



Minnesota Asphalt Pavement Association

PAVING

PROGRESS

February 2012

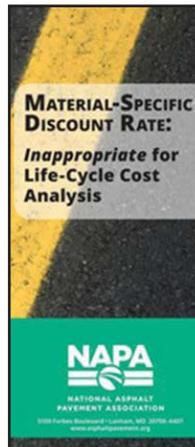
900 Long Lake Road, Suite 100 • New Brighton, MN 55112 • (651) 636-4666 • www.AsphaltIsBest.com

In This Issue:

- Page 1 • Material Specific Discount Rate: Inappropriate for LCCA; IARC Update
- Page 2 • NCAT Pavement Test Track Updates; Study: \$2 Trillion Needed for U.S. Infrastructure; Calendar of Events
- Page 3 • Discount Rate, Cont.; IARC, Cont.
- Page 4 • QIC Awards in MN; March 6th Asphalt Workshop
- Page 5 • MSES Scholarship Report; In the News
- Page 6 • Spotlight on James Grube, P.E., Dir., Transportation Dept. & Hennepin County Engineer
- Page 7 • Spotlight, cont.; MAPA Updates
- Page 8 • MAPA Contractor Members; MAPA Associate Members

Material Specific Discount Rate: Inappropriate For LCCA

Economists use life-cycle cost analysis (LCCA) to help calculate the total lifetime costs of a project, including initial construction, rehabilitation, maintenance, and salvage value. Several accepted LCCA models exist, helping state transportation engineers and project planners to best compare the costs of project design alternatives.



model differing inflationary pressures for different materials. While the concept sounds interesting, the actual economic model is fundamentally flawed.

In “The Effects of Inflation and Its Volatility on the Choice of Construction Alternatives,” the Concrete Sustainability Hub at the Massachusetts Institute of Technology tries to use recent price changes of concrete, asphalt, steel, and lumber to calculate future prices of these commodities over a 50-year period.

Recently, a single report has raised the idea of using material-specific discount rates within life-cycle cost analyses to

Applying a material-specific discount rate is not accepted as valid by the

Continued on Page 3.

IARC Issues Health Classification For Occupational Exposures During Road Paving

The International Agency for Research on Cancer (IARC), based in Lyon, France, issued a statement assigning occupational exposures to straight-run asphalt cement and its emissions during road paving a Group 2B (“possibly carcinogenic to humans”) classification. This Group 2B classification puts road paving in the same category as numerous exposures, including cell phones and coffee.

Dr. Jim Melius, DrPH, MD, the top occupational physician at the Laborers International Union of North America (LIUNA), commented, “People working in the asphalt paving industry should not be concerned about this new IARC classification. The two key animal studies on paving asphalt did not show any evidence of cancer risk,

Continued on Page 3.

NCAT Pavement Test Track Updates

The National Center for Asphalt Technology (NCAT) at Auburn University in Alabama has been operating for 10 years. It is a cooperative accelerated outdoor pavement testing facility with individual test sections sponsored by highway agencies and commercial interest groups. The pavement test track is oval in shape and 1.7 miles in length with 46 different test sections.



Some recent key findings are as follows:

- Field performance through four years does not indicate that using a softer virgin binder grade improves performance for high recycled asphalt pavement (RAP) content mixes.
- Warm mix asphalt (WMA) has proven to be very resistant to rutting.
- The higher binder content of stone matrix asphalt (SMA) exhibited only a slight change in the macrotexture with no cracking.
- Fine-graded SuperPave mixes performed as well as coarse-graded and intermediate-graded mixes under heavy traffic and tended to be easier to compact, less prone to segregations, and less permeable.
- Well designed 4.75 mm NMAS mixtures are a tough and durable option for pavement preservation.
- The Missouri Department of Transportation (DOT) has been able to revise its SMA specification to reap the benefits of lower cost SMA mixes containing local crushed gravel.
- The Alabama DOT implemented new asphalt layer coefficients in its pavement design practice and estimates that the changes will save about \$25 million per year.

For more information, visit NCAT's web site at www.ncat.us.

Study: \$2 Trillion Needed for U.S. Infrastructure

The United States is falling dramatically behind much of the world in failing to rebuild and expand an overloaded and deteriorated transportation network in order to remain competitive in the global marketplace, according to a study by the Urban Land Institute.

The U.S., the institute report concludes, needs to invest \$2 trillion to rebuild roads, bridges, water lines, sewage systems, and dams that are reaching the end of their planned life cycles.

The report says that the desire of Congress to curtail spending will push costs onto "budget-busted" state and local governments. It points to highways built with federal funds 40 to 50 years ago, that will become financial burdens to local governments as the time comes for replacement.

The Urban Land Institute's web site is www.uli.org.

Calendar of Events

- | | |
|--|--|
| • Flagger Train the Trainer Course
Mar. 2, '12 • 8AM-Noon • Mn/DOT D3 Office •
St. Cloud, MN | • AAPT 87th Annual Meeting
Apr. 1-4, '12 • Omni Austin Hotel Downtown •
Austin, TX |
| • 56th Annual Asphalt Contractors' Workshop/
Quality Initiative Workshop
Mar. 6, '12 • Earle Brown Heritage Center •
Brooklyn Center, MN | • MAAPT 59th Annual Asphalt Conference
Dec. 5, '12 • Location TBD |
| • World of Asphalt Show & Conference
Mar. 13-15, '12 • Charlotte Convention Center •
Charlotte, NC | • Annual Asphalt Paving Awards Banquet
Dec. 5, '12 • Location TBD |
| | • MAPA 59th Annual Membership Meeting
Dec. 6-7, '12 • Location TBD |

Material Specific Discount Rate: Inappropriate for LCCA, continued from page 1

economics profession. It is not recommended or even mentioned in relevant federal, state, academic, or private-sector literature. Furthermore, using historical price inflation data to predict future prices is an unsupported methodology. Standard economic practices caution against trying to forecast future price trends for inflation or highly volatile commodities, such as oil, over periods of time longer than six months.

Beyond these economic flaws, the Concrete Sustainability Hub's report ignores innovations in asphalt engineering already being used to reduce project costs, such as the use of warm-mix asphalt, reclaimed asphalt pavement, and shingles.

Ultimately, state transportation officials can best conduct LCCAs by using established, accepted methods.

A full examination of the issue is available in the White Paper "An Economic Analysis of the Proposed Material-Specific Discount Rate for Commodity Pricing in Highway Construction Life-Cycle Cost Analyses" (NAPA Special Report 203).

A copy of the white paper and supporting materials are available at www.asphaltpavement.org/SR203.

IARC Issues Health Classification For Occupational Exposures During Road Paving, continued from page 1

and the major IARC cancer study of people working in the paving industry in Europe did not show any increased risk for cancer."

IARC, which brings together international panels of scientists, is based in Lyon, France. Its assessments go to national health agencies for possible guidance. IARC has reviewed more than 900 chemicals and other agents since its founding in 1971. IARC categorizes chemicals, agents, mixtures and exposures into five groups:

- Group 1: carcinogenic to humans (includes alcoholic beverages, solar radiation, and wood dust).

- Group 2A: probably carcinogenic to humans (includes high-temperature frying, household wood fires, and hairdressing/barber occupational exposures).
- Group 2B: possibly carcinogenic to humans (includes coffee and cell phones).
- Group 3: not classifiable as to carcinogenicity in humans (includes tea).
- Group 4: probably not carcinogenic to humans. (Only one substance, caprolactam, has been placed by IARC in Group 4.)

The asphalt paving industry has played a proactive role in protecting the health and safety of its workers. These include exposure reductions, process advancements, and partnerships with government agencies and labor unions. The asphalt paving



industry has been recognized for its worker health initiatives.

Quality in Construction Awards in MN

The National Asphalt Pavement Association (NAPA) announced today the winners of its 2011 Quality in Construction (QIC) Award for excellence in construction of an asphalt pavement. The companies received their awards at a special awards ceremony during the Association's 57th Annual Meeting in Palm Desert, California.

The Quality in Construction Awards recognize asphalt pavements of excellence. "NAPA selects the recipients of its paving awards using a known set of standards that have been shown to give a good result," commented Kim Snyder, 2011 Chairman of the NAPA Board of Directors. "This award demonstrates the high quality of work that the asphalt industry is achieving."

Knife River Materials of Bemidji, MN.

- Work on CSAH 21 in Richwood. The

project included overlay, aggregate shoulders, and pavement striping. Despite heavy traffic on the road, the company and its subcontractors partnered to complete the project on time and with an excellent ride quality.

- Milling, overlay, shoulders, striping, and rumble strips for TH 72 in Lake of the Woods County. The company and its subcontractors worked together to complete the 12.1-mile project within 10 working days. Knife River Materials used environmentally friendly warm-mix asphalt to produce a smooth, quality pavement.
- Work on several streets in Thief River Falls. The project included milling, overlay and striping. Despite the problems that included the state government shutdown and multiple manholes, the company produced an



aesthetically pleasing project with excellent smoothness.

- Work on CSAH 10, from the intersection of CSAH 10 and CR 71 to the east line of Clay County. Despite wet weather and a tight schedule, the company was able to complete construction on this heavily used truck route within the required time frame.
- Widening and overlay of five miles of CSAH 5 and 16 south of Baudette. The company used environmentally friendly warm-mix asphalt to produce a smooth, quality asphalt pavement.
- Milling and overlay of TH 9 in Clay County from the North Clay County line to TH 10. The road was in rough shape at the start of construction, but with milling and two lifts of asphalt mix, Knife River Materials achieved a smooth-riding, high-quality road.

Congratulations Knife River Materials!

March 6th Asphalt Workshop

The Minnesota Asphalt Pavement Association (MAPA) and the 2012 Workshop Planning Committee invite you to attend the 56th Annual Asphalt Quality Initiative Workshop on Tuesday, March 6th, at the Earle Brown Heritage Center, located at 6155 Earle Brown Drive in Brooklyn Center, MN.

This workshop is a technology exchange for new developments and strategies for asphalt pavements. This year the topics

are focused on highway funding, results of national studies on recycled asphalt pavement and on longitudinal joints, material sampling and testing, MnDOT's asphalt pavement specifications, milling for a smooth overlay, alternate design bids in MN, reflective cracking mitigation, China's perpetual pavements, automation controls at the asphalt plant, processing fines for asphalt pavements, and more.

Numerous vender/exhibitor booths

will be open during the day. The Workshop and the booths are a great opportunity for networking, viewing new products, obtaining information, and gaining some insights in to the 2012 construction season.

Personal Development Hours (PDH's) will be available for attendees at this workshop.

Contact MAPA at info@mnapa.org to register.

MSES Scholarship Report

The 55th Annual MN Surveyors and Engineers Society (MSES) Scholarship Report is available on-line at www.mses.org. For the 2011-2012 school year, MSES awarded \$33,000 to 22 undergraduate students and one graduate student received a \$22,000 Scholarship from the Pavement Fellowship Program through the University of Minnesota.



A new effort invites your participation: MSES has started a mentorship program for our scholarship recipients. If you are interested in becoming a mentor, please contact Matt Jensen: Matt.Jensen@kimley-horn.com.

Also, if you are interested in participating in the Scholarship Committee or if you know of a student who is attending one of the core or at-large schools and going into engineering or surveying, please contact Julie Skallman, Scholarship Committee Chair: julie.skallman@state.mn.us.

You can visit their website at www.mses.org to view the scholarship report, donate to the MSES scholarship fund or find out more information about MSES.

In The News

Illinois Tollway Goes all WMA

The Illinois Tollway is moving “full speed ahead” with WMA as a specified preference, not as a contractor option, over the traditional hot mix asphalt. The Tollway plans to convert all massive production of 2012 overlays to WMA. The full story is available at meadwestvaco.com.

SMA Without Fibers

In Kansas City, Chester Bross made stone matrix asphalt (SMA) with warm mix technology and without fibers last September. Paving was 10 miles away in the shadow of the Harrod’s Casino in northern Kansas City. Full details are available on BehindtheScreed.com.



FHWA: Implementation of WMA is a Top Priority



Warm mix is one of the Federal Highway Administration’s (FHWA’s) “Every Day Counts” initiatives. A chief goal of Every Day Counts is rapid field deployment of proven technologies.

FHWA Publishes RAP - RAS - WMA Survey

NAPA announced the publication of a new survey of asphalt pavement usage which it completed under contract to the Federal Highway Administration. The survey covers the use of reclaimed asphalt pavement (RAP), reclaimed asphalt shingles (RAS), and warm-mix asphalt (WMA) in 2009 and 2010. An appendix also includes state-by-state usage data of RAP, RAS, WMA, and hot-mix asphalt. The survey shows that the asphalt pavement industry continues to improve its already outstanding record of environmental stewardship through its increasing use of RAP, RAS, and WMA. These technologies conserve raw materials; conserve energy; cut emissions from production and paving operations; and improve conditions for workers.



- **RAP:** The asphalt industry remains the country’s number one recycler. The amount of RAP used in HMA/WMA was 56.0 million tons in 2009 and 62.1 million tons in 2010. Assuming 5 percent liquid asphalt in RAP, this represents over 3 million tons (19 million barrels) of asphalt binder conserved. About 96 percent of the contractors/ branches reported using RAP. Less than 1 percent of RAP was sent to landfills.
- **RAS:** Use of reclaimed asphalt shingles (both manufacturer’s waste and tear-offs) increased from 702,000 tons to 1.10 million tons from 2009 to 2010, a 57 percent increase. Assuming conservative asphalt content of 20 percent for the shingles, this represents 234,000 tons (1.5 million barrels) of asphalt binder conserved.
- **WMA:** Total tonnage of WMA is estimated at 19.2 million tons in 2009 and 47.6 million tons in 2010. This was a 148 percent increase. Plant foaming is used most often in producing WMA. Additives accounted for about 17 percent of the total WMA production in 2009 and 8 percent in 2010.

The full report is available at AsphaltPavement.org.

Spotlight on James Grube, P.E., Director, Transportation Department and County Engineer for Hennepin County



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

Jim has a passion for public service that stemmed from his Father's 42 years of experience in the public sector.

Jim was born and raised in the southern Minnesota city of Fairmont. He enjoyed technical classes in high school like Math and Science and decided to work at a local engineering consultant company in his spare time. It was an excellent introduction to Civil Engineering and that is exactly what Jim pursued - a degree in at Iowa State University in Ames, Iowa.

After college, Jim wanted to get a Master of Science degree in Soils Engineering so he took a local job in Ames, Iowa at Ames Engineering and Testing. However, after doing soil borings in the winter and getting a severe case of frostbite on his hands, he decided to move back to Fairmont.

In 1977, Jim became the Assistant City Engineer for the City of Fairmont, MN. Jim's interest in city engineering as a profession had been sparked by a 1971 conversation with the City Engineer at that time. A mere six years later, Jim noticed how times had apparently changed from a point where staff was considered the first and only word in city business to a point where public input was essential to the making of key decisions.

Jim's favorite project was to convert the East-West Cross-Wind Runway from grass to asphalt pavement, which included a federal grant. This was Jim's first asphalt pavement project. He remembers flying in a single

engine airplane to view the project and recalls it as a once in a lifetime opportunity that was very enjoyable.

In 1980, Jim moved to the Twin Cities and took the position of Project Engineer for the City of Brooklyn Center. Over the next five years, he was promoted to Assistant City Engineer, then the City Engineer position.

An exciting project in Brooklyn Center was the paving of the Shingle Creek Trail System. Today there are miles and miles of trails in the metro area, but putting trails so close to a meandering creek was new in the early 80's. To determine the alignment, the staff walked through the wetland areas and staked the trail along Shingle Creek's winding shore. Then the grass was matted down and a fabric was placed over the wetland areas. Sand and gravel layers were added and the trail was paved with asphalt. This approach worked successfully and helped to reduce environmental impacts to the wetlands.

Jim recalls the asphalt paving industry being environmentally friendly before it was cool. In the 1980's, recycling asphalt pavement (RAP) into new asphalt pavement was a very new concept in MN and throughout

the nation. Now MN has had more than 35 years of experience with the technology and it is considered abnormal not to allow RAP. Also, the forward thinking concepts of

recycled asphalt shingles (RAS) and warm-mix show that the public does not have to mandate the industry to become sustainable, the industry is already on board.

Jim was the Public Works Director for the City of St. Louis Park from 1985 to 1994. While he was there, he recalled a project on Wooddale

Avenue that had a fairly steep grade. There were some pavement issues at the bottom of the grade where there was a traffic signal. He successfully engineered the pavement at the intersection to withstand slow and heavy traffic using the 2361 Specification for asphalt pavement that had angular aggregate with good friction properties and created a very stable pavement surface.

Jim has been with Hennepin County since 1994. He was appointed County Engineer in May, 2004. He is responsible for the design, construction, and maintenance of the county's highway system consisting of 2100 lane miles of roads, 2000 miles of which are asphalt pavement, 165 bridges, and 690 traffic signals.



Spotlight on James Grube,

Continued from Page 6

During Jim's time at Hennepin County, the last segment of County Road 18 (currently TH 169) between the MN River and I-494 was designed and built by the county for MnDOT to take into their highway network. Completing the CR 18/TH 169 corridor certainly has helped the public and goods to be transported easier, which Jim says is simply our job as agencies in charge of transportation.

Jim feels that the successes in his position reflect the strength of his staff's teamwork. He is very proud of all of his staff including Harlan

Hanson, Construction Division Manager; Craig Twinem, Design Division Manager; Chris Sagsveen, Road and Bridge Operation Division Manager; Greg Chock, Traffic Division Manager; and Tom Johnson, Transportation Planning Division Manager.

Among many of Jim's accomplishments, he is the former President of the City Engineers Association of Minnesota, the Past President of the Minnesota Chapter of the American Public Works Association, and a member of the CTS Infrastructure Council. He

recently received an award from the MN County Engineers Association for "Outstanding Service to the MCEA" for his efforts as the Co-Chair for the National Association of County Engineers Conference in Minneapolis in 2011.

Jim and his wife, Sheryl, have two adult children, Laura and Adam. In Jim's spare time, he enjoys all types of music, being outdoors, and spectator sports - especially the MN Twins.

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



MAPA Updates



This section gives a brief update of MAPA activities.

- MAPA held another successful Annual Meeting Dec. 7-9, 2011 at the DoubleTree by Hilton Hotel in St. Louis Park, MN. Mark your calendars for the next MAPA Annual Meeting to be held Dec. 5-7, 2012
- MAPA has been working with Mn/DOT on the 2012 Special Provisions for Bituminous Specification 2360 and related specifications as well as the pending 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 was a part of the Industry Coalition with MPCA that re-wrote the MNG49 Industry Storm Water Permit that was completed last Fall.
- MAPA will be a speaker at the World of Asphalt Conference, March 13-15, 2012 regarding storm water management with asphalt pavements.
- 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 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 continues to meet and educate Legislators regarding the benefits of asphalt pavements and the industry to taxpayers and jobs.
- MAPA continues to provide Lunch & Learn seminars.
- MAPA is working with the MPCA's Minimal Impact Design Standards (MIDS) agency-industry group to help develop porous asphalt pavement specifications and update the Stormwater Management Manual.
- MAPA is working with Mn/DOT to provide Flagger-Train-The-Trainer classes for agency and industry.
- MAPA is providing training opportunities for its members during the winter season, prior to construction.

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.
- 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.

MAPA Associate Members

- Accurate Test Systems, Inc.
- Advanced Drainage 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 Steininger, 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.
- Twin City Wire, A Unified Screening & Crushing Company
- Unique Paving Materials Corp.
- Vance Brothers
- Volvo Construction Equipment
- Wenck Associates, Inc.
- Wheeler Lumber LLC
- Widseth Smith Nolting
- Ziegler CAT