



Minnesota Asphalt Pavement Association

PAVING PROGRESS

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Rubblization in Southern MN

This summer, Faribault CSAH 16 from TH 253 to the east county line (7.2 miles long) was rubblized and overlaid with hot mix asphalt for a brand new pavement surface. Faribault County had rubblized a different section of CSAH 16 in 2004 and wanted to repeat the successful pavement rehabilitation treatment.

CSAH 16 was turned back to the county when I-90 was completed in the late 1970's. This segment had a 20' wide driving surface and a 10' wide aggregate shoulder on both sides of the pavement.

In 1992 the county milled off the bituminous, added a 2' widening section on each side of the concrete, and placed 4" of bituminous. However, the old concrete pavement panels continued to shift. According to Faribault County,

this was one of the roughest roads in the county.



Antigo Construction, Inc. (Antigo, WI) performed the rubblization with a Multi-Head Breaker, followed by a vibratory, Z-bar roller for compaction.



Ulland Brothers, Inc. (Albert Lea, MN) placed the asphalt pavement.

Rubblization and asphalt pavement overlay is a popular and sustainable road rehabilitation option. All types and thicknesses of concrete pavement can be rubblized.

The process is very cost effective especially when compared to full-depth reconstruction. Construction can proceed quickly while minimizing the impact on traffic.

Excellent long-term pavement performance is being achieved. Because all of the existing pavement structure is reused without

Continued on Page 3.

And The Winner is - Thin Overlays

The U.S. Federal Highway Administration has released results of Long-Term Pavement Performance (LTPP) SPS-3 Analysis: Preventive Maintenance of Flexible Pavements. The LTPP program is a 20-year study of in-service pavements across North America.

Thin overlay (typically 1-inch or less) outperformed slurry seal, crack seal, and chip seal. Each site was categorized according to five design

factors: 1-moisture (wet or dry climate); 2-temperature (freeze or no freeze zone); 3-subgrade type (fine-grained or coarse grained); 4-traffic loading; and 5-existing pavement condition.

The experimental designs and variables resulted in 48 different combinations. In total, 33 states and Canadian Provinces participated. The report is at www.fhwa.dot.gov/publications/research/infrastructure/pavements/ltp/11049/11049.pdf

Dayton Honors Top Environmental Partnerships

Environmental innovators were honored with Governor's Awards for Pollution Prevention on Thursday, August 25, 2011 at the Minnesota State Fair.

The awards were presented by Governor Mark Dayton on behalf of the Minnesota Pollution Control Agency and the U.S. Environmental Protection Agency. They recognize agencies and businesses that took exceptional steps to prevent pollution and practice sustainability,

The Solid Waste Management Coordinating Board, Dem-Con Companies, the Minnesota Asphalt Pavement Association and Commercial Asphalt Co. partnered to develop a system that enabled the Minnesota Department of Transportation to use residential shingles in road asphalt. The system will recycle 30,000 tons of shingles each year and reduce the use of virgin oil in hot-mix asphalt by 32,000 tons.



Pictured in photo (l to r): Rob Kuehborn, Commercial Asphalt Co.; Governor Mark Dayton; Victoria Reinhardt, Ramsey County Commissioner; Jason Haus, Dem-Con Companies; Mark Pahl, Dem-Con Companies; Richard Wolters, Minnesota Asphalt Pavement Association.

Calendar of Events

- **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
- **Flagger Train the Trainer Course**
Thursday, February 9, 2012 • 8AM-Noon •
Mn/DOT Arden Hills Training Center • Shoreview, MN
- **Flagger Train the Trainer Course**
Friday, March 2, 2012 • 8AM-Noon • Mn/DOT
District 3 Office • St. Cloud, 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

MIT Study: Cement Production & Roughness Cause the Most Emissions

A new report from MIT's Concrete Sustainability Hub confirms that "cement production emissions are the largest contributor for every one of the [concrete pavement] structures [studied]."



The report, titled "Methods, Impacts, and Opportunities in the Concrete Pavement Life Cycle," funded entirely by the cement and ready-mixed concrete industry, was released during the MIT International Concrete Sustainability Conference in

early August. The report also concludes that pavement roughness plays the second-largest role in a pavement's overall carbon footprint, accounting for up to 25 percent of the CO₂ emissions from traveling vehicles.

This confirms a recent report from the National Center for Asphalt Technology (NCAT), which found that even modest improvements in the smoothness of pavements could save up to 3.3 billion gallons of fuel per year for the vehicles being driven on America's highways.

Dr. Howard Marks, NAPA's Director of Environmental and Regulatory Affairs, commented, "We now have two research institutions, NCAT and MIT, validating the fact that pavement smoothness plays a huge role in fuel consumption." Dr. Marks attended the MIT conference along with several NAPA members and partners.

MIT also studied the impact of pavement deflection on vehicle fuel economy and concluded that pavement deflection impacts are insignificant.

Rubblization, continued from page 1

having to remove and haul it off-site, the rubblization and asphalt



pavement overlay process is also environmentally friendly.

Rubblization saves time, money, and is a road user-friendly construction technique which is a characteristic of best practices in project assessment and planning. Debris and unused materials do not need to be removed to another site. The rubblized roadbed is left in-place



and has value as part of the new road structure. Many agencies have had great success in implementing rubblization technology.

The intent of rubblizing concrete pavement prior to a HMA overlay is to produce a structurally sound base layer which significantly reduces reflective cracking by obliterating the existing pavement distresses and joints. A rubblized and compacted concrete pavement is an assemblage of concrete segments that form a

tightly keyed, interlocked, high-density, good aggregate base material layer. A rubblized concrete layer is fractured and can no longer sustain flexural stress, however it



possesses high shear strength and rutting resistance.

Visit our web site for more information on rubblization at http://www.asphaltisbest.com/resources_engineering.asp

Federal Transportation Funding Update

by Jim Wafler, James Wafler Consulting Services

The federal transportation funding outlook at this time looks like the rest of the federal budget outlook: uncertain.

In September, there was a looming September 30 deadline beyond which the continuing resolution for Congressional authorization of surface transportation funding would expire, and the federal tax (18 cents per gallon) authorization was to expire at that time too. Fortunately, HR 2887 was passed by the House and Senate and signed into law on September 16, which continued the current authorization levels until the end of March, 2012. That same law also extended the gas tax authorization through March. Failure to do that would have resulted in a catastrophic decline in funding for surface transportation and highways in particular, since the gas tax revenues would have not gone into the Highway Trust Fund.

The federal six-year surface transportation authorization, known as SAFETEA-LU, has now been extended eight times since it originally expired two years ago. The House Transportation Chair, Rep. John Mica, initially proposed a “pay-as-you-go” system which would only allow expenditures from the Trust Fund by revenues collected from the federal gas tax. That proposal would have resulted in a 35% cut for surface transportation from current

levels, or in Minnesota’s case, an annual loss of over \$200 million. However, Rep. Mica was given the go-ahead to bypass the House Budget Resolution and work to sustain current surface transportation fund-



ing levels in a new six-year authorization bill. The major problem right now is where the additional funds would come from to pay for this. Speaker Boehner has proposed tying a portion of funding to “energy exploration fees” (like oil, natural gas, etc.), but this is all up in the air at this time. The Senate has proposed a two-year authorization, and that bill will be marked up in Sen. Barbara Boxer’s committee on November 9. Chair Mica has said he will not support any further extensions of the SAFETEA-LU authorization because each additional extension adds to the deficit between revenues and expenditures. Prospects for another long-term authorization bill making it through Congress before the 2012 general election are slim.

Authorizations don’t mean money is available to spend. That comes through the appropriations process, and both the House and Senate are determining their FY 2012 discretionary budgets for the federal DOT this fall. The Senate is expected to preserve existing appropriations levels, and the House position is yet to be determined.

Finally, the roads and bridges portion of the President’s American Jobs Act may come up for consideration in the Senate soon. This proposal would inject \$40 billion into roads and bridges throughout the country, but prospects for eventual passage in either the House or Senate are practically zero.

In addition, the twelve-member “Super-Committee” established to deal with the federal budget has a November 23 deadline to make recommendations to both the House and Senate for an up-or-down vote. Since virtually all facets of the federal budget (including Defense) are included, some folks feel that the alternative if Congress doesn’t get its job done—sequestration. 3% across-the-board cut—might be better (with Defense included) than other alternatives. Stay tuned!

The prospects for any federal gas tax increase (last increase was in 1993): none.

NCAT Turns 25!

The National Center for Asphalt Technology celebrated its 25th anniversary of service to the industry last week. During a special ceremony, 18 individuals were inducted into the new NCAT Wall of Honor in recognition of their dedication to fulfilling NCAT’s mission. About 100 members of the NCAT family attended the anniversary events. For more information visit www.ncat.us.

The Science and Science Fiction of LCA

by Dr. Howard Marks, NAPA Director of Environmental and Regulatory Affairs

There is a new conversation taking shape in the pavement industry over something called Life-cycle assessment (LCA). Life-cycle assessment focuses on the environmental sustainability of different pavements and materials. It is different from life-cycle cost analysis (LCCA) which is an economic tool for comparing the costs of different construction designs over the life of a pavement.

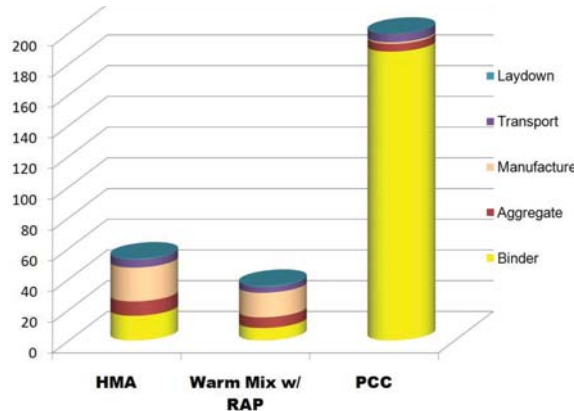
Life-cycle assessment seeks to measure the environmental impacts of all stages of a product or material's life cycle, from cradle to grave to cradle again.

Today's LCA debate is being fueled by two factors. First, environmental stewardship is being emphasized at all levels of government today, and agencies are developing metrics for evaluating different pavement and pavement management choices.

Second, there are no official metrics in place, and some groups and industries are lobbying for standards that promote their cause.

Science has proven the validity of reduce/reuse/recycle as measurements of sustainability, but various interests are trying to broaden the scope of life-cycle assessment to include other factors, some of which can affect direct emissions of greenhouse gases, some not.

The Portland cement concrete industry is one of the groups trying to change the accepted measures of LCA to achieve comparability with asphalt. Concrete suffers in LCA comparisons to asphalt



Charting the relative levels of greenhouse gases involved in the cradle-to-grave-to-cradle life cycles of pavement types illustrates the dramatic environmental advantages of asphalt compared to Portland cement concrete-and the significant environmental advantages of warm mix asphalt.

because it has less reduce/reuse/recycle potential, and because the production of Portland cement creates a large amount of carbon dioxide emissions.

America's concern with the environmental sustainability of pavements is no passing fancy. Green is here to stay. Fortunately, the asphalt pavement industry has been working for decades on making its pavements greener. Asphalt is America's most reused and recycled product. Asphalt can be, and is, engineered to reduce consumption of raw materials; to reuse materials in a way that maintains their character and integrity (i.e. reactivating the asphalt cement in RAP); and recycle. Warm mix reduces the demand for energy in the production and construction of pavements. In the quest for greener pavements, let's stick with scientific facts.

Article reprinted with permission from the Asphalt Pavement Magazine by the National Asphalt Pavement Association. The entire article is in the Nov./Dec. 2011 Asphalt Pavement Magazine at <http://www.naylornetwork.com/nap-nxt/>

NAPA News



- The web site for the National Asphalt Pavement Association (NAPA) changed to www.AsphaltPavement.org effective October 1. You will also see an entirely new look on the web site at that time. NAPA's flagship magazine, HMAT (Hot-Mix Asphalt Technology), will become Asphalt Pavement Magazine beginning with the Nov.-Dec. 2011 issue.

- The 2012 State Director



- election results are in. Congratulations to Gaylen Ghylin, Commercial Asphalt Co., who was re-elected as the Minnesota state director by members of our state for another three-year term commencing January 23, 2012.

- The 2nd International Conference on Warm Mix Asphalt (WMA) was held recently in St. Louis and drew over 550 attendees. The big talk was continued WMA implementation in the US. NAPA has reported that WMA tonnage in the US has increased from 16.7 million (M) tons in 2009, to 47.2 M tons in 2010. It is estimated that there will be close to 100 million tons of warm mix asphalt in the US in 2011.

Spotlight on Mark Krebsbach, P.E., Dakota County Engineer

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

Mark's diverse background in Civil Engineering and affinity toward local transportation issues has helped to guide him to his current position as the Dakota County Engineer.

Mark was born in North Minneapolis and lived there through Junior High School until his family moved to the suburbs. While growing up in the north metro area, Mark found an appreciation for construction activities and transportation projects. Combining this with his enjoyment of math and science, Mark decided to pursue a career in architecture.

After graduating from Robbinsdale High School, Mark went to the University of Minnesota to become an architect. However, he was drawn to more of the engineering classes, so he changed his major to Civil Engineering with an emphasis in structures. Then in an effort to learn more about the trade, Mark interned at the Minnesota Department of Transportation (Mn/DOT) in the Oakdale Traffic Office.

Mark graduated from college in 1985 and began working in the traffic office of Short Elliott Hendrickson Inc. (SEH). Over the next three years, he worked on traffic signal projects, bridge ratings, design, and construction inspection of residential subdivisions.

In 1988, Mark went back to work for Mn/DOT in the Graduate Engineer Rotation program to gain experience in several other transportation related

projects. He started his rotation in the Hydraulics Office then went to the Golden Valley Design and Pre-Design Offices.

After the Graduate Engineer Rotation program, Mark became the Final Design Squad Leader in the Oakdale office. His projects included widening TH 13 in Burnsville from 2-lanes to 4-lanes and the scenic overlook in Taylors Falls. This project received a FHWA Award of Merit in 1996 for the unique efforts to incorporate the scenic surroundings into the design of the project.

In 1992, Mark became the Federal Aid Project Development Liaison in Mn/DOT's State Aid Office. He worked closely with local agencies during the environmental process for rural county projects that had federal aid. This was an introduction for him to the network of County Engineers that he would join in less than 10 years.

Mark went back to Mn/DOT's Metro District at Waters Edge in 1995 as a Pre-Design Engineer. His projects included the Wakota Bridge, planning for I-35E unweave and Cayuga bridge projects, and Highway 8 improvements in Chisago City.

In 1998, Mark became the Pre-Letting Engineer in the Office of Technical Support.

This position allowed for streamlining project delivery and improving plans for letting. Mark helped to develop Mn/DOT's cost participation policies and letting

schedule to balance the lettings so that they were not overloaded with too many similar projects.

During this time, Mark took a mobility assignment to Rochester as the "Acting" District 6 Engineer. This gave him experience in the operations side of Mn/DOT, however he was



still intrigued with the close network of the Minnesota county engineers. When the Dakota County Engineer position opened up, Mark's vast experience helped him to become the new Dakota County Engineer in 2002.

Mark has enjoyed all of his previous jobs and values how his past experiences have prepared him for this job, "the best job" yet. As the Dakota County Engineer, Mark faces a spectrum of engineering and managerial tasks in a given day. There are 440 centerline miles of highways (the vast majority of which are asphalt pavements) that can vary in traffic between 100 and 50,000

Spotlight on Mark Krebsbach,

Continued from Page 6

average daily traffic (ADT). The integration of transit as a major part of their transportation system has also been a significant undertaking.

Mark and his staff have received many accolades including: 2009 Project of the Year Award from the Minnesota County Engineer Association (MCEA) for the reconstruction of County Road 42 (CR 42) between the cities of Burnsville and Savage, which was a joint project with Scott County; and 2007 MCEA Highway Work Zone Safety Award.

Another achievement for Mark has been his emphasis on Pavement Management. Shortly after 2004, the County had just seen a 30% increase in population over the last decade and the Pavement Quality Index (PQI) was at 65% (good). With Mark's work and the County Board Members' support, the PQI is now at 85% (better).

Mark credits his staff and County Board for their hard work and support. He feels that his staff of 90 people is very talented at their craft, they are dedicated to working long hours to get the work done, and

flexible in taking on new tasks. They manage to have fun, too, with annual golf and food outings and more recently, a beer brewing competition with other counties.

Mark and his wife, Jane, have two children: Aimee (14), and Sara (12). In his spare time, Mark likes to coach his daughters in their sports, golf, boat, fish, and camp. He has also participated on a team of up to 20 people in the MS150 Bike Ride a dozen times.

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



MAPA Updates



This is a new addition to MAPA newsletters to give a brief update of MAPA activities.

- MAPA will be working with Mn/DOT this fall on the 2012 Special Provisions for Specification 2360 and pending review of a proposed 2012 new spec book for construction.
- Draft specifications are available for Porous Pavement/Storm Water Management, Rubblization, Driveways, Parking Lots, Thin Overlay, and Tight Blade on MAPA's web site under "Resources".
- MAPA is working with Mn/DOT to help develop a procedure for Alternate Design Bid and update the Pavement Type Selection policy.
- MAPA has been working with an Industry Coalition and the MPCA to re-write the MNG49 Industry Storm Water Permit. It is expected to be completed this Fall.
- MAPA has been invited to speak on Porous Pavements/Storm Water Management at the next World of Asphalt Conference, March 13-15, 2012.
- MAPA has updated its web site to include publications on Warm Mix Asphalt in MN and Mn/DOT's Record of 9 National Perpetual Pavement Awards. As always, MAPA Newsletters are available on the web site.
- MAPA has been planning the 2011 Annual Meeting to be held Dec. 7-9 at the DoubleTree by Hilton Hotel in St. Louis Park, MN (NEW LOCATION).
- MAPA has been involved in updating the LCCAExpress software to version 2.0 (available at AsphaltRoads.org).
- Governor's Award from the MPCA (see page 2).
- MAPA has met with key Minnesota Congressional Representatives to discuss stable funding for transportation and how our transportation system contributes to the overall economic success of our nation and state.
- MAPA participated in the Town Hall Meeting with Congresswoman Betty McCollum at 3M to stress support for infrastructure, safety improvements, jobs, economy of Minnesota and quality of life.
- MAPA continues to meet and educate Legislators regarding the benefits of asphalt pavements and the industry to taxpayers and jobs.
- Mn/DOT hosted the Transportation Estimating Association (TEA) Workshop in Minneapolis. MAPA participated in the Contractor/ Industry panel for approximately 40 estimators from State DOT's.
- MAPA is a guest speaker for construction management students at local colleges.
- MAPA continues to provide Lunch & Learn seminars.

MAPA Contractor Members

• 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.
• Duinink 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.

MAPA Associate Members

Accurate Test Systems, Inc.
 American Agency, Inc.
 American Engineering Testing, Inc.
 Anderson Industrial Scales, Inc.
 Antigo Construction, Inc.
 Area Lakes Testing, LLC
 Arr-Maz Custom Chemicals
 Bearence Management Group
 Bomag Americas
 Boyer Trucks
 Braun Intertec Corporation
 Brock White Company LLC
 Cat Auction Services
 Caterpillar Paving Products Inc.
 Cedarleaf, Cedarleaf & Cedarleaf, Inc.
 Century Fence Co.
 Certainteed Corporation
 Clarence Richard Company
 Cobb Strecker Dunphy & Zimmermann Inc.
 Construction Bulletin
 Crysteel Truck Equipment, Inc.
 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
 Eide Bailly LLP
 Erickson Engineering Co.
 Esch Construction Supply, Inc.
 Ess Brothers & Sons, Inc.
 Fabyanske, Westra, Hart & Thomson, P.A.
 Foth Infrastructure & Environment, LLC
 Gencor Industries, Inc.
 General Equipment & Supplies, Inc.

Grant Thornton LLP
 Hayden-Murphy Equipment Co., Inc.
 HHTC, Inc. DBA Pirtek Midway
 Highway Technologies
 Humboldt Manufacturing Co.
 Independent Testing Technologies, Inc.
 Inspec, Inc.
 Interstate Engineering, Inc.
 Intex Corporation
 J.D. Donovan, Inc.
 Johnson Crushing, Inc.
 Kraemer Mining & Materials, Inc.
 L.G. Everist, Inc.
 Leonard, Street & Deinard, P.A.
 Lubrication Technologies, Inc.
 Martin Marietta Aggregates
 Max Steinger, Inc.
 Maxam Equipment, Inc.
 Midstates Equipment & Supply
 Minnesota Laborers - Employers
 Cooperation and Education
 Trust (MN LECET)
 Minnesota Petroleum Marketers
 Association
 Minnesota Trucking Association
 Murphy Oil USA, Inc.
 MWV Asphalt Innovations
 Northern Balance & Scale
 Northwest Process Equipment, Inc.
 Nuss Truck & Equipment
 Olson and Welle, P.C.
 PQ Corporation/Advera WMA
 Prinsco, Inc.
 R and G Construction Co.
 RB Scott Company, Inc.

RDO Equipment Co.
 Ritchie Bros. Auctioneers (America) Inc.
 RJ Ahmann Company
 Road Machinery & Supplies Co.
 Roadtec, Inc.
 Rock On Trucks Inc.
 Rotochopper, Inc.
 Ruffridge-Johnson Equipment Co., Inc.
 Safety Signs
 Scharber & Sons
 Severson, Sheldon, Dougherty &
 Molenda, P.A.
 SPC Engineering & Testing, Inc.
 St. Paul Park Refining Company, LLC;
 a Div. of Northern Tier Energy
 Stonebrooke Engineering, Inc.
 Swanston Equipment Companies
 TexPar Energy, LLC
 Truck Utilities, Inc.
 Unique Paving Materials Corp.
 Vance Brothers
 Volvo Construction Equipment
 Wenck Associates, Inc.
 Wheeler Lumber LLC
 Widseth Smith Nolting
 Ziegler CAT

Welcome to Our Newest Associate Members:

- Advanced Drainage Systems, Inc.
- Twin City Wire, A Unified Screening & Crushing Company