APA Unleashed

Dan Staebell
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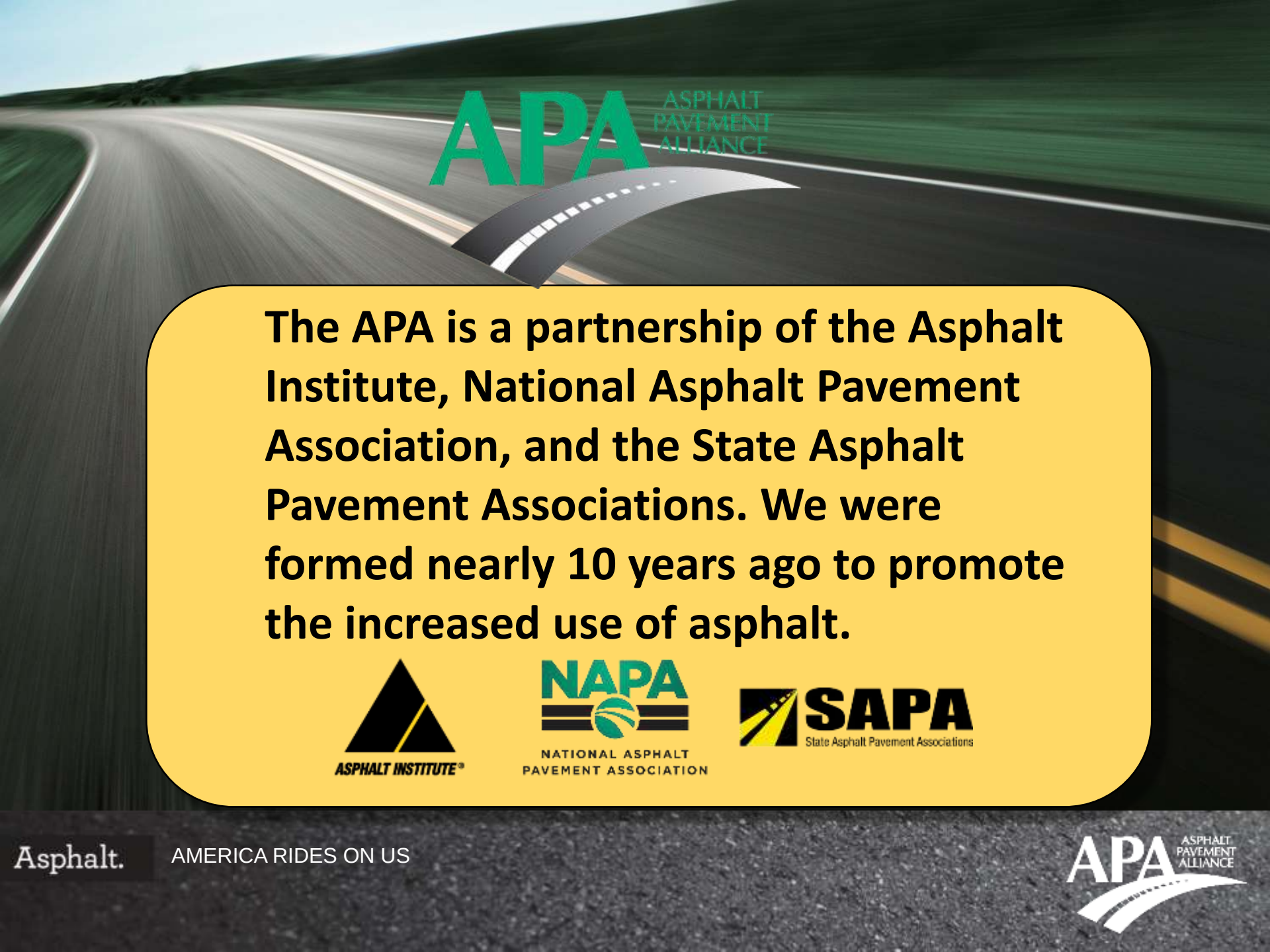
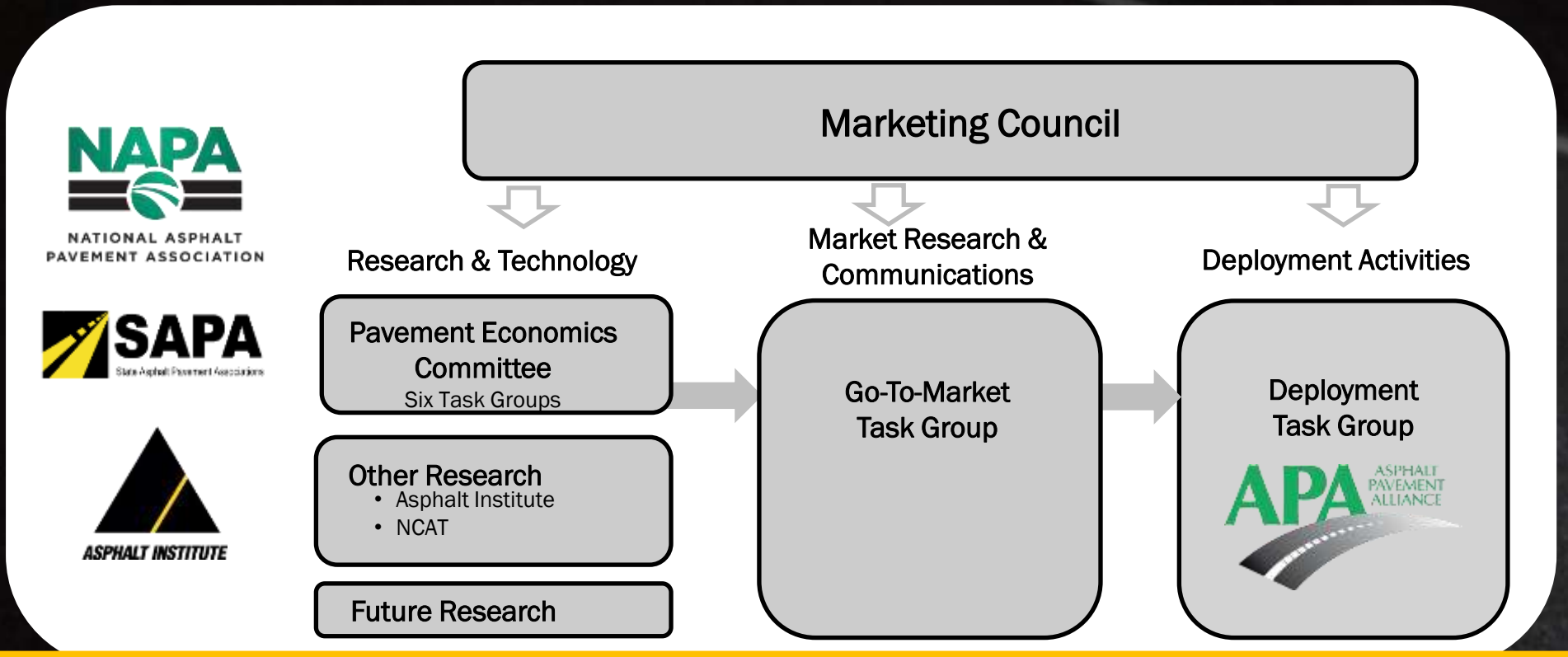


The APA is a partnership of the Asphalt Institute, National Asphalt Pavement Association, and the State Asphalt Pavement Associations. We were formed nearly 10 years ago to promote the increased use of asphalt.

ASPHALT INSTITUTE®

NAPA
NATIONAL ASPHALT PAVEMENT ASSOCIATION

SAPA
State Asphalt Pavement Associations



Market Organizational Structure

PEC Task Groups

- Best Quality & Competitiveness
- Environmental Sustainability
- Legislative
- Pavement Type Selection
- Pavement Design
- Pavement Preservation
- Private Sector Markets & Local Roads

NATIONAL ASPHALT PAVEMENT ASSOCIATION

Pavement Economics Committee

Technology & Innovation

- Best Quality & Competitiveness
- Pavement Type Selection
- Pavement Design

PaveXpress

- Pavement Preservation

THINLAY
SAFE. SMOOTH. DURABLE.

- Environmental Sustainability

Environmental Product Declaration
NAPA CERTIFIED

IRI Explorer

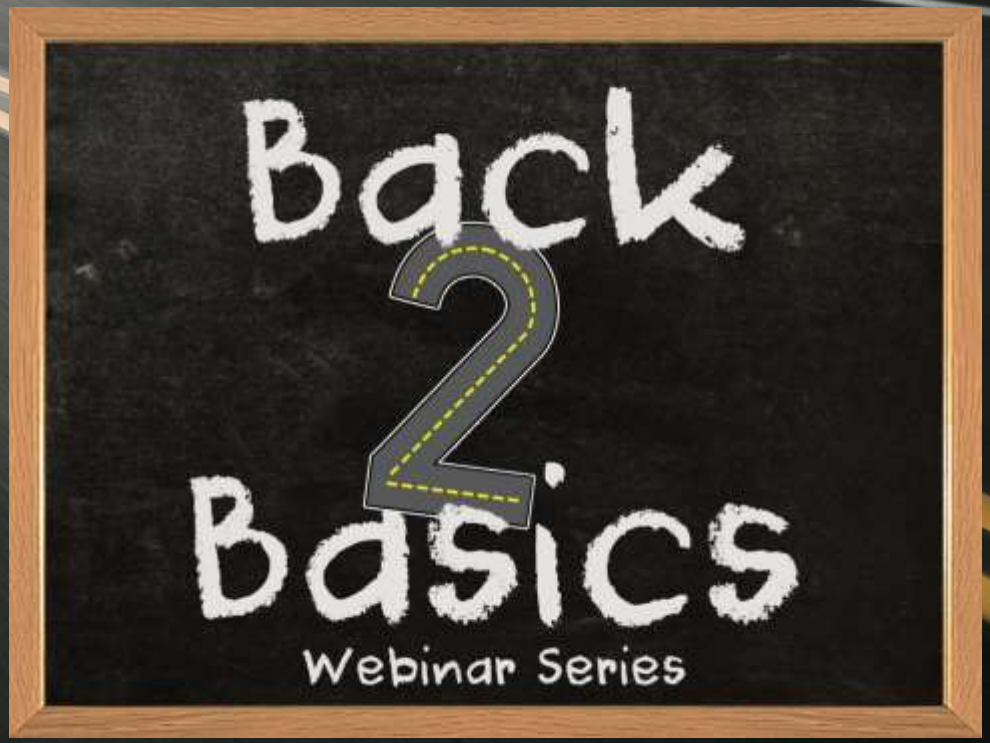
- Legislative

Training

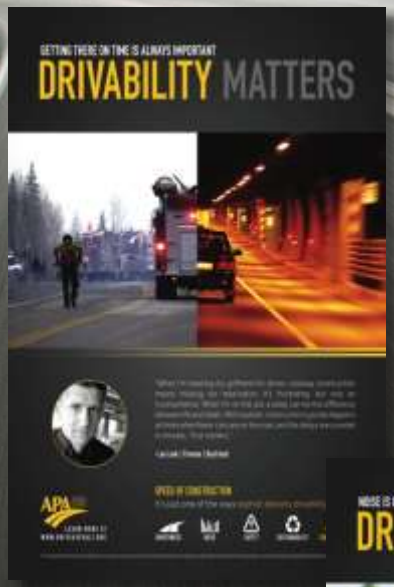
***Back to Basics Series*:**
Binder —
Thursday, February 16

Back to Basics Series:
***Aggregate* —**
***Tuesday*, March 14**

***Back to Basics Series*:**
Volumetrics —
Tuesday, April 4



Go To Market



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APA ASPHALT PAVEMENT ALLIANCE

Messaging


DRIVABILITYMATTERS
53%
$2MIL
81%


DRIVABILITYMATTERS
$3B
20%
55%
FORCES
HYDROPLANING


DRIVABILITYMATTERS
72%
$109B
7/10
58%
+4.5%


13,500
3.2M
+4.5%
$2.8B
-7dB
$3.5B


DRIVABILITYMATTERS
11 HOURS
$9.2B
70% FASTER
2.5X
$160B
48% LESS

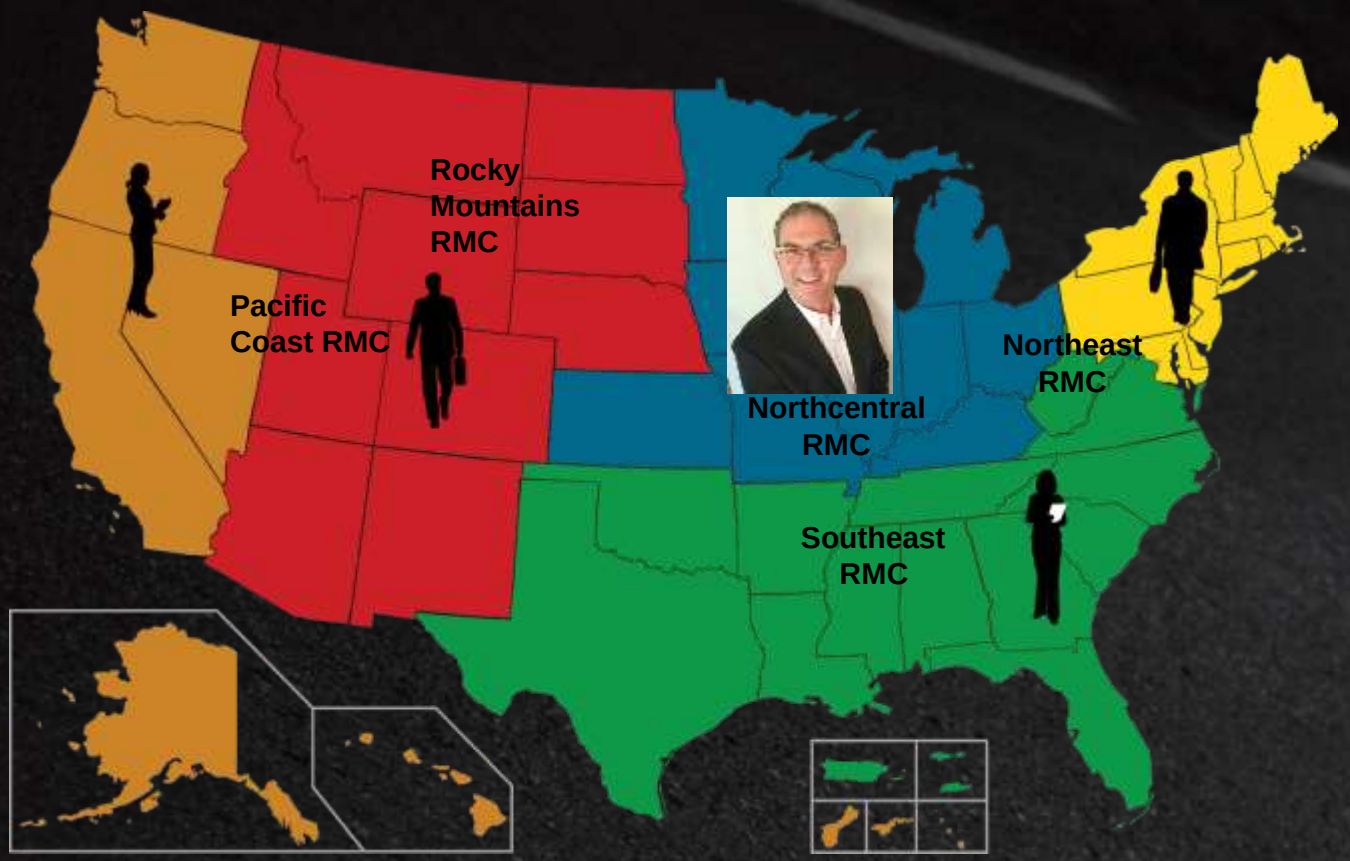
Market Organizational Structure

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

NC APA Region SAPA Members

Jill Thomas
Brandon Brever

Minnesota

Brandon Strand
Deb Schwerman

Wisconsin

John Becsey
Chuck Mills

Michigan

Bill Rosener
Royce, Larry and
Darwin

Iowa

Cliff Ursich &
Andrew Gall

Ohio

Bill Knopf
Dudley Bonte

Indiana

Kevin Burke

Illinois

Dan Scherschligt

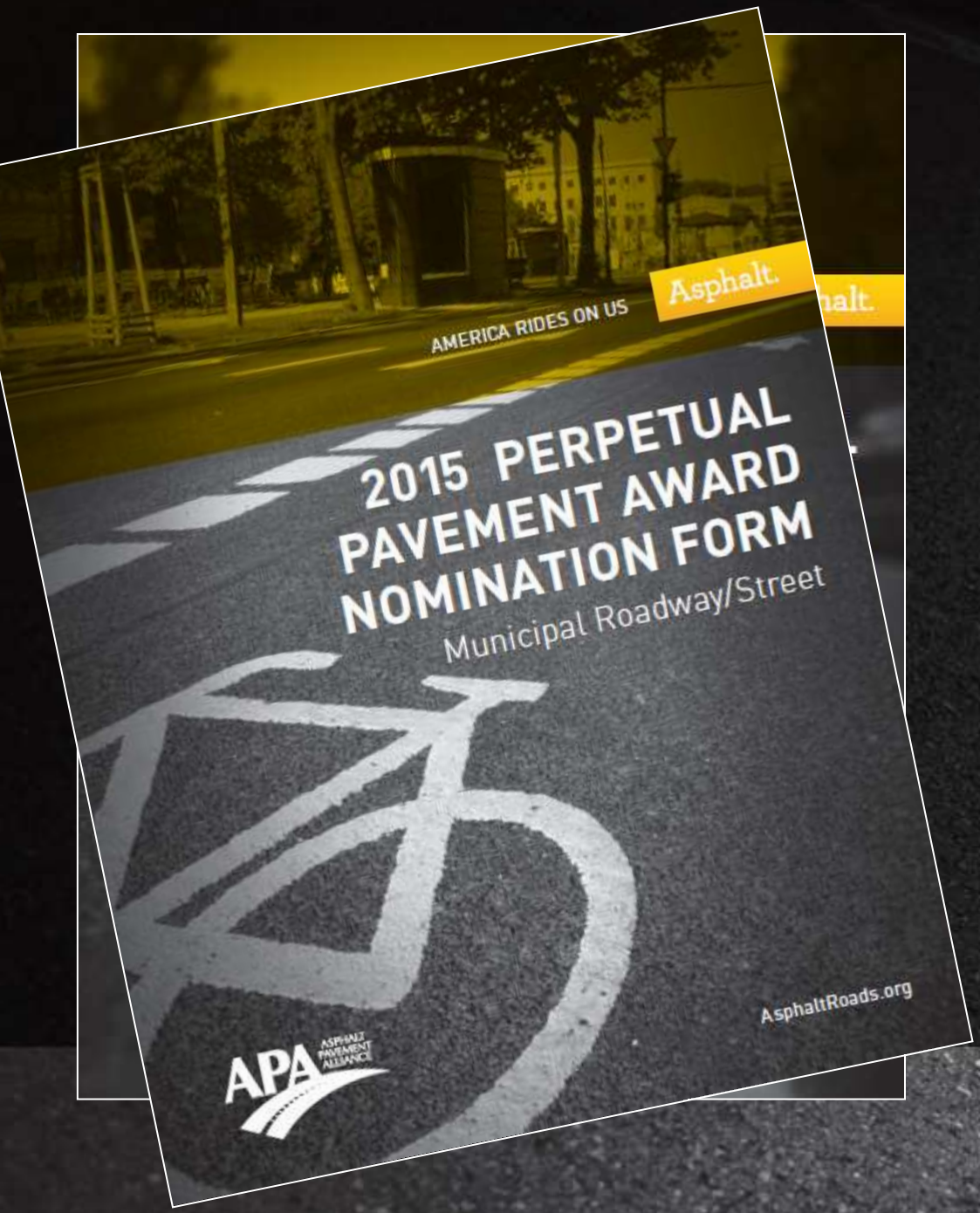
Kansas

Dale Williams
Brandon Atchison

Missouri

Brian Wood and
Paul Del Rio

Kentucky



Criteria:

- 35+ years old
- 13+ years between overlays (average)
- No increase > 4"

This award honors asphalt pavements that were designed and built with outstanding care and exceptional quality. The result is a long-lasting pavement, one that serves the traveling public well, provides true value to the taxpayers, and demonstrates both the convenience and the quality of asphalt pavements.

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.

WARNING!

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APA ASPHALT PAVEMENT ALLIANCE

Versatility

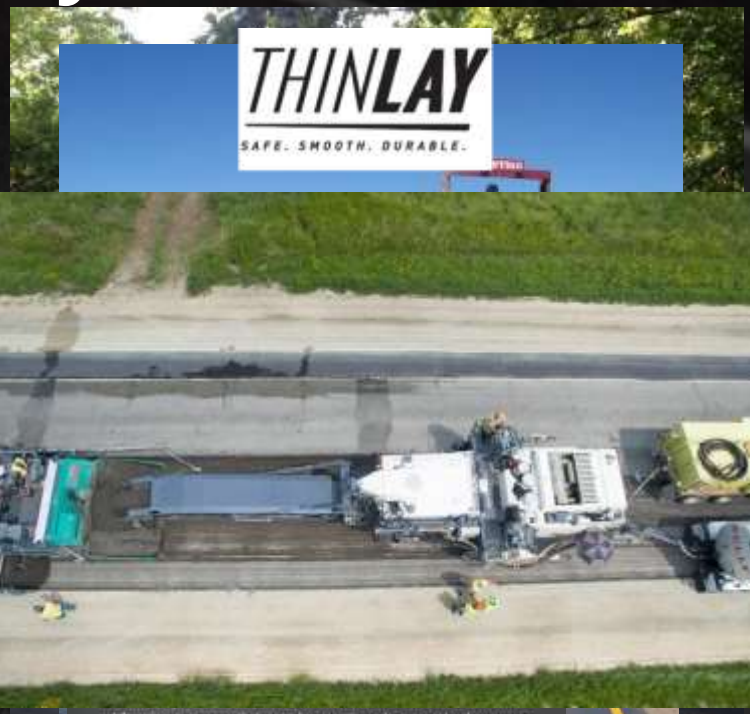
ver·sa·tile

(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

Placement

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

Recycle

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

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
increased in-place air voids
summarizes these results. De
voids was estimated to impro
and 43.8%.

Table 1. Effect of Air Voids on

Study	Lab/Field Experimer
UCB (Epps and Monismish 1969)	Lab
UCB (Harvey and Tsai 1996)	Lab
WesTrack (Epps et al. 2002)	Lab
	Field
Al (Fisher et al. 2010)	Lab

[1] (Seeds et al. 2002)

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

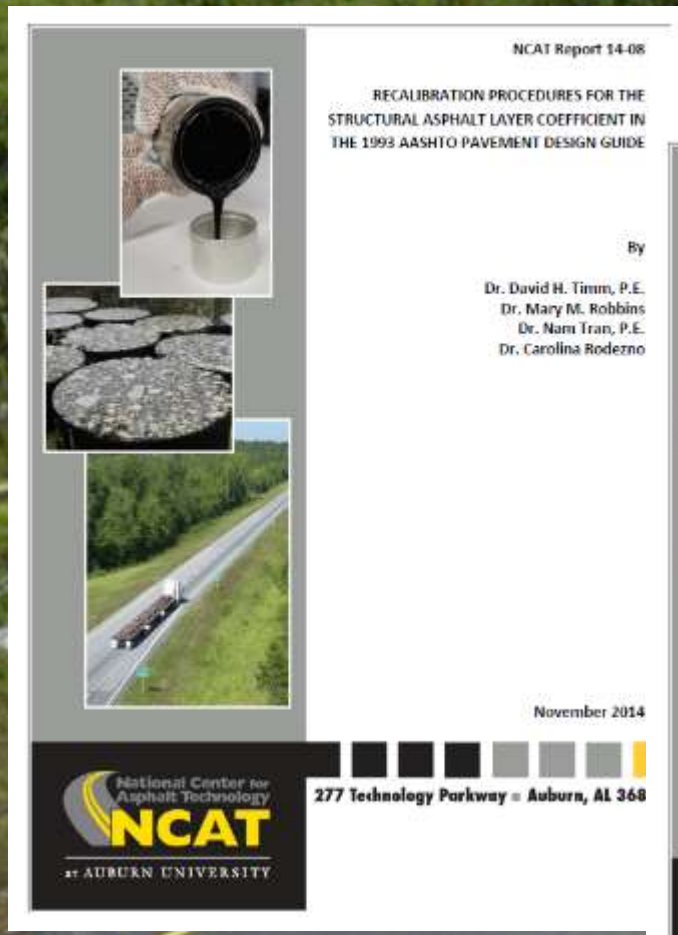
Summary of Middle 90% of Pavement Ages at Time of 1st Rehab

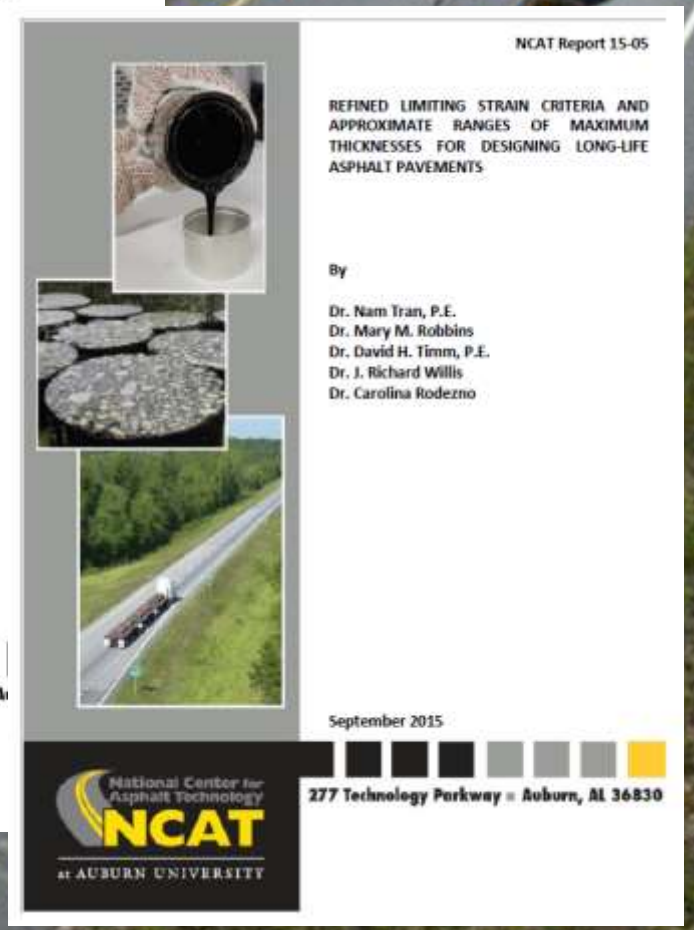
Pavement Type	No.	Avg	Min	Max	Std Dev
AC	206	17.68	7.09	28.93	5.51
PCC	121	23.84	12.88	35.44	5.79

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



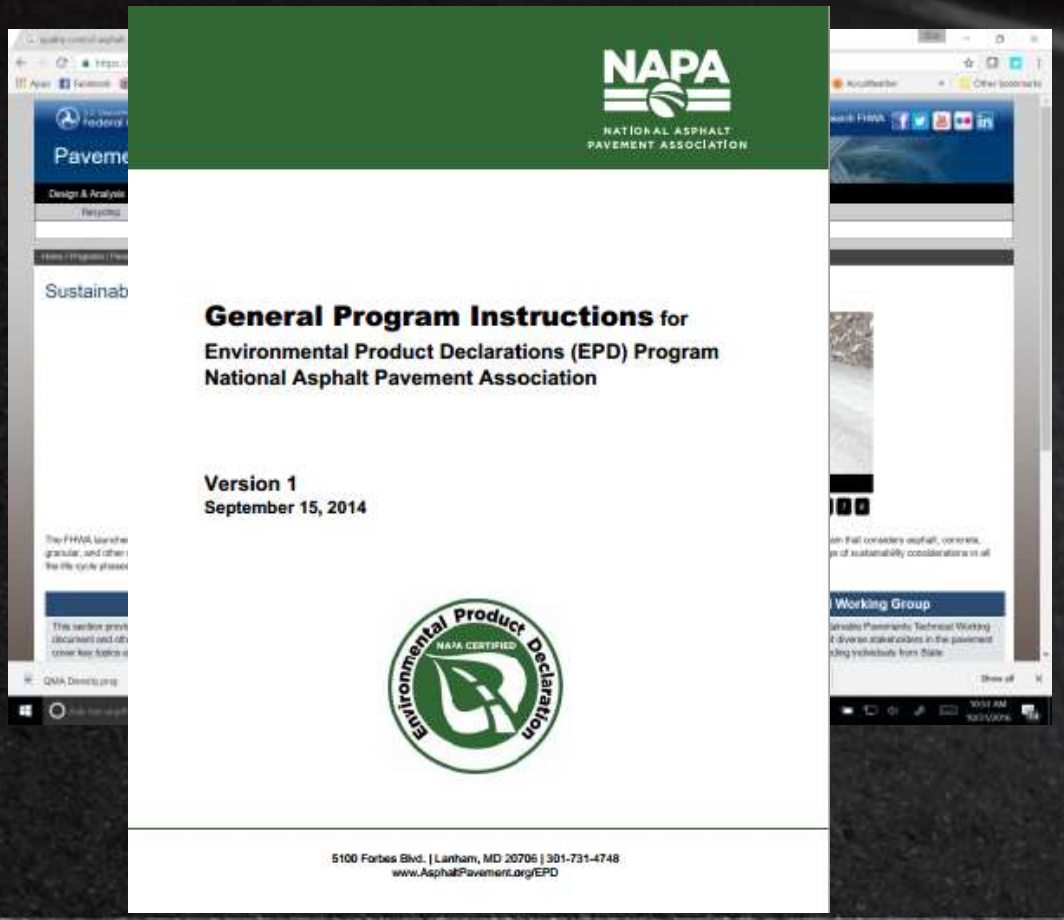


http://eng.auburn.edu/research/centers/ncat/info-pubs/technical-reports.html

What does Optimized Design mean?

Environment

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



Emerald ECO LABEL

Emerald
ECO LABEL

Environmental Product Declaration for Asphalt Mixtures

Company

{company_name} is a plant asphalt mixture producer.

{Company logo}

{plant_name}
{plant_street_address}
{plant_city}, {plant_state} {plant_zip_code}

Product Description

This EPD reports the impacts for {mix_product_code} a {mix_type} asphalt mixture which can be incorporated as part of the structure for a roadway, parking lot and recreational pavement and meets {mix_spec} mix specifications provided for its application. This asphalt mixture is categorized as a {warm-mix asphalt/hot-mix asphalt} and {does/does not} uses a {chemical/foaming} warm-mix technology. This asphalt mixture was produced within a temperature range of {production_temp}.

This declaration is an environmental product declaration in accordance with ISO 14025:2006 Type III environmental performance labels which transparently describes the potential environmental impacts of the described product caused during the identified stages.

The data specific to this product can be found on page 3 of this document.

Declaration Number: {Software Output xx}

Date of Issue: {mm/dd/yyyy} Period of Validity: {12/10/2022}

Environmental Product Declaration for Asphalt Mixtures {Company logo}

Environmental Impacts

The life cycle impact assessment results are relative expressions and do not predict actual impacts on category endpoints, the exceeding of thresholds, safety margins, or risks.

IMPACT ASSESSMENT RESULTS

IMPACT CATEGORY	UNIT	TOTAL	MATERIALS	TRANSPORT	PRODUCTION
Global Climate Change (Global Warming Potential)	kg CO_2-eq				
Ozone Depletion Potential	kg CFC-11-eq				
Acidification Potential	kg SO_2-eq				
Eutrophication Potential	kg N-eq				
Smog Formation Potential	kg O_3-eq				
Hazardous Waste	kg				

Interpretation

The information presented in this EPD can be used to model the environmental impacts of asphalt mixtures purposed to be part of (but not limited to) roadway, parking lot, or recreational pavements. This EPD alone does not provide the environmental impacts of the entire pavement structure itself and does not make any statements that the product covered by the EPD is better or worse than any other product.

Comparison of the environmental performance of asphalt mixtures using EPD information shall be based on the product's performance and function, and therefore EPDs shall not be used for comparability purposes when the asphalt mixture performance and functions are not the same. NAPA verified asphalt mixture EPDs that are expected to meet the same performance and function can be compared. EPDs of other programs may not be comparable because they could be calculated using a different PCR.

Additional Environmental Information

{plant_name} is a {xxxx} Diamond Achievement Sustainability Commendation Recipient. Visit https://gaspha.lt/2kEDkqF to see current status.

{None}

Declaration of Limitations

This EPD reports the results of a cradle-to-gate LCA for asphalt mixtures. This EPD may be used as a data input for full life cycle assessments to compare the environmental impacts of different asphalt roadway, parking lot, or recreational pavement design alternatives.

DATA GAPS

{This mix uses additives, such as fibers, crumb rubbers (if it is added at a plant), liquid antistrips, recycling agents, stabilizers, etc., which no known public data source exists. The upstream impacts associated with the process of extraction, manufacturing/production, and transportation of the materials listed have not been accounted for in this EPD.*}

{*This mix uses a {polymer/GTR/polymer + GTR} modified asphalt binder. The upstream impacts associated with the process of extraction, manufacturing/production, and transportation of the materials used in the modification process have not been accounted for in this EPD.*}

{*The impact of recycling asphalt shingles was estimated using data for processing reclaimed asphalt pavement. The source of the shingles (tear off or factory rejects) is not being accounted.*}

{None}

3

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Recap

- Placement
- Recycle
- Inspection
- Durability
- Environment

= PRIDE

Thank You

DAN STAEBELL
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