TRB B076GCL5GT

Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis

Official Instruction Manual

1. Introduction to the Manual

The Highway Capacity Manual (HCM) 6th Edition provides a comprehensive set of methodologies for evaluating the operational performance of multimodal transportation facilities. It serves as a foundational reference for transportation professionals, engineers, and planners involved in the analysis, design, and operation of highways, streets, and other transportation infrastructure.

This edition integrates traditional highway capacity analysis with considerations for pedestrians, bicyclists, and transit, reflecting a holistic approach to mobility. It is developed and maintained by the Transportation Research Board (TRB).

Figure 1.1: Front cover of the Highway Capacity Manual 6th Edition. This image displays the title, edition number, and a graphic representing transportation flow.

2. Structure and Content Overview

The HCM 6th Edition is organized into multiple volumes, each addressing specific aspects of capacity and quality of service analysis. The manual is designed to guide users through various analytical procedures for different facility types and modes of transportation.

2.1. Key Volumes and Sections

- **Concepts:** Introduces fundamental principles, definitions, and the overall framework of capacity analysis.
- **Uninterrupted Flow:** Covers methodologies for freeways, multilane highways, and two-lane highways.
- **Interrupted Flow:** Details analysis for signalized intersections, unsignalized intersections, roundabouts, and arterial streets.
- **Multimodal Facilities:** Provides guidance on pedestrian, bicycle, and transit facilities, and their integration with vehicular traffic.
- **Applications:** Presents case studies and practical examples to illustrate the application of HCM methodologies.

Each section includes detailed procedures, computational methods, and relevant data requirements.

3. Application Guidelines

To effectively utilize the HCM, users should follow a systematic approach:

1. **Identify the Facility Type:** Determine the specific type of transportation facility to be analyzed (e.g., freeway segment, signalized intersection).
2. **Select the Appropriate Methodology:** Choose the relevant chapter and procedure based on the facility type and desired level of detail (operational, planning, or design).
3. **Gather Required Data:** Collect necessary input data, which may include traffic volumes, geometric characteristics, control parameters, and environmental factors.
4. **Perform Calculations:** Apply the specified formulas and computational steps to determine performance measures such as capacity, density, delay, and level of service (LOS).
5. **Interpret Results:** Analyze the calculated performance measures in the context of project objectives and design standards.

The manual also provides guidance on sensitivity analysis and the use of supplemental software tools.

4. Digital Resources and Support

In addition to the printed manual, supplementary digital resources are available to enhance the user's understanding and application of the HCM methodologies. These resources are designed to support learning and practical implementation.

Figure 4.1: Overview of available digital learning resources. These resources include study plans, web books, quiz generators, practice problems, practice exams, and performance reports, designed to complement the manual.

These digital tools can assist users in preparing for professional examinations and in deepening their understanding of complex transportation concepts.

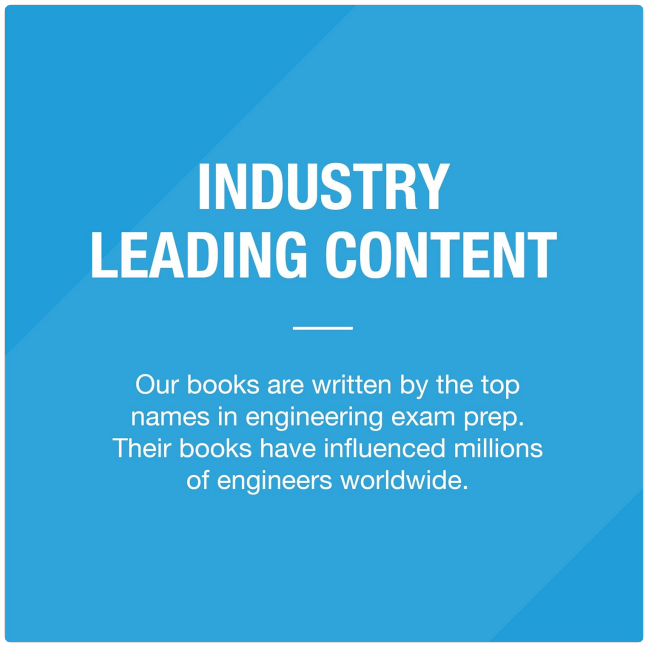

Figure 4.2: Information regarding the content development. The manual's content is developed by recognized experts in the field of engineering and transportation.

5. Specifications

Attribute	Detail
Title	Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis
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