

Triennial Strategic Plan

Transportation Research Board

Committee on Information and Knowledge Management (AJE45)

Committee Leadership:

Kendra Levine, Institute of Transportation Studies
Library, UC Berkeley (Co-Chair)
Frances D. Harrison, Spy Pond Partners, LLC (Co-Chair)
Benjamin Anyacho, Texas DOT (Research Coordinator)
Cara Marcus, RTAP (Communications Co-Coordinator)
Joseph Glowitz, PS-E, LLC (Communications
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TSP Three-Year Period:

April 2025 to April 2027

Date Prepared:

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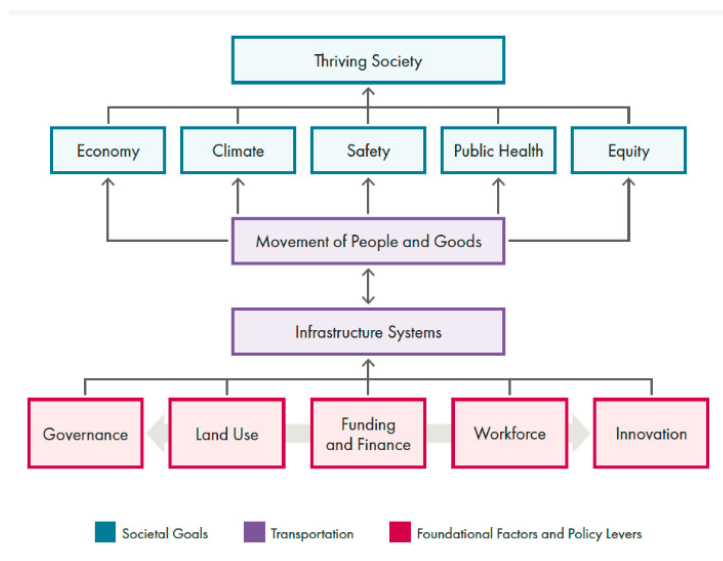
Committee Scope:

The committee advances and disseminates practices that improve knowledge and information creation, access, sharing, preservation and retention within and among transportation organizations. The committee identifies critical research needs in these areas, promotes understanding of these topics throughout the transportation community, and fosters the use of library and information science and knowledge management practices through education, training, collaboration, outreach and research.

Future Outlook

Future Statement

The TRB [Critical Issues for Transportation in 2024 and Beyond](#) publication describes many challenges and issues to be addressed by the transportation community. It identifies several foundational factors and policy levers that impact transportation's ability to achieve important societal goals such as a strong economy, safety, public health, climate change, and equity and inclusion.



Source: TRB¹

Our committee's work is foundational and supports knowledge advancement for all the critical issues. It is most closely aligned with two of the identified foundational factors/policy levers:

- **Workforce:** Attracting, training, and retaining a diverse, skilled transportation workforce, particularly in the public sector
- **Innovation:** Building and sustaining cultures of innovation in government transportation agencies

Over the next seven years (2025-2031), the Committee's activities and areas of focus will be influenced by the following key trends:

- **Changes in the nature of information and knowledge requirements of transportation agencies** to meet increasingly sophisticated and evolving needs related to safety, system operations, prioritization of limited resources, multimodalism, resilience, equity, and environment. Agencies will need to become more nimble in identifying and responding to shifting needs.
- **Advances in information and knowledge management solutions** related to use of Semantic Technology (such as knowledge graphs), Natural Language Processing (NLP) and Generative AI. Transportation agencies will be pursuing implementation of solutions for automated content classification and tagging, intelligent search and retrieval (including chatbots), content summarization and personalized information delivery.
- **Growing needs for information to be provided in multiple, accessible and interoperable forms** given continued digitization of content, implementation of various data and content repositories

¹ National Academies of Sciences, Engineering, and Medicine. 2024. Critical Issues in Transportation for 2024 and Beyond. Washington, DC: The National Academies Press.
<https://doi.org/10.17226/27432>.

and reporting capabilities, increased expectations for information access and integration among an increasing population of “born digital” employees, and continued evolution in practices for ensuring content accessibility to individuals with disabilities.

- **Growing concern about data and information-related risks** including exposure of sensitive information, data privacy, cybersecurity, and irresponsible use of AI tools. Transportation agencies will be seeking to balance strategies for mitigating these risks with the desire to improve information sharing and access.
- **Continued evolution in the transportation workforce and work environment:**
 - Challenges in attracting and retaining talent - particularly for specialized areas such as information technology and data science
 - Increases in employee turnover, requiring new approaches to onboarding, training and knowledge transfer
 - Shifts in the amount of remote work (both increases and decreases), impacting how employees share information and knowledge

Committee Goals and Focus Areas

Mission

The TRB committee on Information and Knowledge Management (IKM) advances development and adoption of practices that improve access to and application of critical information and knowledge - both within and across transportation organizations². The committee brings together researchers and practitioners from public, private and academic sectors with an interest in library and information science, knowledge management, innovation, organizational excellence, and workforce planning and development. This collaboration enables us to develop a holistic understanding of needs, challenges, constraints and opportunities for advancing transportation agencies’ ability to make efficient use of their data, content, codified knowledge and employee know-how.

Vision

Information and knowledge management is a core function within the transportation community, used to ensure that:

- transportation information and knowledge are widely accessible and easily located,
- transportation information and knowledge are optimized to achieve business objectives,
- transportation information and knowledge loss is minimized during organizational and individual transitions, and
- transportation information and knowledge for research and innovation is developed and moved into practice efficiently and effectively.

Goals

The following goals are intended to guide our committee’s activities as we work towards elevating awareness, understanding and implementation of effective information and knowledge management practices in all aspects of transportation organization management and operations.

1. **Advance Research.** Engage a diverse mix of researchers and transportation organization staff to identify critical research questions, develop research agendas, describe and share research results, and pursue avenues for advancing research projects.
2. **Curate and Share Successful Practices.** Advance adoption of successful and impactful IKM

² The term “transportation organization” includes state departments of transportation, local and regional transportation agencies, public and private transportation providers, transportation education and research institutions, professional organizations and interest groups, and private transportation research or consulting firms.

practices through curating and sharing information and providing opportunities for peer-to-peer sharing of experience.

3. **Raise Awareness of Committee Activities.** Regularly employ a variety of distribution channels to share key activities and messages both among Committee members and friends, as well as among stakeholders and the transportation industry at-large.
4. **Engage Members and Friends.** Recruit a diverse mix of members representing different interest and expertise areas, organization types and traditionally marginalized groups. Facilitate active participation in committee activities across all members and friends.

Focus Areas

The committee intends to focus our efforts in the following three focus areas:

1. Retaining and Preserving Critical Information and Knowledge.

Why:

- Retention of critical knowledge and information is a primary concern of transportation organizations as experienced employees retire and employee turnover increases.
- In many transportation organizations, information management practices do not yet reliably ensure that critical information is curated and retained for future use.
- There is a need for new maturity models related to the curation and preservation of information and knowledge assets by transportation organizations.

How:

- Explore models to help transportation organizations identify what is important to curate, capture and retain.
- Develop guidance and best practices on how transportation organizations can integrate information and knowledge capture in existing workflows.
- Develop guidance for transportation organizations to manage information and knowledge assets in ways that ensure ongoing availability for different stakeholders.

2. Facilitating Sharing, Access and Use of Critical Information and Knowledge.

Why:

- It is essential that transportation organizations not only preserve and maintain their critical knowledge and information but also ensure that it is accessible to various stakeholders.
- Without access to information or the ability to leverage existing knowledge, transportation researchers and practitioners will be limited in their ability to recognize new trends and innovations.

How:

- Advance practices to improve organization and accessibility of transportation information and knowledge.
- Raise awareness of appropriate/best practices for using emerging AI tools for transportation information retrieval.
- Raise awareness of practices that facilitate person to person knowledge sharing within and across transportation organizations.

3. Building a Common Transportation Language.

Why:

- As transportation continues to become more interdisciplinary in nature and technological advances enable more collaboration across sectors, a significant obstacle persists in the lack of a unified vocabulary.
- In practice, each organizational unit or subject area has their own terminology and

definitions, which creates silos that inhibit innovation.

How:

- Develop a common vocabulary resources (glossaries, thesauri, ontologies) within and across transportation organizations.
- Advance the state of the practice in creating and leveraging semantic resources such as knowledge graphs within transportation.
- Identify and support new models for sharing vocabulary resources across the transportation community.

Committee Action Plan (2025-2027)

The IKM committee has identified three topic areas to focus our efforts for the next three years to achieve our committee's goals. They are all critical functions of information and knowledge management that support innovation and resilience in transportation organizations. For each of these goals it's crucial to recognize that both technical and cultural aspects of these subject areas need to be addressed for our efforts to be successful. For each topic are the goals will be to do the following:

- produce a research needs statement for the topic
- identify/scope a webinar
- identify/scope a TRB session/workshop
- identify/maintain communication with other committees/groups
- identify/curate/provide AJE45 web content

Focus Area 1: Retaining and Preserving Critical Knowledge and Information

Building on existing work, and recognizing how information and knowledge management has matured, there is a need for new maturity models in relation to the curation and preservation of information and knowledge assets by organizations.

Strategies

- Explore models to help organizations identify what is important to curate, capture and retain
- Develop guidance and best practices on how organizations can integrate information and knowledge capture in existing workflows
- Develop guidance for organizations to manage information and knowledge assets in ways that ensure ongoing availability for different stakeholders

Focus Area 2: Facilitating Sharing, Access and Use of Critical Knowledge and Information

It is critical that the information/knowledge organizations take care to preserve and maintain is also accessible to various stakeholders. Without access to information or the ability to leverage existing knowledge, transportation researchers and practitioners will be limited in their ability to recognize new trends and innovations.

Strategies

- Advancing practices to improve organization and accessibility of information and knowledge
- Raising awareness of appropriate/best practices for using emerging AI tools for information retrieval
- Facilitating person to person knowledge sharing

Focus Area 3: Building a Common Transportation Language

As transportation continues to become more interdisciplinary in nature and technological advances enable more collaboration across sectors, a significant obstacle persists in the lack of a unified vocabulary. In practice, each organization or subject area has their own terminology and definitions, which creates silos that inhibit innovation.

Strategies

- Advancing practices to improve organization and accessibility of information and knowledge
- Raising awareness of appropriate/best practices for using emerging AI tools for information retrieval
- Facilitating person to person knowledge sharing