



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

# MANAGING TRAVEL FOR PLANNED SPECIAL EVENTS



**FINAL REPORT**

**SEPTEMBER 2003**

## **NOTICE**

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof. This report does not constitute a standard, specification, or regulation.

The United States Government does not endorse products or manufacturers. Trade and manufacturers' names appear in this report only because they are considered essential to the object of the document.

**Technical Report Documentation Page**

|   |  |  |           |
|---|--|--|-----------|
| 1. Report No.<br>FHWA-OP-04-010   | 2. Government Accession No.                          | 3. Recipient's Catalog No.   |           |
| 4. Title and Subtitle<br><br>Managing Travel for Planned Special Events   |  | 5. Report Date<br>September 2003   |           |
|   |  | 6. Performing Organization Code  |           |
| 7. Author(s)<br>Steven P. Latoski, Walter M. Dunn, Jr., Bernie Wagenblast,<br>Jeffrey Randall, Matthew D. Walker  |  | 8. Performing Organization Report No.  |           |
| 9. Performing Organization Name and Address<br>Dunn Engineering Associates, P.C.<br>66 Main Street<br>Westhampton Beach, NY 11978   |  | 10. Work Unit No. (TRAVIS)   |           |
|   |  | 11. Contract or Grant No.<br>DTFH61-01-C-00180                                       |           |
| 12. Sponsoring Agency Name and Address<br>Office of Transportation Management<br>Federal Highway Administration<br>400 Seventh Street, S.W.<br>Washington, D.C. 20590   |  | 13. Type of Report and Period Covered<br>Final Report<br>April 2002 – September 2003 |           |
|   |  | 14. Sponsoring Agency Code<br>HOTM   |           |
| 15. Supplementary Notes<br><br>Jon Obenberger, FHWA Operations Office of Transportation Management, Contracting Officer's Technical Representative (COTR).<br>Technical report was performed under contract to Science Applications International Corporation.  |  |  |           |
| 16. Abstract<br><br>This handbook presents and recommends policies, regulations, planning and operations processes, impact mitigation strategies, equipment and personnel resources, and technology applications used in the advance planning, management, and monitoring of travel for planned special events.<br><br>This handbook was written to assist responsible agencies in managing the ever-increasing number of planned special events impacting transportation system operations in rural, urban, and metropolitan areas. It communicates to a wide audience, assisting readers that possess the following backgrounds: (1) novice planned special event practitioner, (2) experienced planned special event practitioner, (3) local, single-jurisdiction event planning and management, (4) regional, multi-jurisdiction event planning and management. |  |  |           |
| 17. Key Words<br>Planned Special Events, Regional Coordination, Permit, Feasibility Study, Traffic Management, Parking Management, Pedestrian Control, Traveler Information, Travel Demand Management, Transit Service, Implementation, Traffic Management Team, Evaluation   |  | 18. Distribution Statement<br>This document may be distributed without restriction.  |           |
| 19. Security Classif. (of this report)<br>Unclassified  | 20. Security Classif. (of this page)<br>Unclassified | 21. No. of Pages<br>427  | 22. Price |



## ACKNOWLEDGEMENTS

This study represents a Federal Highway Administration (FHWA) TMC Pooled-Fund Study (TMC PFS) project. Jon Obenberger, FHWA Operations Office of Transportation Management, served as the Contracting Officer's Technical Representative. Dottie Shoup, Nebraska Department of Roads, was the project champion. URS Corporation, particularly Jeffrey Benson, Jim Huffstetler, and Ming-Shiun Li, assisted the project team by providing technical guidance, project support, and review of project deliverables. The assistance of these individuals is both recognized and appreciated.

In addition, the authors would like to express appreciation to the very many transportation professionals who contributed to the project by responding to requests for information. Special recognition is given to Mark Newland and Jay Wasson of the Indiana Department of Transportation for hosting a visit by the writing team during the 2002 Brickyard 400. The following agencies and universities contributed valuable information and data in support of this project:

- Caltrans
- City of Anaheim (CA) Traffic and Transportation
- City and County of Denver (CO) Traffic Engineering Services
- City of Daytona Beach (FL) Traffic Engineering
- City of Toronto (Canada) Transportation Services
- City of Wichita (KS) Engineering
- Florida Department of Transportation
- Indiana Department of Transportation
- Kansas Department of Transportation
- Montana State University
- New Jersey Department of Transportation
- New South Wales (Australia) Roads and Traffic Authority
- New York State Department of Transportation
- New York State Police
- Road Commission for Oakland County (MI)
- TRIMARC
- University of South Florida
- Utah Department of Transportation
- West Virginia University
- Wisconsin Department of Transportation

# TABLE OF CONTENTS

|   |         |
|---|---------|
| <b>INTRODUCTION</b> .....   | i-1     |
| Planned Special Events .....  | i-1     |
| Background .....  | i-2     |
| Purpose .....   | i-4     |
| References .....  | i-5     |
| <br><b>CHAPTER ONE – BACKGROUND</b> .....   | <br>1-1 |
| Definition .....  | 1-1     |
| Statement of the Problem .....  | 1-1     |
| Sources of Congestion .....   | 1-1     |
| Impact of Planned Special Events .....  | 1-3     |
| Goals of Managing Travel for Planned Special Events .....                               | 1-4     |
| Benefits of Successful Planned Special Events .....                                     | 1-5     |
| Literature Review .....   | 1-7     |
| NCHRP Synthesis 309 .....   | 1-7     |
| FHWA Metropolitan ITS Infrastructure Deployment Tracking .....                          | 1-7     |
| Handbook Overview .....   | 1-8     |
| Approach .....  | 1-8     |
| Intended Audience .....   | 1-9     |
| Organization .....  | 1-11    |
| References .....  | 1-13    |
| <br><b>CHAPTER TWO – CHARACTERISTICS AND CATEGORIES OF PLANNED SPECIAL EVENTS</b> ..... | <br>2-1 |
| Purpose .....   | 2-1     |
| Planned Special Event Classification .....  | 2-1     |
| Characteristics .....   | 2-1     |
| Categories .....  | 2-4     |
| Impact Level .....  | 2-7     |
| Stakeholder Groups .....  | 2-13    |
| References .....  | 2-17    |
| <br><b>CHAPTER THREE – OVERVIEW</b> .....   | <br>3-1 |
| Purpose .....   | 3-1     |
| Introduction .....  | 3-1     |
| Background .....  | 3-2     |
| What is Managing Travel for Planned Special Events? .....                               | 3-2     |
| Stakeholder Roles and Coordination .....  | 3-4     |
| Phases of Managing Travel for Planned Special Events .....                              | 3-8     |
| Planned Special Event Categories .....  | 3-9     |
| Discrete/Recurring Event at a Permanent Venue .....                                     | 3-9     |
| Continuous Event .....  | 3-10    |
| Street Use Event .....  | 3-10    |
| Regional/Multi-Venue Event .....  | 3-11    |
| Rural Event .....   | 3-11    |
| Program Planning .....  | 3-11    |
| Regional Level .....  | 3-12    |
| Local Level .....   | 3-13    |
| Event Operations Planning .....   | 3-16    |
| Initial Planning Activities .....   | 3-18    |
| Feasibility Study .....   | 3-22    |
| Traffic Management Plan .....   | 3-27    |
| Travel Demand Management and Traveler Information .....                                 | 3-44    |

|   |            |
|---|------------|
| Implementation Activities .....   | 3-47       |
| Implementation Plan .....   | 3-47       |
| Review and Testing.....   | 3-47       |
| Personnel .....   | 3-50       |
| Day-of-Event Activities .....   | 3-51       |
| Traffic Management Team.....  | 3-52       |
| Communication .....   | 3-53       |
| Traffic Monitoring .....  | 3-55       |
| Post-Event Activities .....   | 3-55       |
| Evaluation Framework .....  | 3-56       |
| Participant Evaluation .....  | 3-57       |
| Post-Event Debriefing .....   | 3-58       |
| Post-Event Report.....  | 3-58       |
| <b>CHAPTER FOUR – REGIONAL AND LOCAL COORDINATION .....</b>                     | <b>4-1</b> |
| Purpose .....   | 4-1        |
| Introduction .....  | 4-2        |
| Regional Level .....  | 4-2        |
| Institutional Framework .....   | 4-2        |
| Policy Support.....   | 4-5        |
| Regional Planned Special Events Program.....                                    | 4-6        |
| Relationship to FHWA Traffic Incident Management<br>Self-Assessment Guide ..... | 4-10       |
| Local Level .....   | 4-10       |
| Overview of Planned Special Event Permitting .....                              | 4-10       |
| Permit Process.....   | 4-12       |
| Application Components .....  | 4-19       |
| Permitting Requirements .....   | 4-21       |
| Infrastructure Support .....  | 4-24       |
| Technology Applications .....   | 4-24       |
| Funding Sources .....   | 4-33       |
| References.....   | 4-34       |
| <b>CHAPTER FIVE – EVENT OPERATIONS PLANNING .....</b>                           | <b>5-1</b> |
| Purpose .....   | 5-1        |
| Introduction .....  | 5-2        |
| Initial Planning Activities.....  | 5-2        |
| Overview .....  | 5-2        |
| Stakeholder Roles and Coordination .....  | 5-3        |
| Risk Assessment.....  | 5-5        |
| Performance Goals and Objectives .....  | 5-7        |
| Planning Schedule and Deliverables .....  | 5-8        |
| Public Outreach.....  | 5-10       |
| Stakeholder Review of Planning Products.....                                    | 5-13       |
| Policies and Agreements .....   | 5-14       |
| Feasibility Study .....   | 5-16       |
| Overview .....  | 5-16       |
| Data Requirements .....   | 5-18       |
| Travel Forecast .....   | 5-18       |
| Market Area Analysis .....  | 5-25       |
| Parking Demand Analysis .....   | 5-27       |
| Traffic Demand Analysis .....   | 5-29       |
| Roadway Capacity Analysis.....  | 5-30       |
| Mitigation of Impacts .....   | 5-31       |
| External Factors Affecting Scope of Event Impact .....                          | 5-33       |
| Overview .....  | 5-33       |

|   |            |
|---|------------|
| Available Resources .....                                     | 5-33       |
| Weather .....   | 5-34       |
| Concurrent Road Construction and Planned Special Events ..... | 5-34       |
| External Factor Monitoring and Assessment .....               | 5-36       |
| References .....  | 5-36       |
| <b>CHAPTER SIX – TRAFFIC MANAGEMENT PLAN .....</b>            | <b>6-1</b> |
| Purpose .....   | 6-1        |
| Introduction .....  | 6-2        |
| Plan Components .....   | 6-2        |
| Overview .....  | 6-2        |
| Development Process and Integration .....                     | 6-5        |
| Special Considerations .....                                  | 6-7        |
| Contingency Planning .....                                    | 6-8        |
| Analysis and Modeling .....                                   | 6-9        |
| Overview .....  | 6-9        |
| Analysis Techniques .....                                     | 6-10       |
| Site Access and Parking Plan .....                            | 6-12       |
| Overview .....  | 6-12       |
| Parking Policies and Tactics .....                            | 6-12       |
| Vehicle Access and Circulation .....                          | 6-16       |
| Parking Area Design and Operation .....                       | 6-20       |
| Parking Occupancy Monitoring .....                            | 6-23       |
| Parking Regulations .....                                     | 6-24       |
| Plan Specifications .....                                     | 6-25       |
| Pedestrian Access Plan .....                                  | 6-25       |
| Overview .....  | 6-25       |
| Pedestrian Control .....                                      | 6-28       |
| Disabled Accessibility .....                                  | 6-32       |
| Shuttle Bus Service .....                                     | 6-32       |
| Plan Specifications .....                                     | 6-36       |
| Traffic Flow Plan .....                                       | 6-36       |
| Overview .....  | 6-36       |
| Strategic Route Planning .....                                | 6-38       |
| Alternate Routes .....  | 6-40       |
| Emergency Access Routes .....                                 | 6-41       |
| Background Traffic Accommodation .....                        | 6-43       |
| Transit Accommodation .....                                   | 6-45       |
| Plan Specifications .....                                     | 6-47       |
| Traffic Control Plan .....                                    | 6-47       |
| Overview .....  | 6-47       |
| Freeway Traffic Control .....                                 | 6-49       |
| Street Traffic Control .....                                  | 6-51       |
| Intersection Traffic Control .....                            | 6-57       |
| Plan Specifications .....                                     | 6-59       |
| En-Route Traveler Information Plan .....                      | 6-61       |
| Overview .....  | 6-61       |
| Information Needs .....                                       | 6-62       |
| Static Signing .....  | 6-62       |
| Changeable Message Signs .....                                | 6-63       |
| Highway Advisory Radio .....                                  | 6-64       |
| Media .....   | 6-66       |
| Other Technology Applications .....                           | 6-66       |
| Plan Specifications .....                                     | 6-69       |
| Traffic Surveillance Plan .....                               | 6-70       |
| Closed-Circuit Television Systems .....                       | 6-70       |



|  |            |
|--|------------|
| Field Observation .....  | 6-71       |
| Aerial Observation.....  | 6-71       |
| Media Reports.....   | 6-72       |
| Traffic Incident Management and Safety Plan .....                              | 6-72       |
| Overview .....   | 6-72       |
| Crash Prevention Tactics .....   | 6-72       |
| Service Patrols .....  | 6-73       |
| Traffic Incident Quick Clearance Initiatives.....                              | 6-75       |
| References.....  | 6-76       |
| <br>   |            |
| <b>CHAPTER SEVEN – TRAVEL DEMAND MANAGEMENT AND TRAVELER INFORMATION .....</b> | <b>7-1</b> |
| Purpose.....   | 7-1        |
| Introduction .....   | 7-1        |
| Travel Demand Management .....   | 7-2        |
| Overview .....   | 7-2        |
| Demand Management Strategies .....   | 7-3        |
| High Occupancy Vehicle Incentives.....   | 7-3        |
| Event Patron Incentives .....  | 7-6        |
| Bicyclist Accommodation .....  | 7-7        |
| Local Travel Demand Management.....  | 7-8        |
| Transit Service .....  | 7-9        |
| Overview .....   | 7-9        |
| Public Transit Service Expansion .....   | 7-9        |
| Express Bus Service.....   | 7-11       |
| Charter Service .....  | 7-12       |
| Transit Service Marketing .....  | 7-13       |
| Pre-Trip Traveler Information.....   | 7-14       |
| Information Needs.....   | 7-14       |
| Internet.....  | 7-16       |
| Telephone Information Systems .....  | 7-17       |
| Public Information Campaign.....   | 7-19       |
| Event and Venue Transportation Guide .....                                     | 7-20       |
| Other Technology Applications .....  | 7-21       |
| References.....  | 7-22       |
| <br>   |            |
| <b>CHAPTER EIGHT – IMPLEMENTATION ACTIVITIES .....</b>                         | <b>8-1</b> |
| Purpose.....   | 8-1        |
| Introduction .....   | 8-1        |
| Implementation Plan .....  | 8-2        |
| Overview .....   | 8-2        |
| Plan Specifications.....   | 8-3        |
| Review and Testing.....  | 8-5        |
| Purpose.....   | 8-5        |
| Stakeholder Simulation Exercises .....   | 8-6        |
| Equipment Testing .....  | 8-8        |
| Personnel .....  | 8-9        |
| Overview .....   | 8-9        |
| Volunteer Recruitment .....  | 8-11       |
| Training Activities .....  | 8-11       |
| References.....  | 8-12       |
| <br>   |            |
| <b>CHAPTER NINE – DAY-OF-EVENT ACTIVITIES .....</b>                            | <b>9-1</b> |
| Purpose.....   | 9-1        |
| Introduction .....   | 9-1        |
| Traffic Management Team.....   | 9-2        |

|   |             |
|---|-------------|
| Stakeholder Roles and Coordination .....                                  | 9-2         |
| Team Management .....   | 9-4         |
| Command Post .....  | 9-4         |
| Resource Planning .....   | 9-5         |
| Managing Traffic .....  | 9-5         |
| Evaluation Activities .....   | 9-6         |
| Communication .....   | 9-8         |
| Structure and Protocol .....  | 9-8         |
| Interagency Communication .....   | 9-8         |
| Equipment .....   | 9-9         |
| Interacting with the Media .....  | 9-10        |
| Traveler Information Dissemination .....                                  | 9-11        |
| Traffic Monitoring .....  | 9-12        |
| Purpose .....   | 9-12        |
| Traffic Management Support .....  | 9-13        |
| Performance Evaluation Data .....   | 9-14        |
| <b>CHAPTER TEN – POST-EVENT ACTIVITIES .....</b>                          | <b>10-1</b> |
| Purpose .....   | 10-1        |
| Introduction .....  | 10-1        |
| Evaluation Framework .....  | 10-2        |
| Overview .....  | 10-2        |
| Measures of Effectiveness .....   | 10-3        |
| Integration with Program Planning Process .....                           | 10-4        |
| Application to Future Events .....  | 10-4        |
| Participant Evaluation .....  | 10-5        |
| Stakeholder Debriefing .....  | 10-5        |
| Patron Survey .....   | 10-6        |
| Public Survey .....   | 10-7        |
| Post-Event Debriefing .....   | 10-7        |
| Meeting Organization .....  | 10-8        |
| Meeting Agenda .....  | 10-8        |
| Identification of Key Successes and Lessons Learned .....                 | 10-9        |
| Post-Event Report .....   | 10-10       |
| Report Organization .....   | 10-10       |
| Operational Cost Analysis .....   | 10-11       |
| Qualitative Evaluation .....  | 10-11       |
| Quantitative Evaluation .....   | 10-12       |
| References .....  | 10-12       |
| <b>CHAPTER ELEVEN – DISCRETE/RECURRING EVENT AT A PERMANENT VENUE ...</b> | <b>11-1</b> |
| Purpose .....   | 11-1        |
| Introduction .....  | 11-2        |
| Special Considerations .....  | 11-2        |
| Event Operations Planning .....   | 11-3        |
| Implementation and Day-of-Event Activities .....                          | 11-7        |
| Post-Event Activities .....   | 11-9        |
| Program Planning .....  | 11-10       |
| <b>CHAPTER TWELVE – CONTINUOUS EVENT .....</b>                            | <b>12-1</b> |
| Purpose .....   | 12-1        |
| Introduction .....  | 12-1        |
| Special Considerations .....  | 12-2        |
| Event Operations Planning .....   | 12-3        |
| Implementation and Day-of-Event Activities .....                          | 12-6        |
| Post-Event Activities .....   | 12-8        |

|  |             |
|--|-------------|
| Program Planning .....   | 12-9        |
| <b>CHAPTER THIRTEEN – STREET USE EVENT .....</b>   | <b>13-1</b> |
| Purpose .....  | 13-1        |
| Introduction .....   | 13-1        |
| Special Considerations .....   | 13-2        |
| Event Operations Planning .....  | 13-3        |
| Implementation and Day-of-Event Activities .....   | 13-6        |
| Post-Event Activities .....  | 13-8        |
| Program Planning .....   | 13-9        |
| <b>CHAPTER FOURTEEN – REGIONAL/MULTI-VENUE EVENT .....</b>   | <b>14-1</b> |
| Purpose .....  | 14-1        |
| Introduction .....   | 14-1        |
| Special Considerations .....   | 14-2        |
| Event Operations Planning .....  | 14-2        |
| Implementation and Day-of-Event Activities .....   | 14-6        |
| Post-Event Activities .....  | 14-8        |
| Program Planning .....   | 14-9        |
| <b>CHAPTER FIFTEEN – RURAL EVENT .....</b>   | <b>15-1</b> |
| Purpose .....  | 15-1        |
| Introduction .....   | 15-1        |
| Special Considerations .....   | 15-2        |
| Event Operations Planning .....  | 15-2        |
| Implementation and Day-of-Event Activities .....   | 15-6        |
| Post-Event Activities .....  | 15-8        |
| Program Planning .....   | 15-9        |
| <b>APPENDIX A – SAMPLE SPECIAL EVENT PERMIT REGULATIONS, APPLICATIONS,<br/>AND AGREEMENTS .....</b>  | <b>A-1</b>  |
| <b>APPENDIX B – EVENT-ORIENTED RISK SCENARIO CONTINGENCY PLANS .....</b>   | <b>B-1</b>  |
| <b>APPENDIX C – INTERAGENCY AGREEMENTS FOR SPECIAL EVENT PLANNING .....</b>  | <b>C-1</b>  |
| <b>APPENDIX D – 2003 FAIR SAINT LOUIS EVENT PATRON SURVEY .....</b>  | <b>D-1</b>  |
| <b>APPENDIX E – REGIONAL DIRECTIONAL DISTRIBUTION FOR 2001 NASCAR<br/>KANSAS 400 .....</b>   | <b>E-1</b>  |
| <b>APPENDIX F – PARKING AND PEDESTRIAN ACCOMMODATION PLANS –<br/>LAMBEAU FIELD RECONSTRUCTION .....</b>  | <b>F-1</b>  |
| <b>APPENDIX G – WISCONSIN DOT ORGANIZATION AND DISSEMINATION OF<br/>INTER-JURISDICTIONAL ROAD CONSTRUCTION AND PLANNED<br/>SPECIAL EVENT INFORMATION .....</b> | <b>G-1</b>  |
| <b>APPENDIX H – EXAMPLE SITE AND PARKING MAPS .....</b>  | <b>H-1</b>  |
| <b>APPENDIX I – EXAMPLE TRAFFIC FLOW MAPS .....</b>  | <b>I-1</b>  |
| <b>APPENDIX J – EXAMPLE PROTOCOL FOR PLANNED SPECIAL EVENT TRAFFIC<br/>SIGNAL SYSTEM OPERATIONS .....</b>  | <b>J-1</b>  |
| <b>APPENDIX K – EXAMPLE TRAFFIC CONTROL PLANS .....</b>  | <b>K-1</b>  |

|  |            |
|--|------------|
| <b>APPENDIX L – PUBLIC AGENCY AND EVENT-SPECIFIC WEBSITES.....</b> | <b>L-1</b> |
| <b>APPENDIX M – VENUE TRANSPORTATION GUIDES .....</b>              | <b>M-1</b> |
| <b>APPENDIX N – SAMPLE IMPLEMENTATION PLANS .....</b>              | <b>N-1</b> |

## LIST OF TABLES

|            |  |      |
|------------|--|------|
| Table i-1  | Practice of Managing Travel for Planned Special Events.....  | i-2  |
| Table i-2  | Keys to Successful Management of Planned Special Events .....  | i-4  |
| Table 1-1  | Congestion Impacts of Planned and Unplanned Events .....   | 1-2  |
| Table 1-2  | Impacts on Transportation System Users.....  | 1-3  |
| Table 1-3  | Planned Special Event Travel Management Goals .....  | 1-4  |
| Table 1-4  | Technical Reference Objectives .....   | 1-5  |
| Table 1-5  | Overall Benefits.....  | 1-6  |
| Table 1-6  | Benefits to Transportation Stakeholders and System Operations.....                                   | 1-6  |
| Table 1-7  | Community Benefits.....  | 1-6  |
| Table 1-8  | Planned Special Event Management Phases and Key Tasks.....   | 1-10 |
| Table 1-9  | Event Operations Stakeholders .....  | 1-11 |
| Table 1-10 | Handbook Organization .....  | 1-12 |
| Table 1-11 | Technical Reference User Groups.....   | 1-13 |
| Table 2-1  | Categories of Planned Special Events.....  | 2-4  |
| Table 2-2  | Characteristics of Different Planned Special Event Categories.....                                   | 2-5  |
| Table 3-1  | Responsibilities of Stakeholder Groups .....   | 3-4  |
| Table 3-2  | Event Operation Characteristics .....  | 3-10 |
| Table 3-3  | Categories of Planned Special Events.....  | 3-10 |
| Table 3-4  | Distinguishing Operating Characteristics of a Discrete/Recurring Event<br>at a Permanent Venue ..... | 3-10 |
| Table 3-5  | Distinguishing Operating Characteristics of a Continuous Event .....                                 | 3-10 |
| Table 3-6  | Distinguishing Operating Characteristics of a Street Use Event .....                                 | 3-10 |
| Table 3-7  | Distinguishing Operating Characteristics of a Regional/Multi-Venue<br>Event .....                    | 3-11 |
| Table 3-8  | Distinguishing Operating Characteristics of a Rural Event.....                                       | 3-11 |
| Table 3-9  | Regional Program Stakeholder Organizations .....   | 3-13 |
| Table 3-10 | Municipal Code Provisions on Planned Special Events .....  | 3-16 |
| Table 3-11 | Summary of Event-Oriented Risk Scenarios .....   | 3-19 |
| Table 3-12 | Transportation System Operations Performance Objectives for Planned<br>Special Events .....          | 3-19 |
| Table 3-13 | Measures of Effectiveness for Assessing Performance Objectives .....                                 | 3-20 |
| Table 3-14 | Summary of Policies and Agreements Applicable to Managing Planned<br>Special Events .....            | 3-22 |
| Table 3-15 | Feasibility Study Analysis Summary .....   | 3-23 |
| Table 3-16 | Traffic Generation Forecast Process .....  | 3-24 |
| Table 3-17 | Market Area Analysis Methods .....   | 3-25 |
| Table 3-18 | Tools for Mitigating Planned Special Event Impacts on Transportation<br>System Operations.....       | 3-28 |
| Table 3-19 | Groups Attending a Planned Special Event.....  | 3-29 |
| Table 3-20 | Contingency Plan Checklist .....   | 3-29 |
| Table 3-21 | Site Access and Circulation Considerations .....   | 3-30 |
| Table 3-22 | Site and Parking Plan Checklist.....   | 3-32 |
| Table 3-23 | Pedestrian Crossing Tactics .....  | 3-33 |
| Table 3-24 | Pedestrian Access Plan Checklist .....   | 3-34 |
| Table 3-25 | Tactics for Accommodating Background Traffic during Planned Special<br>Events .....                  | 3-36 |
| Table 3-26 | Bus Accommodation Tactics.....   | 3-36 |
| Table 3-27 | Traffic Flow Plan Checklist.....   | 3-37 |
| Table 3-28 | Interchange Operations Tactics for Planned Special Events .....                                      | 3-39 |
| Table 3-29 | Traffic Control Plan Checklist.....  | 3-41 |

|            |   |      |
|------------|---|------|
| Table 3-30 | Crash Prevention Tactics .....  | 3-43 |
| Table 3-31 | Travel Demand Management Strategies .....   | 3-45 |
| Table 3-32 | Transit Service Strategies .....  | 3-46 |
| Table 3-33 | Pre-Trip Traveler Information Dissemination Techniques .....  | 3-47 |
| Table 3-34 | Implementation Plan Checklist.....  | 3-48 |
| Table 3-35 | Elements of a Stakeholder Simulation Exercise .....   | 3-50 |
| Table 3-36 | General Volunteer Training Activities.....  | 3-51 |
| Table 3-37 | Traffic Management Team Stakeholders.....   | 3-52 |
| Table 3-38 | Traffic Management Plan Evaluation Activities.....  | 3-53 |
| Table 3-39 | Communications Structure Primary Considerations .....   | 3-54 |
| Table 3-40 | Internal Measures of Effectiveness.....   | 3-56 |
| Table 3-41 | External Measures of Effectiveness.....   | 3-56 |
| Table 3-42 | Elements of a Stakeholder Debriefing .....  | 3-57 |
| Table 3-43 | Post-Event Debriefing Meeting Agenda Topics .....   | 3-58 |
| Table 3-44 | Outline of Post-Event Report .....  | 3-58 |
|            |   |      |
| Table 4-1  | Regional Program Stakeholder Organizations .....  | 4-8  |
| Table 4-2  | Traffic Incident Management Program Assessment Questions Relative to<br>Managing Planned Special Events ..... | 4-11 |
| Table 4-3  | Stakeholders Governing Permit Applications .....  | 4-13 |
| Table 4-4  | Planned Special Event Permit Application Submission Deadline.....   | 4-15 |
| Table 4-5  | Planned Special Event Permit Restrictions .....   | 4-16 |
| Table 4-6  | Planned Special Event Permit Application Decision Criteria .....  | 4-17 |
| Table 4-7  | Event Organizer Special Requirements.....   | 4-18 |
| Table 4-8  | Planned Special Event Permit Application Components .....   | 4-19 |
| Table 4-9  | Planned Special Event Permit Application Supplemental Requirements ...  | 4-22 |
| Table 4-10 | Guidelines for Compliance with the Americans with Disabilities Act .....                                      | 4-23 |
| Table 4-11 | Municipal Code Provisions on Planned Special Events .....   | 4-23 |
| Table 4-12 | Planned Special Event Permit Application Fees.....  | 4-25 |
| Table 4-13 | Planned Special Event Funding Mechanisms .....  | 4-25 |
| Table 4-14 | Louisville, KY Criteria for Providing Free Services for a Special Event.....                                  | 4-26 |
| Table 4-15 | Planned Special Event Technology Applications.....  | 4-27 |
|            |   |      |
| Table 5-1  | Event Planning Team Responsibilities During the Event Operations<br>Planning Phase .....                      | 5-3  |
| Table 5-2  | Stakeholder Participation in Event Operations Planning .....  | 5-4  |
| Table 5-3  | Summary of Event-Oriented Risk Scenarios .....  | 5-6  |
| Table 5-4  | Transportation System Operations Performance Objectives for Planned<br>Special Events .....                   | 5-8  |
| Table 5-5  | Measures of Effectiveness for Assessing Performance Objectives .....  | 5-8  |
| Table 5-6  | Seahawk Football Transportation Management Program Goals and<br>Objectives .....                              | 5-11 |
| Table 5-7  | Measures Considered in Developing a Neighborhood Parking<br>Management Plan for Seattle's Safeco Field.....   | 5-12 |
| Table 5-8  | Summary of Policies and Agreements Applicable to Managing Planned<br>Special Events .....                     | 5-15 |
| Table 5-9  | Components of Interagency Agreements .....  | 5-16 |
| Table 5-10 | Feasibility Study Analysis Summary .....  | 5-17 |
| Table 5-11 | Feasibility Study Data Requirements.....  | 5-19 |
| Table 5-12 | Example Modal Split for Discrete/Recurring Events at a Permanent<br>Venue .....                               | 5-21 |
| Table 5-13 | Traffic Generation Forecast Process .....   | 5-22 |
| Table 5-14 | Example Planned Special Event Vehicle Occupancy Factors.....  | 5-23 |
| Table 5-15 | Example Planned Special Event Traffic Arrival Rate Characteristics.....                                       | 5-24 |
| Table 5-16 | Market Area Analysis Methods .....  | 5-26 |
| Table 5-17 | Example Event Parking Occupancy Summary .....   | 5-29 |

|            |   |      |
|------------|---|------|
| Table 5-18 | Tools for Mitigating Planned Special Event Impacts on Transportation System Operations..... | 5-32 |
| Table 5-19 | External Factors Considered in the Wisconsin TIME Program Special Event Planning Tool.....  | 5-37 |
| Table 6-1  | Traffic Management Plan Objectives .....  | 6-3  |
| Table 6-2  | Traffic Management Plan Components .....  | 6-4  |
| Table 6-3  | Groups Attending a Planned Special Event.....   | 6-7  |
| Table 6-4  | Contingency Plan Checklist .....  | 6-9  |
| Table 6-5  | General Parking Management Considerations.....  | 6-12 |
| Table 6-6  | Factors Influencing Lot Assignment.....   | 6-13 |
| Table 6-7  | Key Findings from Saint Paul Advanced Parking Information System Operational Test.....      | 6-17 |
| Table 6-8  | Site Access and Circulation Considerations .....  | 6-17 |
| Table 6-9  | Guidelines for Designating Pick-up and Drop-off Areas .....                                 | 6-18 |
| Table 6-10 | Vehicle Processing Tactics at Parking Area .....  | 6-22 |
| Table 6-11 | 2002 Winter Olympics Parking Occupancy Monitoring Plan .....                                | 6-24 |
| Table 6-12 | Off-street Parking Regulation Considerations .....  | 6-24 |
| Table 6-13 | Site and Parking Plan Checklist.....  | 6-26 |
| Table 6-14 | Considerations for Posting Plans on an Internet Website .....                               | 6-27 |
| Table 6-15 | Pedestrian Crossing Tactics .....   | 6-30 |
| Table 6-16 | Pedestrian Facilities Covered in the Highway Capacity Manual .....                          | 6-32 |
| Table 6-17 | Considerations in Shuttle Bus Operations .....  | 6-33 |
| Table 6-18 | Shuttle Bus Service User Needs.....   | 6-33 |
| Table 6-19 | Considerations in Shuttle Bus Station Design .....  | 6-35 |
| Table 6-20 | Pedestrian Access Plan Checklist .....  | 6-36 |
| Table 6-21 | Traffic Flow Plan Information Sources .....   | 6-37 |
| Table 6-22 | Road Closure Impact Checklist.....  | 6-38 |
| Table 6-23 | Traffic Flow Route Development Considerations .....   | 6-39 |
| Table 6-24 | Alternate Route Plan Development Process .....  | 6-41 |
| Table 6-25 | Alternate Route Plan Development Considerations .....                                       | 6-42 |
| Table 6-26 | Tactics for Accommodating Background Traffic during Planned Special Events .....            | 6-44 |
| Table 6-27 | Pre-Trip Traveler Information for Street Use Events .....                                   | 6-45 |
| Table 6-28 | Bus Accommodation Tactics.....  | 6-45 |
| Table 6-29 | Exclusive Bus Lane Limitations .....  | 6-46 |
| Table 6-30 | Traffic Flow Plan Checklist.....  | 6-48 |
| Table 6-31 | Highway Advisory Radio Pre-Event Message Considerations .....                               | 6-50 |
| Table 6-32 | Highway Advisory Radio Day-of-Event Message Considerations .....                            | 6-50 |
| Table 6-33 | Changeable Message Sign Message Template .....  | 6-50 |
| Table 6-34 | Interchange Operations Tactics for Planned Special Events .....                             | 6-52 |
| Table 6-35 | Disadvantages of Divided Highway Alternative Lane Operations .....                          | 6-35 |
| Table 6-36 | Portable Traffic Management System Components .....   | 6-57 |
| Table 6-37 | Traffic Control Plan Checklist.....   | 6-60 |
| Table 6-38 | Crash Prevention Tactics .....  | 6-72 |
| Table 6-39 | Service Patrol Operations Considerations.....   | 6-74 |
| Table 6-40 | Traffic Incident Quick Clearance for the 2002 Winter Olympics .....                         | 6-75 |
| Table 7-1  | Travel Demand Management Goals.....   | 7-2  |
| Table 7-2  | Travel Demand Management Strategies .....   | 7-4  |
| Table 7-3  | Transit Service Strategies.....   | 7-10 |
| Table 7-4  | Pre-Trip Traveler Information Dissemination Techniques .....                                | 7-14 |
| Table 8-1  | General Field-Level Operations Guidelines.....  | 8-2  |
| Table 8-2  | Implementation Plan Checklist.....  | 8-4  |
| Table 8-3  | Elements of a Stakeholder Simulation Exercise .....   | 8-6  |

|            |  |       |
|------------|--|-------|
| Table 8-4  | Day-of-Event Personnel Resource Requirements .....   | 8-10  |
| Table 8-5  | Example Rewards for Volunteer Service .....  | 8-11  |
| Table 8-6  | General Volunteer Training Activities.....   | 8-12  |
| Table 9-1  | Day-of-Event Activities .....  | 9-2   |
| Table 9-2  | Traffic Management Team Stakeholders.....  | 9-2   |
| Table 9-3  | Traffic Management Plan Evaluation Activities.....   | 9-7   |
| Table 9-4  | Communications Structure Primary Considerations .....  | 9-8   |
| Table 9-5  | Advantages of Operating on a Common Frequency .....  | 9-8   |
| Table 9-6  | Levels of Communication.....   | 9-9   |
| Table 9-7  | Use of Media .....   | 9-10  |
| Table 9-8  | Traveler Information Dissemination Methods .....   | 9-11  |
| Table 9-9  | Use of Surveillance Information .....  | 9-13  |
| Table 9-10 | Data Collection Methods .....  | 9-13  |
| Table 9-11 | Benefits of Detection and Surveillance .....   | 9-14  |
| Table 9-12 | Traffic Monitoring Information Uses .....  | 9-14  |
| Table 9-13 | Performance Evaluation Measures .....  | 9-15  |
| Table 9-14 | Reasons for Traffic Monitoring and Evaluation .....  | 9-15  |
| Table 10-1 | Key Post-Event Activities .....  | 10-3  |
| Table 10-2 | Internal Measures of Effectiveness.....  | 10-3  |
| Table 10-3 | External Measures of Effectiveness.....  | 10-3  |
| Table 10-4 | Elements of a Stakeholder Debriefing .....   | 10-5  |
| Table 10-5 | Types of Event Patron Surveys .....  | 10-7  |
| Table 10-6 | Post-Event Debriefing Meeting Agenda Topics .....  | 10-9  |
| Table 10-7 | Outline of Post-Event Report .....   | 10-10 |
| Table 10-8 | Elements of a Post-Event Report.....   | 10-11 |
| Table 10-9 | Key Topics of a Qualitative Evaluation .....   | 10-12 |
| Table 11-1 | Types of Discrete/Recurring Events at a Permanent Venue .....  | 11-2  |
| Table 11-2 | Distinguishing Operating Characteristics of a Discrete/Recurring Event at a Permanent Venue .....                | 11-2  |
| Table 11-3 | Event Operations Planning Steps - Discrete/Recurring Event at a Permanent Venue .....                            | 11-5  |
| Table 11-4 | Checklist of Implementation and Day-of-Event Activities for Discrete/Recurring Events at a Permanent Venue ..... | 11-8  |
| Table 11-5 | Checklist of Post-Event Activities for Discrete/Recurring Events at a Permanent Venue .....                      | 11-9  |
| Table 11-6 | Program Planning Activities for Discrete/Recurring Events at a Permanent Venue .....                             | 11-11 |
| Table 12-1 | Types of Continuous Events .....   | 12-1  |
| Table 12-2 | Distinguishing Operating Characteristics of a Continuous Event .....   | 12-2  |
| Table 12-3 | Event Operations Planning Steps - Continuous Event .....   | 12-5  |
| Table 12-4 | Checklist of Implementation and Day-of-Event Activities for Continuous Events .....                              | 12-7  |
| Table 12-5 | Checklist of Post-Event Activities for Continuous Events .....   | 12-8  |
| Table 12-6 | Program Planning Activities for Continuous Events .....  | 12-10 |
| Table 13-1 | Types of Street Use Events .....   | 13-2  |
| Table 13-2 | Distinguishing Operating Characteristics of a Street Use Event .....   | 13-2  |
| Table 13-3 | Event Operations Planning Steps - Street Use Event .....   | 13-5  |
| Table 13-4 | Checklist of Implementation and Day-of-Event Activities for Street Use Events .....                              | 13-7  |
| Table 13-5 | Checklist of Post-Event Activities for Street Use Events .....   | 13-9  |
| Table 13-6 | Program Planning Activities for Street Use Events.....   | 13-10 |



|            |  |       |
|------------|--|-------|
| Table 14-1 | Types of Regional/Multi-Venue Events.....  | 14-2  |
| Table 14-2 | Distinguishing Operating Characteristics of a Regional/Multi-Venue Event .....               | 14-2  |
| Table 14-3 | Event Operations Planning Steps - Regional/Multi-Venue Event.....                            | 14-5  |
| Table 14-4 | Checklist of Implementation and Day-of-Event Activities for Regional/Multi-Venue Events..... | 14-7  |
| Table 14-5 | Checklist of Post-Event Activities for Regional/Multi-Venue Events.....                      | 14-8  |
| Table 14-6 | Program Planning Activities for Regional/Multi-Venue Events .....                            | 14-10 |
| Table 15-1 | Types of Rural Events.....   | 15-2  |
| Table 15-2 | Distinguishing Operating Characteristics of a Rural Event.....                               | 15-2  |
| Table 15-3 | Event Operations Planning Steps - Rural Event.....   | 15-5  |
| Table 15-4 | Checklist of Implementation and Day-of-Event Activities for Rural Events                     | 15-7  |
| Table 15-5 | Checklist of Post-Event Activities for Rural Events.....                                     | 15-8  |
| Table 15-6 | Program Planning Activities for Rural Events .....   | 15-10 |

## LIST OF FIGURES

|             |   |      |
|-------------|---|------|
| Figure i-1  | Planned Special Event.....  | i-1  |
| Figure 1-1  | Planned Special Event Patron Arrival.....   | 1-1  |
| Figure 1-2  | Community Promotion of Planned Special Events.....                                    | 1-5  |
| Figure 1-3  | Media Promotion of Stakeholder Efforts.....   | 1-7  |
| Figure 2-1  | Event Traffic Management.....   | 2-1  |
| Figure 2-2  | Event Operation Characteristics.....  | 2-2  |
| Figure 2-3  | Examples of Planned Special Events.....   | 2-6  |
| Figure 2-4  | Example Regional/Multi-Venue Event.....   | 2-8  |
| Figure 2-5  | Planned Special Event Impact Factors.....   | 2-10 |
| Figure 2-6  | Wisconsin TIME program Special Event Traffic Management Planning<br>Tool.....         | 2-14 |
| Figure 2-7  | Planned Special Event Stakeholder Groups.....   | 2-16 |
| Figure 3-1  | Event Pedestrian Management.....  | 3-1  |
| Figure 3-2  | Transportation Management Plan Components and Event Planning<br>Team Involvement..... | 3-3  |
| Figure 3-3  | Planned Special Event Stakeholders.....   | 3-5  |
| Figure 3-4  | Planned Special Event Management Phases and Associated Products....                   | 3-9  |
| Figure 3-5  | Planned Special Event Permit Process.....   | 3-15 |
| Figure 3-6  | Event Operations Planning Process Flowchart.....                                      | 3-17 |
| Figure 3-7  | Event Operations Planning Schedule.....   | 3-21 |
| Figure 3-8  | Feasibility Study Analysis Steps.....   | 3-23 |
| Figure 3-9  | Parking Demand Analysis Process.....  | 3-26 |
| Figure 3-10 | Traffic Flow Route Assessment Process.....  | 3-35 |
| Figure 4-1  | Closed-Circuit Television Camera on a Stadium Access Road.....                        | 4-1  |
| Figure 4-2  | Major Elements of a Framework for Regional Collaboration and<br>Coordination.....     | 4-3  |
| Figure 4-3  | Planned Special Event Permit Process.....   | 4-14 |
| Figure 5-1  | Event Planning Team Meeting.....  | 5-1  |
| Figure 5-2  | Nevada State Route 168 Closure During Motorcycle Rally.....                           | 5-7  |
| Figure 5-3  | Event Operations Planning Schedule.....   | 5-9  |
| Figure 5-4  | Chicago Resident Permit Parking Program Enforcement.....                              | 5-13 |
| Figure 5-5  | Feasibility Study Analysis Steps.....   | 5-17 |
| Figure 5-6  | Commuter Rail Modal Split.....  | 5-20 |
| Figure 5-7  | Event Patron Departure from a Discrete/Recurring Event at a Permanent<br>Venue.....   | 5-23 |
| Figure 5-8  | Pre-Event Activity.....   | 5-25 |
| Figure 5-9  | Example Travel Time Analysis.....   | 5-26 |
| Figure 5-10 | Parking Demand Analysis Process.....  | 5-28 |
| Figure 5-11 | Designated Event Off-Site Parking Area.....   | 5-29 |
| Figure 5-12 | Local Area Planned Special Event Parking Restriction.....                             | 5-30 |
| Figure 5-13 | Example Preliminary Road Segment Capacity Analysis.....                               | 5-30 |
| Figure 5-14 | CORSIM Simulation Animation.....  | 5-31 |
| Figure 5-15 | Stadium Reconstruction.....   | 5-34 |
| Figure 5-16 | Site and Pedestrian Accommodation Plan for Stadium Reconstruction.....                | 5-35 |
| Figure 5-17 | Contingency Parking Plan for Weather.....   | 5-35 |
| Figure 5-18 | Internet Summary of Road Construction and Planned Special Events.....                 | 5-36 |
| Figure 6-1  | Temporary Reversible Lane Operation.....  | 6-1  |

|             |   |      |
|-------------|---|------|
| Figure 6-2  | Traffic Management Team Command Centers on the Day-of-Event .....   | 6-5  |
| Figure 6-3  | Fundamental Relationships in Transportation System Operations ..... | 6-6  |
| Figure 6-4  | Planned Special Event Activity Networks .....                       | 6-7  |
| Figure 6-5  | Street Vendor Activity .....  | 6-8  |
| Figure 6-6  | Freeway CMS Displaying Parking Information .....                    | 6-14 |
| Figure 6-7  | Guide Sign for Reserved Parking Areas .....                         | 6-14 |
| Figure 6-8  | Temporary Parking Area Identification Landmark .....                | 6-15 |
| Figure 6-9  | Shoulder Utilization .....  | 6-18 |
| Figure 6-10 | Lane Channelization .....   | 6-18 |
| Figure 6-11 | Access Road Traffic Pattern During Event Egress .....               | 6-20 |
| Figure 6-12 | Queuing System Schematic.....                                       | 6-21 |
| Figure 6-13 | Permanent Venue Gate and Queue Storage Lanes.....                   | 6-21 |
| Figure 6-14 | Minimizing Pedestrian/Vehicular Conflicts in Parking Areas .....    | 6-23 |
| Figure 6-15 | Parking Restriction Signs.....                                      | 6-24 |
| Figure 6-16 | Annotated Aerial Map of Venue Site.....                             | 6-27 |
| Figure 6-17 | Downtown Area Venue Parking Map.....                                | 6-27 |
| Figure 6-18 | Mode Transfer Point.....  | 6-27 |
| Figure 6-19 | At-Grade Pedestrian Crossings Adjacent to a Venue Gate.....         | 6-28 |
| Figure 6-20 | Pedestrian Crossing Barrier.....                                    | 6-29 |
| Figure 6-21 | Pedestrian Traffic Monitoring Via CCTV.....                         | 6-29 |
| Figure 6-22 | Pedestrian Access Route and Emergency Access Route .....            | 6-30 |
| Figure 6-23 | Temporary Pedestrian Bridge .....                                   | 6-31 |
| Figure 6-24 | Road Closure Adjacent to Event Venue .....                          | 6-31 |
| Figure 6-25 | Staffed Mid-block Crossing .....                                    | 6-31 |
| Figure 6-26 | Special Event Disabled Parking Area Access Point .....              | 6-32 |
| Figure 6-27 | Shuttle Bus Service Promotion .....                                 | 6-33 |
| Figure 6-28 | On-Site Shuttle Bus Station .....                                   | 6-35 |
| Figure 6-29 | Parade Staging Area.....  | 6-38 |
| Figure 6-30 | Corridor Target Points.....   | 6-39 |
| Figure 6-31 | Multiple Local Traffic Flow Routes .....                            | 6-39 |
| Figure 6-32 | Traffic Flow Route Assessment Process .....                         | 6-40 |
| Figure 6-33 | Background Traffic Diversion.....                                   | 6-43 |
| Figure 6-34 | Dynamic Route Guidance Sign.....                                    | 6-43 |
| Figure 6-35 | Accommodation of Traffic Destined to Major Generators.....          | 6-44 |
| Figure 6-36 | Exclusive Bus Route .....   | 6-46 |
| Figure 6-37 | Bus Priority Lane.....  | 6-46 |
| Figure 6-38 | Portable Changeable Message Sign .....                              | 6-50 |
| Figure 6-39 | Temporary Elimination of Freeway Weaving Area .....                 | 6-53 |
| Figure 6-40 | Prohibition of Late Freeway Diverge.....                            | 6-53 |
| Figure 6-41 | Remote Traffic Surveillance and Management.....                     | 6-53 |
| Figure 6-42 | Daily Reversible Lane Operation .....                               | 6-53 |
| Figure 6-43 | Daily Contraflow Operation .....                                    | 6-54 |
| Figure 6-44 | Contraflow Operation during Event Traffic Egress .....              | 6-54 |
| Figure 6-45 | Temporary Reversible Lane Operation with Lane Control Signals.....  | 6-55 |
| Figure 6-46 | Route Marker Sign .....   | 6-55 |
| Figure 6-47 | Introduction of Route Marker Sign Symbols .....                     | 6-56 |
| Figure 6-48 | Daytona Beach (FL) Transportation Management Center.....            | 6-56 |
| Figure 6-49 | Portable Traffic Management System.....                             | 6-56 |
| Figure 6-50 | Elimination of Competing Intersection Traffic Flow.....             | 6-57 |
| Figure 6-51 | Turning Movement Lane Balance .....                                 | 6-57 |
| Figure 6-52 | Road Block of Ingress Route to Facilitate Egress .....              | 6-58 |
| Figure 6-53 | Intersection Advance Signing .....                                  | 6-58 |
| Figure 6-54 | Positive Traffic Control.....                                       | 6-58 |
| Figure 6-55 | Portable CCTV Camera Mounted on Traffic Signal Pole.....            | 6-59 |
| Figure 6-56 | Permanent CMS Over Stadium Access Road.....                         | 6-64 |
| Figure 6-57 | Portable CCTV Camera for Freeway Surveillance .....                 | 6-71 |

|             |  |      |
|-------------|--|------|
| Figure 6-58 | Portable Lighting .....  | 6-73 |
| Figure 6-59 | Congestion Warning Sign .....  | 6-73 |
| Figure 6-60 | Service Patrol Vehicle .....   | 6-74 |
| Figure 6-61 | Highway Advisory Radio Traveler Safety Message .....   | 6-74 |
| Figure 7-1  | Planned Special Event Express Bus Service from Park and Ride Lot .....   | 7-1  |
| Figure 7-2  | High Occupancy Vehicle Incentive .....   | 7-5  |
| Figure 7-3  | High Occupancy Vehicle Parking Incentive .....   | 7-5  |
| Figure 7-4  | Venue Website Survey on Event Patron Incentives .....  | 7-7  |
| Figure 7-5  | Event Patron Incentive .....   | 7-7  |
| Figure 7-6  | Bicycle Parking Area .....   | 7-8  |
| Figure 7-7  | Traffic Information Dissemination Via a Public Agency Website .....  | 7-16 |
| Figure 7-8  | Telephone Information System Menu Structure .....  | 7-18 |
| Figure 7-9  | Promotion of 511 Service on Event Website .....  | 7-19 |
| Figure 7-10 | Public Information Campaign Promotion .....  | 7-19 |
| Figure 7-11 | Public Information Campaign Brochure .....   | 7-20 |
| Figure 7-12 | Television Travel Report .....   | 7-22 |
| Figure 8-1  | Personnel Monitoring of Arterial Ramp Closure .....  | 8-1  |
| Figure 8-2  | Planned Special Event Implementation Plans .....   | 8-3  |
| Figure 9-1  | Traffic Management Team Day-of-Event Interaction .....   | 9-1  |
| Figure 9-2  | Unified Command Organization for Planned Special Events .....  | 9-3  |
| Figure 9-3  | Planned Special Event Command Post .....   | 9-4  |
| Figure 9-4  | Internet Traveler Information .....  | 9-11 |
| Figure 10-1 | Field Observation of Traffic Management Plan Implementation .....  | 10-1 |
| Figure 10-2 | Electronic Vehicle Counter Installation .....  | 10-2 |
| Figure 10-3 | Maintenance of Freeway Service Patrol Assist Log .....   | 10-2 |
| Figure 10-4 | Indiana State Police Debriefing Protocol for Brickyard 400 .....   | 10-6 |
| Figure 10-5 | TMC Meeting Room .....   | 10-8 |
| Figure 11-1 | Discrete/Recurring Event at a Permanent Venue: Qualcomm Stadium in San Diego, CA .....   | 11-1 |
| Figure 11-2 | Event Operations Planning Process Flowchart .....  | 11-4 |
| Figure 12-1 | Continuous Event: Summerfest Music Festival in Milwaukee, WI .....   | 12-1 |
| Figure 12-2 | Event Operations Planning Process Flowchart .....  | 12-4 |
| Figure 13-1 | Street Use Event: New York City Cycling Championship .....   | 13-1 |
| Figure 13-2 | Event Operations Planning Process Flowchart .....  | 13-4 |
| Figure 14-1 | Regional/Multi-Venue Event: Bradley Center, U.S. Cellular Arena, and Midwest Airlines Center (convention center) Adjacent to 4 <sup>th</sup> Street in Milwaukee, WI ..... | 14-1 |
| Figure 14-2 | Event Operations Planning Process Flowchart .....  | 14-4 |
| Figure 15-1 | Rural Event: U.S. Open Championship in Southampton, NY .....   | 15-1 |
| Figure 15-2 | Event Operations Planning Process Flowchart .....  | 15-4 |