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President's Report

By Duane Ratermann, PE
Knox County, Illinois



"State threatens to withhold motor fuel tax funds from local governments" was the headline in July for a Chicago area newspaper. At first glance one has to wonder how that is even possible. Typically the State of Illinois will collect \$50-\$60 million in motor fuel tax each month with a portion of it distributed to local governments. Local governments depend on MFT monies to maintain roads and bridges within their jurisdiction.

Motor fuel taxes were first collected in 1929 in Illinois. The MFT is derived from a tax on the privilege of operating motor vehicles upon public highways and recreational watercraft upon the waters, based on the consumption of motor fuel. The motor fuel taxes that are deposited in the Illinois fund are 19 cents per gallon for gasoline/gasohol products and 21.5 cents per gallon on diesel fuel.

There are approximately 2,800 units of local government in Illinois that receive MFT funding. That number includes 102 counties; 1,400 townships; and approximately 1,300 municipalities and villages. Counties receive MFT based on the number of licensed vehicles in the county. Townships receive funding based on the number of miles of public roadway that they maintain, and municipalities receive funding based on their population.

Illinois Motor Fuel Tax Funds can be spent on maintenance and construction activities on public roadways and streets, including mowing, snow removal, pavement preservation, and drainage structure rehabilitation and replacement. Wages and salaries for local government employees can be paid with MFT funds as long as the employee is working on an MFT eligible activity.

In 2014, Knox County received \$690,000 in MFT funding compared to \$896,000 in 2005. The 20 townships within Knox County received a total of \$1.1 million in 2014 compared to \$1.25 million in 2005. During that same 10 year period, many of the materials that we purchase for the maintenance of our roadways have at least doubled and in some cases tripled in price. MFT funds represent about one-third of my total highway department budget.

With the decline in funding and the increase in costs, we are forced to scale back the maintenance activities each year, with the condition of the local road system suffering. For many years now the Illinois Association of County Engineers has been pleading with our State and Federal elected officials to address the funding issue with very little success.

Hopefully by now you have a clear picture of the importance of MFT funding for local agencies in Illinois. Many of us believed the MFT funding was "untouchable" when Illinois politicians were looking for ways to reduce ongoing budget deficits. The newly elected Illinois Governor (Republican) and the long time Speaker of the House (Democrat) are at a standoff on how to balance the FY 2015-16 state budget, with the new fiscal year beginning July 1. Because there is no approved budget in place, the state does not have appropriation authority to distribute money collected by the motor fuel tax to local governments.

Since July 1, millions of dollars of motor fuel taxes have been collected but have not been distributed. IDOT is telling us that all of the MFT money collected will eventually be distributed to local governments when the state has a budget in place. Many local agencies are most definitely depending on that. Stay tuned.

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The Washington State Association of County Engineers (WSACE) promises you'll experience the best of Tacoma and Pierce County!

On the site, you'll find about everything you need: the preliminary schedule, hotel and travel information, session topics, networking opportunities, things to do in Tacoma and more.

Act now to reserve a room at the host hotel, The Murano, as space is limited. The Courtyard also has a NACE block. Registration will open around the first of November.

Feel free to contact us if you have any questions: nace@naco.org or 202-393-5041.

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Travel Scholarships Available to County Engineers

Several Travel Scholarships are available, specifically designated for County Engineers, to assist them in attending the **2015 National Accelerated Bridge Construction Conference**. The conference will be held on December 7-8 at the Hyatt Regency Hotel in downtown Miami, Florida.

If you are interested in receiving a Travel Scholarship, please email Dr. Atorod Azizinamini at aazizina@fiu.edu and mention that you were contacted by Brian Roberts. The conference will include more than 110 30-minute technical presentations. Congressman Mario Diaz-Balart will be the keynote speaker. 10 pre-conference workshops will be held on Dec. 6.

Opportunities are also available to submit your ABC project for a national award. The nomination deadline is September 15. Carmen Swanwick, Utah State Bridge engineer will chair the award committee.

You can find more detailed information [HERE](#) about the conference, including the program and procedure for nominating your project for an ABC award.

The 2014 National Accelerated Bridge Construction Conference held Dec 4-5 was a great success! More than 750 attended the conference, including more than 150 state bridge engineers, more than 40 FHWA bridge engineers, and many consultants and bridge officials. FHWA Acting Administrator Gregory Nadeau was the keynote speaker.

More than 160 20-minute technical presentations were made and 9 workshops were. View a [short video](#) capturing the highlights of 2014 conference.

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Transportation Reauthorization Clears Another Hurdle

By **Brian Roberts, PE**
NACE Executive Director



We'd like to update you on the latest activity (or inactivity) on the House transportation reauthorization and encourage you to contact your Representative.

You may recall that the House T&I Committee was preparing to release their bill in mid-September. Prior to its release, the DOT had announced that the Highway Trust Fund (HTF) was in better shape than originally thought. DOT projected that there was enough funding to carry through until June 2016. This announcement seems to have taken some of the pressure off the House to act.

Plus, committee members still disagree on a number of issues. According to T&I Minority Leader Rep. Peter DeFazio (D-Ore.), they are "more than one hand, less than all my hands and toes." Some of the points of divergence are environmental permitting for infrastructure projects, and bike and pedestrian issues, he said. The T&I ranking member suggested those points would get resolved pretty quickly, according to Politico.

Then last week, DOT released new information showing the HTF's Highway Account will drop below its minimum \$4 billion liquidity balance four times by the end of 2015--potentially requiring the department to begin slowing down reimbursements to states for approved federal aid highway improvements. The DOT report states:

"Trust fund balances are currently estimated to remain at or just below the prudent balance levels through May 2016, the beginning of the 2016 construction season, whereupon the balances will rapidly decline to the point where the fund will become fully insolvent and DOT will be unable to meet its financial obligations during the heat of the construction season."

At this point it is unclear when the House T&I will release its bill. What is clear is we **MUST keep the pressure** on the House to act. We encourage you to contact your Member as described below.

Also, keep in mind that recess is scheduled for the week of October 12. That would also be an excellent time to contact your Representative back in the district. Once the bill is released, we will all need to follow up with our contacts to provide specific input on the proposed language.

Email Your Congressperson

NACE encourages all members to share our priorities with your Representative. The Member email addresses can be found [here](#).

Keep me posted on your efforts and results as we're sharing this info with Jessica Monahan of NACo to increase the effectiveness of our group efforts.

NACE Sample Letter

The Honorable (Name)
United States House of Representatives
Washington, DC 20515

Dear Representative ____:

As the Transportation and Infrastructure Committee is drafting the reauthorization of MAP-21 legislation, I am writing to convey the legislative priorities of the National Association of County Engineers (NACE).

NACE is a nonprofit, nonpartisan professional association founded in 1956. We're the voice America depends on for safe, efficient county roads and bridges. Nationwide, local roads account for about 75% of our highways and roads, and over 231,000 bridges are owned by counties. Our nearly 2,000 members are county engineers, public works directors, highway commissioners, road managers and related professionals in the US and Canada. We have 32 State Affiliates.

Our top two priorities are Project Streamlining and Safety initiatives.

Project Delivery Streamlining

Administrative requirements when receiving federal funding for county projects result in higher project costs and longer completion times. Project delivery and streamlining reforms are necessary to remedy these consequences. NACE proposes that for simple projects similar to ones identified in MAP-21 where efficiencies related to environmental reviews were established for projects under \$5 million, single page certifications by the local government sponsor and contractor(s) that the project was designed, bid and constructed to local and federal standards.

Safety Initiatives

Rural roads have a disproportionate number of highway fatalities in the US, at roughly 57%. Two items can help address this issue:

Strategic Highway Safety Plans: Future transportation bills should require State DOTs to coordinate with local agencies in developing SHSPs. By bringing local stakeholders to the table, we can ensure that the proper resources are allocated to reduce highway fatalities.

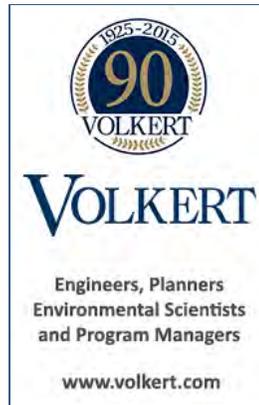
Toward Zero Deaths: NACE supports TZD Grants which would provide local and non-profit organizations with funding to establish and implement TZD programs, which have been proven effective in other organizations. HR 1274 provides the necessary framework to begin this grant program.

I urge you to address these critical issues in your bill to ensure that counties can efficiently and cost effectively build and maintain their vital transportation infrastructure and reduce the fatalities on county roads.

Please contact NACE Executive Director Brian Roberts, PE, at 202-393-5041 or broberts@naco.org if you have any questions about our priorities. Thank you for your continued attention to these matters.

Sincerely,

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The New National Center for Rural Road Safety

By Dave Brand, PE, PS
County Engineer, Madison County, Ohio



Going it alone while attempting to find solutions is never anyone's first choice.

Almost every great hero has a sidekick working in his shadow to make the problem of the day a little easier to solve. Batman has Robin, Andy Griffith has Barney Fife, Sherlock Holmes has Watson, Captain Kirk has Spock, and even Wayne Campbell has Garth Algar.

The point is that each of them would have a much harder path to success without his sidekick being that dependable person to count on.

The question for us as County Road Professionals is: Who is going to be our sidekick when it comes to being a roadway safety hero? Who is going to be there all the time to give us easy to understand information and practical solutions?

The new **National Center for Rural Road Safety** housed at the University of Montana aims to fill that role. The center was funded with the re-authorization of MAP-21 in 2012 as a next generation center focused on enhancing safety on rural roads by supporting local, state, and tribal road owners and their stakeholders. The center just opened its physical doors in December 2014 and rolled out its web presence this past month at <http://ruralsafetycenter.org>.

The center's first webinar is scheduled for November 3, "Introduction to the National Center for Rural Road Safety. What does the Safety Center offer to road agencies and their personnel?" You can sign-up online.

You can also receive updates from the Center by joining their distribution list at <http://ruralsafetycenter.org/about-our-center/contact-us/> or follow them on Facebook at <https://www.facebook.com/ruralroadsafety>.



National Center for Rural Road Safety

As the NACE member representing locals on the Stakeholder Group, I invite you to investigate these new resources and provide feedback on the Center's materials, web resources and focus. I can be reached at dbrand@co.madison.oh.us or you can reach out to any of the members of the NACE Roadway Safety Committee.

The National Center for Rural Road Safety truly wants to be your everyday safety sidekick, so you, in turn, can become a roadway safety hero. You don't have to go it alone.

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Wheeler : Build Bridges with In-House Assets

By David Clemens

Wheeler Sales Manager, Engineered Products

Stretching available budget dollars often means leveraging in-house staff and equipment. In the case of bridge replacement, prefabricated bridge kits are an option to consider. The following is a typical example where Wheeler worked with county staff through the steps of a bridge replacement.

Engineering on a Budget

Wheeler provided sealed superstructure plans with the material package. This greatly reduced the expense of developing the overall bridge plans. The County Engineer reviewed the history of the bridge site. Based on previous flood events it was determined the current structure size was adequate. Soil borings were obtained and geotechnical analysis recommended the use of driven pile for the foundation. The associated abutment details were provided as part of the Wheeler bridge plan. No other engineering services were required.

Install with Common Equipment

The county did not have a crane or certified operator. They solicited multiple quotes from local contractors for the pile installation. This was the only outside contracting service required for the project. The remaining abutment and rip-rap installation was performed by the county crew. Prefabricated components were unloaded and installed with a front-end loader and backhoe. All superstructure assembly was performed by the county crew without the need for specialized equipment. Backfilling, landscaping and paving of the wear surface were finished by the county.

Work with an Experienced Supplier

Panel-Lam bridge kits have been used for decades in these applications. Wheeler has tailored them for in-house installation. Panelized superstructures are custom detailed specific to the site. Sealed superstructure plans are clearly detailed. The components are labeled and referenced in the bill-of-material. All hardware is included.

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The Short Span Steel Bridge Alliance – A Valuable NACE Partner

By **Derin Campbell, PE**
County Engineer, Boone County, Missouri



I'm a member of the Short Span Steel Bridge Alliance (SSSBA), a group of bridge and buried soil structure industry leaders who develop and share educational information on the design and construction of short span steel bridges up to 140 feet.

At our August meeting in Philadelphia, the group discussed several time- and cost-saving tools for county engineers. I'd like to share two of those tools with the NACE membership.

eSPAN140

A free-to-use, web-based design tool that prints out customized designs for individual projects. Users can access the tool at www.espan140.com.

You type in as few as three project requirements and then wait less than five minutes for a PDF file that gives all the data needed for that particular project: some choices on the preliminary design, and the companies with their contacts who can build the bridge.

It's a one-stop shop for short span steel bridges. eSPAN140 can be used for more than one project and the information can be shared with co-workers. It is extremely user-friendly. Since eSPAN140 became available in 2012, almost 2,000 preliminary designs have been downloaded. The first eSPAN140-designed bridge was built in Jesup, Iowa, with Brian Keierleber, PE, and his Buchanan County staff.

Workshops at LTAP Centers

SSSBA offers free short span steel bridge workshops for county engineers, DOT personnel, and road supervisors. The workshops are held at state LTAP\TTAP Centers.

The half-day or full-day format covers design tools, case studies, new technologies such as cost-effective press brake-formed tub girders and recent innovations in protective coatings. The topics can be tailored to the needs and interests of your agency. When the topics are selected and a date is set, SSSBA takes care of arranging the speakers and paying for their travel.

The local LTAP\TTAP is responsible for reserving an appropriate meeting location and handling registration, but all the rest is provided and paid for by the SSSBA. So far this year, workshops have been held in West Virginia and Wyoming, with more scheduled in Ohio and Alabama.

How helpful are these SSSBA tools? I have used eSPAN140 and have attended the training workshop, and highly recommend both tools to everyone reading this article.

If you'd like more information, contact me at DCampbell@boonecountymmo.org or Dan Snyder with the SSSBA at dsnyder@steel.org or visit www.shortspansteelbridges.org.

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7 Lesser Known Uses for Asphalt

By James Careless
Asphalt Magazine

Asphalt has many well-known uses. It paves the world's highways, seals in its roofs and keeps its driveways solid and weatherproof. But there is a whole range of lesser-known applications where asphalt provides durable protection against all kinds of harsh conditions, year after year.

Here are seven such lesser-known uses for asphalt.

1. Any Color "So Long as It Is Black"

Henry Ford is legendary for his Model T, the mass-produced 'Tin Lizzie' that made car driving affordable to the general public. Over 15 million Model Ts were produced between 1908 and 1927.

"Any customer can have a car painted any color that he wants so long as it is black," Ford is famously quoted as saying. Offering just one color simplified the mass production process, which was central to keeping the Model T's price low for the masses.

In truth, Ford did offer some Model Ts in red, gray and "Brewster green" from 1908 to 1912. But after 1913, "Japan Black" came standard – and yes, this paint contained a high level of bitumen or liquid asphalt. Actually a black lacquer that was named for its widespread application on imported Japanese products, Japan Black is made "from an asphaltic base in conjunction with oils, dryers, thinners and, sometimes, other varnish ingredients," according to the American Chemistry Council. It is "usually applied to metal, such as automobile fenders and baked at a comparatively high temperature of 400°F."

Add the fact that Japan Black was fast drying, and one can understand why Henry Ford adopted this finish in his effort to constantly drop the Model T's price, and, by extension, boost its sales by putting this car within the budgets of more consumers. In 1908, the first Model Ts sold for \$950. By 1912, the price was down to \$575; it would eventually get as low as \$280 per Model T, thanks to Ford's cost-cutting, mass production techniques – including Japan Black paint.

2. Taking care of the farm

Wooden farm fences are not the first things that come to mind when one thinks of asphalt. But the truth is that this substance offers tremendous advantages for farmers who want to maintain their fences, while maximizing the intervals between repainting.

This is where asphalt fence paint comes in. Unlike regular paint, asphalt paint is extremely durable, waterproof and can be used both above and below ground. It also dries to the touch in just four hours. This means that a farmer has the option of painting fence posts before sinking them into the earth, thus minimizing rot and decay caused by water seepage. As well, water-based asphalt paint is UV-resistant, maintains its black color for years and protects covered nails and screws from rusting. It can also be used to paint metal pipes, storage tanks and masonry walls.

One last advantage: black asphalt fence paint doesn't show the dirt and dust the way that conventional white paint does.

3. Keeping cars and trucks quiet

Cars and trucks ride on asphalt. But vehicle manufacturers also use this substance to line body parts, in an effort to muffle road noise.

Applying an asphalt coating reduces component vibration and absorbs sound waves caused by whatever road-induced vibration remains. At the same time, the asphalt lining helps to block outside road noise from coming into the vehicle.

Such asphalt dampeners are applied during manufacturing to locations such as floor pans, trunk exteriors and other areas where noise generation or penetration can be an issue. Application techniques include asphalt pads that are applied to the vehicle and

fused into place using baking, and sprayed-on liquid asphalt coatings.

Beyond combatting noise, asphalt linings help to protect body metal from rust, repel the buildup of corrosive materials such as road salt and extend the durability of cars and trucks.



4. Asphalt works for art

Canadian artist Lucas Seaward lives in Fort McMurray, Alberta, in the heart of the country's bitumen-rich oil sands. In tribute to this fact, Lucas has taught himself how to collect and then dilute surface-level liquid bitumen to create stunning monochrome wildlife paintings.

It's not an easy process. To dilute and bind the bitumen to the canvas permanently, Seaward has to mix it with a special varnish that also protects the painting's surface.

A number of Lucas Seaward's stunning works can be seen (and are for sale) through his web site at www.lucasseaward.com. His commissions include a 13' by 7' bitumen canvas for Fort McMurray International Airport.

5. Asphalt fights graffiti

On the flip side of art, graffiti is a big nuisance for urban building owners. One way to attack this problem easily is to coat a building's external masonry/concrete walls with black asphalt paint, and then keep a few cans of spray asphalt paint at hand. When someone tags the wall, just take out the spray asphalt paint and quickly cover the offending graphic. It is fast, easy, and effective.

6. Nature's medic

At first glance, it may seem odd that liquid asphalt would actually provide effective first aid for trees and plant graftings. But it does, because this substance is effective in sealing wounds from invasive bugs and bacteria.

In fact, few substances work as well as bitumen mixed with latex, which is why gardeners rely on both liquid and paste versions when they remove tree limbs, treat storm damage or graft new roots to plant stems.

7. A contractor's dream

Asphalt-based products are an absolute godsend for contractors. Just ask Tim Carter. He is an experienced contractor and founder of the AskTheBuilder.com advice web site.

"I use asphalt-based waterproofing compounds as either a foundation damp-proofing or waterproofing barrier on poured or block foundations to either stop water vapor or liquid water from entering below grade spaces," Carter said.

Carter also uses asphalt-based compounds in place of tarpaper under wood siding, brick veneer, and vinyl/fiber cement siding, and "as a remarkable flashing material for doors and windows by cutting pieces of the self-adhesive rubberized asphalt that comes in rolls," he said. "It allows me to flash any opening by creating my own custom flashing as a must-have sub-flashing material for roof skylights or any other roof penetration. I also use these products as a magical ice dam leak prevention product under roofing materials of all types."

Reprinted from Asphalt Magazine, September 14 issue.

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September 2015

New Strategic Highway Safety Plan Resources Focus On Building Effective Leadership, Engaged Stakeholders

By Jennifer Warren
FHWA Office of Safety



The Office of Safety has recently developed two new resources designed to encourage transportation agency leadership and safety stakeholders to improve their effectiveness in executing the strategies identified in the State's Strategic Highway Safety Plan (SHSP).

The revised **Leadership That Saves Lives** flyer is designed to build awareness among key leaders about the important role they play in the SHSP process. The flyer offers examples of proven State approaches and practices that could inspire leaders to recommit to their State's SHSP goals. It also offers important tips for connecting and holding a successful dialog with internal and external safety partners, energizing and encouraging partners, and tackling roadblocks to clear the

way for successful implementation of important safety strategies.

As States continue to update their SHSPs, it's also important to sustain engagement with current safety partners as well as reach out to new stakeholders in the safety community.

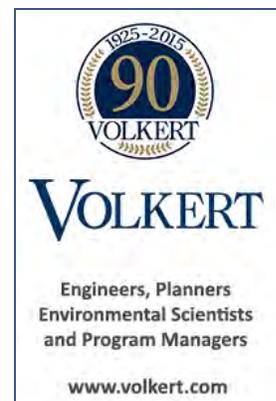
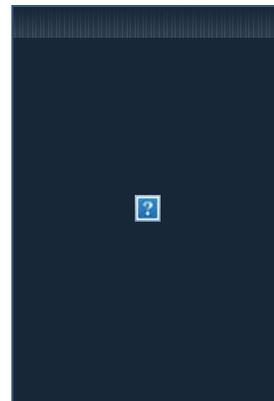
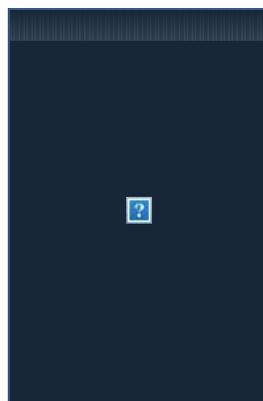
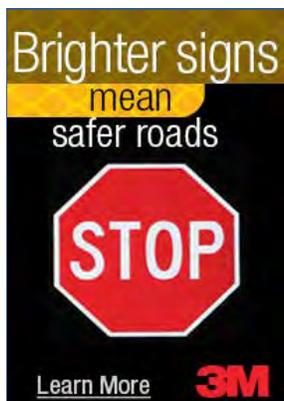
The newly revised **Get Stakeholders Involved** flyer explains the need for stakeholder involvement and the many benefits of collaboration. These benefits include:

- Shared responsibility, which means that the financial and technical burdens of implementation are not shouldered by one agency or organization alone, but rather are spread out among all stakeholders;
- Expanded understanding of other stakeholders' roles, responsibilities, and perspectives, which means individuals know where to turn with questions, problems, and new ideas; and
- Leveraged resources, such as implementing low-cost safety improvements combined with high-visibility enforcement, which may improve safety more than either strategy alone.

We encourage readers to download and circulate these updated flyers to your state SHSP partners, especially those in departments of transportation and state highway safety offices. The flyers can be included in briefing packages to leadership and distributed at SHSP/safety summits and other meetings and conferences.

For more information on these flyers or other SHSP resources, please contact Jennifer Warren at jennifer.warren@dot.gov.

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September 2015

Injunction Muddies Implementation of New WOTUS Rule



The preliminary injunction to halt implementation of the "Waters of the U.S." rule only applies to the 13 states that filed the original brief, according to North Dakota U.S. District Court Chief Judge Ralph Erickson.

Erickson, who made the first ruling Aug. 27, issued another order Sept. 4, limiting the scope of the injunction to the plaintiff states. The decision, Erickson said in his order, takes into account competing state interests and competing judicial rulings. It was unclear at the time of the initial ruling whether it extended nationwide.

States seeking a preliminary injunctions from the North Dakota District Court were: Alaska, Arizona, Arkansas, Colorado, Idaho, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota and Wyoming.

Lawsuits seeking temporary injunctions were also filed in federal district courts in West Virginia and Georgia. In both cases, the courts declined to grant an injunction, claiming they did not have jurisdiction.

The North Dakota court decision is just one skirmish in a larger legal battle on the part of 31 states to have EPA and the Corps of Engineers withdraw and re-write the WOTUS rule. NACo will continue to monitor and report developments as they occur."

A federal judge has temporarily stopped EPA and U.S. Army Corps of Engineers from enforcing the new "Waters of the U.S." rule in at least 13 states: Alaska, Arizona, Arkansas, Colorado, Idaho, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, South Dakota and Wyoming.

U.S. District Court of North Dakota Chief Judge Ralph Erickson granted a preliminary injunction, citing the harm states would likely incur by the rule's planned implementation on Aug. 28. It is unclear at this point whether the order granting the temporary injunction applies only to the 13 states or nationwide. Judge Erickson is expected to clarify the scope of the ruling. Currently, the EPA is arguing that the preliminary injunction only applies to the 13 states involved in the case, while others believe the federal ruling applies nationally.

Lawsuits seeking temporary injunctions were also filed in federal district courts in West Virginia and Georgia. In both cases, the courts declined to grant an injunction, claiming they did not have jurisdiction.

"As the rule goes through the judicial process, we will continue to work with the federal agencies to clarify the regulation and implementation process," said NACo President Sallie Clark. "All of us want clean water, and we must work together to achieve that goal without compromising our public safety and infrastructure responsibilities."

Counties are responsible for many types of infrastructure that could be affected by the rule, including roadside ditches, storm water drains, flood control channels and other systems designed to keep water away from people and property. Counties own and maintain 45 percent of the nation's road miles and one out of every 10 bridges. Counties and other local governments are also charged with upholding federal, state and local regulations that protect water resources.

"This has always been an issue of practicality for us. We hope the EPA and the Corps will work collaboratively to provide more precise guidance that will help us protect water and keep our residents safe," Clark said. "However, we also believe in the appropriate level of state and local control."

Since the agencies unveiled the proposal in 2014, NACo testified before congressional bodies four times and has steadfastly advocated for more collaboration and greater clarity.

Reprinted from NACo County News, September 8 issue.

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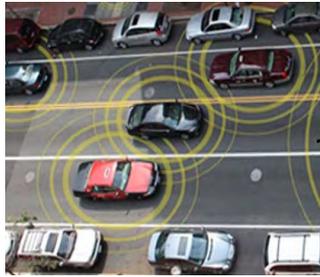
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September 2015

US DOT Announces Up to \$42 Million in Next Generation Connected Vehicle Technologies



US Transportation Secretary Anthony Foxx announced on Sept. 14 up to \$42 million to pilot next-generation technology in infrastructure and in vehicles to share and communicate anonymous information.

New York City; Tampa, Florida; and Wyoming were selected for a competitive pilot.

As part of the national Connected Vehicle Pilot deployment program, the locations were selected in a competitive process to go beyond traditional vehicle technologies to help drivers better use the roadways to get to work and appointments, relieve the stress caused by bottlenecks, and communicate with pedestrians on cell phones of approaching vehicles.

"Today's announcement is a big step forward for the future of how we move in this country, from our rural communities to our biggest cities," said Transportation Secretary Anthony Foxx. "It has been a core mission of the Department to support promising new technologies, and through these types of smart investments we are opening the door to a safer and cleaner network and expanding how future generations travel."

New York City will install Vehicle to Vehicle (V2V) technology in 10,000 city-owned vehicles; including cars, buses, and limousines, that frequently travel in Midtown Manhattan, as well as Vehicle to Infrastructure (V2I) technology throughout Midtown. This includes upgrading traffic signals with V2I technology along avenues between 14th Street and 66th Street in Manhattan and throughout Brooklyn. Additionally, roadside units will be equipped with connected vehicle technology along the FDR Drive between 50th Street and 90th Street.

US DOT made an additional commitment to empowering cities to solve congestion and safety issues with connected vehicle technology by awarding \$17 million to solve peak rush hour congestion in downtown Tampa and to protect the city's pedestrians by equipping their smartphones with the same connected technology being put into the vehicles. Tampa also committed to measuring the environmental benefits of using this technology.

In Wyoming, the focus is on the efficient and safe movement of freight through the I-80 east-west corridor, which is critical to commercial heavy-duty vehicles moving across the northern portion of our country. Approximately 11,000 to 16,000 vehicles travel this corridor every day, and by using V2V and V2I, Wyoming DOT will both collect information and disseminate it to vehicles not equipped with the new technologies.

These connected vehicles will yield unprecedented levels of anonymous data that will be the basis for a multitude of innovative applications that will lead to smart vehicles, smart infrastructure, and ultimately smart cities. Research has found that the technology could reduce unimpaired vehicle crashes by 80 percent, while also reducing the 4.8 billion hours that Americans spend in traffic annually.

In 2012, the USDOT tested and proved connected vehicles' life-saving potential in the largest real-world pilot of the technology to date, with over 2,700 equipped vehicles operating on the streets of Ann Arbor, Michigan. Participating vehicles used V2V safety technology to help everyday drivers avoid crashes as they traveled along their normal routines. Safety apps warned drivers of alerts such as braking vehicles ahead, vehicles in their blind spots, or impending red-light violations. USDOT's efforts proved that connected vehicle technology indeed works in the real world and in a variety of vehicle types including cars, trucks, transit vehicles, motorcycles, and even bicycles.

The high level of interest that was prompted by the announcement of the Connected Vehicle Pilot Deployment Program is a testament to the promise of connected and automated vehicles. With the Connected Vehicle Pilot Deployment Program, the USDOT is now focusing on accelerating the deployment of the technology in more regions throughout the nation.

The USDOT's goals for the program are straightforward—advance deployment, measure impact, and uncover and address the technical and non-technical barriers to deployment in a hands-on way.

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September 2015

“PaveM”, Caltrans’ Pavement Management System By Tom Pyle, Caltrans

This article provides status of the new Caltrans Pavement Management System, “PaveM”, developed to help manage Caltrans 50,000-mile highway system in a better way.

The goal is clear. California’s highways need some attention. Well, a lot of attention. They are getting better, but still it’s of little consolation that California’s highway condition ranking by the Reason Foundation has moved from the basement rank of 48 to 47. Since 2000, California’s highways have been consistently in the bottom 10. It is clear that new tools are needed.

The ‘how-to’ would be easy if we had all the money we wanted. Since we don’t, we need to figure out the optimum project strategy for each mile of pavement. Thus, the idea of a new, more automated pavement management system was born a few years ago to assist pavement engineers with this difficult problem.

Why is this so difficult? We have money, smart engineers and willing contractors. What gives? Pavement Management is like a war. The enemy is not clear though. It shows up as rain, heat, axle loads, smaller tire foot prints, repeated loadings, age, etc. California also has some unique problems that no other state faces. Here are five important considerations in our California battle:

1. Unique climate – 5 zones: dry blistering deserts, rainy coastal zones, snowy Sierra’s, etc.
2. Large ports: 5 of the nation’s 9 largest ports truck goods to the continent.
3. A need to perform pavement work at night, in short construction windows.
4. Heavy seasonal agricultural truck traffic.
5. Extremely high commute traffic: 300,000+ vehicles per day on some routes. In addition, there are thousands of miles where the pavement in one lane is different than in the lane next to it. Why does this matter? Because if the HOV lane is asphalt with 10 years of life remaining and the next lane is concrete with 20 years of life left, meaning then the treatments and schedules to repair are very different.

Given all these considerations, visionaries at Caltrans decided in 2008 to create a new tool to assist with pavement management.

Enter the new Pavement Management System.

Those who crafted the original scoping documents made it clear that Caltrans could not carry on the business of pavement management as it had in the past. In the past, California has led the nation in cutting edge pavement technology, and the next wave of technology was targeted to be more automated to meet the demands of this diverse state.

Automation: So how do you automate the selection of projects over 50,000 lane miles of a war zone given changing budgets and high demands? By breaking it into tiny pieces and then rebuilding those pieces - with decades of institutional knowledge - in a computer program. The automation is broken into three simple areas to answer essential questions.



Figure 1. Caltrans Instrumented Van for Pavement Condition Rating



Figure 2. Image of the Automated Pavement Condition Survey Showing IRI Color Ratings of the Highway, and also Forward and Downward Photo Images

1. What's below the surface?
2. What's the condition of the surface?
3. Where are the optimum projects?

What's below? A company of geophysicists used vans to scan our highways with Ground Penetrating Radar (GPR) to determine what's below the surface. While we think we know everything about our highways, there are surprises on some of the old routes. Surprises are not good during construction.

On one route we found an old rail line that was forgotten and overlaid with asphalt. Also, there are countless miles of rural highways that started as horse trails, then were widened for wagons, to eventually be laid with gravel and then perhaps some oil sprayed on before it became a street and then a highway. Bottom line is we have to know what's below the surface and GPR can tell us that.

The surface condition: Engineers are now receiving more accurate data on the pavement surface condition. Today's surface condition data is in an entirely different realm than what we collected for the last 30 years. In January 2015 Caltrans 'sun-setted' its old visual surveys of the pavement condition. That effort involved a crew of 6 who drove the state and looked at the first 100 feet of every mile every 18 months. Under our new system, annually, from January to August, a fleet of high-speed vans (Figure 1) will collect this data with lasers and high definition scanners and report it to the Pavement Program Office. Lasers and high definition scanners and report it to the Pavement Program Office.

And the data is pouring in! This is exactly what the visionaries imagined. Table 1 shows what the surface condition data will look like. With the new system, we're now receiving GPS coordinates on every crack, rut and bump, and an International Roughness Index (IRI) rating is produced for every one-tenth lane-mile of pavement (Figure 2). The new data even includes the condition of every concrete slab.

Table 1

Caltrans Maintenance Program

2011 Pavement Summary

Caltrans Drive Order

District 8, SBD, Rte 395, PM R3.981 - 73.518

***** Both Side *****

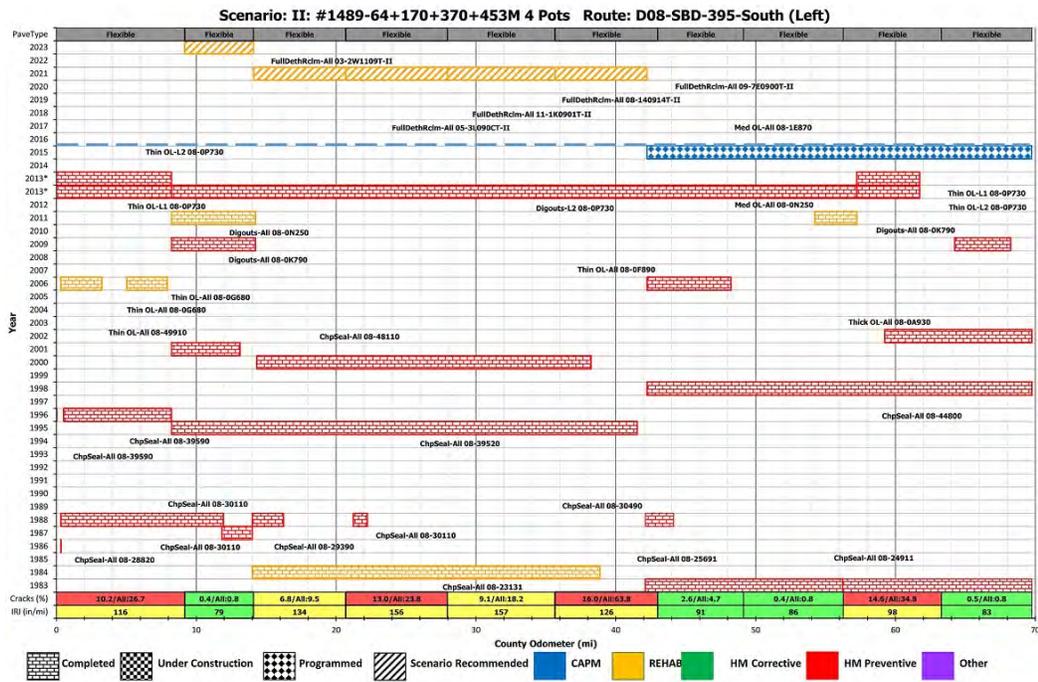
Prior-ity #	Beg ODM	End ODM	Beg PM	End PM	Length	Pave Type	Dir	AADT (,000)	MSL	Alligator		Rut Avg (in)	# Slab	# Crnr	3rd St. Crk* (%)	Fltd Jnts (%)	IRI* (ipm)	
										A (%)	B* (%)							
31	0.000	9.174	R 3.981	12.942	9.174	F	B	12	1	14.46	10.2	0.197					116	
0	9.174	14.092	12.942	17.860	4.918	F	B	8	1	0.00	0.4	0.136					79	
32	14.092	20.691	17.860	24.459	6.599	F	B	8	1	37.75	6.8	0.238					134	
9	20.691	27.968	24.459	31.736	7.277	F	B	8	1	45.68	13.0	0.254					156	
31	27.968	35.650	31.736	39.418	7.682	F	B	8	1	27.32	9.1	0.267					157	
9	35.650	43.008	39.418	46.776	7.358	F	B	8	1	17.13	16.0	0.205					126	
32	43.008	49.139	46.776	52.907	6.131	F	B	3	1	6.81	2.6	0.128					91	
0	49.139	56.265	52.907	60.033	7.126	F	B	3	1	0.04	0.4	0.086					86	
9	56.265	63.289	60.033	67.057	7.024	F	B	3	1	13.90	14.6	0.175					98	
0	63.289	69.750	67.057	73.518	6.461	F	B	3	1	0.00	0.5	0.132					83	
					69.750													

* Last APCS survey data collected updated using PaveM performance model to year: 2012

At publication of this article, we are more than half way through this 9-month data collection cycle.

Optimum projects: Handling and processing terabytes of data does, however, create new challenges. Fortunately Caltrans has some pretty powerful processing tools, which allow us to sift, sort and combine the data for our needs. The new PaveM Pavement Management System provides the pavement data and allows engineers to "drive" the highways from their computers. PaveM not only provides historical projects information, but suggests potential new projects depending on what the budget is. Table 2 shows a view of how engineers can see the past and programmed projects along with potential future projects. The bottom line, PaveM is an aid to help make decisions about what, where and when to focus on a highway.

Table 2



Improved decision making is the goal.

There is a wide variety of maintenance and repair strategies to attack not only the existing cracks and ruts, but also the future distresses that have not yet arrived. And our engineers have countless years of great decision making experience. While in the past, a small sample of surface condition data was collected and used to aid in project development, future decisions will include input from a complete picture of the surface condition.

These kinds of decisions will help with the question of, "What /where is the optimum project?" Where should we focus for best results - on a route?, a District?, for delaying rehabilitation?, for the truck network?, for preserving pavement life? ... etc. The optimum project thus has many possibilities. As the department builds on computing power for pavement management decision making, you can rest assured that terabytes of data were sorted and sifted behind every project you see. And as Caltrans works smarter, we will be better equipped to make the best use of our limited transportation funds.

For more information contact Tom Pyle at: tom.pyle@dot.ca.gov

Reprinted from the CP2 Newsletter of the California Pavement Preservation Center No. 35 September 2015.

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September 2015

MnDOT to Install 54 Warning Systems at Rural Intersections

By Russell Barnes
KSTP.com



Many high-risk intersections in rural Minnesota areas will hopefully be site to less crashes, thanks to intelligent transportation systems that will soon be installed by the Minnesota Department of Transportation.

MnDOT is installing Rural Intersection Conflict Warning Systems at 54 intersections across the state. According to MnDOT, the sites were chosen based on various criteria, such as low visibility before the intersection, the nearby presence of a railroad or commercial development and previous crash history.

"The system gives real-time warning to motorists approaching a stop sign that there is traffic approaching and also warns drivers on the road without the stop sign that a vehicle is stopped or entering the intersection," Ken Hansen, RICIW project manager, said.

These systems will be used at stop-controlled intersections to let drivers know when vehicles are nearing the intersection. The system uses traditional road signs, as well as sensor-triggered flashing lights that are activated when traffic approaches an intersection.

Watch a short video on how the system works.

"Drivers should always obey the stop signs as they approach an intersection, but the added technology is designed to be an additional safety message," Hansen said.

Although some may think that rural areas may experience less crashes due to such areas' smaller populations, around 66% of fatal crashes in Minnesota happen on rural roads. In 2014, 324 fatal crashes occurred statewide and 214 of those were in areas where the population was less than 1,000.

"Injuries in rural areas are usually serious injuries and fatalities," Hansen said. "Emergency response often takes longer because of the distance between cities. We think these systems will make a difference in reducing crashes and saving lives."

A National Highway Traffic Safety Administration study found that 62% of crashes in rural stop-controlled intersections occurred when drivers stopped and looked around their surroundings, but didn't see the other vehicle and proceeded into the intersection. According to MnDOT, 26% of right-angle crashes at stop-controlled intersections were caused by drivers failing to stop.

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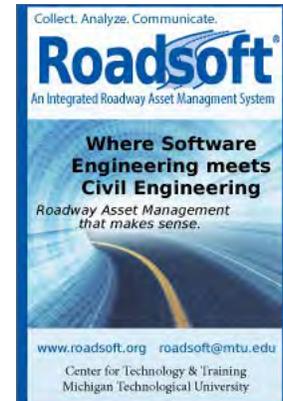


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September 2015

Heavier Trucks Are the Real Elephant in the Room

By Fredrick Pausch

Executive Director of the County Engineers Association of Ohio



If you want to quickly grasp the current proposal in Washington to increase the weight limits on shipping trucks, your first stop should be the zoo.

There, you could set your sights on the giant of the savanna, an adult elephant — all 5½ tons of him. Now imagine the weight of that elephant being added to the load of an 18-wheeler that you'll pass on your way home with your family.

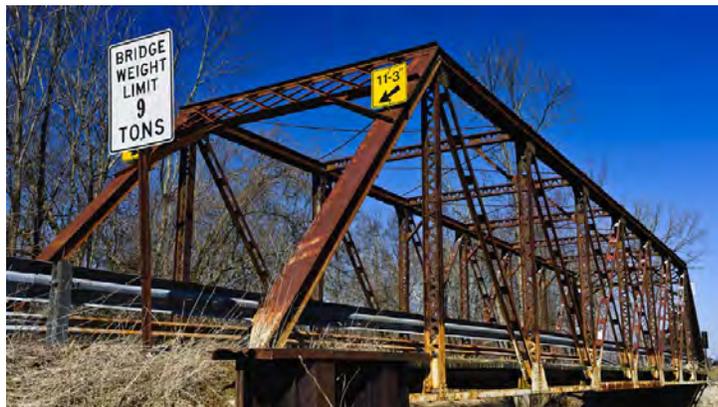
If certain shippers get their way, this soon could be the reality on the already-strained roads and bridges in my home state of Ohio and across the United States. Special interest groups are pushing for the current highway reauthorization bill to include an increase in the federal limit on truck weight to 91,000 pounds from the current maximum, 80,000 pounds.

Who Pays? Taxpayers

The ramifications of this in all 50 states would be enormous and the numbers are certainly not on the side of those wanting heavier trucks. If a 14 percent load increase is allowed, we'll see the rapid deterioration of our already-frayed infrastructure, damage that will ultimately force taxpayers to foot the bill at a time when they're already subsidizing these heavy trucks.

A US Department of Transportation study has shown that taxpayers already pony up 20 percent of the cost of highway damage caused by trucks weighing 80,000 pounds. Should that limit increase to 91,000 pounds, the taxpayer burden would grow to 50 percent. It's a simple matter of engineering: If you put more weight on roads, they have to be repaired and upgraded sooner.

Another DOT study, released just this past June, found that if federal truck weights were increased to 91,000 pounds, the added stress to bridges would require either strengthening or replacing about 4,845 bridges at an estimated cost to taxpayers of more than \$1.1 billion. That's on top of the \$2.4 billion for damage already done by trucks at the current weight limit of 80,000 pounds. It is important to note that this study only took into account a sample of the nation's bridges and that the impact of this proposal is likely much larger than quantified by the study. At a time when more than 144,606 — or 24 percent — U.S. bridges are already deficient, can we really afford to make this bad problem worse?



This certainly resonates in Ohio, which has the second largest number of bridges in the country — 44,000 of them, trailing only Texas. We've load-rated every bridge in our state, a task that took five years. We did so in the wake of the tragic I-35 bridge collapse in Minneapolis in 2007. We'd have to start that process anew if the load limit were increased, costing Ohio \$60 million overnight.

By the way, more than 5,300 of our bridges have been deemed functionally obsolete or structurally deficient and need to be replaced. The funds simply aren't there. As to our county bridges that still have wooden decks, some of these would have to be posted or closed for the safety of the traveling public. And I surely wouldn't want to see how long they would last against 91,000 pound vehicles.

What Proponents Say

Proponents of this legislative proposal will make two arguments, both weak. First they claim that the addition of a sixth axle would ameliorate the damage that the heavier weight would cause. In Ohio, nearly 3 in 4 bridges are long enough that the bridge would bear the entire weight of the truck all at once. It's fine that the weight is spread more evenly, but that does nothing to ease the strain on a bridge.

The other argument is that the weight increase would apply to the Interstate Highway System, and not every road. If every heavy truck began and ended on an interstate, this distinction would matter. But as we like to say, all travel starts and ends on a local road. You don't go from Cleveland to New York just on interstates.

For our safety and for the stability of our highways and bridges, let's leave this 5½-ton elephant where he belongs: at the zoo.

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September 2015

GRS-IBS Makes Quick Work of Bridge Replacement

By Joseph Spadea

Senior Engineer / Project Manager, Pennoni Associates Inc.

When flooding forced the closure of the Jessup Mill Road Bridge over Edward's Run in Mantua Township, New Jersey, county officials turned to a quick but effective solution to reopen the vital community link: geosynthetic reinforced soil-integrated bridge system technology.

"We had observed the use of innovative bridge construction methods in other states that reduce time," said Vincent Voltaggio, Gloucester County engineer. "In particular, we wanted to explore the use of GRS-IBS methods for our application."

GRS-IBS, an Every Day Counts innovation since 2011, is helping meet the nationwide demand for small, single-span bridges by delivering low-cost, durable structures that can be built with commonly available equipment and materials. Instead of using joints, deep foundations, approach slabs or cast-in-place concrete, this project used a prefabricated superstructure supported on GRS-IBS abutments built using layers of geosynthetic reinforcement and compacted fill.

Built in 1925 and rehabilitated in 1940, the Jessup Mill Road Bridge included a reinforced concrete arch culvert and an 84-inch diameter corrugated metal pipe that was beyond repair, requiring a six-mile detour for the 2,300 travelers who used the bridge each day.

Although GRS-IBS was a new approach in New Jersey, Gloucester County officials chose the technology to minimize the cost and duration of the bridge replacement, which took place from December 2014 to March 2015. Using GRS-IBS cut at least a month—about 25 percent—from the construction timeline, and the experience gained from the county's first use of the innovation is expected to save even more time on future projects. Using GRS-IBS instead of conventional construction also allowed crews to replace the bridge during winter weather.

The new structure was constructed within the footprint of the old bridge to maintain both vertical and horizontal alignment. The span is 22 feet long and 32 feet wide to accommodate two 11-foot lanes and 5-foot shoulders.

The new bridge used a prefabricated superstructure consisting of prestressed concrete beams and a composite reinforced concrete deck supported on a GRS-IBS structure. The U-shaped GRS abutments and wing walls kept the new bridge within the right-of-way limits. Jessup Mill Road is about 13.5 feet above the Edward's Run channel bed. The 17-inch-thick concrete superstructure provided the greatest hydraulic opening of the alternative bridge types evaluated.

"This bridge has been completely replaced and is modern and safe," said Robert Damminger, director of the Gloucester County Board of Freeholders. "We appreciate the patience of those that have been affected by this bridge closure, but now we can all be confident this bridge will not be a danger to our motorists or the community."



New Jersey's first GRS-IBS project replaced a flood-damaged bridge in Gloucester County.



Curtis Shugars, Vincent Voltaggio, Heather Simmons, Robert Damminger, Ron Moore and Michael Sheahen celebrate the opening of the new bridge.

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September 2015

US DOT Shows Highway Trust Fund Not Okay After All

By Dave Bauer

ARTBA Senior Vice President of Government Relations

Highway Trust Fund's (HTF) Highway Account will drop below its minimum \$4 billion liquidity balance four times by the end of 2015—potentially requiring the department to begin slowing down reimbursements to the state for already approved federal aid highway improvements. The new assessment purposely corrects a previous U.S. DOT report of a much rosier HTF outlook and reinforces the overwhelming need for Congress to complete a long-term federal surface transportation reauthorization bill and HTF stabilization plan during 2015.

The department's "Highway Trust Fund Ticker" web page caused widespread confusion Aug. 20 when it released a projection that the HTF could support current investment levels through June 30, 2016. The report followed the July 31 enactment of legislation transferring an additional \$8 billion to the HTF—an amount that was thought at the time to be sufficient to support trust fund activities through Dec. 31. The Aug. 20 report set off claims from on and off Capitol Hill that the pressure was off Congress to develop a multi-year reauthorization of the federal highway and public transportation programs in 2015, with some even calling for more short-term extensions until the HTF needed additional resources.

The new U.S. DOT report clearly articulates the continuing threat to the federal highway program: "Trust fund balances are currently estimated to remain at or just below the prudent balance levels through May 2016, the beginning of the 2016 construction season, whereupon the balances will rapidly decline to the point where the fund will become fully insolvent and DOT will be unable to meet its financial obligations during the heat of the construction season."

While the trust fund's mass transit account is projected to stay above its prudent balance until May 27, 2016, the first highway account drop into jeopardy is forecast for Nov. 20. See U.S. DOT's weekly highway account projections below.

Reprinted from ARTBA Washington Newline, September 18.

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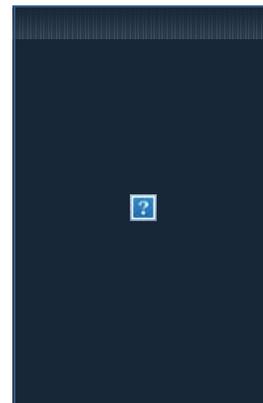
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September 2015

Building Official Opening in Mohave County, Arizona



Starting Salary \$59,862.40 - \$92,913.60 annually DOQ

With over 13,400 square miles, Mohave County is the second largest county in Arizona and the fifth largest county in the United States. Situated in northwestern Arizona, it borders Utah, Nevada and California and contains elevations from 500 to over 8,400 feet above sea level. Kingman and the Mohave County area offer a more relaxed, rural lifestyle.

The Chief Building Official (CBO) plans, organizes and directs the activities of the Building Division of the Development Services Department. The CBO has division level responsibility for administration and direction of the County's building plan checking, inspection and building code enforcement functions. The incumbent is responsible for formulating policy, developing goals and objectives, supervising staff, administering the division budget and directing day-to-day operations. Responsibilities allow for a high degree of administrative discretion and require a high level of technical expertise in their execution.

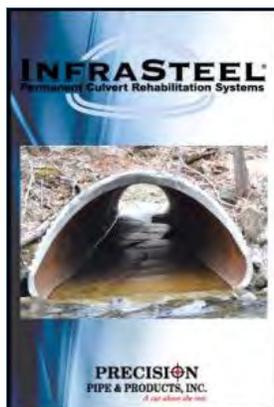
Work is performed independently under administrative direction of the Development Services Director. Work is performed with considerable latitude for discretion and judgment in achieving Division goals and objectives and in supervising and evaluating inspection and clerical support staff. Work is reviewed through conferences and results achieved. Supervision is exercised directly over a staff of inspection, plan review and clerical support personnel. Acts on behalf of the Director as authorized.

The preferred candidate shall have a Bachelor's Degree in civil engineering, architecture or related field and five (5) years or more of responsible technical experience performing plan checking, building inspections and ensuring compliance to codes and approved plans and specifications, of which three (3) years were in an administrative and/or supervisory capacity; OR an equivalent combination of experience, education and training which provides the desired knowledge, skills and abilities may be considered. In addition, candidates must have the appropriate and qualifying engineering education and have an Engineer-in-Training certificate or a Professional Engineer license or a current certification by the International Conference of Building Officials (ICBO) as a Combination Inspector.

To be considered for this position, please submit an application online at <https://www.governmentjobs.com/careers/mohavecountyaz>.

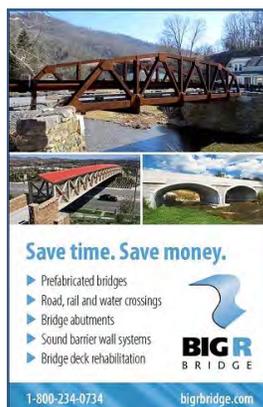
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