

# HIGHWAY CAPACITY MANUAL 2000

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**T**he Highway Capacity Manual (HCM) is approaching its 50th year of serving as the principal resource for the analysis of capacity and level of service of U.S. streets and highways. The first edition of the manual was published in 1950 by the (then) U.S. Bureau of Public Roads. In 1965 the second edition was completed under the guidance of the Highway Research Board's Committee on Highway Capacity. The 1965 manual added significant depth of material on freeways and signalized intersections.

The 1985 SR209 HCM (third edition) was published by the Transportation Research Board. This edition represented a significant step forward for capacity analysis as it included the results of more than a dozen major funded research efforts. It strengthened the concept of level of service; allowed for interim updates by appearing in looseleaf format; and was the first multimodal HCM, including chapters on transit, pedestrians, and bicycles. Probably the most significant contribution of the 1985 edition was that it led to the development of software for use in performing the calculations required by the procedures in the manual.

A major update of the 1985 edition was published in 1994. Another update is currently being produced by TRB and is expected to be released in early 1998.

## PRODUCTION OF HCM 2000

The HCM is the most widely distributed TRB publication. Up-to-date information on capacity and level of service is vital to an expanding array of public policy, planning, fiscal, land use regulation, design, operational, and educational applications. The development of HCM 2000 began in January 1995 with the commencement of National Cooperative Highway Research Program Project 3-55. With its final report, submitted in October 1996, this project established a framework for activities that will lead to the publication of HCM 2000.

In October 1996, NCHRP Project 3-55(6) was initiated, with the primary mission of producing HCM 2000. The panel overseeing the work is chaired by Carlton Robinson and comprises professionals from the United States and Canada who are experts in capacity and level-of-service analysis and applications. The panel will work closely during the next several years with the TRB Committee on Highway Capacity and Quality of Service to ensure that both groups provide regular input and direction to the research team.

## HCM 2000 CONTENT

The content of HCM 2000 will be somewhat broader than that of SR209 and subsequent updates. Sections on general concepts (and planning applications), corridor and areawide analyses, and simulation will be added to the traditional chapters providing detailed analysis for each facility type. HCM 2000 will also be based on metric units. With research results on pedestrian and bicycle facilities, two-lane highways, extended freeway segments, transit, freeway weaving, and use of travel speed for level-of-service analysis still to be contributed during 1997 and 1998, HCM 2000 will be not only broader in coverage, but also more up to date in content.

HCM 2000 will have six parts: I. Overview, II. General Concepts and Estimated Values, III. Analytical Procedures, IV. Corridor and Areawide Analyses, V. Simulation Models, and VI. Additional Example Problems. Important additions in Part I will be sections on when HCM 2000 can and should be used and how HCM analyses relate to economic and environmental analyses. A section on decision making using results from HCM 2000 will also be added to provide senior management and elected officials with information on the implications of basing decisions on the numbers and outputs produced by the manual. Two new topics have been added to the Part III material: Chapter 22, Freeway Facilities, and Chap-

ter 26, Interchange Ramp Terminals. The overall analysis of extended freeway segments will be covered in Chapter 22, while the analysis of closely spaced and arterial/ramp intersections at interchanges will be presented in Chapter 26.

Restructuring of the printed version of HCM 2000 will result in a new look for the typical page. A single column of text will be used, with a note margin containing captions to highlight key concepts or values, and providing space for the HCM user to add notes and annotations. Another feature of the new format is that a more consistent look for text, tables, and figures will be used for all chapters.

## ON-LINE VERSION OF HCM 2000

HCM 2000 will differ notably from its predecessors in that three distinct but complementary tools will be available for the user: a printed book, calculation software, and a multimedia version of the manual on CD-ROM or some other electronic medium. It is this third component that will help the user review and apply the analytical procedures of Part III of the new manual more quickly and effectively. The multimedia version should also provide a sound basis for teaching and training programs required by the user community.

With a 1996 prototype version of the proposed multimedia component for HCM 2000, the user can navigate efficiently from one part of a chapter to another or skip from one chapter to another. Advantages of the multimedia presentation include the ability to word search, to view video clips of typical traffic situations, and to view (and listen to) short tutorials on key topics. The user will also be able to print out any section of text or an exhibit that is currently displayed on the screen.

Figure 1 shows a screen from the prototype CD-ROM produced by NCHRP Project 3-55.

## DELIVERY OF HCM 2000

Although not yet defined, the means for delivery of the three components of HCM 2000 and for their maintenance and updating may involve both traditional and electronic (Internet, World Wide Web) elements. HCM 2000 is expected to be available from TRB during the latter half of the year 2000.

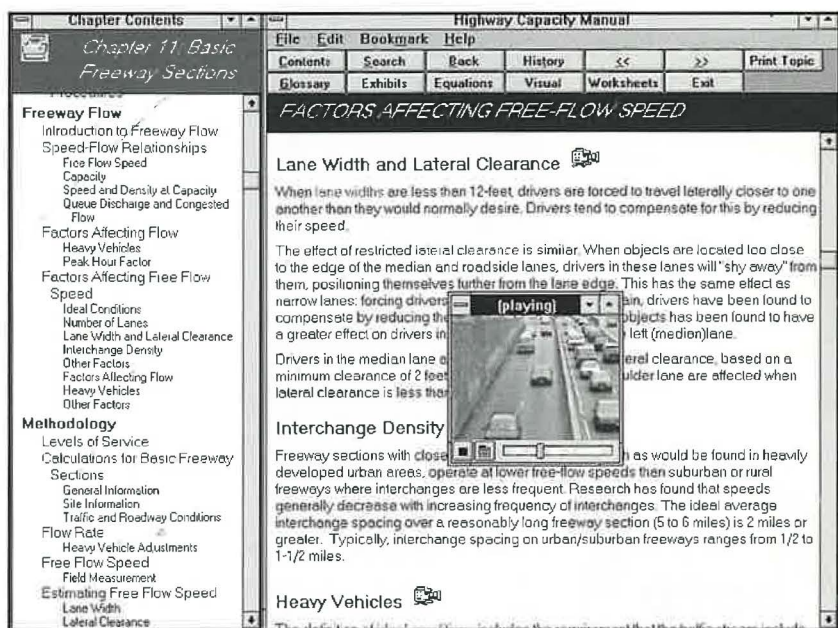


FIGURE 1 Screen from HCM 2000 prototype CD-ROM shows video clip as part of pop-up definition from glossary.

## Highway Capacity Manual Website

HCM 2000 will be produced under a joint effort of the TRB Committee on Highway Capacity and Quality of Service (HCQS), several National Cooperative Highway Research Program and Transit Cooperative Research Program projects, and research and support activities of the U.S. Department of Transportation. The World Wide Web is increasingly being used to coordinate these activities. To keep up to date on HCM activities, visit the Highway Capacity Manual website at <http://www.hcmweb.net/>, which provides the following information:

- ◆ Demographics of HCM users
- ◆ Description of available National Highway Institute training
- ◆ Interpretations issued by the TRB HCQS Committee
- ◆ Link to McTrans, where the highway capacity calculation software is available
- ◆ Link to the TRB HCQS Committee site, which contains information on the committee and its meetings (some parts of this site are password protected for committee use)
- ◆ Link to information on NCHRP and TCRP projects related to the HCM