

THE MILEPOST

THE QUARTERLY NEWSLETTER FOR THE NEVADA LTAP CENTER

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Upcoming workshops

Workshops are held in Carson City, Elko, Eureka, Las Vegas, Reno and Winnemucca. New workshops are being added all the time. To view our most up-to-date schedule, visit <http://www.tmmc.edu/ltap> or call 775-829-9046 for details.

The following topics will be offered this spring and summer:

- **Asphalt Pavement Rehabilitation: Overlays and In-place Reclamation**
- **Asphalt Pavement Maintenance Review and Update**
- **Basic Computer Skills**
- **Tort Liability Issues**
- **Pavement Distress Evaluation and Maintenance Treatment Selection**
- **Summer Survival**
- **Gravel Roads**

Driving safety tips

Buckle up – Close to half of Nevadans who die in car crashes aren't buckled up.

Watch for pedestrians and cross roads cautiously – 258 pedestrians lost their lives on Nevada roadways in a recent five-year period.

Don't speed – A car traveling at 60 miles per hour travels 88 feet per second. Speed has a great impact on how much time you have to react to the road ahead.

Drive safely near intersections/obey all traffic signals – 467 people died in Nevada intersection crashes in a recent five-year period.

Don't drink and drive – 574 people died in alcohol-related crashes in a recent five-year period.

New NDOT director named



Rudy Malfabon, who has worked at NDOT for more than 25 years, is the agency's new director. He is responsible for its daily operations with about 1,750 employees and an annual operating budget of more than \$800 million.

Malfabon began his NDOT career in 1984 as an inspector. After earning his professional engineering license, Malfabon became a resident engineer and managed the construction of several interchanges and grade separations on U.S. 95 in northwest Las Vegas. Nearly half of his NDOT career was spent in Carson City, where

he has worked as a construction engineer.

In 1998, he became the state construction engineer for Washington DOT. Malfabon was then recruited by Jacobs Engineering in Las Vegas in 2000, where he worked as a manager for three years. After being away from NDOT for nearly five years, Malfabon returned as the deputy director for southern Nevada.

As NDOT director, Malfabon seeks to further enhance communication, coordination and customer service with local agency partners, elected officials, contractors and the public to prioritize transportation funding needs, projects and activities across the state.

In addition, he chairs the American Association of State and Highway Transportation Officials' Standing Committee on Highway Traffic Safety, which encourages, recommends and supports highway safety programs to reduce highway crashes and promote national health and economic growth. He has also served on two research panels for the National Cooperative Highway Research Program, dealing primarily with construction management issues.

Malfabon is a civil engineering graduate from the University of Nevada, Reno, and is a registered professional engineer in Nevada and Washington.

Nevada LTAP center survey results

Thank you for participating in our interest survey. We found that the areas with the greatest responses were: snow and ice control, roadway drainage, pavement preservation, computer applications, winter and summer survival, and community and personal preparedness.

Your input continues to be important to us, so whenever an idea for LTAP comes to mind, please let us know. Email Mindy Gonzalez, program manager, at mgonzalez@tmmc.edu or call her at 775-829-9046. We look forward to hearing from you.



Every Day Counts shares technological advances

Submitted By Leah Sirman, FHWA Planning & Research Program Manager

The FHWA has rolled out a second wave of innovations for its Every Day Counts (EDC) initiative, an effort focused on shortening the time needed to complete highway projects through the use of new technologies and innovative processes. It's promoting 13 innovations to state, local and regional transportation agencies, as well as to the design and construction industries. For the next two years, specialists will explain the benefits to stakeholders across the country.

Every Day Counts is designed to shorten project delivery, enhance the safety of our roadways and protect the environment. Since it was launched in 2010, the initiative has seen dramatic results. The Safety EdgeSM, for example, a construction method that tapers the edge of the roadway to allow drivers who drift off highways to return to the pavement safely, has been applied to pavements in all 50 states, Puerto Rico and the District of Columbia and in each Federal Lands Highway office.

The Initiatives

Programmatic agreements II

This initiative establishes a streamlined approach for handling routine environmental requirements. The key is to consider repetitive actions on a programmatic basis rather than project-by-project. This initiative builds upon the initial programmatic approaches by applying newly developed agreements to new states or regions. This emphasis will increase efficiency and effectiveness of the highway development process while maintaining appropriate consideration of the environment.

Locally administered federal-aid projects

A three-pronged strategy has been developed to aid local agencies through the complexities of the federal-aid highway program's requirements and processes. These strategies are certification/qualification-type programs, indefinite-delivery/indefinite-quantity consultant contracts and stakeholder committees. These strategies will reduce the oversight states need to provide and make local agencies more capable to follow federal regulations and guidelines.

3-D modeling for construction means and methods

This technology's potential for highway applications is now being realized with benefits expected in operational productivity and efficiency. As an example, GPS-enabled construction equipment, when combined with the 3-D terrain model can run all day and

night while achieving accurate grades on the first pass. Together, these technologies can increase productivity by up to 50 percent.

Intelligent compaction

Intelligent compaction (IC) delivers a modern approach to compaction with the use of special vibratory rollers equipped with accelerometers, an integrated measurement system, a map-based GPS,

onboard display and computer reporting system. By integrating all components, IC rollers can accelerate project delivery as well as improve quality. IC rollers also collect enough data to display continuous records of the number of roller passes, material stiffness measurement values, and precise location of the roller.



Accelerated bridge construction

ABC technologies allow agencies to replace bridges faster – only delaying traffic during construction for hours rather than months or years – and safer, since construction workers are not working above active traffic for days on end. This significantly reduces traffic delays and road closures and can potentially lower costs. And because bridges or their components are manufactured off site, in controlled environments, quality is increased and the bridges last longer.

The ABC technologies being promoted are:

- Prefabricated bridge elements and systems, where entire structures or their components are manufactured and assembled off site and moved into place in a matter of hours;
- Slide-in bridge construction, a technique for deploying PBES where a bridge is built adjacent to an old structure and slid into place once the old facility is removed; and
- Geosynthetic reinforced soil integrated bridge system, a concept for using closely spaced geosynthetic reinforcement and granular soils as a composite material to build enhanced abutment and approach embankments for bridges.

Design build

Design build (DB) allows the traditional design-bid-build process to be streamlined. With DB, a state DOT identifies what it wants constructed, accepts bids and selects a contractor to assume the risk and responsibility for both the design and construction phases. With DB, agencies generally have the option of selecting a contractor based on a best-value basis; allowing DOTs to consider other factors beyond lowest price.

Construction manager/general contractor

Another method used to accelerate project delivery is the construction manager/general contractor (CMGC) process. In this process, the project owner hires a contractor to provide feedback during the design phase, before the start of construction.

The CMGC process is broken down into two contract phases. The first contract phase—the design phase—allows the contractor to work with the designer and the project owner to identify risks, provide costs projections and refine the project schedule. Once the design phase is complete, the contractor and project owner negotiate on the price for the construction contract. If all parties agree on costs then the construction phase begins.

CMGC offers unique advantages. The contractor acts as the consultant in the design process and can offer new innovations, best practices, and reduced costs and schedule risks as a result of the contractor's years of proven experience doing the actual work. This process also allows the project owner to employ new innovations, assist in the design process, and make informed decisions regarding cost and schedule.

Alternative technical concepts

An alternative technical concept (ATC) is a suggested change by the contractor to the contracting agency's basic configuration design, scope or construction criteria. The proposed concept provides a solution that is equal to or better than the requirements in the request for proposal. If a proposer's concept is acceptable to the contracting agency, the proposer may incorporate that concept in its technical and price submittal. ATCs provide competing teams with the opportunity to suggest innovative, cost-effective solutions.



High friction surfaces

In 2008, horizontal curves made up only five percent of our nation's highway miles. Yet, more than 25 percent of fatal crashes occurred on horizontal curves. This emerging technology dramatically reduces crashes, injuries and fatalities. With friction values far exceeding conventional pavement friction, high-quality aggregate is applied to existing or potential high-crash areas to help motorists maintain better control in all driving conditions.

Intersection and interchange geometrics

Several innovative designs are now available that reduce crossover points or move the conflict points away from a main intersection, allowing for safer, more continuous travel for

motorists, pedestrians and bicyclists. Recent FHWA studies of alternative intersection and interchange designs implemented show an immediate and significant reduction in the number of total crashes, injury crashes and fatal crashes (up to 53, 42 and 70 percent respectively).

Roundabouts, diverging diamond interchanges and intersections with displaced left-turns or variations on U-turns are proving to be a few of the effective alternatives to traditional designs.

Geospatial data collaboration

Currently, most GIS and web-mapping applications at federal, state and local levels are housed internally. Building on current organizational and technical capabilities, this initiative will use innovative cloud-based GIS services to improve data sharing both within transportation agencies and among project delivery stakeholders. Collaborative analyses and rapid updating of shared common maps will lead to faster consensus building and improved decision-support.

Implementing quality environmental documentation

This initiative improves the quality of NEPA documents by making them more effective in disclosing the information used as a basis for making project decisions to the public and participating agencies including regulatory agencies who have permitting or review responsibilities. By improving the quality and readability of NEPA Documents, FHWA and project proponents will accelerate project delivery and achieve better environmental outcomes. This will promote recent best practice experience and build upon prior efforts, including recommendations from the May 2006 Report "Improving the Quality of Environmental Documents" – A Report of the Joint AASHTO/ACEC Committee in Cooperation with the Federal Highway Administration.

First responder training

Traffic incidents—including crashes, disabled vehicles and debris on the road—create unsafe driving conditions. They put motorist and responder lives at risk and account for about 25 percent of all traffic delays. It is estimated that 4.2 billion hours per year and more than 2.8 billion gallons of gasoline wasted every year while vehicles are stuck in incident-related traffic.

This initiative offers the first national, multi-disciplinary traffic incident management process and training program. The unique training for first responders promotes a shared understanding of the requirements for safe, quick clearance at traffic incident scenes; prompt, reliable and open communications; and motorist and responder safeguards.

To learn more about Every Day Counts initiatives visit:
www.FHWA.dot.gov/everydaycounts/edctwo/2012

Leah Sirmin, a Nevada LTAP board member, is the planning and research program manager for the FHWA Nevada Division. Leah works with the NDOT, the four metropolitan planning organizations and other local public agencies in implementing transportation planning and programming throughout Nevada. Leah has been with the FHWA since 2010 and earned a master's degree in city and regional planning from Clemson University.



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Email Mindy Gonzalez at mgonzalez@tmcc.edu to be added, with a name correction, or to be removed from our mailing list.

For more information or to register call the Nevada LTAP Center at 775-829-9046 or visit: <http://www.tmcc.edu/ltap/>

Nevada LTAP advisory board members

The last five months have proved to be both challenging and rewarding. Due to the continued support from everyone on the advisory board, we are moving forward. Thank you for your help! We would like to extend a warm welcome to the two newest members to the board: Scott Gibson and Chris Hansen. Scott joins us from the RTC while Chris is from the City of Reno.

Patrick Pittenger, Carson City Public Works Department
Delmo Andreozzi, City of Elko
Kevin Carnes, USDA Forest Service
Ken Chambers, NDOT
Scott Gibson, RTC
Chris Hansen, City of Reno Public Works
Kevin Lee, NDOT
Shital Patel, RTC/FAST
Kathy Sanchez, City of Reno Public Works
Leah Sirmin, Federal Highway Administration
Paul Solaegui, Solaegui Engineers, Ltd
Roger Sutton, City of Winnemucca
Barbara Stearns, NDOT

Zero fatalities traffic safety goal launched to save lives in Nevada

The NDOT, Nevada Highway Patrol, Nevada Office of Traffic Safety and safety partners launched the Zero Fatalities traffic safety campaign to save lives. The state's Zero Fatalities goal is consistent with the national Toward Zero Deaths strategy led by the Federal Highway Administration and others.

On average, 325 people lose their life annually on Nevada roads.

The Zero Fatalities goal is part of a revamped Nevada Strategic Highway Safety Plan. The plan, developed by more than 75 Nevada traffic and safety experts, identified five Nevada-specific areas including increasing seat belt usage, pedestrian/intersection safety and reducing impaired driving. Traffic engineering, enforcement, education and emergency response strategies were developed in each area to reduce road deaths and injuries.

“Since we implemented the safety measures outlined in the 2006 plan, traffic fatalities have dropped from an all-time high of 434 in 2006 to 256 in 2010,” NDOT Chief Safety Engineer Chuck Reider said. “But we didn’t want to leave it at that. We revamped the plan with updated strategies to continue saving lives and reduce traffic deaths to zero.”

More information about driving safety is available at www.drivesafenv.com.

Highway 50, known as the Loneliest Highway in America, received its name from “Life” magazine in 1986. There are few road stops in the 287 mile stretch between Ely and Fernley.

<http://www.50states.com/facts/nevada.htm>