



**Improving HMA Committee, MS Teams/Bullfrog Hybrid – October 19, 2023
Meeting Minutes**

Present	Name	Company	Present	Name	Company	Present	Name	Company
X	Anderson, Taj	Poe	X	Gent, Dave	WAPA	X	Schofield, Dave	CWA
X	Anderson, Cooper	Am. Rock	X	Hill, Kentin	Granite	X	Schofield, Kim	WAPA
X	Beier, Spencer	WSDOT	X	Huang, Shin-Che	FHWA	X	Schultz, Brett	Miles
X	Bender, Riley	WSDOT	X	Joy, Justin	Idaho Asphalt	X	Swearingen, Shawn	Inland
X	Benson, Ed	Interstate C&A	X	Johnson, Torrey	Tucci & Sons		Terrill, Keith	Road Science
X	Cantrell, Logan	Granite		Kull, Spencer	CalPortland	X	Waligorski, Kevin	WSDOT
X	Carlie, Karen	WSDOT	X	McLaughlin Sean	WSDOT	X	Webster, Garrett	WSDOT
X	Chapman, Josh	Granite	X	Methvin, Dave	Central Pre-Mix		Williams, Chris	ICON
X	Clayton, E. J.	Granite	X	Pederson, Chris	CTL	X	Winger, Leon	WSDOT
X	Crouse, Jeff	Lakeside	X	Pedroza, Jared	CalPortland	X	Zemke, Erik	Shamrock
X	Davis, Steve	WSDOT	X	Phillips, Scott	WSDOT			
X	Fishel, Greg	Miles						

OLD BUSINESS Roll call/Introductions: Bob Raynes has retired. Kristi Olsen and Jason Zimmer also attended from WSDOT HQ Lab.

17-02 How can we cost-effectively increase the service life of HMA Pavements?

Note: This section has been rolled up see 4/13/23 minutes for previous notes.

- Nov 3, 2022: No changes to 2023 Standard Specifications. WSDOT will be reviewing HMA data for 2021 and 2022 to assess if any further changes warranted. Any future proposed specifications changes will be brought to the improving HMA group for further discussion.
- April 13, 2023: Steve Davis has been analyzing mix data with the changes that have been implemented. So far not seeing the % binder increasing. Are seeing the fines increasing. Will put together a smaller workgroup to review data.
- October 19, 2023: The modifications to the compaction and job mix specs have been fully implemented for a couple seasons now. While compaction improvements have been realized the mixture results are not trending as hoped for. Steve Davis reviewed data from the past 5 seasons with averages staying mostly flat for ½” & 3/8” mixes in VMA, Pb, D/A, and P200. One significant note is the D/A is averaging at or above the AASHTO M323 recommended range of 0.6 to 1.2 for fine graded mixtures for both ½” and 3/8” mixtures. Per FHWA recommendation WSDOT considering reducing D/A requirements from 0.6-1.6 (9-03.8(2)) to 0.6 to 1.2 and is considering adding to the Job Mix Compliance Price Adjustment for production testing. Putting a team together to look at spec’s for trial. Kim taking volunteers. Some discussion on Balanced Mix Design. Steve noted we do some performance testing during the mix design phase but not during production. [NAPA](#) notes WSDOT as pre-implementation although WSDOT does verification testing for rutting with Hamburg & Indirect Tensile. Attending a BMD peer exchange next month. Also, FHWA will be here presenting a 2-day session in May 2024 for those interested that may be a segue in WSDOT transition to more BMD.

14-16 Concerns with SAM

- October 31, 2019 – Dave Gent,
 - October Construction Manual update: Dyer
 - Prepave meeting – discuss process of notifying mixture and compaction results
 - Prepave meeting – timely results needed to keep track of CPF
 - Inspector roles and responsibilities – OK to provide unofficial results at time of testing
 - Data on timeliness of data entry: Kurt Williams

- June 9, 2020 - The lab has pulled data from SAM regarding the time to post test data in SAM and has shared the data with the regions. In general the turnaround times are good for compaction and mix. Mineral Aggregate tests tend to lag behind. Contractors should contact the Project Office if this issue continues.
- November 5, 2020: We did have instances of untimely SAM data entry this season primarily tracked to one area. While this doesn't appear to be a systemic issue it does warrant continued effort. WSDOT is proposing pull SAM data entry reports annually and submit to region management.
 - Granite pointed out some project they had issues with Timely SAM Data entry, Timely Challenges, Timely Min Agg data entry, and accuracy of Challenges.
 - Requesting time limit for Min Agg, and Min Agg samples run per mix design and not combined together (is this a new topic?).
 - Dave Schofield noted need to check accuracy of data entry and calculations and communication.
- April 29, 2021 – Kurt Williams pulled the SAM entry data and is being reported to the region construction engineers. Continues to be a focus and was discussed at the WAPA Joint training and Construction Engineer meetings. COVID telework certainly didn't help the issue, will continue to monitor. Contractors brought up question about testers double checking data prior to entering into the system. Always a best practice to double check not only data entry, but also that SAM is using the correct spec version.
- October 28, 2021 – This is an ongoing issue and will continue to be with staffing shortages and turnover. WSDOT will continue to pull SAM data entry data annually and provide to the regions and timely and accurate data entry will continue to be reinforced during trainings. Inconsistencies with compaction subplot sizes was pointed out. Should we consider adding language allowing irregular areas (intersections, turn lanes, etc.) not completed during the main paving operation to be broken out into a separate lot with varying subplot sizes?
- April 28, 2022 – SAM data discussed at WAPA/WSDOT Joint Training held 3/3/2022. Team brought up looking at adding a maximum timeframe for SAM Data? (example - can't get below 1.0 if not entered into SAM within 7 days?) including min. agg. Also mentioned to CN manual language emphasizing timely and accurate data entry. (This is already covered in the CM chapter 5-04.1, 5-04.2, 5-04.3(9)B3, and 5-04.3(10)C, reference note from 10/31/19). Original test data on retests? The original test data is accessible if the contractor requests.
- November 3, 2022 – Accurate and timely data continues to be problematic on smaller paving projects where paving may be done before getting data and jobs with GEC or consultant testers. An example of a project where resistance to sharing test data was noted. Sharing unofficial test results is addressed in the Construction Manual GEN 5-04.2 Inspector Roles and Responsibilities.
- April 13, 2023 – This topic was emphasized at the WAPA/WSDOT joint training and at 2 WSDOT Documentation trainings with 200 plus attendees.
- [October 19, 2023: This is an ongoing internal issue. Continues to be problematic particularly with GEC's and Design Build. Steve noted WSDOT looking at separate training or inclusion into current WSDOT training for GEC's on material documentation including SAM data. WAPA volunteered to help.](#)

19-01 Challenge Testing Uncompacted Void Test Results

- April 28, 2022 – Kurt noted that a challenge or retest option is not supported per the notes above. Dave Gent requested this remain an agenda item for now. Keep as a line item but hide notes for future, reference 4/28/22 minutes for latest notes.
- [October 19, 2023: Recommend removing this from the agenda.](#)

19-09 Is WSDOT cooling the pavement adequately before taking cores?

- October 31, 2019 - Dave Gent – Is a change to the coring test procedure needed to address this? A couple of ideas that came up included modifying SOP 734 to require the use of ice if coring the same day, or maybe require the contractor to acquire the cores. Bob and Kurt will review with regions.
- June 9, 2020 - Procedure discussed with Region IAI's. Appears to be more related to education than a problem with the test procedure. This has been addressed and WAPA has been asked to bring problems forward if they occur.
- November 5, 2020 – This issue was brought up on at least one occasion this year. Should the responsibility for taking cores be transferred to the Contractor? Dave Gent to review the idea of contractor coring with other WAPA members, Joe DeVol/Kurt Williams to review idea with Region Materials Engineers.
- April 29, 2021: Update on cores. Joe DeVol - There's a push for contractor provided coring but some resistance in areas of WSDOT. Leon brought up a scenario were the contractor releases the mat for coring, and the contractor takes care of the icing if they feel it's needed.
- October 28, 2021 – WSDOT is resistant to modifying coring test procedures. There are standard items for contractor coring of bridges and roadway in the specifications that can be included in contracts or change ordered in if requested and accepted.
- April 28, 2022 – Coring multiple lift paving too early. Issue potential on fish passage work particularly. (Possibility - Require waiting 24 hours minimum to core multi-lift paving?) Random sampling concern – coring multiple lifts at same time. What challenges are we having out in the field?
- November 3, 2022 – A question was raised about the use of liquid nitrogen. It is allowed in the testing procedures, has anyone used it and if so how much was used? Brief Discussion that the use of nitrogen is allowed by the test procedure, but no one at the meeting was aware of it being used.
- April 13, 2023: Discussion was focused around projects with multiple paving lifts paved in the same day (fish passage type projects). Options could be to require cores the following day (would require modification to spec or test procedure, see entry from April 2022), use gauge correlated to the same mix on another job if available, or investigate possibility of the RDM.
- [October 19, 2023: The test procedures allow use of ice. Up to the qualified tester to determine need. There is a shift to more contractor provided cores in some areas. WAPA has a specific request to restrict coring of multi-lift pavement sections \(more than 4"\) to 24 hours after paving.](#)

19-16 Recycled Materials Toxicity Testing – RAP/RAS – New Spec Joe/Steve

- April 29, 2021: Update on toxicity testing certification. Joe or Kurt. The initial issues have been handled however the topic is still evolving. This item will be collapsed and left on the agenda as a check in to see if anything new comes up.
- October 28, 2021 – Nothing new on this item. Monitoring – Dave Gent observation: It would be great to start a simple data base list the documents that there is no toxicity documented in this process (or, if there is a toxic of some ilk found, what is it for info. to the group). A recent development since our meeting, a RAS mix sample was tested and found to have asbestos in it. Use of RAS mixes have been put on hold.
- April 28, 2022 – Update on the new GSP & QC 8 RAS requirements associated with Asbestos.
- November 3, 2022 – Reported only 1 RAS design submitted this season. No issues encountered although did take extra time to get through process with added asbestos testing requirement. Particularly noting the climate initiatives coming and that manufacturers are working to minimize mfg. waste, it was pointed out we should work on getting tear off shingles back in the program. Finally, a question was asked if there was enough data to show there are no issues with RAP surrounding toxicity testing. Can this be eliminated?

- April 13, 2023: Another request to remove or modify toxicity testing of RAP. Also, discussion on RAS, requesting to get tear offs back in. At the point WSDOT not ready to make that adjustment however there is a new Industrial Hygienist, will review with them. 2 RAS designs this year.
- [October 19, 2023: Recommendation to accept where we are at with this and drop this topic. There is no interest in trying to modify requirements with the environmental office and other agencies. This will be removed for the next meeting.](#)

21-03 RAP Reset Update

- April 29, 2021 - Joe DeVol: Data will be sent out as soon as it's finalized. This may lead to new spec changes...Stay tuned.
- October 28, 2021 – Steve Davis to provide update. Steve Davis to set up a presentation with Adam Hand to go over RAP Reset study. Discuss potential changes resulting from this study at the next meeting.
- April 28, 2022 – Adam Hand presented findings at meeting on 4/7/2022 (see attachment), how will this information be used moving forward? Look into getting a new RAP Reset subcommittee together. (Higher RAP, RAP Reset modifications, Green HMA)
- November 3, 2022 – Logan Cantrell – Proposing bumping RAP to 50% and to get the ball rolling on a RAP Reset subcommittee to see how we can expand the use of RAP. Logan volunteered to do a trial very high RAP project. Dave Gent noted it would be good to stay ahead of the climate initiative wave which is pushing for higher use of recycled materials. Currently only 2 contractors using the existing high RAP any RAS specifications.
- April 13, 2023: Considerations include requiring RAP in mix designs on any RAP project, reviewing how RAP will affect EPD's, would like to get a better measure of how much RAP is being used. Plan to put together a RAP Reset Subcommittee to review adjustments.
- [October 19, 2023: Need to put subcommittee together to review. WSDOT is open to high rap MD's if requested by contractor. Other associated topics include requiring RAP in the MD process for all RAP mixes, not just high RAP. Increasing the use of RAP in base mixes. Review the use of RAP for EPD's. How to acquire RAP samples when the RAP is coming of the job being repaved. Are there ways to simplify the RAP MD process. Using BMD principles to evaluate RAP mixes.](#)

21-05 Alternative Compaction Testing Methods

- October 28, 2021 – A question has been raised concerning different density testing methods such as electro-magnetic, Rolling Density Meter. A question also raised about using Method A in AASHTO T355. There are reliability concerns with the electro-magnetic test and the T355 Method A test so those are not going to be used. Kim would like to pilot RDM for bridge compaction as a possible alternative to bridge deck coring. Kim has applied for a State Transportation Innovation Council (STIC) grant.
- April 28, 2022 – Update on STIC grant for RDM on bridge decks. Have a list of projects, will be coordinating testing with the paving schedules. Update results in the fall meeting. Calibrating RDM with gyratory pucks and compare with cores.
- November 3, 2022 –WSDOT did collect data from 2022 and are evaluating. Plan to collect more data in 2023. Logan Cantrell noted they had done some testing with the RDM and identified issues with calibrating the RDM to the cores.
- April 13, 2023: Karen Carlie reported WSDOT is still gathering data. Looking at bridge decks.
- [October 19, 2023: Karen noted there was some preliminary data on bridge decks that looked encouraging with RDM. Logan noted they had also used RDM on a couple of miles of paving with some success. There is lots of work on this nationally although feds not currently behind it.](#)

21-06 Indirect Tensile Strength Requirement

- October 28, 2021 – Request by Kentin to eliminate IDT until IdealCT implemented. Has there been any failures from IDT? Steve Davis noted the IDT is a test run that is counter to the Hamburg to ensure the mix is not too stiff. Verification compared back to the design. Need to keep this test. A question was raised about increasing the spec when different binder grade mixes are tested.
- April 28, 2022 – Steve noted IDT test will remain in place while research is being performed by WSU to determine appropriate limits for IDEAL CT. Update aging process based on results, expected in about a year. For IDT Logan noted need different IDT number depending on binder grade.
- November 3, 2022 – Update on the WSU study which is another year out from completion. An IdealCT spec will not be ready for at least a couple of years.
- April 13, 2023: Steve Davis noted cores just sent over to WSU yesterday. WSU's work is planned to be complete end of June with paper to follow. May see spec update about 1.5 years later.
- October 19, 2023: Steve to give update. Report coming out soon, how do we take the information and use in a way that works for our setup? Looking at putting together a **subgroup** in January '24. Logan has some aging data on IDEAL CT and will send over. Kim to follow up with Steve on the subgroup.

22-02 HMA Mix Design Approval Process Subcommittee

- November 3, 2022 – Assembling a subcommittee to look at possible updates to WSDOT Standard Practice for HMA Mix Designs QC 8 or the Standard Spec's to address concerns with HMA mix design approval time frames taking longer than expected and address changes to process with DPS budget. Initial meeting was 11/2/22, follow up meeting 1/19/22.
- April 13, 2023 – Draft language in QC8 establishing a "Replacement QPL Mix Design" item allowing submittal 6 months prior to expiration. See **Attachment 22-02a**. Also draft language in '24 book allowing a 30 day extension of expiring mix design if CPF 1.0 or above and as approved by the Engineer in SS 5-04.2(1). See Attachment **Draft 2024 Spec Changes**. – Contractors would like to begin using "replacement mix design" process now while manual is awaiting update, Lab noted they should be able to make this happen. Torrey Johnson asked about extending MD approval to 36 months with good CPF's rather than the current 24 month. Shin Che noted FHWA would have concerns with this. WSDOT is not considering extending beyond 24 months at this time.
- October 19, 2023: Process adjustments have been made to allow more flexibility to the contractors. Heavy period is April/May timeframe, best to schedule around that if possible. Also, a best practice to hit the drop-off dates for aggregates to keep the process moving on schedule. Improvements have been made on the up-front administrative process. Scott Phillips emphasized importance of marking aggregate bags clearly and accurately, ensuring submittals are complete and accurate, ASA's are up to date, and be sure to cc email him when setting up agreements. Steve also noted that if contractors are on a contract with working days being charged be sure to cc the PE when communicating with the lab.

22-04 Auto Samplers at HMA Plants AASHTO R97

- November 3, 2022 – The question surrounds where in the setup an auto sampler may be used. The current WSDOT FOP for AASHTO R97 notes "A mechanical sampling device installed between the discharge of the silo and the truck transport that is approved by the Regional Materials Engineer." There was discussion about this in 2016. Some plants have samplers prior to the silo's, there are concerns with tracking the mix representing that sample in those cases. WSDOT is open to more discussion on this topic with the primary concern of being able to track what was tested to placement in the field, particularly on plants with silo's.
- April 13, 2023: WSDOT to consider requests to use auto samplers prior to the silos on plants with smaller silos. FHWA is recommending sampling at the project site. – Future topic to review FHWA comments on WSDOT spec's 5/12/23.

- October 19, 2023: As noted previously FHWA is pushing to test further in the process rather than sooner. Idaho has switched to sampling behind the paver. Steve noted WSDOT will work with subcommittee to look at potential trials. Several team members noted they were against.

22-05 Density Accuracy

- November 3, 2022 – Logan brings up a couple of things on accuracy. One topic is that he's noting more often than not the agency test is testing low theorizing an unlevel surface or rock propping the gauge up. Recommends switching to Method A of 2 1-minute tests under AASHTO T 355 (currently not recognized by WSDOT. Also, would like ability to retest high shots, 100 plus. And proposing an adjustment to 5-04.3(10)C4 which limits retest request to noon the day following the subplot test result provided or made available and only allowed when the lot is running below 1.0. Proposing to remove the timing requirement allowing retest requests when the lot falls below 1.0 if at a later time. Method A was the old procedure, WSDOT worked with Troxler to change to the current procedure which is more accurate. Could be some training to ensure gauges are not rocking or sweep prior to initiating the test. WSDOT will touch bases with WAQTC training. WSDOT will also review the current specifications for coring low tests in lots at or above 1.0 and will look at how to handle very high test results.
- April 13, 2023: Continued discussion on the 1 four-minute test vs. 2 one-minute tests at 90 degrees (this was discussed in FHWA review of WSDOT specs 5/12/23). Also requests to allow retest of sublots exceeding 100% and allowing retests on low sublots when CPA for lot is 1.0 or above.
- October 19, 2023: Based on latest FHWA spec review recommendations and to address concerns with DBB and DB contracts WSDOT is looking at expanding coring for density acceptance as an additional density tool on certain projects. The goal is not to replace the nuclear density gauges at this point, but to develop a working GSP that would allow WSDOT an additional density tool for possible use on certain projects. Would like to work together with WAPA to develop a trial spec and test it out on a couple of projects. Initial considerations include changing the subplot size to reduce the number of cores required, contractor provided traffic control and contractor obtain the core then transfer to WSDOT inspector for testing by WSDOT.

This topic generated lots of discussion with general disagreement in the idea from WAPA members and Region Materials Engineers. Comments include (a **subcommittee** will be assembled to investigate):

- Added time for coring impacts work hour restrictions reducing paving time and exposing contractors to LD's
- Cooling cores noting only 1 shot at getting a core due to no retest/challenge option
- Delayed test results
- Reduced ability to correlate contractor QC gauges
- Increased staff and equipment requirements
- Local Agencies who rely on WSDOT spec's, although they can keep APWA spec's
- Coring is a destructive test
- Chain of custody concerns with sampling and testing
- Reduced sampling results in less data for statistical analysis
- Why deviate from the accepted AASHTO T355 standard?
- Would be better off trying to fix the Nuclear Gauge/SAM issues, ideas include:
 - Go to Two 4-minute tests at 90 degrees and reduce the tolerance
 - Use thin lift gauges exclusively 3450's or 4640's?
 - Follow through on training, including GEC's
 - Require Nuclear Gauge documentation from GEC's and DB QA firms.
 - Continue to look at new technologies, RDM etc.

22-06 Warm Mix Additives for High RAP Mix

- November 3, 2022 – Logan Cantrell – Noting 5-04.2(2)B does not allow using additives that reduce mixing temps for High RAP/Any RAS Mixtures. Notes that with coming Climate discussions this could be a good tool. WSDOT will revisit this spec.
- April 13, 2023 – Draft language allowing additives in the '24 book. See SS 5-04.2(2)B in **Attachment Draft 2024 Spec Changes**. The Draft presented was updated to make clearer. Additives for high RAP /any RAS allowed provided they are included in the mix design approval process. This update will be in the 2024 book.
- [This topic will be removed from the next agenda.](#)

22-09 Sample Splitting Protocol

- November 3, 2022 – New topic for the next meeting
- April 13, 2023: Concern is that the current process is subject to some variability, looking to tighten up so it's more consistent. One area is for contractor and WSDOT testers to coordinate methods and use same methods throughout the job. Dave S. and Kentin to put something together for a recommendation. Steve Davis will also look at WAQTC training.
- [October 19, 2023: Steve did not find any existing videos. Kim will take the lead on working with WAQTC to put a video together showing best practices and how different methods can result in different results.](#)

23-01 Lead and Asbestos Containing Material GSP's

- April 13, 2023 – Lakeside concerns regarding recent paving contract specifications. Two extremes have come about. In one case suspected ACM's identified when no testing has been done (example is bridge membranes). In the other a second volume of specifications (246 pages) included in a basic paving job (13 miles, 16 plan sheets) just for Asbestos and Lead Good Faith Investigation.
- [October 19, 2023: CN office did have discussions encouraging getting samples tested whenever possible when ACM is anticipated \(membranes\).](#)

New Items:

Other:

Climate Challenge – 4 contractors have volunteered to participate in the study. Tucci, CWA, Granite, and Poe. Investigation to be completed this paving season.

E-Ticket Update: All HMA jobs will be using the new HaulHub portal.
[Sign up here Washington State Department of Transportation - HaulHub Technologies](#)

SET DATE FOR NEXT MEETING –

Date: [March 28, 2024](#)

Time: [9:00 - 12:00](#)

Location: [Tentative Bullfrog \(4551?\)/Virtual](#)