



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
MARCH 25, 2021, 9:00 A.M. – 11:00 A.M.
VIA TEAMS**

Present:	Carol Aldrich	Mark Dionise	Ryan Mitchell
	Mark Bott	Mark Geib	Will Thompson
	Gregg Brunner	Jason Gutting	Brad Wieferich
	Matt Chynoweth	Tony Kratofil	Hal Zweng
Absent:	Rebecca Curtis	Brandy Solak	Gorette Yung
	Kristin Schuster		
Guests:	Kelsey Buchmayer	Jason Pittman	Jami Trudelle
	Ben Krom	Justin Schenkel	Dharmesh Valsadia
	Jonathon Loree	Jason Sundell	
	Mike O'Malley	Dina Tarazi	

OLD BUSINESS

1. Approval of the December 23, 2020 Meeting Minutes – Tony Kratofil

ACTION: Approved

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

- a. New Material Monthly Report of Data

- ❖ Number of Submittals Received
- ❖ Number of Submittals Accepted
- ❖ Number of Submittals Not Accepted
- ❖ Biannual Qualified Products List Revisions

ACTION: For information only.

NEW BUSINESS

1. Safety Topic: Eye Safety – Carol Aldrich

www.preventblindness.org/screen-time-out

ACTION: For Information Only

2. Roundabout Construction, US-127/US-223 in Woodstock Township, Lenawee County – Jason Pittman

Issue Statement – Roundabout Construction, intersection of US-127/US-223 in Woodstock Township, Lenawee County.

Route/Location: US-127 from NVL of Addison to US-12 and US-223 from US-127 easterly to Stoddard Road, Lenawee County.

Job Numbers: 131769, 204949, 209398

Control Sections: 46011, 46012, 46061

Letting Date: December 2021

Est. Construction Cost: \$21.3M

Major Issue(s) – No major issues with the project. A public meeting was held February 1, 2021 with no negative responses related to the proposed roundabout. Woodstock Township approved in October 2020.

Background/History – The intersection of US-127/US-223 has had safety issues for years. Several severe crashes have happened due to the existing layout and vehicle speeds. The proposed roundabout will address the safety issues related to limited sight distance and high vehicle speed at the intersection, as recommended in the road safety audit completed on October 2-3, 2019. Roundabout lighting will be installed at project cost and Woodstock Township will fund future lighting and maintenance cost.

ACTION: Approved

3. Roundabout Construction, Michigan Avenue and Dearing Road, Jackson County – Jason Pittman

Issue Statement – Roundabout Construction, Michigan Avenue and Dearing Road interchanges in Jackson County.

Route/Location: I-94 from Michigan Avenue interchange to M-60 interchange freeway reconstruction and bridge critical path method (CPM) combined with I-94 from Jackson/Calhoun County Line to Michigan Avenue freeway rehabilitation and bridge CPM.

Job Number: 127621 & 210047
Control Section: 38101 & 38102
Letting Date: December 2021
Est. Const. Cost: \$120M

Major Issue(s) – No anticipated issues at this time. The roundabout options at the Dearing Road and Michigan Avenue interchange ramp terminals were presented at a stakeholder meeting on November 30, 2020 and a public meeting held on December 21, 2020. MDOT did not receive any negative comments related to the roundabout options.

Background/History – Due to the width and location of the Dearing Road and Michigan Avenue bridges and guardrail, sight distance is limited at the ramp terminals. This limited sight distance creates an issue for drivers entering the road from the ramp terminal. This reconstruction project will not include bridge replacements, as the condition of the bridges do not warrant replacement. Constructing roundabouts at the proposed ramp terminals will address the limited sight distance issue. Lighting will be included in the project to light the roundabouts at both interchanges.

ACTION: Approved

4. Updated MDOT User Guide for Mechanistic-Empirical (ME) Pavement Design (March 2021 Edition) – Justin Schenkel/Jami Trudelle

Issue Statement – Updated MDOT User Guide for Mechanistic-Empirical Pavement Design, (March 2021 edition) primarily to account for the design standards of the new fix types to be included in the MDOT Life Cycle Cost Analysis (LCCA) program. Note that the new fix design and life cycle protocols were previously presented and approved by the Engineering Operations Committee (EOC), so this update is simply a matter of taking that information and adding it to the user guide.

Major Issue(s) – To approve the updated MDOT User Guide for Mechanistic-Empirical Pavement Design, (March 2021 edition).

Background/History – This user guide is intended to help pavement designers use the Pavement ME Design software to design the pavement cross-section on MDOT projects. It provides details on software operation, design types to be used with ME, the inputs to be used, and how to assess the design results. This user guide is based on version 2.3 of the Pavement ME Design software.

This user guide is assembled by the MDOT Construction Field Services (CFS) Division.

The following is a summary of changes to the MDOT ME User Guide:

- Chapter 4 – General Inputs
 - Updated the following table to match updates/additions to APPENDIX A – DARWin Inputs (AASHTO 1993 Method):
 - Table 4-1. Design Type, Pavement Type, and Design Life Inputs
- REFERENCES
 - Added software references (including their versions) and latest ME design guide Manual of Practice reference (3rd Edition).
 - APPENDIX A – DARWin Inputs (AASHTO 1993 Method)
 - Clarified and updated the existing notation in Appendix A for the AASHTO 1993 pavement design method. Also, added the new fix types to be included in the MDOT Life Cycle Cost Analysis (LCCA) program. The new fix types include the following:
 - Hot Mix Asphalt (HMA) over Crush and Shaped HMA, (2 course and 3 course)
 - Multiple Course HMA Overlay (of existing HMA or concrete), (2 course and 3 course)
 - Asphalt Stabilized Crack Relief Layer (ASCRL) with multi-course HMA Overlay (of existing concrete)
 - Thin Concrete Overlay, thickness less than 6”
 - ❖ Note that “thin concrete overlay” consists of thin unbonded overlays which are placed over existing concrete or composite pavements, and white toppings which are placed over existing HMA pavements.

Recommendation(s) – Approval of the updated MDOT User Guide for Mechanistic-Empirical Pavement Design, (March 2021 edition).

ACTION: Approved

5. Pavement Type Selection: US-2 from County Road 424 to the Michigan/Wisconsin State Line, Iron County – Ben Krom

Issue Statement - Pavement type selection.

Route/Location: US-2: CR 424 to the Michigan/Wisconsin State Line, Iron County

Job Number: 203897

Control Section: 36051

Letting Date: 8/4/2023

Department policy requires that a LCCA be used to determine the most cost-effective pavement design.

Major Issue(s) – None. The paving industries had no comments on this LCCA.

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 EOC.

Recommendation(s) – Approve the pavement alternate with the lowest EUAC.

ACTION: Approved

6. Pollinator Candidate Conservation Agreement (CCAA) with Assurances – Hal Zweng/Kelsey Buchmayer

Issue Statement – Pollinator CCAA with Assurances.

Major Issue(s) – Enrollment in the proposed CCAA will promote pollinator habitat. MDOT will enroll certain right of way (ROW) and dedicate staff time to the Agreement.

Background/History – Monarch butterflies are currently a candidate for a threatened/endangered listing. The listing would have a significant impact on all MDOT ROWs. Participation in this agreement is voluntary and is a proactive effort to forebear a listing decision.

Recommendation(s) – The Environmental Services Section staff have researched and developed a proposal for MDOT’s participation in the CCAA. Environmental Committee has reviewed the proposal and supports it. The Environmental Committee requests EOC approval/support.

Status – Pending EOC approval and other leadership approvals as needed.

ACTION: Approved

7. APB on I-94 Projects in Parma, Jackson County – Ryan Mitchell

Issue Statement – Alternate Pavement Bid (APB) in Parma, Jackson County, University Region

Route/Location: I-94 from Michigan Avenue interchange to M-60 interchange freeway reconstruction and bridge CPM combined with I-94 from Jackson/Calhoun County Line to Michigan Avenue Freeway rehabilitation and bridge CPM.

Job Number: 127621 & 210047

Control Section: 38101 & 38102

Letting Date: December 2021

Est. Const. Cost: \$120M

Major Issue(s) – Use of APB on I-94 design-bid-build project.

CFS 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 4.33%. HMA was the low-cost alternative.

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

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

Recommendation(s) - The Innovative Contracting Committee (ICC) recommends approval of the use of APB on this design-bid-build project.

ACTION: Approved

8. Use of Alternate Technical Concepts for Maintenance of Traffic on I-94 from Jackson/Calhoun County Line Easterly to M-60 Project, Jackson County – Ryan Mitchell

Issue Statement – Request approval for the use of Alternate Technical Concepts (ATCs) for Maintenance of Traffic (MOT) on upcoming I-94 rehabilitation and reconstruction work from Jackson/Calhoun County Line easterly to M-60, Jackson County. Due to the complexity of maintaining traffic on this multiple fix-type project, rehabilitation on 10 structures including constructing roundabout at couple of interchanges, industry input and innovation is being sought for the purpose of improving MOT for the project.

Project Location:

JN 210047: On I-94, Jackson/Calhoun County Line to west of Michigan Avenue

JN 127621: On I-94, West of Michigan Avenue to M-60

Work Description:

JN 210047: 4.9 miles of concrete pavement repairs, multi-course HMA overlay, installation of cable median barrier, drainage improvements, ramp resurfacing, and bridge preventative maintenance (four structures).

JN 127621: 8.8 miles of pavement reconstruction with ramp extensions, drainage improvements, roundabout construction at Dearing Road and Michigan Ave interchanges, and bridge preventative maintenance (six structures).

Est. Const Cost:	210047:	\$29,969,798
	127621:	\$90,038,727
TOTAL:		\$120,008,525

Key Dates:

07/02/2021 – Plan Completion

12/03/2021 – Letting

2022-2025 – Construction

Major Issue(s) – I-94 is a busy commercial corridor and mobility is a top concern during this multiple year construction project. Due to existing bridge width limitations at several locations, conventional maintenance of traffic concepts may not be effective. During weekdays, single lane closure on I-94 will be allowed but need two lanes in direction on weekends. Alternative Technical Concepts (ATCs) for Maintenance of Traffic (MOT) are desired to provide efficiency and continuity of traffic control throughout the duration of construction activities.

Recommendation(s) – The ICC has recommended the use of ATCs for MOT on this project considering work type and recognizing a need for innovative traffic management options. Contractor means and methods could improve MOT staging which may result in expedited delivery of the project. ATC for MOT is expected to deliver efficiency and continuity of traffic control throughout the duration of construction activities.

Status - New

ACTION: Approved

9. Alternate Pavement Bid on the I-196 Design-Bid-Build Project in Zeeland and Jamestown Townships, Ottawa County – Ryan Mitchell

Issue Statement – APB in Zeeland and Jamestown Townships, Ottawa County.

Route/Location: I-196 from Byron Road to 32nd Avenue Freeway Reconstruction

Job Number: 201133

Control Section: 70024

Letting Date: December 2021

Est. Const. Cost: \$55M

Major Issue(s) – APB on I-196 Design-Bid-Build project.

CFS 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 2.85%. Concrete was the low-cost alternative.

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

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

Recommendation(s) - The ICC recommends approval of the use of APB on this design-bid-build project.

ACTION: Approved

10. Updated Alternate Pavement Bid and HMA Quality Initiative Guidance – Ryan Mitchell

Issue Statement – APB and HMA Quality Initiative (QI) Guidance

Major Issue(s) – Updated the HMA QI guidance document to add direction for APB projects: 5% of the cost of all eligible HMA items using the unit price in the engineers estimate.

Background/History – The current MDOT APB Process document, lists the following for incentives related to APB jobs:

- a) HMA QI: HMA QI is calculated by 5% of the cost of all eligible HMA items covered on the project. Guidance on use of HMA QI can be found on the website at the following link:

http://www.michigan.gov/documents/MDOT_HMA_Initiative_Guidelines_163421_7.pdf

- b) Concrete QI: Concrete QI is calculated by 5% of all concrete items covered under the percent within limits spec 12SP604(B) Quality Control and Acceptance of Portland Cement Concrete.

After reviewing this and the associated link, we determined there is a conflict in direction between the two documents as to how QI is calculated. Now that this has been identified, as well as the previous direction from our former Chief Operations Officer in 2014 clarifying to use the 5% approach (which was concurred with by the Federal Highway Association and relayed to the Asphalt Pavement Association of Michigan and Michigan Concrete Association at that time). We have revised the MDOT HMA Initiative Guidelines to correctly reflect how to calculate QI for the APB process: 5% of the total cost of all eligible HMA items. The total cost is calculated by using the unit price in the engineer's estimate. Current advertised and upcoming projects will reflect the “5% of the cost of all eligible HMA items” for the estimate during bidding.

Recommendation(s) - This is presented to the EOC for approval. The APB process guidelines will be updated with a revised link to the updated HMA QI guidance and a copy will be sent to industry when completed. In the meantime, currently advertised and upcoming projects will follow the “5% of the cost of all eligible HMA items using the unit price in the engineers estimate.”

ACTION: Approved

11. Use of Design-Build/Alternate Pavement Bid with Best Value Contracting Method, Blue Water Bridge Corridor and Plaza Expansion Project, City of Port Huron – Ryan Mitchell

Issue Statement – Request approval for the use of design-build/APB with Best Value contracting method on the reconstruction and reconfiguration of the Blue Water Bridge (BWB) Corridor and Plaza Expansion project in City of Port Huron.

Major Issue(s) – As the fourth largest port of entry in value of goods, the BWB crossing is vital to both the economy of the United States and Canada, any significant delay in the processing of traffic is a costly expense to the consumer and a major interruption in trade. Developing staging plans for maintaining access for motorists while continuing tolling and customs operations to avoid security concerns and massive traffic backups. Throughout project development, key goal is to maintain international security and border operations by providing adequate space and geography to allow for essential homeland security functions. The project also has many risks including refining the existing plaza alternative, completing environmental re-evaluation of the Environmental Impact Statement and Record of Decision (ROD) issued in 2009 of the approved alternative, updating Engineering Report, and conducting a Feasibility Study with General Services Administration (GSA) and Customs Border Petrol (CBP) on the refined alternative. Real estate acquisition and utility relocations are identified and currently underway. The project received \$25M Infrastructure for Rebuilding America (INFRA) grant which has an obligation deadline of Fall 2022 and substantial completion in 2025. Overlapping final design and construction phases while seeking input from qualified contractor through the design-build process is recommended to achieve schedule acceleration and reduce traffic, mobility, and safety impacts.

Background/History - MDOT began studying the BWB plaza for expansion in 2002. The study was driven by the small size of the existing plaza (18 acres), along with the need for increased border security, new inspection technologies, procedures, and policies, traffic growth, safety concerns, and aging and functionally obsolete infrastructure leading to the plaza.

MDOT successfully obtained a ROD through the FHWA in 2009, completing environmental clearance for a recommended alternative to move forward into detailed design and construction of a 38-acre plaza expansion. At that time, the project was divided into four separate construction contracts to facilitate easier delivery. Additionally, significant real estate acquisition occurred resulting in the purchase of 125 residences and 16 businesses by MDOT for the plaza and corridor expansion.

In May 2010, the CBP announced it could not fund their portion of the plaza expansion. Contracts three and four, the plaza expansion and the local street relocation, were put on hold as a result. In response to the funding shortfall, in late 2010 MDOT and the CBP created a more affordable plaza expansion proposal consisting of a 16-acre expansion that would only process commercial inspections. This revised alternative was defined in the Blue Water Bridge Land Port of Entry Feasibility Study Revision on behalf of the GSA by M. Arthur Gensler, Jr. & Associates, Inc. in December 2011.

A \$30M Transportation Investment Generating Economic Recovery grant and other sources provided funding to complete the first construction contract in 2012. This construction contract consisted of two phases, which involved the reconstruction of 2.2 miles of the I-94/I-69 corridor approaching the BWB plaza, and the replacement of the I-94/I-69 bridge over the Black River. The total construction cost was approximately \$90M.

In 2013, MDOT investigated a more comprehensive solution to replace the reduced proposal announced in 2010, which did not address many of the operational and circulation issues that exist at the current plaza. MDOT updated the BWB master plan, which included the concept of a revised 33.5-acre expansion that provides a better solution for future plaza needs. This option remains within the approved footprint of the ROD. The BWB master plan plaza alternative was used as a basis for discretionary grant applications and was selected to receive an INFRA grant for \$25 M.

Recommendation(s) – The ICC has recommended the use of the Best Value Design-Build contracting method for this project considering the need to accelerate schedule and reduce overall durations, minimize impacts to the border traffic, incorporate performance-based specifications that promote innovation and best practices from Contractor while meeting project milestones in a timely manner.

Best Value Procurement and Contractor selection is recommended for this complex, high risk, high visibility project to ensure the highest quality technical proposals. This procurement method requires significant effort from bidders, including project management, coordination, and design input. A best value Design-Build procurement allows proposers to demonstrate their understanding of and detailed approach to delivering the project, and selection of the proposal that offers the lowest risk, highest quality, and lowest cost to deliver the project. Based on the criticality of the operations, the sensitivity of the stakeholder engagement, and the schedule and quality expectations, a best value design build approach is recommended.

Status - New

ACTION: Conditional approval with requirement to come back for future EOC final approval.



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Carol Aldrich, Secretary
Engineering Operations Committee

RA:lr

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