

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

## Oregon Road Warrior Winter Weapons

By Larry Christianson, T2 Newsletter Coordinator

Winter has definitely descended on Oregon. Now comes the challenge of providing safe, efficient and environmentally proper treatment and removal of the ice and snow that comes with it!



Tandem plowing and sanding on Commercial Street SE in Salem

Oregon is climatically diverse, so it stands to reason that we might find diverse responses to how public works crews deal with the nemesis of winter weather. Actually, in polling a few of those responsible for responding to ice and snow-covered roadways, it turns out that “the enemy” appears in the same forms and the “weapons” are few, but effective when applied with the right “battle strategy”.

We don’t think of the Willamette Valley as having huge snow related problems, but a robust “tactical plan” is nevertheless in place for the City of Salem. I asked Bruce Hildebrandt, Salem Street Maintenance Supervisor, to explain his “battle strategies” where winter snow and ice maintenance were concerned.

“The overwhelming majority of our program is focused on anti-/deicing activities as we see snowfall only once every three to four years. Black

See **ROAD WARRIOR** page 3

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## 2006 OACES Skills Demo Rodeo A Big Hit

By Kelli Candella, Deschutes County Road Department

On September 12 – 14, 2006 a different kind of Rodeo took place. The *Thirteenth Annual Equipment Operator Skills Demonstrations and Technical Training School* was held at the Valley River Center in Eugene, Oregon. City and county road maintenance workers from around the state were on hand to maneuver the heavy equipment to see who would be this year’s Top Gun.

Over 150 participants, sponsors and exhibitors spent two and one half days at the OACES (Oregon Association of County Engineers and Surveyors) sponsored event. Classroom training included a T2 **Roads Scholar** elective, CDL rules in Oregon covering the CDL license standards and applicable endorsements, medical card exam requirements and restrictions, and how driving violations can affect public works maintenance. All this was combined with hands-on equipment operation, making this one of the most anticipated schools of the year.

The Rodeo offered six skills tests for competition that simulated different on-the-job situations such as plowing between parked

cars, operating a loader in tight situations, moving the grader blade for blue topping, backhoe operations, installation of snow-chains and performing a pre-trip inspection on trucks with hidden defects. The events were judged by state and county officers.

The two top finishers from each event were presented with their belt buckles. A third place award was also given out at the popular awards banquet. The first and second Top Gun winners earned their seat for a trip to the APWA Western Snow & Ice Conference & National Snow Rodeo in Estes Park, Colorado. The traveling three-foot tall trophy will be moving on to Lane County, the 2006 Top Gun’s agency.

The Skills Competition events were sponsored by such well-known industry names as Cryotech, Papè Machinery, Peterson Cat, Pewag Chains, Special Asphalt, TEC Equipment, and Western Power & Equipment. Conference sponsors also included Paramount Petroleum Products, IUOE Local 701, Lane County Public Employees Association, Lane County Public Works, Lithia Chrysler Dodge of Eugene and Wright Asphalt.

See **ROADEO** page 6



## 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 Technology Transfer (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 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
- answer telephone and mail inquires relating to transportation technology or make a referral to a specialist.

# Letter from the Editor...

The last few months have been very busy for the T2 Center with activities mainly associated with the delivery of individual training classes to our primary customers – the counties and cities of Oregon. We have also been involved in a couple of training events – the *OACES Annual Technical Training School and Equipment Operator Skills Demonstration* and the *Fall Street Maintenance and Collection Systems School*. Also, we completed the development of a maintenance and safety poster for local bridges, copies of which are available upon request. Additional information on the OACES training and the availability of the bridge maintenance poster are provided elsewhere in this newsletter.

Bill Kolzow, T2 Center Circuit Rider/Training Specialist, recently attended a three-day train-the-trainer workshop in Orlando, Florida compliments of the Federal Highway Administration. Topics were Road Safety Fundamentals and Road Safety Audits. Bill will be using material from the train-the-trainer workshop to develop a *Road Safety Fundamentals* training class for the Oregon audience. We are also in the process of obtaining reprints of the *Road Safety Fundamentals* guidebook and it will be available upon request. See the article on page 7 for additional information.

The *Fall Street Maintenance and Collection Systems School* was held at Eagle Crest Resort® in Redmond on October 18 – 20. The 2 ½ day school provided four tracks of professional and technical training sessions as well as exhibits and displays to over 180 attendees. The popularity and continued success of the fall and spring schools as well as other events can be directly attributed to Judy Arasmith and her company, Events Solutions, Inc., which has been the event planner for APWA and T2 Center joint training for the last 20 years. Unfortunately, Judy has decided to retire (see related article on page 4) and the Oregon Chapter of the APWA has selected Cameo Management Solutions to handle future events. We wish Judy a long and fulfilling retirement and welcome



Judy Arasmith receives her honorary **Roads Scholar** certificate From T2 Center Director Bob Rath.

Maggie Vohs of Cameo. As a parting gift, the T2 Center awarded Judy an honorary **Roads Scholar** certificate at the fall school.

Since completing our statewide offerings of all ten **Roads Scholar** core classes last year, we have begun to cycle through the classes again for those who have joined the program since its inception in October of 2001 or have missed core classes. We will continue to offer the classes in 2007 at both the spring and fall *Street Maintenance and Collection Systems Schools* as well as at numerous locations statewide. We are currently offering the *RS-1 Basics of a Good Road* and *RS-2 Drainage: Key to Roads that Last* classes. If your agency is interested in hosting either of these, please let me know right away since we plan on wrapping up our offering of these "basics" and "drainage" classes before next spring.

In recognition of **Roads Scholar** program participants who complete the Level 1 program requirements, we provide a plaque and travel mug. In addition, we are now providing a plaque inscribed with individual **Roads Scholar** names to the sponsoring agencies to recognize their participation and support of the program. The first agency plaque was presented at the fall school in Redmond to Darrel Burnum, Road Maintenance Foreman at the Clackamas County Department of Transportation and



Darrel Burnum of Clackamas County receives a **Roads Scholar** agency plaque from T2 Center Director Bob Rath

Development. Clackamas County was selected to receive the first agency plaque since it has been a primary supporter of the program since its inception and currently has ten **Roads Scholar** program graduates, the most of any county or city. Eventually, we will be providing a plaque to all of the Oregon counties and cities participating in the **Roads Scholar** program.

T2 Program Director

ice is our nemesis here and the most dangerous to traffic since it blends with the pavement and is not readily detectable to the average driver.

“Over 95 percent of our annual material usage is the liquid anti-deicer magnesium chloride. As an alternate to sodium chloride, “mag” is mixed with lignite sulfate to neutralize the pH to a factor of 7 and is suspended in water at about a 30% solution. Starting in 2000, we began utilizing highly refined magnesium chloride products now called Freezgard. We also use it to wet sanding rock to “burn” it into the ice or snow pack for added traction retention so the sand won’t just blow away after a few vehicles have passed by. Sand is applied only as a last resort, and typically only if there is accumulated snow and/or ice present on the street surface. We also plow snow as needed in the same priority as deicing/sanding and our routing system is flexible and adjustable to provide maximum support to rush hour traffic flows both morning and evening. We plow all snow to the edge of the street and leave driveway openings to citizens to dig out by their own means. The only area in town where we physically remove the snow is our downtown business core where we will plow snow to the middle of the street and remove it during night time operations only.”

I asked Bruce what things have to be considered for environmental purposes when treating roads in winter maintenance situations.

“The City of Salem is surrounded by “listed” streams for three species

of threatened and endangered salmonoid. We recognize that everything on our streets flows into our streams then subsequently into the Willamette River which bisects our community.

“Our program has always had the aim of utilizing the least amount of de-icer/anti-icer possible to achieve traffic safety without compromising our environment. We are able to set application rates well below the industry standard by being able to apply the material at slow speeds in an urban environment and in a fog-type application instead of a knife snivey application. For higher speed roadways in rural areas, this is not a practical application method due to the relative speed of application equipment and traffic. Our application rate of between 6.7 to 8.2 gallons per lane mile has proved very effective for us and as yet is undetectable in storm runoff to our streams.”

Of course sanding is another weapon in the winter arsenal, but I wondered aloud to Bruce Hildebrandt what its best use might be and what environmental and other considerations it might require.

“Sanding is necessary under many circumstances to preserve human life and property. This is typically dictated by the storm event and must remain a viable tool in our arsenal for providing

traffic safety for the motoring public during winter months and even for spills which compromise traction. Due to the angular nature of sanding rock so it can provide traction on snow and ice, it can smother spawning beds in our streams and rivers by choking the flow of oxygen laden water by interlocking amongst the rounded stream bed gravels. This is why we do our best to limit the use of sanding rock where possible without compromising traffic safety. We feel as long as the same emphasis is placed on recovering the sanding rock after an event is over as was in place during the event, we can minimize the possible migration of sanding rock into our streams and rivers. This creates a good and achievable balance between the need to protect our public and our environment.”

Over East, the available weapons are the same, but the City of Redmond has chosen to stay “chemical-free”. I talked with Arlene Thomas, Transportation Division Manager for the City of Redmond, about her strategy for dealing with the “enemy”.



*Snow removal - City of Redmond style*

“The City of Redmond has opted to use sand and snow plows rather than chemicals for snow and ice maintenance. We have quite low traffic speeds on most of our streets which are residential. Sand that is applied to stop sign areas will last through several days if not covered again by significant snow fall. Plows begin work at a 4” and deeper snowfall and we do the best we can at plowing out all city streets clear back to the curb during the first snow storm, so that residents understand graphically where we will be storing snow for the rest of the winter. We have to “shoe up” our plows and run

rubber bits on our one grader due to manhole lids and other utilities so unfortunately our streets are rarely ever truly “clear” once we have a snow pack base, so there is usually something for the sand to stick to even in the higher speed areas.”

I asked ODOT’s District 10 Manager, Pat Creedon, what safety benefits he could attribute to aggressive and proactive treatment of icy and snowy road conditions.

“Our crews have seen a decrease in crashes when we are able to apply the right de-icing/anti-icing treatments at the right time. Also, there are two very good studies from British Columbia and Idaho that document the amount of crash reduction at 70% to 80%. I know there are thousands of drivers out there that have avoided crashes due to anti-icing and de-icing application, but they’re hard to identify because how do you count the ones that didn’t get in a crash!!”

As beautiful as winter can be, it presents a definite challenge to Oregon’s many public works employees. We salute the crews that work sometimes around the clock to make sure we can get where we want, when we want as safely as possible.

# IT'S RETIREMENT TIME FOR EVENT SOLUTIONS

From the APWA Chapter Newsletter

Written by Gordon Merseth, Education Committee Chairman



In 1985, Jeanne Nyquist knew that the Chapter's education program had grown beyond the point of being a member/volunteer run operation. Soon after, Judy Arasmith and her firm, Event Solutions, began their 20-year relationship with the Oregon Chapter. After reviewing the credentials of several firms, the chapter selected Event Solutions (initially known as the

Conference Company) to take care of the many details involved in putting on a professional education program. Judy and Event Solutions proved to be a wise choice as she has provided exemplary service to the chapter and our client students. In addition to helping coordinate current events and organize

new ones, Judy takes care of all the local arrangements for our workshops, prints and mails the announcements, assembles and delivers session materials, takes registrations, handles all the tuition and invoices, and organizes and distributes workshop feedback. Phew! In working with our partners at T2, Judy has proven to be a great ambassador of the Chapter. Much of the success of our education program can be tracked directly to her involvement. As with many things, change will occur gradually. Judy has agreed to continue involvement with workshops scheduled for 2006 and provide guidance to whomever we select to take the position. After that though, she vows to spend much more time with her grandchildren and with her husband, Skeet. We'll be able to find a new firm to provide the services needed to continue our education program, but we'll never be able to replace the professionalism, smile and gentle grace Judy brought to our chapter. If you'd like to add your own personal comment, you can reach her at [judy@easyevents.com](mailto:judy@easyevents.com).

## Circuit Rider Corner

By Jack Foust, T2 Circuit Rider

### Did You Know?

The 2003 Legislature passed HB 2176 regarding operation of a motor vehicle around or near emergency vehicles. The law was added to the Oregon Vehicle Code as follows:

811.147 Failure to maintain safe distance from emergency vehicle or ambulance; penalty. (1) A person operating a motor vehicle commits the offense of failure to maintain a safe distance from an emergency vehicle or ambulance if the person approaches an emergency vehicle or ambulance that is stopped and is displaying required warning lights and the person: (a) On a highway having two or more lanes for traffic in a single direction, fails to: (A) Make a lane change to a lane not adjacent to that of the emergency vehicle or ambulance; or (B) Reduce the speed of the motor vehicle, if making a lane change is unsafe. (b) On a two directional, two-lane highway, fails to reduce the speed of the motor vehicle. (2) The offense described in this section, failure to maintain a safe distance from

an emergency vehicle or ambulance, is a Class B traffic violation. [2003 c.42 §2]

The law states that emergency vehicles are police, fire and ambulance vehicles but as with many other Oregon laws, there are exceptions. In this case, the exception concerns roadway maintenance vehicles. In talking with Oregon State Police and Oregon Department of Transportation (ODOT) representatives, it was learned that if a local or statewide roadway maintenance agency requests a permit from the ODOT Director, their maintenance equipment (with warning lights operating) under certain conditions, parked on a road or roadside or moving on a roadway, such as snow plows may be included as an emergency vehicle covered by this law.

This appears to be somewhat vague so, as a motorist, how do you know if a maintenance vehicle is covered? We determined that the safest defensive driving reaction to all vehicles on the roadside that are displaying their warning lights or flashers is to reduce speed and move over one lane when it is safe to do so.



## ◀ Can you spot what's wrong with this picture?

There is something very definitely "invisible" in this picture.

See page 6 to find out.

# Calendar of Events and Training

**APWA** [www.oregonapwa.org/training/](http://www.oregonapwa.org/training/)

Date	Fee	Title	Location
April 12-14	\$185	Spring Maintenance and Collection Systems School	Agate Beach Hotel – Newport

**OSU** <http://kiewit.oregonstate.edu/workshops.html>

Date	Fee	Title	Location
February 8	\$110	Designing Streets for Bicyclists	OSU LaSells Stewart Ctr
February 12-13	\$225	Designing streets for pedestrians	OSU LaSells Stewart Ctr
March 20-22	\$330	Uniform Traffic Control Devices Workshop	OSU LaSells Stewart Ctr
April 6	\$110	Legal Aspects and Liability of Traffic Safety	OSU LaSells Stewart Ctr
May 2-3	\$225	Design and Control for the Older Driver	OSU LaSells Stewart Ctr
May 17-18	\$225	Lighting and Illumination	OSU LaSells Stewart Ctr
June 19-21	\$330	Advanced Traffic Operations & Highway Capacity Analysis (w/computer applications)	OSU Owen Hall Computer Lab

**ODOT** <http://www.oregon.gov/ODOT/HWY/TECHSERV/upcomingengtrng.shtml>

Date	Fee	Title	Location
January 17	See Note	Certified Hot Mix Asphalt Construction Inspection	Salem –Black Bear Inn
January 17	See Note	ODOT Sign Design – Policies and Procedures	Salem – Region 2, Bldg B
January 22	See Note	General Construction Inspector	Medford – Rogue Regency Inn
January 25	\$40	Local Agency Federal Aid Project Delivery	Salem – Eola Chemeketa
January 29	See Note	Bridge Safety Inspection – Training and Certification	Salem – HR Training Center
January 30	See Note	Certified Hot Mix Asphalt Construction Inspection	Wilsonville – Best Western
February 6	\$40	Local Agency Federal Aid Project Delivery	Wilsonville – Holiday Inn
February 13	\$40	Local Agency Federal Aid Project Delivery	Salem – Eola Chemeketa
February 13	See Note	Certified Traffic Signal Inspector	Wilsonville – Best Western

*Note: Visit the web site above for additional registration information*

## 2006 Regional Bridge Maintenance Conference

By Grant Griffin, Washington State DOT

The Pacific Northwest Bridge Maintenance Conference was held October 4th & 5th, 2006 at the Seaside Convention Center in Seaside, Oregon. The Washington, Oregon, Idaho and Alaska Departments of Transportation and the Federal Highway Administration sponsored the biennial event. The conference attracted over 300 individuals from the Pacific Northwest and also garnered some national attendance. Interest and attendance has grown with each successive conference since the launch in 2000.

The conference is not only proving to be a hit with bridge maintenance professionals but also with the wide spectrum of product exhibitors specializing in products designed to extend the life of bridges. There is great excitement among participants for this forum providing such excellent opportunities for various bridge maintenance crews to share information, innovation, and creative ideas. While some speakers are invited to provide a national perspective to common bridge problems, the vast majority of speakers are members of local and regional bridge maintenance crews. These speakers like to beg forgiveness for their lack of experience making formal presentations in front of such a large group, but their presentations are invariably informative and well done. A scholarship program has been established to provide an award for the best presentation as voted by the conference attendees.

This year's winning presentation was "A Successful County Bridge Program" presented by Carl Hendricks and Brian Mankle from Whatcom County, Washington. The scholarship award for 2006 is a trip to Louisville, Kentucky to attend the Midwest Bridge Working Group Winter Meeting. Carl and Brian presented an overview of the Whatcom County bridge inspection and maintenance program. Highlighted were innovative repair techniques developed and deployed by crew members, critical bridge damage response, staffing and outfitting the bridge crew, and the development of a standard bridge design for the replacement deficient bridges with construction performed by the county maintenance crew.

The next Pacific Northwest Bridge Maintenance Conference is already being planned for October 2008. Those interested are encouraged to develop presentation ideas. Those who have presented information at past conferences are also encouraged to present a follow-up presentation outlining improvements and refinements to their procedures. Keep an eye on the official web site maintained by Washington State University Conferences and Professional Programs at <http://www.capps.wsu.edu/bridge/#Bridge>. There you will be able to view information about the 2006 conference and get the latest information on the next conference as it becomes available.

## This year the Skills Competition winners were

<p><b>Backhoe</b>                  Jeff Maskal – Linn County 0:55.14                  David Bice – City of Salem 1:05.25                  Casey Arbogast – ODOT Ukiah 1:05.52</p>	<p><b>Chain on/ Chain Off</b>                  Keith Stanancyk – ODOT Meacham 1:49.80                  Erik Johnson – Deschutes Co. 1:54.90                  Casey Arbogast – ODOT Ukiah 1:55.50</p>
<p><b>Grader</b>                  Tim Lollar – ODOT – Roseburg                  John Thompson – ODOT – Meacham                  Scott Richardson – Wheeler County</p>	<p><b>Loader</b>                  Hondo Bull – Lane County                  Mike Hanna – Coos County                  Steve Kirkpatrick – Lane County</p>
<p><b>Truck Plow</b>                  Tim Lollar – ODOT – Roseburg                  Steve Kirkpatrick – Lane County                  Erik Johnson – Deschutes County</p>	<p><b>Pre-Trip</b>                  Cody Whetzel – Douglas County                  Rusty Eccleston – Jackson County                  Mark Emery – City of Salem</p>
<p><b>TOP GUN</b>  <b>1st</b> – Steve Kirkpatrick Lane County      <b>2nd</b> – Jeff Stinger Lane County      <b>3rd</b> – Tim Lollar ODOT - Roseburg</p>	



**Top Gun Winners:** Left to Right  
 3<sup>rd</sup> Place **Tim Lollar** – ODOT Roseburg,  
 2<sup>nd</sup> Place **Jeff Stinger** – Lane County, and  
 1<sup>st</sup> Place **Steve Kirkpatrick** – Lane County,  
**Event Sponsor: Tony Myrha, Cryotech**  
 Deicing Technology



**Grader Event Winners:** Left to right:  
 3<sup>rd</sup> Place **Scott Richardson** – Wheeler County,  
 2<sup>nd</sup> Place **John Thompson** – ODOT, and  
 1<sup>st</sup> Place **Tim Lollar** – ODOT Roseburg

Answer to *What's Wrong with this Picture?* (page 4)

### What's Wrong With This Picture –

There actually is a STOP sign mounted on the metal post at this corner, but any approaching driver would have a difficult, if not impossible, time seeing the sign and reacting in time to avoid a potential intersection incident except possibly in the winter when the tree loses its leaves.



Assuming the STOP sign is necessary, some solutions are (1) a drastic tree trimming, (2) tree removal & replacement with a lower-growing plant of some sort, or (3) a STOP AHEAD sign could be installed in advance of the STOP sign. Number (3) isn't a readily acceptable solution because it does not improve visibility of the STOP sign.

2003 MUTCD, Section 2B.06, under "Standard" indicates "The STOP sign shall be located as close as practical to the intersection it regulates, **while optimizing its visibility to the road user it is intended to regulate.**"

### Technology Transfer Center Steering Committee

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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# Technical Resources Available

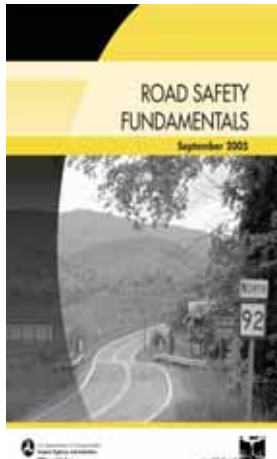
## Oregon Temporary Traffic Control Handbook



The Oregon Transportation Commission formally adopted the May 2006 edition of the *Oregon Temporary Traffic Control Handbook for Operations of Three Days or Less* at their May meeting. The implementation date for the use of the new handbook was July 1, 2006. This new edition of the handbook replaces all older versions and the errata that was issued in December of 2005. Any local manuals addressing traffic control for maintenance and other short term operations need to be updated to the new standards in the handbook.

This revision to the Temporary Traffic Control Handbook has many changes and added information that have been thoughtfully reviewed by representatives who work on and along Oregon roads and highways. Within these pages, you can find the guidance to apply the 2003 Manual on Uniform Traffic Control Devices to your work needs. Where the new handbook differs from the MUTCD, the handbook applies.

## Road Safety Fundamentals



### FHWA SA-05-011, 134 pages

Local (cities, towns, Tribes, and/or counties) governments are responsible for constructing and maintaining the majority of road mileage in the United States. Many of these roads are in rural areas where traffic volumes can be low, but speeds may be high. The combination of rural environment, unforgiving roadsides (rocks, trees, utility poles, etc.), distance from emergency medical services, and speeding has made these roads the most deadly in the Nation. Statistics show that 30 percent of the Nation's fatal crashes occur on local rural highways. This reality challenges smaller road agencies to reconcile cost-effective road improvements with the need to increase safety.

*Roadway Safety Fundamentals* is designed to help local and Tribal road agency professionals understand the critical relationships between roads, roadside, road user behavior, and safety. Because many of these agencies have no licensed professional engineers on staff, this publication reviews the proper use of common traffic control devices such as signs, lane markings, and lighting. It also addresses the use and effectiveness of roadside barrier systems, especially different guardrail systems.

*Road Safety Fundamentals* identifies the core concepts local and tribal road agency professionals can use to evaluate and improve their safety operations. Throughout the process, the guidebook encourages agencies to document decisions and actions for future agency reference and as safeguards against potential litigation. Information in the guidebook will help road agency professionals use a systematic approach to improve safety and roadways in a manner that makes best use of resources and manpower.

## Bridge Maintenance and Safety Poster



The T2 Center, in cooperation with the ODOT Local Programs and Bridge Sections has developed a safety and regular maintenance guide for local bridge programs. The guide is a 20" X 28" poster that is intended to be displayed and serve as a promotional tool to encourage good bridge safety and maintenance practices. Although ODOT does inspect most bridges in the state, the overwhelming majority are owned by local agencies and it is their responsibility to maintain them throughout their life cycle.

*Copies of the Bridge Maintenance and Safety poster as well as the Oregon Temporary Traffic Control Handbook and the Road Safety Fundamentals guidebook are available from the T2 Center by calling 503-986-2855.*

# Oregon Technology Transfer (T2) Center

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*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. The opinions, findings or recommendations expressed in this newsletter are those of the authors and do not necessarily reflect the views of the Oregon Department of Transportation or the Federal Highway Administration. We do not endorse products or manufacturers. Where names of either appear, it is only to lend clarity or completeness to the article or report. Space limitations and other considerations prohibit us from providing an advertising service to our readership.

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Simply make a copy of this page showing the addressee information, make the corrections, and fax it to us at 503.986.2844. We'll be happy to make the necessary changes.

Should you have any questions or concerns, contact Beth at 503.986.2855 or by e-mail: [Beth.Hunter@odot.state.or.us](mailto:Beth.Hunter@odot.state.or.us)



## Pass it on . . .

After you have read this newsletter, copy what you need for your files and **pass it on!**

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