

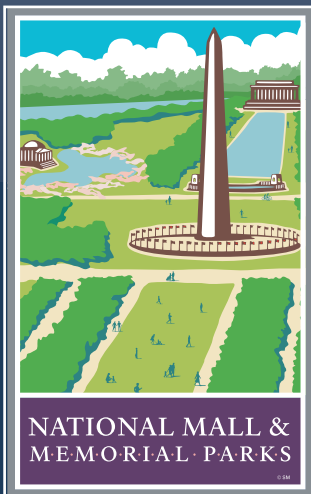


THE NATIONAL MALL

1997
THE LEGACY PLAN

1901
MCMILLAN PLAN

1791
L'ENFANT PLAN



**Best Management Practices Used
at Urban Parks in National and International Locations**
A Background Report for the National Mall Plan
March 2007

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National Park Service
U.S. Department of the Interior

National Mall & Memorial Parks
Washington, D.C.



BEST MANAGEMENT PRACTICES

USED AT URBAN PARKS IN NATIONAL AND

INTERNATIONAL LOCATIONS

A Background Report for the National Mall Plan

Prepared by the Center for Park Management
National Parks Conservation Association
for the
National Mall & Memorial Parks

March 2007

Unless otherwise noted, all photographs were taken by staff at the
Center for Park Management or the National Park Service.

SUMMARY

This report looks at best management practices used at a variety of urban parks in national and international locations. The purpose is to provide information that can be used in the development of a National Mall plan. The Center for Park Management conducted the research for this report in collaboration with the National Mall & Memorial Parks. The information presented is a synthesis of best practices used for events and maintenance at urban sites in the United States, Canada, England, and Australia. Use at these national and international sites is comparable to the National Mall in Washington, D.C.

Four sites are in the United States — Central Park in New York City, Golden Gate Park in San Francisco, Millennium Park in Chicago, and Piedmont Park in Atlanta. Three park sites are in national capitals — Canberra, Australia (Parliamentary Triangle); Ottawa, Canada (National Capital Commission); and London, England (The Royal Parks).

All study sites have one or more similar features to the National Mall:

- status as a national capital or a major metropolitan area
- an interest in maintaining landscape quality despite high levels of use
- large recurring and one-time events
- a history of freedom of expression activities
- complex maintenance and events programs

The information presented in this report is based on information collected through site visits (excluding Canberra, Australia), the completion of a detailed site survey, supporting materials provided by participating sites, and other relevant secondary research as noted throughout.

This report is rich with suggestions on how the National Mall could improve landscape management quality through its events and maintenance programs. Not all best practices will necessarily be practicable or desirable. A holistic view of the park's long-term plans and goals, along with the structure of existing programs, is needed to determine the fit for any one or combination of best practices.

The report highlights best practices in five topic areas, as described below.

Landscape Standards

The discussion of landscape standards addresses how landscape use is aligned with a park's mission and vision, followed by a detailed discussion of how written landscape quality standards can be used for planning on both a strategic and a practical level for events and maintenance. Landscape quality standards identify desired quality outcomes and typically outline the maintenance activities required to achieve these results. Standards provide a framework for determining a specific desired quality for a landscape element (e.g., turf, trees, and flowers). Quality standards serve as a performance-based evaluation tool for maintenance; the performance of the maintenance program is evaluated against the achievement of quality standards. With these types of standards in place, parks are better able to strategically plan their maintenance programs, focusing resources in areas or zones where standards are set at higher levels.

Summary of best practices:

- *Align uses and standards with park mission and vision.*
 - Define the role for high-use activities at a strategic level and make clear links between intensity of use and the quality and conservation of park resources.
 - Get public buy-in for landscape quality goals through education and engagement, since the public plays an active

- role in respecting landscape rehabilitation and resource conservation efforts.
- *Use written landscape quality standards.*
 - Define management areas and sub-areas.
 - Set specific, realistic, and measurable landscape quality standards for all areas or subareas within the park. Not all areas are equal in terms of desired or attainable landscape standards.
 - Set quality expectations and guidelines for all maintenance activities and link these expectations to landscape quality standards.

Design

The design section considers all types of use and outlines common practices for coordinating the identity for a place and its appearance through consistent, appealing, and appropriate site furnishings and circulation approaches. Enhancements to design reduce landscape damage (e.g., social trails) and improve the efficiency of the maintenance staff (e.g., consistent site furnishings). Additionally, visitor experience is enhanced as a result of easy access, comprehensive and clear information, and an overall level of excellence in landscape appearance.

Summary of best practices:

- *Establish a sense of place.*
 - Reinforce place character through branding — use of logos and consistent site furnishings.
 - Set high expectations for design quality and use of enduring materials.
- *Control circulation and access.*
 - Control access for safety (e.g., capacities are not exceeded) and the protection of landscape elements (e.g., avoiding soil compaction and trampling of tree roots).
 - Design pathways and entrances to accommodate visitors' needs (e.g., multi-use trails, events, and protests).

- Reduce damage to the landscape through the use of fencing, social trail reduction tactics, edging, and corner treatments.
- *Design to accommodate events and regular use with less impact.*
 - Develop specific areas to accommodate events.
 - Pave areas to provide space for event infrastructure, including mobile food stands, information kiosks, stages, speaker's corners, etc.
 - Incorporate landscape elements that are robust enough for high use (e.g., turf specified for sports field or golf courses).
 - Incorporate utility connections within park furniture, such as bollards or light posts.
 - Design tent anchor locations to support and control the location of tents at events.
- *Design for ease of maintenance.*
 - Standardize and limit the numbers and types of site furnishings.
 - Pave under seating, trash containers, and information/interpretive signs.

Visitor Information

For visitor information, approaches are discussed for improving visitor experiences through coordinated onsite orientation, way-finding, educational information, and regulations. Cutting edge education and information methods are highlighted, including mobile welcome centers and downloadable self-guided tours in MP3 format. The role for strong natural resource management messaging (e.g., "Clean and Green") is emphasized; messaging should be integrated with repair and recovery signage (e.g., a red flag system in Central Park) as well as park infrastructure (e.g., trash receptacles) and visitor services (e.g., concession stands).

Summary of best practices:

- *Provide information that is identifiable, consistent, understandable, and current.*
 - Partner with other agencies and organizations (e.g., surrounding museums or parks) to eliminate confusion and improve visitor experiences.
 - Present coordinated visitor information, orientation, interpretation signs.
- *Reinforce resource protection messaging.*
 - Educate visitors on park programs that target resource protection challenges.
 - Encourage the responsible behavior of visitors. Display positive messaging and park rules.
- *Use cutting edge education and information methods.*
 - Use a variety of approaches for education and information, including web-based tools, traditional interpretive panels, and permanent and mobile welcome centers.

Maintenance

The maintenance section provides an important perspective on dealing with impacts resulting from high use. It suggests alternative staffing structures, scheduling considerations, and practical maintenance approaches to dealing with the tension between high levels of use (both events and regular visitation) and the desire for high landscape quality. Fostering a sense of pride in employees is a critical component of a successful maintenance program and can be achieved by streamlining hiring practices and developing staff, linking day-to-day operations to landscape quality standard goals, creating maintenance zones, and experimenting with scheduling programs. The use of sustainable maintenance practices by others is an emerging best practice. Study sites are using organic mulching programs and tactics for limiting the use of chemicals and mitigating damage (e.g., to reduce problems associated with runoff).

Summary of best practices:

- *Use a staffing model that works for the organization.*
 - Assess different staffing models, including in-house staff, contract services, and private/public partnerships.
 - Maintain an adequate level of expertise in specialty skills on the park staff (e.g., landscape architecture).
 - Use volunteers to enhance staff and contractor efforts.
- *Ensure goals, standards, and design intent are understood.*
 - Ensure that maintenance staff and contractors understand quality expectations.
 - Monitor maintenance performance against landscape quality standards.
 - Reward consistently high performance and address poor performance immediately.
 - Promote respect through a zero tolerance approach toward trash on the ground or overflowing from trash receptacles, graffiti, and other forms of vandalism.
- *Organize maintenance staff by zone and specialties.*
 - Organize staff by geographic zones to develop expertise and to instill pride in one's work and a caring attitude toward the park.
 - Manage zones to specific landscape standards.
 - Develop specialty teams that work in all zones as needed.
 - Ensure that maintenance staff and contractors understand quality expectations.
 - Monitor maintenance performance against landscape quality standards.
 - Reward consistently high performance and address poor performance immediately.

- Promote respect through zero tolerance of trash on the ground or overflowing from trash receptacles, graffiti, and other forms of vandalism.
- *Develop staff.*
 - Hire staff based on both experience and attitude.
 - Support the professional development and upward mobility of employees to boost morale and satisfaction levels.
 - Ensure that managers visibly participate in day-to-day activities.
- *Develop plans for regular and emergency maintenance.*
 - Develop creative and flexible approaches and written schedules for recurring, periodic, and seasonal maintenance activities.
 - Develop a system to address typical emergencies and complaints.
 - Respond to complaints in a timely manner; develop and maintain a system to convey that action has occurred.
 - Develop a system to monitor and track park conditions.
- *Use sustainable maintenance practices.*
 - Begin to move toward organic practices and implement as possible.
 - Limit the use of commercial fertilizers, pesticides, and herbicides, and use chemicals responsibly when necessary.
 - Address soil compaction with turf closures and rotations, limited traffic, post-event treatments, engineered soils, and irrigation.

Events Management

Events management looks at the many of the challenges of hosting large-scale and high-use events on vulnerable landscapes. Managers must be proactive, with comprehensive event guidelines, limitations on use (e.g., maximum duration and number of events), and regulation enforcement (e.g., weather delays). Fees and bonds should recover the cost of the

events program as well as event damages. The Royal Parks charge a disruption fee depending on the scale of the event. Finally, a fully staffed team of professional events staff will boost the performance of a park's event program.

Summary of best practices:

- *Manage events proactively.*
 - Manage use, including limiting the number, type, location, and duration of events.
 - Use mitigation checklists.
 - Define requirements for public safety and security.
 - Enforce event regulations uniformly and consistently.
- *Facilitate the permitting process.*
 - Create comprehensive and accessible events guidelines with graphic appeal.
 - Communicate park goals to event organizers to ensure a clear understanding of the park's purpose and significance.
 - Develop strong working relationships with event organizers.
- *Charge fees and recover costs for use of public areas.*
 - Use variable permit fee schedules based on the type and location of events, as well as level of disruption.
 - Charge direct costs for staff, utilities, trash collection, removing or relocating park furniture, and repairing damage.
 - Assign responsibility with performance bonds and event monitoring.
- *Professionalize events staff.*
 - Hire staff with hands-on experience in events production.
 - Co-locate maintenance and event staffs to foster collaboration, coordination, and communication.
 - Consider classifying events and maintenance staffs within one division.
 - Staff sufficiently to cover permitting, monitoring, and reporting needs.

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INTRODUCTION

This report synthesizes best practices information from comparable urban sites in the United States and the capital cities of Canada, England, and Australia. The study was conducted between July and December 2006, and the goal was to understand best practices for achieving high standards of landscape maintenance despite heavy levels of use and the presence of major events.

Webster's New Millennium Dictionary of English defines a best practice as “a technique or methodology that, through experience and research, has reliably led to a desired or optimum result.” The planning process associated with the National Mall plan is an ideal opportunity for contemplating new ideas and validating existing park practices. This best practices study will be used by the National Park Service (NPS) as a source of:

- information for public education and civic engagement
- technical materials for grounds maintenance staff
- ideas for alternatives that will be explored in planning

BEST PRACTICE TOPIC AREAS

This report begins with a brief overview of each of the seven study sites, providing context on the sites from which the bulk of the best practices were drawn. The remainder of the report outlines best practices in the following five topic areas:

- **Landscape Standards** — How landscape use is aligned with a park’s mission and vision is defined. Written landscape quality standards can be used to plan on both a strategic and on a practical level for events and maintenance.
- **Design** — All types of use are considered, along with common practices for coordinating the identity of a place and its ap-

pearance through consistent, appealing, and appropriate site furnishings and circulation approaches.

- **Visitor Information** — Approaches to improving visitor experience through coordinated onsite orientation, wayfinding, educational information, and regulations are presented. Cutting edge methods for education and information are emphasized, along with the importance of strong natural resource management messaging.
- **Maintenance** — Alternative staffing structures, scheduling considerations, and practical maintenance approaches are discussed to balance the tension between dealing with the impacts of high use (both events and regular visitation) and the desire for high landscape quality.
- **Events Management** — Solutions to many of the challenges inherent in hosting large-scale, high-use events on vulnerable landscapes include proactive management, fee and performance bond structures, and professional events staff.

STUDY METHODOLOGY

The Center for Park Management (CPM) and the National Mall & Memorial Parks staff collaboratively developed a survey, which was sent to study sites for completion prior to site visits (see appendix A). CPM or NPS staff visited all of the study sites, except Parliamentary Triangle in Canberra, Australia.

This report summarizes the best practices gleaned from each of the study sites. Support material that accompanies this report is a rich source of additional information on many of the best practices presented. Examples of support material includes completed site surveys, event guidelines, photo files, and landscape quality standard details.

OVERVIEW OF COMPARABLE SITES

The four sites studied in the United States are Central Park in New York City, Golden Gate Park in San Francisco, Millennium Park in Chicago, and Piedmont Park in Atlanta. The three international sites studied are in Canberra, Australia (Parliamentary Triangle); Ottawa, Canada (the National Capital Commission); and London, England (The Royal Parks).

CENTRAL PARK, NEW YORK

Central Park was the first landscaped public park in the United States, and it is the largest open space in New York City. Since 1980, the Central Park Conservancy has managed the park, undertaking major renovations of a park that had fallen into disrepair. Through support of individuals, corporations, and foundations, the conservancy has set new standards of excellence in park care.

Mission and Purpose: The man-made park is a natural oasis surrounded by the hectic pace of New York City.

Size and Facilities: The 843-acre park includes informal landscape (trees, shrubs, turf areas), bodies of water, and a mix of formal landscapes, hardscapes/paved areas, gardens, larger turf areas, athletic fields, and buildings.

Landownership: New York City Parks Department



Literary Walk, Central Park, New York

Management Responsibilities: Central Park Conservancy in public/private partnership with the Parks Department.

Use: Central Park does not have events that are specifically required by law, nor do they have published criteria describing what permitted events must embody. However, the priority event focus is for those types related to freedom of expression and events with an established history within the park.

Annual Visitation: 25–30 million (35% in the summer, 25% in spring and fall, and 15% in winter).

Major High-Use Events:

- Musical Events in the Park — Summer performances of the New York Philharmonic and Metropolitan Opera on the Great Lawn
- Annual New York City Marathon — 35,000 runners finish in the park throughout the day
- *The Gates* by Christo & Jeanne-Claude (February 2005 art installation) — 4 million visitors in 16 days

GOLDEN GATE PARK, SAN FRANCISCO

Considered to be one of the largest parks ever constructed, Golden Gate Park was created in 1871 from coastal terrain well beyond the city limits of San Francisco. It is California's first state park. The park is 3½ miles long and ½ mile wide, and it is located amid today's busy neighborhoods in the western portion of the city.

Mission and Purpose: To serve as a testament to the will of the city to preserve a place to play, relax, and grow culturally.

Size and Facilities: The park is 1,017 acres, with approximately 680 acres of forested area, 130 acres of open areas, and 33 acres of water.



Golden Gate Park, San Francisco.

The remaining acreage consists of roadways, buildings, and specialized recreation areas.

Facilities within the park include visitor contact stations, large athletic fields, softball diamonds, bowling greens, tennis courts, handball courts, playgrounds, fly-casting pools, a golf course, an archery range, and a petanque field. Additionally, concessioners and partner organizations operate restaurants, mobile food carts, equestrian facilities, boat rentals, botanical gardens, an art museum, and a conservatory.

Landownership: City and County of San Francisco

Management Responsibility: City and County of San Francisco Recreation and Park Department

Use: Special use events include concerts, festivals, and athletic events. The park has five key sites for these events: Speedway Meadow (40,000 person capacity), Sharon Meadow (12,000), Lindley Meadow (12,000), the Polo Field (60,000), and Beach Chalet Fields (12,000). In 2006, 56 special events were planned ranging in attendance from 50 to 75,000.

Annual Visitation: 11–15 million visitors (fall 40%, summer 35%, spring 20%, and winter 5%).

Major High-Use Events:

- Strictly Hardly Bluegrass Festival (Speedway, Marx, and Lindley Meadows plus Grassy Cove) — draws up to 50,000
- Opera in the Park (Sharon Meadow) — draws up to 15,000
- One-time: Dave Matthews Band Concert (Polo Field) — drew approximately 60,000

MILLENNIUM PARK, CHICAGO

Opened in 2004 and owned by the City of Chicago, Millennium Park is a modern, 24.5-acre urban cultural park and civic center in the heart of downtown Chicago. The park features award-winning architecture, sculpture, and landscape design, and it offers a host of free cultural programming events. The park is an innovative “green roof” design, considered the largest in the world, and is constructed atop parking garages and a railroad yard. Millennium Park borders Grant Park on the Chicago lakefront.

Mission and Purpose: The park is a combination of architecture, monumental sculpture and landscape design, blending nature and culture and serving as an icon for Chicago.

Size and Facilities: The park includes the Jay Pritzker Pavilion, with its 2.5-acre Great Lawn (an outdoor concert area with lawn seating capacity of 11,000 and pavilion seating of 4,000), the Lurie Garden, Cloud Gate/SBC



Opening weekend 2004, Millennium Park, Chicago.

City of Chicago / Peter J. Schultz

plaza, the Boeing Gallery areas, Wrigley Square, the Millennium Monument area, McCormick Tribune Plaza and Ice Rink, three Chase Promenade hardscape areas and the interactive Crown Fountain area.

Landownership: City of Chicago

Management Responsibility: Chicago Department of General Services, and private contractors

Annual Visitation: 3 million visitors (summer 60%, fall 20%, spring 15%, winter 5%).

Major High-Use Events:

- Chicago Gospel Festival
- Grant Park Music Festival in Millennium Park
- Events throughout midsummer, which can attract 11,000–15,000 on the Great Lawn.

PIEDMONT PARK, ATLANTA

Piedmont Park began as an exclusive club and racing ground for horse enthusiasts in the late 1880s and was later purchased by the City of Atlanta. In 1912 the Olmstead plan for the park was developed, but never fully implemented. The park went through a period of deterioration during the 1970s and 1980s as a result of budget constraints. In 1992 the non-profit Piedmont Park Conservancy signed a memorandum of understanding with the City of Atlanta to establish an official public/private partnership. The conservancy is dedicated to the restoration, maintenance and enhancement of Piedmont Park and has raised nearly \$20 million in private funds.

Mission and Purpose: The mission of the Piedmont Park Conservancy is to enhance and preserve the park as a vital, urban green space and as a cultural and recreational resource that enriches the quality of life for all Atlantans.

Size and Facilities: The 189-acre park includes green spaces, scenic paths, athletic

fields, a 10-acre lake, and an off-leash 2-acre dog park. In 2007 the park will expand by an additional 50 acres through a \$73 million fundraising initiative. The renovated visitor center overlooks a new dock on Lake Clara Meer, recently restored with a new granite bridge, additional fishing piers, plantings, aeration system and lakeside swings. The 3,200-square-foot Magnolia Hall is an educational complex and offers a leased convention center often used for weddings or other events. Large turf areas comprise about 30% of the park's acreage and host major events.

Landownership: City of Atlanta

Management Responsibility: Piedmont Park Conservancy, in public/private partnership with the City of Atlanta. The conservancy handles approximately 90% of the operations and maintenance tasks at the park, and the city the remaining 10%.

Annual Visitation: 3 million visitors (spring 40%, summer 35%, fall 15%, and winter 10%).

Major High-Use Events:

- Dogwood Festival — 300,000 attendees over a three-day period
- Turner's Screen on the Green — 20,000 to 35,000 per movie screening during five weeks in the summer
- Pride Festival — 300,000 over three days
- Atlanta Jazzfest — 100,000 for each day of a three-day event



Oak Hill, Piedmont Park, Atlanta.

Sarah Shanks, Piedmont Park Conservancy

- Peachtree Road Race (the world's largest 10 km race) — 50,000 runners plus 300,000 attendees on one day

PARLIAMENTARY TRIANGLE, CANBERRA, AUSTRALIA

Parliamentary Triangle serves as Canberra's premiere open space and was designed to embody the spirit of Australia.

Mission and Purpose: To create a national capital that symbolizes Australia's heritage, values and aspirations, is internationally recognized and worthy of pride by Australians. To build the national capital in the hearts of all Australians.

Size and Facilities: The 2,965-acre park consists of 30% formal landscape, 50% informal landscape (trees, shrubs, turf areas), and 20% hardscape/paved areas. The city has eight specific venues for events, some with multiple areas within (i.e., some areas have open lawn space and amphitheatres, etc). The main event sites are the Federation Mall and Commonwealth Place, with capacities of 40,000 and 10,000 respectively.

Landownership: Australian Government

Management Responsibility: National Capital Authority

Use: Canberra is a relatively new city and has only been actively promoting its public outdoor venues since 2004. The Australian Capital Authority recognizes that it will take many years for the public venues to be used to their full potential because the city is generally not at the forefront of Australian's minds when choosing a place to hold their event. Therefore, the area is being aggressively marketed to encourage more use. Unlike the majority of the study sites, Canberra is not experiencing a high degree of damage to their landscape due to overuse, but rather is in a position to actively develop procedures to prevent future damage when visitation increases. During the 2005–6 fiscal year, the park had 593 events, most of which were non-commercial and thus official attendance counts were not done.



Image courtesy of the National Capital Authority (Australia)

Parliamentary Triangle, Canberra, Australia.

Annual Visitation: The park has visitors relatively evenly distributed throughout the calendar year. The park does not do regular visitor estimates; however, major annual events draw over 300,000 people.

Major High-Use Events:

- Australia Day celebrations — 50,000 visitors, as well as an Australia Day Live concert, with 35,000 attendees
- Canberra Day celebrations — 30,000
- Tropfest, a short, one-day film festival — 20,000
- Skyfire fireworks display — 100,000
- The Canberra Floriade, an annual flower festival, usually from around the middle of September to the middle of October — approximately 200,000. (A large portion of the Commonwealth Park is closed from March to December to allow for preparation of garden beds, planting, etc., one month for the show and several months to return the site to its original state.)

NATIONAL CAPITAL COMMISSION, OTTAWA, CANADA

The National Capital Commission (NCC) is a federally managed Crown Corporation that was created in 1959 with a mandate to develop a capital reflecting Canada as it evolves into a great modern state.

Mission/Purpose: To communicate the capital to Canadians, create a meeting place in the capital, and safeguard and preserve the capital for future generations.

Size and Facilities: The parks include 150 sites, totaling 7,767 acres, in and around Ottawa (both in Quebec and Ontario). In Ottawa more than 40 parks cover 126 acres, six of which are the primary event sites — Confederation Park (7,000 capacity), Jacques Cartier Park (14,000 at north and south sites), Major’s Hill Park (8,000–10,000), The Commons (20,000), and Parliament Hill (60,000).

Most of the NCC sites have large green open spaces to accommodate events and festivals. There is a strong landscaping component (e.g., shrubs and flower beds) within each site for aesthetic reasons but also to protect century-old trees. Hard surfaces are strategically placed to accommodate events and to reduce the risk of damage.

Landownership: Federal Government

Management: Federally managed Crown Corporation

Use: Most of the major events occur due to traditions — celebration of an important day (e.g., July 1st) or an event that has been ongoing for years or decades (e.g., the Tulip Festival), rather than by any type of governmental or free speech mandate. Regardless of the history of an event, all events are subject to a rigorous planning and management process.



Confederation Park, Ottawa, Canada

Annual Visitation: Approximately 2 million for events and festivals

Major High-Use Events:

- Canada Day celebrations — more than 300,000 visitors in the national capital region for concerts, fireworks, and other festivities
- Winterlude — more than 616,000 people in 2004
- Tulip Festival — more than 500,000 people over a three-week period in the spring
- Blues Festival — more than 200,000 over 10 days
- Others: Jazz Festival, Franco Festival, Fireworks Competition, National Capital Marathon

THE ROYAL PARKS, HYDE PARK, LONDON, ENGLAND

Hyde Park was created by Henry VIII in 1536 and initially served as a private deer hunting ground. In 1637 the park became widely open to the public. Over the centuries Hyde Park gained a lake, a Lido, England’s first artificial street lighting, and became the site for national celebrations and national political and civil rights protests. Since 1872, people have been allowed to speak at Speaker’s Corner on any subject they wish.

Mission/Purpose: Historic parkland that provides opportunities for enjoyment, exploration, and healthy living in the heart of the capital.

Size and Facilities: The park is 350 acres, made up of large open spaces, athletic fields, formal and informal landscapes and hard-scapes. The primary event sites are the Parade Ground, with a capacity of 100,000, and the Football Pitches with a capacity of 50,000. The park’s six catering outlets offer a range of choices from snacks to sit-down meals. The park also features a plant nursery, a nature center focusing on environmental education, a

horse riding center, a playground, and concession-operated boat tours and rentals. The landscape includes 4,000 trees, a natural meadow, historic buildings, and landscapes. The park's free speech area — Speaker's Corner — is in the northeast corner of the park and is a constructed hardscape to accommodate intensive use.

Landownership: The Crown

Management: Department for Culture, Media and Sport

Use: Hyde Park is a major site for national and local events, in high demand from the government, commercial, and charitable sectors. It is also highly used for active recreation, such as informal soccer games. There is an effort to encourage uses such as walking, cycling, non-invasive events, educational trips, and tourism, which have less impact on the landscape. The total number of major events is limited, priority being given through the following criteria:

- to improve the quality and range of services for visitors to and users of the parks
- to protect, conserve, and enhance the natural and historic environment of The Royal Parks
- to develop policies and initiatives to encourage wider access by priority groups and non-users of the parks
- to raise the profile of the parks, increase understanding of the role and value of The Royal Parks to London and the na-



The Royal Parks, London, England

tion, and to consolidate our role nationally and internationally at the forefront of park management

- to manage The Royal Parks efficiently and effectively, particularly by improving the financial base and developing partnerships across the public, voluntary and private sectors

Annual Visitation: 5 million (summer 40%; fall, winter, and spring 20% each season).

Major High-Use Events:

- Concerts — 25,000–100,000 visitors about 10 days a year
- Demonstrations — crowds of up to 350,000 sporadically

Table 1: Comparison of Basic Site Characteristics — the National Mall in Washington, D.C., and National and International Parks in this Study

	Size	Annual Number of Visitors	Landownership	Management	Annual Number of Event Permits (avg.)*	Events Required by Law
National Mall, Washington, D.C.	600 acres	26 million	Federal Government	National Park Service	3,000 permitted activities	First Amendment demonstrations, annual celebrations, concerts, and festivals
U.S. Parks						
Central Park, New York City	843 acres	25–30 million	NYC Parks Department	Central Park Conservancy	Six major events/year on Great Lawn, with maximum of 50,000 attendees	None, although many recurring events.
Golden Gate Park, San Francisco	1,017 acres	11–15 million	City and County of San Francisco	San Francisco Recreation and Park Department	N/A	None, although many recurring events.
Millennium Park, Chicago	24.5 acres	3 million	City of Chicago	City and Contractors	N/A	None, although many recurring events.
Piedmont Park, Atlanta	180 acres	3 million	City of Atlanta	Piedmont Park Conservancy	Mo more than five events with more than 100,000 attendees	None, although many recurring events.
Parks in National Capitals						
Canberra, Australia	2,965 acres	300,000	Australian Government	National Capital Authority	N/A	None, although many recurring events.
Ottawa, Canada	7,767 acres total (126 ac. for core parks)	2 million (event attendance)	Federal Government	Crown Corporation	200 events of various sizes permitted	None, although many recurring events.
The Royal Parks, London, England	350 acres	5 million	The Crown	Department for Culture, Media and Sports	N/A	Yes, plus ad hoc events, such as the Queen’s 50th Anniversary.

* The available information from site surveys is not consistent.

BEST PRACTICES

The best practices in this report are rich in both breadth and depth. Thus, for ease of navigation, the remainder of the report holds to a consistent format with similar attributes.

Best practices are grouped into five topic areas:

- Landscape standards
- Design
- Visitor information
- Maintenance
- Events management

Each topic area begins with a brief summary statement on the best practices identified through the case studies, followed by key points and supporting examples from case studies or other relevant sources of information. Keeping this format in mind will allow the reader to more easily navigate the report.

LANDSCAPE STANDARDS

- ◆ Create written landscape standards to align with a park’s mission and vision, and to provide park staff with specific and measurable objectives. These standards should be communicated clearly to the public.

Best Practice: Align uses and standards with park mission and vision

Key points:

- Define the role for high-use activities at a strategic level and make clear links between intensity of use and the quality and conservation of park resources.
- Get public buy-in for landscape quality goals through education and engagement, since the public plays an active role in respecting landscape rehabilitation and resource conservation efforts.

Plan for use by defining landscape standards.

Uses of the park should not contradict either the park’s mission or desired conditions. Identifying the core values or fundamental purpose of the site allows events and associated high-use objectives to be suitably aligned with them. Several national capitals give priority to events that are national in scope and that promote an understanding of national culture, democratic principles, diversity, or identity. Without a clear and controlling strategy, an event program can easily stray from its priority areas, which often results in a level of event activity that is not consistent with the site’s mission and that is not sustainable from a landscape management perspective.

The Royal Parks in London have recently implemented an events strategy. The guiding vision for this strategy is “to try to achieve the perfect balance, where all understand and value the Parks, where everyone finds something in the Parks for them, and where no one’s enjoyment of the Parks is at the unacceptable expense of others, now or in the future.” The basic management tenet to implement this strategy is to “proactively manage the balance between events, other recreation and the conservation of the historic landscapes and remain sensitive to the different needs of different users of the Parks.” This is done by providing “space in the calendar for events of all kinds whilst ensuring controls and limits are in place to protect and conserve the natural and historic environment for future generations and to maintain public access to the Parks for quiet recreation and exercise.” Thus, The Royal Parks has a clear framework and decision-making criteria that can be applied in a consistent manner.

It is the role of the management agency to decide on allowable uses of its land by area. A simple mapping between goals and objectives for use and available areas can save a lot of time and avoid errors that are inevitable when

a consistent model is lacking. Both Canberra’s **Parliamentary Triangle** and Ottawa’s **National Capital Commission (NCC)** identify areas within the managed landscape by appropriate event types, capacity, and available facilities (e.g., utilities, washrooms, and parking). This approach ensures that land use is consistent with the organization’s objectives and facilitates site selection discussions between event organizers and event staff.

Educate visitors on landscape management goals.

Using positive messaging to convey to the public why an area is closed or a use restricted due to resource rehabilitation efforts or regular maintenance procedures helps build support for maintenance goals. **Central Park** uses a red flag system for field rotation, such as heavily used ball fields (e.g., those at the North Meadow and the Great Lawn). To preserve the North Meadow’s 12 fields while accommodating 6,000 baseball and softball games that are played each season, the Central Park Conservancy keeps one baseball and one softball field closed at all times, rotating from field to field every few weeks. This rotation allows the fields to recuperate and allows for necessary maintenance. The red flag system also alerts the public to horticultural care being performed or to adverse lawn conditions requiring the landscape to be closed (such as a large event, when soil is compacted from heavy use, or after rain, when soil is especially vulnerable to compaction).

Best Practice: Use written landscape quality standards

Key points:

- Define management areas and subareas.
- Set specific, realistic, and measurable landscape quality standards for all areas or subareas within the park. Not all areas are equal in terms of desired or attainable landscape standards.
- Set quality expectations and guidelines for all maintenance activities and link these expectations to landscape quality standards.

Develop a framework for conceptualizing landscape quality for different areas.

Defining a framework for desired quality is the starting point for addressing tensions between high use and landscape quality. Achieving high landscape quality standards is a challenge for parks with extremely high levels of use. The tension between high-use levels and a high-quality landscape can be further exacerbated by budget restrictions, limited resources, and lack of maintenance expertise.

A landscape quality standard is a specific objective for an area within a park that translates into the desired appearance and condition of natural and cultural resources and site furnishings. Standards are set for areas within a park (e.g., the Tidal Basin within the National Mall) and for specific elements that make up an area (e.g., benches, trees, and turf).



The red flag system used in Central Park alerts visitors to area closures for maintenance.

Due to variations in levels and types of use by visitors and resource protection needs, landscape quality requirements will necessarily vary from area to area within a park, as well as for the elements within an area. Thus, quality standards must be specific enough to deal with these variations. Defining a comprehensive set of standards for each area and for the elements it includes provides a framework for determining desired quality at both a high and low level of specificity.

However, merely defining landscape quality standards is not sufficient to ensure that standards are upheld. Quality expectations for all maintenance activities must also be set and linked back to the landscape quality standards. A landscape quality standards framework serves as a performance-based evaluation tool for maintenance. The performance of the maintenance program, whether in-house or contracted out, is evaluated against the achievement of quality standards. With these types of standards in place, parks are better able to strategically plan their maintenance programs, focusing resources in areas where standards are set at high levels.

Many of the study sites have written landscape quality standards. (All site-specific documentation that was provided by study sites can be found in the supporting material that accompanies this report.) The remainder of this section highlights standards used in

parks surveyed, as well as standards gleaned from other sources.

Table 2 outlines four different landscape quality standard frameworks and their application to a specific element — turf. Examples are drawn from Ottawa and San Francisco, as well as two sites that were not part of the study — Auburn, Indiana, and Trent University in Canada. (The utilization of landscape quality standards was uncovered through secondary research and provides further examples of written landscape standards.)

The examples in Table 2 illustrate the points made above regarding clear definitions for desired levels of quality at an area and element level. Furthermore, the required maintenance activities (e.g., cutting and trimming grass) to achieve a quality standard (e.g., mowing height or frequency) are indicated. To be effective, landscape quality standards must be linked to maintenance specifications.

Two additional maintenance standards that are noteworthy have been included in the support binder: City of Toronto, Parks and Recreation Division, operating standards, turf level of maintenance, and City of Seattle, Parks and Recreation, *2005 Best Management Practices Manual*. They are not included in Table 2 because they are specific to the “type of area” which does not fit well with a comparison of high to low standards.

Table 2: Landscape Quality Standards Comparison Matrix

Source	National Capital Commission, Ottawa	San Francisco Recreation & Park Department	City of Auburn, Indiana	Trent University, Canada
General Definition	Landscape quality is defined for activities and subactivities within a park. Maintenance contractors are held to this level of performance.	Landscape quality is defined for park features and elements within those features. The measurement of tangible features is a pass/fail system. Quality is assessed by staff and the general public. Highest through lowest rankings have been generalized based on available documentation. There is no defined rating system (i.e., >80% positive responses equals high quality).	Landscape quality is defined by levels stemming from the National Recreation and Park Association standards. Park areas are set to a level, and standards are benchmarked against current and past practices and the needs of each park.	Landscape quality and maintenance standards are defined by zone. Definitions for zones relate closely to use (e.g., high use athletic fields through to naturalized areas).
Example: Turf				
High standard	<i>Class A (Premium):</i> Manicured lawn (turf only with	A park that meets all standards.	<i>Level 1:</i> Grass height is maintained according to species and	<i>Zone A: Athletic Fields.</i> (Areas subject to more rigorous use

Source	National Capital Commission, Ottawa	San Francisco Recreation & Park Department	City of Auburn, Indiana	Trent University, Canada
	no other type of ground cover). All turf area is at maximum density, uniform in cut, texture, color and appearance (no bare spots and minimum amount of weeds). All maintenance subactivities are at maximum frequency.		variety of grass. Mowed at least once every seven to nine workdays. Aeration as required. Reseeding or sodding as needed. Weed control is practiced so that no more than 1% of the surface has weeds present. (Level 1 is reserved for special, high-visibility, high-traffic areas that require a high level of maintenance.)	than any low maintenance methods can adequately sustain.) Weekly inspection during growing season. Intensive maintenance required; may be impossible to eliminate herbicide use. Frequent scheduled "rest periods" required. 5-7 day mowing cycle; mow no shorter than 2½" in height.
	<i>Class B (High):</i> Well maintained lawn (turf with some other type of ground cover). Most turf area is at medium to maximum density, uniform in cut, color and general appearance (minimum bare spots and weeds). All maintenance subactivities are close to maximum frequency.	A lower number of standards are met. There is a logical gradient from highest to lowest, allowing for comparison between park sites.	<i>Level 2:</i> (This is the norm, expected on a regular, recurring basis. The "desired standard" for most park areas.) Grass cut once every 7-9 working days. Aeration as required and as time and resources permit. Athletic field irrigation. Garden areas utilize a combination of in-ground sprinklers or quick-couple systems. Reseeding when bare spots are present. Weed control is applied to problematic areas only. Funding levels do not permit a system-wide herbicide program.	<i>Zone B: High Profile Areas:</i> (Areas require the next highest standard of turf quality.) Inspection every two weeks during growing season. Ideal locations for carefully planned turf management experiments to maximize growth and minimize use of chemicals. Weekly mowing; mow to 3" -3.5" .
Mid to Low Standard	<i>Class C (Good):</i> Meadow like fields with tall grass and some weeds. Fields are cut periodically; swaths are cut along fences, lanes, roads and paths for fire breaks and visibility. Maintenance subactivities at minimum to medium frequency.	Park meets few to none of the standards. There is a logical gradient from highest to lowest, allowing for comparison between park sites.	<i>Levels 3 and 4:</i> (These levels fall just below the norm. Areas may be at this level due to low visitation or development or from staffing or funding limitations.) <ul style="list-style-type: none"> • <i>Level 3:</i> Grass cut once every 7-9 workdays. Normally not aerated unless turf quality indicates a need or in anticipation of an application of fertilizer. Reseeding only when major bare spots appear. Weed control measures normally used when 50% of small areas are weed infested or when 15% of the general turf is infested with weeds. • <i>Level 4:</i> Low-frequency mowing scheduled based on species. Low-growing grasses may not be mowed. High grasses may receive periodic mowing. Weed control limited to legal requirements for noxious weeds. <i>Level 5:</i> (This level is reached through minimal maintenance; one step before lands return to their original state.) Low-frequency mowing scheduled based on species. Low-growing grasses may not be mowed. High grasses may receive periodic mowing. Weed control limited to legal requirements for noxious weeds.	<i>Zone C: Low Maintenance Recreation Areas.</i> (Areas require mowing due to pedestrian traffic, but quality of turfgrass is not important.) Inspection monthly during growing season; 7-10 day mowing cycle; mow to 3" -3.5" . No pesticides. Plant health care methods if budget allows.
Other Standards	<i>Class N (Naturalized Lands):</i> Field kept clean of debris; 3-meter-wide swaths maintained along	N/A	<i>Level 6:</i> (Land that was allowed to return to its original natural state or already exists at that state.) Not mowed. Weed con-	<i>Zone D: Naturalization.</i> (For lawn areas that could be converted to other uses including natural.) Inspection in the spring and fall.

Source	National Capital Commission, Ottawa	San Francisco Recreation & Park Department	City of Auburn, Indiana	Trent University, Canada
	fence lines (for fire breaks), roads and recreational paths. Maintenance subactivities at minimal frequency.		trol only if legal requirements demand.	When border on existing natural area, mow edge 1 meter from natural area. No pesticides.

SOURCES: Additional material for all examples is included in the support materials.

National Capital Commission, Ottawa, "Request for Proposal – Core Parks and Confederation Boulevard."

San Francisco Recreation & Park Department, "San Francisco Park Maintenance Standards: The Manual and Evaluation Forms," May 2005.

Measured elements and unit of measure:

- Cleanliness: Turf is free of litter; turf is free of organic debris that impedes mowing.
- Color: 80% of turf area is fairly green.
- Density and spots: 80% of turf area is free of bare spots.
- Drainage/flooded areas: 80% of turf area is free of standing water two days after rain or two hours after irrigation.
- Edged: 80% of edges are clearly defined and have less than four (4) inches of growth over adjoining landscape.
- Height/mowed: Lawns are mowed and kept at a uniform height of less than ankle height.
- Holes: noticeable from a 10-foot distance, lawns are free of visible holes greater than six (6) inches in diameter and/or depth.

City of Auburn, Indiana, Report. Available at <www.ci.auburn.in.us/departments/parks&recreation/2006_2010_VisionPlan/4-Maintenance.pdf>. Accessed Nov. 6, 2006.

Trent University, Canada, "Trent University Grounds Management Plan," 1998, (based on City of Peterborough system). More detail on fertilizing, top dressing, over-seeding, weed and insect control, irrigation, and aeration is in the support binder.

Create detailed specifications for landscape quality standards

The National Capital Commission in Ottawa has defined specific landscape quality standards, as shown in Tables 3 and 4. This section discusses the approach used in Ottawa in more detail.

Ottawa's landscape quality system is a three-tiered structure:* first by site, then by activity, and finally by subactivity. As an example, Table 3 provides the quality standard by activity across four of the major event sites in Ottawa's downtown core. All of these event sites are high profile and high use; therefore, the most common landscape quality designation is Class A (premium), followed by Class B (high), and finally Class C (good) for one landscape activity at Lebreton Festival Site and Vimy Place.

For each of the 14 activities listed in Table 3, the specifications for landscape quality standards define the scope of the activity followed

by a description for each class (quality level). See Table 4 for an example of the activity level detail for turf.

To this point, the site and activity level information has been qualitative. Classes, activities (e.g., turf, drainage systems), and sites (i.e., specific park areas) are easily understood by almost anyone, including park managers from any discipline or specialists such as landscape architects and maintenance contractors.

It is at the subactivity level that the details become more prescriptive, providing a level of detail required by the in-house maintenance department or maintenance contractors. At this level, standards established at the higher level (e.g., Class A) are linked to day-to-day activities.

The National Capital Commission standards also include the following subactivities under turf: cutting and trimming (more detailed standards are shown in Table 4), watering, fertilizing, edging, aerating, top dressing, and seeding and overseeding. These specifications provide maintenance staff with ample guidelines for achieving the designated class.

* Ottawa uses the terms "site" and "activity." Throughout the remainder of the report the term "area" is used rather than site, and "element" rather than activity.

Table 3: Landscape Quality Standards, National Capital Commission, Ottawa

Activity	Major's Hill Park	Parliament Hill	Confederation Park	Lebreton Festival Site and Vimy Place
Turf	A	A	A	A
Trees and shrubs	A	A	A	A
Flowers, bulbs, and perennials	A	A	A	C
Non-desirable vegetation/nests/small animals	A	A	A	A
Roadways/parking lots	B		B	B
Roadways/parking lots (minimal services at government sites)		B		
Walkways/pathways/sidewalks/trails	B		B	B
Walkways/pathways/sidewalks/trails (government sites, minimal services)		B		
Site lighting and electrical systems	A		A	A
Drainage systems	B		B	A
Plumbing, irrigation, water systems	A	A	A	A
Fixtures and furniture	A	A	A	A
Snow and ice control	B	A	A	A
Waste/cleaning operations	A	A	A	A

NOTE: This matrix has been modified from the original provided by the National Capital Commission.

- Class A: Premium level of quality services.
- Class B: High level of quality services.
- Class C: Good level of quality services.

Table 4: Quality Standards for Turf, National Capital Commission, Ottawa

Class A: Premium Level	Class B: High Level	Class C: Good Level	Class N*
Activity: Turf — Includes all turf areas located within the boundaries of this Contract. The Contractor shall perform the following tasks: the supply of all plant material and products, machine and manual cutting, trimming, watering, fertilizing, edging, aerating, top dressing, seeding and over seeding.			
Manicured lawn (turf only with no other type of ground cover). All turf area is at maximum density, uniform in cut, texture, color and appearance (no bare spots, minimum weeds). All maintenance subactivities are at maximum frequency.	Well-maintained lawn (turf with some other type of ground cover). Most turf area is at medium to maximum density, uniform in cut, color and general appearance (minimum bare spots and weeds). All maintenance subactivities are close to maximum frequency.	Meadow-like fields with tall grass and some weeds. Fields are cut periodically; swaths are cut along fences, lanes, roads and paths for fire breaks and visibility. Maintenance subactivities are at minimum to medium frequency.	Field kept clean of debris. Three-meter-wide swaths are maintained along fence lines (for fire breaks), roads and recreational paths. Maintenance sub-activities at minimal frequency.
Subactivity: Cutting and Trimming**			
Cut to 7 cm before it reaches 10 cm (all lands).	Cut to 8 cm before it reaches 12 cm (all lands).	Cut in July and again in September (all lands in general). Cut to 15 cm when it reaches 25 cm (only for fire breaks and overflow parking).	Cut to 15 cm when it reaches 25 cm (only along fence lines, recreational pathways). Cut three to four times per season (5 m wide along fire lanes and 2 m wide each side of recreational paths).

* The National Capital Commission has also defined standards for Class N, which refers to Naturalized Lands. No naturalized lands in the core parks are presented in Table 3.

**Special requirements:

- Use mechanical weed trimmer only around non-vegetative items (hand trimming around trees, shrubs, flowers, etc.).
- Blow grass clippings away from cultivated plant beds and hard surfaces. Rake excessive clippings and remove from site immediately after mowing (removal of excessive grass clipping not required on Class C lands).
- Trimming operations to be completed at the same time as cutting operations and during the same working day for any given site. For Class C trim around all trees, posts, fences, bus stops close to roads.
- Clean up and remove all debris from site after each work day.



Quality is reflected in the design of orientation and information signs at the parks in Ottawa.

DESIGN

- ◆ Coordinate a site’s identity and landscape appearance through consistent, appealing, and appropriate site furnishings, information, and circulation, which contribute to higher quality visitor experiences. Design sites to accommodate events and regular use and to support ease of maintenance.

Best Practice: Establish a sense of place

Key points:

- Reinforce place character through branding — use of logos and consistent site furnishings.
- Set high expectations for design quality and the use of enduring materials.

Build strength and quality into your brand.

A logo for the park that is recognized and respected by all visitors helps establish a sense of place and can be used as a tool for building brand awareness. Branding should be consistent and applied to all aspects of a park’s operations. **The Royal Parks** has established a coordinated park identity for both contractors and park staff. To maintain a strong connection to the brand, all contractor vehicles dis-

play clear and consistent park messaging. This is achieved even though the maintenance contracts are spread over a number of companies.

In **Ottawa** the National Capital Commission’s high-quality bronze wayfinding displays, large information fixtures along city streets, and seasonal banners build a consistent and recognizable brand throughout the city.

Best Practice: Control circulation and access

Key points:

- Control access for safety (e.g., capacities are not exceeded) and the protection of



Maintenance contractors brand trucks to capture the park’s brand, The Royal Parks.

landscape elements (e.g., avoiding soil compaction and trampling of tree roots).

- Design pathways and entrances to accommodate visitors' needs (e.g., multi-use trails, events, and protests).
- Reduce damage to the landscape through the use of fencing, social trail reduction tactics, edging, and corner treatments.



Curved pathways eliminate erosion at corners in London's Royal Parks.

Design entrances to accommodate circulation patterns.

Enlarging the paved areas at park entrances presents an inviting and welcoming image while dispersing foot traffic. Using permanent entrances as security checkpoints for events reduces landscape damage. Fencing installed around the periphery of event sites restricts visitor access to permanent or temporary entrances and exits.

Many of the highly used park areas in **Ottawa** have well-defined entrances and decorative fence peripheries. These design elements work well for regular as well as high-use events. In contrast, **Central Park** uses temporary fencing along the periphery of many high-use turf areas as a barrier to entry, except at designated entrances. Gaps in fencing are created for entrances, and these entrances are moved periodically to better disperse landscape damage.

Design pathways for effective access and circulation.

Pathway materials vary and commonly include crushed stone, gravel, stone pavers or brick, and concrete or asphalt. Pathways should be

built to accommodate expected use (e.g., building wider trails in high-traffic areas).

Site surveys revealed that asphalt or similar materials are most prevalent and preferred in terms of ease of maintenance and durability. In **Chicago** the Lakefront Path is a 10-foot-wide bike and in-line skating path with 3 feet of gravel path on either side for runners and walkers. Rather than battle the social paths that inevitably develop beside asphalt pedestrian paths, the running section is gravel, which is preferred by runners and high-impact walkers.



Park entrance controls circulation at Confederation Park in Ottawa.

Edges define walkways and reduce trampling in Ottawa (left) and Piedmont Park in Atlanta (right).



Granite curbing & edging.

Erosion at pathway corners and intersections can be reduced by avoiding 90 degree angles. **The Royal Parks** use arcs to round the pathway corners and intersections.

Corners can be softened with cobblestones or other durable materials where damage has already occurred. Raised curbs and decorative low fencing can be installed to encourage visitors to stay on designated pathways. Corner treatments, curbs, and low fencing can be aesthetically pleasing while still being effective in reducing resource damage.

Social trails can be combated through the strategic placement of bike racks, boulders, logs, hedge-fences, metal fencing, signs, and pavement markers to redirect pedestrian circulation patterns. Obstacles placed along habitual routes encourage a change in pedestrian behavior. In **Ottawa** a successful tactic for dis-

couraging continued use of social trails and diverting traffic back onto an adjacent walkway involved planting shrubbery in line with the entrance and exit of the social trail. The National Capital Commission experienced some resistance from the public when initially employing this tactic, but the approach was ultimately accepted and the diversion back onto the asphalt pathway was successful.

Pathways should be designed to accommodate multiple uses. Controlling circulation is not only an issue for event management. Heavy ongoing use is a concern at most study sites. Multi-use trails designated for pedestrians, bikes, and even equestrian use and cars at **The Royal Parks** controls congestion and confusion. Free shuttles and road closures during weekends and busy periods put a focus on a pedestrian-oriented experience.



Landscape damage at corners in Ottawa has been mitigated with cobblestones and other durable materials.



Various styles of fencing protect the landscape. The Royal Parks in London (top and middle left, bottom right), Central Park in New York City (bottom left), and Ottawa (below).



Circulation and access challenges should be considered from a historical point of view, and important historical characteristics should not be eliminated in order to address present-day problems. In **Central Park** the Mall and Literary Walk are formal elements of the original design. The park acknowledged the public's need for a place to socialize; they knew that a "grand promenade" was an "essential feature of a metropolitan park." Flanking the 40-foot-wide Mall are quadruple rows of American elms (see the photo on page 2). The elms and surrounding turf are permanently fenced off, with pedestrian traffic contained on the walkway and seating provided on benches that follow the fencing.



Plants atop seats (designed with appearance similar to steps) thwart a developing social trail in Millennium Park in Chicago.



Examples of trails designed and marked for various uses. The Royal Parks at the top, Golden Gate Park at the bottom.



The Commons, Ottawa's new event space, is designed to accommodate large-scale use.

Best Practice: Design to accommodate events and regular use with less impact

Key points:

- Develop specific areas to accommodate events.
- Pave areas to provide space for event infrastructure, including mobile food stands, information kiosks, stages, speaker's corners, etc.
- Incorporate landscape elements that are robust enough for high use (e.g., turf specific for sports fields or golf courses).
- Incorporate utility connections within park furniture, such as bollards or light posts.
- Design tent anchor locations to support and control the location of tents at events.

Design new or existing sites for event use.

Redeveloping existing spaces or designing new spaces with events in mind improves visitor experiences, reduces the negative impacts of events, and addresses landscape management challenges (e.g., poor soil conditions). Designing specific sites with high-use events in mind shifts pressure away from other high-use areas.

Prior to 2003, the sports fields in Regent's Park, one of **The Royal Parks** in London, were in poor condition. Many of the fields

consisted of a thin topsoil over a substantial amount of rubble fill. While the park was over 200 years old, the fields had been used as a convenient fill site for rubble from extensive damage during the Second World War. After various attempts to mitigate the impact of the poor playing surfaces, a decision was made to seek funding to redevelop 49 acres of sports surfaces and to then maintain them to a consistently high standard. The park successfully solicited grant funding to offset a large portion of the cost. Professional sports field contractors and consultants were engaged to develop new playing surfaces that would be capable of supporting the huge number of organized and social games that take place daily in the park.

The sports fields now perform to a consistently high standard, supported by a robust design, sand layers, topsoil, turf, drainage, and automatic irrigation systems. New operating procedures and preventive maintenance schedules have ensured that these high standards are maintained.*

In **Ottawa** the National Capital Commission slated a prime piece of property in the downtown core for redevelopment. Started in 2002, the event space will be inaugurated in the summer of 2007. Referred to as **The Commons**, the design for the space caters to large-scale use, with a capacity of 20,000, thus taking

* For more information on the new fields and facilities, visit <http://www.royalparks.gov.uk/parks/regents_park/hub/thehub.cfm>.



Event hardscape can be attractively designed, as at Confederation Park in Ottawa.

pressure off other sites used for events. For example, the turf design is based on golf course design, the irrigation system gets water from the adjacent museum's cooling tower, utility hookups are embedded in site furnishings, and hardscape is available for staging.

Create hardscape areas for event infrastructure.

Hard surface spaces should be planned and located to complement and protect turf areas. Hardscapes should be of an appropriate size for event infrastructure, especially stages, tents, portable restrooms, and dumpsters. Hardscape pathways are appropriate for service vehicles, with access routes that do not negatively impact the landscape.

In recent years, the **National Capital Commission** in Ottawa has taken steps to better accommodate events in its high-use sites. Some turf areas have been replaced with hardscapes designed to accommodate staging and other event infrastructure.

The famous Speaker's Corner at London's **Hyde Park** is a hardscape area designated for free speech and public assembly. This allows for almost unlimited pedestrian traffic and gatherings on the site every day of the week without significant landscape damage.

Incorporate utility hookups within park furnishings.

Standardized utility hookups to support event goals reduce utility line hazards and the need for supplementary temporary utilities and generators. Utility hookups can be disguised in park furnishings when not in use. Utility bollards can be located in convenient locations to accommodate staging and event vendor needs.

Use permanent anchors to accommodate event structure on hardscapes.

Whenever possible, hardscapes should be used for event structures instead of turf areas. Anchor points on hardscapes can accommodate tents and other event structures. Chicago's **Millennium Park** has pre-installed tent anchors, which control where temporary structures can be located, thus preventing damage to irrigation systems caused by tent stakes. Controlling the placement of infrastructure helps keep important views and vistas unobstructed.



Snack bar tent anchored to hardscape and anchors for tents found throughout the Promenades in Millennium Park.



Standardized utility hookups can be disguised in bollards, reducing the need for temporary facilities. Shown are utility hookups in Ottawa (left and center) and a utility bollard in Chicago's Millennium Park (right).

Best Practice: Design for ease of maintenance

Key points:

- Standardize and limit the numbers and types of site furnishings.
- Pave under seating, trash containers, and information/interpretive signs.

Place hard surfaces under site furnishings and information/interpretive displays.

Hard surfaces under and around seating, trash containers, and information/interpretive signage prevent wear and tear on turf. Quick fixes are more expensive in the long run. The most appropriate material should be used to match

Standardize site furnishings.

Using a uniform design for site furnishings, such as waste containers, benches, lighting, and bollards, improves the appearance of the landscape. Consider the park's brand and an area's use when selecting site furnishings. Beyond aesthetic appeal and the presentation of a consistent identity, standardized site furnishings reduce costs and increase the efficiency of regular maintenance, repair, and replacement efforts.



Hard surfacing adjacent to visitor stopping places prevents wear and tear on turf. Examples are from Ottawa (top left), Central Park in New York City (top right), and Millennium Park in Chicago (left).



Bench styles sitting on hard surfaces protect turf. The Royal Parks (left top and bottom), Piedmont Park in Atlanta (top right), and Ottawa (bottom right).

surrounding design elements — cobblestones, pavers, asphalt, etc. As was the case at some study sites, the need to place site furnishings and signs on hard surfaces often becomes apparent after damage has been done to the surrounding landscape.

parks) to eliminate confusion and improve visitor experiences.

- Present coordinated visitor information, orientation, and interpretation signage.

VISITOR INFORMATION

- ◆ Provide information to visitors to educate and orient them. Use a range of media to educate visitors on natural and cultural resource protection challenges. Orientation must be comprehensive and coordinated with a park's surroundings.

Best Practice: Provide information that is identifiable, consistent, understandable, and current

Key points:

- Partner with other agencies and organizations (e.g., surrounding museums or



Piedmont Park in Atlanta provides information and orientation in a designed setting.



Innovative orientation and information signs in London's Royal Parks.

Build partnerships to streamline visitor information.

Coordinating signage with other parks, museums, and visitor attractions reduces visitor confusion. Highly visible signs should provide information and orientation for both pedestrians and vehicle passengers. Visitors are often unaware or less concerned with management and jurisdictional boundaries than are the responsible agencies and organizations. Partnerships that promote a seamless visitor experience among complementary visitor attractions enhance visitors' experiences.

Develop effective and well-designed signage.

Consistent and clear orientation and information signs improve visitor experiences. Signs should combine good design and meet the needs of visitors. Specifically:

1. *Provide consistent maps and information signs for visitors at major pedestrian and vehicle intersections.* Signs should be up-to-date, universally accessible, viewable by several people at once, have broad appeal, and be very durable and able to withstand abuse or constant touching.

Signs should be located near entrances and at major circulation intersections.

2. *Provide simple directional signs for pedestrians, and use universal symbols to identify visitor facilities (restrooms, food services, etc.) and locations.*
3. *Develop stand-alone educational and interpretive signs throughout the park with a design that is consistent and compatible with the landscape and other site furnishings.*



Directional signage with universal symbols in The Royal Parks.



Signs provide interpretive information, park rules, and a detailed map in New York's Central Park.

4. Use seasonal banners along major tourist routes to reflect a new theme or celebration in the park.

The accompanying photos illustrate a number of different approaches to information and orientation at **Piedmont Park**, **The Royal Parks**, and **Central Park**. Note the use of hard surfaces under the signage, the eye-catching pavement designs at The Royal Parks contrasted with an obelisk and floral display at Piedmont Park, and the level of detailed information conveyed to visitors.



Best Practice: Reinforce resource protection messaging

Key points:

- Educate visitors on park programs that target resource protection challenges.
- Encourage the responsible behavior of visitors. Display positive messaging and park rules.

Use "clean and green" messaging.

Promoting visitor behavior to support a clean and green park aids in resource protection by visitors. All of **Central Park's** red flag signs refer to keeping the park green, reinforced by "Keep Park Clean" on park concessions.



Signs in The Royal Parks provide detailed information and orientation.



Vendor cart in New York's Central Park promotes "clean and green" messaging.

Best Practice: Use cutting edge education and information methods

Key point:

- Use a variety of approaches for education and information, including web-based tools, traditional interpretive panels, and permanent and mobile welcome centers.

Complement traditional approaches with new technology.

Chicago's Millennium Park uses a mobile welcome cart to increase the park's flexibility to get information in the hands of visitors. Ottawa's National Capital Commission opens a seasonal visitor's center in a temporary structure to address increased visitor use during the summer; the permanent visitor center is centrally located downtown.

Self-guided walking tours are a popular addition to ranger-guided tours. Self-guided tours with pamphlets are common and include a map of each site, information about all the points of interest, distance of each walk, and degree of difficulty. At Millennium Park free MP3 self-guided audio tours are available for download for personal players, and self-guided audio tour devices are also available for rental.

MAINTENANCE

- ◆ Develop a landscape maintenance program that complements landscape quality standards. Structure the program to suit the park's size and complexity, usage levels, maintenance infrastructure, and staffing and volunteer structures.

Best Practice: Use a staffing model that works for the organization

Key points:

- Assess different staffing models, including in-house staff, contract services, and private/public partnerships.
- Maintain an adequate level of expertise in specialty skills on the park staff (e.g., landscape architecture).
- Use volunteers to enhance staff and contractor efforts.

Explore a range of staffing models.

The staffing model should complement the needs and desired culture of the organization. One model does not fit all situations. There are likely several options for different parts of the park's maintenance operation.

Golden Gate Park in San Francisco represents the classic in-house model for maintenance operations. Seventy full-time employees provide coverage seven days a week. On weekdays staff is on duty from 4 a.m. until midnight.



Mobile welcome center in Chicago's Millennium Park.

Atlanta's **Piedmont Park Conservancy** uses a combination of paid in-house specialists as well as a volunteer workforce of more than 1,000, including off-duty police officers for park patrols.

New York's **Central Park Conservancy** has a full time staff of 170 and 30 seasonal staff dedicated to maintenance and operations. While the majority of maintenance activities are covered by in-house staff and volunteers, tree care, sanitation, and solid waste removal are contracted out.

Ottawa's **National Capital Commission** has contracted its maintenance services since the mid 1990s. The catalyst for contracting out these services was pressure to reduce budgets, and the change resulted in approximately a 25% reduction in maintenance costs. To mitigate the impact of layoffs, the commission encouraged employees to establish companies (employee takeover corporations) that could compete to provide the services as contractors. Not all maintenance-related positions were contracted; NCC staff is responsible for high-level maintenance related planning and management, including contract management.

Chicago's **Millennium Park** has a pool of certified contractors. This pool is determined from a request-for-proposal outcome where-

by interested firms put forth their proposed approach to meeting the park's maintenance objectives. When new maintenance projects are required, Millennium Park issues requests-for-proposal against the certified pool of contractors. The majority of maintenance is conducted by the Chicago Parks District. Most day-to-day maintenance is subcontracted out by the prime property management contractor, who then manages more than 15 subcontracts, including custodial, security, repair, and garbage removal services.

For London's **Royal Parks**, all maintenance has been contracted out for the past 14 years, with the contracts spread over a number of companies. However, to maintain a strong connection to The Royal Parks brand, all contractor vehicles display clear and consistent park messaging.

Engage volunteers in maintenance activities.

The use of volunteers can enhance the parks' landscape maintenance program, with volunteers integrated into regular and seasonal activities. Volunteers with specialty skills bring a fresh perspective, along with a genuine interest in helping the park achieve its goals.

Central Park relies on over 300 volunteers, including a group of horticulture volunteers who work one to five mornings every week. Additionally, over 3,000 people volunteer annually through corporate and school groups and cleanup type events.

Piedmont Park has strong support from volunteers. For example, a Cleaning Green activity is held every Saturday, which attracts over 2,000 volunteers per year, and off-duty law enforcement officers regularly volunteer for park patrols. Community support is paramount; even outside contractors supply their excess mulch to Piedmont Park.



An advertisement for volunteers at The Royal Parks.

Best Practice: Ensure goals, standards, and design intent are understood

Key points:

- Ensure that maintenance staff and contractors understand quality expectations.
- Monitor maintenance performance against landscape quality standards.
- Reward consistently high performance and address poor performance immediately.
- Promote respect through a zero tolerance approach toward trash on the ground or overflowing from trash receptacles, graffiti, and other forms of vandalism.

Link landscape standards to day-to-day maintenance activities.

An understanding of landscape standards at the operational level is essential so that standards are not viewed as solely a theoretical discussion. Maintenance staff must be educated on the activities required to achieve standards, with monitoring of maintenance and landscape staff and contractors against the agreed standards. For both **The Royal Parks** in London and the **National Capital Commission** in Ottawa, contractors take a proactive approach to meet responsibilities, responding quickly to emergency situations, as well as handling routine work.

Demonstrate respect for the park through high maintenance standards.

Maintenance staff reinforce resource protection messaging through constant attention to the park's image. A zero-tolerance approach toward trash on the ground or outside trash receptacles, graffiti, and other forms of vandalism promotes respect by visitors. By removing trash nightly and promptly removing graffiti, **Central Park** staff demonstrate respect for the park to visitors.

Best Practice: Organize maintenance staff by zone and specialties

Key points:

- Organize staff by geographic zones to develop expertise and to instill pride in one's work and a caring attitude toward the park.
- Manage zones to specific landscape standards.
- Develop specialty teams that work in all zones as needed.

Develop a sense of pride in work through staffing by zone and specialty.

Organizing staff by district or zone and by specialty instills a sense of pride and accountability to established landscape quality standards.

Central Park is divided into 47 zones, defined by geographical boundaries and distinctive characteristics, with dedicated staff responsible for specific zones. Zone-assigned staff are supplemented by parkwide crews in areas requiring special expertise or where the needs are highest. The staff is divided as follows: 35 supervisors, 2 horticulturists, 15 landscape architects and designers, 50 gardeners, 1 biological science technician, 3 tree workers/arborists, 1 turf specialist, 50 laborers, 1 integrated pest manager, 20 grounds cleanup/recycling technicians, and 3 trade specialists.

Golden Gate Park is organized by zone and specialty. There are eight maintenance areas in the park (six landscape zones, the Conservatory, and the park nursery). Parkwide staff consists of 53 gardeners and 17 custodians, who are divided into designated crews and assigned to landscape zones. Work is supplemented by citywide parks crews in turf management, forestry, structural maintenance, mechanical maintenance, and supply.

Piedmont Park is organized by sites into the Meadow area (15 acres), Oak Hill (20 acres), Front Lawn (7 acres), Active Oval (baseball

and soccer fields), and Magnolia Hall and the Bathhouse area. While most of Piedmont's landscapers cover all areas, Piedmont has started to specialize and experiment with zones. The grounds, landscape, and janitorial staff consist of 11 people.

At **The Royal Parks** most contracts have a tight geographic focus, resulting in contract staff developing expertise and commitment to the particular area in the parks under their care.

Best Practice: Develop staff

Key points:

- Hire staff based on both experience and attitude.
- Support the professional development and upward mobility of employees to boost morale and satisfaction levels.
- Ensure that managers visibly participate in day-to-day activities.

Make great hiring choices.

A well thought-out hiring and retention process guarantees a fully engaged and capable staff. Hiring should be based on relevant education and demonstrated skills, but more importantly on the ability to interact with the public, enthusiasm, and a willingness to perform duties. Where possible, permanent staff should be recruited from high-caliber seasonal staff. Using job titles such as landscapers and gardeners, instead of laborers, adds prestige for staff.

Encourage staff to continuously improve.

Continuously motivating employees through increased responsibilities, upward mobility, training opportunities, skills acquisition, and mentoring helps build a committed staff. Showing appreciation through regular events for staff (e.g., quarterly luncheons) helps ensure that staff are recognized for their accomplishments. Professional development, such as

industry certifications and licenses,* should be encouraged, along with support for attending classes, workshops, talks, and seminars from local landscape and turf organizations.

Develop a culture of active management.

Having managers actively engage in day-to-day operations helps remove the communication barrier between line staff and management. **Piedmont Park's** staff exhibit strong dedication and professionalism. The management team has a hands-on and fully engaged attitude toward the operations and maintenance of the park. The entire team has a full understanding of all the equipment and procedures and is in constant communication. Managers are diligent with landscape inspections, monitoring conditions of turf, plant beds, furnishings, irrigation systems, and solving issues before they become a significant problem. For a park the size of Piedmont, the industry average size for landscape staff would be approximately 25, however Piedmont is able to handle landscape maintenance with a staff of 11, supported by a strong volunteer program.

Best Practice: Develop plans for regular and emergency maintenance

Key points:

- Develop creative and flexible approaches and written schedules for recurring, periodic, and seasonal maintenance activities.
- Develop a system to address typical emergencies and complaints.
- Respond to complaints in a timely manner, and develop and maintain a system to convey that action has occurred.
- Develop a system to monitor and track park conditions.

* Piedmont's landscapers are encouraged to obtain their pesticide license, consisting of a regimen of coursework and tests from the Georgia State Agriculture Department.

Schedule maintenance to address regular and unexpected needs.

Maintenance planning for known recurring, periodic, and seasonal activities should be conducted annually. Flexibility is needed so that schedules can be quickly modified to accommodate shifts in visitor use patterns, seasonality, weather, personnel availability, events, managerial priorities, and park projects. Static schedules, while easy to plan, fail to serve maintenance needs effectively over time.

Supervisors should distinguish between frequently recurring tasks, such as mowing, and less frequent tasks, such as pest control, and balance scheduling between these two types of tasks. Regular meetings between park maintenance managers and line supervisors help coordinate work and facilitate decisions on staffing and schedule requirements. Special event staff maintain close communication with maintenance staff regarding anticipated needs.

Respond to problems and complaints effectively.

Both internal and external systems should be developed for dealing with emergencies, complaints, and general inquiries in a timely fashion. With procedures in place to respond to issues, the quality and safety of the landscape improves. Examples of issues to watch out for include being alerted to activities on closed turf areas, irrigation systems that are malfunctioning, vandalism of site furnishings, and hazardous trees.

Calls from the public regarding landscape management issues are important for other monitoring efforts by park or contractor staff. In Ottawa the **National Capital Commission** has put a system in place to deal with emergencies, complaints, and general inquiries. The primary call center is not staffed 24 hours, but an off-hours call service is used to provide round-the-clock service. The call center (or call service) can relay any issues to the maintenance contractors, who also have 24-hour

emergency lines, and maintenance contractors must be available at all times to respond to emergencies. Ottawa receives approximately 600 maintenance-related complaints per year.

Actively engage the public in monitoring landscape standards.

The landscape standards need to be known to the public. A web-based monitoring system can clearly state the desired landscape conditions and engage with the public in monitoring progress.

ParkScan, a partnership between the City of San Francisco and the Neighborhood Parks Council, has helped reverse the public's distrust and dissatisfaction with city park maintenance. The project created a web-based forum for city park users to report safety concerns and substandard maintenance conditions to park managers. Staff from the ParkScan project offer customized training on the city's official "Park Maintenance Standards" to community groups. The training allows community members to apply the measures to any park in the municipal jurisdiction. Users post observations to the ParkScan website (www.parkscan.org), which forwards concerns to the appropriate city department for attention. ParkScan technology allows timely reporting and tracking of park and playground maintenance issues. Typical problems are resolved in a timely manner, and larger capital issues get prioritized within the responsible divisions. All reports are public, and their status can be tracked on the website.

Plan efficient approaches to regular activities.

Creative thinking is needed in determining how to achieve maintenance activities. Perhaps timing and equipment can be modified to achieve goals. At **Central Park** trash is collected at night as well as during the day so that the park is clean every morning, thus minimizing the negative impacts on park visitors. Small vehicles, which have less impact on walkway surfaces and visitor experiences, travel through the park to pick up trash and

take it to collection points along the periphery of the park.

Best Practice: Use sustainable maintenance practices

Key points:

- Begin to move toward organic practices and implement them as possible.
- Limit the use of commercial fertilizers, pesticides, and herbicides, and use chemicals responsibly when necessary.
- Address soil compaction with turf closures and rotations, limited traffic, post-event treatments, engineered soils, and irrigation.

Move toward an organic landscape management approach.

The expertise and supporting systems for organic landscape management practices need to be developed. Organic compost can be bought from other suppliers in the area, or a facility can be established within the park.

Golden Gate Park is the home of a green-waste recycling center operated by the City of San Francisco, and it supplies organic mulch and topdressing for city parks. Downed and removed vegetation from parkland is ground, then manure from the San Francisco Zoo and the Police Department stables is added.

Battery Park in New York City has been using completely organic landscape maintenance methods for 10 years. A key component of their organic management is the focus on organic soil management, with the application of the building blocks of nitrogen rather than applying nitrogen to the soil itself. A compost tea is applied on turf and around trees, shrubs, and flowers. The park creates the compost tea using clippings and vegetable matter collected from coffee shops and grocery stores. Maintaining the correct combination of fungal and bacterial matter, appropriate pH levels, among other complexities of successful composting,

requires that there be a highly qualified staff member managing the organic program.

Limit commercial fertilizers, pesticides, and herbicides.

Rather than using chemicals to treat turf, trees, flowers, and other natural resources in the park, other scientifically supported practices to reduce the negative impacts of fertilizers, herbicides, and pesticides should be considered (Bell and Moss 2006; Cole et al. 1997):

1. Include a runoff prevention program within a park's turfgrass management program to reduce the loss of sediment, nutrients, and possible pollutants into nearby water areas from fertilizers, herbicides, and pesticides.
2. Do not apply fertilizers or pesticides to saturated soils, frozen soils, or non-target surfaces (concrete, plastic, hardscapes), since application on these surfaces will likely increase chemical runoff during subsequent rainfalls.
3. Use slow-release nitrogen and phosphorus fertilizers as well as aeration. Slow-release products provide a small amount of soluble nutrient at any given time, thereby reducing potential runoff. Aeration helps increase the surface infiltration rate and slows soil saturation that results in runoff. While aeration may increase leaching, the surrounding soil is an excellent filter and provides resistance.
4. If possible, create turfgrass buffers around turf panels by using strategic mowing. Mowing at a slightly higher level around an inner portion of a turf panel creates a single-height, surrounding vegetative buffer that helps slow runoff and prevents nutrient and pesticide losses. The width of the buffer does not make a substantial difference to the amount of runoff. An added strategy is to create a multiple-height series of buffer strips surrounding an inner turf panel,

which is more effective than a single-height buffer.

The **Central Park Conservancy** minimizes the use of commercial fertilizers through an in-park composting operation. In addition, the use of insecticides or any other products containing chemicals is carefully limited. In cases where the need of or threat to the landscape is serious enough and no organic alternative exists, the park uses the most balanced and least toxic products available, takes all available precautions, and carefully monitors the landscape to ensure that the application is minimized and controlled.

Address soil compaction.

Regular, routine maintenance procedures and reasonable restrictions on the use of turf areas can mitigate soil compaction resulting from high use.

Closing areas to use when turf is vulnerable due to wet or freezing conditions or overuse protects the investment in the landscape, as does managing the frequency and logistics of events, requiring rain dates, and making provisions for closures after events to allow for recovery and maintenance. Closures can be managed through a rotation schedule for turf areas (event and sporting), and fencing and signs can be used to restrict access to turf and trees (e.g., green mesh snow fencing around turf that is being installed or restored). Signs that educate visitors about the need for the grass to be restored periodically helps foster public support for the closures (e.g., Central Park uses educational signs and red flags).

Severely limiting vehicles from driving on turf, including careful and constant oversight of park staff, contractors, vendors, and event organizers, helps protect turf. **Central Park** is particularly strict with this issue and only allows vehicles on specific paved routes. This applies to law enforcement, special events, and day-to-day operations.

Turf conditions can be further optimized by regularly aerating and fertilizing sites (e.g., af-

ter each major event), plus topdressing on an ongoing basis. At **Golden Gate Park** routine aeration (using 2-inch by 3/8-inch core tines) is done two to four times per year on any turf that receives moderate to significant use. Then, areas are overseeded and topdressed using organic redwood soil conditioner with nitrified shavings.

Longer grass protects the ground from excessive compaction. The result is a far more resilient surface in a high use area that is able to withstand heavy wear even during periods of wet or drought. The Parade Ground in **Hyde Park** in London, a large, open grass-covered area, provides the setting for various large-scale public gatherings, as well as informal social gatherings and casual sports. In a typical summer this site will host military parades and pop concerts with up to 100,000 spectators, serve as the start/finish area for fun runs and marathons, offer relaxation spots for weary tourists and office workers, and be used as a gathering place for rallies and protests. In recent years the grass in this area has been re-seeded and is now maintained at a longer length (3–5 inches).

When redeveloping turf areas, sand-based soils and other engineered systems will reduce compaction issues and improve drainage.* The 2.5 acre Great Lawn at Chicago's **Millennium Park** is part of a 24.5-acre green roof built on a concrete base. Atop the concrete bottom is a waterproof membrane, then a sand layer, then a cellular polystyrene structural insulation layer. The topsoil (Indiana native, virgin topsoil) is above the insulated layer and then turf. Reinforced fibers were added throughout the substrate layers, and a slope results in rapid and effective drainage.

* A fiber reinforced turf system is used at the National Capital Commission's new Commons event site: STALOK G-400 product mixed with sand. STALOK G-400 product is 400 denier fibrillated polypropylene fibers for soil reinforcement.

Use irrigation systems strategically.

Irrigation systems must function properly and be operated effectively. Staff should be trained to monitor irrigation systems and adjust irrigation scheduling based on use patterns and climate. Coordinating between event management and maintenance staff maximizes the effectiveness of irrigation and minimizes the damage that could be caused by the combination of wet turf and heavy pedestrian or vehicle traffic.

Adequate irrigation is an essential maintenance element for turfgrass that is subject to high temperatures and high use. All study sites have irrigation systems, with the majority using underground systems or a combination of underground and manual or aboveground irrigation.

At **Millennium Park** the Great Lawn has pop-up sprayhead irrigation that is typically conducted at night. The Lurie Garden uses several forms of computer-controlled irrigation, including a drip tube system on top of the soil to water most of the trees and shrubs, and copper risers, which hook into ground fixtures in the perennial plates and provide a continuous mist of water. Watering infrequently, but thoroughly, has proven to be a more environmentally friendly and efficient than watering often, but for shorter periods.

Atlanta's **Piedmont Park** uses the Toro Sentinel irrigation system, which is PC-based and allows managers to program by means of a handheld control for rain delays and to turn specific zones on and off. Irrigation is performed at night when necessary, typically 20 minutes per zone for turf and less time for tree/shrub areas. The Piedmont Park Conservancy staff vigilantly inspect the irrigation systems prior to and following any event.

EVENTS MANAGEMENT

- ◆ Develop an events program that employs strategic and proactive approaches to planning and management. A strong events pro-

gram requires continuous improvement, including hiring skilled staff, coordination between events and maintenance staffs, and development and enforcement of events procedures and protocols.

Best Practice: Manage events proactively

Key points:

- Manage use, including limiting the number, type, location, and duration of events.
- Use mitigation checklists.
- Define requirements for public safety and security.
- Enforce event regulations uniformly and consistently.



Irrigation in San Francisco's Golden Gate Park.



Handheld communication device used in Atlanta's Piedmont Park.

Control level of use.

Limits for events (number, type, size, location, and duration) need to be established to ensure that both landscape quality desires and event intensity needs are met. Appropriate levels vary from site to site as a result of types of use, climate, and landscape conditions.

Each study site bases restrictions on the number of events, durations, and recovery periods differently. However, all sites have a set of requirements directed at balancing landscape quality and use. The types of standards include:

- *Limit the total days of occupation of an event on any site.* For example, in **Ottawa** an event must never exceed 17 days, including setup and dismantling; this limit is set to control landscape damage.
- *Limit the total number of major events per year.* For example, **Piedmont Park** limits major events to no more than five annual events with more than 100,000 attendees. In London's **Hyde Park** major events are normally permitted only from April to September.
- *Limit the number of events per month.* For example, for most **Golden Gate Park** sites no more than one multiple-day event drawing at least 10,000 people may be held in the same grass area within one calendar month, and non-sporting events at the Polo Field are allowed only every six weeks.
- *Define the capacity for each event site and suggest appropriate types of uses for each venue.* In **The Royal Parks** certain areas are off limits to events. Other areas are defined as unsuitable for larger types of events, which are intrusive and require careful management. These include areas of special ecological, landscape, architectural, or historical significance; gardens (or other areas which are primarily for quiet recreation); and wildlife areas.
- *Restrict the use of park areas for private events.* Managers must be innovative

when an event impacts the ability for all visitors to enjoy the park equally. Chicago's **Millennium Park** is intended for the public, but on a few rare occasions the entire park is closed for private events. To help reduce public complaints and potential editorials concerning the closure, park staff dress in red t-shirt uniforms and act as hospitality hosts, positioned at the periphery of the park. They inform the public about why the park is closed, hand out a card indicating the reasons and noting upcoming special free events, and also hand out a free discount booklet for other area attractions and sightseeing venues.

Schedule turf rest periods between events.

Without rest periods, maintaining high landscape quality standards is not possible. **Golden Gate Park** requires at least one week between events; **Ottawa** suggests two weeks between major events, and small-scale events are limited to three days per week. **The Royal Parks'** event strategy defines certain times of the year as rest periods for various parks and does not allow events to take place during these periods; the strategy further suggests avoiding events during peak visitation periods in order to allow visitors to enjoy the parks as they were designed, without the additional intrusion and impact from a special event.

Use checklists to mitigate potential resource damage.

Creating a checklist to make a direct link between potential resource damage and event activities forces event organizers to acknowledge that steps will be taken to reduce damage. **The Royal Parks** uses an environmental checklist in planning and managing events to further reduce impacts. The checklist is completed prior to licensing any major event in order to ensure that no potential negative impacts are overlooked in the planning process. The checklist covers issues such as protecting the grass (e.g., use of portable roadways), other aspects of the park fabric (e.g., trees and monuments), and important views; ecological

and wildlife impact assessment (e.g., use of fireworks); pollution and noise controls; waste control and removal; good neighborliness (e.g., advising affected households and organizations); and transportation plans.

Control the placement of event infrastructure.

Guidelines should be used to protect the landscape from temporary event structures, such as tents, fencing, and staging.

- *Prohibit event infrastructure within the drip lines of trees.* No posts or pegs are allowed in tree root zones, on pavement or decorative surfaces, on sensitive or unique ground surfaces, or in wall treatments. Staking can be restricted by allowing infrastructure only on hardscapes where sandbags or water barrels can be used for weighting.
- *Provide dedicated anchor points in turf* (e.g., deep spike with short cable and cable loop to affix tent line). At **Piedmont Park** anchor points have plastic caps for recognition, but if grass is long or the cap is missing, then metal detectors are used to locate the anchors. **Golden Gate Park** installed “fence sleeves” to receive fence posts in the ground along the perimeter of fields and special use areas. The sleeves are approximately 1-foot metal pipes, buried vertically, with a hinged lid just below the ground surface to be hidden from view. The absence of a weighted fence base prevents footprint issues, and the fixed location prevents fence movement.
- *Identify the location of underground utility lines before allowing staking.* In **Ottawa** underground irrigation and electrical lines are marked with colored biodegradable paint the day before event setup. With these markings as a guide, the event organizers are responsible for not pegging tents or other infrastructure within 3 feet of a line. Damage is the responsibility of the event organizers. Therefore, some event organizers prefer

to use weights to reduce the risk and to avoid the need to wait for line markings.

- *Require signs, décor, and temporary fencing for security, protection of sensitive areas, etc. to be self-supporting.* Nothing may be affixed to walls, floors, or any other structure (e.g., at **Millennium, Ottawa, Golden Gate, and Central Park**).

Protect turf and trees from excessive damage.

Temporary surface covering or protection should be required for turf and other vulnerable landscape elements. Turf and treed areas are subject to damage from vehicular and pedestrian traffic, as well as tents and other infrastructure that are placed on turf for extended periods of time.

Study sites that do allow infrastructure on turf require that tents and structures be elevated (e.g., 100 to 150 mm / 3.9 to 5.9 inches), and the ends to be open to allow air circulation. Some sites such as parks in **Chicago, Canberra, and San Francisco** are more prescriptive in that coverings such as plywood are prohibited and event organizers must use permeable turf protectors for special events.

A number of companies supply permeable surfaces designed to protect natural turf grass from excess abrasion and wear due to high traffic. The grass protection system takes the load while the grass underneath rests. While covering the ground, the material still allows air, light, and water to penetrate so the grass can live.

Fencing can be used as a protective measure for turf, trees, and other landscape elements. Tree roots can be protected by planting shrub beds around trees and bordering these beds with cobblestones or other edging material to keep traffic away from the roots.

Enforce weather-related restrictions.

Restrictions due to weather conditions will prevent or mitigate excessive damage to a landscape. Weather-related restrictions used in the study areas vary from delay and reloca-

tion to cancellation. Rain, heavy rain, snow, and excessive heat are all conditions that may result in different types of restrictions.

The study site surveys outline restrictions by site and weather condition. Ottawa’s **National Capital Commission** uses the following weather related restrictions, contingencies, or mitigation techniques:

- In continuous rainfall situations, mulch must be used to cover sections of grass with high pedestrian traffic.
- Organizers must be prepared to undertake night watering during drought conditions, and this is often done by the event organizer’s private security guards.
- Event promoters must arrange set-up schedules and logistics according to weather. If it rains, they are restricted from driving a heavy vehicle on green spaces. They might be requested to lay down plywood on grass when backing up vehicles when the ground is soft. Event organizers are empowered to look at different creative measures to reduce damages to sites. Any damage to a site is charged back to the event organizers.

Establish requirements for event security and public safety.

Requirements for security personnel at events, security checkpoints, incident command center, first aid, and emergency services must be defined in event guidelines, including an evacuation plan.

Procedures need to be in place to ensure that event organizers respect capacity limits. Temporary fencing can be used to manage crowds for security purposes. Ticketed events by design have controlled access points, and limiting ticket sales controls crowd size.

Millennium Park has a rigorous security detail throughout the park, and security personnel use two-wheeled Segway® Human Transporters, which are quiet, offer the security official an elevated look over the heads of

crowds, are fast and maneuverable, enhance the visibility of the security official, and are far less destructive to turf and grounds than golf carts.

Best Practice: Facilitate the permitting process

Key points:

- Create comprehensive and accessible events guidelines with graphic appeal.
- Communicate park goals to event organizers to ensure a clear understanding of the purpose and significance of the place.
- Develop strong working relationships with event organizers.

Provide comprehensive and detailed event guidelines.

Comprehensive, clear, and detailed event guidelines should be easily available to event organizers (e.g., internet downloads and online applications). Guidelines should clearly identify the link between park goals and events, and event management staff must enforce guidelines to guarantee a more coordinated and strategic events program. Event guidelines should include the following essential elements: site plan requirements, application timelines and procedures, site-specific information by event type, fee information, performance bond expectations, tent placement, security, signage, list of necessary approvals, insurance requirements, and appeal procedures.



Security at Chicago’s Millennium Park.

In addition to guidelines featuring the dos and don'ts for event organizers, useful information such as venue description sheets, area hotel lists, vendor suggestion lists to help support events, approved caterers, and a facility rental guide should be included in materials provided. Atlanta's **Piedmont Park** and Canberra's **Parliamentary Triangle** both provide this type of information packet of materials for their event clients.

Canberra is aggressively promoting its Parliamentary Triangle venues for public use and has developed strong marketing materials and information packets with graphic appeal for event planners. One-page fact sheets for each venue describe the location (including a map), physical characteristics, facilities (including parking, access to power and water), and recommended events suitable for the site. Canberra also provides a four-page pamphlet, *Guidelines to Planning an Event*, that gives an overview of the park and what needs to be done to have an event. The document has a user-friendly "Event Approval Flow Chart." These materials are targeted primarily to increasing use of the park; however, they contain valuable planning information that helps mitigate damage to the sites.

Promote communication between event staff and event organizers.

Relationships need to be developed between park event staff and event organizers. Regular communication can establish a clear understanding of the park's expectations of exactly what is and is not allowed at the site, and an understanding of the event organizer's approach to adhering to the event guidelines. Event guidelines and other documentation alone will not ensure a successful events program.

Many of the large events at study sites are recurring. Hence, relationship building is an ongoing process over a number of years. Event coordinators at the **National Capital Commission** in Ottawa work closely with recurring annual event organizers. As these rela-

tionships strengthen, event planners and organizers establish particular arrangements that benefit both parties. Event organizers may benefit from fee reductions and access to NCC event equipment. In return, event organizers promote the commission as part of their event package. However, the fee, rental, and promotion arrangements do not otherwise change the standard event guideline requirements; the event organizers must comply with all event guidelines and must reapply each year for the right to hold an event.

Best Practice: Charge fees and recover costs for use of public areas

Key points:

- Use variable permit fee schedules based on the type and location of events, as well as the level of disruption.
- Charge direct costs for staff, utilities, trash collection, removing or relocating park furniture, and repairing damage.
- Assign responsibility with performance bonds and event monitoring.

Use fee structures to generate revenue in support of event programming.

A fee structure should yield revenue for event program cost recovery. Different fees are appropriate for different event types (e.g., non-profit or commercial), attendance level or site used (e.g., events with more than 50,000 attendees), and disruption (e.g., noise levels). All expected direct costs associated with events should be calculated, and these costs should be included in the regular fee structure or performance bond system.

Fee structure information from the study sites is contained with the support material. The following examples of fee structure indicate the range and sophistication of fee structures.

- Canberra's **Parliamentary Triangle** and Ottawa's **National Capital Commission** have a range of fees based on the type of event and venue. Ottawa's major events are subject to a fixed cost of \$400 plus

\$300 per day (\$100 per day for a non-profit event).

- **Central Park** does not charge any fees beyond a \$25 application fee.
- **Millennium Park**'s fee structure varies from as high as \$50,000 per day for a fixed seat capacity of 4,000 at Jay Pritzker Pavilion (half that rate for nonprofits) to \$250 per hour for ceremonies for up to 200 people at Wrigley Square. In addition to hourly or daily fees, charges for security, custodial, technical, and production services are common and are noted in the park's fee schedule.
- **Golden Gate Park** has a complex fee schedule that considers event type (e.g., commercial, nonprofit, or athletic), duration, number of participants, and admission cost (if an event is ticketed). For example, a commercial event for up to 1,000 participants costs \$5,000, plus \$500 for each additional 500 participants, and up to 25% of ticket revenue above 5,000 participants.
- **Piedmont Park** assesses fees based on the expected number of attendees and the venue, with discounts for nonprofit organizations.

Piedmont Park Special Events fee Schedule			
Class	Anticipated Attendance	Application Fee	Permit Fee
Commercial Fee Schedule			
A	50,000	\$ 150	\$ 15,000
B	20,000 - 49,000	\$ 150	\$ 8,000
C	10,000 - 19,000	\$ 100	\$ 5,000
D	2,000 - 9,999	\$ 100	\$ 2,500
E	250 - 1,999	\$ 100	\$ 500
Non-Commercial Fee Schedule (for nonprofit organizations)			
A	50,000	\$ 100	\$ 9,000
B	20,000 - 49,000	\$ 100	\$ 3,000
C	10,000 - 19,000	\$ 50	\$ 1,500
D	2,000 - 9,999	\$ 50	\$ 750
E	250 - 1,999	\$ 50	\$ 250

- **The Royal Parks** charge a fixed disruption fee depending on the scale of the event, together with a per person fee. Fees range depending on the nature of the event. In addition, The Royal Parks also charge for any direct costs that are incurred as a result of events. Such costs typically include additional trash collection, removing park furniture, and repairing damage to hard or soft landscapes.

The Royal Parks Disruption Fee Schedule		
	Type of Event	Disruption Fee (per day on site)
Hyde Park St. James's Park The Green Park	Commercial and Charitable Events	\$8,000-\$24,000
	Non-Profit, Free Events	\$100-\$2,000
All Other Parks / Open Spaces	Commercial and Charitable Events	\$2,000-\$6,000
	Non-Profit, Free Events	\$100-\$2,000

NOTE: Disruption fee charges are set according to the level of disruption caused (e.g., road closures, other restrictions to park life, size of area built on).

The Royal Park per Head Fee Schedule		
Event	Type of Event	Per Head Fee
Concerts	Commercial and charitable, ticket fee	\$6.00
	Not-for-profit, ticket fee	\$3.20
	Commercial and charitable, free entry	\$0.20
Walks, Runs & Similar Sporting Events	Commercial	\$4.00
	Large Charitable	\$3.20
	Not-for-profit, Small Charitable	No charge
Other commercial events with a ticket fee		\$2.00
Other commercial events with free entry		\$0.20
Not-for-profit events with free entry		No charge

NOTE: The per head fee is calculated on the maximum possible attendance (e.g., the number of race entries accepted rather than the actual number of runners, the concert capacity rather than attendance).

Combine monitoring with performance bonds to secure responsibility for damage.

Event organizers must be responsible for damage done to the event site, including turf, site furnishings, irrigation and utility lines, tire marks, oil spills, etc. Payment can be secured through the use of performance bonds. While the amount of the bond may vary, success rests in having mechanisms in place and adequate staffing levels to regulate permitted obligations.

Holding event organizers responsible for damage requires due diligence on the part of the park. Having staff onsite from event setup through takedown helps ensure that event guidelines are followed. Monitoring officers for event and maintenance management need to be in regular contact with the onsite event contact, monitor activities, and document and remediate problem areas. Pre- and post-event reports prepared for the event organizers by park staff document conditions with photos and descriptions. Where damage has been done, the post-event report outlines remediation efforts required by the event organizers.

Best Practice: Professionalize events staff

Key points:

- Hire staff with hands-on experience in events production.
- Co-locate maintenance and event staff to foster collaboration, coordination, and communication.
- Consider the classification of events and maintenance staff within one division.
- Staff sufficiently to cover permitting, monitoring, and reporting needs.

Hire skilled event planning and management staff.

Event planning and management skills are a requirement in the staff hiring process. Existing staff needs to be trained in event planning and production. Experienced staff are able to support event organizers in planning and executing events that reach their goals without compromising the park's objectives. Staff that lack event production experience are able to enforce guidelines and regulations but may not be able to provide as much value (based on experience) to event organizers. For example, in reviewing a site plan, an experienced event planner will be able to suggest alternative locations for event infrastructure that work for the external event organizer while meeting landscape restrictions (e.g., tents outside tree drip-lines, maximizing the use of hardscapes).

Develop a collaborative relationship between event and maintenance staff.

Fostering a culture that supports collaborative management between event and maintenance staff helps ensure a successful operation for everyone involved. Mechanisms are needed for regular communication and coordination, whether staff is in-house or contracted out. If both groups are in-house, facilitate collaboration by having both groups within the same division or department of the organization and collocating office space.

Ottawa's **National Capital Commission** has assigned both the Maintenance Management and the Events and Facilities Management groups to the same organizational group; therefore, they report to a common individual. At the majority of other sites studied, event and maintenance staff are co-located in the same office, which facilitates consistent communication (e.g. **Central Park, Piedmont Park, and Golden Gate Park**).

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APPENDIX A: SITE SURVEY TEMPLATE



National and International Best Practices Study for Managing Heavily Used Landscapes National Mall & Memorial Parks, Washington, D.C.

Survey Respondent : <name, title, contact information>

Date: <date of submission>

Any written documents (e.g. site map with zones, maintenance calendar, events guidelines, desired landscape conditions evaluation form, sample job description/announcement, standard operating procedures, etc.) that might better explain/answer a survey question would be welcomed.

1. INFORMATION ABOUT YOUR AREA

- 1.1. Location name:
- 1.2. Location (country, city, address) _____
- 1.3. Area size/ acreage _____
- 1.4. Approximate annual budget and funding source:
_____ Event planning and management - source _____
_____ Landscape maintenance - source _____
- 1.5. Property owner?
___ federal, ___ state/provincial ___city/county, ___non-profit, ___ private, ___other
- 1.6. Management responsibility
___ federal, ___ state/provincial ___city/county, ___non-profit, ___ partnership, ___other

2. USE OF AREA

- 2.1. Number of annual users _____
- 2.2. Approximate % use per season: ___winter, ___ spring, ___ summer, ___ fall
- 2.3. Maximum capacity of key event sites:
Site _____ Capacity _____
Site _____ Capacity _____
- 2.4. How is capacity determined? _____
- 2.5. Are you concerned primarily with mitigating the impact of high use on your site/landscape, or encouraging more use? Please describe your situation.

2.6. Purpose / Mission of site(s) (Rank any that apply from 1-7, 1 = Most Important)

- Public Park for active and passive recreation
- Site for governmental buildings / civic spaces
- Cultural / educational / museums / art space
- Memorials, monuments and commemorative statues
- Events venue
- Freedom of expression, speech and demonstration
- Other _____

2.7. General description of landscape characteristics (Assign approximate percentages of grounds.)

- Formal landscape
- Informal landscape character (e.g. trees, shrubs, turf areas)
- Hardscape/paved areas
- Gardens
- Large turf areas
- Athletic fields
- Other _____

3. FACILITY INFORMATION IN HEAVILY USED LANDSCAPE AREAS

3.1. Permanent Restrooms

- _____ # of toilets/urinals, _____ Locations are visible and easy to find
- _____ Approx. distance between restroom facilities in highly used areas (e.g. 500', ¼ mile, ½ mile)
- _____ Average number of times restrooms in high use areas are cleaned daily

3.2. Food Service (check all that apply)

- Year round, Seasonal
- Food service located within visitor facilities (e.g. museums, exhibit halls, recreation facilities)
- Food service located on the grounds:
 - Restaurants, Food Stands, Food Carts, Outdoor Cafes
 - Fenced food gardens or courts, Moveable tables and chairs
- Nearby restrooms, in same building, separate building

3.3. Other Visitor Facilities and Concessions

- Visitor contact / information centers
- Ice skating rinks or other winter facilities, specify _____
- Boat rentals
- Gift and book shops
- Other, please specify _____

4. CONTROLLING CIRCULATION TO PRESERVE TURF AND TREES (Check all that apply)

- Restrict access to turf or tree areas (e.g. fencing, signs, other)
- Control / move entrance points to access turf areas (e.g. move chain/fence)
- Direct circulation with fencing, post and chain or other barriers
- Temporary restrictions during turf rest/recovery:
 - snow fence, plastic tape, wire fencing, custom fencing
 - signs (e.g. please do not walk on grass, resting our trees, etc)
- Control social trails or runners/bicyclists using turf adjacent to walkways?
 - regulations, fencing, signs/symbols, separate users,
 - pavement marking, place obstacles to deter behavior

Other/Top tips:

5. WALKWAYS / SURFACING

List approximate width of paved walkways in most heavily used areas (e.g. 40')

Rank surface materials (1 = most preferred, 3 = least preferred)	Crushed stone	Gravel	Stone, Pavers, or Brick	Exposed aggregate concrete	Wood	Asphalt	Smooth Concrete	Rubber based paving	Other materials
Easy maintenance and durability									
Pedestrian comfort									
For runners									
For bicycles									
Ease of use for disabled									

6. SITE FURNISHINGS (e.g. benches, seating, signs, lights, etc) (Check all that apply)

- Standardized suite(s) of furnishings to support location identity
- Use of logos on site furnishings
- Trash, recycling, compost containers
 - Behavior messaging (e.g. 'Keep Park Clean')
 - Approximate distance between locations
- Standardize/limit for maintenance efficiency (e.g. light bulbs, types of in-ground light fixtures or site furnishings)

7. SIGNS AND INFORMATION

- 7.1. Is orientation signage coordinated between your managing group and other institutions?
(e.g. park and adjacent museum) yes no
- 7.2. Do you have the following items? (Check all that apply)
 - Maps / orientation / information signs
 - Located at major access and pedestrian entry points
 - Located at intersections of major pedestrian circulation routes

- Directional arrows (e.g. pointing direction to museum X or garden Y)
- Identify destinations that are nearby or provided by other agencies/orgs
- Universal symbols to identify visitor facilities and locations (e.g. restrooms, food service, information, memorials, museums, bicycling routes)
- Logos or multiple logos to identify adjacent points-of-interest
- Regulations posted
- Visitor educational / interpretation messages
- Standalone education and interpretation waysides (e.g. exhibitions with history, graphics/photos, research or science, or temporary construction information)
- Other, _____
- Do you use posted or graphic messages to promote positive behaviors?
 - Signs to reinforce behaviors that protect natural resources
 - Signs to address immediate natural resource concerns
- Where are these messages placed?
 - facilities
 - trash receptacles
 - moveable food service carts
 - exhibits or wayside signs
 - fences
 - lights and poles
 - small free standing signs
 - other, _____

8. MAINTENANCE ORGANIZATION & STAFFING

8.1. Number and type of staff

- # of full-time staff
- # of seasonal staff
- # of interns/students
- # of volunteers

8.2. Does the site have partners (e.g. volunteer, friends groups) who assist (financially or otherwise) in grounds maintenance? yes no

If yes, to what degree to they provide aid? _____

8.3. How is staff organized?

- district/zones
- general work pool
- specialties (e.g. tree workers, turf disease specialists, etc.)
- combination

8.4. List the number and type of personnel by functional duty.

- Supervisor
- Horticulturalist
- Landscape Architect/Landscape Designer
- Gardener
- Biological Science Technician
- Tree Worker/Arborist
- Turf Specialist
- Laborer
- Integrated Pest Manager
- Grounds Clean up / Recycling Technician
- Irrigation Technician
- Heavy Equipment Operator
- Trades (e.g. Mechanic, Mason, Electrician, Plumber, etc.)
- Other, _____

8.5. What are ways you hire for success?

- Education
- Specific skill set (e.g. certifications)
- Specified years of experience
- Hiring volunteers as full or part-time staff
- Hiring seasonal staff as full-time staff

Please check which group performs the following duties:	Grounds Maintenance	Tree Care	Sanitation, Solid Waste Removal	Snow Removal	Memorials & Statues Care	Site Furnishing Care
In-house						
Contracted out						
Volunteers						
'Friends' groups						
Other/Training/Interns						

8.6. Do you have a special crew assigned to deal with emergencies and complaints? yes no

8.7. How do you motivate staff to perform to higher standards?

- Rewards
- Recognition
- Job titles
- Responsibilities

- Upward mobility (ability to move into supervisory roles)
- Training
- Skills Acquisition
- Mentoring

9. MAINTENANCE OPERATIONS

- 9.1. Do you have an annual maintenance calendar? yes no
 If yes, would you be willing to share such a document? yes no
- 9.2. Do you have written landscape quality standards that guide your maintenance efforts? yes no
 If yes, would you be willing to share such a document? yes no
- 9.3. What turf grass varieties are used for high-traffic areas?
- 9.4. What methods do you use to prevent and/or mitigate soil compaction?
- 9.5. Are there specific soil preparations, soil mix specifications, engineered soils, or seeding techniques used with turf in high-traffic areas? yes no
 If yes, please provide the specification. _____
- 9.6. How do you maintain soil fertility and pH in high-traffic areas?
- 9.7. Do you irrigate your site? yes no
- 9.8. How do you schedule irrigation to accommodate use?
- 9.9. How do you prevent damage and vandalism to your irrigation systems?
- 9.10. What are your top tips for maintaining healthy grounds in heavily used turf and treed areas
 (tools, equipment, seed mix, techniques)?
 Turf
 Trees
- 9.11. Do you use organic methods? yes no
- 9.12. Would you be willing to share any organic, sustainable practices or programs you have successfully applied?
 If yes, would you consider sharing your manual or written standards?
- 9.13. Do you have a documented Integrated Pest Management plan? yes no

10. SOLID WASTE MANAGEMENT

10.1. Receptacles are provided for trash compost recycling.

	Daily	Week Days	Weekend Days	Different in different seasons
Average # of times solid waste is removed				

11. PLANNING FOR EVENTS IN YOUR AREA

- 11.1. Do you have annual or other events required by law? yes no
- 11.2. Do you have published criteria that permitted events must embody (e.g. patriotism, education, freedom of expression)? yes no

11.3. Do you limit? (Check all that apply) ___ # of events; ___ type of events; ___# of users

11.4. Does the site have partners (e.g. volunteer, friends groups) who assist (financially or otherwise) in:

___ Event planning, please describe _____

___ Event management/execution, please describe _____

12. PRIORITY OF EVENT FOCUS (Rank 1-6, with 1 being most important)

___ Governmental / state events

___ Freedom of expression / free speech requirements

___ National scope events

___ Regional events

___ Local events

___ Other, _____

13. TYPES OF EVENTS (Check all that apply)

___ Cultural / arts activities

___ Festivals

___ Concerts / large performances / movies

___ Celebrations with fireworks

___ Recreational events (e.g. walks, marathons, sporting competitions, games & tournaments)

___ Educational exhibitions

___ Charity events

___ State / Military ceremonies

___ Demonstrations and protests

___ Personal passages (e.g. weddings, enlistment ceremonies, family reunion, etc.)

___ Other, _____

13.1. Which are the primary high-use events (recurring or recent one-time) at your site? Please include volume and duration of use. (e.g. Independence Day Celebrations, folk festivals, etc.)

13.2. Which events have the largest adverse landscape impact? Please include volume and duration of use. These events may be the same or different from the primary high-use events above.

13.3. Please describe method for counting or estimating visitors to site/event.

13.4. Do you use or know of any innovative, successful techniques to estimate visitor counts in sites with permeable, open boundaries?

14. TO PROTECT THE LANDSCAPE (Check all that apply)

___ Events are dispersed

___ Events are concentrated in assigned areas

___ Events are concentrated on hard surface areas

___ Areas are fenced

- Number of events for locations is limited
- Attendance numbers at events is limited
- Landscape recovery periods (set time periods) required after events.
- Techniques/approaches to restore turf zone
- Turf and soil has been specially designed to withstand compaction
- Assigned events staff members present during event / set up / take down
- Maintenance and events staff co-located to coordinate activities
- No vehicles on turf or vehicle weight restrictions without temporary surfacing
- Time limits; _____ Total duration allowed (for set up, event, and takedown)

15. REQUIRED EVENT AREA TEMPORARY SURFACE MATERIALS (Check all that apply)

- Spread weight and reduce compaction (e.g. Plywood, wood, plastic or metal surfacing)
- Must allow water/air to get through
- Required for pedestrian circulation
- Required for vehicular areas and access
- Recommended temporary surface materials? _____

16. TEMPORARY EVENT RESTROOMS (Check all that apply)

- # required for events, depending on expected attendance
- Can be placed on turf?
- Must be placed on paved surfaces?
- Pre-planned locations and cleaning schedule are stated in event planning materials?

17. DO YOUR EVENT GUIDELINES REGULATE USE UNDER DIFFERING WEATHER CONDITIONS?

yes no

Requirement in case of:	Event can be delayed	Event must be relocated	Vehicular access is restricted	Turf may be covered for limited amount of time	Event must be cancelled
Rain					
Heavy rain					
Snow					
Excessive heat (100°+)					
Other					

18. EVENT SECURITY AND PUBLIC SAFETY (Check all that apply)

- Event security checkpoints
 - placed to facilitate access (entrance/exit)
 - on hard surfaces to reduce impact on turf

_____ Security, incident command center, first-aid and emergency locations

_____ Dogs and horse patrols' space and logistical needs

_____ Temporary fencing required

____Typical amount (e.g. 1 mile, 5 miles, etc)

19. DO YOU HAVE WRITTEN PROCEDURES AND PLANS FOR EVENT SECURITY AND PUBLIC SAFETY (E.G. EMERGENCY EVACUATION PLAN; SAFE SHELTER; EMERGENCY FACILITIES)? ___ yes ___ no

20. INSTALLING TEMPORARY FENCING, TENTS, AND FACILITIES

20.1. Do you allow staking? ___ yes ___ no

20.2. Do you require weighted bases (e.g. water barrels)? ___ yes ___ no

21. INFORMATION PROVIDED TO EVENT PLANNERS (Check all that apply)

___ Clear and consistent written rules and guidelines for events

___ Small events guidelines (different from major event guidelines)

___ Major events guidelines

___ Mandatory training to receive permit to hold major event

___ Maps showing utilities, temporary parking, access routes, media set up locations, and restrictions

___ Event rules and guidelines available electronically and online

___ Online scheduling and approval for events

22. HOW MANY EVENT STAFF DO YOU HAVE? _____

22.1. How is event staff structured organizationally? Please provide an organizational chart if available.

23. WHAT IS THE FEE STRUCTURE FOR USE OF THE SITE FOR EVENTS?

24. ARE BONDS OR INSURANCE REQUIRED FOR USE OF SITE (E.G. RESTORATION BONDS, BONDS FOR UNBUDGETED COST)?

___ yes ___ no

25. OTHER / TOP TIPS: _____

APPENDIX B: DETAILED SITE INFORMATION

Central Park, New York

The Central Park Conservancy's annual operating budget is \$25 million (approximately 85% raised privately by the conservancy and 15% contributed by the NYC Parks Department).

For more information, visit:

www.centralparknyc.org/

Golden Gate Park, San Francisco, California

Golden Gate Park is managed by the City and County of San Francisco Recreation and Park Department and has an annual operating budget of approximately \$11.5 million. Maintenance operations are shared between the citywide Turf Management, Forestry, and Structural Maintenance Divisions as well as park-specific teams of gardeners and custodians. Special park uses are managed through the Department's office of Permits and Reservations, located in Golden Gate Park.

Park managers emphasize their need to balance the demands of active recreational and special event uses with the original intent and purpose of the park as a "sylvan and pastoral" retreat.

For more information, visit:

www.parks.sfgov.org/

www.parks.sfgov.org/site/recpark_page.asp?id=17796

www.sfgate.com/traveler/guide/sf/neighborhoods/ggpark.shtml

For more information about the ParkScan tool:

<http://www.parkscan.org/>

Millennium Park, Chicago, Illinois

Millennium Park is a Division of the City of Chicago's Department of Cultural Affairs. The City of Chicago's Department of General Services (DGS) is responsible for the Park's management and maintenance. DGS contracts with a private management company who is responsible for over 90% of day-to-day property management services, manages 15+ subcontractors, has offices on site, and reports directly to the Director of Operations. The annual cultural events programming budget totals

about \$7M, of which \$5M is raised by Millennium Park and its partners through sponsorships and grants. \$2M is contributed by the Chicago Park District budget to accommodate part of the Grant Park Music Festival.

Most events are programmed by Millennium Park staff; special events requiring permits must not over-run the park and are decided by Millennium executive staff who have past experience and very close ties with the Chicago Park District and City of Chicago Cultural Affairs Department.

For more information, visit:

www.millenniumpark.org

www.millenniumpark.org/images/MPMAP.jpg

www.millenniumpark.org/documents/finalguide.PDF

Piedmont Park, Atlanta, Georgia

The total annual park budget is approximately \$2.5 million, comprised of funds from various private sources and partnerships, as well as from the city.

As wild areas are converted to cultured park areas, park use is encouraged. As areas are impacted, they may be left dormant until fully renovated/restored (e.g. athletic fields area in Active Oval have been closed for over a year, but soon will open). Piedmont Park Conservancy staff conducts constant vigilant monitoring of all landscape conditions.

For more information, visit:

www.piedmontpark.org

www.piedmontpark.org/pdf/Park_Map_2006_PRINT.pdf

Parliamentary Triangle, Canberra, Australia

The National Capital Authority operates this public land with an annual budget of \$5.8 million AUS - \$5 million for landscape maintenance (all federal dollars) and \$817,000 for event planning and management (comprised of federal dollars and a small portion coming from sponsorship funds).

For more information, visit:

www.nationalcapital.gov.au/

www.cultureandrecreation.gov.au/wsd/1602.htm

National Capital Commission, Ottawa, Ontario, Canada

NCC has management responsibilities for 150 sites (7,767 acres) in and around Ottawa in both Quebec and Ontario. The total budget for land, life cycle, maintenance, and event and facilities management is roughly \$12 million (Canadian).

The Tulip Festival creates the largest adverse landscape impact due to the typically wet weather in May and the festival's duration, which exceeds event guidelines. The duration exception is made for the Tulip Festival due to the need for the event to hit the period of time when tulips are in bloom and the associated unpredictability of the weather.

For more information, visit:

www.canadascapital.gc.ca

The Royal Parks, London, England

Hyde Park has a budget of \$2.7 million (\$1.93=1 pound), largely funded by events at the site. The park is managed by the central government with funding through the Department of Culture, Media and Sport.

The park has a friends group that provides consultation, building support among the local residents and have valuable local knowledge. The Central Royal Parks Wildlife Group provides expertise and advice on park issues. Education and Community Engagement volunteers help provide education services.

A three-person events team manages all the Royal Parks Events (which in total includes 8 park sites) and an additional four-person team (1 dedicated to events, and 3 operational park management staff) spends time managing (on- and off-site) events at Hyde Park specifically.

For more information, visit:

www.royalparks.gov.uk

SELECTED BIBLIOGRAPHY

Bell, G., and J. Moss

2006 "Mowing Practices Reduce Runoff from Turf", *Turfgrass Trends*, June 1, 2006

Cole, J.T., J. H. Baird, R. L. Huhnke, D. E. Storm, G. V. Johnson

1997 "Influence of Buffers on Pesticide and Nutrient Runoff from Bermudagrass Turf." *Journal of Environmental Quality* 26:1589-98.

National Capital Commission, Ottawa, Canada

"Request for Proposal – Core Parks and Confederation Boulevard."

San Francisco Recreation & Park Department

2005 "San Francisco Park Maintenance Standards: The Manual and Evaluation Forms."

City of Auburn, Indiana

2006 Report. Available at <www.ci.auburn.in.us/departments/parks&recreation/2006_2010_VisionPlan/4-Maintenance.pdf>. Accessed Nov. 6, 2006.

Trent University, Canada

1998 "Trent University Grounds Management Plan."

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As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environment and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.