North Central Regional Update

Dan Staebell
Regional Director
dstaebell@asphaltroads.org
Research & Technology

Pavement Economics Committee
- 4 Task Groups

Other Research
- Asphalt Institute
- NCAT

Future Research

Market Research & Communications

Go-To-Market Task Group

Deployment Activities

Deployment Task Group

ASPHALT PAVEMENT ALLIANCE

NAPA
National Asphalt Pavement Association

SAPA
State Asphalt Pavement Associations

Asphalt Institute
To establish asphalt pavement as the preferred choice for quality, performance and the environment.

Mission
New Task Group Structure

Mixture Quality & Performance
- Best Quality & Competitiveness
- Pavement Preservation
- Private Sector Markets & Local Roads

Life Cycle Cost Analysis
- Pavement Design
- Pavement Type Selection

Life Cycle Assessment
- Environmental Sustainability

Legislative
Brand Management

Align with New Task Groups
• Create Materials on LCCA, LCA, Mixture Quality & Performance, and Commercial Markets
  ✓ Advertising Program
  ✓ Videos & Infographics
85% of deaths in work zones are drivers and passengers in cars.

Work zone safety is your safety, too.
A Moment Can Save a Life

Every year more than 600 people are killed in roadway work zones. Construction companies are dedicated to ensuring the safety of their workers and the driving public. Roadway work zones use a variety of warning systems, barriers, and other traffic controls to make certain drivers and work zones stay separated, but it just takes a moment of distraction for an accident to happen and for lives to be changed forever.

This is one such story.
STRATEGIC AREA 1 – LCCA
• Objective: Advocate the Proper and Appropriate Use of LCCA.
  • Working with the SAPAs and industry members, advocate to DOT audiences, pavement specifiers and political appointees on how to properly formulate and use LCCA.

STRATEGIC AREA 2 – PAVEEXPRESS
• Objective: Expand the use of the PaveXpress software by pavement designers.
  • Working with SAPAs, AI Regional Engineers, and other industry partners to expose pavement-design professionals, including public agencies and consulting engineers, to PaveXpress. Simply exposing the design community to PaveXpress has shown to increase usage of the tool.

STRATEGIC AREA 3 – COMMERCIAL
• Objective: To work with industry and SAPA members to develop national relationships that create opportunities to advocate for the effective use of asphalt.
  • Meetings with engineers and decision makers at the headquarters of national accounts to create relationships and determine what assets they need.
  • Work with state execs and contractors to implement PEC material geared to the commercial market.
Regional Initiatives

• **Life Cycle Cost Analysis**

• **Rehab Competition**
  – GOAL: Create competitive industry message promoting best HMA practices.

• **Proper Design Thickness**
  – GOAL: Promote initiatives designed to teach designers how to optimize pavement design while ensuring performance.

• **Commercial Market Strategy**
  – GOAL: Implement tools designed to enhance market share in private sector market.
WARNING!

Full Disclosure and Transparency

Asphalt. AMERICA RIDES ON US
It’s All about the Message!

What is OUR Message!!
Action LCCA

Presentations at SAPA Annual Meetings (general sessions) on LCCA
- Deploy Educational PowerPoint on LCCA Recommended Practices
- Prepare and conduct an APA update on the top three national initiatives: LCCA, PaveXpress, and Commercial Markets

Meetings with DOTs, appointees, and owners on LCCA in conjunction with industry partners

Understand the LCCA challenges and opportunities in the Northcentral regional states and develop plan with deliverables
Review of Initial Service Life Determination in LCCA Procedures and In Practice – *TRB 2018*

Summary of Middle 90% of Pavement Ages at Time of 1st Rehab

<table>
<thead>
<tr>
<th>Pavement Type</th>
<th>No.</th>
<th>Avg</th>
<th>Min</th>
<th>Max</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>206</td>
<td>17.68</td>
<td>7.09</td>
<td>28.93</td>
<td>5.51</td>
</tr>
<tr>
<td>PCC</td>
<td>121</td>
<td>23.84</td>
<td>12.88</td>
<td>35.44</td>
<td>5.79</td>
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</tbody>
</table>

Ride Quality (IRI) Prior to Rehabilitation

<table>
<thead>
<tr>
<th>Pavement Type</th>
<th>Percent of Total Pavement Sections</th>
<th>Very Good**</th>
<th>Good 61 – 95</th>
<th>Fair 96 – 120</th>
<th>Poor 21 – 170</th>
<th>Very Poor &gt; 170</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Pavements</td>
<td></td>
<td>9.6%</td>
<td>34.3%</td>
<td>24.1%</td>
<td>17.5%</td>
<td>14.5%</td>
</tr>
<tr>
<td>PCC Pavements*</td>
<td></td>
<td>1.1%</td>
<td>23.3%</td>
<td>26.7%</td>
<td>34.4%</td>
<td>14.4%</td>
</tr>
</tbody>
</table>
#2 Rehab Competition
GOAL: Create competitive industry message promoting best HMA practices.

Specific to NC Region Initiative
<table>
<thead>
<tr>
<th>Rating</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRI</td>
<td>&lt;95</td>
<td>95-170</td>
<td>&gt;170</td>
</tr>
<tr>
<td>(inches/mile)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSR* (0.0-5.0 value)</td>
<td>≥4.0</td>
<td>2.0-4.0</td>
<td>≤2.0</td>
</tr>
<tr>
<td>Cracking Percent</td>
<td>&lt;5</td>
<td>CRCP: 5-10</td>
<td>&gt;10</td>
</tr>
<tr>
<td>(%)</td>
<td></td>
<td>Jointed: 5-15</td>
<td>&gt;15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asphalt: 5-20</td>
<td>&gt;20</td>
</tr>
<tr>
<td>Rutting (inches)</td>
<td>&lt;0.20</td>
<td>0.20-0.40</td>
<td>&gt;0.40</td>
</tr>
<tr>
<td>Faulting (inches)</td>
<td>&lt;0.10</td>
<td>0.10-0.15</td>
<td>&gt;0.15</td>
</tr>
</tbody>
</table>

*PSR may be used only on routes with posted speed limit < 40mph.
§ 490.309 State DOT Pavement Data Submittal

<table>
<thead>
<tr>
<th>Current</th>
<th>First Performance Period</th>
<th>Second Perf Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate Data Collection</td>
<td>IRI, Rutting, Cracking Percent, Faulting, and Inventory</td>
<td>IRI, Rutting, Cracking Percent, Faulting, and Inventory</td>
</tr>
<tr>
<td>Non-Interstate NHS Data Collection</td>
<td>IRI Inventory</td>
<td>IRI Inventory</td>
</tr>
</tbody>
</table>

Calendar Year
- 2017: Submit June 15
- 2018: Submit April 15
- 2019: Submit June 15
- 2020: Submit April 15
- 2021: Submit June 15
- 2022: Submit April 15
- 2023: Submit June 15

U.S. Department of Transportation
Federal Highway Administration

Asphalt. AMERICA Rides on Us
Dan Staebell
Regional Director
APA
dstaebell@asphaltroads.org
t@apa_djs

Asphalt. AMERICA RIDES ON US
Preserving Performance using Thinlay™

DAN STAEVELL
APA
NORTHCENTRAL REGIONAL DIRECTOR
DSTAEVELL@ASPHALTROADS.ORG

Thanks for Assistance:
Buzz Powell, NCAT
Brett Williams, NAPA
Action #3 Pavement Design Initiative

STRATEGIC AREA 2 – PAVEEXPRESS

Objective: Expand the use of the PaveXpress software by pavement designers.

Means to achieve:
Use PaveXpress to open discussions about structural number and proper design thicknesses in the APA Northcentral, Northeast, and Southeast regions.
Learning Pavement Design with PaveXpress

The PaveInstruct learning module is a web-based pavement design education system with video instruction by leading industry experts. PaveInstruct accompanies PaveXpress, a web-based software created to design flexible and rigid pavements using AASHTO 93/96. The education modules within PaveInstruct correlate with the design modules in PaveXpress and provide technically sound pavement design and instruction.

**PAVEInstruct**

- **Instruction**
  - Please click below to enter the PaveInstruct learning module system. Presentations are available in short clips or in full format.

**PaveXpress**

- **Design**
  - Please click below to enter the PaveXpress design system.

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PaveXpress

PAVEMENT DESIGN Simplified
The Path to Today

AASHO Road Tests Begin
1958

Recycled Asphalt Mixes
1973

World Bank IRI Studies
1986

Interim Pavement Design Guide
1961

Material Transfer Vehicles
1998

AASHTO 1993 Design Guide
1993

Superpave
1995


Perpetual Pavement Designs
2000

Mechanistic-Emperical Design Guide
2008

Warm-Mix Asphalt
2003

PaveXpress
2016

Since 1961, the layer coefficient of 0.44 for the structural number has not changed.
NCAT PEC Pavement Design Study

- SN Values today reflect .50-.54 vs .44
- Local review encouraged

1. The asphalt layer coefficient originally recommended by AASHO in 1962 (1) is not necessarily applicable in all situations. Studies in Alabama (8) and Washington (11) found a higher value better reflected actual performance. The values in each state (Alabama = 0.54; Washington = 0.50) were remarkably similar despite geographical differences.

6. Local agencies or municipalities that may not have all the information required for recalibration could still perform recalibration by utilizing existing information available through state or other local agencies for similar roadways in their geographic regions.
Iowa SN work

HWY 100 SN Estimate

“When you have a perpetual pavement <100 microstrain, you can’t get there without at least a 0.5 layer coefficient. Specifically for HWY 100 I would estimate 0.58 SN.”

S. Schram IA DOT
What does Optimized Design mean?

<table>
<thead>
<tr>
<th>Component</th>
<th>SN Value</th>
<th>Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface (AC)</td>
<td>0.52</td>
<td>2.00&quot;</td>
</tr>
<tr>
<td>Binder/Intermediate (AC)</td>
<td>0.44</td>
<td>2.00&quot;</td>
</tr>
<tr>
<td>Base (AC)</td>
<td></td>
<td>1.50&quot;</td>
</tr>
<tr>
<td>Aggregate Base</td>
<td></td>
<td>6.00&quot;</td>
</tr>
</tbody>
</table>

20% Savings

5.5" HMA 7" HMA
Action #4 Commercial

STRATEGIC AREA 3 – COMMERCIAL

Objective: To work with industry and SAPA members to develop national relationships that create opportunities to advocate for the effective use of asphalt.

• Work with state execs and contractors to implement PEC material geared to the commercial market.
ASPHALT: THE SMOOHEST WAY TO WELCOME CUSTOMERS

Whether at a business, a shopping center, a school, house of worship, recreation area or apartment building, a PARKING LOT is one of the first things a person sees when arriving at their destination. First impressions matter, and a poorly constructed or maintained lot can reflect negatively on an establishment. A well-maintained parking lot is also safer and easier for both pedestrians and drivers to navigate. Asphalt pavements are the superior choice for parking lots because they are quick to construct, long-lasting, sustainable and easy and cost-effective to maintain. Plus, because asphalt is everywhere, there are qualified and capable asphalt paving companies in every community across the nation.

ASPHALT WELCOMES

- An asphalt parking lot allows an owner to keep their “welcome mat” crisp and inviting.
- Long-term serviceability is easily and quickly maintained when utilizing asphalt pavements.
- Asphalt pavements are extremely versatile and can be easily adapted to suit any pavement application.

- Asphalt is the most recycled product in the world.
- Asphalt parking lots are economical and can be used in light and heavy-duty applications.

Contact us today for assistance.

ASPHALT: The Right Choice

+ Proper Design
+ Construction Expertise
+ Timely Maintenance
= Cost Effective
= Long-term Durability


Private Sector Markets & Local Roads

NAPA
NATIONAL ASPHALT PAVEMENT ASSOCIATION

Parking Lot Flyer
Parking Lot Training
New and Reconstruction

Agenda

- 7 Keys to Success
- Critical Pavement Design
- Reconstruction
  - When
  - How
- Porous Asphalt
- LEED and Sustainable Practices

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Upcoming Commercial Training

• Professional Instructor’s
  – Tim Murphy PE
  – Mike Groh-

• April 17-18th Chicago
  – Future locations:
    • KC and MSP

• Focus: “How To”
  – Build
  – Maintain
  – Rehabilitate
Women of Asphalt

Please join us for the debut of

women of asphalt
COUNCIL

World of Asphalt
Houston Convention Center

March 6, 2018 | 3-5 pm
Mixer (Free wine and beer)
APA booth (#3455) and AI booth (#3457)

March 7, 2018 | 1-3 pm
Women of Asphalt Council forum
Room 360 A&B
Discussion on the WOA council and a roundtable with ladies in the industry, plus a presentation from Dr. Audrey Copeland, NAFA VP for Engineering, Research and Technology.

For more information, contact Asphalt Pavement Alliance at 904.436.0758.
Create an Environment
Thank You!

Dan Staebell
APA
Northcentral Regional Director
dstaebell@asphaltroads.org
608-440-0142 Cell