

SECTION 5 SITE SCREENING/SELECTION PROCESS

5.1 PRELIMINARY SITE LIST DEVELOPMENT

5.1.1 NYSDEC Questionnaire

The New York State Department of Environmental Conservation (NYSDEC) distributed a questionnaire in the spring of 2000 to gauge the sentiment of the public toward swimming in the Hudson River. The survey sought information regarding general interest in swimming in the Hudson River, locations where people are swimming now, locations they would like to see developed into a formal swimming facility, and reasons for or against swimming in the river. Distributed to members of groups and representatives of agencies and municipalities already on NYSDEC and NYSOPRHP mailing lists, the survey was not intended to represent the overall population of the Hudson Valley.

The survey indicated significant numbers of people who were interested in and others who were opposed to swimming in the Hudson River. Viewpoints of the survey respondents included the following:

- 36% of survey respondents reported swimming in the river currently
- 52% of survey respondents reported swimming in the river in the past
- 52% of survey respondents said they would utilize a new swimming facility in the Hudson River
- 29% of respondents said they would not utilize a new swimming facility on the Hudson River
 - 41% of these people think the river is too polluted for swimming (12% of total respondents)
 - 23% of these people believe that swimming is prohibited in the Hudson River
 - 30% of these people cite age and abilities as reasons not to swim in the river

As part of the survey, respondents were asked to list specific swimming locations known to them. More than 100 locations were identified by the respondents, either as places they swim now, or places they would like to swim. The most popular swimming regions or areas suggested for the creation of a swimming site included Ulster, Dutchess, Rockland, and Westchester counties. Fewer sites were named in the Albany Capital District and New York City, where water quality has not improved as much and where navigation presents a greater hazard.

5.1.2 Public Information Sessions

Two public information meetings were held during the Step I phase of the feasibility study, on 20 and 25 July 2000, at Bear Mountain State Park and in Catskill. The objectives of these meetings were to inform the public that a study was being conducted, and to solicit feedback on the study approach and on sites to be evaluated under the feasibility study. The public was presented with a summary of the research conducted by the consultants as of that date, including a breakdown of the procedures that would be followed during the study. Handouts and maps depicting the potential sites were available to the public for review, and they were encouraged to make suggestions regarding sites that had been reviewed or to introduce new sites for review by the consultant team. A public comment period followed the meetings and comments were compiled and reviewed.

5.1.3 Consultation with Government Agencies, Public Action Groups and Interested Parties

There is a wealth of governmental, public and non-governmental organizations located in the Hudson River Valley. Many have jurisdiction over specific programs, geographic areas or properties that play a critical role in the study of existing and potential swimming facilities on the Hudson. Many meetings, telephone contacts, review of documents, and other forms of outreach provided basic information for the study, and an opportunity to interact with many of the key individuals who are knowledgeable about potential sites and the issues associated with them.

New York State and New York City organizations that administer, plan or review swimming programs in the Hudson Valley were consulted. Pertinent regulations, standards, and operating procedures were reviewed and incorporated into the Study. This often required contact with several units in each organization. Health and environmental agencies provided limited water quality data. Park and recreational entities provided data applicable for design and cost parameters. Resource agencies with coastal and other planning responsibilities provided relevant documents many of which focused on specific sites and communities. The initial Project Team providing advice to the Consultants included seventeen individuals with a great range of expertise and responsibilities. The information obtained and analyzed from these many sources is referenced in the report sections.

Many of the entities, public or private, that own or manage properties that were considered for swimming facility development were contacted for their input. Outreach through mailed surveys, public meetings, announcements, newsletters and notices, alerted other interested parties. Suggestions came from all parts of the State, with the greatest percentage from the counties in the Hudson Valley. A considerable effort was made to contact people and organizations in all areas of the estuary and to follow up all suggestions of sites and relevant issues. Those organizations with broader areas of jurisdiction, such as counties and River-wide organizations, were asked to broker information to and from smaller organizations in their areas of interest.

State agencies, many acting in an advisory capacity, provided data and constructive advice. NYSDEC provided information pertaining to specific properties and water quality, and

coordinated the input of a number of communities. NYSOPRHP provided data, forecasts, standards and operating procedures, contract management and continuing help. Regional State Parks Staff in the Taconic, New York City, Saratoga and Capital District regions, and the Palisades Interstate Park Commission provided information and help with field surveys. NYSDEC and NYSOPRHP shared the task of maintaining project oversight. NYS Department of Health provided data and standards, and reviewed project work elements during the study. The Department of State's Local Waterfront Revitalization Program provided plans and data, statewide standards and advice throughout the process.

Other State entities also provided important input including The Hudson River Valley Greenway Communities Council and Conservancy, and the Hudson River National Estuarine Research Reserve. The NYS Office of General Services provided information regarding State land in the Hudson River, NYS Department of Transportation provided cartographic and other information, and the New York City based Hudson River Park Trust provided plans and suggestions for the Study.

Meetings were held with county officials, usually involving staff from planning, parks, conservation, health, and/or public works agencies in Albany, Rensselaer, Greene, Columbia, Ulster, Dutchess, Orange and Westchester Counties. A number of municipal and New York City agencies and officials were contacted to review specific issues and sites including NYC Parks and Environmental Protection staffs, as well as the staff and officials from a number of smaller municipalities. These agencies provided reports, data, suggestions, operating manuals, and hosted an additional boating survey.

Several non-profit organizations provided pertinent reports, data, maps, and suggestions including Scenic Hudson, The Hudson River Water Trail Association, the Metropolitan Waterfront Alliance, the River Project, Floating the Apple, and the Parks Council (in NYC), and the NY Parks and Conservation Association. Staff from two utility companies, Consolidated Edison Company of New York, Inc. and Mirant New York, Inc. provided important input and St. Lawrence Cement Corp. staff reviewed properties that were considered.

Notwithstanding all of the outreach described, with more than sixty sites identified for the Step I evaluation, and nearly two-dozen sites undergoing additional Step II analysis, contact with all entities interested in each specific site was not possible. The extensive outreach provided a comprehensive inventory of sites to be reviewed, and standards to be considered, which served as the basis for the site evaluation.

The study to determine the feasibility of developing Hudson River public swimming facilities included the analysis of many primary data sources, collected specifically for the project, and the direct input of State and municipal government and not-for-profit agency staffs, as well as the contribution of many citizens. There were many secondary data sources and references that were important in helping to select sites that were evaluated, identify needs, plans and applicable standards. Relevant designs and costs were also collected from analogous swimming beach projects, and updated to represent the facilities that could be considered for selected sites.

5.1.4 Preliminary Site List

A preliminary site list for potential swimming facilities was developed as a result of swimming survey site suggestions, meetings with government officials, informal field surveys and suggestions made at the public meetings held in the summer of 2000 (Table 5-1, Figures 5-1a and 5-1b). At the conclusion of the site developmental phase, the potential swimming site list totaled 60 potential sites (including five existing sites). This list in its entirety was analyzed during the Step I screening process to determine the most feasible sites for development.

5.2 STEP I OF THE SCREENING PROCESS

5.2.1 Step I Screening Objectives

The basic objective of the Hudson River Public Swimming Facilities Feasibility Study is to find sites that can accommodate safe and attractive swimming programs on the River at this time, or in the near future. A two step process was used to select the most appropriate sites. The Step I review process considered many sites that were well known or suggested for review. Initial analysis, primarily based on an on-shore inspection and review of Hudson River and site specific information, indicated limitations and problems with many locations identified by the public and other sources. Only sites that appeared to be safe and adequate for a public swimming program were selected for a more comprehensive, Step II review.

5.2.2 Step I Screening Criteria

Field surveys of each site and a literature search enabled the categorical numerical scoring of each site based on selected criteria. Scoring differed for each criteria category, but for each category the higher the score, the more suited the site was for creation of a swimming beach. When scoring for each category was complete, the scores for each site were totaled to obtain an overall score. Sites determined to continue on to Step II review were selected based on this scoring analysis as well as the local knowledge provided by the project team.

The criteria used during the Step I phase of site analysis (detailed in the following sections) included beachfront conditions, accessibility, general Hudson River hydraulic conditions, water quality, and construction and operational feasibility. These criteria were selected because of their usefulness in identifying sites with characteristics that would eliminate them from future consideration. This Step I analysis took a broad view of all the potential sites with a goal of eliminating only those sites with insurmountable obstacles to facility creation.

5.2.2.1 Beachfront Conditions. Four factors required for a good swimming beach were used in the initial screening: 1) the quality of sand or beach materials, 2) the slope at the waterfront, 3) the length of beach available, and 4) the availability of an area backing the beach. Locations where more than two of these factors were rated as marginal will have little chance to establish a beach-based swimming program. Each site was rated independently and beaches were then ranked accordingly.

Table 5-1 (Page a of 2)

Initial List of Potential Swimming Facility Sites * (Step I)

Proposed Site Name	County	Municipality	Step II Category	Notes From Site Inspections
Watervliet Park	Albany	Watervliet City		5,7,8
Corning Preserve/Hudson Linear Park	Albany	City of Albany		7,8,16
Rensselaer (North of High School)	Rensselaer	City of Rensselaer		7,8,3
City of Albany-South End	Albany	City of Albany		7,8,3
Henry Hudson Park-Town of Bethlehem	Albany	Town of Bethlehem	C	8
Papscanee/Campbell Islands (peninsula)	Rensselaer	Town of Schodack		8,6,10
Schodack Island State Park (peninsula)	Rensselaer	Town of Schodack	C	8,15
Bronck Island	Greene	Town of New Baltimore		4,11,17
Stuyvesant (Riverview Park)	Columbia	Town of Stuyvesant	B	11
Nutten Hook	Columbia	Town of New Baltimore		3,9,5
Coxsackie Riverfront Park	Greene	Village of Coxsackie		1,10
Gays Point/Stockport Middle Ground Island	Columbia	Town of Stockport		11,3,10
Four Mile Point Road	Greene	Town of Coxsackie	C	13
Middle Ground Flats	Columbia	Town of Greenport		11,13
St. Lawrence Cement Company	Columbia	Town of Greenport		3,16
Rogers Island	Columbia	Town of Greenport		1,11
Dutchman's Landing Park	Greene	Village of Catskill		4,10,17
Greene Point	Greene	Town of Catskill		2,12,17
Cheviot (Germantown)	Columbia	Germantown		3,6,16
Bristol Beach State Park	Ulster	Town of Saugerties	D	4,2,16
Saugerties Village Beach (Esopus Creek)	Ulster	Village of Saugerties	A	14
Cruger Island	Dutchess	Town of Red Hook		11,6,3
Barrytown	Dutchess	Town of Red Hook		3,5,16
Ulster Landing County Park	Ulster	Town of Ulster	A	15
Charles Rider Park	Ulster	Town of Ulster		3,16,10
Ulster Town Park	Ulster	Town of Ulster		10,16
Kingston Point Park	Ulster	City of Kingston	A	14
Port Ewen	Ulster	Town of Esopus	A	2,17
Mills - Norrie State Park	Dutchess	Town of Hyde Park	C	10
Black Creek Forest Preserve	Ulster	Town of Lloyd		11,15
Bard Rock	Dutchess	Town of Hyde Park		5,6,10,
Hudson Psychiatric Center (HPC)	Dutchess	Town of Poughkeepsie		3,10,16
Marist College	Dutchess	Town of Poughkeepsie		3,10,16
Poughkeepsie – Waryas Park	Dutchess	City of Poughkeepsie		10,6,16
Poughkeepsie - Kaal Rock	Dutchess	City of Poughkeepsie		5,6,16
Central Hudson/Traprock	Orange	Town of Newburgh		12,11,3
Dennings Point State Park	Dutchess	City of Beacon		3,1,2
Eastern Harbor Marine	Orange	Town of New Windsor		10,13,14
Kowawese Unique Area at Plum Point	Orange	Town of New Windsor	B	
Little Stony Point (Sandy Beach)	Putnam	Town of Philipstown	C	
Constitution Island	Putnam	Town of Philipstown		11,6,5
Iona Island	Rockland	Town of Stony Point		6,9,10
Verplanck – Consolidated Edison of NY, Inc.	Westchester	Town of Cortlandt	C	13
Stony Point State Historic Park	Rockland	Town of Stony Point		11,10,3
George's Island	Westchester	Town of Cortlandt		5,6
Oscawana	Westchester	Town of Cortlandt		11,5,6
Riverfront Park	Rockland	Town of Stony Point	B	10
Rockland County Park	Rockland	Town of Haverstraw	B	15
Bowline Point	Rockland	Town of Haverstraw	D	10
Croton on Hudson (Village Beach)	Westchester	Village of Croton-on-Hudson		1,16

Table 5-1 (Page b of 2)

Initial List of Potential Swimming Facility Sites * (Step I)

Proposed Site Name	County	Municipality	Step II Category	Notes From Site Inspections
Crawbuckie Park	Westchester	Village of Ossining		3,11
Croton Point /Westchester County Park	Westchester	Village of Croton on Hudson	A	14
Ossining, Louis H. Engel, Jr. Park	Westchester	Town of Ossining	D	3,7
Nyack Beach State Park	Rockland	Town of Clarkstown	C	15,3
Nyack Memorial Park	Rockland	Village of Nyack		16,10,3
Kingslands Point Westchester County Park	Westchester	Village of Sleepy Hollow	B	14,15
BA Beach Tarrytown	Westchester	Village of Tarrytown		3,11
Piermont Pier	Rockland	Village of Piermont		3,6,10
Dobbs Ferry	Westchester	Village of Dobbs Ferry	D	1,3
Hudson River Park (Gansevoort Peninsula)	Manhattan	City of New York	C	7,8,16

*Sites in bold are those that were determined to be most feasible for further study following the Step I analysis.

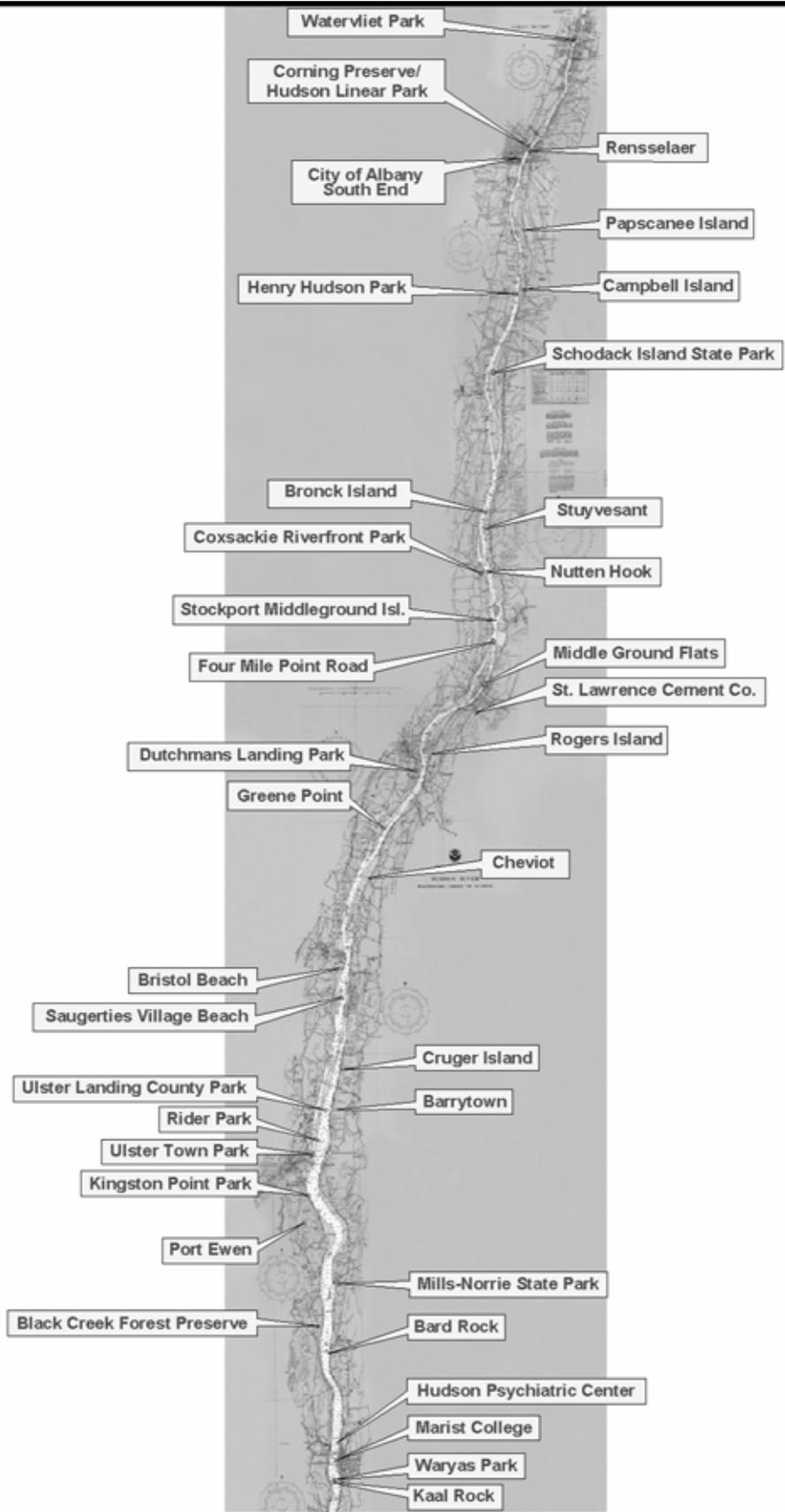
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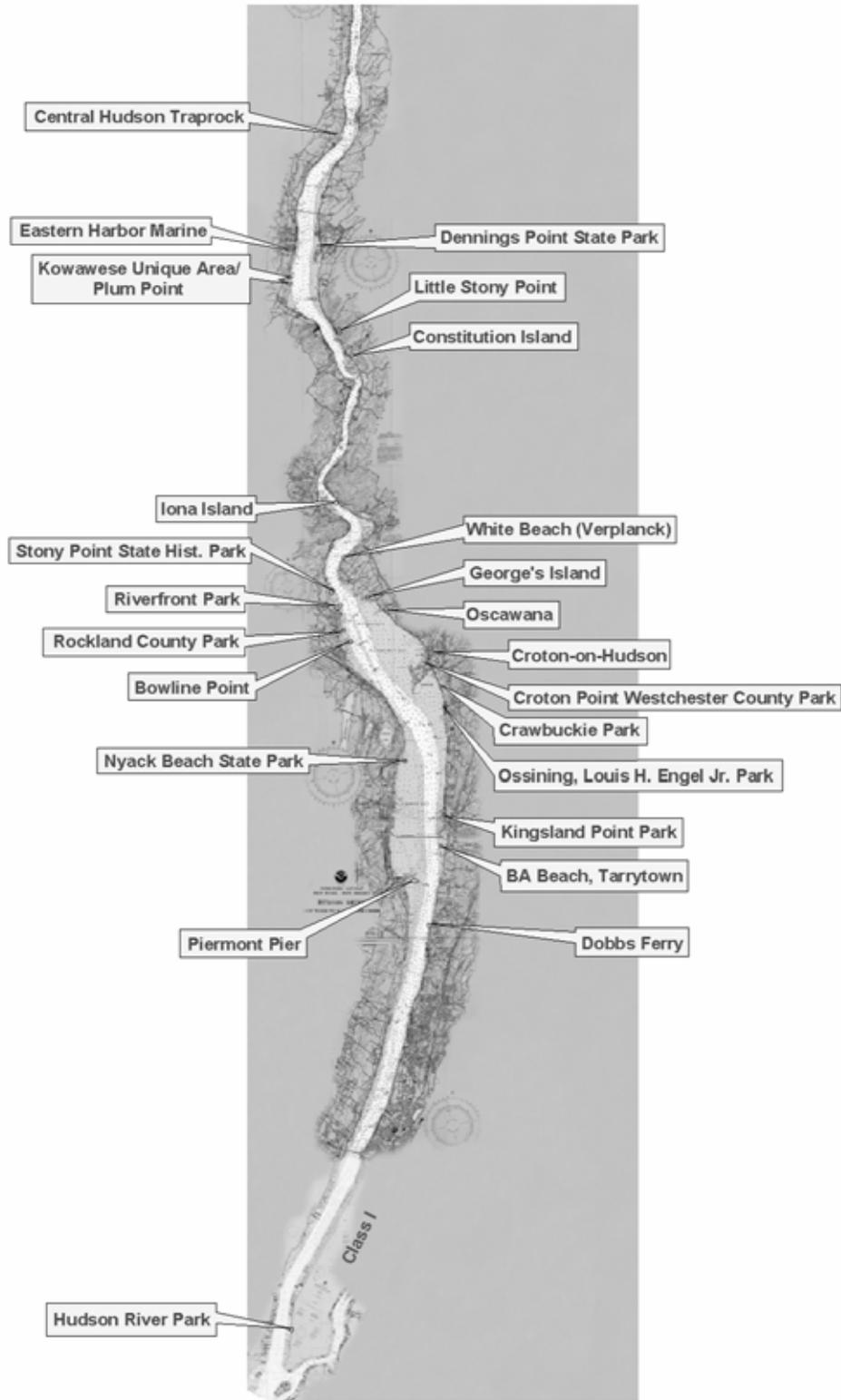
Step II Category

- A Potential improvements to existing swimming sites
- B Feasible new sites.
- C Potential new sites requiring additional action to become feasible
- D Potential new sites with substantial barriers to development

Notes From Site Inspections

- 1 Deep layer of silt and mud along shoreline
- 2 Considerable aquatic plants along shoreline
- 3 Insufficient upland space to accommodate public swimming
- 4 Upland beach is often underwater
- 5 Steep shoreline, cliffs upland
- 6 Drop-off under water, unsafe for guarded beach
- 7 Water quality problems, nearby discharge locations
- 8 Water quality classification – bathing not identified as best use
- 9 Dangerous water currents, wakes and other wave exposure
- 10 Conflicting uses, i.e. boat traffic, historic sites
- 11 Safe access is not possible, or very difficult to provide
- 12 Property is not available and cannot be acquired for public swimming
- 13 Property needs to be acquired if considered
- 14 Existing structure(s) need rehabilitation
- 15 Erosion control and /or limited beach restoration is needed
- 16 Complicated and extensive beach construction is required
- 17 Poor, flat slope





5.2.2.2 Accessibility. The swimming sites were inspected for good, safe accessibility now, or the potential for economical access development. Without safe access, or the potential for constructing or arranging for access, the best potential sites are not feasible. All modes of access were considered; however, the ability to drive to beaches or to use mass transit (New York City area) were the primary characteristics considered at this stage of study. Good pedestrian, bicycle and boat access as well as the potential for chartered bus accommodations were also noted where possible at this stage of study. Where no access currently exists but where access could reasonably be provided sites were considered feasible and the need to create access was noted.

5.2.2.3 Hydraulic Conditions. For Step I screening considerations, the channel current velocity range in feet per second and the channel tide height (spring tidal range in feet) were obtained and considered for each site. The results were then scored, the scores for each category were averaged and a final score was determined. Hydraulic conditions are important to consider in determining if a particular site will be safe to swim at with regard to tides and currents.

5.2.2.4 Water Quality. Potential Hudson River swimming sites were screened to determine their suitability for swimming in terms of water quality. Two screening criteria were used (distance from combined sewer overflows (CSO) and waste water treatment plant (WTP) outfalls and water classification) to determine a raw score.

A Geographic Information System (GIS) was used to determine the proximity of potential swimming sites to CSOs and WTP outfalls. NOAA charts of the Hudson River were used as a base map and the location of the potential swimming facilities were located and their coordinates were entered into the GIS database. Locations of CSO discharges and WTP outfalls were determined from two data sources - the USEPA's Permit Compliance System (PCS) database and State Pollutant Discharge Elimination System (SPDES) permits for WTP along the Hudson River.

Once all the potential facilities, CSO discharges and WTP outfalls were located and entered into the GIS database, each potential swimming site was given a score based on its' proximity to a CSO discharge or a WTP outfall. Water quality is discussed in further detail in Section 3.

5.2.2.5 Construction and Operational Feasibility. The feasibility of developing a public swimming facility is highly dependent upon how difficult it would be to construct the facility at a particular site. Construction concerns, such as soil type and cost of creating a suitable beach area are important factors. Wetlands and steep terrain would restrict the potential for site construction. Suitable parking or alternative methods of site access would increase the feasibility of developing a site.

The Step I screening takes a broad look at construction and operational constraints at the potential beach sites. Available parking and or transportation to the site, site soil type, as well as projected waterside construction costs were all considered. The screening criteria also included a category representing any special site features that would add to its appeal as a beach site. These categories were scored for each site, the total becoming the raw score. The raw score was then broken down to reflect the scoring range used for the other Step I parameters.

5.2.3 Step I Field Survey

The Step I field survey was ongoing throughout the Step I screening process. Sites were reviewed as they were suggested through returned surveys, interviews with local agencies, and suggestions received at the public meetings held in July 2000. As many sites as was possible were visited to obtain site information, with photo documentation and field notes of the sites used for the Step I analysis. The Step I field survey was done primarily from the shore, with observations made regarding upland conditions at each site, as well as some minimal waterside conditions including bottom type, estimated water velocity and estimations of high and low tide lines as determined by disturbance on the beaches. A few sites were also inspected underwater during Part I of the study, however these field inspections did not have the advantage of consistent survey locations and depth measurements, such as could be obtained from a boat survey.

5.2.4 Results of the Step I Screening

The Step I screening process resulted in narrowing the initial list of more than 60 potential sites to 22 sites that were most feasible for further analysis. Those sites are shown in bold type on Table 5-1.

5.3 THE STEP II SCREENING PROCESS

5.3.1 Step II Screening Objectives

The objective of the Step II analysis was to select sites that would be suitable for developing access and infrastructure required by a public swimming facility. While it is sometimes possible to construct facilities where natural and other conditions are substantially modified, an effort was made to identify projects where construction constitutes good public policy. Project costs and environmental constraints that may make selecting some of the Step II sites difficult, versus the ones that are less complicated for implementing a swimming program, were noted. Such site advantages and constraints were considered in light of the availability of nearby alternative sites, and the relative costs of developing similar upland facilities in that locality. Sketch plans and initial cost estimates were developed for the sites selected through this process, to help identify the scale of the project that may be considered for these locations. For a detailed discussion of plans and costs for individual sites, see Section 6.

5.3.2 The Step II Screening Process

The Step I process was designed to select sites with good upland characteristics that include adequate upland beach quality, area and slope, existing or potential access, and no apparent hazards posed by water currents, proximity to the ship channel or unacceptable underwater conditions, as shown on navigation charts. While constraints were noted at some locations, all of the sites advanced for Step II study showed promising conditions for swimming facilities.

The Step II screening focused on underwater conditions, local plans and other issues that relate to each site. After the twenty-two Step II locations were identified, a second inspection of these sites was undertaken from a research boat. Conditions that could only be determined from measurements of water clarity, water currents, underwater contours and a sample of sediments were observed for each Hudson River site. These findings and earlier observations were then reviewed for their impact on the feasibility of establishing swimming facilities. Five of the sites examined have existing swimming facilities, and were included in the Step II research. Four of those five sites, those located on the main stem of the Hudson River were subjected to site evaluation.

In addition to site-specific physical and technical review, the evaluation of recreational demand was part of the screening process. The purpose of the recreational assessment was to determine if these sites would fill a recreation gap or provide a worthy and perhaps unique recreational experience.

The recreational assessment methodology was consistently applied to all of the initial 60 sites and integrated three elements: (1) a county-level Index of Swimming Needs for the year 2010, developed for the State Comprehensive Outdoor Recreation Plan by State Parks staff; (2) determining the availability and capacity of public swimming facilities in the municipality where the site is located and in nearby localities; and (3) identifying if the sites would serve nearby populations with modest incomes, who generally have low mobility and higher need for public swimming facilities. A scoring system for each of the three recreational assessment elements was developed and a combined rating was completed that assigned each site into one of three categories of overall recreational need: high, moderate and low.

Of the 22 sites, 7 rated high, 10 rated moderate and 5 scored low in recreational need. Of the five low scoring sites, two were sites with current swimming facilities and two were locations with future potential, if constraints could be addressed.

As part of the Step II screening process, each site was reviewed to determine if it was located within, or near an area having a Local Waterfront Revitalization Program (LWRP). These LWRPs are funded and administered through the New York State Department of State's Coastal Management Program. The purpose of this review was to determine if swimming needs and projects were identified in approved, or well advanced plans, and to also determine if advancing these sites would be consistent with existing or proposed waterfront land and water uses and projects identified in the LWRP's.

Nine of the twenty-two Step II sites were within or near LWRPs. A review of these LWRP plans determined that development or improvement of Hudson River swimming beaches in these communities would be supportive of the recreational needs and opportunities identified in the LWRP, and also be consistent with other major dimensions of the plans. In no case was it evident that swimming at any of these nine sites would conflict with existing or proposed local waterfront programs.

Also conducted as part of the Step II screening process was an environmental assessment and review of the 22 sites which passed the Step I screening process. Individual site environmental issues are discussed with each site description in Section 6.2.

5.3.3 Environmental Review

A preliminary environmental review of potential new sites was conducted to determine potential impacts of developing swimming facilities at the sites. The following is a brief description of the environmental review conducted.

Requests for file searches to identify any endangered, threatened or special concern species were conducted for each of the sites. These requests were directed to the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the New York State Department of Environmental Conservation (NYSDEC). Responses to these requests have been received from the U.S. Fish and Wildlife Service, who also supplied information on NYSDEC listed species, and the NYSDEC Natural Heritage Program. For a listing of threatened and endangered species by site, as well as species and communities of special interest, see Table 5-2.

The New York State Department of State's (NYSDOS) Division of Coastal Resources and Waterfront Revitalization in conjunction with The Nature Conservancy (TNC) have identified 39 Hudson River areas located on the tidal section of the Hudson River between the Federal Dam at Troy, NY and New York City as having special environmental importance. Detailed information on the 39 areas is presented in the document *Hudson River Significant Tidal Habitats: A Guide to the Functions, Values and Protection of the River's Natural Resources* (NYSDOS and TNC 1990). Included in the 39 sites are 34 sites designated as Significant Coastal Fish and Wildlife Habitats under New York State's Coastal Management Program, and five sites recognized by the New York Natural Heritage Program as containing important plant and animal communities.

The potential public swimming facilities evaluated under the Step II screening were examined in relation to the designated Hudson River Significant Tidal Habitat areas. Of the 22 sites selected for evaluation under Step II, including the existing public swimming facilities, nine are located within designated significant habitat areas and nine are located on the boundary or within a mile of a designated area. The evaluated sites and their relationship to designated Hudson River Significant Tidal Habitat areas are presented in Table 5-3.

All sites that were found to be feasible as a result of the Step II screening analysis were also subjected to a review based on National Wetland Inventory (NWI) records. Wetlands mapped by NWI are Federally (USACE and USEPA) regulated and are identified by habitat type(s). Sites were reviewed first for wetlands occurring within a 1/4-mile radius, then for wetlands within a 1/8-mile radius of the site (Table 5-4). Federally regulated wetlands have no regulated adjacent buffer area. NYSDEC-regulated wetlands have a 100-foot buffer zone upland from the edge of a wetland. A review of the sites in areas that have been mapped by NWI, shows that no wetlands occur within 100 feet of a potential site. NYSDEC regulated wetlands were determined to be adjacent to two potential beach sites, Stuyvesant and Four Mile Point Road. State maps showed an area of submerged aquatic vegetation adjacent to the proposed Stuyvesant Beach site, and an area of shoals/mudflats along the beach of Four Mile Point Road. Before determining if a beach should be

Table 5-2 (Page 1 of 3).
Threatened, Endangered and Rare Species, Communities and Habitats As Reported by the NYS Natural Heritage Program. Reported by Site.

<p>Stuyvesant</p> <p>Endangered Species (Year Observed) American Waterwort (1933) Quillwort (1936) Blunt Spikerush (1936) Estuary Beggar-Ticks <i>Bidens hyperborea</i> (1937)</p> <p>Threatened Species (Year Observed) Upland Sandpiper (1983) Heartleaf Plantain (1996, 1993, 1988) Spongy Arrowhead (1992, 1985) Davis' Sedge (1978)</p>	<p>Rare Species (Year Observed) Tawny Emperor – unprotected (1994)</p> <p>Communities/Habitats (Year Observed) Freshwater Intertidal Mudflats (1988) Freshwater Tidal Marsh (1988)</p>
<p>Four Mile Point Road</p> <p>Endangered Species (Year Observed) American Waterwort (1965, 1935) Blunt Spikerush (no date) Muensher's Naid (1965)</p> <p>Threatened Species (Year Observed) Bald Eagle (1999) Least Bittern (1986, 1987) Golden Club (1933) Swamp Lousewort (1935) Smooth Bur Marigold (1993, 1994) Heartleaf Plantain (1988, 1993) Spongy Arrowhead (1993)</p>	<p>Rare Species (Year Observed) Estuary beggar-ticks <i>Bidens bidentoides</i> (1992, 1994) Taxiphyllum – unprotected (1989)</p> <p>Communities/Habitats (Year Observed) Freshwater Tidal Swamp (1994) Freshwater Intertidal Mudflats (1988, 1994) Freshwater Intertidal Shore (1988, 1991) Freshwater Tidal Marsh (1988, 1994) Anadromous Fish Concentration Area Waterfowl Wintering Area</p>
<p>Mills-Norrie State Park</p> <p>Endangered Species (Year Observed) Shortnose Sturgeon (1986)</p> <p>Threatened Species (Year Observed) Pied-billed Grebe (1980)</p>	<p>Communities/Habitats (Year Observed) Waterfowl Concentration Area – Esopus Meadows (1986) Anadromous Fish Concentration Area – Esopus Meadows (1986)</p>

Table 5-2. (Page 2 of 3)
Threatened, Endangered and Rare Species, Communities and Habitats As Reported by the NYS Natural Heritage Program. Reported by Site.

<p>Kowawese Unique Area at Plum Point</p> <p>Endangered Species (Year Observed) Estuary Beggar-Ticks <i>Bidens hyperborea</i> (1936) American Waterwort (1937)</p> <p>Threatened Species (Year Observed) Bald Eagle (1996, 2000) Least Bittern (1991) Spongy Arrowhead (1990)</p>	<p>Communities/Habitats (Year Observed) Brackish Intertidal Mudflats (1988) Brackish Tidal Marsh (1988) Waterfowl Concentration Area (1984) Raptor Concentration Area (1984) Anadromous Fish Concentration Area (1987)</p>
<p>Little Stony Point</p> <p>Endangered Species (Year Observed) Shortnose Sturgeon (1986) Peregrine Falcon (1999) Few-Flowered Panic Grass (1867)</p> <p>Threatened Species (Year Observed) Bald Eagle (1998) Fence Lizard (1997)</p>	<p>Communities/Habitats (Year Observed) Anadromous Fish Concentration Area (1986)</p>
<p>Verplanck</p> <p>Threatened Species (Year Observed) Bald Eagle (1988, 1998) Least Bittern (1980)</p>	
<p>Riverfront Park/Rockland County Park*</p> <p>Threatened Species (Year Observed) Bald Eagle (1992, 1996, 1998) Pied-Billed Grebe (1981) Least Bittern (1980) Troublesome Sedge (1957) Heartleaf Plantain (1936) Spongy Arrowhead (1936)</p>	<p>Communities/Habitats (Year Observed) Waterfowl Concentration Area (1986)</p>
<p>Kingslands Point Westchester County Park</p> <p>Endangered Species (Year Observed) Peregrine Falcon (1998) Rattlebox (1896) Virginia False Gromwell (1896)</p> <p>Threatened Species (Year Observed) Shrubby St. John's Wort (1898)</p>	<p>Protected Species (Year Observed) Kentucky Warbler (1980)</p>

*Due to the close proximity of these sites, they were evaluated together for species presence.

Table 5-2. (Page 3 of 3)

Threatened, Endangered and Rare Species, Communities and Habitats As Reported by the NYS Natural Heritage Program. Reported by Site.

<p>Saugerties Village Beach</p> <p>Endangered Species (Year Observed) Shortnose Sturgeon (1986) Muensher's Naid (1927) Estuary Beggar-ticks <i>Bidens hyperborea</i> (1937) Waterpigmy Weed (1936) Drummond's Rock Cress(1974)</p> <p>Threatened Species (Year Observed) King Rail (1987) Marsh Horsetail (1973) Heartleaf Plantain (1934, 1988) Woodland Agrimony (1916) Spongy Arrowhead (1988)</p>	<p>Communities/Habitats (Year Observed) Waterfowl Concentration Area (1993) Anadromous Fish Concentration Area (1986) Freshwater Tidal Swamp (1988) Freshwater Intertidal Mudflats (1988) Freshwater Tidal Marsh (1988)</p>
<p>Kingston Point</p> <p>Endangered Species (Year Observed) Shortnose Sturgeon (1986) American Waterwort (1936) Frank's Sedge (1993) Muensher's Naid (1936)</p> <p>Threatened Species (Year Observed) Pied-Billed Grebe (1980, 1984) Least Bittern (1984) Smooth-Bur Marigold (1985) Heartleaf Plantain (1985, 1988) Spongy Arrowhead (1993) Swamp Cottonwood (1993)</p>	<p>Rare Species (Year Observed) Estuary Beggar-Ticks (1993)</p> <p>Communities/Habitats (Year Observed) Rondout Creek Mouth Freshwater Tidal Community (1988) Freshwater Intertidal Shore (1988) Waterfowl Concentration Area (1987) Anadromous Fish Concentration Area (1987) Anadromous Fish Concentration Area at the Flats (1986) Freshwater Tidal Marsh (1988)</p>
<p>Ulster Landing County Park</p> <p>Threatened Species (Year Observed) King Rail (1987) Heartleaf Plantain (1936, 1992)</p>	<p>Communities/Habitats (Year Observed) Waterfowl Concentration Area (1986) Anadromous Fish Concentration Area (1986)</p>
<p>Croton Point Park</p> <p>Threatened Species (Year Observed) Bald Eagle (1998) Least Bittern (1981)</p>	<p>Communities/Habitats (Year Observed) Anadromous Fish Concentration Area (no date) Warm Water Fish Concentration Area (no date)</p>

TABLE 5-3

EVALUATION OF HUDSON RIVER PUBLIC SWIMMING FACILITIES RELATED TO SIGNIFICANT TIDAL HABITAT AREAS
(NYSDOS 1990)

SITE DESIGNATION	LOCATION RELATIVE TO SIGNIFICANT HABITAT AREA		NYSDOS DESIGNATED SIGNIFICANT TIDAL HABITAT AREA	POTENTIAL FOR IMPACT
	NEAR	WITHIN		
Henry Hudson Town Park	X		Shad and Schermerhorn Islands	2
Schodack Island State Park		X	Schodack and Houghtaling Islands and Schodack Creek	1
Stuyvesant		X	Stuyvesant Marshes	3
Four Mile Point		X	Vosburgh Swamp and Middle Ground Flats	3
Bristol Beach State Park	X		Germantown-Clermont Flats	2
Saugerties Village Beach	X		Esopus Estuary	2
Ulster Landing County Park	X		The Flats	2
Kingston Point Park	X		Rondout Creek	2
Port Ewen	X		Rondout Creek / Kingston Deepwater	2/4
Mills-Norrie State Park		X	Vanderburg Cove and Shallows / Kingston Deepwater	3/4
Kowawese Unique Area at Plum Point	X		Moodna Creek	2
Little Stony Point		X	River Miles 44-56	3
Verplanck-Consolidated Edison Co. of NY	X		Haverstraw Bay	2
Riverfront Park		X	Haverstraw Bay	3
Rockland County Park		X	Haverstraw Bay	3
Bowline Point		X	Haverstraw Bay	3
Croton Point/Westchester County Park		X	Haverstraw Bay	3
Ossining-Louis H. Engel, Jr. Park	X		Croton River and Bay	4
Nyack Beach State Park	X		Piermont Marsh	2
Kingsland Point Westchester County Park	X		Piermont Marsh	2
Dobbs Ferry	X		Piermont Marsh	2
Hudson River Park			No significant habitat area within the vicinity of this site	4

1 Complies with intended use – significant area is located within site designation – no projected environmental impact

2 Although swimming does not comply with intended use, significant area is not located within site designation, and is not subject to direct impacts.

3 Significant area is located within site designation, there is potential for impact, further study is needed.

4 No identified intended use – significant area is not located within site designation – no project environmental impact

Table 5-4
National Wetlands Inventory Review for Step II Sites

Site	Mapped Wetlands	Map Cited
Stuyvesant	SV located adjacent to proposed beach site	NYSDEC
Four Mile Point Road	SM located along the shoreline of the site	NYSDEC
Mills-Norrie State Park	(1) PFOIE located within ¼ mile radius, falling on the border of the 1/8 mile radius (1) PUBH _x within ¼ mile radius, but outside the 1/8 mile radius	NWI Map: Hyde Park, NY
Riverfront Park	(1) PEMIE – mapped within ¼ mile radius, but outside the 1/8 mile radius (2) PFOIE – mapped within ¼ mile radius, but outside the 1/8 mile radius	NWI Map: Haverstraw, NY
Little Stony Point	(1) PUBH _x within 1/8 mile radius of the site	NWI Map: West Point, NY
Kingsland Point Park	(1) RIUBV within ¼ mile radius of the site, none within 1/8 mile of the site	NWI Map: White Plains, NY
Rockland County Park	(2) EZEMIN6 within ¼ mile radius of site, but outside the 1/8 mile radius (1) PSSIR within ¼ mile radius of site, but outside the 1/8 mile radius	NWI Map: Haverstraw, NY
Verplanck	(1) LIUBH _x within ¼ mile radius, but outside the 1/8 mile radius	NWI Map: Peekskill, NY
Kowawese	(1) PEMIE, located on the ¼ mile radius (1) PFOIE located on the ¼ mile radius	NWI Map: Cornwall, NY

SM: Shoals/vegetated mud flats

SV: Submerged attached vegetation

PFOIE: Palustrine, forested, broad-leaved deciduous, seasonally flooded/saturated

PUBH_x: Paulstrine, unconsolidated bottom, permanently flooded, excavated

PEMIE: Palustrine, emergent, broad-leaved deciduous, seasonally flooded/saturated

RIUBV: Riverine, tidal, unconsolidated bottom, permanent tidal

EZIMIN6: estuarine intertidal, emergent, persistent, regularly flooded, oligohaline

PSSIR: Palustrine, scrub shrub, broad-leaved deciduous, seasonal tidal

LIUBH_x: Lacustrine, limnetic, unconsolidated bottom, permanently flooded, excavated

built at these sites, further investigation and determination of potential impacts to these significant habitat areas would be necessary. There were also locations where wetlands are indicated within close proximity of a Step II site (Table 5-4).

Although the NWI maps serve as a useful resource for beginning a wetlands survey, due to the age of the maps and lack of complete coverage of all sites, an on-site wetland survey is suggested for any site that is considered for development. In addition, many of the wetlands on NWI are "mapped" from aerial surveys and are not field-confirmed.