



Minnesota Asphalt
Pavement Association

PAVING PROGRESS

900 Long Lake Road, Suite 100 • New Brighton, MN 55112 • (651) 636-4666 • www.AsphaltIsBest.com

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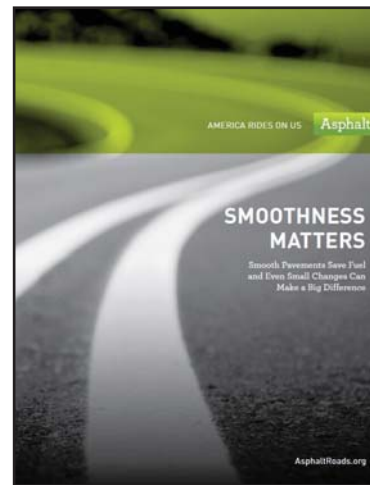
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Road to Energy Savings; U.S. Could Save 3.3 Billion Gallons of Fuel per Year

National Asphalt Pavement Association News Release, Incline Village, NV

A new study shows that one road to energy savings could already be under the wheels of our cars: smoother pavements. Dr. Richard Willis, an assistant research professor at Auburn University, reported today that modest improvements in the smoothness of pavements could save up to 2.4 billion gallons of gasoline and 900 million gallons of diesel for the U.S. every year – a total of 3.3 billion gallons of fuel for the vehicles being driven on our highways. In other terms, smoothing out America's roads and highways could save around \$12.5 billion a year for the U.S. economy.

Willis and Auburn University's Dr. Rob Jackson have just completed an analysis of more than 20 studies from throughout the world. At the Midyear Meeting of the National Asphalt Pavement Association, Willis presented a preview of a study that will be published soon by Auburn. He reported that smoothness is a pavement characteristic that has one of the greatest impacts on fuel economy. "We know that, of all the factors that influence fuel economy – vehicle aerodynamics, engine dynamics, ambient air temperature, tire



geometry, vehicle speed, tire pressure, and so forth – there is only one that pavements can affect, and that is rolling resistance," said Willis.

Asked to define his terms, Willis said, "Rolling resistance can be thought of as the force required to keep tires rolling.

It could also be thought of as the energy lost between the vehicle and the pavement. Of the two main influences on rolling resistance related to pavements – those due to the stiffness properties of the tire and those due to imperfections in the pavement surface – the pavement industry has the opportunity to influence only one, the pavement itself."

Willis broke down his numbers. "A study published by Schmidt and Ullidtz in 2010 showed that slight improvements in smoothness can reduce fuel consumption by 1.8 percent to 2.7 percent. Other studies suggest larger

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The NEW '11-'12 MAPA Directory is at www.AsphaltIsBest.com or contact MAPA if you would like one mailed to you!

MSES Fall Outing

Sept. 14-16, 2011 – www.mses.org

The Minnesota Surveyors and Engineers Society (MSES) is sponsoring its 89th Fall Outing – this year at Grand View Lodge in Nisswa, September 14-16, 2011. The Fall Outing purpose, while meeting old and new friends, is to raise scholarship money for schools including land surveying students at Saint Cloud State University, civil engineering students at Minnesota State University – Mankato, University of Minnesota, and North Dakota State University. Over \$1 million has been given in scholarships since 1953! And, MSES has given \$37,000 to at-large midwest-regional engineering schools since 2003. Those who received 2010-11 awards attend: University of Minnesota-Duluth, Iowa State University, Michigan Technological University; South Dakota State University and other schools. The complete list is on the MSES web site at www.mses.org.

The Fall Outing event is a chance to socialize with your friends and make new acquaintances. Wednesday evening will be the first “Taste of MSES” event sponsored by various firms and organizations.



And, instead of a banquet, a second social will occur Thursday with full bar and appetizers, an informal program and valuable door prizes (including a weekend at Grand View Lodge). Registration forms have been emailed to members, and soon will be mailed to current MSES members. If you are not an MSES member, you may join at the Fall Outing or join now using PayPal on-line. Annual dues are \$40 (pays for membership through 2012) in addition to the \$35 registration fee. For further information, go to www.mses.org, email ann@mses.org or call Ann Manthey at 651-343-9525.

Calendar of Events

- **MSES Fall Outing**
September 14-16, 2011 • Grandview Lodge •
Nisswa, MN
- **MAAPT 58th Annual Asphalt Conference**
Wednesday, December 7, 2011 •
DoubleTree Hotel • St. Louis Park, MN
- **Annual Asphalt Paving Awards Banquet**
Wednesday evening, December 7, 2011 •
DoubleTree Hotel • St. Louis Park, MN
- **MAPA 58th Annual Membership Meeting**
Thursday-Friday, December 8-9, 2011 •
DoubleTree Hotel • St. Louis Park, MN
- **NAPA 57th Annual Membership Meeting**
January 21-25, 2012 • JW Marriott Desert
Springs Resort • Palm Desert, CA
- **56th Annual Asphalt Contractors' Workshop/
Quality Initiative Workshop**
March 6, 2012 • Earle Brown Heritage Center •
Brooklyn Center, MN
- **World of Asphalt Show & Conference**
March 13-15, 2012 • Charlotte Convention
Center • Charlotte, NC
- **AAPT 87th Annual Meeting**
April 1-4, 2012 • Omni Austin Hotel Downtown •
Austin, TX

Highway Funding Myths

Myth:

Highways and roads pay for themselves from gasoline taxes and other charges to motorists.

Fact:

They don't. Gas taxes and other highway user fees pay less today than ever before.

Myth:

Proceeds from the federal gas tax are used to build and maintain the interstate highway system.

Fact:

That was the promise made to taxpayers in 1956. Today, however, at least 25 percent of federal gas tax funds are diverted to non-highway uses including maintaining sidewalks, funding bike paths, and creating scenic trails.

Fact:

The current funding level for transportation is not adequate. Contact your local legislator and dispel the myths!

Road to Energy Savings,

continued from page 1

reductions of up to 4.5 percent. The Bureau of Transportation Statistics says that vehicles traveling on U.S. highways consumed 168 billion gallons of gas and diesel in 2009. AAA reported last week that the average price of gas was \$3.66 per gallon and diesel averaged \$3.93. Using a conservative figure of a 2.0 percent reduction in fuel consumption, we could thus save 3.3 billion gallons of fuel, or \$12.5 billion, every year," he said.

Dr. Howard Marks, NAPA's Director of Environmental and Regulatory Affairs, was unsurprised by Willis' findings. "It is intuitive that smoother pavements are more fuel-efficient since less bouncing over rough pavements means less wasted energy. While it is possible to build smooth pavements out of either concrete or asphalt, asphalt pavements are easier to build smoother and to keep smoother over their lifetimes," he said. Visit www.AsphaltRoads.org to download the publication "Smoothness Matters" for more information.

NAPA President Mike Acott

pointed out that rough roads also cost Americans billions for excess repairs. "The Road Information Program calculates that rough roads cost the average American motorist \$324 every year – a total of \$67 billion, just for extra wear and tear on vehicles. Adding this figure to the \$12.5 billion in potential fuel savings, we can see that the U.S. could save nearly \$80 billion a year by building and maintaining smoother pavements."

Acott added, "Congress and other policymakers are looking to incorporate green highway metrics in the pavement selection process. Legislation that has just been introduced in the House of Representatives – the Promoting Green Transportation Infrastructure Through Research and Development Act – would identify the independent research studies and assessments in this field of research. This is a logical step in advancing the deployment of ultra-fuel-efficient pavements throughout the country and saving billions of gallons of fuel annually."

ASCE: Old Infrastructure Costs U.S. Billions

Deteriorating streets, highways, bridges, railways and public transportation systems cost the U.S. \$129 billion a year, a study by the American Society of Civil Engineers (ASCE) found. If improvements aren't made soon, decaying surface infrastructure will cost business \$430 billion a year with a decade, the ASCE said. "The link

between a nation's infrastructure and its economic competitiveness has always been understood," says Kathy Caldwell, president of the ASCE. "But today, for the first time, we have data showing how much failing to invest in our surface transportation system can negatively impact job growth and family budgets." The Washington Post (7/27)

Thank you!

A special thank you to everyone who sent e-mails, made phone calls, and had personal contact with legislators urging support for transportation, a state budget, and an end to the shutdown!

Technical Corner

RAP IN ASPHALT

The U.S. Federal Highway Administration

has released a report that examines the state of the practice for reclaimed asphalt pavement



(RAP) use in the United States as well as best practices for increasing the use of RAP in asphalt pavement mixtures.

Several conclusions were made including “RAP is a valuable, high-quality material that can replace more expensive virgin aggregates and binders. The most economical use of RAP is in asphalt mixtures.” Also, “The performance and life of pavement containing up to 30 percent RAP is similar to virgin pavements with no RAP.”

The report is available at <http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/11021/11021.pdf>

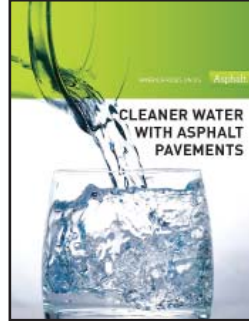
SAFETY EDGE

The U.S. Federal Highway Administration has released a report regarding the use of a safety edge, “Safety Evaluation of the Safety Edge Treatment.”

The report is available at <http://www.fhwa.dot.gov/publications/research/safety/hsis/11025/>

ASPHALT’S ROLE IN BETTER WATER QUALITY

The Asphalt Pavement Alliance has just published a new white paper, “Cleaner Water With Asphalt



Pavements.” The report summarizes a number of scientific studies that document the beneficial effects asphalt pavements can have on water quality.

“From improved storm water management, clean drinking water, and reduced roadside pollution, asphalt pavements are clean and environmentally beneficial,” Dr. Howard Marks of the National Asphalt Pavement Association, said. Marks is the report’s principal author and serves as co-chair of the team that produced the document.

“Asphalt pavement’s inert quality has been observed in a number of scientific studies that are documented in the white paper. Additionally, smooth asphalt pavements save fuel – potentially billions of gallons every year. And asphalt pavement has a small carbon footprint, especially compared to other paving materials.”

The white paper is available at www.AsphaltRoads.org.

URBAN HEAT ISLAND MYTHS

Over the past six months, NAPA has reported on the ongoing legislative, regulatory, and related activities associated with the misperception that asphalt pavements are less beneficial than more reflective, whiter pavements regarding reducing the Urban Heat Island (UHI) effect. Jay Hansen, NAPA’s Vice President of Legislative and Regulatory Affairs, noted, “We continue to see this as the concrete industry’s promotional efforts at market share, but the science just isn’t there yet; it’s far from black and white.”

NAPA’s Special Report on this issue, authored by Dr. Howard Marks, Director of Environmental and Regulatory Affairs, provides talking points and documentation for a variety of audiences and is available at www.hotmix.org/images/stories/napa_special_report_202_uhi.pdf.

SUSTAINABILITY

Sustainable Asphalt Pavements – Has the Question Come up? Key on-line resources can help with the answer:

- www.AsphaltIsBest.com
- www.AsphaltRoads.org
- www.PaveGreen.com
- www.WarmMixAsphalt.com
- www.BeyondRoads.com

Warm Mix Asphalt in MN

With the United States Clean Air Act passing into law in 1970, environmental responsibility has been a major priority to U.S. industries and abroad. The hot-mix asphalt (HMA) industry is no exception and has taken great initiatives to be leaders in these initiatives.

Today, the production and placement of HMA pavements consumes less fuel and produces lower levels of greenhouse gases.

Since 1970, the asphalt industry has decreased total emissions from HMA plants by 97 percent while increasing production by 250 percent.

Emissions from asphalt plants are so low, the EPA considers them as only minor sources of industrial pollution. Currently there are initiatives for reducing the temperature at which HMA is produced and placed and thus further reducing emissions and energy used, as well as many other benefits.

Warm Mix Asphalt (WMA) technology allows the mixing, laydown, and compaction of plant produced asphalt pavement mixes at significantly lower temperatures compared to HMA. The technology can reduce production temperatures 35°F to 100°F lower than conventional HMA. A scanning committee in the U.S. was formed in 2002 to investigate the European technology and pursue research and development work necessary for implementation. Today there are countless numbers of successful WMA projects throughout the nation and in Minnesota.



There are several benefits with the use of WMA technologies including reduced energy consumption, reduced greenhouse gas emissions, improved working conditions at the paving site, cool weather paving, compaction aid, ability to extend the paving season, longer haul distances, and potentially higher recycled asphalt pavement (RAP) percentages.

The number of WMA technologies is expanding. They involve designing the mix with either a chemical additive, an organic additive, or by a foaming mechanism. These are all viable options and each of the technologies available are discussed at a web site dedicated to WMA

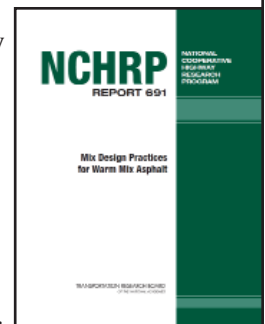
information at www.WarmMixAsphalt.com.

Since 2007, there have been several successful WMA projects in Minnesota with either a chemical additive (Revix or Evotherm 3G) or a foaming additive. In 2010, the Minnesota Department of Transportation (Mn/DOT) changed their specification for asphalt pavement (Mn/DOT Spec 2360) to allow WMA provided the quality of the mix is maintained or improved. The permissive spec requires quality measures and allows for economics and the market to dictate when WMA will be used and how it will be produced. Thus, it is not necessary to specify WMA nor the method to create WMA nor the temperature.

Mn/DOT also allows the use of recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS) in asphalt pavements as per the

2360 Specification and should not be precluded with the use of WMA. Recycled materials have been used in the WMA projects with success. In fact, it is another benefit of WMA technology that allows for higher percentages of RAP by allowing for better compaction and decreasing the aging of the asphalt binder, both of which increase the pavement service life and lead to cost savings for the taxpayer/owner of the pavement.

The “Warm Mix Asphalt Special Report: Mix Design Practices - NCHRP 09-043” is complete and summarized in TRB Report 691. Of particular note are the Summary Findings, which includes the statement “WMA mixtures designed in accordance with AASHTO R 35 will have similar properties as HMA mixtures.” In addition, the report finds that “only minor changes to current mixture design practices are needed to design WMA mixtures.” The report is available at http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_691.pdf.



Asphalt pavement is a basic building block of our nation’s infrastructure. As the United States goes green, asphalt is keeping pace with the times. Warm mix is an important step in sustainable development, simultaneously conserving natural resources, reducing the carbon footprint of the industry, and improving the quality of the pavements that Americans rely on.

Spotlight on Greg Isakson, P.E. Goodhue County Engineer

An interview by Jill Thomas, P.E., Associate Director, Minnesota Asphalt Pavement Association

Greg Isakson feels he has “the best job in the world” and his journey to Goodhue County has been interesting.

A native of Minnesota, Greg was raised in Mankato and went to Mankato State University for his first two years of college. He enjoyed math and science and decided to pursue a degree in Civil Engineering at South Dakota State University (SDSU). It was at SDSU that Greg met and later married his wife, Teresa. Though her family only lived several miles from Greg’s family, they had never met.

After graduating from college in 1982, Greg began working for the United States Army Corps of Engineers (USACE). He and Teresa lived and worked in New Orleans, LA for approximately five years. Greg worked as a Construction Engineer building flood protection levees and walls. The city of New Orleans is nine feet below sea level and any rain that falls there has to be pumped out or the city will flood, as we all remember too well.

One day while surveying a shipping channel in a marsh area, Greg and his co-workers were walking in the weeds and noticed two long objects hanging from a tree. The next day he asked the dredging crew about it and was told that they were two rattlesnakes (at least 6 to 8 feet long) that had been rounded up for

a competition in Texas. That was the end of surveying on foot for Greg!

After the birth of their daughter Samantha, the Isakson family transferred to Kansas City, KS. Greg’s new job with USACE was as an Office Engineer at the McConnell Air Force Base while it was being rebuilt to house the new B-1 Bombers. The project included unique features such as a hydrant system that provided fuel to an idling B-1 on the launch pad to keep it 100% full; and a fire house, not to protect people in case of a fire, but to house armed guards 24 hours a day to protect the B-1 on the launch pad against intruders. After several months, Greg was able to transfer to the District Office where he provided engineering service support for local military installations, developed the project scope, negotiated fees with selected engineering firms and managed their design projects.

In 1991, Greg and his family moved to Minnesota where he became the Director of Faribault County Public Works Department/ County Engineer. He felt that his time at Faribault county was a great learning experience and appreciates his mentors including Doug Haeder, retired Mn/DOT District 7 State Aid Engineer; Bob Witty, retired Martin County Engineer and

Greg’s next door neighbor; and Gene Isakson, retired Sibley County Engineer and Greg’s father.

Greg remembers that one of the biggest challenges as the Faribault County Engineer was the soils. There is a reason for the City of



Blue Earth’s name, the earth is literally blue. The topography is flat and drainage is extremely important but difficult to achieve. Greg drew on his experience with drainage difficulties in the city of New Orleans to design highways and structures properly.

Greg became the Director of Public Works/County Engineer for Goodhue County in 1998. In this position he manages the Highway Engineering and Highway Maintenance; Parks; and Waste Management departments. The Goodhue County road and bridge construction program covers a 400-mile system, which includes

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Spotlight on Greg Isakson,

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325 miles of hot-mix asphalt pavement, 72 miles of gravel roads, and 439 bridges. He has a staff of more than 40 employees and an annual budget between \$9 and \$10 Million. Greg feels he has a very dedicated staff that is proactive in stepping forward to take on more responsibility as needed during these times of reduced budgets and fewer employees.

Greg is involved with other counties and agencies to share information and technology. He was the President of the Minnesota County Engineers Association in 2004. He received the Outstanding County Highway Engineer of the

year Award in 2005. In 2007 he was elected as the state's representative to the National Association of County Engineers (NACE). In 2011 he was named the Rural County Engineer of the Year by NACE.

In 2007, Greg went to Russia as a part of the Federal Highway Administration program for technology transfer. In this program, Minnesota representatives traveled to the "sister" agency, the Republic of 'Mariy El' Russia, to present information on current topics. Greg presented on bituminous milling/reclamation projects and he gave an explanation of the state and county government

structure for managing roadways in Minnesota.

Greg and Teresa have two children, Samantha who is pursuing a Masters degree in school psychiatry and Travis who is pursuing a degree in Mechanical Engineering with an emphasis in alternative energy. Greg enjoys skiing downhill in the winter, waterskiing in the summer, mountain biking, fishing, hunting birds and spending time with his family.

Best of luck Greg, and keep building 'em black!

Contact MAPA's Contractor Members For All Your Hot-Mix Asphalt Paving Needs!
All Members Are Listed at www.AsphaltIsBest.com

• Aggregate Industries
• Anderson Brothers Construction Co.
• Asphalt Surface Technologies Corp.
• Barton Enterprises, Inc.
• Bemidji Bituminous Inc.
• Bituminous Paving, Inc.
• Bituminous Roadways, Inc.
• Commercial Asphalt Co.
• DMJ Asphalt Inc.
• Duininck Inc.
• FPI Paving Contractors, Inc.

• Hardrives, Inc.
• Hawkinson Construction
• KGM Contractors, Inc.
• Knife River Corporation - Central Minnesota
• Knife River Materials
• Mark Sand & Gravel Co.
• McNamara Contracting, Inc.
• Mesabi Bituminous, Inc.
• Midwest Asphalt Corporation
• Minn-Dak Asphalt, Inc.
• North Metro Asphalt

• North Valley, Inc.
• Northland Paving, LLC
• Northwest Asphalt, Inc
• Pine Bend Paving, Inc.
• Plehal Blacktopping, Inc.
• Rum River Contracting Company
• T.A. Schifsky & Sons, Inc.
• Tri-City Paving, Inc.
• Ulland Brothers, Inc.
• Valley Paving, Inc
• Wm. Mueller & Sons, Inc.
• W W Blacktopping, Inc.

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American Engineering Testing, Inc.
Anderson Industrial Scales, Inc.
Antigo Construction, Inc.
Area Lakes Testing, LLC
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Bearence Management Group
Bomag Americas
Boyer Trucks
Braun Intertec Corporation
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Caterpillar Paving Products Inc.
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Century Fence Co.
Certainteed Corporation
Clarence Richard Company
Cobb Strecker Dunphy & Zimmermann Inc.
Construction Bulletin
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Custom Welding & Metal Fab, Inc.
Dahl Trucking Inc.
Dem-Con Companies
Dillman Equipment; a Div. of Astec Inc.
Dresser Trap Rock Company
East Jordan Iron Works
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Interstate Engineering, Inc.
Intex Corporation
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Minnesota Trucking Association
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MWV Asphalt Innovations
Northern Balance & Scale
Northwest Process Equipment, Inc.
Nuss Truck & Equipment
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PQ Corporation/Advera WMA
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- Cat Auction Services



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900 Long Lake Road, Suite 100
New Brighton, MN 55112
(651) 636-4666 • Fax: (651) 636-4790
info@mnapa.org
www.AsphaltIsBest.com