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**Alabama Transportation
Newsletter**

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Conversion from One-Way to Two-Way Traffic Requires Sign Modifications



Entering and departing downtown Montgomery, Alabama, from Interstate-65 historically has been primarily along the one-way pair of Herron St as eastbound and Clay St as westbound. This one-way pair has been in operation for several decades. Local officials recently decided to return this pair of streets to two-way operation.

With a milling and paving operation scheduled, the changes needed for the pavement markings were apparent. But a dilemma arose on what signs to change. Some modifications were obvious. The One Way and Do Not Enter signs would be removed. Parking signs and Speed Limit signs were posted on both sides of the streets for the one-way operation. Signs on the left hand side of the street would have to be re-installed in the opposite direction for the new two-way traffic flow. For drivers approaching on the mainline where the one-way traffic section used to begin, Two Way Traffic warning signs would be mounted on both the right and left hand side of the roadways.

But what about the side street traffic that approached the former one-way sections? Since this condition is not presented in the Manual on Uniform Traffic Control Devices (MUTCD), a new sign or modification was needed. This stop-controlled side street situation was similar to the Stop signs on side streets of a divided highway or the locations where a four-way stop was being changed to a two-way stop.

The plaque for Cross Traffic Does Not Stop, W4-4P, was chosen to apply for this condition. A companion sign from the MUTCD is Traffic From Left (or Right) Does Not Stop, W4-4a. A Two Way Traffic plaque was considered to be a modification of these plaques, so it is referred to as a W4-4P (modified). The sizes of the sign blank and the height of the lettering were determined by combining the Standard Highway Signs dimensions with those shown on the ALDOT Special Drawing SHS-31. The sign blank is 24" wide by 18" high. The letters are 4" high since there is less text than the various alternatives. The colors of the plaque remain the same as the W4-4P, with black letters on a yellow background. The modification of the text is considered to be in accordance with MUTCD Section 2C.03. (Continued on next page)

(Continued from page 1, "Conversion from One-Way...")

The Two Way Traffic plaque is mounted under the existing Stop sign. These plaques are used to communicate to the drivers on the side street that they now have to be aware of traffic approaching them from both directions. These local drivers had been used to traffic approaching them from only one direction, hence the need for a sign or plaque to indicate the change in traffic operations.

The question arose about two messages being shown on the same sign. This statement is taken as being with regard to two messages on the same sign face. When separated by a border, this is considered to be in compliance with the MUTCD. An example of this combination is in the School Speed Limit Assembly where the Speed Limit sign is separated from the School plaque and the time specification plaque by a border. So the use of the plaque is not a condition of two messages on the same sign face, but a sign and its plaque on the same sign support.

A One Way sign is shown on the same support as a Stop sign in Figure 2B-15 of the 2009 MUTCD. Underneath this same Stop sign is shown a Divided Highway sign. This mounting location was chosen for the Two Way Traffic plaque. MUTCD Section 2C.59 also states: "If a W4-4P plaque or a plaque with an alternative message is used, it shall be mounted below the STOP sign."

(Prepared by John R. McCarthy, P.E., City of Montgomery, AL)

Hazards in Auburn

OSHA, on August 14, 2011, cited NPL Construction Co. for two safety violations for exposing workers to excavation hazards while connecting an underground natural gas line in Auburn, Alabama. Proposed penalties total \$73,000 following an April inspection.

NPL Construction is a pipeline construction company employing approximately 2,000 workers throughout the U.S., with corporate offices in Phoenix. The company has a local office in Moody, Alabama.

As OSHA inspectors were traveling to an inspection near Auburn they passed an open excavation where workers were not being protected from cave-ins. The OSHA officials stopped and opened an inspection at the NPL Construction site, and requested that the workers be removed from the trench. One of the walls of the excavation later collapsed.

A repeat violation with \$66,000 in penalties was cited for failing to provide a protective system for employees working in an excavation more than 5 feet deep. The company was cited in Connecticut in 2010 and Kansas in 2008 for the same violation.

A serious violation with a \$7,000 penalty was cited for failing to ensure equipment is kept 2 feet from the edge of the excavation.

"Disregarding workers' safety by leaving them unprotected from potential cave-in hazards is unacceptable and will not be tolerated," said Kurt Petermeyer, OSHA's area director in Mobile. "The actions of the OSHA compliance officers likely saved the lives of these workers."

(From "For Construction Pros", Newsletter, Cygnus Business Media, 8/16/2011)

Steering Committee Meeting

The Alabama T2 Steering Committee met in Montgomery on July 13, 2011. Agenda items included contract administration, finances, RTAP activities, Region 4 Huntsville Meeting, Southeastern Local Roads Conference, and the video library. The 2009 - 2011 Seminar Programs were reviewed. Requests for seminars from past attendees were summarized and discussed. Ideas for the 2012 Seminar Program were presented. Balloting for seminar topics concluded the meeting. The following persons attended the Steering Committee Meeting:

Clint Andrews
FHWA

Ricky Mitchell
Mobile County

Tim Barnett
ALDOT

Joe Nix
ALDOT

Richie Beyer
Elmore County

Marlon Perry
ALDOT

Garry Havron
Auburn University

Joe Ruffer
Mobile County

Harry He
Regional Planning Commission
of Greater Birmingham

Larry Sellers
Auburn University

Larry Kite
Russell County

George Speake
Montgomery County

Heavy Metals and Glass-Beads

VALLEY FORGE, PA - A task force with the American Association of State Highway Transportation Officials (AASHTO) has recommended that heavy metals in glass beads for highway markings must meet a maximum allowable limit of 200 ppm for arsenic, 200 ppm for lead, and 200 ppm for antimony. The task force, which has studied heavy metals in glass beads used on highway markings for the past four years, made the recommendation to the association's materials committee, which voted unanimously to recommend that all member states adopt limits at least as stringent as these.

"We at the American Glass Bead Manufacturers' Association (AGBMA) are encouraged by AASHTO's recognition of the significance of this problem and find it appropriate AASHTO is recommending its member states set limits on arsenic, lead, and antimony," said Bob McClune, president AGBMA.

(Continued from page 3, "Heavy Metals and Glass-Beads")

"Compliance by member states with these AASHTO recommendations will protect the environment, state highway workers, and the public at large." Twenty-four states already have set limits consistent with this recommendation, and there is hope that the remaining states will now rapidly implement minimum protective limits, McClune added. "We commend AASHTO for addressing this important issue," he said.

A three-year study sponsored by the New Jersey Department of Transportation reaffirmed prior research work which has shown that imported glass beads can have high levels of arsenic and lead and were quickly susceptible to leaching with exposure to ground water and normal environmental conditions, the association said. The findings from this exhaustive study solidify all the previous research and are consistent with a recent Texas A&M University Texas Transportation Institute (TTI) study. They also confirm what the membership has known to be true for quite some time, according to McClune.

Over the past several years, the association has worked diligently to raise awareness of the issue, citing the need to hold all manufacturers to higher quality standards that protect the environment and highway worker safety by avoiding the use of products that contain hazardous materials. Setting a heavy metals standard for glass beads has gained strong support from environmental groups like the Sierra Club, state and federal lawmakers, and unions like the International Union of Operating Engineers.

The focus on avoiding the utilization of glass beads containing hazardous materials is intensifying globally with the European Union, Australia, New Zealand, and several Canadian provinces already setting similar standards. China, a major source of these questionable glass beads, has also set strict heavy metal standards for internal use but continues to export contaminated glass bead products to other nations, including the U.S., according to the association.

(From "For Construction Pros", Newsletter, Cygnus Business Media, 8/19/2011)

Cell Phones and Truckers

Conducted by ZoomSafer in the spring of 2011, a survey polled more than 500 business managers in North America to gauge corporate attitudes and best practices regarding employee use of mobile phones while driving on-the-job.

The original survey was conducted across multiple industry segments- including "commercial trucking" (both local and long-haul).

62% of all respondents said their companies had adopted written policies prohibiting employees from using mobile phones while driving on-the job. This figure represents a huge increase over previously reported statistics and reflects rapidly growing concern about corporate risk and liability associated with employee use of cell phones while driving.

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Within the trucking industry, the percentage of respondents with written cell phone policies was substantially higher: nearly three-fourths (71%) of respondents from long-haul trucking companies and 83% of respondents from local trucking companies said their companies had implemented written cell phone policies.

The survey also reveals that while many companies have cell phone driving policies, only half of respondents (53%) said their companies make any attempt to enforce compliance. Among companies that do enforce compliance, the survey found that 61% rely on post-incident disciplinary measures, and only 2% currently utilize technology to proactively measure and manage employee compliance.

Long-haul trucking companies were the most likely to enforce compliance with cell phone use policies: over 73% of respondents report that their companies have taken steps to enforce compliance with cell phone use policies. 59.3% of local trucking respondents reported that their companies have made efforts to enforce compliance.

Key findings include:

- * 32% of all respondents said their companies have knowledge or evidence of vehicle crashes that have occurred as a result of distractions stemming from employee use of cell phones while driving
 - 53% of long-haul trucking and 41% of local trucking respondents reported same
- * 7.6% of respondents said their companies have faced plaintiffs' litigation resulting from damages alleged to have occurred as a result of employee use of cell phones while driving
 - 11.1% of long-haul trucking and 7.4% of local trucking respondents said their companies have faced such litigation
- * 62% of respondents said their companies have implemented a written cell phone use policy
 - Respondents from long-haul trucking and local trucking companies were by far the most likely to report having a written cell phone policy (71% and 83% respectively)
- * 53% of respondents who said their companies have a defined cell phone policy also said their companies claim to enforce the policy in some manner
 - Almost three-quarters (73.3%) of respondents from long-haul trucking companies claim their companies have some form of policy enforcement
- * Disciplining an employee after a crash/incident is the most widely utilized form of policy enforcement; 61% of all respondents said their company uses post-incident discipline.

(From "Measuring Industry Attitudes Towards Distracted Driving: Trucking Industry Detail", ZoomSafer, Inc., 6/27/2011)

Gravel Roads Are Back

LANSING, IOWA - In the rolling countryside along the Minnesota border, the lonesome, dusty roads seemingly outnumber the people. So when Tony and Gertie Monat were looking for a place to live 14 years ago, they were happy to find a house with the bonus of a paved surface in front of it.

Now that pavement has been pulverized. The county government couldn't afford to resurface it, and the road in front of the Monats' white rambler is back to soft gravel. Amid the regular swirl of dust and flying stones, they can't help but feel they've lost a piece of modern life.

"We definitely miss the hard surface," Gertie Monat said. "I'm like, how can you take that away now?"

The paved roads that finally brought rural America into the 20th century are starting to disappear across the Midwest in the 21st. Local officials, facing rising pavement prices, shrinking budgets and fewer residents, are making tough decisions to regress. In some places, they have even eliminated small stretches of gravel road altogether.

In states like South Dakota and Michigan, the reversions are bringing substantial changes to the landscape. Minnesota has managed to mostly escape so far, but at a conference in Shoreview last month some engineers acknowledged changes might be looming.

"In a way, this is a step backwards," Otter Tail County Engineer Rick West told the group, as he kicked off the discussion about reverting to gravel. "But I think it's reality."

Michigan has changed more than 100 miles of pavement to gravel. After one road was torn up a year and a half ago, the County Road Association of Michigan bottled the millings and asphalt and sent them to state legislators as a message.

In North Dakota, a couple of stretches nearly 10 miles long have gone to gravel along with a sprinkling of smaller patches. County leaders are discussing more such changes, a transportation official there said. South Dakota may hold the distinction of being the most torn-up state in the Midwest. A state transportation official estimated that 120 miles of pavement have been ground up or left to crumble back to gravel.

Many rural roads are deteriorating faster than they used to because farm and industrial equipment are heavier than ever. Meanwhile, the cost of pavement has risen dramatically in recent years. Some engineers estimate it costs up to \$300,000 to replace a mile of paved road surface now. Gravel isn't free, but it's far less expensive.

With maintenance costs included, engineers have often used a rule of thumb that a road needs 150 to 200 cars a day, or the equivalent in heavy-weight traffic, to be worth paving.

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(Continued from page 6, ("Gravel Roads Are Back"))

Country residents driving cars and pickup trucks hate the gravel for its slushy texture in spring, the dust in summer and the washboard-like ridges that sometimes emerge.

"It's no fun going backwards," said Ken Skorseth, a program manager for the South Dakota Local Transportation Assistance Program. "We've been through that already in South Dakota, so that shock is in the past for me. But my friends in Minnesota are facing it head-on right now."

In Minnesota's Freeborn County, Sue Miller, the county engineer, has been warning county commissioners about the possibility in future years.

The rising cost of maintaining 634 miles of road in her county presents "a pretty grim picture," Miller said.

She helped launch a study with the state Local Road Research Board to come up with alternatives. The board is looking at what other states have tried, including putting additives into gravel to make it harder and more durable and building stronger road bases that can use just a thin layer of pavement.

Miller has already presided over reversion on a small scale. Workers in her county tore up a 1,500-foot stretch of pavement that kept sinking on marshy land. It was simply too expensive to keep fixing. While that decision made easy engineering sense, returning other roads to gravel wouldn't sit well with residents, said County Commissioner Glen Mathiason.

A farmer who lives on a road paved nearly 40 years ago, Mathiason said commissioners would have to go through "a pretty lengthy explanation."

Skorseth has seen it play out many times in South Dakota: "To be bluntly honest ... it can be political suicide for an elected official unless they can clearly communicate convincingly the predicament that they're in."

Minnesota has been able to escape large-scale reversion so far partly because the Legislature raised the state's gas tax by 8.5 cents in February 2008, with the increase phased in through next year. Counties get part of that tax, plus property taxes and other small sources of income for their roads.

Still, state and county transportation officials have warned it won't be enough to keep up with maintenance demands.

Back to the future

In Iowa, Allamakee County Engineer Brian Ridenour said things are more desperate because the state hasn't passed a gas tax increase. He maneuvered his county pickup truck through the slushy roads on a thawing day recently, pointing out "there used to be a gravel road here" or "this used to be sealcoated."

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(Continued from page 7, "Gravel Roads Are Back")

With 900 miles of county roads for 14,000 residents, the budget is tight. A few years ago, faced with three aging bridges on the Upper Iowa River, the county decided to build just one new span to replace them. Some gravel roads leading to those bridges became farmland again.

"I get a lot of calls. They'll say, 'Is this really your mission to close our roads or go to gravel?'" Ridenour said of local residents. "I'm like, 'No, it is not.' ... You're forced to do these things; this is not something I'm promoting."

Once people learn the numbers, he said, they're more understanding.

To tear up a thinly paved road and add some new gravel, Ridenour said, costs his county about \$5,000 a mile. Resurfacing can run about \$100,000.

Tony Monat said he understands why the quarter-mile of pavement leading up to his property was ripped up. At least the gravel is smoother than the patchwork of potholes he used to dodge.

"I'd rather have concrete, but it's just so expensive," he said. "And really, why should everybody in the rest of the county help pay for my hard surface road?"

(Prepared by Pam Louwagie, Star Tribune, 3/26/2011)

Serious Lockout/Tagout Mistakes

Over the last two months, I've discussed details of lockout/tagout procedures that often trip people up. It's not just the threat of an OSHA citation that should motivate you to get LO/TO right, however. Here are two examples of what can happen when LO/TO is ignored or not thought through.

In the first case, workers had just finished repair work inside an 8-ft-diameter pipeline that carried hot oil from its source to a secondary processing station half a mile away. There was one pumping station at the oil source and one at the pipeline midpoint, both operated from a control room a substantial distance away.

During the repairs, workers had properly locked out pipeline valves and pumping stations and returned them to their operating state after the work was done and inspected. They told control-room personnel the work was completed and asked them to start up the system 5 hours earlier than usual so the equipment could come up to temperature.

Two supervisors decided to check the repairs, a task which required them to walk inside the pipe with flashlights. They did not perform LO/TO on the valves, the pumps, or the controls in the control room, nor did they alert control-room personnel of their last-minute inspection. When the control-room operator started the system as instructed, the two supervisors were in the midst of their inspection and were killed by the hot oil.

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(Continued from page 8, "Serious Lockout/Tagout Mistakes")

The second case also involves hot-oil by-products, specifically road-repair asphalt. The accident happened in a cold-weather state where asphalt is stored in large tanks and flows via gravity into waiting trucks. In order for the asphalt to flow easily, the pipeline is heated by a pressurized hot-water line, which carries superheated water at more than 250° F.

Supervisors decided to tear down the transfer station and move it to another location. Workers opened the valve at the bottom of the transfer line to drain it of hot asphalt so they could disassemble the asphalt piping and move it to the new spot. However, they made two mistakes.

First, they didn't stop or drain the hot water that was heating the asphalt pipeline. Second, once the asphalt had drained out, they reclosed the valve at the end of the transfer line.

The workers didn't know there was a leak in the valve at the other end of the transfer line, the one that controlled whether asphalt stayed in the tanks or flowed into the pipe. Hot asphalt once again filled the transfer line. When two workers disassembled one of the pipe's joints, hot asphalt sprayed and severely burned them both.

When stored energy is removed from the system, keep the system used to remove the stored energy in place so that the stored energy cannot return and be a danger. If the valve used to drain the hot oil from the line had been left open, the worst that could have happened is that the hot oil would have drained onto the ground. If the hot-water system had been turned off, the asphalt line would have been messy to handle, but the asphalt would not have been a danger.

(Prepared by Lanny Berke for Machine Design, 5/19/2011)

Video Library

A complete listing of the videos in our library is now available. More than 350 videos/CDs, DVDs with capsule descriptions are described. New additions are presented herein.

Videos are available from the Alabama Technology Transfer Center on a loan basis. The loan period is seven days. To request a video or catalog, call Kathryn Storey in the AU Civil Engineering Department at (334) 844-4320 or email her at storeke@auburn.edu

DVD-18 Heat Stress: Staying Healthy, Working Safely (14 minutes)

This Wumbus Corporation video describes the hazards of working in the heat. The differences between dry heat and humid heat are identified. The three forms of heat stress (cramps, exhaustion, and stroke) are explained. (Only one copy of this copyrighted video is available, therefore a waiting list will be prepared.)

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(Continued from page 9, "Video Library")

DVD-19 Personal Protective Equipment: Real Accidents, Real Stories (16 minutes)

This Wumbus Corporation video stresses OSHA's PPE requirements of hearing protection, head protection, and eye protection. (Only one copy of this copyrighted video is available, therefore a waiting list will be prepared.)

DVD-20 Preventing Slips, Trips and Falls in the Transportation Industry (7 minutes)

This Wumbus Corporation video emphasizes that all injuries that result from slips, trips and falls are preventable. Examples of not paying attention to your surroundings are presented using small buses and vans. (Only one copy of this copyrighted video is available, therefore a waiting list will be prepared.)

DVD-21 Good Housekeeping: Keeping Your Workplace Safe (12 minutes)

This Wumbus Corporation video covers OSHA standards with regard to general housekeeping requirements in a work environment. Awareness and prevention are emphasized. The five S's of Safety are covered: Sorting out, Straightening, Spic n' Span, Standardizing, and Self-discipline. (Only one copy of this copyrighted video is available, therefore a waiting list will be prepared.)

DVD-22 Trenching and Shoring: Meeting the Requirements (14 minutes)

This Wumbus Corporation video provides an overview of the safety issues associated with trenching and shoring. Elements covered are trenching vs. excavating, angle of repose, sheeting, use of a trench box, soil conditions, ventilation, and daily inspections. (Only one copy of this copyrighted video is available, therefore a waiting list will be prepared.)

DVD-23 Reducing the Effects of Storm Water Runoff (17 minutes)

This Wumbus Corporation video provides an overview of the impact of wet weather discharges. It presents information as to what each person and organization can do to reduce the harmful effects of storm water runoff. (Only one copy of this copyrighted video is available, therefore a waiting list will be prepared.)