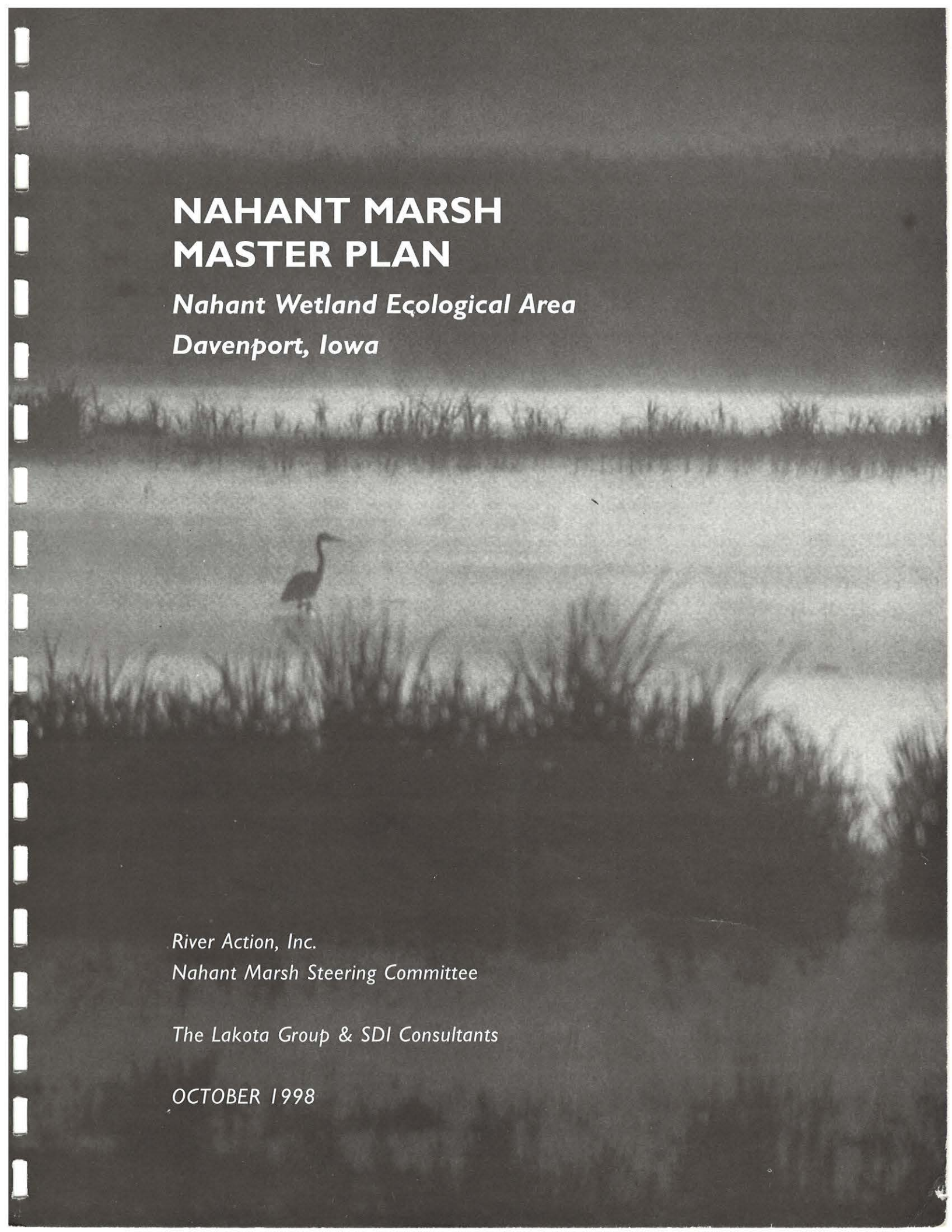

# NAHANT MARSH MASTER PLAN

## *Nahant Wetland Ecological Area*

## *Davenport, Iowa*

*River Action, Inc.*
*Nahant Marsh Steering Committee*

*The Lakota Group & SDI Consultants*

*OCTOBER 1998*

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*Cover photograph by John Freiband, Moline*

*Other photographs by:*

*John Freiband (pp. 1, 5, 8, 9, 10, 16)*

*The Lakota Group (pp. 6, 7, 13)*

*Fred Charles for Landscape Architecture (p. 11)*

# Planning Team

## Nahant Marsh Steering Committee

River Action
City of Davenport, Iowa
United States Fish & Wildlife Service
Scott County Conservation Board
Quad City Conservation Alliance
Quad Cities Audubon Society
The Sierra Club
Augustana College
United States Army Corp of Engineers
Iowa Natural Heritage Foundation
Izaak Walton League
Iowa DNR
Mississippi River Basin Alliance

## Consultant Team

The Lakota Group *Chicago, Illinois*
SDI Consultants *Oakbrook, Illinois*

# Contents

# Introduction

## Background/History

In 1996, a Mississippi River Corridor Framework Plan was prepared for a 26-mile corridor of the Mississippi River through the Quad Cities Area of Illinois and Iowa.

The Framework Plan was developed by a coalition of civic groups, public agencies, and corporations. This coalition, which was led by River Action, identified numerous opportunity sites along the River for improved park and recreation facilities, mixed-use development, and environmental and educational enhancements.

***The mission: Preservation, Protection and Enhancement of the Nahant Marsh area***

As part of the Corridor planning process, the 513-acre Nahant Marsh area, located adjacent to the Mississippi River in Davenport, Iowa, was recognized as a unique urban wetland.

This area encompasses numerous wetland community types including bottomland forest, open-water habitat and a significant marsh of approximately 177 acres east of Interstate 280.

Over the last few decades, the land use and character of the areas surrounding Nahant Marsh and the town of Nahant has greatly changed. Once a large and important rail maintenance facility surrounded by agricultural land and marsh, Nahant today feels the increased pressures of urbanization.

Expansion of industrial areas to the east, residential growth in areas north and west, and the development of the City of Davenport Waste Water Treatment and Compost Facilities have directly impacted the quality of the Marsh. The new Interstate 280 bridge, which bisects the Marsh, has also had a significant impact on Nahant Marsh's hydrology and ecosystem integrity.

Urbanization has impacted Nahant Marsh in several important ways. These impacts include land use changes, irregular variation in seasonal water levels, ecosystem degradation such as reduction in plant and wildlife species diversity, and the loss of essential land area specifically needed for buffer zones near sensitive habitats or ecosystems. Not withstanding these impacts, Nahant Marsh remains a valuable natural resource.

Beliefs that Nahant Marsh may be in better ecological condition today than in the past is represented in on-going research of the marsh area and its ecosystems. Contributing to this belief is the fact that private organizations, together with Federal, State and local public agencies, have demonstrated an interest in taking a more proactive role in protecting and preserving this natural resource.

Yet some concerns exist as to the future of Nahant Marsh proper and its neighboring areas. What will happen to the Marsh and its ecosystems in the future? The continued loss of specific species from this area has been documented through on-going research. How will the coalition be able to implement the necessary steps required to preserve, protect and enhance the vitality of these wetland communities? How will the coalition work with the over 100 individual and institutional land owners that own the land comprising the marsh ecosystem? This document the Nahant Marsh Master Plan, provides a framework for marsh preservation.

In 1997 a significant parcel of land within the Nahant Marsh community was made available for purchase. The Scott County Sportsmen's Association (SCSA), a regional gun club used for trap and skeet shooting, had ceased operations.

The elements surrounding the purchase of this 78-acre property were quite complex, yet have led to an opportunity for the Iowa Natural Heritage Foundation and River Action to begin preservation of the fragile area. Through detailed site investigations by the Environmental

Protection Agency, the Gun Club site was found likely to have poisonous levels of lead shot located within an existing sedge meadow. Although the site was only considered contaminated, clean-up and subsequent restoration would be required of the existing owner.

Through the assistance of the Iowa Natural Heritage Foundation, River Action and the Nahant Marsh Steering Committee have developed an action strategy for acquisition of this property. The eventual goal will be to transfer property to a local municipality, institution or environmental group. The particular group acquiring the property will act as guardian or caretaker entrusted with implementing the goal of restoring the Gun Club property to appropriate wetland ecosystem conditions. An educational/research station also is envisioned for the existing Gun Club building.

The Nahant Marsh Master Plan process started with the Steering Committee developing a time frame for site acquisition of the Gun Club. A future vision for the preservation and enhancement of the Nahant Marsh Ecological Area also is in progress.

## Mission

The mission for the Nahant Marsh is simple — Preservation, Protection and Enhancement of the Nahant Marsh and its neighboring areas.

After several years of establishing the mission, and countless committee volunteer and expert hours spent researching the Marsh and its many diverse ecosystems, the Nahant Marsh Steering Committee established the need and framework for developing a Master Plan.

The Nahant Marsh Steering Committee concluded that in order to 'drive' decision-making regarding the future of the Marsh, a long-range plan should be developed. This plan, though flexible and certain to evolve over time, should provide the framework for short-term and long-term decision making.

Critical objectives of the Master Plan should consider:

- Acquisition.
- Buffer Zones.
- Land Use Policy.
- Access.
- Educational and Research Opportunities.
- Control and Management.

In September 1997, the Committee retained The Lakota Group and SDI Consultants (the Consultant Team) to facilitate the process of preparing a long-range Master Plan.

## Planning Process

The Consultant Team and Nahant Marsh Steering Committee met at Nahant Marsh in early October 1997 to tour the Marsh and investigate the surrounding land use. In addition, recorded data were collected by the team from a variety of existing sources including the U.S. Fish and Wildlife Service, the City of Davenport and the Quad City Audubon Society.

Existing research, data and on-site investigations were used as a basis for developing an overall understanding of the Marsh and associated areas.

The master planning process was broken down into five (5) phases. These phases included:

- Research, Data Collection and Analysis.
- Base Mapping.
- Alternative Concept Scenarios.
- Preliminary Master Plan.
- Final Master Plan and Report.

Each phase provided further insight and information resulting in the formulation of an overall design direction. The Consultant Team facilitated numerous internal workshops discussing critical policy and design issues in order to reach a consensus for the direction of the Final Master Plan.

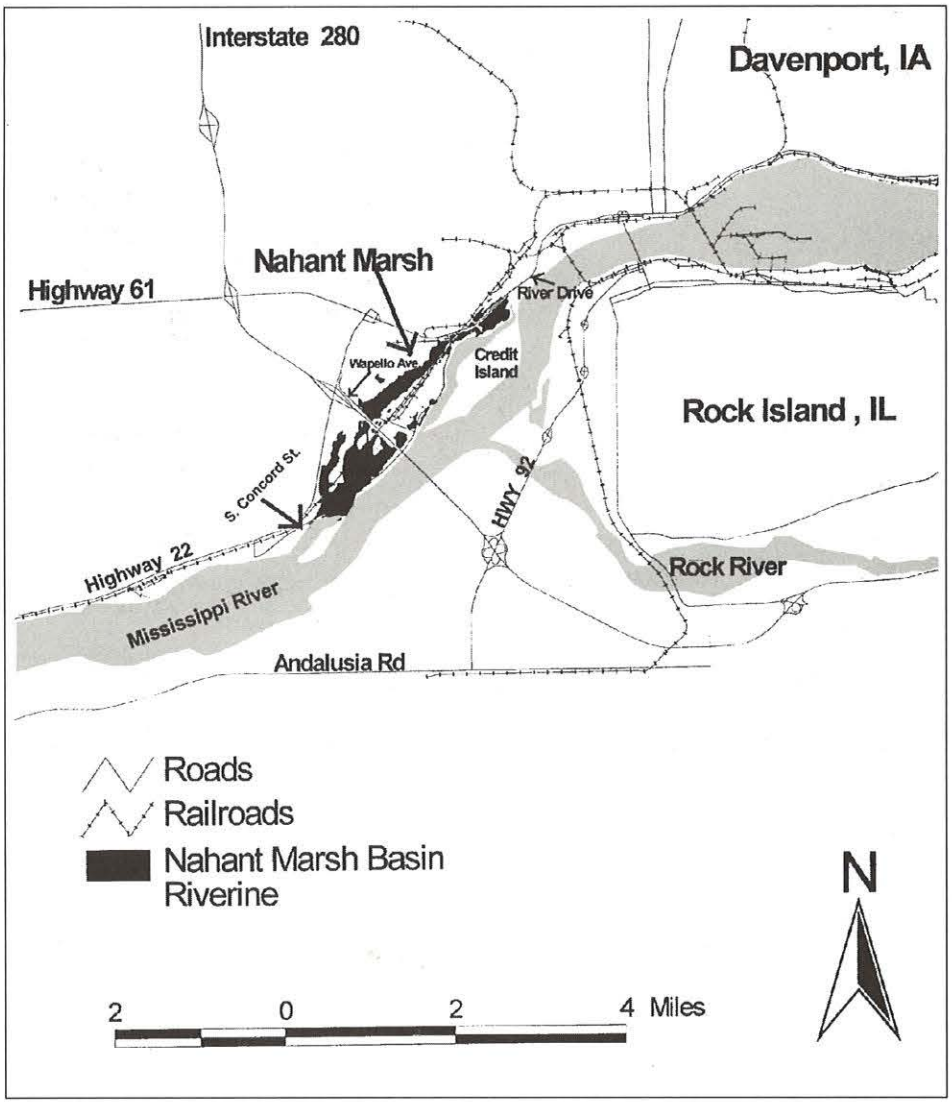
The culmination of our research and design process occurred in May 1998. A public meeting/community workshop was held at the Credit Island Fieldhouse to present findings and a Final Master Plan direction. The goal of the workshop was to invite community comments, and to promote discussions on concerns and issues as they relate to the Marsh and its surrounding areas.

# Site Analysis

## Site Study Area Overview

Nahant Marsh Study Area is located at the southwest corner of Davenport, Iowa, within the city limits. The Marsh and its surrounding areas provide a unique natural ecosystem in an accessible urban setting.

The Marsh Study Area, at approximately 930 acres, includes Nahant Marsh (approximately 177 acres) and the surrounding suburban, industrial, and agricultural land—collectively the Nahant Marsh Ecological Area. In order to provide the most comprehensive analysis of the site, a three-tiered study approach was used. The Marsh itself was studied as a natural resource and amenity to the Davenport community. The resulting ecological issues/opportunities represented by Nahant Marsh extended the Study to include the impact of the Marsh on the ecosystem. Finally, a broader study area was developed to identify relationships that would occur in a more regional sense.




The Nahant Marsh Ecological Area, as defined by this study, is bordered on the south by the Mississippi River, on the east by Highway 61(West River Drive), and on the north by Highway 22. Both highways are divided, four-lane arterial roads. Highway 22 carries a moderate amount of industrial traffic along the Mississippi Riverfront. Highway 61 carries a variety of traffic from the I-280 interchange east to Davenport's Central Business District, as well as to Bettendorf, Iowa.

Access to the Nahant Ecological Area as it exists today is: from the east, Highway 22 to Wapello Avenue or Concord Street; from the south, Concord Street at Wapello Avenue; from the north, Wapello Avenue and several dead-end access drives.

I-280 divides the site east/west and is elevated approximately 40-50 feet above the wetland areas. The Interstate, constructed on earthen embankment, alters the natural water flows and fragments ecosystem corridors within the Study Area.

A 100-year-old Rock Island freight railway divides the site roughly north/south. The rail line is elevated approximately 10-15 feet above the wetland area. This line, similar to I-280, also alters water flow through the southern portion of the site. The rail line meets grade at Wapello Avenue where it diverges into an operating rail yard, and connects to spurs serving the nearby industrial areas.

***The Nahant Marsh Study Area contains a mixture of marshy areas, grassy areas, and lowland forests.***

Smaller at-grade roads exist within the site. Wapello Avenue runs north/south parallel to I-280 and connects to Highway 22. Concord Street runs east/west, parallel to the Mississippi River, connecting to Highway 61 (West River Drive). Several access roads service the industrial park. There also are minor access roads to farms and small businesses along Highway 22.

The Nahant Marsh proper is located on the eastern portion of the Study Area (east of I-280) and is flanked by railroad tracks to the south and agricultural fields to the north. The eastern tip of the Marsh is bounded roughly by Highway 61 (West River Drive).

Beyond the agricultural fields to the northeast is a small industrial park. The industrial users in this area include a mixture of warehousing, packing and production (aluminum castings, plastics, etc).

South of Nahant Marsh is a railroad yard, a municipal compost plant, and a municipal waste water treatment plant.

South of Nahant Marsh and east of Interstate 280 are more industrial users, including an auto repair/parts yard, an abandoned junk yard and some warehouse buildings. The historic center of Nahant, known to have been "a freight junction on the Milwaukee railroad" is located south along Wapello Avenue. Within this area are some storage buildings, residences and several parcels of vacant land owned by the City of Davenport.

West of I-280 are additional wetland habitats intertwined with uplands. There are open water habitats including Carp Lake (once believed to have been excavated), some bottomland forest areas, and some higher upland ridges. Two of the higher land masses have been created from fill. One of these currently appears to be monitored for groundwater leachate.

Other land uses in the Study Area include a public elementary school building and some scattered industrial uses along Highway 22 and Concord Avenue. The remainder of the land is primarily residential.

## Environmental Conditions

### Area Land Use

Land uses within the Study Area that have been described in the Site Analysis include:

- Industrial uses.
- Single-family residences.
- Auto salvage, auto and truck-related uses.
- Dump sites.
- Public school site.
- Agricultural land.
- Vacant Sportsman's Club.
- Wetlands.
- Woodlands.
- Open Fields.
- Transportation corridors/rail yards.
- Municipal Facilities.

Further physical and natural characteristics of the site include:

### Topography

The site is mostly lowlands. There are higher areas towards the southeast. Lowland elevations are between 2-5 feet above the Mississippi River water level. The northern portion of the site rises towards river bluffs north of Highway 22. As noted earlier, there are several mounded knolls at the western portion of the site. Some of the knolls are believed to be artificial (i.e. landfills). The highest elevations within the Study Area are approximately 10-20 feet above river water level, not including the I-280 overpass.

### Wetlands/Hydrology

Wetland communities account for approximately 50% of the total land coverage within the Study Area. The wetland complex includes marsh, sedge meadow, and open water habitats. The wetlands are directly connected to and fed by the Mississippi River via at least three culverts at the southern end of the site adjacent to Concord Street. Backflow waters enter at seasonal intervals. It is believed that these wetlands/waterways were once oxbows of the Mississippi River subsequently altered by the construction of the Credit Island Causeway and I-280 bridge. The wetlands also are fed by overland flow from the northwest via several drainage ditches.

### Soils

The soils in the Study Area are generally classified as hydric soils. A defined wetland area has been shown as part of our study boundary (Hydric Soils Map—Appendix E). A larger hydric soil boundary is shown on the attached soils map indicating an area of agricultural land to the northeast as a potential wetland expansion area.

### Environmentally Degraded Areas

In general, there is a substantial amount of visible "pollution" within the Study Area. Illegal dumping seems to be a consistent problem, occurring through-

***Nahant Marsh feels the pressure of urbanization, including an active freight railway adjacent to marsh environs (below) and active industrial users flanking the Nahant Marsh's northeastern boundaries (bottom).***

***A tire and other debris attest to the degraded condition of the bottomland forest (top), and an existing auto salvage yard encroaches precariously along the edge of the marsh ecosystem.***

out different portions of the site. There is fill material (concrete, stone, etc), and an abundance of rubber tires floating/submerged in the open water areas. Unknown or less visible dumping also is potentially present.

Legal dumping occurs at a land-covered "fluff pile", where a monitored dump site is lined with new geo-textile fabric ready to receive waste.

It is believed that several industrial land uses along the periphery of the Study Area have leaked, or may continue to leak, pollutants into the ground water. Auto salvage yards, small boat marinas, and related uses have been historically known to dump hazardous waste products into these wetland areas or adjacent open spaces.

The agricultural lands adjacent to Nahant Marsh add the potential of undesirable chemical runoff from their fields in the form of herbicides, pesticides and fertilizers.

The railroad yard also lends to the speculation of a pollutant source due to long-term storage and use of petro chemicals. Additionally, chemical freight cars travel this route and may be temporarily stored in this yard, thus creating a potential spill hazard.

The abandoned Scott County Sportsmen's Association operated near Nahant Marsh for many years. Activities allowed for the spread of lead shot and clay pigeons over a 19-acre area of the Marsh. Testing by the Environmental Protection Agency has shown that there are over 500 lead pellets per square foot in the top 6" of the soil, a sufficient concentration of lead to pose an environmental hazard. This contamination also affects approximately 16 acres of open water, 3 acres of cattails and sedge meadow, and 1/2 acre of lowland/woods.

## *Flora and Fauna*

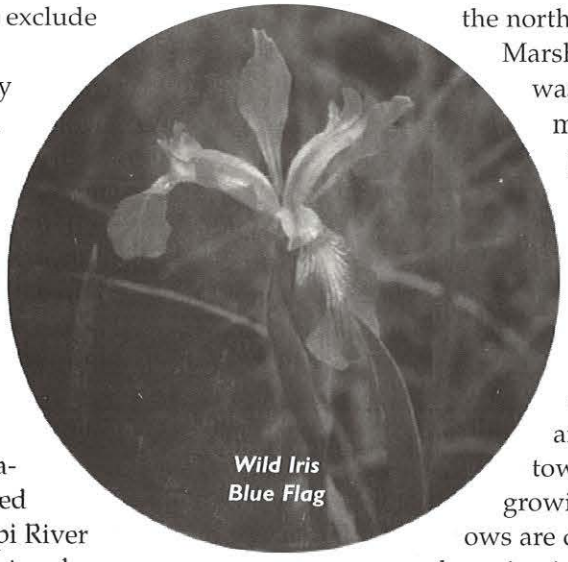
### Summary of Plant Communities Present in or near the Nahant Marsh

Nahant Marsh is bordered by the Mississippi River to the south, and industrial and agricultural land to the north and east. Interstate 280 roughly bisects Nahant Marsh east-west. The plant communities present change dramatically east or west of I-280. We have used this convenient point of separation to describe various plant communities near the Marsh.

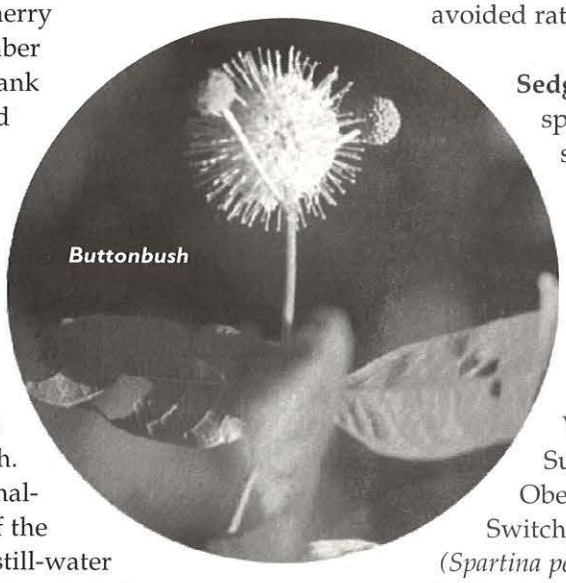
The areas surrounding Nahant Marsh have been used for agricultural production since at least 1957. Portions of the Marsh, east of I-280, may even have been farmed in the past. Since then, additional land uses have included the creation of an industrial park (northeast of the Marsh and west of I-280), a skeet shooting club, a railroad yard, a waste water treatment plant and

composting facility for the City of Davenport, salvage yards, and residential or commercial areas.

**East of I-280** This area is primarily marsh today, dominated by cattails with scattered open water areas where the water depths are deep enough to exclude most plants, or where channels have been dredged. A herbaceous fringe lies on slightly higher ground around the Marsh perimeter. This area may contain specimens from the original sedge meadow that was present in the 1950's. Present plant species include River Bulrush *(Scirpus fluviatilis)*, various sedge species *(Carex spp.)*, Rice Cut Grass *(Leersia oryzoides)*, and several bulrush species *(Scirpus spp.)*.


Wild Iris
Blue Flag

**West of I-280** This area is predominantly open water with a fringe of emergent vegetation and floodplain forest, what is often called bottomland forest. Areas near the Mississippi River have developed significant bottomland forest and emergent wetlands where sedimentation has partially filled in old watercourses. Silver Maple *(Acer saccharinum)* and Slippery Elm *(Ulmus rubra)* dominate the tree component of these forests, with Green Ash *(Fraxinus pennsylvanicum subintegerrima)*, Red-osier Dogwood *(Cornus stolonifera)*, White Mulberry *(Morus alba)*, cherry *(Prunus spp.)*, Bur Cucumber *(Sicyos angulatus)*, Riverbank Grape *(Vitus riparius)*, and Smartweeds *(Polygonum spp.)* forming the shrub and herbaceous layers.


Buttonbush

**History** Anecdotal histories and similar plant communities in the upper Midwest offer evidence of historic plant communities in the Marsh. Nahant Marsh may originally have been an oxbow of the Mississippi River. These still-water plant communities typically mimic the community existing prior to the oxbow creation, with the addition of emergent wetlands as sedimentation fills in the oxbow. During the early twentieth century a causeway to Credit Island was constructed to allow for access to a Victorian-era recreational park. This causeway blocked river flow from the Marsh, which caused severe sedimentation to occur, sealing the northern "mouth" of the Marsh. Circa 1950 the Marsh was primarily a "sedge meadow". These wetland plant communities are typically dominated by sedges and grasses and experience relatively long periods of soil saturation, but seldom with standing surface water present. These areas tend to dry out towards the end of each growing season. Sedge meadows are dependent on winter or early spring inundation to provide soil saturation as the growing season commences. These communities often are completely dry late in the year, allowing for limited agriculture. Because of the difficulty in draining large sedge meadows (they typically are the low spot to which most of the surrounding terrain drains), these wetlands are more often simply avoided rather than converted to agriculture.

**Sedge Meadow Community** Typical plant species representative of upper Midwestern sedge meadows include: Swamp Milkweed *(Asclepias incarnata)*, Blue Joint Grass *(Calamagrostis canadensis)*, Common Lake Sedge *(Carex lacustris)*, Common Tussock Sedge *(Carex stricta)*, Brown Fox Sedge *(Carex vulpinoidea)*, Buttonbush *(Cephelanthus occidentalis)*, Spotted Joe Pye Weed *(Eupatorium maculatum)*, Blue Vervain *(Verbena hastata)*, Saw-tooth Sunflower *(Helianthus grosseserratus)*, Obedient Plant *(Physostegia virginiana)*, Switchgrass *(Panicum virgatum)*, Prairie Cordgrass *(Spartina pectinata)*, Rice Cut Grass *(Leersia oryzoides)*, Dudley's Rush *(Juncus dudleyi)*, and Inland Rush *(Juncus interior)*.

**Marsh Community** Marsh plant communities typically are cattail dominated, with an assortment of other herbaceous species. Marshes are plant communities which are frequently shallowly flooded for long periods, with the concentration of inundation during spring and early summer. These plant communities typically dry out towards the end of each growing season. They often are ignited by late summer or fall thunderstorms, burning annually as the plant material becomes "browned out" by the onset of winter. Plants typically associated with marshes include: Common Cattail *(Typha latifolia)*, Narrow-leaved Cattail *(Typha angustifolia)*, Common Water Plantain *(Alisma subcordatum)*, Common Hop Sedge *(Carex lupulina)*, Brown Fox Sedge *(Carex vulpinoidea)*, Rice Cut Grass *(Leersia oryzoides)*, Common Rush *(Juncus effusus)*, Blue Flag *(Iris virginica)*, American Lotus *(Lotus americanus)*, Yellow Pond Lily *(Nuphar advena)*, Pinkweed *(Polygonum pennsylvanicum)*, Common Arrowhead *(Sagittaria latifolia)*, Pickerel Weed *(Pontederia cordata)*, Soft-stemmed Bulrush *(Scirpus validus)*, Hard-stemmed Bulrush *(Scirpus acutus)* Common Bur Reed *(Sparganium eurycarpum)*, Three Square *(Scirpus pungens)*, Dark Green Rush *(Scirpus atrovirens)*, Needle Spike Rush *(Eleocharis acicularis)*, and Blunt Spike Rush *(Eleocharis obtusa)*. While this list is not exhaustive it should be noted that Narrow Leaf Cattail, Common Water Plantain, Yellow Pond Lily and American Lotus have not been sighted at Nahant Marsh.


Great Blue Heron

**Floodplain Forest Community** These lowland or bottomland plant communities typically are located on stream terraces or other low areas associated with flowing water bodies (e.g., stream and rivers). Wetlands in these locations are usually shaded, inundated only occasionally during the larger storms, and frequently are dependent on upland sheet flows for hydrology during most of the year. These plant communities are dominated by trees, primarily Silver Maple (Acer saccharinum) and Slippery Elm *(Ulmus rubra*, along with Hackberry *(Celtis occidentalis)*, Sycamore *(Plantanus occidentalis)*, Green Ash *(Fraxinus pennsylvanica)*, and Eastern Cottonwood *(Populus deltoides)*. Other tree species present may include River Birch *(Betula nigra)*, Sweet Gum *(Liquidambar styraciflua)*, Swamp White Oak *(Quercus bicolor)*, Burr Oak *(Quercus macrocarpa)*, Pin Oak *(Quercus palustris)*, Box Elder *(Acer negundo)*, Red Maple *(Acer rubra)*, Black Tupelo *(Nyssa sylvatica )* and Black Willow *(Salix nigra)*.

Normally, shading from the closed tree canopy and frequent soil saturation or inundation prevents a shrub or substory tree layer from developing. Some shrub species that may be found in scattered canopy openings or higher ground include Sandbar Willow *(Salix interior)*, Red-osier Dogwood *(Cornus stolonifera)*, and Highbush Cranberry *(Viburnum opulus)*. Smooth Sumac *(Rhus glabra)* is a dominant shrub species on the higher upland locations.

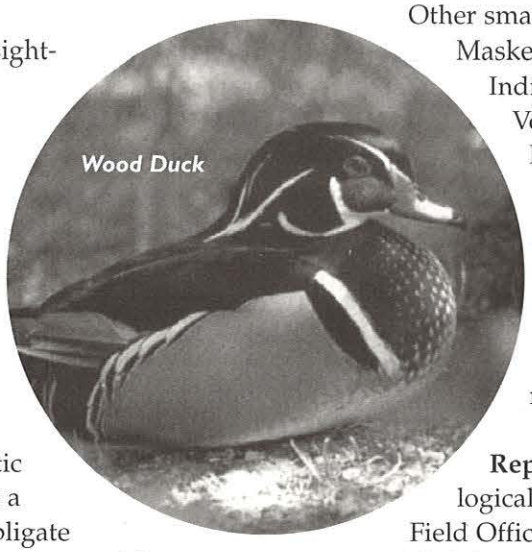
The ground layer is dominated by erect flowering plants *(Forbs)* and vines. These may include such species as Wild Golden Glow *(Rudbeckia laciniata)*, Wingstem *(Actinomeris alternifolia)*, Skunk Cabbage *(Symplocarpus foetidus)*, Bur Cucumber *(Sicyos angulatus)*, Common Dodder *(Cicuta gronovii)*, Orange Jewelweed *(Impatiens capensis)*, Yellow Jewelweed *(Impatiens pallida)*, Wood Nettle *(Laportea canadensis)*, Fowl Manna Grass *(Glyceria striata)*, Riverbank Grape *(Vitus riparia)*, Poison Ivy *(Toxicodendron radicans)*, Wood Sage *(Teucrium canadense)*, Tall Nettle *(Urtica procera)*, Virginia Creeper *(Parthenocissus quinquefolia)*, Common Wood Reed *(Cinna arundinacea)*, Sensitive Fern *(Onoclea sensibilis)*, Stickseed *(Hackelia verginica)*, Virginia Bluebells *(Mertensia virginica)*, Giant Cane *(Arundinaria macrosperma)*, and False Nettle *(Boehmeria cylindrica)*.

## Summary of Fauna in or near Nahant Marsh

The available information on wildlife in the Study Area is limited and generally based on short-term studies and anecdotal data. The data available was used to define the types of animals which actually use the area, and was then further refined by considering faunal assemblages present in similar areas to develop a list of potential species which could use the Study Area. For

the purposes of this summary, five classes of fauna were considered; birds, mammals, reptiles and amphibians (herpetiles), and fish. Other fauna not considered herein, but important to ecological integrity, are arthropods (spiders, insects and crustaceans) and mollusks (bivalves and gastropods). Each of the five classes of fauna considered are outlined below.

**Birds** Data on bird species sighted near the Nahant Marsh Study Area during the three years preceding 1996, indicates that 130 species use the Study Area, of which an estimated 76 species are potential breeding species. Of the 130 species, a preliminary analysis found that 41 (32%) were wetland-dependent species, requiring a wetland or aquatic habitat in which to complete a portion of their life cycle (Obligate Wetland Species). Most of these were either waterfowl (ducks and geese; 17 species), or wading birds (7 species), with the remainder (17 species) being composed of shorebirds, perching birds, and raptors. The remaining 89 species were a mixture of facultative species that use upland and wetland habitats in about equal proportions to complete their life cycles and bird species that are not dependent on wetlands (Obligate Upland Species). These latter species were well represented in the 1996 bird data (59%), reflecting the mixed wetland/upland aspect of the Study Area.


Wood Duck

Other bird species which potentially could use the Nahant Marsh vicinity, but were not recorded in bird surveys, include Northern Harrier, Piping Plover, Virginia Rail (potential breeder), Sora (potential breeder), Black Duck, Canvasback, Red-Head, American Bittern (potential breeder), Common Goldeneye, Ring-necked Pheasant, Common Moorhen, Sandhill Crane, American Woodcock, Savanna Sparrow, Sedge Wren, Common Tern, and Yellow-crowned Night Heron. Additional species could use the Nahant marsh area as a resting or staging area during migration, but these were not considered here.

**Mammals** Fifty-six species of mammals have been identified as being present in Iowa. Early data suggests that the Study Area may not have large mammal populations. One local study of small mammals found only four species; White-footed Deer Mouse, Deer Mouse, Prairie Vole, and Short-tailed Shrew.

Other small mammals potentially present include Masked Shrew, Silver-haired Bat, Big Brown Bat, Indiana Brown Bat, Fox Squirrel, Meadow Vole, House Mouse, Norway Rat, and Meadow Jumping Mouse, Larger mammals potentially present include Beaver, White-tailed Deer, Red Fox, Gray Fox, Raccoon, Virginia Opossum, Spotted Skunk, Striped Skunk, Muskrat, Mink, Coyote, Eastern Cottontail, Badger, and feral cats and dogs. Therefore, approximately 29 mammal species could use the Study Area.

**Reptiles and Amphibians** A preliminary ecological data report prepared by the Rock Island Field Office of the U.S. Fish and Wildlife Service provided data on herpetiles. Added survey data for anurans (frogs and toads) was provided by a separate study. This study found 7 species that were present. These were American Toad, Bullfrog, Cricket Frog, Eastern Gray Tree Frog, Northern Leopard Frog, Western Chorus Frog, and Spring Peeper.

Reptiles present at Nahant Marsh include Northern Water Snake (Nerodia sipedon sipedon), Common Snapping Turtle, Western Painted Turtle, and Blanding's Turtle. An amphibian survey failed to detect any individuals. Additional herpetiles potentially using the Study Area include Eastern Tiger Salamander, Mudpuppy, Central Newt, Smallmouth Salamander, Eastern Spiny Softshell, Eastern Garter Snake, Eastern Plains Garter Snake, Midland Brown Snake, and Eastern Milksnake.

Fish A preliminary ecological data report prepared by the Rock Island Field Office of the U.S. Fish and Wildlife Service provided the data for this survey. Fish species collected in 1996 were Central Mudminnow, Carp , Bullhead, Green Sunfish, and Bowfin. Addi-tional species likely to be present include Largemouth Bass, Bluegill, White Sucker, White Crappie, and Pickerel.

## Land Ownership

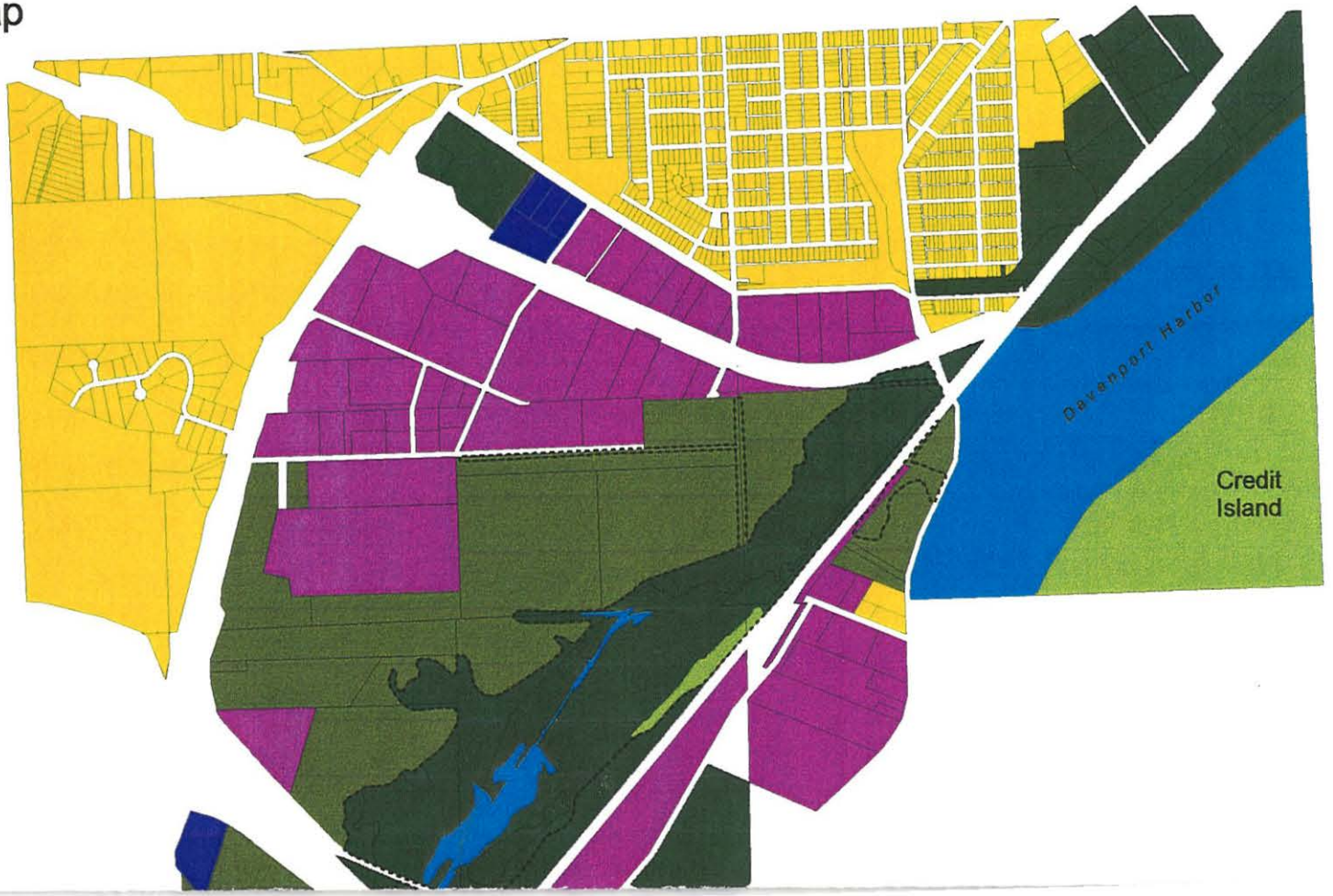
The overall study area is owned by approximately 112 different entities. There are only about 16 entities which own a substantial parcel of land, that being a 15- to 90-acre range. The remainder of the ownership parcels are generally smaller than 15 acres in size, with a majority being less than one acre in size. Most of these acre lots are currently occupied by single-family residential users. The remainder of the small lot uses are industrial in nature.

Nahant Marsh proper is described as the portion of marsh on the east side of Wapello Avenue. The Marsh is approximately 177 acres in size and is owned by 5 different entities. A vast portion of the marsh (78.8 acres) is currently owned by the Scott County Sportsmen's Association. The remaining 4 owners consist of three private owners and one corporation.

# Nahant Marsh Master Plan

**Davenport, Iowa**

Land Use Map



Wetland2-se

Parcel Uses

- Ag Lands
- Open Lands
- Residential
- Industrial
- Open Water
- Semi Public
- Recreational

500 0 500 1000 1500 2000 2500 Feet

N


LAKOTA
URBAN DESIGN
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THE LAKOTA GROUP, INC.
223 West Erie Street, Suite 3 NE
Chicago, Illinois 60610 USA
312.654.5440 Fax 312.654.5444

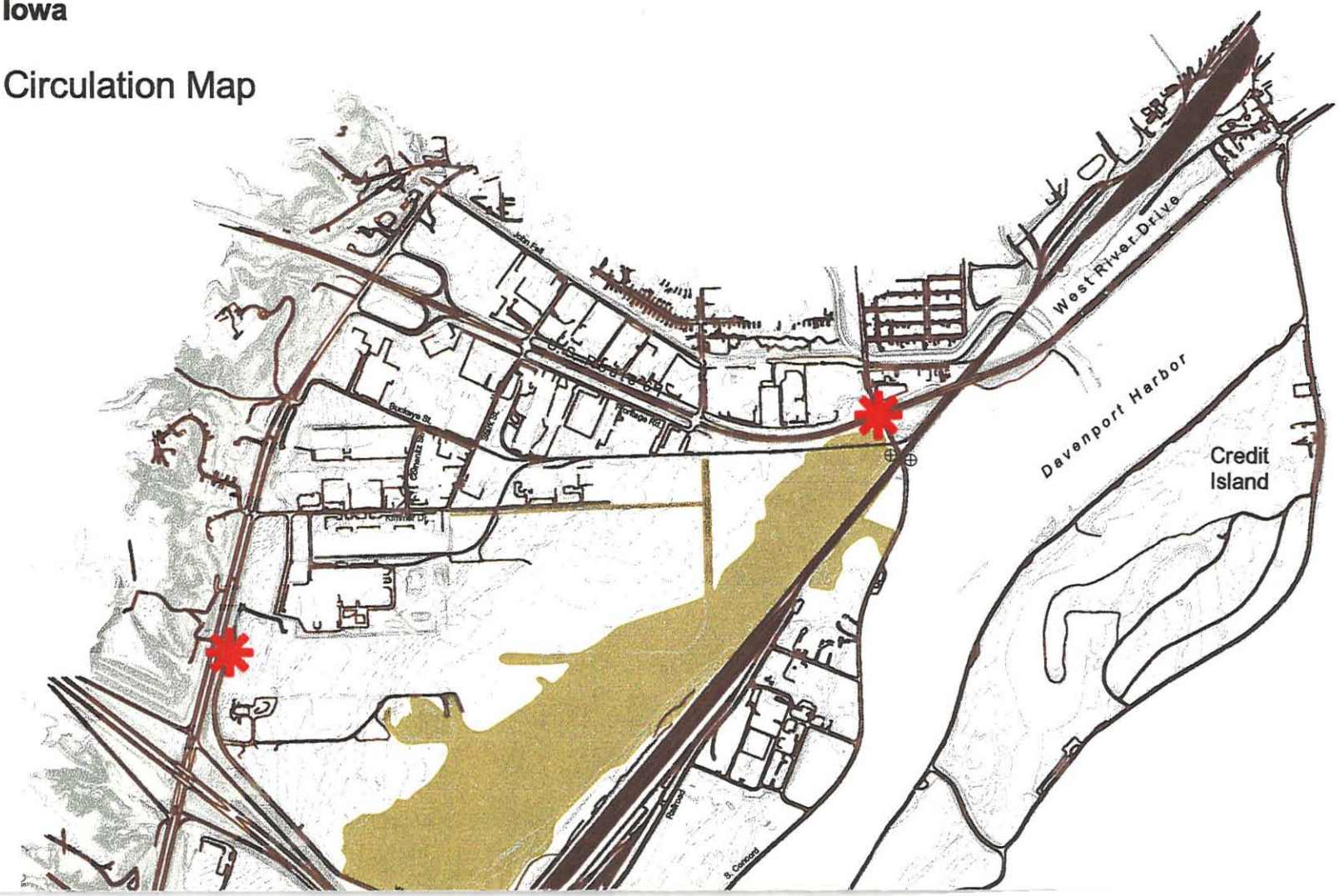
SDI CONSULTANTS LTD.


| | |
|---|---|
| Scale | 1"=500' |
| Date | 12/12/97 |
| Title | Land Use |
| Drawn by: | WBW |
| Checked | BLB |
| Sheet | A3 |

# Nahant Marsh Master Plan

**Davenport, Iowa**

## Access & Circulation Map




⊕ At Grade Rail Crossing

✱ Marsh Access

Transportation

Nahant Marsh Boundary

500 0 500 1000 1500 2000 2500 Feet

N

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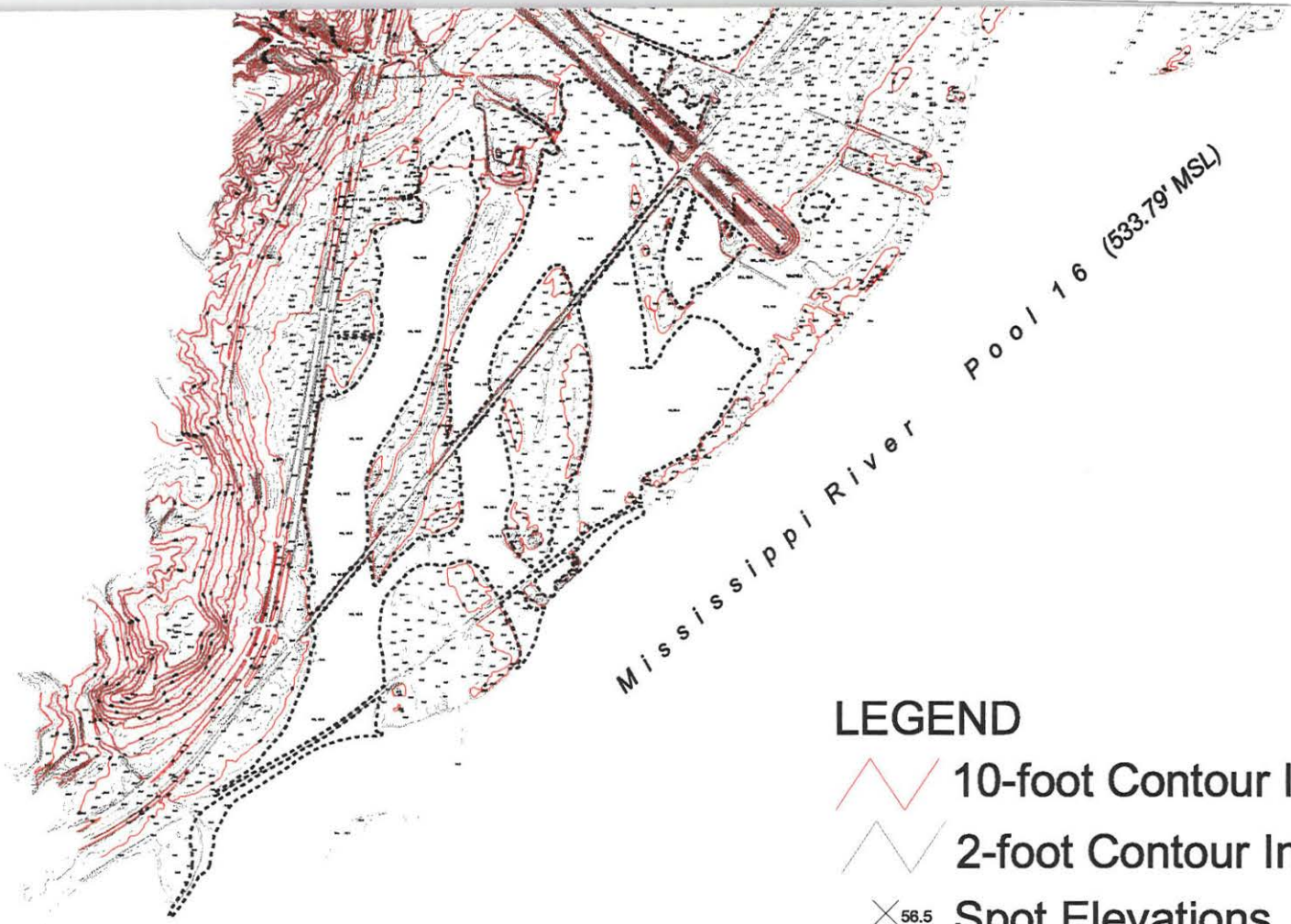
| Scale | 1"=500' |
| Date | 12/10/97 |
| Title | Access & Circulation |
| Drawn by: | WBW |
| Checked | BLB |
| Sheet | A8 |

# Nahant Marsh Master Plan

**Davenport, Iowa**

Contour Interval Map




## LEGEND

10-foot Contour Interval

2-foot Contour Interval

56.5 Spot Elevations

500 0 500 1000 1500 2000 2500 Feet

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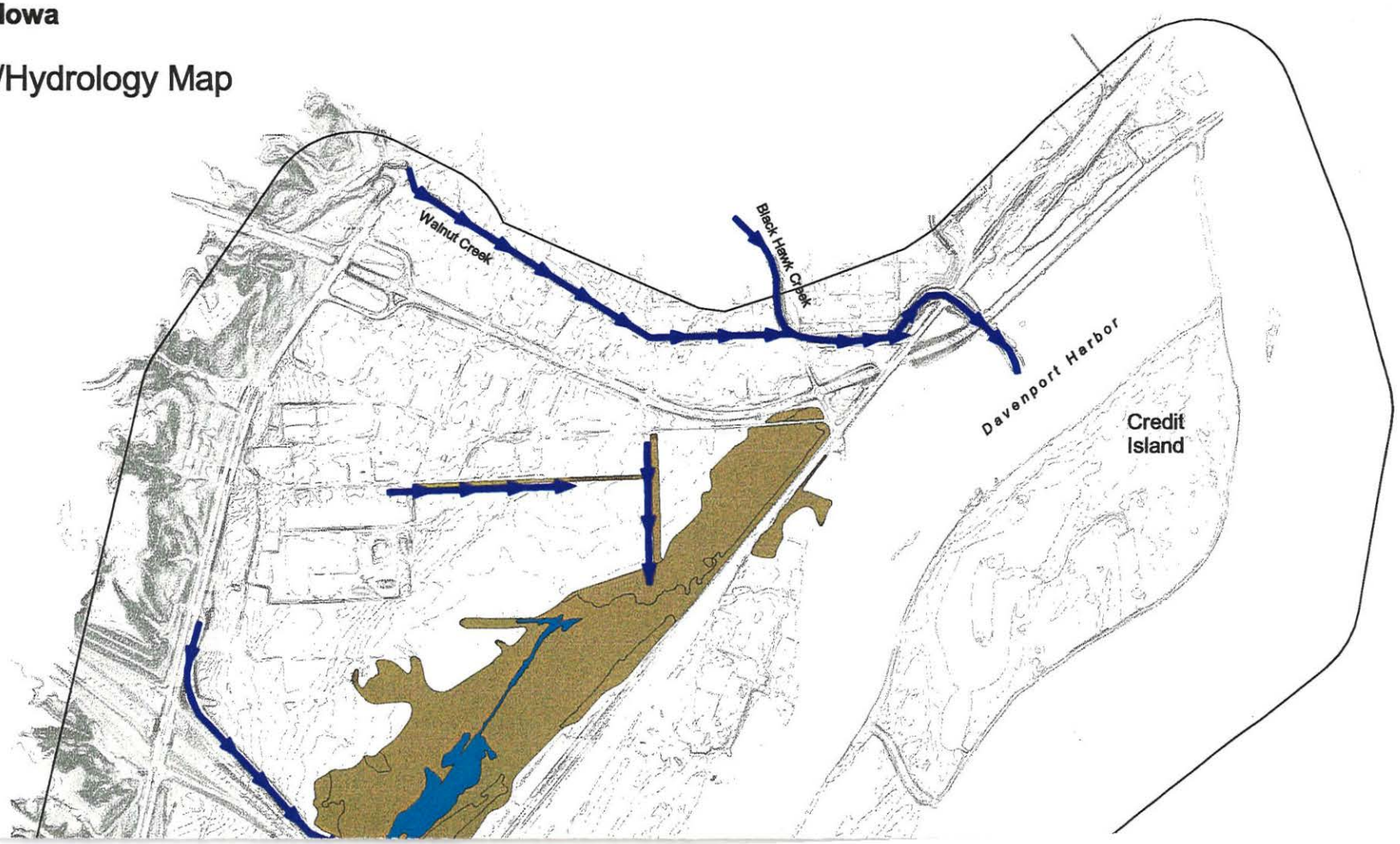
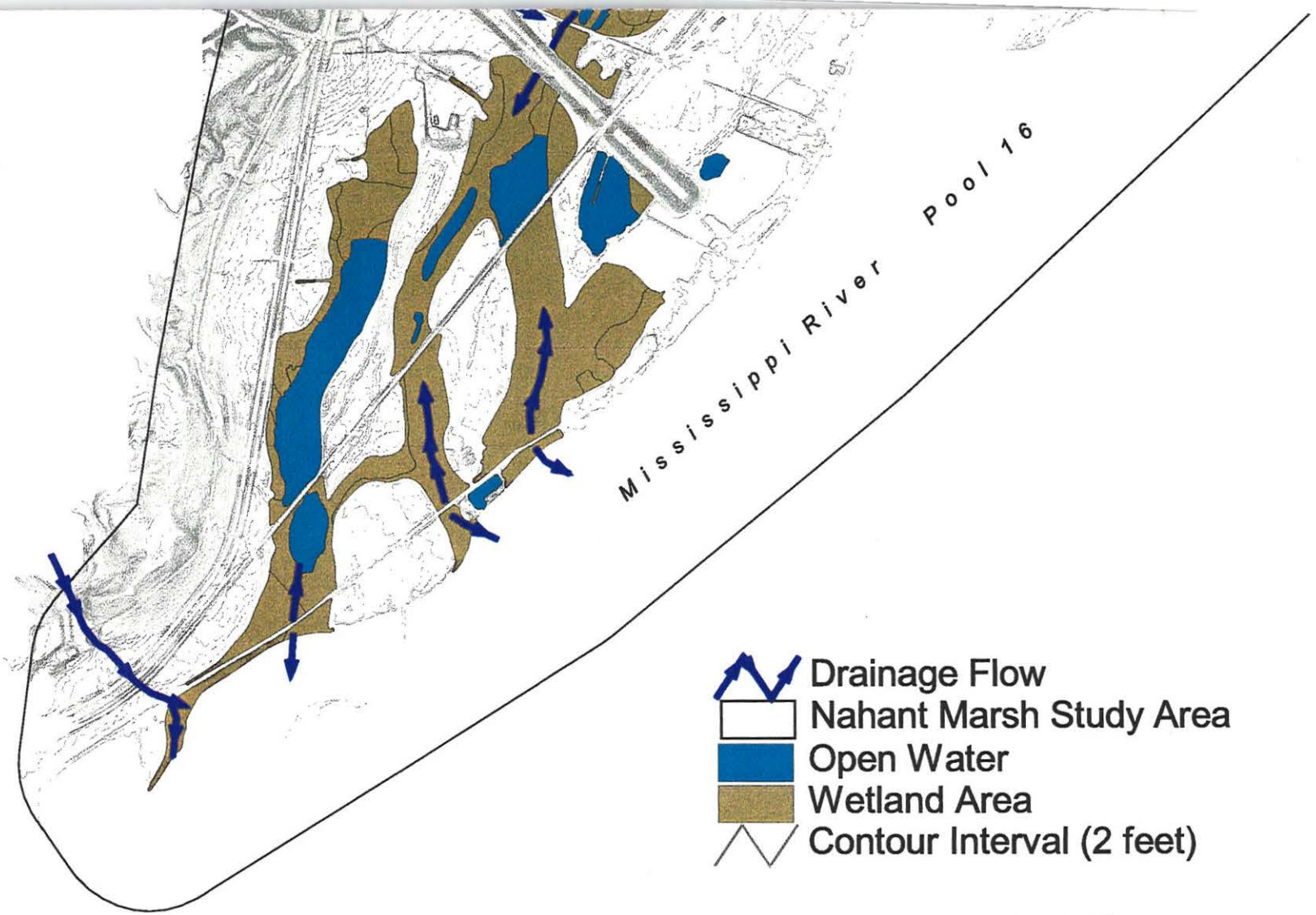
| Scale | 1"=500' |
| Date | 12/11/97 |
| Title | Contour Intervals |
| Drawn by: | BLB |
| Checked | BLB |
| Sheet | A6 |

# Nahant Marsh Master Plan

**Davenport, Iowa**

## Wetlands/Hydrology Map






Drainage Flow
Nahant Marsh Study Area
Open Water
Wetland Area
Contour Interval (2 feet)

500 0 500 1000 1500 2000 2500 Feet

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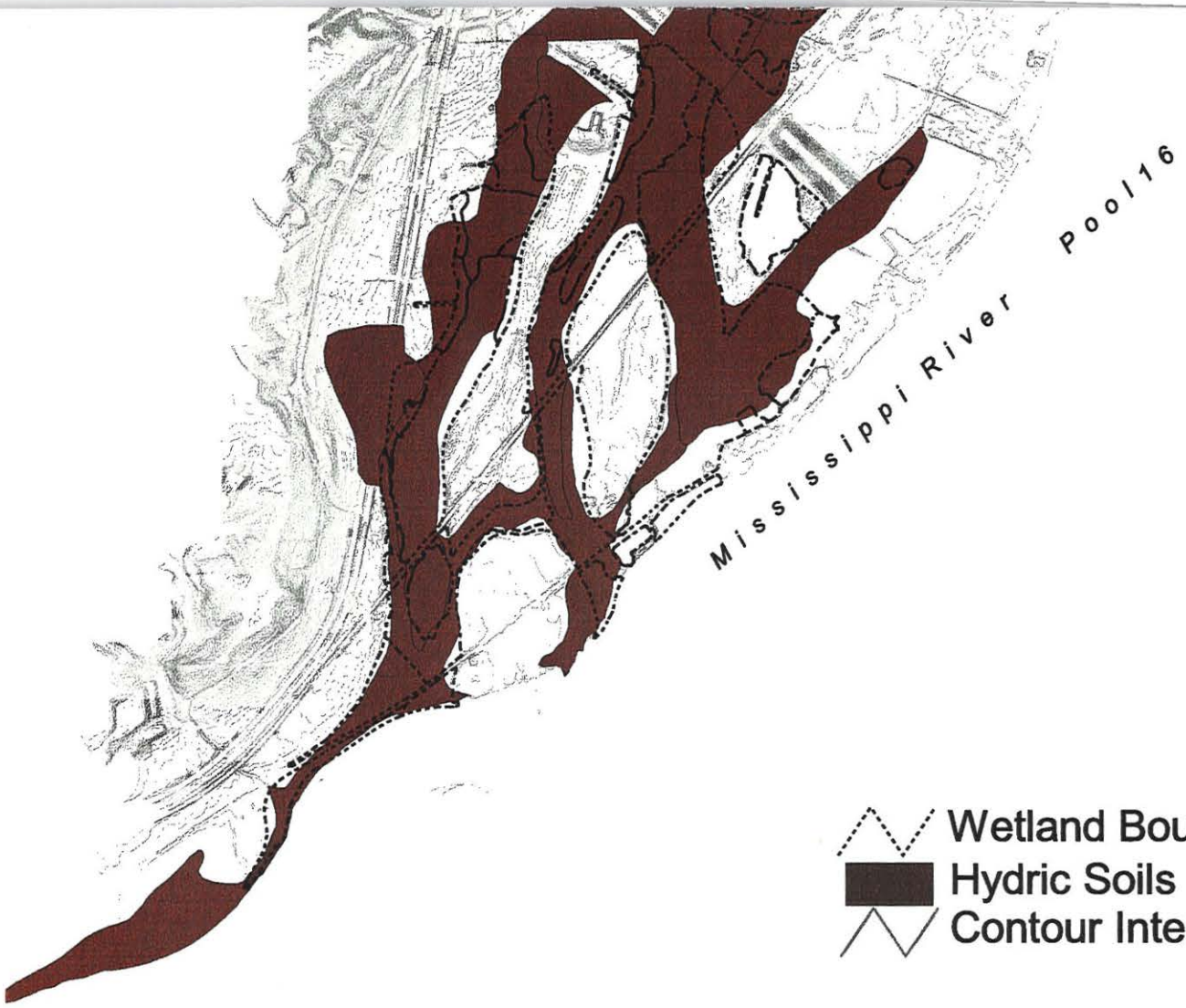
|---|---|
| Scale | 1"=500' |
| Date | 12/11/97 |
| Title | Wetland/Hydrology |
| Drawn by: | WBW |
| Checked | BLB |
| Sheet | A4 |

# Nahant Marsh Master Plan

**Davenport, Iowa**

## Hydric Soils Map




Wetland Boundary
Hydric Soils
Contour Interval (2 feet)

500 0 500 1000 1500 2000 2500 Feet

N

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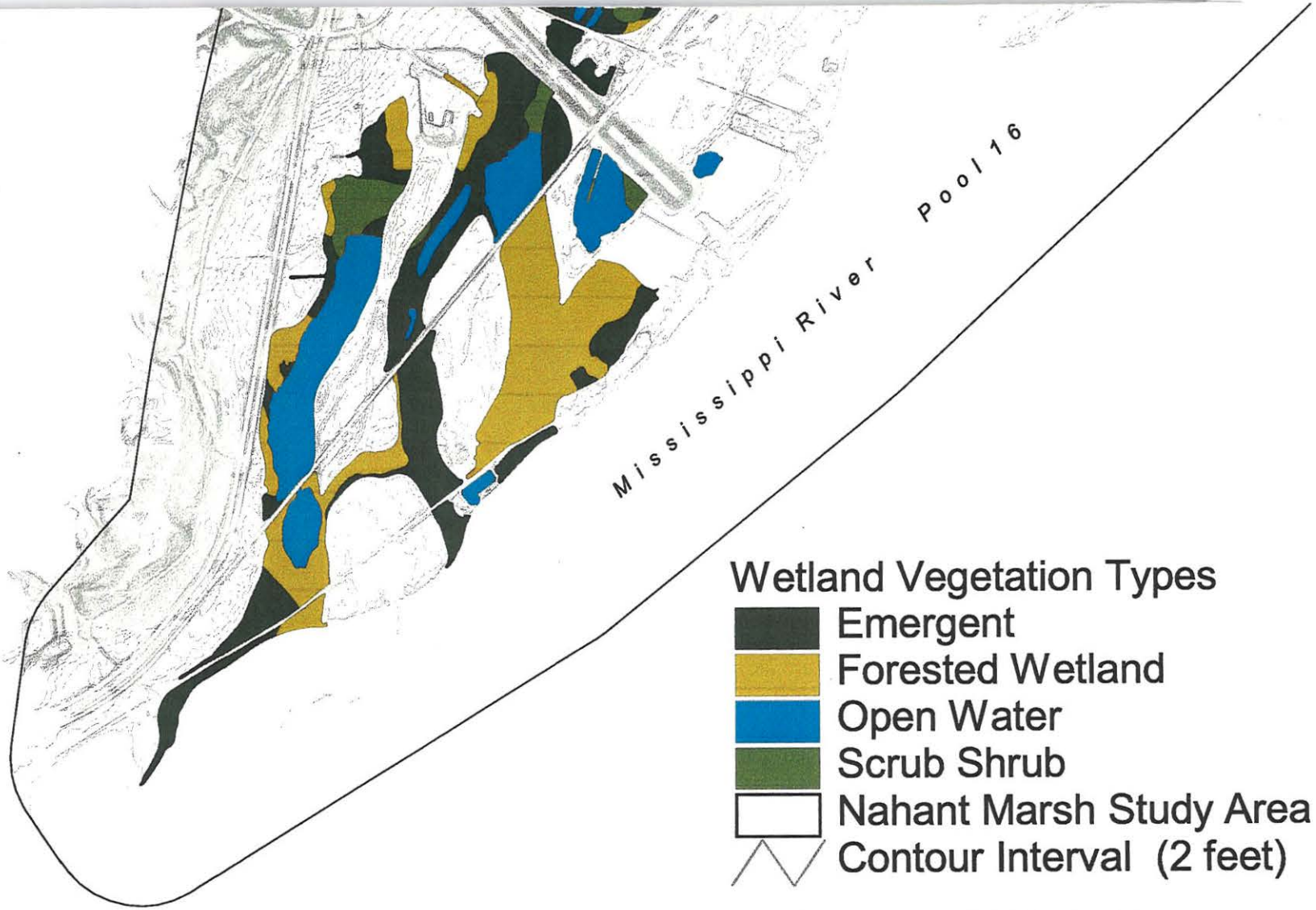
|---|---|
| Scale | 1"=500' |
| Date | 12/11/97 |
| Title | Hydric Soils |
| Drawn by: | WBW |
| Checked | BLB |
| Sheet | A5 |

# Nahant Marsh Master Plan

**Davenport, Iowa**

Wetland Vegetation Map




## Wetland Vegetation Types

- Emergent
- Forested Wetland
- Open Water
- Scrub Shrub
- Nahant Marsh Study Area
- Contour Interval (2 feet)

500 0 500 1000 1500 2000 2500 Feet

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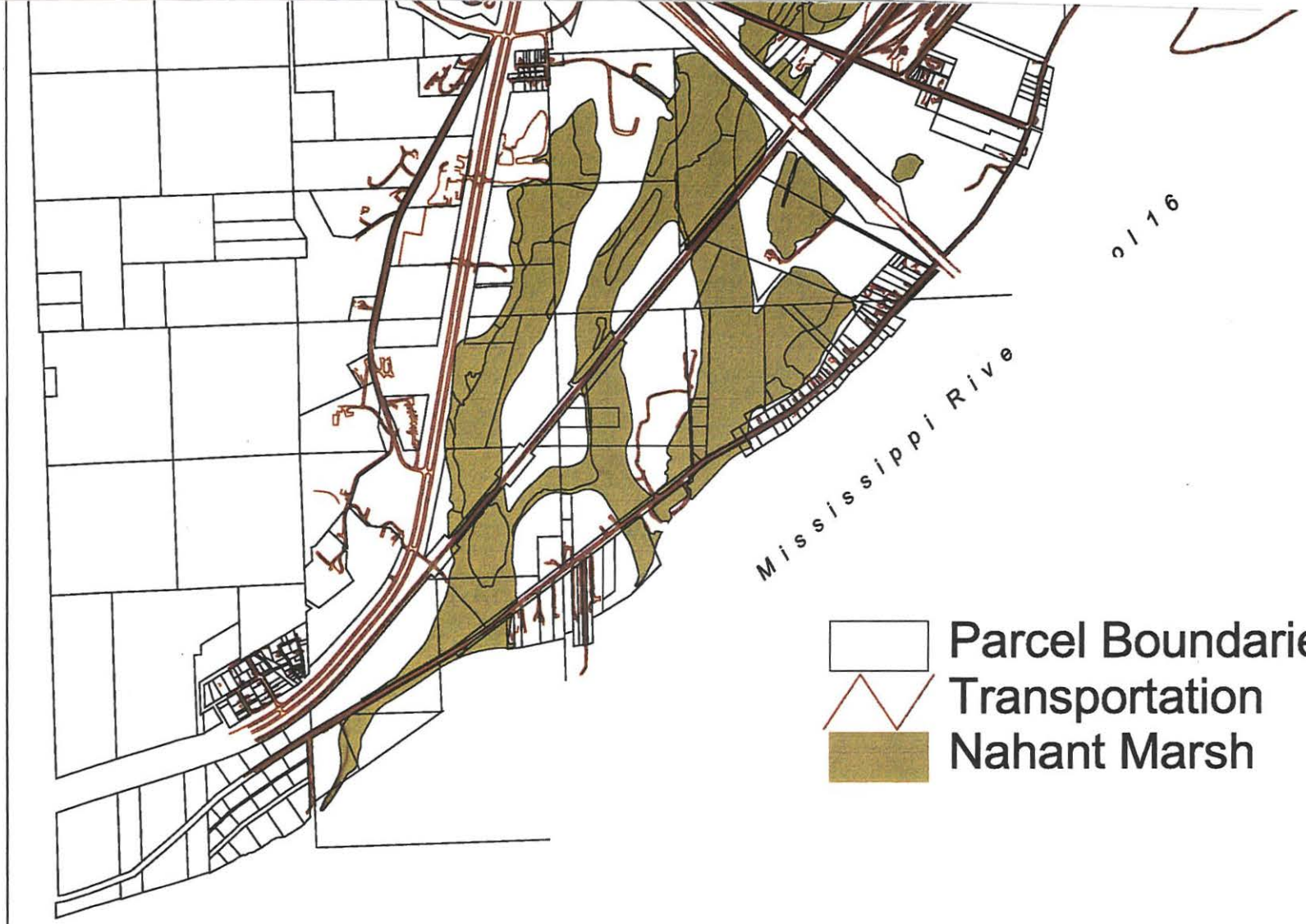
|---|---|
| Scale | 1"=500' |
| Date | 12/12/97 |
| Title | Wetland Vegetation |
| Drawn by: | WBW |
| Checked | BLB |
| Sheet | A7 |

# Nahant Marsh Master Plan

**Davenport, Iowa**

Parcel Map

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| | |
|---|---|
| Scale | 1"=500' |
| Date | 12/12/97 |
| Title | Tax Parcel |
| Drawn by: | WBW |
| Checked | BLB |
| Sheet | A2 |


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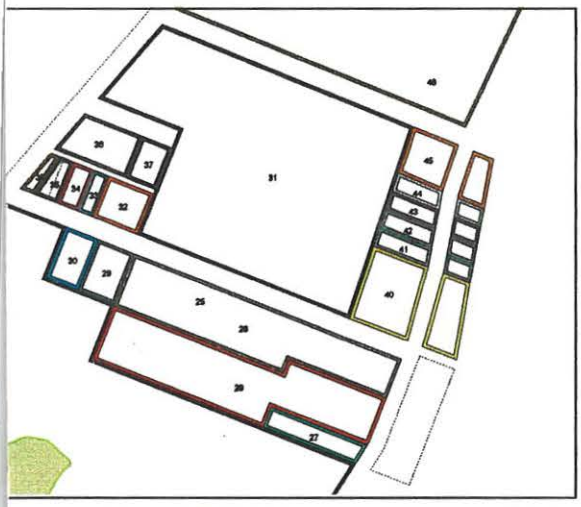
4000 Feet

# Nahant Marsh Master Plan

## Davenport, Iowa

## Parcel Ownership Map




## Property Owners

1 Bruce & Donna Bandy
2 Darren Beyers
3 Mike Voss
4 Maryann Duffy
5 Maryann Duffy
6 James Aldrich
7 Clyde Lenz
8 Sherri Lynn Riley
9 Sherri Lynn Riley
10 Jimmy Leroy Poston & Bonnie Dogran (sp)
11 William Strugeon Trust
12 Willis Mae Ticks (sp)
13 Steven J. Defrane & Joyce A. Defrane a/k/a
14 Richard Rojek
15 ?
16 Craig M. & Kathleen Cook
17 Burton Voss
18 Burton Voss
19 Burton Voss
20 Davenport Levee Improvement Commission
21 City of Davenport
22 W. G. Block
23 Blackhawk Foundry & Machine Co.
24 James Van Fossen
25 John Clark
26 Melvin & Shirley Reicks
27 Melvin & Shirley Reicks
28 Dorothy J. Traum
29 David J. Fox
30 Charles & Irene Millsaps
31 City of Davenport
32 Hardy
33 Ernest Houston
34 Ida ----
35 Eva Howard
36 Louis -----
37 City of Davenport
38 Asphalt Protect (sp) Maintenance
39 E. Elwood
40 ?
41 Marie Gallenkott
42 ?
43 Harold & Esther Kaiser
44 Harold & Esther Kaiser
45 Harold & Esther Kaiser
46 Charles R. Roberts & Roy W. Van Der Kamp Trustees
47 City of Davenport
48 City of Davenport
49 ?
50 ?
51 ?
52 ?
53 ?
54 ?
55 ?
56 ?
57 ?
58 ?
59 ?
60 ?
61 ?
62 ?
63 Scott County Sportsmen Club
64 Warren Carter
65 Julia B. Castro (1/3 Und. Interest)
Wayne Pilgritz & Marjorie Stoffers (1/2 + 2/9 Und. Interest)
Emma Walker (1/9 Und. Interest)
66 JJJ Enterprizes
67 William Sr. & Joyce Carter
68 3H Corporation
69 Cramer Corporation
70 Dick Hohls
71 Jelcilen Inc.
72 Polly F. Wright
73 Reed West, Co.
74 Ken Good N. V. Ltd. Et al
75 Walter K Henes
76 Donald R. Ende & Douglas R. Hayes
77 Gonding & Gonding Partners
78 J. L. Watts Co.
79 E. & T. Realty
80 Pleasure Pools
81 Mid Continent
82 ?
83 ?
84 Buckeye Investments Partnership
85 The Mutual Life Insurance Company of New York City
86 Solar Plastics
87 Rock Island Auction Sales
88 State of Iowa
89 Davenport School District
90 Highway 22 Company - and or -
Meta Pilgritz
Emma Harvey Walker
Marjorie Hans Stoffers
Wayne A. Rosella Pilgritz
91 NW Bank & Trust Trustee
92 John Gerdes
93 Scott County
94 Albert O. Pilgritz et al
95 Highway 22 Company
96 John McFedres
97 Fairview Addition - Housing-multiple owners?
98 SLR Co. Inc. (Railroad)
99 Lolus E. Wright
100 GCD Associates
101 W. Tyrone & Josie Collins
102 Dorothy E. Williams
103 ?
104 Ducks Un.Ltd.
105 Burton Voss Trustee
106 Burton Voss Trustee
107 ?
108 ?
109 ?
110 Davenport Levee Improvement Commission
111 Esther Wareghel
112 Harry & Eliz V. Helbe
113 W. G. Block Co.
114 Elizabeth Ebelle
115 Keene Backhoe Service Inc.
116 Darrell & Mary Brunning
117 Darrell & Mary Brunning
118 Darrell & Mary Brunning
119 Helen Ferguson
120 Helen Ferguson
121 Dorothy Bemauer & Dennis Allen Davis
122 John Howes Trustee or E. Coon Trust
123 Dorothy E. Williams
124 Jas. W. Van Fossen
125 Jas. W. Van Fossen
126 Davenport Levee Improvement Commission
127 Thomas Knee
128 Doyle & Dorothy Stark
129 Dorothy Blazek
130 Marlowe Phyllis Jones
131 Charles A. Fisher
132 Michael O. Hoechek
133 Dadd Andresen
134 Mary E. Kettler
135 James A. Van Fossen & Judith Van Fossen
136 James A. Van Fossen & Judith Van Fossen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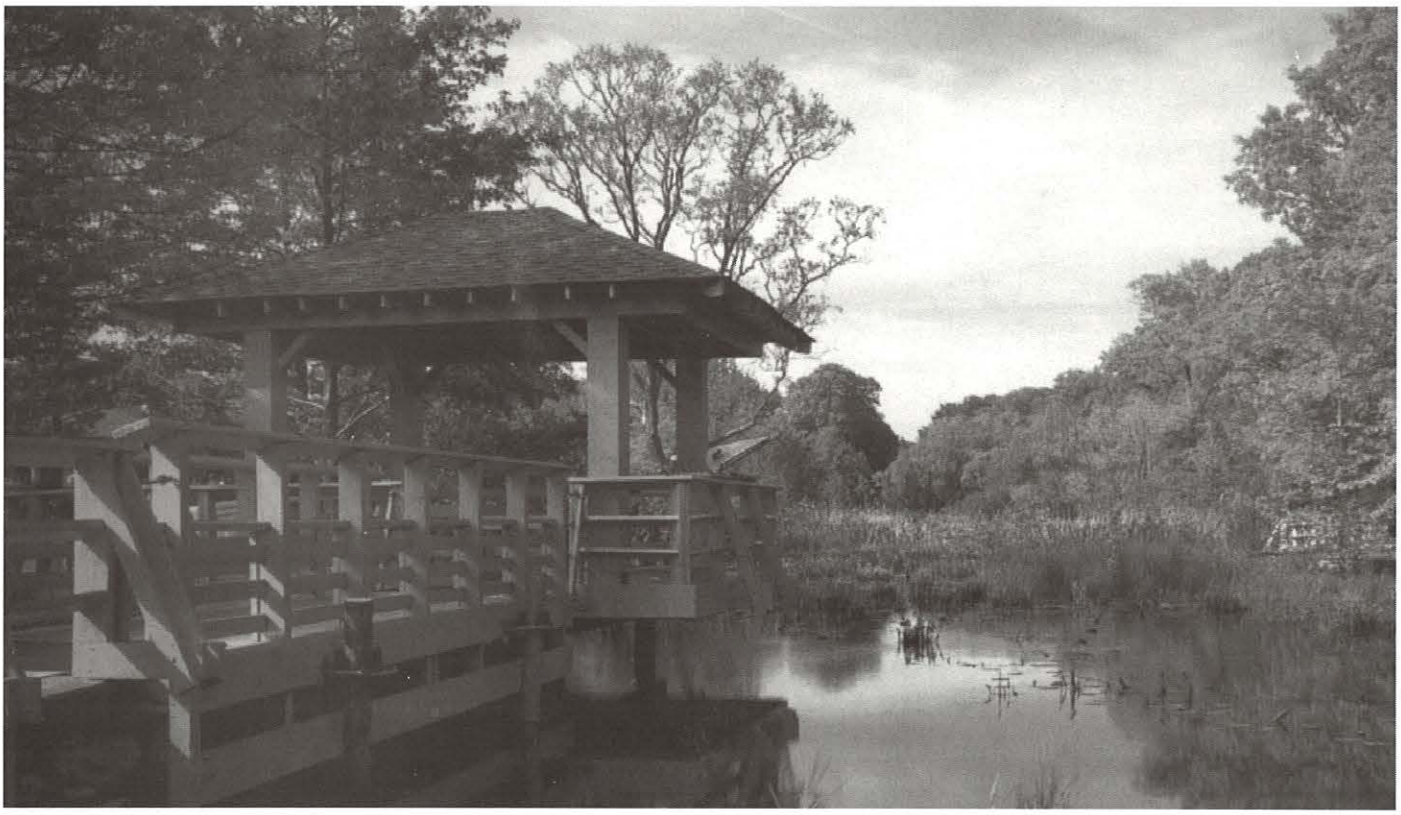
| | |
|---|---|
| Scale | 1"=500' |
| Date | 3/26/98 |
| Title | Ownership Map |
| Drawn by: | WBW |
| Checked | BLB |
| Sheet | A10 |

# Master Plan



***Boardwalks and covered overlooks can be blended into landscape to minimize visual intrusion.***

## Concept Overview

The Nahant Marsh Master Planning Team began the design process by first assessing what the actual parameters of the site Master Plan Study Area should be. These parameters primarily focused on the boundary and overall size of the Master Plan Area of Nahant Marsh proper, as well as the impact or influence of areas affecting the Marsh's many wetland and upland ecosystems scattered within the Study Area.

A 930-acre Study Area was established as described in the area context section of the site analysis. The Study Area analysis addresses surrounding land use relationships that affect the quality of the Marsh. It was determined by the committee that the larger site area should be called the Nahant Marsh Ecological Area, for the many diverse wetland and upland ecosystems that occur in the study area.

The Master Plan proposes a significant number of projects which are generally shown on the plan in graphic form and will be further discussed in this section.

These improvements or programs include:

- Acquisition and property transfer of the 75-acre Scott County Sportsman's Club parcel to an institutional organization or the municipality.
- Wetland restoration of remediated sedge meadow within the Scott County Sportsman's Club 75-acre parcel.
- Renovation of the existing Scott County Sportsman's Club facility into a wetland research or environmental center.
- Improved public parking area along Wapello Avenue adjacent to Nahant Marsh bridge.
- Controlled public access trail at Wapello Avenue and the entry drive to the Scott County Sportsman's Club.
- Development of a simple, ecologically sensitive limited-access boardwalk and hidden viewing platform within the edges of the Marsh along Wapello Avenue and the Scott County Sportsman's Club. The design to be compatible with ADA requirements.

***River Way kiosks can be implemented in or around the Nahant Ecological Area to provide needed linkage to the regional bike trail.***

- The establishment of additional interconnected access points, trails, boardwalks and observation areas, both east and west of I-280 to allow limited public access to unique natural areas.
- Future acquisition of adjacent parcels in poor, polluted or severely degraded conditions.
- Future perimeter buffer zone acquisition through voluntary contributions, conservation easements or fee-simple purchase.
- Perimeter buffer screening along railroad yard boundaries adjacent to the Marsh.
- Work with the city of Davenport to ensure environmentally sensible and responsible expansion of the existing compost and water treatment facilities within the goals of the city public works expansion plans.
- Ecological enhancement or restoration of existing natural areas such as wetlands, prairie remnants, and woodlands.
- Promotion of adaptive reuse of existing buildings or structures for use as environmental education centers, retreats or additional research posts.
- Development of easy-to-use wayfinding sign program for Nahant Marsh area access points; interconnect riverway elements where feasible.
- Development of Marsh gateways.
- Development of interpretive trail markers.
- Development of scenic overlooks at key vantage points throughout the Study Area.
- Development of clean-up action programs to prevent illegal dumping, and river shoreline pollution.
- Enhancement and upgrade of riverfront water recreational opportunities such as boat launches, park space, canoe rentals and overlooks.
- Development of programs linking the River to the Marsh.
- Enhancement of and provision for a variety of educational programs related to enhancing the public awareness of the benefits, diversity and uniqueness of an urban marsh.
- Development of a Marsh Management Plan.

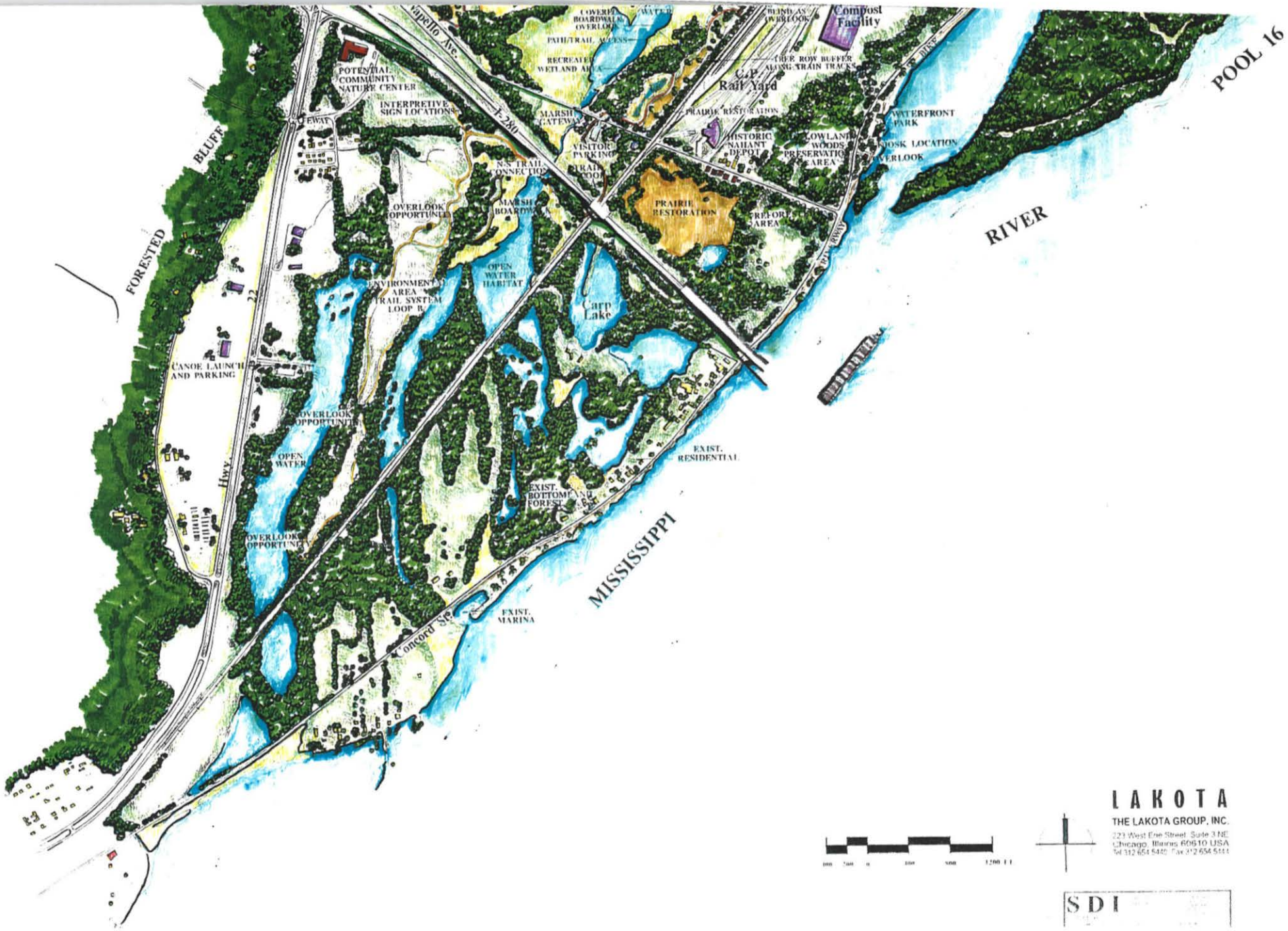
# Nahant Marsh Master Plan

NAHANT WETLAND ECOLOGICAL AREA

Davenport, Iowa

APRIL 6, 1998
APRIL 20, 1998
APRIL 30, 1998

## CONCEPT C


Capello Ave.
COVERED BOARDWALK OVERLOOK
PATH/TRAIL ACCESS
RECREATED WETLAND AREA
BLIND AS OVERLOOK
Compost Facility
TREE ROW BUFFER ALONG TRAIN TRACKS
C.P. Rail Yard
POOL 16
POTENTIAL COMMUNITY NATURE CENTER
INTERPRETIVE SIGN LOCATIONS
I-280
MARSH GATEWAY
PRAIRIE RESTORATION
WATERFRONT PARK
BLUFF
VISITOR PARKING
HISTORIC NAHANT DEPOT
LOWLAND WOODS PRESERVATION AREA
KIOSK LOCATION
OVERLOOK
N.S. TRAIL CONNECTION
OVERLOOK OPPORTUNITY
MARSH BOARDWALK
PRAIRIE RESTORATION
PREFORM AREA
RIVER
FORESTED
OPEN WATER HABITAT
ENVIRONMENTAL AREA TRAIL SYSTEM LOOP B
Carp Lake
CANOE LAUNCH AND PARKING
22
OVERLOOK OPPORTUNITY
OPEN WATER
Hwy.
EXIST. RESIDENTIAL
EXIST. BOTTOMLAND FOREST
OVERLOOK OPPORTUNITY
MISSISSIPPI
EXIST. MARINA
Concord St.
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## Ecological Enhancements

While the following Ecological Enhancements are not an exhaustive or detailed list of programs they do provide a simple outline of items or tasks that may be provided to ensure/protect the Marsh ecosystems health and diversity.

- Typical ecological enhancement measures:
  - *Control and removal of non-native species through physical removal and/or selected and controlled herbicide application.*
- Prescribed or controlled fire to be used as a:
  - *Essential biodiversity tool.*
  - *Critical maintenance tool for prairie and wetland plant community regeneration.*
- Removal of non-natives including:
  - *Woody species management in prairie or emergent wetlands.*
- Seeding or planting in newly created areas.
- New plantings to increase species diversity or to control soil erosion.
- Hydrologic management and water level manipulation to control and stabilize local hydrology.
- Controlled flooding or drawdown in order to aid in vegetation management practices.
- Typical wildlife enhancement measures:
  - *Installation of nesting structures.*
  - *Installation of loafing or resting platforms.*
  - *Forage planting to improve/maintain wildlife attraction.*
  - *Removal of wildlife encumbrances. (Includes pollution, physical barriers, etc.)*
  - *Installation of new plantings to act as visual barriers at appropriate locations.*
  - *Re-grading and re-vegetation to favor a target wildlife groups (e.g. Amphibians, Waterfowl, Waders).*
  - *Predator protection at nesting sites.*

## Preliminary Development Costs

## Nahant Marsh Master Plan Action Items Preliminary Budget Numbers

| *Item* | *Qty.* | *Unit Cost* | *Total Cost* |
|---|---|---|---|
| ***Acquisitions*** | | | |
| Acquisition of Scott County Sportsmen's Association (S.C.S.A.) | 75 acres | | |
| Acquisition of Vacant Salvage Yards At Wapello/ Concord | to be developed in later phases | | |
| Buffer Zone or Conservation Easement Acquisitions | to be developed in later phases | | |
| ***Site Improvements—Hardscape*** | | | |
| Renovation of the Existing S.C.S.A. Building for Research Outpost/ Environmental Center | 9,000 SF | $50/SF | $450,000 |
| Develop an Improved Public Parking Area at Wapello Avenue and Bridge (30 car- gravel lot with landscaping) | 9,000 SF + 10 trees | $3.50/SF | $31,500 |
| Install Simple Access Trail and Boardwalk Nahant Marsh North of Wapello into (ADA Accessible - 6'-8' wide wood or synthetic) | 1,400 LF (800 LF path, 600 LF boardwlk) | $60/LF | $84,500 |
| Install Hidden Wood/Steel Viewing Platform at end of Boardwalk | 500 SF | $35/SF | $17,500 |
| Renovate and Architecturally Enhance Existing School Site for Environmental Center | 24,500 SF | $50/SF | $1,225,000 |
| Develop Wayfinding Signage Program | | | |
| – *Riverway Kiosk* | 2 | $20,000/ea | $40,000 |
| – *Marsh Gateway Sign* | 3 | $20,000/ea | $60,000 |
| – *Interpretive Signs* | 13 | $5,000/ea | $65,000 |
| – *Trail Markers* | 26 | $2,000/ea | $52,000 |
| Develop Linked and Interconnected Trail System(North/South of 1-280) | | | |
| – *Paved Asphalt Trail (± 5' Wide)* | 8,800 LF | $3.50/SF | $154,000 |
| – *Mulch of Crushed Stone (±5' Wide)* | 21,440 LF | $40/CY | $119,111 |
| – *Elevated Boardwalk* | 6,400 LF | $25/SF | $960,000 |
| Install Environmentally SensitiveOverlooks | 6 | $10,000/ea | $60,000 |
| Upgrade Existing Boat Launches | | Lump Sum | $20,000 |

| Item | Qty. | Unit Cost | Total Cost |
|---|---|---|---|
| Install New Riverfront Boat Launch Near Wapello/Concord | | lump sum | $20,000 |
| Install Canoe Piers at Multiple Open Water Locations | 3 | $3,500/ea | $10,500 |
| Develop Additional Gravel Parking/Access Areas (2) (10-12 cars each with landscaping) | 1 @ 12,000 SF & 1 @ 9,000 SF + 18 trees | $3.50/SF | $73,500 |
| Provide Safety Lighting at Parking Lots | 6 Lights | $3,500/ea | $21,000 |
| ***Site Improvements - Softscape*** | | | |
| Remediate/Restore Existing Sedge Meadow or Open Water Habitat at S.C.S.A. | 3.67 acres | $2,000/acre (not including grading or excavation work) | $7,340 |
| Enlarge and Expand New Wetland Area North and West of Nahant Marsh | 75 acres | $4,000/acre | $300,000 |
| Develop Perimeter Buffer Screening at S.C.S.A. along Railroad Yard | 4000 LF | $30/LF | $120,000 |
| Develop New Open Water Habitat & Prairie Planting along New Boardwalk (Wapello/S.C.S.A.) | (TBD) | $20,000–$30,000/acre | (TBD) |
| Enhance/Clear Existing Woodland Stands | | lump sum | $10,000-15,000 |
| Maintain Existing Woodland Stands | | lump sum | $10,000 yearly |
| Enhance and Protect Existing Wetlands Areas | | lump sum | $15,000-20,000 over 3 years + |
| Enhance Existing Prairie Remnants | (TBD) | $2,000/acre | (TBD) |
| Develop New Woodland Stands (Tree Cover Habitat) | (TBD) | $20,000-40,000/acre | |
| ***Management*** | | | |
| Develop Marsh Management Plan | | lump sum | $15,000-20,000 |
| Develop and Implement Clean-Up and Maintenance Program | | lump sum | $20,000-30,000 yearly |
| Identify Pollution Sources and Work with Owners/City to Resolve | | | $ |
| Develop Information/Education Packet for Homeowners and Industrial Owners to use as a Guide for Protecting and Conserving Wetland Environmental Resources. | | lump sum | $15,000-20,000 |
| Implement Staff Management Team (Full or Part-Time) | | lump sum | $10,000-15,000 yearly per employee (PT) |
| | | lump sum | $25,000-30,000 yearly per employee (FT) |

# Next Steps

***Ongoing volunteer support through seasonal "clean-up" days helps protect the Marsh environs.***

The Master Plan's goal is to serve as a framework for evaluating and guiding the future of the Nahant Marsh Ecological Area. While the data and detail of specific elements of the plan are not fully defined, these next steps will serve as a checklist of action items needed to carry the plan forward in its implementation stages. These next steps are considered essential, and due to the changing and evolving nature of a long-term master plan are not prioritized or ranked as to their importance.

- Garner public approval and adoption of Master Plan at the City of Davenport.
- Amend Davenport's Comprehensive Land Use Plan.
- Finalize ownership and title transfer of Scott County Sportsmen's Association following Environmental Protection Agency remediation program.
- Select or appoint Marsh Management Policies and Implementation Plan.
- Develop Marsh Management Policies and Implementation Plan.
- Prioritize action items from Master Plan — develop phased implementation budget.
- Prepare final designs/documents for selected action items.
- Obtain necessary approvals for final designed action items.
- Implement and manage construction of action item.
- Simultaneously identify key land acquisitions or conservation opportunities.
- Develop on-going oversight and monitoring of implemented strategies and action items.
- Define goals/objectives of implemented strategies or action items at local and regional scales. Develop performance standards by which to evaluate progress of ecological and cultural enhancement, mitigation, or preservation activities.
- Identify federal, state, and local funding programs for selected action items.