

ODOT Research News

Fall Quarter 2001

Welcome to the first edition of ODOT Research News, a quarterly newsletter to bring you the latest research and resources from the Research Group. The [underlined links](#) throughout the newsletter will take you to different parts of the [Research Web Page](#). Our web page includes updates on current research projects, links to published reports and research notes, information on staff and specialties, and links so you can send us your questions or suggestions for potential research projects. Check it out! You can also call us at 503-986-2700.



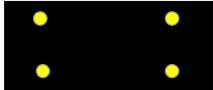
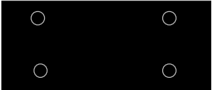
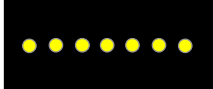
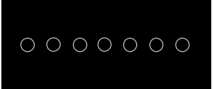
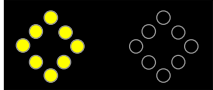

Project Accomplishments:

In August, the Research Group conducted our second **Research Management Peer Exchange**. Six research experts from other agencies, other states, and FHWA interviewed ODOT staff and our research partners to collect their views of the program. ODOT received high praise for our research program along with some suggestions for improvements. The report of the panel's findings and recommendations is available by contacting Research Manager [Bernie Jones](#) at 503-986-2845. ODOT's action plan for improvements will be completed this winter.

The **Automated Data Collection** project is studying systems to automate the collection of pavement condition data. In August, vendors showed vehicles with lasers to measure rutting, strobes and cameras to collect images of pavement condition, video cameras for road inventories, GPS/positioning systems to measure grade and location, and more! The vendors collected data and video samples, which will be compared with current systems. A survey of potential ODOT users is planned for this fall. For more information, call [Cole Mullis](#) at 503-986-3116.



Arrow Panel Research: This summer, Research Group staff evaluated a "sequentially flashing diamond" arrow panel display as a caution warning for temporary work zones. The display was compared to the MUTCD-approved flashing line and flashing four-corner displays. Field tests on OR 22 west of Salem and OR 99W south of Monmouth showed that the greatest speed reductions occurred when the diamond display was operating.

| Display Mode | First Sequence | Second Sequence |
|-------------------------------|---|---|
| Flashing Four-Corner |  |  |
| Flashing Line |  |  |
| Sequentially Flashing Diamond |  |  |

Motorists were also surveyed about the displays. Over 70% chose the diamond display as the most effective at getting their attention, and 80% would like to see the diamond used when work is taking place on Oregon highways. However, 61% found the displays confusing. The results of the field trials and motorist survey show potential for the diamond display's use as an advance warning device in temporary work zones. If a similar study by Utah DOT confirms these results, ODOT may approach FHWA for approval to use the diamond display. For more information, contact [Andrew Griffith](#) at 503-986-3538. The [report](#) is available on-line, too.

Aggregate Resource Inventory and Needs

Forecast Study: Kim Wyttenberg, a geologist on a rotational assignment from the Geometronics Section, completed extensive field work for this project. Data was collected at 759 aggregate sites owned or leased by ODOT, and the quantity and quality of available aggregate was inventoried. The project report will contain information about each site including rock classification, estimate of reserves, current use of the site, location (including GPS coordinates), drainage characteristics, and adjacent land use. Images of each site will also be included. Questions? Contact [Andrew Griffith](#), 503-986-3538.



A research report on the ***Rockfall Catchment Area Design Project*** is soon to be released. This project, jointly funded by a eight states and FHWA, is developing guidance for the design of catchment areas (ditches) to retain rockfall from cut slopes of varying heights and slopes. This report will be published in the next month on compact disc, available by calling 503-986-2700.

The ***Freight Shipper and Motor Carrier Survey*** project is nearing completion. Its objective



Upcoming Events

Northwest Transportation Conference

The Northwest Transportation Conference and ITS Oregon Annual Meeting are scheduled for February 5-7, 2002 at Oregon State University in Corvallis. The conference theme is Sustainable Transportation, featuring workshops on all modes of transportation, innovations in mobility, new environmental research and developments in transportation. Keynote speakers include members of the congressional delegation. Check the latest information at the [conference Web site](#).

was to develop an effective survey methodology for obtaining freight industry views about problems on Oregon highways. After testing several survey approaches, the Portland State University researchers recently conducted a full-scale survey and obtained noteworthy results – a 60% response rate from the shippers and carriers they contacted. [Alan Kirk](#) can provide more information, 503-986-2843.

An update on a [research project recently mentioned](#) in “Inside ODOT”– the ***Precast Concrete Barrier Crash Testing Project***. Oregon’s Standard (32-inch) F-shaped barrier and the newly-adopted Tall (42-inch) F-shaped barrier performed admirably in crash testing with a ¾-ton pickup truck traveling at 62 mph. Recently, the Tall barrier was also tested with a 17,600 lb. single unit truck going 50 mph. The barrier effectively contained and redirected the truck, and the vehicle remained upright. Contact [Alan Kirk](#) for a report on this project, expected to be available in December.

A collection of maintenance innovations from ODOT shops across the state is available at the

Maintenance Outreach

site on the Research web page. You’ll also find links to similar innovations from other states. A showing of innovations will be included as part of the Northwest Transportation Conference in February 2002. Glenn Boyle, our part-time circuit rider is also available to visit your workplace to bring information or record your good ideas. E-mail [Glenn](#) or call him at 503-986-6550.



Research Project Solicitation

Once a year, Research makes a formal request for suggestions for potential research projects. Although your questions and research problems can be [sent in anytime](#), the annual selection process is used to prioritize and fund the major research needs of the organization. Use these links to a [description of the process](#) and to [forms](#) for problem submission. Find out [who represents your area of expertise](#) and our [most recent work on research priorities](#).



Recently Published Reports:

[Analysis of Design Attributes and Crashes on the Oregon Highway System:](#) This study looked at how well safety features used in crash models predicted crash frequencies.

[Desert Varnish: MP 4.1 to Dabney State Park:](#) How desert varnish performed over 2 years to blend shotcrete into the surrounding hillside.

[Evaluation of Arrow Panel Displays for Temporary Work Zones:](#) A study of driver behavior and preferences using three arrow panel displays to alert travelers of work zones.



New Research Notes:

[The OPL – How does it Work?](#) Before you buy, check the Qualified Products List for items that have been reviewed and approved – or more importantly, those that have been reviewed and rejected – by the New Products Evaluation Committee. This Research Note describes the Qualified Products List and how to use it.

[Putting the Heat on Weeds.](#) With increasing concerns for environmental impacts of herbicides and other vegetation control methods, infrared treatments offer another option for vegetation control in environmentally sensitive areas.

[On the Road to Long Lasting Pavements.](#) The Long Term Pavement Performance project is a 20-year national study of pavement performance. Oregon has monitored 8 sites since the program started in 1987. LTPP has led to several new procedures and products to improve pavement performance.

[Reflective Cracking: Year 3 Report.](#) Transverse cracking reflecting through overlays is a real problem in areas with freezing winter weather. This study is monitoring how geosynthetics perform to reduce reflective cracking on a test section in central Oregon.



Resources

Transportation Research Information Services (TRIS)

TRIS Online is a great resource for information on transportation topics. <http://199.79.179.82/sundev/search.cfm>. This link will take you to the TRIS search engine, where entering the topic will bring a list of books, reports, articles and Web sites related to that subject. For more information on TRIS, check our Research Note, [Information at Your Fingertips](#).

The Arizona Transportation Research Center provides 2-page reviews of research reports on a wide variety of topics. Their database can be searched by date, subject, key word or transportation mode. These reviews are summarized monthly by ATRC in their Transportation Research Digest, available at <http://www.dot.state.az.us/ABOUT/atrc/DocRev/index.htm>.

The Research Group receives many reports from other states. Here's a [link to the list of reports](#). Or if you'd like help finding a report, send us the topic, and we'll do the search for you.



T2 – Technology Transfer

The Research Group also manages the Technology Transfer Program, which provides resources for local governments on transportation, particularly roads, streets and bridges. T2 recently implemented the [Roads Scholar Program](#), and offers [publications](#) and [videos](#) on safety, maintenance and other transportation topics.



Questions? Problems?

Got a work problem that you think should be researched? Need a resource to answer a question? Call or e-mail the Research Group and we may be able to help.

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*For more information on ODOT's Research Program and Projects,
check the website at <http://www.odot.state.or.us/tddresearch/>*