Vol. 27, No. 2 – September 2013

The Bridge

A quarterly newsletter from Michigan's Local Technical Assistance Program

A contractor applies a **chip seal** on a rural road in Wexford County to prevent a "mid-life" pavement from deteriorating further. In addition to this common use of the treatment, Wexford County Road Commission regularly chip seals roads that have deteriorated far beyond the usual preventive maintenance window of opportunity. Chip sealing new roads and using a chip seal as a crack relief layer over milled pavement before applying an asphalt overlay have also shown promise as variations of the standard practice.

Promising New Variations of Standard Chip Seal Practices

Melanie Kueber Watkins, Ph.D., P.E., Research Engineer
Center for Technology & Training

Wexford County Road Commission

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Chip seal treatments are popular pavement maintenance options among county road commissions and municipal departments of public works across the U.S. The combination of asphalt emulsion to seal the surface of an existing asphalt pavement and an aggregate cover to provide a durable, high-friction wearing surface has proven to be highly effective for extending the service life of "mid-life" pavements.

Extreme variations in the design of chip seals and their use for non-preventive maintenance applications have also yielded good results. As described in the article, "Unconventional Pavement Maintenance," published in the October 2011 issue of *The Bridge* (Issue 25.2), Barry and Wexford County Road Commissions in Michigan regularly use the treatment at both ends of the pavement deterioration curve. Barry CRC chip-seals newly paved roads to get an early start on deterioration prevention, and Wexford CRC uses a modified chip seal treatment instead of patching to hold together roads that have deteriorated far beyond the usual preventive maintenance window of opportunity for chip sealing.

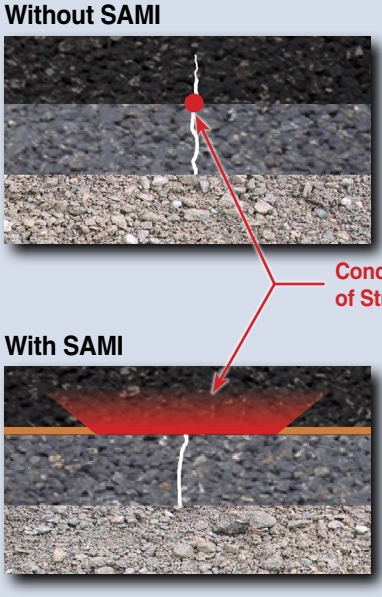
Crack Relief

The Street Maintenance Division of the Charlotte, NC Department of Transportation (CDOT) has developed another promising application for the chip seal treatment: they use it as a crack relief layer before paving over milled asphalt. "On some mill and overlay projects we chip seal after milling and before placing the new asphalt mat," explained Tom Shabani, CDOT's northeast district superintendent. "As long as the existing pavement isn't too far gone, the chip seal works as a relief layer and prevents cracks from reflecting through the new asphalt mat."

Distribution of Stress

A milled pavement that has a pretreatment chip seal functions like a stress absorbing membrane interlayer (SAMI) beneath new asphalt pavement. The purpose of a SAMI is to allow the stress from an underlying crack to be spread over a larger area on the overlaying pavement.[1] SAMI materials range from various geotextiles to rubber-modified asphalt.[2, 3] This traditional SAMI layer bridges the joint or crack and lowers the stress concentration to slow reflective cracking, as shown below.

▶ Chip Seal, Page 6



Engage, Instruct, Inspire

I had an interesting conversation recently with a guy who refs youth soccer. Bob (his real name) is one of the best refs I've ever seen—in any sport at any level. I've had the pleasure of coaching games that he has reffed, and I've also been in the stands as a fan. I've talked to him before, during, and after games and I've thanked him many times, but I've never stopped to say more than a few words.

When I bumped into him the other day I made it a point to let him know I appreciate how he manages soccer games. "Thanks," he said. "I really enjoy reffing." When I asked what he enjoys most about it, he replied, "Teaching kids about the game." After a few more questions and responses, I knew I had my next editorial for this newsletter.

Three things make Bob a great ref. First, he knows the game and the rule book inside out, and he enforces the rules consistently. If a player or coach steps out of line, Bob blows his whistle and addresses the infraction. Period.

Secondly, Bob is able to explain himself quickly and clearly without disrupting the flow of the game and without offending the person or people he's talking to. He constantly talks to the kids on the field—especially at the younger levels when they're just beginning to learn the game. Many times I've heard him say a few things to a coach or a parent on the sidelines as he's jogging past. Sometimes it's a quick explanation about a call or a rule, and other times he says, "I'll talk to you in a minute."

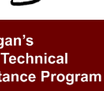
Finally, Bob is passionate. He loves the sport of soccer and he wants others to love it too. His enthusiasm is infectious. In over 10 years of coaching and parenting soccer players I have never heard anyone complain about Bob.

Many of the people I know and work with at local road agencies are a lot like Bob. They know their field of work very well, they're passionate about the work they do, and they enjoy talking about it and teaching others about it. The three main articles in this issue contain evidence of this fact.

The seeds of the chip seal article (Page 1) were planted during a 20-minute bus ride in Charlotte, NC this past April. When I boarded the bus I happened to sit next to a guy who worked on a City of Charlotte DPW road crew. After I commented about the nice pavement in downtown Charlotte, he launched into a summary of their maintenance practices, which included using a chip seal treatment on milled asphalt before placing an overlay. Melanie Kueber Watkins, one of our pavement maintenance experts (as knowledgeable, passionate, and engaging as anyone, by the way) loved the idea and wrote a great story about it.

George Messner (Page 3) connected with his passion for internal combustion engines and the vehicles moved by them over 40 years ago, when he took a job as a mechanic at Livingston County Road Commission. Over the years, he's shared his knowledge, experience, and enthusiasm with his family, his church, and his peers across the state. George's shop in his back yard is well-equipped and well-used. I enjoyed a tour of his shop, and I appreciated a few pointers about building and restoring vehicles.

The article about Facebook (Page 4) is the second of a two-part series about local agencies and social media. It contains several examples of knowledgeable, passionate people helping others better understand aspects of local road construction, maintenance, or management. Facebook has enabled some road agencies to engage, instruct, and inspire people who are interested in learning about roads. It's a great outlet for people who want to help others—like Bob the ref teaching kids about soccer.



Center for Technology & Training

Michigan's Local Technical Assistance Program

The Center for Technology & Training is part of the Department of Civil & Environmental Engineering at Michigan Technological University in Houghton, Michigan. The mission of the CTT is to develop technology and software, coordinate training, and conduct research to support the agencies that manage public infrastructure. In support of this mission, the CTT houses Michigan's Local Technical Assistance Program, which is part of a national effort sponsored by the Federal Highway Administration to help local road agencies manage their roads and bridges. For more information, visit ***www.MichiganLTAP.org.***

The Bridge

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About LTAP

The Local Technical Assistance Program (LTAP) is a nationwide effort funded by the Federal Highway Administration and individual state departments of transportation. The goal of the LTAP effort is to foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing knowledge of the transportation workforce and decision makers.

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The LTAP Steering Committee makes recommendations on, and evaluations of, the activities of Michigan's LTAP.

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Life Lessons from Turning a Wrench

John Ryynanen, Editor
Center for Technology & Training

Recently retired from an equipment supervisor position at Livingston County Road Commission, George Messner loves to spend time in his well-appointed home workshop. "Whether I'm fixing what's broken or designing and fabricating something completely new, I get a lot of satisfaction out of taking things apart and making them better," he says.

Center for Technology & Training

In the side yard of George Messner's home, which he built on 10 acres about 15 minutes from downtown Howell in Livingston County, sits a nondescript brown garage. From the outside, it's nothing special: steel siding, a few windows, a basic entrance door on the side, and a large garage door on one end. Stepping inside, I quickly realize the significance of the building—it's a gearhead's dream shop.

The walls and ceiling are painted bright white, and the floor is covered with a protective epoxy coating applied in a blue and white diamond pattern. An aluminum-topped workbench—littered with hand tools, diagnostic equipment, manuals, and other shop supplies—spans the entire length of one side of the work area. A 10,000 pound, two-post hydraulic auto lift is bolted to the center of the floor. The shop is lit with 12 eight-foot fluorescent fixtures. It's a beautiful place, even if you're not into rebuilding cars.

Near the auto lift stands a height-adjustable automotive restoration rotisserie on wheels. A forlorn-looking shell of a 1972 Chevrolet Camaro hangs upside-down in the device. "I haven't been able to spend as much time in here as I would like, but now that I'm retired I can work on it again," George says, placing his hand on the car's rocker panel. "This beauty actually came from a junk yard—one step away from the crusher. It was completely lifeless; I'm planning to bring it back to life. I'll name it Lazarus." George said he doesn't make a habit of naming his vehicles, but this one was special. "When I saw it, I knew right away I was going to rebuild it."

Not far from Lazarus sits a cool little (unnamed) dune buggy that's built on a vintage VW bug chassis and drivetrain. George and his now-grown kids (Jessica, Lewis, and Nathanael), restored it as a home school project several years ago.

A high-performance go-cart that George and his wife Doreen built and raced several years ago hangs on the back wall of the garage. "Top speed is 120 miles an hour," George says. "It was a lot of fun, but that was before we started a family."

Working for 40 years in various vehicle maintenance-related positions at Livingston County Road Commission (he retired as equipment supervisor in 2012), George knows his way around a toolbox, and he has a lifetime of experience building, restoring, and maintaining vehicles of many shapes and sizes. At Livingston CRC, George spearheaded the effort to assemble all of the agency's heavy trucks in-house. Many of the innovations and custom equipment that he and his crew developed for Livingston CRC trucks over the years influenced the way manufacturers design and build trucks for county and municipal agencies across the country today.

"I really enjoy making things work," George explains, his eyes shining with enthusiasm. "Whether I'm fixing what's broken or designing and fabricating something completely new, I get a lot of satisfaction out of taking things apart and making them better."

The scope of George's current project seems overwhelming until he shows me what will be the heart and soul of the vehicle: a modified 406 small block engine from a 1978 Chevy van. It's mounted on an engine test stand. "Oh yeah, it runs," he says excitedly when I ask him if it's ready to go. With a twist of a fuel shut-off valve, and a couple of pumps on the throttle, George fires it up. Suddenly the garage sounds and smells like the starting line at a drag strip on a hot summer evening. "This is one of the original go-fast motors for muscle cars," George shouts over the ear-splitting, muffler-less roar. "To get extra performance and just the right sound, I added a Brodix head and six-inch rods, and then I cammed it tight. It's ready to race." *Camming a motor tight* (I learned) means installing a custom camshaft that causes excessive overlap of the intake and exhaust valve openings. "A motor that's cammed tight has an unmistakable lopey-sounding idle," George explains. "It also has a little more horsepower at higher RPMs."

George bought the 406 small block years before he found the Camaro. At the time, he was involved with his church's youth group, and he wanted to teach the kids life lessons through automobile maintenance. "I didn't want to just change the oil or something like that," he explains. "I wanted to do something big, like building a racing motor."

Like anyone who is deeply passionate about what they do, George draws many relevant and inspirational parallels between his work and life. Commitment, enthusiasm, and knowledge flow out of him

▶ Life Lessons, Page 7

Using Facebook to Engage with the Motoring Public

Shaughn Kern, Technical Writer
Center for Technology & Training

This is Part 2 of a two-part article about how road agencies are using Facebook. Part 1 (Road Commissions "Like" Facebook, The Bridge 27.1 – June 2013), discussed some trends, cautions and opportunities involved in setting up local agency Facebook pages. This part addresses questions about content. After a local agency has set up a Facebook page, the next big questions should be "What do I post to help and expand my audience?" and "How should I respond to content posted by my audience?"

Questions About Content

Several gray areas currently exist regarding the significance of Facebook content as it relates to open meeting laws, official correspondence, public information, and other issues of public trust that road agencies have to deal with. For example, can an elected official communicate on Facebook without violating Michigan's Open Meeting Act (P.A. 267-1976)? Can road agencies use Facebook to solicit public comment on proposed road projects? Does a report of a roadway defect on Facebook carry the same legal weight as a defect reported through a phone call, an email, or through an agency's web site?

There are no simple answers to these questions. They all involve complex legal issues which will likely be defined by case law in the coming years. For this reason, Facebook is currently used by road agencies for informational purposes only and to solicit "unofficial" comments from the public. In Part 1 of this article, Mark Jahnke, an administrator for the Michigan County Road Commission Self-Insurance Pool (MCRCSIP), recommends that road agencies add disclaimers to their Facebook pages to clarify the purpose and to provide a base level of protection against liability. As with any issues of liability, agencies should always seek the advice of an attorney before publishing a statement or disclaimer.

Among the states grappling with issues of public trust that arise when using social media, California (a hotbed of internet activity and innovation) is perhaps the furthest along in addressing them. Road agencies and other local government entities in the State of California look to the Institute for Local Government (ILG), which is a non-profit research affiliate of the California State Association of Counties and the League of California Cities, for guidance. Like Jahnke, the ILG recommends that road agencies add a disclaimer to their social media pages to clear up some points of possible confusion. For more information, see **www.ca-ilg.org/document/legal-issues-associated-social-media.**

Attracting and Engaging an Audience

Content is king when it comes to Facebook posts. The best way to build an audience is to post relevant, accessible content. For road agencies on Facebook, relevant topics include recent and upcoming construction projects, road closures, weather advisories, and other roadway-related alerts.

Unike other forms of media, which only allow one-way communication, Facebook posts often become a launch pad for dialogue with the public. For example, when a recent post on the Grand Traverse County Road Commission (GTCRC) page stated that fog seal operations would start shortly (see below), a few followers responded with questions. The questions opened the door for Deb Hunt, who manages the GTCRC Facebook page, to educate them on technical details about fog sealing and also inform them about operational details about the road commission.

Posts about lane closures for pothole patching often prompt people to report additional potholes. Posts that provide updates about specific projects and activities typically generate long strings of user comments and questions.

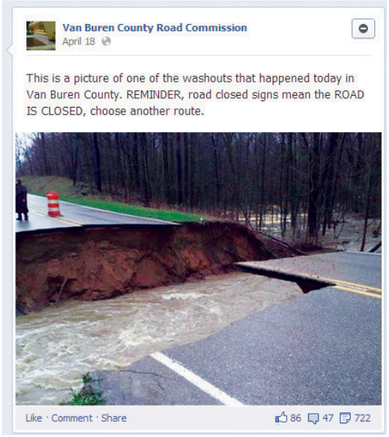
As a public service, agencies often post information that is important to the community, but has nothing to do with infrastructure. Notifications of food drives, charity events, posts from emergency services, and local festivals are just some of the non-transportation topics that local agencies share online.

Posting pictures is another popular way to spark interest in a Facebook page, and can add spice to the monotony of text-only posts. A recent photo posted by GTCRC resulted in 144 comments and 133 shares. "Our likes really jumped up when we posted a photo of a large bear that had been struck and killed by a car," said GTCRC's Hunt. While the nature of the photo may be considered grisly (see below), it resulted in a substantial number of comments and shares, which translates to additional exposure for GTCRC's page. The photo also provided a good reminder to be alert to animals in the roadway.

Perhaps the most viral post among Michigan road agencies is Van Buren County Road Commission's (VBCRC) photo of a washed out road after a torrential downpour in April of this year. Along with gathering 47 comments and 722 shares, the post was shared on the Facebook pages of several other road commissions. The caption included the phrase "REMINDER, road closed

▶ next page

signs mean the ROAD IS CLOSED, choose another route," which is a great example of leveraging dramatic and interesting content to deliver an important message (see below).



Responding to User Posts

After a local agency establishes consistent user traffic on their Facebook page, one thing is inevitable: the agency will receive questions, comments and complaints. Obviously this is an intimidating consideration; posts from the public can range from sincere to sarcastic, inquisitive to critical, and well-articulated to incomprehensible. Nonetheless, the point of social media is to increase interactivity; to that end, the best policy for a local agency is to allow the public to post content to the page. No matter the intention or tone of user posts, each one is an opportunity to educate.

Linnea Rader, moderator of VBCRC's Facebook page, appreciates the exchange of information that the agency's Facebook presence affords. "I would love to have more people ask questions or create posts on our page; each one provides a way to educate and share information with the public," she said. This optimistic approach to using Facebook is reflected in the tone of VBCRC's page; users tend to post sincere questions and many compliments. A good example is a thread that resulted from a question posted earlier this year regarding a change in "Bridge may be icy" signs, and why budget was spent on such a thing. Rader responded with a thorough explanation of the MUTCD. This was met by a number of follow up comments (including from the initial poster) thanking the VBCRC for taking the time to respond and for providing additional details (see thread at right).

Some posts are complaints masquerading as questions. In such cases, it's usually pretty obvious that they are thinly veiled criticism, not sincere requests for information. These types of posts usually do not lead to productive, extended dialogue that can grow out of a sincere question. However, a savvy local agency will address them just as they would a real question, which transforms the negative content into a legitimate exchange from which the public can learn.

Even when a public post isn't directly related to something the road commission deals with, it is good practice (and good publicity) to respond productively (see *Before You Respond*, on page 7). For example, a user might post a complaint about the condition of a road that is outside of a road agency's jurisdiction. When responding, it's important to avoid simply "passing the buck." A good response acknowledges the concern, explains the road ownership and funding issues that come into play, and either forwards the complaint to the appropriate agency or provides contact information so the user can resolve the issue on their own.

of having a Facebook page. Craig Bryson, public information officer for the Road Commission for Oakland County (RCOC), does not have a formal policy for responding to posts. Instead he responds based on his own philosophy of remaining calm and not criticizing, which usually enables him to diffuse potentially volatile situations and transform negative posts into valuable educational opportunities.

VBCRC's Rader ordinarily responds to user posts on her own, but when dealing with a difficult or hostile post, she sends her response to her superiors to be reviewed before she posts it. "Typically, a negative post reflects a problem in understanding the issue and we can take that opportunity to explain the reasons, process, and other issues, and get that person on board with us," Rader explained.

Criticism itself is not a bad thing. "It's OK for people to question what we do and why we do things the way we do them," says Bryson, on the subject of critical posts. "If

"Typically, a negative post reflects a problem in understanding the issue and we can take that opportunity to explain the reasons, process, and other issues, and get that person on board with us."

Responding to Aggressive Posts

The ugliest posts that a local agency will encounter on their Facebook page contain colorful language, name-calling, and other forms of composition that result from anger. These are a rare but unavoidable side effect

there aren't good reasons to be doing things, we shouldn't be doing them -- and we ought to be able to explain these reasons to the public we serve." However, there is a fine line between complaining and insulting. Bryson has had to block two people from the RCOC Facebook page because their comments crossed the line from criticism of the agency to pointed attacks and name-calling laced with profanity. Extreme care should be taken when it comes to banning users. Nonetheless, personal attacks, vulgar language, and similar inappropriate content reduces the value of the page and disrupts opportunities to educate the public.

Perhaps the most dramatic example of an agency's willingness to engage the public through Facebook appears at the end of a tense exchange on RCOC's page back in 2010. In this case a user posted a sarcastic and somewhat rude comment regarding RCOC's seeming unwillingness to repair roads. After responding with a wealth of information and a step-by-step response to each of this user's assertions and complaints, RCOC signed off with, "Great questions—Keep 'em coming!" ■

Chip Seal (from Page 1)

Shabani's chip seal layers work much the same way as the SAMI. But instead of using an interlayer fabric or rubber modified asphalt layer, Shabani places asphalt emulsion and aggregate on the old pavement making it into a crack-bridging layer itself.

Choosing the Type

Shabani and his crew use three different types of chip seals depending on the functional class of the road and the severity of cracking in the existing pavement. The three types are straight sealing, split sealing, and triple sealing. All three use CRS-2 liquid asphalt, which is a high-performance, rapid setting asphalt emulsion designed specifically for chip seals. The aggregate cover is #78 stone (or 78M), which is a ¼-inch clean washed stone — an engineered aggregate, not a riverbed stone.[4, 5] "Clean washed stone provides good porosity for the asphalt emulsion below and for the new HMA above," Shabani explained. "It enables a good, strong bond between the two."

The only difference between the three variations of chip seal treatments is in the respective asphalt and stone application rates (see Table 1). For all three, the asphalt emulsion is applied at 150 to 175 degrees F.

To determine the appropriate chip seal type, Shabani considers the functional class of the road and then the crack severity on the existing pavement. On minor roads with light to moderate cracking, he uses straight sealing. On minor roads with severe cracking, he uses split sealing. On major arterial roads, he uses triple sealing regardless of the crack severity. "The objective is to prevent reflective cracking by sealing and stabilizing the existing pavement," Shabani explained. "As a rule of thumb, greater crack severity requires more asphalt emulsion and more stone."

Research Shows Promise

Using a chip seal treatment as a crack relief layer is not an entirely new or unproven practice. A research project titled, "Cost Effective Prevention of Reflective Cracking of Composite Pavement," sponsored by the Louisiana Transportation Research Center (LTRC) and published in September 2011, compared the results of various crack relief treatments at 50 different sites in Louisiana for a period ranging from 4 to 18 years. Among the treatments that were analyzed, chip seal as a crack relief interlayer was among two that showed the most promising results, in terms of performance and economic worthiness. The other promising treatment was saw and seal, which involves sawing the HMA overlay to create transverse and longitudinal joints at the exact locations of the joints in the concrete pavement, and then sealing the constructed joints. For complete project details, visit the LTRC web site: **www.ltrc.lsu.edu/pdf/2011/fr_478.pdf.** ■

Table 1: Asphalt and Stone Application Rates for Chip Seal Types

Type	Asphalt Application Rate (gal/yd2)	Stone Application Rate (lb/yd2)
Straight	.035	18 – 20
Split	0.60	30 – 35
Triple	0.70	45 – 51

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Another Sign Retro Resource from MIchigan's LTAP

Earlier this year, Michigan's LTAP launched the retroreflectometer loan program to help agencies stay up to date with sign retroreflectivity requirements. Sign retro assistance will expand this fall as Michigan's LTAP begins to distribute 50 sign comparison panel kits. The kits will enable agencies to inspect signs based on the FHWA visual nighttime inspection method using the comparison panels procedure.

The comparison panels are designed to be just above the FHWA minimum retroreflectivity measurement. To use a panel, simply visually compare it to the sign in question; if the sign clearly looks brighter than the panel, it passes inspection. Each panel also comes with a sticker that contains measured retroreflectivity values to aid in comparisons.

The kits include six color panels (white, red, green, orange, yellow, and fluorescent green), instructions, and a carrying case. They will be distributed on a first-come, first-served basis. Distribution will give preference to local agencies. Consultants working for a local agency can request a set of panels on behalf of the agency. To order a set of panels, please complete and submit an online request form at **www.MichiganLTAP.org/RetroKit**.

Before you Respond . . .

three tips for communicating effectively on Facebook

When a Facebook page is managed well, more time will go into responding to users than creating original posts. As with any form of communication, responding through Facebook requires a bit of thought. The following guidelines will help avoid misunderstanding and will make responses as informative and productive as possible.

1) Frame the response

Before addressing the main topic of the post, frame the conversation with a statement of empathy and understanding. Leading with a simple, "We understand your frustration," "We appreciate your taking the time to let us know," or, "We share your concern," sets a positive tone for the rest of the response. Linnea Rader, manager of Van Buren CRC's Facebook page, explains why extra steps like these are important. "We really take care in our responses, trying not to provoke or talk down to anyone," she said. "We are very conscious of the fact that reading words is not always taken as they are spoken and can cause confusion, so we try to be very careful." Whereas body language, tone of voice and other factors express emotion during in-person conversations, these are absent in Facebook posts. Hence, a frustrated member of the public may project their own attitude onto a written post. Framing the conversation can minimize this emotional ambiguity.

2) Inform with detail

Treat each question or complaint as an opportunity to educate the public. Many user posts are about frequently encountered topics, such as existing roadway hazards; prioritization of road maintenance services; and funding, ownership, or scheduling of projects. Frequently-asked questions can have common answers, which enable prompt responses. For example, to a question about maintaining "Winding Road," which is in "ABC County," you would reply, "Winding Road is an ABC County road, so it's maintained by ABC County Road Commission. You can contact them at 555-555-5555 or help@ABC-County.gov."

Whenever possible, you should also provide solid specifics, especially in terms of dates and numbers. "We maintain 1256 miles of road with 25 trucks," is more useful than "We don't have enough manpower or time." Even if you've shared the same data many times before, the user may not have seen any of the earlier posts, and will appreciate the extra detail.

3) Extend the conversation

Conclude your response by explaining what the road commission is doing or will do next, or explain where the user can find more information. It is always good to be specific; instead of simply responding with, "we will fix it," it would be better to say, "The Superintendent will fix it within two weeks."

When concluding a response, it's also a good idea to provide information about following up on whatever concern prompted the original post. This follow up information could include inviting the user to call the office, giving them a link to more information, or anything else that encourages them to explore the subject further. Ultimately, the goal is that the Facebook dialogue serves as a branching-off point rather than a dead end. ■

Life Lessons from Page 3

effortlessly. "Rebuilding a motor and restoring a car takes patience, perseverance, and wisdom. You gotta have a vision; you have to ask others for help and advice sometimes; and you have to be organized and careful, but you also have to take some risks. These are all good things," George explains. "Practicing them will help you at work, no matter what you do for a living. They're good things to build your life around. Isn't that neat?" ■

The Bridge

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Upcoming Events

(details at www.MichiganLTAP.org)

Advanced Hydraulics and Electrical Systems for Heavy Equipment

Sep. 16 – Indian River; Sep. 17 – Bloomfield Hills; Sep. 18 – Lansing; Sep. 19 – Kalamazoo

Facility Tour: Valley Truck Parts

Sep. 20 – Grand Rapids

Introduction to Roadsoft

Oct. 1 – Okemos; Oct. 2 – Bay City; Oct. 3 – Gaylord

Local Concrete Seminar 2013: Repairing Concrete Pavement Joints

Oct. 8 – Grand Rapids; Oct. 9 – Livonia; Oct. 10 – Okemos

Asset Management for Municipal Departments of Public Works (part of the Michigan APWA Snow Roadeo)

Oct. 9 – Kentwood

Michigan Winter Operations Conference

Oct. 16-17 – Gaylord

AASHTOWare Bridge Rating™ 6.5.0

Available Now!

New in this release:

- 3D curved steel multi-girder systems
- Live loading of diagrams in straight and curved steel multi-girder systems
- Reinforced concrete slab systems
- Non-standard gage vehicle LRFR analysis
- Option to override shear and flexural capacities at point of interest
- Corrugated metal deck simple span model rating
- User interface enhancements including the ability to cancel an analysis event

Coming in 6.5.1 (expected December 2013):

- Post-tensioned and reinforced concrete multi-cell box LRFR rating

For technical assistance, or to request a free copy of *AASHTOWare Bridge Rating* 6.5.0 (courtesy of Michigan Department of Transportation for use with Michigan bridges), please call the Center for Technology & Training at 906-487-2102 or visit http://loadrating.michiganltap.org. Additional load rating resources, including a newly completed tutorial on load rating camelback bridges, can also be found on the Bridge Load Rating web site.