

**CHAPTER 2
APPLICATIONS**

CONTENTS

1. INTRODUCTION..... 2-1

 Overview 2-1

 Chapter Organization..... 2-2

 Related HCM Content 2-2

2. LEVELS OF ANALYSIS 2-3

 Overview 2-3

 Operational Analysis 2-3

 Design Analysis..... 2-4

 Planning and Preliminary Engineering Analyses 2-4

 Matching the Analysis Tool to the Analysis Level 2-4

3. ROADWAY SYSTEM ELEMENTS 2-6

 Types of Roadway System Elements..... 2-6

 Analysis of Individual System Elements 2-8

 Assessment of Multiple Facilities 2-8

 System Performance Measurement 2-9

4. TRAVEL MODES 2-11

 Motorized Vehicle Mode 2-11

 Pedestrian Mode 2-11

 Bicycle Mode..... 2-11

 Transit Mode..... 2-12

5. OPERATING CONDITIONS 2-13

 Uninterrupted Flow 2-13

 Interrupted Flow 2-13

 Undersaturated Flow..... 2-14

 Oversaturated Flow 2-14

 Queue Discharge Flow 2-15

6. HCM ANALYSIS AS PART OF A BROADER PROCESS 2-16

 Noise Analysis..... 2-16

 Air Quality Analysis..... 2-16

 Economic Analysis..... 2-16

 Multimodal Planning Analysis 2-17

 System Performance Measurement 2-17

 Summary 2-17

7. REFERENCES..... 2-19

LIST OF EXHIBITS

Exhibit 2-1 Illustrative Roadway System Elements 2-6

Exhibit 2-2 HCM Service Measures by System Element and Mode 2-8

Exhibit 2-3 Components of Traveler-Perception Models Used in the
HCM 2-9

Exhibit 2-4 HCM Motorized Vehicle Performance Measures for
Environmental and Economic Analyses 2-18

