Session 1
23 CFR 772: Type I Project Definitions

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- Participants:
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  - Mariano Berrios, Florida DOT
  - Tom Hanf, Michigan DOT
  - Greg Smith, North Carolina DOT

What are Type I Projects?

per FHWA Traffic Noise FAQs, May 2015

1. The construction of a highway on a new location

Type I Projects – continued

2. The physical alteration of an existing highway where there is either:

   a. **Substantial Horizontal Alteration.** A project that halves the distance between the traffic noise source and the closest receptor, from the existing condition to the future build condition, or;

Type I Projects – continued

b. Substantial Vertical Alteration. A project that removes shielding, exposing the line-of-sight between receptor and traffic noise source - by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor

Increasing the Height of an Overcrossing

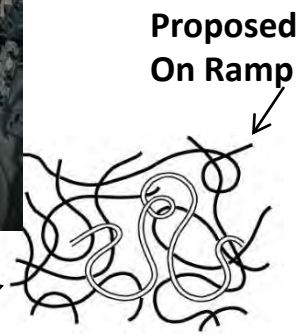
Multi-Use Path: Constructing a Gap in the Berm

Type I Projects – continued

3. The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a HOV lane, High-Occupancy Toll (HOT) lane, bus lane, or truck climbing lane; or,

4. The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane; or,

5. The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange; or,



Type I Projects – continued

6. Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane

7. The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot or toll plaza.

Portland Ride-Share

If a project is determined to be a Type I project under this definition then the entire project area as defined in the environmental document is a Type I.

Florida Department of
TRANSPORTATION

Type I Projects Definitions

CEE Noise Practitioners Summit 2015
October 21-22, 2015
Baltimore, MD

Mariano Berrios
Environmental Programs Coordinator
Florida Department of Transportation

Today's Presentation

- What's in 23 CFR 772?
- What's in the FHWA guidance?
- Florida's additional definitions for auxiliary lanes and interchange ramps work

What's in 23 CFR 772?

Type I project

- (1) Construction of highways on new location
- (2) Physical alteration of existing highway – horizontal or vertical
- (3) The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a HOV lane, High-Occupancy Toll (HOT) lane, bus lane, or truck climbing lane; or,
- (4) The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane; or,
- (5) The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange; or,

What's in 23 CFR 772?

Type I project

- (6) Restriping existing pavement to add additional through traffic lanes or auxiliary lanes
- (7) Addition of a new or substantial alteration of weigh stations, rest stops, ride share lots, or toll plazas

What's in the FHWA guidance?

FHWA Guidance for Type I Projects Involving Auxiliary Lanes:

- The addition of an auxiliary lane is a Type I project, unless the auxiliary lane is a turn lane.
- Highway agencies should take a broad approach to defining turn lanes when considering projects with auxiliary lanes.
- Consideration of auxiliary lanes on local roads should be limited to those that could be used as a through lane (including bus or truck climbing lanes) rather than lanes used for parking, speed change, turning or storage for turning or weaving.
- For interstates, limit consideration to auxiliary lanes between two closely spaced interchanges to accommodate weaving traffic and auxiliary lanes carried through one or more interchanges.

Auxiliary Lanes

Auxiliary Lanes:

Florida's "Plans Preparation Manual" defines "auxiliary lanes" as:
"The designated widths of roadway pavement marked to separate speed change, turning, passing and climbing maneuvers from through traffic. They may also provide short capacity segments."

Wikipedia
A turn lane is set aside for slowing down and making a turn, so as not to disrupt traffic. By removing turning traffic from the through lanes, motorist safety is improved and delay is removed.

Auxiliary Lanes

Sooo…. based on 23 CFR 772, addition of an auxiliary lane is Type I project.

Based on the FDOT definition of auxiliary lane, the following could be Type I projects:

- Acceleration lanes
- Deceleration lanes
- ~~Turning lanes~~
- ~~Two way left turn lanes~~
- Weaving lanes
- Passing lanes
- Truck climbing lanes (not many in Fl.)
- Operational lanes (extra lane between interchanges)

Auxiliary Lanes

FHWA guidance:

Local roads – limit consideration to auxiliary lanes that could be used as through lanes (including bus or truck lanes).

Argument: Define “auxiliary lanes that could be used as through lanes”.

Interstates (freeways and expressways?) – limit consideration to:

- auxiliary lanes between two closely spaced interchanges (to accommodate weaving) and -
- auxiliary lanes carried through one or more interchanges (operational lanes)

Argument:

- What is a closely spaced interchange? (See table in next slide)
- Other auxiliary lanes (other than lanes carried though one or more interchanges) between “not” closely spaced interchanges. (Ex. Long acceleration lanes)

Interchange Ramps

Interchange lanes and ramps

Not much guidance on what constitutes…

addition or relocation of interchange lanes
ramps added to a quadrant to complete an existing partial interchange

…other than the language in the rule.

Adding a lane – Are all lane additions considered adding capacity, therefore a Type I?
What constitutes a lane relocation? Distance relocated? New distance between outside of lane and receptor (reduce by ½)?
Realignment of existing ramps – not addressed, how much realignment? Considered a lane relocation?
Extension (lengthening) of existing acceleration lanes (max. length of acceleration lane?)

Florida Specific Additions to Type I List

Based on discussions with the FHWA Florida Division and new on-line guidance from FHWA….

FDOT developed a Type I Projects Matrix to assist the FDOT Districts in better identifying what projects are considered Type I projects including clarification of unique situations that are not clear in the rule or guidance.

Matrix

	Type 1	Not Type 1 (No Noise Study Required)
1	Construction of highway on new location	
2	New or relocated interchanges	
3	Addition of new interchange ramps (add a ramp where no ramps existed). Viewed as a new location.	
4	Relocation of an interchange ramp where the edge of the outside lane on any segment of the ramp reduces the distance to the closest receptor by one-half. (See #6 for realignment of ramps)	

Matrix

5	Increasing capacity to an existing on or off interchange ramp (by adding lanes) including associated merge lanes. Viewed as a new location.	
6	Lengthening an existing interchange ramp's acceleration or deceleration lane and associated merging into the mainline to a total of more than 2500 feet (from the gore to the end of the lane), or re-aligning where any segment of the ramp reduces the distance to the closest receptor by one-half.	Lengthening an existing interchange ramp's acceleration or deceleration lane and associated merging into the mainline (total length less than 2500 feet), or re-aligning where any segment of the ramp reduces the distance to the closest receptor by one-half.
7	Alteration of the horizontal alignment of an existing highway such that the edge of the outside lane reduces the distance to the closest receptor by one-half.	Alteration of the horizontal alignment of an existing highway such that the edge of the outside lanes DOES NOT REDUCE the distance to the closest receptor by one-half.

Matrix

8	Alteration of the vertical alignment, or the surrounding topography, where existing shielding is removed and the line of sight between the noise source and the receptor is now direct. (Activity does not include removal of vegetation).	
9	Addition of new through-lanes that increase capacity to an existing highway. (Noise analysis required on both sides of the highway whether the lanes are all in one direction or both directions of travel.)	
10	Restriping existing pavement to add a through-lane or auxiliary lane (See #13, #14 and #15 for auxiliary lanes).	

Matrix

11	Addition of new or substantially altered weight station, rest stop, ride share lot or toll plaza.	
12	Addition of ramps or new lanes serving as climbing lanes for buses and trucks.	
13	Addition of auxiliary lanes used as a through lanes on local roads.	

Matrix

14	Auxiliary lanes on freeways and expressways connecting two or more interchanges (continuous lanes longer than 2500 feet from gore to gore).	Auxiliary lanes on freeways and expressways connecting two closely spaced interchanges (less than 2500 feet from gore to gore) to accommodate weaving traffic.
15		Turn lanes at intersections associated with arterial highways
16		Bicycle and Pedestrian paths
17		Safety activities (23 USC 402)
18		Landscaping

Matrix

19		Installation of fencing, signs, pavement markings, small passenger shelters, traffic signals, railroad warning signals (that don't disrupt traffic patterns)
20		Deployment of electronics, photonics, communications, information processing to improve safety and security
21		Re-surfacing, restoration, rehabilitation or reconstruction of an existing facility (unless there is a change in horizontal or vertical alignment per 7 & 8 above).
22		Electronic toll collection facilities that do not disrupt traffic patterns.

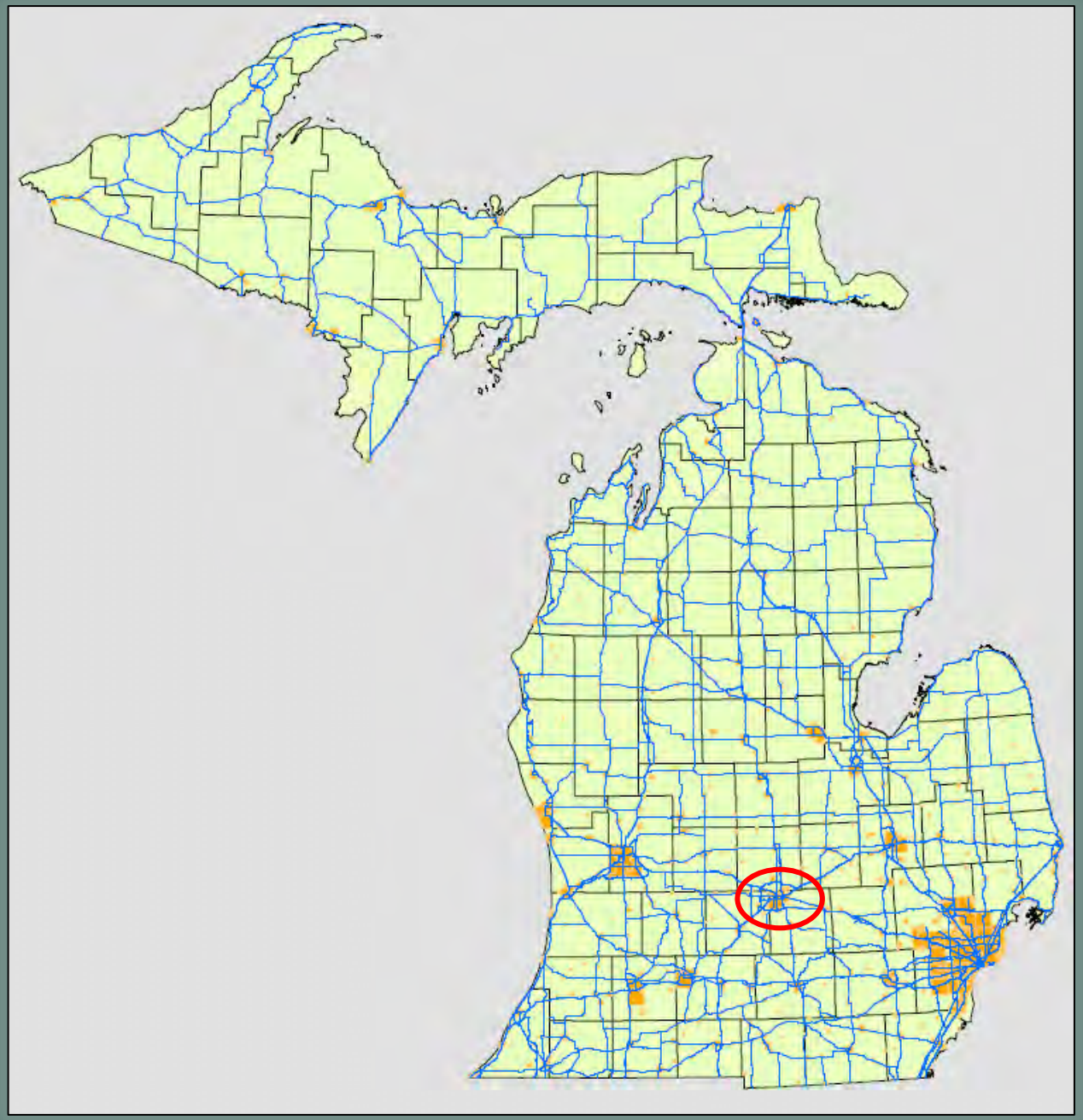
Input?
Discussion?
Questions?

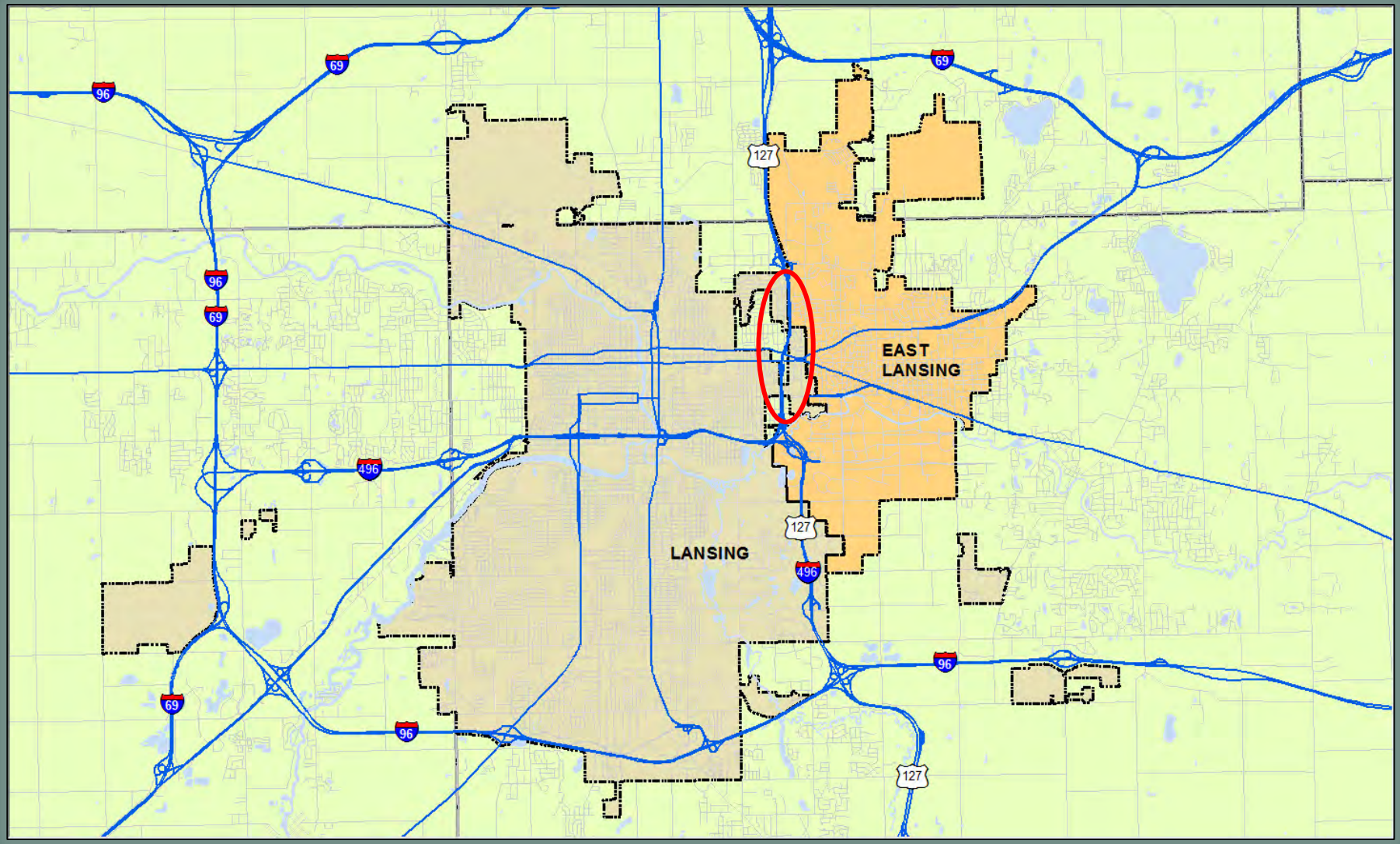
TYPE I

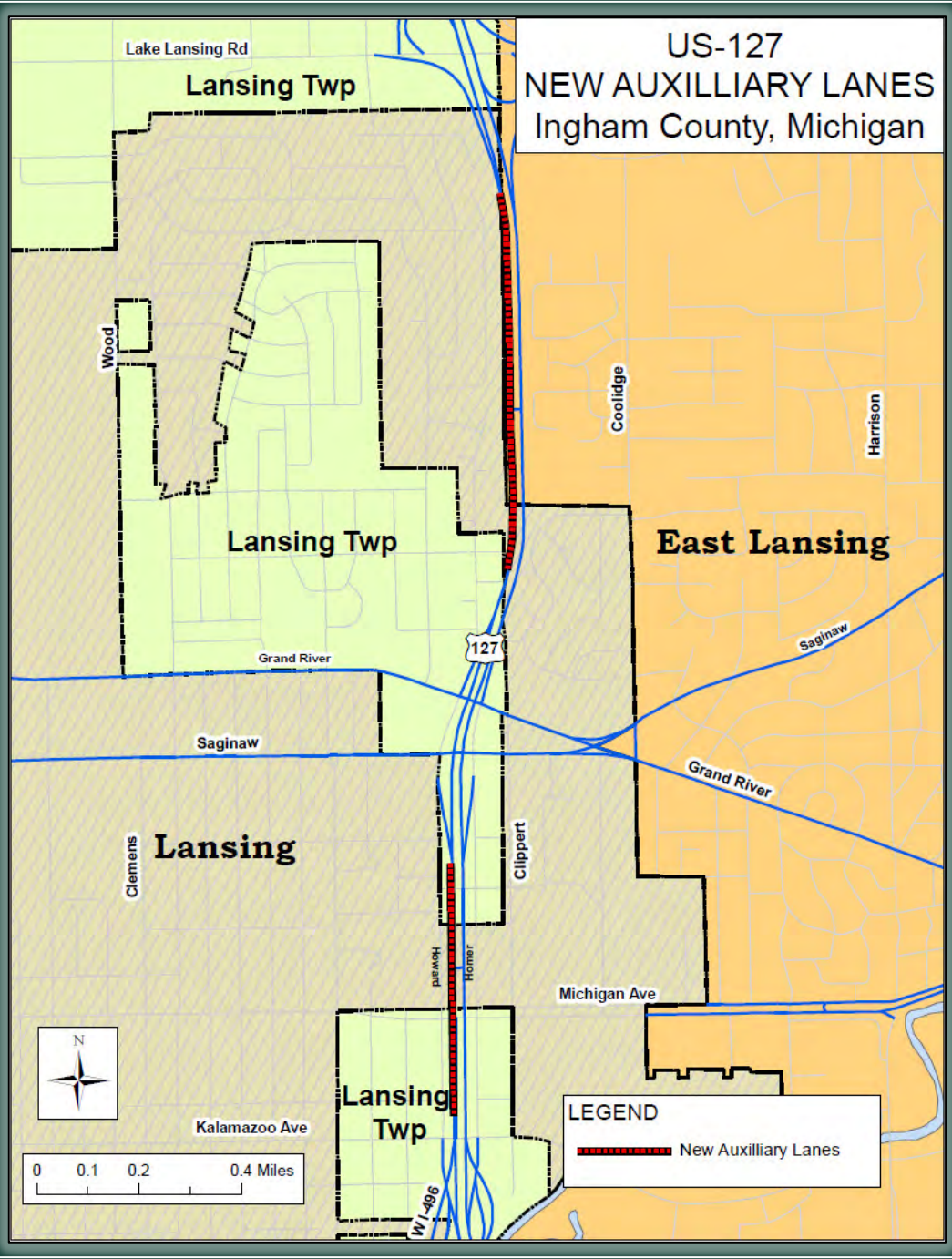
Michigan DOT Experience

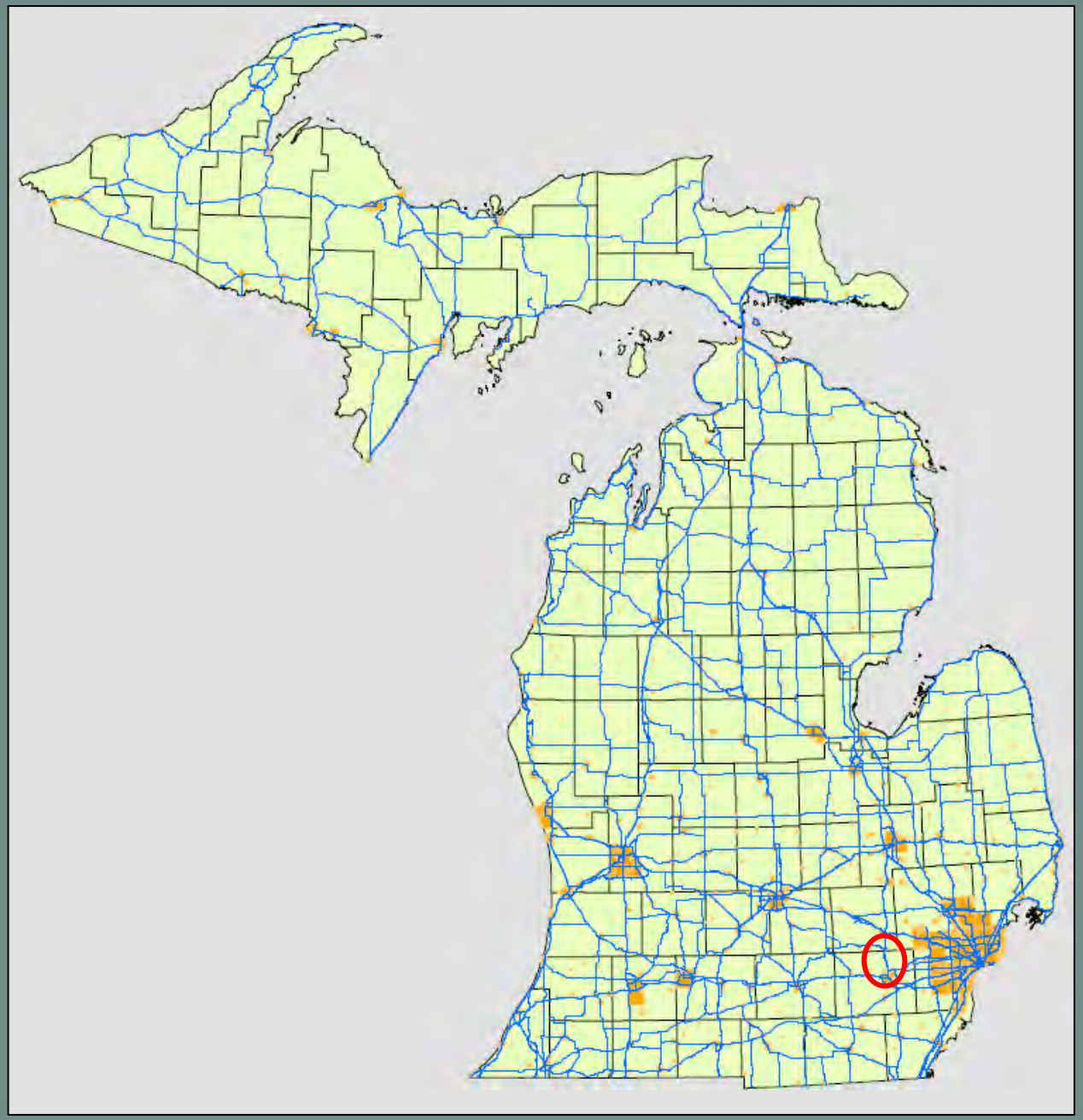
CEE Noise Practitioners' Summit
Baltimore, Maryland
October 21-22, 2015

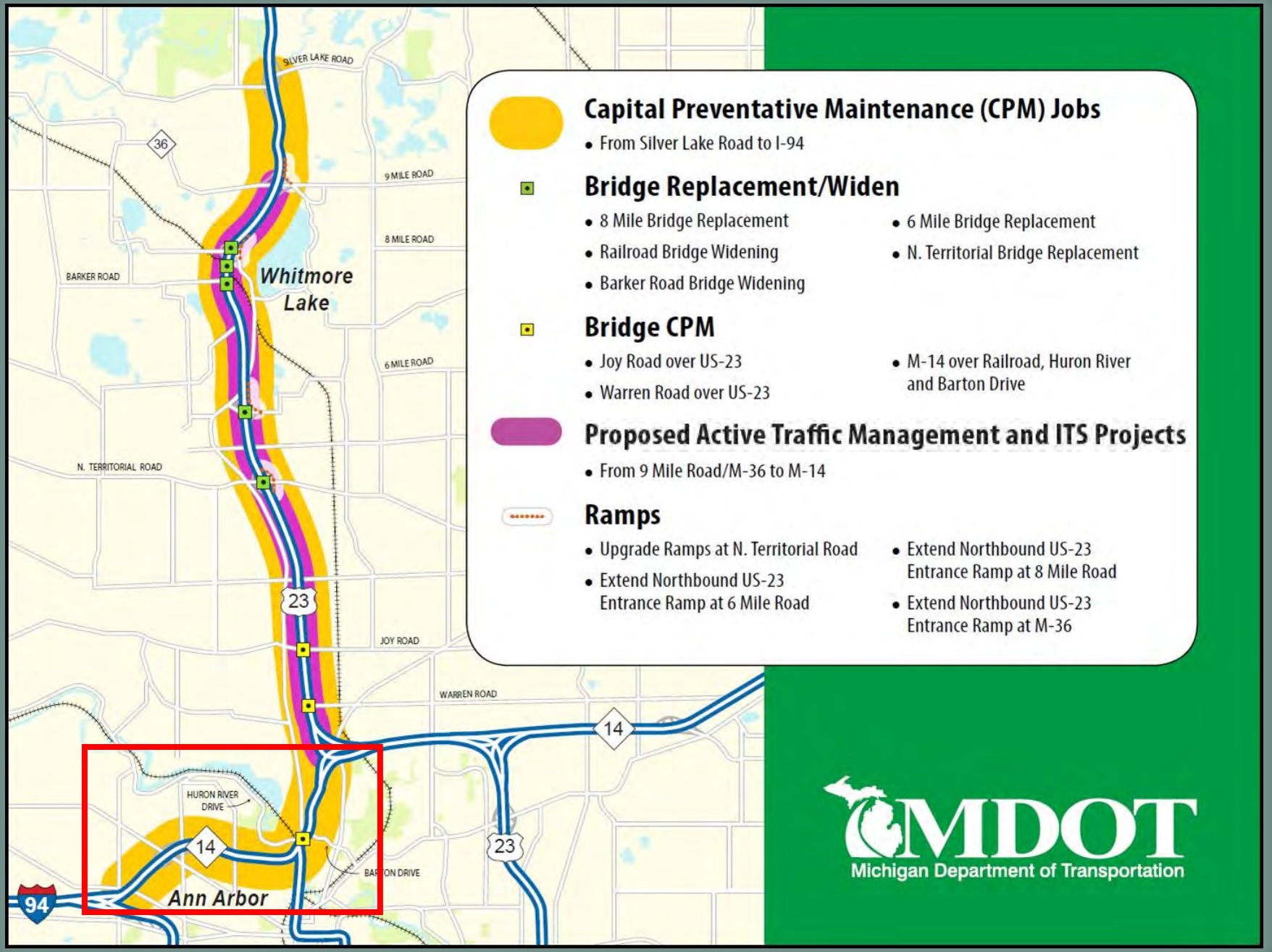
Tom Hanf
Michigan DOT

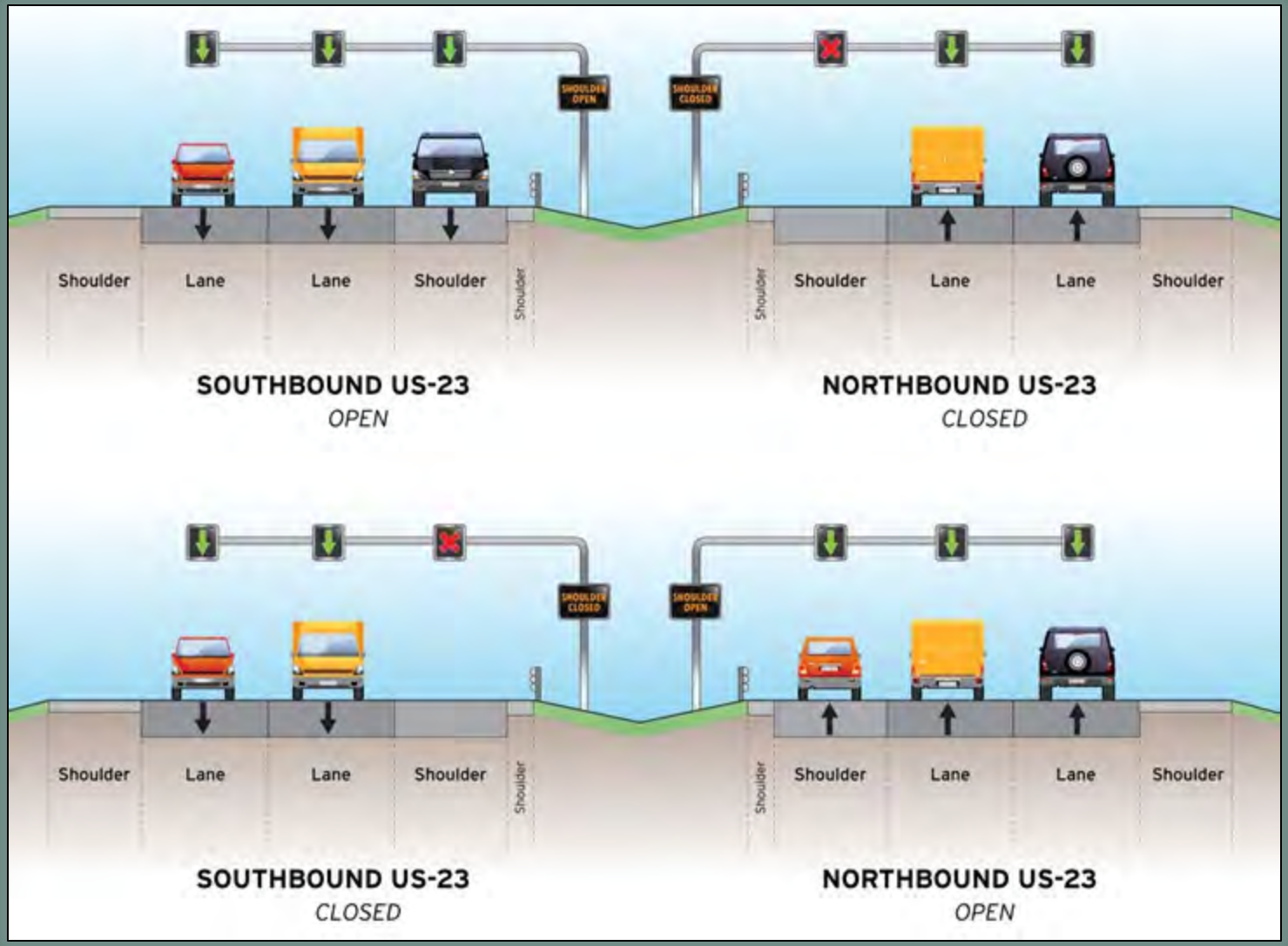



69
96
127
EAST
LANSING
496
LANSING


US-127
NEW AUXILLIARY LANES
Ingham County, Michigan
Lake Lansing Rd
Lansing Twp
Wood
Lansing Twp
Coolidge
Harrison
East Lansing
127
Grand River
Saginaw
Saginaw
Grand River
Clemens
Lansing
Clippert
Howard
Homer
Michigan Ave
N
Kalamazoo Ave
Lansing Twp
0 0.1 0.2 0.4 Miles
I-496
LEGEND
New Auxilliary Lanes




SILVER LAKE ROAD
36
9 MILE ROAD
8 MILE ROAD
BARKER ROAD
Whitmore Lake
6 MILE ROAD
N. TERRITORIAL ROAD
23
JOY ROAD
WARREN ROAD
14
HURON RIVER DRIVE
14
BARTON DRIVE
23
94
Ann Arbor
Capital Preventative Maintenance (CPM) Jobs
• From Silver Lake Road to I-94
Bridge Replacement/Widen
• 8 Mile Bridge Replacement
• Railroad Bridge Widening
• Barker Road Bridge Widening
• 6 Mile Bridge Replacement
• N. Territorial Bridge Replacement
Bridge CPM
• Joy Road over US-23
• Warren Road over US-23
• M-14 over Railroad, Huron River and Barton Drive
Proposed Active Traffic Management and ITS Projects
• From 9 Mile Road/M-36 to M-14
Ramps
• Upgrade Ramps at N. Territorial Road
• Extend Northbound US-23 Entrance Ramp at 6 Mile Road
• Extend Northbound US-23 Entrance Ramp at 8 Mile Road
• Extend Northbound US-23 Entrance Ramp at M-36
MDOT
Michigan Department of Transportation


SHOULDER OPEN
SHOULDER CLOSED
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SOUTHBOUND US-23
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NORTHBOUND US-23
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SHOULDER CLOSED
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NORTHBOUND US-23
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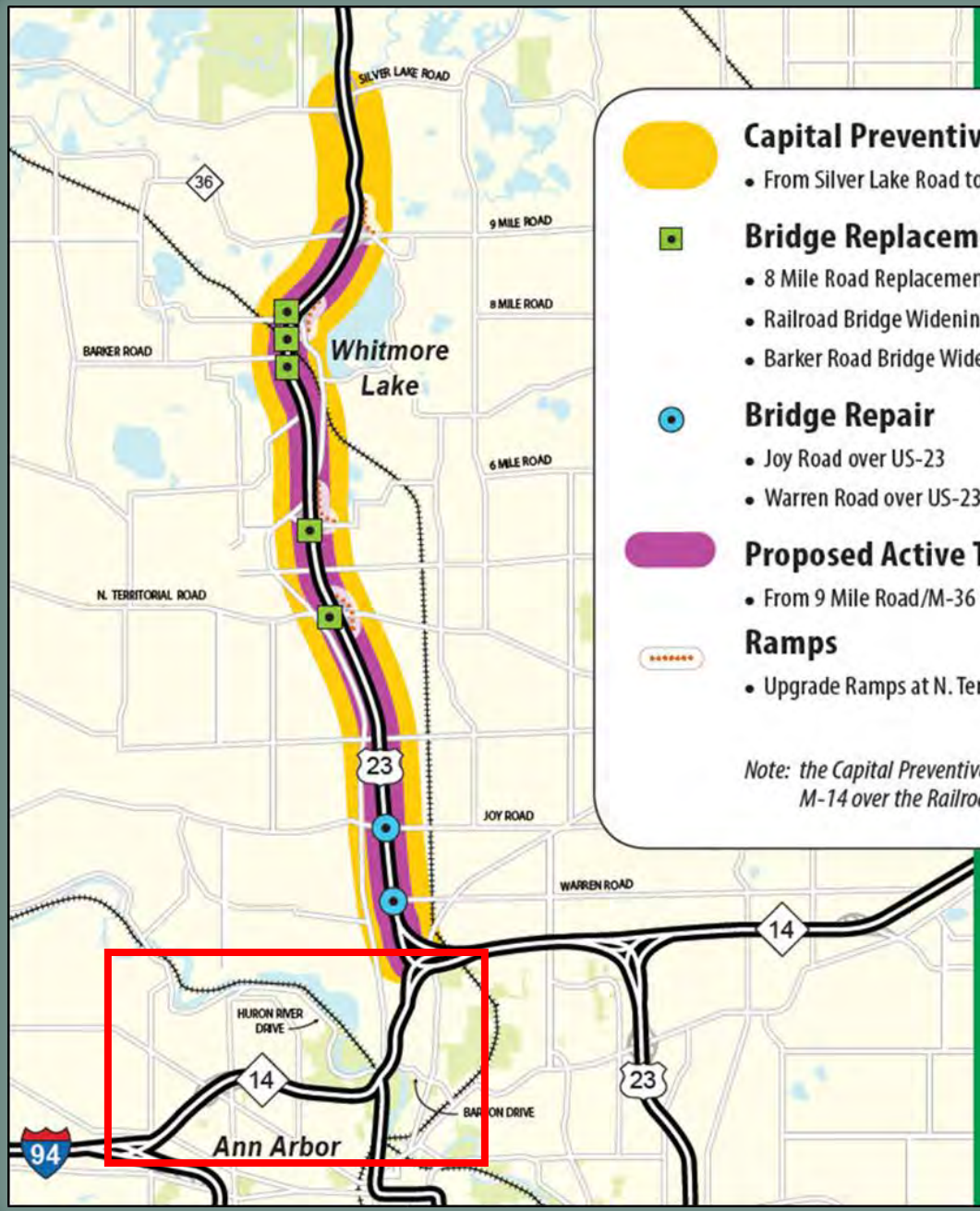


Capital Preventive Maintenance (CPM) Jobs

- From Silver Lake Road to I-94

Bridge Replacement/Widen

- 8 Mile Road Replacement
- Railroad Bridge Widening
- Barker Road Bridge Widening
- 6 Mile Road Replacement
- N. Territorial Bridge Replacement

Bridge Repair

- Joy Road over US-23
- Warren Road over US-23

Proposed Active Traffic Management and ITS Projects

- From 9 Mile Road/M-36 to M-14

Ramps

- Upgrade Ramps at N. Territorial Road, 6 Mile Road, 8 Mile Road and M-36

Note: the Capital Preventive Maintenance project on M-14 and the bridge work on M-14 over the Railroad, Huron River and Barton Drive will be a seperate project.

MDOT
Michigan Department of Transportation

For More Information:
Contact the Brighton TSC, 810-227-4681

Other Type I Challenges

Park and Ride Lots

Substantial Vertical Alteration

Thank You!

Type I Project Definitions Considerations

2 NC Projects for Consideration

CEE Noise Summit
Session 1

Baltimore, MD
October 21, 2015

Morrisville-Carpenter Road Safety Improvements

228 Total Receptors

69 Existing Impacts 69 No-Build Impacts 91 Build Impacts

2.0 dB(A) Average NL Increase 3 dB(A) Maximum NL Increase

Morrisville-Carpenter Road Safety Improvements

Morrisville-Carpenter Road Safety Improvements

Morrisville-Carpenter Road Safety Improvements

Morrisville-Carpenter Road Safety Improvements

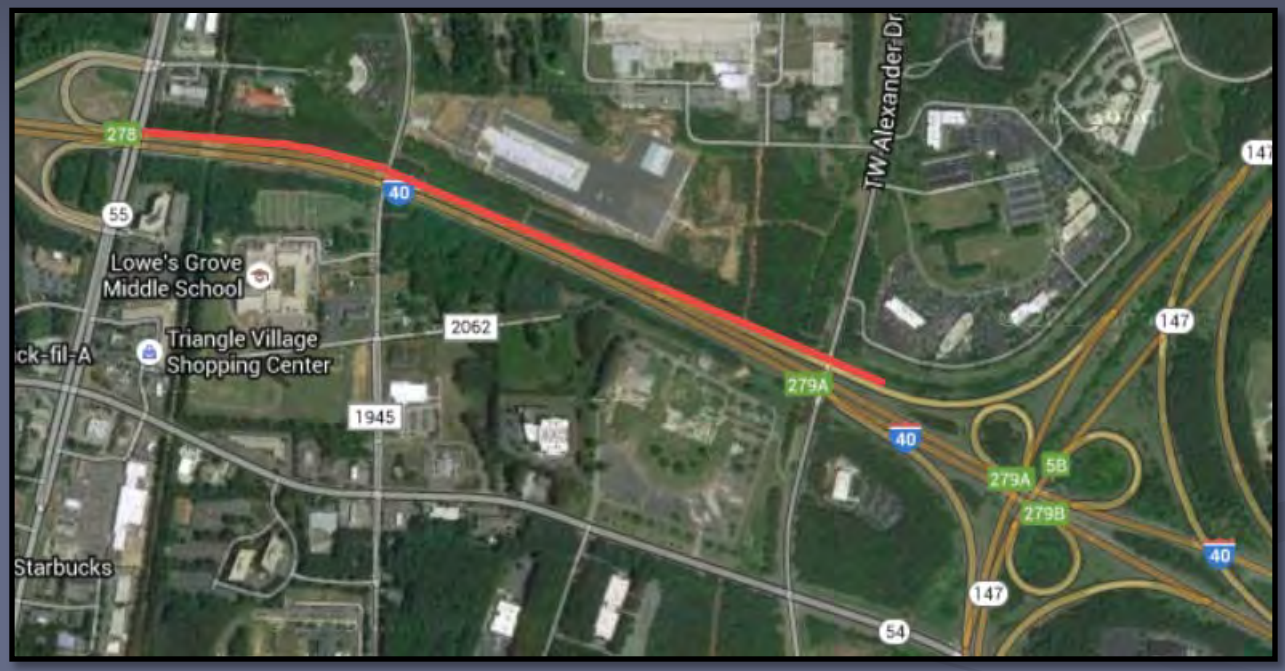
- Estimated Project Construction = $ 1,015,000
- Estimated Total Wall Cost = $ 560,000 - $ 830,000

or

55 – 82 % of Construction Cost

Project Abandoned

I-40 Between Interchanges



- Approximately 4500 ft. Lane Between Interchange Ramps To Provide Safer Weave Pattern
- Ends in Exit Ramp (Right Turn)

I-40 Between Interchanges

- Per FHWA Online FAQ, "an auxiliary lane should classify the project as Type I if the auxiliary lane is 2,500 feet or longer".
- Per 23 CFR 772, A Type I project is required with "the addition of an auxiliary lane, except for when the auxiliary lane is a turn lane".
- Per FHWA Analysis & Abatement Guidance, "for interstates, limit consideration to auxiliary lanes between two closely spaced interchanges to accommodate weaving traffic and auxiliary lanes carried through one or more interchanges".

Type I Project?

Session 1 - Questions

- Jordahl-Larson, MN: How to determine the “substantial vertical alteration” without having to conduct a full noise impact analysis?
- Guidance on existing barriers on Type I projects
- Tedford, CT: How are Type III Projects defined?
- Runkle, IL: We get pushback from our districts wanting a threshold length on the addition of a through-traffic lane before it is considered Type I. Is IL unique in this?

Session 1 - Questions

- Burgin, KY: Will any other project types be added to the definition of Type I? (such as where traffic volumes and speeds are especially light/slow)
- Hanf, MI: Where do manage use lanes that are only scheduled open during peak periods fit in the definition? Auxiliary lanes, through-traffic lanes?
- Burcham, MO: Under the topic “Issues when an entire project is considered Type I if only part of it is Type I.” increased project costs?

Session 1 - Questions

- Moch, ND: NDDOT has included provision to in Noise Policy Manual to exclude turn lanes or passing lanes that are equal to or less than 2 miles long.
- Evans, NH: Should rumble strip installation projects be added to Type I project definition. Of particular concern is the installation of centerline rumble strips within passing zones adjacent to residential neighborhoods. If included as Type I, what procedures/methods are there for predicting noise levels and determining impacts.
- Dougherty, WV: Should raising the speed limit on an existing FA highway be considered a Type 1 project?

Session 1 - Questions

- Alcala, OH : Issues with the NEPA study area being the noise study area
- Shellenberger, PA: How to handle Type I projects that will only be in place for a limited time until they are reconstructed and will require another analysis. For example, we are restriping to add a lane and mitigation is feasible and reasonable. In a year we are doing a widening to the same roadway. Can we defer the noise analysis or abatement until the second project is completed?
- Polcak, MD: Avoidance of impacts via alignment shift, parapet, etc. vs. analysis and implementation of abatement.