Implementing Transportation Knowledge Networks

A national initiative to improve information sharing in transportation is under development to help practitioners find information they need, when they need it—saving time and money, and getting better results for their organizations.

The Problem: Finding the Right Information at the Right Time

Scenarios that could be avoided with a better transportation information infrastructure:

A traffic operations manager is asked to prepare recommendations for improved emergency response following a severe winter storm in which motorists were stranded for hours. He spends several days on this, only to discover later that a neighboring state in this same situation commissioned a detailed consultant report containing directly applicable recommendations that he missed.

A county engineer needs a tool for prioritizing safety improvements. He has a consultant develop one for him, not realizing that he could have obtained what he needs from several peer agencies.

A research director approves a request to fund a $100,000 project on VMT-based user fees. When the study results are presented at a conference, a member of the audience comments that her agency completed a nearly identical study the previous year.
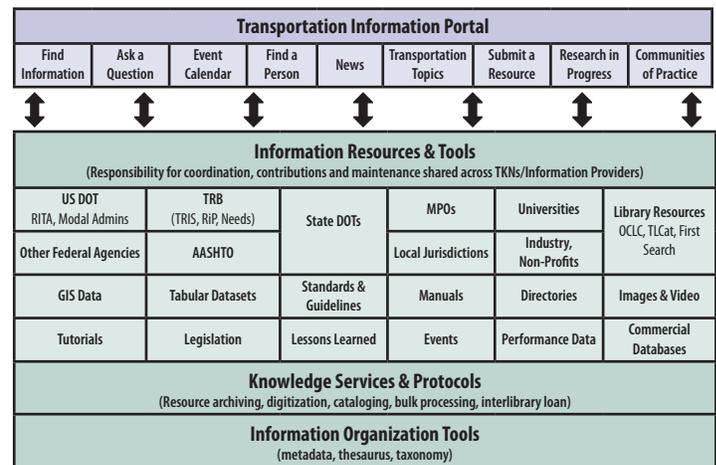
The Imperative

This is a time of unprecedented challenges and shifting roles for transportation agencies. There are also dramatic shifts taking place in the transportation workforce. The transportation practitioners of today—and tomorrow—need a more efficient way to find and share information. Organizations need to retain the valuable knowledge of their retiring employees and help new employees and consultants quickly get up to speed. Without improvements in information sharing, knowledge will be lost, duplication of effort will continue, and valuable resources will be wasted.

The Vision: One-Stop Shopping for Transportation Information

A coordinated program of information sharing is envisioned, with a single "one-stop shop" for access to a variety of resources including:
- Legislation and regulations
- Case studies of current practice
- Standards and manuals
- Data sets and map layers
- Analysis tools
- Consultant studies
- Agency contact directories

This information would also be available for integration into existing Web sites. This effort will build upon (and not duplicate) current information services provided by TRB, AASHTO, USDOT, and others. It will add value to existing information resources by making them easier to find when they are needed.

Transportation Information Portal								
Find Information	Ask a Question	Event Calendar	Find a Person	News	Transportation Topics	Submit a Resource	Research in Progress	Communities of Practice

Information Resources & Tools
(Responsibility for coordination, contributions and maintenance shared across TKNs/Information Providers)

US DOT RITA, Modal Admins	TRB (TRIS, RiP, Needs)	State DOTs	MPOs	Universities	Library Resources OCLC, TLCat, First Search
Other Federal Agencies	AASHTO		Local Jurisdictions	Industry, Non-Profits	
GIS Data	Tabular Datasets	Standards & Guidelines	Manuals	Directories	Images & Video
Tutorials	Legislation	Lessons Learned	Events	Performance Data	Commercial Databases

Knowledge Services & Protocols
(Resource archiving, digitization, cataloging, bulk processing, interlibrary loan)

Information Organization Tools
(metadata, thesaurus, taxonomy)

Background

Implementing Transportation Knowledge Networks is a result of several projects championed by AASHTO to define the role of libraries and information services for transportation. These efforts resulted in TRB Special Report 284, which concluded that there is an urgent need for improved information management within the transportation sector. This report recommended use of "transportation knowledge networks," or TKNs, for information sharing, based on successful programs in medicine and agriculture.

The Plan

Transportation knowledge networks will provide the "behind the scenes" structure for capturing, organizing and delivering information to practitioners via the information portal and ensuring that it will meet evolving needs. The business plan for TKN implementation includes the following three elements:

Regional Transportation Knowledge Networks (TKNs) – organized groups of transportation organizations (for example, state DOTs, MPOs, transit agencies, and engineering firms) that collaborate to share their information resources and improve information access. There are currently three regional TKNs in existence, covering the entire United States. Full implementation of the plan would strengthen these networks, enabling them to make a noticeable difference in information access for end users.

The National Transportation Library (NTL) as the national coordination function – responsible for developing national infrastructure and standards for transportation information sharing, and for leading and supporting TKN activities.

An Advisory Board with senior transportation community representation to provide strategic direction and ensure accountability.

Needed investment

Needed funding for the TKN initiative is $13.5 million annually over a five-year period. This is a national initiative that will benefit all in the transportation community.
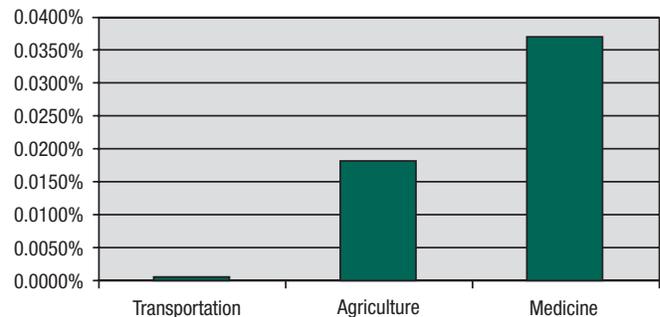
The $13.5 million consists of:
- $7.9 million for providing content that would be accessible via the central portal – from both national sources and collaborative efforts of federal, state, and local knowledge network participants.
- $3.1 million for the technical and administrative infrastructure, including standards coordination and thesaurus maintenance.
- $1.5 million for outreach and education.
- $1 million for research and literature review services.

Investments in a national Transportation Knowledge Network will have a high return on investment (ROI); current assessments of information services have estimated ROIs between 10-1 to 12-1.

The transportation sector invested only 0.0003% of its annual GDP in national library and information management in 2005, as compared to the still small but relatively much larger investments by agriculture and medicine.

National library investment as a % of sector GDP in 2005

With only a small incremental investment to the amount that is already spent for research and publication, the transportation sector can build a sustainable, efficient, and effective information infrastructure.

Project Details, NCHRP 20-75