Appendix G – Recreation Facilities Plan

GOVERNOR ALFRED E. SMITH/ SUNKEN MEADOW STATE PARK

RECREATION FACILITIES PLAN

Prepared for:

New York State Office of Parks, Recreation, and Historic Planning

Prepared by:

Cashin Associates, P.C.

Engineering-Planning- Construction Management

1200 Veterans Memorial Highway

DECEMBER 2012

GOVERNOR ALFRED E. SMITH/ SUNKEN MEADOW STATE PARK

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EXECUTIVE SUMMARY

DESCRIPTION, PURPOSE, AND GUIDING PRINCIPLES

Governor Alfred E. Smith / Sunken Meadow State Park (SMSP) is located on the north shore of Long Island in the Town of Smithtown. The state park consists of over 1,287 acres with approximately 2.5 miles of shoreline access. It serves as both a recreational location for local Long Island residents and a recreational destination for distant users, particularly from New York City. The park has from 1.5 to 2.5 million visitors annually, with most patrons coming to picnic, walk, jog, fish, and swim.

The primary purpose of the *SMSP Recreation Facilities Plan* is to explore the potential for developing new recreation facilities that will address current user needs and trends and improve upon existing recreational uses to enhance patron experience.

The SMSP Recreation Facilities Plan includes an overall park vision description, historical analysis, national and local recreational trends and needs review, an ADA accessibility analysis for walkways and amenities, a conditions assessment of all recreational facilities and attendant facilities, and a park-wide activity network layout. The plan specifies new and expanded recreational uses for the park, provides conceptual layout and design strategies for area development, develops an extensive multi-use trail network system, and presents conceptual reuse plans for overflow parking in Fields 2 and 5. Park-wide plans for primary areas within the park are provided. Trail network layout and detailed area development sketches are provided within this plan.

The guiding principles for the *SMSP Recreation Facilities Plan* are as follows:

- **ACCESSIBLE**: as a state park all main areas and access routes should be ADA compliant
- **APPROPRIATE**: facilities and activities should be allowed in the park only when they are compatible with existing amenities and geography of the park, and harmonious with patron general interests
- **BENEFICIAL**: the layout and facilities of the park should provide for the mind and body with social, educational, and physical opportunities
- **COHESIVE**: the pedestrian, vehicular, and bicyclist access and network of roads and trails must be safe, accessible, and incorporate connections to the various destinations throughout the park
- **CONTEMPORARY**: enhancement and expansion should respond to national and local trends
- **FLEXIBLE**: designated recreation facilities should be kept to a minimum to allow for the flexibility of space for all activities instead of limiting to specific uses
- **PROTECT**: environmental, cultural, and historic resources must be valued and managed properly
- **RESPONSIVE**: underutilized areas and those in need of rehabilitation should be addressed to expand the useable acreage of the park

METHODOLOGY

The SMSP Recreation Facilities Plan explores the needs and trends of park user groups and determines the appropriate future direction for facility creation, expansion, accessibility, and layout. Need was assessed by examining a variety of data sources including local, state, and national surveys of recreation needs, opinions surveys, population and demographic research studies, public correspondence, and public input provided during the SMSP community meeting. The outdoor recreation needs of a diverse range of present and future visitors were considered in order to identify the appropriate recreational facilities for SMSP. Through careful review of national and local user needs for open space, outdoor recreation trends, specific SMSP site assessment and facility conditions analysis, other local parks analysis, and future design considerations, a basis for recreation facility needs was established.

SUMMARY OF NEEDS AND TRENDS

According to the findings of the surveys and data reviewed, walking is the highest rated recreational activity across all demographics. Other activities rated highly in popularity are: relaxing in the park, picnicking, jogging, running, swimming, soccer, basketball, and bicycling. The most popular winter specific activities are ice skating, cross country skiing, and snow shoeing. Passive outdoor creation activities such as bird and wildlife watching, hiking, walking, and jogging were identified to be all experiencing a growth in popularity. Based on the findings from the surveys and research studies analyzing particular racial and ethnic group preferences, suggestions for accommodating particular interests include: providing family oriented places and activities, natural areas for exercise and relaxation, large picnic areas with facilities for extended family groups, and grassed fields and courts for sports. Recreation facilities such as spray parks, disc golf courses, labyrinths, dog parks, skate parks, and large cross-use buildings are currently popular built structures in state and local parks across the country. According to the 2004 GPORS, the most needed facilities in New York are swimming pools, beaches, multi-use trails, picnic facilities, and local playgrounds.

RECOMMENDATIONS

The following recommendations represent the major components for improving the recreational facilities and user experience of SMSP:

- Reorient the park to focus on the pedestrian user by providing wider, continuous, accessible main pathways, creating a hierarchy of open space over parking, and introducing vehicular traffic calming measures
- Create a cohesive multi-use trail network throughout the park, linking amenities and connecting the existing trail network
- Redevelop Field 2 into a multifunctional space that can accommodate overflow parking, picnicking, and play fields while integrating low-impact materials such as pervious pavement and grass supported with structural soil
- Incorporate children's play areas into picnicking areas in order to improve ease of play, and increase supervision and safety
- Focus on creating large open spaces that can accommodate a multitude of sports and field activities
- Integrate the principles of universal design into any existing or new development particularly focusing on highly used facilities including the trail system, playgrounds, and picnicking locations

INTRODUCTION

NEW YORK STATE MASTER PLAN PROCESS

The New York State Office of Parks, Recreation, and Historic Preservation (NYS OPRHP) administers over two-hundred state parks and historic sites encompassing over 330,000 acres of parkland (SMSP Master Plan, 2010). NYS OPRHP's mission for public recreation space is to provide safe, enjoyable, and interpretive recreation opportunities for all New York State residents and visitors, and to be responsible stewards of its valuable natural, historic, and cultural resources. The Master Plan process explores and evaluates the park's existing physical, natural, cultural, recreational, and structural resources in order to provide recreation and interpretive opportunities within healthy and productive environments (SMSP Master Plan, 2010). NYS OPRHP vision for Governor Alfred E. Smith/ Sunken Meadow State Park (SMSP) is for it to continue to be a place for visitors to enjoy recreational opportunities while affording them the chance to enjoy and appreciate the resources of Long Island's North Shore. The overall park goal is to welcome over 1.5 million people every year to enjoy family outings, picnic, golf, swim, hike, run, bike, and learn from the natural and cultural resources present (SMSP Master Plan, 2010).

The Sunken Meadow State Park Recreation Facilities Plan identifies recreational use alternatives that enhance both the user experience and protect the existing natural, historical, and cultural resources of the park. Based on extensive site analysis, historical research, trends in recreation both nationally and statewide, and the needs of particular user groups, *SMSP Recreation Facilities Plan* provides a comprehensive study of the current condition of the park and the selection of preferred alternatives for its future development that best provides for its patrons while maintaining its integrity and park vision.

Sunken Meadow Driving Range

SMSP VISION AND GOALS

The *SMSP Recreation Facilities Plan* has devised the following set of guiding principle keywords to provide a foundation for planning, development, operation, and management decisions to be made during the master planning process. Future development within SMSP should consider this key list of principles to guide the direction of the park to protect its natural, cultural, and historical integrity while responding to the contemporary needs of patrons.

GOVERNOR ALFRED E. SMITH/ SUNKEN MEADOW STATE PARK RECOMMENDED GUIDING PRINCIPLES

- **ACCESSIBLE:** *as a state park all main areas and access routes should be ADA compliant*
- **APPROPRIATE:** *facilities and activities should be allowed in the park only when they are compatible with existing amenities and geography of the park, and harmonious with patron general interests*
- **BENEFICIAL:** *the layout and facilities of the park should provide for the mind and body with social, education, and physical opportunities*
- **COHESIVE:** *the pedestrian, vehicular, and bicyclist access and network of roads and trails must be safe, accessible and incorporate connections to the various destinations throughout the park*
- **CONTEMPORARY:** *enhancement and expansion should respond to national and local trends*
- **FLEXIBLE:** *designated recreational facilities should be kept to a minimum to allow for the flexibility of space for all activities instead of limiting to specific uses*
- **PROTECT:** *environmental, cultural, and historic resources must be valued and managed properly*
- **RESPONSIVE:** *underutilized areas and those in need of rehabilitation should be addressed to expand the useable acreage of the park*

HISTORY OF THE PARK

Many of the state parks on Long Island were established with the intent of serving the growing population and recreational needs of both New York City and Long Island during the 1920s. With its vast shorelines and large acreages of undeveloped areas, Long Island was the ideal location for providing access and open space for recreational opportunities for both urban and suburban dwellers (SMSP Master Plan, 2010).

In 1924, a comprehensive plan for the Long Island Park Region was developed with the State Park plan. The plan served to identify key information regarding the geography and demography of the island, along with its proximity to the New York City metropolitan area. It recommended to improve the lives of the urban poor," and to him, "nothing was more visible than the physical entity that was a park" (Caro, Robert A. 1975).

significant acreage of shoreline access to public users, which up until then, had been reserved for private, local use (SMSP Master Plan, 2010). Governor Alfred E. Smith was "anxious

After the initial comprehensive plan was established, the Long Island Park Commission began purchasing land for the development of State parks (SMSP Master Plan, 2010). By the end of 1926, the state acquired thousands of acres to set aside for these recreational parks. Once exclusive destinations, these expanses along the north and south shores became publicly accessible. From 1926 and to the present day the park acquired land from both private and town property.

1926 marked the initial land acquisition for Governor Alfred E. Smith/ Sunken Meadow State Park (SMSP) with the acquisition of 200 acres from the late George and Antoinette Lamb (SMSP Master Plan, 2010). The original master plan included picnic, camping, and parking areas, along with a playground and beach area accessible via a boardwalk across Sunken Meadow Creek. The name, Sunken Meadow, comes from the low meadowland that separates the beach from the upland forest (Finch, Susan, 2009).

In 1928, from the State's purchase of over 2,000 feet and the Town of Smithtown deeding over 400 feet, SMSP gained over 2,400 feet of Long Island Sound waterfront property. A second master plan was developed in 1928 showing the proposed Sunken Meadow Parkway extension and causeway across Sunken Meadow Creek to a new and larger parking field (SMSP Master Plan, 2010). In 1930, the causeway connecting the mainland to the beach was completed and opened. Over the next few years, the bathing beach was improved, the number of parking lots increased, a modern bathhouse was completed, and the Orchard Hill picnic shelters constructed (LeFrank, 2011). In the 1950s, a third park plan was developed showing significant expansion of SMSP's facilities. This plan laid out the general framework for what is seen as the park today (SMSP Master Plan, 2010). During the 1950s the park continued to purchase both sizeable and smaller parcels of land for expansion. In 1952, Plum Island was seized through eminent domain to be incorporated into SMSP. Previous to its acquisition, Plum Island was home to Camp Sandy, created by the Society of St. Johnland to serve as a summer camp for boys and girls. The island was created by the confluence of Long Island Sound, Sunken Meadow Creek, and the Nissequogue River (Harris, Bradley, et al., 2011). Robert Moses had the inlet filled in, connecting the land to the state park. After this acquisition, the focus shifted to developing and improving park facilities. New facilities included the boardwalk, a cafeteria building, and a 1,200 vehicle parking field. Upon the completion of the five-mile stretch of the Sunken Meadow Parkway, yearly visitation increased drastically to 900,000. In 1958, the permanent toll booth and service area at the main entrance of the park was completed (LeFrank, 2011).

In 1960, approximately 300 acres to the west end of the park were purchased in order to build three golf courses and a driving range.

From top to bottom: SMSP early views of the Bluff: St. Johnland's Camp; SMSP Early Views of the Boardwalk; Picnicking Grounds (Harris, Bradley, et al., 2009)

All designed by Alfred Tull, the first two courses were built in 1962, followed by the Blue Course in 1964 (SMSP Master Plan, 2010). The three golf courses are often played as one 9-hole, and one 18-hole. Over the next decade, The East and West Pavilions were constructed along with field parking expansions. After 1964, development of new park facilities ceased while attendance continued to grow (LeFrank, 2011). Very little expansion or acquisition of land takes places from the 1970s through the 1990s. By 1990 the annual park attendance grew to 1.5 millions visitors.

From 1990 to the present day, park attendance increased to up to 2.5 visitors annually, with a busy summer weekend attendance reaching 24,000 visitors daily. During this time, there had not been any significant changes to the park; the boardwalk was rebuilt and new playgrounds were installed adjacent to Fields 1 and 4.

Since it first opened as a state park in 1928, "Sunken Meadow has been a popular beach destination not only for residents of Kings Park and Smithtown but also for inhabitants of New York City and Brooklyn seeking fresh air and relief from their otherwise cramped urban existences" (Harris, Bradley, et al., 2009).

Today, SMSP consists of 1,287.70 acres with over two and a half miles of shoreline access to the Long Island Sound (SMSP Master Plan, 2010). Attendance data shows that it is both a destination and local recreation place, with local weekday and evening users utilizing the space for an hour or two at a time, along with summer weekend city users coming to spend the full day out in the fresh air. The park has anywhere from 1.5 to 2.5 million visitors annually, with most patrons coming from Nassau and New York City counties (SMSP Park Profile, 2010).

Sunken Meadow: building Fields 1 and 2 (Lefrank, 2011)

BENEFITS OF RECREATION

Studies have shown that recreation is important for human health and social development. The discussions below explore how recreation can positively affect and shape the lives of those that participate.

CORP Identified Benefits

The California Department of Parks and Recreation produces a statewide outdoor recreation leadership and action plan every five years. Called the California Outdoor Recreation Plan (CORP), its preliminary objective is to determine the outdoor recreation issues and to explore the most appropriate actions. In its 2002 CORP, California explored the health and social benefits of outdoor recreation.

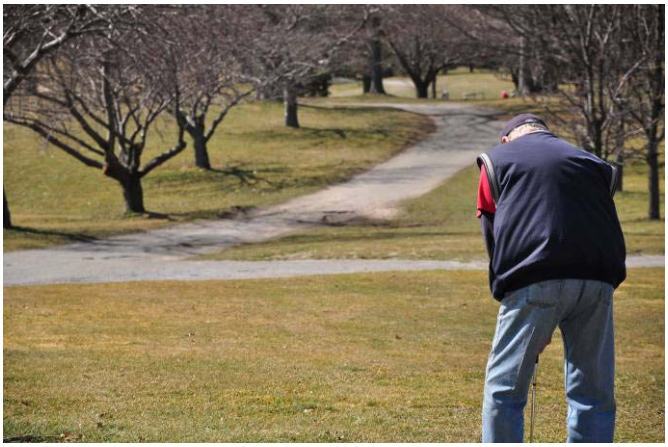
According to the 2002 CORP, there has been an extreme trend towards a sedentary lifestyle over the last decade. Interaction and play have shifted from outdoor recreation to use of primarily computers (hand-held and desktop), television, and video games. An estimated 7 in 10 American adults are not regularly active during their leisure time and 4 in 10 are not active at all. The number of obese and overweight children, adolescents, and adults in the United States has doubled over the past twenty years due in part to this sedentary lifestyle.

The CORP also explores how participation in outdoor recreation provides a wide range of health and social benefits. Recreation encourages physical activity from walking and bicycling to court and field sports. Regular physical activity exercises the body's muscles reducing

disease and injuries, while increasing the production of endorphins thereby also reducing depression. It also increases social interaction, creating a more inclusive society and provides an escape from everyday stress and pressure.

The open spaces and recreational opportunities provided in parks help foster healthy and cohesive communities. They increase community integration, reduce social alienation, build strong family bonds, as well as contribute to the development of youth. They increase community interaction by drawing people out of their individual homes and into the community. Recreation encourages the sharing of ethnic and cultural traditions and social interaction through this media can break down isolation of groups, unfamiliarity, and fear. It can significantly improve the quality of life for individuals with disabilities as well as informally educate those without disabilities that the same recreational needs and benefits are shared (State of California Resources Agency, 2002).

As the population over the age of sixty-five is rapidly increasing, so is the need for more recreational opportunities for seniors. Incidents of depression increase with age, as well as the trend towards a sedentary lifestyle. Recreation can reduce depression, and encourage



Golfer at Sunken Meadow Golf Course

socialization and independence in children, recreation becomes a pivotal tool in a child's emotional, mental, social, and physical development. Methods of recreating become a medium for the development of a person's social, motor, intellectual capacities, concepts, and level of creativity which are established at a very young age (State of California Resources Agency, 2002).

Benefits for Youth

The figure "Recreation Influences on Developmental, Health, and Academic Outcomes" (located in *The Rationale for Recreation Services for Youth: An Evidenced Based Approach*) presents a model in the form of a chain of events linking recreation's role in the development of short term outcomes to lasting lifestyle changes. According to the figure, recreation offers to youth: lifelong interests, self-determination skills and competence, durable relationships with adults, interaction with the opposite sex, formation of strong peer bonds, opportunities for leadership, growth, goal orientation and future expectations, ability to take positive risks, informal learning, and development of planning and problem solving skills. This can in effect lead to associated developmental outcomes including those related to identity, autonomy, initiative and persistence, conflict resolution skills, ability to overcome challenges, comfort with intimacy, community attachment, and civic engagement. Longer term health and academic outcomes can amount to academic success and increased physical activity and lowered rates of school failure, depressed mood, substance abuse and crime, and sexual risk. It is important to note that recreation programs need to be intentionally and dynamically designed to encourage the involvement of the younger generation (Witt and Caldwell, 2010).

RECREATION NEEDS ASSESSMENT METHODOLOGY

The outdoor recreation needs of a diverse range of present and future visitors were considered in order to create an appropriate recreational design program for SMSP. An assessment of current conditions and amenities available within the park in combination with an understanding of the direction recreation is taking in the United States helps to identify appropriate future development. Need was determined by examining several sources including local, state, and national surveys of recreation needs, opinion surveys, population and demographic research studies, public correspondence, and public input provided during SMSP community meetings. A wide array of user needs are identified through examination of amenities available and type of user. The needs identified that are applicable to SMSP are included.

RECREATION NEEDS ASSESSMENT

GOALS AND OBJECTIVES

Recreational providers need to not only meet current needs, but also adjust for future directions in order to be effective. It is important to have a clear understanding of what was provided in the past, current demand, trending activities, as well as recognize the direction of outdoor recreation activities. There is speculation that nature-based recreation is on a downtrend as the popularity of personal computers, home theaters, and video games continues to increase among the younger generation and adult users. Richard Louv, author of *Last Child in the Woods*, argues that children are becoming less connected with nature. Others believe that changes in lifestyles have affected the way in which people recreate.

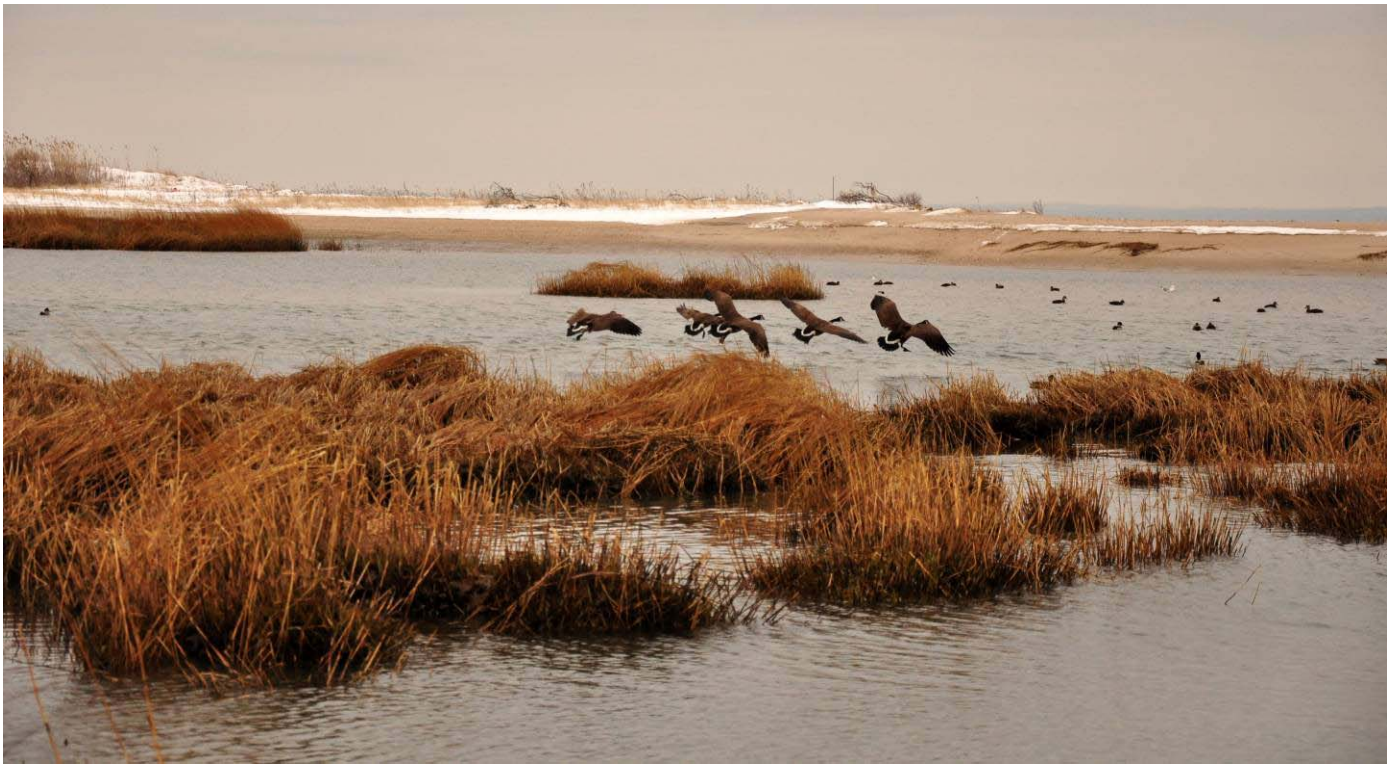
Understanding and predicting future recreation trends enable land managers and legislators to know where to allocate funds and resources. Participation and consumption data provides the broadest measure of a recreation market. Level of participation is a general indicator of the size of the market and a gauge of public interest. For almost all of the surveys analyzed within this report, participation is counted if an individual has participated in an outdoor recreation activity in the preceding twelve months. Consumption is measured as the number of visits, days, or trips in a given year, and provides an additional dimension for resource managers to make decisions based on “how often” and for “how long” individuals engage on a particular activity. Past and recent outdoor recreation trends can be good general indicators of future trends, however, there are underlying additional factors that drive these specific trends. Trend analysis can be supplemented by following the dynamics of the underlying factors and associations known to influence participation such as large changes in demographic, economic, and land use factors. Additionally, factors such as race, ethnicity, gender, age, income, and available proximity to settings can drive recreation participation and consumption behavior. (Outdoor Recreation, 2011).

The SMSP Recreation Facilities Plan explores the needs and trends of park user groups and determines the appropriate future direction for facility creation, expansion, accessibility, and layout. Through careful review of national and local user needs for open space, outdoor recreation trends, specific SMSP site assessment and facility conditions analysis, other local parks analysis, and future design considerations, a basis for recreational facility needs and development at SMSP is provided.

RECREATION NEEDS AND TRENDS

INTRODUCTION

The State park system offers recreational opportunities that are not often otherwise accessible to the general public. In order to meet demand, the parks must adapt to current trends. *Recreation Needs and Trends* explore current trends in outdoor recreation by comparing patron and non-patron surveys, research studies, park user feedback, and park management knowledge.



Canada geese in tidal wetlands

Findings from seven surveys were summarized and compared for the *SMSP Recreation Facilities Plan*. The scope of these surveys ranged from those conducted on a national level, those pertaining to New York State residents, and those performed by private groups and agencies. The following surveys were analyzed: the New York State Statewide Comprehensive Outdoor Recreation Plan (SCORP); the New York State Office of Parks, Recreation, and Historic Planning General Public Outdoor Recreation Survey; the National Survey on Fishing, Hunting, and Wildlife Associated Recreation (FHWAR) conducted by the U.S. Fish and Wildlife Service; the United State Forest Service National Survey on Recreation and the Environment (NSRE); the National Sporting Goods Association (NSGA) survey; the Outdoor Recreation Participation Study of the Outdoor Foundation; and the Open Space and Recreation Strategic Master Plan for Brookline, Massachusetts.

In addition to the surveys, information was gathered on trends and needs specific to racial/ethnic groups from research studies, trends in built recreation facilities in the United States, specific SMSP user needs based on patron feedback, and additional existing conditions data based on park management knowledge.

The surveys summarized in this section were based upon questionnaires administered by telephone, mail, or internet, from a representative sample of U.S. citizens. In general they ask respondents if they have participated in a particular recreational activity in the past year and the frequency to which they participated. Certain surveys gather additional socioeconomic and demographic data on respondents. Not all studies were in direct agreement with each other regarding needs and trends across different groups. Reasons for these discrepancies include differences in: respondent sampling size; recall period (a few months to the previous year); age of user; scope (nation or state-wide); given activity categories (i.e. walking for exercise vs. walking); and minority population considerations.

NEW YORK STATE SURVEYS

New York State Statewide Comprehensive Outdoor Recreation Plan 2009 - 2013

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) is prepared periodically by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). Its purpose is to provide policy direction for parks statewide and fulfill its preservation and recreation mandate. Originally designed to fulfill eligibility requirements for funding from the Land and Water Conservation Fund (LWCF), the SCORP process has evolved into a guidance plan for recreation resource preservation, planning, and development. It serves all interest groups of New York State as a basic information source in regards to particular recreation issues, policies, priorities, and projections. The current 2009 SCORP will be used by NYS for development and planning through 2013.

In *Trends, Issues, and Needs* section of the SCORP 2009 report, NYS OPRHP includes and utilizes data provided from the 2004 General Public Outdoor Recreation Survey (GPORS). The SCORP supplements the GPORS data with a survey completed by local government park professionals focusing on needs, issues, and trail concerns. The SCORP provides a broader spectrum of analysis than the GPORS because it gathers its input from the entire citizenry, rather than particular interest groups. The SCORP combined data received from the GPORS with U.S. Census data for the purpose of making projections of current and future recreation levels by activity and county within New York State.

SMSP park patrons walking along the boardwalk in March

According to the 2009 SCORP analysis, the most popular activity for NYS citizens is relaxing in the park with 12,495,807 participants in 2004. Relaxing in the park also has one of the highest projected growth rates for 2025 at 3.99%. As illustrated in Figure 1, visiting historic sites has the highest increase in projected growth at 5.36 percent, followed closely by walking (4.34%), and bicycling (3.04%). Cross country skiing also shows an increase in projected growth although it has a lower number of participants overall.

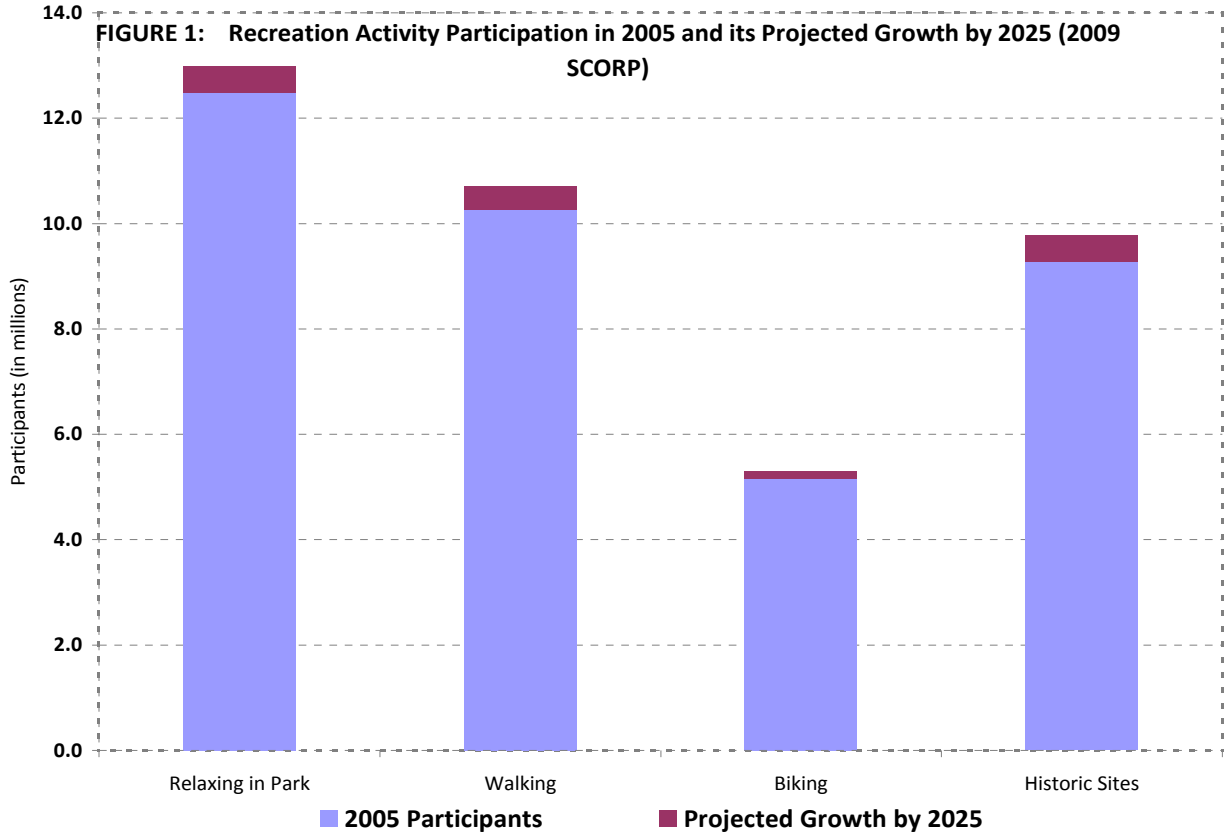


FIGURE 1: Recreation Activity Participation in 2005 and its Projected Growth by 2025 (2009 SCORP)
Participants (in millions)
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Relaxing in Park
Walking
Biking
Historic Sites
2005 Participants
Projected Growth by 2025

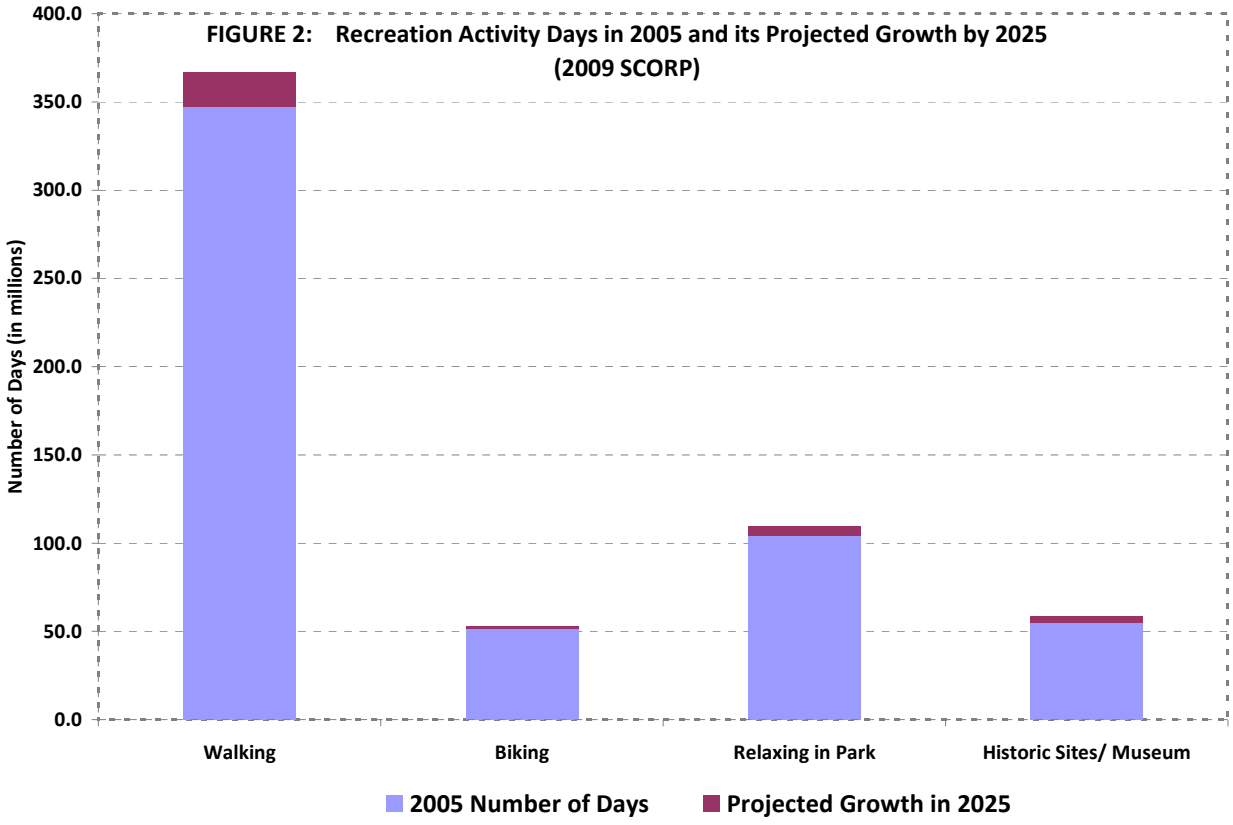


FIGURE 2: Recreation Activity Days in 2005 and its Projected Growth by 2025 (2009 SCORP)
Number of Days (in millions)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
Walking
Biking
Relaxing in Park
Historic Sites/ Museum
2005 Number of Days
Projected Growth in 2025

Figure 2 shows that from a consumption standpoint, walking has the highest number of active days a year, 33.85 per participant. It has over four times the average active days when compared to relaxing in the park which has an average of 8.34 days per participant. Additionally, it has the highest projected growth rate of all recreation activities. This may be attributed to the length of time spent walking versus how much time is considered needed to relax. Walking, for some participants, could occur once a week for 1-hour intervals, while relaxing in the park may be a general term covering a full day in the park and include activities such as reading, swimming, drawing, or picnicking. Similar to relaxing in the park, many of the highest ranked activities can overlap with other uses during the same outing. A complete listing of activity participation, consumption levels, and projections can be found in Tables 1 and 2, in Appendix I.

The findings from the 2004 GPORS were analyzed by NYS SCORP in conjunction with demographic data. Because of the change in age demographic, such as the aging "baby-boomer" generation, activity trends may shift in the next few years towards low-impact, passive activities with increased consumption in activity and hours. According to the 2009 SCORP projection, fishing, camping, downhill skiing, snowmobiling, and field sports are predicted to see a downtrend in the amount of users and the amount of days spent on each activity. The information regarding trends in New York can be further assessed when compared with the *Relative Index of Needs* in the 2009 SCORP. Recreation needs were established by considering the recreational facilities available along with the demand or level of participation in estimating how participation will change over time, both geographically and quantitatively.

Table 3 is an excerpt from the *Relative Index of Needs* which is created for every county. According to the dot density matrix compiled by SMSP; the Bronx, Kings, Nassau, New York, Queens, and Suffolk counties carry the highest

TABLE 3 — **Recreational Index of Needs of New York Counties with Highest Density of Sunken Meadow Users (NYS SCORP 2009 - 2013)**

Recreation Activity	New York Counties						Average
	Bronx	Kings	Nassau	New York	Queens	Suffolk	
Cross country skiing	10	10	10	10	10	10	10
Horseback riding	10	10	10	10	10	10	10
Hiking	10	10	10	10	10	9	9.8
Bicycling	10	10	9	10	10	8	9.5
Walking/ jogging	10	10	7	10	10	6	8.8
Relaxing in the park	8	10	7	10	10	6	8.5
Camping	10	10	6	9	10	5	8.3
Field sports	9	10	6	10	10	5	8.3
Misc. local winter activities	10	9	5	10	8	7	8.2
Swimming	7	7	6	7	8	5	6.7

**Recreation needs is established by comparing the supply of recreational facilities with the demand of participation while using population trend data to determine how this level will change over time. The number listed is an indexed number that translates the need by county into a numerical scale; 10 being high, 5 as the statewide average, and 1 as low.*

Source: NYS OPRHP SCORP 2009 - 2013

number of park patrons. While there are additional users coming from other NYS counties, states, and countries, these six counties represent the majority and therefore indexed needs were only compared between them. The indexed number translates the need by county into a numerical scale, 10 being the highest need, 5 as the statewide average, and 1 being low. An average score is calculated for each activity, giving equal weight to each of the six counties. According to the index of needs calculated, park patrons are looking for more areas to horseback ride, cross country ski, snowshoe, ride bicycles, walk, jog, and relax in the park. While places for cross country skiing, horseback riding, hiking, and bicycle riding are desired by all service counties, activities such as walking, camping, and field sports have a higher index of need from the residents living in the urban counties listed.

2004 NYS OPRHP General Public Outdoor Recreation Survey

The 2004 General Public Outdoor Recreation Survey (GPORS) was conducted by the NYS OPRHP. It was completed in order to assess the recreation trends and needs of the citizens of New York State. The format and content of this survey are similar to previous surveys conducted dating back to 1975. This particular study allows the OPRHP the opportunity to assess the needs of all possible users, not just those who visit the park regularly or belong to special interest groups. In that sense, the agency can address a broader range of the potential user population.

In January 2005, ten thousand surveys were mailed to NYS residents. The State received a response of 1,103 complete surveys that were deemed suitable for the study. The 2004 GPORS focused on four topic areas important for the park planning process including: recreation participation, experiences with OPRHP facilities, opinions on important recreation and environmental issues, and demographic data of the respondents' households. Particular results applicable to the planning of SMSP are discussed below.

Table 4 shows the percent of the population that participated in the activity at least once during 2004. The ten most popular summer activities and five most popular winter activities are displayed in the table. For a complete listing of all activities surveyed refer to Table 5, Appendix 1. According to the 2004 GPORS, relaxing in the park is the most popular activity, with 70.8 percent participation. Walking for enjoyment or exercise (54.5%), swimming (47.7%), and picnicking (45.1%) were also found to be highly popular among participants. Sledding, at a nineteen percent participation rate, was found to be the most popular winter activity, closely followed by ice skating at 16.3 percent.

Table 6 presents the highest ranked activities based on days of activity per participant in 2004. Walking for enjoyment or exercise is the most popular activity based on consumption. The average number of days per participant that listed walking spent 55.5 days each year doing so. The second activity that occupies the highest number of days was jogging/ running, which averages 48.3 days per year. Soccer is listed as the fourth most frequented activity, and averages at 31.4 days per year per participant. The top three winter activities listed in Table 6 downhill skiing (10 d), snowmobiling (9.8 d), and snowboarding (9.6 d), are not appropriate uses for SMSP. However, snow shoeing (8.3 d) and cross country skiing (7 d) are both on the most frequented winter activity list and are popular activities at SMSP. Both activities should be given priority when considering the layout of the park for winter activities.

To gain a broader sense of which activities the citizens of NYS wished they had access to, the 2004 GPORS

TABLE 4 Percent of Participation for Most Popular Recreation Activities

Summer Activity	Percent of Population
Relaxing in the park	70.8%
Walking for enjoyment or exercise	54.5%
Visiting museums	50.8%
Swimming	47.7%
Picnicking	45.1%
Visiting historic sites	42.5%
Visiting zoos	40.3%
Outdoor theatre/ concerts	37.4%
Gardening	33.6%
Visiting nature preserves	32.4%
Winter Activity	
Sledding	19.0%
Ice skating	16.3%
Downhill skiing	8.8%
Cross country skiing	5.5%
Snowmobiling	5.5%

Note: Rankings are limited to the 10 most popular year-round and 5 most popular winter specific activities

Source: NYS OPRHP, 2004

TABLE 6 Days of Activity (per participant) for Most Frequented Activities

Summer Activity	Days of Activity
Walking for enjoyment or exercise	55.5
Jogging/ Running	48.3
Gardening	35.8
Soccer	31.4
Handball/ Racquetball	26.1
Playground use	23.7
ATV/ Off road vehicle/ 4x4	23.1
Relaxing in the park	22.0
Horseback riding	22.0
Bird watching/ Nature photography	21.9
Winter Activity	
Downhill skiing	10.0
Snowmobiling	9.8
Snow boarding	9.6
Snow shoeing	8.3
Cross country skiing	7.0

Note: Rankings are limited to the 10 most frequented year-round and 5 most frequented winter specific activities.

Source: NYS OPRHP, 2004

provided an open-ended question in the survey which stated, "What two activities would you most like to participate in but cannot for any reason?" Results were then classified into general categories. The top ten non-winter and top five winter specific activities are listen in Table 7. The corresponding percentage is the total number of responses for the activity divided by the number of households surveyed. Possible reasons that respondents could not participate in a particular activity include: accessibility, cost, availability, and free time. Boating (10.9%) and swimming (9.1%) were the most desired activities by NYS citizens.

Figure 3 illustrates the type of recreation facilities needed within a thirty minute radius of where a participant lives. Fifty-two percent of respondents of the 2004 GPORS felt that additional facilities were needed in their area. The top four facilities based on NYS citizen needs are swimming pools/ beaches, trails, picnic facilities, and local playgrounds. There is the opportunity for expansion of each of these facilities at SMSP.

Figure 4 shows the most popular recreation amenities used by the NYS citizens in NYS Parks from 2000 through 2004. The most popular resources are those related to typical day use activities such as picnicking, walking, and swimming. According to the survey, the most highly used amenities are picnic areas/ pavilions (52.7%), trails (46.7%), swimming facilities (34.9%), and playfields/ playgrounds (31.0%).

The results of the 2004 GPORS are consistent with the results of previous surveys performed by NYS OPRHP. In the past, the activities that were listed among the most popular, such as, relaxing in the park, picnicking, swimming, and walking, remain in the same bracket. According to the GPORS study, age as a factor seems to have a negative impact on the ability for a participant to recreate when in regard to physically demanding activities. As the State's population ages, court and field activities may be expected to experience a decrease in participation rates. According to the 2004 GPORS, the preliminary study data does not reveal any significant change in recreational behavior over the past twenty-five years.

NATIONALLY CONDUCTED SURVEYS

U.S. FWS 2006 National Surveys of Fishing, Hunting, and Wildlife Associated Recreation

The 2006 National Surveys of Fishing, Hunting, and Wildlife-Associated Recreation (FHWAR) completed by the U.S. Fish and Wildlife Service reports results from interviews conducted with U.S. residents, sixteen years of age and older, about their fishing, hunting, and wildlife watching participation and expenditures. The FHWAR survey has been conducted every five years since 1955, however, due to methodology changes in collecting the data, 2006 estimates should not be directly compared with results prior to those collected in 1991. Unlike in the past, surveyors now contact interview respondents three times in the same year to have them recall the past four months of activity, establishing a more accurate survey. Approximately 80,000 U.S. residents, ages sixteen and older are interviewed for each survey. The interviews are conducted predominantly over the phone, with some conducted in person.

While there is a slight upward trend in wildlife watchers, overall there is a downward trend in fishing and hunting. In 2006, 71.1 million people sixteen years old and older were wildlife watching participants. Compared to 2001, in 2006 there was a six percent increase in participation in wildlife related recreation. However, the number of U.S. residents fishing dropped by twelve percent from 2001 to 2006 (34.1 million as compared to 30.0 million in 2006). During that

same time span, there was a four percent drop in the number of hunters, 13.0 to 12.5 million.

Wildlife-associated recreation is reported in two major categories: fishing and hunting, and wildlife watching (observing, photographing, and feeding fish or wildlife). Wild bird observers are the largest group of wildlife watchers with approximately 47.7 million people bird watching on trips and around the home. 13.3 million people reported visiting parks or areas around the home to observe wildlife for that same year. There is an even distribution of men to women in the wildlife watching category, with slightly more women than men participating.

According to the U.S. Fish and Wildlife survey, thirty million U.S. residents, ages sixteen and older, fished during 2006. Anglers (sportspersons who only fish plus those who fish and hunt) fished a total number 517 million days. Freshwater anglers numbered 25.4 million, while saltwater anglers numbered 7.7 million. Seventy-five percent of fishers were men and twenty-five percent were women. Fishing and hunting have both been experiencing a significant decline since 1991. In addition to the FHWAR results, other studies have also shown a decline in hunting and fishing licenses.

TABLE 7 Non-Winter and Winter Activities Respondents Wish to Participate in but Cannot for any Reason

Non - Winter	Percentage
Boating	10.9%
Swimming	9.1%
Camping	8.0%
Hiking/ Walking	7.9%
Tennis	5.9%
Outdoor theater, etc.	4.5%
Horseback riding	4.3%
Field games	4.3%
Golfing	4.2%
Biking	4.1%
Winter Specific	
Downhill skiing	5.3%
Ice skating	4.7%
Snowmobiling	3.4%
Cross country skiing	2.6%
Snowshoeing	0.9%

Note: Percentage represents the total number of responses for the activity divided by the number of households surveyed

Source: NYS OPRHP, 2004

FIGURE 3: Type of Recreation Facilities Needed (2004 GPORS)

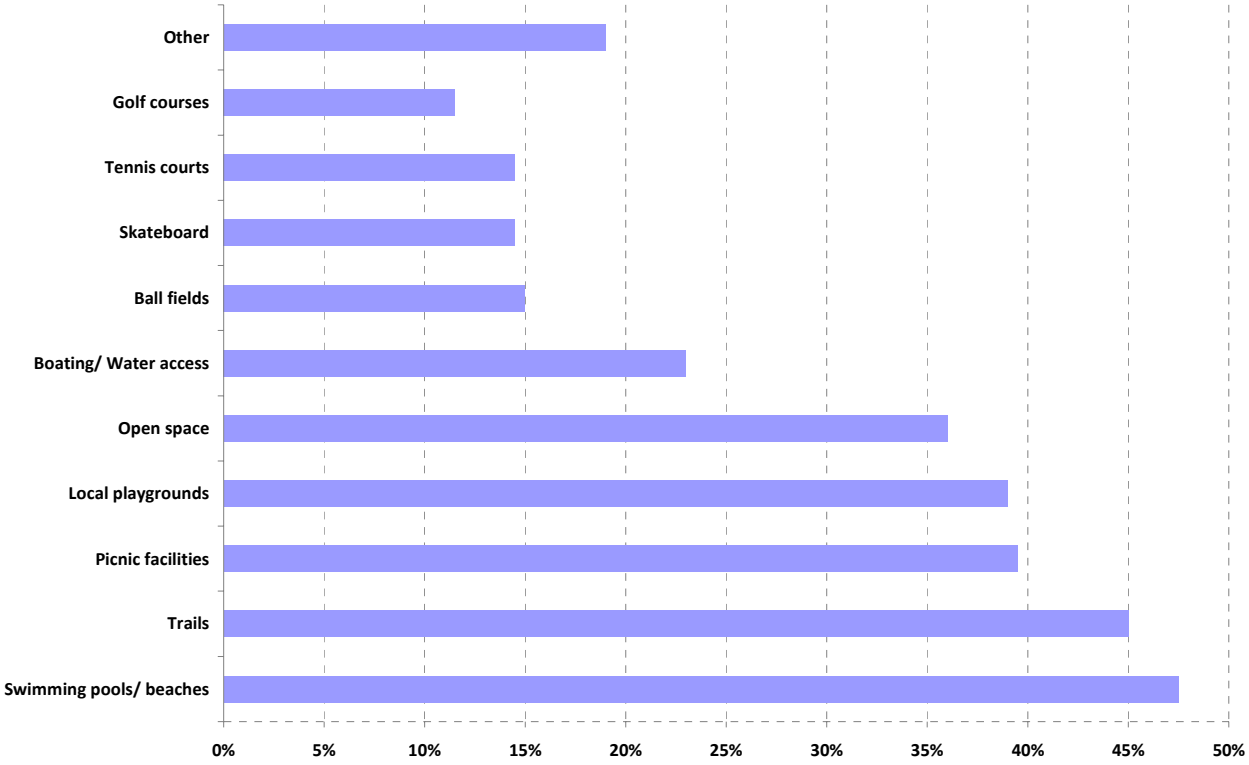
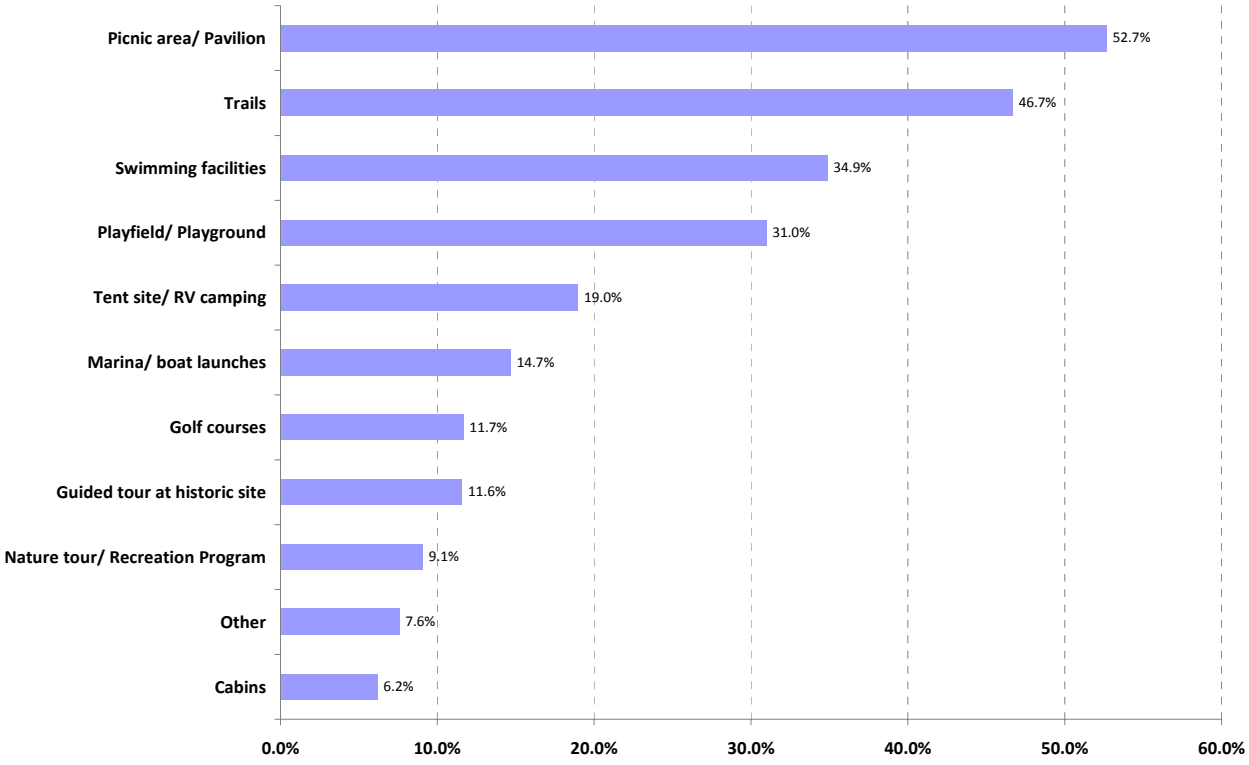


FIGURE 4: Recreation Amenities used in New York State Parks (2004 GPORS)



Four factors thought to be attributed to the decline are: urbanization of the population, loss of open space on the urban fringe due to development, decline in the amount of leisure time, and decline in recruitment and retention rate (Walls, et al. 2009). These same downward trends in fishing and hunting may foreshadow similar trends with nature-based activities such as camping and kayaking that require the same access to resources and time commitment.

U.S. Forest Service Nation Survey on Recreation and the Environment

The National Survey on Recreation and the Environment (NSRE) is the Nation's oldest ongoing outdoor recreation participation and environmental public lands survey. It is a collaborative process between the Research and Development Branch of the U.S. Forest Service; the Coastal and Ocean Resource Economics Program of the National Oceanic and Atmospheric Administration; the University of Tennessee Department of Forestry, Wildlife, and Fisheries; and the University of Georgia Warnell School of Forest and Natural Resources. Other agencies have helped to sponsor and conduct the NSRE at various times including the Bureau of Land Management; the Environmental Protection Agency; the U.S. Coast Guard; and other nongovernmental organizations.

Recently broadened from its original structure as the National Recreation Survey (NRS) which first started in 1960 and taken over by the Outdoor Recreation Resources Review Commission, it became the basis for gauging national and regional demand. The range of activities collected for the NSRE is quite broad, gathering information on over fifty activities from passive interactions in nature to active organized team sports. The survey has been conducted eight times since its start, using varied methods such as in person and by mailer, and since 1994 the survey has been conducted through telephone interviews. The current version asks respondents to recall particular recreation activities that they have participated in during the previous twelve months. Additionally, the NSRE collects information on the number of days spent on each activity along with the number of trips taken for a particular activity (any portion of a day spent counts as a full day). The most recent survey taken from 2005 to 2008, had a total of 19,186 respondents, however, the number has varied over the years. After the survey was completed the responses were weighted to represent the general population.

Figure 5 shows trends in the participation rate for fishing, hunting, and wildlife watching, over four survey periods from 1982 to 2008. According to the NSRE surveys, fishing rates in general have remained about the same at thirty-four percent participation, dropping slightly for the 1994 survey to twenty-nine percent. Hunting has also remained steady in its participation rate over the years. The most noticeable upward trend occurred for bird watching participation rates. In 1994, when both rates of fishing and hunting dropped, bird watching jumped from twelve to twenty-seven percent. Since 1994, the percentage of bird watchers has steadily increased to thirty-five percent. These trends differ from the trends determined by the U.S. FHWAR National Survey in that they found a downward trend in both fishing and hunting. Only bird watching and wildlife watching found a similar trend across both surveys, however, FHWAR's wildlife watching category is a much broader one than the NSRE's bird watching category, and due to its generality, would have expected to have seen a larger increase in participation comparatively. They are both surveys taken at a national level, however, the FHWAR survey was completed for the purpose of monitoring three types of activities, where as the NSRE asked respondents to reflect on over fifty. This may be a main factor in the discrepancy between the two surveys.

FIGURE 5: Fishing, Hunting, and Bird Watching Participation Rates (NSRE)

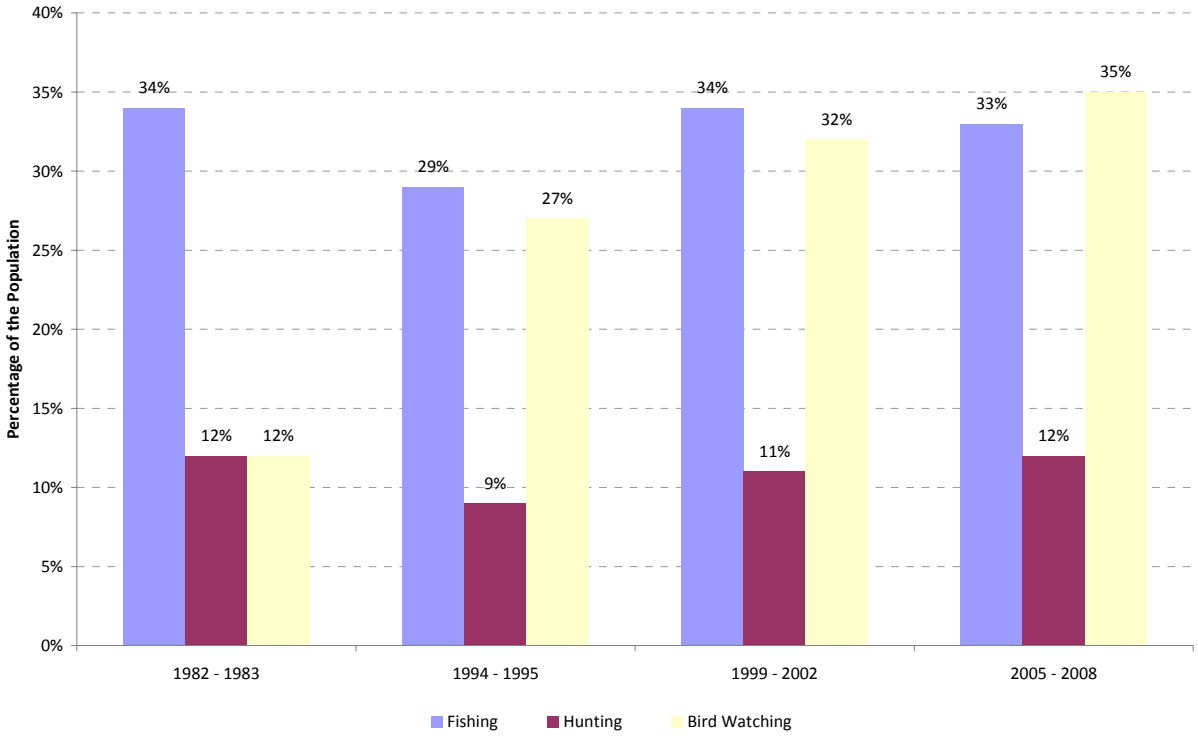


FIGURE 6: Participation Rates for Various Recreational Activities (NSRE)

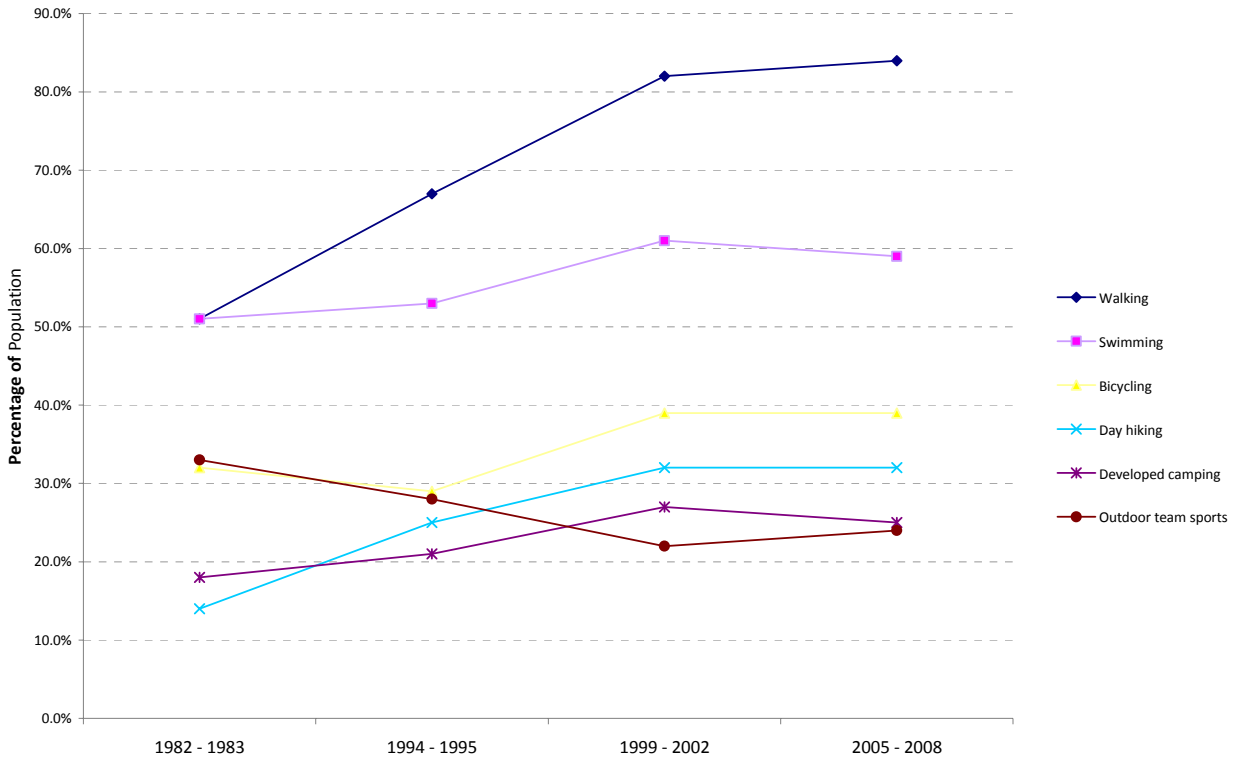


Figure 6 compares the participation rates for various recreational activities (walking, swimming, bicycling, day hiking, developed camping, and outdoor team sports) over four surveys from 1982 through 2008. Walking is the most popular activity for Americans and continues to have the greatest increase in participation between each survey period for the six activities graphed. The activity saw an increase from thirty-one percent to eighty-four percent. Outdoor team sports saw a downward trend in participation from 1994 to 1999, but increased slightly from 1999 to 2008. Most of the activities graphed held relatively constant in participation rates or increased. Family gathering follows walking as the second most popular activity overall in 2008 at a participation rate of 71.2 percent. Running/ jogging had only a 29.2 percent participation rate, which is surprisingly low compared to the findings of the other studies such as the OPRHP's 2004 GPORS which lists running/ jogging as the second most frequented activity. It should be noted that the method of data collection for the two surveys may vary widely and that the GPORS was conducted for New York State, while the NSRE was conducted for the entire U.S. Table 8, in Appendix I, presents the activities studied that are applicable to SMSP. The table compares the percentage of participants as well as number of participants across the activities.

The NSRE collects demographic data from respondents including age, gender, and ethnicity/race in order to follow trends and demand for particular subgroups. Ken Cordell, U.S. Forest Service R&D, used this information in his study on the latest trends in outdoor recreation, and reports that nature-based recreation activities in particular have become less dominated by men (Cordell, 2008).

According to the NSRE 1996 and 2002 surveys there are more similarities than differences in trends of participation among racial/ ethnic groups regarding activity popularity. As displayed in Table 9, walking and family gatherings are listed as the two most popular activities for the four racial/ ethnic groups surveyed (white, non-Hispanic; black, non-Hispanic; Hispanic; and Asian/ Pacific Islander). However, according to the NSRE survey data, Hispanics preferred picnicking as a recreational activity over sightseeing (which was preferred by the other three groups) for their third most popular activity. For further comparisons, refer to the section *Research Studies on the Role Ethnicity and Race Play in Recreation* of this plan, on how racial/ ethnic cultural traditions can affect recreation trends and needs.

PRIVATE GROUP AND AGENCY SURVEY FINDINGS

National Sporting Goods Association Survey

The National Sporting Goods Association (NSGA), the world's largest sporting good trade association, conducts an annual sports participation survey in the United States. Since 1985, the NSGA study collected data on sports participation, frequency of participation, and the average number of participation days by gender and age. Prior to 2010, the survey was conducted using mailback surveys, and beginning in 2010 an online survey was used. Therefore, any direct comparisons with data prior to that year will yield discrepancies.

For 2010, the NSGA surveyed over 41,000 households maintained by TNS (a custom research specialist). The panel of households maintained is balanced on characteristics determined to be key indicators of purchase behavior which include: household composition and size, household income, age of household head, region, and market size. It should be noted that race and ethnicity are not considered general purchase behavior indicators and therefore African Americans and Hispanics are under-represented in this sample.

TABLE 9	Outdoor Recreation Activities and their Popularity Rating among different Racial/ Ethnic groups from 1994 through 2002 (NSRE)			
Ten Most Popular Activities for Total U.S. Population	**Racial/ Ethnic Group**			
	White (non-Hispanic)	**Black (non-Hispanic)**	**Hispanic**	**Asian/ Pacific Islander**
Walking	1/1	2/1	1/1	1/1
Family gatherings	2/2	1/2	2/2	2/2
Nature centers	4/3	5/6	4/3	4/4
Picnicking	5/5	4/3	3/4	5/3
Sightseeing	3/4	3/4	6/9	3/5
Sports events	6/6	6/5	5/8	7/7
Historic sites	8/8	8/9	9/10	6/6
Viewing wildlife	-/7	-/-	-/-	-/-
Swimming (lakes)	9/9	-/-	9/-	10/10
Swimming (pools)	7/-	10/-	8/-	8/-

** Dash denotes that the activity was not among the top ten at the time of the survey*

Source: National Survey on Recreation and the Environment, various years

TABLE 10	Recreation Activities with Highest Total Participation Rates (2010 NSGA)	
Activity	**Total Participation (in millions)**	**% Change from 2009**
Exercise Walking	95.8	2.6%
Exercising with Equipment	55.3	-3.4%
Swimming	51.9	3.4%
Camping (vacation/ overnight)	44.7	-12.0%
Bicycle Riding	39.8	4.3%
Bowling	39.0	-13.3%
Aerobic Exercising	38.5	16.3%
Hiking	37.7	10.9%
Workout at Club	36.3	-5.3%
Running/ Jogging	35.5	10.3%

Source: 2010 NSGA

The online survey for the 2010 NSGA sports participation survey asked the heads of households to respond for themselves and up to three other members of the household ages seven and older. Respondents were asked to indicate which sports they (and other members of the household) participated in for the past year, the frequency of participation, and their gender and age. Seven sports require a participation of six or more times a year in order to be included: aerobic exercise, bicycle riding, exercise walking, exercising with equipment, running/jogging, swimming, and weightlifting.

According to the results of the 2010 NSGA survey, the recreation activities related to SMSP that had the highest increased participation from 2009 were cross country skiing (19.5%), kayaking (14.8%), tennis (13.2%), hiking (10.9%), and running/ jogging (10.3%). (Note: Only activities that are applicable to SMSP were included in the results of this report). As shown in Table 10, exercise walking is the most popular recreation activity with 95.8 million participants. It had a slight percentage increase of 2.6 from 2009.

Figure 7 compares the recreation activities with over 15 percent change in total participation numbers from 2001 to 2010. Running/ jogging and hiking both displayed the greatest increase overall from 2001 to 2010 with 44.7 and 44.4 percent increases, respectively. In-line roller skating and scooter riding both saw the largest drops in participation rates from 2001 to 2010, at -61.0 and -41.6 percents.

The popularity of particular activities were specifically looked at for the female demographic. Exercise walking is the most popular activity with a percentage increase in participation of 61.3 since 2009. Participation for females followed closely to the same trend as participation overall. In the 45 – 54 year old age group, the highest trending outdoor recreational activities for 2010 are skateboarding (231.7 percentage increase); ice hockey (204.2%); off-road mountain biking (181.4%); and hiking (75.0%). Hiking is the most popular activity within the 45 – 54 year old age group.

Figure 8 illustrates the trending outdoor recreation activity participation rates for 7 – 17 year olds by showing the percentage rate change from 2001 to 2010. As shown below, ice hockey has the highest percentage rate increase out of seventeen selected sports in 2010 for the entire 7 – 17 demographic at 50.4 percent. For ages 7 – 11, the highest increase is for tackle football at 102.5%. For ages 12 – 17, the only outdoor recreation activity with an increase in participation was for ice hockey. In-line roller skating had the greatest decrease in participation across all age groups from 2001 to 2010.

There are additional trends of particular note according to the 2010 NSGA survey. Exercise walking continues to be the number one recreational activity Americans participate in, with 95.8 million participants in 2010. Yoga is the highest trending activity with an increase of 28.1% from 2009.

2011 Outdoor Foundation Survey

The Outdoor Foundation, a nonprofit organization that conducts research and promotes the outdoors though various programs and activities, was established by the Outdoor Industry Association. In 1998 it started its annual national survey of participation in 114 different recreational activities. Originally, the survey was conducted through telephone interviews of four to five thousand respondents per year. In 2006 the survey switched over to a web based format with a network of over 40,000 people. Due to the change in both data scale and method collection recent years cannot be accurately compared to earlier ones (those prior to 2006).

FIGURE 7: Recreation Activities with over 15 Percent Change in Participation from 2001 to 2010
(NSGA 2010)

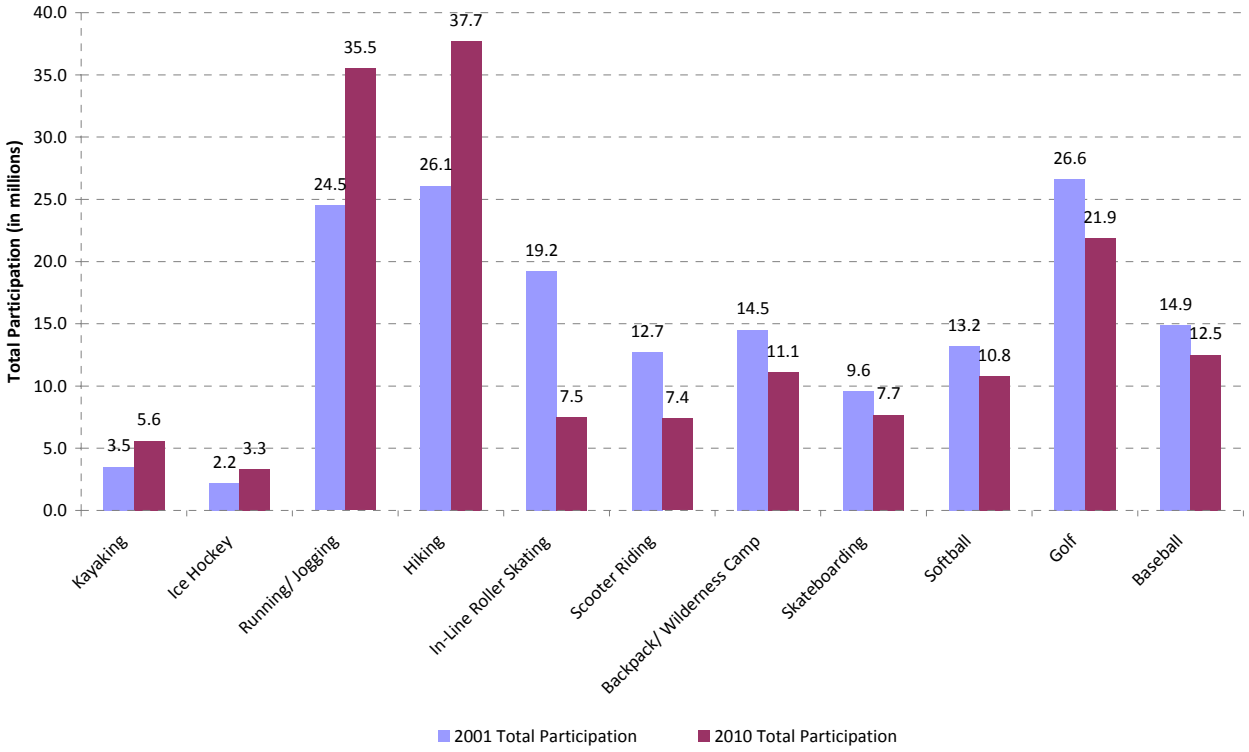
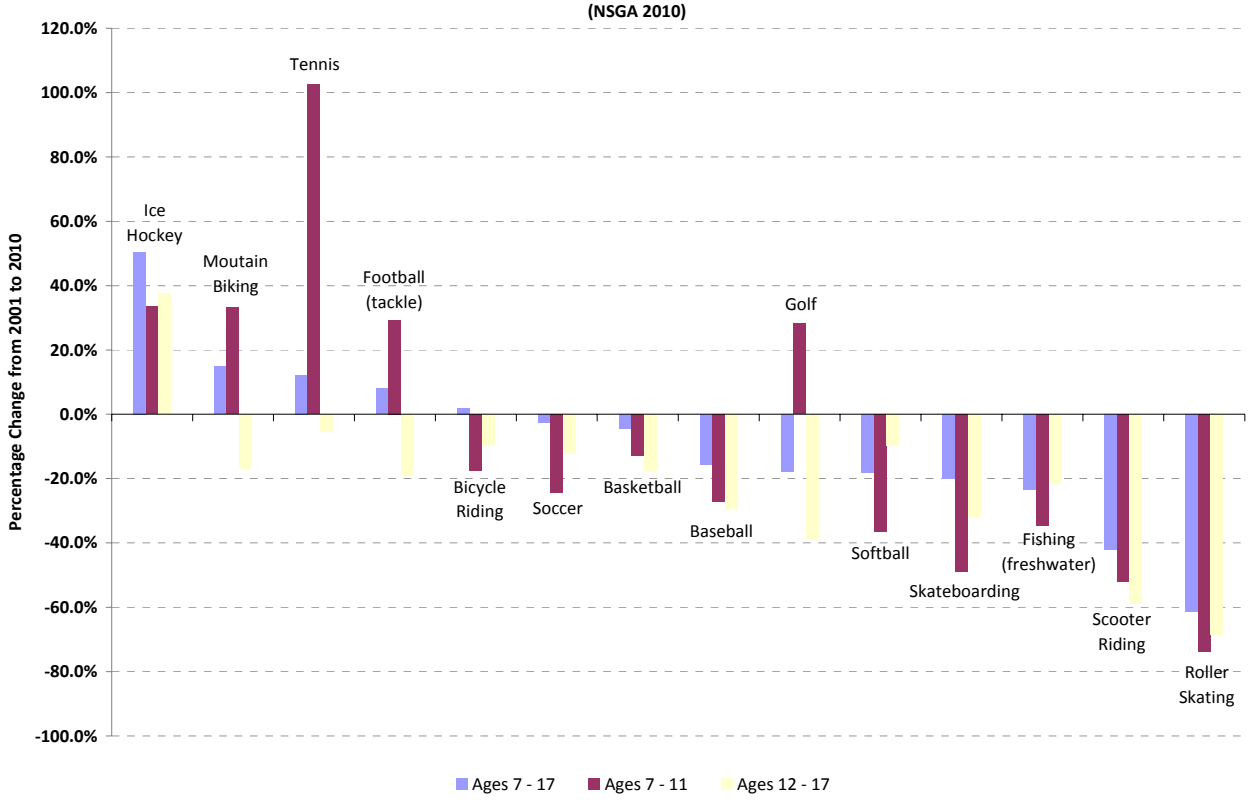


FIGURE 8: Trending Outdoor Recreation Activities for Ages 7 - 17 from 2001
(NSGA 2010)

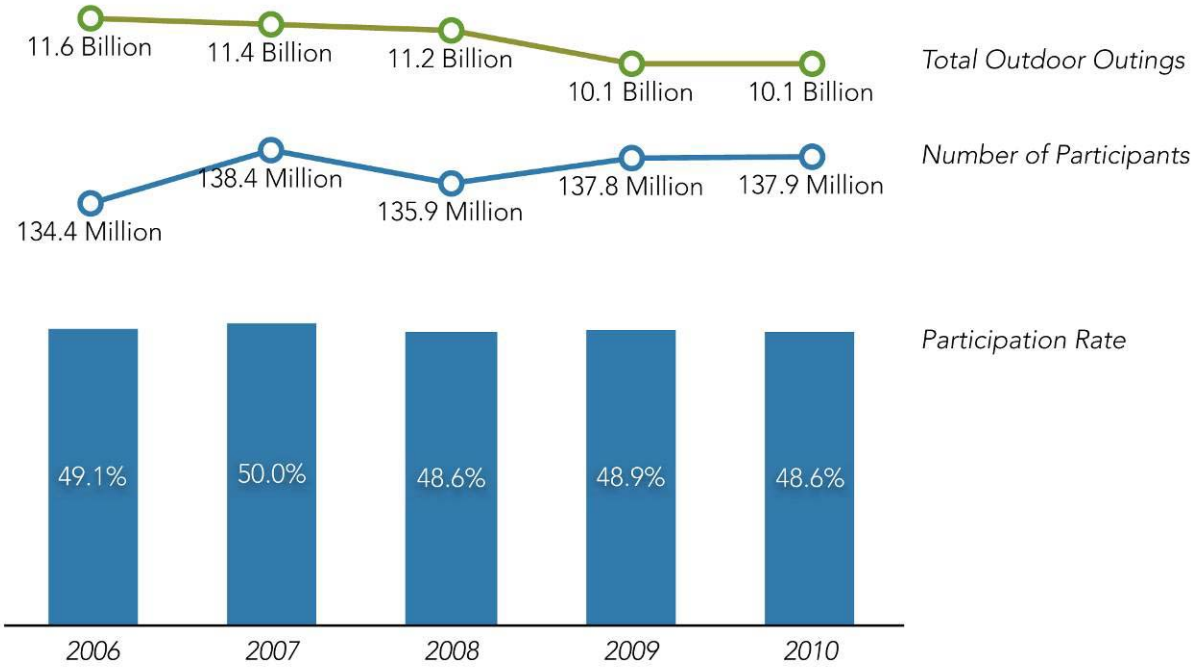


For the 2011 survey, a total of 38,742 online interviews were carried out. The respondents were part of a nationwide sample of individuals and households from the U.S. online panel operated by Synovate (a marketing research firm). The data was weighed in order to reflect the total U.S. population for ages six and above. This weighting is based on gender, age, income, household size, region, and population density. Over sampling of ethnic groups took place in order to elevate the response from typically under represented groups.

According to the Outdoor Foundation's 2011 Outdoor Recreation Topline Report (2011 OFS), the rate of participation in outdoor recreation remained steady from 2008 – 2010 with over forty-eight percent of the American population ages six and older (137.9 million individuals). Each of these individuals participated in one or more outdoor activities in 2010, making a total of 10.1 billion outdoor outings for that particular year. Figure 9 illustrates the American outdoor recreation participation rate, number of participants, and total number of outdoor outings from 2006 through 2010. As shown in Figure 9, while the total number of outdoor outings has decreased from 11.6 billion in 2006 to 10.1 billion in 2010, the number of overall participants has grown from 134.4 million to 137.9 million, respectively.

As seen by the outdoor participation rates shown in Figure 9, the change in the economy has made an impact on the number of people that participate in outdoor recreation and the rate in which they do. According to the 2011 OFS, forty-two of outdoor participants say that the economy affects how often they will participate. Figure 10 breaks down participators by their employment status and

FIGURE 9: Outdoor Participation, 2006 to 2010 (2011 OFS)



Source: 2011 OFS

according to this figure, more than half of those who participate are employed, with only four percent unemployed. Due to the decline in the economy, those who participate in both indoor and outdoor recreation cut back on expenditures such as equipment purchases, travel, and playing fees.

The 2011 Outdoor Foundation Survey looks at the extent and quality of participation and non-participation among diverse groups of the United States. According to its study, participation in outdoor activities is significantly higher among Caucasians than the other ethnicities surveyed, with seventy-four percent of all outdoor participants in 2010 being Caucasian. Across all age groups, African Americans have the lowest rate of participation in outdoor recreation. While both African Americans and Hispanics have fewer participants overall, those that participate do so at a higher frequency than Caucasians and Asian/ Pacific Islanders. African Americans have the highest number of average outings per participant at 108 per year, with Hispanics having the second highest number of outings at ninety-four per year. Figure 11 demonstrates the rate of participation according to ethnicity and age group. One considerable difference seen in comparing participation rates across these two demographics is that for three of the groups listed: Asian/ Pacific Islander, Caucasian/ White, non-Hispanic, and Hispanic, the highest participation rate across all age groups

FIGURE 10: Outdoor Participation by Employment Status (2011 OFS)

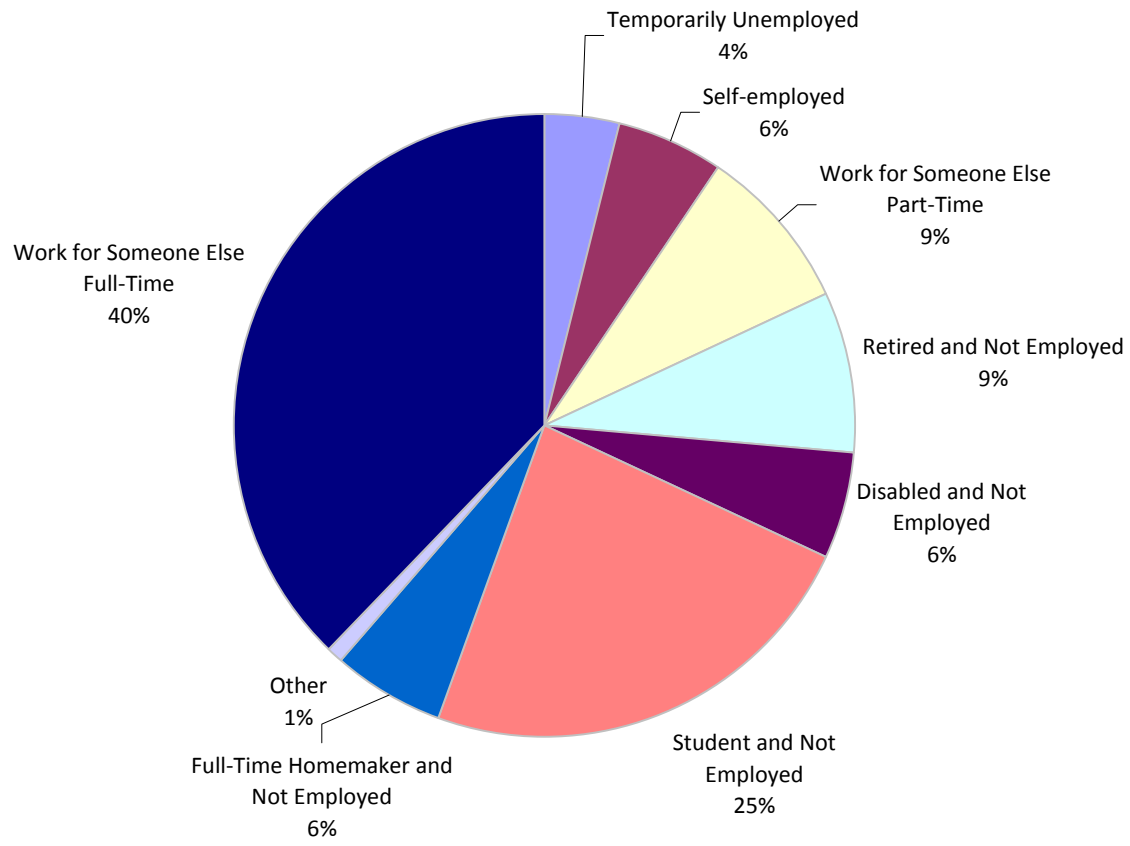


FIGURE 11: Participation in Outdoor Recreation - All Americans by Ethnicity (2011 OFS)

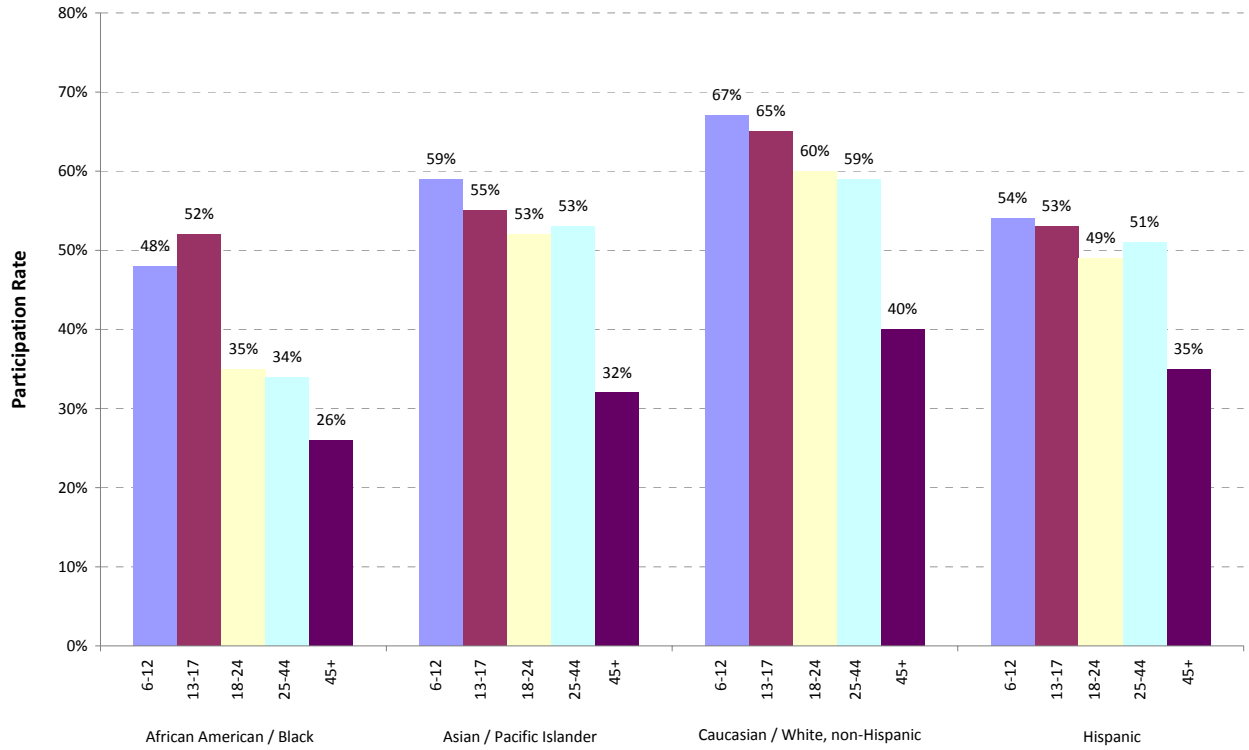
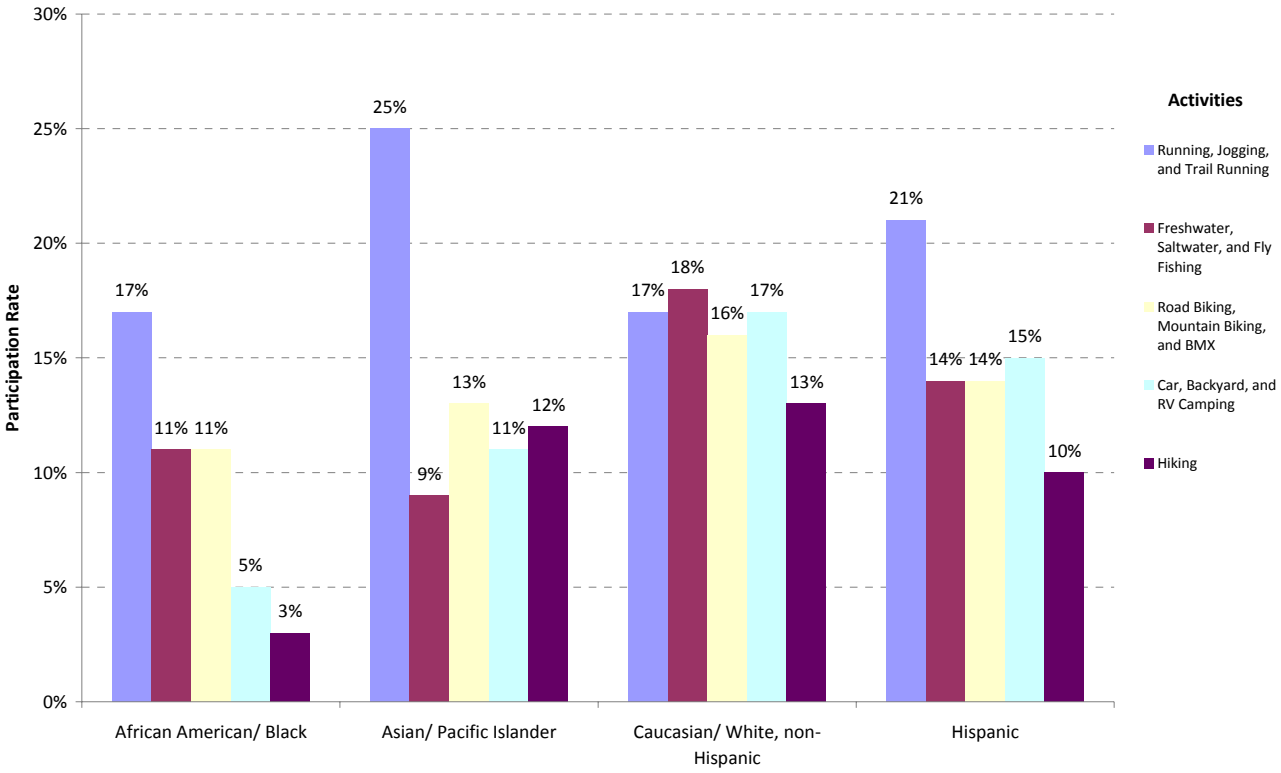


FIGURE 12: Most Popular Outdoor Activities Among Diverse Groups for Ages 6 and Older (2011 OFS)



comes from the six through twelve year olds. But for the African American/ Black group, the highest percentage of participation comes from ages thirteen through seventeen.

As pointed out in the NSRE reports, there are more similarities than differences among diverse groups of recreation participants. In Table 9, PAGE 20, the NSRE demonstrates that walking and family gatherings are the most popular activities across all racial/ ethnic groups included in the survey. The 2011 OFS looks at participation rates across what they consider to be the most popular activities based on survey results. The categories are slightly different, yet overlap with those used in the NSRE studies. According to Figure 12, a graph made from data collected by The Outdoor Foundation for their 2011 survey, running, jogging, and trail running are the most popular activities for all groups other than Caucasian/ White, non-Hispanic. For the Caucasian/ White, non-Hispanic groups, fishing (freshwater, saltwater, and fly fishing), is the most popular activity listed.

According to the Outdoor Foundation Survey, "engaging youth in outdoor recreation and other activities that promote a healthy lifestyle makes a lasting impression" (OFS, 2011). The survey cites running related activities and bicycling as both the top two popular and favorite youth (ages 6-24) activities. Other youth activities that have high popularity are camping, fishing, and hiking. Skateboarding, bird watching, and surfing are also favorites among this age group. Figure 13 represents a 1-year and 3-year change in participation percentage rates of youths (ages six through twenty-four) in certain activities. According to the 2011 OFS, participation in activities such as triathlon, kayaking, adventure racing, and trail running has increased the most significantly over the past three years. Fishing (all types) and skateboarding have seen the greatest downward trend out of the activities shown over the past year, and past three years.

According to the OFS 2011, the most popular outdoor activities for adults (ages twenty-five years and older) in order respectively are: fishing; running, jogging, trail running; camping; bicycling; and hiking. The favorite adult activities (based on frequency of participation) are: running, jogging, trail running; bicycling; bird watching; wildlife viewing; and fishing. Adventure sports (such as backpacking, canoeing, climbing, and scuba diving) and running-related activities have shown significant growth in participation from 2007 to 2010.

Figure 14 illustrates the change in participation rates for all Americans ages six and older from 2006 to 2010 for five popular activities: walking, running, bicycling, golf, and bird watching. According to the figure, walking is the most highly participated in activity and is experiencing an upward trend from 2009 to 2010. Golf is the one activity compared experiencing a constant downward trend from 10.9 percent in 2006 to 9.2 percent in 2010.

According to Figure 15, which presents the most popular team sports in 2010, basketball has the highest participation rate out of the five sports (baseball, basketball, touch football, outdoor soccer, and slow pitch softball): That year, 9.3 percent of the population participated in basketball.

Table 11, in Appendix I, lists all of the activities surveyed for the OFS from 2006 through 2010 which are applicable to SMSP, and their corresponding percent participation levels for each year.

FIGURE 13: Trending Youth Activities (2011 OFS)

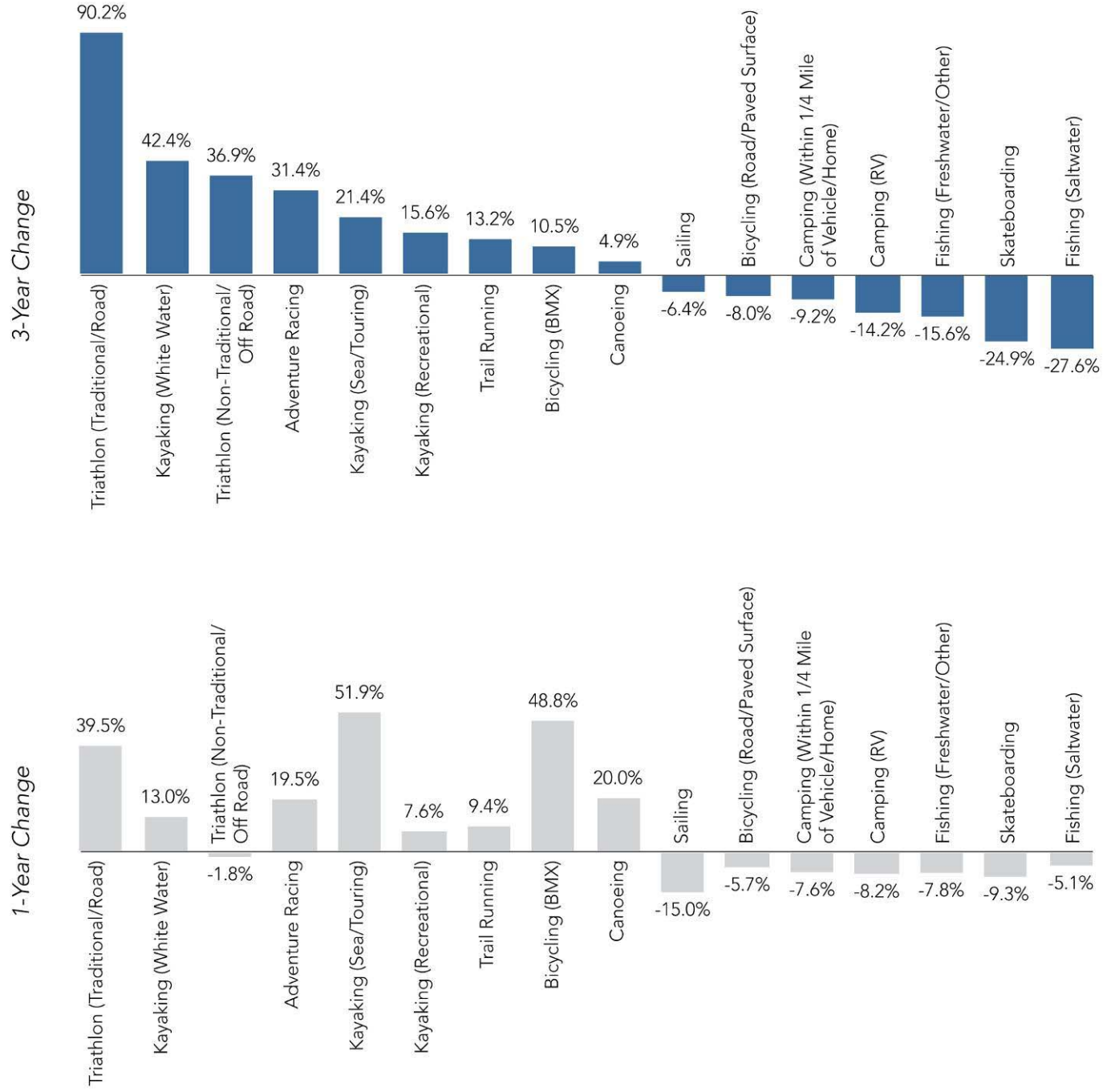


FIGURE 14: Participation Rates for Various Recreational Activities 2006 - 2010 (2011 OFS)

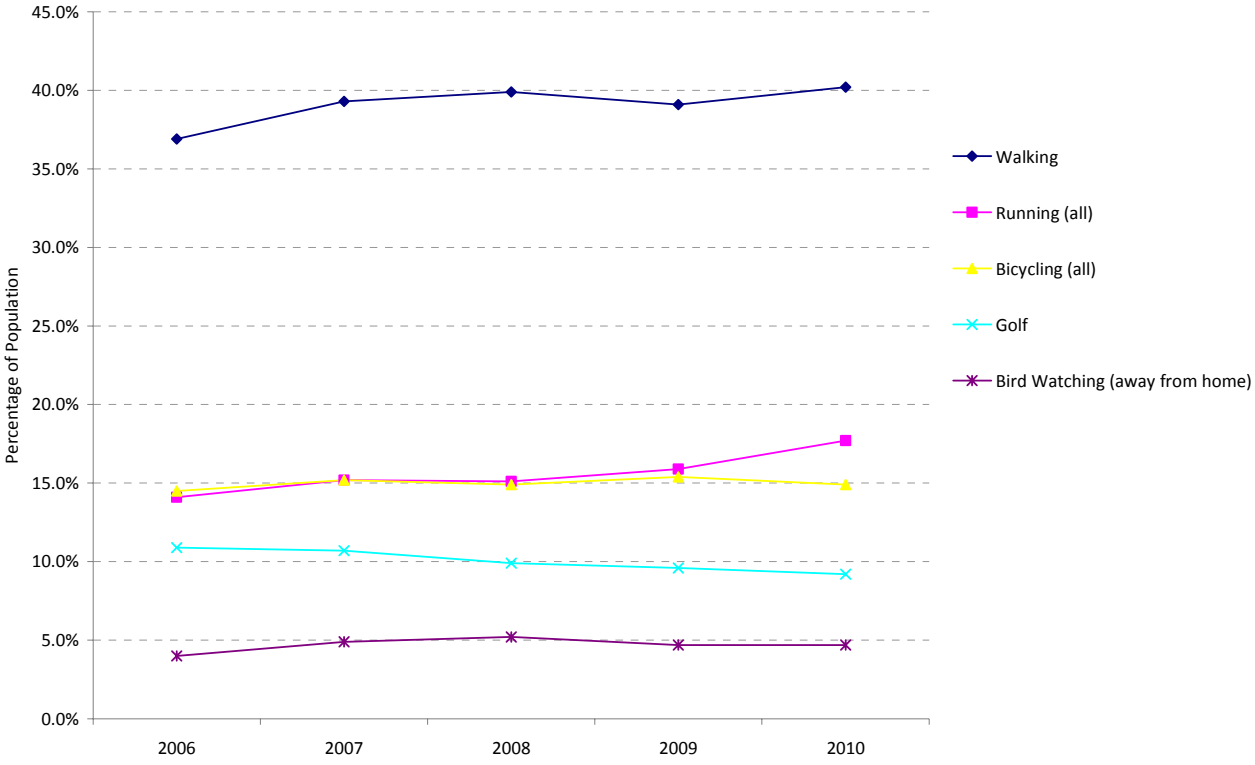
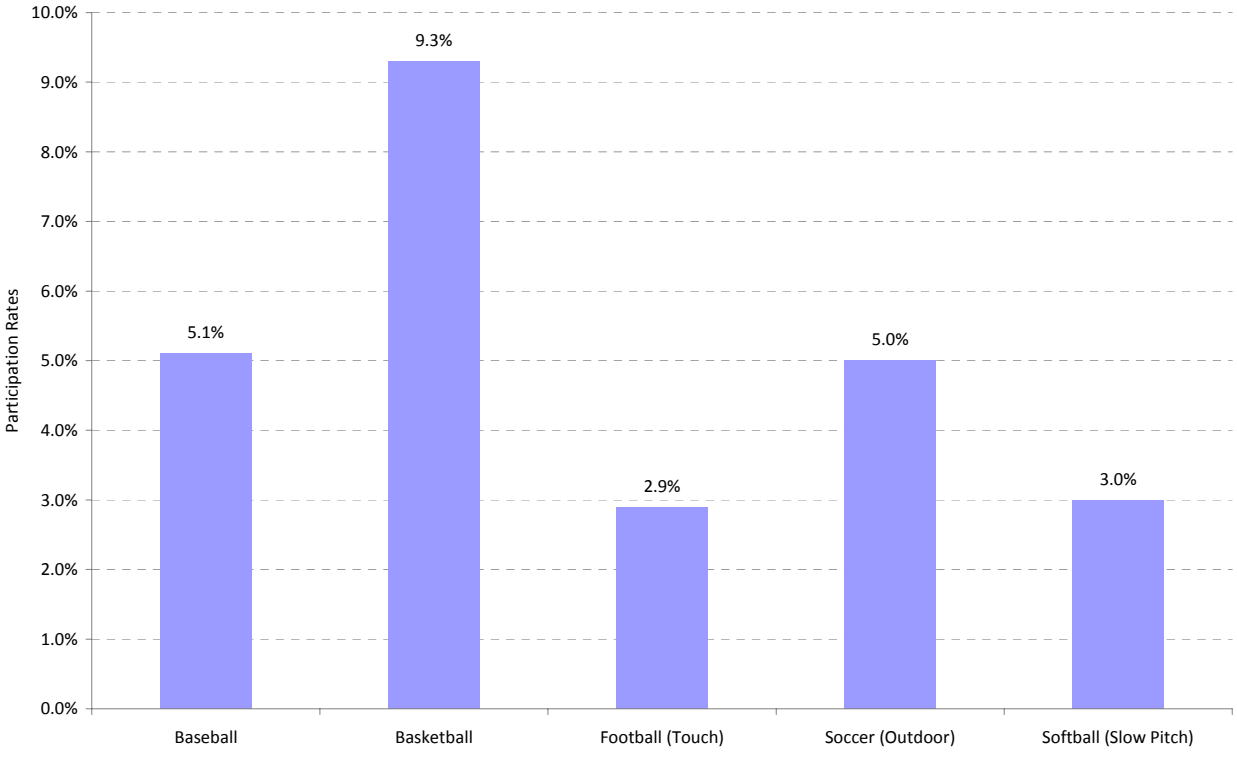


FIGURE 15: Team Sports with Highest Participation Rates in 2010 (2011 OFS)



2006 Open Space and Recreation Strategic Master Plan for Brookline, MA

The 2006 Open Space and Recreation Strategic Master Plan (OSRSMP) for Brookline, Massachusetts, addresses lifestyle trends and the need for public recreation facilities. These two categories are not state specific, as they were researched on a national level and can be directly applied to SMSP.

Lifestyle trends and their impact on recreational programming were summarized in the 2006 OSRSMP. Unlike in the past, Americans have less leisure time, both overall and by each individual length of time. Therefore participation in structured activities which require participation more frequent than once a week for more than an hour interval at a time, has decreased. Activities are moving more towards individualized and drop-in style programs. The top four leisure activities for all Americans for the past decade and which continue to remain are: watching television, reading, socializing with friends and family, and shopping. Out of the ten activities, swimming and walking were the only two physical activities listed.

The 2006 OSRSMP also examined trends in public recreation facilities. Large, multipurpose, one-stop facilities (65,000 to 125,000+ ft) which serve all ages and promote retention, encourage cross-use, and increase cost recovery are becoming increasingly popular in the U.S. Following the same trend, amenities for all ages and abilities located all in one place, are becoming typical, rather than alternative. Other public facilities that are becoming mainstream are therapeutic and leisure pools; interactive game rooms; nature, education, and outdoor recreation centers; regional playgrounds for all ages; skate parks and in-line hockey facilities; and indoor walking tracks. Alternative activities that are gaining popularity are climbing walls; BMX tracks; indoor soccer; and cultural art facilities.

Research Studies on the Role Ethnicity and Race Play in Recreation

A person's culture can play a significant role in the amount and way in which they participate in recreation. The following section examines outdoor recreation needs and trends based on ethnic and racial demographics of the four groups that make up the majority of the U.S. population. Surveys taken by the Outdoor Foundation examined participation in outdoor recreation among diverse groups. The National Survey of Recreation and the Environment (NSRE) demonstrate the similarities across ethnic groups in forms of recreation participation. This section explores the role ethnicity and race play in recreation by comparing the results of research studies including the "State of the Knowledge Report: The Association of Race/Ethnicity, Gender, and Social Class in Outdoor Recreation Experiences", "Ethnicity, Race, and Outdoor Recreation: A Review of Trends, Policy, and Research", and "Minority and Ethnic Variations in Outdoor Recreation Participation: Trends and Issues." These studies were examined along with others (which are included in the reference section of this report), in order to develop a more comprehensive look at the potential patrons of SMSP and their wants and needs.

African Americans

According to the report "Recreation Visitor Research: Studies of Diversity", African Americans identify solitude, spiritual healing, self-renewal, and being with friends and family as benefits sought to gain from outdoor recreation (Chavez, et al., 2008). They prefer areas that are more developed and well managed as opposed to preserved natural areas (Dwyer and Hutchison, 1990). They participate in a greater number of outdoor sports such as basketball, softball, baseball, and

as sport spectators (McDonald and Hutchison, 1986; Gramann, 1996), but rate camping, going to the beach, going to zoos, bicycling, dining out, skiing, and going to the museum, as significantly lower in appeal than European Americans (Philip, 1995). One exception regarding outdoor recreation activities is fishing, which was rated higher for African Americans than European Americans (Philip, 1995). Overall, African Americans were interested in recreating in places with an aesthetically pleasing view, water, green space, and areas for hiking, picnicking, and viewing nature. They prefer to recreate with church or social groups, peers, and by themselves, using the opportunity either to relax or connect with family and friends. In particular, African Americans are looking for larger open areas to recreate and developed facilities such as courts and designated picnicking areas.

Asian Americans

Asian Americans identify being in nature, seeing wildlife, getting away from everyday stressors, and education, as primary reasons for participating in outdoor recreation activities. Asian Americans prefer to recreate with their children and participate with them in educational and recreational activities rather than sending them to participate in programs by themselves. They also prefer to recreate with their extended family, especially their elders, prefering to participate in activities suitable for the whole family. Concerned with safety, Asian Americans do not often allow children to go off and recreate on their own. They prefer shorter hikes and visiting areas that are more populated. In conclusion, Asian Americans are looking for places they can include their elders, places with accessible information (such as in their native language), and areas with educational activities available for adults and children (Chavez, et al., 2008).

European Americans

European Americans cite getting away from everyday stressors, fresh air, and having a place to exercise and relax as benefits sought from outdoor recreation. Compared to African Americans, European Americans participate in a greater degree of outdoor recreational activities (McDonald and Hutchison, 1990). They are less likely than the other groups to prefer highly developed facilities in outdoor recreation areas, rather, they prefer preserved natural areas (Dwyer and Barro, 2001). European Americans have a preference for recreating by themselves, with a significant other, peers, and their children. In recreation areas, they are looking for trails, picnic sites, swimming facilities, and playgrounds (2004 GPORS).

Latinos/ Hispanic Americans

Latinos/ Hispanics are most interested in recreating in groups consisting of their immediate and extended family (Chavez et al., 2008). In the report, "Leisure Experiences of Hispanic Families" Chavez notes that the most important activities in natural environments were picnicking, being with family, relaxing, water play, and napping (1996). Compared to European Americans, they are less likely to participate in activities such as downhill skiing, water-skiing, motorboating, and bicycling (Gramann, 1996). While they tend to visit the same types of areas as European Americans, Latinos/ Hispanics tend to come in larger groups and for longer stays. For example, while European Americans will often prepare and bring food from home for a short picnic, Latinos/ Hispanics will often make food from scratch on site and stay for an entire day. Therefore they often seek places with larger picnic areas, pavilions, areas to barbeque, and areas for their children to play. In addition to preferring areas in which they can socialize with a large group, they use outdoor recreation as an opportunity to remove themselves from everyday stressors, pollution, cost, and look for educational programs to promote self-esteem in their children (Chavez et al., 2008). Latinos/ Hispanics often

decide on where to go based on family and friend recommendations, as information is mainly accessible only in English. They are constrained by not knowing what public facilities are available to them for recreation. As they believe that children are an important part of the community, they prefer areas which accommodate children by having playgrounds, basketball courts, clean bathrooms, water to play in, and open spaces (Chavez et al., 2008).

Table 12 displays the comparison of twenty-five of the forty-three recreational activities surveyed across three racial/ ethnic groups; Caucasian/ White, African American/ Black, and Latino/ Hispanic (Dwyer and Barro, 2001). Unlike findings from national and private studies that showed similarities in participation rates in recreation activities across diverse racial/ ethnic groups, according to the data collected for the report, "Proceedings of the 2000 Northeastern Recreation Research Symposium", significant differences in participation were measured between racial/ ethnic groups in thirty-three out of forty-three activities. Table 12 shows that Caucasians/ Whites are more likely than the other two groups to participate in activities that require the natural environment such as biking, gardening, and hiking. African Americans/ Blacks are more likely to participate in sports such as basketball, baseball, and volleyball than Caucasians/ Whites. While the most popular activity for Latinos/ Hispanics is visiting the zoo, closely followed by walking, they are more likely to play soccer than any of the other two groups.

Table 13 displays a summary of major themes for recreational planning across the four racial/ethnic groups (African American, Asian American, European American, and Latino/ Hispanic American) most prominent in SMSP. The table lists: benefits sought, patron needs and preferred activities, typical group size and composition, length of visit,

TABLE 12 **Comparison of Participation in Recreation Activities by Racial/ Ethnic Groups**

Activity	Caucasian/ White	African American/ Black	Latino/ Hispanic
Walk	75++	67-	58-
Zoo	59+	46-	61
Picnic	47	51	46
Drive	51+	46	40-
Bike	47++	37-	40-
Sport Spectator	46++	31-	34-
Garden	44++	30-	21-
Pool Swim	45++	23-	32-
Run	30	30	29
Basketball	20--	30+	30+
Arboretum	39++	18-	22-
Observe Wildlife	33++	2-	19-
Non-Pool Swim	34+	14-	32
Baseball	21-	31+	23
Volleyball	17--	22+	23+
Fish	24++	16-	15-
Nature Center	30++	10-	12-
Golf	27++	10-	9-
Hike	24++	8-	9-
Tennis	14	14	12
Tent Camp	18++	9-	12-
Motorboat	21++	7-	5-
Ice Skate	15++	8-	9-
Rollerblade	14+	7-	10
Soccer	8-	6	24+

+ = significantly higher than one other group

- = significantly lower than one other group

Source: "Outdoor Recreation Behaviors and Preferences of Urban Racial Ethnic Groups: An Example from the Chicago Area", Dwyer and Barro, 2001.

and constraints for each group included. The information given is a compilation of data from eight recreational research studies and surveys mostly based on particular racial/ethnic group needs and preferences. Across all groups a main benefit sought from recreation was relaxation, by either removing oneself from the everyday stressors or by gaining solitude and peace of mind. Walking was one of the highest rated activities for all groups. Further information on the sources used in this table are listed in the Reference section.

TABLE 13 **Summary of Major Themes for Recreational Planning Across Four Ethnic/ Racial Groups**

	African Americans	Asian Americans	European Americans	Latinos/Hispanic Americans
Benefits Sought	spending time with family and friends	to be in nature	getting away from everyday stresses	places for youth
	solitude	to see wildlife	fresh air	educational programs to promote self-esteem in youth
	spiritual healing	education	place to exercise/relax	spend time with family
	self-renewal	recreate with family		getting away from everyday stresses
		scenary and fresh air		areas free from pollution and free of cost
		getting away from everyday life stresses		
Needs/Wants	developed facilities and conveniences	areas they can bring elders in their family	preserved natural areas	parent/ youth involvement
	developed picnic areas, courts, and sanitary facilities	increased signage/ information accessible in multiple languages	less developed areas	facilities such as pavilions/ gazeboes/ grouped picnic tables for larger groups
		educational opportunities for adults and children		increased signage/ information accessible in multiple languages
Highest Rated/ Preferred Acitivities	walking	walking	walking	walking
	picnicking	hiking	picnicking	picnicking
	biking	tai chi	biking	biking
	basketball	fishing	swimming	swimming
	running		running	running
	baseball		nature center	basketball
	volleyball			soccer
Typical Group Size	individual	couple	individual	extended family
	members of a single-generation peer group	nuclear family	members of a single-generation peer group	
Typical Group Compositions	church/ social groups	entire family with elders and children	single	nuclear family + extended family
	single person	couples	couples	
	members of a single-generation peer group	parents with children	members of a single-generation peer group	
Normal Length of Visit	a few hours	a few hours	a few hours	full day
	full day		full day	
Constraints	safety concerns	lack of information	leisure time	lack of information
		safety concerns		

Sources: Busser et al, 1996; Chavez et al, 2008; Chavez, 1996; Dwyer and Hutchison, 1990; Dwyer and Barro, 2001; Gramann, 1996; McDonald and Hutchison, 1986; and Rodriguez et al, 2002

Spray Park (© Rain Drop Products, LLC.)

Current Recreational Facility and Activity Trends in the United States

This section looks at the trends in recreation facilities being built across the United States in state and local parks. An overview of the activities and the facilities needed are included for spraygrounds, geocaching, disc golf and labyrinths. Each of these recreational activities could potentially be adapted for use at SMSP.

Spraygrounds

Interactive waterplay environments are a growing recreational trend providing patrons with a safe, accessible area for water play during the summer without the need for lifeguards. An alternative to swimming pools, they are designed with a zero-depth water surface that is padded and equipped with drainage to prevent standing water from accumulating. Structure component layout, colors, and themes, can be customized as appropriate for each location. Most parks incorporate water features such as pumps, geysers, buckets, and other interactive components (Hixon, 2009). While most spraygrounds are designed to appeal to young children, a growing recent trend has been to create more sophisticated aquatic features that attract adult users as well. While spray parks do not require the same supervision as swimming pools, they do require regular maintenance and water treatment.

Disc Golf

Disc golf is played in a similar fashion to traditional golf, but with a flying disc and elevated basket. Formalized as a sport in 1970, the object of the game is to get the disc into the basket with the fewest number of throws. The flying disc is thrown from a tee area to a target, commonly a metal basket. The player progresses by making a consecutive shot from where the previous throw has landed. Diversity in the landscape such as trees, shrubs, and elevated grade changes in and around the fairway can provide for exciting and challenging obstacles. Disc golf courses can be set up in as

Disc golf. (www.pdga.com)

little as five acres and as great as forty acres and co-exist with existing park facilities and activity areas (PDGA, 2011).

Labyrinths

Set on a single path, a labyrinth is an ancient geometric pattern that leads the user to the center and back out again. Unlike a maze which has a multitude of paths and dead-ends challenging the mind to problem solve, a labyrinth engages the intuitive and creative right brain for calming and balancing purposes. Originally the labyrinth was based on a circle which is a symbol for healing, unity, and wholeness. In this sense, the labyrinth becomes a tool for renewing the mind-body-spirit connection. Labyrinths can be dated back over 3000 years and ancient and modern ones can be found in places all over the world including England, France, India, Peru, Sweden, as well as the United States. The built structure can be as basic as a chalked design in pavement or constructed out of stone and vegetation. Benefits sought from walking labyrinths include relaxation, ability to meditate, and find stillness in a busy life (Burlington, 2011).

The Boston College Memorial Labyrinth

Geocaching

Geocaching is an outdoor treasure hunting game using Geospatial Positioning System (GPS) – enabled devices. Players have to navigate to a specific set of GPS coordinates and then attempt to find the hidden geocache container at that location. The activity does not require any formally built infrastructures to play, and can be set up as any other type treasure hunt (Groundspeak, 2012).

PARK USER FEEDBACK

As part of the process of producing a master plan for SMSP, the NYS OPRHP held a public information meeting on March 3, 2011. The following list summarizes points from park user feedback given at the meeting and comments posted by mail or email received by OPRHP by April 4, 2011. For a more extensive summary of comments pertaining to the recreation facilities of SMSP, refer to *Sunken Meadow Recreation Facilities Public Comments Summary* in Appendix II.

Core Points from SMSP User Feedback

- Emphasize and protect the core resources of the park *such as the beach, trail systems, boardwalk, golf courses, and picnic areas*
- Preserve the historic culture of the park *by restoring the Main Bathhouse and creating informal markers portraying SMSP's significance on Long Island*
- Expand opportunities for indoor and outdoor activities *with built courts and an indoor recreation facility*
- Incorporate special user group needs *such as model airplane and kite flyer, astronomy and scout groups, and dog walkers*, by providing permits for limited hour or seasonal access to appropriately designated areas
- Create a way-finding path for bird and wildlife watchers with a scenic overlook viewing deck
- Improve the conditions of the golf courses *by constructing a paved pathway to be used in*

wet conditions, and by considering a separate entrance for direct access to the course

- Establish concessionaire opportunities *for boat and kayak rentals as well as fishing bait and tackle*
- Construct, remediate, and improve connectivity of trails *for walking, running, and bicycling*
- Provide for environmental education opportunities *by constructing a nature center and sponsoring programs for adults and children through classes, workshops, and nature walks*
- Upgrade park infrastructure *through renovating existing facilities, updating seating, repaving poor roads and parking fields, and improving shower and restroom quality*
- Coordinate and develop partnerships with special interest groups for assistance with planning, construction, and maintenance for associated activities

PARK MANAGEMENT KNOWLEDGE

Discussions with the SMSP management identified user groups, issues, conflicts, and needs for the park. According to park management, the most prominent users at SMSP are walkers, joggers, bicyclists, and picnickers. The trails are heavily used by cross country runners, bird watchers, walkers, and naturalists. One of the biggest issues during the summer weekends is the conflict between pedestrian and vehiclular circulation. The main bridge is not sized sufficiently to permit more than one lane of pedestrian users and two vehicles at the same time. Pedestrians, bicyclists, and runners will often cross the main area of the bridge, causing vehiclular congestion. Both a separate bridge for pedestrians as well as building a spray park for patrons in Field 4 may help to alleviate circulation issues. A new pedestrian bridge would draw patrons away from the vehicular bridge and cement the pedestrian connection of pathways throughout the park. The spray park could promote the retention of families to Field 4, providing an alternative to the beach for heat relief.

SUMMARY OF TRENDS APPLICABLE TO SMSP

According to the findings of all surveys and data reviewed, walking, for both exercise and relaxation, is the highest rated recreation activity across all demographics. Other activities highly rated in popularity are: relaxing in the park, picnicking, jogging, running, swimming, soccer, basketball, and bicycling. The most popular winter specific activities are ice skating, cross country skiing, and snow shoeing. Passive outdoor recreation activities such as bird and wildlife watching, hiking, walking, and jogging are all experiencing a growth in popularity. Snowmobiling, downhill skiing, and camping are all projected to downtrend over the next few years.

The findings from the surveys and research studies analyzing particular racial and ethnic group preferences were discussed in the segment, *Research Studies on the Role Ethnicity and Race Play in Recreation*. Based on U.S. Census data for the SMSP patron population residence locations, the four most prevalent racial/ethnic groups are African Americans, Asian Americans, Caucasian Americans, and Latinos/ Hispanic Americans. Suggestions for accommodating particular interests include providing family oriented places and activities, natural areas for exercise and relaxation, large picnic areas with facilities for extended family groups, and grassed fields and courts for sports.

Recreation facilities such as spray parks, disc golf courses,

labyrinths, dog parks, skate parks, and large cross-use buildings are currently popular built structures across the United States in state and local parks. According the 2004 GPORS, the highest needed facilities in New York are swimming pools, beaches, multi-use trails, picnic facilities, and local playgrounds. The Recreation Index of Needs created by the 2008 SCORP indicates that the top five needed facilities in New York City and Long Island are those that permit and provide space for walking and jogging, hiking, bicycling, horseback riding, and cross country skiing.

Not all of the highest rated trends are suitable for SMSP. In order to establish what is beneficial, appropriate and applicable for the park, the trends and needs found in the above studies were compared in conjunction with the user demographics of the park, a conditions analysis of SMSP facilities and surrounding park uses in order to arrive at the recreation needs for SMSP and develops conceptual layouts of proposed amenities. The sections that follow contain detailed information on the specifics regarding SMSP and recreation facilities.

Snow covered driving range

SUNKEN MEADOW STATE PARK USER ANALYSIS

Park user characteristics encompass the many factors that influence and may predict how an individual recreates. These characteristics can include a patron's culture, living situation, intent of visit, group size, day of week, and length of stay. *SMSP User Analysis* addresses the different aspects of potential indicators of park recreation needs. It identifies the areas where most SMSP visitors live and compares the information with U.S. Census data, demographic recreation participation studies, and available recreation space in order to identify key points for development consideration.

SUNKEN MEADOW STATE PARK PATRON DEMOGRAPHICS

Major Draw Communities

Situated on the north shore of Long Island, SMSP primarily services users from the Southern District of New York and Long Island. During the week the park attracts more local users, while on summer weekends an intense crowd from surrounding towns and city counties utilize the park.

Figure 16 is included in the SMSP Master Plan and provides a graphic representation of where the highest number of persons who used the park from 2000 to 2010 live. According to this map, a dot density matrix, the highest numbers of users originate from six New York counties: the Bronx, Kings, Nassau, New York, Queens, and Suffolk. While there are additional users coming from other counties of New York, as well as visitors from out of state, these six counties represent the majority. This data was combined with 2010 U.S. Census date specifically pertaining to race and ethnicity, age, and living situation, in order to develop a more accurate understanding of how demographics can affect patron wants and needs.

FACTORS INFLUENCING VISITOR NEEDS

Housing situation

Proximity and access to open space

Cultural trends

Purpose of visit

Group size preference

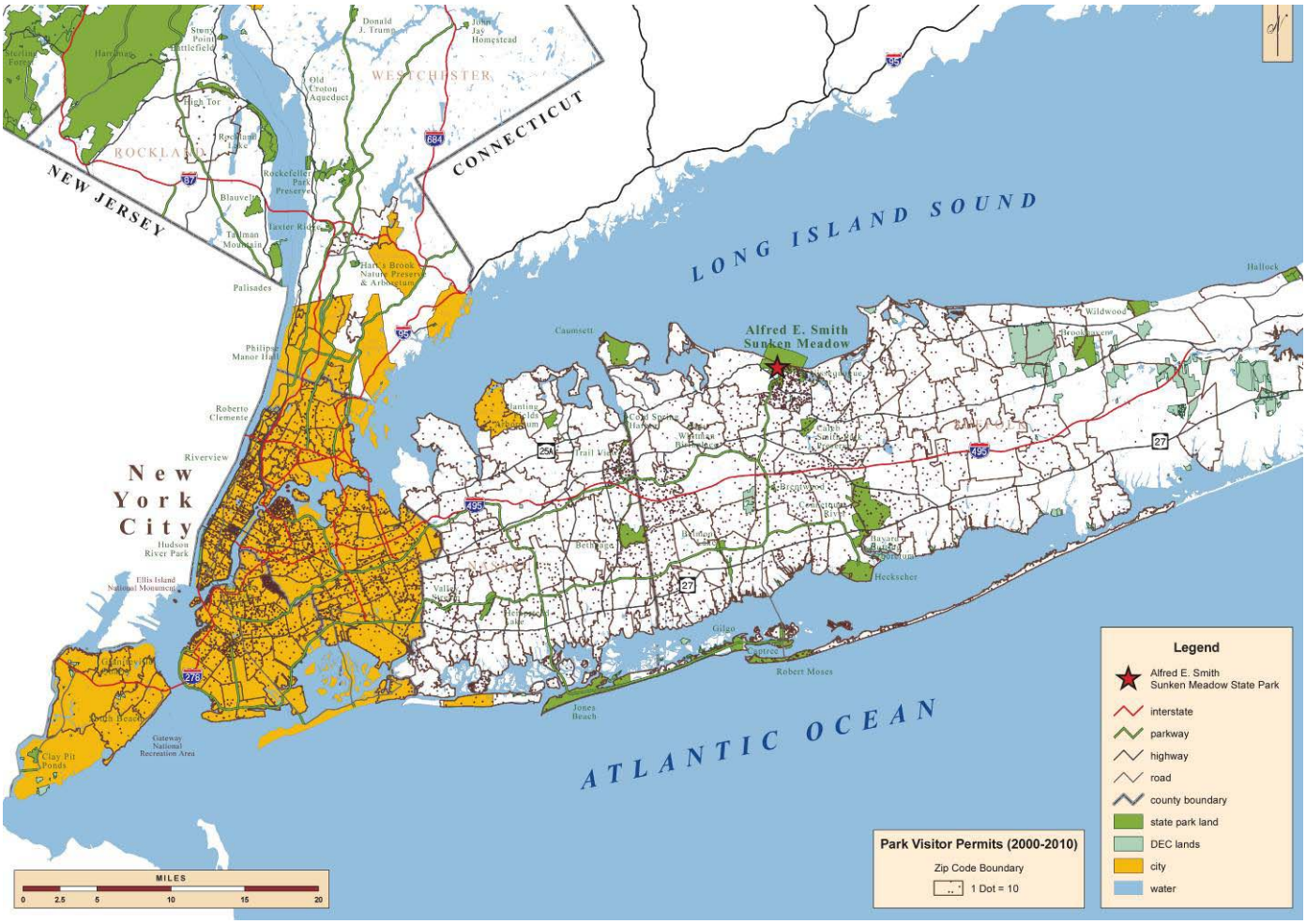
Age of visitor

Physical ability level

Demographics and their Affect on Recreation Trends and Needs

The recreational facilities design layout and components of SMSP should be effective in creating interest and accessibility among its diverse patron population. With a population of over nineteen million individuals, New York State's population is rich in ethnic, religious/spiritual, cultural, and life-style diversity. It is important to recognize and incorporate these preferences and needs. Programs and approaches should be relevant to the lives of local people and become an integral part of the community fabric (Rodriguez and Roberts, 2002).

FIGURE 16: Sunken Meadow State Park Patron Origin Dot Density Matrix (SMSP Master Plan)



Source: SMSP Park User Density Analysis

Providing "high quality outdoor recreation, on both land and water, accessible to New Yorkers regardless of where they live, how much money they have, or their physical abilities" is one of the central goals of the NYS OPRHP. This section reviews both the demographic categories that can affect the recreational needs of a park such as: age, mobility, gender, location, and race, and the factors that influence park activity such as: race and ethnicity, age of users, living situation, and user distance from facility.

The dot density matrix illustrates that the majority of SMSP patrons are either from local communities or from neighborhoods in the Queens, Brooklyn, and Manhattan boroughs of NYC. Eight communities on Long Island and in New York City were identified of having the most concentrated population of park users. These are Kings Park, Melville, Woodbury, Ditmars Steinways, and neighborhoods within Bushwick, Midtown, Harlem, and Hamilton Heights. Figure 17 displays the communities in New York City with the highest number of SMSP patrons.

Table 14 highlights the specific service areas by communities and breaks down the highest user population of SMSP by race or ethnicity provided by the 2010 U.S. Census Data. The labels for Racial/ Ethnic groups are consistent with those used by the U.S. Census Bureau, however they differ from labels used in the recreational surveys.

FIGURE 17: Communities in New York City with Highest Number of Sunken Meadow State Park Patrons

Sources: SMSP Master Plan and 2010 U.S. Census Bureau

Discussion of Race and Ethnicity of Users

In general, public survey analyses do not give an accurate representation of minority group preferences because the number of opinions collected only provides a narrow sampling. To account for this disparity, specific research studies on ethnic and racial groups that represent the core group of park users were examined. Care should be taken to avoid stereotyping particular groups, but at the same time realize that recreational activities can often be linked back to cultural traditions and values and that these should influence the direction of the park.

From the U.S. Census data collected from the specific locations determined by the SMSP dot density matrix of park patrons, Table 14 shows that the majority of the population consists of White Americans (69%), Black or African Americans (23%), and Asian Americans (8%). Within the White American-designated population thirty-eight percent are Hispanic or Latino, while sixty-two percent are identified as not Hispanic or Latino. The 2010 Census shows the Nation's Hispanic population grew four times faster than the total U.S. population. Park facility use preferences for particular ethnic/race preferences is discussed in *Research Studies on the Role Ethnicity and Race Play in Recreation*, in the *Recreational Needs and Trends* section of this report.

Discussion of Age of Users

Currently, New York State is home to 3.4 million individuals sixty years of age and older (NYS Office for the Aging, 2007). By 2015, people over the age of sixty will constitute twenty to twenty-four percent of the country's population (NYS OPRHP). This is due to the significance size of the aging 'baby-boomer' population (those persons born from 1946 through 1964) which constitute the single largest economic group in the country. In effect, this will cause a shift in recreation trends and focus. Not only will this shift lead away from activities typically associated with youth such as team sports, court games, and other highly physical activities, but also from activities the baby-boomer generation associate with being old, such as bridge and

shuffleboard. Park amenities need to address a growing interest in activities such as golf, relaxing in the park, walking, and other passive leisure activities that are more individually focused rather than group oriented.

There is also a need to improve the quality and quantity of recreational activities for the youngest New Yorkers. Today's youth are spending less time participating in outdoor recreational activities, due to factors such as changing family dynamics, and children spending a greater amount of time by themselves and indoors using electronic devices. This decrease in time youth spends recreating outdoors is a factor in the rise of health concerns such as childhood obesity and to social interaction issues. The rewards of participation in recreation in youths can last a lifetime, as they provide physical, psychological, social, and emotional benefits (NYS OPRHP).

Discussion of Living Situation and User Distance from Facility

As a public park, SMSP caters primarily to two types of user groups; the local, regular users who frequent the park for an hour or two every day to a few hours every week, and those that come less frequently, but stay for a half to full day, primarily on the weekends. In general, those who utilize the park more regularly for a shorter time period recreate by walking, hiking, jogging, bicycling, playing with kids, and fishing. The weekend user groups generally come from further away and spend a greater amount of time at the park. They use the park for swimming, picnicking, playing golf, field and court sports, as well as for special events such as track meets or social club outings.

Type of housing, setting, and proximity can affect park user needs. Visitors to SMSP live in a wide variety of housing situations. Some own their own home and have surrounding property, others may rent and have access to shared

TABLE 14

Racial/ Ethnic 2010 Population Demographics by Service Areas with Highest Density of Users for Sunken Meadow State Park

	Melville	Woodbury	Kings Park	Midtown	Harlem	Hamilton Heights	Ditmars Steinway	Bushwick	Total Population	Percent of Population
Total Population	18,985	8,907	17,282	32,569	22,957	46,484	47,537	92,580	287,301	100%
RACE										
White	16,441	7,748	16,268	28,171	4,617	11,315	36,315	30,670	151,545	53%
African American	639	123	196	591	13,991	16,137	1,030	17,969	50,676	18%
Asian	1,376	915	411	2,928	905	1,161	5,042	4,423	17,161	6%
ETHNICITY										
Hispanic or Latino	955	199	915	1,742	5,381	26,633	9,226	64,186	109,237	38%
Not Hispanic or Latino	18,030	8,708	16,367	30,827	17,576	19,851	38,311	28,394	178,064	62%

Sources: SMSP Master Plan and 2010 U.S. Census Bureau

wish to retreat for a day of fresh air and hiking at the park, two friends from a rural area may seek the beaches for swimming and fishing. Finally, a visitor's proximity to the site will often affect for what purpose and how long the visit will be. A woman living in the surrounding residential areas may go for a daily stroll through the trails or to the boardwalk, while a church group coming from a distance of an hour or more may plan to spend the entire day.

ORGANIZED USER GROUPS

SMSP attracts patrons on both an individual and group basis. The park is host to meets, games, competitions, concerts, and events throughout the year. Organized groups in particular such as: the Boy Scouts, C.L.I.M.B., model airplane flying groups, and the Astronomical Society of Long Island take advantage of the park's natural resources. Many of the trails are used for high school and collegiate cross-country track meets as well as the Foot Locker Northeast Regional cross-country championship. Two of the parks six baseball diamonds are used for league practice and games, the golf course hosts an Annual Golf Outing, and the Lessing's/ West Concessions Pavilion holds a weekly seafood fest on the beach during the summer months as well as catered group events. The BOCES/ SCOPE Environmental Education Center, located in Field 5, is used year round for educational programs in addition to a summer camp for grades 1-8. Equestrian users also utilize Field 5 as a trail head for bridle paths in the south end of the park.

SMSP USAGE ASSESSMENT

A park usage assessment was completed by combining population survey data gathered during site visits with park management knowledge. Year-round, the most popular activities witnessed in the park are walking, running, jogging, playground use, saltwater fishing, golf, and bicycling. Walking and running are the main activities on the boardwalk and trails in the southern end of the park. During the summer, the most popular activities are picnicking, swimming, and field sports such as soccer and baseball. There are a few summer weekends when the park fills to full capacity and the picnic areas and swimming beaches become overly crowded. The main activity for these weekends is picnicking, and users generally come from further away and stay for the entire day. Popular winter-specific activities for SMSP are cross-country skiing and snow shoeing.

The park is occupied by every age group in the summer, especially on hot summer weekends. This is due to the large number of families which come and spend the entire day at SMSP. On weekends from late spring to early fall, SMSP is host to cross-country track meets. During the weekdays, high school track teams will use the grounds for cross-country practice. The BOCES/ SCOPE environmental education center hosts a summer camp for grades 1st through 8. In the winter, the age group shifts from family-oriented to small adult or senior citizen groups or couples, and parents with young children.

EXISTING AREA RECREATION FACILITIES

SUNKEN MEADOW STATE PARK

The layout of SMSP provides a balance of both developed and undeveloped areas for recreational purposes. This arrangement of the natural environment interwoven with constructed amenities such as pathways, playgrounds, parking fields, and comfort stations, allows for a wide variety of passive and active recreation opportunities. While the space may be interpreted and adjusted in multiple ways, the main draw of users to the park is its prime location on the Long Island Sound and its trails through its natural wooded and wetland landscape. SMSP's boardwalk, swimming beach, extensive picnic areas, shoreline salt and freshwater fishing, hiking and running trail network, and golf courses and driving range make it unique and appropriate for all age groups. These six main amenities need to remain central for future expansion or renovations of the park. The following facilities analysis is based on site conditions assessment, park management feedback, and public user comments.

SMSP impediments to recreation are derived from its layout, condition of amenities, and level of cohesion. The three points below illustrate the key issues facing the park and resolving these should be the primary focus of future recreational planning strategies:

- Orientation of park towards vehicles rather than pedestrians
- Disjointed layouts between activities with interconnecting relationships
- Lack of connectivity between trails and key destinations

SMSP Activities and Facilities

- Baseball/ Softball - *6 fields, 2 permitted for league use*
- Basketball - *4 courts*
- Boardwalk - *3/4 miles in length*
- Biking
- BOCES/ SCOPE - *environmental education center*
- Bridle paths - *Field 5 access*
- Restroom & showers - *4 public, 2 available for winter use*
- Cross country skiing
- Cross country running trails
- Dog walking - *undeveloped east end of park*
- Golf clubhouse, driving range and courses – *18 & 9-hole courses*
- Picnic areas
- Playgrounds – *2 built playgrounds*
- Refreshment stands
- Salt and freshwater fishing
- Soccer/ playing fields - *3 areas*
- Swimming beach
- Walking, hiking, and Greenbelt trails

Existing Recreation Facilities

Baseball/ Softball Fields

There are six designated baseball/softball fields at SMSP, however, not all of these are needed. Two of the ball fields, located between Fields 1 and 3, are reserved for league use (Monday through Thursday) with a permit. The other fields are located in Fields 2 and 4. The baseball diamonds are in average condition, with a poor drainage problem due to heavily compacted soil.

According to park management not all of the ball fields are occupied most days by baseball or softball players. A significant amount of open field space is designated and maintain for one particular activity when the space is often used instead for activities such as cricket, soccer, and picnicking. This can cause a problem for cross-use of the area, causing a majority of players to yield to the minority in areas with pre-designation to that sport.

Basketball Courts

There are four built asphalt basketball courts in the park: two are new and in prime condition adjacent to Field 1, while two more courts are located to the west of Field 4. The pavement is uneven in both of the courts adjacent to Field 4 and the area lacks seating for spectators.

Boardwalk

The twenty-five foot boardwalk extends ¾ of a mile stretching from Field 2 to Field 3 along the sandy beach. Replaced in the 1990s, it remains to be one of the parks main attractions. It is heavily used by patrons year-round, especially for walkers, joggers, and bicyclists. It is the core east-west thoroughfare for pedestrians and is in excellent condition.

From top to bottom: Baseball field drainage issues; Field 1 baseball diamond; Field 1 basketball courts; View of boardwalk

Boat Docking

Boat access for row boats, canoes, kayaks, and wind surfing is provided in the designated creek access point to the east of Field 3. There is no permanent built dock, and users must board on the edge of the shore and account for tidal conditions.

BOCES/ SCOPE Environmental Education Center

Built in 1971, the fully equipped learning laboratory is available for year-round use for students and as well as educators. The park's surrounding open fields, woodlands, salt water marshes, and beaches provide an outdoor environment that enriches existing school curriculums. Located in Field 5, the building also hosts a summer camp for grades 1 through 8, used primarily Monday through Friday.

Dog Walking

Dogs are currently permitted only in undeveloped areas of the park with a six foot leash. They are not allowed in bathing or picnicking areas, in buildings or on walkways and cannot enter through the main entrance. Signage and maps of areas where dogs are permitted is not given, making it difficult for owners to know regulations.

Trail System

An extensive network of trails is used by walkers, joggers, runners, hikers, bicyclists, horseback riders, birders, naturalists, snowshoers and cross-country skiers. This network is comprised of the boardwalk, concrete and asphalt pathways, compounded dirt trails, and social trails. User created trails and park managed trails such as the Long Island Greenbelt often intersect creating a diversity of experiences for each patron.

While an expansive network of trails does exist, many trails are deteriorated and lack suitable or marked connections. The park lacks a single, multi-use trail connecting the

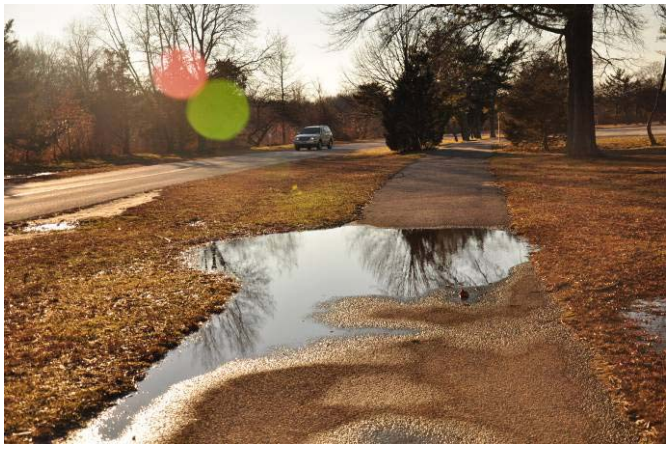
From top to bottom: Boat access area; BOCES/ SCOPE Environmental Education Center (2 views); Jogger south of creek

secondary trail network and amenities throughout the park. Many of the paved pathways are narrow and in poor condition, and are heaved, cracked, and prone to flooding, and patrons often use the adjacent roads rather than these built trails.

Trails often break for utility purposes and roadways, with only a limited number of pedestrian crossways provided. This can lead to safety issues between pedestrians and vehicles. Crossing can be dangerous, especially in areas such as on the northern side of the vehicular bridge, which lack stop signs for oncoming traffic. During the summer, this area becomes subject to the congestion of motorists and pedestrians trying to cross the bridge at the same time.

The trails and paths in the Field 4 picnic area are not ADA accessible, making it difficult for everyone to reach restrooms, concessions, picnic grounds, and play areas with ease. Certain trails near Field 4 lead to dead-ends or inappropriate areas, such as the maintenance area. Trails should loop back together and form a well maintained cohesive network. There is a need for a paved multi-use trail leading to the golf course along Naples Avenue. This is currently a popular route for runners and walkers as they use the road as a trail connection and scenic pathway.

SMSP's woodland and wetland trails are lacking in proper upkeep and trail markings. The dirt trails on the slopes are prone to erosion; such is the case for both Cardiac and Snake Hill, which are heavily used by cross-country runners. Many of the social trails weaving down the bluff in the northeast section of the park are fairly steep and eroded. Proper maintenance is needed to remove invasive vegetation, poison ivy, and overhanging broken tree branches, and to block off social trails that are causing erosion.



From top to bottom: Cracks in pavement and pooling water; Narrow pathway for pedestrians over bridge; Jogger on Naples Avenue; Trail adjacent to Field 1

Signage is needed to facilitate trail usage in the park. There is little trailhead signage, mapped layout, or signs designating permitted usage. Most of the trail system does not have any blazing or markings.

Golf Course and Driving Range

The golf courses are a popular attraction due to their open access to the general public and low attendence fee. SMSP offers twenty seven holes that may be played as nine and eighteen hole courses. The area also features a driving range that overlooks the Long Island Sound and a putting green.

The main issues regarding use of the golf course is the access to the course during busy days, high mosquito population, and course condition. In its current state, golfers can only access the course through the main entrance. On busy summer weekends, the main entrance becomes congested with cars, making access to the course difficult. The golf course does not have a network of paved pathways for golf carts. During inclement weather, this can cause the course to be damaged by vehicles. Due to the area's adjacency to wetlands and amount of standing water from ponds, there is a very high insect population affecting the golfers at the park, making it uncomfortable for patrons to play.

Picnicking Areas

Picnicking is extremely popular at the park, especially during hot summer weekends. The main picnic areas with provided picnic tables are located in sections of Field 4, Field 1, and in limited amount in Field 5, with grills additionally supplied in Field 4. SMSP supplies over a thousand picnic tables, but patrons will often bring additional chairs, tables, and blankets. During the busiest occasions, when the parking lots fill to near full capacity, the park becomes overcrowded by picnic goers.

From top to bottom: Two views of the Golf Course; Driving range; Picnic Area Field 4

Many picnickers will typically walk to the beach to access water facilities. Due to lack of pedestrian crossings this often creates additional pedestrian/vehiclular conflicts. Play fields and playgrounds are often at the edge of the picnic areas, making them less accesible and harder to supervise.

All areas for picnicking are located within appropriate proximity to restrooms. However, there is a lack of ADA accessible picnicking areas, pathways, restrooms, and concessions. Currently, the majority of main pathways in Orchard Hill, the Field 4 picnicking area, and the pedestrian bridge over the creek, are not ADA compliant. All main routes, and those connected to sanitary facilities, concessions, and activity areas should be made accessible for all users.

Playgrounds

There are two playground areas designated for children ages two through twelve: one located north of Field 1 and next to the Main Bathhouse, and the other to the west of Field 4. They are both in close proximity to the parking lots, with Field 4's playground in a corner formed by the parking lot and a vehicular roadway. The playground in Field 1 has two swing sets and three pre-fabricated play structures. The area is partially fenced with an asphalt path running through it. Only the newest pre-fabricated play structure has a rubber mat play surface underneath, with the others resting on sand and soil. The playground in Field 4 is comprised of two pre-fabricated play structures divided by age group with a dead-end asphalt trail in the center.

The current layout of both play areas puts children in a potentially dangerous situation. There is no seating provided in Field 4, and in Field 1, only certain areas of the play structure can be watched from where benches are

From top to bottom: Picnic Area Field 4; Playground layout and Adjacencies to parking lot in Field 1 (3 views)

located. Adequate seating should be provided to maximize the safety of the playground. The playgrounds are too close in proximity to the parking lot and roadways. Vehicles themselves can pose a serious threat to children in addition to other potential hazards caused by fumes and exhaust and hotter temperatures from the heat island caused by the asphalt parking lot.

Play Fields

There are three general areas in the park that can be used as play fields for activities such as soccer, cricket, football, lacrosse, and Frisbee. Unfortunately, these areas also are adjacent or overlapping with designated ball fields, making the space less flexible for different user groups. The main three open grass areas suitable for playing are between Fields 1 and 3, to the north of Field 2, and to the west of Field 4. Often, during hot summer weekends, these play fields are taken over by picnic goers, as there is not enough open space in the park to accommodate everyone comfortably at full capacity.

The play fields have sparse grass cover. Additionally, the area between Fields 1 and 4 has very poor drainage making it difficult to play sports for several days after heavy rain.

Swimming Beach

The swimming beach at Sunken Meadow is one of the highlights of the park which has over two and a half miles of open access to the Long Island Sound with a beach depth of approximately three hundred feet. Swimming is allowed with lifeguard supervision for almost the entire length of the ¾ mile boardwalk. The beach is kept clean and in good condition, with lifeguard supervision for swimmers.

From top to bottom: Field 4 Play Field; Field 2 Play Field; Poor drainage in Field 1; Swimming beach

Existing Attendant Facilities

Golf Clubhouse

The clubhouse is currently undergoing renovations and supports a café, outdoor eating deck, pro shop, and restroom. No improvements are recommended as renovations are underway.

Parking Fields

The parking fields at Sunken Meadow constitute a significant useable acreage of Sunken Meadow. While in the past, users focused more on visiting the shore of the park, currently picnicking is becoming the dominant activity, especially on hot summer weekends, when the main parking lots fill to capacity. The park has five parking fields, in addition to the parking lot provided for golf course and driving range users. Combined, all lots hold approximately 6,700 cars. On the most days, the parking fields do not fill to capacity. As is, the park recreation space cannot support the users when the parking fields are filled to full capacity. The wide expanses of asphalt without tree shading or vegetated medians promote runoff and the heat island effect.

Parking Fields 1 and 3 are in the best condition out of all of the lots in the park, with Field 1 recently repaved. The northern portion of Field 1 could be a prime location for additional open spaced grassed picnic and play field for patrons.

Field 5 has potential for parking and weekend activity expansion. In its current disposition it serves as a lot for groups using the environmental center and camp groups it also serves as a trail head for equestrian riders and patrons utilizing the trails in the south end of the park. The lot is in poor condition, and is not entirely paved or striped to delineate parking spaces.

From top to bottom: Golf clubhouse under construction; Field 2 Parking Lot (2 views); Field 1 parking and its adjacency to playground

The golf course parking lot does not incorporate safe pedestrian crosswalks or walkways. The lot is heaved and cracked in many places, making it difficult for pedestrians in wheelchairs or walkers to approach the course.

Field 2, when full, has the potential to provide space for over 2,200 cars, but due to its poor condition and faded striping it currently maxes out at seventy-five to eighty percent of original capacity. The lot is only needed a few days out of the year and sits vacant most of the time. In its current state it does not encourage dual use for picnic or play, wasting potentially useable recreation space.

Restroom and Shower Facilities

There are six public restrooms in the park. Five are located around Fields 1, 3, and 4, while another is located at the golf clubhouse. Restrooms are provided for those using the Environmental Center in Field 5, but are not opened for general public use. The shower facilities for men and women are located within the Main Bathhouse. The only bathrooms open during the off season are located near Fields 1 and 3. Field 4 does not provide any restrooms for winter use. The restrooms and shower facilities are all in need of renovation. Lighting is poor in most of the bathrooms, and each stall should be provided with properly working doors.

Refreshment Stands

SMSP is host to food concessions along the boardwalk and in the building to the east of Field 4. Lessing's operates a pavilion at the western end of the boardwalk, catering private events and hosting a seafood fest every Wednesday during the summer.

From top to bottom: Field 5 parking lot; Golf course parking lot and club house; Field 4 women's restroom; Field 3 women's restroom

Roads

The dominant network through the park is a vehicular roadway system. The speed is set at 30 mph but drivers typically do not obey the speed limit. There is a lack of stop signs, speed bumps, and pedestrian crossways, making it dangerous for pedestrians and bicyclist to traverse the park.

SURROUNDING FACILITIES ASSESSMENT

Examining other recreational facilities within the vicinity of SMSP helps to assess and predict the uses, needs, and success of specific recreation options. First, popular and similarly structured state parks to SMSP with the same potential user groups were looked at in detail and then compared in usage, layout, and opportunities adaptable for SMSP. The four state parks analyzed through research and site visits were: Belmont, Caumsett, Hempstead, and Jones Beach. Specifically looked at were the activities and amenities provided, park highlights or major user draws, commonalities found between the park and SMSP, and any uses or layouts that could be adapted to SMSP. Next, a second research analysis was completed to include parks within a twenty mile radius of Kings Park (the hamlet in which SMSP is located).

From top to bottom: Lessing's pavilion; Food concessions in Field 3; Intersection north of vehicular bridge

Belmont Lake State Park

Local Parks with Similar Characteristics

Belmont Lake State Park

An inland park surrounded by a residential neighborhood located off the Southern State Parkway in Babylon, the park encompasses Belmont Lake and provides an intimate and inviting space for recreation. Activities and amenities offered by the park include: biking, boat rentals, bridle paths, dog walking in unpaved areas, freshwater fishing, food concessions, grills, hiking, trails, pavilions, picnic tables, playgrounds, playing fields, recreation programs, bocce, and horseshoe courts. Patrons can fish, boat, and utilize the multi-use trail circumventing the lake. Belmont provides pavilions and ample picnic areas equipped with grills. Its trail system is ADA accessible and cohesive, and it serves as a linking system for amenities throughout the park. As in SMSP, the main focuses of the park are water opportunities and picnicking. The recreational picnic and playground roles intermixed with woodland areas are also very similar to those found at SMSP.

Belmont's cohesive and accessible layout is one that SMSP should look to model itself after. It can adapt its functional multi-use trail layout connecting points of key interest throughout the park. The well marked entrances for pedestrian and bicyclist users become main points of access for local users. And finally, the strategy to have the picnic areas intertwined with different recreational experiences, such as with play fields, courts, and playgrounds, while a short walk from parking lots, restrooms, and concessions makes it successful in use and guardian supervision.

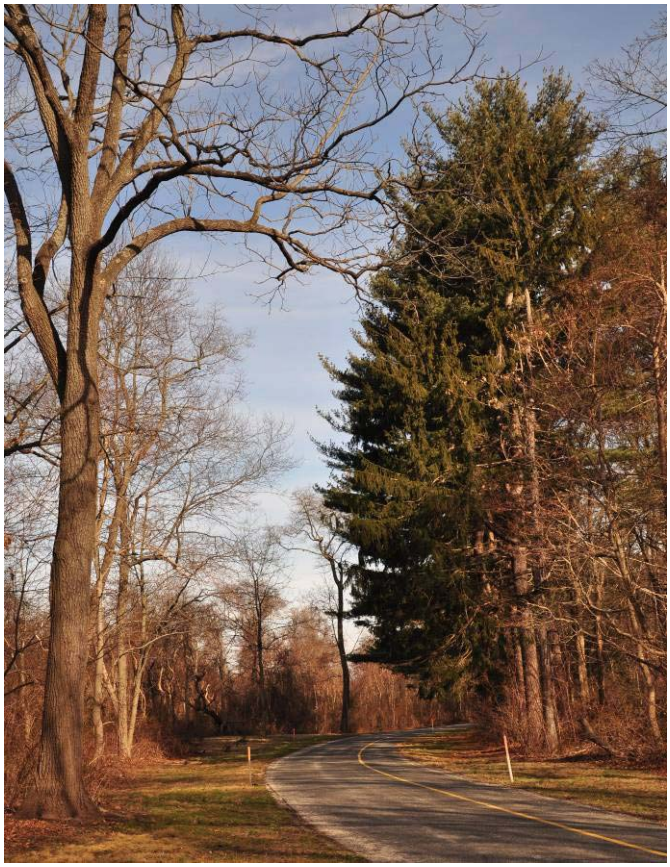
Caumsett Historic State Park Preserve

Caumsett is a scenic peninsula park preserve in Lloyd Neck, with the Long Island Sound bordering the northern face. It features include walled gardens, the Henry Lloyd Manor

Cuamsett Historic State Park Preserve

house, Volunteers for Wildlife Hospital, historic barns and stable, and access to the Long Island Sound. The main conduit throughout the park is a fifteen foot wide three mile long multi-use asphalt trail. The park features primarily opportunities for passive recreation such as fishing, bird watching, nature photography, nature study, horseback riding, scuba diving, cross country skiing, hiking, walking, bicycling, and jogging. Other amenities provided include the polo pony barn, operated by a concessionaire, and Nassau BOCES outdoor and education programs.

Similar to SMSP, there is a long scenic drive before arriving to the park on the north shore. Unlike SMSP, Caumsett primarily focus is to operate as a preserve. One feature that is adaptable to SMSP is its three-mile looped multi-use trail. This paved trail is a popular route for all users and is equipped with seating areas and exercise stations.



Multi-Use Trail through Caumsett Historic State Park Preserve

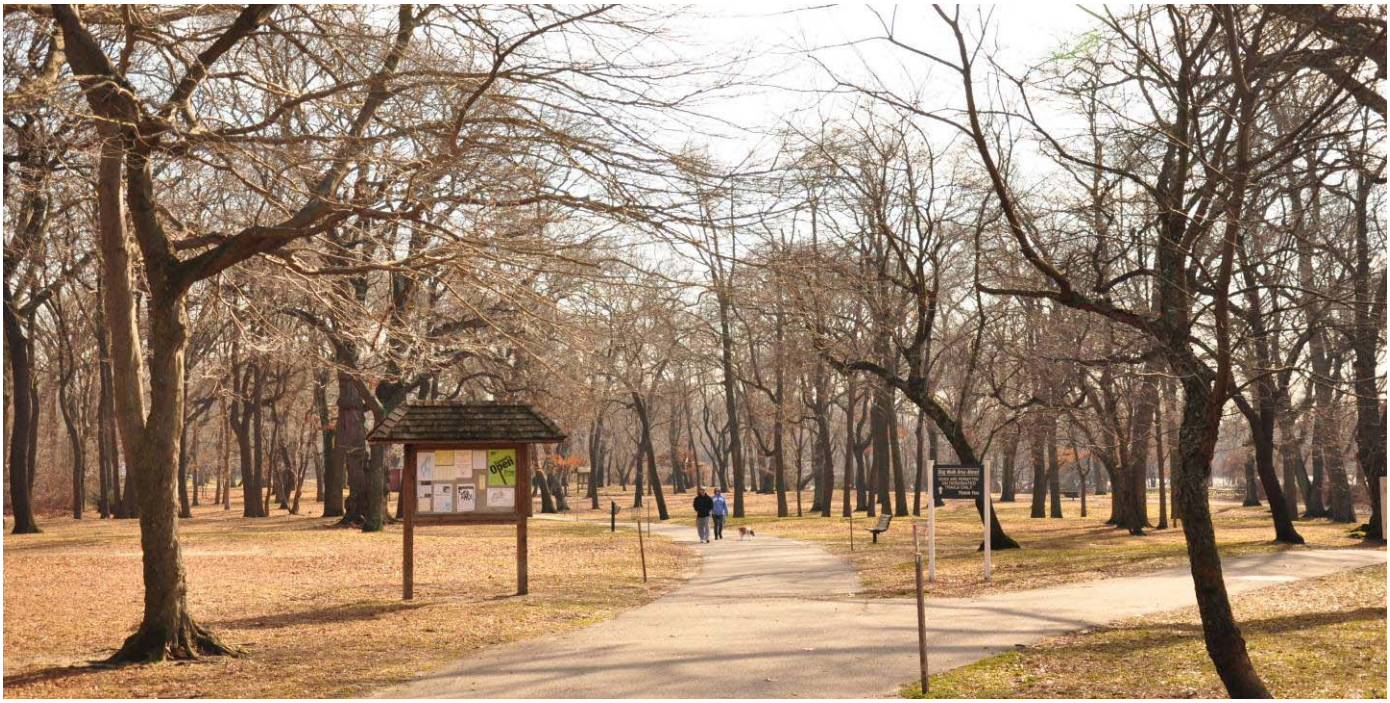
Jones Beach State Park View of Boardwalk

Jones Beach State Park

Opened in 1931, and located on the South Shore of Long Island along the Atlantic Coast, Jones Beach is renowned for its swimming beaches, and is the most popular state park during the summer for local and city residents, as well as tourists. It features a 6.5 mile stretch of Atlantic Ocean beachfront and a two-mile multi-use boardwalk featuring a bandshell, tennis, shuffleboard and other game courts, and miniature golf along the boardwalk. The park is also host to a large concert arena and the Theodore Roosevelt Nature Center. Other activities and amenities include: surf and stillwater bathing, swimming pools, surf fishing, a boat basin, an undeveloped natural area for wildlife and migratory bird habitat, deck games, museum, visitor center, playgrounds, beach volleyball, picnic tables, showers, food concessions and restaurants, and recreation programs.

Jones Beach is systematically laid out for pedestrian use and connectivity. The main thoroughfare through the park is the boardwalk, with the beach to the south and a wide variety of activities and opportunities for visitors flanking the north. Seating in the park features a multitude of options, such as in: benches with and without backrests, moveable tables and chairs, a deck overlook area equipped with recliners, in addition to sun and wind protected glass shelters and pavilions.

Jones Beach State Park Bandshell



Hempstead Lake State Park Dog Accessible Area and Paved Trail

Both Jones Beach and SMSP offer shoreline access and have substantial multi-use boardwalks along the water. Jones Beach features extensive uses along its boardwalk and the same ideology could be applied to SMSP. SMSP should consider putting court uses to the south of the boardwalk for activities such as shuffleboard, tennis, volleyball, etc. Increasing the sheltered seating areas along the wider areas of the boardwalk could be beneficial for older patrons looking for a shaded protected area to rest. A small bandshell, such as the one found at Jones Beach, could provide a suitable space for concerts, events, workshops, and shows at SMSP and increases evening activities.

Hempstead Lake State Park

Hempstead Lake State Park is located in Rockville Centre on both sides of the Southern State Parkway. Its main feature is its lake, the largest in Nassau County. Other highlights include its fishing ponds, tennis courts, historic hand-carved carousel, and dog walking area. It features a six foot wide paved trail for pedestrians to navigate throughout the park.

Other activities and amenities include: biking, boat launches, bridle paths, cross country skiing, fishing, food, grills, hiking, pavilions, picnic tables, playgrounds, playing fields, and recreation programs.

Just as in SMSP, Hempstead Lake is heavily used for picnicking. The muti-use paved trail is perfect for regular looped routes and especially convenient for use on days with inclement weather. The picnic tables were located in both open and wooded areas and adjacent to playfields. Dogs were permitted on leash in certain areas of the park.

Resources of Local Parks

Table 15 lists the twenty-six state and county parks within a twenty mile radius of SMSP. Other parks within the twenty mile designated radius were not included in the table and analysis due to their restricted access, limited functions, and small size. The majority of larger parks within the radius are state parks that are open to the public for a fee ($6-10

TABLE 15	RECREATIONAL ACTIVITIES AND AMENITIES WITHIN A 20 MILE RADIUS OF SUNKEN MEADOW STATE PARK															
Park & location	**Approx. dist. from SMSP**	**Jurisdiction/ Fee**	**Overnight Facilities**	**Env. Education**	**Hiking**	**Dog Walking**	**Picnic Areas**	**Swimming Areas**	**Playing Courts/ Fields**	**Playgrounds**	**Biking**	**Bridle Path**	**Fishing**	**Walking/ Jogging Trails**	**Winter Activities**	**Additional Amenities**
Govenor Alfred E. Smith/ Sunken Meadow State Park Kings Park	0.0 mi.	NYS / Parking $8-10	No	Yes - BOCES outdoor learning lab	Yes	Yes - in undeveloped areas of park only	Yes	Long Island Sound beach access	Yes	Yes	Yes	Yes - in southern area of park	Yes - Freshwater and Saltwater	Yes	Yes - x-country skiing, snowshoeing, sledding	3/4 mile boardwalk, restaurant/ catering hall, golf courses
Nisseqougue River State Park Kings Park	0.0 mi.	NYS / Parking $8	No	Yes - Guided Tours	Yes	No pets allowed	No	No	Yes	No	No	No	Yes - Freshwater and Saltwater	Yes	Yes - snowshoeing, x-country skiing	boat launch marina
Caleb Smith State Park Preserve Smithtown	3.06 mi.	NYS / Parking $8	No	Yes	Yes	No pets allowed	No	No	No	No	No	No	Yes - Freshwater	Yes	Yes - snowshoeing, x-country skiing	museum, visitors center
Blydenburg County Park Smithtown	3.06 mi.	Suffolk Cty / Parking $10	Yes - camping	No	Yes	Dog run area	Yes	No	No	Yes	No	Yes	Yes - Freshwater	Yes	No	historic grist mill
Town of Huntington Dog Park East Northport	4.05 mi.	Huntington R only / dog permit req.	No	No	No	Yes - 24,000 ft. fenced in run	No	No	No	No	No	No	No	Yes	No	
Lakeland County Park Islandia	6.91 mi.	Suffolk Cty / free	No	No	Yes	No	Yes	No	Yes	No	No	No	No	Yes	No	specifically developed for people with disabilities and their families
Lake Ronkonkoma County Park Lake Ronkonkoma	8.22 mi.	Suffolk Cty / P = $3 - R/ $10 - NR	No	No	No	No	Yes	No	Yes	No	No	No	Yes - Freshwater	Yes	No	
Raynor Beach County Park Lake Ronkonkoma	8.22 mi.	Suffolk Cty / free	No	No	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No	
Caumsett State Historic Park Preserve Huntington	9.87 mi.	NYS / Parking $8	No	Yes - wildlife hikes	Yes	no dogs allowed	No	No	No	No	Yes	Yes	Yes - Saltwater	Yes	Yes - x-country skiing	formal gardens, historic site, preserve
Trail View State Park Huntington	9.87 mi.	NYS/ No fee	No	No	Yes	no pets allowed	No	No	No	No	Yes	Yes	No	Yes	Yes - limited x-country skiing	
West Hills County Park Huntington	9.87 mi.	Suffolk Cty / Parking $5	Youth group camping	No	Yes	cats and dogs permitted leashed, or unleashed in designated dog run areas	Yes	No	No	Yes	No	Yes	No	Yes	No	public meeting hall, horseback riding facility
Cold Spring Harbor State Park Huntington	9.87 mi.	NYS / no fee	No	No	Yes	No	No	No	No	No	No	No	No	Yes	Yes - snowshoeing, x-country skiing	birdwatching
Gardiner County Park West Bay Shore	10.34 mi.	Suffolk Cty / no fee	No	No	Yes	No	No	No	No	No	No	No	No	Yes	No	

TABLE 15	RECREATIONAL ACTIVITIES AND AMENITIES WITHIN A 20 MILE RADIUS OF SUNKEN MEADOW STATE PARK															
Belmont Lake State Park North Babylon	11.42 mi.	NYS / Parking $8	No	No	Yes	Dogs only - in undeveloped areas	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes - snowshoeing	paddle boating on lake
Hecksher State Park East Islip	12.05 mi.	NYS / Parking $8	Yes - camping	No	Yes	Dogs only - in undeveloped areas	Yes	Great South Bay or swimming pools	Yes	Yes	Yes	No	Yes	Yes	Yes - snowshoeing, x-country skiing	Recreation programs
Connetquot River State Park Preserve Oakdale	12.06 mi.	NYS / Parking $8	No	Yes	Yes	No pets allowed	No	No	No	No	No	Yes	No	Yes	Yes - snowshoeing, x-country skiing	birdwatching, museum
Bayard Cutting Arboretum State Park Oakdale	12.06 mi.	NYS / Parking $8	No	Yes	Yes	No pets allowed	No	No	No	No	No	No	No	Yes	No	arboretum
Battle Row Campground Old Bethpage	14.4 mi.	Nassau Cty / $75 - 100 per month	Yes - campgrounds	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No	No	water hook-ups
Bethpage State Park Farmingdale	14.3 mi.	NYS / Parking $8	No	No	Yes	No pets allowed	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes - sledding, x-country skiing	5 world-class golf courses, polo field, resturant
Planting Fields Aboretum State Park Oyster Bay	14.68 mi.	NYS / Parking $8	No	Yes	Yes	No	Yes - not designated	No	No	No	No	No	No	Yes	No	gardens, greenhouses, Coe hall museum, garden/craft related classes, concerts
Cathedral Pines County Park Middle Island	15.67 mi.	Suffolk Cty / Parking $5	Yes - campsites	No	Yes	No	Yes	No	No	No	Yes - inlcuding mountain biking	Yes	No	Yes	No	
Captree State Park Babylon	18.38 mi.	NYS / Parking $8	No	Yes	No	No pets allowed	Yes	No	No	Yes	No	No	Yes	Yes	No	marina, boat launch site, food, excursion boats, boardwalk
Robert Moses State Park Babylon	18.38 mi.	NYS / Parking $8-10	No	No	Yes	No pets allowed	Yes	Atlantic Ocean	No	Yes	No	No	Yes	Yes	No	boardwalk, golf, food
Gilgo State Park Babylon	18.38 mi.	NYS / permit req.	No	No	No	No pets allowed	No	No	No	No	No	No	Surf Fishing	No	No	birdwatching, access to part via 4-wheel drive vehicles
Jones Beach State Park Wantagh	19.79 mi.	NYS / Parking $8 - 10	No	Yes	Yes	No pets allowed	Yes	swimming pools, Atlantic Ocean, Great South Bay	Yes	Yes	Yes	No	Yes	Yes	No	boardwalk, marina, concerts, bandshell
Wantagh Park Wantagh	19.79 mi.	Nassau Cty / Parking $10 NR	No	No	No	Yes - dog run	Yes	swimming complex and water play area	Yes	Yes	Yes	No	Yes - Wantagh marina	Yes	No	boating ramps, chess and checkers area, water slides, bocci courts
Eisenhower Park East Meadow	20.04 mi.	Nassau Cty / Parking $10 NR	No	Nassau County Cornell Cooperative Extension headquarters	No	No	Yes	pool and indoor acquatics center	Yes	Yes	No	No	No	Yes	No	batting cage, entertainment/ theater, indoor acquatics center, golf, miniature golf, resturant/ catering hall, lighted athletic fields

for day use). An analysis of the amenities available combined with the user needs identified in *Recreation Needs and Trends*, identified a shortage of camping areas, environmental educational programs, dog walking areas, swimming areas, and handicap accessible locations. The only state park in the group that permits camping is Heckscher State Park. Most public parks do not permit any animals; a few have designated areas for dog runs, and/or trails open to horseback riding. Other than the beach parks along the south shore, SMSP has the largest waterfront area available for swimming. As charted in the Table 15, SMSP is one of the few parks in this area that combines such a wide array of recreational opportunities, ranging from passive walking and fishing opportunities to hosting state-wide cross country track meets.

Implications for SMSP

Based on the inventory of amenities and facilities at other parks within a twenty mile radius similar in character to SMSP, a list of key recommendations was compiled for future recreation development at SMSP:

- Multi-use trail system
- ADA accessible picnicking grounds
- Low intensity court activities such as bocce, horseshoes, and shuffleboard
- Dogs permitted on leashes on unpaved trails
- Cohesive layout which optimizes use of overlapping activities
- Additional opportunities for recreation along boardwalk
- Sheltered seating areas and pavilions
- Bandshell for concerts, events, workshops, and shows
- Increase in environmental educational programs

From top to bottom: ADA accessible picnicking area (Hempstead Lake State ark); Shuffleboard courts; Wind shelter; Courts adjacent to boardwalk (Jones Beach State Park)

RECREATION NEEDS IDENTIFICATION

The following recommendations identify future recreation facilities development for Governor Alfred E. Smith/ Sunken Meadow State Park. The information suggested is based on trends and needs in recreation nation and state wide, park management knowledge and public input, usage needs of park patrons, and SMSP site amenities conditions analysis. For potential layout strategies of New and Expanded Uses, refer to *Recreation Facilities Design Strategies*.

Spray park in Indiana (Parks and Recreation, 2012)

NEW USAGES

Facilities

Each of the following amenities will enhance the park patron experience as well as extend the potential use and length of day at the park.

Bandshell/ Amphitheatre

SMSP provides an ideal setting for staging small concerts, events, award ceremonies, dance classes, plays, etc. A small bandshell/ amphitheatre, such as the one found at Jones Beach State Park is recommended to be built along the new proposed pathway, linking the new pedestrian bridge to the boardwalk, east of the parking lots in Field 1. Locating the bandshell/ amphitheatre here will reinforce the north/south access of the park and increase evening use of the main loop. When not being used for specific events, this facility can be used by regular users as an interpretive flexible space.

TABLE 16	RECREATION ACTIVITIES: ACTIVITIES AND AMENITIES SUGGESTED FOR SMSP									
Activity	Existing	Passive or active	Season	Size of area needed	What is needed to have this activity?	Activity overlap	Primary age group	Revenue generator	MP survey identified concerns	Suggestions
RELAXING IN THE PARK / PICNICKING	yes	passive	year round	varies	good overall park layout and aesthetic; natural areas; combination of sun and shade areas; for picnicking - barbecue stoves, potable water acces, sanitary facilities within 500', parking, play areas, 10%+ accessible	yes - most	all	yes - can rent out pavilions	yes	Need for more and better seating within park; Suggest benches with backrests along trails and on boardwalk; Expand areas that are suitable for picnicking by increasing acerage, creating wind and rain shelters, pavilions, renovating restrooms, and creating a better lay out of adjacent uses such as: playgrounds, playfields, accessibility to cars, trails, and universally accessible picnic tables, barbecues, and multi-use trails.
PLAYGROUND USE	three	active	year round	separated play areas for age groups: pre-school, elementary, and young adults	combination of sun and shade areas; locate out of general traffic pattern routes but close to regular adult activity; part shade; benches for guardians; away from vehicle traffic areas	no	2 - 12 years	no	yes	Move existing playgrounds to be incorporated into safer areas - such as away from roads and parking lots to within picnic areas and close to playfields; Pour-in-Place surfacing; Focus on making playgrounds universally accessible
BIRD WATCHING/ NATURE PHOTOGRAPHY	yes	passive	year round	varies	sheltered natural areas; areas with minimal people/ vehicle traffic	yes - trail type	all	no	yes - enhance ability to view the West end of park such as by constructing a viewing deck and informational kiosk; Create a scenic overlook on top of SM hill	Create a wayfinding path for bird watchers and nature photographers; Provide educational signage on flora and fauna visible in the area; Establish appropriate seating areas and overlook pavilions
BASKETBALL	four courts	active	year round	ranges from 74-94' wide x42-50' long	level asphalt court; 2 basketball hoops; basketballs	yes - shuffleboard; hopscotch	6+ years	no		Incorporate basketball courts within picnic areas with seated spectator areas
SHUFFLEBOARD	no	active	year round	10'x52'	typically concrete; shuffleboard discs	yes - basketball	6+ years	no		Create shuffleboard courts adjacent to picnic areas and/ or boardwalk for evening users
BADMINTON / VOLLEYBALL	no	active	seasonal	Badminton 20'x44'; Volleyball 40'x80' grass field or level sand	grass or concrete court; nets; racquets and shuttlecocks or volleyball	no	6+ years	no	yes	Provide smaller suitable sized open areas between other amenities; Patrons provide own equipment
CROQUET	no	passive	seasonal	typ. 100'x50'	level grass field or dirt court; croquet mallets; croquet balls; wickets	yes - field type	adults	no	yes	Allow patrons to use their own croquet equipment but provide additional smaller open areas among picnic area to encourage activity use other than larger sport activities
BOCCE BALL	no	passive	seasonal	typ. 90'x8.2 - 13'	soil, sand or asphalt court; Bocce balls and pallino jack	no	seniors	no	yes	Build a Bocce Ball sand court; Patrons provide their own equipment
BASEBALL / SOFTBALL	six fields	active	seasonal	250'x250' open field	mowed grass and exposed soil area; 4 plates; pitching rubber; baseball bats; baseballs	yes - other field	youth/ young adults	no	yes - create additional fields	Remediate compacted soil conditions of exisiting fields, do not designate additional fields to Baseball/ Softball as this discourages the space for other activities but consider reduction in number of sand diamonds
SOCCER / FOOTBALL / LACROSSE / CRICKET	three large areas	active	seasonal	200'x200' min., 300'x600' desirable open grass field, 2% desirable slope for drainage	open, level, well-drained grass field; sport specific equipment	yes	youth/ young adults	no	yes - set aside more areas for soccer	Provide adequate additional space for field sports, but do not designate areas for specific usage; Remediate drainage issues
BEACH VOLLEYBALL	no	active	seasonal	40'x80' open field	court area clearance on sand; volleyball net; volleyball	no	young adult	no	yes - provide nets	SMSP already provides patrons with poles and nets for beach volleyball; Patrons provide own volleyballs
SWIMMING	beach access	passive	year round	varies	natural areas (beach) and man-made swimming pools; lifeguard facilities; telephone service; and emergency vehicle access; fencing for built pools	no	all	no	yes	Protect and preserve the integrity of the exisiting beach swimming area

TABLE 16	RECREATION ACTIVITIES: ACTIVITIES AND AMENITIES SUGGESTED FOR SMSP									
Activity	Existing	Passive or active	Season	Size of area needed	What is needed to have this activity?	Activity overlap	Primary age group	Revenue generator	MP survey identified concerns	Suggestions
ROW BOATING / CANOEING / KAYAKING / WIND SURFING / PADDLE BOARDING / DINGHY SAILING	yes	passive	seasonal	varies	suggested vehicle access to drop off boat; suggested built dock	yes - other boating activities	adult	yes - concessionaire for those who do not have their own boats	yes - provide rentals	Field 3 Boat launch provided and LI Sound access available adjacent to parking lot; Improve access with a dock along the shoreline of the existing boat launch and have a concessionaire for rentals
SALT WATER FISHING	yes	passive	year round	varies	piers and dock development when shoreline proves inadequate; can provide fish cleaning area, lighting, and benches	no	adult	no	yes - modify the jetty into a fishing pier; Construct a 600' fishing pier in the Western portion of the park	Fishing pier over jetty possible if permittable by NYS DEC; Access is available along shoreline, off of Old Dock Road, and in adjacent parks
FRESH WATER FISHING	yes	passive	year round	varies	piers and dock development when shoreline proves inadequate; can provide fish cleaning area, lighting, and benches	no	adult	no		Continue to allow freshwater fishing at SMSP
SPRAY PARK	no	active	seasonal	varies	nonslip, nonporous broom brushed concrete; play structures; fountains; spouts	yes - swimming	2-12 years	no	yes - create a water park in Field 1	A spray park is recommended to be built in Field 4, west of the parking lot
SCUBA DIVING	no	passive	seasonal	varies	adjacent parking areas; benches and tables available near site entry to help with equipment setup	no	adult	yes - permits	yes	Allow scuba diving in park outside public beach area or use times w/o special facilities
BICYCLING (on road)	yes	passive	year round	5' suggested width lane designated for bicycles	road markers designating lane	yes - trail based	all	no	yes - construct new lanes and develop a two-way pathway from the L.I.E. to the park; Create an additional trail loop in the West End; Improve trail signage to follow IMBA guidelines	Make developing a cohesive network of bicycle trails a priority in the park, both through developing a primary multi-use permeable paved trail, and a secondary system of additional loops; Designate yield hierarchy and provide appropriate signage
BICYCLING (off road/ mountain biking)	yes	passive	year round	1.5' to 6', min. 5 mile loop; 15-25 miles of linear or looped trails	firm natural surface with grade changes; overall grade not to exceed 10%	yes - trail based	all	no	yes - construct new trails away from highly trafficked areas, considering areas along parkway; Consider trail systems of 7+ miles; Designate Field 5 as a trail head; Create a BMX skills area	Make developing a cohesive network of bicycle trails a priority in the park, both through developing a primary multi-use permeable paved trail, and a secondary system of additional loops
SKATEBOARDING	yes	both	year round	ranges from skatedot (an object) to a regional skatepark (can be 25,000 sq. ft. or more)	skatedot (skatable objects, or paved open space); skatespot (small number of structures that can be dual-purposed as seating areas); neighborhood skatepark (diverse array of structures, trashcan, seating areas); regional skatepark (full spectrum of skating opportunities - often designed bowls or street terrain, lighted, plenty of spectator seeing, and nearby restrooms)	yes - trail based; seating; rollarblading	youth	possible - with concessionaires monitoring skatepark		Demand for larger skatepark suitable for other locations; Small skate spots that can be used interchangeably for seating suggested
INLINE SKATING	yes	passive	year round	ranges from rollarblading on paths to using skatepark	asphalt, concrete, or boardwalk trails; skatespot or skatepark	yes - trail based; skateboarding	youth	no		Give inline skaters the same rules and jurisdiction as bicycle riders within the park
WALKING	yes	passive	year round	suggested 8' - 10' for multiuse and paved ADA; but can be down to 4' for secondary trails; 5+ miles	for main multi-use trail use permeable asphalt, concrete, or boardwalk; for secondary trail network - dirt trail; consider ADA access for multi-use	yes - all	all	no	yes - improve trail conditions, connections, and expand system to include a multi-use trail that also includes golf course	Significantly improve on conditions of exisiting pathways and establish connections between trails. Create a 3 -5 mile looped multi-use permeable paved trail to run throughout park highlighting and promoting access to specific amenities and sites; Increase and update signage and maps to alert users of conditions and connections to different areas as well as the Long Island Greenbelt Trail; Run a multi-use trail up to the golf course to pull patrons off of the road

TABLE 16	RECREATION ACTIVITIES: ACTIVITIES AND AMENITIES SUGGESTED FOR SMSP									
Activity	Existing	Passive or active	Season	Size of area needed	What is needed to have this activity?	Activity overlap	Primary age group	Revenue generator	MP survey identified concerns	Suggestions
RUNNING / JOGGING / HIKING	yes	passive	year round	suggested 8' - 10' for multiuse; but can be down to 4' for secondary trails; 5+ miles	grass, bare soil, permeable asphalt, boardwalk, or crushed gravel or wood chips for slopes	yes - trail based	all	no	yes - preserve the dirt trail and maintain trails year round	Maintain running trails year-round; Improve and expand trails; Remove poison ivy and over hanging large branches within clearance area; Lay crushed gravel on steeply sloped areas to prevent erosion
HORSEBACK RIDING	Field 5 access	passive	year round	18 to 30 inches trail width, 5 to 25 miles	compounded soil, vertical clearence of 10 to 12 ft; possible equestrian center; accessible parking area	yes - trail based; priority to rider	all	yes - for concessionaire	yes - develop an equestrian facility in the West end of the park	Improve trails; Designate yield hierarchy and provide appropriate signage; Equestrian facilities better suited at other locations
TENT CAMPING/ BACKPACKING	yes	passive	year round	varies	access to sanitary facilities	no	young adult	no	yes - allow camping for boy scouts	Allow camping to Boy Scout groups with pre-approval
GOLFING	yes	active	year round	driving range: 10 acres min.; chip & putt course: 20 to 30 acres; executive course: 50 to 70 acres; 9 holes: 50 to 85 acres; and 18 holes: 120 - 170 acres	gently rolling land with a variety of tree stands and open areas with easy vehicular access to site; electric power supply; irrigation; sanitary facilities/ clubhouse; golf carts; tees; golf clubs; golf balls; parking area	no	adult	yes - fee	separate entrance to golf course	No additional courses to be built; Maintenance standard expected: Improve existing with proper maintenance and better trail system for golf carts; Improve parking lot; Access should be addressed to improve usage; Holes should be ADA accessible
GARDENING	no	passive	seasonal	varies	suitable soil; maintenance	no	all ages	no	yes, as well as putting in an aroboretum	Suggested if privately funded and maintained
GEOCACHING	no	passive	year round	any	personal GPS device	yes - most	all ages	yes - permit req.		Allow geocaching within park
DISC GOLF	no	active	seasonal	5 - 25 acres	Traditionally a course with 9 or 18 holes, but courses can be made with 12, 24, or 27 holes; fairways, tees, and targets; fairways should have a diversity of site experiences	yes - most	young adult/ adult	yes - concessionaire	yes - create a 18 hole course	Not at this time due to feasability of overlapping uses; Reconsider if interest is heightened - concessionaire responsible for identifying suitable areas
MODEL AIRPLANE FLYING	no	passive	year round	varies: 200 to 250 feet of open space	parking nearby; paved area or open natural fields	yes - most (especially an unused area of a parking lot)	adult	yes - permit	yes - provide an area designated for year-round use	Allowed at adjacent parks; Allowed in off-season with permit only in designated areas such as parking lots
LABYRINTH	no	both	year round	varies: 20' to multiple acres	mowed grass, dirt paths, concrete, bricks, gravel, or hedges	yes - most	all ages	no	yes	Allow private group to build and maintain a labyrinth in a suitable location
ICE SKATING	no	both	seasonal	typ. 800 to 7200 sq. ft.	artificial rink - 4" depth of ice required (such in an unused portion of the parking lot) or frozen lake (suggested less than 3' deep)	yes - seasonal	all	yes - concessionaire		Suggested for SMSP; Set up in an unused portion of a parking field and maintained by a concessionaire
CROSS COUNTRY SKIING	yes	passive	seasonal	6 to 8' of clearing; looped trail system 3 to 10 miles long	gentle sloping or flat areas normally in woods and natural open areas; scenic diversity and varied terrain; *not* compatable with skiing or snowmobiling	yes - seasonal	adult	no	yes - establish a designated area	Continue to allow cross country skiing in park, but do not designate specific areas as this discourages the use from other activties
SNOWSHOEING	yes	passive	seasonal	4 to 10 ft width; .3 mile loops	snow with underlying baresoil, rocks or wood chips; no grooming required	yes - seasonal	all	no		Continue to allow snowshoeing in park
DOG PARK	no	passive	year round	small parklet (40' x 40') to multiple acres	6' high fence; gated entrance; seating areas; sun/shade areas; separate areas for puppies and large dogs; waste receptacle; park rules	no	adult	yes - fee or permit	yes - expand dog permittable areas; Build a dogpark and if needed fees could be charged to dog owners to offset expenses; Provide better signage and	Dog parks already established in adjacent parks; Improve signage for dog owners to designate and notify them of permissable areas
BANDSHELL/ AMPHITHEATER / STAGE	no	active	seasonal	varies depending on capacity accomodation need	natural or paved; locate within 500' of adequate parking; universally accessible; sloping site desirable or earth work necessary; stage; screen; seating; lighting; electricity	yes	all	possibly	yes	Build a small Bandshell and/ or Amphiteater

TABLE 16	RECREATION ACTIVITIES: ACTIVITIES AND AMENITIES FOUND NOT SUITABLE FOR SMSP									
Activity	Existing	Passive or active	Season	Size of Area Needed	What is needed to have this activity?	Activity overlap	Primary age group	Revenue generator	MP survey identified concerns	Suggestions
SURFING	no	passive	seasonal	varies	surf board; tidal waves	no	young adult	no		Water conditions at SMSP beach not suitable for surfing
TENNIS	no	active	year round	min. 120' x 55'; typ. 120' x 60'	grass, clay, or concrete court; net; racquets	yes - ice-skating in winter	6+ years	yes - concessionaire	yes - construct indoor and outdoor courts with lighting; possible location in Field 5	Demand suitable for other locations with better access; Suggested only as a secondary use for overflow parking lots
HANDBALL/RACQUET-BALL (one-wall outdoor)	no	active	year round	typ. court 20 wide x 34' deep; can be larger	paved court; wall 20' wide by 16' tall; racquets; handballs or racquetballs	no	6+ years	no	yes	Demand suitable for other locations with better access
BOATING (with a motor)	no	active	year round	typ. 40 - 60 parking spaces per lot	boat launch ramps and adjacent parking areas	yes - other boating activities	adult	yes - with issue of permits	yes - construct a motor boat launch in Field 2 with canal access to the LI Sound; Construct a small visitors marina	Not recommended; Boat launch and marina provided in adjacent parks
ATV / OFF ROAD VEHICLE / SNOW MOBILE / ELECTRIC PERSONAL ASSISTIVE MOBILITY DEVICES (EPAMD)	no	active	year round	4 to 12 ft. depending on driver ability; 20 - 80 miles of trail	mostly smooth with some rough sections depending on level of difficulty of trail	no	young adult/ adult	yes - permit req.		Do not allow use of ATVs, Off Road Vehicles, or Snow mobiles within the park boundaries; EPAMD use only permissable for people with disabilities
CABIN/ COTTAGE CAMPING	no	active	year round	varies	cabins; electricity source; sanitary facilities; potable water supply	no	adult	yes - facility fee		Demand better suited at other locations
RV CAMPING	no	active	year round	varies	open space area; sites with 75' frontage; potable water supply; sanitary facilities	no	all	yes - camping fee	yes - construct an RV campground	Demand better suited at other locations
DOWNHILL SKIING	no	active	seasonal	trail width (40' min.) percent slop 5 - 30%+	appropriate sloped trails; rope tows or chair lifts; open areas at base of slopes	yes	all	no		Activity not suitable at SMSP due to trail conditions and access
SNOW BOARDING	no	active	seasonal	trail width (40' min.) percent slop 5 - 30%+	appropriate sloped trails; rope tows or chair lifts; open areas at base of slopes	yes	all	no		Activity not suitable at SMSP due to trail conditions and access
HUNTING	no	passive	seasonal	extensive acerage of land, wetlands, and/or water	woods; open natural areas; access roads; parking spaces; refuse disposal; and sanitary facilities	no	adult	yes - permit		Hunting is not an appropriate activity at SMSP due to the necessary space requirements needed to be designated for this activity only
ROCK CLIMBING	no	both	year round	varies	large boulders or built climbing wall	yes - most	young adult/ adult	yes - concessionaire		Demand suitable for other locations with better access
SLEDDING	no	passive	seasonal	trail width min of 40' and wide base area	Steeply sloped open areas with cleared based area	yes - seasonal	all	no		Sledding not permitted at SMSP for safety reasons
INDOOR RECREATION BUILDING	no	active	year round	large multi-use building 65,000 to 125,000 sq. ft.	multi-use building with adjacent sanitary facilities	no	all	possibly - activity dependent or concessionaires	yes - for indoor activities such as ping pong, play-room, music jamming room, darts, biliiards, workshops, dancing classes, health classes, guest speakers	Demand suitable for other locations with better access

Spray Grounds/ Spray Park

Many people come to the park during the summer for picnicking in areas that are located a considerable distance from the shore. Placing one or more spraygrounds at SMSP would reduce congestion at the beach and areas closest to the water, as well as reduce the pedestrian/ vehicular conflicts formed by patrons crossing over the bridges, roads, and parking lots when leaving Field 4 to go to the swimming beach. Spray grounds/ spray parks are a welcomed safer alternative to the swimming beach due to the lack of standing water in which children can drown.

A spray park is recommended to be built in Field 4, located to the west of the parking lot, south of the restroom. One baseball/softball diamond is suggested to be removed with a sprayground placed over it. This would increase the retention rate of patrons to the area making it safer and lower the density of crowds along the shore.

Labyrinth

One or more labyrinths are suggested for the park, with two suitable locations in Fields 2 and 5. A facility that can be used as a tool to help patrons slow down and relax, they are a relatively low cost method to increase park interest and diversify user groups. The Labyrinth should be built and maintained by a private group. The following could be considered as potential materials for constructing the geometric pattern: mowed grass, dirt paths, bricked, gravel, or hedges.

Ice Skating Rink

An ice rink is recommended for the park to expand the opportunities available for recreation during the winter season. Temporary rinks can be constructed in an unused paved portion of one of the Fields, such as 1, 2, or 3, or on existing playing courts. Concessionaires could supply the rink, oversee maintenance and supervision, and provide skate rentals.

Permitted Activities

The following lists additional activities considered suitable for SMSP suggested to be allowed within designated areas of the park. These uses are proposed with no new infrastructure required.

Scuba Diving

It is recommended that areas within the park be designated for Scuba diving to patrons with appropriate certification and SMSP issued permits.

Skateboarding

Skateboarding is recommended to be permitted in all areas of the park except for the main bricked walkway of Fields 1 and 2, and on the boardwalk.

Geocaching

Geocaching is recommended to be allowed in SMSP so long as it does not interfere with pre-designated area activities.

Tent Camping and Backpacking

Camping is recommended to be allowed for Boy Scout groups with pre-approval in designated areas.

High Intensity Court Activities

High intensity court activities are suggested as an alternative strategy for utilizing overflow paved parking lots when not in use by vehicles. This is established by dually-striping the lots for the particular activities as well as providing appropriate structures for play. Additionally, designated areas for court activities are suggested for the “in-between” and adjacent areas around picnicking. While equipment for these spaces does not need to be provided by the park, measures should

be taken to prevent picnic tables and grills overlap into these sections.

Tennis, Racquetball and Handball Courts

Tennis, racquetball and handball courts are all suggested to be built as an alternative use for when overflow paved parking lots are not occupied by vehicles. They are not recommended to be built as additional structures, rather, retrofitted and adapted to fit within the parking lots. Specifically, overflow lots, such as Field 2, are recommended to be dually striped for these activities. Amendments for these activities such as constructing a concrete wall for racquetball and handball, and providing appropriate connection points for nets, are suggested.

Badminton and Volleyball

Grassed areas sized suitably for badminton and volleyball games are suggested to be provided within or adjacent to picnicking areas. These areas can be broken up and smaller fields designated for soccer, lacrosse, football, and baseball. Patrons can provide their own equipment for pick-up games.

Low Intensity Court Activities

Low Intensity Court Activities are both hard and softscape areas designated for passive recreation activities. These are suggested to be built adjacent to the main bricked pedestrian loop and boardwalk area in addition to smaller areas reserved between picnicking sites.

Shuffleboard and Bocce

Both shuffleboard and bocce courts are suggested for the areas adjacent to the boardwalk and/or off of the new built brick walkway between the new pedestrian bridge and proposed bandshell/amphitheatre in Field 1. Placing these activities at this juncture will provide an increase in activities available for all age groups for use along the main loop during the day, and expand evening opportunities for those who wish to walk the boardwalk at night.

Horseshoes and Croquet

Horseshoes and croquet are two activities that can be enjoyed as a group activity across multiple age groups. In order to support the two, suitably sized level grass areas should be made available for use both in Field 2 as well as within picnicking areas.

EXPANDED USES

The following uses were found not meeting patron needs at SMSP and require update and expansion.

Area Development

Layout Considerations

New park development should focus on developing a strong pedestrian network of trails and activities throughout the extents of the park. This will promote use, ease of accessibility, and safety for all park patrons. Development should also address amenity adjacencies, creating a layout that maximizes patron use, experience, and safety.

As aforementioned in the section *Existing Area Recreational Facilities*, vehicles are given priority at SMSP, when the focus should be on the pedestrian user. Most intersections lack appropriate stop signs and cross walks. While the speed limit is designated at 30 mph, the limit is not typically observed. SMSP should increase the experience of the pedestrian by putting in traffic calming measures for vehicles such as stop signs, speed tables, and crosswalks, in

Aerial of Fields 1 (right) and 2 (left) (Google Maps)

addition to creating pedestrian loops independent of the vehicular network. A second pedestrian bridge is suggested to be built connecting Fields 1 and 4, to draw pedestrians away from the constricted vehicle bridge over the creek. This will reduce congestion and lower the chance of accidents.

Parking

As examined in the section, *Existing Area Recreational Facilities*, about fifty percent of the park's open space that could be accessible for relaxing, field, and picnicking activities is lost to parking. In its current state, the lots are not suitable for secondary use when not occupied by vehicles. Alternative strategies to the current parking situation are illustrated in *Recreation Facilities Design Strategies*. The main similarity between all these strategies is to increase the space available for play fields and picnicking, and to construct the parking lots in such a way that when they are not being used by cars they are approachable and encourage a secondary use for patrons.

The main strategy looks to remove unused parking facilities and locate additional overflow parking in Field 5. Opening up grassed areas for picnicking and field sports decreases the overall pedestrian congestion of the park. Currently, when parking reaches full capacity, the park cannot support patrons adequately. The current open area of Field 5 could support up to five hundred cars. Opening up this area for more parking could alleviate congestion in the northern sections of the park. Decreasing the amount of paved surfaces and re-adjusting the layout of the parking will also help to relieve the issue.

Additional strategies for lot improvement include alternatives to impervious asphalt. Paving such as pervious asphalt is recommended to increase filtration and vegetated

medians for runoff filtrations and reduce heat islands. Overflow parking surfaces could include grass areas supported by structural soil, or gravel lots. Lots which are paved could be closed to cars when not in use and dually-striped for court activities. Potential strategies such as using grassed and gravel lots for parking and dually-striping lots for court games in addition to vehicle parking are shown and discussed in *Recreation Facilities Design Strategies***.**

Picnicking

Due to the heavy use of the park by picnickers there should be an increase of space made available for this purpose. Picnicking should be expanded to Fields 2 and 5 which will help to relieve the congestion from heavily used areas. Facilities in Orchard Hill should be renovated, with one designated to be opened for winter use.

Pavilions and shelters are recommended for picnic areas in Fields 2 and 4. Larger pavilions could be provided for group rental.

Consider Field 5 as an amenity, using it for additional parking, picnicking, and as a major trail head. The parking lot could be repaved and striped, accommodating up to an additional five-hundred cars. Bringing users to this southern end of the park can reduce overall congestion and provide for an additional type of experience at SMSP. Field 5 could be a serene and more secluded picnic area, connecting pedestrians to the park through its heavy trail adjacencies.

The paths are currently ideal for hiking, horseback riding, bicycling, and dog walking. Recommendations to encourage use of Field 5 are repairing the parking lot, constructing a public restroom facility, providing additional picnic tables and grills, and creating a public nature or education center.

Three views of Field 5 highlighting serene areas for picnicking and hiking

Areas designated for picnicking should be planned and laid out in conjunction with child and youth play activities.

Currently, the majority of pathways at SMSP do not meet ADA standards. The proposed main route of the multi-use trail is designed to be ADA compliant. All picnicking areas should have appropriate ADA accessible trails linking visitors to parking lots, sanitary facilities, concessions, water sources, picnic tables, grills, playgrounds and other amenities. All designated picnicking areas are recommended to have areas constructed for use with wheel chairs and walkers, such as by providing ADA accessible picnic tables and grills on concrete slabs.

Play Fields

SMSP should strive to maximize the flexibility of open space within the park. This can be achieved by reducing the number of baseball designated fields within the park and creating open lawn areas that will increase the user potential for soccer, cricket, lacrosse, and football games.

Designating areas for a particular sport by making the area accessible only with a permit or by installing particular structures can be convenient and desirable for users of that said sport, but limit the accessibility for patrons interested in playing something else. It is recommended that three baseball/softball fields be removed from the park due to low usage and to create opportunities for other sports. The two fields in Field 1 are recommended to be replaced by one field located in the space between the two. Two fields recommended for removal in Field 4, closest to the restroom. It is suggested that a spray park be built over the baseball field closet to the comfort station.

In addition to larger open space areas reserved for sports, there should be some smaller areas designated for games such as badminton, volleyball, relay races, etc. within the picnic area. During hot summer weekends, there is a tendency for picnic areas to become overcrowded but with a small open space strategy, users could still have pockets for play.

Due to the poor drainage of the fields, it is recommended that the steps be taken to reduce soil compaction and install proper drainage infrastructure where necessary.

Playgrounds

Playgrounds should be placed in a location and laid out in such a way that maximizes safety and allows all children, regardless of physical and mental ability, to have an enjoyable experience. Safety and ease of use can be optimized by placing playgrounds within the vicinity of picnicking areas. This encourages cross-use and better parental supervision.

The potential for child predation can be minimized by pulling the playground areas away from driving and parking areas, and by providing more comfortable opportunities supervising children.

Open space grassed areas for play should be provided for younger kids in the area adjacent to play grounds to encourage field activities. The playground strategies in *Recreation Facilities Design Strategies* provide suggestions for future playgrounds layouts.

Trail Network

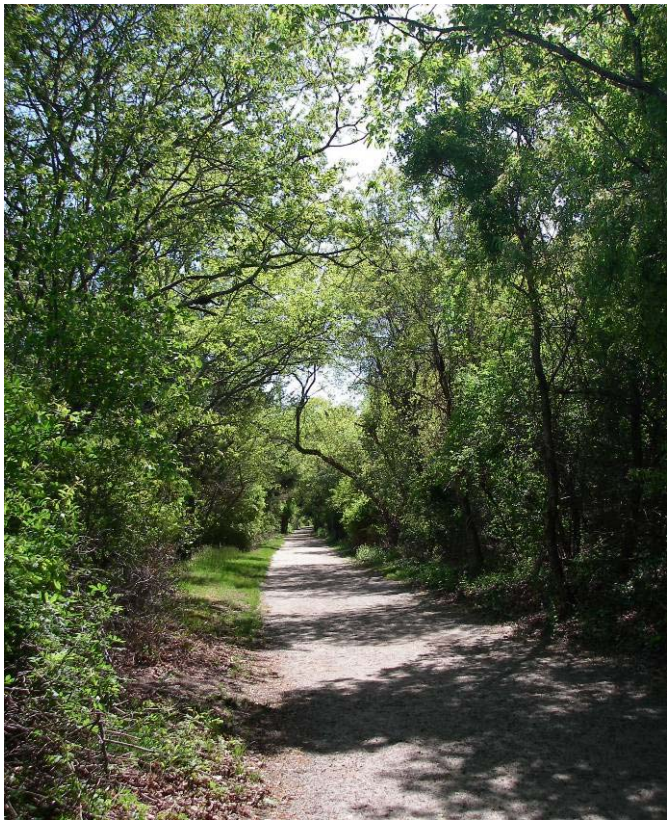
The highest trending outdoor recreation activities are walking, jogging, and bicycling. Future development of SMSP needs to reflect these trends by establishing a multi-use looped trail network. It is recommended that SMSP develop two interlinking networks of trails. The first, a main trail network, will be used to link and pull visitors through the developed areas of the park. A primary loop will be

located to the north of Fields 1 and 2, bringing users off of the parking lots and onto a bricked pathway. The loop will connect Fields 1 and 2 to the Main Bathhouse, boardwalk, West Concessions Pavilion, proposed bandshell/ amphitheatre, and proposed patron drop off location at the head of the turn-around circle. The boardwalk has the potential for expansion in width especially for an increase in seating opportunities and outdoor group activities. Low intensity court activities adjacent to the boardwalk with lighting would increase both day and evening use. While the length of the boardwalk itself is not recommended for expansion, incorporating the boardwalk as a significant part of the main trail loop will extend its potential for users.

The main trail system will be comprised of the existing boardwalk or paved materials. In some areas, the multi-use main trail will provide dual-use for pedestrian access and staff vehicles. Pedestrian crosswalks and stop signs for cars should be placed at appropriate locations to give pedestrians priority over vehicles. Appropriate uses for the multi-use trail system are walking, jogging, running, and hiking. Bicyclists, in-line skaters, and skateboarders will be permitted on all trails and all times with the exception of the boardwalk in which hours will be limited. The main trail should be designed in accordance with State regulations and be a minimum of eight feet wide and wider where deemed necessary, and routes should be ADA accessible.

A second loop will pull patrons along the creek with three areas suitable for crossing over the creek. The three cross-over locations over the creek include the existing pedestrian bridge and land crossover to the east of Field 3, as well as the proposed pedestrian bridge to be located to the east of Field 1.

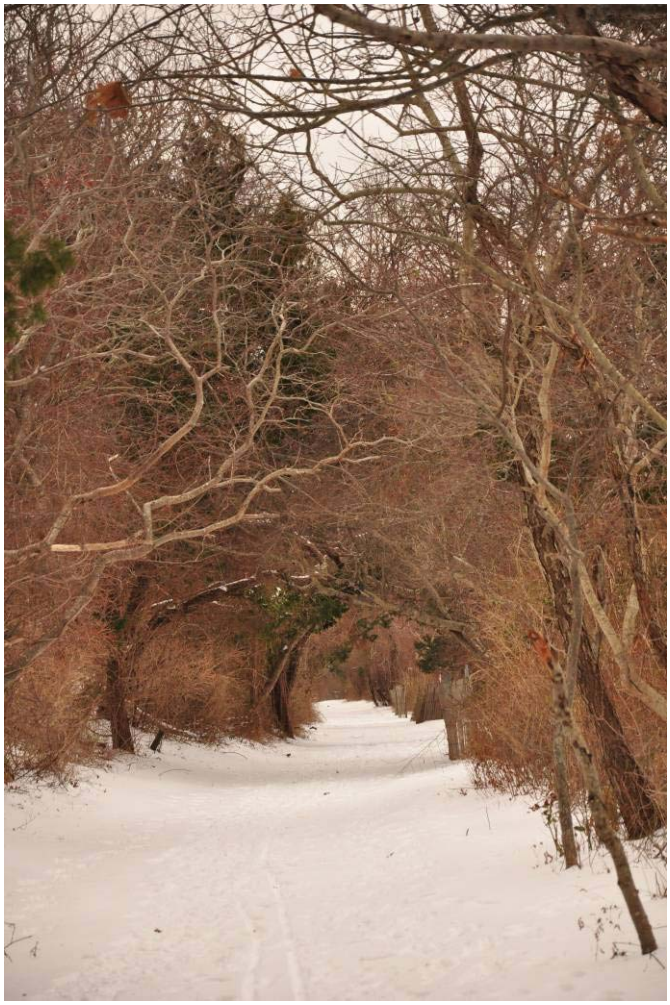
The secondary trail network should be paved and extend the main trail system and provide for additional linkages of



Highlights along the mutii-use trail network around the creek

existing running, woodland, naturalist, and Greenbelt Trail. As with the main trail, this network is also appropriate for multi-use for walking, jogging, bicycle riding, skaters, and skateboarders. The secondary network should be ADA accessible where conditions allow and marked accordingly.

For a conceptual strategy on laying out the main and secondary trail system network refer to *Recreation Facilities Design Strategies*. All main and secondary trail systems should provide seating at appropriate intervals. Trailheads are recommended to be located in Fields 2, 3, 4 and 5. Each trailhead should provide a map of the trail system as well as state permitted uses. All paved primary and secondary trails should be mile marked, and woodland trails should be appropriately blazed.



Greenbelt Trail

Recreation Facilities

Boating

The park should consider installing a small floating dock in the creek docking area to the east of Field 3. Currently, patrons with row boats, canoes, kayaks, and small sailboats must enter and exit boats on the tidal shoreline where conditions vary. A concession could provide boating opportunities for patrons without the resources.

BOCES/ SCOPE Environmental Education Center

Field 5 could be expanded for public use
by expanding the Environmental Education building in order to accommodate a public restroom facility and nature education center.

Dog Walking

Dog walking could be permitted to the east of Field 3 and in the undeveloped southern areas of the park originating from Field 5. An informative map showing areas that dogs are permitted at each trailhead needs to be provided. Dogs would be permitted only on a six foot leash.

Golf

To enable visitors to access the golf course on busy days, a second entrance to the park could be considered next to the golf course. A multi-use trail is also suggested for construction, officially connecting this area for pedestrian use. For more information regarding multi-use trail construction refer to *Recreation Facilities Design Strategies*.

View from top of the Bluff, adjacent to Field 3: potential area for overlook tower

The golfers at SMSP are subjected to a high population of mosquitoes. The park could take certain measures to reduce the mosquito and gnat population within the park. SMSP's initiative to restore the tidal wetland will reduce the amount of standing water in which the mosquitoes breed. Additionally, the park could improve standing pond conditions by using mechanical aerators for stagnant water, keeping grass clippings out of the water, and by maintaining high quality vegetative buffers around the pond.

In order to protect the golf course green, a network of paved pathways for golf carts should be established. These pathways could also be used as a main route for golfers when the grass is wet.

Nature Walks and Birdwatching

An overlook tower and boardwalk system for viewing wildlife is suggested in the eastern end of the park, closest to Field 3. Existing woodland trails as well as trails along the bluff should be maintained by providing erosion protection and removing poison ivy. Trails should be marked on a map provided at the trailhead, and each trail should be blazed properly. Along the trails to the east end facing the water and the trails around the wetland in the western end of the park, educational signage could be provided for patrons interested in the wildlife. Signage indicating prime bird watching locations as well as particular vegetation, bird, and other wildlife species could be provided along the trail.

DESIGN CONSIDERATIONS FOR RECREATION UPGRADES

RECOMMENDED PARK DESIGN CRITERIA

For suggested layout and conceptual design strategies for future development refer to *Recreation Facilities Design Strategies*.

The following criteria were adapted from the NYS OPRHP's *SCORP: 2009-2013* depicted in Recommended Park Design Criteria as found adaptable to SMSP Recreation Facilities Plan:

Beach Areas

The design and upkeep of any beach area's predominant concern should be for safety. Special precautions including life-guard facilities, first aide, and access for emergency vehicles must be provided. Benches and trash cans should be provided. Since SMSP is a linear beach, it should continue to have several access points to dispense users and provide for associated facilities. Food service facilities ranging from vending machines to a restaurant complex should be provided, as well as adjacent eating or picnicking areas.

Lighting

Any proposed lighting must fit in with the natural character of SMSP. The park should provide lighting to the western end of the boardwalk north of Fields 1 and 2 and the connecting brick path loop. The lighting plan should use the most energy efficient design available and not create light pollution. Light fixtures should meet Dark Sky requirements for no light spillage and SMSP should adopt the Dark Sky Initiative Plan for the rest of the park.

Picnic Areas

A diversity of sun and shaded areas should be provided for picnicking. Adjacencies to bodies of water and parking are preferable for users. A percentage of picnic tables should be made ADA accessible, in accordance with ADA design standards (for more information refer to ADA Compliance and Universal Design in this section of the report).

Toilet facilities should be located within five hundred feet of sites and drinking fountains within two hundred and fifty feet. Parking is ideally located within four hundred feet of the picnic tables. For picnic tables, ground should be terraced to provide level spaces whenever necessary. Picnic shelters and pavilions can be built and installed for use by larger groups and group rentals.

Vehicles and Pedestrian Safety

Areas used heavily by children should be located away from roadways or parking lots. If placement adjacent to roadways is unavoidable, the facilities should be fenced in or have vegetative barriers to protect users from traffic hazards.

Road design within parks should focus on speed control with pedestrian and bicycle areas clearly marked. Directional and navigating signage should comply with current acceptable standards.

ADA Compliance and Universal Design

Approximately 20.6% of the New York State population above the age of five is considered to have a disability (NYS OPRHP). Generic and basic adjustments to make play and recreation areas accessible and ADA compliant often segregate users with disabilities. For example, children that have limited use of their legs and use wheelchairs for mobility are often restricted from most playground structures due to steps, narrow ramps, ground surface material, and width of navigable pathways.

The playground is one of the most important settings for childhood development as it sets the stage in a child's life for social interaction, imagination, and how to meet physical and social challenges (Skulski, J., 2007). There are many simple adjustments or structures that can be added to a playground that creates an inclusive area that fosters the direct interaction between children with disabilities and children without disabilities. Areas and amenities available for picnicking, trail walking, playing games, etc. should provide user access for those individuals in wheelchairs. Additionally, all-terrain wheelchairs should continue to be provided by the park for those users who wish to be mobile on the beach.

Proposed accessibility guidelines that include appropriate considerations for SMSP such as trails, access routes, departures, fixed picnic tables, fire rings, cooking surfaces, fixed trash and recycling containers, fireplaces, overlooks and viewing areas, fixed benches, etc. have been developed by the Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas. A detailed explanation of guidelines, exceptions to the categories, and departures can be found on the Access Board's website at www.access-board.gov.

Structures for Inclusive Play (from top to bottom) Bumblebee spring rocker; Transfer structure; Access to sand platform (Skulski, 2007).

Wherever possible, SMSP should incorporate the principles of universal design to any existing or new development. Universal design is the design of products and environments to be useable by all people, to the greatest extent possible, without the need for adaptation or specialized design. The seven principles of universal design are listed below (The Center for Universal Design, 2007). Table 17 lists the principles along with their guidelines.

TABLE 17	PRINCIPLES OF UNIVERSAL DESIGN (CENTER FOR UNIVERSAL DESIGN)
Principles	Guidelines
Equitable Use	The design is useful and marketable to people with diverse abilities
Flexibility in Use	The design accomodates a wide range of individual preferences and abilities
Simple and Intuitive Use	Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level
Perceptible Information	The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities
Tolerance for Error	The design minimizes hazards and the adverse consequences of accidental or unintended actions
Low Physical Effort	The design can be used efficiently and comfortably and with a minimum of fatigue
Size and Space for Approach and Use	Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility

Source: The Center for Universal Design, 2007

STORMWATER MANAGEMENT

Uncontrolled stormwater runoff from impervious surfaces has been identified as a major contributor of non-point source pollutant loads to surface waters and of erosion of stream channels. These pollutant load discharges result in water quality impacts that cause beach closures, impact shellfish and other aquatic species, as well reduce the aesthetic quality of the surface waters.

All new and redevelopment projects within the park should be constructed in accordance with the New York State Stormwater Design Manual (latest edition) (Design Manual) design criteria for stormwater management and control to reduce the pollutant loads discharging to surface waters, the erosion of stream channels and overbank flooding. To address surface water quality, the Design Manual requires treatment of the 1.3" storm event volume to reduce significantly the pollutant loads discharging to surface waters. The use of runoff reduction measures, including low-impact development (LID), green infrastructure, and pervious pavement, reduces runoff volumes to levels as close to the original site conditions as practicable. The quantity control management measures provides protection of the stream channel and controls peak discharges and overbank flooding to pre-development levels for the specified storm events to the maximum extent practicable. The practices available to meet these reductions include traditional recharge or detention basins and infiltration structures, as well as LID and green infrastructure measures

Comparison of traditional asphalt (left) and porous asphalt (on right) (Bassuk, Haffner, and Trowbridge, 2007).

which include pervious or porous pavements, vegetated swales, riparian buffers and floodplain enhancements that are applicable to the SMSP site.

The following lists specific measures that can be taken at SMSP to reduce water pollution and increase groundwater recharge. Any new paved surfaces should reduce Stormwater runoff and erosion by replacing impermeable pavement with pervious pavement. Such materials significantly increase groundwater infiltration and remove or reduce the need for drainage structures. Existing lots can also be retrofitted with vegetated medians, utilizing trees and shrubs for water filtration and reducing the overall temperature of the lot.

TRAIL DESIGN

Parking fields and key recreation facilities offer a good starting point for trailheads: providing users with trail layout, safety information, and permitted uses. While different user groups require different types of trails, when designing trail alignment, terrain, topography, aesthetic value, points of interests, road crossings, other dangers, and the destination should be considered. Trails should fit within the land to provide for a natural feel and use erosion control measures whenever needed. A width of eight feet is needed for service and vehicle access points along the trail. For the woodland trails of SMSP, hiking and horseback riding trails should be separated whenever possible to provide for improved safety and sanitation (NYS OPRHP, 2008).

Table 18 presents the guidelines for the development of seven different types of trails suitable for SMSP as provided by NYS OPRHP 2009 – 2013. For further information on trail design guidelines refer to the NYS OPRHP's Statewide Comprehensive Outdoor Recreation and Generic Environmental Impact Statement: 2009 – 2013. New and existing trails that require maintenance should be designed or modified to improve accessibility for persons with disabilities.

SIGNAGE

Signage should be used to educate patrons, ease use of trails, make known permitted uses, and increase pedestrian safety with traffic calming measures. Trailheads should be created in Fields 2, 3, and 5 with maps detailing trail layout, ability, and permitted uses. Trail blazes should mark all non-paved woodland trails. Informational educational displays providing information on wildlife and waterfowl that may be in the area should be provided along the boardwalk and naturalist trails. Signs that utilize color recognition and universal symbols are especially useful, especially for foreign visitors. Visual distance should be taken into consideration when deciding on size of lettering and signs (NYS OPRHP, 2008). Because of signage should be provided in English, Spanish, and Chinese, as these reflect the three most spoken languages for the user groups of SMSP.

TABLE 18	TRAIL GUIDELINES (NYS SCORP 2009 - 2013)								
Trail Type	**Vertical Clearence**	**Corridor Clearence**	**Treadway Width**	**Surfacing Materials**	**Trail Length**	**Sight Distance**	**Slope**	**Turning Radius**	**Users per Mile**
Biking Class 1 (Path)	8 - 10 feet	5 - 6 ft. (1 lane); 8 - 10 ft. (2 lane)	2 - 3 ft. (1 lane); 6 - 8 ft. (2 lane)	Smooth pavement, asphalt, concrete, crushed stone, clay or stabalized earth	Min. 5 mi. loop (1.5 - 2 hrs.); 15 - 25 mi. of linear or loop trails (day trip)	Min. of 50 ft. up to 100 ft. on downhill curves or road crossings	0 - 5% Max: 5 - 10% sustained 15% shorter than 50 yd; Outslope of 2 - 4%	8 - 14 ft. depending upon speed	40
Mountain Biking	8 - 10 feet	1.5 - 6 ft. (1 lane)	36" (novice); 24" (intermediate); 6 - 12" (expert)	Firm natural surface with some obstacles such as roots, grade dips or rocks	Min. 5 mi. loop (1.5 - 2 hrs.); 15 - 25 mi. of linear or loop trails (day trip)	Min. of 100 ft.; up to 150 ft. on downhill curves or road crossings	Over all grade not to exceed 10%; Climbing turns not to exceed 7 - 12%; Outslope of 3 - 5%	Novice/ intermediate 8 ft. min.; Expert 6 ft. min.	10
Cross Country Skiing	8 - 10 feet above snow depth (10 - 12 ft. in summer)	8 ft. (1 lane); 10 - 12 ft. (2 lane)	4 - 6 ft. (1 lane); 7-8 ft. (2 lane); 8 - 10 ft. (up & down hill)	Snow with underlying bare soil, rocks or wood chips. Outsloped underlying material. Can be groomed or ungroomed	.5 - 3 mi. loops up to 4 - 8 mi. (2 - 4 hr. trip)	Downhill runs, stream or road crossings 50 ft., otherwise not critical	0 - 5% max.; 10% sustained; 15 - 25% shorter than 50 yrds.	Avoid sharp turns. Never locate a turn at the base of a downhill run. Min. 50 ft.; Preferred 100 ft.	5 - 30
Hiking (developed, interpretive, group or connector)	8 - 10 feet	4 - 8 ft.	4 - 6 ft.	Bare soil, rocks, stone dust or wood chips. May have hardened surface (concrete, asphalt or boardwalks) in high use areas	.25 - 5 mi. (1/2 day); 5 - 15 mi (full day)	Not critical, barriers on reverse curves may be used	0 - 5% max.; 15% sustained; 40%+ shorter than 50 yds.; Outslope 4% max.	N/A	0 - 30
Hiking (primitive, back packing)	8 - 10 feet	4 - 6 ft.	18 - 30 in.	Bare soil, rocks, gravel, wood hardened surface for wet areas	Min. 5 mi.; 5 - 15 mi. (full day); 15 - 25+ (multi day)	Not critical	1 - 5% Max.; 15% sustained; 40-50% shorter than 50 yds.	N/A	1 - 5
Horse	10 - 12 feet	5 - 6 ft. (1 lane)	18 - 30 in. (1 lane)	Soils have a large percentage of rocks, clay and/or organic matter. Void of rocks football sized or larger. Little treadway development required in soils are appropriate. Problem areas, water control measures may be installed. Brush and saplings should be cut flush or below ground level. Remove dead or leaning trees	Min. 5 mi. (11.5 hrs.); 15 - 25 mi. of looped trails (full day)	Not critical unless 2 - way traffic. 50 - 100 ft. at motorized road crossings	0 - 10% Max.; 10% sustained; 20% shorter than 50 yds.; Outslope 4% max.	Not critical but avoid sharp turns on steep slopes or using switchbacks (30 in. if they are necessary)	5 - 15
Snowshoe	8 - 10 feet above snow depth (10 - 12 ft. in summer)	8 ft. (1 lane); 10 - 12 ft. (2 lane)	4 - 6 ft. (1 lane); 7 - 8 ft. (2 lane); 8 - 10 ft (up & down hill)	Snow with underlyingbare soil, rocks, or wood chips. Outsloped underlying material. No grooming is needed	.3 mi. looped (2 - 4 hrs, 4 - 8 trips)	N/A	0 - 5% Max.; 10% sustained; 15 - 25% shorter than 50 yds. for experienced snowshoers	N/A	5 - 30

Source: NYS OPRHP SCORP 2009 - 2013

PROJECTED FLOOD LEVELS

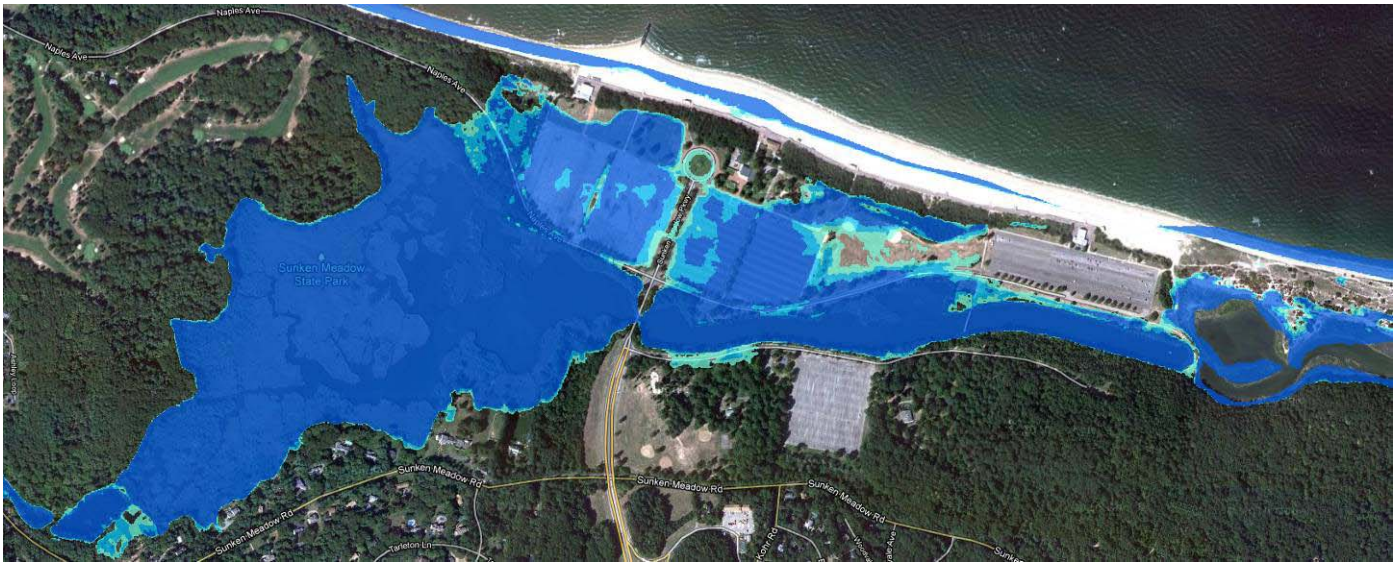
The proposed Recreation Facilities Plan for SMSP considers the flood levels of the park for both a forty and seventy year period as projected by The Nature Conservancy. In response to this concern, future development looks to reduce the overall long term structural development within the park. This is achieved by reducing the amount of impermeable surfaces in projected flood zones and replacing them with well-draining surfaces. SMSP's low lying nature and projected flood levels were taken into consideration when deciding on the suitability of new recreation facilities.

Highly developed facilities such as those constructed for rock climbing, tennis courts, racquetball, etc. were not considered suitable for SMSP unless built as secondary uses for overflow parking lots.

FIGURE 18: High Projection of Flood Levels for SMSP in 2050, No Storm (TNC)

Source: Coastal Resilience, The Nature Conservancy

FIGURE 19: High Projection of Flood Levels for SMSP in 2080, No Storm (TNC)



Source: Coastal Resilience, The Nature Conservancy

RECREATION FACILITIES DESIGN STRATEGIES

INTRODUCTION

The following section identifies concepts and designs that implement recommended strategies depicted in earlier sections of this report including *Recreation Needs Identification* and *Design Considerations for Recreational Upgrades*.

The *Recreation Facilities Design Strategies* includes:

- Strategies that address parking needs for general usage and extreme usage during limited periods while allowing opportunities for recreational spaces and picnicking
- Improvements to the trail network including a looped walking trail system and improved connections to hiking trails
- Future area developments including increasing recreation facilities and activities, and improving usage at underutilized locations
- Recommendations for phasing implementation of the improvements over the lifespan of the SMSP Master Plan

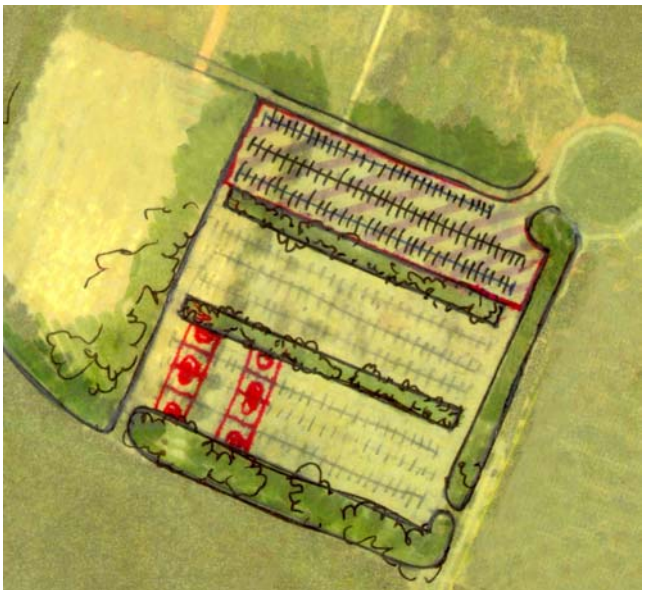
PARKING STRATEGIES

The parking lots of Field 2 were designed to hold approximately 2,200 cars at full capacity, but in their current state of disrepair, they accommodate fewer vehicles. Most of the year Field 2 is not utilized for parking and it does not lend itself easily to alternative uses. There are about six to eight weekend days per year when the park reaches full capacity and could use the additional spaces of this field. The field reaches up to 80% capacity three times per year, and 50-70% percent full the other major days. Due to its lack of space striping, the lots of Field 2 are used more often as a tailgating area than a full efficiency parking lot.

The following design strategies for Field 2 were developed in conjunction with the re-development of the Field 5 parking lot to balance the reduction in Field 2 capacity with an increased capacity in Field 5 as discussed later in this section. The strategy for Field 2 is to provide a multipurpose area that can provide parking on busy weekends and recreational usage and be utilized as a picnic area at other times.

Each of the three design strategies developed for Field 2 can carry between 1,100 to 1,400 cars. These spaces in addition to the 500 potential spaces in Field 5 preserve between 72-82% of the original number of parking spaces in Field 2. The three design strategies developed all depict a small permanent parking lot for the West Concessions Pavilion. The design strategies can each include approximately 200 parking spaces for the pavilion.

Each design strategy also includes expanses for picnicking and playing field games, a comfort station, and walkways that reinforce the integrity of the original design.



Top to bottom, left to right: Concept #1; The Inn at Biltmore Estate event lawn; Brick pavers to delineate parking rows; Concept #2; Grass parking lanes; Concept #3

Concepts Behind Design Strategies

The three design concepts illustrated to the left all maximize the amount of multi-purpose areas while maintaining parking usage when needed in Field 2.

Concept #1 illustrates the potential for maximizing the amount of green space that is well drained, supports cars on days needed, and serves as a picnic ground and play field throughout the year. Structural soil provides a support system that enables cars to park on the grass without compaction. The parking rows can be delineated through the use of brick pavers, vegetation such as trees, and permanent seating structures, such as benches, placed in rows. On days in which the space is needed for parking, this area can be cordoned off. Pictured in the inset to the left is an example of grass supported with structural soil for parking purposes as installed by PermaTill, at the Inn at the Biltmore Estate.

Concept #2 demonstrates a multifunctional space with areas for grass picnicking, on the grass parking lanes, and storage for picnic tables, in the vegetated medians, to allow for a quick turnover from picnic to parking on busy days. The gravel travel lanes are fast draining, reduce the heat island effect, and provide an additional opportunity for some recreational uses such as relay races.

Concept #3 maximizes parking space delineation and expands the potential of space for court games. The lot can be dually-striped for court activities such as basketball, tennis, shuffleboard, and hopscotch, among others. The vegetated medians could accommodate picnic tables and spectator seating areas.

The three design strategies depicted on the following page utilize concepts 1 and 3 shown for parking areas.

Design Strategies

DESIGN STRATEGY #1: OPEN PICNIC AND PLAY FIELDS AS OVERFLOW PARKING

Benefits

- Best Aesthetic
- Provides Maximum Amount of Green Space
- Highest Groundwater Recharge
- Maximizes Picnic and Play Field Potential

Space Delineation

- Brick Pavers (Concept #1)
- Vegetation (Concept #1)
- Permanent Seating Structures (Concept #1)

Parking Potential

- Grass Parking = ~1200
- West Concession's Pavilion Lot = ~200
- **Total Spaces** = ~1400

DESIGN STRATEGY #2: CENTER PLAY FIELD WITH SOUTHERN PARKING

Benefits

- Proximity of Picnic Area and Play Field to Beach
- Main Lot Dually Functions as Additional Court Space

Space Delineation

- Striped Parking Lot (Concept #3)
- Vegetation and Brick Pavers Set up in Rows (Concept #1)

Parking Potential

- Main Parking Lot = ~670
- West Concession's Pavilion Lot = ~200
- Overflow Grass Parking = ~265

Total Spaces = ~1135

DESIGN STRATEGY #3: NORTHERN PERMANENT LOT WITH OVERFLOW FIELD

Benefits

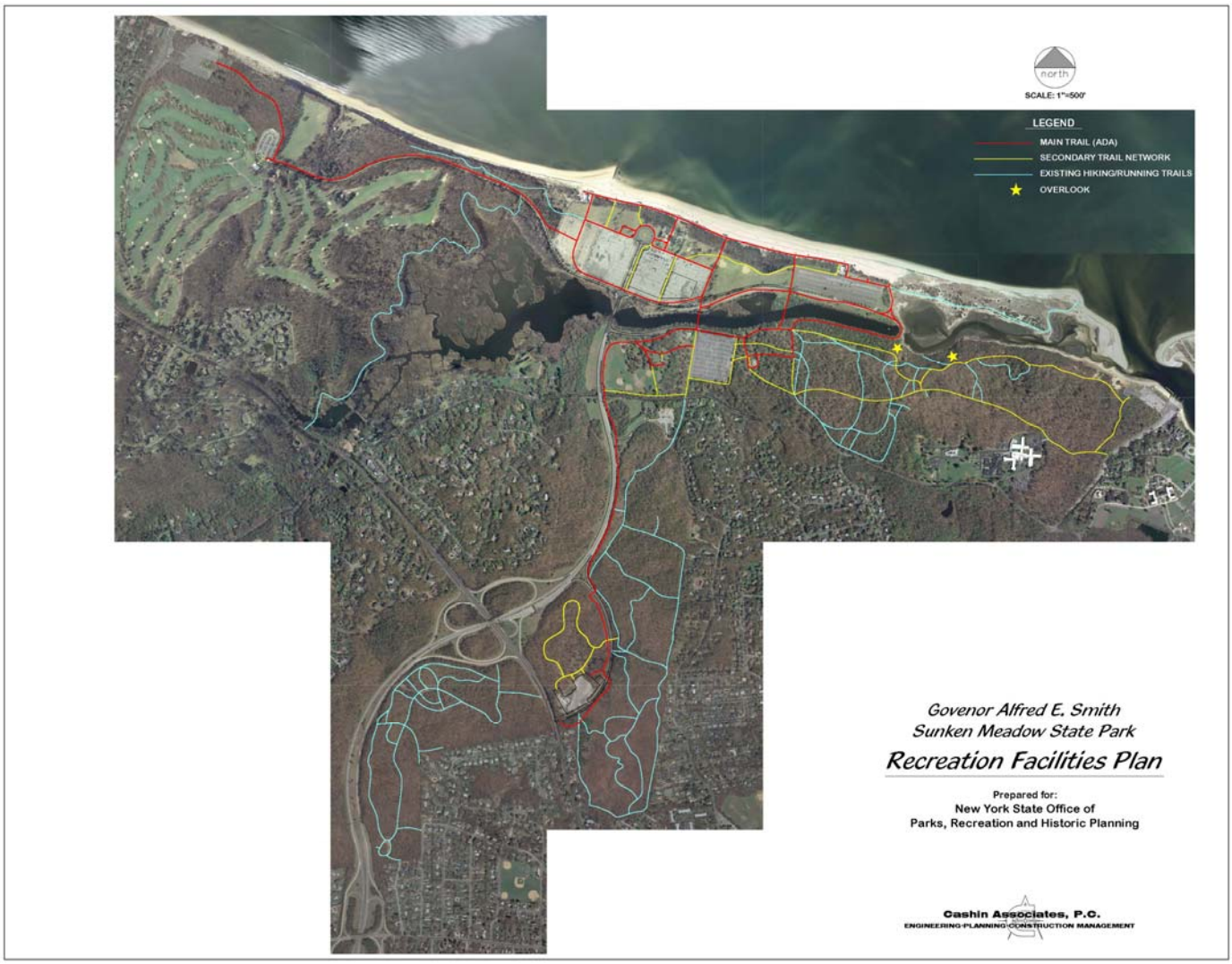
- Placement of Main Lot Preserves Central Layout Integrity of Park Design
- Vegetated Median also Functions as a Picnic and Spectator Seating Area
- Overflow Grass Parking in Area Less Susceptible to Flooding

Space Delineation

- Striped Parking Lot (Concept #1)
- Vegetation and Brick Pavers Set up in Rows (Concept #1)

Parking Potential

- Main Parking Lot = ~540
- West Concession's Pavilion Lot = ~200
- Overflow Grass Parking = ~470
- **Total Spaces** = ~1210



The Trail Network at SMSP

THE TRAIL NETWORK

The proposed trail system was developed to create a cohesive network of trails for pedestrians and bicyclists into and throughout the park. It is a linked network of looped trails that connect key areas of the park and existing hiking/running trails to the main network. The proposed trail system includes three levels of trails, the main, multi-use trail; the secondary trail network which includes the main pathways within the parking fields and picnic areas and provides connection points to the third level of trails; the existing hiking/running trails.

The main trail is a multi-use, ADA accessible trail that starts in the southern end of the park at Route 25A/Fort Salonga Road, adjacent to Field 5, and ends at Callahan Park to the northwest. A fold-out map of the entire trail system within the park is provided in the back cover of this report.

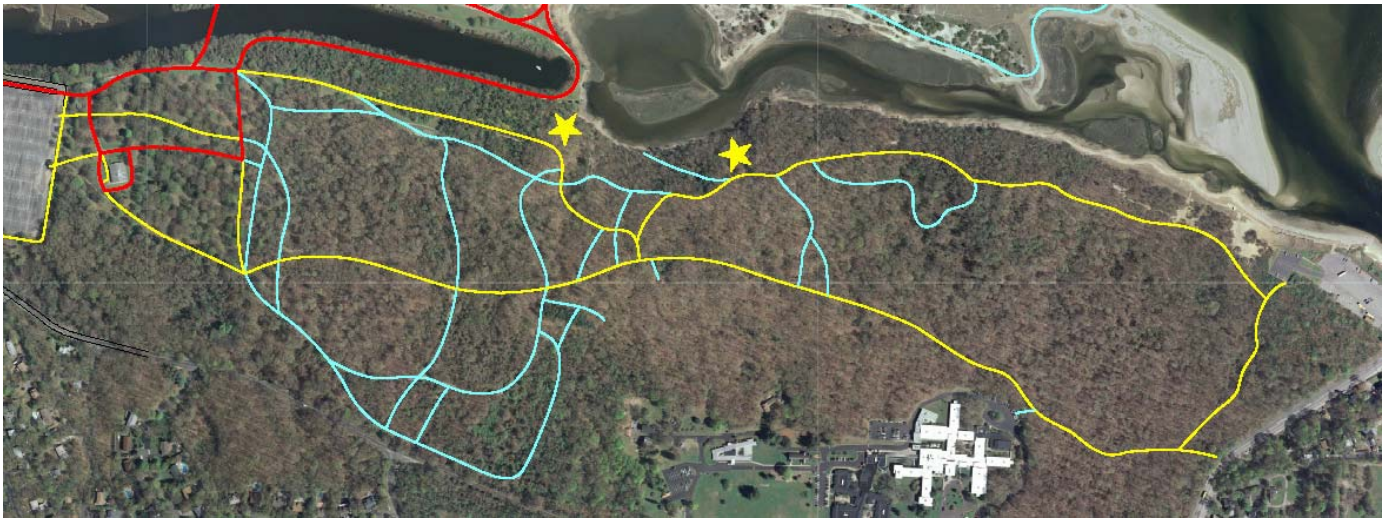
The proposed trail system includes a new pedestrian bridge (alleviating the congestion issue at the existing vehicular bridge), connections to the boardwalk, a new trail leading up to the golf courses, and traffic calming measures.

Close-up of the Main and Secondary Trail network over Fields 1, 2, and 3 (left)

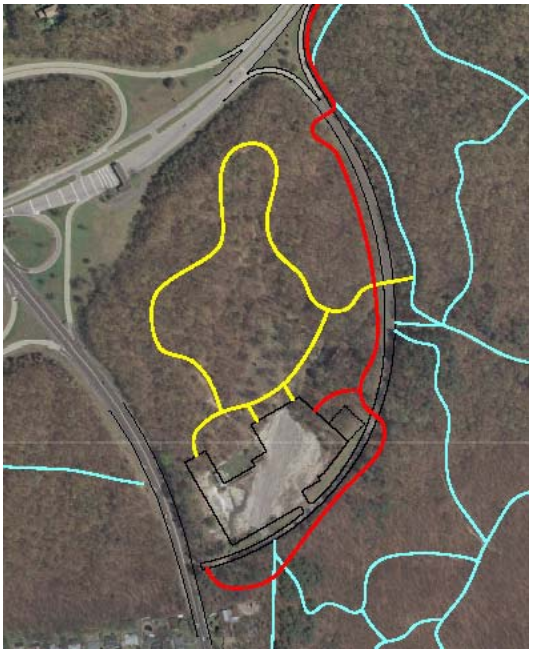
In Field 4, the secondary trail system recommended to be built to the south and west of the Field 4 parking lot is located where patrons have already worn trails into soil or alternatively walked through the parking area. These trails can be paved with gravel in order to account for the area's high water table. The secondary trail also provides a new connection to the existing trails north of Field 5 parking.

Field 4 East, also known as East Orchard Hill, already has an existing extensive trail network, providing access mostly for the picnicking area in addition to the woodland running and hiking trails to the east. Due to steep terrain in this park area, final design will need to consider an ADA accessible access route that may begin at the northeast corner of parking Field 4 and require ramps or redesigned paths to reach the new facilities. The trail network detailed in Orchard Hill also illustrates the connection to the two proposed Long Island Sound Scenic Overlooks.

The Field 5 trail detail (pictured on the following page) depicts the southernmost end of the main multi-use trail with its trailhead connecting to Route 25A/Fort Salonga Road. The secondary trail in yellow illustrates a layout for an additional future trail system if there is increased usage of Field 5 that warrants improved facilities.



Detail of new and existing trails in Field 4 East, East Orchard Hill



Detail of new and existing trails in Field 4 West (above); Detail of Field 5 trail system(right)

Central Area concept drawing (above); Existing conditions of Fields 1 and 2 (inset)

FUTURE AREA DEVELOPMENT

Central Area Development

The concept drawing pictured above represents the potential for a walking loop and new recreational facilities in the main area of the park. The existing brick pathway that extends along the parking lots of Field 1 is extended through Field 2. The loop draws users from Fields 1 and 2 and creates an area and walking trail that is functional for both day and evening use. The loop highlights recreational attributes of the park such as the beach boardwalk, the West Concessions Pavilion, and new proposed amenities such as the low-intensity court games, the Field 2 Comfort Station, a pedestrian drop-off, the bandshell, expanded children's play area, and direct connection to Field 4 through the proposed pedestrian bridge. The trails to the north of the parking fields are recommended to be lined with trees and lighted for increased evening use.

Field 1 Area Development

The Field 1 Area Development, illustrated on the following page, expands upon the existing playground and incorporates an additional area for a small children's play field. The addition of a trail through the northern end of the playground area provides extra security with benches placed to allow parents or guardians to supervise the children. A vegetated buffer is recommended to be planted between the parking lot and play area to provide shading, filter fumes from the vehicles, and reduce the amount of heat radiating from the pavement. In order to accommodate the new

Field 1 Area Development (above); Field 1 existing conditions (inset)

space needed for the children's play field and vegetated buffer, the eastern parking lot of Field 1 was reduced by approximately 240 spaces. The improvement allows for additional picnic areas in close proximity to the playground.

One softball field is recommended for removal and the remaining field centered between the existing two locations. This will permit space for the proposed main north/south promenade from stream crossing to boardwalk.

Lining the new access trail are low intensity sports courts, such as for shuffleboard. In addition to this activity which will strengthen the coherence and safety of the park, a bandshell/amphitheatre is also recommended to be placed in this location, strengthening the east/west access.

Field 4 East Area Development (above); Field 4 East existing conditions (inset)

FIELD 4 AREA DEVELOPMENT

The design of Field 4 East, East Orchard Hill, expands the development of this area by providing a new comfort station and concession area adjacent to the existing East Orchard Pavilion (which will be placed on the reservation system and the adjacent enclosed room adapted for food preparation and warming). Two large rental pavilions are recommended to be placed in the illustrated areas along with a new playground.

Located to the east of East Orchard Hill are two Long Island Sound Scenic Overlooks. They are located approximately ¼ and ½ mile from the point illustrated in the detailed drawing above with exact locations to be determined by further site assessment.

The main goal of redeveloping the picnic area west of the Field 4 parking lot (pictured on the following page) is to provide additional recreational facilities that make the picnic area a destination location and to develop an ADA accessible picnic area. The proposed design strategy centralizes the recreational activities within the space: Making the children's recreational activities, playground, and new spray ground the focus allows recreational opportunities to be incorporated and overlap with picnicking.

Field 4 Area Development (above); Field 4 existing conditions (inset)

Reducing the number of baseball diamonds from three to one opens up the space for other sport usage such as soccer, cricket, and a small children's play field. The space next to the northernmost basketball court is suggested to be a future youth play area and the design includes increasing the spectator seating around the basketball courts and providing additional open space for field games.

Two pavilions are recommended to be placed in Field 4 West, one, south of the driveway and the second adjacent to the spray park and comfort station.

ADA accessible picnic areas are proposed to be installed west of the restrooms. This area is central to activity and is directly off of the secondary trail network which must provide an accessible route to the parking lot and concession.

Finally, in Field 4 West, an Emergency Vehicle Access point could be located where the secondary trail intersects with Route 25A to the east.

Field 5 Area Development (above); Existing conditions (right)

FIELD 5 AREA DEVELOPMENT

Developing Field 5 provides an ideal opportunity for SMSP to reduce congestion for both pedestrians and vehicles in the northern section of the park. A large picnic area and BOCES Environmental Center already exists, with Field 5 also serving as a trail head for the routes in the southern end of the park. Upgrading the existing parking facility and directing vehicles to this parking area when other fields fill on busy weekends should increase use. In the future the parking lot in the Field can be enlarged to hold approximately 500 cars. As popularity for this area grows a restroom could be built next to the BOCES building, and the secondary trail network could be put into place. Making these minor updates to Field 5 could make it a destination in the future for those patrons wishing to avoid the busy summer crowds.

There is some concern for the conceptual layout of the additional parking at Field 5. It should be noted that the projection for 500 parking stalls at this location is conceptual and that the final, detailed layout is contingent upon various constraints that are not typically considered for a plan of this type. Constraints may be revealed during preparation of construction plans during the final design phase, such as easements, existing infrastructure, and final plans for the main existing facilities, which will require modifications of the parking arrangement shown on this page.

MAJOR COMPONENT PHASING

Phase 1 (0-10 yrs)

- Remove existing Field 2 parking lots
- Reconstruct a parking lot for the west concessions pavilion supporting 200 vehicles
- Build a smaller dual-use parking lot in Field 2 to support 500-700 cars, or implement a structurally supported grass or pervious paved lot to accommodate up to 1,200 cars
- Remove the access road south of Field 3
- Install a spray park west of Field 4
- Install picnic pavilions in Field 4 east and west
- Remove underutilized softball fields in Field 4 and create open lawn areas
- Establish the main multi-use trail system
- Improve trail signage and trailheads
- Install a drop-off shelter in the main vehicular circle
- Designate pedestrian crossings and install traffic calming devices
- Utilize Field 5 for overflow parking and restripe layout to maximize capacity

Phase 2 (5-15 yrs)

- Build a new pedestrian bridge to connect Field 4 west to shoreline
- Install a bandshell/amphitheatre in Field 1
- Install low intensity courts along the new pathway in Field 1
- Reconstruct softball field east of Parking Field 1
- Establish grass overflow parking areas in Field 2
- Establish the secondary trail system
- Establish all tertiary connections to existing trails
- Construct shoreline overlooks east of Field 4
- Construct new restroom and playground in Field 4 east

Phase 3 (10-20 yrs)

- Construct new playground facilities at Field 4 west and remove the existing playground in Field 4
- Remove sections of eastern lot of Field 1 to accommodate trail layout in the south and playground/play field expansion to the north
- Install restrooms in Field 5
- Expand and repave Field 5 parking
- Establish trails in Field 5

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ADDITIONAL RESOURCES

Adaptive Environments, 180-200 Portland Street, Suite 1, Boston, MA 02214. (617) 695-1225. Online at <www.adaptenv.org>.

American National Standards Institute, 1819 L Street, NW, Washington, DC 20036. (202) 293-8020; Fax: (202) 293-9287. Online at <www.ansi.org>.

The Access Board, 1331 F Street, NW, Suite 1000, Washington, DC 2004-1111. (202) 272-0080, (202) 272-0082, (202) 272-0081 (fax). Federal standards online at <www.access-board.gov/adaag/html/adaag.htm>.

National Center on Accessibility, 501 North Morton Street, Bloomington, IN 47404-3732. (812) 856-4422 (Voice), (812) 856-4421 (tty), (812) 856-4480 (Fax). Online at <www.ncaonline.org>.

36 CFR Part 1191: *Americans with Disabilities Act Accessibility Guidelines; Recreation Facilities*. U.S. Architecture and Transportation Compliance Board. Federal Register (September 3, 2002). Washington, D.C. <www.access-board.gov/recreation/final.htm>.

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APPENDIX I

TABLE 1	Recreation Activity Participation in New York in 2005 and Projected Participation for 2025 (2009 SCORP)					
Activity	**2005 Participants**	**2005 % of Population**	**2025 Projected Participants**	**2025 % of Population**	**Projected Growth**	**Projected % Growth**
Relaxing in park	12,495,807	78.03%	12,994,075	77.79%	498,268	3.99%
Walking	10,259,380	64.06%	10,704,563	64.09%	445,183	4.34%
Swimming	7,193,165	44.92%	7,201,111	43.11%	7,946	0.11%
Biking	5,148,247	32.15%	5,304,582	31.76%	156,335	3.04%
Historic sites	9,279,275	57.94%	9,776,268	58.53%	496,993	5.36%
Boating	4,296,624	26.83%	4,327,552	25.91%	30,928	0.72%
Fishing	2,917,010	18.22%	2,883,353	17.26%	-33,657	-1.15%
Hiking	3,084,106	19.26%	3,080,203	18.44%	-3,903	-0.13%
Field sports	3,015,000	18.83%	2,969,291	17.78%	-45,709	-1.52%
Court games	3,947,521	24.65%	3,943,761	23.61%	-3,760	-0.10%
Tennis	1,734,461	10.83%	1,751,914	10.49%	17,453	1.01%
Golfing	2,031,215	12.68%	2,044,693	12.24%	13,478	0.66%
Camping	4,314,756	26.94%	4,261,150	25.51%	-53,606	-1.24%
Hunting	1,003,858	6.27%	1,027,296	6.15%	23,438	2.33%
ATV	1,029,832	6.43%	992,248	5.94%	-37,584	-3.65%
Local winter	4,956,576	30.95%	4,954,269	29.66%	-2,307	-0.05%
Downhill skiing	1,252,905	7.82%	1,223,477	7.32%	-29,428	-2.35%
X-Country skiing	1,084,119	6.77%	1,105,715	6.62%	21,596	1.99%
Snowmobiling	762,384	4.76%	722,935	4.33%	-39,449	-5.17%

TABLE 2	Recreation Activity Days in New York in 2005 and Projected Activity Days for 2025 (2009 SCORP)					
Activity	2005 Number of Days	2005 Per Participant	2025 Number of Days	2025 Per Participant	Activity Growth	Activity Day % Growth
Walking	347,294,417	33.85	366,896,973	34.27	19,602,556	5.64%
Field sports	33,723,802	11.19	33,582,420	11.31	-141,382	-0.42%
Golfing	22,215,328	10.94	22,521,577	11.01	306,249	1.38%
Biking	51,482,470	10.00	53,047,831	10.00	1,565,361	3.04%
Court games	36,507,669	9.25	36,759,810	9.32	252,141	0.69%
Relaxing in park	104,170,358	8.34	109,449,427	8.42	5,279,069	5.07%
Swimming	60,966,850	8.48	60,309,198	8.37	-657,652	-1.08%
Hunting	7,702,896	7.67	7,790,958	7.58	88,062	1.14%
Hiking	20,821,392	6.75	21,068,539	6.84	247,147	1.19%
ATV	6,634,812	6.44	6,376,121	6.43	-258,691	-3.90%
Historic sites/ museum	54,959,437	5.92	58,611,800	6.00	3,652,363	6.65%
Fishing	16,763,916	5.75	16,470,258	5.71	-293,658	-1.75%
Boating	24,665,177	5.74	24,618,653	5.69	-46,524	-0.19%
Camping	24,156,268	5.60	23,667,935	5.55	-488,333	-2.02%
Tennis	8,140,674	4.69	8,245,728	4.71	105,054	1.29%
Downhill skiing	6,400,664	5.11	6,366,777	5.20	-33,887	-0.53%
Cross country skiing	4,456,481	4.11	4,531,456	4.10	74,975	1.68%
Local winter	19,386,352	3.91	19,164,445	3.87	-221,907	-1.14%
Snowmobiling	2,109,036	2.77	2,003,940	2.77	-105,096	-4.98%

TABLE 5	2004 General Public Recreation Survey	
Activities	**Percent**	**Days**
Visiting Parks and Natural Areas		
Relaxing in the park	70.8%	22.0
Picnicking	45.1%	8.7
Playground use	30.9%	23.7
Bird watching/ nature photography	22.7%	21.9
Visiting nature preserves	32.4%	8.1
Court Games		
Tennis	10.1%	15.8
Handball/ racquetball	68.0%	26.1
Basketball	13.3%	18.6
Field Sports		
Baseball/ softball	11.4%	18.3
Soccer	8.0%	31.4
Volleyball	6.3%	10.1
Water Based Activities		
Swimming	47.7%	18.4
Boating (with a motor)	18.9%	13.0
Rowboating/ canoeing/ kayaking	17.6%	7.8
Sailing	3.1%	9.3
Salt water fishing	7.8%	13.5
Fresh water fishing	17.4%	14.0
Surfing	2.1%	13.9
Trail Activities		
Bicycling (on-road)	28.5%	21.5
Bicycling (off-road/ mountain)	9.8%	17.3
Skateboarding/ rollerblading	8.0%	17.0
Walking for enjoyment or exercise	54.5%	55.5
Jogging/ running	17.5%	48.3
Hiking/ backpacking	19.5%	12.0
Horseback riding	5.4%	22.0
ATV/ Off road vehicle/ 4x4	8.2%	23.1
Camping		
Tent camping	20.1%	8.1
RV camping	6.9%	9.3
Primitive camping/ backpacking	3.9%	7.1
Cabin/ cottage camping	10.6%	8.8

Other Outdoor Recreation		
Golfing	14.3%	20.8
Gardening	33.6%	35.8
Geocaching	0.9%	15.0
Hunting	7.3%	20.4
Rock climbing	5.4%	5.9
Cultural Activities		
Visiting formal gardens	29.7%	5.1
Outdoor theatre/ concerts	37.4%	5.8
Visiting zoos	40.3%	4.6
Visiting historic sites	42.5%	4.9
Visiting museums	50.8%	6.1
Winter Activities		
Ice skating	16.3%	5.5
Cross country skiing	5.5%	7.0
Downhill skiing	8.8%	10.0
Sledding	19.0%	6.6
Snow boarding	4.5%	9.6
Snow shoeing	3.7%	8.3
Snowmobiling	5.5%	9.8

TABLE 8 U.S. Participation in Recreation Activities (2005 - 2008 NSRE)

Activity	Percent Participating	Number of Participants (in millions)
Walk for pleasure	83.9%	191.2
Family gathering	71.2%	162.3
Gardening or landscaping for pleasure	66.8%	152.3
View/ photograph natural scenery	64.1%	146.1
Visit nature centers, etc.	57.1%	130.1
View/ photograph wildflowers, trees, etc.	52.0%	118.5
Attend outdoor sports events	51.0%	116.2
View/ photograph other wildlife	50.6%	115.3
Picnicking	50.2%	114.5
Visit a beach	42.8%	97.7
Swimming in an outdoor pool	41.6%	94.8
Swimming in lakes, streams, etc.	41.0%	93.5
Yard games (e.g., horseshoes)	41.0%	93.5
Bicycling	39.4%	89.9
Boating (any type)	36.7%	83.6
View/ photograph birds	35.4%	80.8
Fishing (any type)	34.1%	77.7
Day Hiking	32.3%	73.7
Gather mushrooms, berries, etc.	31.0%	70.6
Visit a wilderness of primitive area	30.6%	69.9
Running or jogging	29.2%	66.5
Developed camping	26.6%	59.9
Motorboating	24.4%	55.7
Snow/ ice activities (any type)	24.0%	54.8
Driving (off-road)	20.0%	45.7
Moutain biking	18.8%	42.9
Basketball outdoors	17.4%	39.6
Primitive camping	14.6%	33.2
Volleyball outdoors	14.6%	33.4
Sledding	13.2%	30.0
Golf	12.6%	28.8
Hunting	11.8%	26.8
Handball or racquetball outdoors	11.3%	25.9
Football	11.1%	25.4
Baseball	10.3%	23.5
Soccer outdoors	10.3%	23.4
Tennis outdoors	10.1%	23.0
Softball	8.5%	19.4
Ice skating outdoors	4.7%	10.7
Snowmobiling	4.2%	9.5

TABLE 11	Percentage of Americans who Participate in Outdoor Activities, Ages 6 and Older (OFS)				
	2006 % of Pop.	**2007 % of Pop.**	**2008 % of Pop.**	**2009 % of Pop.**	**2010 % of Pop.**
Bicycling (BMX)	0.6%	0.7%	0.7%	0.6%	0.8%
Bicycling (Road/ Paved Surface, Mountain/ Non-Paved Surface, BMX)	14.5%	15.2%	14.9%	15.4%	14.9%
Birdwatching (More Than 1/4 Mile of Home/ Vehicle)	4.0%	4.9%	5.2%	4.7%	4.7%
Camping (Withing 1/4 Mile of Vehicle/ Home)	13.0%	11.3%	12.0%	12.2%	10.9%
Canoeing	3.3%	3.5%	3.6%	3.6%	3.7%
Climbing (Sport/ Indoor/ Boulder)	1.7%	1.6%	1.7%	1.5%	1.7%
Fishing (Freshwater/ Other)	15.7%	15.8%	14.4%	14.5%	13.7%
Fishing (Saltwater)	4.5%	5.2%	4.9%	4.4%	4.2%
Hiking	10.9%	10.8%	11.6%	11.6%	11.5%
Hunting (All)	5.5%	5.1%	5.0%	5.4%	4.9%
Kayaking (Recreational)	1.5%	1.8%	2.2%	2.2%	2.3%
Running (Running/ Jogging or Trail Running)	14.1%	15.2%	15.1%	15.9%	17.7%
Running/ Jogging	14.1%	14.8%	14.7%	15.6%	17.4%
Sailing	1.2%	1.5%	1.5%	1.5%	1.4%
Scuba Diving	1.1%	1.1%	1.2%	1.0%	1.1%
Skateboarding	3.7%	3.0%	2.8%	2.6%	2.4%
Skiing (Alpine/ Downhill)	n/a	3.7%	3.7%	3.9%	4.1%
Skiing (Cross-Country)	n/a	1.3%	1.4%	1.5%	1.6%
Snorkeling	3.1%	3.7%	3.7%	3.3%	3.3%
Snowboarding	n/a	2.5%	2.6%	2.6%	2.9%
Snowshoeing	n/a	0.9%	1.0%	1.2%	1.3%
Telemarking (Downhill)	n/a	0.4%	0.5%	0.5%	0.6%
Trail Running	1.7%	1.5%	1.7%	1.7%	1.8%
Wildlife Viewing (More Than 1/4 Mile of Home/ Vehicle)	7.4%	8.3%	8.6%	7.6%	7.4%
Team Sports					
Baseball	5.3%	5.8%	5.4%	4.9%	5.1%
Basketball	8.6%	9.4%	9.4%	8.5%	9.3%
Cheerleading	1.1%	1.2%	1.1%	1.1%	1.1%
Field Hockey	0.3%	0.4%	0.4%	0.4%	0.5%
Football (Touch)	4.5%	4.7%	3.8%	3.2%	2.9%
Ice Hockey	0.6%	0.7%	0.7%	0.8%	0.8%
Lacrosse	0.3%	0.4%	0.4%	0.4%	0.6%
Rugby	0.2%	0.2%	0.2%	0.3%	0.4%

Soccer (Outdoor)	5.0%	5.0%	5.1%	4.9%	5.0%
Softball (Fast Pitch)	0.6%	0.8%	0.8%	0.9%	0.8%
Softball (Slow Pitch)	3.5%	3.4%	3.5%	3.0%	3.0%
Track and Field	1.5%	1.7%	1.6%	1.6%	1.5%
Volleyball (Beach)	1.2%	1.4%	1.5%	1.6%	1.8%
Volleyball (Court)	2.2%	2.5%	2.9%	2.6%	2.6%
Volleyball (Grass)	1.6%	1.8%	1.8%	1.7%	1.6%

Other Activities					
Badminton	2.2%	2.5%	2.6%	2.7%	2.7%
Golf (9/ 18-Hole Course)	10.9%	10.7%	9.9%	9.6%	9.2%
Horseback Riding	4.2%	4.4%	3.9%	3.5%	3.5%
Ice Skating	3.5%	4.1%	3.9%	3.9%	4.2%
Racquetball	1.3%	1.5%	1.8%	1.6%	1.6%
Roller Skating (2x2 Wheels)	2.8%	3.2%	2.8%	2.9%	2.9%
Roller Skating (Inline Wheels)	4.5%	3.9%	3.4%	2.9%	2.8%
Snowmobiling	n/a	1.7%	1.7%	1.7%	1.8%
Squash	0.2%	0.2%	0.3%	0.3%	0.4%
Tennis	5.3%	6.1%	6.6%	6.6%	6.7%
Ultimate Frisbee	1.3%	1.5%	1.7%	1.6%	1.7%
Walking for Fitness	36.9%	39.3%	39.9%	39.1%	40.2%

APPENDIX II

SUNKEN MEADOW RECREATION FACILITIES PUBLIC COMMENTS SUMMARY

Overall Planning

- Plan should emphasize existing and core resources of park such as a large beach area, golf courses, cross-country running and walking trails, picnic areas, and the boardwalk
- Allow for flexibility when considering additional or expanding activities in the future but avoid adding new activities that conflict with existing
- Include the Dark Sky's Initiative in a lighting plan for the park
- Acquire adjacent lands when they become available such as the woodland property across from the St. Johnland Nursing Home
- Increase the usage of the area south of 25A to deter rampart motorized use, this section is like the wild, wild west
- Do not design/ plan facilities/parking for the maximum quantity of patrons
- Park should remain undeveloped: Do not construct an aquatic adventure land, concert arena, expanded boardwalk with concessions, etc.

Cultural Resources

- Explore for any historic events that have occurred in Sunken Meadow; Reconstruct the historic fire tower
- Create an informational marker or display that portrays Sunken Meadow's significance on Long Island and in New York State
- Preserve historic buildings, such as the Main Bathhouse, on the site

Recreational Resources

Model Airplanes

- Provide an area in the park for year-round usage meeting current standards set forth by the Academy of Model Aeronautics
- Allow any park patron that shows proof they can fly radio controlled airplanes to use their plane in a safe, designated area of the park, do not limit this activity to a single club
- Create a 20 to 30 year stewardship plan with a model airplane club or group of clubs to insure the available of the field during reasonable houses and insure the club maintains the area in accordance with OPRHP policies

Dog Accessible Areas

- Allow dogs in additional areas of the park
- Fees could be charged to dog owners to offset expenses
- Construct a fenced-in dog park with separate areas for small and large dogs; Provide a dog park in Field 5
- Identify access points and parking lots available for dog owners on the plan and OPRHP website

Astronomy

- eliminate lighting in the park for usage of telescopes
- construct a warming hut for astronomers; install a pier for telescopes; provide electricity near the beach

Miscellaneous

- Construct a **labyrinth** for meditation with gardens and well kept concrete paths
- Designate an area for **Kite Flying**
- Allow **SCUBA diving**
- Develop Field 2 with activities such as **mini-golf**, **tennis**, etc., similar to those found at Jones Beach
- Designate a **clothing-optional** beach area; Allow a skinny dipping night each week
- Create an 18 hole **Disc Golf** course as not one exists locally
- Construct a **landing strip** for amateur glider pilots and/or hot air balloons
- Add additional outdoor activities such as the following: **bocce ball**, **badminton**, **archery**, **volleyball**, **handball**, **croquet**, **hiking** and **biking trails**, and a **playground**
- Build a **¼ mile short track**, **go-kart**, or **motocross track** in Field 2
- Construct **amusement park rides**, **lazy river park**, an **aquatic park**, a **Ferris Wheel**, an **exotic animal zoo**, and an **arboretum**
- Construct a **water park** for children near the existing playground at Field 1; Construct an in-ground **swimming pool** in Field 1
- Enhance ability to view West End of park for **bird watchers**, as it is a good location to see waterfowl; Construct a **viewing deck** over the water with a **kiosk** identifying birds and other animals while describing their habitat
- Construct an **RV campground** and a **primitive camping area** for Boy Scouts; Develop Field 2 into a shady grass area for camping and **overflow parking** similar to Hecksher State Park
- Consider using an unused portion of the West end of the park for an **equestrian facility** including 2 to 4 fenced dirt show rings with ample parking and trail access; no barns are necessary
- Develop an activity that is multi-cultural, educational, and physical fitness based
- Construct a **scenic overlook** on top of Sunken Meadow Hill on Rte 25A

- Provide **treasure hunts** in the beach hiding NY State Park memorabilia, T-shirts, Frisbees, hats, weekend passes, etc, to promote NY State Parks
- Designate an area for **Cross-country skiing**

Sports

- **Tennis** – Construct hard surface courts with lighting, construct indoor courts for year round use; Develop Tennis courts on Field 5
- Construct a **handball** court
- Provide **beach volleyball** nets
- **C**reate additional **softball fields**
- Set aside areas for **soccer fields** before adding more softball fields to provide for the ethnic diversity of users

Buildings

- Develop a minor league sports complex; Construct a YMCA as a recreation center and indoor pool
- Provide indoor space for the following activities: **ping pong**, **play room** with **board games** and **café**, **music jamming room**, **darts**, **billiards**, and **cooking**, **art**, **health**, **dance** and **yoga** classes

Boats

- Provide **rowboat** and **kayak** renting
- Construct a **motor boat** launch basin in Field 2 with a canal built for access to the LI Sound
- Construct a small **Marina** for people to dock and access the park
- Provide direct water access to the LI Sound for motor boats

Fishing

- Modify the jetty to use it as a **fishing pier**
- Construct a 600' fishing pier in the western portion of the park (perhaps by extending boardwalk)
- Create a **concessions building** built for pole rental, bait , tackle, food and drink sales

Golf Course

- Construct an additional **9 hole** golf course
- Construct a paved golf course pathway to be using during wet conditions
- Consider providing a **separate entrance** to the golf course, off of Route 25A, west of Sunken Meadow Road
- Provide new and improved tee boxes at all 27 holes

Trails

- **Mountain Biking –** Construct trails away from high-use existing trails; Consider areas near parkway; Use sustainable standards from the International Mountain Bike Association; Continue to allow biking and bicycling in park; Create **BMX** skill development areas; Consider trail systems of 7+ miles; Refer to the following study on "perceived" trail conflicts are not based on reality: *Perception and Reality of Conflict: Walkers and Mountain Bikes on the Queen Charlotte Track in New Zealand*—2002. Gordon Cessford, Science and Research Unit, Department of Conservation, Wellington, New Zealand; Designate Field 5 as a trailhead; Create a safe crossing access to the area south of 25A (along Sunken Meadow Parkway)
- **Trail signage –** Improve all trail signage; Include signage for skiing and dog areas within park; Provide educational signage to encourage appropriate behavior
- **Bicycling –** Construct bike paths/lanes within park; Develop a two-way bicycle pathway from the L.I.E. to the park along the Sunken Meadow Parkway similar to the path on Wantagh Parkway to Jones Beach; Use the area west of Sunken Meadow for additional trail loop with a safe crossing created on the south side of the bridge that crosses the wetlands/marsh area; Improve trail signage to follow IMBA guidelines so users can choose trails that matches their ability
- Construct a **multi-use trail** to the golf course
- Improve trail connections to Greenbelt trail, Kings Park Bluff, and toll booths
- Create a **universally accessible dog walking area** and adjacent trails; Remove poison ivy from alongside trails
- Include the Long Island Greenbelt Trail in park plans; Enhance signage and blazing
- **Cross country running** - Do not pave course and preserve its natural look; Replace crushed rock surfacing with wood chips; Continue to allow XI NYS Public High School Athletic Association sanctioned cross country running meets and championships at the park; Maintain the trails year round
- Construct a barrier to discourage people from climbing on the bluff on the trail closer to Old Dock Road, as this increases erosion
- Develop a **single-track** trail network to promote outdoor activity, reduce obesity crisis, and engage kids in nature; create a well marked family trail

Educational Opportunities

- Provide **environmental educational activities**, programs and interpretation throughout the park and in particular along Sunken Meadow Creek; Hold weekly guest speaker sessions for adults and kids activities
- Construct a nature center and encourage use of preserved areas to increase public's awareness of importance of conservation

Park Facilities

- Improve shower facilities and restroom quality; Restore the Main Bathhouse; Keep the East Pavilion open year round; Construct a new bathhouse in Field 1

- Provide recycling receptacles
- Provide low level LED lighting in park for evening use including the boardwalk, play areas, and bathroom areas
- Construct a cell phone tower in a secluded area of park
- Open the Main Bathhouse sales area: Sell food, gifts, and rent items such as umbrellas, bicycles, and beach chairs
- Repair the walkway and guardrail from Route 25A into the park
- Repair the Sunken Meadow Creek spillway/dike
- Provide electric/additional electric in buildings for public use
- Extend the boardwalk further along beach; Construct a triangular extension to the north of the boardwalk near the bath house to further define its original design concept of a ship. Include a steering wheel and flag mast for photo opportunities and interpretive panels and brochures that discuss Robert Moses' design and intent
- Upgrade park infrastructure; Renovate existing athletic facilities; Update main life guard hut
- Add more benches with backrests on the boardwalk, the concrete benches are uncomfortable; Provide seating on brick sidewalk for people waiting to be picked up
- Consider building an environmental research and study park, garden center, aquatic adventure land, large auditorium or convention center, outdoor concert hall, museum, amphitheater
- Expand the Board of Cooperative Education Services (BOCES) program; Initiate the High School Environmental Center learning programs (US-EPA) for schools and residents
- Consider moving park office close to the entrance of the park to provide a convenient and welcoming location for patrons to learn about the park
- Re-pave Field 2 Parking lot
- Provide concessionaire run indoor/outdoor seasonal salsa shack
- Implement a "Zero plus Energy" structure

Park Operations

- Control speed of cars coming into park
- Allow evening access to the boardwalk which could be limited to certain days of the week if needed, or with special permit
- Employ golf course rangers on all three courses to facilitate the pace of play
- Consider allowing access to dogs on leashes after hours or in the off season; ORPHP should develop a policy placing all liability and responsibility on dog owners as a means to allow dog access in the park; charge a minimal fee to dog owners for admittance; open a portion of the beach in the off season to dogs
- Provide better access to firewood in the spring and winter

Partnerships

- SCUBA divers are willing to conduct underwater trash clean-up in park
- Develop private/ public partnerships including the Town of Smithtown
- Concerned Long Island Mountain Bicyclists (CLIMB) offer assistance for trail planning, construction, maintenance and trash clean-up along trails. CLIMB will also help develop a tiered bicycle riding system to target different levels of skill and fitness based on the different areas of the park and assist in the creation of a BMX skills development area for the local youth
- Offer to assist with the planning of dog related activities and facilities
- Formalize relationship with the Kings Park School District Heritage
- Develop a "sponsor a bench" program in the park as a means to provide additional benches without incurring costs; Allow patrons to invest in the park
- Greenbelt volunteers offer assistance to help with trail erosion on the Greenbelt Trail with the use of an OPRHP Gator type vehicle to haul material
- Coordinate with retired school teachers to volunteer and lecture on topics such as American/ World history or S.A.T. preparations

Access and Connectivity

- Avoid designing in isolation, consider the two adjacent parks, Caleb Smith Park and Nissequogue River State Park when planning Sunken Meadow; Construct a public access road between Nissequogue and Sunken Meadow; the Greenbelt trail connecting Nissequogue, Caleb, and Sunken Meadow should be completed
- Create a safe access into the park for the 1.5 mile bike path in Kings Park that ends just before Nissequogue State Park, by creating a cohesive connection between the park it enhances the opportunities for people who prefer to bicycle for recreation
- Address traffic issues during busy summer days, concerts, etc.
- Include bike lanes/ pedestrians walkways along east/west roadway
- Provide parking at the side entrances to the park as people currently park in front of residences; Do not provide parking at the side entrances to the park as they will interfered with the natural environment and disrupt the cross-country trail