Restoring Surface Friction/Extending Service Life

Northeast Pavement Preservation Partnership
Annual Meeting
Portsmouth, New Hampshire
November 8, 2010

Janice P. Williams, P. E.
Chief, Project Development Division
LA DOTD
Restoring Surface Friction/Extending Service Life
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• Need

• Background/Technology

• Study in Progress

• What Comes Next
“In 2008, there were an estimated 5,811,000 police-reported traffic crashes, in which 37,261 people were killed and 2,346,000 people were injured; 4,146,000 crashes involved property damage only.”

National Highway Traffic Safety Administration
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One-third of America’s major roads are in poor or mediocre condition ... Current spending of $70.3 billion per year for highway capital improvements is well below the estimated $186 billion needed annually to substantially improve conditions.

ASCE’s Infrastructure Report Card 2009
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Citizens demand:

• Safe Roads
• Smooth Roads
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State Highway Agencies want:
• Long Lasting Roads
• Smooth (but not slick)

LA 6
104 Year Old Brick Pavement
Natchitoches, LA
Applying the right treatment

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Pavement Preservation:

Applying the right treatment

... To the right pavement

... At the right time
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Louisiana’s preservation toolbox

- Chip seal
- Micro-surfacing
- Thin Overlay
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What’s missing?
Fog seal
Slurry Seal

Why?
60”+/− LA avg yearly rainfall
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May 2009, New Orleans LA
SEPPP meeting = Synergy

Gary Billiard – Skidabrader
Colin Durante - Pavement Technology Inc.
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“Two great tastes that taste great together”
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What if we combine Skidabrasion pavement texture with the Reclamite® rejuvenator?

DOTD says let’s try it!
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Developed Test Section/Study Procedures

- DOTD to provide traffic control
- Skidabrader service and Reclamite product provided at no cost to DOTD
- Before and after skid tests with bald tire
- LTRC to monitor for three years
- 2 test sections approx 1000’
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What is Skidabrader?
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**Skidabrade**

High production pavement texturing service

Removes pavement surface using steel shot

Propels shot at high speed/variable angle

Vacuums shot for re-use
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What is Reclamite?
Asphalt Rejuvenator
Cationic Maltene Emulsion
Penetrates the pavement and fluxes with the AC
Restores and preserves plasticity and durability of the AC
Works on both older and new pavements
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Site Selection

- **US-80**
  Bienville Parish, Arcadia, LA
  2006 ADT : 5637

- **US-51**
  Tangipahoa Parish
  Hammond, LA
  2007 ADT : 21279
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Skidabrader Vehicle
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Test Section After Skidabrader Operation
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Reclamite Application Vehicle
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Maltenes Absorbed Into The Abraded Surface
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Skid Truck
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- ASTM E-274
- Vehicle Speed: 40 mph
- Tire Type: Bald Tire

US 51 Results

<table>
<thead>
<tr>
<th>Pretreatment</th>
<th>Skidabraded Only</th>
<th>Reclamite-0.04 Gsyd</th>
</tr>
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</table>

![Graph showing skid numbers for different treatments and time periods: App. Day and 3 Weeks.](image)
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- Vehicle Speed: 40 mph
- Tire Type: Bald Tire
- ASTM E-274

US 80 Results

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<tr>
<th>Skid Numbers</th>
<th>App. Day</th>
<th>1 Week</th>
<th>2 Weeks</th>
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US 80 Results

Pretreatment  Skidabraded Only  Reclamite-0.04 Gsyd  Reclamite-0.05 Gsyd

Skid Numbers

App. Day  1 Week  2 Weeks  5 Months  1 Year
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![Graph showing outflow numbers for US 80, Arcadia and US 51, Hammond with Pretreatment and Skidabraded categories.](image)

- **Outflow Number**
  - Pretreatment
  - Skidabraded

- **Locations**
  - US 80, Arcadia
  - US 51, Hammond

- **Reference**: ASTM E-2380
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![Bar Chart](chart.png)

Co-efficient of Permeability (mm/s $10^{-4}$)

US 80, Arcadia
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Outcome:

• Early results very promising
• Skid numbers increased
• Permeability decreased
• Quick re-open to traffic
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What’s next?
• Develop construction specifications/design criteria
• Full scale project test

If successful...
• Alternative to chip seal – low volume roads
• Alternative to microsurfacing/single lift overlay – high volume roads
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Questions?
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Thank You!

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