
SECTION 1 – SITE DESCRIPTIONS

1.0 Introduction

A resolution of the U.S. House of Representatives Committee on Transportation and Infrastructure, dated April 15, 1999, identified environmental restoration within the Hudson-Raritan Estuary (HRE), including the creation and enhancement of aquatic, wetland, and adjacent upland habitats as specific areas of interest. In response, the U.S. Army Corps of Engineers – New York District (USACE-NYD) initiated a reconnaissance study to identify and inventory water resources and sediment-related problems and needs in the HRE. The study was performed under the U.S. Army Corps of Engineers (USACE) Civil Works Program. Problems were evaluated to identify potential environmental restoration projects in the HRE that met the criteria for federal involvement and that had strong sponsor/local support.

On April 23, 2003, the District Engineer from the USACE-NYD and the Executive Director for the New Jersey Meadowlands Commission (NJMC) (the non-federal sponsor), endorsed the Project Management Plan (PMP) for the Ecosystem Restoration Study (ERS) for the Hudson-Raritan Estuary – Hackensack Meadowlands, New Jersey (Meadowlands). The purpose of the PMP was to describe the process that will be undertaken during the Meadowlands Feasibility Study (Meadowlands FS). The Meadowlands FS will determine the feasibility of environmental restoration and protection projects relating to water resources, wildlife habitat, and sediment quality within the Meadowlands, and culminate in recommendations for USACE-NYD project implementation, while also providing recommendations for programs or projects to be implemented by other agencies or local stakeholders. This watershed approach will also result in a working tool for the Meadowlands that will be incorporated into ongoing efforts, including the larger Hudson-Raritan Estuary Feasibility Study, with a view towards a comprehensive ecosystem restoration approach.

The USACE-NYD and NJMC, in coordination with the U.S. Fish and Wildlife Service (USFWS), identified two primary issues to be addressed in the Meadowlands FS:

1. A single comprehensive Meadowlands-wide analysis of ecosystem restoration opportunities to be used as an implementation plan for future restoration within the Meadowlands, including but not limited to analysis and recommended solutions to salt marsh restoration, infrastructure encroachments on tidal flow, water management control structures, contaminated sediment impacts on biota, impact of brownfield sites on coastal habitat, benthic habitat restoration, and refuse landfill impacts on coastal habitat; and
2. Initial ecosystem restoration efforts at specific sites identified as Tier-1 (i.e. priority) restoration sites.

Concentrating on these needs, the PMP identified numerous potential restoration actions and sites based on a literature review, agency coordination, and field investigations.

To facilitate and focus the scope of work development associated with the Meadowlands FS, this Meadowlands Environmental Site Information Compilation (MESIC) was conducted to identify and catalog available, relevant data. The existing data is organized in this report to facilitate a determination of data gaps and needs, so that a strategy can be created for the substantial data collection effort required for the Meadowlands FS. It is anticipated that the MESIC will serve to advance the Meadowlands FS and eliminate duplication of data previously collected and recorded.

1.1 Purpose

The two primary purposes for the MESIC are: 1) to form a baseline of available, relevant information on the various technical areas for each of the MESIC sites, and 2) to facilitate the coordination of potential restoration-related actions within the Meadowlands with the involved regional stakeholders and public.

1.2 Description

The MESIC was conducted in full coordination with the USACE-NYD, the NJMC, and the USFWS. The data investigation centered on 50 sites within the Meadowlands, but also included data relevant to the Meadowlands as a wetland complex, so a “Meadowlands-wide” category was included. The 50 sites were selected based upon four site categories.

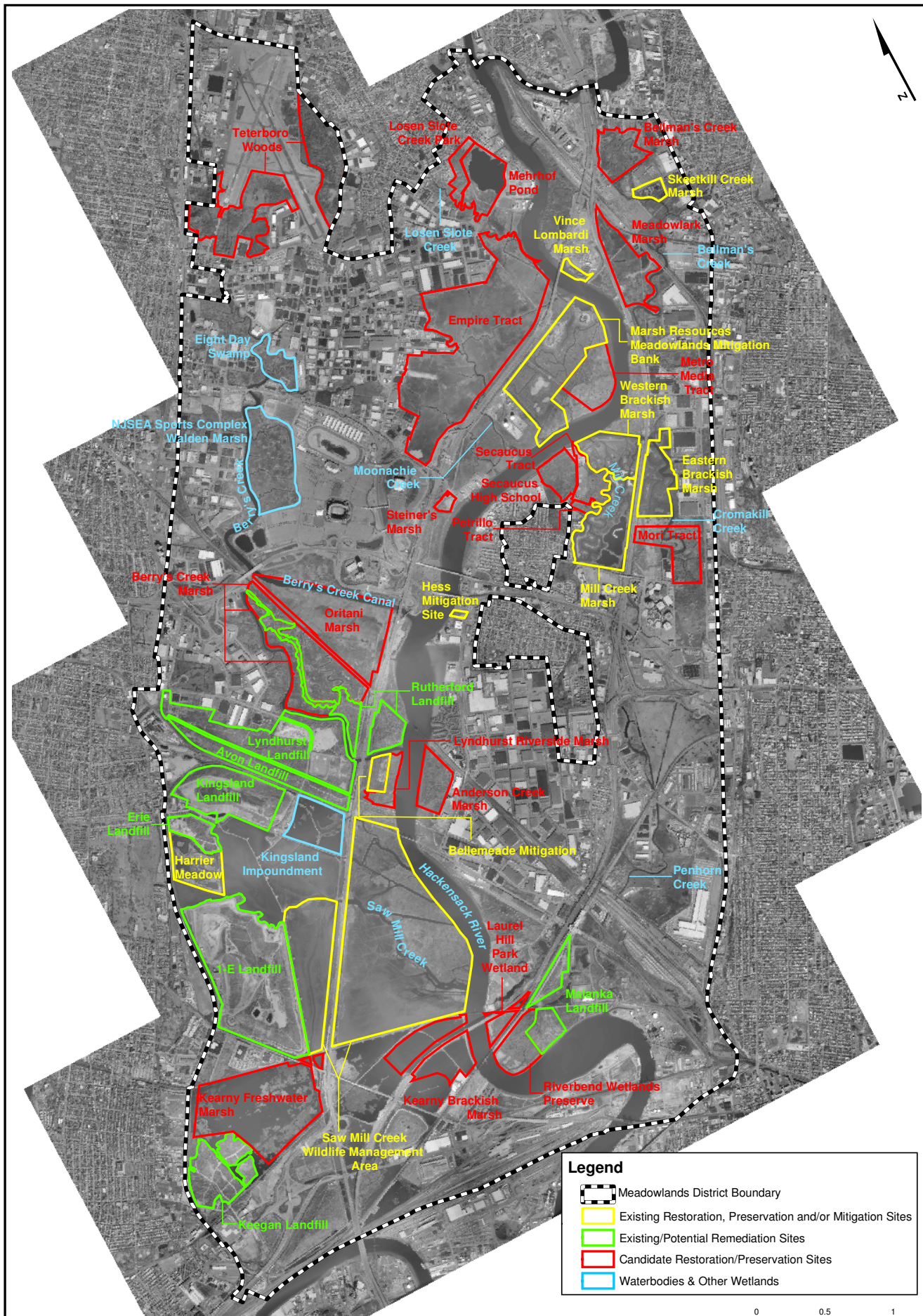
- **Existing Restoration, Preservation, and/or Mitigation Sites**
Existing Restoration/Preservation Sites are wetlands sites within the HMD that have either been restored or preserved to enhance water resources, wildlife habitat, and sediment quality. They are being included for use as bio-benchmark and reference sites for the Candidate Restoration/Preservation Sites.
- **Candidate Restoration/Preservation Sites**
Candidate Restoration/Preservation Sites are sites within the HMD that have the potential to be restored or preserved as wetlands to enhance water resources, wildlife habitat, and sediment quality. These sites would require further investigation under the Meadowlands FS before USACE-NYD project implementation.
- **Waterbodies and Other Wetlands**
Waterbodies are waterways within the HMD whose water and/or sediment quality have the potential to be enhanced, and are also pertinent reference sites for the Candidate Restoration/Preservation Sites. Other Wetlands are wetlands sites within the HMD that could possibly have applicable reference data for the Candidate Restoration/Preservation Sites.
- **Existing/Potential Remediation Sites**
Existing/Potential Remediation Sites are upland landfill sites within the HMD that either have been remediated or have the potential to be remediated to enhance water resources, wildlife habitat, and sediment quality. These sites would require further investigation under the Meadowlands FS before USACE-NYD project implementation.

Data collection for the Meadowlands and specific sites will remain an on-going process that will be important to continue as the Meadowlands FS progresses. This report represents the initial, baseline data collection effort for 50 selected sites of interest, as well as the Meadowlands, current as of May 2004. Similarly, the 50 sites represent the majority of sites within the Meadowlands that were relevant to the comprehensive ecosystem restoration approach as of May 2004, as well as those sites for which relevant data was available as of May 2004. The data collected is not all-inclusive, nor is the list of 50 sites the final list of candidate sites anticipated to result from the Meadowlands FS.

Table 1-1 lists the fifty MESIC sites, grouped by site category. Figure 1-1 presents the boundary of the Meadowlands, along with the boundaries of the fifty MESIC sites, which are grouped by site category.

Table 1-1: MESIC Sites

Existing Restoration, Preservation, and/or Mitigation Sites		Waterbodies and Other Wetlands	
#1	Bellemeade Mitigation	#31	Bellman's Creek
#2	Eastern Brackish Marsh	#32	Berry's Creek/Berry's Creek Canal
#3	Harrier Meadow	#33	Cromakill Creek
#4	Hess Mitigation Site	#34	Eight Day Swamp
#5	Marsh Resources Meadowlands Mitigation Bank	#35	Hackensack River
#6	Mill Creek Marsh	#36	Kingsland Impoundment
#7	Saw Mill Creek Wildlife Management Area	#37	Losen Slote Creek
#8	Skeetkill Creek Marsh	#38	Mill Creek
#9	Vince Lombardi Marsh	#39	Moonachie Creek
#10	Western Brackish Marsh	#40	NJSEA Sports Complex-Walden Marsh
		#41	Penhorn Creek
		#42	Saw Mill Creek
Candidate Restoration Sites		Existing/Potential Remediation Sites	
#11	Anderson Creek Marsh	#43	1-E Landfill
#12	Berry's Creek Marsh	#44	Avon Landfill
#13	Bellman's Creek Marsh	#45	Erie Landfill
#14	Empire Tract	#46	Keegan Landfill
#15	Kearny Brackish Marsh	#47	Kingsland Landfill
#16	Kearny Freshwater Marsh	#48	Lyndhurst Landfill
#17	Laurel Hill Park Wetland	#49	Malanka Landfill
#18	Losen Slote Creek Park	#50	Rutherford Landfill
#19	Lyndhurst Riverside Marsh		
#20	Meadowlark Marsh		
#21	Mehrhof Pond		
#22	Metro Media Tract		
#23	Mori Tract		
#24	Oritani Marsh		
#25	Petrillo Tract		
#26	Riverbend Wetlands Preserve		
#27	Secaucus High School		
#28	Secaucus Tract		
#29	Steiner's Marsh		
#30	Teterboro Woods		



Source: Digital Orthophoto, New Jersey Meadowlands Commission, 2002.

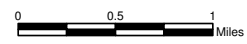


Table 1-2 lists the block and lot information for the 50 MESIC sites, grouped by site category.

Table 1-2: Block and Lot Information for the 50 MESIC Sites

Site Number	Site Name	Block	Lot	Town
Existing Restoration, Preservation, and/or Mitigation Sites				
1	Bellemeade Mitigation	232	1.02	Lyndhurst
		232	1.03	Lyndhurst
		232	1.01 [†]	Lyndhurst
		232	2.02	Lyndhurst
		232	3.02	Lyndhurst
		232	2.01 [†]	Lyndhurst
		232	3.01 [†]	Lyndhurst
		232	4.02	Lyndhurst
2	Eastern Brackish Marsh	453c	22b.1	North Bergen
3	Harrier Meadow	190	1.01	North Arlington
		191	1.01 [†]	North Arlington
4	Hess Mitigation Site	100	1 [†]	Secaucus
5	Marsh Resources Meadowlands Mitigation Bank	137	44 [†]	Carlstadt
		137	42 [†]	Carlstadt
		137	40 [†]	Carlstadt
		137	35	Carlstadt
		137	36	Carlstadt
		137	34	Carlstadt
		137	38 [†]	Carlstadt
		137	37	Carlstadt
		137	24 [†]	Carlstadt
		137	30	Carlstadt
		137	31	Carlstadt
		137	27	Carlstadt
		137	26	Carlstadt
		137	33	Carlstadt
		137	32	Carlstadt
		137	28	Carlstadt
		137	23 [†]	Carlstadt
		137	20 [†]	Carlstadt
		137	12 [†]	Carlstadt
		137	29	Carlstadt
137	22	Carlstadt		
137	21	Carlstadt		
137	19 [†]	Carlstadt		

[†] Site only partially within lot listed.

Site Number	Site Name	Block	Lot	Town
5	Marsh Resources Meadowlands Mitigation Bank (Continued)	137	14 [†]	Carlstadt
		137	18 [†]	Carlstadt
		137	17 [†]	Carlstadt
		138	9	Carlstadt
		138	7 [†]	Carlstadt
		138	4 [†]	Carlstadt
		138	3 [†]	Carlstadt
		138	2 [†]	Carlstadt
6	Mill Creek Marsh	185	2.03 [†]	Secaucus
7	Saw Mill Creek Wildlife Management Area	149	11c	Kearny
		149	North 11a	Kearny
		149	11a	Kearny
		149	11b [†]	Kearny
		149	11d	Kearny
		149	12	Kearny
		149	13	Kearny
		238	1	Lyndhurst
		238	2	Lyndhurst
		238	3	Lyndhurst
		238	4	Lyndhurst
		239	1 [†]	Lyndhurst
		232	11	Lyndhurst
		232	12	Lyndhurst
232	13	Lyndhurst		
8	Skeetkill Creek Marsh	4014	16	Ridgefield
		4014	17	Ridgefield
9	Vince Lombardi Marsh	4001	1 [†]	Ridgefield
		4001	2	Ridgefield
10	Western Brackish Marsh	185	2.03 [†]	Secaucus
Candidate Restoration/Preservation Sites				
11	Anderson Creek Marsh	18	2	Secaucus
		18	2.01	Secaucus
12	Berry's Creek Marsh	220	1 [†]	Rutherford
		220	2 [†]	Rutherford
		220	5 [†]	Rutherford
		220	3	Rutherford
		220	4	Rutherford
		220	6 [†]	Rutherford
		220	7 [†]	Rutherford

[†] Site only partially within lot listed.

Site Number	Site Name	Block	Lot	Town
12	Berry's Creek Marsh (Continued)	220	8 [†]	Rutherford
		220	9 [†]	Rutherford
		220	10 [†]	Rutherford
		220	11 [†]	Rutherford
		220	12 [†]	Rutherford
		220	16 [†]	Rutherford
13	Bellman's Creek Marsh	4014	4 [†]	Ridgefield
14	Empire Tract	106	3.01	South Hackensack
		106	3.02	South Hackensack
		106	4.01	South Hackensack
		131	10	Carlstadt
		131	11	Carlstadt
		131	7	Carlstadt
		131	8	Carlstadt
		128	28	Carlstadt
		128	21	Carlstadt
		128	20	Carlstadt
		128	15	Carlstadt
		128	12	Carlstadt
		128	19	Carlstadt
		128	16	Carlstadt
		128	18	Carlstadt
		128	17	Carlstadt
		128	11	Carlstadt
		128	14	Carlstadt
		128	13	Carlstadt
		128	9	Carlstadt
128	10	Carlstadt		
15	Kearny Brackish Marsh	287	12	Kearny
		287	18	Kearny
		287	19	Kearny
		287	20	Kearny
		287	30	Kearny
		287	31	Kearny
		287	32.03	Kearny
		287	33	Kearny
16	Kearny Freshwater Marsh	205	19.01	Kearny
		287	4a	Kearny

[†] Site only partially within lot listed.

Site Number	Site Name	Block	Lot	Town
16	Kearny Freshwater Marsh (Continued)	287	7b	Kearny
17	Laurel Hill Park Wetland	1	2	Secaucus
		1	3	Secaucus
		1	4	Secaucus
		1	5	Secaucus
		1	6	Secaucus
		1.01	1	Secaucus
		6	1	Secaucus
18	Losen Slote Creek Park	106.01	13.05	Little Ferry
		106.01	13.07	Little Ferry
19	Lyndhurst Riverside Marsh	232	1.01 [†]	Lyndhurst
		232	2.01 [†]	Lyndhurst
		232	3.01 [†]	Lyndhurst
		232	4	Lyndhurst
20	Meadowlark Marsh	4006	1	Ridgefield
21	Mehrhof Pond	106.01	13.01 [†]	Little Ferry
		106.01	13.02	Little Ferry
		106.01	13.04	Little Ferry
22	Metro Media Tract	138	10 [†]	Carlstadt
		138	6	Carlstadt
		138	7 [†]	Carlstadt
		138	8	Carlstadt
		138	4 [†]	Carlstadt
		138	5	Carlstadt
		138	3 [†]	Carlstadt
23	Mori Tract	227	9	Secaucus
24	Oritani Marsh	109.01	1	East Rutherford
		109.01	2	East Rutherford
		109.01	3	East Rutherford
		109.01	4	East Rutherford
25	Petrillo Tract	225	5	Secaucus
26	Riverbend Wetlands Preserve	3	3	Secaucus
27	Secaucus High School	226	38	Secaucus
28	Secaucus Tract	225	14.02	Secaucus
		225	14.01	Secaucus
		255	13.01	Secaucus
		255	12	Secaucus
		255	11	Secaucus
		255	10	Secaucus

[†] Site only partially within lot listed.

Site Number	Site Name	Block	Lot	Town
29	Steiner's Marsh	107.03	7	East Rutherford
30	Teterboro Woods	76	1.02 [†]	Moonachie
Waterbodies & Other Wetlands				
31	Bellman's Creek	N/A	N/A	N/A
32	Berry's Creek/Berry's Creek Canal	N/A	N/A	N/A
33	Cromakill Creek	N/A	N/A	N/A
34	Eight Day Swamp	123.01	6	Carlstadt
		123.01	6.01 [†]	Carlstadt
		123.01	7.01	Carlstadt
		123.01	8.01	Carlstadt
		123.01	9	Carlstadt
		123.01	9.03	Carlstadt
		123.01	9.05	Carlstadt
		123.01	9.01	Carlstadt
123.01	28 [†]	Carlstadt		
35	Hackensack River	N/A	N/A	N/A
36	Kingsland Impoundment	236	1.02 [†]	Lyndhurst
		236	1.03 [†]	Lyndhurst
37	Losen Slote Creek	N/A	N/A	N/A
38	Mill Creek	N/A	N/A	N/A
39	Moonachie Creek	N/A	N/A	N/A
40	NJSEA Sports Complex-Walden Marsh	107.01	1	East Rutherford
41	Penhorn Creek	N/A	N/A	N/A
42	Saw Mill Creek	N/A	N/A	N/A
Existing and Potential Future Adjacent Remediation Sites				
43	1-E Landfill	149	10	Kearny
		175	1	North Arlington
		176	1	North Arlington
		177	1	North Arlington
		178	1	North Arlington
		179	1 [†]	North Arlington
		180	1	North Arlington
		181	1	North Arlington
		182	1 [†]	North Arlington
		183	1 [†]	North Arlington
		185	1 [†]	Kearny
		186	1 [†]	North Arlington
		187	1 [†]	North Arlington
		188	1 [†]	North Arlington

[†] Site only partially within lot listed.

Site Number	Site Name	Block	Lot	Town
43	1-E Landfill (Continued)	189	1 [†]	North Arlington
44	Avon Landfill	233	14	Lyndhurst
		231	14	Lyndhurst
45	Erie Landfill	191	1.01 [†]	North Arlington
		192	1	North Arlington
46	Keegan Landfill	205	19.02	Kearny
		205	18	Kearny
		205	31	Kearny
		205	32	Kearny
		205	27	Kearny
		205	30	Kearny
		205	33	Kearny
		205	29	Kearny
		205	28	Kearny
		205	24	Kearny
47	Kingsland Landfill	194	1	North Arlington
		195	1	North Arlington
		197	1	North Arlington
		198	1	North Arlington
		198	2	North Arlington
		198	3	North Arlington
		236	1.01	Lyndhurst
48	Lyndhurst Landfill	231	9	Lyndhurst
		231	10	Lyndhurst
		231	11	Lyndhurst
		231	12	Lyndhurst
		233	6.02	Lyndhurst
		233	6.01	Lyndhurst
		233	16.02	Lyndhurst
		233	16.01	Lyndhurst
		233	15	Lyndhurst
		233	10	Lyndhurst
		233	11	Lyndhurst
		233	12	Lyndhurst
49	Malanka Landfill	3	4	Secaucus
		7	4	Secaucus
50	Rutherford Landfill	220	1 [†]	Rutherford
		220	2 [†]	Rutherford
		220	5 [†]	Rutherford

[†] Site only partially within lot listed.

Site Number	Site Name	Block	Lot	Town
50	Rutherford Landfill (Continued)	220	6 [†]	Rutherford
		220	7 [†]	Rutherford
		220	8 [†]	Rutherford
		220	9 [†]	Rutherford
		220	10 [†]	Rutherford
		220	11 [†]	Rutherford
		220	12 [†]	Rutherford
		220	16 [†]	Rutherford
		220	14	Rutherford
		220	15.01	Rutherford
		220	15.02 [†]	Rutherford
		220	15.03	Rutherford

[†] Site only partially within lot listed.

Table 1-3 lists the upland parks and recreation areas that were included in the original list of MESIC sites. However, it was determined that while these areas will be important components to consider in the comprehensive ecosystem restoration approach for the Meadowlands, they would not provide specific data that is relevant to the advancement of restoration or preservation of the candidate sites. These areas are labeled on NJMC's Green Map, presented as Figure 1-2.

Table 1-3: Upland Parks and Recreation Areas in the Meadowlands

Site	Location	Owner
Birch Street Park	Little Ferry, Bergen County	Little Ferry
Losen Slote Park		
Gagliardi Ball Field	Lyndhurst, Bergen County	Lyndhurst
Concord Street Park	Moonachie, Bergen County	Moonachie
Meadowlands Field	Ridgefield, Bergen County	Ridgefield
Buchmuller Park	Secaucus, Hudson County	Secaucus
Duck Pond		
Eckle Park – 9th Street Playground		
Ivanoski Park		
Kane Stadium		
Meadowlands Parkway Athletic Fields		
Mill Creek Park		
Mill Ridge Field		
Mill Creek Point		
Secaucus High School Athletic Field		
Shetik Field		
Smit Park		
Snipes Park		
Trolley Park		
Hudson County Park at Laurel Hill	Secaucus, Hudson County	Hudson County
Richard W. DeKorte Park	Lyndhurst, Bergen County	NJMC
Meadows Path	Various	Various NJMC – land manager
Mill Creek Point		
Secaucus Greenway		
Meadowlands Sports Complex Area	East Rutherford, Bergen County	New Jersey Sports and Exposition Authority

The initial list of MESIC sites also included Bashes Creek, Cantanzaro Property, Doctor's Creek, Viola Landfill, and Desiderio Landfill. Based on a lack of acquisition potential, shortage, and/or overlap of available data, and irrelevance to HMD restoration projects, these sites were removed from the MESIC site list.

While a vast amount of data exists for the Meadowlands, the MESIC focuses on that data that will be useful in accomplishing the goal of the Meadowlands FS – determining the feasibility of environmental restoration and protection projects relating to water resources, wildlife habitat, and sediment quality within the Meadowlands. These types of projects will include the aquatic, wetland, and upland areas that fall under the four site categories listed above. The MESIC also focuses on data that is relevant to the

Green Map

Spring 2002

New Jersey Meadowlands Commission

Green Spaces

- Major Park
- Athletic Field
- Watchable Wildlife
- Special Plants
- Waterfront Park
- Boat/Canoe Launch
- NJMC boat pier launch site
- Canoe Launch Only
- Canoe Launch Only (proposed)
- Environment Center
- Golf Course
- Enhanced Wetlands
- Scientific/Research Area
- Flyover Zone
- Compost Site
- Landform
- Recreational Fishing Spot (Catch & Release Policy)

- Parks & Recreation Areas
- Wetlands
- Preservation Areas
- Landfill Restoration Areas
- Water Bodies

Trails

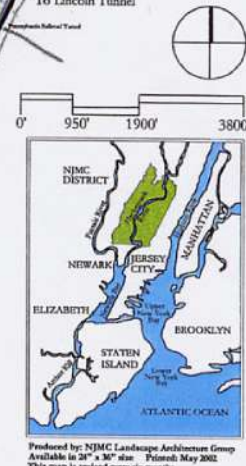
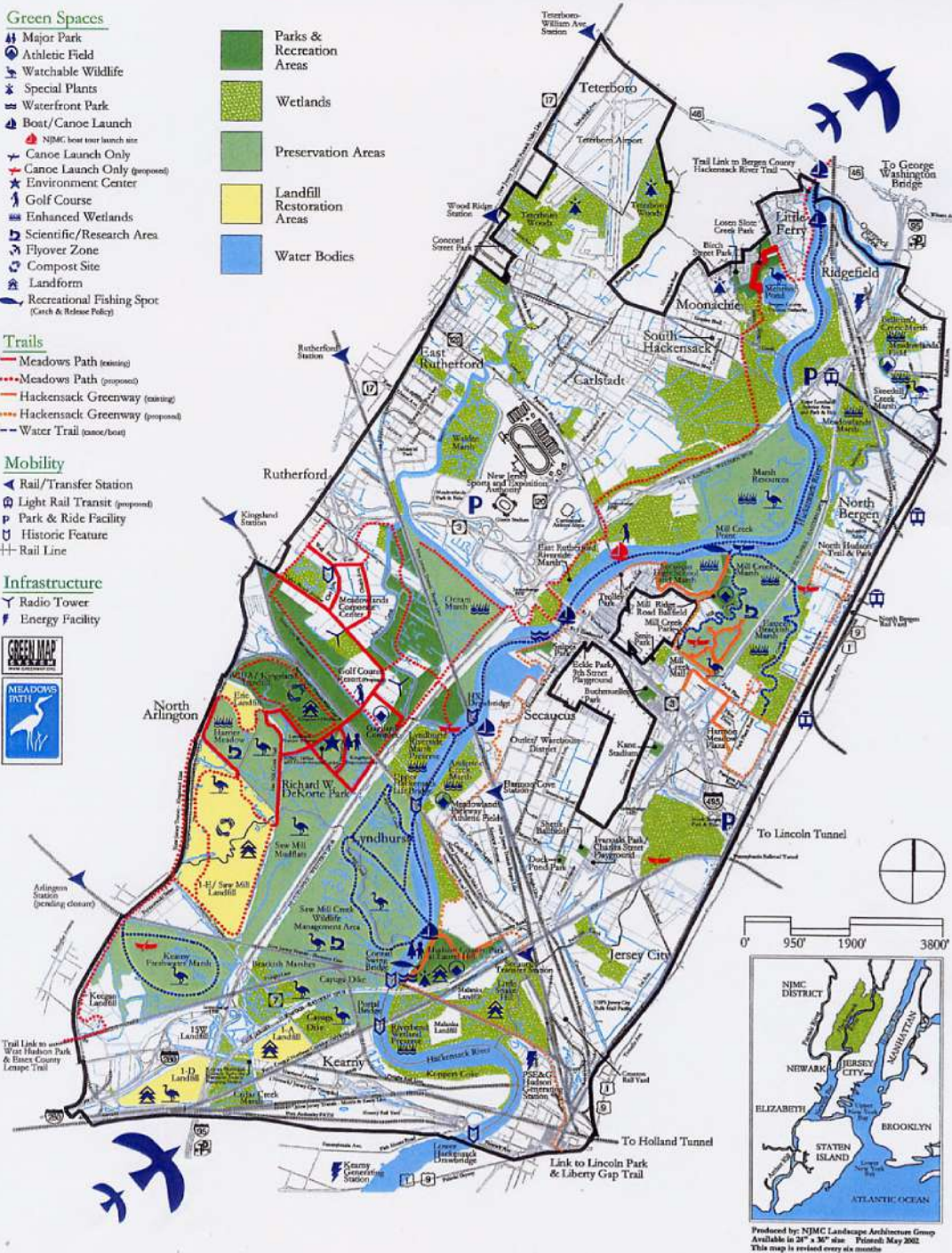
- Meadows Path (existing)
- Meadows Path (proposed)
- Hackensack Greenway (existing)
- Hackensack Greenway (proposed)
- Water Trail (canoe/boat)

Mobility

- Rail/Transfer Station
- Light Rail Transit (proposed)
- Park & Ride Facility
- Historic Feature
- Rail Line

Infrastructure

- Radio Tower
- Energy Facility



The Green Map System (GMS) shows the interconnections between nature and culture in urban places. Each Green Map is created locally and utilizes globally designed green space icons a shared language of symbols. The Green Map System is a not-for-profit organization. To learn more about GMS visit www.greenmap.org, Email info@greenmap.org, or call 212-674-1631. For further information on the NJMC visit our web site at www.njmeadowlands.state.nj.us. Comments, larger maps, and brochures: Email landsc@meadowlands.state.nj.us or write NJMC c/o Green Map, 1 DeLancey Park Plaza, Englewood, New Jersey 07067.



U.S. Army Corps of Engineers
N.Y. District

Meadowlands Environmental Site Investigation City Compilation (MESIC)
GREEN MAP : NEW JERSEY MEADOWLANDS COMMISSION

FIGURE
1-2

specific site's intended purpose (i.e. reference data for an existing site, baseline data for a candidate site, either reference or baseline data for a waterbody, or remediation data for a landfill) and readily available to the USACE-NYD, NJMC, and USFWS for use during the Meadowlands FS.

Ten data categories were established to organize the useful and relevant data that was collected. These categories cover the many different topics that are applicable to a comprehensive ecosystem restoration approach. For the 50 sites, plus the Meadowlands-wide category, documents were cited, abstracted, and then listed where appropriate under one or more of the following ten data categories:

A. Survey, Maps, and GIS

Includes topographical data, aerial photographs, historical maps, and Geographical Information System (GIS) datasets.

B. Real Estate/Ownership

Includes information on past and present owners, as well as acquisition information.

C. Site History & Land Use

Includes current and past site history and land use description and information.

D. Biological Studies – Fauna

Includes studies, assessments, and surveys for birds, benthic organisms, fish, and other wildlife, as well as any threatened/endangered species information.

E. Biological Studies – General Environmental

Includes wetland delineations and assessments, vegetation studies and surveys, and other general environmental information.

F. Geotechnical

Includes soils and geology data.

G. Hydraulics and Hydrology

Includes surface water (stormwater and surface runoff), groundwater, flood control, hydrologic structures, and general river/stream/creek data.

H. Water and Sediments

Includes water quality, contaminant, and sediment data.

I. Historical/Cultural Resources

Includes historical and cultural resources assessments and other information.

J. Restoration/Remediation Design Plans

Includes conceptual, preliminary, and final restoration and remediation design plans, as well as plans for relevant structures or other site construction activities.

For each of the fifty sites, the MESIC report includes a one-page site information fact sheet and a more detailed site report. Both the fact sheets and the site reports contain general site information including: site category; location; current land use; location; size; current ownership (where applicable); and a brief site description. The fact sheets also include a site-specific map and photograph, and a summary description of site-specific data available under each of the ten data categories. Along with the general site information, the site reports contain the site-specific citations and abstracts listed under the appropriate data categories. It should be noted that many citations within the Meadowlands-wide site

report, primarily in the Survey, Maps, and GIS data category, are also applicable to the fifty sites for use as general baseline information. The site information fact sheets are contained in Section 1.5 and the site reports are located in Section 3.2.

The MESIC report also includes a site matrix table, which contains cells corresponding to each of the 50 sites and each of the ten data categories. A number from “1” to “4” is assigned to indicate the level of usefulness for the data corresponding to the site and the data category represented by that cell. In general, usefulness was assessed based on the data’s level of detail, substantiating documentation, age, and relevance to the assessment of ecological restoration needs and design concepts in accordance with the specific data category. The level-of-usefulness assignments are explained in further detail in Section 2.0; the site matrix table is in Section 2.1.

Data for the MESIC report was cataloged or collected from various sources associated with federal and state agencies, Rutgers University, and private firms, including:

- Meadowlands Environmental Research Institute (MERI) Library – electronic files;
- MERI/NJMC Staff ;
- USACE – NYD regulatory files: 1992 – present;
- USACE – NYD Project Management Plan (January 2003);
- EnCap Golf Holdings, LLC;
- USFWS;
- Rutgers University; and
- The Louis Berger Group, Inc.

Contact information is given for these sources in Section 3.0 of this report.

1.3 Study Area Description

The study area for the MESIC is the Meadowlands, located in Bergen and Hudson Counties, New Jersey (see Figure 1-1). The Meadowlands encompasses 32 square miles or 19,730 acres across ten communities in Bergen County and four in Hudson County. These communities are:

- Bergen County: Carlstadt, East Rutherford, Little Ferry, Lyndhurst, Moonachie, North Arlington, Ridgefield, Rutherford, South Hackensack and Teterboro; and
- Hudson County: Jersey City, Kearny, North Bergen, and Secaucus.

As an integral part of the HRE, the Meadowlands significance lies in it being one of the largest wetland complexes remaining in the HRE ecosystem, as well as being one of the largest contiguous blocks of open space in the highly developed landscape of the New York City metropolitan area. The approximately 8,400 acres of wetlands and waterways that remain are especially significant for concentrations of federal trust species and state listed species of concern, including waterfowl, wading birds, shorebirds, raptors, anadromous fish, estuarine fish, and terrapins. Many of the wetlands in the Meadowlands are degraded due to physical disturbances, such as filling and alterations to natural hydrologic connections. Leachate contamination from extensive landfills in the area is common. Numerous point sources, stormwater runoff from developed areas and highways, and other non-point sources have severely degraded water and sediment quality in areas of the habitat complex.

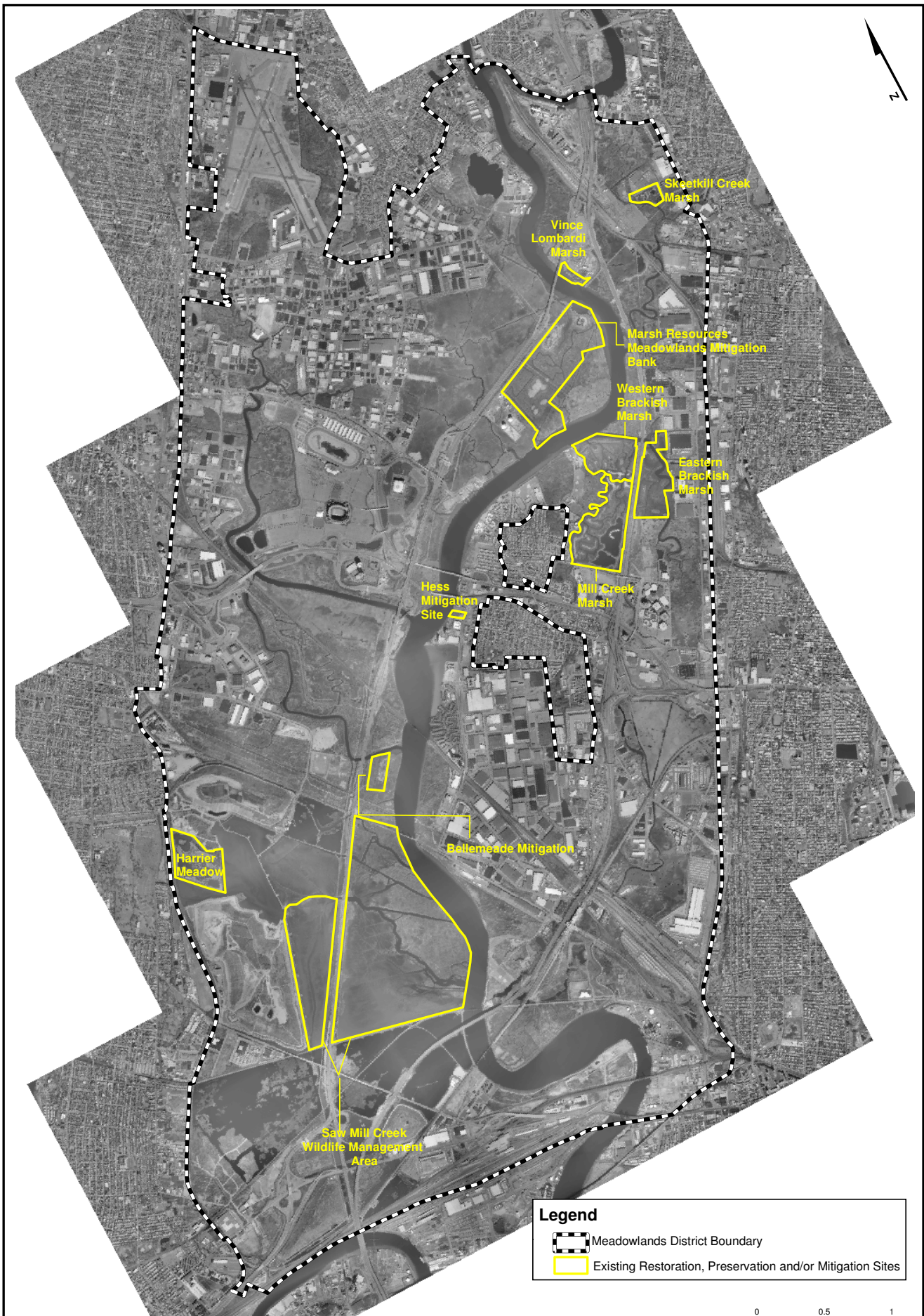
1.4 Site Information Fact Sheets Description

For each of the 50 sites, as well as the Meadowlands-wide category, a one-page fact sheet summarizes the more detailed site reports contained in Section 3.2. The top half of the fact sheets contain general site information including: site category; location; current land use; location; size; current ownership (where applicable); and a brief site description, as well as a site-specific map and photograph. The bottom half of the fact sheets list a summary description of site-specific data available under each of the ten data categories.

1.5 Site Information Fact Sheets

This section presents the site information fact sheets grouped by site category (Existing Restoration/Preservation Sites, Candidate Restoration/Preservation Sites, Waterbodies and Other Wetlands, and Existing/Potential Remediation Sites). Each site category is preceded by a map showing the sites within that specific category (Figures 1-3 through 1-6).

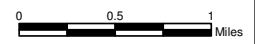
**EXISTING RESTORATION, PRESERVATION,
AND/OR MITIGATION SITES**



Legend

- Meadowlands District Boundary
- Existing Restoration, Preservation and/or Mitigation Sites

Source: Digital Orthophoto, New Jersey Meadowlands Commission, 2002.



U.S. Army Corps
of Engineers
N.Y. District

Meadowlands Environmental Site Investigation Compilation (MESIC)
**EXISTING RESTORATION, PRESERVATION AND/OR
MITIGATION SITES**

FIGURE
1-3

1. Bellemeade Mitigation

Category: Existing Restoration/Preservation, and/or Mitigation Site

Location: Bordered on the west by the New Jersey Turnpike - Western Spur, on the east by Lyndhurst Riverside Marsh and the Hackensack River, and to the north by Berry's Creek in Lyndhurst, Bergen County.

Latitude/Longitude: 40.78553/-74.08970

Current Land Use: Tidal marsh

Size: 21 acres

Current Ownership: NJMC

Site Description: The Bellemeade Mitigation site was restored in the 1990's and includes two marsh areas separated by a tributary that runs from Kingsland Creek to Berry's Creek. Prior to restoration, the sites were both undeveloped and supported a monoculture of common reed (*Phragmites australis*). The low marsh area (approximately seven acres in size) is located west of the tributary and is dominated by smooth cordgrass (*Spartina alterniflora*). The low marsh area was created in approximately 1993 through the excavation of previously placed dredged material. The site was graded with a two percent slope and then planted with *S. alterniflora*. The high marsh area, created in approximately 1996, was mowed and replanted with saltmarsh hay (*Spartina patens*). Currently the low marsh site continues to be dominated by *S. alterniflora* with inclusions of *Phragmites*. The high marsh area is dominated by *Phragmites* and spikegrass (*Distichlis spicata*), with inclusions of *S. patens*, tall cordgrass (*Spartina cynosuroides*), *S. alterniflora*, and *Salicornia species*.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by NJMC

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

General baseline data collected in 1988 for NJ Turnpike Widening EIS.

E. Biological Studies - General Environmental

Site-specific wetland functional analysis conducted in 1992. General baseline data collected in 1988 for NJ Turnpike Widening EIS. □

F. Geotechnical

General baseline data collected in 1988 for NJ Turnpike Widening EIS.

G. Hydraulics and Hydrology

General baseline data collected in 1988 for NJ Turnpike Widening EIS.

H. Water and Sediments

General baseline data collected in 1988 for NJ Turnpike Widening EIS.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Open brackish marsh conceptual restoration plan developed in 1987.

2. Eastern Brackish Marsh

Category: Existing Restoration/Preservation and/or Mitigation Site

Location: East of the New Jersey Turnpike - Eastern Spur, south and west of Cromakill Creek, and north of Mori Tract in North Bergen, Hudson County.

Latitude/Longitude: 40.79927/-74.03556

Current Land Use: Tidal marsh

Size: 77 acres

Current Ownership: NJMC

Site Description: Hartz Mountain Industries restored this site and the Western Brackish Marsh in the 1980's. Prior to restoration, the site was undeveloped, had experienced little or no direct industrial activities, supported a dense monoculture of common reed (*Phragmites australis*), and was not subject to daily tidal inundation. Restoration activities included the excavation of previously placed dredged material, the creation of small upland islands using the excavated material, and planting of native vegetation in the tidal and upland areas. Currently, the intended low marsh areas function as mudflat areas while the upland island areas support a mix of tree, shrub, and herbaceous species. This site has also been known as the IR-2 Mitigation Site.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. □

B. Real Estate/Ownership

Owned by NJMC. Acquisition data available on NJMC website.

C. Site History & Land Use

Site-specific history and land use data from 1988 and 1991.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Post-restoration site-specific data collected in 1991 and 1995. Pre-restoration general baseline data conducted in 1978. Wetland assessments performed in 2003. □

F. Geotechnical

Post-restoration soil comparison study conducted in 1995.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Conceptual restoration/enhancement plan developed in 1986. Post-restoration studies conducted in 1988 and 1991.

3. Harrier Meadows

Category: Existing Restoration/Preservation, and/or Mitigation Site

Location: Located along the western border of the Meadowlands District, west of the Kingsland Impoundment, south of Erie landfill and north of 1-E landfill in North Arlington, Bergen County.

Latitude/Longitude: 40.78632/ -74.11761

Current Land Use: Tidal marsh and pedestrian trail

Size: 76 acres

Current Ownership: NJMC

Site Description: Harrier Meadows is located within the Saw Mill Creek Basin, and was initially part of a large marsh system influenced by Kingsland Creek and Sawmill Creek. The wetland has been cut off from full tidal inundation due to the construction of a pipeline and the New Jersey Turnpike - Western Spur. In the 1960's, the site was bermed and used for rock and soil disposal. Wetland enhancement activities, which were completed in 1998, included the excavation of 20 acres of shallow impoundments that are hydrologically connected to the surrounding Kingsland mudflats. The impoundments were designed to help control the invasion of common reed (*Phragmites australis*) and purple loosestrife (*Lythrum salicaria*). Spoils from the excavation were used to create higher elevation areas for suitable nesting and resting habitats. Upland improvements included the creation of a scrub-shrub border along the base of the Meadows Path extension on the site's western and southern boundaries, as well as around the margins of the impounded areas. Additional public access features at the site include benches, wildlife viewing blinds, and interpretative signage.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. As-built survey developed in 1998.

B. Real Estate/Ownership

Owned by NJMC

C. Site History & Land Use

Site-specific history and land use data presented in 1983 report for Saw Mill Creek Basin.

D. Biological Studies - Fauna

Post-restoration site-specific monthly and annual monitoring reports prepared from 1999 to 2003.

E. Biological Studies - General Environmental

Site-specific monthly and annual monitoring reports prepared from 1999 to 2003. Comparative study conducted in 2002 on vegetative uptake of heavy metals. Wetland assessments performed in 2003. □

□

F. Geotechnical

Baseline data and wetland quality assessments conducted between 1998 and 2003.

G. Hydraulics and Hydrology

Pre-restoration site-specific hydrologic data presented in 1983 report for Saw Mill Creek Basin. Post-restoration hydrological assessment conducted in 2002.

H. Water and Sediments

Pre-restoration site-specific hydrologic data presented in 1983 report for Saw Mill Creek Basin. Soil sampling study conducted in 1998 and comparative study conducted in 2001 and 2002 on vegetative uptake of heavy metals.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

As-built survey developed in 1998.

4. Hess Mitigation Site

Category: Existing Restoration/Preservation, and/or Mitigation Site

Location: Located on the eastern edge of the Hackensack River, north of Snipes Park, and south of Route 3 - Eastbound in Secaucus, Hudson County.

Latitude/Longitude: 40.79639/-74.06891

Current Land Use: Tidal Marsh

Size: 3 acres

Current Ownership: Amerada Hess

Site Description: Amerada Hess restored this site in the 1990's as mitigation for permitted marsh fills. Prior to restoration, the site was not subject to daily tidal inundation and supported a monoculture of common reed (*Phragmites australis*). Site restoration included the removal of previously placed dredged material and planting of smooth cordgrass (*Spartina alterniflora*). Currently, the site is dominated by *S. alterniflora*, with inclusions of *Phragmites*.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Pre-restoration site maps and wetland mitigation conceptual plan prepared in 1988.

B. Real Estate/Ownership

Owned by Amerada Hess.

C. Site History & Land Use

Site-specific history and land use data from 1989 Alternatives Analysis report.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Pre-restoration site-specific baseline data obtained in 1988 Stream Encroachment Permit documents.

F. Geotechnical

Pre-restoration site-specific baseline data obtained in 1988 Stream Encroachment Permit documents.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Mitigation plan developed in 1988 Stream Encroachment Permit.

5. Marsh Resources Meadowlands Mitigation Bank

Category: Existing Restoration/Preservation, and/or Mitigation Site

Location: The site is bordered to the northeast and southeast by the Hackensack River, to the east by the Metro Media tract, to the southwest by the Transco facilities, and to the northwest by the New Jersey Turnpike - Western Spur in Carlstadt, Bergen County.

Latitude/Longitude: 40.81411/-74.04022

Current Land Use: Tidal Marsh

Size: 206 acres

Current Ownership: Marsh Resources Inc.

Site Description: The site was restored by Marsh Resources Inc. as a private wetland mitigation bank to offset permitted wetland fill impacts that occur within the service area. Prior to restoration, dredged material had been placed on the site. As a result, the site was not being inundated twice daily by the tides and was dominated by a monoculture of common reed (*Phragmites australis*). Restoration activities included excavation of dredged material, creation of low and high marsh areas and tidal channels, creation of upland islands from the excavated material, and planting of native vegetation within the marsh and upland areas. Currently the low marsh areas are dominated by smooth cordgrass (*Spartina alterniflora*), dwarf spike rush (*Eleocharis parvula*), and marsh fleabane (*Pluchea purpurascens*). The high marsh areas are dominated by saltmarsh hay (*Spartina patens*), spikegrass (*Distichlis spicata*), and groundsel tree (*Baccharis halmifolia*), with inclusions of a variety of other herbaceous species. The upland islands support tree, shrub, and herbaceous species. This site has also been known as the Transco Marsh Site and the Doctor's Creek Site.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Pre-restoration topographic maps prepared in 1996. As-builts for restoration Phases 1 & 2 developed in 1999 and 2001.

B. Real Estate/Ownership

Owned by Marsh Resources, Inc. Site ownership described in 1999 Mitigation Banking Instrument.

C. Site History & Land Use

Site history and land use developed in 1996 Phase 1 report and 1999 Mitigation Banking Instrument.

D. Biological Studies - Fauna

Pre-restoration studies conducted in 1988, 1993 and 1998. Post-restoration studies presented in monthly and annual monitoring reports completed between 1999 and 2003.

E. Biological Studies - General Environmental

Pre-restoration studies conducted in 1988, 1993, 1996 and 1999. Wetland assessment performed in 2003.

F. Geotechnical

Pre-restoration studies conducted in 1988, 1993, 1996 and 1999.

G. Hydraulics and Hydrology

Pre-restoration studies conducted in 1988, 1993 and 1999. Post-restoration studies conducted in 1999 and 2002.

H. Water and Sediments

Pre-restoration studies conducted in 1988 and 1999. Post-restoration studies completed in 2002□

I. Historical/Cultural Resources

Pre-restoration study conducted in 1999.

J. Restoration/Remediation Design Plans

Proposed restoration design plans developed in 1998. As-builts for restoration Phases 1 & 2 developed in 1999 and 2001.

6. Mill Creek Marsh

Category: Existing Restoration/Preservation, and/or Mitigation Site

Location: Bordered on the east by the New Jersey Turnpike - Eastern Spur, to the south by a shopping center, to the west by Mill Creek, and to the north by Western Brackish Marsh in Secaucus, Hudson County.

Latitude/Longitude: 40.79723/-74.04481

Current Land Use: Tidal Marsh and Pedestrian Trail

Size: 128 acres

Current Ownership: NJMC

Site Description: Mill Creek was restored by NJMC as a wetland mitigation area to offset permitted fill that occurred in marsh areas located within the HMD. Prior to restoration, the site was undeveloped, had been filled with dredged material, was not subject to daily tides, and supported a monoculture of common reed (*Phragmites australis*). Enhancement of the Mill Creek Marsh site included the excavation of dredged material, the re-establishment of tidal flow across the site with the creation of open water impoundments, and surface grading to support the development of low marsh and upland habitat areas. The enhancement resulted in low marsh habitats that are flushed daily by the tides, lowland scrub-shrub habitats along the marsh/upland ecotone, and creation of breeding, wintering, and migratory habitats. A secondary component is the nature park and approximately 1.5-mile walking trail. Approximately three miles of canoe-able channels with access from Mill Creek exists at the site.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Pre-restoration site survey conducted in 1997. As-built survey conducted in 1999. Surveys of outlet areas conducted in 2001.

B. Real Estate/Ownership

Owned by NJMC. □

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

Post-restoration monthly and annual monitoring data collected in 1999 through 2003. Fish survey conducted in 2002.

E. Biological Studies - General Environmental

Pre-restoration wetland functional evaluations completed in 1986, 1990, 1992 and 1993. Post-restoration monthly and annual monitoring data collected in 1999 through 2003. Wetland assessments conducted in 2003.

F. Geotechnical

Post-restoration annual monitoring data collected in 1999 through 2003. Also, post-restoration comparative soil sampling study conducted in 1998.

G. Hydraulics and Hydrology

Hydrologic study of outlet channels conducted in 2001.

H. Water and Sediments

Sediment sampling study completed in 1998 and comparative dissolved oxygen study conducted in 2002. Annual monitoring reports completed from 1999 through 2003. Site-specific Rutgers University studies conducted from 1999 through 2002.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Wetland mitigation design plans developed for 1997 USACE Permit. As-built designs developed in 1999. Channel outlet re-designs developed in 2001.

7. Saw Mill Creek Wildlife Management Area

Category: Existing Restoration/Preservation, and/or Mitigation Site

Location: Divided vertically by the New Jersey Turnpike - Western Spur, bordered on the south by New Jersey Transit Boonton Line, on the East by the Hackensack River, and on the west by 1-E landfill in Kearny and Lyndhurst, Hudson and Bergen Counties respectively.

Latitude/Longitude: 40.77082/ -74.10130

Current Land Use: Wildlife management area, mudflats, tidal marsh, and open water

Size: 878 acres

Current Ownership: NJDEP (NJMC has management agreement.)

Site Description: Early in the 20th century, the Saw Mill Creek area adjacent to the Hackensack River was diked for mosquito control. Over ensuing decades, the topography of the area increased in height, and become cutoff from tidal flows. The overall biodiversity declined, so that by mid-century, the number of wetland species that occupied or utilized the marsh had significantly decreased. In 1950, a powerful nor'easter struck the region. Its high winds, rain, and storm tides destroyed the Saw Mill dikes, reopening the vast wetland to the Hackensack River tides. The common reed (*Phragmites australis*) that had previously colonized the area began to retreat, and smooth cordgrass (*Spartina alterniflora*) began to dominate. *S. alterniflora* now occupies hundreds of acres in the Saw Mill area.

The Saw Mill Creek Wildlife Management Area, including the large, contiguous expanse of mudflat area known as the Saw Mill mudflats, is home to myriad wildlife, including some species classified by the state as threatened or endangered. The significant species found here include striped bass, fiddler crabs, diamond-back terrapin, great blue heron, osprey, common moorhen, least bittern, and the state endangered least tern and black skimmer. Recreational use has also returned to the area, including angling, canoeing, kayaking, and NJMC boat tours. Waterfowl hunting is again permitted during the regular hunting season.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Pre-restoration site survey conducted in 1997.

B. Real Estate/Ownership

Owned by NJDEP (NJMC has management agreement.)

C. Site History & Land Use

General site history and land use contained in 1980 DeKorte Master Plan and 1983 Sawmill Creek Basin Reports. Site-specific report developed in 1986.

D. Biological Studies - Fauna

Avian studies conducted in 1970 and 1989. Benthic macroinvertebrates studied in 1991 and heavy metal concentrations in terrapins studied in 2000.

E. Biological Studies - General Environmental

General baseline data collected for 1984 Sawmill Basin EIS and 1988 NJ Turnpike Widening EIS. Site specific studies conducted in 1987, 1988, 1999 and 2002.

F. Geotechnical

General baseline data collected for 1984 Sawmill Basin EIS and 1988 NJ Turnpike Widening EIS. Site specific soil investigation conducted in 1983.

G. Hydraulics and Hydrology

General baseline data collected for 1984 Sawmill Basin EIS and 1988 NJ Turnpike Widening EIS.

H. Water and Sediments

General baseline data collected for 1984 Sawmill Basin EIS and 1988 NJ Turnpike Widening EIS. Site specific studies conducted in 1987, 1999, 2000 and 2002.

I. Historical/Cultural Resources

Information contained with the 1980 DeKorte Park Master Plan.

J. Restoration/Remediation Design Plans

Preservation plan for the site contained in 1979 DeKorte Park Master Plan. Restoration design plan developed in 1997.

8. Skeetkill Creek Marsh

Category: Existing Restoration/Preservation, and/or Mitigation Site

Location: Bordered on the west and south by Bellman's Creek, and south of Bellman's Creek Marsh and Meadowlands Field in Ridgefield, Bergen County.

Latitude/Longitude: 40.82617 / -74.01744

Current Land Use: Tidal Marsh

Size: 16 acres

Current Ownership: NJMC

Site Description: Prior to restoration by NJMC, Skeetkill Creek Marsh was undeveloped (although surrounded by industrial development), was not subject to daily tidal inundation, and supported a monoculture of common reed (*Phragmites australis*). The restoration design included excavating previously filled areas, creating low marsh and tidal channels, and the excavation of shallow pools to provide open water habitats. Upland waterfowl habitat nesting areas were created and provided with access to open water areas. The design included the creation of a nature park and viewpoint along Pleasantview Terrace.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Pre-restoration survey developed in 1997. As-built survey developed in 1999.

B. Real Estate/Ownership

Owned by NJMC. Acquisition data obtained from NJMC website.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

Monthly and annual monitoring data compiled from 1999 through 2002.

E. Biological Studies - General Environmental

Monthly and annual monitoring data compiled from 1999 through 2003. Wetland assessments conducted in 2003.

F. Geotechnical

Annual monitoring data compiled from 1999 through 2003.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

Annual monitoring data compiled from 1999 through 2003.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Restoration design plan developed in 1997.

9. Vince Lombardi Marsh

Category: Existing Restoration/Preservation, and/or Mitigation Site

Location: Bordered on the west and southwest by the Hackensack River, on the north by New Jersey Turnpike - Western Spur, and on the east by the Vince Lombardi Rest Area, in Ridgefield, Bergen County.

Latitude/Longitude: 40.82273/-74.03170

Current Land Use: Tidal Marsh

Size: 10 acres

Current Ownership: New Jersey Turnpike Authority

Site Description: The Vince Lombardi Marsh is a wetland restoration site created to mitigate for permitted marsh fills associated with the development of the Vince Lombardi Rest Area. Prior to mitigation, the site had been filled with dredged material, was not subject to daily tidal inundation, and supported a monoculture of common reed (*Phragmites australis*). The site was restored in the 1980's, and included the removal of previously placed dredged material and replanting of native vegetation. Currently, the site is dominated by *Phragmites*.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by New Jersey Turnpike Authority.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

No data obtained.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

10. Western Brackish Marsh

Category: Existing Restoration/Preservation, and/or Mitigation Site

Location: Bordered on the east by the New Jersey Turnpike - Eastern Spur, on the west by Mill Creek, on the south by Mill Creek Marsh, and to the north by the Hackensack River in Secaucus, Hudson County.

Latitude/Longitude: 40.80331/-74.03911

Current Land Use: Tidal Marsh

Size: 75 acres

Current Ownership: NJMC

Site Description: Hartz Mountain Industries restored this site and the Eastern Brackish Marsh in the 1980's. The 151-acre restoration effort was mitigation for permitted fill of 131 acres of brackish marsh. Prior to restoration, the site was undeveloped, had experienced little or no direct industrial activities, supported a dense monoculture of common reed (*Phragmites australis*), and was not subject to daily tidal inundation. Restoration activities included the excavation of previously placed dredged material, the creation of small upland islands from out of the excavated material, and planting of native vegetation in the tidal and upland areas. Currently, sections of the tidal marsh support smooth cordgrass (*Spartina alterniflora*), while other sections are dominated by dwarf spike rush (*Eleocharis parvula*). High marsh areas are dominated by *Phragmites*. The upland islands are dominated by grey birch (*Betula populifolia*) and *Phragmites*, and support a variety of other trees, shrubs, and herbaceous vegetation. This site has also been known as the IR-2 Mitigation Site.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by NJMC.

C. Site History & Land Use

Site-specific site history and land use information collected for 1988 and 1991 reports.

D. Biological Studies - Fauna

General avian and benthic studies conducted at the site in 1989 and 2001, respectively. Fisheries/benthic studies were completed in 2001 and 2003 respectively.

E. Biological Studies - General Environmental

General vegetation and environmental studies were conducted from 1978 to 1995. A wetland delineation and several wetland and habitat quality assessments were conducted in 1990. Wetland assessments were also performed in 2003.

F. Geotechnical

Soils data was collected at the site in 1995.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

Sediment data collected at the site in 1987 and 2001.

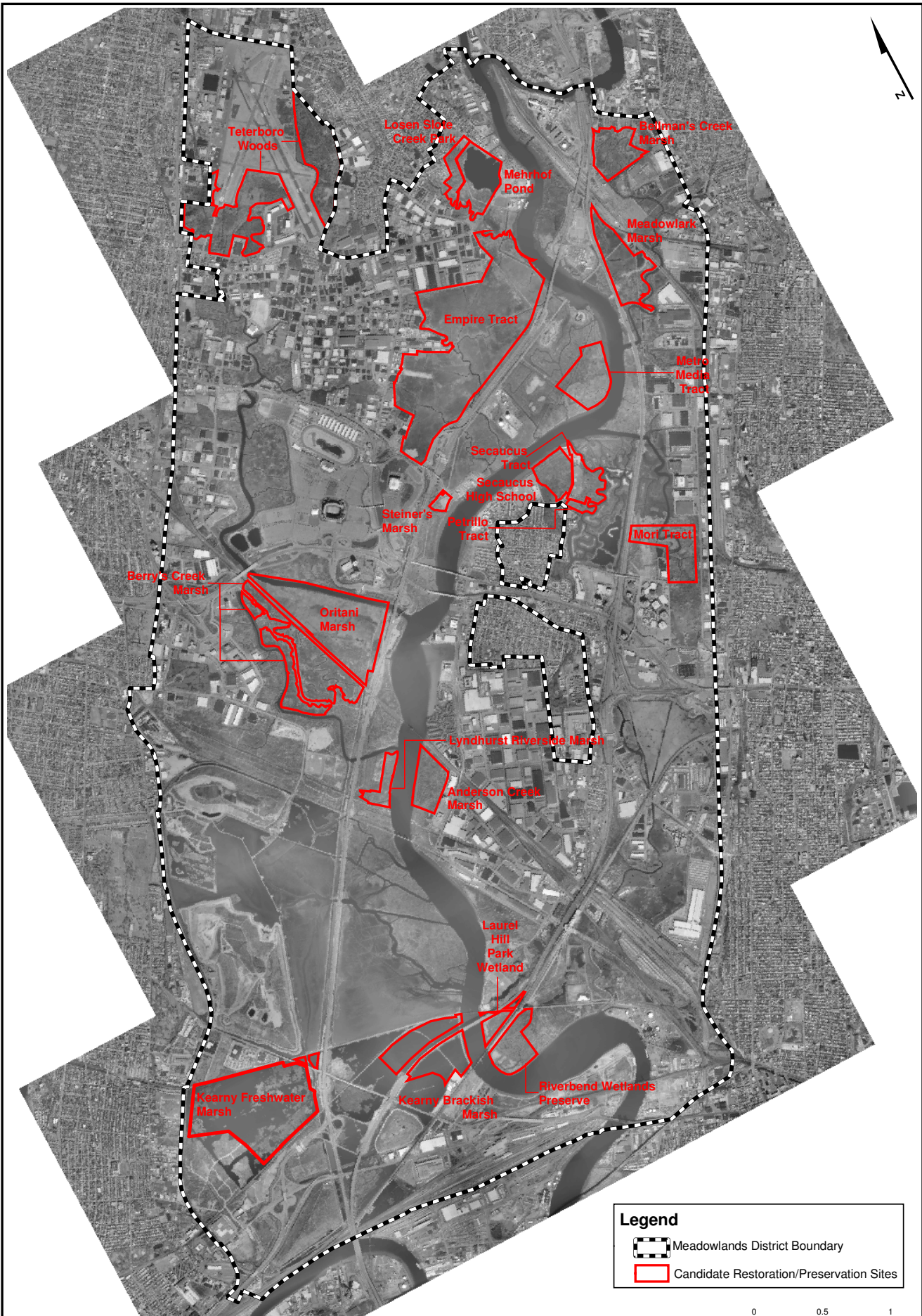
I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans



Studies monitoring the results of site's restoration were conducted in 1982, 1986, 1988, and 1991.

CANDIDATE RESTORATION SITES



Source: Digital Orthophoto, New Jersey Meadowlands Commission, 2002.

Legend

-  Meadowlands District Boundary
-  Candidate Restoration/Preservation Sites



U.S. Army Corps
of Engineers
N.Y. District

Meadowlands Environmental Site Investigation Compilation (MESIC)
CANDIDATE RESTORATION/PRESERVATION SITES

FIGURE
1-4

11. Anderson Creek Marsh

Category: Candidate Restoration/Preservation Site

Location: Along the eastern bank of the Hackensack River, south of the New Jersey Transit Bergen Line in Secaucus, Hudson County.

Latitude/Longitude: 40.78225/-74.08348

Current Land Use: Tidal Marsh

Size: 52 acres

Current Ownership: NJMC

Site Description: The Anderson Creek Marsh is an undeveloped area, but has been impacted by ditching for mosquito control and tide gate installation. Common reed (*Phragmites australis*) dominates approximately 95% of the site. The remaining areas are open water with mudflats. The current conceptual restoration plan entails creation of additional meandering creeks, lowering site elevations to allow for twice-daily tidal inundation, and excavation of shallow pools to provide open water habitats. Upland waterfowl habitat nesting islands are also planned with access to open water areas.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by NJMC. Acquisition data available on NJMC website.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

Site-specific baseline data collected in 1985.

E. Biological Studies - General Environmental

Baseline data and wetland and habitat quality assessments conducted in the early 1985, 1990, 1992 and 1993. Wetland assessments performed in 2003.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

Site-specific baseline data collected in 1985.

H. Water and Sediments

Site-specific baseline data collected in 1985.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Conceptual restoration plans developed in 1985 and 1986.

12. Berry's Creek Marsh

Category: Candidate Restoration/Preservation Site

Location: East of the Meadowlands Corporate Center and southwest of Oritani Marsh and the New Jersey Transit - Bergen Line in Rutherford, Bergen County
Latitude/Longitude: 40.80145/-74.08913

Current Land Use: Tidal marsh

Size: 168 acres

Current Ownership: NJMC

Site Description: Berry's Creek Marsh is an undeveloped area dominated by common reed (*Phragmites australis*). Fish Creek traverses through the site and a portion of the area is bordered by Berry's Creek. The remaining areas are open water with mudflats and isolated pockets of vegetation. The conceptual mitigation design entails grading of the marsh surface to create low marsh habitat and additional creek meanders, excavation of shallow pools to provide open water habitats, and planting of native vegetation



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Topographic information collected for a portion of the site in 2001.

B. Real Estate/Ownership

Owned by NJMC. Acquisition data available on the NJMC website.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

General baseline data collected in 1988, site-specific data collected in 1985, 1992 and 2001.

E. Biological Studies - General Environmental

Baseline data and wetland quality assessments conducted in 1988 and 1992, and in 2001 for a portion of the site.

F. Geotechnical

General baseline data collected in 1988, site-specific data collected in 1985, 1992 and 2001.

G. Hydraulics and Hydrology

Baseline data collected in 1988, site-specific data collected in 1985, 1992 and 2001.

H. Water and Sediments

Site-specific water and sediment contamination data collected in 1980 and 1985.

I. Historical/Cultural Resources

Site-specific baseline data collected in 2001. □

J. Restoration/Remediation Design Plans

Final wetland mitigation plan developed in 2001.

13. Bellman's Creek Marsh

Category: Candidate Restoration/Preservation Site

Location: North of Bellman's Creek and east of the Eastern Spur of the New Jersey Turnpike in the Town of Ridgefield, Bergen County, New Jersey.

Latitude/Longitude: 40.83189/-74.01829

Current Land Use: Tidal marsh

Size: 62 acres

Current Ownership: PSEG

Site Description: Bellman's Creek marsh is dominated by common reed (*Phragmites australis*) and interspersed with pockets of wooded uplands and mudflats. Portions of the site are used for utility purposes, including a berm running through the site from the northeast to the southwest.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by PSEG.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Fish sampling study conducted in 1980. □

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

Water quality data was collected in 1980.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

14. Empire Tract

Category: Candidate Restoration/Preservation Site

Location: Bordered on the east by the Hackensack River and on the south by the New Jersey Turnpike - Western Spur, in Carlstadt, Bergen County.

Latitude/Longitude: 40.82147/-74.05017

Current Land Use: Brackish marsh

Size: 531 acres

Current Ownership: Empire Ltd. (a wholly owned subsidiary of Terminal Construction)

Site Description: The Empire Tract is a historically diked marsh that is dominated by common reed (*Phragmites australis*). Channelized tidal creeks exist at the site, but land/water interface is poor due to high elevations, tide gates, and the installation of a gas pipeline. The site has been extensively studied and a number of conceptual wetland mitigation plans have been developed for the site.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. An existing conditions map was developed for a 2002 EIS.

B. Real Estate/Ownership

Owned by Empire Ltd. (a wholly owned subsidiary of Terminal Construction). Site ownership is discussed in 2002 EIS.

C. Site History & Land Use

Site history and land use information is included in various sources, including a 2002 EIS.

D. Biological Studies - Fauna

Baseline studies and an avian survey were conducted in the late 1990's.

E. Biological Studies - General Environmental

Various baseline data and wetland quality assessments were conducted between 1995 and 2002. A JD was completed in 1997. □

F. Geotechnical

Site-specific baseline data collected for the 2002 EIS.

G. Hydraulics and Hydrology

Water budget and stormwater management study completed in 2000 and baseline data collected for 2002 EIS.

H. Water and Sediments

Water quality analysis completed in 2000 and baseline data collected for 2002 EIS

I. Historical/Cultural Resources

Baseline data collected for the 2002 EIS.

J. Restoration/Remediation Design Plans

Conceptual mitigation plans and mitigation impact assessments developed in 1998, 1999 and 2000, and also presented in 2002 EIS.

15. Kearny Brackish Marsh

Category: Candidate Restoration/Preservation Site

Location: The site is divided horizontally by the New Jersey Turnpike - Eastern Spur and bordered in the east by the Hackensack River in Kearny, Hudson County.

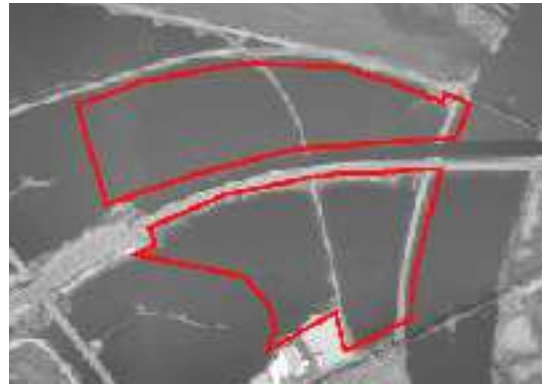
Latitude/Longitude: 40.75814/-74.10272

Current Land Use: Tidal marsh

Size: 116 acres

Current Ownership: NJMC

Site Description: Emergent vegetation at the Kearny Brackish Marsh has been mostly eliminated over the past ten years and replaced by open water. Both tidal flows and hydrologic connections have been restricted due to surrounding development. The current conceptual restoration design includes the re-establishment of emergent vegetation by managing water levels and preventing soil erosion, potentially through the replacement of the broken water control structures at the Cayuga Dike.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by NJMC. Acquisition data available on NJMC website.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

A sediment/vegetation comparative study was performed in 2003. Wetland assessment performed in 2003.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

A sediment/vegetation comparative study was performed in 2003.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

16. Kearny Freshwater Marsh

Category: Candidate Restoration/Preservation Sites

Location: Bordered to the north by the New Jersey Transit - Boonton Line, to the south by a freight line and the west by Keegan Landfill, in Kearny, Hudson County.

Latitude/Longitude: 40.75956/-74.12746

Current Land Use: Freshwater wetland

Size: 279 acres

Current Ownership: NJMC

Site Description: The Kearny Freshwater Marsh is a freshwater impoundment, adjacent to the Keegan Landfill at its southwestern corner. Over the years, the productivity of the marsh has declined as a result of rising water levels within the marsh itself. Additionally, leachate from the Keegan Landfill and runoff from the surrounding areas have resulted in increased contaminant levels throughout the surface sediments. The current conceptual restoration plan includes the re-establishment of emergent vegetation by managing water levels and stemming erosion, removal and disposal of contaminated surface soils, closure of the Keegan Landfill (a source of leachate), and installation of a water control structure and/or pumping station to manage water levels.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. General, baseline data was collected for a 1989 EIS. Topography information for a portion of the site is available in a 1998 Keegan Landfill study.

B. Real Estate/Ownership

Owned by NJMC. Acquisition data available from the NJMC website.

C. Site History & Land Use

General site information available from the 1978 Meadowlands Management Plan and a 1989 EIS. Site-specific data from 1978, 1982, and 1988 reports.

D. Biological Studies - Fauna

A variety of studies have been completed ranging from a 1978 bird survey to a 2003 macroinvertebrate biodiversity assessment.

E. Biological Studies - General Environmental

A variety of studies have been completed, dating from 1978 to 2003.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

A variety of water and sediment quality studies were completed between 1999 and 2003.

I. Historical/Cultural Resources

General baseline data collected for 1989 EIS.

J. Restoration/Remediation Design Plans

A draft wetland mitigation plan was proposed in 1998.

17. Laurel Hill Park Wetland

Category: Candidate Restoration/Preservation Site

Location: Adjacent to Laurel Hill Park, east of the Hackensack River, north of the Penn-Central Northeast Corridor (AMTRAK), and south of the New Jersey Turnpike - Eastern Spur in Secaucus, Hudson County.

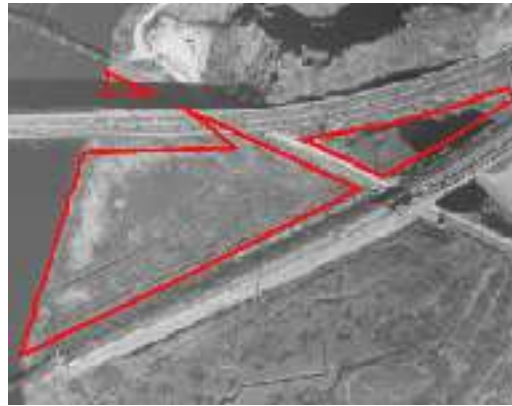
Latitude/Longitude: 40.75603/-74.08950

Current Land Use: Tidal marsh and public park

Size: 20 acres

Current Ownership: Hudson County

Site Description: Laurel Hill Park Wetland is surrounded by rail lines and highways. The site is dominated by common reed (*Phragmites australis*) interspersed with pockets of saltmarsh hay (*Spartina patens*). Tidal waters enter the site directly from the Hackensack River.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. General site conditions were examined in a 1994 environmental assessment.

B. Real Estate/Ownership

Owned by Hudson County.

C. Site History & Land Use

General site history information was compiled in 1994. Site-specific land use information developed in 1981.

D. Biological Studies - Fauna

General baseline data was collected for a 1994 environmental assessment.

E. Biological Studies - General Environmental

General baseline data was collected for a 1994 environmental assessment. A JD was issued in 1995.

F. Geotechnical

General site history information was compiled in 1994. Site-specific geologic information developed in 1981.

G. Hydraulics and Hydrology

General baseline data was collected for a 1994 environmental assessment.

H. Water and Sediments

General baseline data was collected for a 1994 environmental assessment.

I. Historical/Cultural Resources

General baseline data was collected for a 1994 environmental assessment.

J. Restoration/Remediation Design Plans

A conceptual wetland mitigation plan was developed in 1994.

18. Losen Slote Creek Park

Category: Candidate Restoration/Preservation Site

Location: Northwest of the Mehrhof Pond site and bordered to the west by Losen Slote Creek in Little Ferry, Bergen County.

Latitude/Longitude: 40.83756/-74.03893

Current Land Use: Freshwater wetland and public park

Size: 26 acres

Current Ownership: Borough of Little Ferry (NJMC has a 99-year lease agreement for public access.)

Site Description: The Losen Slote Creek Park site was part of the extensive plantation of Captain John Berry, an early Meadowlands landowner. During Captain Berry's time, the area was a semi-wilderness of cedar swamps, cattails, and wet woodlands. In the 18th century, the site was harvested for salt hay from the tidal portions of the site. In the 19th century, the site was diked and drained, and as a result, much of the formerly tidal areas are now upland. The park was protected in 1990 per an agreement between the Town of Little Ferry and the NJMC.

The recreational section of the park contains a two-acre children's playground, a regulation-size roller hockey rink, and an educational and recreational resource area with outdoor classrooms. The undeveloped portion consists of an inner coastal plain lowland forest. A plant inventory was completed in 1991. Some existing wetlands on the property were enhanced in 1992; however, some areas onsite could still be enhanced. The park is located adjacent to the Bergen County Utilities Authority Nature Preserve. The site is one of the few remaining remnants of lowland forest in Bergen County.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. A survey was completed in 1987.

B. Real Estate/Ownership

Owned by Borough of Little Ferry. (NJMC has a 99-year lease agreement for public access.)□

C. Site History & Land Use

Site history information was compiled in 1987.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Baseline wetland data and quality assessments conducted in 1991 for a zoning permit application.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

19. Lyndhurst Riverside Marsh

Category: Candidate Restoration/Preservation Site

Location: Located southeast of where Berry's Creek flows into the Hackensack River, to the east of the Bellemeade Mitigation site, and south of Rutherford Landfill in Lyndhurst, Hudson County.

Latitude/Longitude: 40.78422/-74.08880

Current Land Use: Tidal marsh

Size: 31 acres

Current Ownership: NJMC

Site Description: Lyndhurst Riverside Marsh is undeveloped and adjacent to the Bellemeade Mitigation site. The site is dominated by common reed (*Phragmites australis*). The current conceptual mitigation design includes grading of the marsh surface, creating of tidal channels, and reestablishing high saltmarsh.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. A boundary and topographic survey was conducted in 1999.

B. Real Estate/Ownership

Owned by NJMC. Acquisition data available from the NJMC website.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Wetland assessment performed in 2003.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

20. Meadowlark Marsh

Category: Candidate Restoration/Preservation Site

Location: Located north of Bellman's Creek and east of the New Jersey Turnpike - Eastern Spur in Ridgefield, Bergen County.

Latitude/Longitude: 40.82120/-74.02449

Current Land Use: Tidal marsh

Size: 90 acres

Current Ownership: Hartz Mountain Development Corporation, but NJMC is in the process of acquiring the site.

Site Description: The Meadowlark Marsh site is currently undeveloped and dominated by common reed (*Phragmites australis*), but dotted with staghorn sumac (*Rhus hirta*) and black cherry (*Prunus serotina*) trees. Site elevations range from approximately 15 feet in the upland forest to 1-foot along Bellman's Creek. It appears that runoff from development along Westside Avenue is a possible source of freshwater for several ponds contained on site. The land is visited frequently by feeding ducks including green-winged teal (*Anas crecca*), and is a popular nesting area for red-winged black birds (*Agelaius phoeniceus*). This site has also been known as the Meadowlark Tract and Bellman's Creek Site.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. □

B. Real Estate/Ownership

Owned by Hartz Mountain Development Corporation, but is in the process of being acquired by NJMC.

C. Site History & Land Use

Existing conditions surveyed at the site in 1997.
Preliminary hazardous materials assessment completed in 2003.

D. Biological Studies - Fauna

General wildlife and environmental data was collected in 1993 and 1997 for site assessments.

E. Biological Studies - General Environmental

Wetland assessments conducted in 1993, 1997, and 2003.
Preliminary hazardous materials assessment completed in 2003. □

F. Geotechnical

General soils data was collected for a 1997 site assessment.

G. Hydraulics and Hydrology

General hydrology data was collected for a 1997 site assessment.

H. Water and Sediments

General sediment data was collected for a 1997 site assessment.

I. Historical/Cultural Resources

Existing cultural resources information was compiled for a 1997 site assessment.

J. Restoration/Remediation Design Plans

Conceptual restoration plan was developed in 1986.
Development of a conceptual restoration plan was evaluated for a 1997 site assessment.

21. Mehrhof Pond

Category: Candidate Restoration/Preservation Site

Location: South of Losen Slote Creek, east of Losen Slote Creek Park, and west of the Hackensack River in Little Ferry, Bergen County.

Latitude/Longitude: 40.83600/-74.03752

Current Land Use: Open water, upland, and freshwater wetland

Size: 77 acres

Current Ownership: BCUA (NJMC has lease access agreement for public access.)

Site Description: The Mehrhof Pond site consists of an open freshwater pond (Mehrhof Pond), native grassland and wet meadow areas, and the BCUA Nature Preserve and trail. The site is adjacent to a BCUA water treatment facility, and is bisected by a service road. The approximately six acre BCUA Nature Preserve and trail were dedicated in June of 1996 by BCUA. The nature preserve itself is considered a remnant lowland forest with coastal indications, while the self-guided trail is approximately 1½ miles long and features observation sites that include an observation deck and an outdoor classroom. The trail encircles Mehrhof Pond, which was formerly a clay pit for a brick manufacturing company that occupied the property until the 1940's. All the plant life that embellishes the nature preserve is indigenous to the area. At the present time, the BCUA Nature Preserve is not open to the general public, but is open by appointment only to organized groups and organizations.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by BCUA. (NJMC has lease access agreement for public access).

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

Fisheries study completed in 1998.

E. Biological Studies - General Environmental

No data obtained.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

22. Metro Media Tract

Category: Candidate Restoration/Preservation Site

Location: Bordered on the east and south by the Hackensack River and on the north by Marsh Resources Meadowlands Mitigation Bank in Carlstadt, Bergen County.

Latitude/Longitude: 40.81180/-74.03711

Current Land Use: Tidal marsh

Size: 74 acres

Current Ownership: NJMC

Site Description: This Metro Media Tract surrounds the Metro Media Broadcast site and towers. The site is undeveloped and dominated by common reed (*Phragmites australis*). Tidal flows are restricted due to high elevations. The current conceptual restoration plan includes restoring tidal hydrology, restoring high and low saltmarsh habitat, creating a tidal channel network, and creating an upland buffer zone.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by NJMC.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Study on effects of differing soil types on growth of smooth cordgrass (*Spartina alterniflora*) was conducted in 1995.

F. Geotechnical

Study on effects of differing soil types on growth of smooth cordgrass (*Spartina alterniflora*) was conducted in 1995.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

23. Mori Tract

Category: Candidate Restoration/Preservation Site

Location: Located along Cromakill Creek, south of Eastern Brackish Marsh, and bordered to the west by West Side Avenue in Secaucus, Hudson County.

Latitude/Longitude: 40.79141/-74.03806

Current Land Use: Tidal marsh

Size: 77 acres

Current Ownership: Eugene E. Mori

Site Description: This site is a restricted tidal marsh dominated by common reed (*Phragmites australis*). The current conceptual restoration plan includes increasing tidal flow and exchange, restoring intertidal wetlands, and reintroducing native wetland species. The adjacent upland area to the south of the site is owned by the same property owner. This site has also been known as the Cromakill Marsh.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by Eugene E. Mori.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

A Jurisdictional Determination was issued in 2001.
Wetland assessments performed in 2003.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

24. Oritani Marsh

Category: Candidate Restoration/Preservation Site

Location: Bordered to the northeast by Berry's Creek Canal, to the southeast by the New Jersey Turnpike - Western Spur, and to the west by New Jersey Transit Bergen Line in East Rutherford, Bergen County.

Latitude/Longitude: 40.80229/-74.08405

Current Land Use: Tidal marsh

Size: 224 acres

Current Ownership: NJMC

Site Description: Oritani Marsh is an undeveloped tract that includes upland areas and high and low marsh areas, with small tidal channels in certain areas of the site. Present elevations at the Oritani Marsh site are substantially higher than that of the average daily tide, resulting in minimal hydrologic connections to the adjacent Berry's Creek Canal and the Hackensack River. The upland areas are dominated by a dense monoculture of common reed (*Phragmites australis*). The high marsh areas are dominated by saltmarsh hay (*Spartina patens*), while the low marsh areas are dominated by smooth cordgrass (*Spartina alterniflora*), marsh fleabane (*Pluchea pupurascens*), and dwarf spikerush (*Eleocharis pavula*).

The northern portions of the tract along the Berry's Creek Canal received spoils from the original dredging of the canal between 1902 and 1908. The northeastern half of the site received hydraulically broadcast spoils removed from the New Jersey Turnpike construction during the mid-1950s. Together, these activities eliminated a large portion of the low saltmarsh, burying it beneath several feet of fill material. This site has also been known as the Sisselman Tract.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Survey conducted for 2001 baseline study.

B. Real Estate/Ownership

Owned by NJMC. Acquisition data available from the NJMC website.

C. Site History & Land Use

Existing condition surveyed for baseline studies report.

D. Biological Studies - Fauna

Baseline studies and wildlife monitoring was conducted in 2001 and an assessment of benthic invertebrates and bird and mammal usage was completed in 2003.

E. Biological Studies - General Environmental

Baseline data collected in 1999 and 2001, site monitoring conducted in 2001, and a vegetation assessment completed in 2003. A JD was issued in 2000. Wetland assessments performed in 2003.

F. Geotechnical

Baseline data collected in 1998, 1999, 2001, and 2003.

G. Hydraulics and Hydrology

Baseline data collected in 1999.

H. Water and Sediments

Baseline data collected in 1998, 1999, and 2003.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

A conceptual wetland mitigation plan was investigated in 1999 and 2001.

25. Petrillo Tract

Category: Candidate Restoration/Preservation Site

Location: Located adjacent to the Secaucus High School, Secaucus Tract, and Mill Creek Marsh sites in Secaucus, Hudson County.

Latitude/Longitude: 40.80004/-74.04621

Current Land Use: Tidal marsh

Size: 8 acres

Current Ownership: Louise G. Petrillo

Site Description: The Petrillo Tract includes a lowland marsh area and upland areas. It appears that runoff from residential streets flows into the property. A drainage ditch on the western border prevents runoff from an adjacent parking lot from reaching the upland areas, but it is likely that this runoff reaches the low-lying marsh area. The current conceptual restoration plans includes increasing tidal flow and exchange, restoring intertidal wetlands, reintroducing native wetland species, and restoring upland grassland habitat.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by Louis G. Petrillo

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

A variety of data was collected from baseline, habitat, vegetation studies etc. conducted in 1986 and 1990.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Conceptual restoration plan developed in 1986.

26. Riverbend Wetlands Preserve

Category: Candidate Restoration/Preservation Site

Location: Directly adjacent to the Malanka landfill to the east, to the Hackensack River to the west and south, and south of the Laurel Hill Park Wetland site in Secaucus, Hudson County.

Latitude/Longitude: 40.75312/-74.08973

Current Land Use: Tidal marsh

Size: 57 acres

Current Ownership: NJMC

Site Description: Riverbend Wetlands Preserve is undeveloped but is directly adjacent to the Malanka Landfill. Mosquito ditches were dug at the site in the 1920's and 1930's. Portions of the site currently support a mixture of native high saltmarsh vegetation, dominated by saltmarsh hay (*Spartina patens*). Other areas consist of open water and dense monocultures of common reed (*Phragmites australis*). Rutgers University uses the site as a reference study site due to the presence of native high marsh vegetation.

The site was purchased by NJMC in December 1996. NJMC has since prepared a preliminary wetland enhancement design and developed a scope of the work for baseline studies at the site. Preliminary evaluation of the open marsh water technique has been completed and presented to the jurisdictional agencies. A restoration design is being developed based on open marsh water management, and the baseline studies scope of work is being modified to ensure consistency with the OMWM requirements. This site has also been known as the South Secaucus Site.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by NJMC. Acquisition data available on NJMC website.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

Monitoring conducted in 2001.

E. Biological Studies - General Environmental

Site-specific baseline data collected in 1990 and 1992. Monitoring conducted in 2001. *Phragmites australis* studies were conducted from 2000-2003. Wetland assessments conducted in 1990, 1993, and 2003.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

Site-specific sediment sampling and analyses conducted in 1982 and 2001.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Conceptual restoration plan developed in 1986.

27. Secaucus High School

Category: Candidate Restoration/Preservation Site

Location: Bordered on the north by the Hackensack River and the southeast by Secaucus Tract in Secaucus, Hudson County.

Latitude/Longitude: 40.80420/-74.04718

Current Land Use: Tidal marsh

Size: 43 acres

Current Ownership: Town of Secaucus (NJMC has a 99-year lease agreement).

Site Description: The Secaucus High School site is currently dominated by common reed (*Phragmites australis*), and contains narrow sinuous channels, several mosquito ditches, and tide gates. A pump station, located on the southwest corner of the site, is fed by stormwater from the parking lot of the adjacent high school, as well as a small portion of the neighboring residential area to the southwest, and discharges stormwater directly onto the property. Additionally, three culverts collect stormwater from a 1000-foot section of Mill Ridge Road and feed directly onto the site from the south side. These culverts contain flap gates which theoretically keep onsite tidal waters from backing up onto the road. The flap gates are in poor condition, and currently are not working. Consequently, during heavy rains or excessively high tides, Mill Ridge Road experiences flooding.

The current restoration concept plan includes the use of the site as an emergency flood control detention basin. Design criteria are based on a 100-year storm. Existing storm sewer catch basins feeding directly to the site through the flap gates would be re-routed through new underground storm lines, and directed into the existing pump station, where flow would be discharged to the site from a single, regulated location that would not be subjected to tidal backflow. The installation of automatic Self-Regulating Tidegates would isolate the site from tidal influences during excessively high-tide conditions. This in turn would allow stormwater to be discharged onto the site to be detained until the storm or tides subside. A number of meandering channels and small ponded areas will also be developed.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by Town of Secaucus. (NJMC has a 99-year lease agreement). Acquisition data available on the NJMC website.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

Monitoring conducted in 2001.

E. Biological Studies - General Environmental

Monitoring conducted and baseline data collected in 2001, including vegetation features mapping.

F. Geotechnical

Baseline data collected in 2001.

G. Hydraulics and Hydrology

Baseline data collected in 2001, including hydrologic features mapping.

H. Water and Sediments

Baseline data collected in 2001.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

28. Secaucus Tract

Category: Candidate Restoration/Preservation Site

Location: Bordered on the west by the Secaucus High School site and to the east by Mill Creek Marsh in Secaucus, Hudson County.

Latitude/Longitude: 40.80313/-74.04427

Current Land Use: Tidal marsh

Size: 42 acres

Current Ownership: Town of Secaucus (NJMC has a 99-year lease agreement).

Site Description: The site is currently dominated by common reed (*Phragmites australis*). Restoration of this site would provide connectivity between the Mill Creek Marsh and Secaucus High School sites to form a large, expanse of contiguous habitat.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Town of Secaucus (NJMC has a 99-year lease agreement).

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

No data obtained.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

29. Steiner's Marsh

Category: Candidate Restoration/Preservation Site

Location: Located south of the New Jersey Turnpike - Western Spur, west of Paterson Plank Road, and north of Hackensack River in East Rutherford, Bergen County.

Latitude/Longitude: 40.80745/-74.06321

Current Land Use: Tidal marsh and upland

Size: 8 acres

Current Ownership: Tomu Construction Company, Inc.

Site Description: Steiner's Marsh is predominately an upland area with a low marsh fringe dominated by smooth cordgrass (*Spartina alterniflora*) along the southeastern edge of the site. Development on the property includes a Transco service road along the northern property edge and a golf driving range at the eastern corner. Site elevations range from one foot along the Hackensack River to approximately eight feet on the Transco road. The site may receive some runoff from nearby parking lots and roads.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by Tomu Construction Company, Inc. □

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

No data obtained.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

30. Teterboro Woods

Category: Candidate Restoration/Preservation Site

Location: The site is bordered by Moonachie Avenue to the south and New Jersey Transit Pascack Valley Line in Moonachie, Teterboro, and Little Ferry, Bergen County
Latitude/Longitude: 40.84622/-74.05548

Current Land Use: Freshwater wetland

Size: 258 acres

Current Ownership: Port Authority of New York and New Jersey

Site Description: The Teterboro Woods site consists of two separate areas southeast and southwest of the Teterboro Airport. The dominant wetland type is palustrine, successional broad-leaved deciduous forested/scrub-shrub with pockets of emergent wetlands. Upland inclusions and some disturbed areas are scattered among the wetland areas. Disturbance is mostly due to excavation and subsequent filling, as well as ditch dredging and spoil disposal. The Teterboro Woods site is slated for preservation.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. A topographic survey is included in the 1999 wetland delineation report.

B. Real Estate/Ownership

Owned by Port Authority of New York and New Jersey.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Wetland delineations conducted in 1987 and 1999.
Wetland quality assessment conducted in 1999. A JD was issued in 2001.

F. Geotechnical

Soils information was collected during a 1987 wetland delineation.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

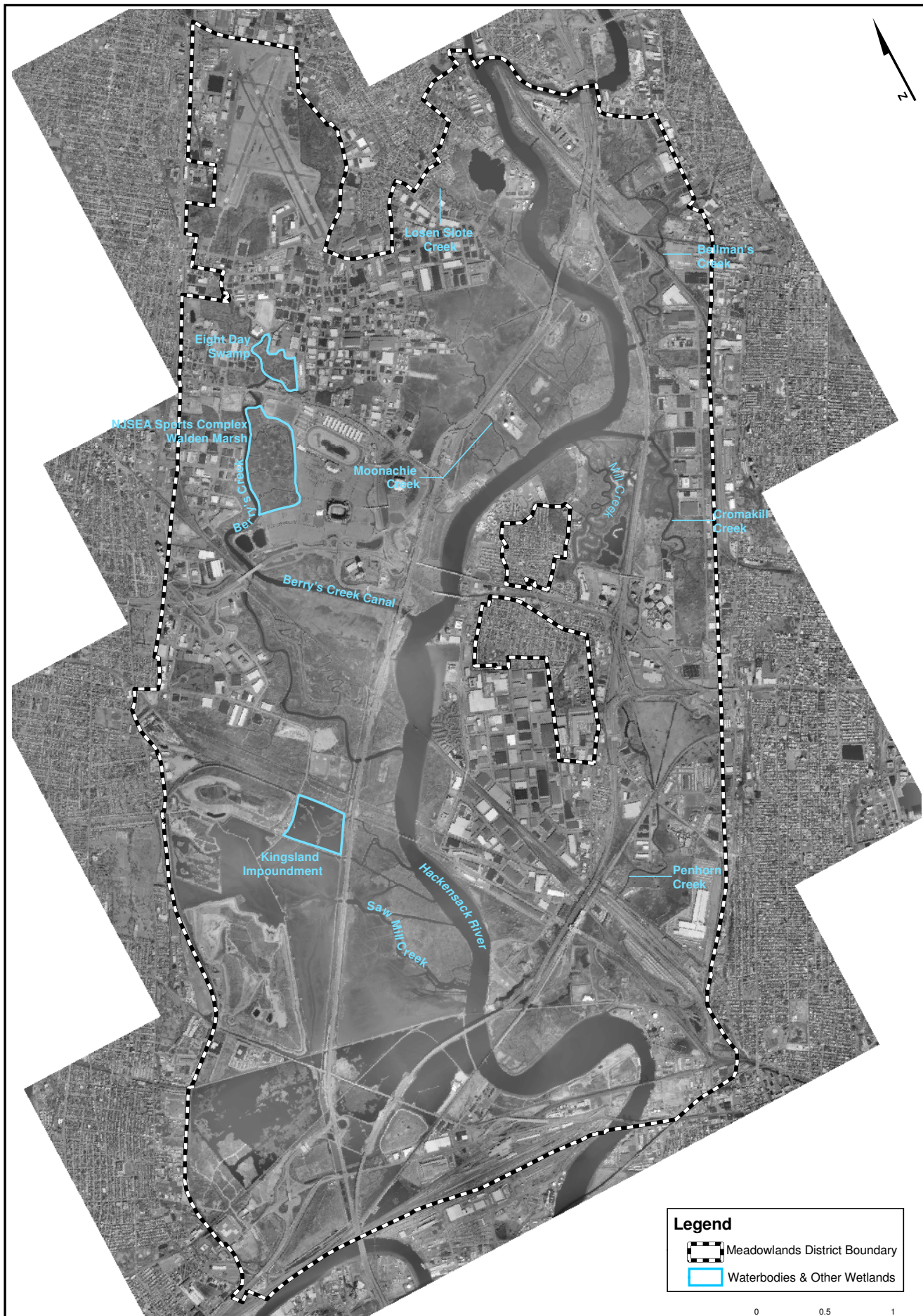
I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Conceptual design developed to mitigate for unauthorized fill at Teterboro Airport in 1987.

WATERBODIES AND OTHER WETLANDS



Source: Digital Orthophoto, New Jersey Meadowlands Commission, 2002.



U.S. Army Corps
of Engineers
N.Y. District

Meadowlands Environmental Site Investigation Compilation (MESIC)
WATERBODIES AND OTHER WETLANDS

FIGURE
1-5

31. Bellman's Creek

Category: Waterbodies & Other Wetlands

Location: Located in the northeast corner of the HMD, running along/through Bellman's Creek Marsh, Skeetkill Creek Marsh, and Meadowlark Marsh. The creek begins in Ridgefield and then runs along the border of Ridgefield and North Bergen out to the Hackensack River, in Bergen and Hudson Counties.

Current Land Use: Open Water

Site Description: Bellman's Creek is tidally influenced. Its banks are primarily mudflats and common reed (*Phragmites australis*) dominated marsh. The creek flows under the New Jersey Turnpike - Eastern Spur, and through culverts under Westside Avenue. Some flooding of the areas around Bellman's Creek is common during storm events.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD data exists inclusive of this site.

B. Real Estate/Ownership

N/A

C. Site History & Land Use

Land use information collected for a 1993 wetland delineation of a nearby site.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

No data obtained.

F. Geotechnical

Geoarchaeological overview completed in 1985 and baseline data collected in 1993 for a zoning permit.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

Baseline data collected in the creek for a natural resources inventory in 1971.

I. Historical/Cultural Resources

Geoarchaeological overview completed in 1985.

J. Restoration/Remediation Design Plans

No data obtained.

32. Berry's Creek / Berry's Creek Canal

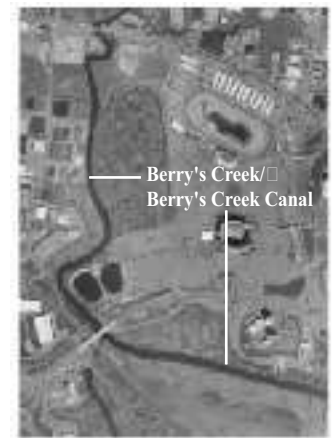
Category: Waterbodies & Other Wetlands

Location: Berry's Creek is located on the western side of the Hackensack River, running along NJSEA Sports Complex Walden Marsh, Berry's Creek Marsh, Lyndhurst Landfill, Rutherford Landfill, Bellemeade Mitigation, and Lyndhurst Riverside Marsh. The creek flows through East Rutherford into Rutherford, then along the boundary of Rutherford and Lyndhurst out to the Hackensack River in Bergen County. □

Berry's Creek Canal is located to the east of the Hackensack River along the northern boundary of Oritani Marsh in East Rutherford, Bergen County.

Current Land Use: Open Water

Site Description: Berry's Creek and Berry's Creek Canal converge just south of the Route 3 Bridge. The canal flows unimpeded, while the creek flows through two degraded culverts located under the Rutherford Landfill haul road and New Jersey Transit Bergen Line. Both are considered to be highly contaminated, with high levels of mercury and other heavy metals found in the sediments. From as early as 1943, F.W. Berk and Co., and then later the Wood-Ridge Chemical Corporation (Velsicol Corporation), were releasing effluent containing substantial levels of mercury into the canal. It is estimated that as much as one to two kilograms of mercury per day were being released from the chemical plant, until it ceased operation in 1974. Although the chemical plants are no longer releasing mercury into the canal, studies have shown that the site is still a source of contamination.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD data exists inclusive of this site. Detailed surveys completed in 1999 and 2000. Other topographic information is available from reports for nearby sites with dates ranging from 1972 to 2000.

B. Real Estate/Ownership

N/A □

C. Site History & Land Use

Flood management plan conducted for NJSEA Sports Complex site in 1980.

D. Biological Studies - Fauna

Various bird, fish, invertebrate, and wildlife studies conducted for the creek and surrounding areas dated between 1972 and 1992.

E. Biological Studies - General Environmental

Various general studies for creek and surrounding sites conducted between 1972 and 2001.

F. Geotechnical

Various general studies for creek and surrounding sites conducted between 1972 and 2000.

G. Hydraulics and Hydrology

Flood control survey conducted in 2000; study conducted between 1998 and 2004, including a two-dimensional hydrologic ("child") model for the creek. Other information is available from reports for nearby sites with dates ranging from 1982 to 2000.

H. Water and Sediments

Abundant water and sediment quality data collected spanning a period from 1971 to 2003.

I. Historical/Cultural Resources

Baseline data collected for the creek and surrounding areas in 1998 as part of Phase 1 investigation.

J. Restoration/Remediation Design Plans

No data obtained.

33. Cromakill Creek

Category: Waterbodies & Other Wetlands

Location: Located to the east of the Hackensack River, flowing through the Mori Tract and Eastern Brackish Marsh, under the New Jersey Turnpike - Eastern Spur, and along the northern boundary of Western Brackish Marsh. The creek begins in Secaucus and flows along the border between Secaucus and North Bergen out to the Hackensack River in Hudson County.

Current Land Use: Open Water

Site Description: Cromakill Creek is tidally influenced. An active sewage treatment plant discharges effluent into its upper reaches, causing poor water quality throughout the year. Heavy sedimentation, presumably from the effluent, and common reed (*Phragmites australis*) invasion are choking off the creek channel.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD data exists inclusive of this site.

B. Real Estate/Ownership

N/A

C. Site History & Land Use

Ecological management plan for the HMD from 1978 includes general land use planning information.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Ecological report conducted for effects of the Kearny Generating Station on various waterways within the Hackensack Estuary in 1988.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

Water quality studies conducted in 1978, 1980, and 1994. Water and sediment quality investigation conducted in 2001.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

34. Eight Day Swamp

Category: Waterbodies & Other Wetlands

Location: North of NJSEA Sports Complex Walden Marsh in Carlstadt, Bergen County.

Current Land Use: Preserved tidal marsh

Current Ownership: Various private owners and the State of New Jersey.

Site Description: The Eight Day Swamp is a highly contaminated wetland area that lies on the western banks of Berry's Creek. High levels of mercury and other heavy metals are found throughout the site. An estimated 50 tons of mercury are found in a stratified layer within the marsh soils. The Eight Day Swamp is dominated by a monoculture of common reed (*Phragmites australis*) and receives very little tidal flushing.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD data exists inclusive of this site. □

B. Real Estate/Ownership

Separate portions of the site owned by various private owners and the State of New Jersey.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

Benthos studies completed in 2002 and 2003.

E. Biological Studies - General Environmental

No data obtained.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

Sediment contamination studies completed at the site in 1980, 2002, and 2003.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

35. Hackensack River

Category: Waterbodies & Other Wetlands

Location: Begins in Rockland County, New York, flowing down through the middle of the HMD, and eventually outlets into the Newark Bay at Kearny Point.

Current Land Use: Open Water

Site Description: The key waterbody in the HMD is the Hackensack River, a 50-mile southward course that drains the Hackensack River watershed, approximately 197 square miles in size. The Oradell Dam was constructed to supply potable water to northern New Jersey and has essentially separated the Hackensack River into two distinct components: the upper river (above the dam) and the lower river (below the dam). The upper river is a controlled freshwater section with major inputs coming from industrial and municipal discharges, stormwater runoff, and water spilling over the dam. The lower river and its tributaries are part of a brackish estuary in which tidal fluctuations and seasonal water events permit flooding of the adjacent wetland areas. The majority of the river's lower reaches are located in the HMD.

The Hackensack River provides hydrologic support to adjacent wetland areas, preserving the wetlands and their diverse flora and fauna. Additionally, opportunities exist for observation, education, and scientific activities relative to the environment and the quality of the river. The river also provides for commercial and recreational uses.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Detailed surveys completed in 1999 and 2000. Historical maps are included in site history reports from 1896 and the 1970's.

B. Real Estate/Ownership

Ownership history along the river was compiled in 1973.

C. Site History & Land Use

Site history reports for the HMD were compiled in 1973 and 1978.

D. Biological Studies - Fauna

Various invertebrate and fish studies were conducted between 1974 and 2003.

E. Biological Studies - General Environmental

Various general environmental assessments were conducted between 1958 and 1994. A biological resources inventory was completed for the HMD for a draft EIS in 1985.

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F. Geotechnical

Baseline geologic data collected for the Hackensack River Basin in 1976. General soils/geologic data collected for the HMD for a draft EIS and an environmental and health impact statement in 1985.

G. Hydraulics and Hydrology

Flood control survey conducted in 2000; study conducted between 1998 and 2004, including a one-dimensional hydrological ("parent") model for the river. Various other hydrology studies were conducted from 1974 to 1991.

H. Water and Sediments

Many water and sediment quality studies were conducted between 1974 to 2003.

I. Historical/Cultural Resources

A cultural resource study for a portion of the river near Laurel Hill was conducted in 1982. General Baseline data was collected for a BCUA impact study in 1985.

J. Restoration/Remediation Design Plans

A pollution abatement plan for the river was completed in 1964.

36. Kingsland Impoundment

Category: Waterbodies & Other Wetlands

Location: Located north of Saw Mill Creek Wildlife Management Area, to the south of Avon Landfill, and to the east of Kinglands Landfill in Lyndhurst, Bergen County.

Current Land Use: Impounded open water areas and pedestrian trail

Current Ownership: NJMC

Site Description: The Kingsland Impoundment receives tidal waters from both the Sawmill Creek mudflats and Kingsland Creek; inputs are controlled by a sluice gate. Common reed (*Phragmites australis*) stands are interspersed with open water areas. Water levels in the impoundment are managed throughout the year for shorebirds and waterfowl habitat, educational programs, and scenic beauty. Water levels vary from mudflats to approximately 24 inches, depending on which management scheme is in place. The 0.5 mile Marsh Discovery Trail, which bisects the Kingsland Impoundment, has four bird blinds and seating areas for nature enthusiasts.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by NJMC.

C. Site History & Land Use

General site history information for the site and surrounding areas is included in several reports from 1978 to 1988.

D. Biological Studies - Fauna

Two general bird studies were conducted in 1970 and 1988.

E. Biological Studies - General Environmental

General wetland information is included in an assessment of the HMD conducted in 1978. A vegetation plan is included in a Master Plan for DeKorte Park from 1979.

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F. Geotechnical

A general soils/foundation investigation for the Saw Mill Creek Basin was conducted in 1983.

G. Hydraulics and Hydrology

Hydrological data is included in a water quality management report for the Saw Mill Creek Basin from 1983. A hydraulic model for flood damage in the Meadowlands was completed in 1981.

H. Water and Sediments

Sediment data was collected for a water quality management report in 1983. A general industrial effluent study was conducted in 1975, and a 1978 report presented water quality management strategies for the HMD.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Preservation plan for tidal marshes was included in the 1979 DeKorte Park Master Plan.

37. Losen Slote Creek

Category: Waterbodies & Other Wetlands

Location: Located in the northeastern portion of the HMD, running along Losen Slote Creek Park, Mehrhof Pond, and the northern tip of the Empire Tract. The creek begins outside of the HMD in Little Ferry, and runs along the border of Little Ferry and Moonachie, then along the border of Little Ferry and South Hackensack, before it outlets into the Hackensack River in Bergen County.

Current Land Use: Open Water

Site Description: Losen Slote Creek (also known as Eckles Creek) is not influenced by tidal waters due to a tide gate located near its outlet into the Hackensack River. The tide gate was installed by the Bergen County Mosquito Commission, sometime around 1921. The creek receives freshwater inputs from surrounding areas. There are freshwater meadows and forested wetlands located along the banks.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

N/A

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

No data obtained.

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F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

Chemistry and water quality data collected in 1971.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

38. Mill Creek

Category: Waterbodies & Other Wetlands

Location: Located east of the Hackensack River, in Secaucus, Hudson County. It runs along Mill Creek Wetland Mitigation Site, Petrillo Tract, Secaucus Tract, and Western Brackish Marsh before it outlets into the Hackensack River.

Current Land Use: Open Water

Site Description: Mill Creek is a meandering tidal creek with several oxbows. It is the main waterbody that flows into the Mill Creek Marsh owned by NJMC. The Secaucus Sewage Treatment Plant releases large quantities of tertiary-level treated freshwater into the creek, lowering salinity levels. Un-enhanced portions of the bank are dominated by common reed (*Phragmites australis*), while a variety of aquatic species have established along the enhanced marsh areas.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. □

B. Real Estate/Ownership

N/A

C. Site History & Land Use

General land use data was included in an ecological management plan for the HMD from 1978.

D. Biological Studies - Fauna

A comparison fisheries study was conducted in 2002. General data was collected for a report on the effects of the Kearny Generating Station in 1988.

E. Biological Studies - General Environmental

A nitrogen study was done in 1974. General wetlands data was included in an ecological management plan for the HMD from 1978.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

Various water quality studies were completed from 1974 to 2002. A sediment analysis was completed in 2001.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

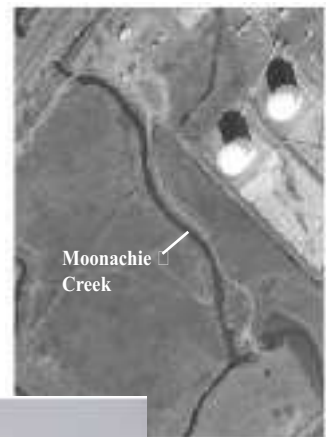
39. Moonachie Creek

Category: Waterbodies & Other Wetlands

Location: Located in the northeastern portion of the HMD in Carlstadt, Bergen County. Runs from the Empire Tract underneath the New Jersey Turnpike - Western Spur to the southwest of Marsh Resources Meadowlands Mitigation Bank, down to the Hackensack River.

Current Land Use: Open Water

Site Description: Moonachie Creek is cut off from tidal influence by a tide gate, as well as berms along the Hackensack, built and maintained by the Bergen County Mosquito Commission. The creek drains a large portion of the Empire Tract. Its banks are dominated by common reed (*Phragmites australis*), with some mixed wooded species at higher elevations.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

N/A □

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

An avian survey and analysis of potential environmental impacts of the proposed mitigation activities were completed for the Empire Tract in 1998.

E. Biological Studies - General Environmental

An avian survey and analysis of potential environmental impacts of the proposed mitigation activities were completed for the Empire Tract in 1998.

F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

40. NJSEA Sports Complex - Walden Marsh

Category: Waterbodies & Other Wetlands

Location: Adjacent to the NJSEA Sports Complex, north of Oritani Marsh along Berry's Creek in East Rutherford, Bergen County.

Current Land Use: Preserved tidal marsh

Current Ownership: NJSEA

Site Description: The approximately 120 acre Walden Marsh is highly channelized due to mosquito ditches, and receives tidal influence from Berry's Creek. The site is predominately a common reed (*Phragmites australis*) monoculture, with highly contaminated soils. It has been estimated that 20 tons of mercury exist in a stratified layer in the Walden Marsh soils.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

N/A □

C. Site History & Land Use

Land use information was included in three EIS's conducted for the NJSEA Sports Complex site in 1972, 1978, and 1980.

D. Biological Studies - Fauna

General biological sampling within the surrounding area was completed for the Meadowlands in 1977. Wildlife studies and an inventory for the surrounding area were included in two EIS's conducted for the NJSEA Sports Complex site in 1972 and 1978.

E. Biological Studies - General Environmental

Various EIS's and a technical document conducted for the NJSEA Sports Complex site in 1972, 1978, 1980, and 1985 included a vegetation inventory and assessments of potential environmental impacts within the surrounding area. Wetland assessments conducted in 2003. □

F. Geotechnical

Soils/foundation investigation for NJSEA Sports Complex site was conducted in 1978. Test borings and geology studies were conducted for two EIS's for NJSEA Sports Complex site in 1972 and 1978.

G. Hydraulics and Hydrology

Stormwater study performed for the NJSEA Sports Complex site/Berry's Creek in 1990. General hydrology studies were included in an EIS and a technical document conducted for the NJSEA Sports Complex site in 1980 and 1985.

H. Water and Sediments

Various EIS's and a technical document conducted for the NJSEA Sports Complex site in 1972, 1978, 1980, and 1985 included a water quality studies. Storm water study performed in 1990.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

A plan to create a mercury budget was established in 1975. Mitigation plan for expansion of parking facilities at the Meadowlands Arena was proposed in 1985.

41. Penhorn Creek

Category: Waterbodies & Other Wetlands

Location: Located in the southeastern portion of the HMD, flows along the border of Secaucus and Jersey City in Hudson County, underneath the various New Jersey Transit rail lines that converge at the Secaucus Transfer Station. The creek outlets to the Hackensack River, just east of Malanka Landfill.

Current Land Use: Open Water

Site Description: Penhorn Creek is blocked from tidal inundation at two points by tide gates. The first is located just above the Hackensack River by the railroad crossing, while the second is located above Secaucus Road. Both tide gates have associated pump stations. The creek runs through the Croxton rail yards and other industrial areas, resulting in very poor water quality. The surrounding areas consist mainly of industrial grounds and monotypic common reed (*Phragmites australis*) stands.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD data exists inclusive of this site. Detailed flood control survey completed in 2000.

B. Real Estate/Ownership

N/A

C. Site History & Land Use

General land use studies were conducted for an ecological resource plan completed for the HMD in 1978.

D. Biological Studies - Fauna

A benthos study was conducted in the creek for the Secaucus Transfer Station Project in 1990.

E. Biological Studies - General Environmental

Various general wetland studies were completed for an ecological resource plan for the HMD in 1978.

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F. Geotechnical

No data obtained.

G. Hydraulics and Hydrology

Flood control survey conducted in 2000; study conducted between 1998 and 2004, including a two-dimensional hydrology ("child") model for the creek.

H. Water and Sediments

Water quality studies were conducted in the creek in 1990 and 1994. General water quality studies were completed for an ecological resource plan completed for the HMD in 1978.

I. Historical/Cultural Resources

A cultural resources study of the area associated with the Secaucus Interchange Project, including the creek, was completed in 1992.

J. Restoration/Remediation Design Plans

No data obtained.

42. Saw Mill Creek

Category: Waterbodies & Other Wetlands

Location: Located in the southwestern portion of the HMD, flowing along and through the Saw Mill Creek Wildlife Management Area and under the New Jersey Turnpike - Western Spur before it outlets into the Hackensack River. The creek runs along the border of Kearny and Lyndhurst in Hudson and Bergen Counties respectfully.

Current Land Use: Open Water

Site Description: Saw Mill Creek is strongly influenced by the tides, and has several mosquito ditches that stem off the main creek channel. The creek opens up to large mudflat areas that are frequented by many waterfowl, wading birds, and shorebirds. Two tide gates, constructed in the 1920's, were destroyed by storm events in the 1950's, re-opening the site to the tides. Since then, the established common reed (*Phragmites australis*) monoculture in the surrounding areas has been steadily replaced by smooth cordgrass (*Spartina alterniflora*).



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD data exists inclusive of this site.

B. Real Estate/Ownership

N/A

C. Site History & Land Use

General site history and land use contained in 1978 ecological resource plan for the HMD and 1983 Saw Mill Creek Basin reports.

D. Biological Studies - Fauna

Various general HMD and site-specific bird, macroinvertebrate, and fish studies completed between 1973 and 2000.

E. Biological Studies - General Environmental

General wetland data collected for the 1978 ecological resource plan for the HMD. Environmental impacts assessed for the Saw Mill Basin in a 1984 EIS.

F. Geotechnical

A soil and foundation investigation was completed for the Saw Mill Basin in a 1984 EIS.

G. Hydraulics and Hydrology

General baseline data collected for the Saw Mill Basin for a 1983 hydrology report and a 1984 EIS.

H. Water and Sediments

General baseline data collected for the HMD and Saw Mill Creek Basin in 1973, 1978, 1983, and 1984. Site-specific studies conducted in 1980, 1992, 1994, and 2001.

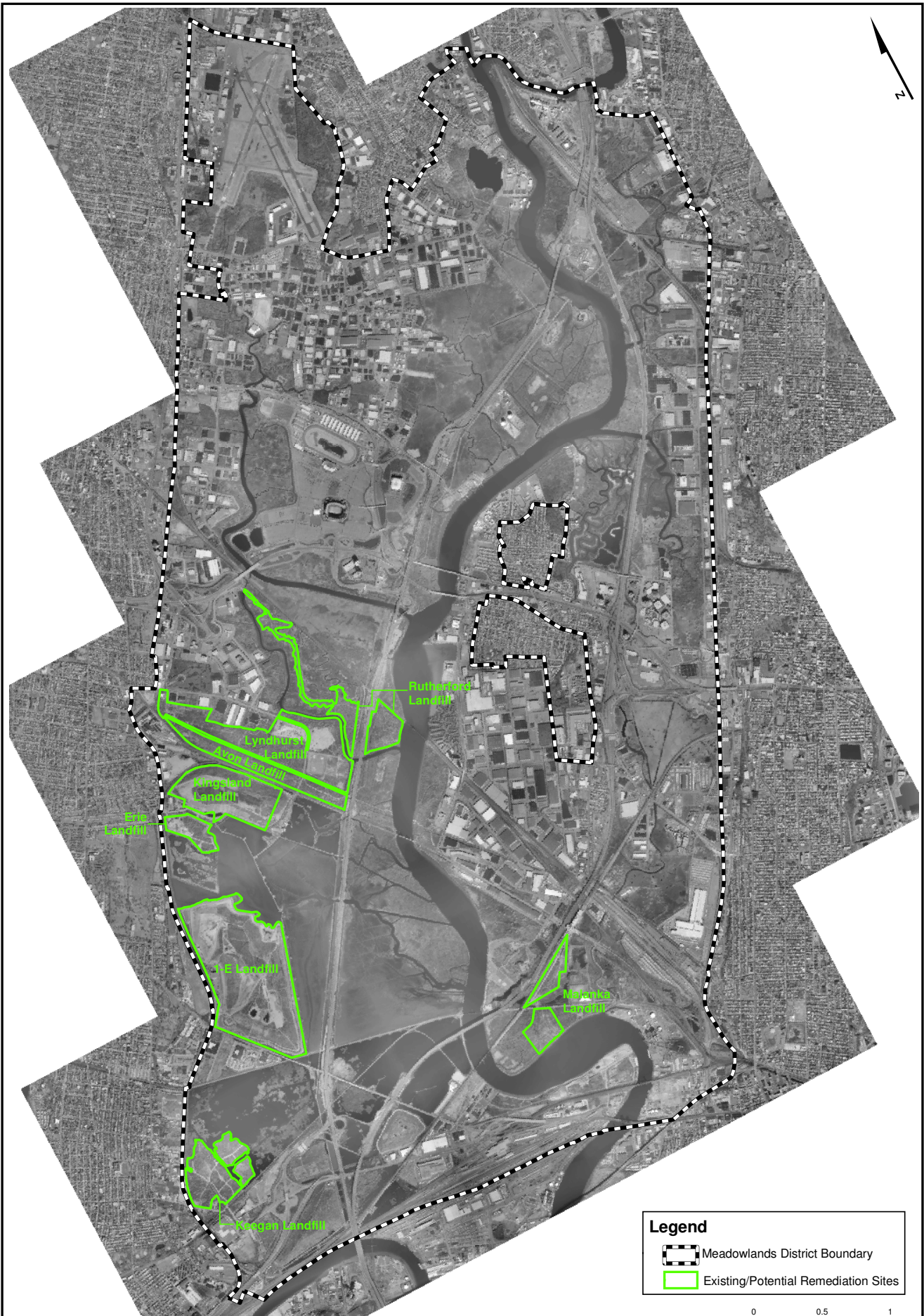
I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

No data obtained.

EXISTING/POTENTIAL REMEDIATION SITES



Source: Digital Orthophoto, New Jersey Meadowlands Commission, 2002.



U.S. Army Corps
of Engineers
N.Y. District

Meadowlands Environmental Site Investigation Compilation (MESIC)
EXISTING/POTENTIAL REMEDIATION SITES

FIGURE
1-6

43. 1-E Landfill

Category: Existing/Potential Remediation Site

Location: Along the western border of the New Jersey Meadowlands in Kearny and North Arlington, Hudson and Bergen Counties respectively.

Latitude/Longitude: 40.77278/-74.11839

Current Land Use: Combination of a leaf composting facility and passive open space.

Size: 409 acres

Current Ownership: NJMC

Site Description: The 1-E Landfill is currently accepting dredged material as part of the cap from Newark Bay. The site also contains a leaf compost facility and a transfer station.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.

B. Real Estate/Ownership

Owned by NJMC.

C. Site History & Land Use

General site history and land use data contained in 1983 Sawmill Creek Basin studies.

D. Biological Studies - Fauna

Site-specific wildlife study conducted in 1992 and an avian survey conducted in 1993.

E. Biological Studies - General Environmental

Baseline data collected between 1984 and 1992.

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F. Geotechnical

Site-specific data collected in 1984 and 1985.

G. Hydraulics and Hydrology

General hydrologic data contained in 1983 Sawmill Creek Basin studies. Site-specific investigation conducted in 1984.

H. Water and Sediments

General baseline data collected for 1983 Sawmill Creek Basin Studies. Site-specific water quality data collected in 1992.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Preliminary engineering design reports for expansion and closure developed in 1985. Additional plans for closure improvements, leachate pumping, perimeter construction, and slope stability developed in 1980s through to 2000.

44. Avon Landfill

Category: Existing/Potential Remediation Site

Location: Bordered by New Jersey Transit Main line, New Jersey Turnpike - Western Spur, and the Lyndhurst Landfill in Lyndhurst Township, Bergen County.

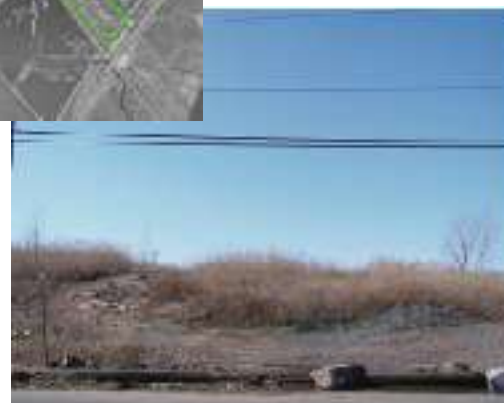
Latitude/Longitude: 40.79256/-74.10304

Current Land Use: Passive open space; non-active, unremediated landfill

Size: 91 acres

Current Ownership: EnCap Golf Holdings, LLC.

Site Description: Linear landfill vegetated with *Phragmites*. Closed to operations in 1980.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Survey and aerial maps developed in 2000. Aerial photographs shot in 2002.

B. Real Estate/Ownership

Owned by ENCap Golf Holdings, LLC. Ownership information presented in 1988 EIS and 1999 report.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Site-specific information developed for redevelopment project reports completed in 2000 and 2002.

F. Geotechnical

Site-specific baseline information collected in 2000 and 2001.

G. Hydraulics and Hydrology

Site-specific baseline data collected in 2000 and 2001.

H. Water and Sediments

Site-specific baseline data collected in 2000 and 2001.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Closure plan developed in 2000 and updated in 2001. Wetland mitigation plans developed in 2001.

45. Erie Landfill

Category: Existing/Potential Remediation Site

Location: South of Kingsland Landfill and north of Harrier Meadow in North Arlington, Bergen County

Latitude/Longitude: 40.78912/-74.11594

Current Land Use: Active landfill, but contained (i.e. remediation system is in place)

Size: 38 acres

Current Ownership: NJMC

Site Description: The Erie Landfill was closed to operations prior to 1970. A remediation system was put in place in 2002, and the landfill was reopened.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site.
Subdivision map developed in 2000 and updated in 2003.
Aerial photographs shot in 2003.

B. Real Estate/Ownership

Owned by NJMC. Ownership information presented in 1999 report.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

No data obtained.

F. Geotechnical

Geotechnical data collected in 2001 and slope stability analysis conducted in 2002.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

No data obtained.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Closure plans developed in 1999, and additional landfill site improvements developed in 2001 and 2002.

46. Keegan Landfill

Category: Existing/Potential Remediation Site

Location: Off Bergen Avenue in Kearny, Hudson County

Latitude/Longitude: 40.75657/-74.13501

Current Land Use: Passive open space, non-active landfill, unremediated

Size: 110 acres

Current Ownership: Town of Kearny and private ownership

Site Description: The Keegan Landfill is bordered on the southeast and east by wetland areas and open-water wetland (i.e. Kearny Freshwater marsh). The western boundary is a mix of residential and industrial facilities. Frank Creek originates on the site and discharges to the Passaic River.

It is believed that the Keegan landfill began landfill operations in the 1940's, with the majority of landfilling operations taking place in the 1960's. The site was known as the Municipal Sanitary Landfill Authority (MSLA) 1-B Landfill and operated by MSLA under a lease agreement with the town of Kearny. The Keegan Landfill was closed in 1972. Today the majority of the site is owned by the Town of Kearny, with a portion under private ownership.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Aerial photographs shot in 2002.

B. Real Estate/Ownership

Owned by Town of Kearny and private owner. Ownership information presented in 1998 and 1999 reports.

C. Site History & Land Use

Site history and land use data collected in 1997 and 1998.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Site-specific baseline data collected from 1995 to 1998.

F. Geotechnical

Site-specific baseline data collected from 1995 to 1998.

G. Hydraulics and Hydrology

Site-specific baseline data reported in 1995 and 1998 reports

H. Water and Sediments

Site-specific studies conducted from 1989 through 1998.

I. Historical/Cultural Resources

Site-specific baseline data detailed in 1995 report.

J. Restoration/Remediation Design Plans

Development and closure design plans presented in 1998 and 1999 reports.

47. Kingsland Landfill

Category: Existing/Potential Remediation Site

Location: Bordered to the west by New Jersey Transit Kingsland Line and the north by New Jersey Transit Main Line, in North Arlington and Lyndhurst, Bergen County.

Latitude/Longitude: 40.79042/-74.10911

Current Land Use: Passive open space; remediated landfill.

Size: 150 acres

Current Ownership: EnCap Golf Holdings, LLC.

Site Description: Landfill closed in 1988. Remediated in the 1990's.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Surveying and aerial mapping completed in 2001 and 2002.

B. Real Estate/Ownership

Owned by EnCap Golf Holdings, LLC.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

Baseline data obtained in 2001(revised in 2002).

E. Biological Studies - General Environmental

Baseline data obtained in 2001(revised in 2002). A JD was issued in 2001.

F. Geotechnical

Engineering design report for expansion completed in 1984. Baseline data obtained in 2001 (revised in 2002).

G. Hydraulics and Hydrology

Engineering design report for expansion completed in 1984. Baseline data obtained in 2001 (revised in 2002). Contract drawings for stormwater management available from 1985 and 1989.

H. Water and Sediments

Engineering design report for expansion completed in 1984. Contract drawings for leachate collection system, cutoff wall, and pumping station available from 1989 and 1992.

I. Historical/Cultural Resources

Baseline data obtained in 2001 (revised in 2002).

J. Restoration/Remediation Design Plans

Pilot study for cover material completed in 1994. Contract drawings for expansion and closure available from between 1984 and 1999. Post-closure plan developed in 2002.

48. Lyndhurst Landfill

Category: Existing/Potential Remediation Site

Location: South of the Meadowlands Corporate Center in Lyndhurst, Bergen County.

Latitude/Longitude: 40.79462/-74.10118

Current Land Use: Passive open space; recreational park with ballfields and two sets of radio towers; unremediated landfill.

Size: 232 acres

Current Ownership: EnCap Golf Holdings, LLC

Site Description: Operations at the Lyndhurst Landfill ceased in the early 1970's.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Aerial photograph shot in 2002.

B. Real Estate/Ownership

Owned by EnCap Golf Holdings, LLC. Ownership information provided in 1999 report.

C. Site History & Land Use

Background information provided in 2001 report.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Background site investigation completed in 2002. JD issued in 2000.

F. Geotechnical

Baseline data obtained in 2000-2003.

G. Hydraulics and Hydrology

Baseline data obtained in 2003.

H. Water and Sediments

Baseline data obtained in 2000-2003.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Wetland mitigation plan developed in 2001. Remedial action plan developed in 2003.

49. Malanka Landfill

Category: Existing/Potential Remediation Site

Location: South of the Penn-Central Northeast Corridor (Amtrak) in southern Secaucus, Hudson County.

Latitude/Longitude: 40.75329/-74.08582

Current Land Use: Passive open space; non-active, unremediated landfill

Size: 66 acres

Current Ownership: Private ownership

Site Description: Site vegetated with *Phragmites australis*. Closed to operations in 1983.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Aerial photograph shot in 2002.

B. Real Estate/Ownership

Under private ownership. Ownership information provided in 1999 report.

C. Site History & Land Use

No data obtained.

D. Biological Studies - Fauna

Benthos biological study of four ponds located on site conducted in 1990.

E. Biological Studies - General Environmental

No data obtained.

F. Geotechnical

Geotechnical borings performed in 1990.

G. Hydraulics and Hydrology

No data obtained.

H. Water and Sediments

Surface water quality conducted in 1990 and sediment sampling conducted in 1982.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Proposed closure plan presented in 1999.

50. Rutherford Landfill

Category: Existing/Potential Remediation Site

Location: East and west of New Jersey Turnpike Western Spur in Rutherford, Bergen County.

Latitude/Longitude: 40.79880/-74.09220

Current Land Use: Passive open space; non-active, unremediated landfill

Size: 98 acres

Current Ownership: EnCap Golf Holdings, LLC.

Site Description: Site vegetated with *Phragmites australis* and scattered trees. Closed to operations in the early 1970's.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

HMD regional data exists inclusive of this site. Surveying and aerial mapping completed in 2000 and 2001. Aerial photographs shot in 2002.

B. Real Estate/Ownership

Owned by EnCap Golf Holdings, LLC. Ownership information provided in 1999 report.

C. Site History & Land Use

Background site information provided in 2001 report.

D. Biological Studies - Fauna

No data obtained.

E. Biological Studies - General Environmental

Existing conditions reported in 2001 and wetland delineation performed in 2002. A wetland jurisdictional determination performed in 2000.

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F. Geotechnical

Geotechnical information provided in reports from 2000 - 2003.

G. Hydraulics and Hydrology

Prior groundwater and surface water studies summarized in 2003 report.

H. Water and Sediments

Prior groundwater, surface water and sediment studies summarized in 2003 report. Contaminant sampling conducted in 2000 and 2001.

I. Historical/Cultural Resources

No data obtained.

J. Restoration/Remediation Design Plans

Proposed closure plan presented in 1999. Wetland mitigation plan developed in 2001.

MEADOWLANDS-WIDE

Meadowlands - Wide Information

Category: Meadowlands-Wide Information

Location: In Bergen County: Carlstadt, East Rutherford, Little Ferry, Lyndhurst, Moonachie, North Arlington, Ridgefield, Rutherford, South Hackensack, and Teterboro. In Hudson County: Jersey City, Kearny, North Bergen, and Secaucus

Current Land Use: Various, including residential, commercial, industrial, transportation, recreational, landfills, wetlands, and open space.

Size: 19,730 acres or 32 square miles

Current Ownership: Various, including state, county, city, and private owners.

Site Description: The Hackensack Meadowlands, located in Bergen & Hudson Counties, New Jersey is an integral part of the New York - New Jersey Harbor Estuary. The approximately 8,400 acres of wetlands and waterways that remain are especially significant for concentrations of federal trust species and state-listed species of concern, including waterfowl, wading birds, shorebirds, raptors, anadromous fish, estuarine fish, and terrapins. Much of the wetlands area in the Meadowlands is degraded due to physical disturbances, such as filling and alterations to natural hydrologic connections. Leachate contamination from extensive landfills in the area is common. Numerous point sources, stormwater runoff from developed areas and highways, and other non-point sources have severely degraded water and sediment quality in areas of the habitat complex.



Existing Site-Specific Data Inventory

A. Survey, Maps, and GIS

Detailed surveys and aerial photographs completed between 1969 and 2002. Topographic maps completed in 1985, 1092, 2000 and 2002. Numerous GIS datasets for the HMD were completed in the past ten years. Various other historical maps and aerial photos available ranging from 1908 to 2003.

B. Real Estate/Ownership

GIS dataset parcel line information completed in 2002. HMD parcels analysis completed in 1997. Ownership information compiled for the Meadowlands in 1977.

C. Site History & Land Use

Various reports including the NJMC Master Plan containing site history and land use information for the HMD were compiled between 1958 and 2004. Several GIS datasets containing land use information for the HMD were completed in the past ten years.

D. Biological Studies - Fauna

Various avian, invertebrate, and fish studies were conducted between 1969 and 2003. Several GIS datasets containing fisheries and avian information were completed in the past ten years.

E. Biological Studies - General Environmental

Various general wetland, biological resources, and environmental assessments and studies were completed between 1969 and 2003. The Hydrogeomorphic functional assessment model for the HMD was completed in 2003.

F. Geotechnical

Various soils/geologic studies were conducted from 1958 to 1995.

G. Hydraulics and Hydrology

Flood control survey conducted in 2000; flood control study conducted from 1998 to 2004. Various other hydrology studies were conducted between 1966 to 1995. Several GIS datasets containing hydrologic information for the HMD were completed in the past five years.

H. Water and Sediments

Various water quality and sediment studies were completed between 1966 to 2003. A GIS dataset containing water quality information for the HMD completed in 2001.

I. Historical/Cultural Resources

Various cultural resource studies were completed between 1985 and 1995. The NJMC Master Plan containing cultural resource information for the HMD was completed in 2004. A GIS dataset containing cultural resources information for the HMD was completed in 2001.

J. Restoration/Remediation Design Plans

Mitigation plans for various areas of the HMD were completed in 1985 and 1986. GIS datasets of preservation and current/potential mitigation sites in the HMD were completed in 2002.