

NACE News



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PRESIDENT'S REPORT

Mark A. Craft, P.E., Engineer-Manager, Gratiot County Road Commission, MI

Well it's January, and this past weekend the temperature got down to -8 degrees and then today it's supposed to be a balmy 47 degrees.

Being from Michigan, I keep pondering what's next. This weather really reminds me of what it's like being a county engineer, everything is always changing, never constant and I wonder how things will be in another 5 years, or even next year for that matter.

As the stewards of 1.74 million miles of the roads in this country, we all know firsthand the current conditions, and trends that we are seeing with our roads and bridges. The bottom line is adequate transportation funding is needed. We can all talk about how best to improve and maintain our systems, but unless something changes with the funding, we've just got to get used to this ever changing environment.

I'm not real fond of the term "new normal", but that really is where we are at. As revenue has decreased so has our level of service provided. As a county road agency we have continuously been adapting by reducing the number of employees and doing the best we can with less. But that comes at a cost.

I think our jobs have become more and more difficult. Especially when trying to explain to our constituent's why we are closing bridges, why we are not fixing roads, why we are turning paved roads back to gravel, and why it's taking us longer to plow the snow on roads. That's a tough job, explaining why we are not doing the things that need to be done.

As County Engineers our jobs have historically been to improve our community's transportation systems and safety has always been our number one goal. But I think we have become much more than just county engineers; we really have become lobbyists or perhaps more like politicians. Instead of fixing our roads and bridges, we are spending our time explaining why we are not fixing them. We are always trying to convince others why we cannot do the things that need to be done.

If you ask anyone "What should government be spending its money on?" What do you think you would get for an answer? I'll bet "roads" are in the top five. Roads are on everyone's mind, especially when they are not in very good condition. But when you look at the priority in regards to funding, roads are never in the top five. No one wants to pay

more taxes. I included. But if we demand safer roads and bridges then we need good roads and bridges, and the only way to have good roads and bridges is to have proper funding mechanisms.

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law in 2005. Its purpose was to address the challenges facing our transportation system. Challenges such as improving safety, reducing traffic congestion, improving efficiency, and laying the groundwork for addressing future challenges.

However, SAFETEA-LU Expired back on September 30, 2009. The program has been kept alive through extension after extension. The program is currently operating on the eighth authorization extension and it will expire on March 31 this year. It really amazes me how the legislature can't come to a conclusion and fund a transportation package. Good safe roads are critical to our economy and our country. So, I guess the question remains, What's next? I'm not sure with SAFTEA-LU, but I'm sure that tomorrow it will either be sunny or snowing.

SURFACE TRANSPORTATION BILL PROGRESSING

A number of important developments have occurred in the long hike toward passing a reauthorization of the surface transportation legislation that funds the highway and transit programs. The House Transportation and Infrastructure Committee has announced that it will mark up its bill on February 2. While the language has not been made available yet, it will include \$260 billion in funding or about \$52 billion annually for five years for the highway and transit program. Approximately 70 programs are either eliminated or consolidated, there is improved streamlining in the project delivery process and there is more leveraging of existing resources. To fully fund the program, an additional \$50 billion in new revenue will have to be found to supplement gas tax revenues. Where those resources come from remains unclear. Also unclear is whether the House bill will enjoy bipartisan support.

In the Senate, a \$109 billion two-year program, MAP-21, was approved in November 2011 on a bipartisan vote by the Environment and Public Works (EPW) Committee, which has highway program jurisdiction. It has been reported that the Banking Committee may consider the transit section of the bill February 1st or 2nd and the Finance Committee may take up the revenue portion of the measure during the week of January 30th. A two-year bill would require an additional \$12 billion in new revenue sources to supplement the gas tax and it is up to the Finance Committee to determine these sources.

NACo has indicated some concerns about the Senate EPW bill because it eliminates the off-system bridge program and the high risk rural road safety program; MPOs between 50,000-200,000 would face an uncertain future and are no longer guaranteed a role in the planning process; efforts to enhance the planning role for include rural regions under 50,000 were not successful; the Surface Transportation Program underwent some changes that may not be beneficial to local governments; and funding for the Transportation Enhancement program appears to be no longer mandatory. The current extension of the surface transportation program expires on March 31 and both the House and Senate would like to complete the reauthorization by that date. Contact: [Bob Fogel](mailto:Bob.Fogel@naco.org) • 202/942-4217.

NEXT EVERY DAY COUNTS EXCHANGE FEB 16TH

The next Every Day County's Exchange will be broadcasted on Thursday, February 16th from 2:00 to 4:00 pm EST on Geosynthetic Reinforced Soil (GRS). To attend contact either the FHWA Division office or the LTAP Center for Exchange locations in your state.

Accelerated Bridge Construction: Is the Geosynthetic Reinforced Soil Integrated Bridge System (GRS-IBS) Right for You?

Do you need to replace bridges, but don't have the funds to do it? Are you looking for bridge alternatives that perform well and can save you both time and money? Would you like to utilize your own construction equipment and forces to build simple, strong, and safe bridges? If the answer to any of these questions is "yes," then the GRS-IBS may be right for you!

The majority of the bridges in the country are the small, single-span bridges that are commonly found on rural and local roads. As the infrastructure ages, weight restrictions or bridge closures are becoming more frequent. With limited resources available, transportation agencies must find innovative, cost-effective solutions to meet these demands. This exchange session provides attendees with background information on the GRS-IBS. To date, the GRS-IBS has been predominately constructed on the local road system with local forces supplying the labor. For the counties utilizing this technology, the result is a lower cost bridge alternative, with savings up to 60%, that can be constructed in as little as 2 weeks. The session will highlight these examples that demonstrate the successful use of the GRS-IBS.

REPORT FROM OKLAHOMA – CIRCUIT ENGINEERING DISTRICTS

By James DeCastro, Design Engineer, Circuit Engineering District #4, OK and NACE State Director

By now the secret is out about Oklahoma's Circuit Engineering Districts locally known as C.E.D.s. There are eight districts that cover the state. There is an Oklahoma Cooperative Circuit Engineering Districts Board that is the umbrella organization for the C.E.D.s. Fortunately with these organizations in place the Oklahoma Department of Transportation, ODOT, was able to easily benefit the counties by giving them a large herd of used bridge beams; a large herd being some 1800 steel I-beams 50 feet long.

ODOT is able to do this because they are retiring a nearly 50 year old elevated section of I-40 that runs through downtown Oklahoma City (see photo right). This elevated section of I-40 has growing deck problems where sections of concrete have fallen out and pot holes appear regularly. It is past its prime for sure and needs to be on a new alignment. East bound traffic has already been moved over to the new alignment and west bound traffic will be moved over very soon. Then the old elevated section of I-40 will be dismantled. It was constructed with steel I-beams with concrete deck all supported on concrete piers and abutments. Dismantling has begun in January and will continue for nearly eight months. Most of the steel I-beams that can be re-used are typically 33 inches deep and around 50 feet long. Some are a little longer. After the beams are inspected for usability they will be



transported to 20 different drop-off sites scattered across the state. Each C.E.D. has selected a few sites within their district area for the beams. The group of counties represented by each C.E.D. will coordinate who gets the beams for their bridge projects.

Of course this doesn't mean the counties get free bridges, just free steel bridge beams. The counties still have to put forth some additional time, materials and manpower, but with all these beams the counties should be able to construct about 300 bridges. This will help Oklahoma climb out of the basement for structurally deficient bridges. Oklahoma ranked 2nd behind Pennsylvania for having the most structurally deficient bridges in 2010 when comparing by percentages.

So that takes care of a few bridges, now the county roads are the next item of interest. Several years ago a group of engineers from ODOT, engineers from some counties, and private consultants formed a knowledgeable committee of experts to create a County Design Guidelines Manual to give authority to engineers designing county roads. This manual was approved by ODOT and the Association of County Commissioners of Oklahoma, ACCO. If the ODOT highway design requirements were followed these local low volume roads would be overdesigned and too expensive to construct when state and federal funds are involved. The county road guidelines document was first composed in 1991. Now another committee of experts has been formed recently to work on the first revision. Other low volume roads guidelines and recommendations have been published since the first manual was written and these documents will help with the revision process.

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NEW YORK IN LIMBO AWAITING REAUTHORIZATION

By Tim Hens, Highway Superintendent, Genesee County, NY and NACE State Director

New York, like many other states, has been anxiously waiting to see what Congress will do to replace the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) which expired on September 30, 2009. Legislation passed this fall extended SAFETEA-LU until March 31, 2012. The New York state fiscal year starts on April 1, 2012 and state leaders have yet to discuss options for replacing the current 2-year transportation capital plan that expires this spring. The capital plan funds transportation projects across New York State and includes local aid to counties known as the Consolidated Highway Improvement Program System or CHIPS. With an uncertain outlook on federal aid, New York has chosen a "wait and see approach" regarding federal aid levels before committing to a transportation capital plan that deals with improvements over a longer term.

The soon to expire 2-year capital plan was supposed to be a transitional plan that was developed in response to the state of the economy and the lack of reauthorization of a federal plan in 2009. In March, it will have been nearly 30 months since the federal government operated under a real surface transportation bill. New York is likely to begin its fiscal year without a transportation capital plan and counties and local municipalities are increasingly nervous that their CHIPS reimbursements may be in jeopardy. Due to pres-

sure from unfunded social service mandates from the state, most counties in New York have limited resources to fund transportation projects locally. In some instances CHIPS may be the only source of transportation capital improvements for counties.

The statewide CHIPS funding, including funding for New York City projects, represents \$363 million. Without this aid, counties may be forced to raise property taxes in order to fund projects locally. This task, however, was made increasingly difficult as the state imposed a 2% annual property tax cap on all municipalities earlier this year. The cap can only be broken with a local override of the law and many county boards have been hesitant to do so fearing reprisals from taxpayers. So in effect, counties in New York are stuck between a rock and a hard place.

Our state and local highway system supports more than 130 billion vehicle miles of travel annually. The total system encompasses more than 113,000 miles of highway and more than 17,400 bridges. New York is also home to an extensive 4,600-mile rail network over which more than 1.6 million passengers travel and 42 million tons of various commodities are shipped each year. The state also supports 485 public and private aviation facilities, and has oversight of several ports. Further, New York's transportation system supports more than 130 public transit operators, serving more than 8 million passengers each day. It is incumbent upon our State to ensure that these assets are maintained and are safe and reliable.

The lack of Congress to enact a new sur-

face transportation bill for the long term has made capital planning nearly impossible for states. This lack of planning is now affecting counties and towns. This puts already stressed local infrastructure and assets in jeopardy. It is imperative that Congress immediately replace SAFETEA-LU with a clean long term plan that allows states to forecast capital expenditures.

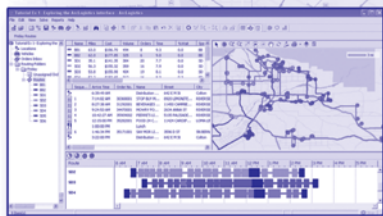
Similar to the situation at the federal level, there is an increasing reliance on the General Fund to support the State's Dedicated Highway and Bridge Trust Fund (DHBTF). In addition, federal funding for transportation remains uncertain. The outlook for an adequately funded, longer-term multiyear transportation program is still far from clear. While the American Reinvestment and Recovery Act (ARRA) supplied a much needed one-time boost of more than two billion dollars in highway and transit funding to New York State in 2009, it will be difficult to continue to make progress on the state and local infrastructure needs without a sustainable growth in funding.

2012 Roadway Safety Infrastructure Conference February 14 – 15, 2012

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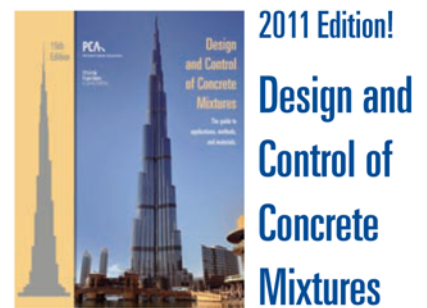


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From FHWA Focus, December 2011

It's as easy as 1-2-3. A new video released by the Federal Highway Administration (FHWA) demonstrates how to build the Geosynthetic Reinforced Soil Integrated Bridge System (GRS-IBS). Initially developed under FHWA's Bridge of the Future initiative in 2002, GRS-IBS can be used to build single span bridges on all types of roads. The technology offers the advantages of being faster, more economical, and easier to build than standard bridge construction. It is also extremely durable and can be built with readily available materials, using common construction equipment, and without the need for highly skilled labor. "We redesigned the bridge from the bottom up," said Mike Adams of FHWA.

FHWA selected GRS-IBS as one of the technology innovations for accelerated deployment by its Every Day Counts (EDC) initiative in 2010. EDC is designed to identify and deploy proven, ready-to-go innovation aimed at shortening project delivery, enhancing roadway safety, and improving environmental sustainability (see June 2010 *Focus*).

As the video shows, researchers at the U.S. Forest Service and the Colorado Department of Transportation pioneered the early development of the GRS technology. FHWA refined the technology for load-bearing applications. In 2005, Defiance County, Ohio, built the Bowman Road Bridge, the world's first GRS-IBS bridge. Use of the technology cut costs by at least 20 percent compared to the county's previous method for bridge construction. Since then, Defiance County has

built a total of 23 bridges using GRS-IBS, realizing savings of 40 percent, and is now able to build a complete bridge in about 2 weeks.

Created to educate designers, engineers, contractors, and inspectors on the fundamentals of GRS-IBS, the video takes viewers through the construction process and illustrates best practices to follow. GRS-IBS consists of three main components: the reinforced soil foundation (RSF), GRS abutment, and GRS integrated approach. The RSF is composed of granular fill material that is compacted and encapsulated with a geotextile fabric. The abutment, meanwhile, uses alternating layers of compacted fill and closely spaced geosynthetic reinforcement to provide support for the bridge superstructure, which can be placed directly on the abutment without the need for a traditional bearing joint or cast-in-place concrete.

Construction of the abutment is as easy as 1-2-3: a row of facing blocks, followed by a layer of compacted granular fill, and then finished with a layer of geosynthetic reinforcement. This process is repeated until the required abutment height is reached. GRS is then also used to construct an integrated approach for the road on to the bridge, alleviating the common "bump" caused by differential settlement between the bridge and approach road.

"Once the construction process starts, you can quickly see how easy the concept is and how flexible you can be," said Jeff Timbrook, Operations Deputy for the Defiance County Engineer.

Following the initial construction experi-

ences of Defiance County, New York's St. Lawrence County is also now using GRS-IBS to replace many of its bridges. "Our biggest benefit is adaptability to different sites," said Toby Bogart, Senior Civil Engineer for St. Lawrence County. "Also, it's cheaper, it's faster." St. Lawrence County has realized savings of 50 to 60 percent on bridges built with GRS-IBS.

To view the GRS-IBS construction video and learn more about the experiences of Defiance County and St. Lawrence County, visit FHWA's YouTube channel at http://youtube.com/user/USDOTFHWA#p/a/u/0/w_5WFoAdoUw. The video can also be viewed on the FHWA EDC Web site at www.fhwa.dot.gov/everydaycounts/technology/grs_ibs/multimedia.cfm.

Best practices in the video follow the guidance outlined in FHWA's *Geosynthetic Reinforced Soil Integrated Bridge System Interim Implementation Guide* (Pub. No. FHWA-HRT-11-026), which is available to download at www.fhwa.dot.gov/publications/research/infrastructure/structures/11026/index.cfm. Also available is a companion document, *Geosynthetic Reinforced Soil Integrated Bridge System Synthesis Report* (Pub. No. FHWA-HRT-11-027), which substantiates the design method and presents case histories for GRS-IBS bridges built to date. For additional information about GRS-IBS, contact Daniel Alzamora at FHWA, 720-963-3214 (email: daniel.alzamora@dot.gov), or Mike Adams at FHWA, 202-493-3025 (email: mike.adams@dot.gov).

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ONLINE TRAINING OFFERS INTRODUCTION TO WARM MIX ASPHALT

As more transportation agencies explore the use of warm mix asphalt (WMA) for pavement projects, a new Web-based training course available from the Federal Highway Administration's (FHWA) National Highway Institute (NHI) offers an introduction to "Special Mixture Design Considerations and Methods for Warm Mix Asphalt" (Course No. FHWA-NHI-131137).

FHWA selected WMA as one of the technologies promoted by its Every Day Counts (EDC) initiative in 2010. EDC is designed to identify and deploy proven, ready-to-go innovation aimed at shortening project delivery, enhancing roadway safety, and improving environmental sustainability (see June 2010 *Focus*).

WMA encompasses a variety of technologies that allow asphalt to be produced and then placed on the road at lower temperatures than the conventional hot mix asphalt (HMA) method. The lower temperatures may result in cost savings and reduced greenhouse gas emissions because less fuel is required. The use of WMA also improves compaction, which then improves pavement performance, reduces fuel and energy usage, and increases worker comfort by reducing exposure to high temperatures, fuel emissions, and odors. Since the asphalt mix can maintain workability at lower temperatures, the use of WMA can also extend the construction season, allowing projects to be completed in a timelier manner.

The free 2-hour NHI course highlights modifications that need to be made to the current Superpave volumetric design procedure to complete a WMA mixture design, as proposed in American Association of State Highway and Transportation Officials' R35, Standard Practice for Superpave Volumetric Mix Design for Hot-Mix Asphalt. The training highlights key differences in WMA and HMA design procedures. Participants also have the opportunity to convert HMA mixtures to WMA mixtures.



Available to schedule at any time, the course is intended for experienced HMA mixture design technicians and engineers. For more details or to schedule the training, visit www.nhi.fhwa.dot.gov. For more information about WMA, including a list of frequently asked questions, case studies, and useful publications, visit www.fhwa.dot.gov/everydaycounts. Information is also available by contacting Matthew Corrigan at FHWA, 202-366-1549 or via email: matthew.corrigan@dot.gov.

BENEFITS AND ASSESSMENT OF ANNUAL BUDGET REQUIREMENTS FOR PAVEMENT PRESERVATION


Purdue University has released a report that identifies methods and best practices that can be used by the Indiana Department of Transportation (INDOT) in performing various strategies for pavement preservation. <http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1837&context=jtrp>


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SIGN-UP FOR NACE 2012 TECHNICAL TOURS - TUESDAY 4/2

The NACE 2012 host committee has planned two very interesting technical tours for the Tuesday afternoon of the conference: The Asphalt Institute and Double Crossover Diamond Interchange/Rural Roundabout.

Asphalt Institute: Tour the lab and headquarters of the internationally renowned Asphalt Institute. Founded in 1919, the Asphalt Institute is the international trade association of petroleum asphalt producers, manufacturers and affiliated businesses. Asphalt Institute publications, seminars and webinars educate users and specifiers on proper practices for the design, construction, maintenance, and rehabilitation of all types of asphalt pavements. The Laboratory of the Asphalt Institute is a leading facility in asphalt industry research, testing and analysis. AI's lab is recognized for leadership in solutions to technical issues that impact the asphalt industry, and it serves as a focal point for the application of new technology based on the highest standards of performance. For more information, visit www.asphaltinstitute.org.

Double Crossover Diamond Interchange/Rural Roundabout: Lexington was plagued with a severely congested and high crash intersection caused by closely spaced traffic signals, heavy turning movements, and weaving operations between intersections. More than 35,000 vehicles travel this section daily. In research and response to this issue, The Kentucky Transportation Cabinet determined that converting the current conventional diamond interchange into a Double Crossover Diamond Interchange was the best option to increase capacity and reduce crash rates. There will be a technical session detailing the challenges of design, construction and public relations. Join us as we travel through the intersection with commentary from the lead Engineer.

Tours will depart the Hilton Lexington Downtown Hotel after the delegate & guest luncheon. Tour is included with conference registration. **For the sign-up form see:**

<http://www.countyengineers.org/events/annualconf/Documents/Tues%20Technical%20Tour.pdf>

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