



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
FEBRUARY 24, 2020, 10:00 A.M. – NOON
LOBBY CONFERENCE ROOM**

Present:	Carol Aldrich	Jason Gutting	Brandy Solak
	Mark Bott	Tony Kratofil	Brad Wieferich
	Gregg Brunner	Ryan Mitchell	Gorette Yung (phone)
	Mark Geib	Kristin Schuster	Hal Zweng
Absent:	Matt Chynoweth	Mark Dionise	
	Rebecca Curtis	Will Thompson	
Guests:	Robert Green	James Ranger	
	Ryan McDonnell	Dina Tarazi	

OLD BUSINESS

1. Approval of the December 5, 2019, Meeting Minutes – Tony Kratofil

ACTION: Approved

2. Approval of the January 21, 2020 Meeting Minutes – Tony Kratofil

ACTION: Approved

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

- a. All attendees should review the report for items in their respective areas. Any corrections to listings are to be sent to the CFS new materials resource email address as follows: MDOT-CFS-NewMaterials@michigan.gov.
- b. The New Materials Steering Committee is working to develop a flow chart.
- c. Jason Gutting was asked if an explanation for status could be added to the report. Jason will investigate.
- d. A dashboard summary will be brought to the next EOC meeting for discussion.

ACTION: See a. – d. above

NEW BUSINESS

1. Safety Topic: Dangers of Carbon Monoxide – Gregg Brunner

<https://www.nfpa.org/Public-Education/Staying-safe/Safety-equipment/Carbon-monoxide>

ACTION: Information only

2. New Pilot Standard Plan for Underdrain Outlets, R-80 Series – Robert Green

Issue Statement – Current design standards are insufficient to allow proper and long-term drainage of the pavement structure. This issue is going to be exasperated with the predicted higher water levels in our lakes and rivers. A revision to the Standard Plan for underdrain outlets, R-80 series, is recommended.

Major Issue(s) – Currently there is little to no design/engineering in the underdrain system that is installed with our reconstruction projects. It is often left up to the contractor to install the underdrains and outlets at their discretion. This often results in outlets being installed at or near the ditch elevation. With the passing of a few years, these outlets are quickly overtaken by vegetation and often have back water flowing into them, plugged, and/or buried. The underdrain system no longer works as designed and keeps the pavement structure saturated decreasing it's effective strength. This results in decreased pavement life and greater investment in performing maintenance on the pavement sooner than expected.

Background/History – The current R-80 standard plan gives a contractor three different options for underdrain outlet endings. These options are a metal end section, a circular concrete ring, and a precast concrete, bullet, ending. Field inspections of these endings have shown that neither of the options perform well in the long-term. The metal end sections typically corrode and/or are easily crushed. The concrete rings and precast bullets often fall off the outlet pipe. All three are also very easily taken over by vegetation and become plugged and buried.

Currently, outlet endings and ditches are to be maintained by our maintenance forces. This type of work is considered routine maintenance and per 23 U.S.C. 116 it is not eligible for federal aid funds. However, with resources stretched thin, this work often does not happen. Some outlet endings have been cleaned out through the Capital Preventive Maintenance (CPM) program, but this work item can only happen if there is another fix happening to the pavement. This all results in decreased performance of the pavement structure.

Recommendation(s) – Revise the current underdrain outlet ending detail to an ending that prevents vegetation growth in and around the outlet. The proposed outlet ending detail would also require greater freeboard than what is currently in our specifications and what is being constructed. The underdrain committee reviewed standards from many other states and is proposing an outlet ending like that used by the Indiana Department of Transportation. Their standard outlet ending is a poured in place concrete pad of varying sizes. Michigan would look to utilize one size approximately five-foot-wide by four or five feet long.

Status – Seeking Engineering Operations Committee (EOC) approval to propose a new standard for use as a pilot. We are currently drafting a new standard to work with Carlos Libiran for the revision of the R-80 series. The next step would be to share with the Joint Pipe Operations Committee/Innovative Pipe Operations Committee and the Michigan Infrastructure and Transportation Association for review and comments.

ACTION: Approved.

3. Roundabout at US-23 Connector/M-13/US-23 Interchange – Ryan McDonnell

Issue Statement – The Bay City Transportation Service Center (TSC) will be pursuing plan development and construction of a roundabout at the US-23 Connector/M-13/US-23 interchange as part of JN 132118 in Arenac County, south of the City of Standish.

Major Issue(s) – Pavement condition for the US-23 Connector/M-13/US-23 interchange is currently in poor condition. JN 132118 has been programmed to rehabilitate the existing interchange as a Hot Mix Asphalt (HMA) overlay with asphalt stabilized crack relief layer scheduled for 2022 construction. As part of this project, the Bay City TSC/Bay Region has determined reconstruction of the US-23 Connector/M-13/US-23 interchange as a roundabout provides the following benefits.

- Right Size MDOT Infrastructure. The existing full interchange is much larger than is required to meet existing and future traffic needs. A roundabout would provide a much smaller footprint thus reducing future maintenance and operations costs. This meets or exceeds the operational level of service, even accommodating holiday travel periods. It also eliminates a structure in poor condition that has minimum vertical clearance and has been hit multiple times.
- Safety Improvements. The existing interchange layout includes undesirable turning movements at US-23 and Sagatoo road, north of the interchange. A proposed roundabout at this location would reduce the risk of turning movements at this intersection while providing an opportunity for future modifications if the traffic operations were to change.

Background/History – US-23 Connector was once part of a proposal to extend the US-23 freeway to the east side of the state up to Tawas and Oscoda. To facilitate future expansion, a full interchange was constructed at the US-23 Connector/M-13/US-23. The proposed freeway was officially canceled in 2002. MDOT continues to maintain the full interchange without the traffic to support it.

In March 2019, the Bay City TSC started working with the Congestion and Reliability and the Geometrics groups to help analyze the US-23 Connector, M-13 / US-23 interchange. This team looked at the existing interchange and its operation under current traffic volumes and future volumes as well as safety. The existing interchange was then compared to several alternatives, including traffic signalization and roundabout options.

Per our last update meeting on October 25, 2019, an analysis provided by the Operational and Geometrics groups to the Bay City TSC/Bay Region offices helped determine that the roundabout option was the design best suited to meet the operational and safety needs at this interchange.

Recommendation(s) – The Bay City TSC/Bay Region would like to move forward with plan development/construction of the proposed roundabout at the US-23 Connector/M-13/US-23 interchange as part of JN 132118.

Status – A Request for Proposal (RFP) is currently posted for plan development of this project. The RFP includes roundabout design at the US-23 Connector/M-13/US-23 interchange. Proposals are due February 10, 2020.

ACTION: Approved

4. Design-Build Delivery and Maximum Price Variable Scope Bidding for Local Agency Bridge Bundling Pilot Project – James Ranger

Issue Statement – Requesting approval for the use of the Design-Build (DB) delivery method for the Local Agency Bridge Bundling Pilot Project, which will include reconstruction/rehabilitation of local agency owned bridges.

Also, requesting approval to use a Maximum Price Variable Scope bidding process. Due to the limited federal funding for this project, a maximum price component of the contract may be necessary and will be investigated. Primary and alternate bridges will be selected.

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:

- The project will reconstruct locally owned bridges as part of the MDOT trunkline program rather than as part of the Local Agency Program (LAP). This will require significant coordination between the Bureau of Bridges and the Bureau of Development (LAP, Environmental Services Section, Specifications and Estimates, etc.) to ensure integration of local agency and trunkline processes.
- Multiple local agencies will be involved. The intent of the project is to select bridges throughout the state with multiple bridge owners. Significant coordination with local agencies is anticipated and this will be a primary focus of the pilot project and lessons learned will be critical to any future bridge bundling program.
- MDOT may need permits or resolutions from the local agency participants to ensure work can be executed in non-MDOT Right-of-Ways.

Background/History – This project will include the reconstruction/rehabilitation of local agency owned bridges with the locations to be determined during the project development.

This project will serve as the pilot for a potential future, broader bridge bundling program, establishing a process for any future program, as well as lessons learned. A goal of a future bridge bundling program would be to eliminate serious or critical bridges in the state inventory. The goal of the pilot project is the reduction of serious and critical bridges in the state inventory. In order to meet the proposed construction timeframe, project selection will focus on projects with minimal schedule risk (permits, National Environmental Policy Act/historic, utilities, right-of-way, railroads, etc.). Deck/superstructure replacements and structures that are not scour critical will be likely candidates as they will minimize the schedule risks associated with environmental permitting.

Bridges with minimal impacts to utilities and the environment will be selected to meet construction schedule timeframes and remove schedule uncertainty during the design and construction phase that could affect bidding and contract administration.

Job Number: 209457
Control Section: Various, non-trunkline (statewide)
Project Cost: \$23M
Letting Date: September 30, 2020

Recommendation(s) – The Innovative Contracting Committee (ICC) has approved the use of the DB contracting method and Maximum Price Variable Scope for this project.

ACTION: Approved.

5. Switch to Federal Value Engineering Thresholds due to Rebuilding Michigan Accelerated Program – Ryan Mitchell/Dina Tarazi

Project Information: Rebuilding Michigan – Bonding and Accelerated Program
Route/Location: Various
Job Number: Various
Control Section: Various
Letting Date: Fiscal Year 2020 – Fiscal Year 2024

Issue(s) – Request to suspend the MDOT Value Engineering (VE) thresholds and maintain federal VE thresholds due to a significant increase in projects during the Rebuilding Michigan program.

Background – On September 6, 2012, the EOC approved continuing the current policy of requiring VE studies on all federal aid projects with an estimated total project (corridor) cost greater than \$25 million for a road project, or \$20 million total cost for a bridge project. The EOC also stated that future projects (corridors) that have a cost between \$25 million and \$50 million, or stand-alone bridge projects with a cost between \$20 million and \$40 million, may be exempt from VE on a project by project basis, if approved by the EOC.

The VE Final Rule published on September 5, 2014 modifies federal regulation, Title 23 Code of Federal Regulation, part 627, to reflect the revisions made in federal law (Section 1503(a)(3) of Moving Ahead for Progress in the 21st Century Act, MAP-21). The changes to the regulation include an increase in project thresholds for required VE analyses to projects on the National Highway System (NHS) receiving federal assistance with an estimated total cost of \$50 million or more for a road project, and \$40 million or more for a bridge project.

The lower threshold values have since been maintained on all NHS projects per the MDOT Road Design Manual, Section 14.27. However, due to the Rebuilding Michigan program, an exemption is requested to suspend the MDOT VE thresholds and maintain federal VE threshold values of \$50 million and \$40 million for road and bridge projects, respectively.

Recommendation(s) – The ICC unit manager and the VE coordinator request approval to suspend application of lower MDOT VE threshold values, instead maintaining federal regulations during the Rebuilding Michigan program, until further notice.

ACTION: Approved with one change. Rather than a temporary suspension, we will adopt the federal VE threshold and encourage use of VE under those values. The ICC will update the language to reflect this change.

6. Alternate Pavement Bidding for I-196 Design-Bid-Build Reconstruction Project, Allegan County – Dina Tarazi

Project Information: I-196 SB Design-Bid-Build reconstruction project in Allegan County, Grand Region

Route/Location: I-196 SB from 130th Avenue to US-31

Job Number: 106587

Control Section: 03034

Letting Date: December 2020

Est. Const. Cost: \$21.7M

Issue(s) – Use of Alternate Pavement Bidding (APB) on the I-196 SB 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 8.16%. 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 – The project appears to meet the criteria for the use of Alternate Pavement Bidding.

Recommendation(s) – The ICC recommends approval for the use of Alternate Pavement Bidding on this Design-Bid-Build project.

ACTION: Approved.

Carol Aldrich, Secretary
Engineering Operations Committee

RA:lr

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