



**ENGINEERING OPERATIONS COMMITTEE  
MEETING MINUTES  
MARCH 26, 2020, 9:00 A.M. – 11:00 A.M.  
VIA SKYPE**

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|          |                |                   |                   |
|----------|----------------|-------------------|-------------------|
| Present: | Carol Aldrich  | Mark Dionise      | Ryan Mitchell     |
|          | Mark Bott      | Mark Geib         | Kristin Schuster  |
|          | Gregg Brunner  | Jason Gutting     | Brad Wieferich    |
|          | Matt Chynoweth | Tony Kratofil     | Hal Zweng         |
| Absent:  | Rebecca Curtis | Will Thompson     |                   |
|          | Brandy Solak   | Gorette Yung      |                   |
| Guests:  | Trevor Block   | Annjanette Kremer | Trevor Sholten    |
|          | Chris Brookes  | Ben Krom          | Miranda Spare     |
|          | Michael Eacker | David Neubaure    | Jon Stratz        |
|          | Therese Kline  | James Ranger      | Dharmesh Valsadia |

**OLD BUSINESS**

1. Approval of the February 24, 2020 Meeting Minutes – Tony Kratofil

*ACTION: Approved*

2. Michigan Department of Transportation (MDOT) New Materials and Products – Jason Gutting

*ACTION: For information only and further development of the summary sheet to occur.*

**NEW BUSINESS**

1. Safety Topic – Matt Chynoweth

Matt provided a PowerPoint presentation and discussion regarding working from home.

2. Update to MDOT Fix Life Guidelines – Ben Krom

Issue(s) – Updates to the Fix Life Guidelines are being recommended, incorporating the most recently available data and analysis.

The region system managers and pavement management engineers had the opportunity to review the proposed guidelines, and their feedback has been incorporated into the draft guidelines.

The paving industries were also sent the draft guidelines and given the opportunity to ask questions concerning the proposed Fix Life values.

The Fix Life Guidelines provide an estimate of the number of years a particular pavement fix type is expected to provide, excluding any future preventive maintenance treatments, and are traditionally found in the MDOT annual call for projects instructions. In accordance with these guidelines, Fix Lives are assigned to projects when they are programmed in JobNet. These Fix Lives are then used in statewide remaining service life estimation and when each region develops its road quality forecasting system reconstruction and rehabilitation strategy. This, in turn, is reflected in MDOT's network wide system condition forecast.

The Fix Life Guidelines were last updated in 2014, when the Fix Lives for three fix types were updated (multi-course hot mix asphalt (HMA) overlay [w/ and w/o milling], concrete pavement patching, and concrete pavement restoration). The Fix Lives for five other fix types were last updated in 2012 (crush and shape w/HMA overlay, rubblize w/HMA overlay, unbonded concrete overlay, HMA reconstruction [includes aggregate lift w/HMA overlay], and concrete reconstruction).

With this iteration, we are proposing to update the Fix Lives for six fix types (crush and shape w/HMA overlay, rubblize w/HMA overlay, unbonded concrete overlay, HMA reconstruction [includes aggregate lift w/HMA overlay], concrete reconstruction, and multi-course HMA overlay [w/ and w/o milling]), and are proposing Fix Lives for two newer fix types (asphalt stabilized crack relief layer [ASCRL] and thin concrete overlays). Pavement Management staff has estimated the lives of these fixes by using MDOT's Distress Index data for the fix life modeling. The single value Fix Lives are a weighted average, where each performance "family" (good, fair, poor performing pavements) was weighted based on the total length of pavement sections in its respective family.

For two fix types (ASCRL and multi-course HMA overlay [w/ and w/o milling]), it is recommended to go with a range of Fix Life values since these Fix Lives are dependent upon the condition of the existing pavement structure, which will mostly be left in-place. These fix life ranges will allow region staff to account for variable existing pavement conditions. The ranges for these two fix types were established as follows:

Multi-course HMA overlay [w/ and w/o milling]: The weighted average fix life value for this fix type was 21 years. Believing this appeared too high, and wanting to maintain a range of fix life values to choose from, we removed the best performing family (which was showing 48 years of fix life on its own) from the weighted average fix life, which resulted in 18 years of fix life. The system managers believed that this was an acceptable top-end value for the fix life range. Then the bottom of the range was selected as the poorest performing family from our analysis: 11 years.

ASCRL: The weighted average fix life value for this fix type was an eye-popping 33 years! This is a newer fix type, with only 64 segments built since 1999. Based on the data and field observations, the vast majority of these projects are performing very well, but we were asked by the System Managers to provide a range of Fix Lives, at values lower than the initial 33 years. Therefore, the low-end of the proposed range is 18 years (the high-end of the multi-course HMA overlay range), and 26 years for the high-end of the range (the fix life of a concrete reconstruct).

The Fix Lives for two fix types were not re-evaluated for this update (concrete pavement patching and concrete pavement restoration) and will continue to use their current range of values.

Recommendation(s) – Approve the draft fix life values, to be used starting with the 2026 Call for Projects.

*ACTION: Approved*

3. Approval Process When Submitting New Pipe Products – Kristin Schuster/Therese Kline

Issue Statement – MDOT and Industry agree to written product approval process detailing pilot projects for new pipe materials.

Document to reside in Joint Pipe Operations Committee Charter paperwork.

Major Issue(s) – MDOT and industry sought concise, written approval process to follow when submitting new pipe products and information concerning pilot projects for the new materials.

Background/History – MDOT and industry sought concise, written approval process to follow when submitting new pipe products and information concerning pilot projects for the new materials. This document provides clear directions for use of pilot projects to safely test out the new products. The document defines timeline for the pilot projects and provides details concerning the testing of the new products during the timeframe stated.

Recommendation(s) – Approval of document to be included with the Joint Pipe Committee Charter. The Internal Pipe Committee Subcommittee New Materials Team agree with the contents of the document. Industry and the Michigan Infrastructure and Transportation Association have had opportunity to review and comment on the document.

*ACTION: Information Only*

4. Qualification Procedure Update for Recycle Product Corrugated Plastic Pipe (CPE) – Kristin Schuster/Therese Kline

Issue Statement - Acceptance of recycle product CPE pipe (RCPE) as CPE pipe for use in same situations as CPE pipe.

Removal of the Engineering Operations Committee (EOC) directive of April 2018 to use recycle product CPE (RCPE) only outside of the right of way (ROW).

Change requires update to the Qualification Procedure for Class A, B and F Bury Plastic Pipe, and Tables 401-1 and 402-1.

Major Issue(s) – CPE is making use of recycled materials in pipe products. Industry has submitted a letter stating that the formulas both provide consistent material properties, structural performance, joint quality and long-term service life.

Background/History – From EOC minutes of April 2018 “*ACTION: Conditional approval. The Committee requested the language requiring virgin material be amended to allow for recycled material use in areas outside the influence of the pavement, such as drive culverts. After revised language has been reviewed/accepted by the Joint Pipe Operations Committee, bring back to the EOC for final approval.*”

Recommendation(s) – Acceptance of updates to the Qualification Procedure for Class A, B and F Bury Plastic Pipe and Tables 401-1 and 402-1. Updates will allow for use of recycled material CPE (RCPE) determined by the American Association of State Highway and Transportation Officials, and with letter certifying formula sameness, to be equivalent to virgin material CPE. Require testing recycle CPE (RCPE) pipe approval of watertight joints and strength tests, eliminate the submittal of calculations, make use of the pipe in the same manner that we are currently using for virgin material pipe.

*ACTION: Approved*

5. US-41 in Houghton Road Diet – Mark Bott/Trevor Sholten

Issue Statement – Road Diet US-41 Townsend Drive in Houghton (four-two lane).

Major Issue(s) – The US-41 corridor through the City of Houghton has several cross sections within the 2021 reconstruction limits, one of which is a short, 2000’ four lane boulevard section adjacent to the Michigan Technological University (MTU) campus. This section creates traffic conflicts in both lanes with car turning movements coupled with weaving movements to overtake slower moving or turning vehicles. Conflicts also arise as the boulevard ends with a trap lane/forced right turn movement at MacInnes. This location has extremely high pedestrian volumes as there are numerous crossing locations connecting the main MTU campus with student housing and residential areas.

Background/History – The overall roadway needs for the US-41 corridor have been evaluated with the scoping of a 2021 reconstruction project. The project team, along with stakeholders and a road safety audit, concluded a lane reduction to one lane in each direction (with turn lanes, as needed), separated by a boulevard median through the limits of the MTU campus, would help calm traffic and create a more pedestrian friendly environment. It will also provide continuity of one lane in each direction with turn lanes through Houghton. An identical cross section was constructed at the point of beginning of this project in 2010.

Recommendation(s) – It is recommended to reconstruct US-41 Townsend Drive with a two-lane boulevard from MacInnes Drive to east Houghton/Ruby Avenue – this is a continuation of the cross section reconstructed from MacInnes Drive easterly in 2010. Traffic models utilizing the 20-year projections confirmed this configuration will operate acceptability.

Status – The proposed road diet is moving forward with support from both MTU and the City of Houghton (City resolution approved March 2019).

*ACTION: Information Only*

#### 6. Village of Cassopolis Road Diet – Mark Bott/David Neubauer

Subject/Issue – Village of Cassopolis Road Diet

Major Issue(s) – The Village of Cassopolis is requesting to complete a road diet on M-60/M-62 (Broadway Street) and M-62 (State Street) within the Village limits as part of their downtown transformation project.

Background/History – The Village of Cassopolis has proposed this road diet through the Village on Broadway Street (M-60/M-62) and State Street (M-60). The maximum average daily traffic (ADT) through the village is 7500 vehicles.

On Broadway Street, 0.30 Miles of state trunkline, will be reduced from four lanes to three lanes and bicycle lanes will be added. Currently, on-street parking exists and will remain after the road diet. A hatched two-foot buffer will be added between the bicycle lanes and the on-street parking.

On State Street, 0.15 miles of state trunkline will be reduced from five lanes to three lanes. No on-street parking currently exists. No on-street parking or bicycle lanes will be added to State Street.

Public meetings for the project were held on August 15, 2019 and September 9, 2019.

Recommendation(s) – The Kalamazoo Transportation Service Center recommends approval of road diet.

*ACTION: Information Only*

7. I-96 Design-Bid-Build (DBB) Reconstruction Project (Kent County) – Ryan Mitchell

Project Information: I-96 DBB reconstruction project in Kent County, Grand Region

Route/Location: I-96 from Thornapple River Drive to Whitneyville Avenue

Job Number: 128093

Control Section: 41024

Letting Date: January 2021

Est. Const. Cost: \$12.2M

Issue(s) – Use of Alternate Pavement Bidding (APB) on the I-96 Design-Bid-Build project.

Construction Field Services coordinated with the project office and calculated a preliminary life cycle costs analysis on this project and determined that the difference between the pavement options was 4.15%. Concrete was the low-cost alternative.

Both pavement alternates are expected to have similar environmental, ROW, drainage, and utility impacts along with similar maintaining traffic concepts. Paving is the controlling operation for the construction schedule.

Background – The project appears to meet the criteria for the use of APB.

Recommendation(s) – The Innovative Contracting Committee recommends approval for the use of APB on this DBB project.

*ACTION: Approved*

8. Exemption of Transportation Management Plans Requirements – Ryan Mitchell/Dharmesh Valsadia/Chris Brookes

Issue Statement – Request approval to eliminate the requirement for Transportation Management Plans (TMPs) on Alternate Technical Concept (ATC) for Maintenance of Traffic (MOT) projects and Design-Build (DB) projects.

Major Issue(s) – If a project is deemed significant and requires a TMP in accordance with MDOT Work Zone Mobility and Safety Policy (WZMSP), the contractor is required to hire a prequalified design firm to create the TMP document, which also requires a statewide peer review. On ATC for MOT projects, this added effort, cost and time may discourage ATC exploration and submittal, potentially diminishing opportunities for improved MOT design and cost savings. The use of ATC for MOT and DB contracting methods allows for various MOT methods to be analyzed and compared. A thorough review of contractor MOT submittals, which is standard procedure on ATC for MOT and DB projects, meets or exceeds the goals set out in the TMP process. Therefore, the requirement for a TMP for these types

of projects adds additional cost and time to the process with minimal to no benefit to project delivery.

Background/History – ATC for MOT and DB project delivery methods are utilized to allow bidders to develop MOT design and construction alternatives which provide MDOT equal or better performance to base plan. A TMP is required per The Work Zone Safety and Mobility (WZSM) Rule outlined in federal regulation, 23 CFR 630 Subpart J, which requires a policy for the systematic consideration and management of work zone impacts on all federal aid highway projects across all stages of project planning, development, construction and operations. (The full details of this process can be found in section 1.01 of the WZSMM.)

This policy has been in place since 2007, which at that time, didn't address or consider the use of some innovative contracting methods. Due to the change in project delivery methods, the policy needs to be updated to remain affective and beneficial to the department. Changes to our current processes would require updating MDOT's MOT policy via the WZSM and submittal to the Federal Highway Association for review.

Recommendation(s) –The Innovative Contracting and Work Zone Units recommend ATC for MOT and DB projects be exempt from the TMP process.

*ACTION: Same as agenda item 9 below, concept to revise guidance approved. Final revisions are to be submitted for EOC approval.*

9. Design-Build Peer Review Team (DBPRT) in Lieu of Statewide Peer Review Team (SPRT)  
– Ryan Mitchell/Dharmesh Valsadia

Issue Statement – Request approval to use the DBPRT in lieu of the SPRT to conduct independent review and provide recommendations for review and approval before implementation of maintaining traffic items/concepts on all DB projects.

Major Issue(s) – Per the WZMSP, if the project is expected to be considered significant, maintaining traffic items/concepts are to be reviewed by SPRT. Due to the shortened review timeframes of a DB project, a SPRT is impractical. Per our Innovative Contracting Guide, a project level exception is to be requested from the region engineer and chief operations officer to deviate from the traditional SPRT team and policy. An exception is requested on most DB projects. The DBPRT in lieu of the SPRT will standardize and streamline this process.

Background/History – Per section 1.02.03 of the WZMSP, a project must be submitted to SPRT for review when all reasonable mitigation has been implemented and the project exceeds the significance policy thresholds. The SPRT is established to conduct independent reviews of projects and provide recommendations for review and approval before implementation. The team should include personnel independent of the region where the project was developed:

- Region Engineer
- TSC Manager
- Work Zone Area
- Design Engineer
- Project Manager
- Construction Engineer
- Operations Engineer
- Traffic and Safety Engineer

Recommendation(s) – The Innovative Contracting Unit (ICU) recommends assembling region-specific DBPRT on all DB projects to review information provided by the design-builder related to MOT and to approve or reject applicable submittals. The ICU requests that DB projects are to be exempt from the SPRT process and may utilize the DBPRT.

The DBPRT will be assembled during project development to complete the duties typically done by the SPRT.

The DBPRT members will include the following positions:

- Region Engineer or designated representative
- TSC Manager or designated representative
- Work Zone Delivery Engineer or designated representative
- MDOT Project Manager (TSC/Region)
- MDOT Deputy Project Manager (ICU Member)
- MDOT Construction Engineer (TSC/Region)
- Region or TSC Operations Engineer
- Region or TSC Traffic and Safety Engineer/Technician

Additional assistance may be provided by ICU staff, General Engineering Consultant (GEC) staff and others as determined by DBPRT.

*ACTION: Same as agenda item 8 above, concept to revise guidance approved. Final revisions are to be submitted for EOC approval.*

#### 10. Design-Build Contracting Method I-496 Reconstruction, University Region– Ryan Mitchell

Subject/Issue – Request approval for the use of DB contracting method on the reconstruction of I-496 from Lansing Road to the Grand River (JN 210093).

Major Issue(s) – As a result of the Rebuilding Michigan bonding initiative, advancing this project into the 2022 construction season with DB allows for a more efficient sequencing of other projects in the area within the five-year plan, to best limit mobility impacts around Lansing. The following issues will be managed by risk register:

Permits: Michigan Department of Environment, Great Lakes and Energy

- Permits may be needed for storm outlets to Grand River

**Utilities:**

- Water main, sanitary sewer, storm sewer outlets into the Grand River, private utilities were identified within the corridor
- This estimate does not include specific items to replace any of these facilities and we do not know at this time if any facilities are planned for replacement (or in need of replacement) due to condition. Coordination with the utility owners is an activity that must be started on immediately.

**Maintaining Traffic:**

- Balancing production, schedule, staging, access, coordination with other projects and public expectations will be a risk.

**Other:**

- Possible siphon in depressed freeway's backslope in an area of proposed geometric improvements. Ramp extension from Lansing Road to Martin Luther King on east bound.
- Mechanically stabilized earth walls associated with ramps that may be impacted to improve safety, operations, and/or to meet current standards.
- Deep storm sewer. All manholes need replacement based on firsthand accounts from maintenance staff.

Background – I-496 from Lansing Road to the Grand River, Genesee County. 2.33 miles of freeway reconstruction, ramp reconstruction, drainage improvements and bridge Capital Preventative Maintenance (CPM) work.

Job Number: 210093

Control Section: 33044

Project Cost: \$77.0M

Letting Date: June 2021

- Survey is underway
- Level of design: 0%
- Bridge work scoping to be included in the General Engineering Company contract.
- APB: Yes, pending the life cycle cost analysis report.

Recommendation(s) – The Innovative Contracting Committee has approved the use of DB contracting method for this project.

*ACTION: Approved*

## 11. Design-Build Contracting Method I-475 Reconstruction, Genesee County – Ryan Mitchell/Trevor Block

Issue Statement – Request approval for the use of DB procurement to reconstruct I-475 from Thread Creek to the Flint River in the City of Flint, Genesee County.

Major Issue(s) – The use of the DB delivery method is being requested due to the expedited nature of the schedule. The following issues will be addressed:

- Railroad coordination will be needed for the grade-separated crossing carrying Grand Trunk Western Railroad facilities over I-475, between Thread Creek and 14th Street. No work will be done to the railroad structure. The Office of Rail has been engaged and anticipates there is adequate time in the schedule to accommodate required railroad coordination.
- NEPA – Categorical Exclusion. Mussell survey and mitigation may be required for the replacement of I-475 over Gilkey Creek culvert. Mitigation will be required to detour the 4(f) Flint River Trail during work on the I-475 over Gilkey Creek culvert.
- NEPA – Categorical Exclusion. The environmental classification may include the entire I-475 corridor with each individual project along the corridor, including this project, receiving a separate environmental certification. This corridor approach will increase the duration of the classification, and possibly the scope and cost, compared to a standalone project classification. This approach will also need to be evaluated for implications related to other federal regulations and the effect on this project, specifically the requirement to submit an initial and annual financial plan.
- Permanent ROW will be needed at the east end of the I-475 over Gilkey Creek culvert replacement. The adjacent property is a City of Flint park that was funded with a Department of Natural Resources Trust Grant. It is anticipated that there is adequate time in the schedule to accommodate this acquisition.
- Coordination is needed with the I-69 reconstruction project at the I-475 interchange which will be in construction in 2021 and 2022. I-69 traffic must not be impacted by this project.

Background/History – I-475 from Thread Creek to Flint River in the City of Flint, Genesee County. 2.6 miles of freeway reconstruction, ramp reconstruction, replacement of I-475 over Stever and Broadway Avenue bridge, replacement of I-475 and service drives over Gilkey Creek culvert, deck replacement of I-475 and Ramp B over SB Chavez Drive, CPM of 3 bridges, and sound wall replacement and rehabilitation.

Job Number: 210086  
Control Section: 25132  
Project Cost: \$97.9M  
Letting Date: August 2021

Recommendation(s) – The ICC has approved the use of DB contracting method for this project.

*ACTION: Withdrawn and will be resubmitted to the EOC at a later date.*

## 12. Village of Constantine, US-131 Road Diet – Angie Kremer

Project Information: US-131BR single course chip seal with a fog seal from North US-131 to north spring point of Spring Street. Deck replacement with right sizing, steel beam repair, full paint, bearing replacement, and scour countermeasure of B01-78012 (US-131BR over the Kalamazoo River).

Route/Location: US-131BR North US-131 to north Spring Point of Spring Street, Village of Constantine, St Joseph County

Job Number: 203665 and 129399

Control Section: 78012

Letting Date: 1/8/21

Issue(s) – Low volume <5,000 ADT, bridge deck replacement, and village will not pass a resolution.

Background – 2013 the US-131 bypass was constructed around the Village of Constantine. Old US-131 in the village was changed to US-131 BR. US-131 BR now has an ADT of 3,846. The bridge deck on US-131 BR over the Kalamazoo River is rated poor (outside beams rated the worse).

This is an opportunity to right size the bridge deck from four lanes to two lanes. South of the bridge in the downtown it is a two-lane section, the bridge and north to Broad Street (1,640 feet) is four lanes. To retain a four-lane section north of the bridge to Broad Street would only allow for 750 feet of a four-lane section with tapers and lane development.

The Village Council is opposed to right sizing the bridge and would not issue a resolution. Reason stated were:

- Dangerous intersection of US-131BR and Water Street.
  - o Five years of crash data were analyzed with a total of five crashes: One angle crash, one sideswipe, one mope fixed object crash, and two backing into parked cars. No crash patterns.
- Intersection of US-131BR and Water Street congested with truck turning
  - o MDOT ordered 24-Hour volume Counts and eight-hour peak turning movement counts (7am-9am, 11am-1pm, 2pm-6pm)
    - SB left turns to EB semi-truck total of eight trucks from 2pm-6pm
    - SB right turns to WB total 8-hour count 46 vehicles

Cost savings for a four lane versus a two-lane bridge deck is \$1,524,700. Plus, the \$1.141 million additional life cycle maintenance. The bridge will have aesthetic railing, simulated stone masonry on barrier and two pedestrian bump outs at piers.

The TSC manager met with Senator LaSata and Representative Miller to inform them of the controversial proposal. They did not have any major concerns.

A public meeting was held February 4, 2020, with 19 people signing the attendance sheet. After the project was described and the reason for right sizing the bridge, most of the public who attended were good with the proposal. (Written public comments submitted with form 1629.) The Village manager is in support of the three lanes also and submitted a written comment. The MDOT environmental coordinator was also at the public meeting for environmental clearance.

The Marshall TSC is asking for a various in requiring a resolution from the village to right size the bridge and a road diet for 1,640 feet.

Recommendation(s) – Approve variance in the requirement for a resolution to right size the bridge over the Kalamazoo River and convert 1,640 feet of four lanes to three lanes north of the bridge to Broad Street.

*ACTION: Information only.*

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Carol Aldrich, Secretary  
Engineering Operations Committee

RA:lrp

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|--------------------------------|---------------------|-------------------------|
| cc: EOC Members                | D. Jones (MDOT)     | R. Brenke (ACEC)        |
| Meeting Guests                 | C. Libiran (MDOT)   | G. Bukoski (MITA)       |
| Region Engineers (MDOT)        | R. Lippert (MDOT)   | D. DeGraaf (MCA)        |
| Assoc. Region Engineers (MDOT) | L. Mester (MDOT)    | C. Mills (APAM)         |
| TSC Managers (MDOT)            | T. Schafer (MDOT)   | D. Needham (MAA)        |
| L. Doyle (MDOT)                | R. Jorgenson (FHWA) | M. Ackerson-Ware (MRPA) |