
Our Weak Link
2012 Bituminous Paving Conference
Hal Wakefield, FHWA


Warning!
• Problem
• Actions
• Quiz
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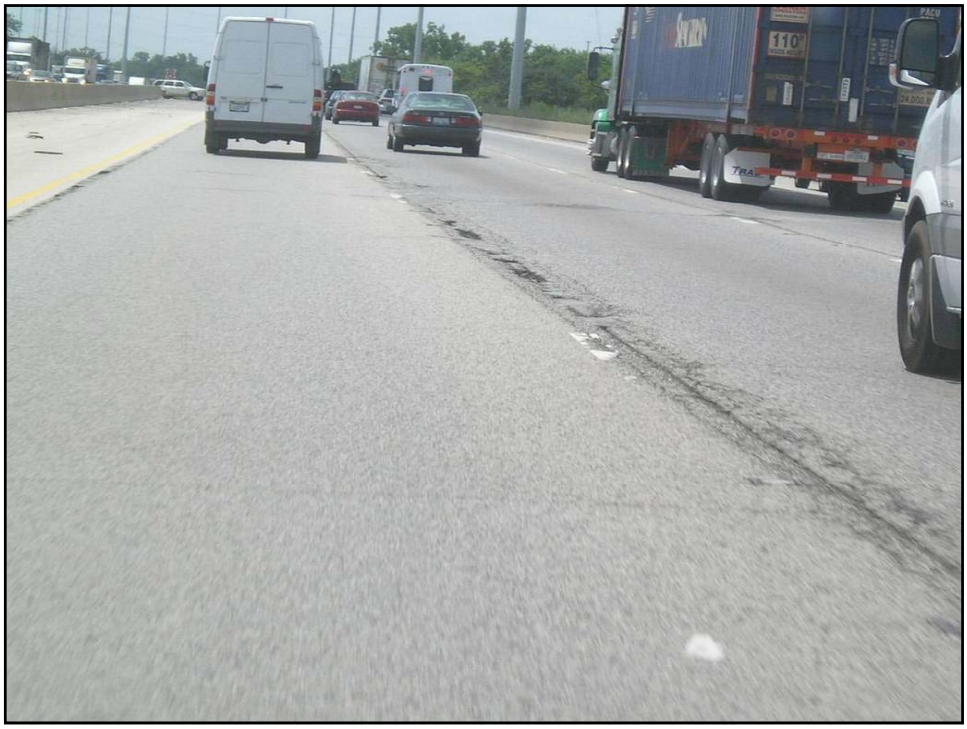
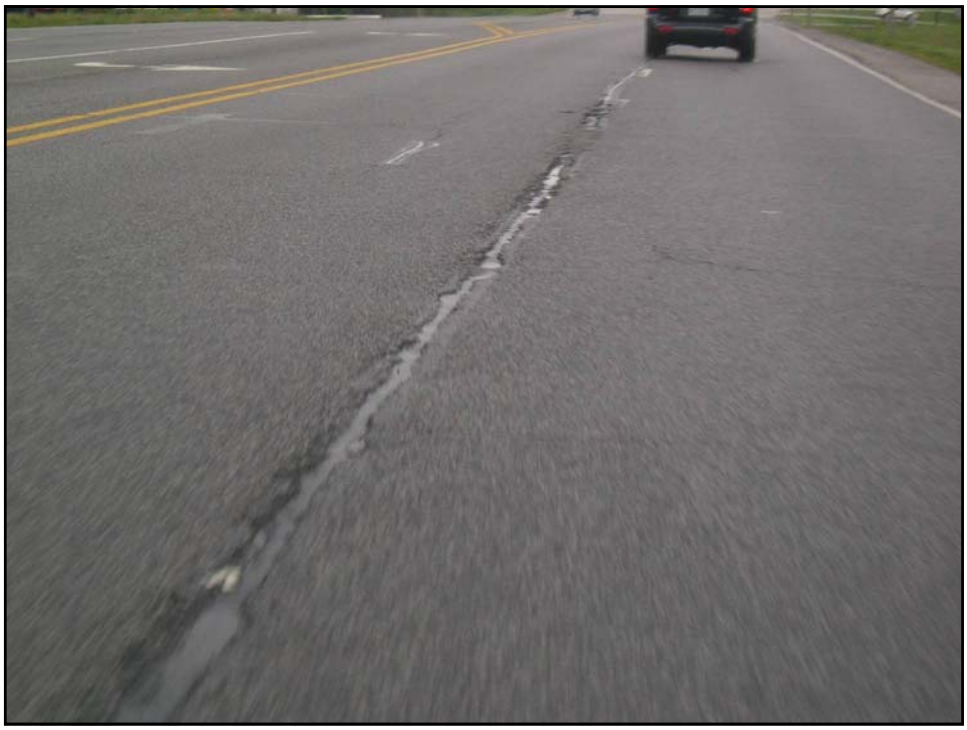
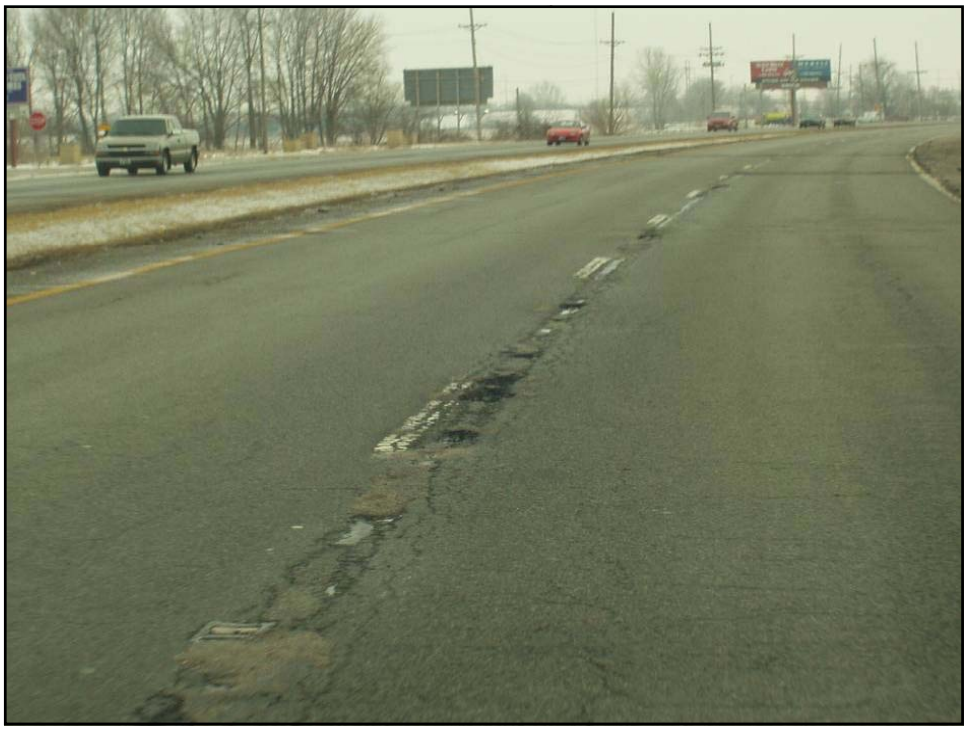
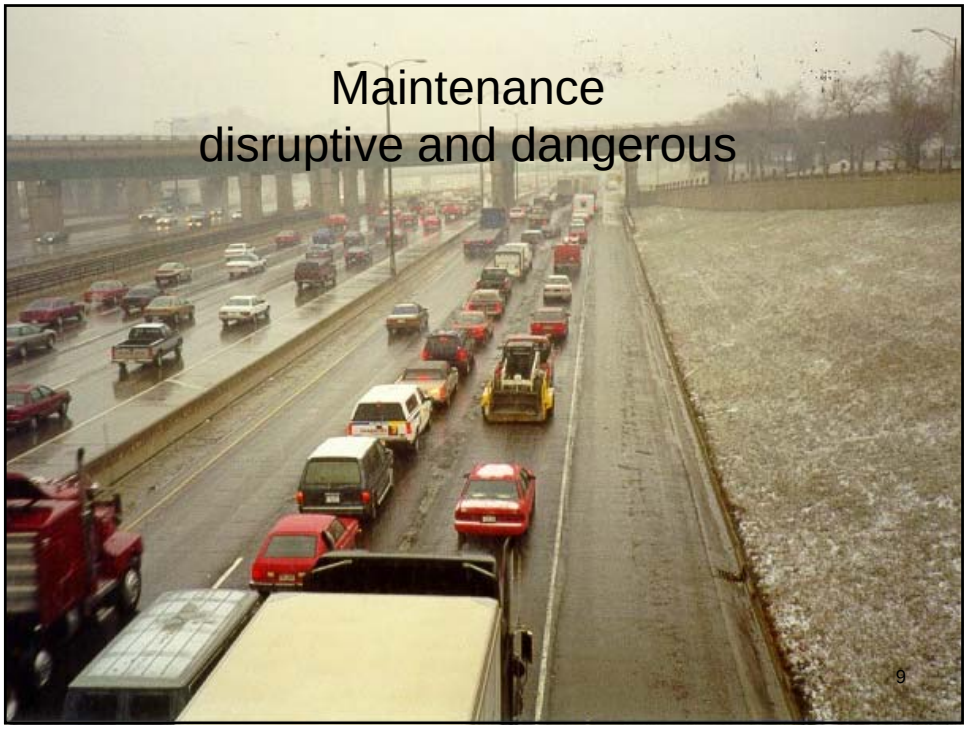
SPEED LIMIT
40








Maintenance
disruptive and dangerous
9

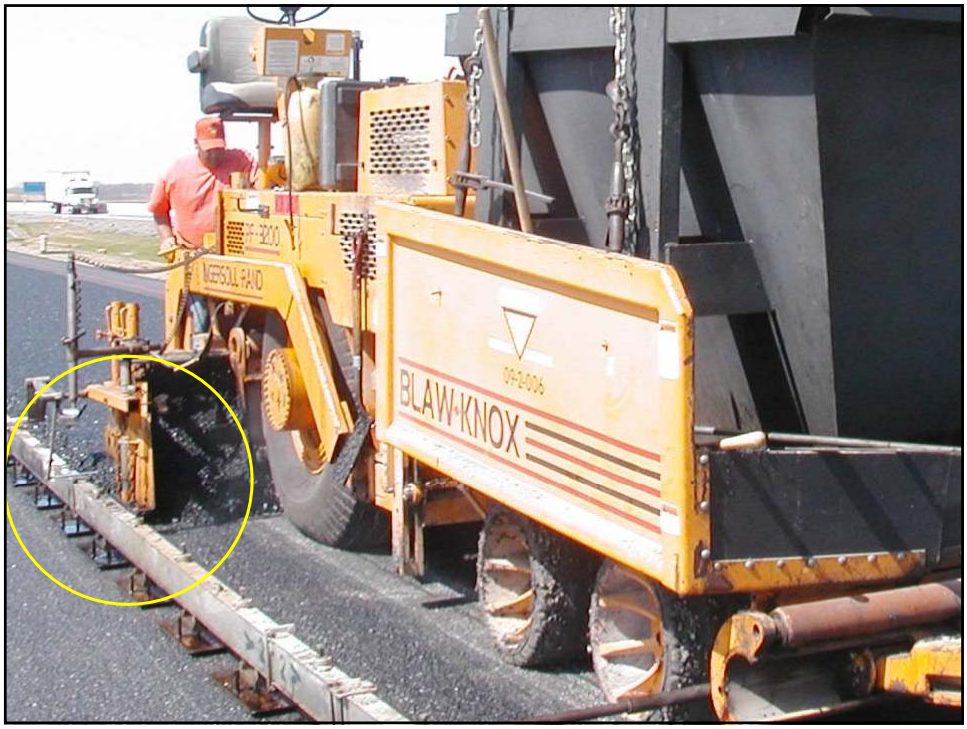

•Throw and Go


Expensive

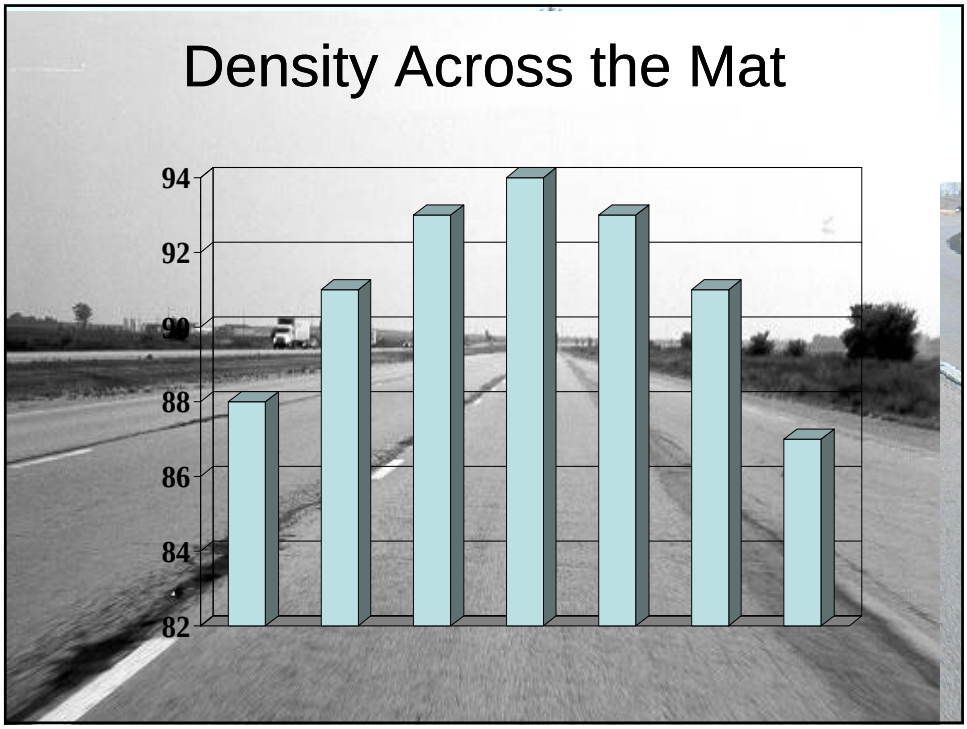

What is good here?
16


How many years?


How many years?


INGERSOLL-RAND
BLAW-KNOX

Density Across the Mat



Permeability

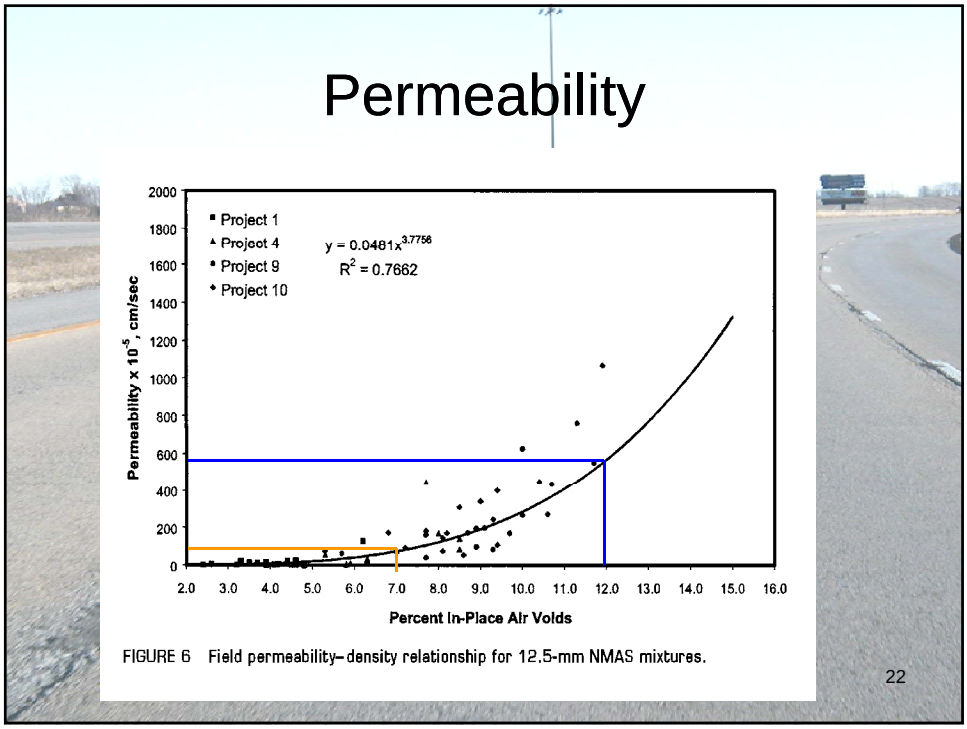


FIGURE 6 Field permeability–density relationship for 12.5-mm NMAS mixtures.

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•Damp Joint

Permeameter?

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Actions

1. Seal
2. Notched Wedge
3. Mill and Fill
4. Density measurement
5. Financial incentives
6. Mix
7. Continued attention

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2. Notched Wedge


3. Mill and Fill to Confine Edge

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4. Test Where It Counts


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5. PFP and QCP Financial Incentives

- Confined edge – PFP and QCP subject to random samples
- Unconfined edge
  - PFP subject to one density test per half mile with pay adjustment
  - QCP subject to random samples with 2% add

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6. Mix Modifications

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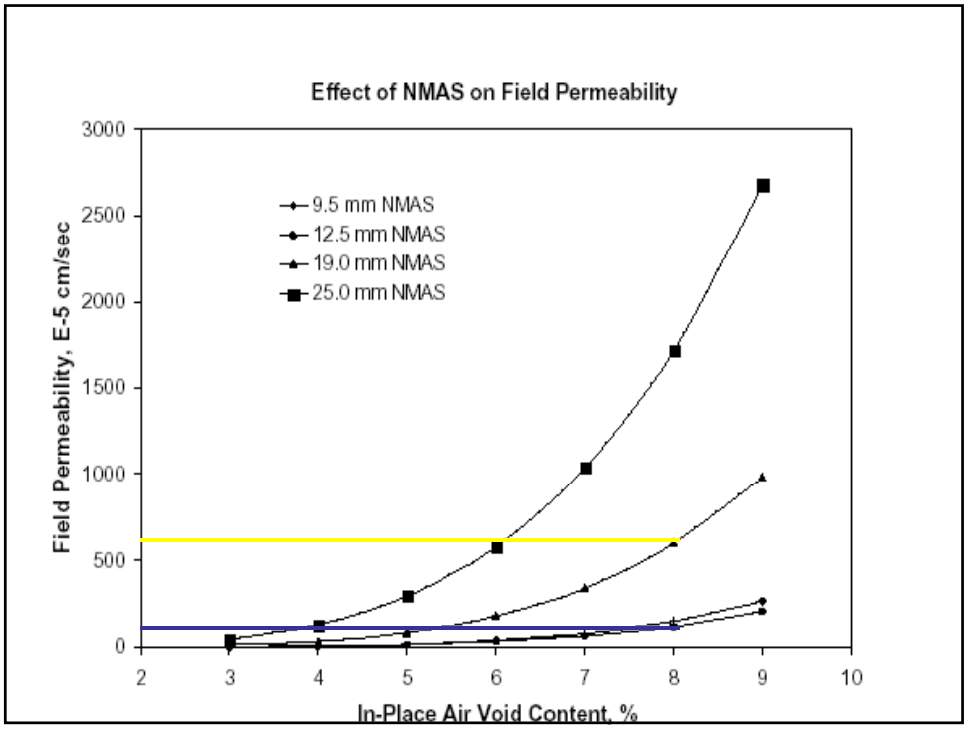
Effect of NMAS on Field Permeability
Field Permeability, E-5 cm/sec
3000
2500
2000
1500
1000
500
0
2
3
4
5
6
7
8
9
10
In-Place Air Void Content, %
9.5 mm NMAS
12.5 mm NMAS
19.0 mm NMAS
25.0 mm NMAS


19 mm Binders Must Go-
Almost Gone

Surface Mixtures

Increase passing #8 from 28% to 36%

- No Significant Cost
- Improves Workability
- Improves density
- Lower permeability
- Reduces segregation
- Improves Appearance
- Improved Longitudinal Joint

7. Continued Emphasis

- Progress in Illinois
  - Lots of best practices
- Still work to be done
- Emphasize

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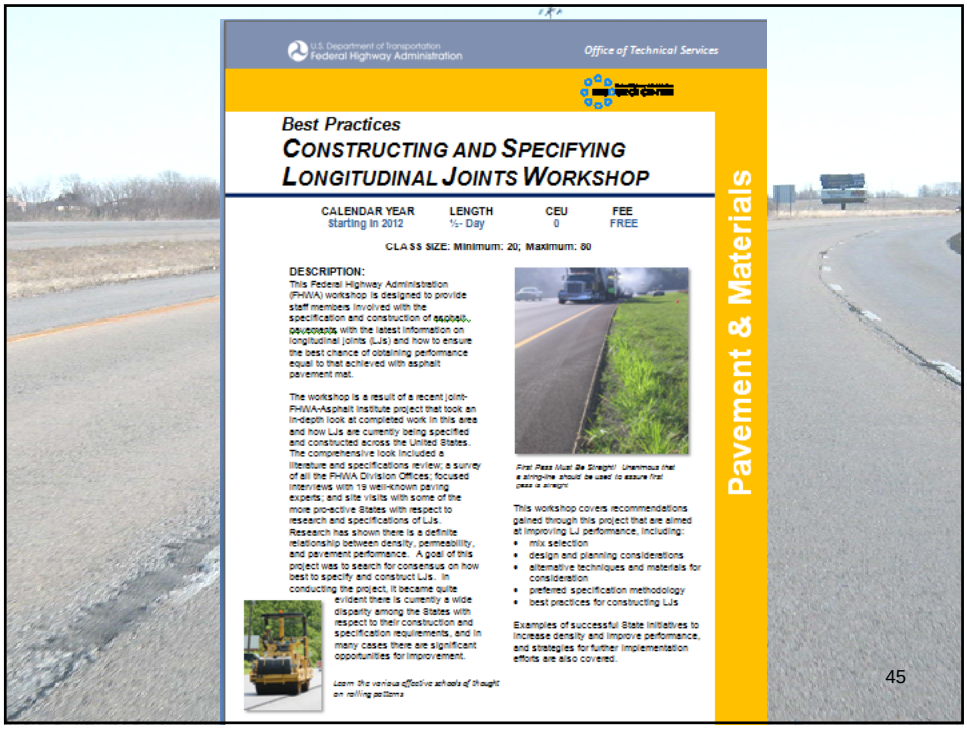
U.S. Department of Transportation
Federal Highway Administration
Office of Technical Services
Best Practices
CONSTRUCTING AND SPECIFYING
LONGITUDINAL JOINTS WORKSHOP
CALENDAR YEAR
Starting in 2012
LENGTH
½- Day
CEU
0
FEE
FREE
CLASS SIZE: Minimum: 20; Maximum: 80
DESCRIPTION:
This Federal Highway Administration (FHWA) workshop is designed to provide staff members involved with the specification and construction of asphalt pavements with the latest information on longitudinal joints (LJs) and how to ensure the best chance of obtaining performance equal to that achieved with asphalt pavement mat.
The workshop is a result of a recent joint-FHWA-Asphalt Institute project that took an in-depth look at completed work in this area and how LJs are currently being specified and constructed across the United States. The comprehensive look included a literature and specifications review; a survey of all the FHWA Division Offices; focused interviews with 19 well-known paving experts; and site visits with some of the more pro-active States with respect to research and specifications of LJs. Research has shown there is a definite relationship between density, permeability, and pavement performance. A goal of this project was to search for consensus on how best to specify and construct LJs. In conducting the project, it became quite evident there is currently a wide disparity among the States with respect to their construction and specification requirements, and in many cases there are significant opportunities for improvement.
Learn the various effective schools of thought on rolling patterns
First Pass Must Be Straight! Unanimous that a string-line should be used to assure first pass is straight
This workshop covers recommendations gained through this project that are aimed at improving LJ performance, including:
mix selection
design and planning considerations
alternative techniques and materials for consideration
preferred specification methodology
best practices for constructing LJs
Examples of successful State initiatives to increase density and improve performance, and strategies for further implementation efforts are also covered.
Pavement & Materials
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Joint Workshop
• Continues emphasis
• Background for new personnel
• Understand future changes
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Quiz T or F

- **A bad area between lanes will not hurt performance because cars don't drive there.**
- **Density measurement 2 feet from the joint improves density test results.**
- **Mixtures: If we don't stay with coarse graded, we won't get what we have always got.**
- **Training on joints is unnecessary when global warming will reduce freeze thaw cycles in Illinois.**

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The End

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