

RESEARCH AND TECHNOLOGY

REVIEW

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Research Projects Selected

Based on recommendations from the NDOT Research Advisory Committee, the department's Research Management Committee (RMC) approved four new research projects to be included as part of the fiscal year 1999 NDOT research program. These proposals were selected based on the department's need and the potential for solving operational problems balanced against the expected duration of the project and the estimated budget. The titles of these new research projects are as follows:

- ◆ **Implementation of Superpave Mix Design and Analysis Procedures for the State of Nevada**
- ◆ **Cracking in Newly Placed Concrete Deck Slabs**
- ◆ **Replacing Bridge Decks on Post-Tensioned Concrete Bridges in Nevada**
- ◆ **Creep and Shrinkage Prestress Losses in Nevada Aggregates.**

WesTrack Pooled-Fund Project

As mentioned in the next article (NRAC meeting), a reduction in available Federal Highway Administration (FHWA) research funds under TEA-21 has resulted in an underfunding of the Strategic Highway Research Program (SHRP) implementation program. Furthermore, a component of SHRP implementation, the Superpave performance test track (WesTrack) was left completely unfunded.

(WesTrack continued on page 3)

National Research Advisory Committee (NRAC) Meeting

Nashville, Tennessee was the site of the 1998 AASHTO Research



1998 RMC Meeting: Left to Right: Roger Grable, Asst. Director-Administration; Tom Fronapfel, Asst. Director-Planning; Rod Johnson, Asst. Director-Operations; Jeff Fontaine, Deputy Director.

Advisory Committee (RAC) meeting. Initiated in 1994, the National RAC meetings are held

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Product Evaluation Committee (PEC) Meeting Recap



September 2, 1998 PEC Meeting: Left to right: Alan Hilton, Research; Dorothy Tate, Materials; Chuck Nixon, Dist. III; Scott Thorson, Traffic; Todd Montgomery, Construction; Patty Mamola, Dist. I; Russ Law, Operations Analysis; Thor Dyson, Dist. II; Rod McInnis, Structures Design; Gary Anderson, Specifications; Terry Springman, Maintenance.

New Specifications for Thermoplastic Pavement Marking Materials

Based on the department's needs, along with a review of current literature and performance data obtained from the AASHTO NTPEP testing of durable pavement markings, a new specification was developed for thermoplastic pavement markings. Approved by the PEC, this specification is being added to NDOT's standard specifications under section 634. The specification consists of furnishing and placing thermoplastic pavement markings. It allows the use of either hot applied or preformed thermoplastic materials on both asphaltic and Portland cement concrete surfaces.

With the problems NDOT has had in

cost over other durable marking materials. This new specification will facilitate this interest and provide a guideline for using thermoplastic materials. ★

Field Test Breakaway Support Couplings for Light Poles

Transpo Industries, Inc.

Three distinguishing features, Omni-directional, no torquing requirement, and the great tensile capacity of Transpo's model 4000 series breakaway support coupling earned it an approval for a field test at the NDOT September 2, 1998 PEC meeting. The product potentially provides an excellent means to retrofit NDOT's existing 4-bolt slip base for light poles as well as use for new construction.

several instances involving epoxy marking material, there has been a renewed interest in the use of thermoplastic due to its performance in other states and its lower cost over other durable marking materials. This new specification will facilitate this interest and provide a guideline for using thermoplastic materials. ★

Transpo's model 4000 breakaway support coupling conforms to 1985 AASHTO standards for breakaway supports for light poles. It has been successfully crash-tested per National Cooperative Highway Research Program (NCHRP) 350 and approved by the Federal Highway Administration (FHWA). According to the vendor, the product breaks away safely and consistently on impact from any direction at bumper height and exhibits twice the service load carrying capacity of most other breakaway couplings. Also, it requires no special tools or torquing, and can greatly reduce impact damage to the pole, anchor bolt and/or foundation

Based on the potential performance

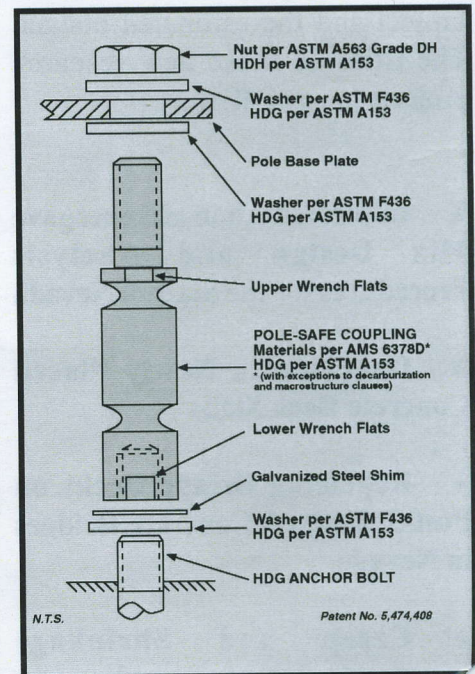


Fig. 1. Breakaway Support Coupling 4000 Series

of this product, the PEC approved a field test of Transpo's model 4000 series and the retrofit coupler design in District II for one year. In addition to obtaining information necessary to install the product, the field test will also examine wind loading on the coupling and its prohibitive effect on vibratory walking (wind-walking). Traffic Engineer, Phil Christopherson, along with Assistant District II Engineer, Thor Dyson, are developing a work plan for the test. ★

(WesTrack Pooled-Fund Project continued from page 1)

Since WesTrack was scheduled for shutdown as of October 1, 1998, the pooled-fund project allowed interested states the opportunity to commit funds immediately to avoid a potential nonrecoverable loss if the WesTrack research team was dissolved. NDOT will contribute a total of \$90,000 to the pooled-fund project over a 3-year period which began September 28, 1998. With a total of \$1.5 million needed for completion, other funding sources such as the National Cooperative Highway Research Program (NCHRP) will be explored in addition to the pooled-fund project.

The department's Chief Materials Engineer, Dean Weitzel, will represent NDOT on the Technical Advisory Committee (TAC) which is charged with overseeing this project. ★

(National Research Advisory Committee, continued from page 1)

on a biennial basis and provide an

opportunity for state research managers to discuss issues related to research management. Also present at the RAC meeting were representatives from the FHWA, the Transportation Research Board (TRB), and others connected to administering federal research programs. Total attendance was about 150.

Our thoughts determine our responses to life. We are not victims of the world. To the extent that we control our thoughts, we control the world.

**On Wisdom by
H. Jackson Brown, Jr.**

Of particular interest during the Nashville meeting was the effect of the recently enacted Transportation Equity Act for the 21st Century (TEA-21) on state and federal research programs. As attendees soon were informed, state research programs, through State Planning and Research (SPR) funding, would be the beneficiaries of about a 51% increase in funding. Conversely, the FHWA research program suffered from a reduction in discretionary funds as the result of congressional earmarking of funds for specific research projects.

Due to the reduction of available funding, ongoing FHWA research efforts were left unfunded, or severely underfunded. One such program left severely underfunded was the SHRP implementation program and the Long Term Pavement Performance (LTPP) study. Prior to

TEA-21, FHWA was spending about \$15 million per year on SHRP implementation and LTPP. Under TEA-21, there is about \$9 million per year available for SHRP and LTPP.

As discussed at the meeting, the chief administrative officers of departments of transportation in the Mississippi Valley Conference (AASHTO Region 3) adopted a resolution calling for all states to participate in a pooled-fund project to offset budgetary shortfalls specifically for SHRP implementation and LTPP. The resolution will be acted on at the AASHTO Annual Meeting in November.

Another topic on the RAC agenda dealt with the results of research management peer exchanges. Under federal regulation, states have until December 31, 1998 to complete a peer exchange of their management processes. Most of the states have already completed their peer exchanges and found the effort to be of value to their research programs. With the mandate for each state to expend a minimum of 25% of their SPR funds for research activities continuing in TEA-21, the requirement for states to hold peer exchanges every three years also continues.

As always, these opportunities for state research managers to gather and discuss common problems are invaluable. The next national RAC meeting will be held in St. Louis, Missouri in the year 2000. Regional RAC meetings will be held in the odd-numbered years. ★

Research Division Reorganization

The Research Division has recently been reorganized based in part on opportunities for improvement identified in the research program peer exchange. Program responsibilities dealing with traffic engineering studies (identified previously as special studies) have been transferred to the Traffic Information Division under the authority of the new division chief, Mike Lawson. Alan Hilton is now exclusively responsible for the department's research management function which includes coordinating the evaluation of new highway products and technologies.

The reorganization separates the traffic engineering duties from research management in order to promote the department's research activities. The significance of a separate Research Management Section is to be comparable to other states' research entity, to avoid internal confusion of research's responsibilities, and to better manage/conduct research projects. The new Research Management Section is designed to be fully responsible for administering the department's research, development and technology transfer (R, D &T) program and serving as the clearinghouse for product evaluations.

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.

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