

TR NEWS

Equity Issues in Financing Transportation

Plus

**Libraries in a Digital Age:
Essential Resources**

The Evolution of TRIS

**Implementing the Results
of Strategic Highway Research**



**Transportation, Energy,
and Climate Change**
TRB 2009 Annual Meeting Highlights

Making Transportation Libraries and Information Services a Priority

MARK LINSENMEYER AND PATRICK CASEY

Linsenmayer is Research and Writing Manager, and Casey is CEO, CTC & Associates LLC, Madison, Wisconsin. This article was produced for the Transportation Library Connectivity Pooled Fund Study; for more information about the study, see www.libraryconnectivity.org/.

When the Minnesota Department of Transportation (DOT) was developing the MnPAVE pavement design software¹, Senior Engineer John Siekmeier and his colleagues needed specific data about the material properties for each standard classification of soil—such as gravel, sand, loam, and clay. Obtaining all of the data needed would involve years of laboratory analysis.

Siekmeier contacted the Minnesota DOT Library and received a series of reports presenting the results of laboratory tests by the University of Illinois between 1976 and 1989 on 50 Illinois soils. The material properties were directly applicable to the MnPAVE project. One call saved the agency hundreds of thousands of dollars and sped up the development of the MnPAVE design software by several years.

Minnesota DOT has invested consistently in its transportation library since 1957. Many other states, however, have had to restrict expenditures for onsite information professionals and local collections.

Justifying the Investment

Ten years ago, funding for government agency libraries in several fields was under attack. The tide is now turning for the transportation sector, thanks

to the Transportation Research Board's (TRB) Special Report 284, *Transportation Knowledge Networks: A Management Strategy for the 21st Century (1)*. This report made the convincing case that continued growth in the transportation sector—as in the sectors of medicine and agriculture—depends on the dissemination and application of new technologies and research findings. Dissemination and application lead to improvements in public safety, in freight and passenger movement, and in use of government resources.

Library services in state DOTs and other transportation organizations play a significant role in dissemination. Consequently, interest is growing at the federal and state levels to increase investments in transportation libraries and information services.

The American Association of State Highway and Transportation Officials (AASHTO) has requested that the upcoming bill authorizing transportation spending include 6 years of funding for transportation knowledge networks as defined in Special Report 284. These state and regional networks, under the direction of the National Transportation Library, would be funded at approximately \$13.5 million per year. A portion of this funding would provide seed grants to state DOTs to develop local library resources and enter state-produced publications into a national catalog accessible to the wider transportation community, either online or through inter-library loans.

This proposal, however, will not proceed without contest. The Internet makes accessible a great wealth of information without the intervention of a librarian or the need to house resources locally as physical copies in a dedicated space. What are the arguments for supporting state transportation libraries from a DOT engineer's perspective? Do investments in this area make that much difference, or could the money be better spent elsewhere?

Savings in Time and Dollars

Minnesota DOT's experience demonstrates that work by information professionals can save money by preventing unnecessary rework. Siekmeier comments: "This was not an isolated case—the library repeatedly has tracked down reports for us that have prevented us from replicating previous work."

Wisconsin DOT Library, interior view.

¹ www.dot.state.mn.us/app/mnpave/.





CENTER OF LEARNING—Wisconsin DOT recently moved its transportation library from the eighth floor to a highly visible location in the main lobby of its central building, emphasizing the library's role as an "information commons and learning center." According to Wisconsin DOT Librarian John Cherney, "The extra space, more computers, other technological resources, and better physical layout provide additional comfort, self-learning options, and better opportunities for collaboration in a more user-friendly environment." The library collection and the services of onsite professional librarians are available to Wisconsin DOT engineers and other staff, university professors and students, contractors, consultants, and the public.

Recently, the Kansas DOT was performing alkali-silica reactivity testing to help prevent the premature failure of concrete pavements. The particular test has been used since the 1930s and was specific to Kansas. Kansas DOT Concrete Research Engineer Rod Montney and his colleagues questioned the rationale for certain parameters in the test. Answers to these questions would require another round of testing at a cost of more than \$3,000.

After receiving an e-mail about the researchers' questions, Marie Manthe in the Kansas DOT Library located a paper by the original developer of the test in the proceedings of a 1949 meeting of the American Society for Testing and Materials. The paper provided the rationale sought by the Kansas DOT engineers. No additional testing was necessary; this saved time and money.

Closing down an onsite library may free up space and slightly reduce the number of employees. Cases like those at the Minnesota and Kansas DOTs, however, show that the value of onsite libraries can outweigh the limited savings from closing the library down.

The Efficiency Argument

In the Minnesota DOT Library's user studies to improve performance, most comments have not related to a specific, spectacular success, but to the efficient, consistent delivery of services. According to Jerry Baldwin, former Library Director at Minnesota DOT, "Only rarely does any particular library encounter result in some directly measurable, relatively large savings or benefit to an individual or organization. What users value in library services is our day-in, day-out ability to deliver information when it is needed, and this value is recognized by the wide range of professionals employed in a typical state DOT."

The transportation library community faces a key challenge—dispelling the image of the librarian as a caretaker of a physical collection. Today's librarians are information experts whose job is not simply to catalog and track a collection but to navigate skillfully and quickly the ever-expanding thicket of electronic databases to find the right resource for a given problem. As Minnesota DOT Library Director Sheila Hatchell has noted, "Librarians are trained to question the spellings of names, the accuracy of dates



Minnesota DOT Library Director Sheila Hatchell offers insights on refining and focusing a literature search.

and geographic locations, and other information vital to locating a specific document. We often are successful at finding something our customers had searched for and gave up.”

As many business managers know, getting a job done right is often a matter of dedicating a resource specifically to that job. Even if engineers have the ability to search the Internet and its transportation-specific resources effectively, having a dedicated information professional on hand who has been trained to serve the needs of transportation researchers can speed up the turnaround time in information gathering and can ensure that all necessary searches are accomplished.

The Quality Argument

A transportation agency's research will be better if it is fully informed by relevant studies. But not all studies are easily accessible—or even available—via the Internet. Although conferences and regular reviews of periodicals can provide an engineer with a perspective on the state of the art in his or her area of specialty, what is available through these activities at any given time may not always relate directly to the work at hand. An agency library and its dedicated information professionals, in contrast, can identify and retrieve pertinent research when it is needed.

In addition, in most cases, the transportation

Developing a Transportation Knowledge Network

LENI OMAN

Like transportation, information is put to use almost every day. But as with the transportation system, the information that is seen and used represents only a small portion of the effort that went into its creation and availability.

Transportation practitioners benefit from many information professionals working behind the scenes to capture, organize, and deliver information to meet the business needs of the transportation community. But finding the information needed, when it is needed, and in the form it is needed can be difficult, even with the level of effort today.

In 2004, at the request of the American Association of State Highway and Transportation Officials' (AASHTO's) Standing Committee on Research, TRB conducted a policy study on the future needs of transportation information. The study committee's findings and recommendations were published as TRB Special Report 284, *Transportation Knowledge Networks: A Management Strategy for the 21st Century* (2006).

The study recommended the development of transportation knowledge networks and proposed a sustainable administrative structure and possible funding sources. A knowledge network is an alliance of organizations and people, supported by technology, sharing information resources and expertise. The networks strengthen the capacity for sharing and applying knowledge among the member organizations and link information providers to users at any location.

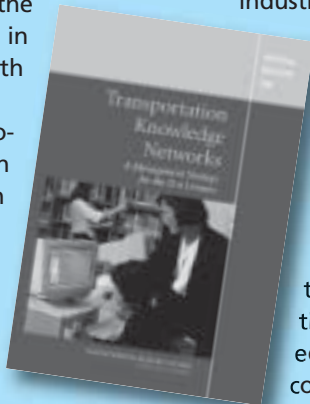
To facilitate the rapid development of the transportation knowledge networks, the committee recommended a follow-on National Cooperative Highway Research Program (NCHRP) project to develop a business plan and guiding concepts. The business plan produced under NCHRP Project 20-75, *Implementing a Transportation Knowledge Network*,

incorporates input from a range of stakeholders. The plan outlines a model for organizing information and defines the key transportation knowledge network functions necessary to achieve noticeable improvements in information access for transportation practitioners.

Implementation of the plan will establish an infrastructure to sustain a knowledge base that grows with changes in the industry. Information providers will benefit from a network that allows them to be more efficient and effective in delivering services. Information users will have access to a user-friendly web portal, as well as to a coordinated network of information centers, allowing them to find what they need rapidly.

Some concepts from these efforts are being implemented. With the support and guidance of the National Transportation Library and transportation librarians, three regional transportation knowledge networks have been established and are collaborating to improve information delivery. These efforts are beneficial, but funds are needed to fulfill

the vision, to bring more information sources into the network, and to improve user awareness and access. AASHTO therefore is seeking a sustainable source of funding to support the full implementation of transportation knowledge networks.



The author is Director, Office of Research and Library Services, Washington State Department of Transportation, Olympia, and chair of the NCHRP Project Panel on Implementing the National Research Council Policy Study, Transportation Information Management: A Strategy for the Future. She also is a member of the Task Force on Transportation Knowledge Networks of the AASHTO Research Advisory Committee.



Marie Manthe (left) assists a Kansas DOT staff member in finding a research report.

librarian is charged with alerting engineers to new resources in their fields. This helps ensure that the most recent information will be available for setting agency research priorities and for performing research already under way.

When Oregon DOT Librarian Laura Wilt saw a recent Federal Highway Administration report on retaining wall blocks, she knew that Retaining Walls Engineer Thomas Kammerer and his colleagues would be interested and sent them the report. Their replies reveal the value of this ongoing service: “Bravo!” one exclaimed. “This is a timely article; we are preparing a section in the Geotechnical Design Manual on retaining dry cast units (segmental retaining wall blocks).” Another commented, “I was not aware of this report, and it is an important study.”

The Objectivity Argument

Many state DOTs and the partnerships formed by state DOTs and local universities increasingly employ consultants. Why not outsource transportation information management?

Siekmeier notes that a critical reason not to outsource is the loss of objectivity. The universities and consulting groups that may provide information searches may be the same groups that would receive contracts to do the work if the pertinent information were not found.

“If you have a problem, and you turn to consultants or universities to solve it, they have limited motivation to find things that would save them time and effort,” Siekmeier explains, “They are not concerned about reinventing the wheel, because they will get paid to do it and think they can do it better. As a taxpayer, I want the DOTs to have a library system in place so that they don’t duplicate what other DOTs and universities and consultants have

already done. There’s no question that this is money well spent.”

State DOT information services, moreover, are a significant benefit to consultants. The library services are generally available to contractors working for the state, and many are open to the public. This free service helps contractors learn what their counterparts are doing in other parts of the country and around the world, enabling rapid improvement in construction and other areas.

Why Not Centralize?

But why are library services needed in all state DOTs? DOT engineers can make use of local university libraries and information services to keep up to date on advances in their areas and to gain access to journals. They could turn to librarians in other states or at the federal level for objective and thorough information searches. Perhaps centralizing services would be more efficient than creating redundant systems in all 50 states.

Networking for Information Access

The Transportation Library Connectivity Pooled Fund Study, TPF-5(105), is a grassroots networking effort by librarians and information professionals across the country. Members include 17 state DOTs, two university transportation centers, and a transit authority, with several states planning to join in 2009. The study’s mission is to bring the benefits of effective information access to the entire transportation community through networking and technical support. Benefits include strategic planning and resource exchanges, cooperative technology transfer activities, a Transportation Librarian’s Toolkit^a, and other tools.^b For more information, please see www.libraryconnectivity.org.

^a www.libraryconnectivity.org/librarianresources_files/Toolkit_final1-5-08_WEB.pdf.

^b www.libraryconnectivity.org/librarianresources.html.

Monique Evans, Ohio DOT: "Quick access to the right information in a useful format is one of the most effective tools any decision maker has at his or her disposal."



PHOTO: HILARY FREER

Centralization makes sense. AASHTO was aware of this in requesting federal funds for transportation knowledge networks. Transportation libraries are engaged in a variety of initiatives to centralize and digitize information to ensure maximum distribution (see sidebar, page 20). As Minnesota DOT's Hatchell observes, "Transportation librarians are wonderfully networked—not only for loans of materials but also for web-delivered training and for discussing and sharing ideas."

A network, however, requires nodes, and the National Transportation Library would rely on transportation knowledge networks. Like many large, centralized corporations that have regional distribution centers and local outlets to deliver products to consumers, local information experts would be essential in delivering information to local practitioners.

When Kansas DOT's Montney needed local help to obtain information on a Kansas-specific test, the DOT librarian's connection to locally produced resources made a good case for retaining local information resources. As Montney says, "We may have a good handle on what our immediate agency predecessors did, especially because we often can reach them in retirement; but for things that happened two or three or more predecessors ago, the records and documents are important."

From the 1960s through the 1980s, state DOTs performed many practical studies that yielded valuable information; the findings, however, may not have warranted publication beyond the DOT. As a result, even local universities are not able to track these documents. Moreover, several engineers at the same DOT often may need to stay abreast of a given publication series—such as the National Cooperative Highway Research Program (NCHRP) reports in a certain area. Maintaining a physical collection of critical national resources at a state DOT library can accommodate this need conveniently and cost-effectively.

Prospects for Funding

The National Transportation Library has a history of being underfunded. A 2007 NCHRP-sponsored study, *Background Information on National Transportation Research*, included a survey of state DOT research directors (2). AASHTO used the findings to develop funding recommendations (2, Appendix B).

The survey respondents called for stable funding at increased levels to allow the National Transportation Library to take a greater role in coordinating transportation knowledge management. If Congress follows AASHTO's recommendations, the network would be strengthened with more funds. In addition, a new, separate Data and Information funding classification would provide the National Transportation Library with more visibility in the federal transportation budget. The state DOT libraries that would serve as the network's nodes also would receive more federal support and be less vulnerable to state budget crises.

Monique Evans, administrator of Ohio DOT's Office of Research and Development and cochair of the Research Funding Task Force of the AASHTO Standing Committee on Research, has observed, "Knowledge isn't power. The access to knowledge and the application of knowledge is power. Quick access to the right information in a useful format is one of the most effective tools any decision maker has at his or her disposal."

References

1. *Special Report 284: Transportation Knowledge Networks: A Management Strategy for the 21st Century*. Transportation Research Board of the National Academies, Washington, D.C., 2006. <http://onlinepubs.trb.org/onlinepubs/sr/sr284.pdf>.
2. CTC & Associates LLC. *Transportation Research: Value to the Nation—Value to the States: Background Information on National Transportation Research for the AASHTO Standing Committee on Research*. Revised Final Report, National Cooperative Research Program Project 20-80(1), February 15, 2008. www.transportation.org/sites/research/docs/NCHRP20-80_1_Final_Report_2008-Feb-15.pdf/.

Additional Resources

AASHTO Standing Committee on Research:
www.transportation.org/sites/research/docs/SCOR_Auth_Rec-shortened.doc.
 AASHTO survey of state DOT research directors:
www.transportation.org/sites/research/docs/AASHTO%20RAC%20Survey%20-%20Technical%20Memorandum.pdf.

POINT OF VIEW presents opinions of contributing authors on transportation issues. The views expressed are not necessarily those of TRB or TR News. Readers are encouraged to comment in a letter to the editor on the issues and opinions presented.