

# SYNTHESIS OF INFORMATION RELATED TO HIGHWAY PRACTICES

## BACKGROUND

Highway administrators, engineers, and researchers face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem is frequently not brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to highway administrators and engineers. Much of it derives from research and much from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information together and making it available to the entire highway community, the American Association of State Highway and Transportation Officials has through the mechanism of the National Cooperative Highway Research Program authorized the Transportation Research Board to undertake a continuing study. This study, NCHRP Project 20-05, "Synthesis of Information Related to Highway Problems," searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an NCHRP report series, Synthesis of Highway Practice.

## The Synthesis Project

This synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

To develop these syntheses in a comprehensive manner and to ensure inclusion of significant knowledge, the Transportation Research Board hires a consultant with expertise in the topic area to collect and analyze available information assembled from numerous sources, including state departments of transportation, and write a summary report. A panel of experts in the subject area is established to guide the consultant and review the synthesis report.

For each topic the project objectives are (1) to locate and assemble documented information; (2) to learn what practice has been used for solving or alleviating the problems; (3) to identify all ongoing research; (4) to learn what problems remain largely unsolved; and (5) to organize, evaluate, and document the useful information that is acquired.

Each synthesis is an immediately useful document that records practices that were acceptable within the limitations of the knowledge available at the time of its preparation. New knowledge can be expected to be added to that which is now at hand and eventually the synthesis may need to be updated or redone. As the processes of advancement continue, new knowledge can be expected to be added to that which is now on hand; eventually, the synthesis may need to be updated or redone. If you believe that a synthesis should be updated, we would appreciate it if you would write TRB and let us know.

## **Selection of Topics**

NCHRP Project Committee SP20-05 meets each year to select topics for study using funds from the upcoming fiscal year. Current funding allows for initiation of about 17 syntheses per year. This number, plus some alternate topics, is selected by the committee at its annual project meeting.

A synthesis study documents current practice for specific highway topics. The following factors are considered in the selection of a synthesis topic

- The objective of the scope of work is to document current highway practice in state departments of transportation (DOTs);
- The synthesis documents current practice not best practice; it is not a research project or a guidebook;
- The topic addresses an area of practice that is widespread and of general interest to state DOTs; and
- There is no other ongoing or recently completed research on the topic that might render the synthesis obsolete shortly after completion.

Each year many more topics are suggested for the committee's consideration than can be programmed for study in Project 20-05. Nevertheless, the continued success of this project depends on a constant supply of worthy synthesis topics. The interest of those who have recommended topics is sincerely appreciated, and they are urged to continue. Candidate topics are suggested by members of the committee and by a variety of other sources, including state department of transportation personnel; FHWA, AASHTO, and TRB committees; and other practitioners and researchers.

## **Conduct of the Studies**

Following the project committee's selection of topics, studies are initiated, usually in the order of priority assigned by the committee. A topic panel consisting of practitioners and researchers is formed for each topic. At its first meeting, this topic panel thoroughly discusses the topic, refines the tentative scope to its final form, suggests sources of information, and identifies and discusses potential topic consultants.

Following this meeting, a consultant is hired to gather information on the topic, synthesize it, and write a report. Typically, the agreement covers a period of 12 months. Information gathering and preparation of the first draft of the synthesis report usually takes about 8 months. This draft is reviewed by the topic panel with the consultant, often at the second panel meeting. A revised draft is then prepared by the consultant. Subsequent drafts and meetings are scheduled if needed, although this rarely occurs.

After the staff is substantially satisfied with the report, a final draft is sent to the members of the topic panel for their review and approval. Review comments are incorporated into the final draft which is published as an NCHRP Synthesis of Highway Practice.