

Asphalt Institute & APA Update

AMAP 12th Annual Meeting
Kansas City, MO; February 15-17, 2011

Peter T. Grass, P.E., CAE
President, Asphalt Institute

What's EPIC?

- It's how adults learn –
 - Experiential
 - Participatory
 - Image driven
 - Communicative
- It's AI's leadership program!
 - 2010-2011 class of 14 students

IARC – Job # 1

- International Agency for Research on Cancer
- Part of World Health Organization
- Based in Lyon, France (2hrs south of Paris)
- Oct 11-18, 2011
- Bitumen and Bitumen Fumes, and...
- Evaluation on cancer hazard (vs risk)
- Critical review by scientists
- Findings published; a monograph

- Industry: 10 years in preparation
- Studies
 - Fraunhofer rat inhalation study
 - IARC's own 8-country epidemiology study (NCC)
 - AI's own PG64-22 DCA

“the paving trifecta”

- What is bitumen?
 - IS-230
 - 2nd Edition in production
 - Expect o/o March 1
 - Print and pdf
- Research Bibliography
 - Listing of relevant papers
- Industry Observers
- AI's Observer Academy (July 2011)

IARC:

game-changer

-or-

non-event?

Asphalt Pavement Alliance

Key Activities...

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AI

NAPA

**ASPHALT
PAVEMENT
ALLIANCE**

SAPA

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APA Reboot!



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Cement and Concrete Marketing

PCA Ad Campaign - Est. \$1M - \$2M

Industry Alliance - \$300,000

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ASPHALT PAVEMENT ALLIANCE STRUCTURE

APA Steering Committee

Engineering

Environment

Economics

Advocacy

Image

Outreach

Deployment

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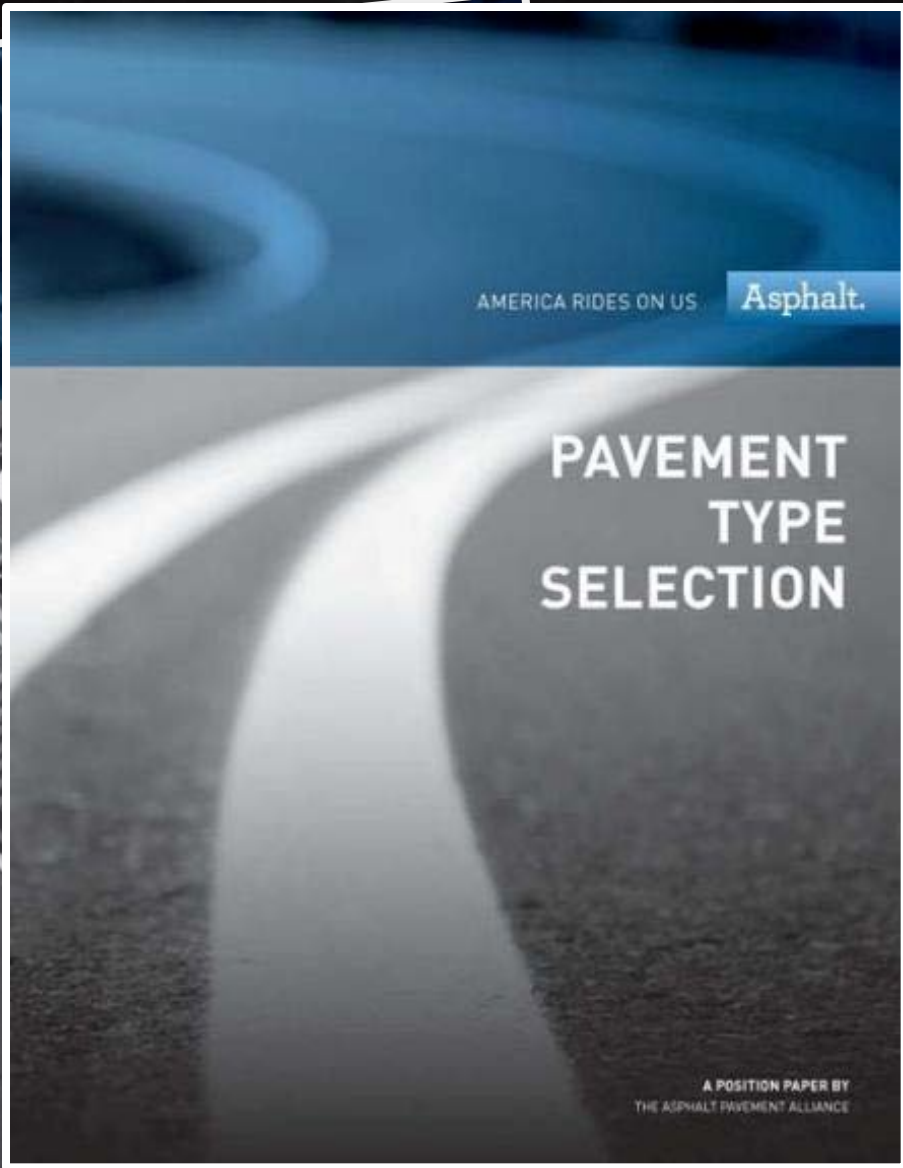
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Documents



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PAVEMENT TYPE SELECTION

A POSITION PAPER BY
THE ASPHALT PAVEMENT ALLIANCE

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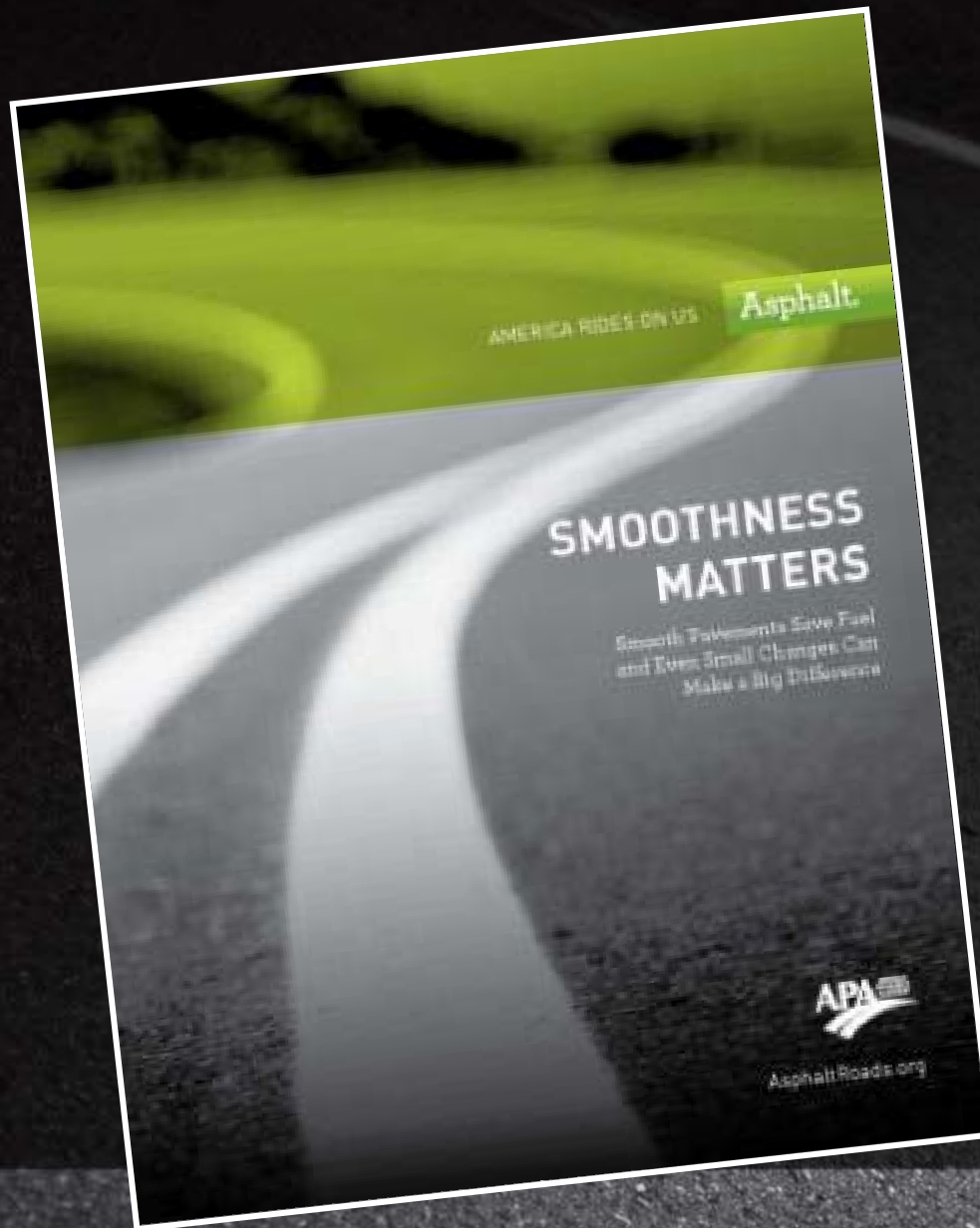
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KEYS TO A SUCCESSFUL ALTERNATE BIDDING PROCESS

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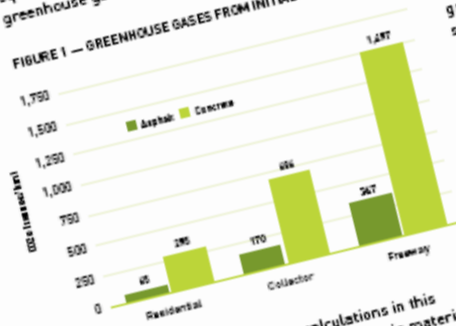
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The freeway pavement sections were taken from the Life Cycle Cost Analysis tool which the Ministry of Transportation for Ontario developed to allow for comparison of alternate-bid contracts.

To carry out the analysis of typical pavements, the tonnes/tonne CO₂e factors given in Table 1 were applied to initial construction of one kilometer of standard concrete and asphalt pavements for residential, collector, and freeway pavements constructed in Ontario. The following graph shows that the greenhouse gases emitted from an asphalt pavement, measured in terms of carbon dioxide equivalents, is only 22 percent to 25 percent of the greenhouse gases of a typical concrete pavement.

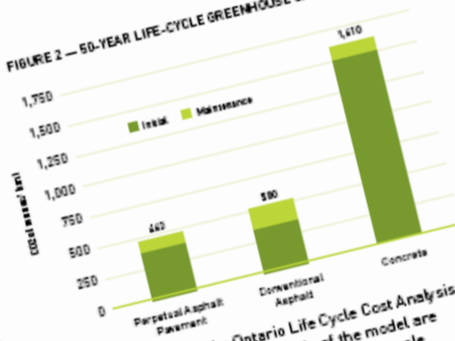
FIGURE 1 — GREENHOUSE GASES FROM INITIAL CONSTRUCTION



It should be noted that all the calculations in this paper are based on using 100 percent virgin materials for both the asphalt and concrete pavement options. In addition, only hot-mix asphalt pavements were analyzed consistent with the VicRoads project. If recycling and warm-mix asphalt were considered, the carbon footprint of the asphalt pavement would be further reduced.

The effect on life cycle for the greenhouse gases for concrete and asphalt pavements was also examined, but only for the freeway case. The maintenance schedule followed for various agencies depends on priorities and budget constraints. A fair analysis would be difficult. In order to make a realistic and fair comparison, the 50-year life-cycle maintenance

FIGURE 2 — 50-YEAR LIFE-CYCLE GREENHOUSE GAS PRODUCTION



schedule used in the Ontario Life Cycle Cost Analysis model was analyzed. The details of the model are available in the paper. In addition, the life-cycle greenhouse gas emissions for all three options are shown in Figure 2.

Although the greenhouse gas emissions from initial construction are greater for the Perpetual Pavement option than for conventional asphalt, it still has lower greenhouse gas emissions over the 50-year life cycle. Regardless of which asphalt option is chosen, the asphalt pavement options only produce about 30 percent of the greenhouse gas emissions of comparable concrete pavements.

Conclusion

This paper has examined greenhouse gas production of asphalt and concrete pavements. The tools employed in these analyses are based on published materials from ISO 14040, VicRoads, and the Ministry of Transportation for Ontario. In every case, the analyses show clearly that asphalt has a far lower carbon footprint. This means that asphalt pavements are the more sustainable choice. When it comes to roads, black is green, now and for the future.

For More Information, Contact Us

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IM-66 2010

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UNDERSTANDING LIQUID ASPHALT SUPPLY

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For 2010,

underutilized refining capacity

U. These range from light products, such as of the various products change constantly and aggregates are also subject to the

decades, the actual crude distillation that produce asphalt cement has cement from those refineries has

ity is not the case. Tightness of ers point to a ready capacity for

As the chart shows, capacity for asphalt and road oil production remains steady for 2010.¹ "Road oil" is a refinery term that can apply to straight run (unmodified) oils that are usually much lighter than straight run asphalt, the latter of which is typically used for road or highway construction. For that reason, U.S. capacity for asphalt production is 33 - 35.9 million tons annually for Canada or Mexico, both of

It inventories are high for all chart below, the purple line series so far for 2010, the blue line that existed during 2009, the line for 2008, and the light blue line for range (and average). Inventory of crude to meet reasonable future based

Inventory, the U.S. historic lows. The chart shows utilization rates for 2008, along with the clearly, U.S. refineries

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THE ROLE OF ASPHALT IN LIVABLE COMMUNITIES

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JOB IN THE ASPHALT PAVEMENT INDUSTRY

Profile of the Men and Women Who Build Our Nation's Infrastructure

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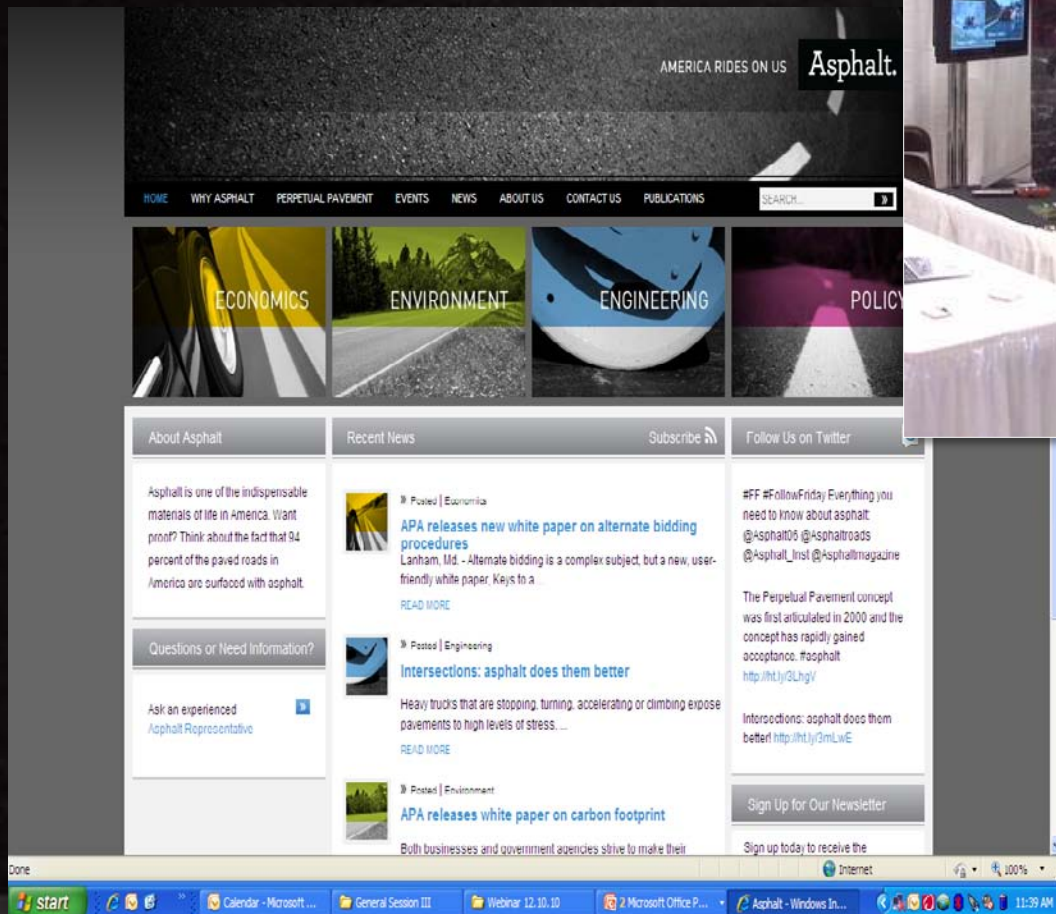
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Trade Shows

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AMERICA RIDES ON US Asphalt

SOME THINGS ACTUALLY GET BETTER WITH AGE – INCLUDING ASPHALT PERPETUAL PAVEMENTS.

The pavement structure lasts indefinitely. Every 18 to 20 years, the surface is milled up and recycled; an overlay is placed during off-peak hours, and road users get a good-as-new highway. There's no need for the entire highway to be removed and replaced from the ground up. A pavement that remains a permanent asset. A pavement that will be able to use. A pavement that's irreplaceable, reclaimable, resuable, and renewable. Think smart. Decide diligently. Perpetual pavements make sense.

ASPHALT. AGE 59

The New Jersey Turnpike won the very first Perpetual Pavement Award back in 2001. Now, 58 years after the Turnpike opened, it's still going strong – with no structural failures ever. Congratulations to the New Jersey Turnpike Authority on a pavement that has stood the test of time.

APA
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Customizing the APA Materials

OHIO RIDES ON US

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ASPHALT. AGE 74

The Ohio Department of Transportation (ODOT) won its first APA Perpetual Pavement Award in 2003 for a section of State Route 73 in Clinton County. This section of S.R. 73 was originally built in 1936, and after 74 years of service is still going strong -- with only resurfacing in 1948, 1962, 1971 and 1995. Congratulations to ODOT on a pavement that has stood the test of time.

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ASPHALT. AGE 40.

The Ohio Department of Transportation (ODOT) won its second APA Perpetual Pavement Award in 2004 for a section of southbound State Route 25 in Wood County. This section of S.R. 25 was originally built in 1937 and 1940. Now, after 67 years of service, it's still going strong -- with only resurfacing in 1948, 1965, 1983, 1990 and 2003.

Congratulations to ODOT on a pavement that has stood the test of time.

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ASPHALT. AGE 40.

The Ohio Department of Transportation (ODOT) won its third APA Perpetual Pavement Award in 2007 for a section of U.S. Route 30 in Stark County. This section was originally built in 1970. Now, after 40 years of service, it's still going strong -- with only a single-course overlay in 1987, spot mill and fill in 2001, and a general mill and fill in 2007.

Congratulations to ODOT on an asphalt base pavement that has stood the test of time with minimal maintenance, while providing outstanding value to the citizens of Ohio.

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Next Up? A Strategy Meeting



March 31, 2011; Tampa, FL

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AI Regional Engineer Offices and User Producer Groups

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Alaska

Dave Johnson

Sandy Brown

Greg Harder

Mark Blow

Wayne Jones

Bob Humer

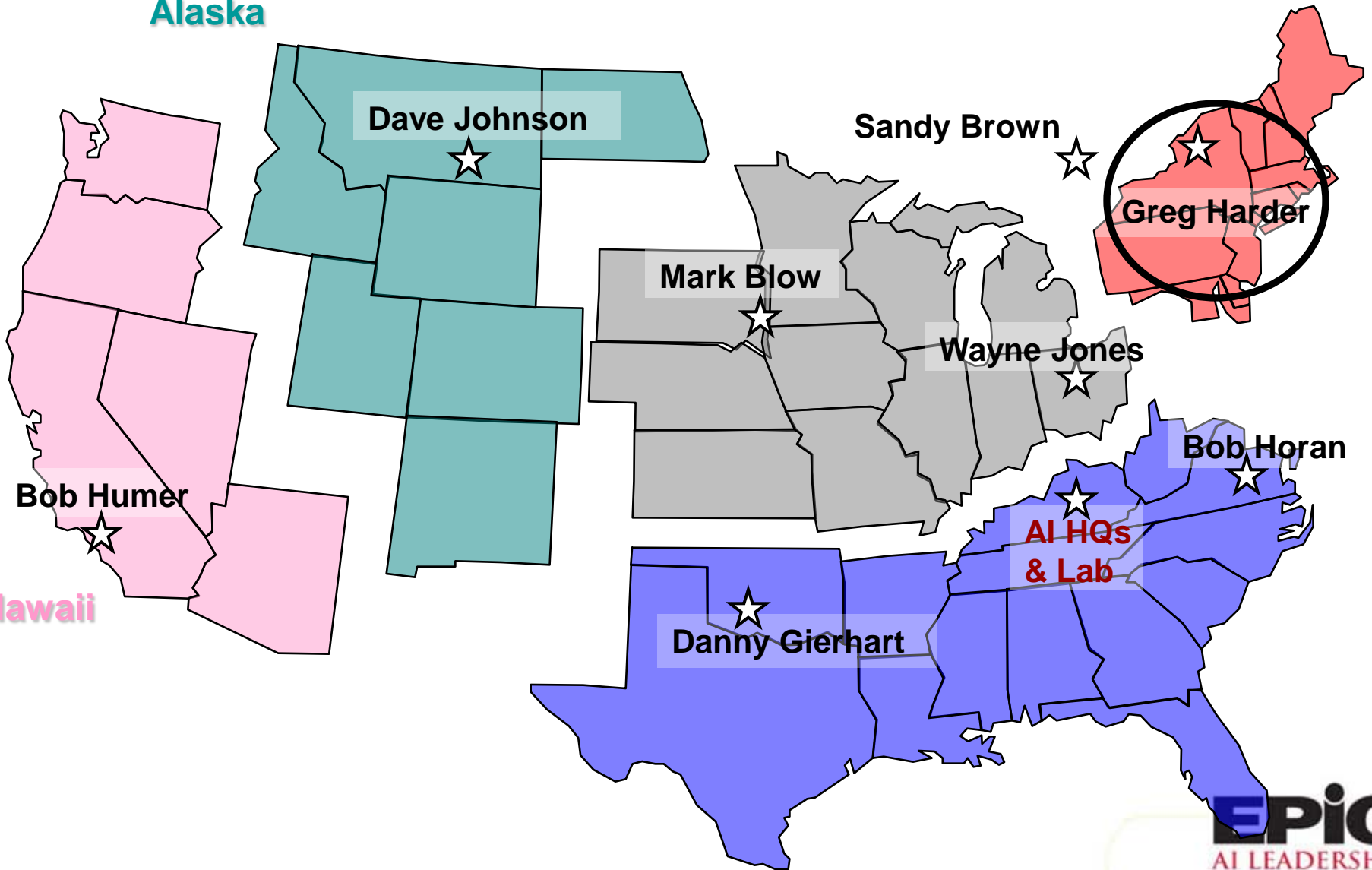
Bob Horan

AI HQs
& Lab

Danny Gierhart

EPIC
AI LEADERSHIP

Hawaii



Binder Spec Database

- All 50 States Now Use PG, But Still Differences
 - Pg-Plus Tests
- Summary Document of Each State's Spec
- On AI's Website
- Standard Format Includes:
 - Test Methods And Criteria
 - Typical Grades
 - Agency Contact Info
 - Website For Actual Spec

AI Binder Spec Database

www.asphaltinstitute.org

Asphalt Institute - Microsoft Internet Explorer provided by Insightbb.com

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Address http://www.asphaltinstitute.org/ai_pages/Technical_Focus_Areas/State_Binder_Specs/State_Binder_Specs_Index.asp Go Links

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State Binder Specs

Description: The Asphalt Institute and PRI Asphalt Technologies have collaborated to develop this binder specification database. Available below (as downloadable pdf files) are individual documents for each of the 50 state highway agencies summarizing their respective asphalt binder specifications. A few additional agencies are also provided. A standardized format is used to list specification methods and criteria, PG-plus tests and requirements, typical grades, exclusions, and the agency's website where specifications can be found.

Updating: AI and PRI will periodically contact the Binder or Materials Engineer listed on each document to review the agency's information for accuracy. Corrections or comments may be e-mailed to us by using the link below. Changes will only be made after confirmation by the individual listed for that agency.

Disclaimer: While care has been taken to provide the most accurate and current information, users are warned that there may be inaccuracies and recent specification revisions may not be reflected. **To ensure the most accurate information, the particular agency should be contacted.**

Click [HERE](#) to fill out the form for corrections or comments.

All documents are in Adobe PDF format. You need the free Adobe Reader to view these files. If you do not have the reader you can download by clicking on the Get Adobe Reader button.

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[Wisconsin](#) [Wyoming](#)

http://www.asphaltinstitute.org/event_items.asp Internet

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Asphalt Binder 5-Part Series

- Instructor: Mike Anderson
 - Feb 3; Introduction, Chemical/Physical Properties
 - Feb 10; AC Testing/Specification 1
 - Feb 17; AC Testing/Specification 2
 - Feb 24; Emulsions, Cutbacks, Air Blown, Modification
 - Mar 3; Testing, Variability, Miscellaneous
- \$50 per session, \$250 for series

Some 2011 AI Courses

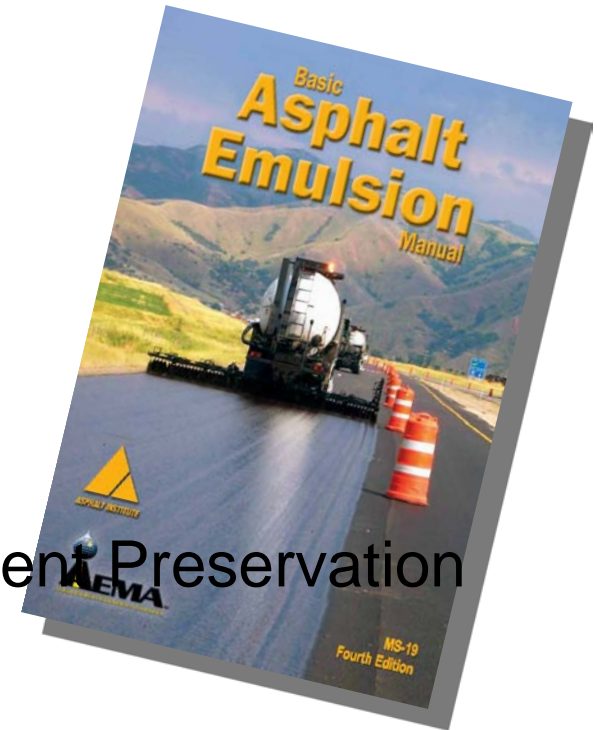


- Airport Pavement Workshops
 - Apr (Kansas City)
 - Oct (Long Beach)
- Mix Design Technologies
 - Jan and Mar at AI HQs
- Optimizing Volumetrics
 - Feb at AI HQs
- Binder Technician Training
 - Throughout year at AI HQs
- Quality HMA Construction
 - 14 different sites

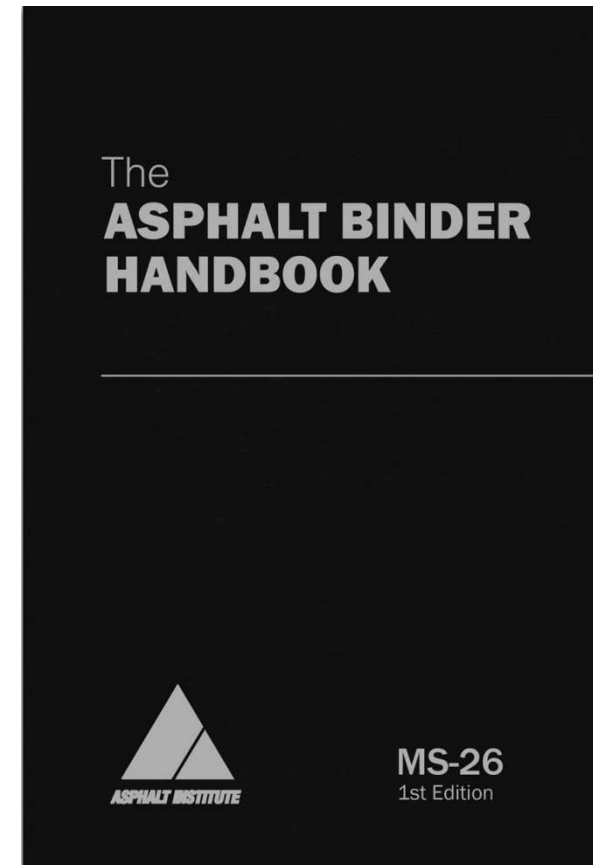
New Manuals or Major Rewrites

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- 2006: MS-25 (and updated every two years)
 - Binder Technician Manual
- 2006 - 2007: MS-4
 - Asphalt Handbook
- 2008: MS-19
 - Asphalt Emulsions Manual
- 2009: MS-16
 - Asphalt Maintenance and Pavement Preservation
- **Mar 2011: MS-26**
 - **Binder Technology Manual**
- **Later in 2011: MS-2**
 - **Mix Design Technology**



- New Manual
 - All about asphalt binders
 - Incorporates information in MS-4, MS-5, MS-19, MS-25, SP-1 and other sources
 - Layout
 - Ten chapters
 - ~180 pages
 - ~135 figures



**Study to Develop
Recommended Best Practices
for Constructing and Specifying
HMA Longitudinal Joints**

**A Co-operative Effort between AI
and FHWA**

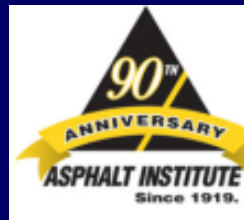
**Mark Buncher, Ph.D., P.E.
Asphalt Institute**

I-84 Connecticut



Current Project Team

- AI
 - Mark Buncher
 - Carlos Rosenberger
 - AI Regional Engineers
- FHWA
 - Tom Harman
 - Michael Arasteh
 - Stephen Cooper
- PA State Asphalt Paving Association
 - Gary Hoffman



PROJECT STEPS

- FHWA “Benchmark” Survey to Divisions
- Literature Review
- Identify What We Know/ Things We Don’t
- Interview 19 Experts
- Visit Five Select State DOTs
- Draft/ Final Report
- Develop Training Tools

Takeaways from FHWA Survey to 52 Division Offices

- 1/2 of states not satisfied with overall performance of L-Joints.
- 2/3rds of states have a L-Joint spec
 - Half of those (17) have a LJ density spec
 - Range from 89% - 92% min TMD
 - Other half were method specs
 - From Joint Adhesive to very prescriptive
- Great start to point us in the right direction, but no definitive answers



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Rocks

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benefit guitar

Member's
auction in
Charleston, SC

April 13 -15,
2011

Member Companies



Affiliate & Commercial Members



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