## Chicago Park District (Park 564) Wetland Restoration at Big Marsh

#### **IAFSM 2016**

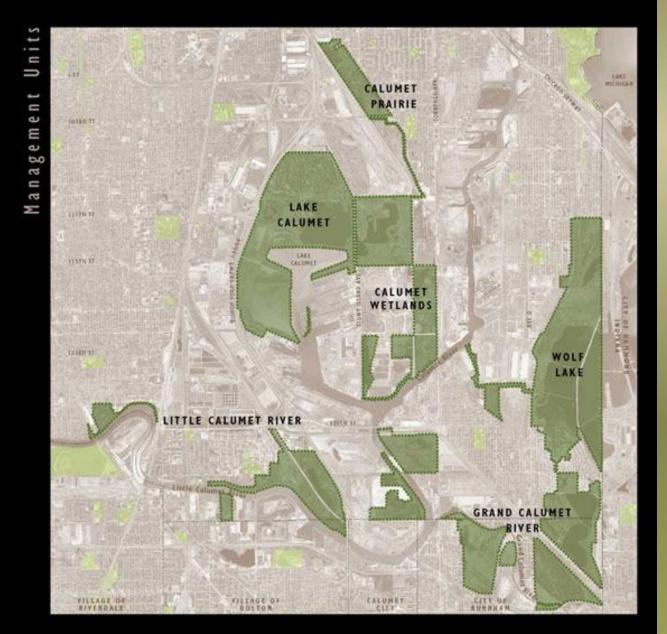
- Regional Overview
- Site History & Industrial Legacy
- Current Conditions
- Project Goals
- Restoration Challenges
- Project Status

#### CALUMET OPEN SPACE RESERVE PLAN

#### LAND MANAGEMENT

COSR Management Units Other Open Space Municipal Boundaries

1,000 3,000 Feet



#### **Calumet Open Space Properties**



Van Vlissingen Prairie (~135 acres)

#### Big Marsh (~300 acres)

Indian Ridge Marsh

#### **Hegewisch Marsh**



W 95th St

-

294

147th St

Slale

Tollway

Dan Ryan Expy

1

94

E 95th St

**Big Marsh** 

Buna

12

41

Chicago St312

Google

912

Indiana

90

E-147th-St

1

57

E Sibley Blvd 83 Sibley Blvd

© 2015 Google Image NOAA Image © 2015 TerraMetrics

## **Big Marsh**

Google

Railroad Marsh

NS Rail Yard & Transfer Station

(个North) Van Vlissingen

**Big Marsh** 

## Lake Calumet

Acme Steel Coke Plant

Paxton Landfill Indian Ridge Marsh (CPD)

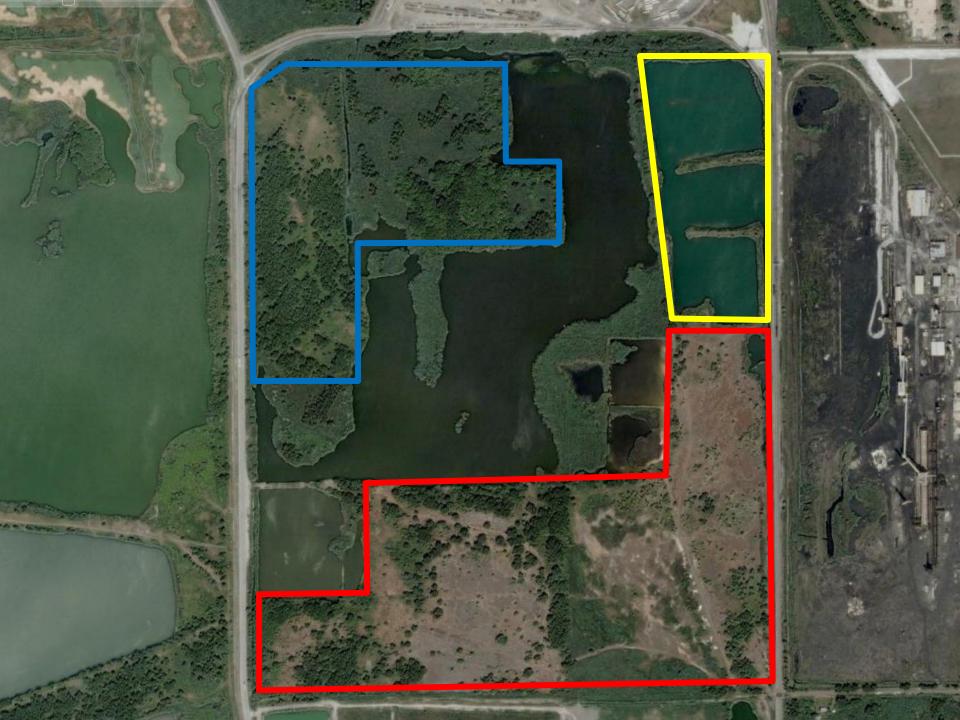
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# Site History & Industrial Legacy

Photo courtesy Illinois Digital Archives

Modern Stony Island Ave.





- 1980's-Waste Management Proposed Landfill
- 1985-Black-crowned Night Heron Rookery Discovered
- 2008-Purchased by City of Chicago
- 2011-Transferred to Chicago Park District

## The Site Today



# 2012 Conditions

Open Water (98 Ac.)



Wooded Upland (64 Ac.)

(Buckthorn & Cottonwoods)

**Degraded Wet Meadow** (16 Ac.)

Wet Meadow (7 Ac.) Old Field (26 Ac.)

Exposed Slag (25 Ac.)



Big Marsh Habitat Restoration

- 190 acres of wetland, open water, and upland.
- Plan includes trails, amenities, and second entrance/parking lot
- Assumes control of Big Marsh water levels



Big Marsh Recreation Plan

#### **Big Marsh Bike Park**

- 50 acres
- Maximize use of exposed slag areas

## **Project Goals**

- Stabilize Wetland Hydrology
- Removal of Invasive Vegetation
- Wetland and Upland Habitat Restoration
- Establish hemi-marsh conditions
- Nature & People Compatibility
- Eco-recreation: (Bike Park and Trails)

# **Restoration Challenges**

Inlet from Railroad Marsh

Inlet from Coke Plant

Dam Control Structure

Drainage control structure

Altered Hydrology

- Drainage from adjacent properties: Railroad Marsh (North) Coke Plant (East) Landfill (South)
- Breached dam, ditch and old control structure, Stony Island culvert, and blocked outlet channel to Lake Calumet
- High water levels: open water, little emergent wetland

## Invasive Species

- Phragmites EVERYWHERE.
- Loosestrife, sweetclover, knapweed throughout.
- Buckthorn dominating wooded upland areas

Photo courtesy of Thomas Photography

## Exposed Slag & Alkaline Leachate

- Low permeability, High pH
- Phyto-remediation experiments

## **Challenges (continued)**

- Poor (absent) soils / planting medium
- Sensitive / T&E Species
- Environmental Contamination human health & ecotoxicological risks
- Funding

## **Project Status**

## Greencorps Clearing of Buckthorn (Winter 2014-2015)

# Greencorps Buckthorn Removal

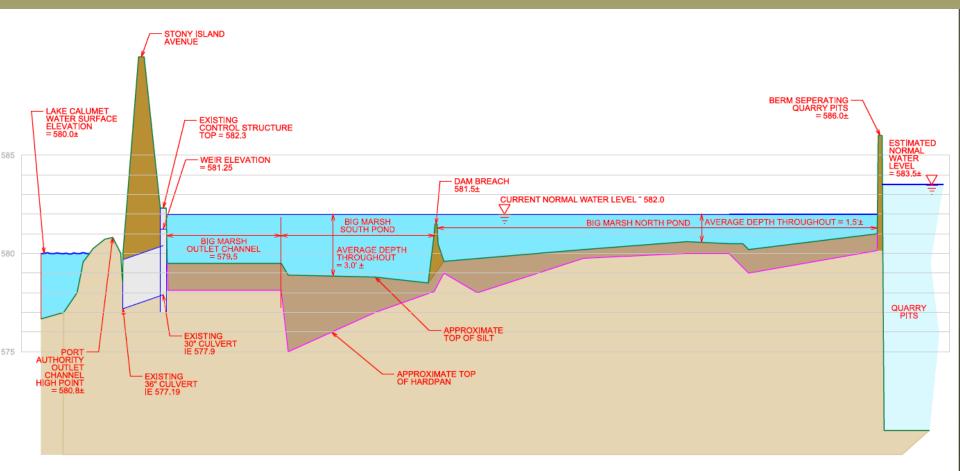
Google earth

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## **Project Status**

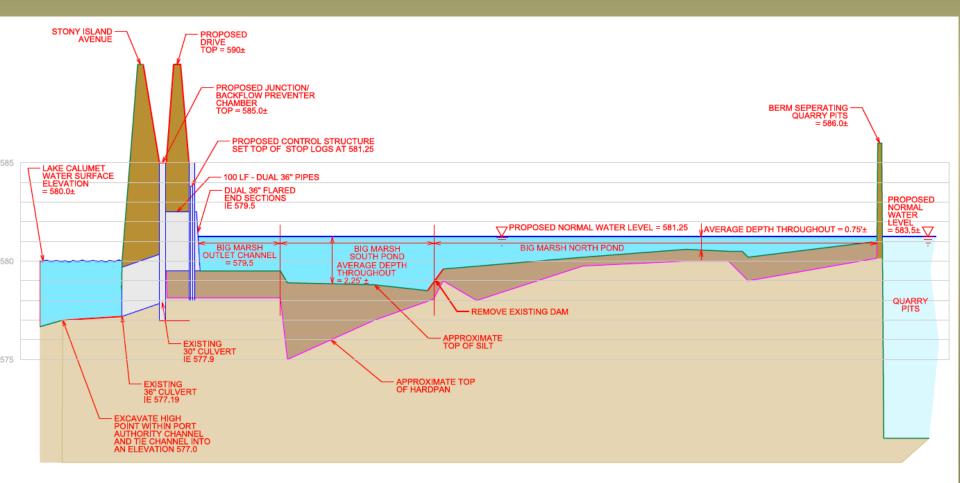
Hydrology Restoration
Design (May 2015)
Construction (October 2015)

## Fixing Big Marsh Hydrology

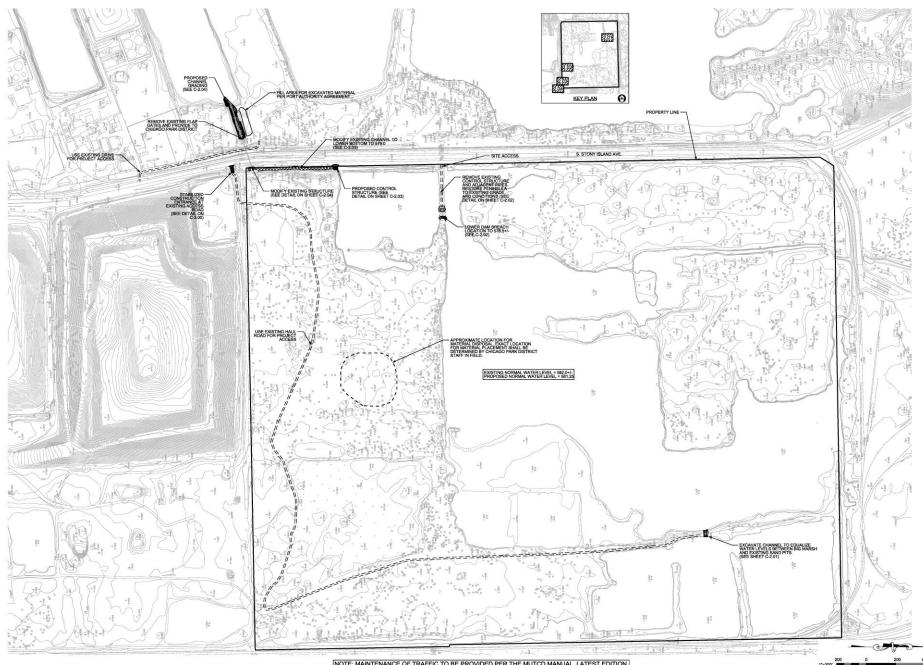


## **Existing Hydrologic Profile**

## Fixing Big Marsh Hydrology



### **Proposed Hydrologic Profile**



NOTE: MAINTENANCE OF TRAFFIC TO BE PROVIDED PER THE MUTCD MANUAL, LATEST EDITION

1"=200 SCALE







# Project Status Aerial Spraying of Invasive Species (September 2015) Prescribed Burns (Spring/Fall 2016)





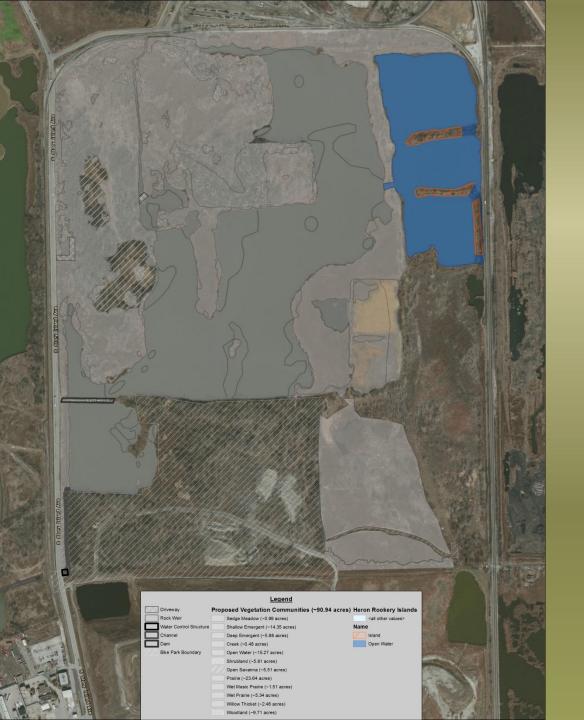


## **Project Status**

## Habitat Restoration Design (July 2015)



#### Wetland Communities



#### Heron Rookery



#### **Prairie Communities**





#### Slag Wetland



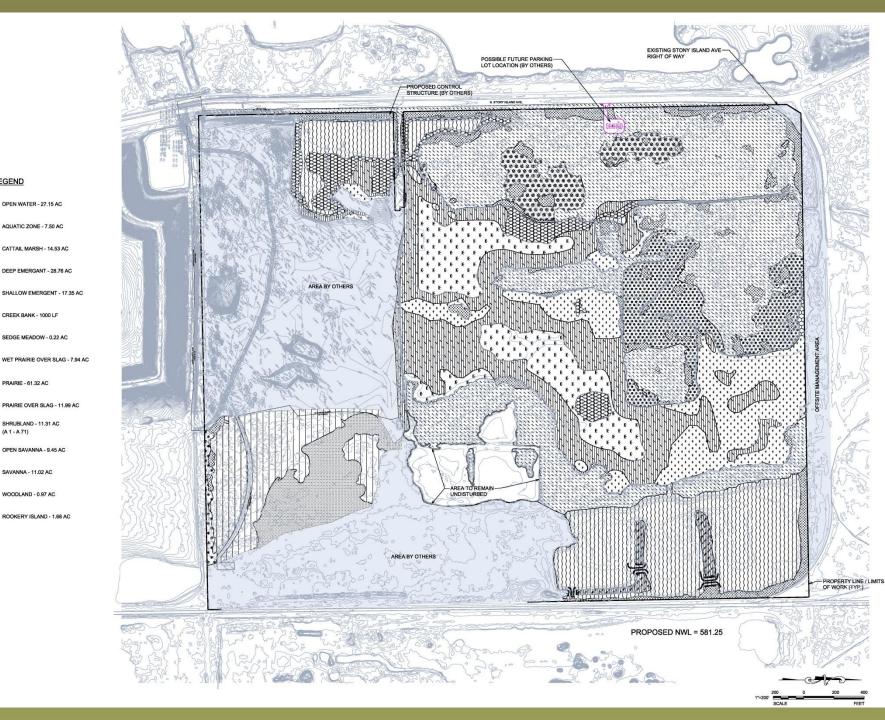
### Native Grass Prairie (Within Bike Park Trails)



#### Woodland & Savannah Communities



#### Shrub & Willow Thicket Communities



#### LEGEND

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#### **Project Partners:**

**Chicago Park District** 

**V3 Companies** 

The Wetlands Initiative

**Audubon Chicago Region** 

#### **Contributing Stakeholders:**

Alliance for the Great Lakes Bird Conservation Network Greencorps

IDNR Coastal Program

**The Field Museum** 

University of Illinois Chicago US Fish & Wildlife Service Argonne National Lab Chicago Audubon Society Hitchcock Design Group

**Openlands** 

**The Nature Conservancy** 

**Urban Wildlife Institute** 

**US Geological Survey** 

Forest Preserves of Cook County Illinois Department of Natural Resources Southeast Environmental Task Force Trails for IL

**US Forest Service** 

# Questions