MTO-OAPC HOT MIX ASPHALT SUBCOMMITTEE MEETING NOTES

Date: March 28, 2024
Time: 10:00am to 1:00 pm
Location: ORBA Road House & Microsoft Teams

ATTENDEE	ORG.	ATTENDEE	ORG.
Doubra Ambaiowei (DA)	OAPC/ORBA	**Joel Magnan (JM)**	MTO
Fernando Magisano (FM)	Canadian Asphalt Industries Inc.	**Seyed Tabib (ST)**	MTO
Mark Latyn (ML)	Capital Paving	**Gelu Vasiliu (GV)**	MTO
Selena Lavorato (SL)	GIP Inc.	**Gizelle Cotton (GC)**	MTO
Kevin Martin (KM)	Fermar Paving Ltd.	**Sonja Dambremont (SD)**	MTO
Trevor Moore (TM)	COLAS Construction	**Dariusz Wodala (DW)**	MTO
Amma Agbedor (AA)	Asphalt Institute	**Imran Bashir (IB)**	MTO
Steve Manolis (SM)	GIP Inc.	**Stephen Lee (SL)**	MTO
Sina Varamini	CRM of Americas	**Warren Lee (WL)**	MTO

REGRET	ORG.	REGRET	ORG.
Walid Abou-Hamde (WAH)	ORBA	**Loan Le (LL)**	MTO
Vincent Gangaram (VG)	Dufferin Construction		

INTRODUCTION / ANNOUNCEMENTS
• Introductions • No changes to subcommittee membership for either OAPC or MTO • Joel Magnan delivered a safety talk on the importance of training new staff during onboarding for the upcoming construction season

OPEN ITEMS		**ACTION BY**
Dec-19-8	**MIX PERFORMANCE TESTING** *Description:* • MTO to develop specification for MPT that can be included on any project. • OAPC wondering if MTO has preferred method for balanced mix designs. • OAPC enquiring about IDEAL CT. Is it a consideration for Ontario?	

OPEN ITEMS		ACTION BY
	• MTO is conducting ongoing MPT Lab Correlations *Discussion:* • MTO shared "03_Item Dec-19-8_MPT Correlations Data for Sharing with ORBA Cumulative 2023 (March 27 updated) REVISED". MTO indicated that two laboratories decided not to participate, and other results from other laboratories were not included due to deviation from the test method during testing. • OAPC wondered if switching to SMA 12.5 from Superpave reduced variability in the correlation. MTO indicated this can only be determined with further correlations. • OAPC asked if MTO participated in the SCB-FIT correlation. MTO did not participate in the SCB-FIT correlation for this round due to equipment failure. • OAPC asked if MTO is considering threshold change based on the results. MTO replied that thresholds mentioned are preliminary values based on research. Further refinement may be considered in the future based on data collected from on mixes used in contracts. • OAPC asked if there was a control laboratory, and the summary should mention MTO did not participate in this round of SCB-FIT correlation. MTO responded that there is no control laboratory, and variability will be considered for the entire population of data. Further, the MTO laboratory is not a QA or referee laboratory. OAPC laboratories also elected to not participate. QA and Referee laboratories are obligated to participate in correlations, while QC/contractor laboratory participation is optional. • MTO presented the DCT correlation. • OAPC observed that the number of gyrations between briquettes of similar thickness is very different. • MTO presented the HWT correlation results for 2023 round 2. • OAPC inquired about the rutting threshold and if it will be changed. MTO indicated that these are preliminary thresholds and have been shared with industry in multiple presentations at multiple venues. • OAPC inquired if ~70% COV in gyration is not alarming for HWT. MTO indicated that is the purpose of correlations. MTO will be conducting lab visits to see where this variation might be introduced. Factors include material splitting, temperature control, etc. • OAPC asked if MTO will consider other rutting tests than Hamburg. MTO indicated that at this time it is following the lead of other US DOTs who are using Hamburg. • MTO indicated that it is working on a new CCIL certification specific to MPT.	

OPEN ITEMS		ACTION BY
	• MTO informed OAPC that BITU0033 is now published and is related to MPT and will be used to conduct testing for information purposes. The specification is not for acceptance purposes. • MTO indicated that it is working to select contracts for group coring for ISS correlation this year. Contract specifics (milled or new surface, mix types) are not known at this time. **ACTION** – *No Action.*	
May-22-10	**ENVIRONMENTAL PRODUCT DECLARATIONS (EPD'S) FOR ASPHALT IN ONTARIO – MTO'S POSITION?** *Description:* • As part of the net zero emissions goal, OAPC is seeking to understand MTO perspectives on EPD's for Ontario Asphalt Mixes and forging a collaborative approach to make it work. *Discussion:* • OAPC is working on EPDs for Ontario. Quotes are being obtained from consultants. • OAPC working with NAPA on adapting their software to Canada/Ontario. • OAPC is publishing an article on EPDs in Asphaltopics spring edition. **ACTION –** *No Action.*	
May-22-13	**SMA Applications – Grit Sand Specification Revisions** *Description:* • OAPC suggests MTO can look at revising specification due to lack of grit sand sources available. • OAPC indicated that there is variability in how CA firms accept gritting material on MTO contracts. *Discussion:* • MTO is still working on the specification. Acceptance range for gradation has not been changed. As previously presented to OAPC, there will be clear payment adjustment and rejection range for grit not meeting the requirements. • MTO is also working on a PH-CC to calculate the payment adjustments in case the grit is not acceptable. • Further, MTO is looking at potential actions when the grit is rejectable. Possible actions include metal ball blasting, diamond grinding, and water blasting to retexture the surface and provide adequate friction. Removal/replacement may also be an option. • OAPC asked if any friction data for 2017 QEW or 401 recent widening was found in their database. MTO responded that specific date and location needs to be provided. **ACTION** – *OAPC will determine the contract numbers, specific dates, and locations where friction testing was conducted on SMA in the past.*	**OAPC**

OPEN ITEMS		ACTION BY
Sept-22-12	**Smoothness specification – future changes** *Description:* • MTO reviewing the current smoothness specification and the list of exemptions for existing pavements. Specifically, MTO would like to modify section 8.01.02 paragraph f: ○ *"The first adjacent lane consisting of one or more lifts of hot mix asphalt that shall match to an existing surface that is not being resurfaced as part of this Work."* • MTO noted that currently projects have excluded entire lanes from smoothness measurements due to the tie-in exemption. *Discussion:* • MTO is still in the internal consultation process. **ACTION –** *MTO will continue following the consultation process.*	**MTO**
Dec-22-13	**ADDITIONAL OAPC 2024 RESEARCH PROGRAM OUTLINE** *Description:* • OAPC initiated a new Study in collaboration with Carleton University. The expected timeline to complete Study is 3 years. • The study objective is to quantify the GHG emissions at asphalt plants. This study supports the move to net zero emissions. *Discussion:* • OAETG is conducting a mix performance study and relating it to BMD. • OAPC is also working on characterizing RAP stockpiles to understand true grading of current stockpiles. OAPC indicated that all parties need to work to address challenges with incorporating RAP. • OAPC will have a presentation on BMD (by NCAT) to be featured in this years ATS. Verification of Balanced Mix Design and field performance will be discussed. **ACTION –** *No Action.*	

June-23-1	**HMA OPTIMIZATION** *Description:* • Crumb rubber and WMA coupled with higher RAP combinations to reduce environmental impacts. • OAPC wants to promote using recycled material. *Discussion:* • MTO delivered a presentation on crumb rubber performance titled "01_Item June-23-1_RMA shared with OAPC 2024". MTO's conclusion indicated that the gap graded rubber mix, there is marginal performance benefit; however, there are significant challenges and additional cost. There were issues related to the mix design procedure (swelling, target volumetrics), and plant limitations (physical size of blending equipment, stability of AC in terminal blends, design fines returned levels, safety due to the elevated temperatures and emissions). In addition, there was limited availability of quality crumb rubber and field blending equipment, no clear PGAC acceptance protocol, concerns with recyclability of the mix in the future, high cost due to high AC content with crumb rubber, issues during Construction (reduced workability, roller pickup, and clumping), post construction aggregate loss. • OAPC indicated a structural analysis and field visit to the sites should be conducted. Further, cryogenically produced crumb rubber is now much better, and particle size is finer and performs better than ambient produced crumb rubber that was used in the trials reviewed. MTO responded that based on the information presented, there is no clear advantage of using crumb rubber compared to conventional HMA. Contractors willing to use this technology may submit change proposals for consideration. • OAPC suggested that lift thickness for crumb rubber sections may have been less than control section, but there was no supporting evidence either way. • OAPC suggested that maintenance activities may have been different between crumb rubber and control sections, but there was no supporting evidence either way. • OAPC suggested that additional trials should be considered. • MTO previously requested that OAPC consult its members on interest in crumb rubber. MTO asked if OAPC consulted its members. • OAPC indicated that it will ask its members if they are interested in using crumb rubber. • The discussion moved to other technologies, particularly WMA. OAPC indicated that it instructed its members to participate in emissions testing and data collection related to WMA. OAPC requested that MTO review the data it has already received. MTO indicated that the analysis of this data will take time with the limited resources. **ACTION** – *OAPC to consult members on interest in crumb rubber.*	**OAPC**

OPEN ITEMS		ACTION BY
Sept-23-1	**BALANCED MIX DESIGN** *Description:* • OAPC wants to understand ministry's process on BMD. *Discussion:* • MTO asked if there is any update on the FHWA testing and education trailer. OAPC is currently focusing on resources that are available in Ontario. • OAPC indicated that AASHTO TP indicates all the steps to BMD. MTO referred to the 2016 Auditor General report. As a response to the report, MTO committed to introduce new laboratory procedures to better predict pavement performance in the field, including acceptance based on mix performance testing and balanced mix design. Volumetric mix design has limitations, hence the focus on MPT. • Further, MTO has achieved many of the milestones related to implementing BMD based on the AASHTO TP document. • OAPC asked if there is still a lot of fatigue cracking. MTO responded that some but not all fatigue cracking has been addressed. Further, testing Tank AC does not capture aging of AC during production, as well as many other issues, that is why RAC testing has been implemented in the interim. RAC testing may or may not be eliminated once MPT is fully implemented. The medium to long term goal is fully implementing MPT and BMD. • OAPC indicated all direction on BMD and MPT need to be shared by all parties so that everyone can act accordingly. Industry does not understand MTO's current approach. • MTO would like to gradually introduce BMD, since industry needs more time to adapt. MTO wants to start with Approach A (volumetric mix design with performance verification) and gradually further to Approach B (volumetric mix design with performance optimization). • Further, MTO indicated that this is the importance of FHWA training, because in the US it is proven that it reduces variability between laboratories and will help push the MPT and BMD initiative further. OAPC agreed that this would be a good approach and see if they can get the trailer, or at least a technician and hosting lab. OAPC will take this back and provide a response. • OAPC indicated that MTO should consider a medium-term plan for what will be done. Because we don't know if EPDs will be used, Life Cycle implications, and how that impacts BMD. **ACTION:** *OAPC to assess the feasibility of bringing the FHWA trailer to Ontario and organize OAPC technician BMD training.*	**OAPC**

OPEN ITEMS		**ACTION BY**
Sept-23-2	**PH-CC-866: BINDER REPLACEMENT ADJUSTMENTS** *Description:* • OAPC stated that the PH-CC-866 indicates +-0.2% in AC Content and a Binder Replacement of -5.0%. The negative may be a mistake. *Discussion:* • MTO indicated that they have conducted a paper exercise and there is no apparent issue in the form. The form reflects the existing specification. Allowing for positive binder replacement allows for increasing RAP contents beyond the specified limits, and/or reducing virgin AC, which are of concern to MTO. • MTO requested a specific instance where this created a problem at the contract level. ***ACTION*** – OAPC to provide a specific example that this created a problem at the contract level.	**OAPC**

OPEN ITEMS		**ACTION BY**
Sept-23-3	**OPSS 313 – REVISITING QUALITY EVALUATION** *Description:* • How can OAPC increase or strive for better quality in asphalt pavement? *Discussion:* • MTO presented a document titled "02_Item Sept-23-3_ERS update 2023 with frequency distribution charts". • OAPC indicated that ~25% of the mixes that are accepted are simultaneously penalized on the ERS. • MTO asked why OAPC keeps referring 0.97 as the benchmark. MTO indicated that the 0.97 is simply to allow enough contractors to qualify and bid on the work, because otherwise it would exclude too many contractors and create a poor bidding environment. Selection of this threshold for Contractor Performance Rating is for practical reasons of qualification and MTO is not endorsing that 0.97 is considered to be full quality. • MTO was fully transparent in 2017 when the changes were made to the ERS and had calculated the anticipated impact to contractors and published an alert with the statistical data. • OAPC indicated that industry would have never accepted the ERS when it was implemented 20 years ago if industry knew this was the environment that would be created. • MTO also indicated that the CPR does not include tack coat and RAC. Tack coat and RAC should be considered in CPR. • OAPC asked why asphalt is being treated differently than other materials. MTO replied that its policy reflects the recommendations from the 2016 Auditor General Report which focussed on asphalt pavement quality. • MTO requested that OAPC submit their exact concerns in writing to the MTO chair of this subcommittee. • MTO also indicated that the MTO-ORBA Executive committee would be a much better audience to answer this question. **ACTION** – *OAPC will address a letter to MTO.*	**OAPC**

OPEN ITEMS		**ACTION BY**
2023-12-1	**CTAA 2025 & MTO'S COLLABORATION** *Description:* • OAPC requested MTO to collaborate for CTAA 2025 since the conference is coming to Ontario. OAPC feels that MTO should not be declining given their leadership role. • OAPC requested MTO to showcase their facility during CTAA 2025. *Discussion:* • OAPC thanked MTO for participation in the ORBA Annual Convention and AGM. **ACTION** – *OAPC will bring the CTAA 2025 MTO participation and CETI tour inquiry to MTO-ORBA Executive Committee.*	**OAPC**

NEW ITEMS		**ACTION BY**
2024-03-1	**REVISITING AC INDEX PUBLICATIONS** *Description:* • OAPC asked why AC Index was not published over the winter. *Discussion:* • MTO is revisiting this. MTO says that there was further review and determined that an Index could not be calculated in the winter months due to the lack of vendors and other factors. • OAPC requested a roundtable to address their concerns once MTO has finished the review. **ACTION –** *MTO to review further.* **ACTION** – *MTO to provide what goes in to determining the index, who submits data, etc.* **ACTION** – *OAPC will determine if a separate meeting is necessary to explain to MTO the impacts on non-MTO tenders.*	**MTO/OAPC**

NEW ITEMS		**ACTION BY**
2024-03-2	**APPROACH TO INNOVATIONS** *Description:* • OAPC indicated an MTO contract was tendered with high-strain interlayer mix in February. • OAPC wants to understand how the specification was put together. • OAPC wants to understand how new products and technologies are looked at by the meeting. *Discussion:* • MTO indicated that there are two overlays on existing concrete base (composite pavement). The overlays will be removed and two high AC asphalt layers, with polymer modified tack coat will be used. The idea is that the highly flexible layer won't allow for reflective cracking from the concrete slabs joints/cracks below. • MTO further explained, that in unprecedented situations MTO needs to be able to solve problems quickly. This is often done through NSSPs to use a non-standard method or product to try and solve the problem where non-traditional methods failed before. The alternate method is when Ministry is solicited to try products or methods. MTO will evaluate the method or technology, and then decide whether to do trials appropriately. • OAPC requested that in the future, if there are challenges to let OAPC know, because sometimes there are other alternate solutions, or OAPC can push members to innovate. MTO requested that OAPC also communicate when members want to approach the Ministry with new technology. **ACTION** – *Close item.*	
2024-03-3	**OAPC'S PROPOSED PAVE-IN FOR HIGH-RAP MIX TRIALS IN 2025** *Description:* • OAPC updates on the 2024 research program *Discussion:* • OAPC is considering a pave-in with 30 to 50% RAP in the mix (binder and surface course) with the use of 3 different rejuvenator suppliers, along with a control section. Pave-in planned for 2025. Details will be provided by OAPC at the ATS and also Asphaltopics spring edition. **ACTION** – *No Action.*	

	ROUND TABLE • No roundtable items	

INFORMATION SHARED FOR THIS MEETING		
Document Title	**Shared By**	**Format**
01_Item June-23-1_RMA shared with OAPC 2024	MTO	Text, graphs and tables in slide format (pdf)
02_Item Sept-23-3_ERS update 2023 with frequency distribution charts	MTO	Text and Graphs (pdf)
03_Item Dec-19-8_MPT Correlations Data for Sharing with ORBA Cumulative 2023 (March 27 updated)REVISED	MTO	Text and Tables (pdf)
Saskatchewan Infrastructure Summit_Balanced Mix Designs_2023	OAPC	Text, tables, graphs (pdf)
varamini_et_al	OAPC	Text, tables, graphs (pdf)
Santagataetal.Mat.andStrucVol42no6pp705ff	OAPC	Text, tables, graphs (pdf)
Piber-2009-RILEM_interlaboratory_test_on_interlayer-(published_version)	OAPC	Text, tables, graphs (pdf)
25458	OAPC	Text
Guidelines-for-BMD-validation-11212023-CAPRI	OAPC	Text, tables, graphs (pdf)

NEXT MEETING

- 2024 Meeting Dates:
    - March 28 (OAPC Host)
    - May 23 (MTO Host)
    - September 19 (OAPC Host)
    - December 5 (MTO Host)

All meeting scheduled from 10 am - 1 pm

Meeting adjourned: 1:15 pm