NCHRP pays off for Caltrans

Randy Iwasaki, director of the California Department of Transportation, knows the three steps to getting the most out of research: “Deploy, deploy, deploy.” Caltrans invests in research to get results it can implement at the highest possible return on its research dollar.

And the numbers are impressive. For example, as the largest state transportation agency, Caltrans committed $3.4 million to NCHRP for fiscal year 2010. In that same period, Caltrans identified 48 NCHRP projects—$26.2 million in research—as having “high value” to the state. This typifies how NCHRP consistently delivers research results that improve practices across Caltrans and save the agency time and money. Two examples among many are deployment of research on quiet pavements for noise mitigation and optimizing rapid highway rehabilitation.

Noise mitigation without walls
Caltrans is concerned with noise barrier walls, which are expensive to build and maintain and have limited effectiveness. Iwasaki was co-chair of an FHWA international scan of innovative noise mitigation approaches used in Europe, so with an eye for finding new solutions for California, he participated on the NCHRP Project 01-44 panel.

Caltrans has made extensive use of the project results detailed in NCHRP Report 630: Measuring Tire-Pavement Noise at the Source. “Our Division of Environmental Analysis uses the tire-pavement noise procedures developed by this research to measure, monitor, and mitigate noise impacts to roadside communities,” says Iwasaki.

Given the cost savings of quiet pavements compared with noise barrier walls—in the hundreds of thousands of dollars per lane mile—Iwasaki is glad to have California on the forefront of this technology. “The collaborative research with the Danish government that grew from this NCHRP project created quieter pavement strategies for California and put us on the cutting edge on an issue that will be important in every state.”

Get in and get out
Another critical issue nationwide, and particularly in California, is the need to rehabilitate heavily trafficked pavements. “On a 40-year-old interstate carrying 40,000 vehicles a day, you need a well-formulated strategy,” says Iwasaki. “The old rehabilitation method was to repair one broken concrete panel at a time, a process that took months. With new, rapid techniques, we know we can do rehabilitation in just days, but it’s vital to know when doing so will represent an overall benefit for highway users.”

The report developed from NCHRP Project 10-50, Web-Only Document 45: A Process for Selecting Strategies for Rehabilitation of Rigid Pavements, put California on the path forward. The analysis method looks at project-specific data, including traffic volume, detour capacity, and construction materials and facilities, and it shows when rapid rehabilitation will be appropriate. “This research assured us that when we promise quick rehabilitation, we’ll be able to uphold our commitment.”

An entire agency benefits
Implementation of NCHRP research is evidenced across Caltrans divisions, from deploying performance management programs (NCHRP Project 08-62) to quantifying the effectiveness of context-sensitive design and solution (NCHRP Project 15-32) to establishing design guidelines for safe and aesthetic roadside treatments in urban areas (NCHRP Project 16-04).

And the benefits to Caltrans stretch beyond NCHRP research results. Year after year, agency representatives continue to serve as panel members. Says Iwasaki, “Having a Caltrans member on a panel helps us identify approaches and solutions that are right for California.” At all stages of the research process, Caltrans has proved to be a smart investor in NCHRP.

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