

APA Unleashed

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Asphalt.

AMERICA RIDES ON US





The APA is a partnership of the Asphalt Institute, National Asphalt Pavement Association, and the State Asphalt Pavement Associations. We were formed nearly 10 years ago to promote the increased use of asphalt.





NATIONAL ASPHALT
PAVEMENT ASSOCIATION



State Asphalt Pavement Associations



ASPHALT INSTITUTE



Marketing Council



Research & Technology

Market Research &
Communications

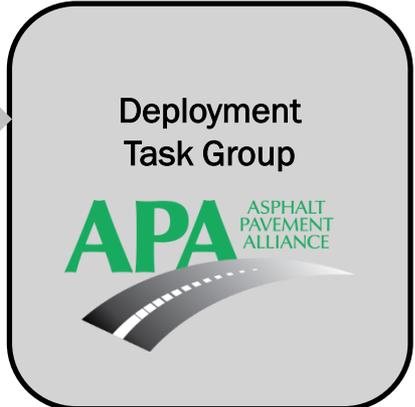
Deployment Activities



Pavement Economics
Committee
Six Task Groups



Go-To-Market
Task Group



Deployment
Task Group



Market Organizational Structure



**Best Quality &
Competitiveness**



**Pavement Type
Selection**



**Environmental
Sustainability**



Pavement Design



Legislative



**Pavement
Preservation**



**Private Sector Markets
& Local Roads**

Pavement Economics Committee

Technology & Innovation



Best Quality &
Competitiveness



Pavement
Design



Pavement
Type
Selection

PaveXpress



Pavement
Preservation

THINLAY

SAFE. SMOOTH. DURABLE.



Environmental
Sustainability



Legislative



GETTING THERE ON TIME IS ALWAYS IMPORTANT
DRIVABILITY MATTERS



DRIVABILITY MATTERS

When I'm meeting my girlfriend for dinner, roadway construction means missing her reservation. It's frustrating, but only an inconvenience. When I'm on the job, a delay can be the difference between life and death. With asphalt, construction typically happens at times when fewer cars are on the road, and the delays are contained in minutes. That matters.

-Lou Lusk | Foreman | BayWind

APA
 LEARN MORE AT WWW.DRIVEASPHALT.COM

SPEED OF CONSTRUCTION
 It's just one of the ways asphalt delivers drivability.

PHOTOGRAPHY | NOISE | SAFETY | SUSTAINABILITY | CONSTRUCTION

The Asphalt Pavement Alliance is a supporting member of the Asphalt Industry, National Asphalt Pavement Association, and the State Asphalt Pavement Association.

SAFETY AND CONTROL ARE ESSENTIAL
DRIVABILITY MATTERS



DRIVABILITY MATTERS

Professional stunt drivers manage risks for a living. But when they drive with their family, hazardous road conditions are a risk to avoid. With asphalt, smoother surfaces mean better control, less surface water, and safer driving on wet roads.

DRIVABILITY MATTERS

A SAFE RIDE
 It's just one of the ways asphalt delivers drivability.

PHOTOGRAPHY | NOISE | SAFETY | SUSTAINABILITY | CONSTRUCTION

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SUSTAINABILITY IS YOUR GOAL
DRIVABILITY MATTERS



DRIVABILITY MATTERS

In the lab, zero-emission vehicle designers are developing the sustainable cars of the future. But on the weekend, they're going cycling, which combines sustainability with fun. Asphalt pavements tend to be built and maintained to ensure a smooth surface, that helps improve fuel economy and reduce emissions. It also makes for better cycling. That matters.

DRIVABILITY MATTERS

SUSTAINABILITY
 It's just one of the ways asphalt delivers drivability.

PHOTOGRAPHY | NOISE | SAFETY | SUSTAINABILITY | CONSTRUCTION

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NOISE IS ONE PASSENGER TOO MANY
DRIVABILITY MATTERS



DRIVABILITY MATTERS

Whether you're a tactical driving instructor training a Hollywood stuntman, or a dad helping his daughter prepare for her first driving exam, the ability to be heard can make the difference between success and failure. Because asphalt roads produce less pavement-to-tire noise, you get quieter rides when you need them the most. That matters.

DRIVABILITY MATTERS

A QUIET RIDE
 It's just one of the ways asphalt delivers drivability.

PHOTOGRAPHY | NOISE | SAFETY | SUSTAINABILITY | CONSTRUCTION

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SMOOTH ROADS ARE SAFER ROADS
DRIVABILITY MATTERS



DRIVABILITY MATTERS

We all get in the car for different reasons. But whether you're trying for a record-fast lap or a record-long one, a smooth ride means a safer, more comfortable ride. Asphalt pavements offer a smoother ride, allowing you to relax and focus on your dreams. That matters.

DRIVABILITY MATTERS

A SMOOTH RIDE
 It's just one of the ways asphalt delivers drivability.

PHOTOGRAPHY | NOISE | SAFETY | SUSTAINABILITY | CONSTRUCTION

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Video



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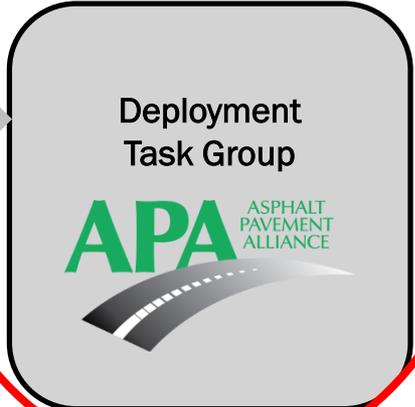
Other Research
• Asphalt Institute
• NCAT



Future Research



Go-To-Market
Task Group



Deployment
Task Group



Market Organizational Structure

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

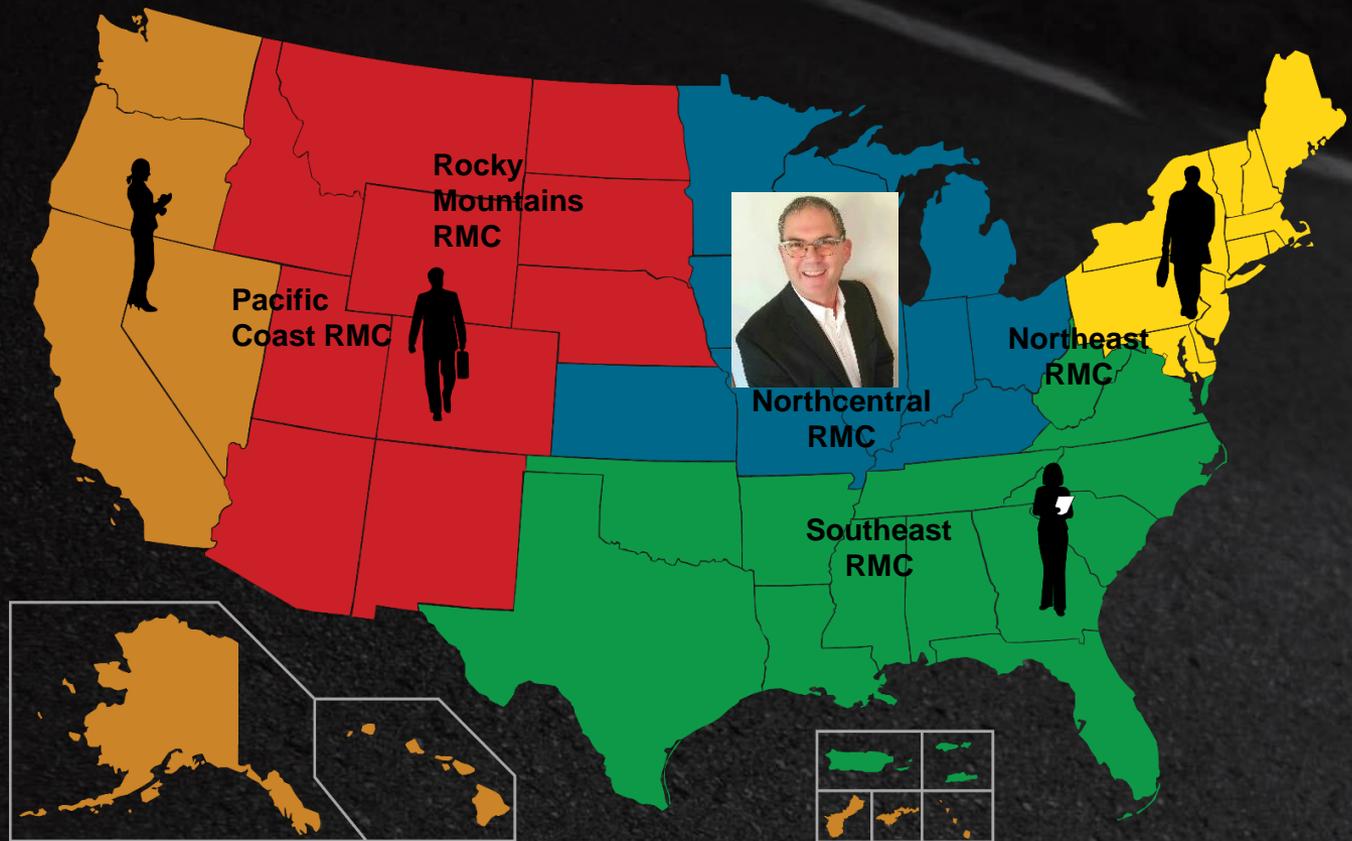


Mission

Amy Miller
National Director



Five regional councils focused on what works in the field to the benefit of the asphalt pavement industry locally and nationally.



Regional Marketing Councils

Asphalt.

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NC APA Region SAPA Members

Minnesota



Jill Thomas
Brandon Brever

Wisconsin



Brandon Strand
Deb Schwerman



John Becsey
Chuck Mills

Iowa



Bill Rosener
Royce, Larry and
Darwin

Illinois



Bill Knopf
Dudley Bonte

Ohio



Cliff Ursich &
Andrew Gall

Kansas



Dan Scherschligt

Missouri



Dale Williams
Brandon Atchison



Kevin Burke

Indiana



Brian Wood and
Paul Del Rio

Kentucky

Regional Initiatives

- **Life Cycle Cost Analysis**
 - GOAL: Adapting standard procedure for LCCA in NC Region that can incorporate state specific input. Gather best practices and deploy best strategies with region
- **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.

Other Region Initiatives

Northeast Regional Council

- Durability
- Pavement Preservation
- Regional Promotional Activity

Southeast Regional Meeting

- Initial group met November 14th;
- Meeting planned for early 2017

WARNING!



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Versatility

ver·sa·tile

(vûr'sə-təl, -tīl') *adj.*

1. Capable of doing many things competently.
2. Having varied uses or serving many functions:
3. Variable or inconstant; changeable:

A Miracle Product



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“Forrest Gump” Shrimp Versatility

Anyway, like I was sayin', shrimp is the fruit of the sea. You can barbecue it, boil it, broil it, bake it, saute it. Dey's uh, shrimp-kabobs, shrimp creole, shrimp gumbo. Pan fried, deep fried, stir-fried. There's pineapple shrimp, lemon shrimp, coconut shrimp, pepper shrimp, shrimp soup, shrimp stew, shrimp salad, shrimp and potatoes, shrimp burger, shrimp sandwich... That- that's about it.



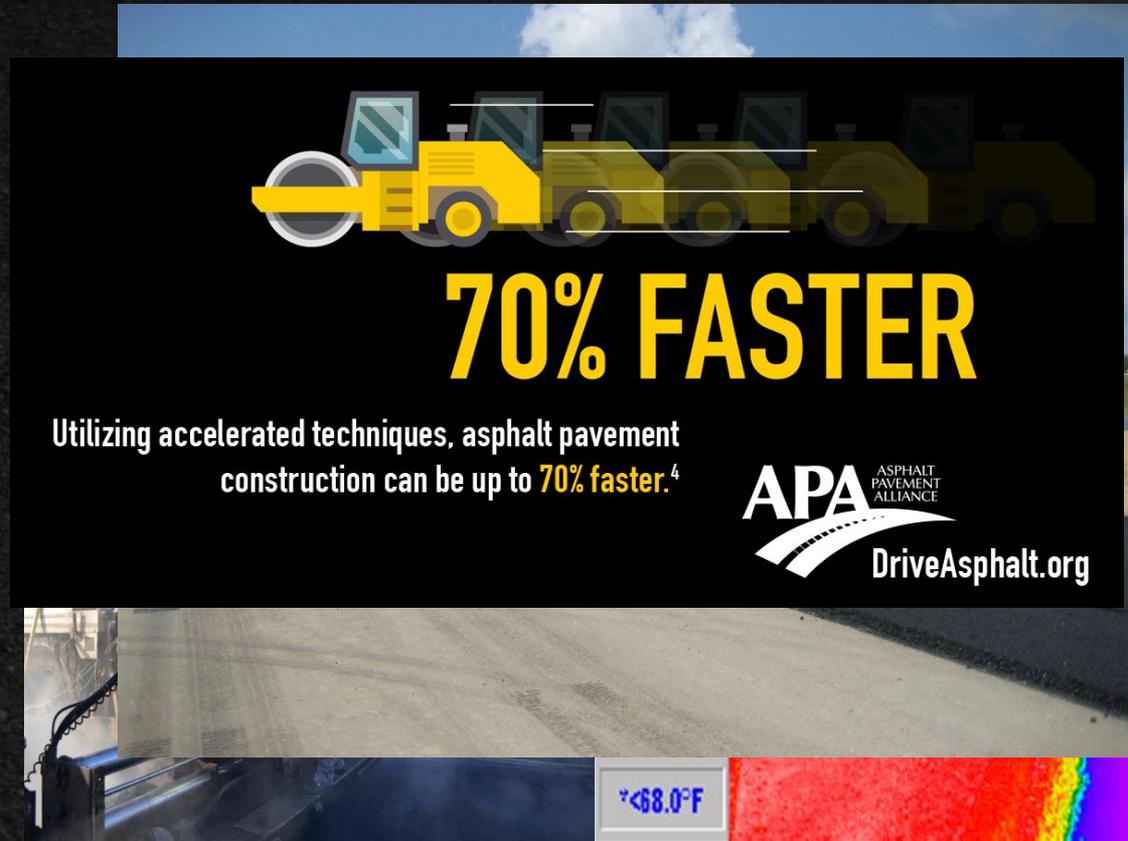
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Placement

- History
 - Pavers
 - Smoothness
 - Transfer Machines
 - Segregation Understood
 - Mix
 - Heat
- Speed of Construction
 - Get out of the Traffic



70% FASTER

Utilizing accelerated techniques, asphalt pavement construction can be up to **70% faster**.⁴

APA ASPHALT PAVEMENT ALLIANCE
DriveAsphalt.org

<68.0°F

Recycle

- History

- 80's – Today
- NAPA Report
 - 25% Just Be Careful
 - Additional Testing
- Drivability
 - 2.8\$ Billion Saved Annually



\$2.8B

In 2014, reused asphalt materials, saved taxpayers more than **\$2.8 billion**.¹

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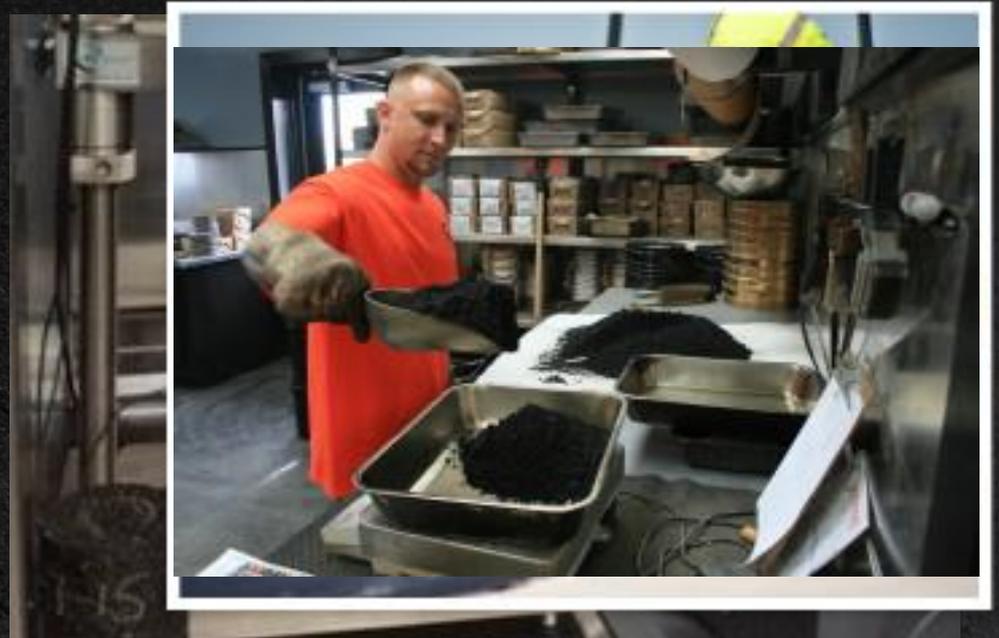
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APA ASPHALT
PAVEMENT
ALLIANCE

Inspection

- 80's – Today
Quality Initiatives
 - QMA, QC, QMP
- Increased Knowledge
 - Agency
 - Industry
- Performance Testing



Durability & Design

- Durability
 - Density = Life
 - 1% = LCCA savings 8.8%
 - AC Content
 - Understand Rutting
- Optimized Design

In summary, results of increased in-place air voids summarizes these results. Density was estimated to improve and 43.8%.

Table 1. Effect of Air Voids on

Study	Lab/Field Experiment
UCB (Epps and Monismith 1969)	Lab
UCB (Harvey and Tsai 1996)	Lab
WesTrack (Epps et al. 2002)	Lab
	Field
AI (Fisher et al. 2010)	Lab

¹ (Seeds et al. 2002)

NCAT Report 16-02





ENHANCED COMPACTION TO IMPROVE DURABILITY AND EXTEND PAVEMENT SERVICE LIFE: A LITERATURE REVIEW

By
 Nam Tran, Ph.D., P.E., LEED GA
 Pamela Turner
 James Shambley

April 2016

277 Technology Parkway ■ Auburn, AL 36830



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for
ids

Review of Initial Service Life Determination in LCCA Procedures and In Practice – *DRAFT*

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

Pavement Type	No.	Avg	Min	Max	Std Dev
AC	206	17.68	7.09	28.93	5.51
PCC	121	23.84	12.88	35.44	5.79

Ride Quality (IRI) Prior to Rehabilitation

Pavement Type	Percent of Total Pavement Sections				
	Very Good** < 60	Good 61 – 95	Fair 96 – 120	Poor 121 – 170	Very Poor > 170
AC Pavements	9.6%	34.3%	24.1%	17.5%	14.5%
PCC Pavements*	1.1%	23.3%	26.7%	34.4%	14.4%

Advancements in Flexible Pavement Design

NCAT Report 14-08

RECALIBRATION PROCEDURES FOR THE STRUCTURAL ASPHALT LAYER COEFFICIENT IN THE 1993 AASHTO PAVEMENT DESIGN GUIDE

By
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Dr. Carolina Rodezno

November 2014



National Center for Asphalt Technology
NCAT
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NCAT Report 14-04

FLEXIBLE PAVEMENT DESIGN – STATE OF THE PRACTICE

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August 26, 2014



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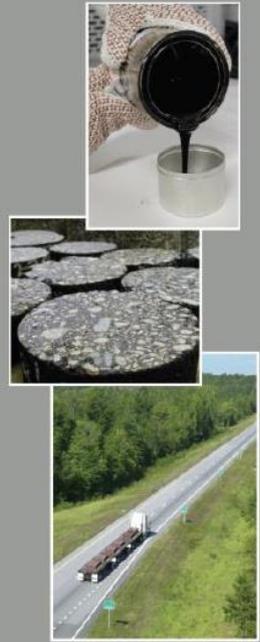
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NCAT Report 15-05

REFINED LIMITING STRAIN CRITERIA AND APPROXIMATE RANGES OF MAXIMUM THICKNESSES FOR DESIGNING LONG-LIFE ASPHALT PAVEMENTS

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September 2015



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What does Optimized Design mean?

SN Value .52

SN Value .44

Surface (AC)	2.00"
Binder/Intermediate (AC)	2.00"
Base (AC)	1.50"
Aggregate Base	6.00"

Surface (AC)	2.00"
Binder/Intermediate (AC)	2.00"
Base (AC)	3.00"
Aggregate Base	6.00"

Subbase

Subbase

20% Savings

5.5" HMA

7" HMA



Environment

- Sustainability
- Can't improve what we do not measure
- LCA
- EPD's
 - NAPA
 - Industry ready

NAPA
NATIONAL ASPHALT
PAVEMENT ASSOCIATION

**General Program Instructions for
Environmental Product Declarations (EPD) Program
National Asphalt Pavement Association**

Version 1
September 15, 2014

Environmental Product Declaration
NAPA CERTIFIED

5100 Forbes Blvd. | Lanham, MD 20706 | 301-731-4748
www.AsphaltPavement.org/EPD

Recap

- Placement
- Recycle
- Inspection
- Durability
- Environment

=

P R I D E

Thank You

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APA

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