



# **ENGINEERING TEAMWORK**

By Fred Garrott, P.E., S.T.A.T.E. Testing, LLC

In the Chicagoland region of northeast Illinois, several public highway agencies and private companies are working together to improve hot mix asphalt (HMA).

Since mid-2006, the Illinois Tollway, Chicago Department of Transportation, the Cook County Highway Department, and Illinois Department of Transportation have been sharing HMA research and engineering resources. Each agency has its own transportation program, its own priorities, and unique issues. Working together and by referencing ideas used by other agencies and the HMA industry around the country, they have been able to try some things that would have normally taken years to do on their own – new mixes, new liquid asphalt cement, new aggregate, and some green ideas.

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Please pass this on to other interested parties in your office.



Illinois Department of Transportation Bureau of Local Roads and Streets



### **IDOT ANNOUNCES NEW SECRETARY**



Governor Rod R. Blagojevich officially named Milton R. Sees as Secretary to the Illinois Department of Transportation (IDOT) on September 17, 2007. Milt was confirmed by the Senate in October.

Mr. Sees has 40 plus years experience in a variety of roles related to the design, implementation, and funding of infrastructure projects. He began his career as an engineer technician with IDOT in 1964. Since that time, he has earned both BSCE and MPA degrees from the University of Illinois, and has been active in numerous national specification and transportation development efforts, involving the planning, funding and implementation of infrastructure enhancements. Mr. Sees' career has included experience in both the public and private sectors. He has worked as a government relations liaison for the construction materials industry in Springfield, Illinois and Washington, D.C., and recently operated several precast concrete manufacturing facilities in southern Illinois. January 2006 marked Mr. Sees return to IDOT when he was selected to become the Director of Highways. As Director of Highways, Mr. Sees had responsibility for the operation and maintenance of all

state highways and bridges throughout Illinois. In September 2007, Governor Blagojevich named Mr. Sees Secretary of the Illinois Department of Transportation, overseeing personnel engaged in all facets, aspects and modes of transportation in Illinois.

Among his awards and recognitions are the Illinois Award and Engineer of the Year Award from the Illinois Society of Professional Engineers. Mr. Sees is a Registered Professional Engineer in Illinois and Virginia. Included in civic commitments are nine years of service on the Mt. Vernon, Illinois City Council, with three of those as Mayor.

## **IDOT ANNOUNCES NEW DIRECTOR OF HIGHWAYS**



Christine M. Reed was named Director of Highways, Chief Engineer, for the Illinois Department of Transportation, effective November 16, 2007. She has been employed with the Illinois Department of Transportation since 1989. Mrs. Reed started in the Division of Highways working in the Bureau of Materials and Physical Research. She held various positions in the Office of Planning and Programming from 1997 to 2003 including the Bureau Chief of Statewide Program Planning. In 2003, she was promoted to District Engineer in District Six. She then became the Deputy Director of Highways/Region Four Engineer. Ms. Reed is a graduate of Texas A&M University with a Bachelor of Science in Civil Engineering and is a registered professional engineer in Illinois.



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This loose-knit association began on June 8, 2006, at a meeting convened by the Cook County Highway Department Superintendent. Cook County was seeking assistance and support in developing a specification for adding recycled ground tire rubber (GTR) in some of its paving projects. At that first meeting, the agencies began to realize how much their programs had in common. Almost immediately, wheels began to turn, emails began to flow, and the "GTR Task Force" was born. The Cook County project is complete. But, the title is still used by the group. An email with that subject line instantly identifies activities of the group.

Since June 2006, the agencies have undertaken, individually and collectively, what can be fairly described as an impressive research and demonstration program of HMA innovations. Construction materials research can be a complicated process, taking time, money, personnel resources, and a suitable place to conduct demonstration projects. The projects described below have all been undertaken in a little more than one year, all within the normal budgets of the agencies. The timing and technology of these projects overlapped. So, they are listed in no particular order:

GTR Rubber Asphalt Cement Specification – Developing the specification for a new product can be a daunting task. IDOT was the natural agency to develop the specification. They already controlled the acceptance of asphalt cement used by the public and private sector in Illinois. While they did not have an immediate project of their own, they provided engineering and chemist expertise to modernize their recycled rubber specification, which had last been used in the early 1990's. This was no simple matter. The new specification had to fit within the new Superpave Performance Graded asphalt binder specification. It had also had to incorporate rubber asphalt and recycling technology that had evolved during the last 15 years. Within a few weeks, they generated a fresh specification that was clear to owners, contractors, and suppliers. The specification has not shown any weakness in use on more than a dozen projects.

Terminal Blended GTR Asphalt Cement and GTR HMA– While asphalt cement prices have escalated along with all other petroleum based products, there has been one bright spot in the HMA picture. Responding to a renewed national interest in tire recycling, a local asphalt cement supplier, Seneca Petroleum, recently introduced terminal blended GTR liquid into the Chicago area. Previous GTR projects in Illinois required adding the ground rubber to the asphalt cement or the aggregate at the HMA plant. That was cumbersome, expensive, and difficult to control. Terminal blending is now possible because of the introduction of stabilizing additives that allow the mix to

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be stored and transported. This new blending process is now on the radar screen with other asphalt cement suppliers in the Midwest.

This is recycling at its best. Terminal blended GTR asphalt cement is no more expensive than conventional polymer-modified asphalt cement. Most of the demonstration project mixes have been tested for performance, noise, and friction. Preliminary tests show that GTR mixes may outperform conventional HMA mixes. And a typical GTR HMA mix recycles about 2,000 tires per paved mile.

Since June 2006, GTR has been used in a variety of mixes by Cook County, Chicago DOT, and the Illinois Tollway. GTR has been used successfully in Open-graded friction courses, SMA's, dense graded Superpave mixes, and Green Alleys (below). Seneca has been a whole partner in this process. Without their assistance in scheduling and pricing, it unlikely the GTR projects would have been as successful, or even completed. Detailed analysis has been performed by the Illinois Tollway on a number of these mixes and HMA pavements to confirm improved performance of the mixes and pavements while providing improved environmental stewardship.

Green Alleys – Green Alleys aren't actually green color. They are paved with asphalt that is pervious to water, promoting groundwater recharge instead of storm sewer overflow. When the GTR Task Force was formed, CDOT had already embarked on a plan to build some Green Alleys in 2006. Timing worked such that one of the alleys could incorporate GTR liquid asphalt. The GTR asphalt worked even better than expected in the open-graded HMA mix. But, more important, the mix design technician discovered that the GTR opengraded mix could be produced without adding fibers to the mix. Small fibers are usually required in "open" mixes to hold the liquid on the aggregate during storage and transport. This discovery may lead to significant cost savings on other mixes that have historically required fibers.

Fractionated Recycled Asphalt Pavement (FRAP) – Another new concept (and acronym) was added to the Illinois paving glossary this year. FRAP is simply screening (fractionating) the milled HMA pavement (RAP) into 3 or more different sizes. The result is a recycled product that is easier to control in HMA mix production. That usually means that more recycled material (both aggregate and residual asphalt) can go into new mixes. Fractionating RAP is more costly than normal RAP processing. It is more practical on a large scale where reduced material costs can more easily compensate for the increased processing costs.

That is where the Illinois Tollway comes in, facing the reconstructing of much of its aging system over the next decade. That program will gen-

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erate mountains of high quality RAP from the grinding of existing HMA overlays and shoulders. The amount of new HMA mix for replacement pavement and shoulders is even greater. The Illinois Tollway recognized the value in maximizing the amount of RAP that could be used in their new mixes. So, they jumped out front, starting with an educational seminar arranged by the Illinois Asphalt Pavement Association. On May 8th, the international leader in HMA equipment technology, Dr. Don Brock, Chairman and CEO of Astec Industries, Inc. shared his recycling approach with Illinois contractors and government agencies.

The Illinois Tollway took Dr. Brock's message to heart, and to the field. This fall, The ISTHA included 9 different new HMA mix combinations on a project on the Jane Addams Memorial Tollway (I-90), near Rockford. These mixes were selected to evaluate the practicality, quality, and economy of fractionating RAP. In addition, the Illinois Tollway will combine resources with IDOT to compare similar mixes made with conventional liquid asphalt cement and GTR asphalt cement at various levels of RAP / FRAP through a University of Illinois study on the impact of higher RAP contents in HMA mixes on pavement structural performance.

This is a much abbreviated description of the demonstration projects and the new technology. The reader is invited to contact any of the task Force agencies for additional details.

There is not space in this article to give credit to the individuals and agencies who worked on these projects. In addition to the public agencies, we recognize several organizations and private companies who have cooperated whenever they have been asked to change course or go faster - Seneca Petroleum, Rib Mountain Aggregate, Rocky Mountain Enterprises, Heritage Research/The Levy Company, Gallagher Asphalt, Bigane Paving/Ogden Materials, Rock Road Companies, Rockford Blacktop, Applied Research Associates, the University of Illinois, the Illinois Asphalt Pavement Association, and S.T.A.T.E. Testing.





# **BLENDED, NOT STIRRED!**

Have you ever wondered where many of the practices we use in winter maintenance came from? Well without a doubt, some have come from Europe. On occasion informational exchanges have taken place and in some cases scanning tours have brought leaders in the industry to foreign countries to learn about methods being used overseas. Much of what was learned was then applied here in the States. Anti-icing is one example of a method used overseas that is now widely used here.

Recently a new method developed here was shared with Europe. Mark DeVries of the McHenry County Division of Transportation recently toured several countries in Europe to share the method of blending liquid de-icing chemicals developed in McHenry County. Mark is the Maintenance Superintendent for the Division of Transportation but wears several other hats as well. Mark is well known as a national speaker doing numerous presentations across the Country. He is the Chairman of the American Public Works Association Winter Maintenance Sub-Committee, he is a member of the Midwest States group and he is an instructor for our T2 program teaching both Snow and Ice and Flagger classes. He is involved in many other committees as well. Mark was recently awarded the Donald C. Stone award by APWA for his work in education.

Mark's tour began on the 18th of September and lasted 11 days. Mark was flow to Manchester, England and did his first presentation to a group in Milton Keynes (not to far from London). The group consisted of local councils (similar to County and City agencies). The presentation covered information on McHenry County operations, liquid use in the States, equipment, newer technologies and the blending of liquid de-icers. The same was true of all the presentations Mark did but they varied in length depending on the conference of meeting.

Blending and storm treatment application recommendations (storm logic, road cast, MDSS etc.) seemed to be the main focus of interest in each discussion. The method of blending and the resulting mixture (Supermix) was new to most of Europe. The components of the mixture are not. Salt brine is used in some parts of Europe but not as widely as here in the States, Calcium Chloride is used in various parts and Safecote (Geo-melt) a sugar beet product is quite common but mainly applied directly to the salt at the mines. In the United Kingdom salt and treated salt are the most widely used products. Mark toured one of the salt mines near Chester. The salt here was much different looking, very dark. This is the main reason

Brine is not use as often. The contamination in the salt produces so much residue it is hard to make brine. Liquid use and its benefits are being looked at closely because frost is common occurrence.

Marks next presentation was in Glasgow, Scotland. This was a private meeting and was to the Managing Director of Scotland and his regional directors. Mark spent the night in Scotland and got to see and taste some of the local flavor.

Then it was on to London. Most of the travel across the United Kingdom was on trains that traveled in excess of 125 mph. This allowed mark to see some of the country. Mark was taken on tour of the city prior to departing for Germany. In Germany the meeting included representatives from 9 different countries. Three interpreters were needed to bridge the language barriers. Mark was the focus of the meeting which included Managing Directors and university research personnel.

The next stop was Austria and again several different countries flew in to attend the presentation. The presentation was held at the offices of Asfinag, a managing company that

oversees operations in Austria. Again this is common to several countries in Europe. Interpreters were needed again and members from Norway did a short presentation as well. Mark spent two days in Vienna and was taken to a local yard were he spent 5 hours viewing and exchanging information. The salt used in Austria was different as well. It looks more like table salt and is very pure. Salt here is blown into silos and loaded from above. The yard he visited had duplicated the method of blending chemicals from articles Mark had written and information he provided. Austria is set to trial Supermix this winter. Mark was taken on a tour of Vienna and to a traditional Austrian dinner before heading back to London.

The last two days of the tour Mark presented at a major conference in Birmingham. Similar to the first conference most of the attendees were local agencies including some from London. There was an international flare as representatives from China were in attendance as well and met with Mark following the presentation.

The last stop was the City of Chester before Mark returned to the States. Mark has been corresponding



with many of the people who attended his sessions and with his hosts. When asked about the experience Mark stated "It was very rewarding and I made many new friends, I learned as much as I shared".

Mark has already been asked to do several presentation on his experience including the North American Snow Conference in Louisville this coming April. For more information or to contact Mark you may go the APWA Web site and click on the snow conference, or technical committees and pick winter maintenance. You may contact Mark directly at rmdevries@co.mchenry.il.us

Article courtesy of McHenry County Highway Department



### STATE OF ILLINOIS NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS) IMPLEMENTATION PLAN

By Gene Felchner, Illinois Emergency Management Agency

The National Incident Management System (NIMS) was established by President Bush in 2003 following the final recommendations outlined in the 9-11 Commission Report. Homeland Security Presidential Directive (HPSD)-5, Management of Domestic Incidents identified that NIMS would be the preferred incident management system to be used at all levels of government when responding to an actual incident or a pre-planned event. Although both local jurisdictions and state governments have the choice to adopt NIMS or not, they lose the ability to apply for Federal Preparedness Grant funding if they chose not to adopt NIMS. Each state was assigned the responsibility to establish the NIMS compliance process for their state. The development and implementation of the NIMS compliance process in Illinois has been assigned to the Illinois Emergency Management Agency (IEMA). The State of Illinois NIMS Implementation Plan is available on the following website. www.iml.org/dbs/nims.

This website was designed to supply current and accurate information concerning NIMS compliance in Illinois. The two identified NIMS compliance items for both 2006 and 2007 are included on this website. As soon as the Department of Homeland Security identifies the 2008 compliance items, they will be included on this website, as well. This website also contains a current list of all jurisdictions that have submitted either one or both of the identified annual NIMS compliance items since 2005. Please review this list to identify if a jurisdiction is currently NIMS compliant. This website is in the

process of being revised. The 40-plus page Implementation Plan will be replaced by individual informational links. These links will provide users the opportunity for direct access to the information they need without have to sort through the entire document. Please direct any questions concerning NIMS compliance to the identified Point-of-Contact for your jurisdiction in the implementation plan. The training piece of the NIMS compliance process has generated the most questions. Figure 1 below is included to help each jurisdiction to identify the level of training for each of their personnel. It is the responsibility of each jurisdiction to determine the level NIMS training based on the job duties of each of their personnel and track the successful completion of this training

### Figure 1

Audience	Required Training
Entry level first responders & disaster	ICS-100
workers	ICS-700
Emergency Medical Service personnel	
Firefighters	
Hospital staff	
Law Enforcement personnel	
Public Health personnel	
Public Works/Utility personnel	
Skilled Support Personnel	
Other emergency management	
response, support, volunteer personnel	
at all levels	
First line supervisors, single resource	ICS-100
leaders, field supervisors, and other	ICS-200
emergency management/response	ICS-700
personnel that require a higher level of	
ICS/NIMS Training	
Mid-level management including strike	ICS-100
team leaders, task force leaders, unit	ICS-200
leaders, division/group supervisors, branch	ICS-300
directors ( <b>REQUIRED</b> ); and	ICS-700
Emergency operations center staff	ICS-800
(RECOMMENDED)	
Command and general staff, select	ICS-100
department heads with multi-agency	ICS-200
coordination system responsibilities, area	ICS-300
commanders, emergency managers	ICS-400
(REQUIRED), and;	ICS-700
Emergency operations center managers	ICS-800
(RECOMMENDED)	

After your jurisdiction has identified the appropriate level of training for each of their staff, those that need to complete ICS 100, 200, 700 and 800.A can complete their training online. The Emergency Management Institute (EMI), located at the National Emergency Training Center, offers the following online courses:

- IS-100 ICS-100 An Introduction to ICS
- IS-100 ICS-100 An Introduction to ICS for Federal Workers
- IS-100 ICS-100 An Introduction to ICS for Law Enforcement Personnel
- IS-100 ICS-100 An Introduction to ICS for Public Works Personnel
- IS-100 ICS-100 An Introduction to ICS for Healthcare/Hospital Personnel
- IS-100 ICS-100 An Introduction to ICS for Schools
- IS-200 ICS-200 Basic ICS for Single Resources and Initial Action Incident
- IS-200 ICS-200 Basic ICS Applying ICS to Healthcare Organizations
- IS-700 NIMS An Introduction
- IS-701 NIMS Multi-Agency Coordination System
- IS-702 NIMS Public Information System
- IS-703 NIMS Resource Management
- IS-800.A NRP An Introduction The website to access these courses is: www.training.fema.gov/ EMIWeb/IS/crslist.asp.

Both ICS 300 and 400 training are not available online. There are currently 4 options available for completing these two courses.

- 1. Current ICS 300 and ICS 400 courses scheduled by IEMA are available by accessing www.state.il.us/iema.
  - Click on training and exercises.
  - Click on training calendar.
  - Check monthly schedule for the ICS 300 course in your area.
  - Complete a copy of the blank student application which is

located at the bottom of each monthly calendar page.

- Submit the completed application to your municipal or county EMA office for processing.
- Any questions concerning the IEMA application process can be directed to Jill Gordon 217/557-4832.



- 2. ICS 300 and ICS 400 courses are currently being offered through the Northern Illinois Public Safety Training Academy (NIPSTA), located in Cook County.
  - Access their website www.nipsta.org for course schedules and application process.
  - Any questions concerning the NIPSTA course application process can be directed to 847/998-8090.
- For those counties bordering our neighboring states, attending ICS 300 courses across the border is another available option.
- 4. Local first responders can also get credit for completing ICS 300 and ICS 400 by successfully completing the Command and General Staff Course currently being offered by the Illinois Fire Service Institute (IFSI).
  - Access the IFSI website at www.fsi.uiuc.edu
  - Click on Courses

- Click on Search and Register, type in "Command and General Staff" and click on "Find Classes"
- After finding a course that fits your schedule, click on "Online" under "Registration"
- Click "yes" whenever you are asked "Do you want to display the nonsecure items?"
- Under "On-line Registration Step 1", click on "Incident Command PIN Request Form". Click "yes" whenever you are asked "Do you want to display the nonsecure items?"
- Fill-in the four fields and click "Request". Click "yes" whenever you are asked "Do you want to display the nonsecure items?". You will receive a Special PIN Request via e-mail within 24 hours from IFSI.
- After receiving the Special PIN, repeat #1-5. Fill-in all requested information under "Online Registration Step 1: Personal Information". Click on "Proceed to Step 2".
- Under "Online Registration Step 2: Chief Validation", go to the "Final Validation and Confirmation" box at the bottom of the page. Under "Chiefs Department" click on the dropdown box and scroll down to "ICS".
- Where it asks for "Chiefs PIN", add the PIN # you received in Step #6.
- Where it asks for "Priority Level", leave as is.
- Must choose one of the "Bill" options. Since where is no charge, no one will receive a bill.
- Must choose the "I understand the Terms of IFSI Online Registration". Click on "Submit Registration".
- Print a copy of the "Registration Submitted Successfully" page for your records.

## ILLINOIS PUBLIC WORKS/WATER/WASTEWATER AGENCY RESPONSE NETWORK (ILWARN)

By Tammy Bennett, Clark-Dietz and Carolyn Grieves, Baxter & Woodman, Inc



Events such as 9/11 and Hurricane Katrina in 2005 identified a need for water, and wastewater agencies to create intrastate mutual aid and assistance programs. The Illinois Public Works Water/Wastewater Agency Response Network, also known as ILWARN, is currently being developed in Illinois to provide a network of utilities to help other utilities with personnel and resources for natural and human made disasters. ILWARN is based on three other active response networks in California, Florida and Texas, however, ILWARN is unique in the fact that it is including public works. The WARN concept is a becoming a nationwide program and is anticipated to be implemented by 2010 for all fifty states' water and wastewater agencies.

ILWARN's mission is to support and promote statewide emergency preparedness, disaster response, and mutual assistance for public and private water and wastewater, public works, townships, and county highway agencies. The establishment of a Mutual Assist- ance Agreement among a network of Illinois agencies will help ensure the continuity of operation and the well being of your community. Such networks are a core principle of the National Preparedness Goal developed by the Department of Homeland Security.

ILWARN will consist of a statewide mutual aid agreement and a website. A community, utility, or agency must sign the mutual aid agreement to join ILWARN. A mutual aid agreement is a formal document that will allow these entities to work together in response to a disaster. The benefit to having the mutual aid agreement is that it outlines the roles and responsibilities of the requesting party and the responding party prior to an emergency. ILWARN can be utilized in a disaster or emergency situation, such as a tornado, that may affect a wide area. It could also be utilized for a local emergency situation, such as a power outage at a lift station.

There are many benefits to a community if they sign up with ILWARN. The entire state is organized with a single mutual aid agreement for use by Public Works, Water and Waste water Agencies, Townships, and County Highway Departments which will help reduce administrative conflict. In addition, it is important to note that the statewide agreement does not conflict with existing local or county mutual aid agreements. In addition, there is no commitment or obligation required to respond if requested. Utility operations are specialized and assistance by another utility can help until the arrival of other government aid.

### Examples of How ILWARN Can Help During a Disaster

- Cleanup Crews Debris Removal
- Restore Water/Wastewater Operations
- Flood Control
- Water Main Leaks Located and Repaired
- Equipment Repair
- Portable Standby Generator Connected
- Cleanout of Lift Stations
- Install Bypass Pumps
- Provide equipment, trucks, generators, etc.

### **Current Status**

ILWARN is currently being developed by a Steering Committee consisting of representatives from Illinois Environmental Protection Agency, Illinois Section of American Water

Works Association, Illinois Emergency Management Agency, American Public Works Association, Illinois Rural Water Association, Department of Homeland Security, Illinois Department of Transportation, Illinois County Highway Engineers, **Illinois Emergency Services** Management Association, and several municipalities and two engineering firms. The Steering Committee will be transitioning to a Governing Board in the next few months with three representatives from each of the eight ILWARN regions. The goal is to have utilities sign the mutual aid agreement and enroll in ILWARN starting in Spring of 2008 and to have ILWARN fully functional by the end of 2008. If you are interested in being placed on a mailing list for ILWARN, please send your contact information to info@ilwarn.org.

### Website

www.ilwarn.org www.nationalwarn.org For more information please contact the Steering Committee Chair, Tammy Bennett, at 217-373-8959 or via email at tammys@clark-dietz.com.







## Illinois Chapter Conference April 30–May 2, 2008

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2nd Illinois Emergency Management Agency Track

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