AASHTO STANDING COMMITTEE ON RESEARCH
AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS

I. PROBLEM NUMBER

To be assigned by NCHRP staff.

II. PROBLEM TITLE

Transportation Research Thesaurus Improvements

III. RESEARCH PROBLEM STATEMENT

In 2001 TRB published NCHRP Report 450, *Transportation Research Thesaurus and User's Guide*. The primary purpose of the Transportation Research Thesaurus (TRT) is to provide a common vocabulary for producers and users of TRB's TRIS database. Indexers can describe documents in a consistent way, and TRIS users can successfully retrieve TRIS records in their areas of interest by searching the thesaurus terms.

In addition to TRB, other organizations are using the TRT in a variety of applications and platforms: the National Transportation Library Digital Library catalog; the library catalog at the Harmer E. Davis Transportation Library, University of California, Berkeley; the library catalog of the Turner-Fairbank Highway Research Center; and the publications catalog of the Texas Transportation Institute. Moreover, the TRT vocabulary is mapped to other standard vocabularies, including the Library of Congress List of Subject Headings and the ITRD Thesaurus. The TRT has been approved by the Library of Congress as a specialized vocabulary with the code "trt."

Although TRB has successfully implemented use of the thesaurus, it has not had the resources to assume maintenance of the authoritative version, which resides only with the original contractor, CDB Enterprises. A thesaurus by its nature is a dynamic document to which new terms must be added as they arise. Maintenance is no small matter, and TRB should have the authoritative version of its valuable resource in-house. The proposed project would allow TRB to develop a database to maintain the authoritative version of the TRT and also to fully integrate it with the new TRIS system that TRB is developing.

Another issue is making the thesaurus more readily available to potential users. The current mechanism for distribution is the Viewer software that was developed by CDB Enterprises in 1994/95 to be compatible with the Windows environment at that time. Although the Viewer functions under Windows XP, the interface is not optimal, and distribution of files to individual PCs is cumbersome. The proposed project would support the development of a web-based version of the thesaurus that would not need to be installed and that could be updated more frequently than the Viewer.

IV. LITERATURE SEARCH SUMMARY

The Transportation Research Thesaurus was developed in accordance with the principals of the *Guidelines for the Construction, Format, and Management of Monolingual Thesauri* (ANSI/NISO Z39.19-1993), an American national standard developed by the National Information Standards Organization and approved August 30, 1993, by the American National Standards Institute. The standard specifies equivalence (synonymous), hierarchical and associative relationships among terms and recommends print and screen formats to show these relationships. Procedures for maintaining the intellectual content of the TRT are detailed in *Transportation Research Thesaurus and User's Guide*. The standards and procedures should guide development of the proposed products.

Trends regarding increasing usage of the Internet are documented by the Pew Internet and American Life Project (http://www.pewinternet.org/trends.asp#usage). Such trends support the notion of moving from use of specialized software to display the thesaurus to use of a web browser.

V. RESEARCH OBJECTIVE

One objective is to develop a database at TRB that 1.) will allow TRB to maintain the authoritative version of the TRT in-house and that 2.) will integrate the TRT with the new TRIS system for record creation. A second objective is to publish the TRT on the Internet. The tasks are as follows:

1. Develop the database structure for importing the thesaurus files.
2. Import the current database files.
3. Integrate the thesaurus database tables with the new TRIS database tables.
4. Develop a user interface for indexers to use in assigning TRT terms to TRIS records.
5. Publish a web-based version of the TRT that incorporates the screen displays (alphabetical, permuted, hierarchical, term detail) specified in the standard cited above.
6. Maintain the thesaurus software for one year after completion of Tasks 1-5.
7. Maintain/update the thesaurus vocabulary during the period of the study.

VI. ESTIMATE OF PROBLEM FUNDING AND RESEARCH PERIOD

Recommended Funding:
$90,000
The cost estimate assumes that most of the work will be done by TRB staff or by a contractor working with TRB Information Services and Information Technology staff. TRB has already completed Tasks 1 and 2.

Research Period:
24 months
Tasks 3-5 will be completed during the first 12 months of the study. Task 6 will be completed during the second 12 months of the study. Task 7 will occur simultaneously with the other tasks. The product of Task 5, the web version of the TRT, will constitute the draft final report.

VII. URGENCY, PAYOFF POTENTIAL, AND IMPLEMENTATION

There is some urgency to transfer the care of this valuable intellectual asset to TRB. The contractor has done a commendable job maintaining the TRT files but will not continue the project indefinitely.

When the TRT is integrated with the new TRIS, there will be a payoff for TRB in terms of easier access by the TRIS indexers to many views of the terminology. There will likely also be increased time efficiency in assigning indexing terms. A further payoff may be the ability to develop products that take advantage of the powerful hierarchical structure of the thesaurus.

For transportation researchers and practitioners the primary advantage will be access to the TRT on the Internet. Research managers, for example, who assign keywords to research reports, will be able to look up terms with a web browser and will not need to install special software. They will be able to cut and paste from the web display, which they cannot do with the Viewer. Newly adopted terms will be added to web version in a timely manner.

By virtue of being on the web, the TRT is likely to be discovered by more potential users, increasing its adoption. Some may choose to select subsets of terms to apply to specialized information products. Increasing adoption of a common vocabulary will improve communication between information

producers and information users. All those involved in transportation research and the application of research results will have better access to technical information.

VIII. PERSON(S) DEVELOPING THE PROBLEM

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IX. PROBLEM MONITOR

A statement of the specifics (name, title, affiliation, address, telephone number, e-mail address) of the person who will be assigned by the Administrator or Committee submitting this problem to monitor the research, if programmed, from inception to completion. The monitor's final responsibility will entail recommendations to the Standing Committee on Research as to how the research results could be implemented.

X. DATE AND SUBMITTED BY

Submitted September 15, 2004 by

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Please submit completed problem statement to the following e-mail address:

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Questions on the process can be directed to the same address or cjencks@nas.edu.