

SYNTHESES

Syntheses are state-of-the-practice reports prepared under contract by outside individuals or firms. Syntheses are currently developed under the National Cooperative Highway Research Program (NCHRP), Transit Cooperative Research Program (TCRP), Airport Cooperative Research Program (ACRP), and Commercial Truck and Bus Safety Synthesis Program (CTBSSP). These reports are oriented toward practical solutions of specific highway, transit, airport, and commercial truck and bus safety problems. The specific objectives of a synthesis are:

1. To locate and assemble information;
2. To learn what practice has been used;
3. To identify ongoing and recently completed research;
4. To learn what problems remain largely unsolved; and
5. To organize, evaluate, and document the useful information acquired.

Each synthesis is written under the oversight of a technical panel appointed for that specific topic, with the guidance of TRB Synthesis staff in the Studies and Special Programs Division. The topic panel and the relevant synthesis project oversight committee and staff review and make recommendations regarding the report's technical adequacy and acceptability for publication, with approval by the Chair of the Subcommittee for National Research Council Oversight (SNO). Synthesis reports are attributed to their authors, with recognition given to the technical topic panel.

The aim of a synthesis, first and foremost, is to get the facts out about what is going on with respect to a particular practice in highway, transit, or air transportation. In addition to this factual documentation, reviews of the state of the practice inevitably provide a basis for the author or authors to make conclusions or assessments about:

- Performance resulting from current practices, including new and unusual practices;
- Current practices that are at odds with research findings;
- Current practices that appear to be working well and those that are not working well;
- Critical knowledge gaps that could be filled by additional research; and
- Other actions—e.g., training, revised standards, and increased management attention—that could improve the state of the practice in a given area.

Such conclusions and assessments are helpful provided that they are well supported and clearly documented in the report. Accordingly, it is desirable that they be incorporated to the maximum extent possible. The reports must, however, stay clear of any recommendations (other than for needed research) and of statements on sensitive or policy issues that would go beyond the purpose of the synthesis series and compromise the fact-finding and technical assessment mission of these reports.

It is important to recognize that the purpose of a synthesis is to document and describe current practice in a given area, but **not** to prescribe a practice or set of practices, as might be expected in a guidebook or manual. It is acceptable for a synthesis to highlight practices that are viewed as successful by many of the entities surveyed in developing the

synthesis, or that are characterized as such in the literature reviewed by the synthesis author; but such practices should not be presented as “best” or “recommended” practices.

The only recommendations that are permitted in a synthesis are recommendations for needed research.

General Guidelines

One size fits all rules or guidelines clearly are not possible for such a varied series of reports, but a few general guidelines are useful. These guidelines, while focused in particular on the final section of a synthesis, are intended to apply in spirit to the whole body of the report. It is also recognized that instances may arise in which there is good reason to deviate from these guidelines; such exceptions are handled on a case-by-case basis.

The final chapter of a synthesis report should be titled *Conclusions*. Conclusions summarize facts about, and technical assessment of, the current state of the practice; any assessment of current practice must be supported by the text and stated carefully. Statements about barriers to widespread implementation of promising methods or practices (e.g., lack of consistent standards) should be presented as an observation or conclusion rather than a recommendation.

Synthesis reports should be descriptive, not prescriptive. It is acceptable to highlight practices that have been reported as successful by many survey respondents and/or that have been characterized as successful in the literature, but such practices should not be presented as “best” or “recommended” practices.

Recommendations for needed research are the only type of recommendations that are permitted in a synthesis. They generally should be limited to recommendations about where important knowledge gaps exist that could be corrected by research. No specific recommendations should be included concerning organizational arrangements for conducting the research (e.g., housing it at FHWA or NCHRP). The research recommendations should appear in the final *Conclusions* chapter.

Subject matter is important. The authors may have more latitude to draw conclusions for topics that are mostly technical (e.g., bridge welds) as opposed to topics where there are clearly policy implications (e.g., state license fees, warranties for road construction).

Potentially sensitive issues that require careful handling are likely when one or more of the following criteria apply:

- Widespread polarization of opinion already exists on the subject;
- There are strong commercial interests in the subject, and the findings or conclusions might favor or injure particular commercial interests; or
- The subject involves health, safety, or environmental issues (issues where public policy involves trade-offs among multiple objectives).

As a general rule, avoid conclusions that imply a need to change funding or public policy. Also avoid implied recommendations directed to particular organizations, except TRB.