



Minnesota Asphalt Pavement Association
www.AsphaltIsBest.com

PAVING PROGRESS

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Perpetual Pavement Award Winners Announced

The Minnesota Department of Transportation (Mn/DOT) has the record of nine National Perpetual Pavement Awards over the past nine years. The latest award winner was recently announced and is TH 61 in District 1 near Silver Bay.

The criteria for this prestigious national award are pavement sections that are 35 years or older, have not had major structural failure, have on average at least 13 years between overlays, and should demonstrate excellence in design, quality in construction and value to the traveling public (see www.AsphaltRoads.org). Figure 1 shows the number of Perpetual Pavement Awards per state or province.

The award winning project (TH 61 from milepost 57 to 62) is an example of design and endorsement of long-life, perpetual hot-mix asphalt (HMA) pavement in Minnesota. The initial construction of TH 61 began in 1969 and was paved by Ulland Brothers, Inc. out of Cloquet, Minnesota. Four feet of unsuitable material was excavated to correct for adverse subsoil conditions and for uniformity of compacted material. A selected backfill material was used to create a drainable, strong construction platform to pave upon and as a long-lasting foundation. This is critical for perpetual pavement design and also to create a durable pavement structure to withstand the freeze-thaw

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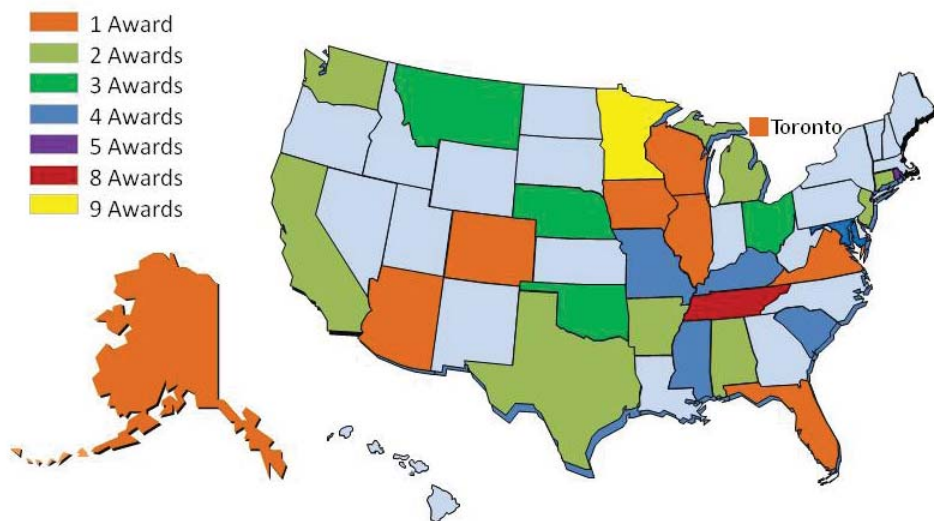


Figure 1. Distribution of Perpetual Pavement Awards.

Pave Green

Building Better Communities Through Sustainable Practices

The Pave Green web site (www.PaveGreen.com) has been created to share information on how asphalt pavement is building better communities through sustainable practices. The following topics and more are discussed.



The Circle of Asphalt-Recyclability

Every year, about 100 million tons of pavement material is reclaimed, and about 95 percent of the total is returned to use in roads and highways. This makes asphalt pavement America's most recycled material.

Porous Asphalt Is King of the Road

You don't get to be the King of the Road just because you look great - you have to have soul, too. See how porous asphalt is changing road infrastructure in sustainable cities.

Green Paving Practices

Asphalt pavements are "LEED"ing the way to sustainable road construction.

Asphalt Topics

- ▶ What is Asphalt?
- ▶ Energy Savings
- ▶ Cleaner Water
- ▶ Public Safety
- ▶ Cleaner Air
- ▶ Carbon Footprint
- ▶ Noise Reduction
- ▶ Traffic Relief
- ▶ Recycled Asphalt

Carbon Footprint

Asphalt pavement is a permanent resource that will never be consumed, and because it will never be burned for fuel, it will never emit greenhouse gases. Scientists call this "carbo..."

Visit www.PaveGreen.com to learn more.

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
- **NAPA 57th Annual Membership Meeting**
January 21-25, 2012 • JW Marriott Desert
Springs Resort • Palm Desert, CA
- **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

Smooth Pavements Save Fuel

The National Asphalt Pavement Association (NAPA) has announced that Auburn University's Department of Mechanical Engineering, together with the National Center for Asphalt Technology (NCAT), is conducting a study looking at pavement factors that affect the fuel efficiency of vehicles. Results from the study could be an important step in enabling engineers and contractors to design and construct more fuel-efficient asphalt pavements.

Dr. Richard Willis, Assistant Research Professor at NCAT, commented, "We are reviewing numerous studies from around the world. One of the issues we are examining is to determine what pavement characteristics affect rolling resistance. Most studies indicate that smoothness, or conversely, roughness of the pavement is the dominant factor that affects rolling resistance." The study will also recommend an experimental plan to better quantify the effects of the key pavement factors on rolling resistance and vehicle fuel economy. Results from the study could be an important step in enabling engineers and contractors to design and construct more fuel-efficient asphalt pavements.

Dr. Howard Marks, NAPA's Director of Environmental and Regulatory Affairs, said, "Although there has always been a question of whether pavement stiffness plays a role in vehicle fuel use, the researchers are now finding that the type of pavement – rigid concrete vs. flexible asphalt – has no significant bearing on fuel economy for vehicles traveling over our nation's highways and therefore cannot be used as a basis

for public policy. What is known, however, is that smoother pavements are more fuel-efficient – and asphalt pavements are far smoother than concrete pavements over their lifetimes."

Dr. Marks also referenced a similar literature review currently being conducted by the Concrete Sustainability Hub sponsored by the National Ready-Mixed Concrete Association and the Portland Cement Association. The Concrete Sustainability Hub is located at MIT. "Given that MIT is examining similar data, we expect that results of both research organizations should be quite consistent in finding that the type of pavement (concrete or asphalt) has no measurable impact on fuel efficiency for vehicles using the highways."

"For more than 25 years, the asphalt industry has been supporting research that has resulted in pavements that are longer-lasting, smoother, safer, quieter, and more durable," commented Dr. Marks. "We have learned that the impact of pavement smoothness on vehicle fuel economy is so striking that a high premium should be placed on constructing and maintaining smooth pavements."

Dr. Marks pointed to the fact that many highway agencies have different smoothness standards for asphalt and concrete. "We think that the evidence regarding pavement smoothness and fuel efficiency is so compelling that all agencies should adopt identical smoothness standards for all types



of pavement, both at the time of construction and when determining the timing of rehabilitation. This will result in fuel savings that will benefit the nation far into the future."

About NCAT:

NCAT is a world-renowned asphalt pavement research center founded at Auburn University, Alabama, in 1986 with an endowment from the NAPA Research and Education Foundation. NCAT has grown into an institution with a 40,000-square-foot lab/teaching facility and a 1.7-mile oval pavement test track. NCAT's funding includes a combination of FHWA research grants, individual state DOT-sponsored projects, pooled research funds coming from state DOTs, and National Cooperative Highway Research Program grants. NCAT is governed by a Board of Directors whose members include Federal Highway Administration officials, state DOT officials, contractors, representatives of companies that support the asphalt industry, and academics.

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Perpetual Pavement Awards,

continued from page 1.

cycles that occur in Minnesota. The aggregates used in all of the pavement layers were taconite tailings, which are a clean, durable, and strong aggregate that is considered waste after the mining of ore in northeast Minnesota. This was an effort to reuse valuable natural resources available locally.

TH 61 is a 5-mile section of the 154



including seven state parks, has earned this scenic route a national designation as an “All-American

Road.” In addition to their scenery, the “Scenic Byway” routes are selected for their cultural, historic, natural and recreational qualities. These byways lead to inviting towns, historic sites, state parks, bike trails and walking paths and are critical to the small

shoreline towns and the tourism industry.

mile “North Shore Scenic Byway” in Minnesota that connects Duluth to Grand Portage. The spectacular scenery of the north shore of Lake Superior,

For more than 40 years, TH 61 has demonstrated outstanding design, construction, and performance to the traveling public and tax payers of Minnesota.

Mn/DOT Has The Record

The Minnesota Department of Transportation (Mn/DOT) has the record of nine National Perpetual Pavement Awards over the past nine years for the following roadways:

- Interstate 35 near Willow River in 2002,
- USTH 71 south of Park Rapids in 2003,
- USTH 10 in Anoka in 2004,
- TH 18 between Garrison and Brainerd in 2005,
- TH 61 between Wabasha and Kellogg in 2006,
- USTH 71 near New London in 2007,
- TH 36 south of Stillwater in 2008,
- TH 10 east of Detroit Lakes to Perham in 2009, and
- TH 61 near Silver Bay in 2010.

Congratulations Mn/DOT!

MSES 2011-2012 Scholarships

For the school year 2011-12, the Minnesota Surveyors and Engineers Society (MSES) awarded 22 undergraduate scholarships totaling \$33,000 to MN engineering students attending college at the University of MN, North Dakota State University, MN State University - Mankato, "At-large" U of MN - Duluth, "At-large" Iowa State Univ., "At-large" Mich. Tech. Univ. and "At-large" South Dakota State Univ.; and to a land surveying student at St. Cloud State Univ.

All recipients are interested in MN's transportation industry. The scholarships included one Palmer & Myrtle Ulland/NAPA/MAPA/MSES Scholarship and one Leslie M. & Adeline L. McGray & Commercial Asphalt/NAPA/MAPA/MSES Scholarship. The full list of scholarship recipients is available at www.mses.org.

Congratulations to all of the scholarship winners!

MSES/MAPA Graduate Fellowship Awarded

The Minnesota Surveyors and Engineers Society (MSES)/Minnesota Asphalt Pavement Association (MAPA) Graduate Fellowship award winner was recently announced. This is the 4th consecutive year the Fellowship has been awarded.

The Selection Committee met on May 13, 2011 and is pleased to announce that Jonathan Manning was selected for the 2011 MSES/MAPA Graduate Fellowship at the University of Minnesota (U of MN). Mr. Manning is currently working on his Master of Science degree under Prof. Joe Labuz regarding the analysis of pavement deformity through digital image correlation.

The Graduate Fellowship Selection Committee consists of:

- Glenn Schreiner, MSES Committee Chair, Parsons Brinckerhoff;
- Gaylen Ghylin, National Asphalt Pavement Association State Director, Commercial Asphalt Co.;



- Pat Hughes, MSES;
- Prof. Joe Labuz, U of MN;
- Chad Sauer, MAPA President, Commercial Asphalt Co.;
- Bernie Arseneau, MSES, Minnesota Department of Transportation (Mn/DOT);
- Jon Huseby, MSES, Mn/DOT,
- Prof. Mihai Marasteanu, U of MN; and
- Rich Wolters, MAPA.

Congratulations Jonathan Manning!

Congratulations to Award Winning Engineers in MN

- American Public Works Association's (APWA) Professional Manager of the Year - **Wayne Sandberg, P.E., Washington County Engineer and Deputy Director**
- APWA's 2011 Top Ten Public Works Leaders - **Mike Eastling, P.E., Director of Public Works, City of Richfield**
- City Engineers Association of MN, Engineer of the Year - **Jon Erichson, P.E., Austin City Engineer/Dir. of Public Works**
- Gerald Rohrbach Award for Excellence in Pavement Research - **Rick West, P.E., Otter Tail County Engineer**
- National Association of County Engineers' Rural County Engineer of the Year - **Gregory Isakson, P.E., Goodhue County Engineer**

Spotlight on Gene Skok, Ph.D. P.E.

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

Gene Skok is a legendary champion of asphalt pavement research.

Born and raised in St. Paul, MN, Gene graduated from Cretin High School in the early 1950's. He knew he liked math and science and enrolled in St. Thomas University's Pre-Engineering program.

To pay for tuition, Gene worked at a local shoe store and enjoyed meeting and socializing with customers. Gene reflects that he was shy and this was a good way to meet new people and become more outgoing. While sitting down at lunch to interview Gene, it is clear that he hasn't lost his charm.

After completing the two year program at St. Thomas, Gene transferred to the University of Minnesota (Go Gophers!). He chose to pursue Civil Engineering because like many of us, he liked to work outside (especially in the summer).

The U of MN had a unique program at that time that allowed 4th year students to get an abbreviated Bachelor of Science degree and then pursue a Master of Science in Civil Engineering degree. Gene was accepted into this program and worked with the help of Prof. Miles Kersten (Note: the Miles Kersten Chair at the U of MN is in honor of Prof. Kersten's tremendous work to further geomechanics, soils, and asphalt pavement technology).

Gene worked on and used data from the American Association of State Highway Officials (AASHTO) Road Test for his thesis on asphalt pavement design. Located in Ottawa, Illinois, construction of the Road Test began in 1956 with 7 miles of two-lane pavements in the form of six loops and a tangent, half concrete, half asphalt. The 836 test sections employed a wide range of pavement layer thicknesses and various instrumentation to monitor pavement response to loading and the environment. Test traffic began in 1958 and ended in 1960, see www.fhwa.dot.gov/infrastructure/50aasho.cfm for more information.

While at the AASHTO Road Test, Gene met and worked with many pioneers in asphalt pavement research including A.C. Benkelman, Fred Finn, and Carl Monismith. Fred Finn was with the Asphalt Institute (AI) and offered Gene a position when he graduated. Gene moved to Maryland, the former headquarters for AI, and worked at AI for two to three years. He returned home briefly to marry a young lady named Betty from Derham High School in 1961. They will be celebrating their 50th Anniversary this summer (Congratulations Gene and Betty!).

Meanwhile, back in Minnesota, Miles Kersten was working with the Minnesota Highway Department (now the Minnesota Department of Transportation) to develop a

pavement design procedure for Minnesota through the Highway Research Board (now the Center for Transportation Studies) at the U of MN.

Gene returned to Minnesota to work on a project to use AASHTO Road Test results to create Minnesota's R-value design for flexible



pavements. He, Bob Wolfe, Paul Diethelm, and Erland Lukanen were the authors of Investigation 183 that used the Benkelman Beam and Stabilometer R-value to determine pavement capacity. Gene used this project as his thesis for his Ph.D. degree.

In the early 1970's, the Minnesota Highway Department started a two-year program for Technicians in Civil Engineering at St. Paul Technical College. Gene was approached to be an instructor, and he really enjoyed teaching applicable technologies and not just theory. Gene was very proud of

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Spotlight on Gene Skok, continued from page 6

the students and the program. The students worked in the field for nine months out of the two years, which led to a 100 percent employment rate after graduation.

In the early 1980's, Gene was one of the founders of a company called Midwest Pavement Management. MPM helped local agencies with monitoring and managing their pavement network, and was purchased a few years later by Braun Intertec. Braun Intertec had the Strategic Highway Research Program's "Long Term Pavement Performance" contract. Gene was one of many people to monitor flexible pavement sections around the nation that would lead to

the development of SuperPave technology.

In 1995, Gene came to work for the Minnesota Asphalt Pavement Association (MAPA). For three years, Gene was a Staff Engineer involved in training and trouble shooting.

Then in 1998, Gene returned to research at the University of Minnesota. He was one of the primary authors of the "Best Practices for the Design and Construction of Low Volume Roads" publication (Mn/DOT Report 2002-17). He was semi-retired in 2004, then he officially retired in 2008.

Gene has also been the Association of Asphalt Paving Technologists (AAPT) Secretary-Treasurer since 1969.

Whether working with researchers, agencies, or industry, it is clear that Gene has been a very instrumental person in asphalt pavement technology in Minnesota!

In their spare time, Gene and Betty enjoy their four children, four grandchildren, and their cabin in Luck, Wisconsin.

Best of luck Gene, and thanks for helping to build '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	• Hardrives, Inc.	• North Valley, Inc.
• Anderson Brothers Construction Co.	• Hawkinson Construction	• Northland Paving, LLC
• Asphalt Surface Technologies Corp.	• KGM Contractors, Inc.	• Northwest Asphalt, Inc
• Barton Enterprises, Inc.	• Knife River Corporation - Central Minnesota	• Pine Bend Paving, Inc.
• Bemidji Bituminous Inc.	• Knife River Materials	• Plehal Blacktopping, Inc.
• Bituminous Paving, Inc.	• Mark Sand & Gravel Co.	• Rum River Contracting Company
• Bituminous Roadways, Inc.	• McNamara Contracting, Inc.	• T.A. Schifsky & Sons, Inc.
• Commercial Asphalt Co.	• Mesabi Bituminous, Inc.	• Tri-City Paving, Inc.
• DMJ Asphalt Inc.	• Midwest Asphalt Corporation	• Ulland Brothers, Inc.
• Duininck Inc.	• Minn-Dak Asphalt, Inc.	• Valley Paving, Inc
• FPI Paving Contractors, Inc.	• North Metro Asphalt	• Wm. Mueller & Sons, Inc.
		• W W Blacktopping, Inc.

MAPA's Associate Members

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American Engineering Testing, Inc.
Anderson Industrial Scales, Inc.
Antigo Construction, Inc.
Area Lakes Testing
Arr-Maz Custom Chemicals
Bearence Management Group
Bomag Americas
Boyer Trucks
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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
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.
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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.*
Patrick Burns & Associates
PQ Corporation/Advera WMA
Prinsco, Inc.
R and G Construction Co.
RB Scott Company, Inc.
RDO Equipment Co.
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RJ Ahmann Company
Road Machinery & Supplies Co.
Roadtec, Inc.
Rock On Trucks Inc.
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St. Paul Park Refining Company, LLC; a Div. of Northern Tier Energy
Stonebrooke Engineering, Inc.
Swanston Equipment Companies
TexPar Energy, LLC
Titan Machinery
Truck Utilities, Inc.
Unique Paving Materials Corp.
Vance Brothers
Volvo Construction Equipment
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