



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
JULY 6, 2017 – 9:00 A.M.
MULTI-MODAL CONFERENCE ROOM**

Present: M. Van Port Fleet R. Ranck K. Avery K. Schuster M. Sweeney
M. Bott H. Zweng B. Wieferrich D. Juntunen S. Bower

Absent: J. Gutting M. Geib

Guests: R. Liptak E. Kind C. Brookes B. Krom D. Morena (FHWA)
D. Tarazi A. Kremer T. Snow C. Torres A. Johnson

OLD BUSINESS

1. Approval of the May 4, 2017 meeting minutes

ACTION: Email approval June 2017

NEW BUSINESS

1. Maintaining Traffic Scheme, US-2/US-41, Superior Region - A. Johnson

The Superior Region is requesting a variance to the Work Zone Safety and Mobility Manual to allow the use of tubular markers, pavement marking, and signs in lieu of temporary concrete barrier to separate traffic on the referenced project.

Description - 5.29 miles of Aggregate lift and HMA resurfacing
Route/Location: US-2/US-41 Westbound, Delta County
Job Number: 126833
Control Section: 21025
Letting Date: 2/2/2018

Posted Speed Limit 65 mph
Current ADT: 8700, 800 Commercial

The maintaining traffic plan requires existing divided eastbound and westbound traffic to operate as two-way traffic on the westbound roadbed during certain project stages. It is proposed to utilize solid, double yellow centerline marking and tubular dividers placed at 25' intervals in lieu of the temporary concrete barrier wall. A construction zone speed limit of 45 mph will be posted.

The project would be considered a pilot and the work zone would be monitored by the Region in coordination with Lansing work zone safety staff. A report will be issued after the project documenting customer concerns, work zone crash frequency/type, and other lessons

learned about the utilization of this maintenance of traffic method. Data will be compared to similar projects where temporary concrete barrier was utilized.

ACTION: Approval is granted contingent upon Attorney General review and approval of the concept.

2. Alternate Pavement Bid (APB) Projects - D. Tarazi, Ben Krom

a. US-10, Clare and Isabella Counties, Bay Region

Two US-10 projects scheduled to be packaged together and let in October 2018, include approximately 1.0 miles of freeway reconstruction and 7.3 miles of freeway rehabilitation with a total construction cost of \$25.3M.

The combined preliminary life cycle cost analysis (LCCA) indicated a hot mixed asphalt pavement that is 3.70% 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. Paving is the controlling operation for the construction schedule.

Job Number: 118947
Control Section: 37032
Project Cost: \$16,159,013
Letting Date: October 2018

Job Number: 123643
Control Section: 18023
Project Cost: \$9,093,694
Letting Date: October 2018

Based on the preliminary LCCA, type and cost of work, project impacts, and construction schedule, the Bay Region, the Pavement Selection Engineer, and the Alternate Pavement Bidding Coordinator recommend this project be let using an APB contracting method and utilize an Alternate Technical Concepts approach for traffic control.

ACTION: Approved

b. I-75, Arenac County, Bay Region

This project includes 1.5 miles of freeway reconstruction and 3.8 miles of freeway rehabilitation with a construction cost of \$20.6M which is scheduled to be let in December 2018.

The preliminary LCCA indicated an HMA pavement that is 10.26% 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. Paving is the controlling operation for the construction schedule.

Job Number: 123642
Control Section: 09035
Project Cost: \$20,604,104
Letting Date: December 2018

Based on the preliminary LCCA, type and cost of work, project impacts, and construction schedule, the Bay Region, the Pavement Selection Engineer, and the Alternate Pavement Bidding Coordinator recommend this project be let using an APB contracting method.

ACTION: Approved

3. Culvert Recommendations – T. Snow, H. Zweng

The Hydraulics Unit regularly receives requests to provide design and maintenance recommendations for culverts that reside within the project limits of roadway rehabilitation/reconstruction projects. Competing project priorities can cause instances where the recommendation cannot be implemented due to cost constraints at the time of the proposed project. Often, project development staff must select a less costly option that only partially addresses the problem.

EOC is requested to approve the formation of a multidisciplinary team that will take a more risk-based approach to culvert design and maintenance recommendations. The team will utilize available site data and consider all competing priorities to provide recommendations on a project level. This team will include representatives from structures, geotechnical, road, construction, maintenance, hydraulics engineers, and project development staff.

ACTION: EOC approves the formation of the team. The team will develop a risk-based assessment process to be implemented. The team will eventually work in conjunction with a future statewide resource program to manage culverts at a network level and report back to EOC in six months with a recommendation. The Environmental Section will take the lead on forming the team.

4. The Manual for Assessing Safety Hardware (MASH) Compliant Terminals - C. Torres

MASH compliant guardrail approach terminals must be used for new installations on federally-funded projects let after 6/30/18. Present MDOT-approved guardrail approach terminals only meet the requirements of NCHRP 350.

The Barrier Advisory Committee (BAC) recommends the following action items to meet the required implementation schedule (projects let after 6/30/18):

- a. Use MASH-compliant, tangent (Type 2) guardrail approach terminals with FHWA eligibility letters for all new installations.
 - i. Only the MSKT and Soft-Stop, respectively, would be permitted to bid now.
 - ii. The Max-Tension may be given the opportunity to bid in the future, but only after FHWA has issued an eligibility letter for this terminal, and BAC has had an opportunity to review the FHWA letter and all associated information, and

- approves the use of the Max-Tension as a suitable alternative to the MSKT and Soft-Stop, respectively.
- iii. Flared terminals would not be permitted for new installations in the interim (i.e., until a second suitable flared terminal becomes available). This is recommended to avoid sole-sourcing the SRT M10 flared terminal.
 - b. Continue using MASH-compliant, tangent (Type 2) guardrail approach terminals for all new installations until a second MASH-compliant, flared (Type 1) guardrail approach terminal becomes available and is deemed suitable by MDOT.
 - c. Specify MASH-compliant guardrail terminals by *special provision* (instead of by Standard Plan Series, as is currently done with NCHRP 350 compliant guardrail approach terminals).
 - i. Manufacturers will be required to provide shop drawings, installation manuals, and maintenance manuals for each type of terminal being provided.
 - ii. Shop drawings are subject to review and approval by the Department.
 - iii. On each project, guardrail terminal manufacturers will be required to provide training pertaining to the installation, operation, and maintenance of the guardrail terminal(s) being installed on the project.
 - iv. In the future, once MDOT becomes familiar with the MASH-compliant terminals, MDOT could revise the Standard Plans and provide details of the MASH-compliant terminals and, thereby, revert to the use of standards for guardrail terminals.
 - d. Add language and revise Chapter 7 of the Michigan Road Design, as needed, due to the design changes associated with MASH-compliant guardrail terminals.
 - i. Revising the design methods (i.e., only specifying tangent terminals, using a special provision, etc.) and design parameters (e.g., changes in the Beginning Length of Need (BLON) point and guardrail deduction quantities) associated with MASH-compliant terminals.
 - e. Issue a design advisory informing designers when MASH-compliant guardrail terminals are required, the methods for specifying MASH-compliant terminals (i.e., by special provision rather than by Standard Plans), the new design methods and parameters associated with MASH-compliant terminals, etc.
 - f. Issue a construction advisory informing construction staff of the new special provision for MASH-compliant guardrail terminals, the shop drawing review requirements, the manufacturer training requirements for MDOT staff, etc.
 - g. Continue using current NCHRP 350 compliant, MDOT-approved double-sided (Type 3) guardrail terminals, detailed in Standard Plan R-63 Series.
 - i. MDOT will continue to use currently-approved Type 3 terminals until suitable MASH-complaint alternatives become available, and are approved for use by MDOT.

ACTION: Approved

5. Single Point Urban Interchange (SPUI) Lighting, Grand Region - M. Bott

Route/Location: M-6/Kalamazoo Ave interchange
Control Section: 41064

Interchange lighting was not installed as part of original construction in 2004. The Interchange Lighting Guidance Document (#10235) recommends lighting for all SPUI interchanges. Requesting funding to install lighting at this SPUI interchange.

ACTION: Approved

6. US-131/M-186 Roundabout, North Region – R. Liptak

Construct single-lane roundabout at the intersection of US-131/M-186 - Grand Traverse County.

Route/Location: US-131 at the M-186 Intersection

Job Number: 132412A

Control Section: 28091

Letting Date: December 2018

Currently, the intersection has a flashing beacon with caution (yellow) for US-131 and stop (red) for M-186. The intersection geometry present marginal sight distance which has led to many angle crashes. Additionally, there is a gas station in the southeast corner with three driveways, one of which is very close to the intersection. There is currently not a clear vision corner right-of-way in the southeast corner which adds to sight distance issues when cars are parked in the gas station lot near the intersection.

A Road Safety Audit (RSA) found that these issues lead to increased crashes. This intersection is currently one of the North Region's high crash locations. There have been multiple angle crashes, mostly resulting from westbound vehicles attempting to cross or turn left onto US-131. Some of the angle crashes have been severe, including two fatalities and two A-injury crashes in the past three years.

There have been some safety improvements made already at this intersection. This intersection currently has dual overhead flashing beacons and an overhead stop case sign. The pavement markings have been updated to help clarify lane designations and improve sight distance and Fife Lake Township installed illumination lighting.

An RSA was conducted on November 16- 17, 2016. This intersection was originally programmed for turn lane additions and a full traffic signal installation. The (spell out first) (RSA) recommended a roundabout as the preferred long term intersection improvement alternative to help with the existing crash patterns. Funding became available to upgrade the programmed fix to the preferred long term RSA solution. This change is also supported by the North Region and Traverse City TSC.

There are no existing sidewalks or crosswalks and no plans to include pedestrian facilities with the project as this is a more rural intersection that does not see a significant number of pedestrians.

The preliminary design calls for a single lane roundabout with four (4) entering and four (4) exiting legs. Replacement lighting will also be part of the scope of work. This correlates with the RSA recommendations, and is also supported by TSC and Region.

EOC is requested to approve a roundabout design for this intersection.

ACTION: Approval is granted contingent upon the region addressing all issues identified at a public meeting.

Steven Bower, Secretary
Engineering Operations Committee

RA:SB

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