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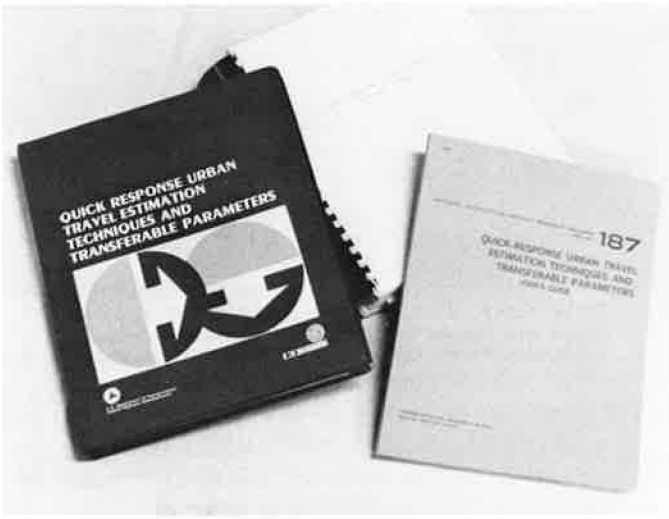
Workshop on Quick-Response Urban Travel Estimation Procedures



Training aids used in the sessions include NCHRP Report 187 (right), an instructor's notebook, and a student's notebook.

Based on materials prepared by the COMSIS Corporation for National Cooperative Highway Research Program (NCHRP) Project 8-12, Travel Estimation Procedures for Quick Response to Urban Policy Issues, a series of workshops were held nationally on quick-response urban travel estimation techniques and transferable parameters. They were sponsored by the National Highway Institute of the Federal Highway Administration (FHWA) and conducted by the COMSIS Corporation.

The FHWA interest in the workshops stemmed from the need for planning techniques that can provide information to the decision maker on critical transportation issues in a relatively short time frame. The quick-response techniques are not viewed as replacing conventional planning tools but rather as supplementing them.

The flexibility in the FHWA and Urban Mass Transportation Administration (UMTA) joint urban transportation planning regulations regarding technical planning activities permits the application of a broad range of planning techniques. The quick-response techniques help the planner to make the most use of this flexibility.

The basic materials used for the workshops were (a) NCHRP Report 187, Quick-Response Urban Travel Estimation Techniques and Transferable Parameters—User's Guide; (b) an instructor's notebook; (c) a student's notebook; and (d) visual aids (i.e., slides and transparencies). All of this material was produced as part of NCHRP Project 8-12A and is available on loan from NCHRP to those wishing to conduct future workshops.

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The User's Guide, the textbook for the workshops, details non-computer methods for planning that are most appropriately used at the corridor and project level. Also included are transferable parameters for characteristics, such as trip rates, vehicle occupancies, and time-of-day trip distributions, when local data are not available and time or cost constraints require use of transferable types of information. These are provided in the form of tables, graphs, and nomographs. These data can be used for computer as well as non-computer applications. The material covered includes trip generation, trip distribution, mode choice, automobile occupancy, time-of-day distribution, traffic assignment, capacity analysis, and spacing procedures. Where appropriate, material is grouped into four population size categories: 50 000-100 000; 100 000-250 000; 250 000-750 000; and 750 000 up to 2 000 000.

The User's Guide provides three scenario applications that can be followed by those who wish to solve similar problems. One is the impact of residential development and shopping center location on the surrounding street system in a small urban area; the second, a highway corridor analysis in a medium-sized urban area; and the third, an application of highway-spacing procedures in a portion of a large urbanized area.

The workshops averaged approximately 40 students per session. The three instructors provided them with sufficient assistance in working on class problems, as well as on a comprehensive problem that was woven through the three days of instruction. One instructor was the principal investigator for the NCHRP project; another, a professor at the University of Tennessee who was involved in the development of the training materials; and the third, an employee of FHWA who represented FHWA interest in quick-response techniques.

The training material was originally tested at a workshop sponsored by the Transportation Center of the University of Tennessee. Although the basic materials

developed were used for the subsequent workshops, improvements and minor modifications were made based on each workshop experience. Many of the changes were based on comments obtained from student evaluation forms; others were based on technical innovations and new procedures under development.

A typical workshop agenda is shown in Figure 1. Each subject included a description generally using slides and transparencies, as well as a descriptive problem. Also, class problems were completed by the students after each subject was covered. The comprehensive problem required the application of all the material covered in the workshop.

Workshops have been held to date in Springfield, Illinois; Fort Worth, Texas; Springfield, Massachusetts; Harrisburg, Pennsylvania; Denver; Sacramento; Seattle; Kansas City, Missouri; Myrtle Beach, South Carolina; and Eugene, Oregon. To date about 360 persons have participated in the workshops. Some 50 of these persons represented federal agencies; 140, state departments of transportation; and the remaining 170, city, county, and regional planning agencies. Because of the short-range focus of the material presented, many of the participants from the local level represented agencies involved in zoning decisions related to major development proposals.

In addition to the FHWA-sponsored workshops, state and local planning agencies and universities have also conducted similar training sessions based on the quick-response materials in Washington, D.C.; St. Paul, Minnesota; Indianapolis, Indiana; Columbus, Ohio; San Diego; Milwaukee; East Lansing, Michigan; and Honolulu. A workshop session was also offered in South Bend, Indiana, to train potential instructors from state and local planning agencies in Minnesota, Wisconsin, Illinois, Ohio, Indiana, and Michigan.

Because of the positive reaction to the workshops already held, the National Highway Institute, in conjunction with the Office of the Secretary of Transportation and the FHWA Urban Planning Division, is currently planning several additional workshop sessions. These will be expanded to cover the application of the quick-response techniques in estimating the energy and air quality impact of various short-range transportation actions such as carpooling, vanpooling, and high-occupancy vehicle lane treatments. These workshops are expected to begin in the latter part of this calendar year.

The FHWA Urban Planning Division is also preparing a report that illustrates the various applications of the quick response techniques, based on material taken from a follow-up questionnaire sent to all of the workshop participants.

For more information on these FHWA activities, interested individuals should contact the authors. Requests for information regarding loan copies of the training materials should be directed to the Program Director, NCHRP, Transportation Research Board, 2101 Constitution Avenue, N.W., Washington, DC 20418.

WELCOME AND OPENING REMARKS

OVERVIEW OF 3-DAY SESSION

FEDERAL HIGHWAY ADMINISTRATION INTEREST

OVERVIEW OF NCHRP PROJECT 8-12 AND TEXT

TRIP GENERATION
- o Generation Rates for Specific Generators
- o Generalized Areawide Estimates
- o Household Generation Rates
- o Example Problem, Application of Trip Generation Material

TRIP DISTRIBUTION
- o Manual Procedure for a Gravity Model
- o Example Problem, Application of Trip Generation Material

INTRODUCTION TO COMPREHENSIVE PROBLEM
- o Strategy Session

MODE CHOICE ANALYSIS
- o Behavioral Post-Distribution Model
- o Pivot Point Analysis

AUTOMOBILE OCCUPANCY CHARACTERISTICS

TIME-OF-DAY CHARACTERISTICS

TRAFFIC ANALYSIS
- o Detailed Assignments Around A Specific Site

WORKSHOP - COMPREHENSIVE PROBLEM
- o Trip Generation
- o Trip Distribution

TRAFFIC ANALYSIS (Continued)
- o Reallocation of Assigned Volumes
- o Corridor Traffic Diversion

CAPACITY ANALYSIS
- o Level of Service Concepts
- o Critical Movement Techniques
- o Corridor Stress Diagram
- o Example Problems

APPLICATION OF QUICK RESPONSE TECHNIQUES BY COMSIS CORPORATION - SCENARIO APPLICATIONS

WORKSHOP - COMPREHENSIVE PROBLEM
- o Traffic Assignment
- o Capacity Analysis
- o Summary

CLOSURE AND FINAL COMMENTS

Figure 1. Agenda for quick-response travel estimation techniques.

Participants provide a study in concentration as they apply themselves to written exercises for the workshop.