

BETTER ROADS SAFER ROADS

WINTER ROAD MAINTENANCE TIPS

ULTRA-HIGH
PERFORMANCE
CONCRETE

SAFETY IMPROVEMENT:
MAKING IT STICK

BETTER ROADS SAFER ROADS

Winter 2016 – TxLTAP.org

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The Local Technical Assistance Program (LTAP) is a nationwide effort financed by the Federal Highway Administration and individual state departments of transportation. Its purpose is to translate into understandable terms the best available technology for roadways, bridges, bicycle and pedestrian facilities, and public transportation for city and county roadway and transportation personnel. The TxLTAP, operated by the University of Texas at Arlington, is sponsored by the Texas Department of Transportation (TxDOT) and the Federal Highway Administration. This newsletter is designed to keep you informed about new publications, techniques, and training opportunities that may be helpful to you and your community.

LETTER FROM TXLTAP ADMINISTRATION

Pardon Our Dust: Building TxLTAP

The Local Technical Assistance Program, typically referred to as LTAP, has had a long history in Texas. Throughout the years, this program has provided countless hours of training, invaluable technical consultation, and easily accessible resources to local government roadway agencies. In September, management of the Texas LTAP program changed hands, and the University of Texas at Arlington (UTA) is proud to serve as its new home.

Transportation and roadway safety related training is nothing new to us. For many years, UTA's Public Works Institute has provided quality instruction and curriculum development talent to several state departments of transportation to serve their own internal workforce training needs, but also in support of grant programs which have reached many local governments and private companies. We look forward to leveraging this experience to build a great TxLTAP program for the state.

We know we have big shoes to fill, and as the TxLTAP is rebuilt, we ask for both your patience, and your involvement. TxLTAP is meant to serve the safety, workforce development, infrastructure management, and organizational needs of roadway agencies across Texas. This will be a challenge given Texas' geographic diversity, urban/rural structure, population growth, industry vs community needs, and the differences between local resources, but we are up to the task. In coming months, TxLTAP will be reaching out to you for insight into your roadway agency's particular needs. Make your challenges, thoughts, suggestions and new ideas known.

Another means of staying involved is keeping in touch with TxLTAP, and the best means of doing so is to sign-up on our contact list. By visiting txltap.org, you can quickly provide us your basic contact information, let us know the areas of interest most important to you, and tell us if you'd prefer to receive future communications via email or traditional mail.

The University of Texas at Arlington has a great vision for the future of TxLTAP. With your feedback and participation, we'll create a robust program that'll be an outstanding training, consultation and informational resource for your organization. Hit the road with us, and we'll get places.

Respectfully,
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WINTER ROAD MAINTENANCE TIPS

By Howard McCann, P.E. and Eldon McCurley
University of Texas Arlington, Public Works Institute

Preventive maintenance is the most cost-effective way for road agencies to protect their road system investment and the winter months present the best opportunity for key road preparation measures. It's far cheaper to "keep good roads in good condition" than allowing them to deteriorate, leading to expensive rehabilitation efforts in the future. Simply stated, a dollar spent on preventive maintenance saves road agencies many times that amount in the future. Listed below are tips for a productive winter road maintenance program:

1

CUT OVERHANGING LIMBS BACK FROM ALL ROADS

Doing so allows as much sun exposure as possible, to help dry surfaces and keep water from standing and soaking into the roads. If left unchecked, tree cover can become so extensive that it forms a canopy, blocks sunlight and contributes to road deterioration.

2

CLEAR THE RIGHT-OF-WAY OF ANY DEBRIS

This helps to provide a "clear zone" for drivers who inadvertently run off the road, and improve sight distance for drivers. Additionally, debris removal offers a "sight triangle" at intersections. Remember to remove brush or limbs blocking traffic signs.

3

INSPECT AND REPLACE TRAFFIC SIGNS

Traffic signs are a very effective tool in promoting safety. Marking bridge ends and culverts, and providing advance notice of curves are safety measures which provide a warning to approaching drivers. These devices are especially useful at night when the view

of drivers is much more limited. Take advantage of shorter daylight periods to inspect the nighttime visibility of signs.

4

FOR GRAVEL ROADS

Blade gravel roads after light winter rains to take advantage of moisture in the road and help minimize the loss of "fines." Blading a dry road creates dust, which is basically the "fines" that hold the surface gravel in place. It takes both moisture and rolling to achieve compaction, thus it pays to take advantage of rains. Shape roads to establish a good crown, eliminate "secondary" ditches, and establish good drainage.



5

FOR CHIP SEAL ROADS

While it's well known that chip seals should be applied on warm/hot summer days, it's also well-established the success of a chip seal depends upon proper advance road preparation. While the following steps may be applicable to other road sections as well, they are especially important for those roads scheduled for next years' chip-seal program.

- Prepare a priority list of the roads for next summer's chip seals, and take the necessary actions to get these priority roads in the best condition possible.
- Begin by establishing good drainage, with all ditches, culverts, and any drainage structures opened up prior to winter rains. Remove any debris under bridges.
- Repair any distressed areas of pavement, which may include base failures, wheel ruts, potholes, etc.
- Do any necessary level-ups to provide a good crown and effective drainage.
- Seal cracks. Cold temperatures have surface fractures opened wide and sealing during the winter allows crack seal materials adequate time to fully cure before applying chip seals during the summer.
- As snow approaches, set up a 24/7 dispatch center, and have a good communication system between all operators, the dispatch center, and the field supervisors.
- Begin snow removal efforts by addressing critical problem locations, such as bridges and hills. If these areas become impassable, you may have lost traffic flow on that entire stretch of road.
- Black ice can form on cleared (but not dry) streets and roads as the evening approaches, and you should be prepared to deal with that.
- It's important workers wear proper personal protective equipment (PPE) including waterproof boots, ANSI/ISEA safety vests, etc.
- Consider establishing contracts with private sector service providers to supply equipment and workers should a snow event, beyond your capability to manage, occur.
- Prepare for pothole maintenance. Shaded road areas are especially vulnerable these formations in geographic locations with freeze/thaw cycles. The sooner these can be addressed the better.
- Develop a proactive instead of reactive Winter Road Maintenance Program.

6

TRAIN AND PROTECT YOUR CREW

Setting up work zone traffic control correctly is critical. Road crews which are trained in the latest procedures outlined in the Texas Manual on Uniform Traffic Control Devices keep themselves and the driving public safe during maintenance work.

7

BE PREPARED TO DEAL WITH SNOW AND ICE CONDITIONS

Prepare a snow removal plan in cooperation with the workforce and elected officials. Snow is typically cleared according to a predetermined priority listing of routes, and it's important this be well understood by all parties. Contact emergency responders from all applicable public agencies in the area to discuss the county's snow removal plan.

- Have all the equipment for snow removal well maintained, and ready to go. This includes all trucks, deicer/sand spreaders, motor graders, scoops, sweepers (for cleanup), etc.
- Stock an ample supply of deicer/sand mix. If you are uncertain about what mixtures to use, the local state transportation office can provide input on what is effective.

TxLTAP provides work zone traffic control training at no charge to city and county road agencies. Courses have been submitted to the County Judges & Commissioners Association of Texas' Commissioners Education Committee for continuing education approval. Call TxLTAP at 817-272-9678 for more detailed information on the courses offered, and/or to host a training class, or send participants to a class already scheduled.

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GRAVEL ROADS CONSTRUCTION & MAINTENANCE GUIDE



FHWA has just released its new **Gravel Roads Construction and Maintenance Guide** and made it available to LTAP centers across the country.

Contributors to the guide included Ken Skorseth, recently retired Program Manager of the South Dakota LTAP Center, and faculty from the Jerome J. Lohr College of Engineering at South Dakota State University. According to the Guide, 1.42 million road miles, or approximately 35 percent of all roads in the U.S., were unpaved as of 2012, and while these roads typically carry lower volumes than paved roads, they provide vital service to many rural areas and serve important sectors of our economy. The guide, rewritten and updated from the edition originally published in 2000, is designed to help local government agencies with the information needed to construct and maintain these roads effectively. The document brings together information on routine maintenance and rehabilitation, drainage, construction materials including types and specifications of gravel, dust control and stabilization, and innovations in gravel road management. Illustrations provide good and bad examples of road sections, and diagrams and charts impart a wealth of knowledge on techniques for keeping these roads serviceable and safe, including equipment types and setup procedures to ensure the best results. To access the Gravel Roads Construction and Maintenance Guide, visit the TxLTAP's library at www.txltap.org or request a hard copy of the manual by calling the TxLTAP office.

A PEEK INSIDE:

Good gravel road maintenance or rehabilitation depends on two basic principles: proper use of a motor grader (or other grading device) and use of good surface gravel. The use of the grader to properly shape the road is obvious to almost everyone, but the quality, volume, and size distribution of gravel needed is not as well understood. It seems that most gravel maintenance or rehabilitation problems are blamed on the grader operator when the actual problem is often material related. This is particularly true when dealing with the problem of corrugation or “washboarding” as it is often

called in the field. This problem is often perceived as being caused by the grader, but it is primarily caused by the material itself.

There are four primary causes of corrugation/washboarding:

1. **The driving habits of people**
2. **Lack of moisture**
3. **Poor quality of gravel**
4. **Lack of crown on the surface**

Driving habits are clearly evident when you observe washboarding at intersections, going up or down steep hills, going into or out of sharp curves and sometimes even near driveways. These are all places where drivers tend to accelerate hard or brake aggressively. This is a major cause of washboarding. In some situations washboarding can occur on the entire road section especially when traffic speed is high. Lack of moisture will encourage washboard formation and prolonged dry weather can aggravate the problem. This is because the crust that forms on the surface of a good gravel road will tend to loosen in dry weather. This allows the stone and sand-sized particles of gravel to loosen or “float” and the material can easily align itself into the washboard pattern.

The two causes just mentioned are completely out of the control of equipment operators

and managers. The third primary cause — the quality of the gravel — is the cause that needs special attention. Good quality surface gravel is thoroughly discussed in Section II of this manual. Simply put, good gravel must have the right blend of stone, sand, and fines. The stone should be fractured and the fine-sized particles should have a binding characteristic, technically called “plasticity.” This type of gravel resists washboarding and will reduce the problem significantly. Lack of crown is the fourth cause. If water cannot drain off of the traveled way and corrugation begins to form, the water will quickly accumulate in the depressions and soften that area of the surface. Traffic will then make the depressions deeper as tires strike the depressions and force aggregate out and up into greater ridges.

Virtually any gravel will develop some washboard areas under traffic. The key for the maintenance operator is to strive to keep the material blended. In dry conditions, the operator can only smooth the road temporarily. When moisture is present, it pays to quickly get out and rework these areas. The material should be cut to a depth of 1 inch or more below the depressions, then mixed and relayed to the proper shape. If time allows, using the machine to apply wheel compaction to the loosened material will help reform the crust. If possible,



use a roller to improve the compaction.

With the best of maintenance, washboarding can never be completely eliminated. However, the key to reducing it is to work hard at obtaining quality gravel with a good binding characteristic. Another option is to test the existing surface gravel and add material on the roadway to modify it to a suitable gradation and plasticity. It must be thoroughly mixed with the motor grader. Thereafter, trouble spots can be reshaped when moisture is present and most roads will perform quite well with limited blade maintenance. If a motor grader actually causes washboarding, it is almost always the result of running at too great a speed. The ridges and depressions will be spaced further apart and will form at the angle across the roadway at which the moldboard was set while doing maintenance. This is seldom the case since most washboards appear perpendicular to the direction of vehicle travel.

The solution to the problem is simple — reduce operating speed! Another problem can be improper tire inflation pressure or defective tires. This will cause a motor grader to bounce or otherwise operate in an unstable manner.

Operating Speed

Operating speed in blading operations must not be excessive. It is virtually impossible to do good work above a top speed of 3 to 5 mph in most conditions. Higher speeds have caused problems on many roads. When the machine begins to “lope” or bounce, it will cut depressions and leave ridges in the road surface. Conditions including moisture, material quality, and subgrade stability vary; therefore, assigning a maximum speed for good maintenance is a challenge. Operating speed must be slow enough to be sure the machine remains stable.

Moldboard Angle

The angle of the moldboard is also critical for good maintenance. This angle is fixed on some grading devices, but on motor graders it can be easily adjusted. It is important to keep the angle somewhere between 30 and 45 degrees. It is a challenge to recover loose aggregate from the shoulder of the roadway without spilling material around the leading edge (toe) of the moldboard. Operating without enough angle is a primary cause of this spilling not allow enough material to be carried for good maintenance.

Moldboard Pitch

Along with correct angle, it is important to understand proper pitch or “tilt” of a moldboard. If the moldboard is pitched back too far, the material will tend to build up in front of the moldboard and will not fall forward and move along to the discharge end, or heel, of the blade. This also causes excess material loss from the toe of the moldboard. It also reduces the mixing action that is desirable when recovering material from the shoulder and moving it across the roadway, leveling and smoothing it in the process. This mixing action is part of routine maintenance.

Traffic tends to loosen material from the road surface and displace it to the shoulder area as well as between the wheel tracks. The stone will tend to separate from the sand and the fine-sized material. At the same time, small potholes and an uneven surface will develop. It is the job of the maintenance operator to recover the material, mix it again as it rolls along the face of the moldboard and restore good surface shape. On some machines, the moldboard may be pitched too far forward. It will accomplish little more than light dragging and does not allow enough material to be carried for good maintenance.

Motor Grader Stability

It can sometimes be hard to keep a machine stable, especially while carrying a light load of material. Counteracting machine bounce or “loping” requires experience — knowing the cause and then finding a solution. If a motor grader begins to rock from side to side — often called “duck walking” in the field — it is usually caused by a blade angle that closely matches the angle from corner to corner of the tires on the rear tandem axles. The solution is generally to stop, change the moldboard angle slightly and slowly resume blading. Simply reducing speed will also often eliminate the loping effect of a machine.

Experimenting with different tire inflation pressures can help stabilize a machine, as well as leaning the front wheels in the direction that material is being moved. Adding extra weight at the front of the grader may also help. Filling tires with liquid ballast to about 70 percent capacity is sometimes done to increase traction, weight and stability of the grader. The ballast most often used is a solution of calcium chloride and water. Stability problems that are constant and severe should be brought to the attention of your equipment dealer and/or tire supplier.

Articulation

Virtually all modern motor graders are equipped with frame articulation. It can be an advantage to slightly articulate the machine to stabilize it even in a common maintenance operation. More aggressive articulation will allow a greater reach with the moldboard. For example, the front wheels can be placed out on the shoulder to better recover material with the moldboard while keeping the rear axles on the roadway for stability. There are too many applications for articulation to cover here, but operators should learn to use this feature to their advantage in both routine and rehabilitation operations, promoting long-term durability.

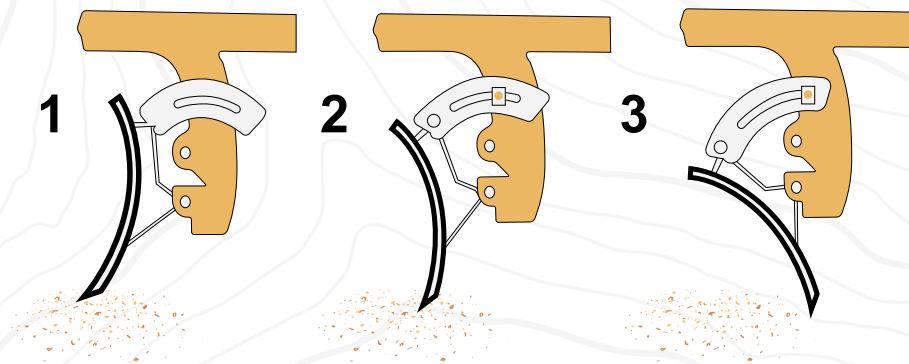


FIGURE 2: Moldboard pitch.

Moldboard pitch or “tilt” refers to how much the moldboard is tipped forward or backward. The right pitch ranges from aggressive cutting (1), to spreading (2), to light blading or dragging action (3) for maintenance of gravel roads.

Take a further look into the maintenance guide on the next page.



WALK-AROUND GRADER INSPECTION

A Good Operator Takes Care of the Machinery

For maintenance and operator personnel safety, and maximum service life of the machine, make a thorough walk-around inspection when performing lubrication and maintenance work. Inspect under and around the machine for such items as loose or missing bolts, trash build-up, cut or gouged tires; damaged hydraulic lines or hoses; oil, fuel, or coolant leaks; and condition of the moldboard.



The grease gun is a very important equipment maintenance tool.



In addition to routine machine maintenance, it is very important to keep all warning devices clean and visible.

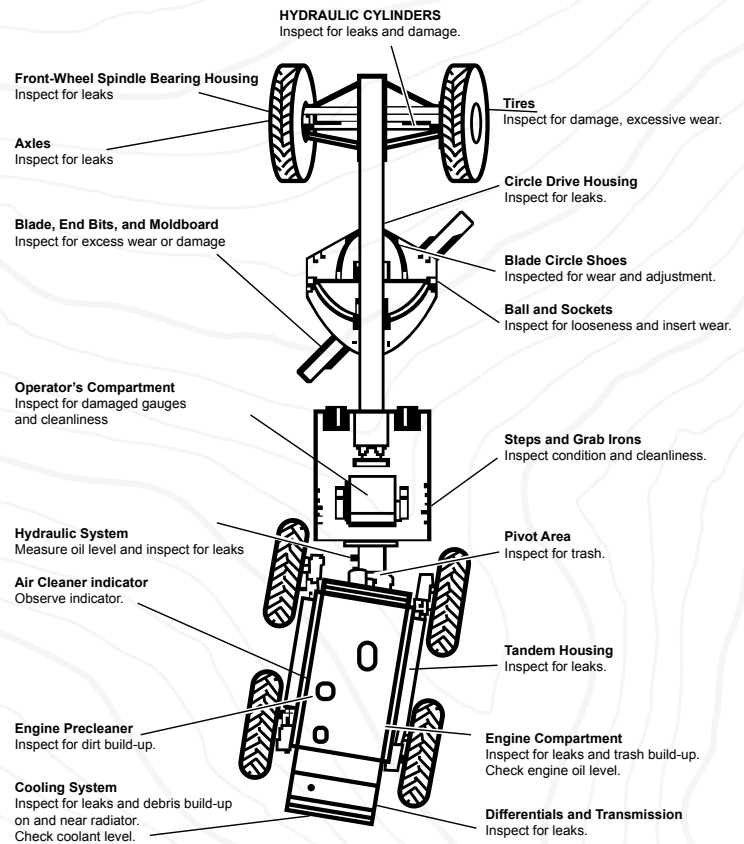


Figure 20: Walk-around Inspection Diagram (From *Maintaining Gravel Roads Training Manual*, 1999. Maine Department of Transportation, Federal Highway Administration.)

APRIL 19, 2016

DECATUR
CIVIC
CENTER

Texas Association of County Engineers and Road Administrators'

SPRING TRAINING WORKSHOP

Our Spring One-Day workshop is scheduled for Tuesday, April 19, 2016. It will be held in Decatur, TX at the Decatur Civic Center. The Texas Association of County Engineers and Road Administrators is pleased to have the University of Texas at Arlington's Public Works Institute teach on roadway maintenance topics. Applications have been made for County Commissioners to earn up to 5.5 continuing education hours for attending the event.

The registration fee is \$40 per person. An additional \$10 processing fee will be necessary for County Commissioners desiring continuing education credits. Contact Markie at 512-260-1376 with questions on how to register for the event.



MOTOR GRADER PREVENTATIVE MAINTENANCE CHECK LIST

Vehicle # _____ Date _____ PM Location _____ #Hours _____

	OK	REPAIR	FOLLOW UP
150 HOUR SERVICE (90 DAYS)			
Change Engine Oil & Filter	_____	_____	_____
Check Air Filter Elements - replace if necessary	_____	_____	_____
Check Exhaust System	_____	_____	_____
Check Air Inlet System for Leaks	_____	_____	_____
Check Wiring for Chafing, Loose Connections, etc.	_____	_____	_____
Check Battery Electrolyte Level	_____	_____	_____
Check Front End	_____	_____	_____
Check and Tighten Wheel Studs	_____	_____	_____
Check Drive Axle Oil	_____	_____	_____
Check Oil Level in Tandem Drives	_____	_____	_____
Check Parking Brake Adjustment	_____	_____	_____
Check Oil Level in Circle Drive Gear Box	_____	_____	_____
 300 HOUR SERVICE			
Change Fuel Filter	_____	_____	_____
Change Hydraulic Filter & Clean Magnets	_____	_____	_____
Change Transmission Filter	_____	_____	_____
Visually Inspect Engine Mounts	_____	_____	_____
Take Oil Sample	_____	_____	_____
Check and Adjust Brake Pedal Linkage	_____	_____	_____
Steam Clean Radiator	_____	_____	_____
 1000 HOUR SERVICE			
Steam Clean Engine	_____	_____	_____
Check and Adjust Engine Speeds	_____	_____	_____
Check and Adjust Valve Clearance	_____	_____	_____
Clean and Repack Front Wheel Bearings	_____	_____	_____
Clean Hydraulic Tank Breather Filter	_____	_____	_____
Check Pivot Pins and Bushings	_____	_____	_____
Road Test Prior to Releasing to Using Agency	_____	_____	_____

Performed by _____

Figure 21: Motor Grader Preventative Maintenance Check List (From *Maintaining Gravel Roads Training Manual*, 1999. Maine Department of Transportation, Federal Highway Administration).

ULTRA-HIGH PERFORMANCE CONCRETE

Advances in the science of concrete materials have led to the development of a new class of cementitious composites called ultra-high performance concrete (UHPC). The mechanical and durability properties of UHPC make it an ideal candidate for use in developing new solutions to pressing concerns about highway infrastructure deterioration, repair, and replacement.

Since 2000, when UHPC became commercially available in the United States, a series of research projects has demonstrated the capabilities of the material. A handful of State departments of transportation have deployed UHPC components within their infrastructure, and many more are actively considering the use of UHPC.

UHPC is a cementitious composite material composed of an optimized gradation of granular constituents, a water-to-cementitious materials ratio less than 0.25, and a high percentage of discontinuous internal fiber reinforcement. The mechanical properties of UHPC include compressive strength greater than 21.7 ksi (150 MPa) and sustained post-cracking tensile strength greater than 0.72 ksi (5 MPa). Ultra-high performance concrete has a discontinuous pore structure that reduces liquid ingress, significantly enhancing durability as compared to conventional and high-performance concretes.

UHPC is being considered for use in a wide variety of highway infrastructure applications. The high compressive and tensile strengths allow for the redesign and optimization of structural elements. Concurrently, the enhanced durability properties facilitate a lengthening of design life and allow for potential use as thin overlays, claddings, or shells. In the United States, UHPC has been used in prestressed concrete girder simple-span bridges, precast concrete deck panels, and field-cast connections between prefabricated bridge components.

Ultra-high performance concretes have demonstrated exceptional performance when used as a field-cast closure pour or grout material in applications requiring the on-site connection of multiple prefabricated elements. This use of UHPC has gained significant momentum recently, with States around the country considering the application.

UHPC is also being investigated for use in a variety of other applications. These applications include precast concrete piles, seismic retrofit of substandard bridge substructures, thin-bonded overlays on deteriorated bridge decks, and security and blast mitigation applications. In a general sense, UHPC has proven to be particularly relevant in applications where conventional solutions are lacking. For example, conventional connection solutions have hindered the use of prefabricated elements; field-cast UHPC allows for a redesign and simplification of the system while simultaneously promoting long-term durability.

Bridges with UHPC components are open to traffic in the U.S. and in Canada.

Further introductory information on UHPC can be found in *Ultra-High Performance Concrete: A State-of-the-Art Report for the Bridge Community* (FHWA-HRT-13-060). The report compiles more than 30 years of worldwide research, more than 600 English-language references, and 12 years of Federal Highway Administration (FHWA) research and development into a first-of-its-kind reference document for UHPC. This report is expected to spur further innovation in the field as innovators will now have an easier time building on the work of their predecessors. It will also provide support to technical experts around the United States as they begin facilitating deployment of UHPC technology.

The use of UHPC for connections between prefabricated bridge elements (PBE) is gaining momentum across the US. UHPC for PBE became part of the FHWA Every Day Counts program in 2014 and this

raised profile is generating interest from many owners, designers, and constructors. To support this application, FHWA has recently published *Design and Construction of Field-Cast UHPC Connections* (FHWA-HRT-14-084).

The mechanical and durability properties of UHPC make it an ideal candidate for use in developing new solutions



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SAFETY IMPROVEMENT MAKING IT STICK

By Bob Schubert, University of Texas Arlington,
Public Works Institute

Improving safety reduces accidents, lost time, equipment damage, and work comp claims. But, how do we get safety improvements to stick? The answer: By not just implementing safety improvements, but by changing the safety culture. You may be thinking, “How do I change safety culture?” The tools developed to drive change can help.

Change. It’s everywhere. Most of us have undoubtedly heard the expression “the only constant is change”. Today that statement seems more applicable than ever. In fact, change is so relevant to what we do each day that it has warranted the development of a systematic approach to driving and managing change in organizations. Change management involves three phases in the change process and the correlating basic responses to each phase. Keep these phases in mind when you implement safety changes and there is an increased chance the improvements will last long term.

THREE PHASES

Phase 1 The Introduction Phase

The first general response to change is confusion and anxiety. The crew may question why the change is being implemented. They are likely to contemplate what this change will mean to them, and they will decide upon their level of commitment to the change.

Phase 2 The Comfort Phase

Here, those involved begin to understand the need for the safety change and become more comfortable with it. During this phase confidence in the vision is realized. Those involved contemplate how they can contribute to successfully implementing the safety change and what resources they may need to do so.

Phase 3 The Norm Phase

This final phase is when those involved see the safety change as the normal process of how things are done. The new behaviors became routine and they begin to wonder why we did it differently before.

Which phase is your most recent safety improvement effort in today? Whichever phase it’s in, let’s examine two change management principles that can aid in moving it forward.

MOVING FORWARD

COMMUNICATION PRINCIPLE

The key to success in any endeavor is communication and this holds true when attempting to improve safety. People want to know what is going to happen, where, and how they fit in. Employees want to know not only the “how”, but also the “why”. Most of all, they want to know how instituting the change will benefit them individually, or as a crew.

When we lack the whole story it is our nature, as humans, to fill in the gaps. If the communication we receive is incomplete, then we create a narrative to fill in the holes. When this occurs, the patched in “information” is seldom accurate.

To combat the “fill in the gaps” errors, it is critical to provide as much information as possible when initiating safety changes. Start with an informative background of what has lead up to the need to improve the safety culture. Provide more than just general statements of the need for and advantages of cultivating a culture of safety. If statistics or hard facts were analyzed in making a determination to improve the safety culture, present an overview while avoiding the temptation of providing so much detail as to bog down the presentation and lose the crew’s attention.

Remember that effective communication flows in both directions. As such, allow adequate time for questions to be asked and fully answered. Not only is it important to allow those involved in the safety change to ask questions, but it is equally important to allow several avenues for questions to be asked. An open forum is an efficient and effective way in which to field questions as it allows all participants to hear the answers presented and, many times get answers to questions they may not have thought to ask themselves.

However, for some, an open forum in a room filled with people is intimidating to the point they will not even consider venturing out to ask their question. For these folks the opportunity to submit written questions before and during the forum can provide a safe avenue for them to ask their questions. These written questions may be addressed in the open forum allowing all to hear the answers.

PRINCIPLE OF ESTABLISHING VISION AND GOALS

In order for a team to rally around and support a safety culture change, the team must be able to formulate a vision of what success will look like. The team must be able to clearly understand the goals to be accomplished. And, they must believe the goals are attainable.

One of the best ways to secure buy-in to the vision, and support in accomplishing the goals, is to involve as many as possible, as soon as possible, in the process of establishing the vision and goals. If the crew is relatively small in size, then everyone should be involved in the process of formulating a vision and establishing the goals. If the crew is large, then it may be best to select a representatives from

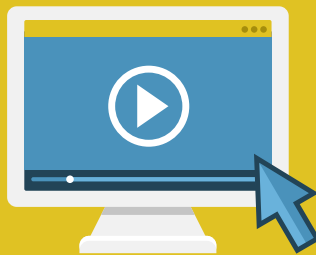
each key area to participate in the vision and goal setting. The best safety vision and most practical related safety goals are established when they are gleaned from those who will be expected to fulfill the vision by accomplishing the goals.

First and foremost this group needs to establish the current status of the organizations safety culture. We must know where we are before we can determine where we need to go. Once the current status has been agreed upon, then the vision and related goals can be established.

SUMMARY

By implementing the change principles of Communication, and Vision and Goal Establishment, each phase of the safety improvement process can be less stressful on those involved. The ultimate result is a more successful implementation of an improved safety culture which won't just be adopted for a few weeks or until the supervisor turns his or her attention away. The change will become the new way of getting the job done.

For more information or to schedule a training in safety culture improvement or change implementation contact the TxLTAP office.



EVERYDAY COUNTS WEBINARS

In coordination with TxDOT and the FHWA, TxLTAP host gatherings across the state where those interested can gather to watch and participate in Everyday Counts webinars. These informational webinars bring the latest news on innovations in the transportation field. Participation is free to all. Visit the TxLTAP website to find out when you can participate in an upcoming webinar.

Spring 2016 / e-Construction

e-Construction is a paperless construction administration delivery process that includes electronic submission of all construction documentation by all stakeholders, electronic document routing/approvals (e-signature), and digital management of all construction documentation in a secure environment allowing distribution to all project stakeholders through mobile devices.

Summer 2016 / Smarter Work Zones

Effective traffic management during construction is necessary to minimize travel delays, ensure motorist and worker safety, maintain access to local businesses and residences, and complete road work on time. These operational and safety benefits can be significant, especially in high-impact areas such as metropolitan regions and corridors and during special events. While several options are available to establish efficient work zones, the EDC-3 Smarter Work Zones effort focuses on two strategies: project coordination and technology applications, especially queue management and speed management.



GRANT FUNDING AVAILABLE FOR LOW COST SAFETY IMPROVEMENTS

Each year FHWA provides Texas with grant funding through the Highway Safety Improvement Program (HSIP). A portion of these funds are earmarked to improve safety on “off-system” roads such as those managed by cities and counties. The grant’s purpose is to support low cost safety improvements which would positively impact conditions at vehicle accident hotspots. These accident hotspots can be located by using crash/incident data (Crash Data Analysis Section of TxDOT’s Traffic Operations Division). In March of 2016, TxDOT will issue its first call for projects with the deadline to submit project proposal to follow in June. Projects will be selected in September.

Who is eligible to submit a project for consideration? *Cities or Counties.*

What type of projects of eligible? *Barriers, Curves, Intersections, Grade Separations, Rumble Strips, Widening, etc.*

What is the deadline for the submission of proposals? *Late May / Early June.*

What is the cost to my organization? *Federal funds cover 90% of construction costs. There is a required local 10% match.*

How much funding can be requested? *There is no maximum amount which can be requested, but there is a minimum amount of \$20,000.*

What are some examples of projects other local gov’t have received funding for? *Widen Roadways, Improve/Install Traffic Signal, Improve Curve Warning Signage, Installation of Barriers and Metal Beam Guard Fence, Safety Lighting, Sidewalks, High Friction Surface Treatments on Curves, Raised Medians, Plus Many More.*

Who should I contact with questions? *Your local TxDOT District or Darren McDaniel at 512-416-3331 or Darren.mcdaniel@txdot.gov.*

TEXAS INTRODUCES LOCAL AGENCY TOOLKIT

The Texas Department of Transportation created an online toolkit to help local governments navigate the complexities of locally administered Federal-Aid projects. The toolkit includes three new resources on local transportation project development—a policy manual, a management guide and a best practices workbook. Each document has links to applicable federal and state laws and regulations, manuals, forms and other tools.

View the toolkit online at:
txdot.gov/government/processes-procedures/lgp-toolkit.html



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