Interesting Projects

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Aging Interstates

• System Constructed in:
  – I-85, I-26, I-385, I-95 50’s mostly 60’s
    • Built up over time incrementally with overlay
    • 70’s to 90’s and continuing into 2000’s
    • Usually more structure added with widening
  – I-77 and I-526 late 70’s and 80’s

• What worked in the past doesn’t always work now given current conditions
I-85 Spartanburg
Mile Markers 56 to 68
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Mile Markers 56 to 68
Near Surface Distress

Average Depth of Asphalt 19 inches

Existing SN 7.45

16 of 18 Cores NB and 9 of 9 Cores SB distresses in upper 5 inches

Mix quality/conditions varied from relatively poor mixes, weak bonds or debonded layers with stripping, and top down cracking
I-85 Spartanburg
Mile Markers 56 to 68

The surface conditions of the
locations where distress was limited
to the upper 5 inches is relatively fair,
with relatively low severity or no
longitudinal wheel path cracking and
no fatigue or lateral cracking spurring
off of in the wheel paths.
I-85 Spartanburg
Mile Markers 56 to 68
Failures within 8 inches
9 of 18 SB and 5 of 9 cores
NB exhibited similar
variable material quality and
failures extending to a depth
of 8 inches.

Surface conditions were fair
to poor, with well-defined
longitudinal wheel path
cracking, often including
multiple wandering cracks,
lateral cracks spurring off
and general fatigue cracking
developing along the wheel
path. Areas prone to
potholes.
I-85 Spartanburg
Mile Markers 56 to 68

Failures greater than 8 inches
7 of 18 SB cores exhibited cracking and distress extending below 8 inches to full depth cracking and deterioration
3 of 18 SB and 1 of 9 NB cores were noted as being significantly cracked and deteriorated full depth

Surface conditions were similar to distresses within 8 inches and usually included 2 longitudinal wheel path cracks.
I-85 Spartanburg
Mile Markers 56 to 68
I-26 Newberry
Mile Markers 89 to 75

• 3 General Pavement Sections
• The left and right lanes were rehabilitated at three intersections/bridges receiving a mill and replace of 2 to 4 inches plus OGFC. (2011/2012)
• Right lane was rehabilitated in 2008 to 2009 receiving a mill and replace of 200 lbs.
• In general (excluding work at intersections), the left lane is in poor condition and likely contains the same distress as the right lane or worse.
I-26 Newberry
Mile Markers 89 to 75
Outside of Intersection Work
(Majority of Project)

Average Depth of Asphalt 11 inches
Ranging from 9 to 12.5 inches

Reduced thicknesses under bridges

Existing SN 4.01, Design SN 6.83

9 of 9 cores have debonding or poor bond between Surface and Binder.

8 of 9 cores have cracking extending 5 inches. 1 of these extending to 8 in.
I-26 Newberry
Mile Markers 89 to 75
Outside of Intersection Work
(Majority of Project)

4 of 9 cores have HMA base issues including stripping, relatively high voids contents and or cracking
I-26 Newberry
Mile Markers 89 to 75
Inside of Intersection Work

Existing SN 5.02, Design SN 6.83

Improved Structure and conditions near surface.

Debonding in 2 of 5 cores at 6 to 7 inches. Base is in better condition.
I-26 Newberry
Mile Markers 89 to 75

• Project Hurdles
  – Maintenance of traffic
  – No allowance for detour
  – Existing width & lack of full depth shoulder
  – Bridge clearances & location of columns
I-26 Newberry
Mile Markers 89 to 75

• Proposed Solutions
  – Will require reconstruction
  – Select weeks for extended lane closures
  – Analyzing costs for widening to help facilitate MOT
  – Considering use of various in place recycling methods
Similar Projects

• I-385 Greenville Mile Markers 42 to 36

• I-85 Greenville Mile Markers 54 to 60

• I-26 Newberry Mile Markers 74 to 60
  – Distress similar to 89 to 74 but to a lesser extent. Majority of base in good condition. More conventional rehabilitation approach.
THE END IS NEAR
Questions?