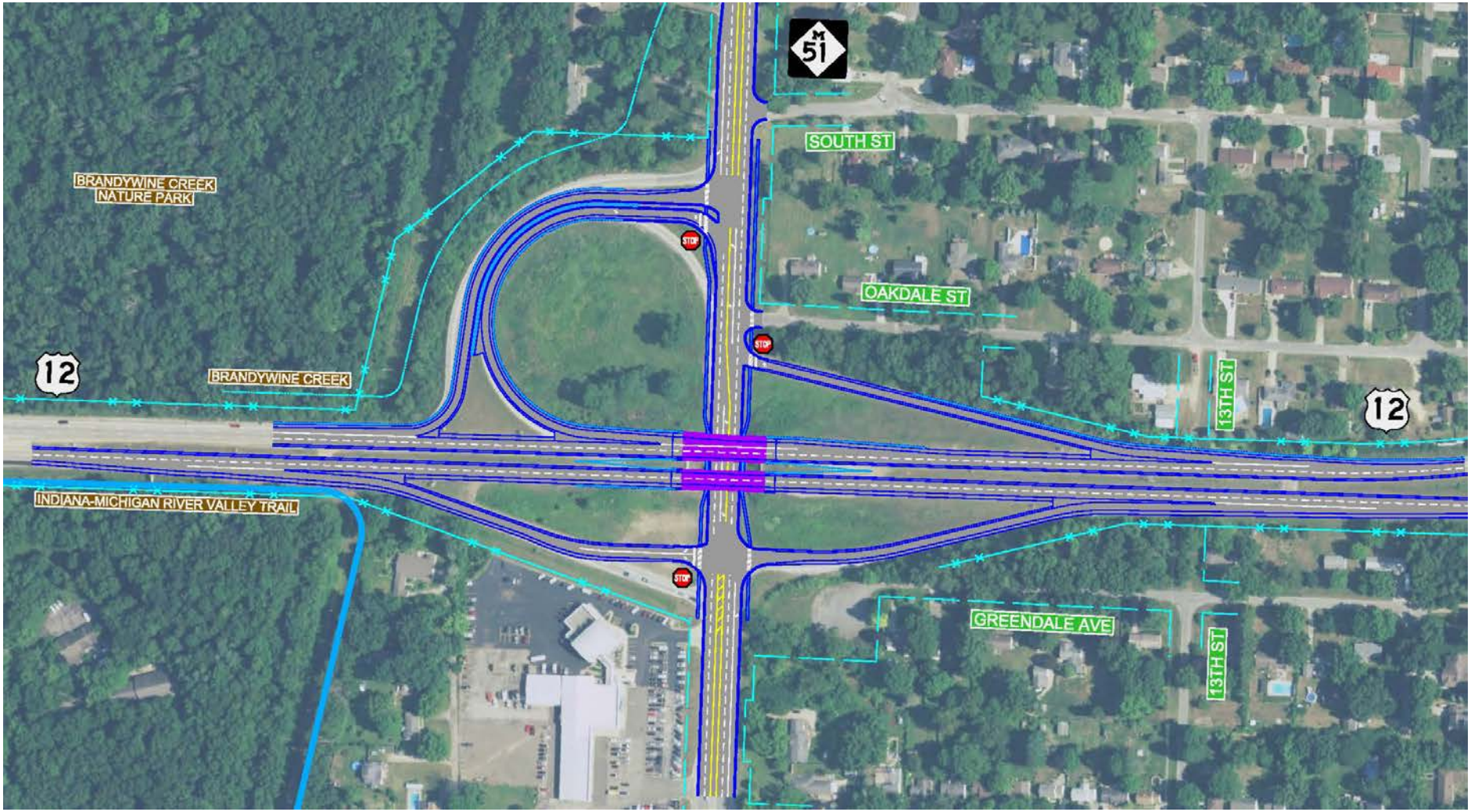
Intersection Angle Crash

Driveway-related Angle Crash

M-51 @ Fort St –
15 Angle Crashes
(6 intersection, 9 driveway)

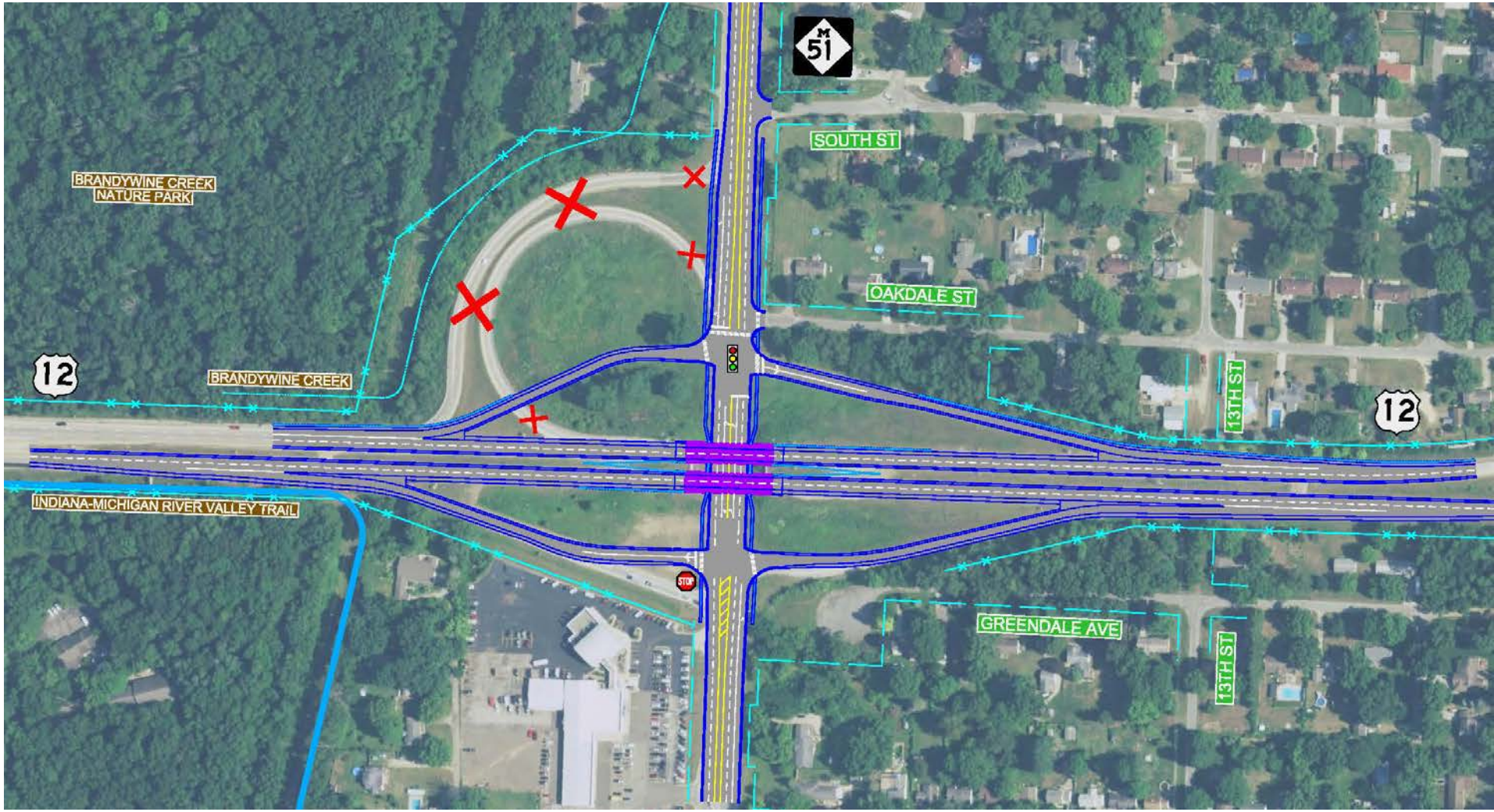
Interchange Preliminary Alternative Ideas

Rebuild Existing Interchange



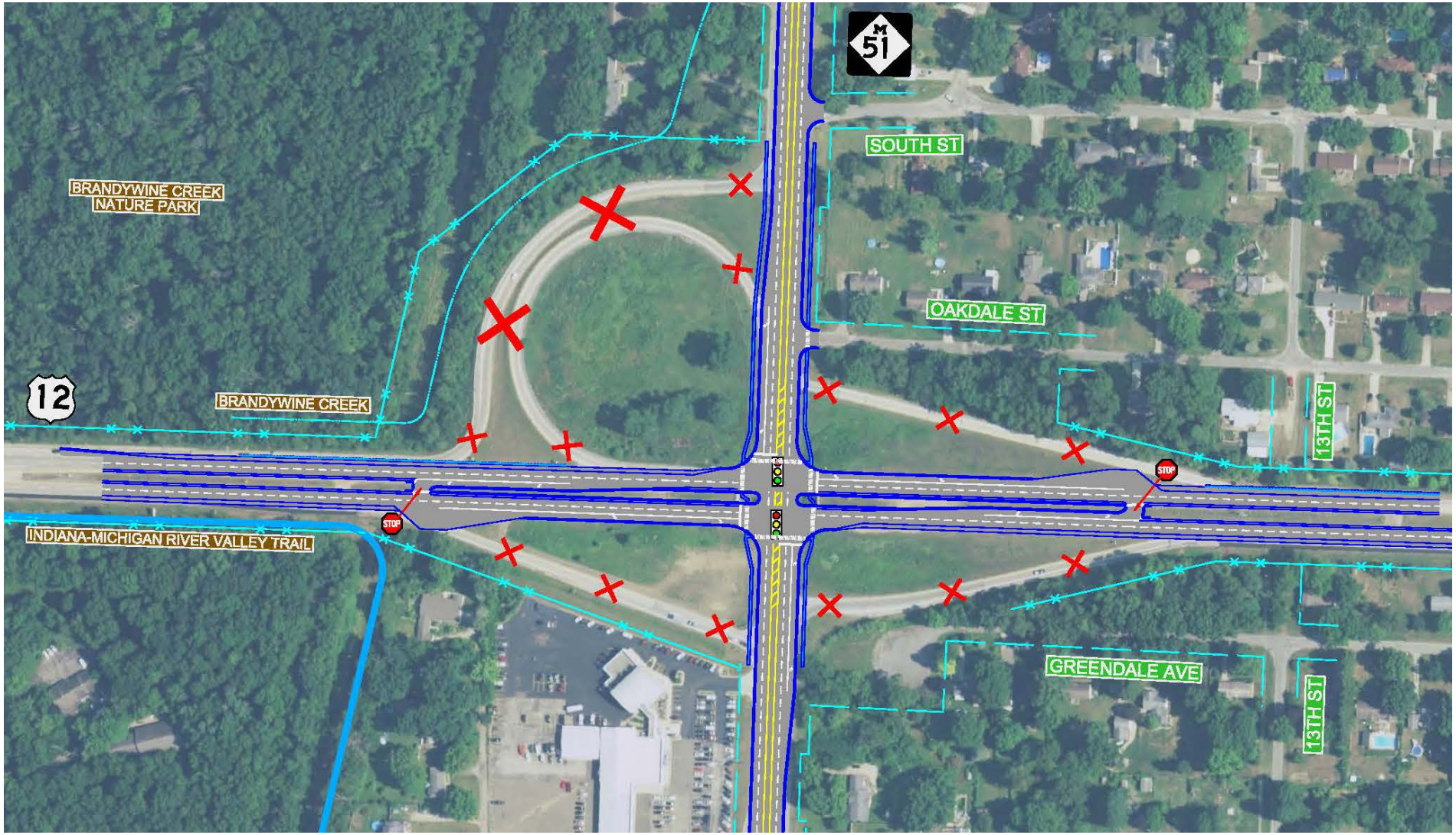
Interchange Preliminary Alternative Ideas

Alternative #1 – Grade-Separated Diamond Interchange



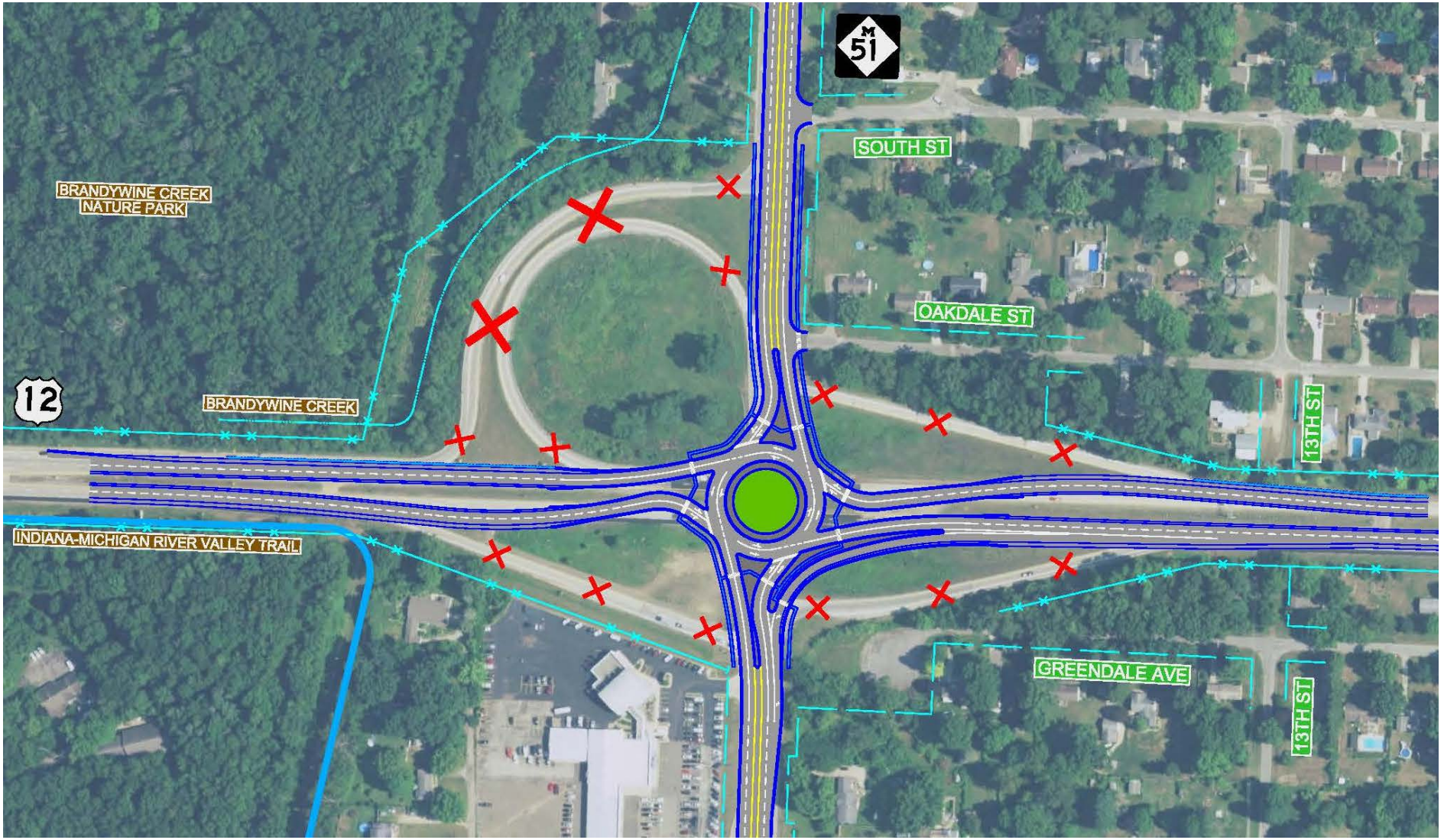
Interchange Preliminary Alternative Ideas

Alternative #2 – At-Grade Signal with Indirect Left-Turns



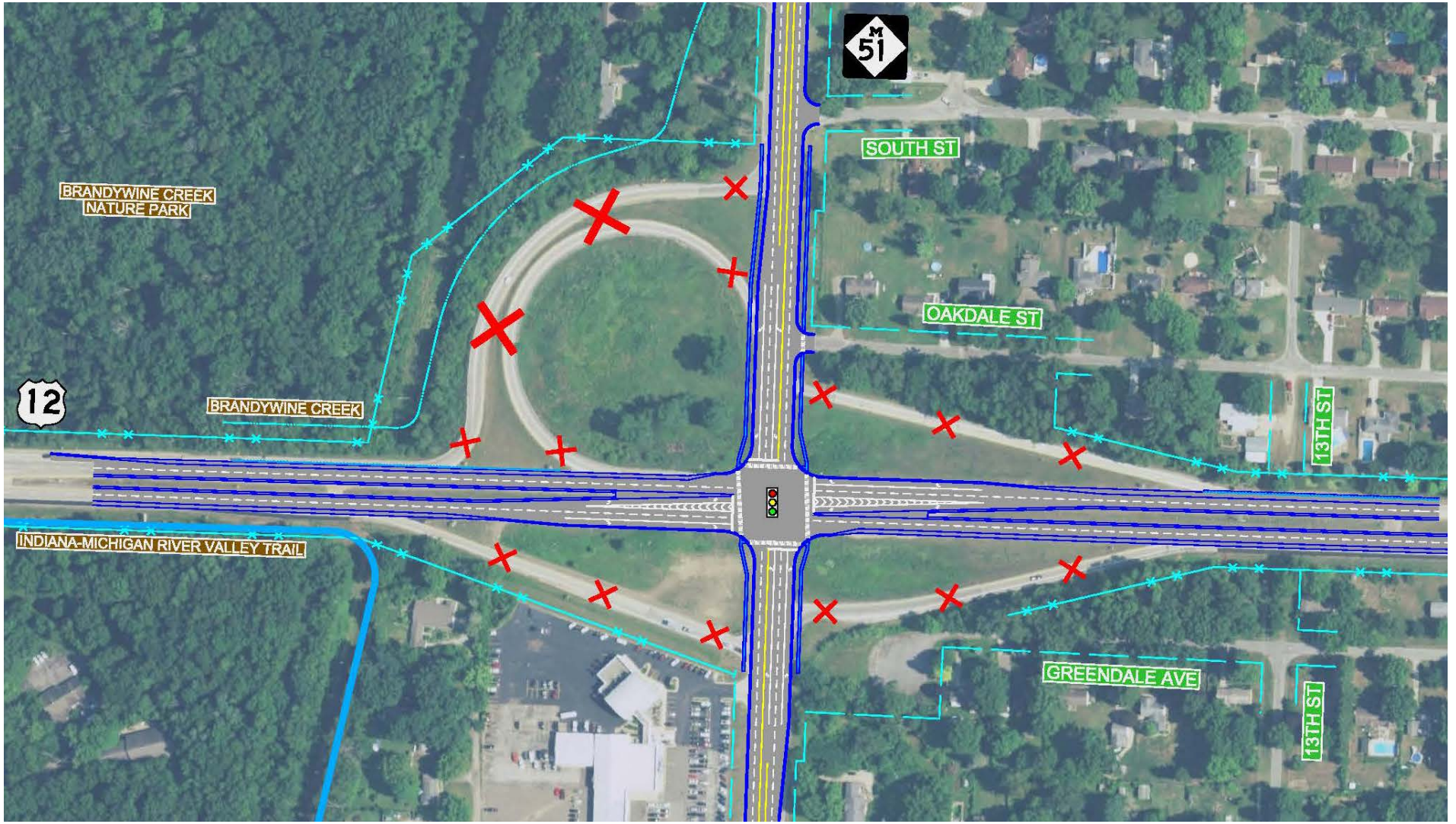
Interchange Preliminary Alternative Ideas

Alternative #3 – At-Grade Roundabout



Interchange Preliminary Alternative Ideas

Alternative #4 – At-Grade Signal with Direct Left-Turns



Traffic Operations Comparison

Alternative	Travel Delay	Pedestrian Accommodations	Motorist Safety	Geometry
Rebuild Existing Interchange	●	●	●	●
Alternative #1 – Grade-Separated Diamond Interchange	●	●	●	●
Alternative #2 – At-Grade Signal with Indirect Lefts	●	●	●	●
Alternative #3 – At-Grade Roundabout	●	●	●	●
Alternative #4 – At-Grade Signal with Direct Lefts	●	●	●	●

● Very Good ● Acceptable ● Not Preferable

Preliminary Construction Cost Estimate (M-51/US-12 Interchange Area ONLY)

Alternative	Construction Cost Estimate
Rebuild Existing Interchange	$16.2 million
Alternative #1 – Grade-Separated Diamond Interchange	$15.0 million
Alternative #2 – At-Grade Signal with Indirect Lefts	$8.7 million
Alternative #3 – At-Grade Roundabout	$8.7 million
Alternative #4 – At-Grade Signal with Direct Lefts	$8.5 million

Stakeholder and Public Involvement

- MDOT wants your input! Comment forms are provided.
- What kind of input is MDOT looking for?
  - What works well along M-51 and at the M-51/US-12 interchange?
  - What does not work well along M-51 and at the M-51/US-12 interchange?
  - What is missing?
- Open House format – Study team available to answer questions.
- Study in accordance with MDOT "Complete Streets Policy"

Where do we go from here?

- AECOM and MDOT will compile today's comments and post to project website.
- AECOM and MDOT will refine alternatives that best meet the goals and objectives.
  - Geometrics
  - Traffic Operations and Safety
  - Cost Estimates
- Next Stakeholder Meeting in late August 2018
  - Present refined Preliminary Alternatives
  - Comment on Alternatives

Contact Person

Kyle Rudlaff

Michigan Department of Transportation

Southwest Region Office

1501 Kilgore Road

Kalamazoo, MI 49001

PH: 269-337-3928

rudlaffk@michigan.gov

Thank you!

QUESTIONS?

The AECOM Team:
AECOM, Bergmann Associates and SME