

Hegewisch Marsh Site Plan

August 2006



Chicago



Department of
Environment

HEGEWISCH MARSH SITE PLAN

Chicago, Illinois

August 2006

Prepared for



City of Chicago
Department of Environment

Prepared by

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Landscape Architecture-Urban Design-Planning-Analysis



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1.0 INTRODUCTION

For the City of Chicago Department of Environment (CDOE), Tetra Tech EM Inc. (Tetra Tech) and its design team partners, Terry Guen Design Associates, Inc., and Land and Water Resources, Inc., have prepared a comprehensive site plan for the ecological rehabilitation and management of Hegewisch Marsh. This site plan will serve as the basis for preparing final design plans and specifications for site rehabilitation and management.

The Hegewisch Marsh site is located in southeastern Chicago and is bounded to the north by 130th Street and the Ford Motor Company (Ford) manufacturing plant, to the east by Torrence Avenue and Ford's parking lot, to the south by 134th Street, and to the west by the Calumet River and CID landfill west of the river (see Figure 1). The 130.1-acre site includes three main parcels: (1) a 100.3-acre parcel owned by the City of Chicago, (2) a 17.8-acre parcel owned by Norfolk Southern, and (3) a 10.2-acre parcel owned by the Metropolitan Water Reclamation District (MWRD) of Greater Chicago. The U.S. Army Corps of Engineers (USACE) also owns 1.8 acres along the southern edge of the site, and has an access road leading to the Thomas S. O'Brien Lock and Dam. According to a wetland delineation performed by V3 Consultants, the site includes 112 acres of wetlands.

Hegewisch Marsh is overgrown with exotic and invasive weedy species such as common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), eastern cottonwood (*Populus deltoides*), and common buckthorn (*Rhamnus cathartica*). Despite the abundance of weedy plants, Hegewisch Marsh provides important habitat for a variety of wildlife species, including the state-threatened common moorhen (*Gallinula chloropus*) and state-endangered yellow-headed blackbird (*Xanthocephalus xanthocephalus*).

Tetra Tech prepared this plan to rehabilitate natural areas of the site and improve habitat for wildlife.

During the development of the site plan, Tetra Tech considered the following factors:

- **Calumet Region** – The Calumet region was once a vast complex of hydrologically connected wetlands. The region currently consists of interspersed industrial, residential, and open spaces, with some remnant wetlands. In some cases, abandoned and potentially contaminated industrial areas are located adjacent to important habitat remnants, which have often been degraded by development. In addition, many of the historical wetlands have been filled with a variety of materials, including slag and dredge spoils, to create “usable” land. As a result, the remaining open spaces are disconnected, and wetlands habitat has been degraded. Nevertheless, the open spaces and remnant wetlands continue to provide important habitat for wildlife, such as foraging and nesting habitat for several bird species, demonstrating the vital importance of the remaining

Calumet region wetlands. Continued habitat degradation is causing a decline in the populations of many species, and ecological rehabilitation activities are essential to reverse this trend.

- **Calumet Area Ecological Management Strategy (EMS)** – The EMS began as an effort to synthesize the vast amount of ecological information about the Calumet region and set ecological goals. The EMS provides a framework for rehabilitating land in the Calumet region and establishes guidelines to preserve, improve, and create habitat as part of land management decisions and activities. The specific guidelines are designed to (1) preserve plant and animal habitat with high biological value; (2) improve existing habitat to maximize the potential for native diversity and ecological health; and (3) create new habitats, where feasible, that will meet the range of needs for native species and communities. Hegewisch Marsh, a natural area surrounded by industrial and residential development, is an ideal location to apply EMS guidelines in the Calumet region.
- **Ford Calumet Environmental Center (FCEC)** – Hegewisch Marsh will be the site of the FCEC and will be a hub for environmental education, stewardship, and ecological rehabilitation in the Calumet region. The FCEC will highlight the unique habitat of Hegewisch Marsh as well as the history and industry of the surrounding community through interpretive exhibits and signage at the site. When completed, the FCEC will provide a starting point for exploring the Calumet region.
- **Coexistence Theme** – At Hegewisch Marsh and throughout the Calumet region, nature continues to coexist with both the industrial features and the cultural aspects of the community. To achieve and promote effective coexistence, the site plan must consider and incorporate industrial, community, and natural resources as essential elements of the historical and contemporary Calumet region. Interpretive exhibits at the FCEC will be designed to emphasize and promote the theme of coexistence.

Many representatives from government agencies, industry, and the community were consulted throughout the decision-making process and played a significant role in developing this site plan. The following sections describe the site planning process (see Section 2.0), the 100 percent (final) site plan and phasing (see Section 3.0), ecotoxicological issues associated with Hegewisch Marsh (see Section 4.0), and wetland mitigation coordination with USACE to obtain necessary permits (see Section 5.0).

2.0 SITE PLANNING PROCESS

The first step in developing this plan was to gather and review available site background and other information to determine important historical features and current conditions at Hegewisch Marsh that should be considered during the planning process. Several biological and environmental studies have been conducted at the site, including a Phase I environmental site assessment and a Phase II subsurface investigation for the 100.3-acre parcel owned by the city. In addition, wetland delineations have been completed for all three parcels, and field work has been conducted to compile species inventories of plants, birds, amphibians, reptiles, and invertebrates at the site. Table 1 summarizes some of the pertinent studies reviewed and other milestones achieved since 2001 that were considered during the site planning process.

Tetra Tech also conducted several site visits, met with local historians, obtained historical aerial photographs and maps of the area, and met with local bird and invertebrate experts to obtain critical habitat information. Based on its review of site background information, Tetra Tech identified the following site features and other considerations for site planning:

- Yellow-headed blackbird and other marsh-dependent bird habitat (including many state-listed threatened and endangered species)
- The original path of the Calumet River that ran through the site before it was straightened (old river channel)
- Sedge meadow habitat and associated invertebrate populations
- The old railroad spur in the northeast corner of the site (old railroad right-of-way)
- Existing trails and ruts at the site

These site features are shown on Figure 1. In addition, Lt. Governor's Office, along with CDOE and various partners, applied for a National Coastal Wetlands Conservation (NCWC) grant from the U.S. Fish and Wildlife Service to help fund ecological enhancement of the northern two-thirds of the 100.3-acre parcel. During the development of the site plan, Tetra Tech considered the site development restrictions associated with this grant, limitations imposed by property ownership and acquisition, ecotoxicological issues (see Section 4.0), and wetland mitigation requirements (see Section 5.0).

TABLE 1
PERTINENT STUDIES CONDUCTED IN THE HEGEWISCH MARSH AREA

Study or Milestone	Date	Prepared By
Phase I Environmental Site Assessment for the 100.3-acre parcel	April 2001	Earth Tech
Plant list for Hegewisch Marsh based on species observed during three site visits	July, August, September 2001	Patricia K. Armstrong
Phase II Subsurface Investigation for the 100.3-acre parcel	March 2002	URS Corporation
Calumet Area Ecological Management Strategy	2002	CDOE
Amphibian and reptile survey at three sites in the Lake Calumet Area	January 2003	IDNR
Regional Permit 3 authorization	February 2003	USACE
Baseline Survey of Invertebrates at Indian Ridge Marsh, Indian Creek, and Hegewisch Marsh	May 2003	Illinois Natural History Survey and University of Illinois
Hegewisch Marsh bird list	June 2003	Douglas Stotz and Walter Marcisz
FCEC design competition proposal	November 2003	Studio Gang (winner announced in April 2004)
Hegewisch Marsh topographic map	March 2004	V3 Consultants
Wetland delineation and assessment for 134 th Street and Torrence Avenue and 130 th Street and Torrence Avenue	July 2004	V3 Consultants
Application for a National Coastal Wetlands Conservation grant with the U.S. Fish and Wildlife Service	2005	Lt. Governor's Office, CDOE, and various partners (award announced in December 2005)
Calumet Area Ecotoxicology Protocol	2006	Calumet Ecotoxicology Roundtable Technical Team
Calumet Area Hydrologic Master Plan including Hegewisch Marsh Hydrologic Analysis	August 2006	V3 Consultants

Notes:

CDOE	Chicago Department of Environment
FCEC	Ford Calumet Environmental Center
IDNR	Illinois Department of Natural Resources
USACE	U.S. Army Corps of Engineers

Finally, to ensure stakeholder participation throughout the site planning process, Tetra Tech conducted a series of meetings with (1) the public at the Chicago Public Library – Hegewisch Branch, (2) the Hegewisch Marsh Advisory Group, (3) the Calumet Government Working Group, and (4) the Ecotoxicology Roundtable Technical Team. The following sections briefly describe and summarize the results of initial planning meetings, as well as those at the 30 percent and 60 percent design stages. The 100 percent (final) site plan is discussed in Section 3.0. Appendixes A through C provide available meeting notes and handouts for the initial, 30 percent, and 60 percent design meetings, respectively.

2.1 INITIAL SITE PLAN MEETINGS

At the beginning of the planning process, Tetra Tech summarized the background information to show existing conditions and site features to be considered in the site plan. On July 19, 2004, Tetra Tech presented the summary at a project kick-off meeting with CDOE, Chicago Department of Planning and Development, Illinois Department of Natural Resources (IDNR), and CorLands. A public meeting was then held on August 24, 2004. The initial stakeholder meetings were considered brainstorming sessions to determine the goals of the site plan as well as the features of Hegewisch Marsh that should be preserved or improved. A variety of comments were received during the meetings, primarily concerning the following issues and topics:

- Overall goal of Hegewisch Marsh
- Bird habitat and water level management
- Interpretive value, trails, and site access
- Community opportunities
- FCEC and associated parking lot
- Ownership and security issues
- Surrounding land use issues

Community concerns and other important components of the site design plan focused on preserving and enhancing yellow-headed blackbird habitat, establishing a means to interpret natural vegetation for the community and educators (such as a botanical garden of native plants), and close conformance to the Calumet EMS. Many comments suggested providing as much habitat as possible for wildlife, particularly the yellow-headed blackbird and shorebirds, and water level management was considered a necessity for maintaining habitat for marsh-dwelling birds. With that in mind, educational opportunities and passive recreation (such as hiking and

bird watching) were seen as important components of the site plan. Interpretive exhibits highlighting the old Calumet River channel as well as industry in the area were also requested, and there was significant interest in providing stewardship opportunities for community members. The comments received during this stage (see Appendix A) were used to create a 30 percent site plan presented to stakeholders, which is discussed below.

2.2 30 PERCENT SITE PLAN MEETINGS

The 30 percent site plan focused on (1) the coexistence theme, (2) the guidelines set forth in the EMS, and (3) stakeholder comments from the initial site plan meetings. The 30 percent site plan meetings were intended to explain how the coexistence theme was incorporated into the 30 percent site plan and to solicit feedback and direction from stakeholders. Tetra Tech presented the 30 percent site plan to stakeholder groups on the following dates:

Stakeholder Group	30 Percent Site Plan Meeting Date
Calumet Government Working Group	December 16, 2004
Public	February 22, 2005
Ecotoxicology Roundtable Technical Team	May 24, 2005
Hegewisch Marsh Advisory Group	September 8, 2005

The 30 percent site plan included conceptual sketches of two alternatives. Appendix B includes these sketches and a handout provided at the meetings discussing how the two alternatives incorporate the coexistence theme. Appendix B also includes available notes taken at each stakeholder meeting. A variety of comments were received during the meetings, primarily concerning parking logistics, site security during construction, potential site contamination, and displacement of wildlife following excessive habitat alteration. Specific comments included the following:

- Preference for the site plan with the least habitat disturbance
- Reduction of trails, especially throughout the northern portion of the marsh
- Incorporation of mudflats along the old river channel to create habitat for shorebirds
- Removal of many cottonwoods currently present at the marsh
- Incorporation of a volunteer program during rehabilitation
- Inclusion of an outdoor classroom and other educational features
- Phased development of the site

2.3 60 PERCENT SITE PLAN MEETINGS

The 60 percent site plan focused on maintaining and improving existing habitat, including hemi-marsh, forested wetlands, and wet prairie/sedge meadow habitat. Several features present in the 30 percent site plan were altered to minimize impacts that visitors might have on wildlife. For example, the 30 percent site plan showed several trails circling the sensitive hemi-marsh area in the northern portion of the site; however, based on feedback received at the 30 percent site plan meetings, many of these trails were removed from the plan to protect nesting habitat for state-endangered yellow-headed blackbirds. While the proposed trails would no longer circle the hemi-marsh, existing trails in the area were retained in the site plan so that the trail system would allow visitors to observe each habitat type present at Hegewisch Marsh. Tetra Tech presented the 60 percent site plan to stakeholder groups on the following dates:

Stakeholder Group	60 Percent Site Plan Meeting Date
Hegewisch Marsh Advisory Group	February 15, 2006
Public	February 21, 2006
Ecotoxicology Roundtable Technical Team	February 23, 2006
Calumet Government Working Group	March 20, 2006

The 60 percent site plan consisted of (1) a master plan showing locations of proposed habitats and site features and (2) diagrams depicting the three phases of project construction. The master plan included representative photographs of proposed habitats and was more detailed than the conceptual sketches presented in the 30 percent design stage. The master plan and text summarizing the plan are included in Appendix C. Notes from each stakeholder meeting are also included in Appendix C. Comments made at the meetings generally focused on the following topics and issues:

- Reconstructing the 130th Street and Torrence Avenue intersection and potential impacts to the marsh
- Linking the bicycle trail to regional trails
- Scheduling work so it would not impact breeding seasons for sensitive species

3.0 100 PERCENT (FINAL) SITE PLAN AND PHASING

Few comments were received on the 60 percent site plan for Hegewisch Marsh, and these comments were incorporated as necessary into the 100 percent (final) site plan. For the 100 percent site plan, Tetra Tech also refined the phasing diagrams to more closely reflect work to be completed under the NCWC grant, which includes the rehabilitation activities in Phase 1. These figures follow the text portion of this document. Tetra Tech will conduct additional meetings with stakeholders to present the final site plan, which will serve as the basis for preparing the final design plans and will provide specifications for site rehabilitation and management.

As discussed in the previous section, Tetra Tech conducted a detailed site background review and met with multiple stakeholder groups to develop a final site plan that (1) is consistent with the guidelines of the Calumet EMS; (2) complements and provides the infrastructure to support the FCEC; and (3) promotes the theme of coexistence between nature, industry, and community in the Calumet region. The Calumet region once contained vast wetland complexes that supported thriving wildlife populations. The site plan highlights Hegewisch Marsh as one of the remaining pockets of this vital habitat, and the FCEC and interpretive signage will educate visitors on the importance of the Calumet region. Tetra Tech paid specific attention to existing resources at Hegewisch Marsh and created the site plan to expand, enhance, and highlight those resources. This approach will maximize the potential for a successful rehabilitation and self-sustaining functionality, while requiring minimal long-term maintenance. The remainder of this section discusses details of the 100 percent site plan and outlines each phase of site rehabilitation. Please refer to the figures following the text for drawings of the site plan and details of each phase of site work.

3.1 SITE PLAN

The Hegewisch Marsh site plan focuses on maintaining and improving existing habitat, including hemi-marsh, forested wetlands, and wet prairie/sedge meadow habitat. Proposed planting lists for each habitat type are shown in Appendix D. Because the protection of threatened and endangered species is critical, the site will be designed to provide for passive recreational uses that will minimize impacts to habitat quality. Interpretive exhibits would be placed in each habitat to educate visitors on the species in that habitat. The exact footprint of the FCEC remains to be

determined, but it will be built on the MWRD parcel. Habitat types and additional site features shown on the site plan are described below.

- **Industrial Features** would be highlighted through interpretive exhibits and in the viewsheds surrounding Hegewisch Marsh. A trail is proposed along the old railroad spur in the northeast corner of Hegewisch Marsh, and the old river channel, where the Little Calumet River originally ran through the site before being straightened, would be partially excavated to create more diverse (and wetter) habitat. The historical importance and natural history of these features would be explained through interpretive signage along the trails. Additional signage would be placed throughout Hegewisch Marsh explaining the significance of the O'Brien Lock and Dam along the Little Calumet River, the railroad bridges along the north edge of the site, and the CID landfill to the west.
- **Wet Savannah** habitat in the northwest corner of Hegewisch Marsh would be improved by removing non-native herbaceous species such as Kentucky bluegrass, and other invasive or weedy species such as white sweetclover. In addition, most of the eastern cottonwood trees—a weedy native species—would be removed to an appropriate density, and the area would be mowed and treated with herbicide to remove invasive herbaceous species. The area would be replanted with a fewer number of other native tree species historically present in wet savannahs such as Silver Maple (*Acer saccharinum*), Green Ash (*Fraxinus pennsylvanica*), Swamp White Oak, and American Sycamore (*Platanus occidentalis*) to restore the wet savannah areas. The area would also be seeded with a native grass and herbaceous savannah mix. Altering the composition and density of the tree community would create more open habitat to benefit bird species. Removal of cottonwoods throughout the site would also help to maintain a higher water level in the marsh.
- **Hemi-Marsh** habitat exists in the north-central area of Hegewisch Marsh and provides important nesting habitat for a variety of marsh-dependent bird species. While these species, such as the state-endangered yellow-headed blackbird, will nest in common reed currently present at Hegewisch Marsh, they prefer other plant species for optimal nesting success. In addition, many marsh-dependent birds require pockets of open water throughout the growing season. Rehabilitation efforts would include (1) removing invasive non-native species such as common reed using herbicide; (2) maintaining open-water marsh conditions that will promote bird habitat through water level manipulation, creation of small potholes, or other means; and (3) planting and seeding native species to create a marsh plant community dominated by broad-leaved cattail (*Typha latifolia*), river bulrush (*Schoenoplectus fluviatilis*), and great bulrush (*Schoenoplectus tabernaemontani*). The seed bank at Hegewisch Marsh likely contains these species in the original soils, and controlling the invasive species that currently dominate the area will allow these native species to thrive. In addition, a lookout tower would be constructed along the old railroad spur to minimize intrusion into sensitive habitat while allowing visitors to view the hemi-marsh throughout the year. Two viewing blinds would also be constructed along the trails at the southern and western edges of the hemi-marsh.
- **Little Calumet River** would be viewed via an accessible trail that complies with the Americans with Disabilities Act (ADA). The trail would run along the river's edge, and in the future, it could be connected to the regional trail system. In addition, a canoe launch and fishing pier would be constructed in areas approved by USACE to ensure

visitor safety. Interpretive signage would be placed along this trail to enhance the visitors' experience.

- **Wet Prairie** or sedge meadow in the southeast corner of Hegewisch Marsh is particularly important for invertebrate species at the site and would be improved through removal of invasive species and planting and seeding the area with a native grass and herbaceous wet prairie/emergent species mix. Native grasses and sedges are likely already present in the seed bank from the original soils. These original species will be supplemented to seed the area to restore the emergent wetland habitat. This habitat would also be expanded in the southern portion of Hegewisch Marsh.
- **Forested Wetland** habitat in the center of Hegewisch Marsh is dominated by purple loosestrife, Eastern cottonwood, common buckthorn, and non-native grasses. Rehabilitation would include removal of the invasive species and thinning the Eastern cottonwood stands to an appropriate density. The area would also be mowed and treated with herbicide to remove invasive herbaceous species. The area would be replanted with oak (*Quercus* spp.), hickory (*Carya* spp.), and associated woodland/forested wetland species.
- **The Old River Channel** would be partially excavated to create emergent wetland with pockets of open water and to provide educational and interpretive value to the site. Boardwalk and bridge features would allow visitors to experience the area from approximately 6 feet above the wetland. An additional trail at the west end of the old river channel would allow visitors to experience the wetland at ground level. Interpretive signage would also be placed along the old river channel.
- **A Boardwalk** and bridge are proposed across the old river channel described above. These features would be ADA-compliant and may be constructed using recycled steel from the Calumet region. These features would allow visitors of all abilities to experience wetland areas from a safe, non-intrusive location.

3.2 PHASING

The phasing of site rehabilitation activities considers several factors such as the NCWC grant award, location of the FCEC, and acquisition of the southern parcels. The phased rehabilitation approach generally begins in the northern portion of the site and progresses southward. The NCWC grant will fund rehabilitation activities in the first phase of the project. Based on data collected, a sensitive period for many species of concern in the Calumet region is March 15 through August 15. During this period, construction should be avoided or minimized to avoid disrupting sensitive populations, especially the bird community during the breeding season. Any construction activities that affect sensitive habitat for species of concern would be coordinated so that adequate suitable habitat is retained and managed in the immediate area or suitable habitat is reestablished by the next nesting season.

Diagrams showing the three phases of rehabilitation are provided following the text of this plan. Design plans and specifications will include detailed descriptions of activities to be completed during each phase. The remainder of this section briefly summarizes activities to be completed in each phase of the rehabilitation of Hegewisch Marsh. Preliminary cost information for each phase is included in Table 2. Items completed during Phase 1 are separated into activities funded through the NCWC grant and activities funded through other means. These other activities will be completed as funding allows and could be refined during the design plans and specifications phase. In addition, some items cannot be estimated at this time because the cost depends on coordination with the architect selected for the FCEC. A final cost estimate will be prepared during the design plans and specifications phase.

Phase 1 (Year 0 to 2)

Phase 1 will focus on habitat and will include the areas north of the old river channel. The following primary activities are planned:

- Herbicide applications and a prescribed burn will be conducted to reduce the abundance of invasive plant species.
- Grubbing, seeding, and planting would occur using appropriate seed mixes specific to each habitat type. Appendix D includes proposed seeding and planting mixes.
- In each habitat, infrastructure would be installed for interpretive exhibits and plantings to be used for educational purposes.
- Marsh hydrology would be improved by thinning the existing trees, especially the abundant eastern cottonwoods, and replacing them with less dense groupings of other native tree species.
- A pump system would be installed to maintain water in the hemi-marsh area, and open water habitat would be maintained in the hemi-marsh through water manipulation, creation of small potholes, or other means. Tetra Tech is exploring various options for cost-effective and minimally invasive methods of creating potholes in the marsh.
- Existing trails would be identified, and preparations would begin for permanent trails.
- Permanent fencing would be installed along Torrence Avenue to control fly dumping.
- Construction of the FCEC would begin, along with the parking lot, maintenance shed, entrance roadway, and botanical exhibits to educate visitors on native plants present throughout the marsh.

**TABLE 2
PRELIMINARY COSTS BASED ON SITE PLAN**

Item	Quantity	Unit	Unit Cost	Total Cost^a
Phase 1^b				
Creation of Marsh Potholes	1	LS	\$186,000	\$186,000
Herbicide Application (3 applications)	1	LS	\$95,000	\$95,000
Prescribed Burn (1 time)	1	LS	\$30,000	\$30,000
Tree Removal ^c	1	LS	\$75,000	\$75,000
Grubbing, Seeding, and Planting ^c	1	LS	\$314,000	\$314,000
Construction and Installation of Pump Station	1	LS	\$95,000	\$95,000
Installation of Infrastructure for Interpretive Exhibits and Plantings	1	LS	TBD	TBD
Site Preparation for Construction of the FCEC	1	LS	TBD	TBD
Stabilization of USACE Roadway for Construction	1	LS	TBD	TBD
Installation of Permanent Fencing	TBD	LF	TBD	TBD
Total Phase 1 Area and Cost	68.75	Ac	NA	\$795,000
Phase 2				
Installation of Bird Blind	2	Each	\$120,000	\$240,000
Installation of Lookout Tower	1	Each	\$120,000	\$120,000
Installation of Site Signage	1	LS	\$50,000	\$50,000
Construction of Low-Impact Trails (begin in Phase 1 and complete Phase 2)	11,500	LF	\$12	\$138,000
Construction of Canoe /Fishing Pier	2	Each	\$8,450	\$17,000
Construction of Boardwalk	TBD	LF	\$1,000	TBD
Construction of Bridge	TBD	LF	\$1,000	TBD
Installation of Lighting	TBD	Each	TBD	TBD
Rehabilitation of Old River Channel	18,220	CY	\$10	\$183,000
Construction of FCEC	1	LS	TBD	TBD
Construction of Parking and Entrance Roadway	1	LS	TBD	TBD
Installation of Botanical Exhibits	1	LS	TBD	TBD
Herbicide Application (3 applications)	1	LS	\$28,000	\$28,000
Prescribed Burn (1 time)	1	LS	\$12,500	\$13,000
Tree Removal ^c	1	LS	\$20,000	\$20,000
Grubbing, Seeding, and Plug and Tree Planting ^c	1	LS	\$95,000	\$95,000
Follow-up Work to Phase 1	68.75	Ac	\$1,000	\$69,000
Total Phase 2 Area and Cost	69	Ac	NA	\$1,123,000
Phase 3				
Rehabilitation of Old River Channel (continued from Phase 2)	8,575	CY	\$10	\$86,000
Construction of Trails in Southern Parcels	3,000	LF	\$50	\$150,000
Herbicide Application (3 applications)	1	LS	\$28,000	\$28,000
Prescribed Burn (1 time)	1	LS	\$12,500	\$13,000
Tree Removal ^c	1	LS	\$20,000	\$20,000
Grubbing, Seeding, and Plug and Tree Planting ^c	1	LS	\$95,000	\$95,000
Follow-up Work to Phases 1 and 2	69	Ac	\$1,000	\$69,000
Total Phase 3 Area and Cost	69	Ac	NA	\$311,000

TABLE 2 (Continued)
PRELIMINARY COSTS BASED ON SITE PLAN

Notes:

- ^a Total cost is approximate and has been rounded to the nearest \$1,000.
- ^b Shaded items are not funded by the NCWC grant.
- ^c The costs listed are general estimates. A specific budget that provides for tree removal, grubbing, seeding, and plug and tree planting to the extent allowed by available funding will be prepared during the final design plans and specifications phase.
- ^d Infrastructure items not completed during Phase 2 based on potential budget constraints can be completed during Phase 3.

Ac	Acre
CY	Cubic yard
FCEC	Ford Calumet Environmental Center
LF	Linear foot
LS	Lump sum
NA	Not applicable
TBD	To be determined
USACE	U.S. Army Corps of Engineers

Phase 2 (Year 3 to 4)

Phase 2 will focus on infrastructure and will include the following primary components of the rehabilitation plan:

- Features such as bird blinds, the lookout tower, canoe launch, and a fishing pier could be constructed, and lighting would be installed near parking areas and trailheads.
- The old river channel would be excavated and prepared, and a boardwalk and bridge would be constructed over the old river channel.
- Trails prepared during Phase 1 would be completed for the 100.3-acre parcel, and signage would be installed along the trails.
- Follow-up work to Phase 1 activities in the 100.3-acre parcel would be completed, including additional herbicide application, prescribed burning, and seeding and planting, as necessary. Tree thinning, herbicide application, prescribed burning, and seeding and planting would also be conducted in other parcels pending site access approval. Habitat would be maintained and rehabilitation success would be monitored.
- Botanical exhibits would be installed to educate visitors on native plants present throughout the marsh.

Phase 3 (Year 5)

Phase 3 will tie the previous efforts together by adding other parcels pending site access approval and will focus on the following primary components of the rehabilitation plan:

- Any infrastructure that was not completed during Phase 2 would be constructed, and the remaining portion of the old river channel would be rehabilitated.
- Follow-up work to Phase 2 activities would be completed, including additional herbicide application, prescribed burning, and seeding and planting, as necessary. Tree thinning, herbicide application, prescribed burning, seeding and planting, and trail construction would also be conducted in other parcels pending site access approval. Habitat would be maintained and rehabilitation success would be monitored.

This final phase would continue over the long-term. Over time, habitat function and benefits to wildlife at the site will improve and stabilize, but the rehabilitation efforts at Hegewisch Marsh will need continuous human intervention to control invasive species and maintain functional habitats for wildlife. Stewards and volunteers would be essential in continuing these activities. Each habitat type would be maintained and rehabilitation success would continue to be monitored.

4.0 ECOTOXICOLOGICAL ISSUES

As the site plan was being developed, additional information was needed to ensure that features of the plan would be protective of human health and the environment. Previous sampling indicated that the soil is relatively uncontaminated at Hegewisch Marsh; however, to ensure that the project is protective of human health and the environment, supplemental sampling is being conducted on the 100.3-acre parcel owned by the city and the 10.2-acre parcel owned by MWRD. Additional sampling is also planned for the 17.8-acre parcel owned by Norfolk Southern (pending site access approval) to provide additional information on potential contamination. Previous sampling did not include many surface soil samples and did not include any vegetation, surface water, or sediment samples, which are necessary to evaluate the site from an ecotoxicological perspective. The planned supplemental sampling would also address these data gaps. The following items summarize results and conclusions based on initial supplemental sampling:

- Initial supplemental sampling on the 100.3-acre and 10.2-acre parcels has shown that, in general, site soils are relatively uncontaminated and are not likely to pose human health or ecological risks.
- Surface water in the hemi-marsh area and soil along the old river channel are not of concern because sampling results did not exceed water quality threshold values.
- Initial sampling has revealed that soils in the northeast corner of Hegewisch Marsh contain elevated concentrations of metals, but this area is currently slated for use as the staging location for the reconstruction of the railroad bridge (truss) at the 130th Street and Torrence Avenue intersection in 2007. After the railroad bridge is reconstructed, the area will be excavated and additional soil samples will be collected to confirm that surface soil contamination no longer poses a threat to human health or the environment.
- Sampling has revealed small areas of metals-contaminated soils in the forested wetland and wet savannah areas. These small areas of contamination are most likely the result of illegal dumping. Additional soil and vegetation sampling will be conducted to delineate areas of contamination and determine if the contaminants are bioavailable and could enter the food web. Some sediments also contain metals, but these metals have reduced bioavailability.

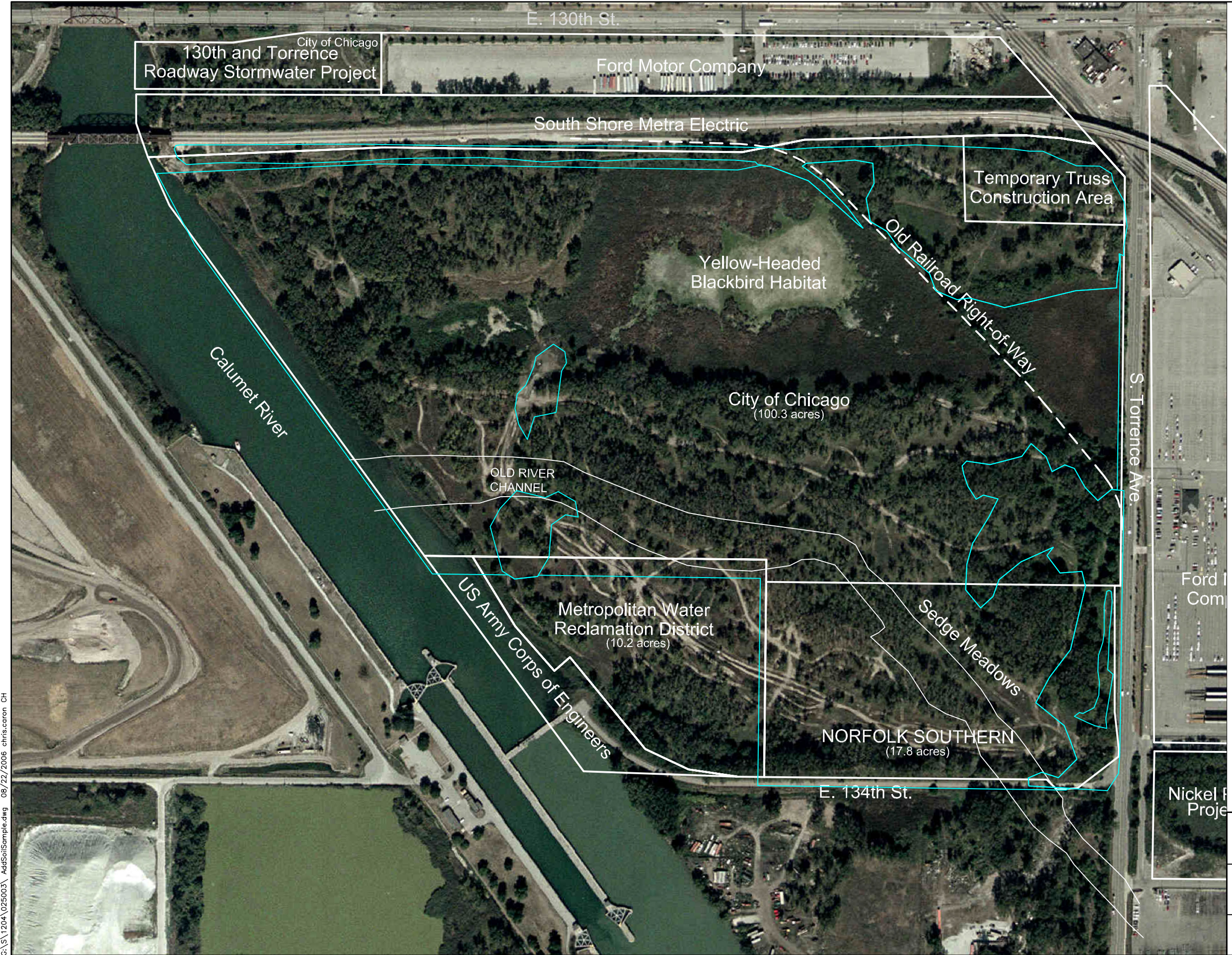
The supplemental sampling is being completed through close coordination with the Ecotoxicology Roundtable Technical Team (Technical Team). The Technical Team reviews the scope of work prior to any sampling event as well as conclusions and recommendations made based on sampling results. Supplemental sampling will continue, and any required changes to the site plan will be incorporated during the final design plans and specifications phase.

5.0 WETLAND MITIGATION COORDINATION

As stated in Section 2.0, about 112 acres of the 130-acre Hegewisch Marsh site is considered wetland based on a delineation performed in July 2004. Some components of the site plan, including construction of the FCEC and trails, will be considered impacts to these wetlands and may require mitigation. In addition, the Chicago Department of Transportation (CDOT) is currently planning to reconstruct the 130th Street and Torrence Avenue intersection, which will also impact wetland areas along the northeast border of Hegewisch Marsh.

DOE and CDOT are planning on-site mitigation of these potential wetland impacts by enhancing existing wetland areas. Because enhancement of the on-site areas is an integral part of the plan, the marsh area is particularly well-suited for mitigating potential wetland impacts. Such mitigation would occur in close proximity to the wetlands potentially impacted, thereby increasing the value and connectivity of the mitigation effort. A USACE permit will be necessary to determine mitigation requirements for the site. The permitting process can begin after determining the exact footprint of the FCEC building, parking areas, and associated structures. CDOE has been coordinating with USACE since the beginning of the project. The permit will be finalized during the final design plans and specifications phase.

FIGURES
(Six Pages)



City of Chicago
130th and Torrence
Roadway Stormwater Project

E. 130th St.

Ford Motor Company

South Shore Metra Electric

Temporary Truss
Construction Area

Yellow-Headed
Blackbird Habitat

Old Railroad Right-of-Way

Calumet River

City of Chicago
(100.3 acres)

OLD RIVER
CHANNEL

Metropolitan Water
Reclamation District
(10.2 acres)

US Army Corps of Engineers

Sedge Meadows

NORFOLK SOUTHERN
(17.8 acres)

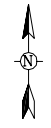
E. 134th St.

S. Torrence Ave.

Ford
Com

Nickel
Proje

WETLAND AS SURVEYED BY V3



NOT TO SCALE

HEGEWISCH MARSH
SITE PLAN
CHICAGO, ILLINOIS

FIGURE 1
SITE LOCATION AND LAYOUT



G:\S\1204\025003\ AddSoilSample.dwg 08/22/2006 chris.caron CH

HEGEWISCH MARSH MASTER PLAN



1 Industrial View



2 Wet Savannah



3 Hemi-Marsh



4 Little Calumet River View



Trail



Boardwalk



Bird Blind



Canoe/Fishing Pier



Lookout Tower

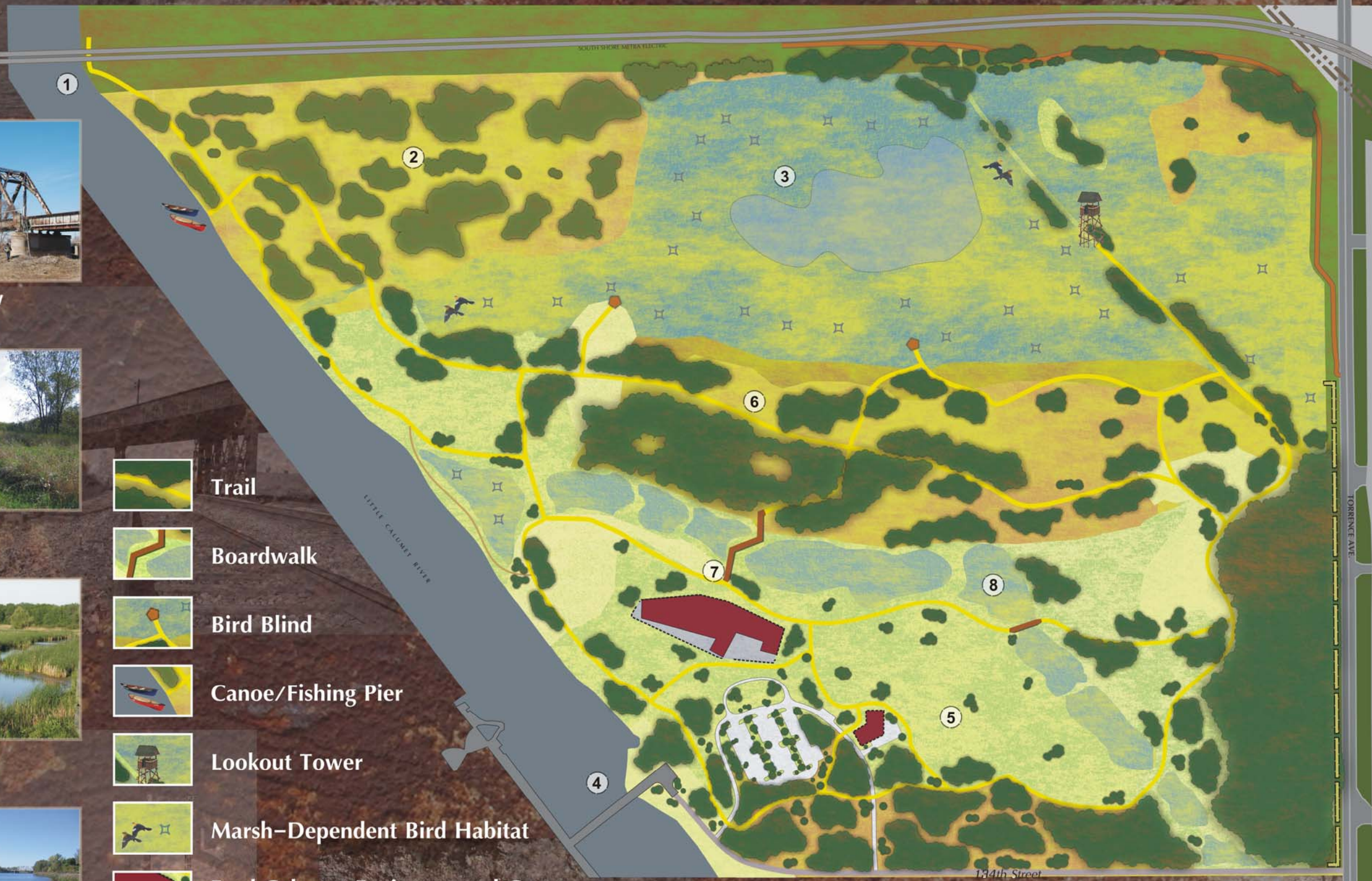


Marsh-Dependent Bird Habitat



Ford Calumet Environmental Center and Supporting Features

Note: Ford Calumet Environmental Center approximate size and appearance



5 Wet Prairie



6 Forested Wetland



7 Boardwalk





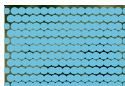
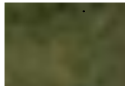


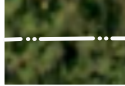




8 Old River Wetland

TYPICAL HABITATS & FEATURES

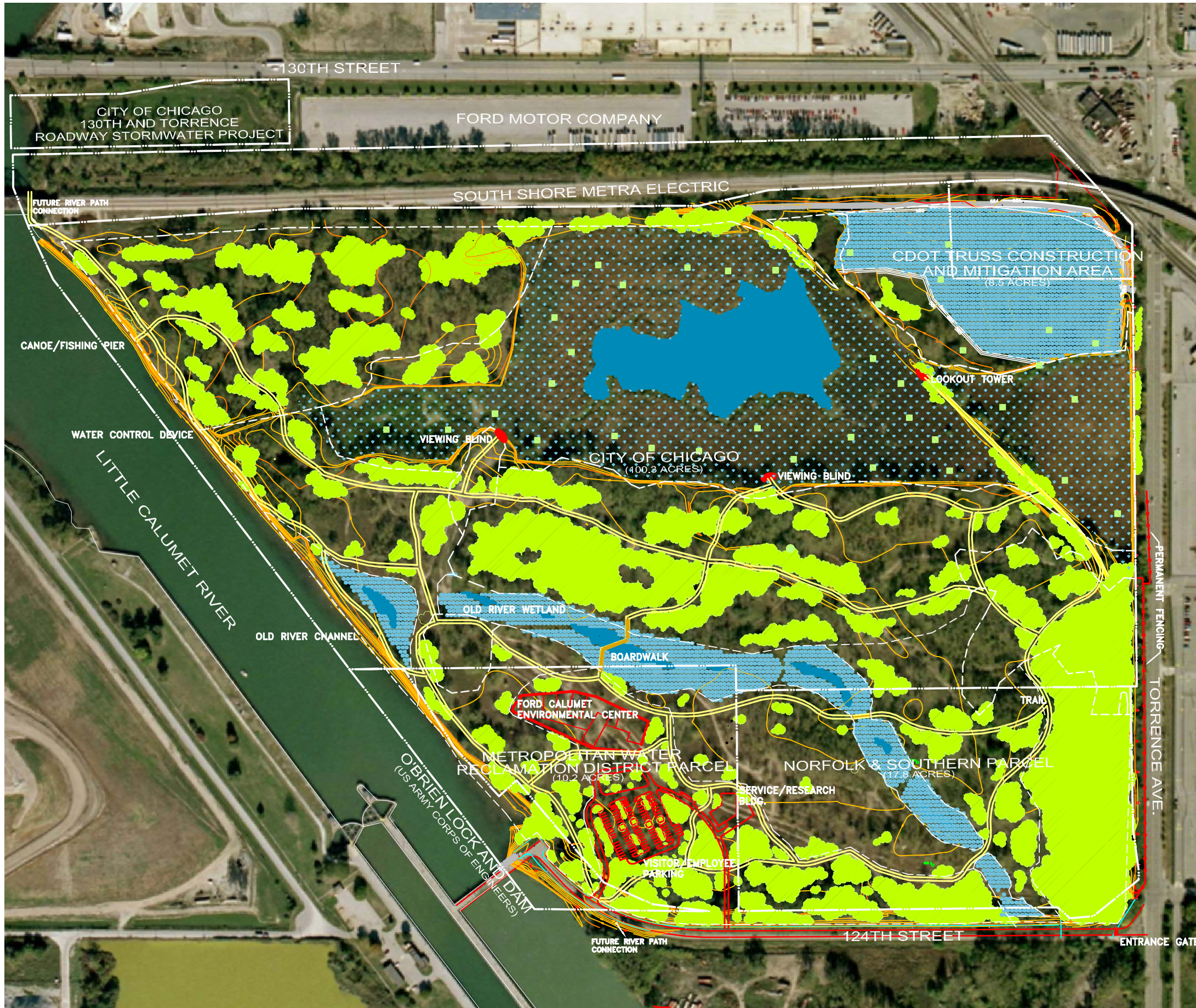


Hegewisch Marsh

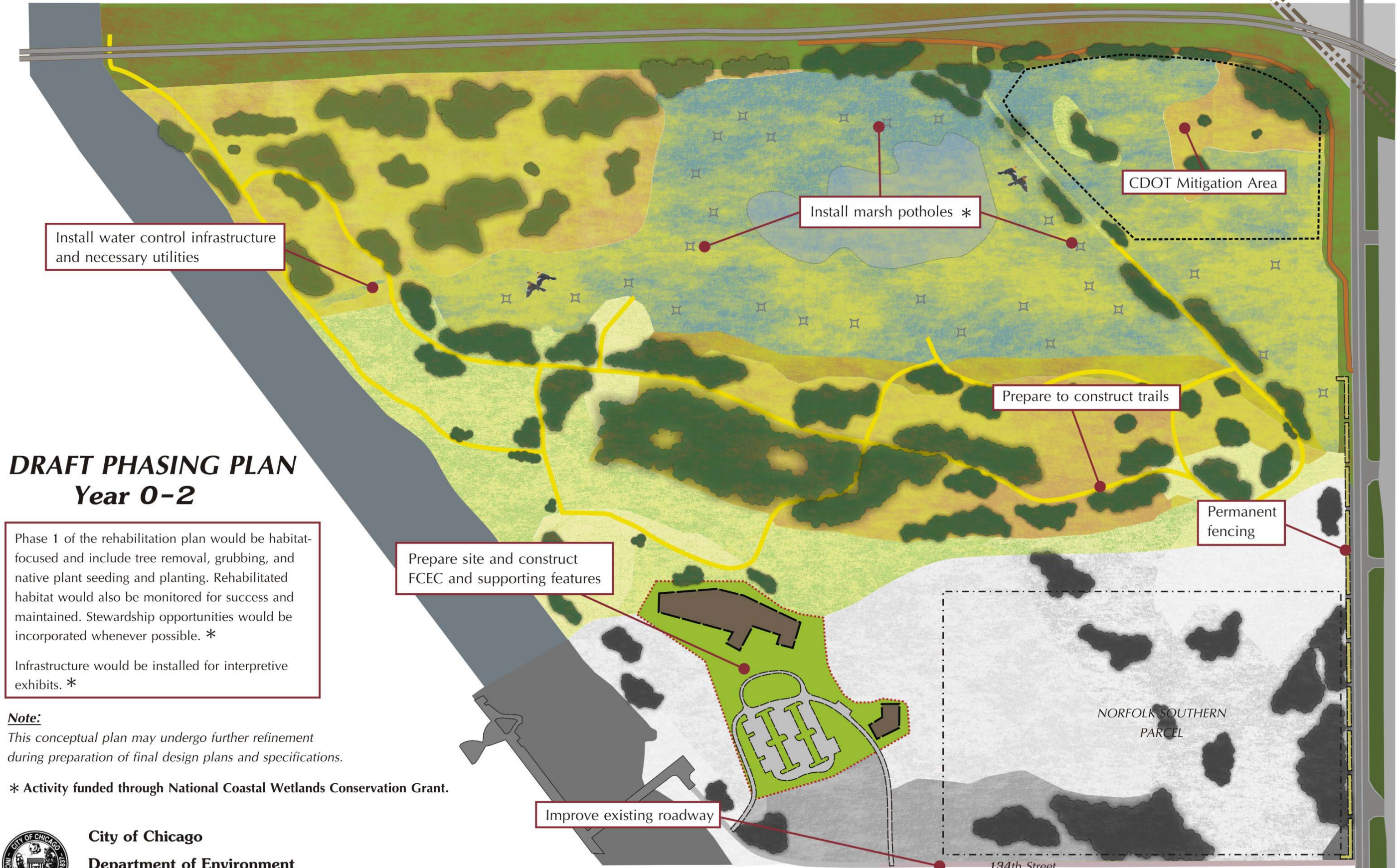
Proposed Plan Details Habitat Types

- 
Enhanced Hemi-Marsh
Includes Marsh Potholes - 20'x20'x9" pockets (to be field located) promoting bird habitat
- 
Proposed Wet Savannah
- 
**Proposed Wetlands
Old River & CDOT Mitigation**
- 
Proposed Wet Prairie
- 
Proposed Forested Wetland
- 
Existing & Proposed Habitat Boundary
- 
Property Boundary
- 
Proposed Trails
Total Estimated Length = 3 MILES
- 
**Proposed Roads, Parking,
and Buildings**
- 
Existing Contours
- 
Proposed Contours

Note:
Ford Calumet Environmental Center approximate size and appearance



HEGEWISCH MARSH PHASE 1



DRAFT PHASING PLAN Year 0-2

Phase 1 of the rehabilitation plan would be habitat-focused and include tree removal, grubbing, and native plant seeding and planting. Rehabilitated habitat would also be monitored for success and maintained. Stewardship opportunities would be incorporated whenever possible. *

Infrastructure would be installed for interpretive exhibits. *

Note:
This conceptual plan may undergo further refinement during preparation of final design plans and specifications.

* Activity funded through National Coastal Wetlands Conservation Grant.

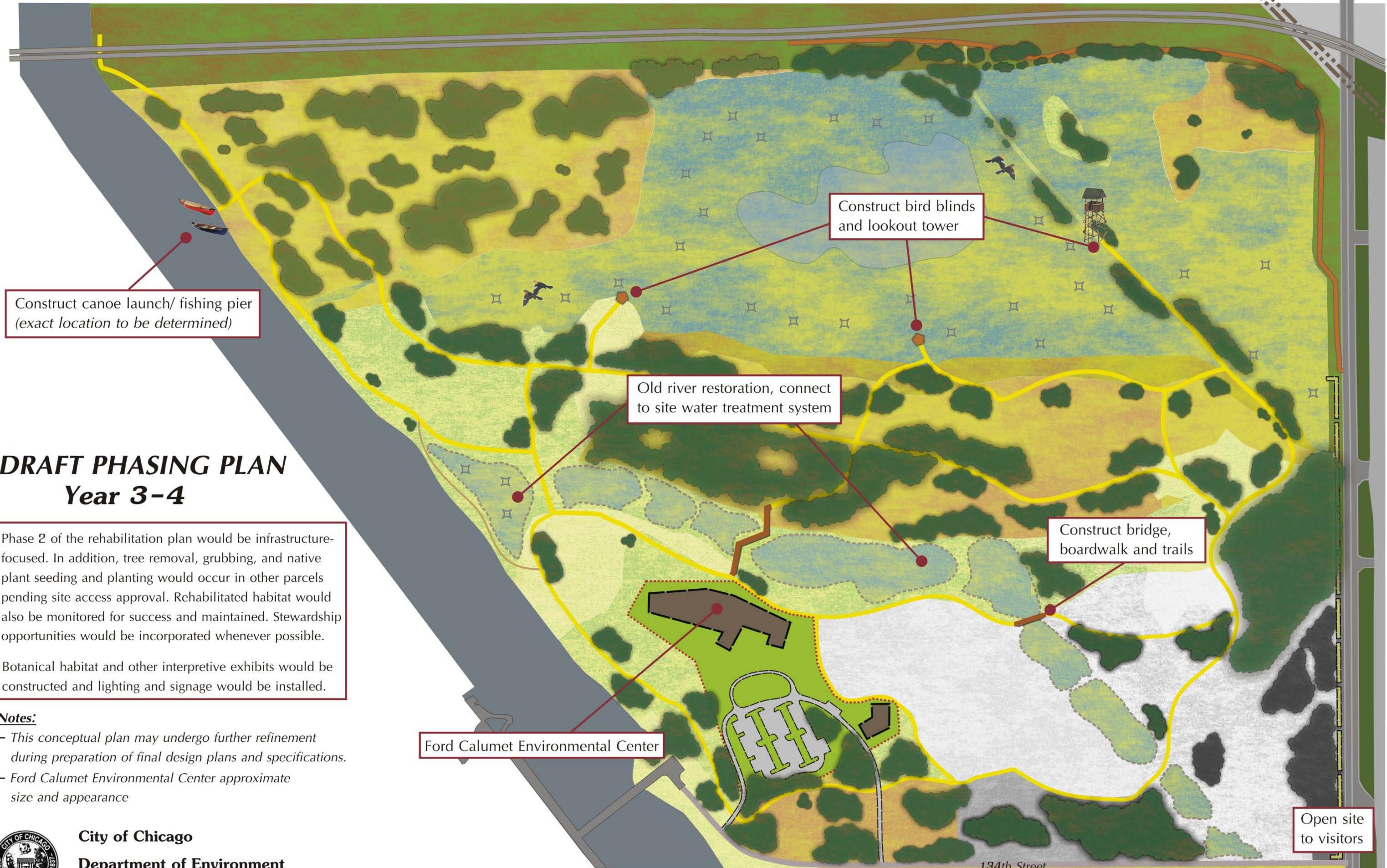


City of Chicago
Department of Environment
September 2006

Terry Guen Design Associates, Inc. Tetra Tech EM Inc. Land and Water Resources, Inc.



HEGEWISCH MARSH PHASE 2



Construct canoe launch/ fishing pier
(exact location to be determined)

Construct bird blinds
and lookout tower

Old river restoration, connect
to site water treatment system

Construct bridge,
boardwalk and trails

Ford Calumet Environmental Center

Open site
to visitors

DRAFT PHASING PLAN Year 3-4

Phase 2 of the rehabilitation plan would be infrastructure-focused. In addition, tree removal, grubbing, and native plant seeding and planting would occur in other parcels pending site access approval. Rehabilitated habitat would also be monitored for success and maintained. Stewardship opportunities would be incorporated whenever possible.

Botanical habitat and other interpretive exhibits would be constructed and lighting and signage would be installed.

Notes:

- This conceptual plan may undergo further refinement during preparation of final design plans and specifications.
- Ford Calumet Environmental Center approximate size and appearance



City of Chicago
Department of Environment
September 2006

Terry Guen Design Associates, Inc.

Tetra Tech EM Inc.

Land and Water Resources, Inc.



HEGEWISCH MARSH PHASE 3

DRAFT PHASING PLAN Year 5+

Phase 3 would complete the rehabilitation by incorporating tree removal, grubbing, and native plant seeding and planting in other parcels pending site access approval. Rehabilitated habitat would also be monitored for success and maintained for many years to come. Stewardship opportunities would be incorporated whenever possible.

Notes:

- This conceptual plan may undergo further refinement during preparation of final design plans and specifications.
- Ford Calumet Environmental Center approximate size and appearance

Ford Calumet Environmental Center

Construct trails

134th Street



City of Chicago
Department of Environment
September 2006

Terry Guen Design Associates, Inc.

Tetra Tech EM Inc.

Land and Water Resources, Inc.



APPENDIX A
INITIAL SITE PLAN MEETING HANDOUTS AND NOTES
(Five Pages)

HEGEWISCH MARSH PUBLIC MEETING NOTES
August 24, 2004

Comments from the Hegewisch Marsh public meeting are provided below by general subject.

Comments on the Overall Goal for Hegewisch Marsh, including Activities and Level of Rehabilitation

1. The site has no historical natural areas; the whole site was disturbed. This is an example of natural selection and nature's ability to retake an area. Restoration to dune-swale wetlands is beyond the scope.
2. Due to the large-scale dumping of slag and dredge spoils in the area, restoration to presettlement conditions is not possible. However, rehabilitation of the area is the goal.
3. Could the old riverbed be excavated?
4. What is Tetra Tech's role? What is the overall goal for the area?
Reply: Tetra Tech is considering all of the ideas put forth by the community while keeping in mind the Calumet Area Ecological Management Strategy (EMS) and design of the Ford Calumet Environmental Center (FCEC). This public meeting is helping us decide what is going to be done.
5. Passive recreation is important.
6. The reason the yellow-headed blackbird nests at Hegewisch Marsh is because the cattails haven't been completely replaced by phragmites. Yellow-headed blackbirds have nested in phragmites in the Calumet region, but they prefer cattails. The phragmites need to be controlled.
7. Canoeing should not be an option at Hegewisch Marsh because it is a swamp area. There should instead be walking or hiking trails with an observation tower. However, canoeing on the river is okay.
8. Fill along the riverbank should be regraded. Riverbank greening is important.
9. The southern one-third of the area should be for fairly intensive use, such as gardens. As you move north, the area should become less accessible and should be managed for birds and other animals there.
10. Hegewisch Marsh is one part of the wetland complex in the area. People could assemble at FCEC for bus tours to heritage sites in the area to view other habitats. However, the parking lot shouldn't be made too large.
11. Don't make the area pristine right away because the community could take advantage of stewardship opportunities. Develop a phasing plan.
12. Could we create more wetlands?
13. Clean out spoil areas.
14. Self-guided tours should be available.

15. A steel and industry museum building may be built, and visitors could be directed there as well.

Comments on Bird Habitat and Water Level Management

1. Water level management is a critical issue.
2. Can we control water levels to make sure Hegewisch Marsh doesn't dry out as it did in 1994? Could we add a pumping station from the river to the marsh?
3. Protection of YHB habitat is important, but shorebird habitat is present when water levels are low. Could this be maintained to provide more permanent habitat for shorebirds?
4. Shorebird habitat (mudflats) provides an opportunity for invasive species, such as phragmites, to invade.
5. The primary concern should be YHB territory and maintaining water levels to preserve and expand it.
6. The marsh has gone dry in the past. The City should study the hydrology and include a mechanism for getting water to prevent this from happening again.

Comments on Interpretive Value

1. The current trail running east to west through the center of the site was made to fill the old river. The trail and riverbed are historical markers and should be interpreted on site.
2. The exhibits will preserve and highlight the idea of coexistence between the natural community and industry.
3. There is much to be learned from the site as it exists. Exhibits should incorporate industry and respect for the existing conditions.
4. The Calumet River is part of the heritage of the area and should be highlighted.
5. The exhibit design will focus on nature, community, and industry as a package. The purpose of the exhibits is to give people tools to understand what's out there and get them out there to use those tools at other places.
6. The exhibit program should cover the impact of industry from 1856, including the control of industrial waste and the last operational dump in Chicago that closed in 1990. It should include what exists today and why that is the case – and it should be honest about the impact of industry.
7. The exhibits should include a description of what's going on.

Comments on Trails and Access

1. How did the current trails get there and why should we use them?
Reply: The trails were created through non-passive recreation, including all-terrain vehicles (ATV) and historical flydumping routes. We don't have to use them.

2. If the location of the current trails is incompatible with endangered species habitat, don't use the trails.
3. Creating new trails might disturb something we aren't aware of.
Reply: The Calumet EMS provides recommended setbacks for threatened and endangered species.
4. To limit impacts, representative habitat types could be shown in one area with limited access to the remainder of the marsh.
5. Trails should be access points but should not crisscross throughout the marsh. Trails could be used to touch upon certain areas, possibly to observation platforms. Kelly's Island along Lake Erie is a good example of an observation tower. Most of the area is inaccessible but visible. Sand Ridge Nature Preserve and Corkscrew Swamp in Florida contain boardwalks. The western end of the marsh where all the current trails converge is a raised area that might be a good location for a tower.
6. A boardwalk along the Calumet River would be nice but not good for habitat.
7. Fishing is currently done under the bridge and should be considered.
8. The site should be accessible to the public because there is nothing in the area that is publicly accessible. This is the City's opportunity to bring an accessible natural site to this area.

Comments on Community Opportunities

1. The areas shouldn't be rehabilitated to be pristine. They could instead provide activities for the community. For example, students could grow purple loosestrife beetles to control that invasive species and take ownership in Hegewisch Marsh. Stewardship opportunities should be available so people can work together and use the skills they are learning in universities, high schools, and elementary schools in the area.
2. A lot of the area wetlands were filled in with dredge spoil. We should create more wetland but spread it out over several years to include students. The rehabilitation should occur in phases to teach students about wetland creation and planning as a tool.
3. There is almost no public access to the Calumet River. High school restoration projects would be beneficial to students and the river, but there is no access presently. Phragmites covers the streambank, and streambank greening programs should be a priority. Water sample collection and animal and plant surveys by students should be allowed.
4. Some elementary schools don't have time to take field trips to environmental centers that are far away; however, there are none that are nearby. This would be their opportunity to take field trips to Hegewisch Marsh and study nature.
5. Could an area be set aside that is more like a labeled botanical garden to give students the opportunity to study botany?

Comments on FCEC and Parking Lot

1. FCEC will be a hub for stewardship for students and researchers. Partner agencies will have space available to bring programs to the marsh. This will be an interagency collaborative sharing space.
2. The building scheme will be displayed at the next meetings, which will be held at the Chicago Center for Green Technology on October 20 from 10 to noon and at the Hegewisch Library on October 13 from 6 to 8 pm. FCEC will be built as close as possible to the existing roads. It will be a sustainable building designed to save energy. The building will be constructed using salvaged steel material; the orientation uses solar energy and natural daylight, with geothermal assistance for heating and cooling that takes advantage of the conductive property of soil; and the building will be encased in a basket-like mesh to prevent bird collisions.
3. Wastewater generated from the FCEC would be dealt with on site through a constructed wetland. The cleaned water could be used for landscape purposes so nothing would be going into sewers. The parking lot would be created to be permeable, and runoff from the roof would be collected in a reservoir to flush the toilets. The final stage of the wetland would be at the front porch of the FCEC so visitors could see part of the process.
4. Seventy-five percent of the parking lot will be fairly porous, and water will be collected and treated around the parking lot with a bioswale (phytoremediation).
5. The projection of annual number of visitors to FCEC was calculated using North Park Village Nature Center as an example and is approximately 40,000 to 50,000. We hope to attract 100,000 people per year in the beginning.
6. The Ford parking lot is not being used. An overpass could be constructed and a shuttle bus could carry visitors from the parking lot to the FCEC. It would have to be ADA-accessible. The intent is to minimize any new parking areas as much as possible. The parking lot will hold approximately 30 cars total. Therefore, additional parking might be required.
7. The FCEC will cover a total of 23,700 square feet.

Comments on Ownership and Security Issues

1. Picnic tables at the lock are now locked down on the other side of the river. We will meet with the U.S. Army Corps of Engineers (USACE) and the Metropolitan Water Reclamation District to find out how we will be able to use their parcels. USACE might have problems with trails that overlook the dam.
2. Access to the riverbank might be limited for homeland security purposes.
3. Securing ownership of the Nickel Plate (Norfolk Southern) parcel is under negotiation.

Comments on Surrounding Land Use Issues

1. Air quality could be an issue because of the landfills on the other side of the river. Several days out of the year it would be difficult to work without discomfort due to the odor, and it would affect any outdoor recreational areas.
2. The dumps are currently active, and recreation won't be possible on many days because of the odor.
3. Will the Torrence Avenue viaduct project and the deep tunnel project affect wetlands at Hegewisch Marsh? According to the highway designers, as 130th Street is depressed, the walls will be designed to minimize seepage, and clay is present at deeper levels that water can't pass through.
4. The temporary truss construction area will be used by the Chicago Department of Transportation during reconstruction of the South Shore Metra line. Pieces of the bridge will be built in the temporary construction area and moved to the railroad site. The temporary construction area will be returned to the restoration site when construction is completed.
5. Waste Management truck activity still occurs at the landfill. Is the City depending on this income to complete the restoration? If there's a reliance on this income, then it could create a problem.
Reply: The landfill asked for an extension and will provide money for restoration, but there is no reliance on that income to fund the restoration.

APPENDIX B
30 PERCENT SITE PLAN MEETING HANDOUTS AND NOTES
(14 Pages)

HEGEWISCH MARSH SITE PLANNING PROJECT

30 PERCENT DESIGN UPDATE

September 2005

The Tetra Tech team's approach for the Hegewisch Marsh Site Planning project consists of evaluating the site and the region using the theme of coexistence and the regional priorities set forth in the *Calumet Area Ecological Management Strategy (EMS)*. A parallel project developed for the Ford Calumet Environmental Center (FCEC) used the theme of coexistence to focus on interactions in the Calumet area among industry, the community, and the natural resources of the region. In a similar fashion, this update is intended to explain how the theme of coexistence applies to the master plan for the Hegewisch Marsh site and to solicit opinion and direction from the stakeholders.

Coexistence is not achieved by simply balancing the needs of community entities and natural resources. Instead, coexistence requires dynamic interaction and exchange among industry partners and the community's human and natural resources over time. To achieve dynamic and effective coexistence, business, community, and natural resources must all be considered and incorporated as essential elements of the site plan and must be recognized as historic and current components of what has made and is making the Calumet Region what it is today.

The EMS develops guidelines for rehabilitating land in the Calumet Region. It sets up a framework of Preserve, Improve, and Create (PIC) as key criteria for managing land. The goals of the EMS are to preserve plant and animal habitat with high biological value, improve existing habitat to maximize native diversity and ecological health, and create new habitats that will meet the needs for native species and communities.

The FCEC and the Hegewisch Marsh site both interpret the Calumet Region and provide an opportunity to implement the EMS. Hegewisch Marsh will provide visitors with a starting point to explore Calumet and will provide a microcosm of the Calumet Region, showing how nature, industry, and community all coexist. The challenge of this project is to develop a master plan for the site that can be used by future program staff to demonstrate the interdependence and interconnectedness of all of these community resources.

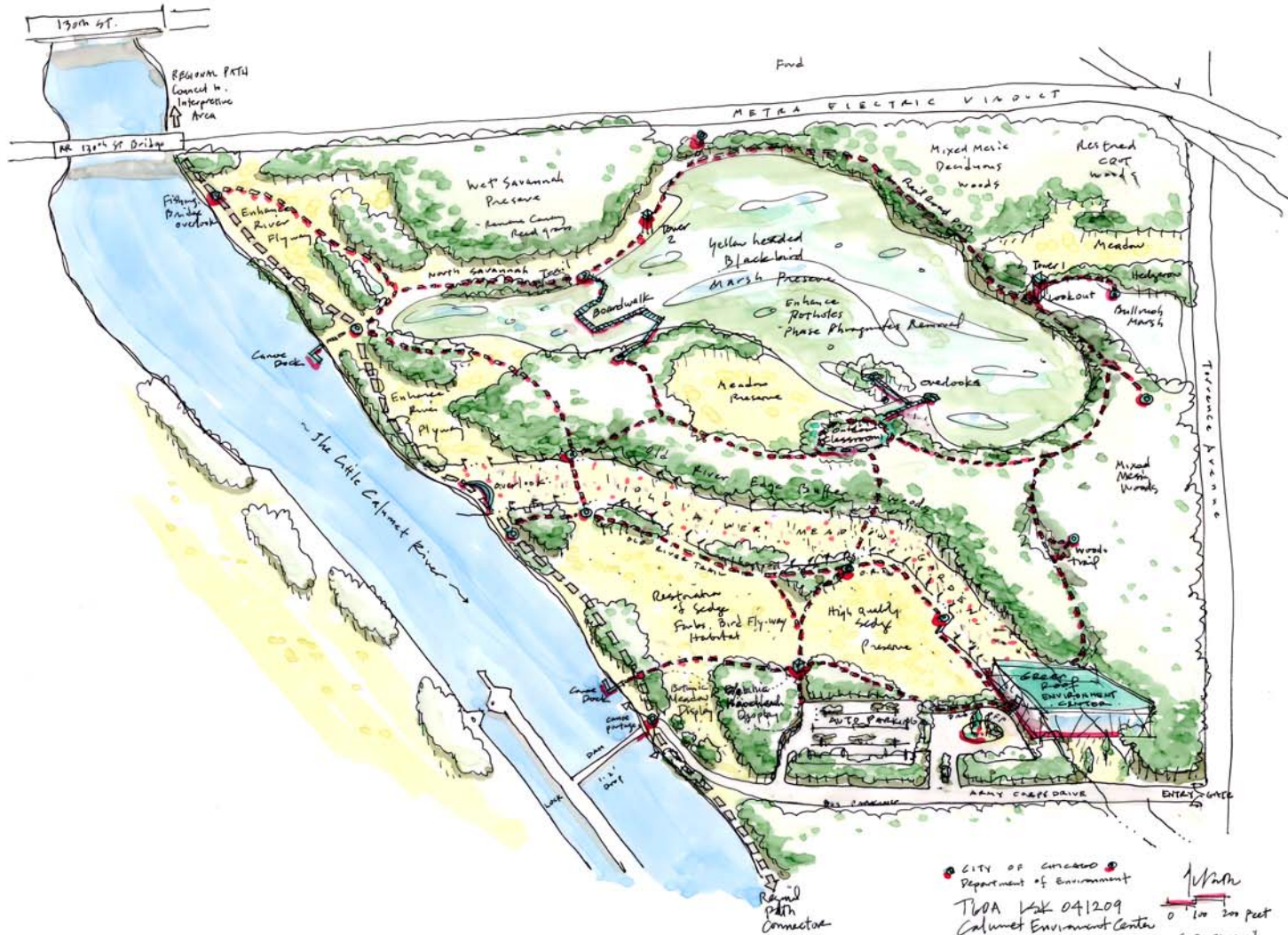
This update includes maps of two alternative proposals that provide a starting point for the 30 percent conceptual design. Comments made at a community meeting held on August 24, 2004, have been incorporated into this process. Comments made at subsequent meetings will be incorporated into the 60 percent design. Community concerns and other important components of the site design focus on the preservation and enhancement of yellow-headed blackbird habitat, the establishment of a means to interpret natural vegetation for the community, and close conformance to the Calumet EMS.

The alternatives being considered provide for the coexistence of nature, community, and industry in the following ways:

- **Nature** – The alternatives address the vegetative communities that currently exist on the site and provide for most of the site to be rehabilitated. The site contains areas that are representative of the Calumet Region, including hemi-marsh wetlands, sedge meadow wetlands, prairies, woodlands, and savannahs. The northern part of the site will be managed to rehabilitate most of these areas to meet the goals of the EMS. The hemi-marsh areas will be preserved and enhanced to meet the needs of the various hemi-marsh bird species, including the state-endangered yellow-headed blackbird, which requires the marsh area to thrive. The sedge meadow areas and woodlands will be improved to provide diversity of plant species and possibly improve habitat for amphibians. Areas where savannah habitat will be created are currently dominated by cottonwood species. Some areas will be left unmanaged to demonstrate the importance of rehabilitating native areas by offering a comparison between rehabilitated areas and non-rehabilitated areas.

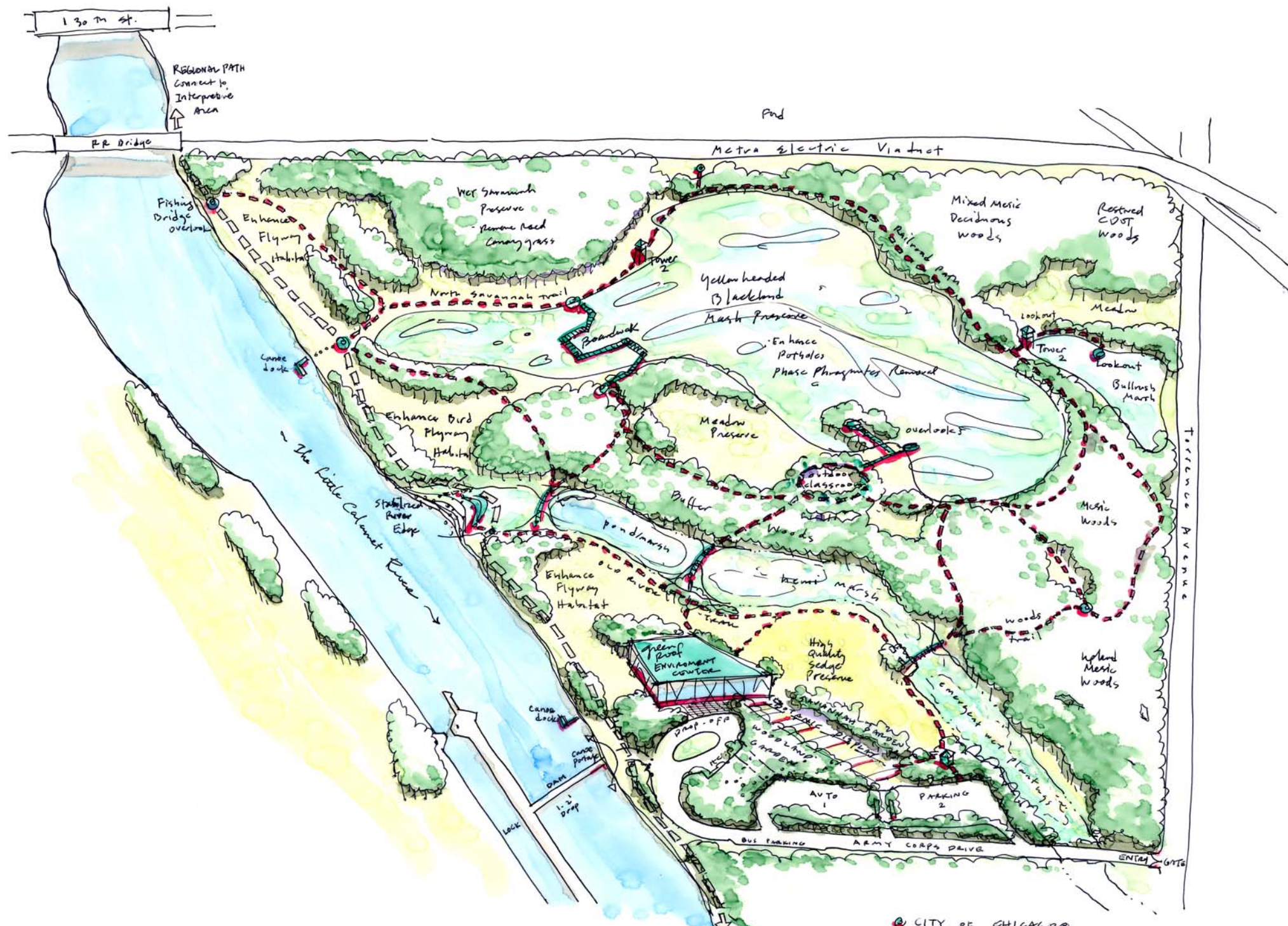
This approach will also allow research on native rehabilitation to occur in accordance with the strategy of Chicago Wilderness. Important components of the long-term interpretation strategy include providing a means to explain (1) what invasive species are, (2) what the benefits of native rehabilitation are, and (3) how the community can accomplish the work required to meet the goals and objectives of both the Calumet EMS and the larger goals of Chicago Wilderness.

- **Community** – The immigrant communities of South Chicago, Hegewisch, South Deering, Pullman, Altgeld Gardens, Jeffery Manor, Riverdale, and East Side historically depended on the strength of the steel industry. Today the area depends more on the overall strength of Chicago’s business sector. The community considers Hegewisch Marsh as an open-space resource for recreation, including various outdoor activities such as hunting, fishing, canoeing, hiking, ice-skating, and riding trail bikes and off-road vehicles. The alternatives identified for the site recognize the importance of these uses for the community while focusing on passive recreation and emphasizing the “wildland” features available in the area, such as bird watching, fishing, and canoeing (on the river).
- **Industry** – The alternatives incorporate the existing industrial background, the landfill, the adjacent locks and waterway, the rail lines, and the FCEC as project features. The coexistence of these industrial resources can be accommodated in the site plan by carefully determining the placement of infrastructure and by thoroughly examining line-of-site layouts and other design considerations.



CITY OF CHICAGO
 Department of Environment
 TWA Lot 041209
 Calumet Environment Center
 Tulusiak Site Plan
 December 10, 2004

1" = 100'
 6" to 10" = 1 mile



CITY OF CHICAGO
 Department of Environment
 TGS LSK 04/2096
 Calumet Environment Center
 Illustrative Site Plan-2
 December 16, 2004

1" = 100'
 0 100 200'
 SFD-1mk

CALUMET GOVERNMENT WORKING GROUP COMMENTS

December 16, 2004

Comments on the Hegewisch Marsh 30 percent site plan from the Calumet Government Working Group are listed below.

1. Comment: Create pockets for salamanders.
2. Comment: Leave areas for Chicago Wilderness research.
3. Comment: Is there still an issue as to which areas will be rehabilitated?
Reply: Yes.
4. Comment: When you bring in people, you want them to be excited; people like seeing open water but must have habitat for animals too.
5. Comment: Direction should be sustainability; that is, people and nature coexisting in the region.
6. Comment: Are there any oaks or maples on site?
Reply: No oaks are currently in the plan; maybe one or two maples.
7. Comment: How open will the north and south area be to the public?
8. Comment: The site should be developed in phases.
9. Comment: Restore the streambank level.
10. Comment: Create a path along the river south to the Ford Calumet Environmental Center (FCEC).
11. Comment: Two canoe portage areas are planned. What is the thinking behind this? Only one should be put near the parking lot so people don't have to drag their canoes far.
12. Comment: The site should include botanic displays showing people what's out there before they go and find it.
13. Comment: The FCEC will be designed to produce no waste. Can the river channel ponds be worked into that?
14. Comment: You can look at the national Crane Viewing center in Nebraska for a good example of a viewing center.
15. Comment: Don't artificially maintain anything with pumps.
16. Comment: Put a sign on the street so people know they can come in and that there is an environmental center there.
17. Comment: Who are the owners?
Reply: Eventually Illinois Department of Natural Resources (IDNR) for the north parcel and the Chicago Department of Environment for the FCEC.
18. Comment: Where will the outdoor classroom be located?
19. Comment: Can the stormwater best management practice (BMP) along 130th Street be used as surface water input?

Reply: The stormwater BMP for the 130th and Torrence intersection along the road would cost too much to connect to the marsh.

20. Comment: Why do we need to maintain a hemi-marsh?

Reply: There are few hemi-marshes left in the region, and there are many species that need them, especially marsh-dependent migratory birds.

HEGEWISCH MARSH PUBLIC MEETING NOTES

February 22, 2005

Comments made at the public meeting on the Hegewisch Marsh 30 percent site plan are listed below.

Comments on the Ford Calumet Environmental Center

1. Comment: The entry road is separated by 0.25 mile to the road to the marina. The landowner of the marina is interested in forming a relationship with Hegewisch Marsh, but it might not happen.
2. Comment: An overpass could be constructed to allow use of the Ford parking lot across the street.

Reply: During future festivals or other days when additional visitors are expected, parking will be made available at existing facilities to accommodate them. The City is also talking to the Chicago Transit Authority about a bus turnaround at the center. Train and bus use will be encouraged to reduce parking requirements.

3. Comment: Could the area south of the site become a parking lot?

Reply: No. This area could be open space and will not be available in time for the opening of the FCEC.

4. Comment: The parking lot will be permeable, and a stormwater management system will be constructed to the north to catch runoff before it enters the Calumet River.
5. Comment: To reduce truck traffic during construction, can barges be used instead?

Reply: Yes, it is possible to construct pieces of the FCEC and transport them to the site, but it would be reasonable only if the FCEC is built near the Calumet River.

Comments on the Opposition to the Ford Calumet Environmental Center

1. Comment: The City is paying for this and is laying people off.

Reply: The City corrected the information by stating that a grant is funding most of the project. Ford provided money for the center to be built at Hegewisch Marsh, and it is anticipated to bring construction jobs and eco-tourism money to the community.

2. Comment: Why was Hegewisch Marsh selected? It has views overlooking the landfill?

Reply: The City, Chicago Park District, Illinois Department of Natural Resources (IDNR), and several community members evaluated several potential sites and selected Hegewisch Marsh. The site offers a good opportunity to interpret nature, community, and human impacts on the environment.

Comments on the Rehabilitation of Hegewisch Marsh

1. Comment: The area is mostly wetland, and development might ruin what is already there.
2. Comment: Will the trails keep coyotes and foxes out? If they are displaced, where will they go?
3. Comment: Will there be much disturbance caused by trail development?

Reply: The trails will likely be aligned along previous all-terrain trails, deer trails, and old railroads that currently run throughout the marsh. Therefore, the development will not cause much additional disturbance.

4. Comment: Will the wetland be dangerous to visitors because of West Nile?

Reply: The City is analyzing the mosquito types that are present at Hegewisch Marsh to make sure it won't be an issue. In addition, water at Hegewisch Marsh moves with the wind, which reduces areas of stagnant water and hinders mosquito development.

5. Comment: Will contaminated areas be cleaned up?

Reply: Hegewisch Marsh will be assessed for both human health and ecological risk. A more detailed study and cleanup plan will be developed.

6. Comment: A design plan with the least disturbance to the land is preferred. The north half of the site should have minimal disturbance as birds nest in the shoreline cattails in the marsh. Trails should be kept to a minimum in the north half to reduce the amount of disturbance from visitors.

7. Comment: The old river channel excavation is a good barrier between the southern and northern portions of the site.

8. Comment: Boardwalks should not be included in the north half of the site because they would create too much disturbance.

9. Comment: An observation tower is a good idea if put in a place where it will not be obtrusive.

10. Comment: Trails should only touch upon the north half. There should not be a trail that encircles the open water marsh. Seasonal closure of the north trails from April through July would also help protect the hemi-marsh. Observational areas can have trails that lead to and from the area.

11. Comment: Bring back as many native species as possible.

Reply: We can't bring the habitat back to the way it was in the 1800s, but we can make it as natural as possible by removing Common Reed (*Phragmites australis*) and seeding with native species.

HEGEWISCH MARSH ECOTOXICOLOGY ROUNDTABLE MEETING NOTES

May 24, 2005

I. Presentation of the Hegewisch Marsh 30 Percent Design

Goal: To develop a comprehensive site plan that complements the Ford Calumet Environmental Center (FCEC) and is consistent with the Calumet Area Ecological Management Strategy (EMS). This is an iterative process that is currently at the 30 percent conceptual design stage, and obtaining data on contaminants at this juncture is critical.

Progress to date:

- Reviewed background data and site history
- Reviewed the Calumet EMS and the proposed design of the FCEC
- Reviewed Phase I environmental site assessment data
- Conducted site visits
- Conducted a public meeting in August 2004
- Conducted a Calumet Government Working Group meeting in February 2005
- Conducted a second public meeting in February 2005
- Reviewed Illinois Department of Natural Resources (IDNR) comments on the Phase I and II environmental site assessment data

Coexistence theme: The site design incorporates the theme of coexistence between nature, the community, and industry. The FCEC and Hegewisch Marsh will interpret the Calumet region and provide an opportunity to implement the EMS.

- Nature – Hegewisch Marsh serves as a study point to explore the region and has representative habitats that we can take advantage of, including the following:
 - Preserve and enhance the hemi-marsh, which provides yellow-headed blackbird (and other marsh-dependent bird species) habitat
 - Improve the sedge meadows and woodlands
 - Create savannah habitat
 - Leave some areas unmanaged to offer a comparison to the rehabilitated areas
- Community – Immigrant communities of Calumet historically depended on the strength of the steel industry and considered Hegewisch Marsh an open space for recreation. The plan will emphasize passive recreational activities such as the following:
 - Canoeing
 - Fishing
 - Hiking

- Birding
- Industry – Hegewisch Marsh also provides an opportunity to interpret the surrounding industrial background, including the following:
 - Landfill
 - Locks and waterway
 - Railroad

Constraints: Wetland delineation, the permitting process, real estate, land use restrictions, site access, and threatened and endangered species issues.

30 Percent Conceptual Design: We are presenting two alternative designs that are very similar but have a few distinct differences.

- Commonalities:
 - The north portion of the site will consist of rehabilitation of the habitat, including invasive species control, but will include minimal development, mainly trails.
 - The south portion of the site will be more developed because it will be the location of the FCEC, and an access road will be constructed.
 - The former path of the Little Calumet River will be highlighted. This allows a phasing of activities as well as a physical and conceptual barrier between the developed and undeveloped portions of the site.
 - Trails generally follow existing paths (for example the former railroad and old ATV trails).
 - There will be minimal disturbance to the hemi-marsh. The feedback received from the public and government working group is to not include a boardwalk and possibly have seasonal trail openings.
 - Canoe and fishing access will be incorporated.
 - A botanic display garden near the FCEC will contain labeled native species that are representative of the habitats in the Calumet region. The teachers at the public meeting requested this feature to be used as a learning tool for students.
- Differences:
 - The location of the FCEC is either in the southeast corner or further west. The western location is preferred to encourage site immersion and provide a view of the river from the FCEC.
 - The historical location of the Little Calumet River is either designated by landscaping and vegetation or by water. While water would provide more of a barrier between the habitats and would be more visually appealing, it would require excavation.

Public Feedback to Date:

- The design should create less disturbance to the hemi-marsh by not including a boardwalk or trails that form a loop around the marsh.

- The design should include different trail designations to make them less active or only open seasonally.
- The feedback was very positive overall from the Calumet Government Working Group and Studio Gang.

Comments:

1. Comment: You should consider speaking to Mike Ward at the Illinois Natural History Society (INHS). He did his Ph.D. dissertation on the yellow-headed blackbird in Illinois and is an expert on the species. I'm not sure that the disturbance will have an impact.
2. Comment: Create shorebird habitat by incorporating mudflats along the historic location of the river. Mudflats are shallow ponds that intermittently flood. You could even take runoff from the parking lot and run it into the old river channel to create the mudflats. The habitat doesn't need much maintenance or much area. This would satisfy the creation goal in the EMS, and I have staff willing to help. This habitat is scarce in the Calumet region and would be beneficial to shorebirds and easily viewed by visitors.
3. Comment: For the pond, marsh area, is there an opportunity to include a water control structure to create mudflats?
 Reply: V3 Consultants is currently completing the hydrologic analysis. The challenge is to keep 3 feet of water in the marsh; we might have to dam up the water.
4. Comment: Are the soils contaminated?
 Reply: No, the site is relatively clean.
5. Comment: Is stormwater from the roadways going into the marsh? Also will the parking lot runoff go directly into the mudflats? Contamination from the parking lot would be an issue.
 Reply: Stormwater from the road is being filtered through a series of best management practices (BMP) north of the site and will be channeled into the river. In addition, the architect for the FCEC will use BMPs to treat the runoff from the parking lot.
6. Comment: For the 100-acre parcel, we are working with the U.S. Fish and Wildlife Service (FWS) on a National Coastal Wetlands Conservation grant. Illinois has never gotten it, and we are trying to get \$1 million. The final proposal will be submitted in July.

II. Presentation of Proposed Supplemental Sampling

Current Data: The Phase I and II environmental site assessment data was collected for a property transfer, not an ecotoxicological analysis.

- Boring logs show that the soil is 90 percent sand, silty sand, and silty clay.
- Fill material occurs in the top 3 to 4 feet.
- The old river channel was mostly filled with dredge spoils.
- Most of the samples were deep; there are limited surface samples. However, they do not indicate widespread contamination.

- There is no surface water or sediment data, but there is some groundwater data available.
- A Geoprobe was used to collect the groundwater and soil samples. This method was acceptable because there was not widespread contamination at the site.
- Based on the available data, the only potential issue is that silver is present in one groundwater sample. Since the sample containing silver was collected using a Geoprobe, the silver could have been attached to the sediment rather than entrapped in groundwater.

Proposed Sampling:

- Sampling will focus on the top 2 feet of soil, but will go to at least 4 feet in the old river channel.
- The location of human health samples will depend on where the FCEC will be located. Two samples per half-acre will be placed around the boundary of the center where there is the most human access, and samples will be collected to a depth of 3 feet.
- If contaminants of potential concern (COPC) are found, additional samples will be taken to delineate the extent of contamination.
- The sampling method has not yet been determined. Surface samples will likely be collected using a hand auger.

Comments:

1. Comment: Are there any plans for groundwater sampling?
Reply: Not now, based on the results. Only one groundwater sample contained silver. We might choose to install wells to collect groundwater samples in the future.
2. Comment: How do surface water and groundwater values compare?
Reply: Surface water values are more conservative, and these were the values used to interpret the current data.
3. Comment: Should Hegewisch Marsh be put in the state remediation program (SRP)?
Reply: We are currently at the 30 percent design stage. At this point, we do not think the site will have to enter the SRP.
4. Comment: Should you concentrate your budget on human health samples because the north portion of the site is limited-use?
Reply: We want to make sure there is nothing on the north half of the site that we would have to worry about, so we have to collect samples in that portion.
5. Comment: Should human health samples be collected along walking trails and not under the structure or parking lot?
Reply: The sample locations will be determined once the design is set and will not be located under the parking lot or building. The supplemental sampling strategy will evolve as we determine the location of the FCEC.
6. Comment: Has the site ever been developed?
Reply: No, Waste Management thought of putting a landfill there, and the old railroad was located in the northeast corner of the site. That is the only development that has taken place.

7. Comment: Has a Phase I Title Search been completed for the site?

Reply: Yes.

8. Comment: For the 404 process, I assume you will wait until the ecotoxicology process is done before submitting an application to USACE.

Reply: Yes, the permit will not just be for the building but for the mitigation as well.

9. Comment: Along the old railroad, sample for arsenic and pesticides.

10. Comment: When sampling vegetation, include collocated soil samples and sample the same species of plant at each location.

11. Comment: Who will sign off on the sampling plan?

Reply: The City of Chicago, Chicago Park District, and IDNR – all current and future landowners. The Ecotox Technical Team will see the sampling plan before the next meeting.

12. Comment: The sampling plan will be completed before the 60 percent design? At 60 percent, will we know where the building and parking lot will be located?

Reply: Yes.

HEGEWISCH MARSH ADVISORY GROUP COMMENTS

September 8, 2005

1. Comment: Be protective of threatened and endangered species regarding human access to north portion of site. The main concern is security of the locks (no walking on the structure), but USACE likes the idea of an overlook to watch the locks.
2. Comment: During construction, how would you keep ATVs out?
Reply: Fencing can control access, and when the temporary road is built, there will be more security.
3. Comment: Will the reconstruction of Torrence Avenue take groundwater from the site?
Reply: Walls were designed to keep water in. The stormwater treatment chain will only take stormwater from the road itself and won't affect drainage into the marsh.
4. Comment: Will the project be completed in phases?
Reply: Layers of the project will be done over specified periods of time. The area won't be clearcut or bulldozed to completely start over.
5. Comment: For potholes or any shallow excavation, why aren't samples collected from 0 to 2 feet below surface?
6. Comment: Expand wetlands where possible; there are too many trails proposed.
7. Comment: Is burning an option?
8. Comment: Keep wood chip trails in mind if considering burning with mowed areas on either side of trail. Visitors also prefer manicured area around trail because they feel safer.
9. Comment: Don't use limestone screenings because cowbirds lay more eggs when there is a ready source of calcium.
10. Comment: The regional trail needs to be bigger and could be constructed of asphalt or something other than limestone.
11. Comment: Encourage the removal of cottonwoods, but need to consider the time frame.
12. Comment: Talk to local foresters if replanting trees (for example, the city forestry department). They know about tree diseases.
13. Comment: Encourage the option to bring people more into the area and allow more access to the river channel.
14. Comment: Will there be a volunteer component to restoration?
Reply: Yes. A volunteer component is critical.
15. Comment: Could the stormwater treatment area be used as mitigation?
Reply: It includes approximately 9 or 10 acres.

APPENDIX C
60 PERCENT SITE PLAN MEETING HANDOUTS AND NOTES
(Five Pages)

Hegewisch Marsh 60 Percent Site Plan Summary

March 2006

Background

The Hegewisch Marsh 60 Percent Site Plan has been produced with input from the public, the Hegewisch Marsh Advisory Group, the Calumet Ecotox Protocol Management and Technical Teams, the Calumet Government Working Group, and other Calumet partners. Comments received in response to the 30 percent Site Plan (first draft conceptual plan) have been incorporated into this 60 Percent Site Plan.

To develop the plan, the consultant team met with experts on birds, invertebrates, and other species to discuss and verify the appropriateness of various features in the updated site plan. In addition, information from a wetland delineation and associated wetland mitigation requirements were considered. The award of \$750,000 from the U.S. Fish and Wildlife Service National Coastal Wetlands Conservation grant led to refinements such as a three-phase physical implementation plan for the ecological rehabilitation work. The 60 Percent Site Plan and phasing are described below.

60 Percent Site Plan

The site plan focuses on maintaining and improving existing habitat, including hemi-marsh, forested wetlands, and wet prairie/sedge meadow habitat. Many of the site features present in the 30 Percent Site Plan have been altered to minimize the impact that visitors might have on wildlife. For example, the 30percent Site Plan showed several trails encircling the sensitive hemi-marsh area at the north of the site. Feedback on the plan led to the removal of many of these trails, ensuring a setback to protect nesting state-endangered yellow-headed blackbirds. While the proposed trails no longer encircle the hemi-marsh, they remain along existing trails and lead to each habitat type present at Hegewisch Marsh. The habitat types and additional site features are described below.

- **Mesic Prairie/Wet Savannah (13.9 acres).** This kind of habitat has plants traditionally found in a mesic prairie - tall grasses, plants that thrive in wet conditions - and also has a low density of trees (often oaks), similar to a savannah. This habitat, present in the northwest corner of Hegewisch Marsh, would be improved by removing non-native species such as Kentucky Bluegrass (*Poa pratensis*) and invasive species such as White Sweetclover (*Melilotus alba*). In addition, many of the eastern cottonwood (*Populus deltoides*) trees, a weedy species, would be removed, and a fewer number of other native tree species would be planted. This would create a more open habitat that would benefit bird species. Removal of eastern cottonwoods throughout the site would also help to maintain a higher water level in the marsh.
- **Hemi-Marsh (41.9 acres).** This kind of marsh typically has an even mix of open water and emergent vegetation containing species such as cattails. This habitat exists in the north-central area of Hegewisch Marsh and is the nesting site for a variety of marsh bird species. Birds, such as the yellow-headed blackbird (*Xanthocephalus xanthocephalus*) prefer to nest in broad-leaved cattail (*Typha latifolia*), although they will also nest in common reed (*Phragmites australis*), an invasive species that currently exists at Hegewisch Marsh. However, marsh-dependent birds require deeper pockets of open water called potholes. Rehabilitation of the hemi-marsh would include removal of the invasive species such as common reed and narrow-leaved cattail (*Typha angustifolia*), creation of potholes for hemi-marsh conditions, and installation of a broad-leaved cattail- and bulrush (*Scirpus* sp.)-dominated marsh.
- **Wet Prairie/Sedge Meadow (28 acres).** Wet prairie habitats contain prairie grasses that can be wet for portions of the year, and an array of sedges. This habitat currently exists in the southeast corner of Hegewisch Marsh. This habitat would be improved by removing invasive species and expanding this habitat in the south portion of Hegewisch Marsh.
- **Forested Wetland (30 acres).** This kind of habitat is characterized by trees and water-tolerant undergrowth. This habitat at the center of Hegewisch Marsh is currently dominated by purple loosestrife (*Lythrum salicaria*), eastern cottonwood, common buckthorn (*Rhamnus cathartica*), and non-native grasses. Restoration would include removing invasive species and replacing the plant community with woodland/forested wetland dominated by oaks (*Quercus* spp.) and hickories (*Carya* spp.).
- **Little Calumet River Edge.** The river runs along the western edge of the site. It would be viewed via a trail that runs along the river edge and complies with the Americans with Disabilities Act. Ideas for connecting the trail to a regional bike system are being explored. In addition, canoe launches would be constructed in areas approved by the U.S. Army Corps of Engineers to ensure visitor safety.

- **Old River Channel (8.5 acres).** Historical maps kept by the Southeast Chicago Historical Society reveal that a portion of the Little Calumet River once meandered directly through Hegewisch Marsh. It was later filled when the river was channelized for navigation. To highlight the natural history of the area, the old channel bed would be excavated to create a wetland with pockets of open water. A boardwalk and bridge (see below) would allow visitors to experience the area from approximately 6 feet above the wetland. An additional trail at the west end would allow visitors to experience the wetland at ground level. Interpretive signage would also be placed along the old river channel.
- **Boardwalk and Bridge.** These are proposed along the Old River Channel. These features will be ADA-accessible. Using sustainable materials would add an interpretive opportunity – for example, constructing them from recycled steel from the Calumet region. These features would allow visitors to experience wetland areas from a safe location. The design of these structures would reflect the architecture of the Ford Calumet Environmental Center (FCEC).
- **Lookout Tower and Viewing Blinds.** A lookout tower would be constructed along the old railroad spur to allow visitors an unobtrusive view of the hemi-marsh throughout the year. Two viewing blinds would be constructed along the trails at the south and west edges of the hemi-marsh.
- **Interpretive Habitat Exhibits.** Plans include establishing small sections in each habitat to educate visitors on the species present in that habitat. These exhibits would consist of native plantings and interpretive displays describing the plants and animals that use each habitat. Visitors could then hike through the habitat and identify these species.
- **Ford Calumet Environmental Center.** The 30 Percent Site Plan included two options for the location of the FCEC. This update presents the FCEC at the east-central portion of the site to facilitate site access and minimize wetland and other habitat impacts; however, the specific location is yet to be determined.
- **Industrial Features.** Industry is a key element of the Calumet region. Hegewisch Marsh has many prime areas for viewing the industrial past, present, and future of the region. Industrial features at the site include a former railroad spur, railroad bridges at the northeast and northwest parts of the site, the adjacent O’Brien Lock and Dam and the Little Calumet River’s commercial ship traffic, and the CID Landfill to the west. These features would be highlighted through interpretive exhibits along trail, and at key lookout points.

Phasing

The phasing of activities considers several factors, such as the National Coastal Wetlands Grant award, location of the FCEC, and acquisition of south parcels. The phasing generally begins in the north and progresses south, as follows:

- **Phase 1 (0 to 1 years)** would focus on habitat and would include areas north of the old river channel. Restoration would include thinning the trees, removing the eastern cottonwoods and replacing some of them with other native species, and creating potholes in the hemi-marsh. Herbicides would be applied to begin the effort to control invasive plants. Existing trails would be identified, and preparation would begin for permanent trails. Permanent fencing would be installed along Torrence Avenue to control fly dumping. During Phase 1, 68.8 acres of habitat would be rehabilitated.
- **Phase 2 (2 to 3 years)** would focus on infrastructure and would include constructing features such as bird blinds, the lookout tower, canoe launch, and lighting. Excavation and preparation of the old river channel would also occur. Other activities would include seeding, planting, continued herbiciding, and prescribed burning. During Phase 2, 33 acres of habitat would be rehabilitated.
- **Phase 3 (4+ years)** would tie the effort together by including areas south of the old river channel. The infrastructure would be completed, and restoration of the habitat would continue. Phase 3 would continue long-term. Over time, the site will stabilize, but it will need continuous human intervention to control invasive species and maintain a functional habitat. Stewards and volunteers would be essential in carrying out these activities, which also provide interpretive value. Phase 3 would include 129.1 acres of habitat rehabilitation.

For More Information

Please contact Nicole Kamins of Chicago Department of Environment at (312) 744-5959 or nkamins@cityofchicago.org.

HEGEWISCH MARSH MASTER PLAN



1. Industrial Feature



2. Savannah



3. Hemi Marsh



4. Little Calumet River



Trail



Boardwalk



Blackbird Habitat



Canoe/ Fishing Piers



Lookout Tower



Environmental Center
* Location to be determined



Interpretive Habitat Exhibits



5. Wet Prairie/Sedges



6. Forested Wetland



7. Boardwalk



8. Old River Wetland

TYPICAL HABITATS & FEATURES



HEGEWISCH MARSH PUBLIC MEETING NOTES
February 21, 2006

Comments from the public are summarized below.

1. Comment: The trail system is much improved from the previous plan. There is a small trail in the upper left corner of the site. Is that to provide access from the railroad?
Response: The trail is for a connection to a bike path in the future. At this point, it is just a possibility.
2. Comment: I love the idea of creating wetlands along the old river channel. Where will the water come from?
Response: The water will tie into the groundwater, and the FCEC design anticipated wetlands to manage the stormwater instead of sewerage. We're still evaluating the need for a pump from the groundwater or Calumet River. It won't be an elaborate system but might be needed to maintain necessary water levels.
3. Comment: Heard that they were restoring the locks at Halsted and these locks would be obsolete. Originally, the locks were at the Riverdale Marina, and if those are used instead of these, it would alter the level of the river.
Response: These locks are not obsolete but are old-fashioned and need repair. We are in communication with USACE to determine the status of the locks.
4. Comment: This is an ambitious project. How will it be scheduled around bird breeding times?
Response: Construction at 130th and Torrence will be going year-round, but the current traffic and congestion don't bother bird breeding habits, so that shouldn't be an issue. Our rehabilitation work will be timed to minimize disturbance during the breeding season. The Calumet EMS delineates time frames to avoid work; during these times, we will work in other areas or will restrict our activities to minimize disturbance.
5. Comment: The northeast corner of the site is dry land. There are no yellow-headed blackbirds there now?
Response: Correct. In addition, the yellow-headed blackbird is not the only species we are restoring for but creating the habitat for these species will benefit many marsh-dependent and other species.
6. Comment: I'm not familiar with the site. Is the old river channel currently wetlands? Are you talking about excavating?
Response: It is filled. We would need to excavate.
7. Comment: Torrence Ave. will be depressed. How will it affect access to the site? Will there be traffic lights and turn lanes into the site?
Response: The road will reach ground level at 134th St. The railroad will need access roads around the site, and they will be constructed. We have talked with CDOT about turn lanes and are working together on providing proper access.
8. Comment: Will the \$750,000 be used throughout the three phases? Are you pursuing other grants?

Response: The money will be used toward the first phase only. This award will make it easier to receive funding for the future phases from NCWC. We also have a range of grants we can use and will continue to apply for.

9. Comment: How will this project impact the fishery? There was mention of docks for fishing and canoeing.

Response: In previous meetings, we heard that the public was very interested in accessing the river. We are looking into the possibility of canoeing and fishing in the region at this and other sites.

10. Comment: I like the idea of parking south of the building and closer to Torrence Avenue, and therefore away from the hemi-marsh.

11. Comment: It would be a good idea to try to have the bike trail link to the underground railroad site and train station.

Response: Trails are planned throughout the region, and opportunities exist in places like Wolf Lake, Ford Supplier Park, and other places that have segments of the planned bike trail in place. The pieces of the trail are beginning to come together.

12. Comment: The Chicago Nature and Wildlife Plan has a priority to protect wildlife habitat and limit the amount of development on a site. Hegewisch Marsh is listed as a site in this plan.

13. Comment: Can we include a canoe launch above and below the locks so there is access to both segments of the river?

Response: We are currently looking into that. We have to coordinate with USACE and discuss launch sites and portage possibilities. Illinois River Trails consists of 450 miles of trails through northeast Illinois. This site would link to that trail system. We can discuss where to put the launch so it would be safe for barge traffic and canoes.

14. Comment: Hegewisch is planning a major cleanup on the site and will have bulldozers, backhoes, and other equipment as well as volunteers on May 13. It's part of the Clean and Green Initiative, and there is a 50¢ tire bounty during the cleanup.

15. Comment: Will the intersection be constructed without closure?

Response: Westbound on Hegewisch will be closed for about a year. Some of the one-way streets may be reversed temporarily to help maintain traffic flow.

16. Comment: This plan is much more refined and focused. It's looking good.

17. Comment: Try not to schedule the public meetings during the CAPS meetings; the 3rd Tuesday of each month. You could present a summary of the design at the CAPS meeting.

18. Comment: Could concentrate on meetings in East Side Pride.

APPENDIX D
PROPOSED PLANTING LISTS
(Five Pages)

Hegewisch Marsh Planting List for Wet Prairie/Sedge Habitat

Scientific Name	Common Name	Color	Form	Season	Lb/acre
<i>Andropogon gerardii</i>	Big Bluestem	Green	Tall grass	Late summer-fall	5
<i>Asclepias incarnata</i>	Swamp Milkweed	Red/pink	Medium forb	Mid-late summer	0.063
<i>Calamagrostis canadensis</i>	Blue Joint	Green	Medium grass	Late spring	0.063
<i>Carex annectens xanthocarpa</i>	Yellowfruit Sedge	Green	Medium-tall sedge	Early-mid summer	0.063
<i>Carex bebbii</i>	Bebb's Sedge	Green	Medium sedge	Early summer	0.063
<i>Carex normalis</i>	Greater Straw Sedge	Green	Medium sedge	Spring-early summer	0.063
<i>Carex vulpinoidea</i>	Fox Sedge	Green	Medium sedge	Spring	0.125
<i>Cassia fasciculata</i>	Partridge Pea	Yellow	Medium forb	Mid-late summer	0.188
<i>Dalea purpurea</i>	Purple Prairie Clover	Purple	Medium forb	Mid-late summer	0.25
<i>Elymus canadensis</i>	Canada Wildrye	Green	Medium-tall grass	Summer	1
<i>Elymus virginicus</i>	Virginia wildrye	Green	Medium-tall grass	Summer	1
<i>Epilobium coloratum</i>	Purpleleaf Willowherb	Pink	Medium forb	Summer	0.015
<i>Eupatorium perfoliatum</i>	Common Boneset	White	Medium forb	Mid-late summer	0.015
<i>Euthamia graminifolia</i>	Flat-Top Goldenrod	Yellow	Medium forb	Summer	0.125
<i>Hypericum kalmianum</i>	Kalm's St. Johnswort	Yellow	Medium forb	Summer	0.016
<i>Iris versicolor</i>	Harlequin Blue Flag	Blue	Medium-tall forb	Mid-late summer	0.125
<i>Liatis pycnostachya</i>	Prairie Blazing Star	Magenta	Medium-tall forb	Late summer-fall	0.313
<i>Liatis spicata</i>	Dense Blazing Star	Purple	Medium-tall forb	Summer	0.188
<i>Lobelia siphilitica</i>	Great Blue Lobelia	Blue	Medium forb	Mid-summer-fall	0.031
<i>Mimulus ringens</i>	Allegheny Monkey Flower	Blue	Medium forb	Mid-summer	0.031
<i>Monarda fistulosa</i>	Wild Bergamot	Pink/purple	Medium-tall forb	Summer-fall	0.016
<i>Oligoneuron ohioense</i>	Ohio Goldenrod	Yellow	Medium forb	Summer	0.063
<i>Oligoneuron riddellii</i>	Riddell's Goldenrod	Yellow	Low-medium forb	Late summer-fall	0.063
<i>Oligoneuron rigidum</i>	Stiff Goldenrod	Yellow	Medium forb	Mid-late summer	0.125
<i>Panicum virgatum</i>	Switchgrass	Green	Tall grass	Summer	0.5
<i>Parthenium integrifolium</i>	Wild Quinine	White	Medium forb	Mid-summer	0.125
<i>Physostegia virginiana</i>	Obedient Plant	Pink/purple	Low-medium forb	Late summer	0.063
<i>Pycnanthemum virginianum</i>	Virginia Mountain Mint	White	Low-medium forb	Summer	0.016
<i>Ratibida pinnata</i>	Pinnate Prairie Coneflower	Yellow	Medium-tall forb	Mid summer-fall	0.25
<i>Rudbeckia hirta</i>	Blackeyed Susan	Yellow	Medium forb	Spring-summer	0.25
<i>Scirpus atrovirens</i>	Dark Green Rush	Green	Medium-tall rush	Late spring-summer	0.5
<i>Silphium laciniatum</i>	Compassplant	Yellow	Tall forb	Summer	0.188
<i>Silphium perfoliatum</i>	Cup Plant	Yellow	Tall forb	Summer	0.125
<i>Sorghastrum nutans</i>	Indian Grass	Green	Tall grass	Late summer	4
<i>Spartina pectinata</i>	Prairie Cordgrass	Green	Medium-tall grass	Mid-summer	0.125
<i>Symphyotrichum laeve</i>	Smooth Blue Aster	Blue	Medium forb	Late summer	0.016
<i>Symphyotrichum novae-angliae</i>	New England Aster	Purple/blue	Tall forb	Late summer-fall	0.031
<i>Symphyotrichum praealtum</i>	Willowleaf Aster	White	Tall forb	Fall	0.031
<i>Vernonia fasciculata</i>	Prairie Ironweed	Magenta	Tall forb	Mid-late summer	0.018
<i>Veronicastrum virginicum</i>	Culver's Root	White	Tall forb	Mid -summer	0.063
<i>Zizia aurea</i>	Golden Zizia	Yellow	Medium forb	Spring-mid summer	0.031
Total					15.336

Notes:

Scientific and common names conform to those listed in the on-line "Plants Database" maintained by the U.S. Department of Agriculture Natural Resources Conservation Service (www.plants.usda.gov).

Lb/acre Pound per acre

Hegewisch Marsh Planting List for Wet Savanna Habitat

Scientific Name	Common Name	Color	Form	Season / Bloom	Lb/acre
<i>Actinomeris alternifolia</i>	Wingstem	Yellow	Medium-tall forb	Late summer-early fall	0.188
<i>Ageratina altissima</i>	White Snakeroot	White	Medium forb	Late summer	0.063
<i>Andropogon gerardii</i>	Big Bluestem	Green	Tall Grass	Late summer-fall	0.5
<i>Bidens cernua</i>	Nodding Beggartick	Yellow	Medium forb	Summer-fall	0.25
<i>Bromus kalmii</i>	Artic Brome	Green	Medium grass	Mid-summer	0.25
<i>Bromus latiglumis</i>	Earlyleaf Brome	Green	Medium grass	Late Summer	0.25
<i>Carex blanda</i>	Eastern Woodland Sedge	Green	Medium sedge	Late spring	0.125
<i>Carex crus-corvi</i>	Ravenfoot Sedge	Green	Medium sedge	Early summer	0.063
<i>Carex grayi</i>	Gray's Sedge	Green	Low sedge	Late Spring	0.015
<i>Carex grisea</i>	Inflated Narrow-Leaf Sedge	Green	Low sedge	Early spring-summer	0.015
<i>Carex lupuliformis</i>	False Hop Sedge	Green	Medium sedge	Spring	0.063
<i>Carex lupulina</i>	Hop Sedge	Green	Low sedge	Spring	0.063
<i>Carex normalis</i>	Greater Straw Sedge	Green	Medium sedge	Spring-early summer	0.063
<i>Carex projecta</i>	Necklace Sedge	Green	Medium sedge	Early-mid summer	0.125
<i>Carex shortiana</i>	Short's Sedge	Green	Low sedge	Spring	0.125
<i>Carex vulpinoidea</i>	Fox Sedge	Green	Medium sedge	Spring	0.5
<i>Cicuta maculata</i>	Spotted Water Hemlock	White	Medium-tall forb	Summer-fall	0.031
<i>Cinna arundinacea</i>	Common Wood Reed	White	Medium forb	Late summer	0.063
<i>Clematis virginiana</i>	Devil's Darning Needles	White	Vine	Mid-late summer	0.063
<i>Cryptotaenia canadensis</i>	Canadian Honewort	White	Medium forb	Late spring-early fall	0.015
<i>Diarrhena americana</i>	American Beakgrain	Green	Medium grass	Mid-late summer	0.031
<i>Elymus hystrix</i>	Eastern Bottlebrush Grass	Green	Medium grass	Early-mid summer	0.063
<i>Elymus riparius</i>	Riverbank Wildrye	Green	Medium grass	Late summer	0.125
<i>Elymus villosus</i>	Hairy Wildrye	Green	Medium grass	Mid-summer	0.125
<i>Elymus virginicus</i>	Virginia Wildrye	Green	Medium grass	Late spring-early summer	5
<i>Eupatorium purpureum</i>	Sweetscented Joepyeweed	Purple	Medium-tall forb	Late summer	0.031
<i>Festuca obtusa</i>	Nodding Fescue	Green	Medium grass	Late spring	0.015
<i>Glyceria striata</i>	Fowl Mannagrass	Green	Medium grass	Spring	2
<i>Helenium autumnale</i>	Common Sneezeweed	Yellow	Tall forb	Summer-fall	0.063
<i>Helianthus strumosus</i>	Paleleaf Woodland Sunflower	Yellow	Tall forb	Fall	0.063
<i>Heracleum maximum</i>	Common Cowparsnip	White	Medium-tall forb	Late spring-early summer	0.375
<i>Lobelia cardinalis</i>	Cardinalflower	Red	Medium forb	Mid-late summer	0.015
<i>Lobelia siphilitica</i>	Great Blue Lobelia	Blue	Medium forb	Mid summer-fall	0.015
<i>Ludwigia polycarpa</i>	Manyfruit Primrose-Willow	Purple	Medium forb	Summer	0.001
<i>Lycopus americanus</i>	American Water Horehound	White	Low forb	Summer	0.125
<i>Mimulus ringens</i>	Allegheny Monkey Flower	Blue	Medium forb	Mid-summer	0.031
<i>Monarda fistulosa</i>	Wild Bergmot	Purple	Medium forb	Late summer	0.031
<i>Osmorhiza claytonii</i>	Clayton's Sweetroot	White	Medium forb	Late spring-early summer	0.062
<i>Oxypolis rigidior</i>	Stiff Cowbane	Yellow	Tall forb	Late summer	0.062
<i>Panicum virgatum</i>	Switchgrass	Green	Medium grass	Late summer	0.5
<i>Physostegia virginiana</i>	Obedient Plant	Pink	Medium forb	Summer	0.031
<i>Pycnanthemum pilosum</i>	Virginia Mountain Mint	White	Medium-tall forb	Mid-summer	0.015
<i>Rudbeckia laciniata</i>	Cutleaf Coneflower	Yellow	Tall forb	Summer-fall	0.063
<i>Silphium perfoliatum</i>	Cup Plant	Yellow	Tall forb	Summer	0.125
<i>Solidago gigantea</i>	Giant Goldenrod	Yellow	Medium-tall forb	Late summer	0.031
<i>Symphotrichum lateriflorum</i>	Calico Aster	White	Medium forb	Late summer-early fall	0.031
<i>Verbena hastata</i>	Swamp Verbena	Lavender	Medium forb	Mid-late summer	0.063
<i>Verbena urticifolia</i>	White Vervain	White	Medium forb	Mid-late summer	0.031
<i>Zizia aurea</i>	Golden Zizia	Yellow	Low-medium forb	Spring-mid summer	0.063
Total					12.016

Notes:

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Lb/acre Pound per acre

Hegewisch Marsh Planting List for Forested Wetland Habitat

Scientific Name	Common Name	Color	Form	Season / Bloom	Lb/acre ^a
SEED					
<i>Agastache nepetoides</i>	Yellow Giant Hyssop	Yellow	Medium forb	Summer-fall	0.016
<i>Agastache scrophulariifolia</i>	Purple Giant Hyssop	White	Medium forb	Late summer-fall	0.016
<i>Ageratina altissima</i>	White Snakeroot	White	Medium forb	Late summer	0.063
<i>Agrostis stolonifera</i>	Creeping Bentgrass	Purple/red	Medium grass	Mid-summer	1.000
<i>Anemone virginiana</i>	Tall Thimbleweed	White	Medium forb	Summer	0.031
<i>Angelica atropurpurea</i>	Purplestem Angelica	White	Tall forb	Summer	0.062
<i>Aquilegia canadensis</i>	Red Columbine	Red	Medium forb	Spring	0.031
<i>Arisaema atrorubens</i>	<i>Arisaema triphyllum</i>	Green	Medium forb	Spring	0.031
<i>Aster shortii</i>	Short's Aster	White	Medium forb	Late summer	0.061
<i>Boehmeria cylindrica</i>	Smallspike False Nettle	Green	Low forb	Mid summer	0.063
<i>Bromus kalmii</i>	Artic Brome	Green	Medium grass	Mid-summer	0.015
<i>Bromus latiglumis</i>	Earlyleaf Brome	Green	Medium grass	Late summer	0.500
<i>Bromus pubescens</i>	Hairy Woodland Brome	Green	Medium grass	Summer	0.250
<i>Campanula americana</i>	American Bellflower	Blue	Medium forb	Summer-fall	0.006
<i>Carex blanda</i>	Eastern Woodland Sedge	Green	Medium sedge	Late spring	0.250
<i>Carex grisea</i>	Inflated Narrow-Leaf Sedge	Green	Low sedge	Early spring-summer	0.015
<i>Carex normalis</i>	Greater Straw Sedge	Green	Medium sedge	Spring-early summer	0.063
<i>Carex rosea</i>	Rosy Sedge	Green	Medium sedge	Spring-early summer	0.015
<i>Carex shortiana</i>	Short's Sedge	Green	Medium sedge	Spring-early summer	0.375
<i>Carex stipata</i>	Owlfruit Sedge	Green	Low sedge	Late spring	0.063
<i>Carex vulpinoidea</i>	Fox Sedge	Green	Medium sedge	Spring	0.250
<i>Clematis virginiana</i>	Devil's Darning Needles	White	Vine	Mid-late summer	0.015
<i>Cryptotaenia canadensis</i>	Canadian Honewort	White	Medium forb	Late spring-early fall	0.015
<i>Diarrhena americana</i>	American Beakgrass	Green	Medium grass	Mid-late summer	0.031
<i>Elymus canadensis</i>	Canada Wildrye	Green	Medium-tall grass	Summer	1.000
<i>Elymus hystrix</i>	Eastern Bottlebrush Grass	Green	Medium grass	Early-mid summer	0.500
<i>Elymus villosus</i>	Hairy Wildrye	Green	Medium grass	Mid-summer	0.500
<i>Elymus virginicus</i>	Virginia Wildrye	Green	Medium grass	Late spring-early summer	3.000
<i>Eupatorium purpureum</i>	Sweetscented Joepyeweed	Purple	Medium-tall forb	Late summer	0.031
<i>Festuca obtusa</i>	Nodding Fescue	Green	Medium grass	Late spring	0.015
<i>Geranium maculatum</i>	Spotted Geranium	Pink	Medium forb	Late spring	0.015
<i>Glyceria striata</i>	Fowl Mannagrass	Green	Medium grass	Spring	0.125
<i>Helianthus grosseserratus</i>	Sawtooth Sunflower	Yellow	Tall forb	Summer-fall	0.062
<i>Juncus bufonius</i>	Toad Rush	Green	Low forb	Late spring-fall	0.006
<i>Juncus torreyi</i>	Torrey's Rush	Green	Medium rush	Summer	0.006
<i>Leersia oryzoides</i>	Rice Cutgrass	Green	Low grass	Summer	0.250
<i>Lobelia cardinalis</i>	Cardinalflower	Red	Medium forb	Mid-late summer	0.008
<i>Lobelia siphilitica</i>	Great Blue Lobelia	Blue	Medium forb	Mid summer-fall	0.016
<i>Mertensia virginica</i>	Virginia Bluebells	Blue	Medium forb	Spring	0.006
<i>Osmorhiza claytonii</i>	Clayton's Sweetroot	White	Medium forb	Late spring-early summer	0.062
<i>Panicum dichotomiflorum</i>	Fall Panicgrass	Green	Low grass	Late summer-fall	1.000
<i>Penstemon digitalis</i>	Talus Slope Penstemon	White	Medium-tall forb	Spring-mid summer	0.016
<i>Penthorum sedoides</i>	Ditch Stonecrop	Green	Medium forb	Summer-fall	0.006
<i>Phlox divaricata</i>	Wild Blue Phlox	Blue	Medium forb	Spring	0.016
<i>Polygonatum biflorum</i>	Smooth Solomon's Seal	White	Medium forb	Spring	0.125
<i>Polygonum lapathifolium</i>	Curlytop Knotweed	Pink/white	Medium forb	Summer-fall	0.500
<i>Polygonum pensylvanicum</i>	Pennsylvania Smartweed	Pink	Medium forb	Late spring-fall	0.500
<i>Prenanthes alba</i>	White Rattlesnakeroot	White	Tall forb	Spring	0.016
<i>Pycnanthemum pilosum</i>	Virginia Mountain Mint	White	Medium-tall forb	Mid-summer	0.016
<i>Ratibida pinnata</i>	Pinnate Prairie Coneflower	Yellow	Medium forb	Mid summer-fall	0.125
<i>Rudbeckia hirta</i>	Blackeyed Susan	Yellow	Medium forb	Spring-summer	0.250
<i>Rudbeckia laciniata</i>	Cutleaf Coneflower	Yellow	Tall forb	Summer-fall	0.063

Hegewisch Marsh Planting List for Forested Wetland Habitat

Scientific Name	Common Name	Color	Form	Season / Bloom	Lb/acre ^a
<i>Rumex altissimus</i>	Pale Dock	Green	Low forb	Late spring-summer	0.063
<i>Scirpus atrovirens</i>	Dark Green Rush	Green	Tall rush	Late spring-early summer	0.625
<i>Smilacina racemosa</i>	False Solomons Seal	White	Medium forb	Spring	0.031
<i>Solidago juncea</i>	Early Goldenrod	Yellow	Medium forb	Summer	0.031
<i>Solidago ulmifolia</i>	Elm-leaved Goldenrod	Yellow	Tall forb	Late summer	0.063
<i>Symphotrichum cordifolium</i>	Common Blue Wood Aster	Blue	Medium-tall forb	Late summer-fall	0.062
<i>Symphotrichum drummondii</i>	Drummond's Aster	Blue	Medium forb	Late summer-fall	0.031
<i>Symphotrichum lateriflorum</i>	Calico Aster	White	Medium forb	Late summer-early fall	0.031
<i>Teucrium canadense</i>	Canada Germander	Pink	Low-medium forb	Summer	0.031
<i>Thaspium barbinode</i>	Hairyjoint Meadowparsnip	Yellow	Tall forb	Spring	0.062
<i>Tradescantia ohiensis</i>	Bluejacket	Blue	Medium forb	Late spring-mid summer	0.016
<i>Triosteum perfoliatum</i>	Feverwort	Purple	Medium forb	Spring	0.031
<i>Verbena hastata</i>	Swamp Verbena	Lavender	Medium forb	Mid-late summer	0.047
<i>Verbena urticifolia</i>	White Vervain	White	Medium forb	Mid-late summer	0.063
<i>Veronicastrum virginicum</i>	Culver's Root	White	Tall forb	Mid-summer	0.031
<i>Zizia aurea</i>	Golden Zizia	Yellow	Low-medium forb	Spring-mid summer	0.062
Total					12.752
SHRUB/TREE PLUGS (as seedlings)					
<i>Carpinus caroliniana</i>	American Hornbeam	NA	Small tree	NA	10
<i>Cary ovata</i>	Shagbark Hickory	NA	Tree	NA	10
<i>Carya cordiformis</i>	Bitternut Hickory	NA	Tree	NA	10
<i>Celtis occidentalis</i>	Hackberry	NA	Tree	NA	10
<i>Cornus alternifolia</i>	Alternatelyleaf Dogwood	NA	Tall shrub	NA	5
<i>Cornus obliqua</i>	Silky Dogwood	NA	Medium shrub	NA	20
<i>Hamamelis virginiana</i>	American Witchhazel	NA	Tall shrub	NA	5
<i>Juglans nigra</i>	Black Walnut	NA	Tree	NA	10
<i>Lindera benzoin</i>	Northern Spicebush	NA	Medium shrub	NA	10
<i>Ostrya virginiana</i>	Eastern Hophornbeam	NA	Small tree	NA	10
<i>Quercus alba</i>	White Oak	NA	Tree	NA	10
<i>Quercus bicolor</i>	Swamp White Oak	NA	Tree	NA	10
<i>Quercus macrocarpa</i>	Bur Oak	NA	Tree	NA	10
<i>Quercus palustris</i>	Pin Oak	NA	Tree	NA	10
<i>Quercus rubra</i>	Northern Red Oak	NA	Tree	NA	10
<i>Sambucus nigra canadensis</i>	Common Elderberry	NA	Medium shrub	NA	20
<i>Staphylea trifolia</i>	American Bladdernut	NA	Tall shrub	NA	10
<i>Viburnum acerifolium</i>	Mapleleaf Viburnum	NA	Low shrub	NA	10
<i>Viburnum lentago</i>	Nannyberry	NA	Medium shrub	NA	5
<i>Viburnum prunifolium</i>	Blackhaw	NA	Low shrub	NA	5
Total					200

Notes:

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Lb/acre Pound per acre

NA Not applicable

^a Seeding units are Lb/acre, but shrub/tree plug units are number per acre.

Hegewisch Marsh Planting List for Emergent Shoreline Hemi-Marsh Habitat^a

Scientific Name	Common Name	Color	Form	Season / Bloom	Plugs/acre
<i>Acorus calamus</i>	Sweet Flag	Green/yellow	Medium forb	Late spring-summer	200
<i>Alisma subcordatum</i>	American Water Plantain	White	Medium forb	Mid-late summer	100
<i>Asclepias incarnata</i>	Swamp Milkweed	Red/pink	Medium forb	Mid-late summer	100
<i>Hibiscus militaris</i>	Halberdleaf Rose Mallow	Pink	Tall forb	Summer	100
<i>Iris versicolor</i>	Harlequin Blue Flag	Blue	Medium-tall forb	Mid-late summer	200
<i>Peltandra virginica</i>	Green Arrow Arum	White	Medium forb	Early-mid summer	100
<i>Pontederia cordata</i>	Pickereel Weed	Blue	Medium forb	Summer-fall	200
<i>Sagittaria latifolia</i>	Broadleaf Arrowhead	White/green	Medium forb	Summer	500
<i>Schoenoplectus fluviatilis</i>	River Bulrush	Green	Medium-tall rush	Late spring-summer	1200
<i>Schoenoplectus tabernaemontani</i>	Great Bulrush	Green	Tall bulrush	Spring-early summer	1200
<i>Sparganium eurycarpum</i>	Broadfruit Bur-Reed	Green	Tall rush	Late spring-summer	1000
Total					4900

Note:

Scientific and common names conform to those listed in the on-line "Plants Database" maintained by the U.S. Department of Agriculture Natural Resources Conservation Service (www.plants.usda.gov).

^a Plantings will consist entirely of plugs.