THE ROADRUNNER

January 2023

ANNOUNCEMENTS

Save the Date:

October 23-26, 2023 are anticipated dates for the Annual TACERA Conference. The Board of Directors are working to enter a contract with the **Hilton College Station.**

Do you have an article you would like to put in our newsletter? Send them to us at TACERA or bryan.neaves@bellcounty.texas.gov

Men crack sealing a roadway in central Texas

WHAT IS THE CONDITION OF OUR ROADWAY SYSTEM?

DW December 29, 2022

This is a question that many leaders of a Public Works Department, City or County Engineer's Office, Road and Bridge Department, or even the City's or County's Management Office may frequently hear but might have difficulty answering.

To begin with, one must truly understand that a roadway does have a "measurable condition". This is called a "Pavement Condition Index" or "PCI" for short. This PCI is typically measured from "0" (very poor) to "100" (new). For example, a roadway with a PCI between "0 – 50" PCI is in very poor condition and likely would need to be reconstructed from top to bottom, or at a minimum milled (several inches of surface pavement ground off) and overlaid with new pavement layers.

A roadway from "50 – 60" PCI is in fair condition and will likely require a surface treatment such as a micro surface, chip seal or slurry seal. Additionally, a crack sealant should be applied to the cracks in the roadway surface that will help prevent further deterioration of the roadway structure.

A roadway from "60 – 80" PCI is in good condition and will likely need a preservative treatment such as a maltene replacement emulsion application or a surface seal and of course a crack sealant application. Lastly, the roadways that range from "80 – 100" PCI should not require treatment for at least the next 2 years under normal conditions.

The tools to help provide the answers are also broad and varied but very important. The first step is performing a "Pavement Condition Survey." This can be performed in a variety of ways, but the information obtained is necessary for **1)** the preparation of annual roadway maintenance budgets; **2)** determining the extent of necessary roadway maintenance; and **3)** potential preservation methods for the most valued asset owned by the entity: the overall roadway system.

The basic method for performing the pavement condition survey is called a "Windshield Survey". This survey is completed by a qualified and experienced roadway maintenance individual who actually drives and views the entire roadway system while giving each roadway section a "PCI" rating. This information is finalized in a report detailing the roadway system's condition and most importantly transferred to a map of the overall roadway system that clearly illustrates the different roadway conditions (typically highlighted in different colors for the different ranges of PCIs).

The highest and most detailed survey method is a "Digital Imaging Survey". This is an extremely thorough survey that collects data according to selected

distress parameters of the roadway and is accompanied by digital images of the roadway. This method can also collect roadside asset information such as signage or roadway structures. The collected information can then be downloaded into the entity's "Pavement Management Program" where it can be utilized for analysis, report preparation and visual production or map generation. All these tools are extremely useful in assisting with planning on an annual basis.

In conclusion, there are many methods that fall between the "Windshield Survey" and the "Digital Imaging Survey" but the bottom line is that the pavement condition survey is critical to the preparation of an effective preservation and maintenance plan for the entity's most valuable asset, "our roadway system".

REVISIONS UNDERWAY FOR THE 8TH EDITION AASHTO GREEN BOOK

Kevan Stone, Exec Dir NACE, July 19, 2022

The AASHTO Technical Committee on Geometric Design (Green Book Committee) is currently working on the 8th edition of the AASHTO Green Book. The format of the new Green Book is going to change to a more performance based, context sensitive design guide instead of the fixed dimensional design criteria of the past.

The new edition of the Green Book will be based on the context of the road first, then on the functional class. The context will be broken down into rural, rural town, suburban, urban, and urban core classifications. The functional class, or type of road, is the way the current Green Book is organized, which encompasses both the rural and urban areas of the following: local roads, collectors, arterials, and freeways. The new edition will expand on the flexible design that is in the current edition, and it will be written with a multimodal mindset to incorporate all legal users of the roadway. It will also cover the design guidance for new construction, reconstruction, and RRR projects. These changes will make the newest Green Book an even more valuable resource.

The Texas Transportation Institute (TTI) will be writing the new design guide, and the Technical Committee will be performing a detailed review of the document.

A SECOND LOOK AT ETHICS

CD October 31,2022

The Engineering Profession has carried a distinction among the other professions as having a high ethical standard. We may take the brunt of a lot of "nerdy" jokes but we have still maintained an ethical standard that commands respect. Over the past decade the fast-paced world of growth and development has created a situation where engineering work has had to meet strict deadlines. Plans and documents that require an engineer's seal have been produced like an assembly line and unfortunately; some have suffered their usual high standards for the sake of the client and their deadlines. In the following Code of Ethics of Engineers; notice the order of priority these are listed in. Number 1 controls in every engineering scenario. Number 4 is not to be taken lightly by any means but still does not supersede number 1.

"Code of Ethics of Engineers

The Fundamental Principles

Engineers uphold and advance the integrity, honor, and dignity of the engineering profession by:

Using their knowledge and skill for the enhancement of human welfare; being honest and impartial, and serving with

fidelity the public, their employers, and clients; striving to increase the competence and prestige of the engineering profession; and supporting the professional and technical societies of their disciplines.

The Fundamental Canons

1. Engineers shall hold paramount the safety, health, and welfare of the public in the performance of their professional duties.
2. Engineers shall perform services only in the areas of their competence.
3. Engineers shall issue public statements only in an objective and truthful manner.
4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees and shall avoid conflicts of interest.
5. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
6. Engineers shall act in such a manner as to uphold and enhance the honor, integrity, and dignity of the profession.
7. Engineers shall continue their professional development through- out their careers and shall provide opportunities for the professional development of those engineers under their supervision."

Let's all encourage each other as engineers to pursue Number 1 in our efforts to uphold the integrity of what I consider the Greatest Profession.

GUARDRAIL CHECKLIST

BN November 17, 2022

Some of our members made a tour of the Texas A&M RELLIS Research Campus during the 2022 TACERA Conference. Those visitors were witness to a 5000-lb pickup truck crash test demonstration. The rail was not successful at redirecting the Dodge RAM truck. Reviewing some of the important points of the *FHWA "W-Beam Guardrail repair", November 2008*, I have summarized some important points of proper guardrail installation and repair.

Posts leaning with no lateral support

Strong posts. Posts contribute to a smooth vehicle redirection. They must provide consistent stiffness to prevent pocketing or buckling. Always bury posts the proper depth and at correct spacing. Never cut posts to bury them shallow. Remove and replace split or damaged posts. Compact the soil around the posts.

Proper rail height. Research shows that a 25" high W-shaped rail (measured to the top of element) will not contain the design impact. (4400-lb pickup truck at 62 mph impacting at a 25-degree angle) Tighten the bolts to the proper torque. Use the washers as shown in the standard. Replace any deformed, bent, or curved rail sections.

Poor beam to post connection

Secure anchors. Always anchor the rail ends with a proper anchor. There are a variety of options but they ensure the vehicles will be redirected by deflection. Anchors prevent rail ends from piercing a vehicle if the impact is at that location. A lack of proper termination will allow the rail to fold under and allow the vehicle to proceed toward the hazard off road.

Properly lapped rail sections. Always bolt the rail connections in the proper direction of traffic. Vehicles should not snag an improperly lapped connection but slide by as it is redirected. Use all the bolts at the lap and torque them to the required standard.

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ARE YOU ADDING VALUE TO OTHERS?

BN October 28, 2022

As I returned home to Belton on my 90-minute trip from the 2022 TACERA Conference, I asked that question to myself. “Did I serve myself or did I improve life for those in my circle?”

John Maxwell wrote in his best-selling book, *21 Irrefutable Laws of Leadership*, “The Law of Addition is adding value to others”. Valuing your employees, friends, and family by caring, listening, and teaching adds value to their lives. You must listen to relate with them to help them achieve their goal.

Every one of us has had mentors, friends, and influencers throughout our lives. It may have been when your dad taught you to drive a car, your mom who taught you to cook or a brother who helped you learn math. A schoolteacher may have pressured you to read a novel, or a boss who taught you to analyze a drainage problem...Your guitar teacher playing an awesome solo or a friend who showed you how to rebuild a carburetor...Your wife who stood by you when times were financially hard. All these people have cared and added value to your life. Those experiences and skills are embedded in you now and you will take them with you wherever you may go.

We add value to our employees every time we listen to them and see a way to help them solve their problems. We cross train them to handle a variety of tasks and contribute as a team member. Planning, estimating quantities, learning equipment operations and road building skills, public speaking, and communication methods are real benefits to the employee and the department goals. Introducing people to new people and helping them establish relationships is a value. Networking gives all of us an opportunity to solve our challenges using each other's knowledge. We give value to one another with fun times at conferences like this recent one at College Station.

Mentoring your employees is adding value to their lives and it is gratifying to know you did so. I send thanks to all my great mentors of my past and those I met this week.

A REMINDER TO MEMBERS

Please be watching your email boxes for the 2023 TACERA Membership Invoices. Invoices will be sent out during the month of January. If you do not get an invoice by January 31, 2023, please contact the TACERA Office.

To pay for your Membership by credit card, log on to the website under “Join Us” or send a check to the office. New and Renewal memberships are good until February 1, 2024.

Members of the Newsletter Committee are:

Chad Davis	Wise Co
Bryan Neaves	Bell Co
Johan Petterson	DEC
Don Ward	Pav Restoration
Curtis Wilson	Reeves Co

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