

NCHRP

SYNTHESIS 309

NATIONAL
COOPERATIVE
HIGHWAY
RESEARCH
PROGRAM

Transportation Planning and Management for Special Events

A Synthesis of Highway Practice

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NCHRP SYNTHESIS 309

**Transportation Planning and Management for
Special Events**

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TRANSPORTATION RESEARCH BOARD

WASHINGTON, D.C.

2003

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Systematic, well-designed research provides the most effective approach to the solution of many problems facing highway administrators and engineers. Often, highway problems are of local interest and can best be studied by highway departments individually or in cooperation with their state universities and others. However, the accelerating growth of highway transportation develops increasingly complex problems of wide interest to highway authorities. These problems are best studied through a coordinated program of cooperative research.

In recognition of these needs, the highway administrators of the American Association of State Highway and Transportation Officials initiated in 1962 an objective national highway research program employing modern scientific techniques. This program is supported on a continuing basis by funds from participating member states of the Association and it receives the full cooperation and support of the Federal Highway Administration, United States Department of Transportation.

The Transportation Research Board of the National Research Council was requested by the Association to administer the research program because of the Board's recognized objectivity and understanding of modern research practices. The Board is uniquely suited for this purpose as it maintains an extensive committee structure from which authorities on any highway transportation subject may be drawn; it possesses avenues of communication and cooperation with federal, state, and local governmental agencies, universities, and industry; its relationship to the National Research Council is an insurance of objectivity; it maintains a full-time research correlation staff of specialists in highway transportation matters to bring the findings of research directly to those who are in a position to use them.

The program is developed on the basis of research needs identified by chief administrators of the highway and transportation departments and by committees of AASHTO. Each year, specific areas of research needs to be included in the program are proposed to the National Research Council and the Board by the American Association of State Highway and Transportation Officials. Research projects to fulfill these needs are defined by the Board, and qualified research agencies are selected from those that have submitted proposals. Administration and surveillance of research contracts are the responsibilities of the National Research Council and the Transportation Research Board.

The needs for highway research are many, and the National Cooperative Highway Research Program can make significant contributions to the solution of highway transportation problems of mutual concern to many responsible groups. The program, however, is intended to complement rather than to substitute for or duplicate other highway research programs.

Project 20-5 FY 2000 (Topic 32-09)
ISSN 0547-5570
ISBN 0-309-06952-1
Library of Congress Control No. 2003100793

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Price \$16.00

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The project that is the subject of this report was a part of the National Cooperative Highway Research Program conducted by the Transportation Research Board with the approval of the Governing Board of the National Research Council. Such approval reflects the Governing Board's judgment that the program concerned is of national importance and appropriate with respect to both the purposes and resources of the National Research Council.

The members of the technical committee selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project. The opinions and conclusions expressed or implied are those of the research agency that performed the research, and, while they have been accepted as appropriate by the technical committee, they are not necessarily those of the Transportation Research Board, the National Research Council, the American Association of State Highway and Transportation Officials, or the Federal Highway Administration of the U.S. Department of Transportation.

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Published reports of the

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

are available from:

Transportation Research Board
Business Office
500 Fifth Street
Washington, D.C. 20001

and can be ordered through the Internet at:

<http://www.national-academies.org/trb/bookstore>

Printed in the United States of America

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FOREWORD

*By Staff
Transportation
Research Board*

Highway administrators, engineers, and researchers often face problems for which information already exists, either in documented form or as undocumented experience and practice. This information may be fragmented, scattered, and unevaluated. As a consequence, full knowledge of what has been learned about a problem may not be brought to bear on its solution. Costly research findings may go unused, valuable experience may be overlooked, and due consideration may not be given to recommended practices for solving or alleviating the problem.

There is information on nearly every subject of concern to highway administrators and engineers. Much of it derives from research or from the work of practitioners faced with problems in their day-to-day work. To provide a systematic means for assembling and evaluating such useful information and to make it available to the entire highway community, the American Association of State Highway and Transportation Officials—through the mechanism of the National Cooperative Highway Research Program—authorized the Transportation Research Board to undertake a continuing study. This study, NCHRP Project 20-5, “Synthesis of Information Related to Highway Problems,” searches out and synthesizes useful knowledge from all available sources and prepares concise, documented reports on specific topics. Reports from this endeavor constitute an NCHRP report series, *Synthesis of Highway Practice*.

The synthesis series reports on current knowledge and practice, in a compact format, without the detailed directions usually found in handbooks or design manuals. Each report in the series provides a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems.

PREFACE

This report of the Transportation Research Board presents the state of the practice of transportation planning and management of special events. Specifically, it addresses how various agencies are planning, coordinating services, and managing the overall transportation systems for both frequent and infrequent events. The report will be of interest to any organization with a stake in special event planning and its management process, including transportation departments, law enforcement agencies, fire departments, the media, event organizers, planning and political bodies, and the military. Topics covered include: the range of special events that agencies and organizations need to plan for; stakeholders and institutional arrangements; common elements among plans, processes and procedures, manuals, operational strategies, the range and type of services provided, tools and mechanisms used, performance measures developed, and resources allocated; and the effectiveness of these plans, models, resources, and tools.

Information in support of this study came from four primary sources: (a) published literature; (2) surveys of stakeholders; (3) select, in-depth case studies; and (4) various informal interviews with special event coordinators, Topic Panel members, and other knowledgeable individuals. The primary source of information came from the survey of stakeholder practices related to special event planning and management, with 36 surveys from 23 states received. A select number of case studies are also provided representative of each of the two special event types—frequent and infrequent.

A panel of experts in the subject area guided the work of organizing and evaluating the collected data and reviewed the final synthesis report. A consultant was engaged to collect and synthesize the information and to write this report. Both the consultant and the members of the oversight panel are acknowledged on the title page. This synthesis is an immediately useful document that records the practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As progress in research and practice continues, new knowledge will be added to that now at hand.

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ACKNOWLEDGMENTS

Jodi L. Carson and Ryan G. Bylsma, Montana State University, were responsible for collection of the data and preparation of the report.

Valuable assistance in the preparation of this synthesis was provided by the Topic Panel, consisting of Thomas E. Campbell, Assistant State Traffic Engineer, Office of Traffic Engineering, Minnesota Department of Transportation; John M. Corbin, Freeway Operations Engineer, Monitor Traffic Operations Center, Wisconsin Department of Transportation; Richard A. Cunard, Senior Program Officer, Transportation Research Board; Edward Fok, ITS Engineer, Western Resource Center, Federal Highway Administration; David L. Helman, Federal Highway Administration; Matt Riffkin, InterPlan Company; Fred Sabin, Division of Operations, California Department of Transportation; George W. Schoene, Federal Highway Administration; Marion G. Waters, III, State Traffic Operations Engineer, Georgia Department of Transportation; and Brian Wolshon,

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This study was managed by Stephen F. Maher and Jon Williams, Managers, Synthesis Studies, who worked with the consultant, the Topic Panel, and the Project 20-5 Committee in the development and review of the report. Assistance in project scope development was provided by Donna Vlasak, Senior Program Officer. Don Tippman was responsible for editing and production. Cheryl Keith assisted in meeting logistics and distribution of the questionnaire and draft reports.

Crawford F. Jencks, Manager, National Cooperative Highway Research Program, assisted the NCHRP 20-5 Committee and the Synthesis staff.

Information on current practice was provided by many highway and transportation agencies. Their cooperation and assistance are appreciated.

TRANSPORTATION PLANNING AND MANAGEMENT FOR SPECIAL EVENTS

SUMMARY

The intent of this overall investigation was to identify and document transportation-related activities related to the planning and management of special events. In 1988, the National Highway Institute defined a special event as an occurrence that “abnormally increases traffic demand” (unlike an incident or construction and maintenance activities that typically restrict the roadway capacity). Under this definition, special events may include sporting events, parades, fairs, and other planned events.

Data to support this investigation came from four primary sources: (1) published literature; (2) surveys of stakeholders; (3) select, in-depth case studies; and (4) informal interviews with special event coordinators, Topic Panel members, and other knowledgeable individuals. Because of the dearth of special event-related literature, the primary source of information to support this investigation came from a survey of stakeholder practices related to special event planning and management. The survey questionnaire provided background information describing this investigation, gave a general definition of a “special event,” and solicited information regarding special event types, stakeholder involvement, tools and techniques, supporting guidance documentation, effectiveness of current efforts, and funding sources.

In addition to using the general survey questionnaire, a select number of case studies were pursued as part of this investigation. The intent was to identify case studies representative of each of the two special event types—frequent and infrequent.

A fundamental challenge to this investigation stemmed from the basic definition of a special event—one that “abnormally increases traffic demand.” This broad definition encompassed frequent events such as sporting events, musical concerts, summer-long event series, and seasonal tourist venues, as well as infrequent events such as national conventions, international summits, parades, fairs, and others.

Event examples cited by survey respondents ranged in size from 1,000 to 1.7 million patrons, in duration from a few hours to several months, and in scope of impact from local to multistate. This breadth in event size, duration, and impact, combined with the dynamic nature of special events, challenges the ability to concisely categorize special events into groups that share common characteristics and present similar challenges in planning and management. These factors subsequently make it difficult to develop uniform procedures for special event planning and management.

Primary stakeholders in the special event planning and management process include law enforcement agencies, fire departments, transportation departments, the media, event organizers, planning and political bodies, and the military. In all, 29 different stakeholders were identified as having a potential role in the special event planning and management process.

Agency and jurisdictional involvement varied by event size, type, and location. Despite the significant number of stakeholders that could be involved in the special event planning and management process, relatively consistent interaction among the key stakeholders was reported. A “champion” was nearly always responsible for ensuring this interaction, although the affiliation of the champion varied depending on the size, type, and location of the special event. The most common forum for interaction was reported as interagency/interjurisdictional pre- and post-event meetings.

An extensive array of special event planning and management tools and techniques were reported as in use or planned for use. In nearly all cases, a combination of tools and techniques are employed that address (1) motorist information, (2) traffic management, and (3) travel demand management needs. Common motorist information tools and techniques include variable message signs, highway advisory radio, and pre-event informational campaigns. Predominant traffic management tools and techniques include the use of traffic cones, temporary lane closures, portable static signs, traffic management teams, and traffic management centers. Travel demand management tools and techniques most commonly employed include park-and-ride lots, alternative routes, and parking management. A high consistency in the use of these tools and techniques for both frequent and infrequent events was noted.

Limited formal guidance documentation to support special event planning and management was found; only seven states reported having such formal guidance. Of those that did respond affirmatively and provided examples, differences were noted in the content and focus of the guidance documents, depending on the lead development agency. Law enforcement-initiated documents focused more on general public safety and enforcement duties and less on traffic control activities during special event times.

Efforts to quantitatively evaluate the effectiveness of special event planning and management activities have been limited, with only 1 survey respondent of 36 indicating that formal performance measures were predefined to evaluate efforts. Only eight survey respondents reported collecting data in support of planning and management efforts. Qualitative assessments of special event planning and management efforts were easier to obtain. The majority of respondents indicated being satisfied with their agency’s level of effort toward special event planning and management. Externally, the common challenge expressed related to communication and cooperation with other stakeholders.

Common sources of funding for special event planning and management at the federal level include the Congestion Mitigation and Air Quality Improvement Program, the Federal Transit Administration, and the Federal Highway Administration. At the state level, the most common funding source cited was state departments of transportation. Transportation department operating budgets have been used to support personnel, traditional traffic control devices and equipment such as variable message signs. Private partners and event organizers also provide funding for planning and managing special events, though at varying levels

INTRODUCTION

The objective of this synthesis report is to identify and document transportation-related activities related to the planning and management of special events. The National Highway Institute defines a special event as an occurrence that “abnormally increases traffic demand” (unlike an incident or construction and maintenance activities that typically restrict the roadway capacity). Under this definition, special events may include sporting events, parades, fairs, and other planned events. Challenging to this investigation was the range of activities that fall under the definition of “special event” and their related planning and management requirements, involvement, and impact. The investigation was focused so that unplanned events, such as natural disaster evacuations that may also increase traffic demand, were not considered.

BACKGROUND

Special events can be categorized as frequent or infrequent. Frequent special events include such activities as sporting events and concerts. Summer-long event series and seasonal tourist venues that temporarily increase traffic demand are also included. The size of these events is likely manageable, with predictable times of day and durations. The scope of impact is anticipated to be local or possibly regional.

Infrequent special events include such activities as national conventions, international summits, parades, fairs, and others. The amount of traffic associated with infrequent events may be dramatically larger than for frequent events. Hence, the impact is likely regional or statewide rather than local. The duration of these types of events is also likely longer than that of frequent events (e.g., several days versus several hours).

Special event planning and management may involve transportation agencies at the federal, state, regional, and local levels. Furthermore, law enforcement agencies and, to a lesser extent, media agencies may have an active role in special events. In well-planned events, fire, emergency medical services, and towing and recovery will also be actively involved to handle occurrences such as heat stroke, heart attacks, and minor accidents. Finally, special event coordinators should be considered as key stakeholders.

In larger urban areas, the planning and management of special events resembles that of routine congestion man-

agement activities. Accordingly, transportation agencies likely take the lead in planning and managing special events of this type with little interaction from other stakeholders. In smaller urban and rural areas, state or local police may plan and manage special events with little input or involvement from transportation agencies.

Stakeholder activities with respect to special event planning and management focus on the dissemination of motorist information, the use of traffic control devices to manage traffic flow near the event, and travel demand management (TDM) strategies to reduce overall traffic demand.

Funding sources may differ dramatically between event types. The planning and management of frequent special events likely relies heavily on state or federal transportation-related funding sources. Innovative sources of funding may include developer fees. The breadth of potential funding sources for infrequent events is often larger, and because these events are infrequent, one-time sources of funding may be more readily identified.

OBJECTIVES

The motivation for and potential benefits from improving special event planning and management relate to improvements in overall transportation system efficiency and safety. Specific benefits may include

- Reduced delay for motorists attending the special event through more active dissemination of information, traffic management, and alternate mode use;
- Reduced delay for motorists not attending the special event through active promotion of alternate routes or modes;
- Reduced overall traffic demand at or near the special event site through active promotion of alternate routes or modes or dissemination of information, resulting in the cancellation or delay of unnecessary trips; and
- Improved safety through more active traffic management and reduced motorist frustration.

With proactive planning and managing of special events, the likelihood of these benefits is improved. Various stakeholders will be familiar with their roles in special event activities and what is expected of them. Also, with

the proper planning, no two agencies would duplicate the same function, nor will a specific function be left unfulfilled. Furthermore, the tools and techniques used for motorist information dissemination, traffic management, or TDM can be more appropriately planned for, procured, and implemented. Finally, complete and comprehensive guidance documentation outlining the special event planning and management process will provide long-term structure to these activities and ensure consistency in training all personnel.

This synthesis report supports these activities by compiling related information in a single source and is written for those wishing to proactively plan or manage special events. Thus, the content not only addresses historical practices and the current state of the practice, but also highlights lessons learned and innovative, successful tools and techniques.

METHODOLOGY

Data to support this investigation came from four primary sources.

- Published literature;
- Surveys of stakeholders;
- Select, in-depth case studies; and
- Various informal interviews with special event coordinators, Topic Panel members, etc.

Literature Review

Information contained in the published literature served two purposes. An initial look at available literature helped to ensure that the scope of work, methodology, and survey instrument for this investigation were comprehensive and complete. Also, findings resulting from a more detailed review of the literature were integrated directly into this report.

Primary sources of literature included

- The Transportation Research Information System (TRIS),
- Conference compendiums such as TRB's annual meeting, the Institute of Transportation Engineer's district and international meetings, and
- Internet websites.

Literature documenting smaller, routine activities was sought, but the published literature was found to be focused primarily on larger, special events. The review of the literature included both domestic and international special event activities.

Stakeholder Survey

Because of the dearth of special event-related literature, the primary source of information in support of this investigation came from a survey of stakeholder practices related to special event planning and management. The survey questionnaire (Appendix A) provided background information describing this investigation, gave a general definition of a "special event," and solicited information regarding the following:

- What types of special events do you encounter?
 - Categorized as frequent and infrequent, and
 - Detailed by size of event, time of day, and duration and scope of impact.
- Whom do you interact with?
 - Detailed by role, jurisdiction, and formality of interaction (i.e., interagency agreement).
- What tools or techniques do you use?
 - Categorized as motorist information, traffic management, and TDM tools and techniques, and
 - Considers both in-use and planned tools and techniques.
- How formalized are these tools and techniques?
 - Categorized as written guidelines, agency policies, and state or federal laws.
- How effective are your efforts?
 - Considers data collection, performance measures, public opinion surveys, and a self-assessment and an external assessments of efforts.
- How are your efforts funded?
 - Categorized as federal, state, county, local, and private sources (see Appendix A).

The survey questionnaire was distributed initially to state-level departments of transportation (DOTs), targeting personnel in engineering or operations. Because special event management and planning is both multijurisdictional and interdisciplinary, state-level transportation personnel were asked to suggest other key jurisdictional or agency contacts (e.g., local city personnel, local law enforcement, and media) actively involved in special event planning or management. The intent was to ask these second-tier contacts to complete an abbreviated form of the survey questionnaire, depending on the intended recipient. For example, a modified list of tools and techniques used for special event planning and management would be provided to law enforcement and media survey recipients, who typically have a different and more limited set of resources available for traffic management. Nearly all respondents to the questionnaire who suggested additional contacts listed personnel within their agency. An additional survey of these personnel would have likely resulted in responses similar, if not identical, to those provided by the first-tier contacts.

Tools and techniques used in the planning and management of special events—both traditional and emerging—are the focus of chapter four. These tools and techniques are categorized by use: (1) motorist information, (2) traffic management, or (3) TDM. Communication protocol and event follow-up activities are also discussed.

Chapter five summarizes supporting documentation discovered for special event planning and management and notes the commonalities and differences among these documents. The motivation behind the documentation development and the jurisdiction and agency involvement is also discussed.

The use of traffic simulation, performance measures, public opinion surveys, and a self-assessment and external assessment of activities are discussed in chapter six. Such

measures are potential means to determine the effectiveness of special event planning or management activities.

Chapter seven identifies both traditional and innovative funding sources for special event planning and management. Funding sources for large-scale, infrequent events, or advanced technology applications are specifically detailed.

Chapter eight provides greater detail regarding the special event planning and management process for three diverse case studies: (1) the 2002 Olympic Winter Games in Salt Lake City, Utah; (2) the Phoenix International Raceway in Phoenix, Arizona; and (3) the Sweet Pea Festival in Bozeman, Montana.

Chapter nine concludes the report with a summary of key findings and provides applicable recommendations based on the information obtained in this investigation.

SPECIAL EVENT TYPES

Under this investigation's definition of a special event—an occurrence that “abnormally increases traffic demand”—the number of activities that can be classified as such is substantial. One objective of this synthesis was to categorize special events into groups that share common characteristics and present similar challenges in planning and management. Therefore, special events were categorized as (1) frequent events such as professional sporting events with predictable times of day and duration and that usually occur more than once a year and (2) infrequent events such as fairs, festivals, the Olympics, and others for which the traffic demand may increase dramatically in size and duration over that of frequent events; and which occur once per year or less often.

The breadth and variety of special events listed as part of the survey questionnaire challenged the categorization of each event type exclusively into one or the other category. Nonetheless, each event was cited as either frequent or infrequent, although it should be noted that certain circumstances place some special events into both categories. Furthermore, agencies differed in how they classified events; similar events could be found in both categories.

Tables 1 and 2 show the breadth of special event types and characteristics that were reported by survey respondents. Special event characteristics include crowd size, time of day, time of year, duration, and impact. It should be noted that impact was not defined on the questionnaire and therefore left to the respondent's interpretation. Some events of similar nature appear to have differing scopes of impact, depending on the respondent's interpretation of impact or such factors as local population and size of metropolitan area. The variability in event characteristics supports the need for further research and guidance into this topic area to identify commonalities and differences in planning and management activities.

FREQUENT SPECIAL EVENTS

Sporting events, including collegiate and professional sports such as baseball, basketball, football, hockey, and soccer are the most common frequently occurring activities in large and small urban and rural areas.

As reported in the survey questionnaire, the size of sporting events varies widely. College football attendance can vary from as little as several thousand at smaller colleges and universities to more than 100,000 for large universities.

Professional football attendance generally ranges from 60,000 to 80,000, depending on team performance and stadium size.

Professional hockey and basketball attendance is generally smaller, ranging from 5,000 to 30,000.

Attendance for major league baseball varies significantly depending on the time of year, day of week, and time of day. Weekday afternoon games typically have smaller crowds that range from 10,000 to 40,000. Weekend and evening games can have larger crowds that range from 30,000 to 60,000, depending on the stadium capacity.

Attendance at these events fluctuates with team performance and the time in the season; a baseball team that is doing well and playing critical games toward the end of the regular season may see greater attendance than a team that is no longer eligible for post-season play.

Other types of frequently occurring sporting events include automobile racing, such as the National Association of Stock Car Auto Racing (NASCAR), Championship Auto Racing Teams, and the Indy Racing League; horse-racing; golf, and tennis.

Most importantly, these events generally have specific venues, which allows for the involvement of common stakeholders and more permanently deployed traffic management tools and techniques. Such venues may see a more condensed arrival and departure traffic pattern (typically from 3 to 4 h) than, for example, convention center activities that may be more dispersed throughout the day. The peak traffic characteristics of these events should be taken into consideration in the planning process.

Although the size of these events varies greatly depending on location, the crowds are generally predictable and limited in size to the venue capacity. As an example, the Martel Field football stadium at Montana State University has a seating capacity of 15,000, whereas Michigan Stadium at the University of Michigan provides seating for more than 107,500. Because of this significant size difference, events at these two college football stadiums cannot be planned and managed identically. However, from the nature of college football, it can be anticipated that each year, from August until as late as January, a game will be played in the stadium approximately once every 2 weeks. Also, the exact dates and times of the games will generally be known well in advance of the actual event.

TABLE 1
FREQUENT SPECIAL EVENT TYPES AND CHARACTERISTICS REPORTED BY SURVEY RESPONDENTS

| Frequent Events | Size | Time of Day | Time of Year | Duration | Scope of Impact |
|-------------------------|----------------|-----------------|--------------|---------------|-----------------|
| Football games | 30–50,000 | Midday | Aug.–Dec. | | L |
| | 35,000 | 9–4 p.m. | | 1 day/wk | L |
| | 40,000 | | | 1 day/2 wks | L |
| | 40,000 | 5–6 p.m. | Aug. | 1 day/wk | L |
| | 50,000 | | Aug.–Dec. | 1 day/2 wks | L |
| | 50–70,000 | | | | L |
| | 60,000 | 5–11 p.m. | | 1 day/wk | L |
| | 60,000 | 2–6 p.m. | | 1 day/2 wks | R |
| | 65,000 | 1–4 p.m. | Aug.–Dec. | 1 day/2 wks | L |
| | 65,000 | | Nov. | | L |
| | 65,000 | 10–5 p.m. | | 1 day/wk | L |
| | 76,000 | 10 a.m.–12 p.m. | Aug.–Dec. | | L, R |
| | 76,000 | 10 a.m.–10 p.m. | Sep.–Nov. | 1 day/wk | R |
| | 80,000 | 1–4 p.m. | Aug.–Dec. | 1 day/2 wks | R |
| | 80,000 | 11–5 p.m. | Sep.–Nov. | 1 day/2 wks | R |
| | 80,000 | | Sep.–Nov. | 1 day/wk | S |
| | 80,000 | 12 p.m.–12 a.m. | Sep.–Nov. | 1 day/wk | L |
| | 100,000 | | | 1 day/2 wks | R |
| | 68,000+ | | Aug.–Dec. | | L |
| | Baseball games | 6–8,000 | 5–11 p.m. | Apr.–Oct. | 3–6 days/wk |
| 20,000 | | 11–8 p.m. | | 1 week | R |
| 20–50,000 | | | Apr.–Sep. | 81 games | L, R |
| 40,000 | | | Mar.–Aug. | 13 games | |
| 45,000 | | 7–10 p.m. | Apr.–Sep. | 4 days/wk | L |
| 50,000 | | 7–10 p.m. | Apr.–Sep. | 4 days/wk | R |
| 50,000 | | 7–10 p.m. | Apr.–Sep. | 5 days/wk | R |
| Basketball/hockey games | 5–17,000 | | Oct.–Jun. | 100+ games | L, R |
| | 10–20,000 | | | | L |
| | 30,000 | 7–10 p.m. | Oct.–May | 3 days/wk | R |
| | 30,000 | 7–10 p.m. | Oct.–May | 4 days/wk | R |
| | 40,000 | | Dec.–Mar. | 2 days/wk | L |
| Auto racing | 100,000 | 6 a.m.–6 p.m. | | 3 days | R |
| Golf | 1–20,000 | 8 a.m.–6 p.m. | April | 1 week | R |
| | 20,000 | 8 a.m.–8 p.m. | | 7 days | R |
| | 50,000+ | 7 a.m.–6 p.m. | | 1 week | L, R |
| | 100,000 | 7 a.m.–7 p.m. | | 4 days | R |
| | 100,000 | 7 a.m.–6 p.m. | July | 3 days | L |
| | 100,000 | All day | | 5 days | L |
| Concert series | 10,000 | | Aug. | 3 days | L |
| | 100,000 | | | Few times/yr | R |
| Conferences/conventions | 1–25,000 | | | 1 week | |
| | 2,000 | | | 1 week | |
| | 10–20,000 | | | | L |
| Parades | 2–6,000 | 6–11 a.m. | Apr.–Jul. | 1 day/wk | R |
| | 10,000 | | May–Dec. | | L |
| | 10,000 | 10 a.m.–2 p.m. | | Weekends | L |
| | 10–200,000 | All day | | 5–7 days/year | L, R |
| | 10–50,000 | | | | L |
| | 40,000 | | | 1 day | L |
| Seasonal markets | 25,000 | | Jun.–Sep. | 2 days/wk | R |

Notes: L = local, R = regional, S = statewide.

TABLE 2
INFREQUENT SPECIAL EVENT TYPES AND CHARACTERISTICS REPORTED BY SURVEY RESPONDENTS

| Infrequent Events | Size | Time of Day | Time of Year | Duration | Scope of Impact |
|-----------------------|------------|----------------|--------------|----------|-----------------|
| July 4th celebrations | 5–50,000 | 3–11 p.m. | July | 1 day | L |
| | 25,000 | 6–11 p.m. | | 1 day | L |
| | 25–100,000 | 6–12 p.m. | | 1 day | L |
| | 75,000 | 5 p.m.–12 a.m. | | 1 day | L |
| | 100,000+ | All day | | 1 day | L |

TABLE 2 (Continued)

| Infrequent Events | Size | Time of Day | Time of Year | Duration | Scope of Impact | |
|-----------------------------------|----------------|-----------------|---------------|----------|-----------------|---|
| Other fairs/festivals | 5,000 | | Sep. | 3 days | L | |
| | 10–50,000 | | | | L | |
| | 20,000 | 7 a.m.–7 p.m. | | 3 days | L | |
| | 25,000 | | Jul./Aug. | | L | |
| | 50,000 | | June | 4–5 days | L | |
| | 50–100,000 | | | 1 day | L | |
| | 60–120,000 | All day | | 1 wk | L | |
| | 75,000 | All day | March | 19 days | L, R | |
| | 80–100,000 | 3–4 p.m. | Oct. | 1 day | L | |
| | 100,000 | 10 a.m.–4 p.m. | April | 4 days | | |
| | 100,000 | 10 a.m.–6 p.m. | | 3 days | L | |
| | 100,000 | 5 p.m.–12 a.m. | | 28 days | L | |
| | 120,000 | All day | March | 3 days | L, R | |
| | 250,000 | | | 1 day | L, R | |
| | 300,000 | 12–11 p.m. | July | 4 days | R | |
| | 300,000 | 7 a.m.–4 p.m. | | 1 day | L, R | |
| | 500,000 | | | 7 days | S | |
| | 500,000 | | | 11 days | S | |
| | Olympics/games | | 9 a.m.–9 p.m. | | | L |
| | | 15,000 | | | 3 days | R |
| 50,000 | | | | 2 wks | L, R, S | |
| 350,000 | | All day | | 2 wks | R | |
| 1,700,000 | | All day | | 3 wks | S | |
| Political/religious visits | | | | 2 wks | R | |
| | | | | 1 day | S | |
| | | | | 1 day | | |
| | | All day | | | L | |
| | | 1–2 h/day | | | R | |
| Protests/rides | | | | | R | |
| | 1–5,000 | | | 1 day | L | |
| | 200 | | | 4 days | S | |
| | 500 | 8 a.m.–7 p.m. | | | R | |
| Convention events/ expositions | 100,000 | | | 1 day | R | |
| | 100–500,000 | All day | | 2 days | L | |
| | 50,000 | 8 a.m.–5 p.m. | Nov. | 5 days | R | |
| Vehicle or equipment shows | 100,000 | 5 p.m.–4 a.m. | Dec. | 1 day | L | |
| | 1,000 | | | 2 days | L | |
| | 20–45,000 | All day | | 6 days | R | |
| Marathon races | 25,000 | 7 a.m.–4 p.m. | Sep. | | L | |
| | 30,000 | 6–8 p.m. | | 4 days | L | |
| | 40,000 | 10 a.m.–10 p.m. | April | | L | |
| | 100,000 | All day | | 3 days | L | |
| | 1,000,000 | | | 1–2 wks | L | |
| | 1–10,000 | | | 1 day | L | |
| | 1,000 | | | 1 day | L | |
| 1,000 | | | 1 day | L | | |
| 2,000 | 6 a.m.–3 p.m. | | 1 day | L | | |
| 2,400 | 6 a.m.–6 p.m. | | 1 day | L | | |
| 2,500 | 7–10 a.m. | | 1 day | L | | |
| 4,000 | 6–10 p.m. | | 1 day | R | | |
| 10,000 | | | 2 days | L, R | | |
| 15,000 | | | 1 day | L | | |
| 17,000 | | | 1 day | S | | |
| 25,000 | | | Dec. | | R | |
| 25–50,000 | | | | 1 day | L | |
| 30,000 | 7 a.m.–12 p.m. | Feb. | | | R | |
| 30,000 | | | | 3 days | R | |
| 35–40,000 | | | | 2 days | R | |
| 50,000 | | | | 1 day | L | |
| 50–100,000 | | | April | | L | |
| 100,000 | | | | 1 day | R | |
| 100,000 | All day | Jul./Sep. | | 1 day | R | |
| 100–6,000 | 7 a.m.–7 p.m. | | | 2–4 days | R | |
| 100–16,000 | 7 a.m.–12 p.m. | | | 2–4 days | L | |

TABLE 2 (Continued)

| Infrequent Events | Size | Time of Day | Time of Year | Duration | Scope of Impact |
|----------------------|-------------|----------------|--------------|----------|-----------------|
| Marathons/bike races | 140–170,000 | | | 3 days | R |
| | 150,000 | 6 a.m.–6 p.m. | | 3 days | R |
| | 150,000 | | | 3 days | R |
| | 150–175,000 | 5–8 p.m. | Feb. | 1 day | L, R |
| | 200–500 | | | | R |
| | | 7 a.m.–8 p.m. | Feb. | 1 day | L, R |
| | | 7 a.m.–8 p.m. | Feb. | 1 day | L, R |
| | | 5–10 p.m. | Feb. | 1 day | L, R |
| Horse races | 60,000 | | | 3 days | L |
| Sailing | 100,000 | All day | Spring | 2 days | R |
| | 400,000 | All day | July | 5 days | R |
| | 500,000 | 8 a.m.–10 p.m. | | 1 wk | S |
| Fishing derby | 12,000 | | | 1 day | L |

Notes: L = local, R = regional, S = statewide.

Sporting events are not the only type of event that can be classified as a frequent event. Other types of events that fit this category are concerts, parades, farmer's markets, and conventions.

Concerts that are held regularly at a particular venue can be considered frequent events. A concert's size may range from several hundred to more than 30,000, depending on location and the appeal of the performer(s). Concerts that are not held regularly at the same venue can be dually classified as infrequent or frequent events (as discussed later in this report).

Similarly, parades can be classified as both frequent and infrequent events, although they most commonly resemble frequent events. In many cities and towns, parades are held annually at specific times of the year. Because a parade may be held on the same street or set of streets each year, its frequent nature may allow for a more permanent traffic management plan and the procurement of permanently deployed traffic management equipment.

Parades and similar event types (e.g., street festivals, marches, races, sports celebrations, presidential motorcades, and wagon trains) are unique in that a roadway closure is required in addition to the increased traffic demand resulting from the event. All motorists should be notified in advance of any road closure(s) to encourage alternate route use.

INFREQUENT SPECIAL EVENTS

One of the most common infrequent events noted in the survey questionnaire was July 4th celebrations. Size can

vary widely depending on the location and type of festivities; reported attendance ranged from 5,000 to 200,000. The time of day and duration of these events also varied. Some localities have entertainment that lasts for a few hours in the evening, whereas others feature full-day or multiday events. An added challenge for this special event is crowd control for fireworks displays; spectators do not typically congregate to a central location but may disperse throughout the area.

Races, typically running or biking, constitute another type of infrequent special event. Running races ranged from several hundred participants and spectators for local races that average 1 to 10 km (0.62 to 6.2 mi) to marathons with thousands of participants and more than 50,000 spectators. Bicycle races are unique in that the race may cover long distances, such as the 200-mi Seattle to Portland Bicycle Classic. In most cases, roads do not have to be closed to regular traffic, but drivers should be warned of the bicyclists ahead. When road closures are necessary, they can be progressive, with the road section closed as bicyclists approach and then reopened as soon as they pass.

As stated previously, some concerts can be categorized as both infrequent and frequent events, depending on their characteristics. Concerts best categorized as infrequent include multiday concerts. As an example, northern California's "Reggae on the River," a 3-day annual event in early August, generally attracts 10,000 spectators. At the other extreme, the Woodstock event held in 1994 in upstate New York attracted approximately 350,000 people to a town of only 15,000 (Hansen 1996). Incidentally, when planning and managing special events, it is important to consider not only the size of the event but also that size in relation to the characteristics of the locale.