



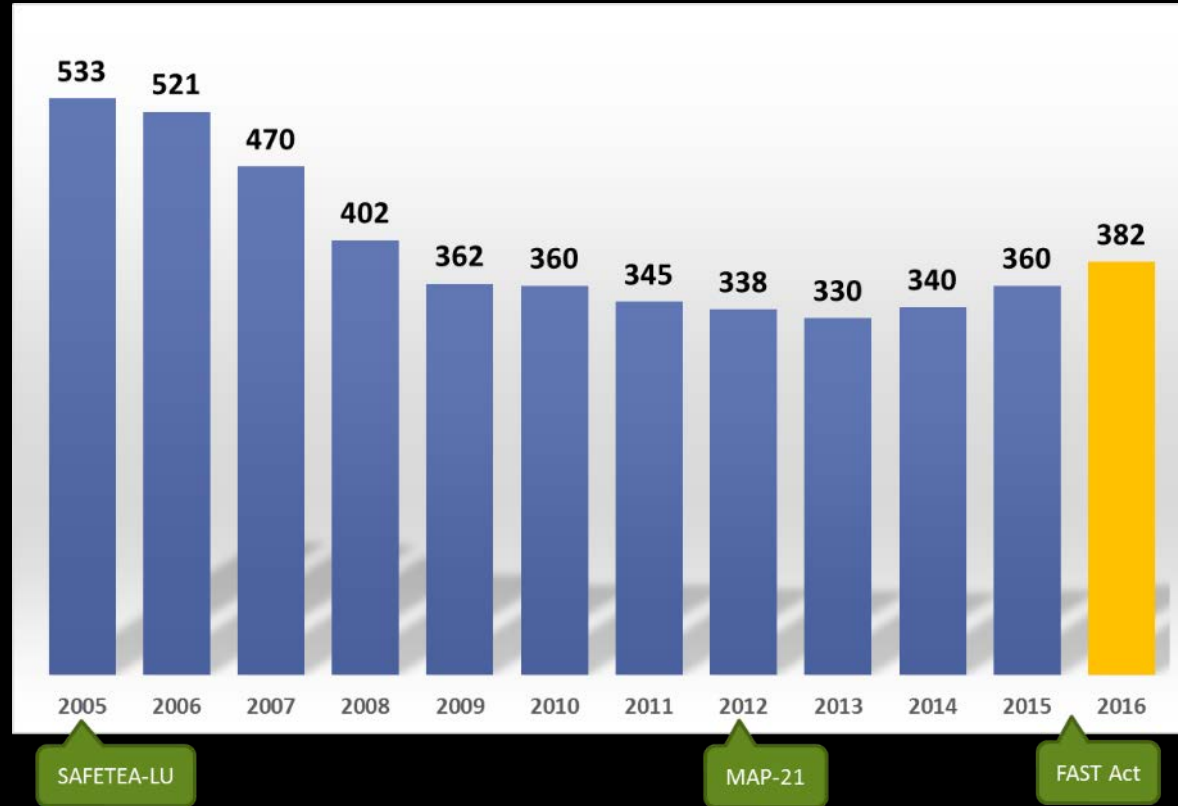
ASPHALT PAVEMENT PERFORMANCE: NATIONAL PERSPECTIVE

DAN GALLAGHER, NAPA CHAIRMAN

THE 58TH ILLINOIS BITUMINOUS PAVING CONFERENCE

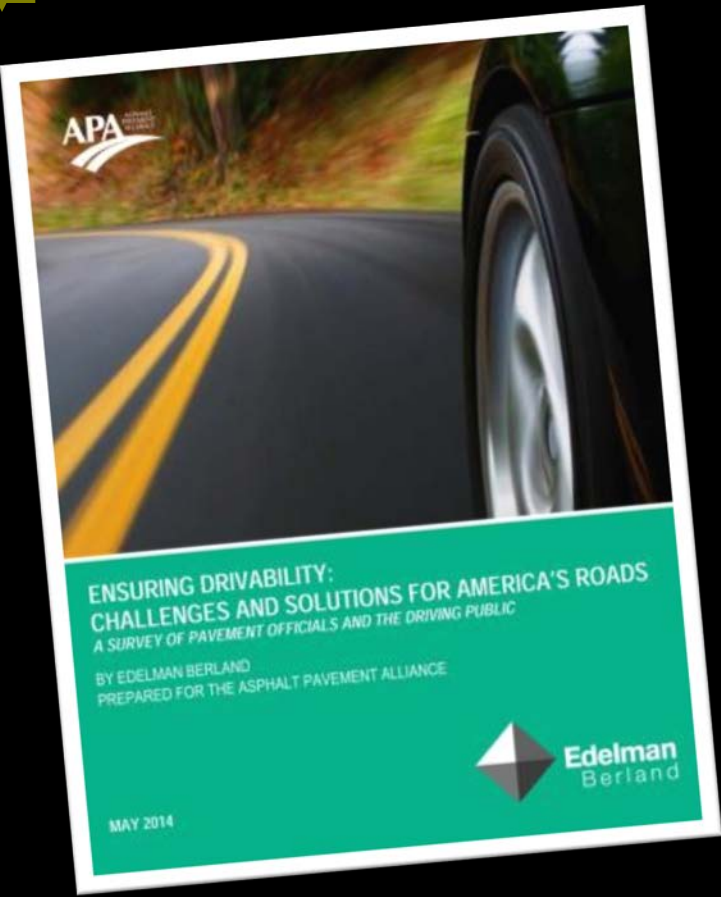


Tons of HMA/WMA Produced Nationally (in millions)



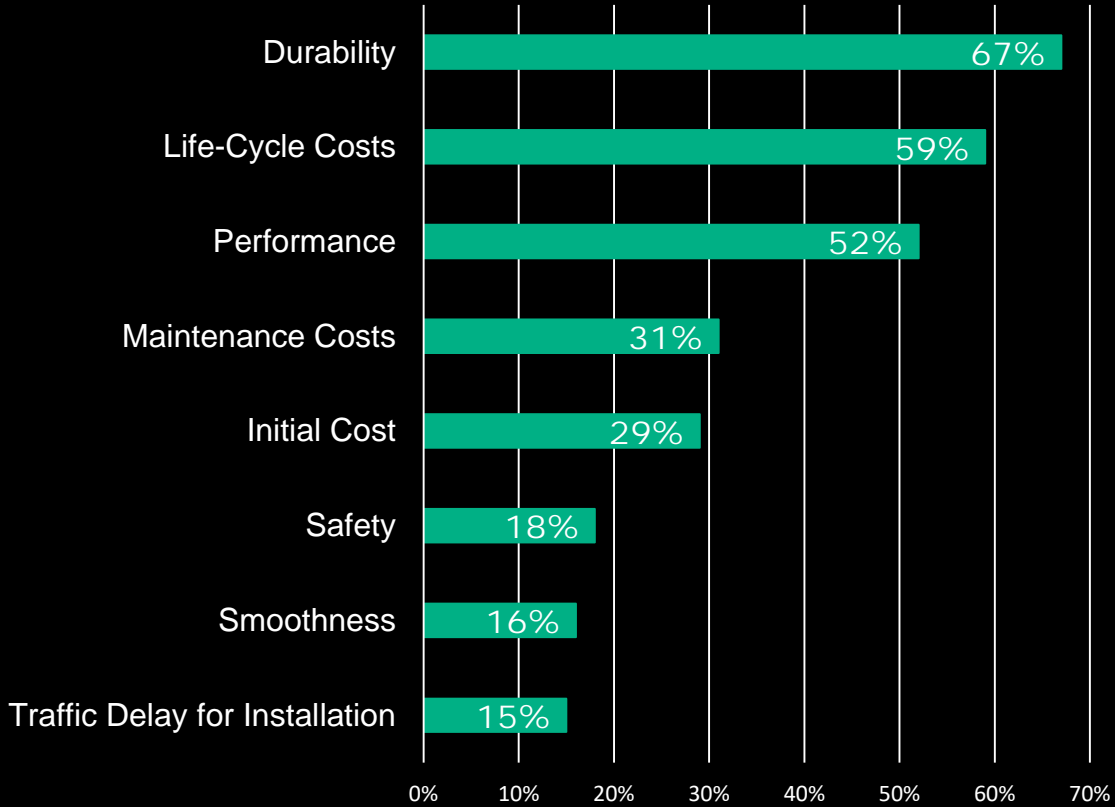
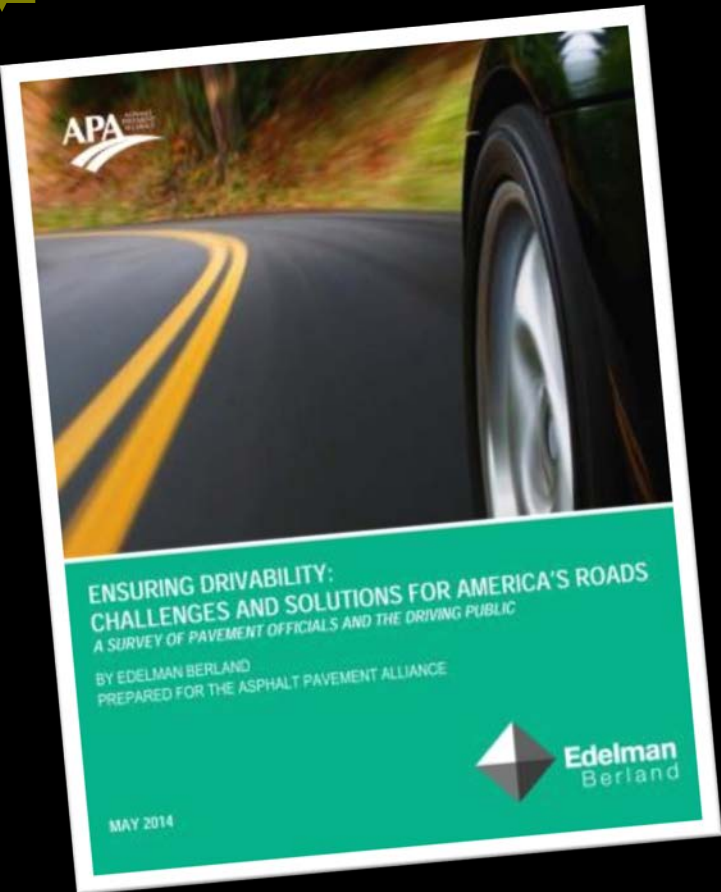


Driver's Preferred Pavement Attributes





Road Owner's Top-Three Priorities





“In order to stretch pavement life and save money, we are focused on preservation.”

“Due to budget constraints, most projects are very thin overlays.”


“Pavement deterioration is the issue; states need to stretch dollars further.”

“...struggling with failures when trying to keep costs down.”



Our Customers' Dilemma

1. Maintain more of their road network through preservation (reduced thickness)
2. Extend the years between preservation or maintenance cycles



“We’re going to use research & technology to change how we build things, we are going to engineer our way to get longer life...with little funding increase”

“If industry can show us how to get more value out of the pavement, we’re listening.”

“The problem is a lack of funding. If we focus on extending or preserving the life of pavements, that will appeal to DOT leadership. Just a 10% increase in pavement life will take care of funding the entire system.”

Our Situation

The Opportunity

- Focus from construction to preservation
- The value of the US highway and road system is estimated at \$1.75 trillion
- Preservation of the existing system is the focus & challenge for pavement managers



Thin Asphalt Overlays An Essential Pavement Preservation Tool

- Lower life-cycle costs
- Applied to all roadway types, various conditions
- Most common used preservation treatment after crack filling & sealing for high volume roadways
- The most effective preservation treatment
- Long-life (Perpetual) pavement

Washington Street in the Village of Canal Winchester, OH with Smoothseal™.

THINLAY

- Thinlays™ successfully extend the life of structurally sound pavements. Thinlays can be as thin as 5/8 inch and of greater thickness as surface conditions necessitate.
- Preservation: correct surface distresses, seal surface, and improve serviceability

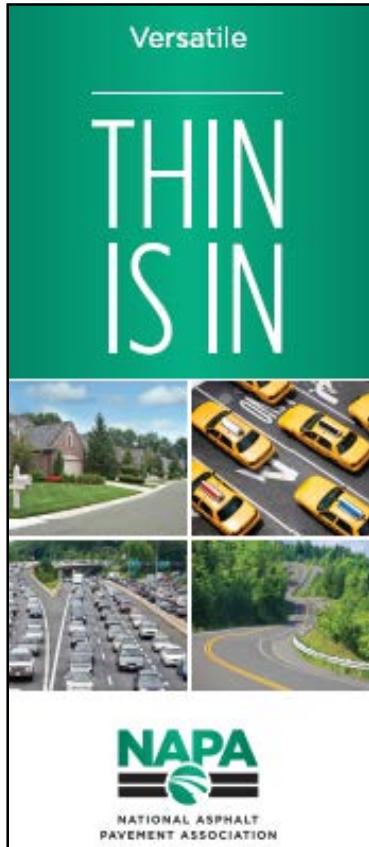




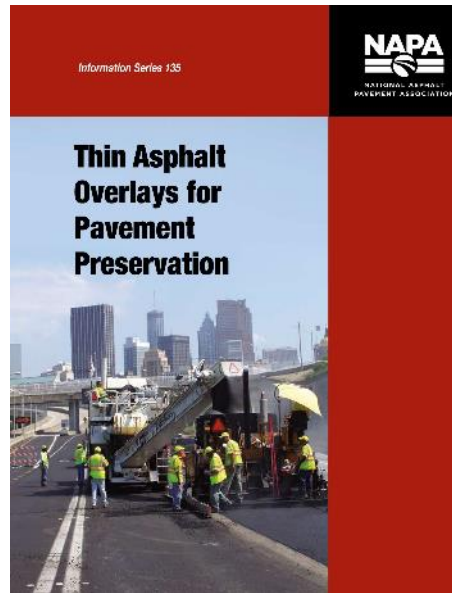
Thinlays for Preservation: From Drawbacks to Innovative Solutions

- May have higher initial cost than other preservation strategies.
 - *Provide longer life*
 - *Thinner lifts*
 - *Use low-cost screenings and recycled materials (RAP, RAS, rubber)*
- Construction & application in cooler temperatures
 - *Warm Mix Asphalt*
- Cracking, durability versus permanent deformation
 - *Higher asphalt contents*
 - *Engineered binders (e.g. polymer, rubber, etc.)*

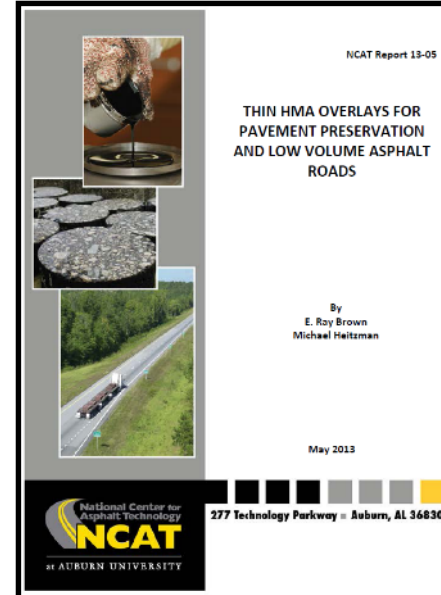
Resources



Thinlays Position Paper



www.asphaltpavement.org/ThinIsIn



www.ncat.us/files/reports/2013/rep13-05.pdf

SHRP R26 Guidelines for Preservation of High Traffic Volume Roadways

NCHRP Synthesis 464, Thin Asphalt Concrete Overlays



NATIONAL ASPHALT
PAVEMENT ASSOCIATION

Pavement Performance

The Issues

Long-term funding and lack of proper funding for preservation and maintenance

Possible dry mixtures with low asphalt content

Construction practices, lack of inspection, and need for training.

The Strategy

Pavement Performance Task Group

Issues and Industry Strategies

Partnerships

Recommendations for Ensuring Durability

The Focus

Refocused Engineering Committee

Focus on Durability in Partnership with FHWA & SAPAs

Rethinking Asphalt Mixture Design & Simplifying Specifications

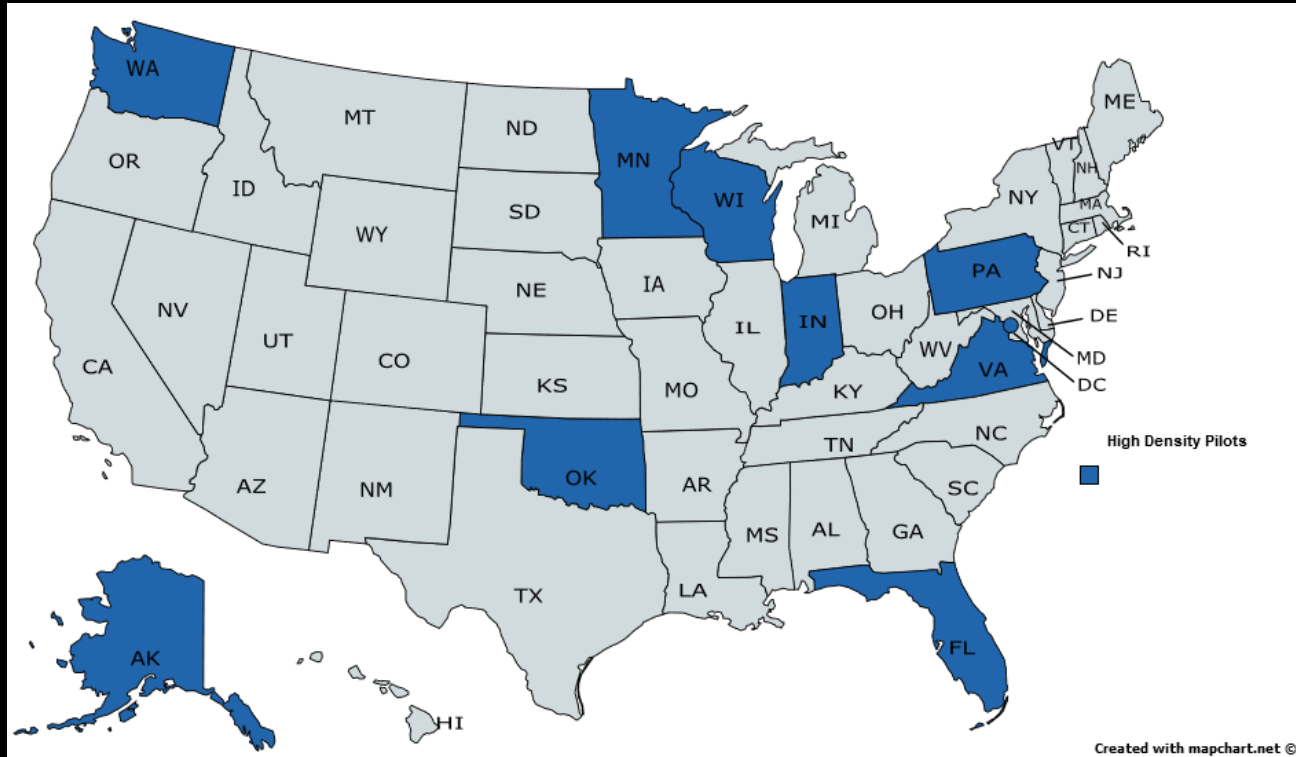
TRB Workshop
NAPA Workshop
FHWA Task Group



National Initiatives for Performance

- NAPA Paving for Performance Conference and Educational Sessions targeted for contractors and agencies
 - Future of Asphalt Mix Design Task Group
 - Promoting Balanced Mix Design to start incorporating performance tests in asphalt mixture design and during production and construction.
- NCAT research on performance tests and Balanced Mix Design training course
- FHWA Balanced Mix Design task group - Shane Buchanan, chairman
- TRB Workshops and Circulars targeted for State DOTs
- AAPT Symposiums and Balanced Mix Design webinar series
- Asphalt User Producer Group knowledge exchange

FHWA Asphalt Density Demo States for 2016

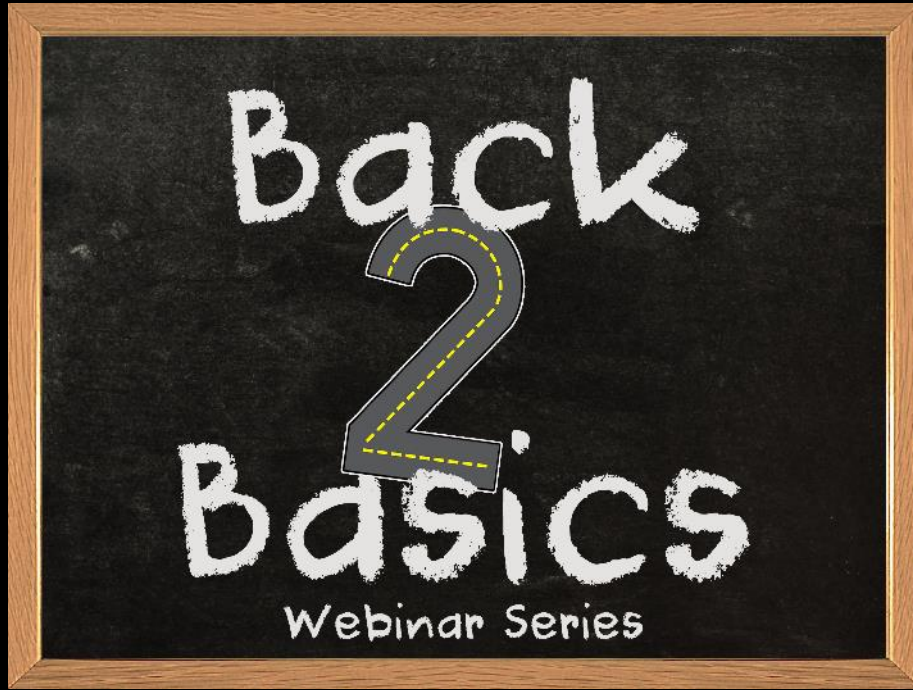


Nine more states added in 2017-18

Back to Basics

Excellence in Asphalt Knowledge



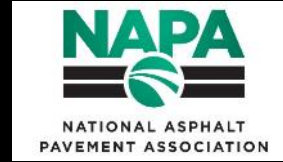


Asphalt Binder	Aggregate
Volumetrics	Mix Design
Plants	Paving
Compaction	Tack Coats
Pavement Design	Forensics
Quality Control/Quality Assurance	
Maintenance/Rehabilitation	
Funding	

Current Training Opportunities

NAPA

- Webinars
- World of Asphalt
- Technical Conferences



For more information, visit www.AsphaltPavement.org.

State Asphalt Pavement Associations

- Workshops



National Center for Asphalt Technology (NCAT)

- Asphalt Mixtures

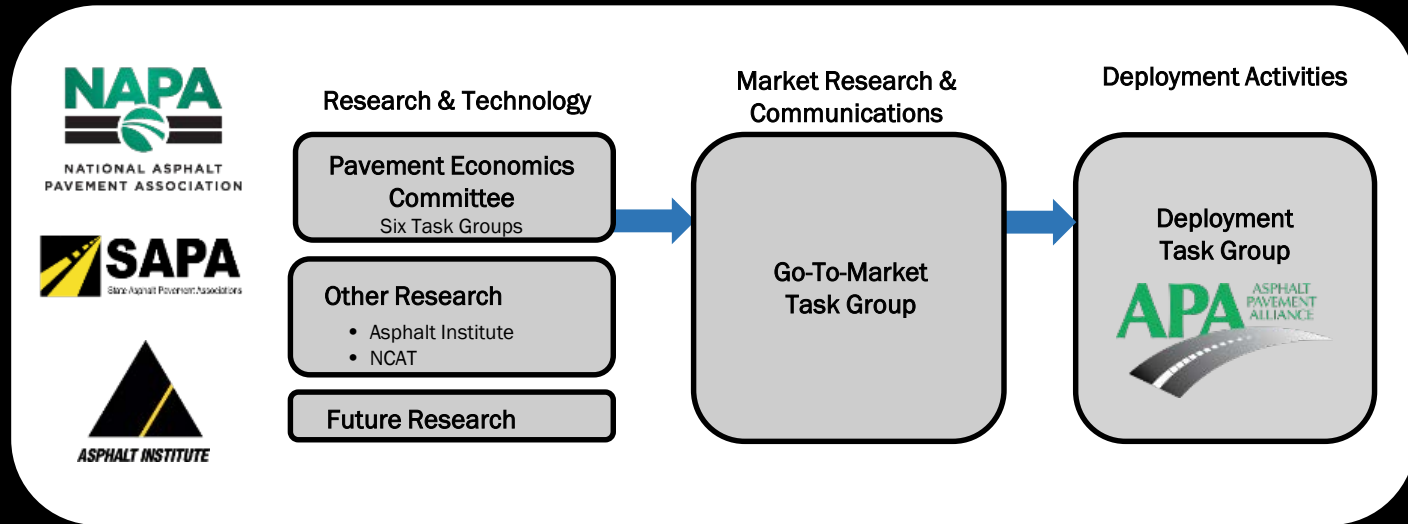


Asphalt Institute

- Binder Certification Programs



The High Road: A Unified Industry



Pavement Economics Teams



Life-Cycle Cost
Analysis



Life-Cycle Analysis



Mixture Quality and
Performance



Legislative

Scientific Research

PAVEMENT DESIGN

Simplified

Web-Based Pavement Design Tool

Designing the right pavement for the job just got easier thanks to Pavexpress, a free web-based pavement design tool for roadway and parking lot pavements.

Projects created in Pavexpress can be printed, shared, and saved, and design options can easily be evaluated in a side-by-side comparison. As a browser-based tool, Pavexpress is always up to date and can be accessed from any computer or mobile device, regardless of screen size or operating system.

PavexpressDesign.com



PerRoad Update



- Layered elastic analysis with a statistical analysis procedure to estimate stresses & strains within a pavement.
- Revise PerRoad to include mechanistic design of ALL pavements.

BETA version: <http://www.eng.auburn.edu/users/timmdav/PerRoad42.msi>

Quantify potential environmental impacts of an asphalt mixture

- Meet material credit requirements of green rating systems affordably
- Meet public agency requirements to quantify a pavement's sustainability
- Identify opportunities to improve operational efficiencies
- Streamline collection process for corporate sustainability reporting
- Ensure an even playing field in the green construction sector
- Tool available beginning April 1, 2017



www.AsphaltPavement.org/EPD

Environmental Facts	
Functional Unit: 1 U.S. short ton of Asphalt Mixture	
Primary Energy, Materials (MJ)	6.0x10 ³
<i>Non-Renewable Energy (MJ)</i>	4.9x10 ³
<i>Renewable Energy (MJ)</i>	1.5x10 ¹
Primary Energy, Energy (MJ)	4.0x10 ³
<i>Non-Renewable Energy (MJ)</i>	3.9x10 ³
<i>Renewable Energy (MJ)</i>	5.5x10 ¹
Water Use (Gal.)	2.5
Global Warming Potential (kg CO₂ eq)	55
Acidification Potential (kg SO₂ eq)	0.233
Eutrophication Potential (kg N eq)	0.007
Ozone Depletion Potential (kg CFC-11 eq)	7.3x10 ⁻⁹
Smog Potential (kg O₃ eq)	4.4
Boundaries: Cradle-to-Gate	
Company: XYZ Asphalt	
HAP: 10%	



Home

Construction

Smoothness

Noise

Safety

Sustainability

Pavement Technologies

Resource Library

America depends on high-performing, safe roads.

LEARN MORE



DriveAsphalt.org Website

Everyday Drivers

IF A CAR DRIVES ON THE ROAD AND NO ONE HEARS IT, THAT'S

DRIVABILITY



** World Road & Transportation Builders Association (TRB) Road & Transportation Builders Survey 2012

To reduce road noise and help keep neighbors' heads quiet, our One-Graded surfaces, as well as multi-lane, rubberized and great as it is designed by world-class engineers, deliver the quietest, smoothest, quietest, smoothest, quietest.

LEARN MORE AT WWW.DRIVESPAK.ORG

The APA is a partner of the United States

DRIVABILITY

WON'T MAKE YOUR JOB



A smooth road, that's what drivers want today. Not just a consistently smooth level of performance, which is why 82% of respondents said, in an independent survey, "I chose asphalt as the smoother surface."*

LEARN MORE AT WWW.DRIVESPAK.ORG

The APA is a partner of the United States

35 MILLION TONS OF GOODS DELIVERED TO 29 MILLION BUSINESSES EACH DAY. THANKS,

DRIVABILITY



Asphalt drives us everywhere. It's the smoothest, most consistent surface for our roads, highways, and parking lots. It's the most durable, most cost-effective, and most environmentally friendly surface for our roads, highways, and parking lots.

LEARN MORE AT WWW.DRIVESPAK.ORG

* 2012 Road & Transportation Builders Association (TRB) Road & Transportation Builders Survey

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GETTING HOME TO WHAT MATTERS. THAT'S

DRIVABILITY



Source: Road & Transportation Builders Association (TRB) Road & Transportation Builders Survey 2012

53% of drivers who reported that the road conditions are the most frustrating part of their driving experience. 72% of drivers who reported that the road conditions are the most frustrating part of their driving experience. 72% of drivers who reported that the road conditions are the most frustrating part of their driving experience. 72% of drivers who reported that the road conditions are the most frustrating part of their driving experience.

LEARN MORE AT WWW.DRIVESPAK.ORG

The APA is a partner of the United States Road & Transportation Builders Association and the State Asphalt Pavement Association.





The APA is an partnership of the Asphalt Institute, National Asphalt Pavement Association, and the State Asphalt Pavement Associations.



National Director
Amy Miller, PE

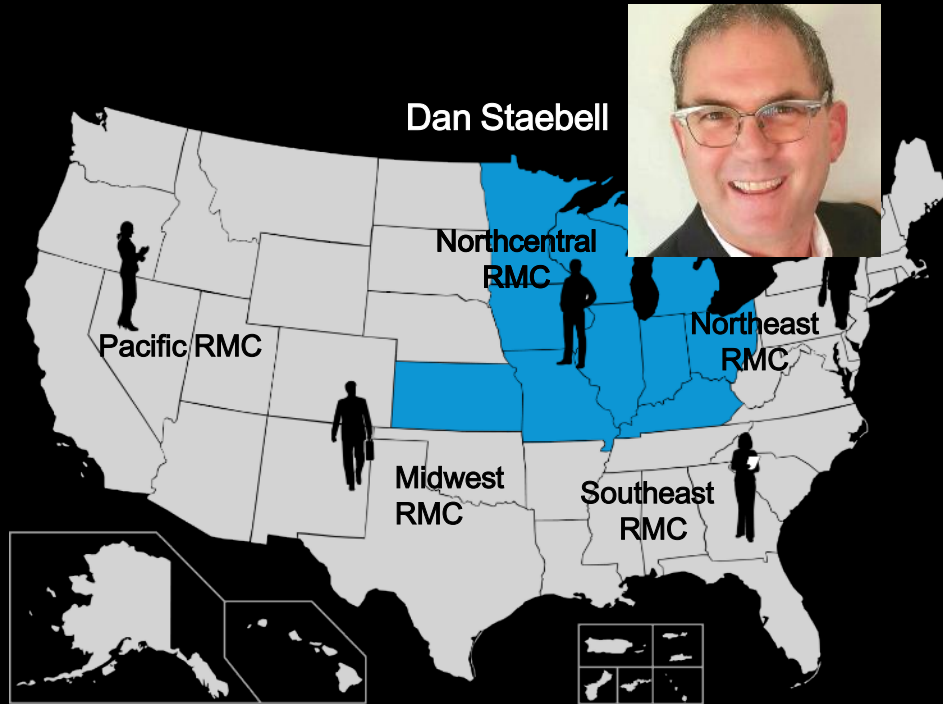
- Bridges National and State Efforts
- Providing Resources
- Connecting With Experts
- Communicates Local Needs

National Deployment





Bring together SAPAs,
Asphalt Producers, AI
Regional Engineers, &
Others to develop
solutions to meet local
& regional needs.



Dan Staebell



Pilot: Northcentral RMC





Beyond
the Horizon
Shape
Tomorrow's
Opportunities
Today

2018
ANNUAL
MEETING

FEBRUARY
11-14, 2018

HILTON BAYFRONT HOTEL
SAN DIEGO, CA

[www.AsphaltPavement.org/
AnnualMeeting](http://www.AsphaltPavement.org/AnnualMeeting)

NAPA

NATIONAL ASPHALT
PAVEMENT ASSOCIATION



**HOUSTON, TX / MARCH 6-8,
2018**

THANK YOU!

