OREGON ROADS Newsletter

Oregon Technology Transfer Center

Winter 2015/2016 Number 110

A quarterly publication for local governments responsible for roads, bridges and public transportation

AFTER THE STORM: FLOOD CLEANUP SAFETY

In December, many areas of Oregon were hit with torrential rains, causing creeks to morph into raging rivers, saturated soils to slide, and roads to flood. The down-pours triggered flood warnings across the Western portion of the state.

Many people know basic safety when it comes to severe weather: take shelter, move to higher ground, and don't drive or walk into flooded areas. After the storm passes, however, additional safety measures are necessary when dealing with floodwater and flood cleanup.

When floods occur, debris and downed trees can block public roads and damage power lines. Workers cannot see what is under the surface of the water to know the dangers that may be present in the area. In addition, there is a level of danger associated with operating electrical equipment used in cleanup. Flooding disrupts water purification and can overflow waste sites, causing contamination and illness to workers who are exposed to it.

Floodwater often contains infectious organisms, such as E. coli, Salmonella, and tetanus. Most cases of illness associated with flood conditions are brought about by ingesting contaminated food or water. However, tetanus can be transmitted from contaminated soil or water entering broken areas of the skin.

(Continued on page 5)

FINALLY! ROADS SCHOLAR LEVEL 2 IS IN THE BAG

"It's been a marathon." Those were the words of Rebekah Jacobson, the Oregon T2 Center Director, on the completion of the *Roads Scholar* Level 2 curriculum program. The eight-class, Level 2 series has been in development since 2011 and is now complete.

The final class, "RS-17: Bridge Inspection, Maintenance, and Repair" was completed earlier this month and debuted at the Fall Street Maintenance and Collections Systems school in Seaside. That class was developed under a contract with retired Linn County Bridge Supervisor and taught by Harding and the current Linn County Bridge Supervisor, Wayne Mink.

"We're excited to be able to offer the Level 2 classes regularly now," said Jacobson, referring to requests for more Level 2 course offerings. Before completion of the series, Level 2 classes were only offered one each six months, at the APWA Spring and Fall Street Maintenance and Collections Systems school. Now, with the series completed, Jacobson hopes to offer two Level 2 classes each Spring and Fall at various locations around the state, in addition to the classes offered at the schools.

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Also in this issue…

To subscribe or unsubscribe to this electronic newsletter, email T2Center@odot.state.or.us

Oregon Technology Transfer Center

Oregon's Technology Transfer (T2) Center

The center is jointly sponsored by the Federal Highway Administration (FHWA), the counties and cities of Oregon, and the Oregon Department of Transportation (ODOT)/ FHWA funds are provided through the Local Technical Assistance Program (LTAP).

The purpose of the Oregon T2 Center is to help local transportation agencies obtain information and training on transportation technology relating to roads, bridges and public transportation. To accomplish this purpose, we:

- provide low-cost seminars, training classes and workshops;
- publish a quarterly newsletter;
- provide a "Circuit Rider" service, taking video programs and informational materials to local agencies;
- provide a lending library service of audio/visual programs on a variety of transportation topics;
- Provide copies of technical bulletins or reports upon request; and
- respond to telephone and mail inquires relating to transportation technology or make a referral to a specialist.

National LTAP & TTAP Programs — Serving America's Local Road & Bridge Agencies

FROM THE DIRECTOR…

With the finalization of the *Roads Scholar* Level 2 Program, we have our first "graduating class" of seven dedicated individuals who have taken each Level 2 class at it's initial offering.

Dawn Hickson (Clackamas County
Terry Learfield (Clackamas County)
Ken Marron (City of Newberg)
Timothy Swift (ODOT)
Lee Medlock (ODOT)
Adam Drago (ODOT)
Keith Russell (ODOT)

Please join me in congratulating these individuals on their outstanding accomplishment!

We plan to start offering Level 2 courses around the state in 2016. To receive *Roads Scholar* class scheduling straight to your inbox, email T2Center@odot.state.or.us and request to receive Roads Scholar emails.

Rebekah Jacobson
Oregon T2 Center Director

CLEAR ROADS PROGRAM PUBLISHES NEW MATERIALS FOR WINTER MAINTENANCE

The Clear Roads pooled-fund research program has published the following new materials. All are available at clearroads.org.

Clear Roads is a national research consortium focused on rigorous testing of winter maintenance materials, equipment, and methods for use by highway maintenance crews. The Minnesota Department of Transportation is the lead agency.

Photo: David Gonzalez, MnDOT

Comparison of Material Distribution Systems

Spreader systems range from relatively inexpensive—such as in-house modifications to a dump truck's tailgate—to sophisticated vehicles that are designed specifically for spreading deicing materials. Spreaders may be outfitted with prewetting systems or salt slurry generators and additions like groundspeed controllers or zero-velocity units. With such a wide range of approaches, it can be difficult for an agency to identify which options will deliver the best performance cost-effectively.

To help agencies compare and select spreader systems, researchers created a catalog of 85 systems and components, along with a report that captures practitioners' experiences with spreader performance.

(Continued on page 11)

EVERY DAY COUNTS WEBINARS

Smarter Work Zones

Smarter Work Zones (SWZ) are among a few select initiatives being promoted by the FHWA Every Day Counts Program. SWZ are work zones that utilize innovative strategies to minimize work zone safety and mobility impacts. In EDC3, focus is on coordination of construction projects and use of technology applications to dynamically manage work zone impacts. These strategies include coordination of roadway construction projects to reduce work zone impacts and using technology applications to dynamically manage traffic in the work zone environment. For more information on the EDC Smarter Work Zones, go to https://www.workzonesafety.org/swz/main.

To provide more information on having smarter work zones, regular webinars are available for participation or viewing after the fact. Below are the webinars that have been offered to date and are available at https://www.workzonesafety.org/swz/webinars for viewing (slides, transcript, recording, and any documents discussed n the webinar).

- Webinar #1: A Comprehensive Overview of the SWZ Initiative, September 9, 2015
- Webinar #2: Smarter Work Zones and the Work Zone ITS Implementation Guide, September 29, 2015.
- Webinar #3: Smarter Work Zones Corridor-Based Project Coordination, October 15, 2015.
- Webinar #4: Technology Application Showcase: Queue Warning Systems, October 26, 2015.
- Webinar #5: Smarter Work Zone Program-Based Project Coordination, November 2, 2015
- Webinar #6: SWZ Case Study: Variable Speed Limit and Dynamic Lane Merge, November 12, 2015
- Webinar #7: Work Zone Project Coordination Guide and Examples, December 2, 2015.
- Webinar #8: Integrating Project Coordination & Technology Applications – Iowa DOT, December 15, 2015.

SWZ webinars coming in 2016:

- Webinar #9: Technology Application Strategies: Performance Measures and System Health Monitoring, January 21, 2016.
- Webinar #10: Designing ITS Systems Based on Identified Needs (SWZ ITS Implementation Guide Steps 1-3), February 18, 2016.

CAN YOU SPOT WHAT'S WRONG WITH THESE PICTURES?

See page 16 to find out

OREGON COUNTIES RESPOND TO RETIREMENTS DIFFERENTLY

Retirements can be challenging for many agencies – not just because of the need to expend effort and time in the hiring process, but also because of the loss of knowledge and experience that walks out the door on the new retiree's last day.

Several Oregon jurisdictions are learning first-hand how difficult it can be to replace seasoned employees with new hires. "Retirements seem to come in waves. Right now, we're on the tail end, so it's quieting down," said John Niiyama, Road Maintenance Manager for Multnomah County. "But I'm anticipating in the next three to five years to have several more."

Lincoln County has also seen quite a few retirements in the last couple of years. According to Roy Kinion, Lincoln County Public Works Director, the Road Department has traditionally been a place where employees tend to stay for a number of years, but now, their workforce is aging out. "It's hard to lose so many of your crew all at once," he said.

Another Oregon County, however, seems to be somewhat ahead of the curve. Marion County went through their heavy retirements a few years ago and has hired almost two dozen new employees within the last two years.

The first step in replacing the skills and knowledge of departing retirees is to fill the newly-opened positions. Different agencies approach this task in different ways, and what they look for in candidates varies, as well.

"We can train them when they get here. You need the right kind of person," said Kinion of Lincoln County. "What I really like to see is they come to work with a smile on their face and a willingness to work. Beyond that, we can pretty much take care of the rest," he said, explaining that they are working hard at trying to hire good, solid citizens. Although the County requires a Commercial Driver License (CDL) within 6 months of hire, as long as the new employee has a permit, the county is willing to put in the effort to help the employee receive the training to secure the CDL license.

After hire, they receive flagger training, forklift training, First Aid and CPR training. It's probably not realistic to expect employees to have that training in advance, Kinion said. "Very few people come to us with flagger card in hand."

Multnomah County is also prepared to train their new hires. "What the county has done is implemented an apprentice program," explained Niiyama. Participants are required to get their CDL permit from the DMV within seven days of hire and then master all the competencies of the apprenticeship program within the program timelines. Those who successfully complete the program are promoted to the position of Maintenance Specialist 1. Those who do not meet the program requirements are terminated. "It opens doors for folks," Niiyama says, allowing people without experience to gain the skills necessary to be successful in a public service profession.

Unlike the experiences of some agencies, Marion County has had no problem finding highly-qualified candidates for their open positions. In fact, they won't even consider a candidate without a CDL license, and they strongly prefer candidates with equipment experience. "We get a lot of candidates. We're pretty fortunate," says Evie Pech, Marion County's Road Operations Supervisor.

However, Pech insists Marion County's good fortune is not because of higher wages. They cast a wide net

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A LOOK BACK IN HISTORY

Commissioner Bowes standing on SW Broadway below a Traffic Safety Commission sign reading "C Sharp or B Flat" in 1948. *City of Portland Archives, Oregon, A2001-007.658*

Flood Cleanup Safety

(Continued from page 1)

Photo courtesy of Gresham Police Department - Northeast Kane Street failed in two places due to a blown out culvert, as shown here near Mt. Hood Community College.

Floodwaters may also be contaminated by agricultural or industrial chemicals or by agents from flooded hazardous waste sites. Flood cleanup crew members who must work near flooded industrial sites may be exposed to chemically contaminated water.

Photo courtesy of ODOT A semi-truck got stuck in a deep sinkhole that formed during Monday's storm along Oregon Highway 22

How to Protect Yourself

If water has been present anywhere near electrical circuits and electrical equipment, turn off the power at the main breaker or fuse on the service panel. Never enter flooded areas or touch electrical equipment if the ground is wet.

Maintain good hygiene while working in a flooded area. Wash your hands with soap and clean, running water, especially before breaks and at the end of a shift. Workers should assume that any water in flooded or surrounding areas is contaminated unless the local or state authorities have declared it to be safe. If no safe water supply is available for washing, use bottled water, water that has been boiled for at least 10 minutes, or chemically disinfected water.

As a safety measure, anyone working in a flooded area should be sure their tetanus shot is current. A tetanus vaccination may be needed if it has been five years or more since the individual's last tetanus shot.

Photo courtesy of Columbia County Emergency Management

Cleanup workers may need to wear chemical resistant clothing if hazardous chemical contamination is suspected in a flood area. Workers will need plastic or rubber gloves, goggles, and watertight boots. Depending on the situation, additional safety equipment may be necessary, such as a hard hat or hearing protection devices.

The danger of a flood does not end when the rains cease. Cleanup crews must follow safe work practices, work together, and look out for one another.

Reference source: OSHA, www.osha.gov Portions of this article originally appeared in the Kentucky LTAP Summer 2015 newsletter. Used with permission.

COORDINATION WORKSHOP

In November, the Oregon T2 Center and Northwest Tribal Technical Assistance Program (TTAP) co-sponsored a two-day coordination workshop at the Confederated Tribes of Umatilla.

The workshop began with the national Traffic Incident Management (TIM) course instructed by Darin Weaver (Incident Management Coordinator from ODOT), Rocky Desimini (Regional Fire Trainer from DPSST), Scott Rector (Senior Trooper with Oregon State Police), Nathaniel Price (ITS/Operations Engineer from FHWA), and Jason Shaner (President of the Oregon Tow Truck Association). This course brings together police; firefighters; state, local and tribal departments of transportation; towing; medical personnel; and other incident responders to recognize how their work affects the other responders at the scene, leading to safer and faster response to incidents and clearing the roadway.

What was most valuable?

- Sizing up the scene and vehicle placement
- Communication between agencies
- Having all the different perspectives

"Perfect class!"
"Lots of good material"
"All information presented was very Informative!"

The TIM training was followed by a session on Local/Tribal Coordination. Rowena Yeaquo, Director from the Northwest TTAP, began the session with the importance of local and tribal governments working together to improve their community's transit, roads, safety, and having a coordinated response to various events. Police Chief Weinhardt from the Yakima Tribe spoke on the experiences the Yakima tribe has had coordinating with agencies in their community.

Day two of the workshop consisted of two four-hour defensive driving classes. Bob Raths, trainer from the Oregon T2 Center, covered personal safety, sharing the road, dealing with aggressive drivers, weather conditions, use of drugs and alcohol, how measure 91 affects driving, and much more.

TECHNICAL RESOURCES

Free copies of the following publications can be ordered by contacting the T2 Center at 503-986-2855 or T2Center@odot.state.or.us. Quantities are limited to stock on hand.

Living On Shaky Ground: How to Survive Earthquakes and Tsunamis in Oregon

This 24-page publication will help readers to prepare for earthquakes and tsunamis in Oregon. It explains how to prepare for, survive, and recover from them. It also describes what we can do today to save lives, reduce injuries, and minimize damage. An ideal reference for road maintenance first responders to help them get their families prepared, so they can better help their communities when the time comes. Order hardcopies from the T2 Center or reproduce your own from this pdf file. www.oregongeology.org/tsuclearinghouse/resources/pdfs/shakygroundmagazine_Oregon.pdf

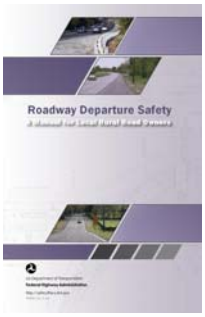
Traffic Engineering and Highway Safety Bulletin: Intersection Control

This publication, produced by the Department of the Army's Military Surface Deployment and Distribution Command Transportation Engineering Agency, outlines appropriate uses of various intersection control devices, such as STOP, YIELD, Multiway stop control, signals, or no control. Order hardcopies from the T2 Center or reproduce your own from this pdf file. http://www.sddc.army.mil/sites/TEA/Functions/SpecialAssistant/TrafficEngineeringBranch/Bulletins/SDDCTEA_Bulletin_Markings_2008-03.pdf

Intersection Safety: A Manual for Local Rural Road Owners

One of the most pressing traffic safety issues on local roads is intersection safety. Many local rural intersections lack suitable design standards, delineation, and signing that may be provided on higher volume roadways. Many were not officially designed, but rather "evolved" over time to their current geometric configuration. Spiral-bound hardcopies available from the T2 Center or pdf file available here for download. http://safety.fhwa.dot.gov/local_rural/training/fhwasa1108/

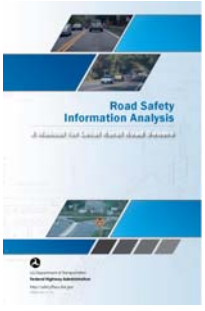
Roadway Departure Safety: A Manual for Local Rural Road Owners



Local rural roads vary from two-lane paved highways to gravel or dirt roads in mountainous, forest, or tribal areas. A portion of these roadways lack basic signing, pavement markings, and appropriate alignment and delineation features. In many cases local agencies have no plans for improvements due to factors such as funding, low traffic volumes, or topographical challenges.

This booklet provides local road practitioners with relevant information to reduce roadway departure crashes on the roadway network. Spiral-bound hardcopies available from the T2 Center or pdf file available here for download. http://safety.fhwa.dot.gov/local_rural/training/fhwasa1109/

Road Safety Information Analysis: A Manual for Local Rural Road Owners



This booklet was developed to provide processes and examples for typical information needs and analyses local practitioners can use to help improve the safety of local rural roads. Its purpose is to acquaint local practitioners – regardless of background or experience level – with the information sources, calculations, tools, and methods to make data-supported decisions regarding local rural road safety.

Spiral-bound hardcopies available from the T2 Center or pdf file available here for download. http://safety.fhwa.dot.gov/local_rural/training/fhwasaxx1210/

CIRCUIT RIDER CORNER

Does a multi-generational work environment help or hinder the success of our work teams?

By Tony Jobanek

Many of us have heard about Generational Influence in the workplace and maybe have even attended a training to better understand its importance. First, what exactly is Generational Influence? And does it help our respective teams to be stronger or does it just make our work lives more difficult? Let me begin by clarifying that it all depends on how well we understand the significance of when we were born and how the cultural events we experienced during our life journey affect our individual perceptions, expectations, and perspectives in the workplace.

In today's workplace you may find up to four generations of employees working side by side: Traditionalists (born prior to 1946), Baby Boomers (born 1946-1964), Generation X (born 1965-1980), and Millennials or "Gen. Y" (born 1981-2000).

Although the Traditionalists – also known as the Greatest Generation – have largely left the workforce through retirement, their influence on those remaining is still strongly felt. Their loyalty and willingness to get things done have sent ripples across the other generations who are left with the responsibility of leadership and continuing the mission of delivering quality services to the public. Generally speaking, Traditionalists seldom asked, "why?" On the job, "just tell us the task, and we will get it done – no questions asked," was often the mantra of this generation.

The Baby Boomers have been the generation who, until recently, have been the dominant group by sheer numbers on our work teams. The Cold War, Vietnam, and the "Sex, Drugs and Rock and Roll" generation was less apt to take direction without asking "why?" – sometimes even doubting the intentions of those around them. Now this large generational group is filtering out of the workforce to make room for the Generation X segment who are beginning to take the reins at many organizations. Soon the Millennials will move to the front of the line in our teams.

What will become of how we provide our service? I am confident it will be fine, despite some of the observations I have heard from my fellow Baby Boomers. Each generation just sees the world differently based on their own snapshot in time along our national and world timeline.

Back to the original question, do all of these varied generations make it better or more difficult for teams to be successful? If you take the time to engage your individual team members – whatever their age – you will find everyone brings to the table something unique and beneficial that will contribute to the success of your team. Many times, earlier generations ask, "Why does the new person always question why we are doing something instead of just doing it?" Or a Millennial will ask "Why can't that older team member operate their computer or tablet faster?" The truth is that each generation has a skill set which can greatly add to the efficiency and effectiveness of your work teams, and all you have to do is take the time to find out how.

Oh, and one more thing: the next generation coming onto our teams is just around the corner. The I-Generation (born 2001-present) will bring something new and unique to our work lives. You can guarantee it!

Tony Jobanek was hired as a T2 circuit rider in August and has been presenting and discussing Generational Impacts in the workplace for public agencies in Oregon since 1998.

KLAMATH FALLS ROADS SCHOLAR

Tony McFarlan is presented his Roads Scholar certificate by Street Division Supervisor Joe David.

Dealing with Retirements

(Continued from page 4)

for applications, using the neogov job posting web site to advertise their open positions and also rely on a lot of word of mouth marketing from current employees. Additionally, seasonal employees are permitted to apply for internal positions, using their temporary position as a foot in the door.

They also typically do their hiring in the off-season, so they are able to take advantage of the market by picking up folks who may be experienced but not currently working.

Multnomah County's Apprenticeship Program

Multnomah County is willing to share the content of their apprenticeship program with other interested agencies. If you would like a copy of their program, you may contact the T2 Center or John Niiyama at john.niiyama@multco.us.

For the various skills, they use a mixture of in-house trainers and T2 courses to provide the training. A supervisor or crew lead validates that the apprentice has demonstrated each specific skill and checks it off on the nine-page skills checklist, which includes content on general skills, as well as road maintenance, traffic aids, and bridge maintenance skills.

The development of the program was "a collaborative process between supervisors, senior Maintenance Specialists, and staff to come up with an agreement that these competencies would be part of the process," explained Niiyama.

Because employees are hired at different times of the year, and the work is very seasonal, the agency is flexible about where a person is in the program and how it takes to complete. Real world experience is not available for all skills during every calendar season. Therefore, the program varies in length between six and 12 months.

For other agencies who are interested in implementing an apprenticeship program, Niiyama has some advice for them. "Have a plan and stick with that plan to get incoming apprentices through the program." It's a collaborative effort from the top down to the line staff. Everybody has to take part in training the apprentice.

FOLLOW-UP TO "WHAT'S WRONG" ARTICLE IN LAST NEWSLETTER

Following up on the What's Wrong With This Picture Article from the last newsletter, what other things did you find wrong in this picture? Here are a few things that could use correction:

- This is a 55mph, rural, 2-lane road. The flagger should be approximately 500 feet from the "Flagger Ahead" sign. Less than 500 feet does not give motorists adequate warning and sight distance to slow down and/or stop.
- It is recommended that the flagger hold the paddle in the right hand, not the left, so the paddle and handle do not partially block the flagger's hand signals.
- The flagger should be standing safely out of the lane of travel, not in the middle of the lane.
- The flagger's vision is blocked by the sign because the paddle handle is too short, and the flagger is also not looking at oncoming traffic.
- The flagger paddle is always supposed to be held out away from the body, high enough that it does not block the flagger's vision in any direction.
- There should be cones marking the work zone area and separating workers from traffic.
- It appears as if the flagger is wearing one of the old, no longer approved, safety vests instead of a Class 2 or 3 current standard vest.
- It also appears that the "Flagger Ahead" sign is not retro-reflective. That is a basic safety requirement for all temporary work zone signs.

10 TIPS FOR WINTERIZING YOUR FLEET

As the temperatures begin to fall, there's no better time to perform a winter maintenance check on your vehicles and outdoor engines. Here are 10 tips to help you make sure that your fleet is ready for even the worst winter weather.

GAS

Keep your gas tank at least half full. Water vapor can collect in the bottom of your tank and when drawn into your engine's fuel line, it can freeze in the winter and prevent your engine from starting. Adding a bottle of gas-line antifreeze such as HEETR or Iso-HEETR to your gas tank combines with the water and enables it to be burned.

OIL

As the temperature drops, it's important to make sure you are using the right viscosity of motor oil. In especially cold climates, even oil with a viscosity of 10W-30 may be too thick! It's best to check your owner's manual for the recommended viscosity for freezing temperatures.

BELTS & WIPERS

Just as heat and everyday driving can cause wear and tear on your vehicle's belts, so can cold weather. A worn timing or v-belt could spell disaster for you and your vehicle, especially when driving in remote regions. Make a belt inspection part of your regular routine and check for signs of fraying or cracking. Change any worn belts now to help avoid a breakdown during the worst of winter. Inspect wiper blades for fraying or cracking and consider using heavy-duty winter blades for tough ice buildup.

FLUIDS

The best time to check and top off your vehicle's fluids is before harsh winter weather hits. Check and top off engine coolants, power steering, brake, wind shield washer and battery fluids.

SPARK PLUGS

If your engine gets off to a rough, jittery start, misfires or simply doesn't want to start, there's a good chance it could be the spark plugs. The side of the road is certainly no place to be in a winter storm. So check your spark plugs, making sure to clean or replace them if necessary.

BATTERY AND BRAKE PADS AND SHOES

Summer heat takes its toll on batteries. However, in the winter cold, when you need the extra cranking power, your battery may not be up to the task. Consider replacing it if it is more than 3 years old and keep the contacts free of corrosion with a battery post and terminal cleaner. With slippery winter road conditions, making sure that your brakes are in working order is a top priority. If your brakes make a high-pitched squealing sound when engaged, it's time to change them out for a new pair.

TIRES

If your vehicles operate in a cold region with snow and ice, all weather tires may not offer the best performance. Consider outfitting your fleet with winter tires instead. They offer better traction in icy conditions and even cold, dry roads.

LIGHTS

In the darker winter months, it's important to be seen by other drivers. Walk around your vehicle to make sure all lights are working.

Other engine maintenance: It's important to also keep other equipment running through the winter season. Snow throwers, generators and other two- and four-cycle engines may not be used for long periods of time. As a result, the fuel may form gum and varnish deposits.

Resource: www.grainger.com/content/supplylink-vehicle-winterization-tips. Also printed in Missouri LTAPs 4th Quarter 2015 newsletter.

Clear Roads Program

(Continued from page 2)

Environmental Factors Causing Fatigue

During winter events, equipment operators work long, stressful hours, and fatigue can be a major problem resulting in higher crash rates, lower productivity, and increased health issues. This project identified sources of fatigue in snowplow operators and developed realistic recommendations for reducing or eliminating fatigue. General recommendations include:

Encourage the use of breaks and naps to reduce fatigue.

- Encourage drivers to report fatigue.
- Increase vehicle maintenance and use equipment such as segmental snowplow blades or rubber blades that reduce noise and vibration.
- Consider scheduling shifts so they do not start or end during the circadian low between 2 a.m. and 6 a.m.
- Offer shift options.
- Increase personal interactions between managers and drivers, and involve snowplow drivers in the decision-making process.

Developing a Totally Automated Spreading System

Automating the material application rate setting may improve the effectiveness of the material spreader by reducing the potential for human error. This is of particular importance as winter maintenance agencies face the prospect of a shrinking, less experienced workforce as operators age and retire.

In this project, researchers wrote three guides:

- an introduction to spreader automation technology
- a hierarchy of automation elements that snowfighters can use to assess their current equipment
- an overview of available systems comparing the features of different products

Preventing Corrosion on DOT Equipment

This best practices manual gives operators, mechanics, and supervisors the information they need about corrosion processes, failure modes, and risk management to minimize equipment corrosion and effectively address it when it occurs.

The first four chapters offer background information, including descriptions and illustrations of the various types of corrosion. Chapter 5, aimed at fleet managers, recommends specifications for new equipment to help prevent corrosion. Chapter 6 provides processes for evaluating, repairing, and restoring fleet vehicles, and is aimed at garage supervisors and staff. Chapters 7 and 8, aimed at both managers and operators, discuss preventive maintenance and training and facility management needs.

Roads Scholar Level 2

(Continued from page 1)

"This program has been very popular with cities and counties around the state," said Bob Raths, Jacobson's predecessor and current Oregon T2 Center Trainer. "Our goal has always been to bring local agencies quality training that meets the needs of their employees. These classes are the only ones in the state that were designed specifically for the professional development of road maintenance crews."

The *Roads Scholar* program began in Oregon in 2001 and was based on programs in other states providing foundation-level technical skills to road maintenance workers . The Level 1 program contains 10 four-hour classes. The Level 2 program, designed for graduates of the Level 1 program, consists of eight six-hour classes, focusing on more advanced topics.

Graduates of each of the programs receive recognition, and some local agencies, recognizing the value of specialized skills training, offer financial incentives for completion of the program. For information or to register in the program, visit the T2 Center's web site at www.oregon.gov/ODOT/TD/TP_T2.

TRB WEBINARS

Understanding Transportation Safety Risks on Tribal Lands: Learning from a Collaborative Research Project with American Indian Communities in Minnesota

TRB will conduct a webinar on Thursday, February 4, 2016 from 2:00PM to 3:30PM ET that will discuss ways to interpret and respond to the high rates of fatalities and severe injuries among American Indians from crashes. This webinar will share results from a study being conducted in collaboration with several tribal governments in Minnesota, which includes findings about best practices, successful interventions, and other lessons learned about policies and management strategies to address those risks effectively and reduce harm.

This webinar was organized by the TRB Standing Committee on Native American Transportation Issues. Participants must register in advance of the webinar, and there is no fee to join this webinar. A certificate for 1.5 Professional Development Hours (PDHs) will be provided to attendees who register and attend the webinar as an individual.

The first 60 minutes of the webinar will be for presentations and the final 30 minutes will be reserved for audience questions. The Registered Continuing Education Program (RCEP) categorizes this webinar activity as relating to health, safety, and welfare including core technical. Registration Information: http://www.trb.org/Calendar/Blurbs/173634.aspx/

Register Now

Tools for Optimizing Performance of Airport Operations and Maintenance

TRB will conduct a webinar on Monday, February 22, 2016 from 2:00PM to 3:30PM ET that features research conducted by TRB's Airport Cooperative Research Program (ACRP) that will introduce airport operation and maintenance personnel to tools, techniques, and practices that may be used to assist them in optimizing performance.

Participants must register in advance of the webinar, and there is no fee associated with this webinar. This webinar will provide 1.5 Continuing Education Units for Accredited Airport Executives. This webinar is pending approval by the American Institute of Certified Planners for 1.5 Certification Maintenance Credits. Registration Information: http://www.trb.org/Main/Blurbs/173639.aspx

Register Now

TRB Webinar: A Sampling of Winter Maintenance Best Practices in Europe

TRB will conduct a webinar on Monday, February 29, 2016 from 2:00PM to 3:30PM ET that will examine how transportation organizations in Europe deal with the challenges posed by adverse weather in their respective countries. This webinar will discuss what their winter materials and chemicals of choice are, what equipment they use, and their procedural strategies. By exploring winter maintenance activities in Scotland and Norway, attendees may be able to apply some practices or methods to their own winter maintenance operations.

This webinar was organized by the TRB Standing Committee on Winter Maintenance. Participants must register in advance of the webinar, and there is a fee for non-TRB Sponsor or non-TRB Sustaining Affiliate employees. A certificate for 1.5 Professional Development Hours (PDHs) will be provided to attendees who register and attend the webinar as an individual. Registration Information: http://www.trb.org/MaintenancePreservation/Blurbs/173675.aspx

Register Now

ARE YOU READY FOR WINTER?

Don't forget that the T2 Center has a lending library of videos. Some of the videos are specific to winter weather and operations. To borrow videos, simply email or call the T2 Center. The videos are loaned for a two-week period. These are all available on DVD.

Anatomy of a Winter Storm (9 minutes)
MNDOT 2013
"Don't crowd the cloud" is one of the key messages in this video that looks at winter work zones, how MnDOT removes snow and ice, hazards that motorists and snowplow operators face, and what motorists can do to drive safely when snowplows are present.

Best Practices: Snow and Ice Control, Winter Formula (18 minutes)
Ohio DOT 2013
Ohio DOT's fourth best practices video release gives an excellent overview of their snow and ice "winter formula." The Ohio "winter formula" includes a well trained workforce, adequate stockpiles or supplies of the right material, well maintained plows, dump trucks and spreaders, and an extensive weather forecasting system. The video details how all of these elements work together in order to provide a timely deployment of manpower and equipment during deteriorating weather conditions.

Defensive Driving: When Good Weather Goes Bad (18 minutes)
© Wumbus 2008
Covers driving safety tips for all four seasons. Winter covers snow and ice, and other common hazards. Spring covers heavy rain and hydroplaning, as well as high winds. Tips for driving in fog and sun glare conditions are also addressed, as well as pre-trip vehicle inspections.

Driving Safely in the Hazards of Winter (12 minutes)
© Wumbus 2011
Driving conditions in the winter months can be full of treacherous winter hazards including, ice, poor visibility, strong winds, snow, rain, and more. This safe driving video discusses each weather condition and the risks involved with driving in each. Important snow driving tips are also given. Viewers will learn how to prevent unsafe incidents, starting with awareness, and how to generally stay safe behind the wheel despite the imminent dangers that every driver must face in the cold months.

Maintenance and Operation of Trucks and Attachments (67 minutes)
Oklahoma DOT 2015
This series of 30 short videos helps users to understand the maintenance and operation of 10-yard dump trucks and their attachments, including snow plow, spreader, sprayer, and trailers. Also covers angle blade, auger, backhoe, box blade, disc, dozer, motor grader, pneumatic roller, PTO, and tractor. Segment durations range from one minute (mowing slopes) to 11 minutes (dozer walk-around), with most in the two to three minute range. These videos are in mp4 format, so they must be viewed using a computer and will not play on a DVD player.

Motor Grader Series: Snow Plowing (17 minutes)
© Wumbus 2011
Motor graders are excellent machines for moving snow. This video illustrates several techniques that can save time and improve efficiency while opening and widening roads.

Snow Plow Orientation (30 minutes)
Alaska T2 Center 2012
Developed as a training tool for winter snow maintenance personnel, this video includes a comprehensive overview of truck attachments for plowing/sanding and best practices for snow removal in rural and urban environments.

Winter Operations (101 minutes)
Iowa DOT 1998
This detailed program covers: introduction to snow removal, pre-season preparation, chemicals and how they work, snow fences, regular equipment checks, radio procedures, anti-icing and deicing, snow plowing techniques, and post storm checks and clean-up.

Working Safely With Snow Plows and Other Snow Removal Vehicles (20 minutes)
© Wumbus 2008
This video covers inspecting your equipment, knowing your route, safe driving and operation, sharing the road, how to handle getting stuck, and after your route.

Technology Transfer Center Steering Committee

The Technology Transfer Center Steering Committee members listed below help guide and direct the policies and activities of the Oregon Technology Transfer (T2) Center. You are invited to contact any of them to comment, make suggestions, or ask questions about any aspect of the T2 Program.

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ONLINE RESOURCES

Transportation Curriculum Coordination Council (TC3) Mobile App

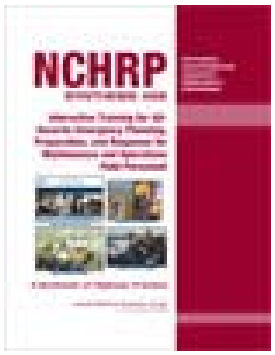
GET IT ON Google play

Download on the App Store

TC3 offers its users a free mobile app, which can be downloaded on Apple and Android devices. Users can browse all courses offered on the TC3 Learning Management System (LMS) https://training.transportation.org/browse_bookstore.aspx, and stay up-to-date with all things TC3, including upcoming meetings, recent activities and updates, and important reference documents. Download today and stay in the know.

Interactive Training for All-Hazards Emergency Planning, Preparation, and Response for Maintenance and Operations Field Personnel

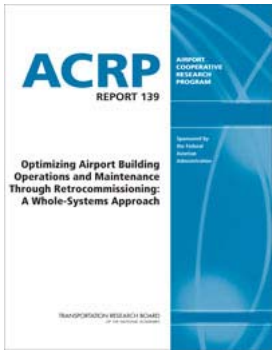
http://www.trb.org/main/blurbs/172182.aspx



TRB's National Cooperative Highway Research Program (NCHRP) Synthesis 468: Interactive Training for All-Hazards Emergency Planning, Preparation, and Response for Maintenance and Operations Field Personnel identifies interactive emergency training tools and sources that may be applied by maintenance and operations field personnel of state departments of transportation and public works agencies. The report also identifies potential obstacles to their implementation and develops a toolkit of relevant training and exercise information.

Optimizing Airport Building Operations and Maintenance Through Retrocommissioning: A Whole-Systems Approach

http://www.trb.org/ACRP/Blurbs/172739.aspx



TRB's Airport Cooperative Research Program (ACRP) Report 139: Optimizing Airport Building Operations and Maintenance Through Retrocommissioning: A Whole-Systems Approach explores ways to optimize operations and maintenance costs and improve overall building system performance through retrocommissioning. The report is accompanied by a CD that contains additional appendices and a spreadsheet tool to help practitioners evaluate and select appropriate facility optimization measures based on cost, savings, complexity, visibility, and greenhouse gas savings.

Calendar of Events and Training

ODOT	***http://www.oregon.gov/ODOT/HWY/Training/pages/upcomingengtrng.aspx***	
Date	*Class Title*	*Location*
Jan 26	Introduction to Highway Hydraulics	Salem
Feb 4-5	Qualification Program for ESA Effects Compliance	Salem
Feb 9-10	Traffic Signal Field Services Level 1 training ($200) *(http://www.oregon.gov/ODOT/HWY/TECHSERV/docs/training/EG001748-1749_020916-022316_Traffic_Signal_Services_Unit.pdf)*	Salem
Feb 23-25	Traffic Signal Field Services Level 2 training ($300) *(http://www.oregon.gov/ODOT/HWY/TECHSERV/docs/training/EG001748-1749_020916-022316_Traffic_Signal_Services_Unit.pdf)*	Salem
Feb 23-26	Fracture Critical Inspection Techniques for Steel Bridges	Salem
Mar 2	Cultural Resource Consultant Qualification Training	Salem
Oregon State University (OSU)	***http://cce.oregonstate.edu/node/216***	
Date	*Class Title*	*Location*
Mar 21-22	Highway Safety Manual	Portland
Apr 12-14	Uniform Traffic Control Devices	Corvallis
American Public Works Association (APWA)	***http://oregon.apwa.net/PageDetails/4269***	
Date	*Class Title*	*Location*
Mar 8-10	Developing Leader	Bend
Mar 29-31	Spring Street Maintenance and Collection System School	Seaside
Apr 19-22	APWA Spring Chapter Conference	Hood River
Apr 27-28	Preventive Maintenance for Roadway Surfaces	Redmond
Miscellaneous Conferences and Training		
Date	*Class Title*	*Location*
Jan 14 Jan 20 Jan 27	Contract Specific Writing ($75) *(http://www.wsdot.wa.gov/LocalPrograms/Training/LTAP.htm)*	Ephrata, WA Shoreline, WA Vancouver, WA
Jan 12 Feb 2 Feb 3 Feb 24 Mar 8	2016 Local Agency ROW *(http://www.wsdot.wa.gov/LocalPrograms/Training/LTAP.htm)*	Olympia, WA Seattle, WA Mt.Vernon, WA Vancouver, WA Spokane, WA
Jan 12-14	Bridge Inventory Coding *(http://www.wsdot.wa.gov/LocalPrograms/Training/LTAP.htm)*	Olympia, WA
Jan 26-28	Bridge Condition Inspection Fundamentals *(http://www.wsdot.wa.gov/LocalPrograms/Training/LTAP.htm)*	Olympia, WA
Mar 1-2 Mar 22-23	Highway Runoff Manual Training *(http://www.wsdot.wa.gov/LocalPrograms/Training/LTAP.htm)*	Tacoma Ellensburg
Mar 15	Enhanced Gravel Road Treatments Workshop ($12) *(http://www.co.marion.or.us/PW/Roads/oacesworkshop/Pages/gravelroadworkshop.aspx)*	Redmond
Mar 15-17	Northwest Transportation Conference *(http://nwtc-conference.org/)*	Corvallis
Oregon T2 Center	***http://www.oregon.gov/ODOT/TD/TP_T2/***	
A full list of training classes offered by the T2 Center is available on-line at the above website. To schedule any of the "Circuit Rider" classes, please contact us at (503) 986-2855 or T2Center@odot.state.or.us.		

Oregon Roads is a quarterly publication of the Oregon Technology Transfer (T2)Center, furnishing information on transportation technology to local agencies. It is distributed free of charge to cities, counties, tribal governments, road districts, and others having transportation responsibilities.

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ANSWER TO WHAT'S WRONG WITH THESE PICTURES

From page 3

In Photo 1, the transition sign and support have been placed with two legs of the support on the outside lane of this multi-lane road to better support the sign. The parkway was somewhat soft and unstable. This is certainly alright to do IF the sign/support do not create a potential hazard. In this case, the sign (and all the signs following it) does create a hazard, because the lane is relatively narrow, as can be seen in the photo. Any traffic in that lane must divert several feet to the left (partially into the middle lane) to miss coming in contact with the sign. On this high volume street, the sign placement creates a probable sideswipe situation, particularly if the driver approaching the sign neglects to check traffic on the left before weaving around the sign. A sideswipe could also cause the vehicle in the middle lane to partially cross into oncoming traffic, causing an even worse head-on accident.

The signing needs to be moved back onto the parkway, where a sandbag(s) could be used to stabilize the support. Our traffic control signing is not supposed to create hazards.

Photo 2 shows more of the same hazard situation described above. It also shows that the flagger and the "Flagger Ahead" sign are not preceded by a "Be Prepared To Stop" sign; both are required in this active flagging situation.

If all the signs were moved onto the parkway, some would be situated in poor locations (blocked by a tree, etc.) All signing should be clearly visible at the approach speed on the street. Recommended sign spacing is flexible enough to allow signing relocation to clearly visible spots. Refer to the Oregon Temporary Traffic Control Handbook (the "Orange book"); beginning on page 19.

Traffic control requires proper signing, in clearly visible locations at the approach speeds, which do not create potential hazards to traffic.