

RESEARCH AND TECHNOLOGY

REVIEW

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RESEARCH DIVISION

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RESEARCH BULLETIN

Research for Next Millennium

The department's Research Management Committee (Deputy Director and Assistant Directors) has committed to funding six new research projects in FY 2000. New for the next millennium are: "Implementation and Application of Pavement Research Products in Nevada" and "Study of Flared Bridge Columns with Fixed Bases." Pooled-fund projects approved for next year include "Highway Innovative Technology Evaluation Center Collaborative Plan for Pooled-Fund Test and

Evaluation," "Steel Bridge Fabrication Error Indexed Example and Solutions," "Development of an Advanced Rotary Snowplow," and "Traffic Management Center Consortium."

These projects, in addition to other ongoing research such as the Nevada Transportation Technology Transfer (T²) Center and the Western Regional Superpave Center, bring the total budget for NDOT's research program to approximately \$2 million for FY 2000.☺

Information Store: Research Division

Do you know that the Research Division can be your one-stop resource center for all your information needs? The research division has access to a variety of databases, libraries and information services on highway research and technology including the Transportation Research Information Services (TRIS), Transportation Research Board (TRB) Library, National Technical Information Service (NTIS) and U.S.

Department of Transportation Library. We also receive newsletters, research reports and other publications from various state, governmental, and private agencies/ organizations. We maintain a library with publications relating to nearly every subject of concern to highway administrators and engineers. In addition, through various organizational membership networks we are informed of national and state research activities, conferences, and calls for papers.

If you need any information regarding research, technology and products/materials, all you need to do is ask. Our research staff will perform literature searches on any topic for you - anyone in the department - at no cost.☺

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WASHTO RAC Meeting

The biennial meeting of AASHTO's Region 4 (WASHTO) Research Advisory Committee was recently

co-hosted by Caltrans and the International Institute for Surface Transportation Policy Studies at San Jose State University and held in the beautiful setting of San Diego.

Agenda items included such topics as the findings to date of the research project entitled "Robust Research Programs." The greatest benefit of such meetings is the opportunity for research managers from the 16 western states represented to discuss their respective programs. This benefit was succinctly stated by co-host Wes Lum of Caltrans' Office of Research when he stated that the meeting was intended to serve as a "kind of big peer exchange." It did just that, especially when each state was provided time on the agenda to formally present information on their programs. Bernie Jones, Oregon DOT, used his time to not only present information on Oregon's research program, but he also entertained the group with a very humorous video on ODOT's botched attempt to dispose of an eight-ton Sperm Whale back in 1970 and the recounting of the story on its 25th anniversary in 1995. The story gave new meaning to the expression "Thar she blows." ☺

Research Reorganization

The Director recently announced that Research will be a separate division apart from Intelligent Transportation Systems (ITS) and Roadway Systems. However, the Research Division will continue to be

responsible for the administration of the department's research development and technology transfer (R,D&T) program which includes product evaluation. There will also be an increased emphasis placed on developing and maintaining the department's library as a part of the Research Division. The goal is to have a library complete with computer terminals which can be used to access many transportation-related databases such as TRIS (Transportation Research Information Service). A separate corridor access for the library will serve to encourage greater use by all NDOT employees. Eventually, the Research Division along with the library will move to the first floor of the headquarters building. ☺

Research Coordinator Named

Tie He, Ph.D., has been appointed as the department's Research Coordinator. Tie brings a wealth of experience to this recently created position through his involvement with product/material evaluation as the Product Evaluation Coordinator along with prior experience in NDOT's Materials Division.

Tie will assist in the management of the department's research, development and technology transfer (R,D&T) program including problem statement solicitation, research proposal

development, project management, and coordinating implementation of successful research findings. In addition, Tie will assist affected divisions in the design of experimental test-sections for new products/materials. ☺

Research Cycle Begins Again

Within the next few weeks, the Research Division will begin soliciting research problem statements for the department's FY 2001 R,D&T work program. The solicitation will provide an opportunity for department employees from administration to maintenance to identify problems that can potentially be addressed through an applied research project. With an increase in research funding under TEA-21, the department is better positioned than ever to utilize these resources to solve, or at least gain a better understanding of some of our problem areas.

In an attempt to generate more interest/participation in the research program, the Research Division will try to conduct as many face-to-face meetings with division/district personnel as time allows. We will try to make the process for submitting problem statements as productive and user friendly as possible. ☺

Product Evaluation Committee (PEC) Meeting Recap



September 2, 1999 Meeting: Left to right; Thor Dyson, District II; Alan Hilton, Research; Dale Lindsey, Operations Analysis; Todd Jorgensen, FHWA; Dean Weitzel, Materials; Scott Thorson, Traffic; Wes Clyde, Materials; Rod McInnis, Structures; Kent Mayer, Maintenance; Gary Selmi, Construction; Dave Lindeman, District III; Chuck Nixon, District I; Tie He, Research.

Approved

Qwick Kurb's Median Barrier

After a year of field testing, Qwick Kurb's median barrier has been approved for use on a case-by-case basis.

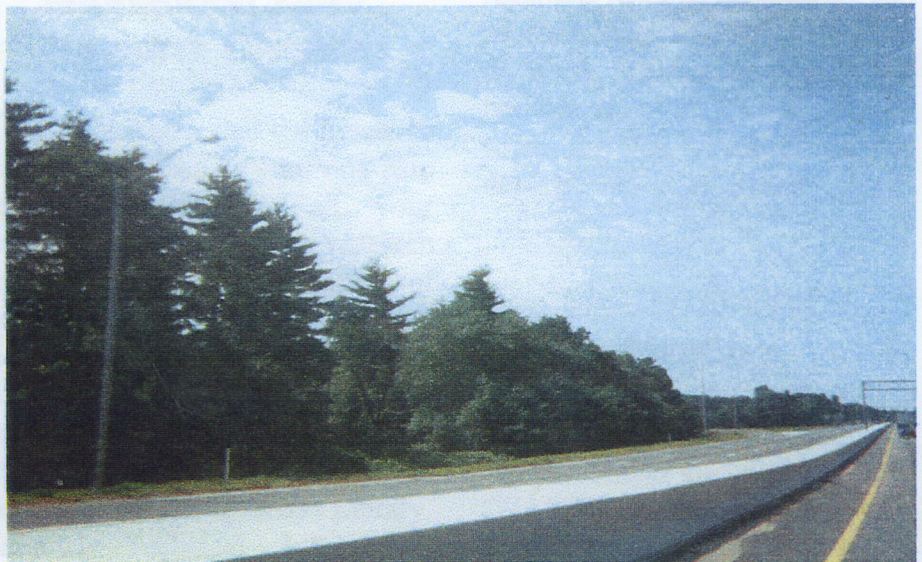
As reported in previous issues of our newsletter, Qwick Kurb was installed at the Mt. Rose Highway (S.R. 431) westbound to U.S. 395 (I-580) northbound on-ramp to deter eastbound Mt. Rose traffic from making illegal left-turn movements onto the northbound on-ramp. According to the field test report from the principal investigator, the median barrier did reduce the number of illegal maneuvers, but did not completely eliminate them. The median barrier system consists of a channelizing device with reflectorized sheeting, that is slipped into preformed channels along the length of the curb. Although the

system is designed to be used in advance of railroad crossings to deter motorists from driving around cross-bars, it can also be installed on drawbridges to define travel paths and lane lines or used as a temporary traffic separator in construction zones. ☺

Specification Development

Hydro-Seal 75

As a representative product of concrete surface protective coatings, information on Hydro-Seal 75 from Northern Industries, Inc. was presented to the PEC for consideration in the development of a specification for this type of product. Hydro-Seal 75 is primarily used for sealing concrete barrier rails and bridges against water/chemical infiltration. It is a high-strength, two-component, modified epoxy coating, comprised of a carefully balanced ratio of fillers, water-extended resins and hardeners. During the cure phase, Hydro-Seal 75 polymers cross-link to create a thermoset macromolecule of extreme durability to provide optimum resistance to a wide variety of chemicals, mass water penetration,



A barrier rail coated with Hydro-Seal 75.

(Courtesy of Northern Industries, Inc.)

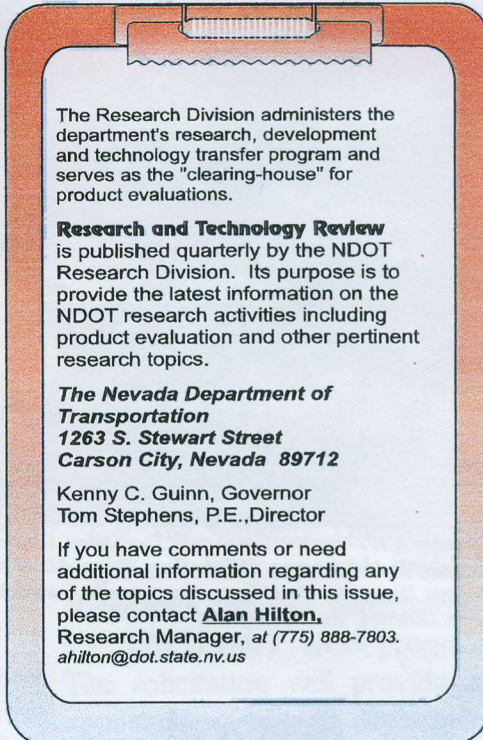
and other environmental conditions. In addition to serving as a protective coating, it can also be pigmented in different colors for use as a decorative finish.

In the meeting, the PEC discussed the department's need for coating barrier rails and bridges, current specifications for fine surface finishes, and availability of similar products. The PEC voted to table specification development, pending further evaluation of similar products and determination of operational need for these products. ⚙

QPLs for Bridge Expansion Joint Systems

Based on Bridge's interest and Research's proposal, the PEC approved three qualified product lists

(QPLs) for bridge expansion joint systems to be included in NDOT specifications. They are preformed joint materials under section 502.02.01(b), asphaltic plug systems under section 502.02.01(c), and pourable sealants under section 502.03.13, respectively. Currently, NDOT is using six types of bridge expansion joint systems--strip seals, compression seals, preformed joint materials, asphaltic plug joints, pourable sealants, and modular expansion joints. For the three types that pertain to a QPL, field testing (usually for a year) will be used to approve new products, unless the proposed product is similar in physical and/or chemical properties to an approved product (s). For the other three types, generic specifications will be used to accept new products. ⚙



The Research Division administers the department's research, development and technology transfer program and serves as the "clearing-house" for product evaluations.

Research and Technology Review is published quarterly by the NDOT Research Division. Its purpose is to provide the latest information on the NDOT research activities including product evaluation and other pertinent research topics.

The Nevada Department of Transportation
1263 S. Stewart Street
Carson City, Nevada 89712

Kenny C. Guinn, Governor
Tom Stephens, P.E., Director

If you have comments or need additional information regarding any of the topics discussed in this issue, please contact **Alan Hilton**, Research Manager, at (775) 888-7803. ahilton@dot.state.nv.us



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1263 S. Stewart St.
Carson City, Nevada 89712

