

CHAPTER 17
URBAN STREET RELIABILITY AND ATDM

CONTENTS

1. INTRODUCTION 17-1

 Overview 17-1

 Chapter Organization 17-1

 Related HCM Content 17-2

2. CONCEPTS 17-3

 Objectives for Reliability Analysis 17-3

 Definitions 17-3

 Active Traffic and Demand Management 17-4

3. CORE METHODOLOGY 17-7

 Scope of the Methodology 17-8

 Required Data and Sources 17-12

 Overview of the Methodology 17-24

4. EXTENSIONS TO THE METHODOLOGY 17-34

 Active Traffic and Demand Management Strategies 17-34

 Extensions for Specific Tactics 17-34

5. APPLICATIONS 17-37

 Example Problems 17-37

 Analysis Techniques 17-37

 Use Cases 17-40

 Use of Alternative Tools 17-43

6. REFERENCES 17-45

LIST OF EXHIBITS

Exhibit 17-1 ATDM Tactics and Measures for Urban Streets.....	17-5
Exhibit 17-2 High-Level Representation of the Method for Estimating the Travel Time Distribution.....	17-8
Exhibit 17-3 General Data Categories Required for a Reliability Evaluation	17-12
Exhibit 17-4 Temporal and Spatial Dimensions of Reliability	17-14
Exhibit 17-5 Default Hour-of-Day Demand Ratios (ADT/AADT)	17-16
Exhibit 17-6 Default Day-of-Week Demand Ratios (ADT/AADT).....	17-16
Exhibit 17-7 Default Month-of-Year Demand Ratios (ADT/AADT)	17-16
Exhibit 17-8 Default Values for Weather Events.....	17-17
Exhibit 17-9 Default Values for Incidents	17-19
Exhibit 17-10 Default Incident Clearance Times	17-20
Exhibit 17-11 Default Incident Distribution with Shoulder Presence	17-22
Exhibit 17-12 Default Incident Distribution Without Shoulder Presence.....	17-22
Exhibit 17-13 Reliability Methodology Framework	17-25
Exhibit 17-14 Interrelationship Between Causes of Congestion and the Facility	17-31
Exhibit 17-15 Example Matrix Allocating Annual Vehicle Hours of Delay by Cause	17-32
Exhibit 17-16 Example Pie Chart of Congestion Causes	17-32
Exhibit 17-17 Student's <i>t</i> -Statistic.....	17-39
Exhibit 17-18 Use Cases for Travel Time Reliability.....	17-40