

Preface

Traffic engineering covers a broad range of engineering applications with a common focus: the nation's system of highways and streets. Often defined as the nation's "lifeblood circulation system," this important part of the national infrastructure supports the vast majority of inter- and intra-city movement of both people and goods. Thus, the system plays a role in every important aspect of our society—including the economy, the environment, assurance of public safety and security, basic mobility for all societal functions, and basic access to the most remote regions of the country.

Traffic engineering involves a variety of engineering and management skills—including planning, management, design, construction, operation, control, maintenance, and system optimization. Because the focus of the traffic engineer's work is a most visible part of the public infrastructure, it is a field that also involves politics at virtually every level of government. Thus, the traffic engineer is called on to exercise a broad range of skills and must be sensitive to a wide range of issues to be effective.

This is the third edition of this textbook. It incorporates new standards and analysis techniques from the *Manual on Uniform Traffic Control Devices* (Millennium Edition), the *Highway Capacity Manual* (Fourth Edition, 2000), the: *Policy on Geometric Design of Highways and Streets* (Fourth Edition, 2001), and other current standards. Like the first two editions, the text can be used for a survey course at the undergraduate or graduate level, as well as for a series of more detailed courses. At Polytechnic, the text is used in a two-course undergraduate sequence and a series of four graduate courses.

The text is organized in four major functional parts:

- Part I: Components of the Traffic System and their Characteristics
- Part II: Traffic Studies and Programs
- Part III: Applications to Freeway and Rural Highway Systems
- Part IV Applications to Urban and Suburban Street Systems

Chapters have been added on Intelligent Transportation Systems; Parking, Signing, and Marking; Analysis of Unsignalized Intersections; and Arterial Planning and Management. Additional material on functional and geometric design and on marking and signing of facilities has also been added.

As in the first two editions, the text contains many sample problems and a wide variety of homework and project assignments that can be used in conjunction with course material. A solutions manual is available. The authors hope that faculty, practicing professionals, and students find this text useful and informative, and they invite comments and/or criticisms that will help them continue to improve the material.

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