May 30, 2025
Meeting – HMA Spec & Density Subcommittee

Location: Teams Meeting / In-Person (Galena Room @ Truax Madison)

Date: 05-30-2025

Time: 10:00AM – 12:00PM

Attendance

- Scott Syron
- Albert Kilger
- Dan Kopacz
- Andrew Hanz
- Taylor Christianson
- David Hose
- Deb Schwerman
- Brian Jandrin
- Jeremy Barron
- Joe Kyle
- Jon Wixom
- Travis Kurey
- Casey Wierzchowski
- Zach Lemke

Agenda Items

1. PWL for SMA Specification Limits
    i. Air Voids Specification Limits
        i. 3.2 – 5.8%
    ii. Air Voids Acceptance Limits
        i. < 3.0% and > 6.5%
            - Same as HMA +2.0% / -1.5%
                - Deb S.: The HMA limit exists because of air void regression. At least for starting out, industry would like to start with +/- 2.0%.
    iii. Mainline Density Lower Specification Limit
        i. 92.5%
    iv. Mainline Density Acceptance Limit
        i. 89.5%
            - -3.0% from the mainline density lower limit
                - ***NOTE***: The department has reverted the density acceptance limit to 93.0% with unacceptable material being defined as less than 90.0%. This is to maintain

consistency with HMA. However, 92.5% will still be used for the specification limit when determining PWL and pay adjustment.

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v. Longitudinal Joint Density Minimum Required Density
    i. 89.5% Unconfined
    ii. 91% Confined
    iii. Upper Layer Only
        - Deb S.: We don't currently measure the joints for SMA. Is it needed?
            - Albert K.: We can't ignore the joint.
            - Dan K.: We don't see a lot of joint distresses and whether that's due to the nature of the SMA or if it's related to cutting back the pavement at the joint. Some notched wedge projects didn't work out well with SMA. We would like to pilot joint density for SMA and see what we get for numbers.
                - **Action Item:** Dept. will collect information on joints.
                - Taylor C.: Has an upcoming SMA project in the next month or so. If BTS has something put together they could see if they'd be willing to add measuring joint densities.
                - Scott S.: Will try to collect QV joint data on an upcoming SMA project.

- Deb S.: Since the SMA projects are primarily gauges, will coring be used as a method for dispute, or will SMA be primarily accepted with cores?
    - Albert K.: Correct these are typically larger tonnage projects so they will likely use nuclear gauges for acceptance. There may be some smaller projects where it makes sense to just do cores.
    - Dan K.: It will follow our normal PWL procedures. If the contractor and department jointly decide to move to cores during a project, that should also be an option.
    - Albert K.: Within the context of the new programs, SMA could be accepted with PWL or PWL Lite and depending on the length of the project, it may not make sense to use nuclear gauges. It will be case-by-case.
- Dan K.: Outside of the AWP program, I think we could do an STSP for SMA like we do now for PWL to do projects earlier if there was an interest so we can get feedback sooner.

2. Coring on Small Tonnages
    i. Industry will provide additional examples of challenging situations for coring select small tonnages.
        i. Bridge Approaches
        ii. Intersections
        iii. Side Roads
        iv. Turn Lanes
        v. Roundabouts
        vi. …
    - Deb S.: The uncorrelated gauges aren't that far off, and we should look at identifying projects where the uncorrelated gauge is good enough and if there is a problem take cores as a backup. To start we should base testing off tonnage and not length.
        - Casey W.: It might end up ultimately being a combination of tonnage, risk, and location.
        - Dan K.: From 2024 project data, on the average offsets were:
            - QC: 0.31
            - QV: 0.47
        - Dan K.: There are a few outliers, for example on one project offsets ranged from -1.80 to +1.50 on approved gauges.
        - Casey W.: We had a discussion with FHWA regarding uncorrelated gauges for certain situations. They said it would have to be a documentable reason as to why a correlated gauge couldn't be used.
        - **Action Item:** Industry should prepare a list of situations and tonnages where they think it would be appropriate to use the uncorrelated gauge.
    - Taylor C.: Why is there a resistance to cores on smaller tonnages? For example, a bridge approach that's a standalone project, it would be just as easy to run one or two cores that it would be to get a gauge, make sure its good to use, and go through all the spec requirements (comparison, reference blocks, etc.).
        - Deb S.: For the bridge approach example, you could have 80 tons on either side and four lanes. Which side do you choose to core, how many cores do you take? It would be easier to shoot with the gauge and get as much data as desired. Then if something seems off, we could get a core. We don't have a lot of core rigs to go all over, especially when you start to include the smaller jobs. Then it becomes a scheduling issue. Then the process for testing the cores is also tedious with the

contractor taking the core, and the department witnessing the testing and then performing verification. This is a lot of work for a bridge approach.

- Scott S.: The recommendation for the regions is to get saws and core dries so the regions can start doing this testing in house. Once SWR gets the equipment, they can start running cores. Other states cut companion cores as well for QC and QV. This is likely the direction we are heading for the future.
    - Dan K.: We should also discuss the frequency of testing, taking a core at every location that we used to place the gauge may not be necessary.
- Joe K.: When the number of tests is reduced, the contractor's risk is increased with PWL. How much improvement are we actually seeing with the pavement? Which things do the department think are critical?
    - Dan K.: Anything that is longer life for example a standalone bridge approach that's going to be there for a long time – a 20-year pavement life - unless it is really low volume, etc. Intersections, bike lanes, and pedestrian paths are probably low enough risk for uncorrelated gauges.
    - Albert K.: We will probably base our risk primarily on traffic. Low volume intersections could be accepted with uncorrelated gauges, whereas a major intersection in an urban setting we might want to core. Even then, these areas would be accepted with department acceptance where you simply need to meet the minimum 93% requirement. There will also be consideration given to the constraints of the design such as changing cross sections, or areas where it is impractical.
        - Jon W.: Some of these intersections are extremely dangerous and busy when it's live and they are trying to get pavers and rollers through there and then trying to also take cores. With IDOT, we've moved cores out of intersections because of safety issues.

- Dan K.: When we are putting together the FDM guidance, whatever is decided needs to be decided before let. You can't decide after let

if you're going to use gauges or cores because project staff may not have a gauge on the project if it's all cores, and the consultant contracts need to be written ahead of time. How all the materials will be accepted will be in the mixture use table in the plans.

- Deb S.: Could the mixture use table identify the amount of mix and the number of tests needed to meet the requirement? Could it get to the point where it identifies the testing locations/lots as part of the plan? For example, a bridge approach, where the table would identify that 2 cores should be taken, one on each side of the bridge?
  - Erik L.: It depends on how proficient we get at a project level with AWP. That level of customization is possible if the designer is knowledgeable enough about the project. Right now, while we are starting, it is just the basics like the testing frequencies in the spec. We will learn through the pilots how flexible the system is. It is possible in the future.
    - Dan K.: Maybe it could be done in the interim in the plans, but maybe it is too much effort right now.
      - Taylor C.: Right now, we struggle with designers getting the mixture use tables correct, but in the future this would be nice to have. IRI Ride is trying to do something similar.

3. Other Topics Brought Up During Meeting
   i. Tech Team Topics (Deb S.)
      i. Core Dry Process Discussed During Tech Team
         - Deb S.: Is it correct that only 20% of the cores the department wants to verify need to be dried? If so, can the department provide guidance on that process?
           - Dan K.: We are moving towards only testing 20% and if there are any issues with them then we would test the rest of the cores.
           - **Action Item:** Department will prepare drying/verifying 20% cores guidance for regions.
      ii. Use T331 on HMA Cores So Drying Isn't Required
         - Deb S.: Is this an approved method? If so, we would need to address it in the MOTP.
           - Dan K.: This is not formally approved yet. We had a

contractor in a region ask to try it out, and we are allowing that but doing it alongside the normal process.
    - Casey W.: Right now, it's a cursory investigation.

iii. Changing the order of T166 to save time (submerged, SSD, dry order).
    - Deb S.: Is this something we are considering again? Also, some states consider using the core dry a destructive test. This makes us nervous when doing replicate drying cycles on the cores.
        - Dan K.: Someone needs to do research on this again. When we first implemented PWL, this method was allowed, and some were doing underwater weights first and others weren't, and things weren't matching up. So that is why things have changed to drying first. Some think the core rig is forcing water into the core and causing the weights to be incorrect. Maybe some of the differences were caused by incorrectly operating the core dry.
        - Scott S.: Had a project where the contractor did the old method of submerged weights first. The SSD and submerged weights were different, but the final density result was within 0.1%. Would like more data. Results match up well with contractor after core dry, so doesn't appear to be destructive test.

iv. Incentives for Coring
    - Deb S.: Industry would like the department to consider incentives if coring is going to be required on smaller projects due to the additional effort vs. an uncorrelated nuclear gauge.
        - Dan K.: We wanted to focus incentives on the traffic lanes, so we removed incentives from the department accepted quantities with PWL. There are incentives with QMP. The department will have to consider what areas should be incentivized.