

Problem Statement

Best Practices in Metadata Application

This problem statement was developed cooperatively by members of the TRB Committee on Library and Information Science for Transportation, ABG40, and the TRB Metadata Subcommittee, ABJ00(3), and submitted for funding under the NCHRP Synthesis program February 10, 2006

The availability of data that is accurate, reliable, useful, and comparable across all transportation modes is essential to the intelligent understanding, management, and growth of our transportation system. The current state of transportation knowledge comprises an enormity of heterogeneous data “silos,” collected for different purposes and represented differently—a collection of local, state, and federal data that are impossible to share or analyze in aggregate. Unfortunately, practices and processes to enable data interoperability across different user communities have not kept pace with the technologies for data sharing.

There are several existing models for use of metadata standards to enable sharing of data resources, with notable examples from the library science, geospatial data, and environmental data communities. We propose a synthesis of best practices gleaned from existing successful metadata applications within and outside the transportation community. This synthesis will provide one element of a program of research to advance the state of the practice in transportation metadata application. (A separate effort will survey transportation agencies in order to determine the current state of the practice, gaps and priority needs.) Examples should be selected to represent use of metadata for sharing of documents, data sets and data elements. The selected examples should also include a mix of large, medium and small scale efforts with respect to resource and time requirements. Each example should include a description (and where possible, quantification) of the benefits gained - including time savings, improved access to information, and facilitation of data integration and harmonization efforts. In addition, the institutional/organizational coordination and management mechanisms employed should be documented.

The outcome of this synthesis would be a set of lessons learned, and documentation of key benefits derived from metadata implementation. This effort will address a critical research gap and will speed progress on development and adoption of interoperability practices for transportation data. The end result will be increased accessibility, use and reuse of such data.