MAC Executive Summary
Materials Advisory Committee (MAC) Meeting
September 16, 2009

Jim Zufall prepared this summary. These minutes are an executive summary only. More detail is provided in the official MAC Minutes which are available on the MAC website @ http://internal/MAC/ . For more information please call (303) 398-6501.

MAC Approval Items

1) Approved a change to Revision to Subsection 702.06 regarding the use of crack fillers and sealers. This specification was going to be revised after the task force research effort was completed; however, with the Spec Book being updated next year it was deemed necessary to edit the existing subsection for clarity and accuracy now. ASTM D 6690 Type I is for filling joints and non-working longitudinal cracks. ASTM D 6690 Type II is for sealing joints and working cracks. For more information see the official MAC Minutes or contact Roy Guevara at 7-6526.

2) Approved adding PG 70-28 to our list of Standard Binders. The surrounding states of Utah, New Mexico, Montana, and North Dakota use this binder. By adding it to the list of Standard binders, we will have another option should shortages in binders happen again in the future. For more information see the official MAC Minutes or contact Roy Guevara at 7-6526.

3) Approved revision of Subsection 412.16, Repair of Defective Concrete Pavement. Changes were required to address partial depth cracks in concrete pavement. Eric stated that all of the cracking seems to have originated because of workmanship issues not because of the materials. For more information see the official MAC Minutes or contact Patrick Kropp 7-6541.

4) Approved changes to the Smoothness specification to require concrete pavement to meet the same IRI specification requirements as asphalt pavement. Currently the acceptance criteria for concrete pavement is profile index. New line lasers are being installed on CDOT's smoothness measuring equipment to facilitate this change. Another significant change is to allow the Contractor to grind into incentive for either type of pavement. This should result in smoother, longer lasting pavements. For more information see the official MAC Minutes or contact Patrick Kropp 7-6541.

5) Approved changes to the HMA Pre-Paving Conference Agenda. Five changes were made to the agenda not including the reference to paving predominantly uphill. For more information see the official MAC Minutes or contact Roy Guevara at 7-6526.

6) Approved changes to the specifications allowing ASTM C1293 in place of ASTM C1260. The new verbiage is: Test results from ASTM C1293 Standard Test Method for Determination of Length Change of Concrete Due to Alkali-Silica Reaction may be substituted for ASTM C1260 test results. The ASTM C1293 test shall be run on an individual source of aggregate. The ASTM C1293 test shall not use fly ash or slag as part of the cementitious content. Any aggregate source tested by ASTM C1293 with an expansion greater than or equal to 0.04 percent at one year shall not be used unless mitigative measures are included in the mix design. For more information see the official MAC Minutes or contact Patrick Kropp 7-6541.

7) Approved creation of a quick action team to modify spec language concerning the extent of removal and replacement limits for poor longitudinal joint density. Craig Wieden presented some project data where the current procedure may not be adequate and may need to be revised. For more information see the official MAC Minutes or contact Richard Zamora at 2-5778.

8) Approved as an experimental feature to use diamond grinding as a macrotexture on new concrete pavement in Region 2. This project is a conventional whitetopping project that was constructed in 2008/2009. Significant grinding has been required to correct the rough ride on this project. Region 2 proposes to leave a diamond ground surface. The Region will periodically monitor pavement skid resistance and wet weather accidents to determine if diamond grinding will provide a long-life, safe, skid resistant surface. For more information see the official MAC Minutes or contact Richard Zamora 2-5778.

Newly Initiated MAC Efforts

Discussion Topics

1) Scott Rees reviewed his e-handout on the Pipe Type Selection Policy. There was a meeting with the Culvert Committee on August 21st, and Scott addressed their comments and added them with the document in advance of MAC/PDAC comments.

2) Craig Wieden reviewed his e-handout concerning density targets for coarse graded mixes. Region 2 constructed a project on I-25 near Colorado City during the summer of 2008. In general, the contractor met the target density range of 92-96% of Rice. However, the mat appears to be permeable as evidenced by moisture still on the surface several days after a rainstorm. We already require 93% to 97% of Rice for SMA. Craig asked for MAC support to pursue a formal AIF task force to look into our target density requirements for coarse graded mixtures. It was decided to pursue a forensic investigation first before endorsing a task force.

3) MAC Schedule: The Big MAC has been cancelled for 2010 due to budget restrictions. The Four Corners meeting for 2010 has been cancelled due to budget restrictions. For additional information, please contact Jim Zufall 7-6501.

Ongoing MAC Efforts

1) MEPDG – Jay reviewed progress of this effort. He first reviewed the thirteen sites on the bulk sample location map of which four are PCCP and the remaining are HMA. The two tables of coring locations were also reviewed. Samples from the PCCP projects have been shipped to Minnesota about 1½ weeks ago. The HMA samples will be shipped to Virginia. The Soils Program will need to obtain a resilient modulus device. The Darwin software is coming along well with the final version available in 1½ years, at which time Darwin 3.1 will be phased out.

2) At the May MAC meeting, Jim Zufall requested we form a QAT to discuss, evaluate, and document in a white paper a protocol in response to requests for non-standard asphaltic materials. Kim reviewed the e-handout for the motivations for using WMA technology.

- Paving seasons may be extended due to the ability to compact at lower temperatures.
- Compaction is easier to achieve.
- Plants are run at lower temperatures resulting in less fuel being used.
- Plants are run at lower temperatures resulting in less pollution being produced.

- Asphalt mix may be hauled over longer distances without fear of losing so much temperature that the mix can't be compacted.
- Fewer fumes are produced at the paver due to lower paving temperatures, possibly resulting in health benefits to paving personnel.
- Binder is aged less during the plant mixing, possibly leading to an extended binder life.
- An increased ability to pave with lower temperatures at night will aid in alleviating day time construction delays.

Education and Research

1) Jay reviewed test data for the crumb rubber research pilot project in Region 4. Preliminary results indicate good test results for the terminal blend and wet process.

2) Roberto reviewed each of the following projects in brief.
   - Participation in Southeast Superpave Center (Pooled-Fund)
   - Alternate Longitudinal Tining to Address Vehicle Handling
   - Evaluation of Tire-Pavement and Environmental Traffic Noise in Colorado
   - Determination of Strength and Modulus for the Design of Lime-Stabilized Soils
   - Development of New Corrosion/Abrasion Guidelines for Selection of Culvert Pipe Materials
   - Concrete Deck Performance Relative to Air Entrainment
   - Evaluation of Longitudinal Joint/Tie-Bar System

3) Bob Mero attended the recent Tire/Pavement Noise Research Consortium meeting in Dayton, OH. This interagency collaboration effort was implemented as a result of discussions that occurred during the April 2006 FHWA Tire-Pavement Noise Strategic Planning Workshop. The objectives of this research project are to provide a forum for states to discuss tire/pavement noise issues, develop a proposed research plan, to pool resources and efforts of multiple state agencies and industry to perform tire/pavement noise research in a similar manner (avoiding duplication), and sharing of data. Continued CDOT participation in this study has been approved by the CDOT Research Implementation Council (RIC) through FY10.