Long Life Asphalt Pavement Projects Update

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LLAP Construction Specifications

- MTV Required
- Longitudinal Joint Density Specification
- **RIDE SPECIFICATION OPTIONAL**
- Tack Coat Every Layer (New Section 460)
- % **WITHIN TOLERANCE (PWT)** ACCEPTANCE
- **INCENTIVIZE CRITICAL ELEMENTS (I.E. MAT DENSITY)**
- PERFORMANCE TESTING
LLAP Construction Specifications

• **Pilot Specification Only Included SMA projects**

• **Rutting Test. (Hamburg Wheel tracking)**

• **Cracking Tests (DCT, IFIT, SCB, OT,**
LLAP Current Features

• **Asphalt Rich Base Course**
  - PWT acceptance includes incentive/disincentive.
  - Design at 3% voids
  - Design 1 gyration level lower than other courses.

• **Base Course**
  - PWT acceptance includes incentive/disincentive.

• **Binder Course**
  - PWT acceptance includes incentive/disincentive.
  - DCT and Hamburg Wheel track test required as performance testing

• **Wearing Course**
  - SMA only
  - 2% density incentive possible
  - DCT and Hamburg Wheel track test required as performance testing
3 Projects with some data

• SR 279 – A83, Allegheny Co.
• SR 376 B09, Allegheny Co.
• SR 0080 – B34, Centre Co.
DCT Performance Diagram

DC(T) Fracture Energy (J/m²)

Hamburg Rut Depth (mm)

19mm Design sample 417 / 4.07mm
SMA Design sample 540.4 / 4.46mm
SMA Project samples
DCT Data

DCT Performance Diagram

DC(T) Fracture Energy (J/m²)

Hamburg Rut Depth (mm)

- 2017 SMA Design
- 2018 SMA design change in asphalt
- 2018 SMA design change in aggregate

Pennsylvania Department of Transportation
IFIT Data

IFIT Performance Diagram

- IFIT Fracture Energy (J/m²)

Hamburg Rut Depth (mm)

- SMA Design sample 14 / 4.46mm
- 19mm Design sample 2.8 / 4.07mm
- SMA Project samples
Problems Encountered

- Including hard limits for performance testing needed long lead times to deal with redesign and retesting.

- Hard limits assumed that limits were applicable to all PADOT mixes.

- The testing labs available for performance related testing are very limited.

- Large number of tests make testing inefficient.
Changes

• Conditioning time is only what is in bulletin 27 for making gyratory samples.

• Performance related testing only required on 19mm NMAS and less.

• Performance related testing limits changed to targets and data for information.

• Need better coordination with proposed research project for determining what limits are reasonable and achievable.
• **District 2-0 – SR 0080 Sect. B34 (ECMS 82105)**
  – Mill and overlay
  – Projected let – 7/2017
• **District 10-0 – SR 0079 Sect. 247 (ECMS 91919)**
  – Structural overlay
  – Projected Letting 11/2017
• **District 11-0 – SR 0279 Sect. A83 (ECMS 87772)**
  – Binder & Wearing Performance Related Testing only.
  – Projected Letting 1/2017
• **District 11 - SR 376 Sect. B09 (ECMS 81976)**
  – Mill and overlay
  – Project Let 4/2017
• **District 6-0 – SR 422 Sect. PM2 (ECMS 86924)**
  – Mill and overlay
  – Project Let 6/2017
• **District 2-0 – SR 322 Section B06 (ECMS 96820)**
  – To be bid as either LLAP or LLCP.
  – Let July 2018
• **District 3 - SR 0080 Sect. 123 (ECMS 97546)**
  – Mill and Overlay
  – Project Letting 1/2018
• **District 10 – SR 0080 Sect. 34A (ECMS 106025)**
  – Structural Overlay
  – Project Letting 7/2017