



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
JUNE 17, 2022, 9:00 A.M. – 11:00 A.M.
VIA TEAMS**

Present: Carol Aldrich Tony Kratofil Brad Wieferich
 Gregg Brunner Kristin Schuster Kim Zimmer
 Jason Gutting Brandy Solak Hal Zweng

Absent: Mark Bott Ryan Mitchell Gorette Yung
 Rebecca Curtis Will Thompson

Guests: David Coger Kevin Kennedy Val Napier
 Patricia Johnson Ben Krom Linda Powell

OLD BUSINESS

1. Approval of the April 20, 2022, meeting minutes – Tony Kratofil

ACTION: Approved

2. Michigan Department of Transportation (MDOT) new materials and products – Jason Gutting

ACTION: For information only

3. Use of Fixed Price Variable Scope for the previously approved Design-Build project, JN 213922 – Ryan Mitchell (**May expedited email approval**)

ACTION: Approved

NEW BUSINESS

1. Safety Topic: Toward Zero Deaths: The Safe System Approach – Gregg Brunner

<<See Appendix A>>

ACTION: For information only

2. Annual revisions to the Materials Quality Assurance Procedures Manual – Kevin Kennedy

Subject/Issue - Annual revisions to the Materials Quality Assurance Procedures (MQAP) Manual.

Issue Statement - Requesting approval of annual revisions to the MQAP. A summary of changes document has been provided for review prior to approval.

Major Issue(s) – Revisions to update MDOT's MQAP.

Background/History – The revisions to the various sections of the manual have been reviewed by Construction Field Services, the regions, industry (Michigan Infrastructure and Transportation Association), and the Federal Highway Administration.

Recommendation(s) – Approve the annual revisions to the MQAP Manual.

Status – New Submittal

ACTION: Approved

3. Pavement Type Selection – US-23: from south of M-36 to north of Spencer Road, Livingston County – Ben Krom

Issue Statement – Pavement Type Selection

Route/Location: US-23: from south of M-36 to north of Spencer Road, Livingston County

Job Number: 204095, 210068

Control Section: 47013, 47014, 47041

Letting Date: 3/3/2023

Total Est. Const. Cost: \$128.1M

Department policy requires that a Life Cycle Cost Analysis (LCCA) be used to determine the most cost-effective pavement design.

Major Issue(s) – None to date. At the time of submittal, the paving industries were wrapping up their review of this LCCA. Any industry issues will be described at the meeting.

Background/History – Pavement selection was determined using the procedures outlined in the MDOT Pavement Selection Manual. Department policy requires that the pavement alternate with the lowest Equivalent Uniform Annual Cost (EUAC) be selected. Final pavement selection requires approval by the Engineering Operations Committee (EOC).

As a reminder, this project was brought to the April 2022 EOC meeting, where they approved the exemption request to the soon to be implemented LCCA requirements for rehabilitation work. Also, an alternate pavement bidding (APB) exemption was discussed at that time and did not require action by the EOC, because the project does not meet all the APB selection criteria (i.e., APB will not be pursued).

Recommendation(s) – Approve the hot mix asphalt alternate, which has the lowest EUAC.

ACTION: Approved

4. Road Diet: City of Big Rapids, Mecosta County, 3rd Street (M-20) from north of Colburn Avenue to north of Bronson (190th) Avenue – Patricia Johnson

Issue Statement – Road Diet of 3rd Avenue (M-20) from Colburn Avenue to north of Bronson (190th) Avenue, City of Big Rapids

Major Issue(s) – History of left turn/rear end crashes and traffic speeds for vulnerable road users.

Background/History – Inbound M-20 traffic is fast. There are two lanes of traffic in each direction and the two lanes are sometimes used for passing relief, increasing speeds even in town. MDOT has noticed a pattern of traffic waiting to turn left in the inside lanes getting rear ended.

The speeds, plus four lanes, make it difficult for some of the most vulnerable pedestrians in the community to cross between Community Mental Health and Our Brother's Keeper, a location under one roof offering a variety of services including a homeless shelter and free medical clinic.

M-20 right of way (ROW) is narrow with only 60' of ROW (not even the 66' most common to rural roads by statute) until outside the platted areas—with four lanes plus curb taking up 48' of the ROW, this limits opportunities for future sidewalk or non-motorized pathways south of Colburn Street.

In reviewing the Maple/3rd intersection, because of average daily traffic volume hourly peaks, keeping two lanes in each direction on M-20 itself including the dual signal northbound to westbound movement within and near this intersection helps avoid significant congestion. Keeping two southbound lanes at the intersection helps with truck turning movements also helping to avoid congestion. Traffic typically splits significantly at M-20/Colburn Avenue intersection.

Recommendation(s) – Turn eastbound M-20 inside lane into left turn lane at Colburn Avenue. Convert remainder of four (4) lane south of Colburn Avenue to one lane each direction and center left turn lane.

Status – Pilot pavement marking changes to take place in July 2022 and evaluated.

ACTION: Information Only

5. Road Diet: City of Big Rapids, Mecosta County, State Street south of Maple Street to Waterloo Street – Patricia Johnson

Issue Statement – Road Diet of State Street (US-131BR) from Maple Street (M-20) to Waterloo Street, City of Big Rapids

Major Issue(s) – Traffic flow northbound at Maple Street and speed for vulnerable road users.

Background/History - State Street has two lanes of traffic in each direction and the two lanes are sometimes used for passing relief, increasing speeds. This is particularly noticeable at school drop off and pick up times when the northbound traffic lanes leave the Maple Street intersection signal in both northbound lanes then try to merge into the right northbound lane before coming to the left turn queue at Pine Street. MDOT has noticed a pattern of traffic waiting to turn left in the inside lanes getting rear ended.

These speeds plus crossing four lanes are perceived as dangerous for pedestrians, especially students. In addition to abundant stories of near misses, a student on foot was hit crossing State Street at Pine Street in 2019. Cross Roads Charter Academy sits on State Street. The Big Rapids Public Middle School sits just east of State Street on Michigan Avenue.

The Maple Street/Michigan Avenue signal takes multiple cycles to clear turn queues at times. Because of average daily traffic volume hourly peaks, keeping two lanes on M-20 westbound itself, including allowing dual signal westbound to southbound movement within and near this intersection, helps avoid backups that would lock up the Maple Street at Michigan Avenue signal.

Despite the northbound Maple Street signal being configured to encourage the higher volume eastbound traffic to turn and clear the signal, the northbound outside lane often has a significant back up when northbound traffic on Maple Street at the Michigan Avenue signal backs up and contributes to making turning onto southbound Michigan Avenue for westbound traffic difficult.

Recommendation(s) – Turn outside lane northbound at Maple Street into right turn only. Reduce State Street from four (4) lanes to one (1) lane each direction and a center left turn lane from Maple Street north to Waterloo Street (existing three (3) lane section).

Status – Pilot pavement marking changes to take place in July 2022 and evaluated.

ACTION: Information only

6. Road Diet: City of Big Rapids, Mecosta County, Maple Street (M-20) from Warren Street to east of Muskegon River Bridge – Patricia Johnson

Major Issue(s) – History of left turn/rear end crashes through westbound transition from four lanes to three lanes west of bridge.

Background/History – MDOT has noticed a crash pattern consisting of left turn/rear end crashes in the four lane to three lane transition section west of the Muskegon River Bridge. The Michigan Street intersection carries enough traffic at peak times to require multiple signal cycles to clear the queue. Actual speeds are high relative to posted speeds in the four-lane section east of Warren Street.

Keeping two lanes on westbound Maple Street leaving the 3rd Avenue intersection helps avoid significant congestion in the intersection. Keeping two lanes on eastbound Maple Street entering the 3rd Avenue intersection allows traffic to sort at the split.

Transitioning lanes where side streets and driveways feed into the roadway is always less desirable than where there are no side streets and driveways. The four lane to three lane transition masks some vehicles and adds an additional layer of confusion while trying to gauge traffic merging into a single lane in both bounds. Maple Street currently transitions from a four lane to three lane section between Ives Avenue and Warren Avenue, an area with three side streets as well as numerous driveways.

The crashes at side streets west of the Muskegon River bridge have a significant proportion of college age drivers (18-23) who are less experienced in gauging traffic.

Recommendation(s) – Extend three lanes (one each direction and center left turn lane) to east side of bridge where transition is in tangent section.

Status – Pilot pavement marking changes to take place in July 2022 and evaluated.

ACTION: Information only

Carol Aldrich. Secretary
Engineering Operations Committee

RA:lrh

cc: EOC Members	C. Libiran (MDOT)	D. DeGraaf (MCA)
Meeting Guests	L. Mester (MDOT)	C. Mills (APAM)
Region Engineers (MDOT)	C. Newell (MDOT)	D. Needham (MAA)
Assoc. Region Engineers (MDOT)	M. Ackerson-Ware (MRPA)	R. Vandeventer (MITA)
TSC Managers (MDOT)	T. Burch (FHWA)	
L. Doyle (MDOT)	R. Brenke (ACEC)	

Appendix A – Safety Topic

The Safe System Approach

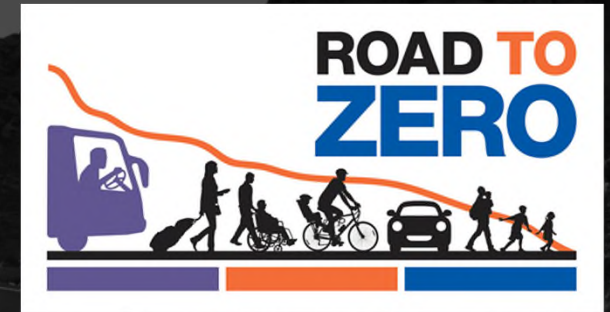
Zero is our goal. A Safe System is how we get there.



Toward Zero Deaths
National Strategy on Highway Safety

[TowardZeroDeaths.org](https://towardzerodeaths.org)

Safe System in the United States



VISION 4 ERONETWORK



Toward Zero Deaths[®]
National Strategy on Highway Safety

A New Direction

The Safe System Approach Aims to Eliminate Fatal and Serious Injuries for All Road Users by:

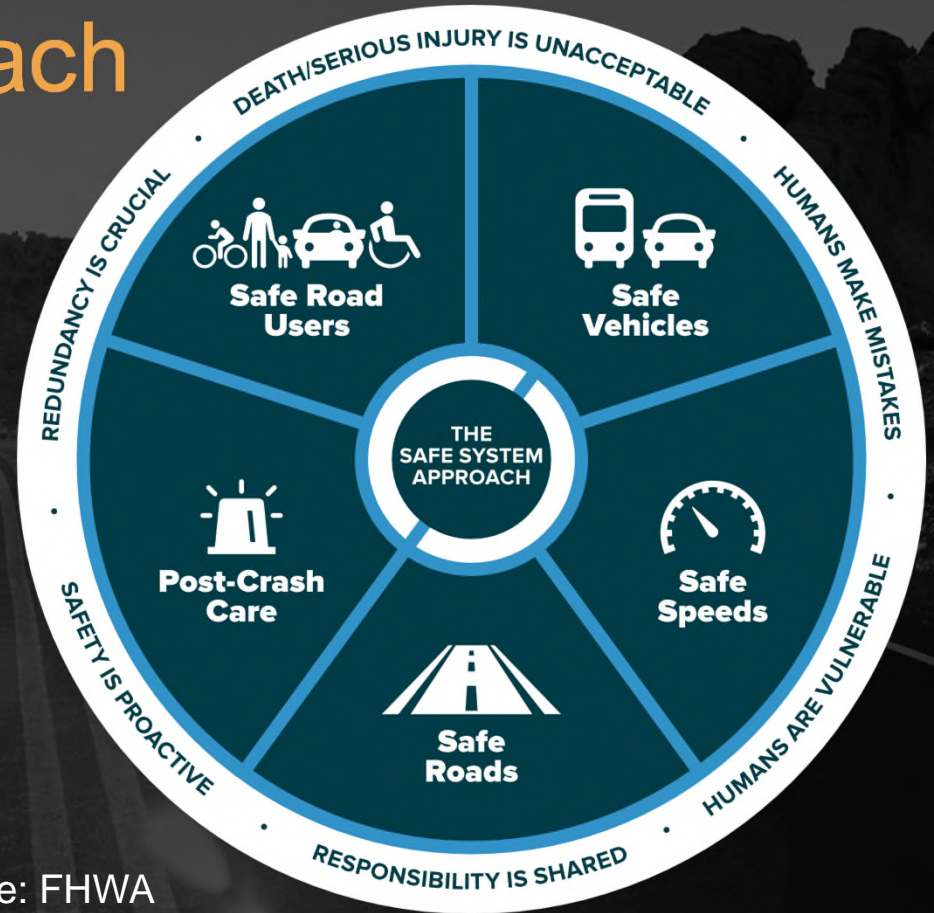


Accommodating human mistakes



Keeping impacts on the human body at tolerable levels

The Safe System Approach



Source: FHWA

The Safe System Approach Principles



Death/Serious Injury is Unacceptable

While no crashes are desirable, the Safe System approach prioritizes crashes that result in death and serious injuries, since no one should experience either when using the transportation system.



Responsibility is Shared

All stakeholders (transportation system users and managers, vehicle manufacturers, etc.) must ensure that crashes don't lead to fatal or serious injuries.



Humans Make Mistakes

People will inevitably make mistakes that can lead to crashes, but the transportation system can be designed and operated to accommodate human mistakes and injury tolerances and avoid death and serious injuries.



Safety is Proactive

Proactive tools should be used to identify and mitigate latent risks in the transportation system, rather than waiting for crashes to occur and reacting afterwards.



Humans Are Vulnerable

People have limits for tolerating crash forces before death and serious injury occurs; therefore, it is critical to design and operate a transportation system that is human-centric and accommodates human vulnerabilities.



Redundancy is Crucial

Reducing risks requires that all parts of the transportation system are strengthened, so that if one part fails, the other parts still protect people.



The Safe System Approach Elements



Safe Road Users

The Safe System approach addresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes.



Safe Vehicles

Vehicles are designed and regulated to minimize the occurrence and severity of collisions using safety measures that incorporate the latest technology.



Safe Speeds

Humans are unlikely to survive high-speed crashes. Reducing speeds can accommodate human injury tolerances in three ways: reducing impact forces, providing additional time for drivers to stop, and improving visibility.



Safe Roads

Designing to accommodate human mistakes and injury tolerances can greatly reduce the severity of crashes that do occur. Examples include physically separating people traveling at different speeds, providing dedicated times for different users to move through a space, and alerting users to hazards and other road users.



Post-Crash Care

When a person is injured in a collision, they rely on emergency first responders to quickly locate them, stabilize their injury, and transport them to medical facilities. Post-crash care also includes forensic analysis at the crash site, traffic incident management, and other activities.



Toward Zero Deaths
National Strategy on Highway Safety

[TowardZeroDeaths.org](https://towardzerodeaths.org)

MDOT's Safety Focus

- Vision
 - Toward Zero Deaths
- Tool to Get There
 - Safe System Approach

159 TRAFFIC DEATHS TO DATE - UP 7 OVER MARCH 2018

MDOT
Michigan Department of Transportation

Moving Michigan Toward Zero Deaths

Toward Zero Deaths
National Strategy on Highway Safety
www.Michigan.gov/ZeroDeaths

The Michigan Department of Transportation (MDOT) has adopted the Toward Zero Deaths (T2D) National Strategy as a statewide campaign to positively enhance road users' behavior and safety. Close to 1,000 people do not return home in Michigan annually due to traffic crashes. The T2D strategy involves enhancing driver education, emergency response, enforcement, engineering, policy, communications and other efforts that will move Michigan closer to zero fatalities. By incorporating safety into all facets of transportation, Michigan will achieve this vision.

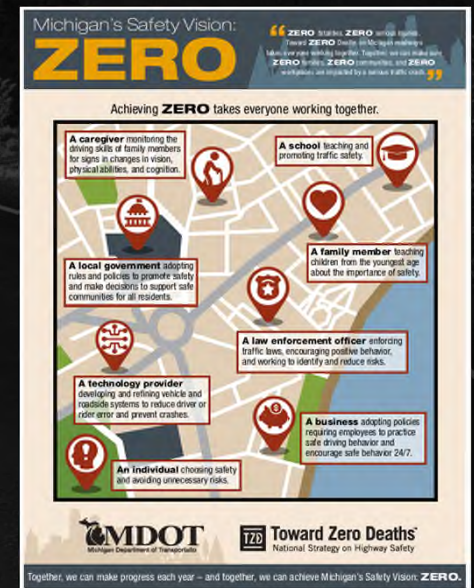
MDOT is involved in various safety efforts with its federal, state and local partners. Without these partnerships, this vision will not be a reality.

Toward Zero Deaths
National Strategy on Highway Safety

Toward Zero Deaths
National Strategy on Highway Safety

Current MDOT Practices

- Embrace Toward Zero Deaths
- Incorporate Safety in ALL Projects
- Countermeasures Utilized Align with SSA
- Robust LSI and RSA Programs
- Map Crash Data within EJ Zones



MDOT's Safe System Focus

- Safe Road Users
 - Vulnerable Road Users, Work Zone Safety, Older Drivers
- Safe Vehicles
 - Support Advanced Driver Assistance Systems
- Safe Speeds
 - Roundabouts, Digital Speed Limit Signs in Work Zones
- Safe Roads
 - Data, HSIP, SHSP, LSI, LRSP, RSA, Complete Streets, Signing, Lighting, Signals, Cable Median Barrier, Rumble/Mumble Strips, Delineation, Pavement Markings, Wider Shoulders, Corridor Access Management, Systemic Application of Low-Cost Countermeasures
- Post-Crash Care
 - Mi-TIME training, TIM

Where Are You On The Safe System Journey?

Traditional Approach

Prevent crashes →

Improve human behavior →

Control speeding →

Individuals are responsible →

React based on crash history →

Safe System Approach

Prevent death and serious injuries

Design for human mistakes/limitations

Reduce system kinetic energy

Share responsibility

Proactively identify and address risks

Incorporating SSA at MDOT

- Safe System Approach Pilot Project
 - Develop Project Selection Process Based on the SSA
- Integration into SHSP and HSIP
- MDOT and FHWA Leadership Support



The Sum Of All Our Efforts Is ZERO

What Will Be Your Effort to move to a
Safe System Approach?