



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
MARCH 3, 2016 – 9:00 A.M.
MULTI-MODAL CONFERENCE ROOM**

Present: M. Van Port Fleet M. Geib R. Ranck
R. VanPortfliet B. Wieferich B. O'Brien
S. Bower K. Schuster M. Bott
T. Marshall (FHWA) H. Zweng M. Sweeney

Absent: C. Rogers

Guests: P. Ajegba C. Bleech J. Schenkel I. Gedaoun C. Libiran
B. Krom J. Gutting D. Juntunen M. Eacker J. Forster (FHWA)

OLD BUSINESS

1. Approval of the December 3, 2015 Meeting Minutes – M. Van Port Fleet

ACTION: Approved

2. The use of the Fixed Price/Variable Scope (FPVS) contracting method to install delineators along various routes in the Muskegon TSC (US-31, I-96 and I-196). – February Email Approval.

Job Number: 129234
Control Section: 84923
Project Cost: \$141,000
Letting Date: May 11, 2016

The project will commence on specific corridors. The priorities will consist of: 1) US-31 from Ludington south to Allegan County; 2) I-96 from US-31 east to Marne; 3) I-196 from US-31 east to Hudsonville. The funding for the project is limited and is not expected to be sufficient to complete all the work. As the estimate is better refined, we will evaluate the priorities and remove as necessary (to be approximately 25% over the budget) and break them down further into smaller segments for bidding purposes. A FPVS procurement will allow the maximum amount of work to be constructed with the available funds.

ACTION: Approved

NEW BUSINESS

1. Pavement Preservation Operations Committee (P2OC) – B. O'Brien

The Michigan Department of Transportation (MDOT)/Michigan Road Preservation Association (MRPA) partnership has been very successful but does not include contractor representation for all types of road preservation construction. The MRPA members perform crack sealing, micro-surfacing, and chip seal fixes, but the MDOT Capital Preventative Maintenance (CPM) program also includes concrete pavement repairs and ultra-thin Hot Mix Asphalt (HMA) overlays as CPM treatments. The current partnership structure does not include contractor representation for the concrete pavement repair or ultra-thin overlay CPM fixes as these are not done by the MRPA members. Since much of the focus of the MDOT/MRPA partnership is on the CPM program, it would be beneficial to restructure the partnership to include contractor representation for concrete pavement repair and ultra-thin overlay CPM fixes.

The EOC is requested to approve the formation of the new Pavement Preservation Operations Committee (P2OC), and approve the draft Guidance Document that defines the authority, organization, and operational procedures of the P2OC.

ACTION: Approved

2. Active Traffic Management (ATM) Guidance Document – P. Ajegba

A draft Guidance Document was created to provide direction to MDOT staff when ATM is a possible solution for corridor congestion. The document was provided to EOC for review and comment prior to submittal to FHWA for review. EOC provided several comments that will be incorporated prior to FHWA submittal.

ACTION: Informational Item. No Action.

3. Project Pavement Designs/Interim Pavement Design Procedure - M. Eacker

Pavement designs have been completed for the following upcoming projects with the recommended pavement design method noted:

Project # 1

Route: I-275

Location: Five Mile to I-96/I-696/M-5 interchange, Wayne & Oakland Counties

Control Section: 63191

Job Number: 117602

Letting Date: March 2016

Pavement Design Method - ME 2.0

Project #2

Route: I-75 (Alternate Pavement Bid)

Location: Coolidge Road to South Boulevard, Oakland County

Control Section: 63174

Job Number: 115576
Plan Completion Date: December 2015
Letting Date: May 2016
Pavement Design Method - AASHTO 1993

Project #3

Route: I-75 (Alternate Pavement Bid)
Location: I-675 to Crane Road, Saginaw County
Control Section: 73112
Job Number: 100014
Plan Completion Date: December 2015
Letting Date: June 2016
Pavement Design Method - ME 2.0

Project #4

Route: US-23
Location: M-14 to Silver Lake Road, Livingston & Washtenaw County
Control Section: 81013, 81075, 47013
Job Number: 115398, 115399, 118461, 123268
Plan Completion Date: March 2016
Letting Date: September 2016
Pavement Design Method - ME 2.0

Project #5

Route: US-131
Location: 10 Mile Road to White Creek, Kent County
Control Section: 41132, 41133
Job Number: 117992, 119012
Plan Completion Date: September 2016
Letting Date: February 2017
Pavement Design Method - ME 2.0

Project #6

Route: I-69
Location: Ballenger Highway to Fenton Road, Genesee County
Control Section: 25085
Job Number: 115799
Plan Completion Date: October 2016
Letting Date: March 2017
Pavement Design Method - ME 2.0

The EOC directed that all life-cycled reconstruction projects be designed using the Mechanistic-Empirical (ME) pavement design method as of March 2015. Subsequent to this decision, errors have been identified with certain models in the ME design software. Recently, the ME software was updated from version 2.0 to 2.2 to correct the errors.

Version 2.2 included a corrected Freezing Index equation to address the errors. The Freezing Index equation has a large impact on the concrete ride quality model in the ME software.

This change has resulted in highly different concrete pavement design outputs from ME version 2.2 versus ME version 2.0 for the same conditions. MDOT has investigated the ride quality model inconsistencies and has determined that the model requires further study before version 2.2 is implemented. Model recalibration will likely take several months which will delay the use of ME Version 2.2.

The EOC is requested to provide guidance on what pavement design procedure (AASHTO 1993 or ME Version 2.0) should be used for future pavement designs until the ME pavement design software issues are resolved. The EOC is also requested to approve the recommended pavement design method for each project as noted. The project plan completion date is also noted to reflect the design schedule for each project.

ACTION: The ME pavement design procedure requires several inputs and models to provide a pavement design. Some of these inputs require customization for Michigan specific conditions. These inputs and models are still being developed and updated. The mechanistic pavement design procedure being used since March 2015 requires that the empirically based AASHTO 1993 design procedure be used as a baseline for all mechanistic pavement designs. The recent errors with ME version 2.0 and subsequent concerns about the updated concrete ride quality models in ME version 2.2 reinforces the need to ensure that ME is properly calibrated for Michigan conditions.

The EOC directs that all new projects utilize the AASHTO 1993 pavement design procedure. The use of AASHTO 1993 will be contingent upon concurrence from the FHWA Michigan Division office. The EOC will determine, at a future meeting, when the ME pavement design procedure will be reinstated subsequent to additional research on the concrete ride quality model. In addition, the EOC approves the recommended pavement design method for each of the projects listed.

4. The use of a Design-Build contracting approach on I-75 in North Region – B. Wieferrich

Route/Location: I-75, Arenac County Line to Cook Road, Ogemaw County

Job Number: 125856

Control Section: 65041

Letting Date: 12/21/2021 (Preliminary)

The project is a 6.589 mile rehabilitation project on I-75 in the North Region with an estimated cost of \$26,150,000. The preliminary Life Cycle Cost Analysis (LCCA) indicated an HMA pavement that is 7.28% less than the concrete option. Both pavement alternates are expected to have similar environmental, right of way, drainage, and utility impacts along with similar maintaining traffic concepts. The HMA option would be an HMA overlay over rubblized concrete. The concrete option would be a concrete overlay over an HMA separator layer. Alternate pavement bidding was previously approved by the EOC in April 2015.

ACTION: The EOC approves the use of a Design-Build contracting approach.

5. Bridge Design Quality Control/Quality Assurance Guidance Document – D. Juntunen

In response to a 2012 FHWA assessment of Michigan’s highway bridge design Quality Control/Quality Assurance (QC/QA) practices, a Guidance Document for QC/QA procedures has been developed. The primary focus is to document procedures presently being followed in Bridge Design and to establish a framework for individual project and program level QC/QA. This document was reviewed by the Statewide Bridge Alignment Team (SBAT) and the Region Bureau Management Team (RBMT) and recommended to the EOC for approval. The EOC is requested to approve the MDOT Bridge Design Guidance document which will be incorporated into the MDOT Bridge Design Manual and the “Final QA/QC Checklist.”

ACTION: The EOC approves the request. In addition, Bridge Design is directed to develop a programmatic review process that includes these improved QC/QA practices.

6. Adoption of AASHTO – A Policy on Geometric Design of Highways and Streets 2011 6th Edition – I. Gedaoun

This AASHTO publication is the basis for geometric design standards. Among other standard practices, it includes criteria for critical design elements for which the FHWA requires formal documented design exception requests when not met on National Highway System (NHS) projects.

The FHWA published a Final Rule to Title 23 Code of Federal Regulations Part 625 in the Federal Register on October 13, 2015, which now includes this edition of the AASHTO publication.

A comprehensive review of the 6th edition publication by the Geometric Design Unit finds no significant impacts from changes compared with the prior edition.

The EOC is requested to approve adoption of the updated manual.

ACTION: Approved. In addition, the EOC directs the Design Division to issue a Design Advisory concerning this issue.

Steven Bower, Secretary
Engineering Operations Committee

RA:SB:

cc: EOC Members D. Parker D. DeGraaf (MCA)
Meeting Guests M. DeLong J. Becsey (APAM)
K. Steudle D. Jackson D. Needham (MAA)
L. Mester W. Tansil Monica Ackerson Ware (MRPA)
D. Wresinski C. Libiran
Region Engineers R. Jorgenson (FHWA)
Assoc. Region R. Brenke (ACEC
Engineers Michigan)
TSC Managers G. Bukoski (MITA)