



# PAVING

Minnesota Asphalt  
Pavement Association

www.asphaltisbest.com

# PROGRESS

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## Transportation Rally Hits a Home Run!

The transportation rally on April 12th was a huge success with over 1,000 people attending. Numerous media outlets ran stories about the rally including Channel 9 News, Channel 4 and Channel 5. In addition, Tom Hauser's "At Issue" show ran a segment featuring the rally on Sunday, April 15th.

The rally was designed to call attention to the need for action this session to increase highway and transit funding. A strong message was sent to the legislators and the Governor about the need to compromise on a strong transportation funding package. ■



## ARTBA Cites \$20 Billion Annual Highway Investment Need

An annual investment of \$20 billion in new revenue is needed to preserve the condition of the nation's highways, and the best source of new revenue is a federal fuels tax increase, according to an analysis by the American Road and Transportation Builders Association (ARTBA). ARTBA based its analysis on the U.S. Department of Transportation's 2006 report on the *Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance*, issued in February. ARTBA Economist William Buechner said that beginning in Fiscal Year 2010, the federal government would have to invest \$54.5 billion and grow to \$61.5

billion by 2015 just to maintain highway conditions and ensure traffic congestion doesn't get any worse. By comparison, current highway account revenues are projected to range from \$34.7 billion to \$40.5 billion between FY 2010 and FY 2015—a shortfall of approximately \$20 billion more annually.

An increase in the federal motor fuels excise tax is the most effective way to fill this void in the short-term, Buechner says. A fuels tax increase of 10 cents per gallon in FY 2010 is necessary to meet the federal government's share of the documented highway investment needs in the U.S. DOT

report. The federal motor fuels excise tax has not been increased since 1993, and inflation has eroded 30 percent of its purchasing power during this time.

The challenges of meeting the nation's highway needs looms even larger, Buechner says, with continued projected growth in the U.S. economy and population, and future increases in truck and passenger vehicle traffic.

The complete text of ARTBA's analysis can be found at the following web site:  
[www.artba.org/pdf/040207\\_Analysis\\_2006\\_DOT\\_Needs\\_Report.pdf](http://www.artba.org/pdf/040207_Analysis_2006_DOT_Needs_Report.pdf) ■

# ASPHALT: The GREEN Pavement

Asphalt is showcased as the sustainable material for constructing pavements at [www.PaveGreen.com](http://www.PaveGreen.com).



The site addresses four major characteristics of asphalt:

- energy & recycling,
- performance,
- water quality, and
- clean air & cool cities.

The site is useful for explaining the environmental friendliness of asphalt to neighbors, schools, environmental advocates, and local news media.

For more information, go to [www.PaveGreen.com](http://www.PaveGreen.com). ■

## Federal Grants to Cut Construction Time



As a part of the Highways for Life program by the Federal Highway Administration (FHWA), Minnesota, Iowa, and South Carolina were the first states to receive \$1 million to help incorporate new technologies and approaches that cut construction time while improving quality, safety, and durability. In Minnesota, funds were used to supplement the reconstruction of 2 miles of TH 36 in North St. Paul.

The proposed upgrades include Hot-Mix Asphalt surfacing, grading, bridges, drainage and lighting, and the closure of portions of TH 36 for the next five months, which started May 1st. This is an effort to reduce construction time. See [www.dot.state.mn.us](http://www.dot.state.mn.us) for more information. ■

# Calendar of Events

**AASHTO Annual Meeting** • Sept. 27-Oct. 2, 2007 • Milwaukee, WI

**MAAPT 54th Annual Asphalt Conference**

Wednesday, December 5, 2007 • Northland Inn • Brooklyn Park, MN

**Annual Asphalt Paving Awards Banquet**

Wednesday Evening, December 5, 2007 • Northland Inn • Brooklyn Park, MN

**MAPA 54th Annual Membership Meeting**

Thursday & Friday, December 6-7, 2007 • Northland Inn • Brooklyn Park, MN

**52nd Annual Asphalt Contractors's Workshop/Quality Initiative Workshop**

Wednesday, March 5, 2008 • Earle Brown Heritage Center, Brooklyn Center, MN

# NCAT Undertakes Third Phase of Loading the Test Track

The National Center for Asphalt Technology (NCAT) initiated the third phase of loading the test track on November 10, 2006. The test track research to date has consisted of three phases. The first phase (Phase I) began in 2000 with the installation of 46 test sections on the 1.7-mile oval track. The only variable among the sections was the properties of the hot mix asphalt (HMA) mixtures in the top four inches of the pavement. This cycle of tests was completed in 2002 after 10 million Equivalent Single 18,000-pound Axle Loads (ESALs) had been applied to the sections.

The second phase (Phase II) of tests began in 2003. Eight sections were removed full depth and reconstructed to provide different thickness of HMA. Some of the structural sections used modified asphalt binder and others used unmodified asphalt binder in adjacent sections. Fourteen sections were milled and inlaid with new mixes to be evaluated in the same fashion as the 2000 experiments. The remaining sections were left in-place to evaluate the effect of two more years of traffic (another 10 million ESALs) and the effect of an additional two years of exposure on durability. A summary of test track findings from the first and second phases and their implementation by various states is available in the Spring 2006 issue of *NCAT's Asphalt Technology News*.

The ongoing research at the track, now in the third phase (Phase III), continues to provide valuable



information regarding pavement materials and mixtures, construction procedures, and structural pavement design. Reconstruction of the Phase III test sections was completed on October 19, 2006. During the 2006 construction, 47 aggregate/RAP stockpiles, five liquid asphalt binders, two base types, and two subgrade types were used. The Phase III test sections can be categorized as follows: structural test sections, milled and inlaid test sections, and test sections for additional trafficking.

## Structural Test Sections

The Phase II test track had eight structural test sections (N1 through N8). In Phase III, six new structural sections (N1, N2, N8, N9, N10, and S11) were reconstructed. The pavement layer types and their respective thicknesses are illustrated in the cross-section of the 11 structural test sections (see [www.pavetrack.com](http://www.pavetrack.com)). The instrumented structural sections are part of a larger, multi-state validation



effort for mechanistic-empirical pavement design. The following are the main structural study areas for the Phase III experiments:

- Mechanical-Empirical Pavement Design
  - ✓ Model validation
  - ✓ Model calibration
  - ✓ Material characterization
- Pavement Rehabilitation
  - ✓ Link pavement response (stress, strain) to structural deterioration (cracking, rutting)
- Perpetual Pavement Design
  - ✓ Determine strain threshold related to performance

The following variables will also be evaluated in addition to different thickness of pavement layers:

- Unmodified asphalt vs. polymer-modified asphalt
- Pavements over a subgrade with low stiffness vs. pavements over a subgrade with high stiffness
- Stone Matrix Asphalt (SMA) vs. Superpave in the wearing course
- Rich HMA bottom course vs. standard bottom course as a potential of minimizing the propagation of fatigue cracking from the bottom upwards

All the structural test sections are fully instrumented to measure stress, strain, and temperature. Multidepth thermister probes have been installed in all 46 sections on the test track for measuring temperature. Paired with data from an onsite, automated weather station, these data are used to precisely characterize the performance

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## In the NEWS

### The Second Perpetual Pavement project in Iowa scheduled for Des Moines

State DOT officials have approached the industry about building Iowa's second Perpetual Pavement. The project



is nearly one mile in length and encompasses the North Mix-Master in Des Moines where I-35, I-80, and I-235 converge, making this one of Iowa's highest trafficked junctions. The State elected to go

with the Perpetual Pavement design because it would require only minimal attention in the future which fits into the "get in, get out and stay out" design philosophy. The contractor, Des Moines Asphalt & Paving Company, winner of the NAPA 2006 Sheldon G. Hayes award, is scheduled to have the project completed this summer. ■

### Scan tour to survey use and performance of warm-mix asphalt in Europe

U.S. pavement experts representing NAPA, AASHTO, AI, FHWA, contractors and consultants will be traveling to Europe from May 18-



June 2 to examine the use of warm-mix technologies there. The group will examine the different warm-mix technologies, materials, performance, and construction practices used in

Norway, Germany, and France. The scan tour will enable the U.S. panel to explore mix design procedures and construction practices used for warm-mix asphalt. A report of the findings will be published. ■

### NCHRP rolls out new pavement design guide

The National Cooperative Highway Research Program hosted a meeting on April 10 and 11, in Irvine, Calif., to unveil the new Mechanistic-Empirical Pavement Design Guide (MEPDG), version 1.0. Researchers discussed the

features of the new method and its applications. Representatives of DOTs discussed implementation and the AASHTO process for balloting the design guide. At this point, the method will be balloted by the AASHTO Joint Technical Committee on Pavements, after which it will be voted on by the Subcommittees on Design and Materials. The Standing Committee on Highways will then take a formal vote of states on the approval, after which AASHTOware will then modify the software for AASHTO. ■

### The Urban Heat Island is not a black vs. white issue

Howard Marks recently represented NAPA and APA at a meeting of EPA's SMART Innovations for Urban Climate and Energy at Arizona State. Representatives from the concrete industry, public utilities, municipalities,



and other stakeholders attended as well. ASU presented its most current research efforts into understanding the impact that pavement materials have on the Urban Heat Island ("UHI") effect. These research findings presented different ways to look at thermal characteristics of pavement materials aside from color. Specifically mentioned was the ability of some pavement materials to dissipate heat more quickly than others, taking into account thickness, density, and other heat-sink capacities.

The ASU research may have implications for the LEED (Leadership in Energy and Environmental Design) rating system, which has been adopted by federal, state, and local governments as a standard for both new and existing sites. Under the current LEED framework, darker pavements are considered less desirable than light-colored pavements for mitigating UHI. The new research indicates that this is not the whole story. For more information, contact Howard Marks at [hmarks@hotmail.org](mailto:hmarks@hotmail.org). ■

### Kentucky Approves Use of 4.75mm Mix

The Kentucky Transportation Cabinet approved the use of their first 4.75mm Superpave mixture on a recent project. The mix, placed 1/2 to 5/8 inch thick, can be used as a preventative maintenance technique. H.G. Mays Company produced and placed the mix and the final product looks excellent (source: AI News). ■

## NAPA Announces Energy and Recycling Symposium in October

NAPA continues to provide leadership for the industry by supplying information on delivering high-quality pavements at low cost in volatile times. The upcoming conference follows the highly successful meeting held in Indianapolis last fall on energy and recycling. This year's meeting will be held at the Radisson Hotel in Austin, Texas, Oct. 22-23. Partnering with Texas Asphalt Pavement Association, TxDOT, FHWA and AASHTO, the symposium will provide updated information on recycling issues and the energy situation. State associations from Oklahoma and Louisiana will also be co-sponsors of this event. ■



## Updated Perpetual Pavement Design Guide now available

PerRoad 3.2 can now be downloaded from the Asphalt Pavement Alliance web site. Go to [www.asphaltalliance.org](http://www.asphaltalliance.org) to download your copy. A beta version of PerRoad for use in designing Perpetual Pavements for local streets is being tested. To participate in this test, contact Dave Newcomb, Vice President - Research & Technology, at [dnewcomb@hotmix.org](mailto:dnewcomb@hotmix.org). ■

## National Asphalt Roadmap outlines needed research

In association with FHWA and AASHTO, NAPA has developed the HMA Roadmap which outlines needed research for the HMA community in the near future. You can download the revised Roadmap and submit comments at the NAPA web site at [www.hotmix.org](http://www.hotmix.org). ■

## Technical topics on asphalt presented at AAPT

The Annual Meeting of the Association of Asphalt Paving Technologists (AAPT) was held March 12-14, in San Antonio, TX. Over 250 engineers, scientists, and researchers heard presentations concerning asphalt binders, recycling, innovations in construction, and asphalt mixture behavior. Specific topics included warm-mix asphalt, intelligent compaction, moisture damage of mixes, Superpave compaction levels, fatigue cracking, and thermal cracking, among others. The next meeting will be April 28-30, 2008, in Philadelphia. More information is available at [www.asphalttechnology.org](http://www.asphalttechnology.org). ■

## AASHTO research committee approves asphalt-related projects

In March, AASHTO approved 72 National Cooperative Highway Research Program (NCHRP) projects through the Standing Committee on Research for the 2008 cycle. The projects funded include: Engineering Properties/Field Performance of Warm-Mix Asphalt Technologies (\$1.2 million), Mix Design and Evaluation Procedure for High Reclaimed Asphalt Pavement Content in HMA (\$400,000), Evaluation of Pavement Type Selection Processes Including Alternate Design/Alternate Bidding (\$400,000), Simple Performance Tester for Superpave Mix Design (\$300,000), Determining Actual Cost of Performing Routine and Preventive Maintenance Operations on Highway Systems (\$400,000), Initial Cost Benefits of Quieter Pavements Compared with Other Forms of Noise Mitigation (\$500,000), and Enhanced Test Method for Specific Gravity and Absorption of Coarse and Fine Aggregate (\$350,000). ■



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**For continuous updates visit MAPA's web site at:  
[www.asphaltisbest.com](http://www.asphaltisbest.com)**

# Spotlight on Lisa Freese, Mn/DOT Deputy Commissioner

*An interview by Jill Thomas, P.E.*



**L**isa Freese has a passion for planning for the future, previously as a Transportation Planner, and more currently as the newly appointed Minnesota Department of Transportation Deputy Commissioner.

Lisa grew up on her family's dairy farm in Monticello, Iowa, with a population of about 5,000. She is the middle sibling with two brothers; her older brother continues to farm and her younger brother is a manager of a belting and hose company.

While the practical side of farming appealed to Lisa, she also enjoyed history and political science. Lisa attended Clarke College located in Dubuque, Iowa and graduated with a Bachelor of Arts degree in Political Science and History and a Minor in Computer Science. She went on to study at the University of Iowa in Iowa City, Iowa, where she earned a Master of Arts degree in Urban and Regional Planning with an emphasis in Urban Services and Land Use. Originally Lisa wanted to attend law school, however, planning was more appealing to her as she valued the policy and practical sides of being a Planner. Coincidentally, Lisa worked with asphalt paving materials during her summer employment with Iowa City's Street Maintenance Division.

After college, Lisa went to work as the Planner for Johnson County Planning Office in Olathe, Kansas. She was responsible for wastewater service district master plans, access management/corridor land use plans and the county's first capital improvement program process. After three years, Lisa looked north to the Twin Cities area for her next employment as the Planner for the City of St. Paul's Department of Planning and Economic Development. Over the next four years she was involved in an array of community planning activities that included a variety of transportation issues, roadway infrastructure, transit, and heliport facilities.

In the early 1990's, Lisa was the Planning Director for the City of Rosemount. Among other responsibilities, she worked with

Mn/DOT and the City of Inver Grove Heights to develop a Corridor Plan on TH 52, which she latter played a significant role in implementing at Mn/DOT. For a year, Lisa was the administrative role working in GIS and developing a permitting computer system for the City of Roseville. This job was a good way to keep involved in planning, but it enabled her to take a break from the night meeting schedule of a planner in order to focus on her young children. But missing the challenges and uncertainty of working with public policy and decision-making, Lisa moved into the position of City Planner for the City of Eagan. She worked on several major development projects with significant infrastructure components and on the major transportation plan for the central business area of the city.

Lisa began her career at the state in the late 1990's on the Community Based Planning grant program for the Minnesota Planning agency. She worked with many communities statewide to help solve the development and growth issues for cities, counties, and regions. Several of these grants administered through this program involved collaborative efforts with Mn/DOT. When the Legislature decided not to continue that program, Lisa moved to Mn/DOT's Access Management Program out of the Central Office.

In 2001, Lisa moved to the Metro District and headed its Corridor and System Planning activities. She was responsible for six Interregional Corridor Plans and the 20-year plan for the District. In 2002, she became one of the four Metro District Area Managers. The Area Manager is responsible for the planning and project delivery for a geographic area. Lisa was responsible for the state highways in Dakota, Scott, and Carver counties. One of her major projects was the oversight and implementation of the Interregional Corridor Management Plan for TH 52, which she was very familiar with after working for the City of Rosemount. This plan included the 117th street interchange project constructed in 2004 involving the new technology of stone matrix asphalt (SMA). SMA was an

innovative material used to accommodate the frequent heavy vehicles at the interchange. Another project she had significant responsibilities for delivering was the current design-build construction of TH 212 that also has SMA.

In Lisa's current position as Deputy Commissioner, she reports to Lt. Governor/Commissioner Molnau. She is responsible for providing leadership and managerial direction to the department's five divisions that are charged with the development and implementation of policies, plans, and programs for state highways, state aid for local roads, railroads, commercial waterways, aeronautics, public transit, and motor carriers. Of the 135,000 miles of roadways in Minnesota, about 12,000 miles are Interstate, U.S., and Minnesota State highways (9% of the total) and about 33,000 miles are local roads on the state aid system (25% of the total).

Lisa is responsible for 4,700 employees and a \$2 billion dollar annual budget including operating and capitol funds. She says that her focus will be on financial management, cash flow on projects, and program management by performance based goals. She is striving to keep costs down on projects and wants to explore innovation in materials selection. She emphasizes the use of processes that include stakeholders, which she feels is the key to better planning, business, and finished products.

Lisa is involved in the American Institute of Certified Planners, American Planning Association, Women's Transportation Seminars, Sensible Land Use Coalition, and the Institute of Traffic Engineers.

Lisa and her husband, Larry, have two sons, Ian (15) and Brennan (11) who play hockey and baseball and are in Boy Scouts. They enjoy camping and biking together as a family. Lisa also volunteers in a variety of ways to assist the sports associations that her sons are involved with. ■

*Best of luck Lisa!*

## NCAT continued from page 3.

environment for each experimental section. Additionally, the sections that make up the structural experiment have high-speed instrumentation arrays consisting of strain gauges and pressure plates installed at select depths. Data generated by these devices are used to quantify the pavements' response to passing loads, which is useful in validating pavement analysis and design methodologies that are mechanically based.

### Milled and Inlaid Test Sections

Sixteen Phase II test sections were milled and inlaid with new binder and/or wearing course mixes to evaluate their resistance to rutting and/or other performance parameters.

The following mix attributes will be evaluated:

- Superpave mixes containing 0,

20, and 45 percent reclaimed asphalt pavement (RAP) material and different grades of PG binders

- Superpave mixes designed with relatively lower number of design gyrations
- Superpave mixes designed with low air voids resulting from high asphalt content as well as from using a denser gradation for comparison
- Open-graded Friction Course (OGFC) mixes containing cubical and flat & elongated aggregate particles for comparison
- OGFC mix containing 100 percent crushed gravel aggregate
- Dual porous friction courses (9.5 mm nominal maximum aggregate size at top and 12.5 mm nominal maximum aggregate size at bottom) placed

- with a European twin-layer paver
- Recycled HMA mix produced with warm mix asphalt technology

### Test Sections for Additional Trafficking

Some state DOTs have decided to keep their test sections in-place for additional trafficking because these test sections have not shown any significant distress to date. The additional trafficking in the current Phase III may better discern performance differences among different mix types.

Design, construction, and performance details for all 46 test sections can be seen at the NCAT test track web site: [www.pavetrack.com](http://www.pavetrack.com). ■

*Reprinted with permission from NCAT's newsletter "Asphalt Technology News".*

## Hot-Mix Asphalt Facilities

Results of a study identify that Hot-Mix Asphalt (HMA) facilities have very low emissions. **Annual** emissions from a typical HMA plant would compare to:

- VOC emissions from 1 bakery operating for about two weeks.
- VOC emissions from 13 residential fireplaces per year.
- TOC emissions from 12 gas filling stations per year.
- TOC emissions from 27 fast-food restaurants per year.

It is impressive that the VOC emissions from an HMA facility producing 200,000 tons of HMA per year would be equivalent to one bakery operation for about two weeks out of that year! ■

## MAPA Contractor Members

Aggregate Industries NC Region  
Anderson Brothers Construction Co.  
Barton Enterprises, Inc.  
Bauerly Companies  
Bemidji Bituminous, Inc.  
Bituminous Paving, Inc.  
Bituminous Roadways, Inc.  
Buffalo Bituminous  
Commercial Asphalt Company  
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Northstar Materials, Inc.  
Northwest Asphalt, Inc.  
Pine Bend Paving, Inc.  
Plehal Blacktopping, Inc.  
River Bend Asphalt Company  
Rum River Contracting Company  
Shamrock Enterprises of Rochester LLC  
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Tower Asphalt, Inc.  
Tri-City Paving, Inc.  
Ulland Brothers, Inc.  
Valley Paving, Inc.  
Wm. Mueller & Sons, Inc.  
W W Blacktopping, Inc.

**MAPA is pleased to welcome a New Contractor Member:**  
Straight River Asphalt LLC (Producer)  
PO Box 419, Medford, MN 55049  
Phone: (507) 446-0825  
Fax: (507) 446-1114

# MAPA's Associate Members

*Accurate Test Systems, Inc.*  
*Aggregate Industries*  
*American Agency, Inc.*  
*American Engineering Testing, Inc.*  
*American Surface Lines, LLC*  
*Anderson Industrial Scales, Inc.*  
*Antigo Construction, Inc.*  
*Area Lakes Testing*  
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*Erickson Engineering Company*  
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*Laser Control, Inc.*  
*Leonard, Street & Deinard, P.A.*  
*Lubrication Technologies, Inc.*  
*Marathon Petroleum Company LLC*  
*Martin Marietta Aggregates*  
*Max Steininger, Inc.*  
*Minnesota Petroleum Marketers Assoc.*  
*Minnesota Trucking Association*  
*Murphy Oil USA, Inc.*  
*Northern Balance & Scale*  
*Northwest Process Equipment, Inc.*  
*Olson & Price, Ltd.*  
*Ortonville Stone Company*  
*Partek Supply, Inc.*  
*Prinsco, Inc.*  
*R & G Construction Company*  
*RDO Equipment Co.*  
*Ritchie Bros. Auctioneers (America) Inc.*  
*RJF Agencies*  
*Road Fabrics, Inc.*  
*Road Machinery & Supplies Co.*  
*Roadtec, Inc.*  
*Ruffridge-Johnson Equipment Co., Inc.*  
*RB Scott Company, Inc.*  
*SPC Engineering & Testing, Inc.*  
*STORK Twin City Testing Corporation*  
*Swanston Equipment Companies*  
*Sweeney Brothers Tractor, Inc.*  
*Testquip, LLC*  
*TexPar Energy, LLC*  
*Tricon Metals & Services, Inc.*  
*Tri-County Aggregate, Inc.*  
*Tri-State Aggregate Machinery*  
*Troxler Electronic Lab., Inc.*  
*Ulteig Engineers, Inc.*  
*Unique Paving Materials Corporation*  
*United Rentals Highway Technologies*  
*Vance Brothers*  
*Wenck Associates, Inc.*  
*Wheeler Lumber LLC*  
*Widseth Smith Nolting*  
*Ziegler, Inc.*



[www.asphaltisbest.com](http://www.asphaltisbest.com)

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