Pavement Preservation Industry Update

Rod Birdsall, PE
President
FP² Inc.

2016 AASHTO Subcommittee on Maintenance
July 18, 2016
Las Vegas, NV
Presentation Outline

• What is FP² Inc.?
  ➢ Mission
  ➢ Supporters
• Advocacy
• Research
• Communications
What is FP²

• What is FP² Inc?
  ➢ An Industry supported trade association

• Purpose of FP² Inc?
  ➢ Promoting the importance of protecting and preserving the huge investment in our nation’s pavement infrastructure
Supporters

• Who supports FP² Inc?
  ➢ Associations
  ➢ Contractors
  ➢ Material Suppliers
  ➢ Chemical suppliers
  ➢ Equipment manufactures
  ➢ Consultants
FP2 Contributors

Corporate Sponsors

Sponsoring Associations

AkzoNobel
All States Materials Group®
Colas
CRAFCO®
Dustrol Inc
Ergon Asphalt & Emulsions, Inc.
EPA Pavement Products & Equipment
SealMaster
Unique Pavement Materials Corporation
Bergkamp
Forta-Fi®
BASF
Ingevity
Western Emulsions

AEMA
Asphalt Institute
ARRA
IGGA
International Grooving & Grinding Association
ISSA
International Slurry Surfacing Association
NAPA
National Association of Pavement Preservation Association
What do we do?

- FP² Inc. financially supports
  - The National Center for Pavement Preservation at Michigan State University
- FP² Inc. works closely with
  - Regional Preservation Centers in California and Texas
  - Regional Preservation Partnerships
  - Federal Highway Administration
- Publish Pavement Preservation Journal
- Participate in ETF and ETG
What do we do?

• Mission
  – **Advocacy**: educate public officials at all levels & involved with legislation.
  – **Research**: Funding partner in NCAT 2012 PG study and 2015 NCAT/MN Road PG project
  – **Communication**: sponsor key events, publish the Pavement Preservation Journal, distribute educational materials
ADVOCACY
Advocacy Effort

- FP² has a contract with Williams & Jensen to represent the Pavement Preservation (PP) industry
- FP² advocated for PP language in MAP 21 and the FAST Act
- Have had many meetings with Transportation committees as well as key Congressmen and staff
MAP-21

- Pavement Preservation language was included in the policy and definition sections of the statute
- Pavement Preservation projects are now eligible to receive federal funds
- Helped to frame the debate for Asset Management and Pavement Preservation
FAST Act passed Congress on Dec 3, 2015

- 5 years

- Increases annual federal highway investments from $40.3 billion to $46.4 billion by 2020 --a $20.2 billion increase over 5 years

- This equates to a 5.1% increase in formula funds to states in 2016 with annually increases ranging from 2.1-2.4% from 2017 to 2020
FAST ACT

FAST Act retains program structure and definitional changes enacted in MAP-21 with a few significant changes

- **Creation of National Freight Program (NFP)** – new $6.2 billion, formula-based funding for projects on the National Highway Freight Network (NHFN)
- **Nationally Significant Freight & Highway Projects Program** - $900 million per year in large scale grants
- **Converts STP into a new Surface Transportation Block Grant Program (STBGP)**
- **New Federal Permitting Improvement process**
FAST ACT: The Good and the Bad

• Increased annual spending- $20 Billion over 5 years
• Provides agencies the certainty they need to plan
• Reaffirmed Congress interest in maintaining a federal role in surface transportation
• Continues many aspects of MAP-21
• NO LONG TERM FUNDING SOLUTION
What’s Next?

• FP2 remains engaged in this process to ensure that preservation outcomes remain as intended
• Next round of legislation-when? 5 years will go by fast
• Discussions and actions by the Senate Finance and Appropriations Committees under way regarding long term funding for transportation
• Highway Trust Fund???
• User Fee Options on the table- Fuel, VMT, Registration, General Fund
RESEARCH
NCAT/MN ROAD Research Partnership

To facilitate high value pavement research that addresses national needs using full-scale pavement testing facilities in both warm and cold climates on flexible, rigid, and composite pavement structures.
NCAT Pavement Test Track at Auburn University

• 2012 Pavement Preservation Study
2012 Preservation Summary

- Martin Marietta Quarry
- EAP's Auburn Plant
- Lee Road 159
2012 NCAT Preservation Group Study

• Seven states and FP2 Inc. were full funding partners for the three year study
• Twenty Five test sections constructed on Lee County, AL 159 in August, 2012
• Several treatments on the NCAT track
• Preliminary results available, with continued monitoring until return to original condition
• Track Conference held March, 2015
• www.pavetrack.com
2012 Preservation Summary

- Crack sealing improves cracking performance
- Differences between route/fill and blow/band
- Scrub seals exhibit both crack & chip seal benefit
- Chip Seal slowed oxidation rate as compared to Control
- Treatments reduce subgrade moisture
- Life extending benefit curves developing nicely
- Extend data collection on Track & Lee Rd 159
2012 Study Performance Data

Step 1:

Step 2:

- Click here for a recent Track rutting bar graph with ESAL update!
- Click the layout below for information specific to each section

- N1 - N11, S5 - S6, and S8 - S13 are structural sections
- All other sections have deep perpetual foundations
- Research cycle of surface placement shown by color
- Black=00, Blue=03, Red=06, Yellow=09, Green=12, Purple=15
- Off-Track test sections on Lee Road 159 & US-280 shown below

Lee Road 159 preservation sections (100-ft, both lanes, from north to south)

US-280 preservation sections (528-ft, westbound truck lane, MP 128.0 to 132.6)
Example Section Data

Quadrant: L
Section: 7

Surface Mix and Materials

Year of Completion: 2012
Surface Design Method: Chip
Specified Binder: CRS-2HP
Surface Layer Aggregates: 89 Columbus Granite

Structural Buildup Information

Study Layer(s) (in): 0.4
Total Bituminous (in): 5.9
Base Material: Soil Agg
Subgrade: Stiff

Research Objective: Single layer chip seal with crack sealing

Preliminary Field Performance Data for the 2015 Research Cycle

Equivalent Single Axle Loadings (ESALs)

- Van IRI (m/km)
- Van MTD (mm)
- Van fRut (mm)
- Contact Rut (mm)
- Cracking (% Lane)

Cracking (% Total Lane)
NCAT Preservation Group Study

- Continued monitoring of Lee Road 159 under current contract
- “Trigger Values” for preservation treatments on the track and Lee Road 159 have been set with the funding partners and treatments will be applied when they are reached
2015 NCAT/MN Road Preservation Group Study

• NCAT partnering with MN Road for the 2015/2016 PG study & FP² is a full funding partner

• Completed treatments on US 280 near Auburn for 2015 PP study

• MN DOT placing treatments on low & high traffic volume roadways in August, 2016
2015 Preservation Group ("PG15")
2015 Track Research Sponsors

FHWA
FP²
Collaborative Aggregates

Minnesota Department of Transportation

National Center for Asphalt Technology at Auburn University
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Fog Seal</td>
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<tr>
<td>2</td>
<td>Rejuvenating Fog Seal</td>
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<tr>
<td>3</td>
<td>Crack Sealing</td>
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<tr>
<td>4</td>
<td>Single Layer Chip Seal</td>
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<tr>
<td>5</td>
<td>Single Layer Chip Seal with Crack Sealing</td>
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<td>6</td>
<td>Triple Layer Chip Seal</td>
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<td>Double Layer Chip Seal</td>
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<td>8</td>
<td>Cape Seal (Micro Surface over Single Chip Seal)</td>
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<tr>
<td>9</td>
<td>Single Layer High Polymer Micro Surface</td>
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<tr>
<td>10</td>
<td>Single Layer Highly Flexible Micro Surface</td>
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<tr>
<td>11</td>
<td>Single Layer Micro Surface</td>
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<td>12</td>
<td>Single Layer Micro Surface with Tack</td>
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<td>13</td>
<td>Single Layer Micro Surface with Crack Sealing</td>
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<td>14</td>
<td>Double Layer Micro Surfacing</td>
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<tr>
<td>15</td>
<td>FiberMat Cape Seal</td>
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<td>16</td>
<td>FiberMat Chip Seal</td>
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<td>Scrub Cape Seal</td>
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<td>18</td>
<td>Scrub Seal</td>
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<tr>
<td>19</td>
<td>Scrub Cape on a Foamed CIR Base</td>
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</tbody>
</table>
20. 4.75 NMAS Thin “Screenings” High ABR Mix on Foamed CIR
21. 4.75 NMAS Thin “Screenings” High ABR Mix on Emulsion CIR
22. 4.75 NMAS Thin “Screenings” High ABR Mix on Foamed CCPR
23. 4.75 NMAS Thin “Screenings” High ABR Mix on Emulsion CCPR
24. 4.75 NMAS Thin “Screenings” High ABR Mix on HIR
25. HMA Cape Seal (4.75 NMAS Thin “Screenings” High ABR Mix over FiberMat Chip Seal)
26. HMA Cape Seal (4.75 NMAS Thin “Screenings” High ABR Mix over Scrub Seal)
27. HMA Cape Seal (4.75 NMAS Thin “Screenings” High ABR Mix over Chip Seal)
28. 4.75 NMAS Thin “Screenings” High ABR Mix on Crack Sealed Surface
29. 4.75 NMAS Thin “Screenings” High ABR Mix on Crack Sealed Surface
30. 4.75 NMAS Thin “Screenings” High ABR Mix over Scrub Seal
31. 4.75 NMAS Thin “Screenings” High ABR Mix Placed with a Spray Paver
32. 4.75 NMAS Thin “Screenings” High ABR Mix with UltraFuse tack
33. 4.75 NMAS Thin “Screenings” Virgin Mix
34. OGFC on Crack Sealed Surface
35. OGFC Overlay
36. OGFC Overlay with UltraFuse Tack
37. OGFC Overlay Placed with a Spray Paver
38. OGFC Inlay after Micro-Milling
Crack Sealing
Chip Seal Application
Verifying Aggregate Application Rate
FiberMat Application
Scrub Seal Equipment
Project Team
FP2- 2015 NCAT/MnRoad Contributors
COMMUNICATION
Communication Efforts

- FP2 Inc. Website – fp2.org
James B. Sorenson Excellence in Preservation Award

Jim Sorenson
Past Sorenson Award Winners

• 2005-City of Los Angeles
• 2006-Fredrick County, MD
• 2007-City of Nashville, TN
• 2008-California Department of Transportation
• 2009-Putnam County, NY
• 2013-New Hampshire Department of Transportation
• 2014-Charleston County, SC
• 2015-City of Los Angeles
FP² Inc. - What’s next?

• Oct 11-14, 2016 NPPC in Nashville
• Oct 26-27 Fall NCAT/ MN Road PP Partnership meeting in Minneapolis
• Engage with Congress on next transportation legislation
• Planning for the 3rd International Pavement Preservation Conference, Paris, FR, February, 2019
• Review Strategic Plan
FP² Contributors

Corporate Sponsors

Sponsoring Associations
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Questions?