



**ENGINEERING OPERATIONS COMMITTEE  
MEETING MINUTES  
OCTOBER 1, 2015 – 9:00 A.M.  
MULTI-MODAL CONFERENCE ROOM**

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Present:	M. Van Port Fleet R. Ranck	M. Bott B. O'Brien	M. Geib R. VanPortfliet	B. Wieferich C. Rogers
Absent:	S. Bower	K. Schuster	T. Marshall (FHWA)	
Guests:	T. Stepanski K. Wallace T. Kratofil C. Youngs	M. Eacker T. Weston (HNTB) J. Forester I. Darwish (A. Benesch)	B. Krom B. Wagner B. Stonebrook	E. Schneider C. Stein M. Chynoweth

OLD BUSINESS

1. Approval of the September 3rd, Meeting Minutes – M. Van Port Fleet

*ACTION: Approved*

NEW BUSINESS

1. Make Gap-Graded Superpave an optional HMA top course mix for projects with traffic levels requiring E30 and E50 mixes – M. Eacker

The cost difference between Gap Graded Superpave (GGSP) over other E30 and E50 HMA top course mixes has increased significantly since it was approved by EOC as a standard at the September 2003 meeting. The cost/benefit of using GGSP is no longer applicable.

- GGSP is significantly more expensive than other available top course mixes.
- Any performance increases for GGSP as compared to 5E or 4E top courses could not be quantified.

At the September 2003 meeting, EOC approved GGSP as the standard top course for all projects with over 10 million ESAL's. This would be any projects with E30 and E50 mixes. At that time, GGSP was estimated to be \$4 to \$5 more per ton than 5E30 and 5E50 mixes. Prices used in the life-cycle process over the last two years have shown GGSP to typically be anywhere from \$6 to \$29 more per ton than 5E30 or 5E50 mixes. The high end of that scale is in University and Metro Regions, where it is the most likely that GGSP would be specified due to higher traffic volumes.

On occasion, a Region has requested that they be allowed to use a 5E mix instead of GGSP in the pavement design due to the significant cost increase of GGSP. Most recently, a request was made on the US-23/I-96 project currently under construction. In all cases, the request

was denied due to GGSP being the standard according to the HMA Mixture Selection Guidelines.

Per direction from EOC at its May 2013 meeting, an attempt was made by the Pavement Management Section to quantify the additional performance benefit from using GGSP as compared to 5E. A valid conclusion could not be reached because there was not enough available performance data from projects using GGSP. In addition, the safety and noise benefits from using GGSP may be very difficult to quantify.

During the recently completed Life-Cycle Cost Analysis Process Improvement effort, the Asphalt Paving Association of Michigan (APAM) requested that MDOT provide added benefit in the HMA performance curves for life-cycle costing or remove GGSP as the standard for E30 and E50 mixes. An Impasse Panel consisting of Greg Johnson, Mark Van Port Fleet, and Randy VanPortfliet decided that GGSP should be removed as the standard mix for E30 and E50 traffic level projects (>10 million ESAL's). The Regions may still use GGSP post-life cycle if HMA is the low cost alternative from the life-cycle cost analysis. The Impasse Panel directed that this issue be brought to EOC for approval.

The HMA Mixture and Selection Guidelines should be changed to reflect that Gap Graded superpave will no longer be the standard choice for projects with traffic levels requiring E30 and E50 mixes. It will remain as an option however. For projects requiring a life-cycle cost analysis, the appropriate 5E or 4E mix will be specified for the top course. If the Region feels that GGSP is appropriate, they can specify it for the project if HMA was the low cost alternative. The use of GGSP will be considered a post life-cycle enhancement, and therefore, does not need to be included in the life-cycle cost analysis.

*ACTION: Approved*

## 2. Interchange Lighting Guidance Document – B. Stonebrook

This document looks to establish the parameters and procedure as to when interchange lighting may be required for MDOT projects. MDOT staff will use this guidance to decide which projects may fall under the interchange lighting requirements and to set aside the necessary funding for this construction. New interchange lighting must be approved by the Engineering Operations Committee (EOC). Interchange lighting may require a signed agreement between the Michigan Department of Transportation (MDOT) and the applicable local municipality, if certain conditions apply. Final buy in and adoption is needed to move forward in implementing this guidance.

Up to now, there has never been a written document that defines the parameters and process for determining when interchange lighting may be needed for MDOT projects. Implementation of this document will insure a consistent methodology utilized statewide. The document assigns responsibilities to MDOT and/or the local agency for different scenarios as it relates to the installation, operation, maintenance and funding for the interchange lighting. The guidance document also provides that a review for each interchange be performed so as to incorporate any other safety initiatives that may be needed in lieu of or in addition to lighting. In this way safety can be enhanced on future MDOT projects. The RBMT has reviewed and commented on the proposed guidance document.

*ACTION: Approved subject to clarification: New interchange lighting requires approval of EOC. Metro P3 for freeway lighting does not allow the additional freeway lights so it would require a contract amendment. All existing installations are grandfathered.*

3. ABC Implementation on the I-94 Advanced Bridges – T. Stepanski

Route/Location: I-94 Modernization Project (Advanced Bridges):  
Second Ave., Cass Ave. and Chene Ave. over I-94 (clear-span)  
Brush St., Mt. Elliott St., Concord Ave., Cadillac Ave. and French Rd. over I-94 (multi-span)  
Job Number: 113125, 113553, 113124  
113553, 113552, 113551, 113126, 113127  
Control Section: 82024, 82024  
Letting Date: December 2016/December 2017

Maintaining regional mobility and work zone safety on the I-94 Freeway during the reconstruction of the I-94 Advanced Bridges through the use of Accelerated Bridge Construction (ABC) Concepts including self-propelled modular transporters (SPMT) and/or the Design-Bid-Build (DBB)+Alternative Technical Concepts (ATC) delivery process.

The I-94 Freeway in Detroit is vital to supporting Michigan's economy with 140,000 to 160,000 vehicles (including 10,000 trucks) per day traveling I-94 and \$100+ billion in annual commodity flow crossing the Detroit Bridges linking Michigan's international border crossings. On June 18th, 2015 MDOT's Owner's Representative Consultant recommended implementation of Accelerated Bridge Construction (ABC) Concepts to the MDOT Bridge Committee to move much of the Advanced Bridges construction work away from I-94 in an effort to better maintain regional mobility and enhance work zone safety.

To meet regional mobility goals of the I-94 Detroit Modernization Project, it is recommended to construct the three proposed clear-span bridges (Second, Cass and Chene) and five multi-span bridges (Brush, Mt. Elliott, Concord, Cadillac and French) over I-94 utilizing ABC technologies reducing I-94 freeway mobility impacts from 20+ weeks with conventional construction methods to as little as 3 weeks with ABC technologies. The recommended ABC technologies to be implemented by the Final Bridge Design Consultants are defined in the Draft ABC Concept Report (Dated June 4th, 2015) and include the use of self-propelled modular transporters (SPMT) and "top down" construction (additional details subject to the findings of the structure study to be completed as part of the final design).

MDOT with support from the Innovative Contracting Section will meet with the construction industry in late 2015 to obtain their input on implementation of ABC Concepts including SPMTs and/or the DBB+ATC delivery process.

*ACTION: Information item – No action necessary. EOC supports the plan to consider ABC technology and to consider alternatives for a clear span structure at several locations along the corridor, including a tied arch and clear span stinger system alternatives.*

4. Value Engineering (VE) waiver for the reconstruction of I-196 from West of 32<sup>nd</sup> Avenue to just West of Kenowa Avenue, in Ottawa County (JNs 118616, 118618 & 123333) follow up – C. Stein for C. Youngs

Route/Location: I-196 from west of 32nd Avenue to just west of Kenowa Avenue in  
Ottawa County  
Job Number: 118618, 118616, 123333  
Control Section:  
Letting Date: Various

A Value Engineering waiver was approved during the July EOC meeting. As part of the waiver, the Innovative Contracting Unit was asked to engage the Grand Region to discuss the potential use of Alternative Technical Concepts.

After discussing this with the Region, it was recommended ATC's not be used because of the following:

The current project programming includes a separate project for MOT/crossovers (JN 123333), which will be using Fiscal Year 2018 funding. The 2019 fiscal year will include reconstruction of I-196 WB (JN 118618). Both projects are currently included in the 5 Year Program. The reconstruction of I-196 EB (JN 118616) has not been included in the current Call for Projects cycle (FY17-21). All projects have been funded for design using one job number (JN 118618 C) and could possibly be packaged several ways if additional funding becomes available. The Maintenance of Traffic plan that has been developed for this project accounts for a multitude of funding scenarios and appears to be the most efficient given the current funding situation and different fiscal years where the projects currently reside.

*ACTION: Approved. EOC concurs with the decision to not utilize ATC for this project.*

#### 5. Diverging Diamond Interchange Information Guide – M. Bott

Whenever an interchange needs to be rebuilt MDOT evaluates the overall operations and future needs of the interchange. Future needs often dictate the addition of lanes the bridge must carry. However, the overall footprint of the structure often cannot be increased due to constraints such as existing bridge pier locations and limited right of way. One interchange design option that could address these constraints is the Diverging Diamond Interchange (DDI).

This interchange design is new to the state of Michigan, therefore, MDOT has very limited knowledge regarding design and operations. Two interchanges are being considered with this design due to the constraints being faced. The two locations are I-75 at University Drive in the City of Auburn Hills and I-96 at Cascade Road in the City of Grand Rapids.

Through STIC funding a multi-disciplinary team from MDOT and the two local units of government went to St. Louis, Missouri as a scan to meet with the Missouri Department of Transportation (MoDOT) to gain valuable insight on this new interchange concept. MoDOT has 13 DDIs in operation with two in the St. Louis area.

This scan focused on the operational and design aspects of this interchange type. MDOT is very interested in any lessons learned by MoDOT from the initial DDI's built and what modifications have been made to the future DDI's. Beyond meeting with MoDOT personnel the scan focused on observing this interchange type under live traffic and how the geometric elements, pavement markings, traffic signing, traffic signal operation and pedestrians have an impact on this design. The scan team has taken the information gathered and applied it not only to the design of the I-75 at University Drive and I-96 at Cascade Road interchanges but used it as an input into the development of a state specific DDI Guidance Document. This guidance is supported by the Federal Highway

Administration (FHWA) Every Day Counts initiatives. The basis for the guide was the August 2014 Informational Guide developed by FHWA.

The Traffic Safety Statewide Alignment Team has reviewed and commented on the proposed guidance documents and is requesting approval of the information guide by the EOC

*ACTION: Approved*

6. I-75 from the I-675 North Junction to north of Crane Road in Saginaw County (Information Item)– R. Ranck

Route/Location: I-75 from the I-675 North Junction to north of Crane Road in Saginaw County.

Job Number: 100014

Control Section: 73112

Letting Date: February 12, 2016

*(Information Only) The I-75 corridor in the Bay Region has been undergoing reconstruction and rehabilitation since 2001 with 10 different construction projects constructed or under construction to date. The segment from the I-75/I-675 north junction to north of Crane Road is scheduled for reconstruction in 2016. This segment is 0.86 miles in length and was previously included in the life cycle cost analysis done in 2009 for an adjacent project. The original project limits were redefined and this segment was excluded from the project. A new life cycle cost analysis will be required for the 0.86 mile segment and will come to the EOC for review and approval at a future meeting.*

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Steven Bower, Secretary  
Engineering Operations Committee

RA:SB:lsf

cc: K. Steudle  
L. Mester  
EOC Members  
Region Engineers  
TSC Managers  
Assoc. Region Engineers  
D. Parker  
M. DeLong

D. Jackson  
W. Tansil  
D. Wresinski  
C. Libiran  
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T. Phillips

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