



Florida Department of
TRANSPORTATION

Pavements Research Update

40th Annual Asphalt Conference
September 13, 2016

Topics

- HVS research
- Contracted research

APT Facility

- Seven test track lanes
 - 5 @ 450 ft
 - 2 @ 150 ft
- Two test pits
 - 12 x 50 ft
 - 18 x 50 ft



Heavy Vehicle Simulator

- Wheel speed up to 8 mph
- Loading from 7 to 24 kips
- Tire wander from 0 to 30 inches
- Control pavement temperature
- Automatically measure pavement rut depth
- Apply 10,000 passes per day



HVS Cycle 9

- Paving completed in Oct 2015
- Testing anticipated to be completed in Fall 2017
- Research projects
 - FC-5 thickness
 - Asphalt segregation
 - Asphalt density
 - Tack coat effect on cracking resistance

FC-5 Thickness

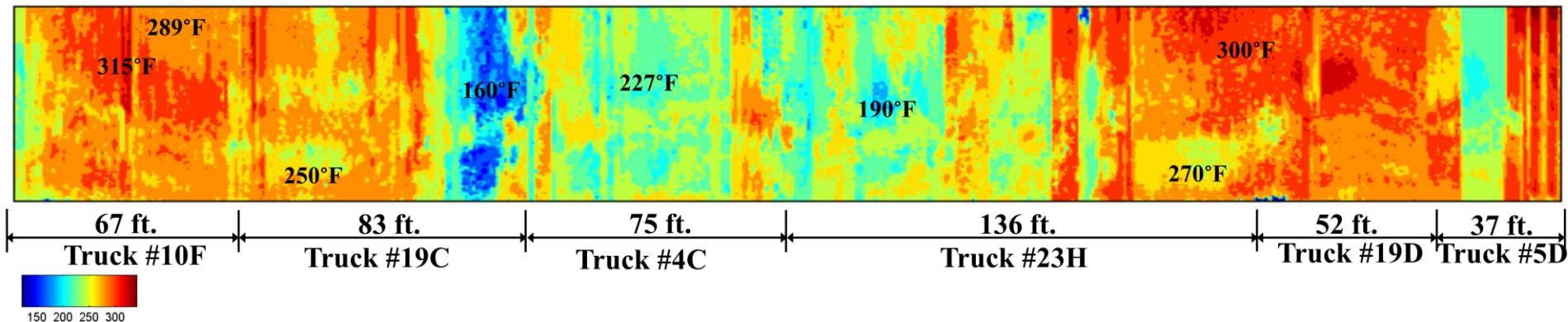
- Objective: Rutting and raveling resistance of thicker FC-5
- PG 76-22 & PG 82-22 binders
- Placed at $\frac{3}{4}$, 1-1/4, & 2 inches thick

FC-5 Variable thickness
1.5-inch SP-12.5 w/ PG 76-22
1.5-inch SP-12.5 w/ PG 76-22
10.5-inch limerock base
12-inch granular subbase

Asphalt Segregation

- Objective: Quantify the reduction of pavement life due to asphalt segregation
 - Develop/refine methods to identify segregation using texture measurements
 - Determine the rutting performance of segregated pavement

Temperature Distribution during Paving



Asphalt Density

- Objective: Determine the impact on rutting and cracking resistance when low density asphalt is left in place
- Three target densities:
 - 87%, 90%, and 93%
- Strain gauges utilized to determine cracking resistance



Tack Coat Rate

- Objective: Evaluate effect of residual tack coat rate on cracking resistance & slippage
- Three residual tack coat rates
 - 0.02 gal/yd², 0.04 gal/yd², 0.06 gal/yd², and
 - one unbonded section (sand)



Ongoing Contracted Research

- Precision of the Florida Texture Meter – FIU
 - Assess precision of the FTM
 - Develop criteria & guidelines for use



Planned Contracted Research

- Review of Flexible & Rigid Pavement Final Wearing Course Selection Policy for Design & Safety
 - Examine factors that influence hydroplaning & roadway departures
 - Review current practices by other agencies
 - Ensure the Department is adequately addressing safety
 - Literature review type study

Planned Contracted Research

- Relationship Between Friction Number & Accidents
 - Determine if existing friction guidelines, material testing, and approval process are appropriate & adequate
 - Pavement type, friction course aggregates, roadway geometry, traffic volume, etc.



Florida Department of
TRANSPORTATION

Questions?