

(_____) PARK

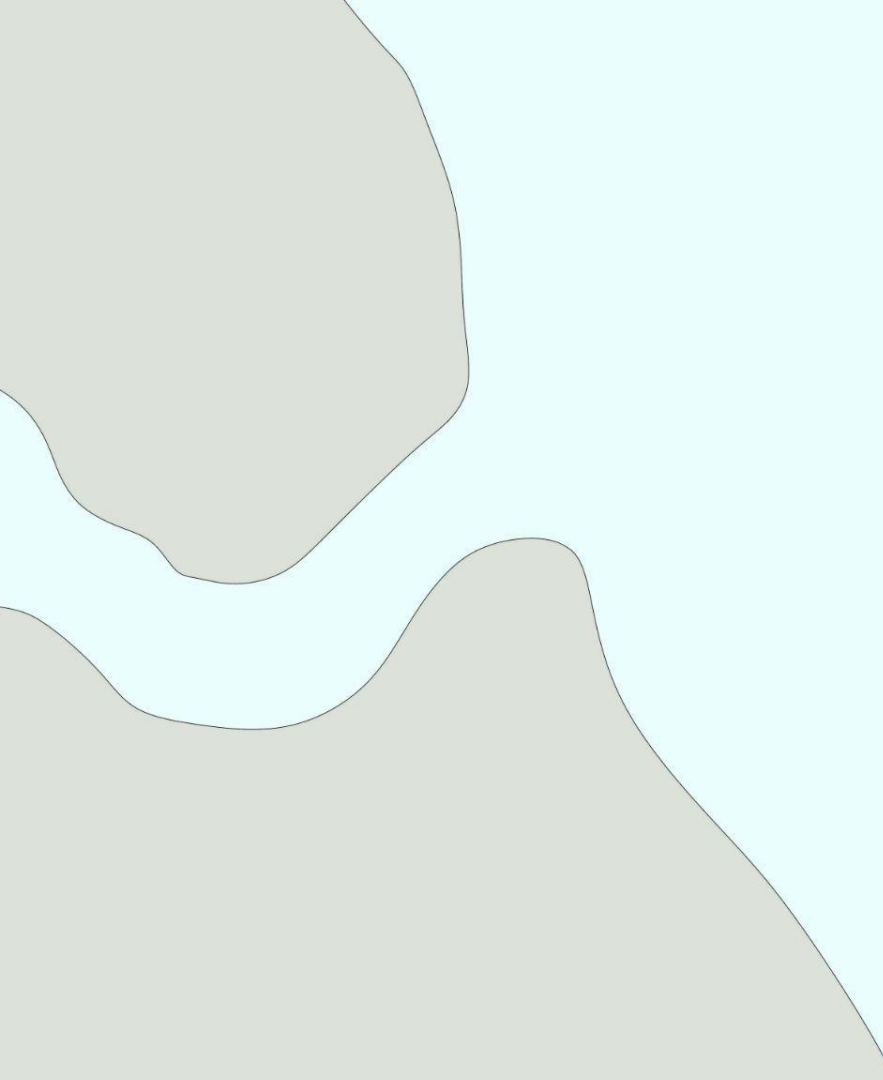
Landscape Architecture + Urbanism Program
Illinois Institute of Technology

Amanda Soto and Daniel Garczek
Professor Ron Henderson





FIRST, THE LAND



Pre-Industrial

The mouth of the Calumet River at Lake Michigan was a changeable shoreline of shifting sediments at the confluence of a slow river and a dynamic lake.



ILLINOIS BEACH STATE PARK
where the Dead River slowly flows into Lake Michigan
most closely resembles the pre-Industrial Calumet
River



Wet Prairies



Wetlands

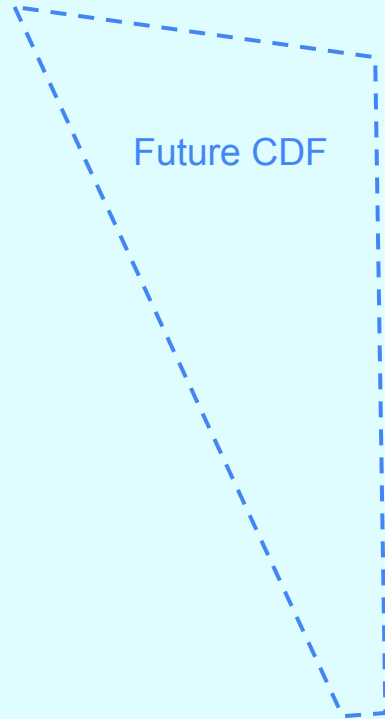
- Bog
- Panne
- Fens
- Marsh



Dunes



1870 (Chicago Fire was 1871)
Industrial development in the Calumet River area began around the 1870s, and by 1890 the western reach of the Grand Calumet River was heavily polluted with the waste of steel mills, foundries, a meat packing plant, and glue and cornstarch factories.



Calumet River, 1870s



1886

The Iroquios Iron Company is established on the south bank at the mouth of the Calumet River.

Future CDF

A map showing a light blue river (the Calumet River) flowing from the top left towards the bottom left. The river is bordered by grey land areas. A dashed blue line outlines a large, irregularly shaped area on the right side of the river, labeled "Future CDF". The text "1886" and "The Iroquios Iron Company is established on the south bank at the mouth of the Calumet River." is located in the top right corner.

Industrial Growth

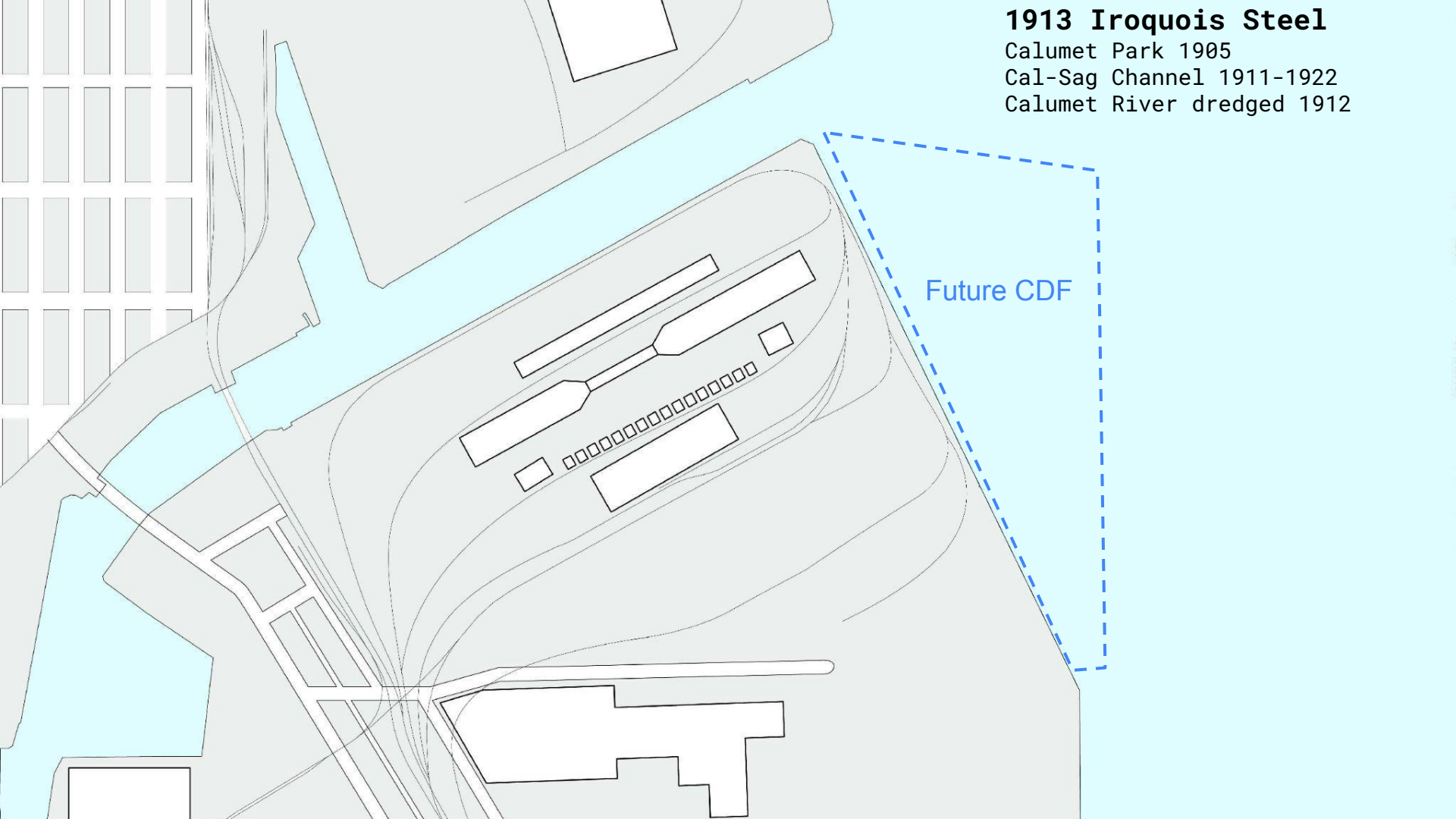


1913 Iroquois Steel

Calumet Park 1905

Cal-Sag Channel 1911-1922

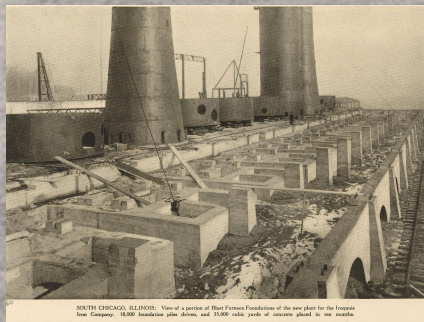
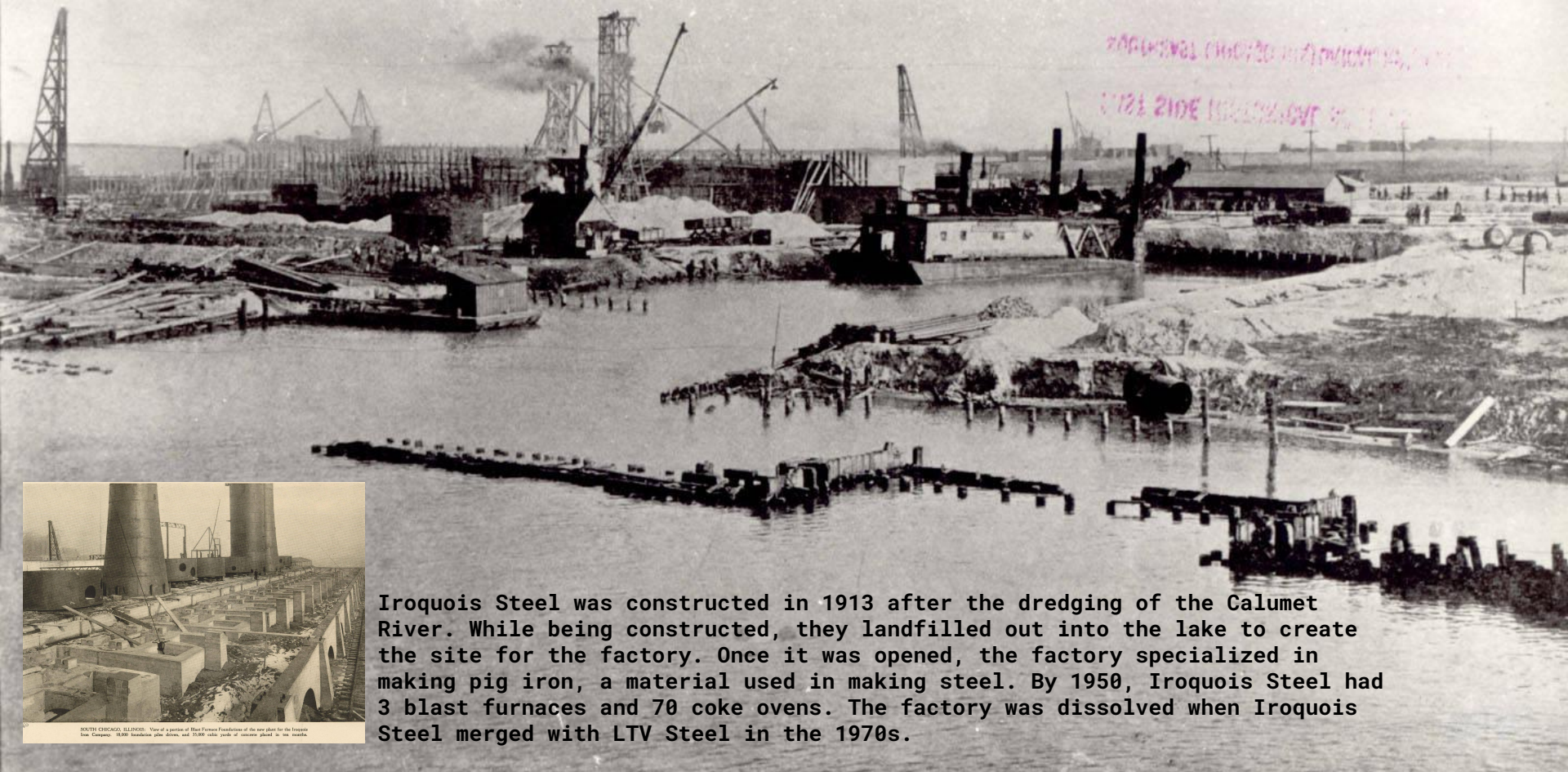
Calumet River dredged 1912



Future CDF

1912 Calumet River Dredged

[https://www.pullman-museum.org/pshs/sechsBySubject.php?subject=Iroquois Iron and Steel Company](https://www.pullman-museum.org/pshs/sechsBySubject.php?subject=Iroquois%20Iron%20and%20Steel%20Company)
<https://www.csu.edu/cerc/researchreports/documents/ChicagoSESideIndustrialHistory.pdf>



Iroquois Steel was constructed in 1913 after the dredging of the Calumet River. While being constructed, they landfilled out into the lake to create the site for the factory. Once it was opened, the factory specialized in making pig iron, a material used in making steel. By 1950, Iroquois Steel had 3 blast furnaces and 70 coke ovens. The factory was dissolved when Iroquois Steel merged with LTV Steel in the 1970s.

1905 Calumet Park

The park was designed by the Olmsted Brothers, opened in 1905, the fieldhouse was constructed in 1924, and it continued to expand until the 1930s.



CALUMET PARK

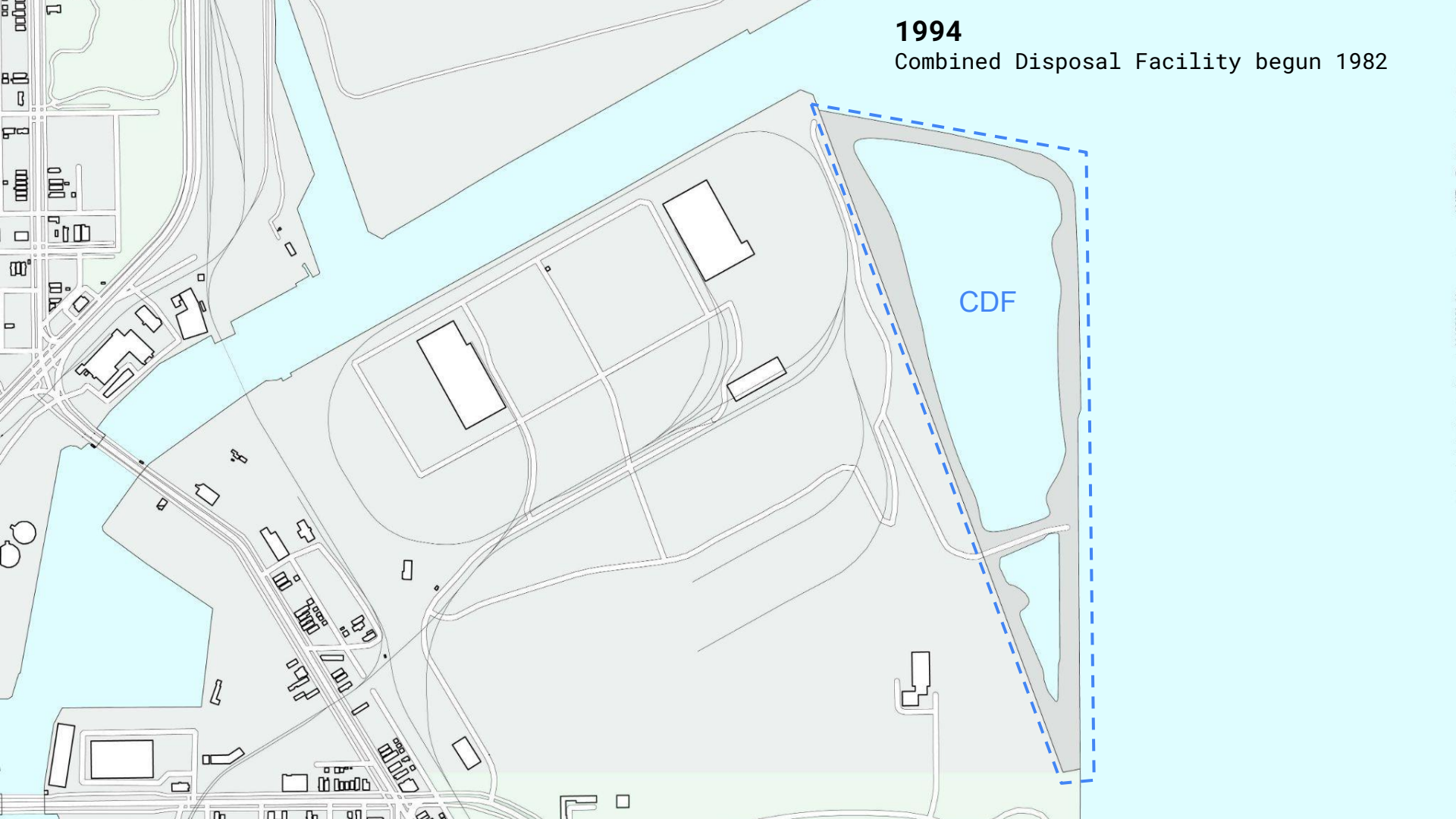


Sanborn Maps assembled

A series of Sanborn Maps providing more detailed information on buildings and rail lines are overlaid on a more generalized map of Iroquois Steel.

1994

Combined Disposal Facility begun 1982





Active Confined Disposal Facilities on the Great Lakes

US Army Corps of Engineers



Approximate # Years of Capacity Remaining

- Less than 5 years
- 5-10 years
- More than 10 years



NASCO 1984

North American Stevedoring Company's (NASCO) facility was constructed in 1984 at the Iroquois Iron shipping port.

Calumet Park

CDF

NASCO

Calumet River



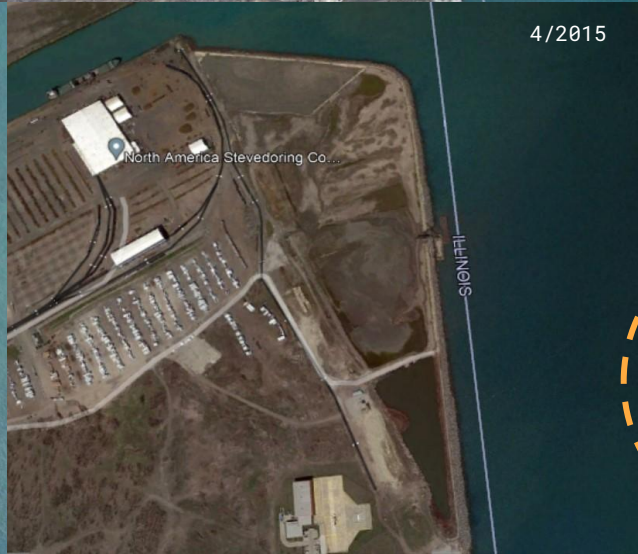


NASCO handles bulk solid materials such as salt, steel, lumber, blast furnace iron, and ferromanganese.

The facility had been contacted by the Chicago Department of Health for releasing toxic levels of ferromanganese alloy dust into the air.

It wasn't until EPA investigated the facility in 2014 that they improved their output and ventilation within the buildings.

https://www.chicago.gov/content/dam/city/depts/cdph/environmental_health_and_food/PetCoke_Public_Comments/PubComNRDCSETFComonNAStevedoringVarReq922014.pdf
https://www.chicago.gov/content/dam/city/depts/cdph/InspactionsandPermitting/CDPHResp_NASCOReq_Reconsideration_7_182018.pdf
https://www.chicago.gov/content/dam/city/depts/cdph/environmental_health_and_food/VarReqfrmNorthAmericanStevedoring9301SKreiterAve.pdf
<https://www.epa.gov/il/north-american-stevedoring-company>



We will vision, dream, and create plans for this promised park!

Next to Calumet Park sits a Confined Disposal Facility (CDF) that stores the toxic sediment dredged from the Calumet River. This dump, at the point where river and lake meet, has been promised to be transformed into a park.

Scan the QR code to register for the online lecture!



Evidence of significant expansion of shipping container storage since 2015 that encroaches into the former woodland.

The potential area for the park is greatly diminished from the **LAST FOUR MILES CONCEPT PLAN** from July 4, 2009.





Present Day

Drying dredge pad
(beneficial use)

Drying dredge pad
(confined disposal)

Illinois-Indiana
state boundary

Dewatering pond

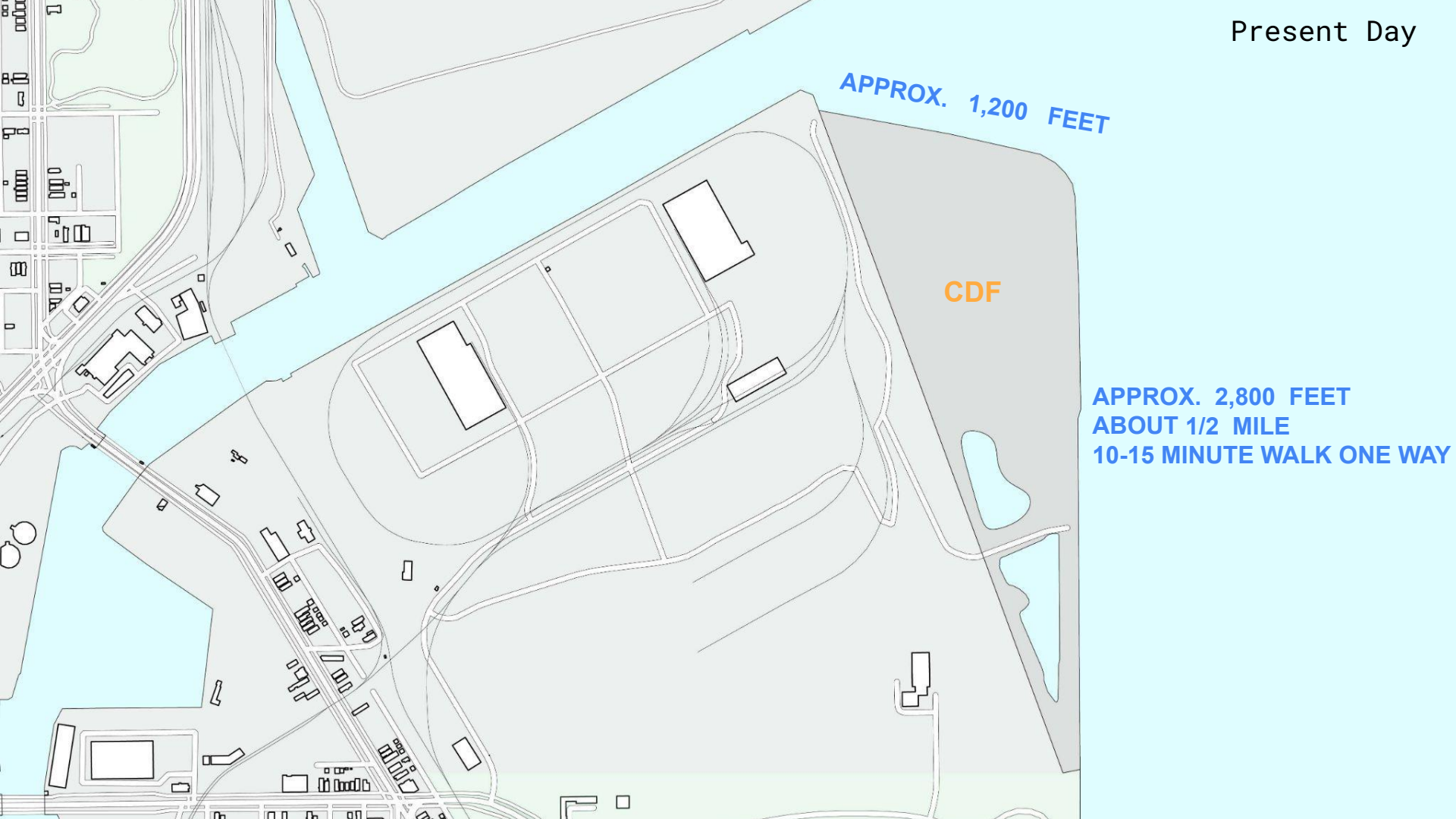
Very narrow
connection to
Calumet Park

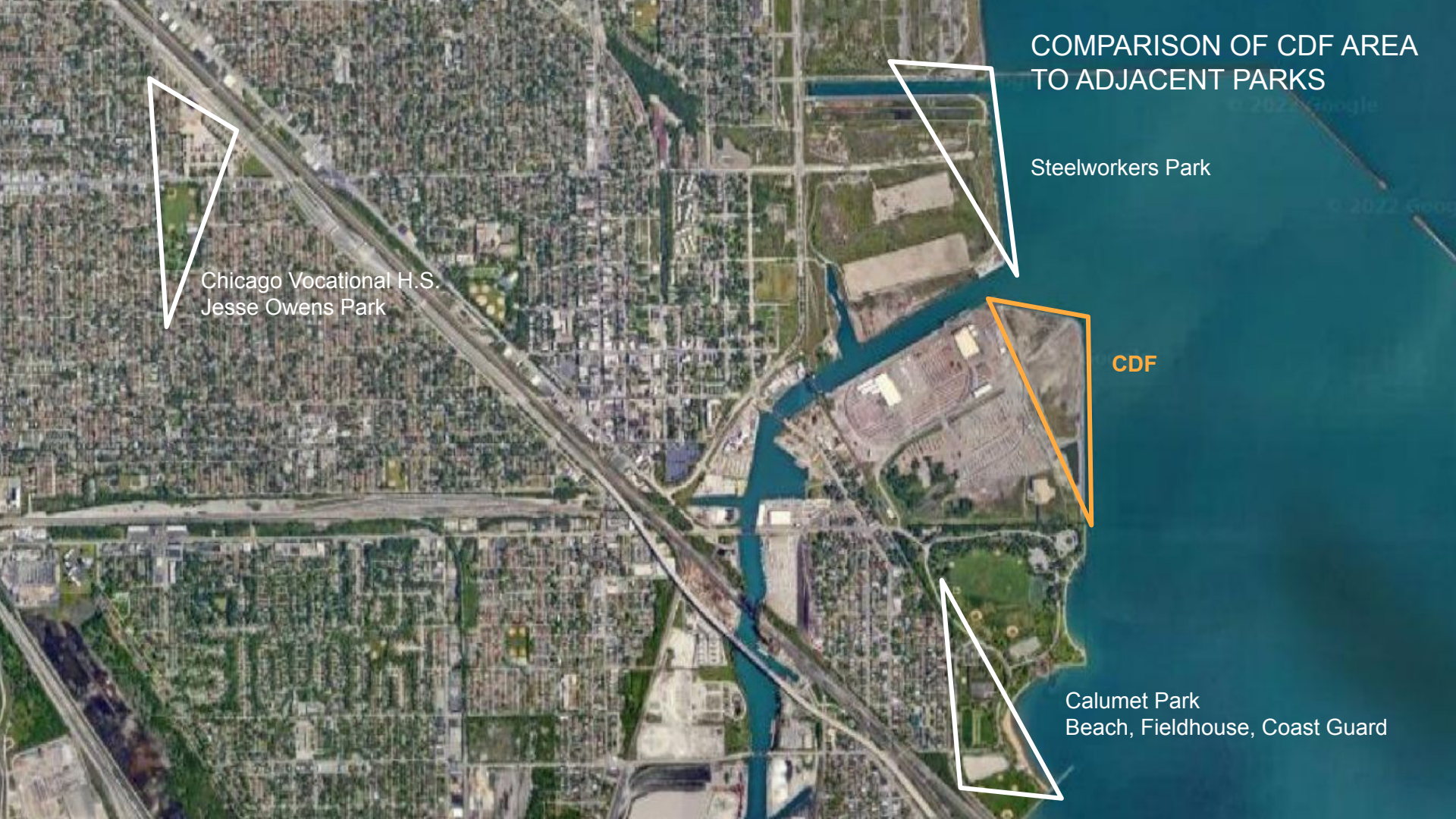
Present Day

APPROX. 1,200 FEET

CDF

APPROX. 2,800 FEET
ABOUT 1/2 MILE
10-15 MINUTE WALK ONE WAY





COMPARISON OF CDF AREA TO ADJACENT PARKS

Chicago Vocational H.S.
Jesse Owens Park

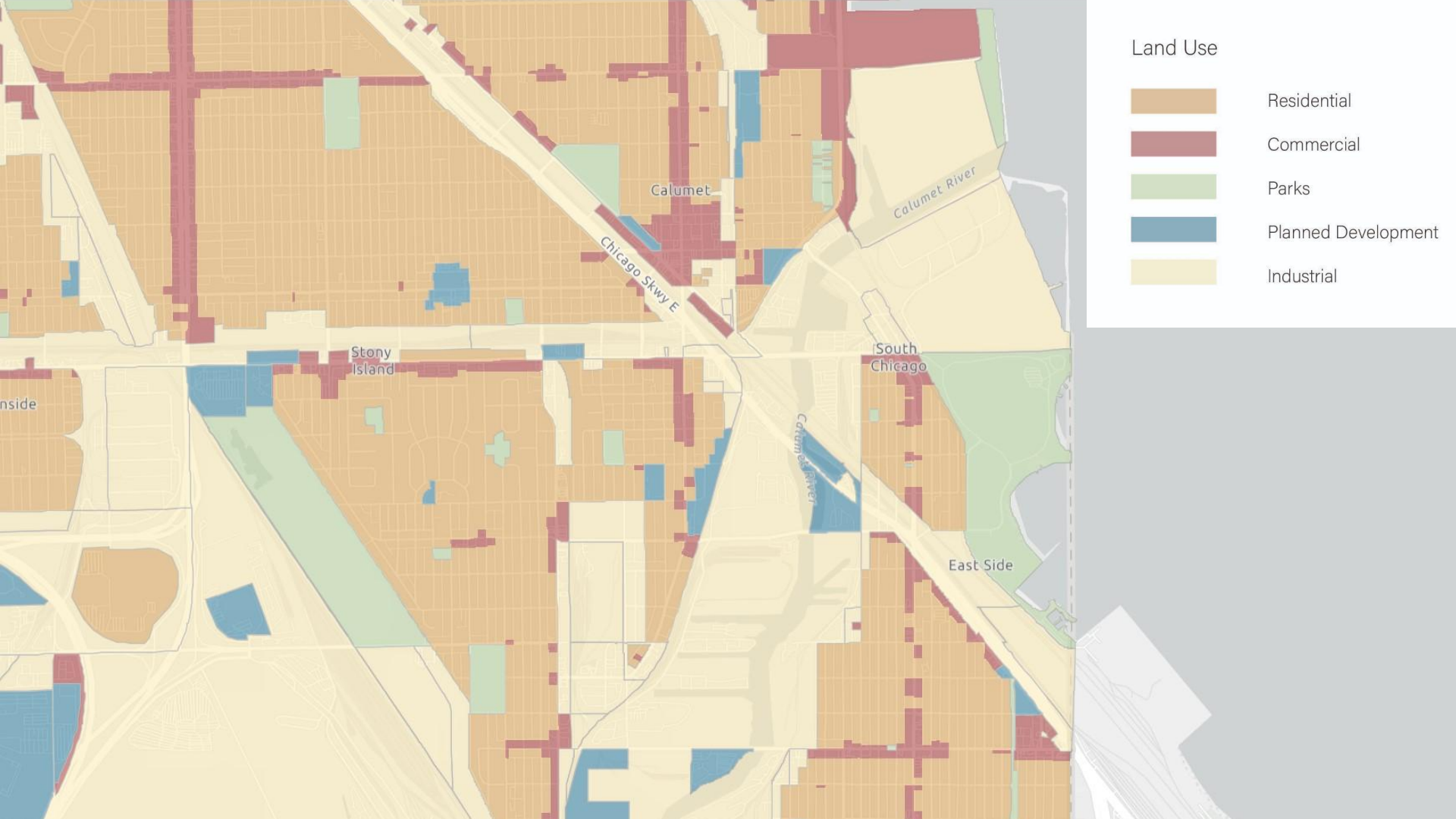
Steelworkers Park

CDF

Calumet Park
Beach, Fieldhouse, Coast Guard

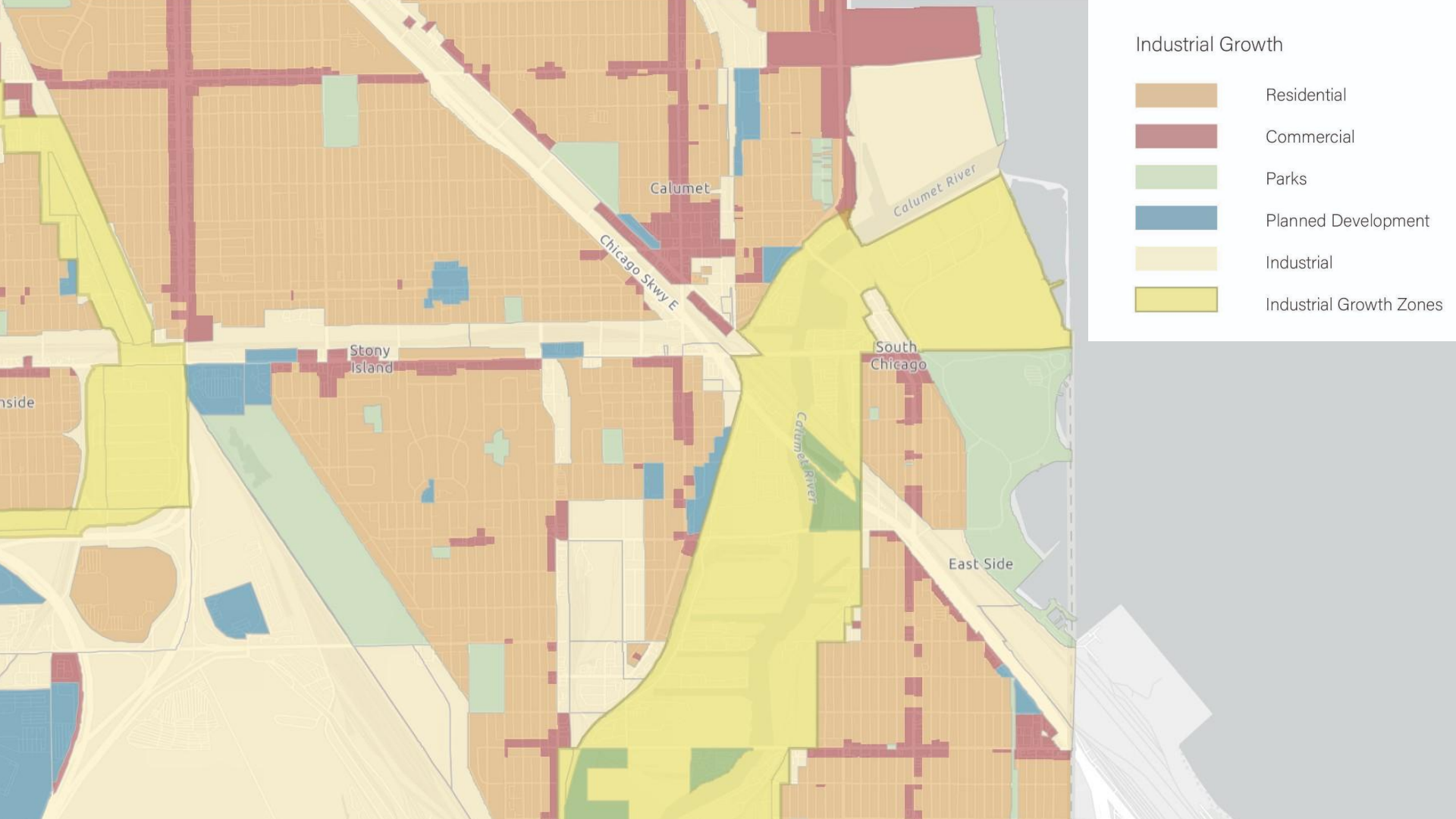


DEMOGRAPHICS






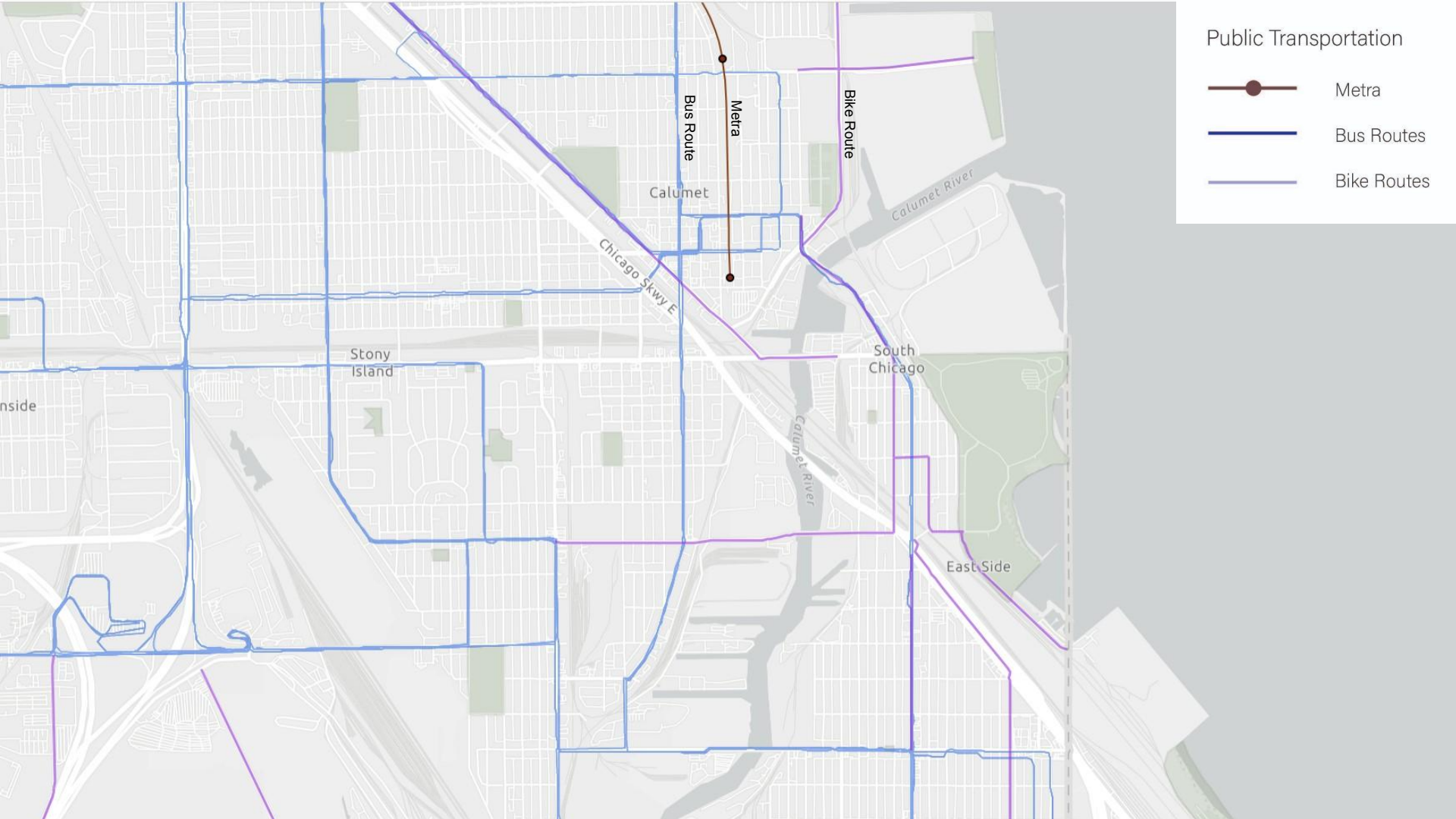
Land Use

-  Residential
-  Commercial
-  Parks
-  Planned Development
-  Industrial

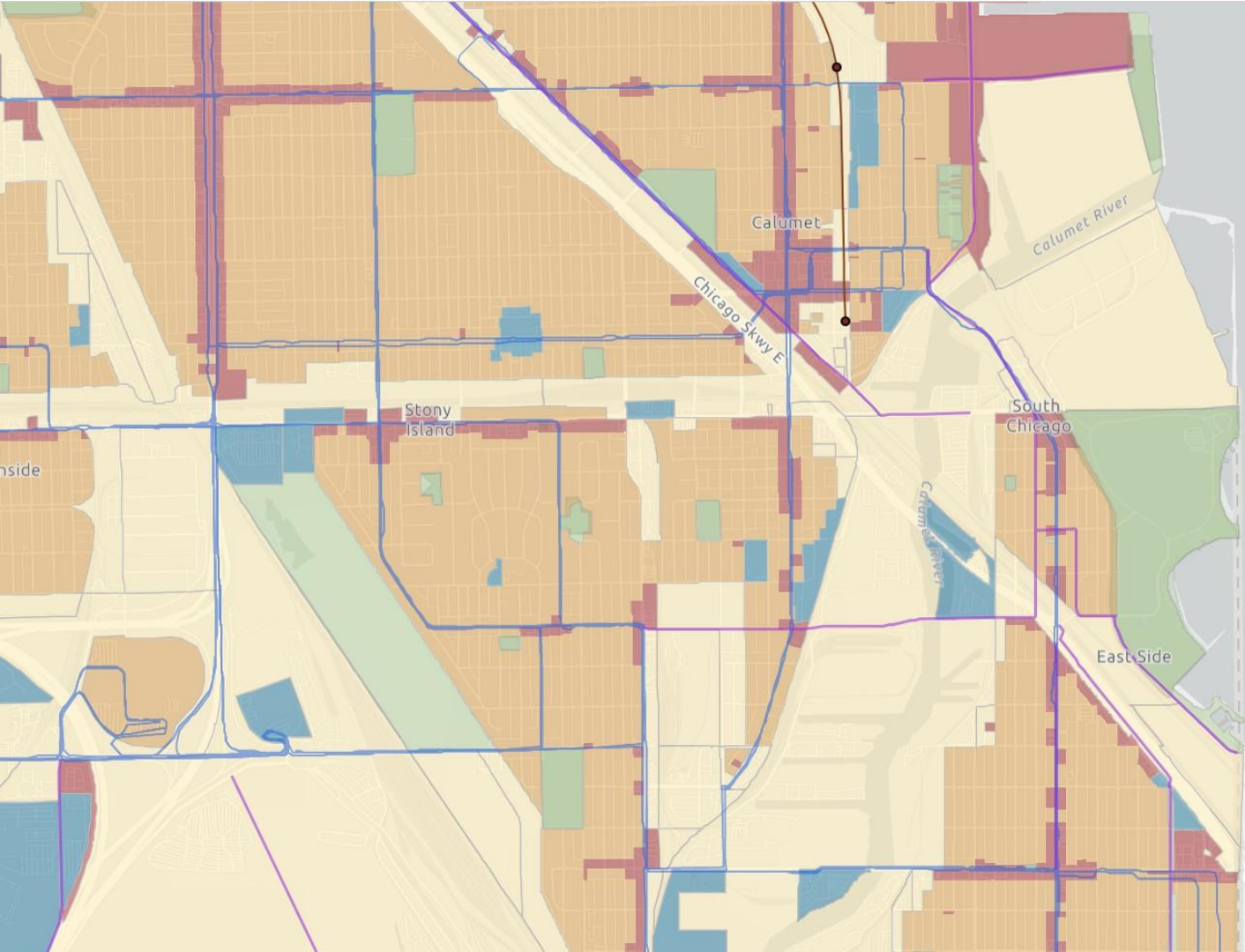


Public Transportation

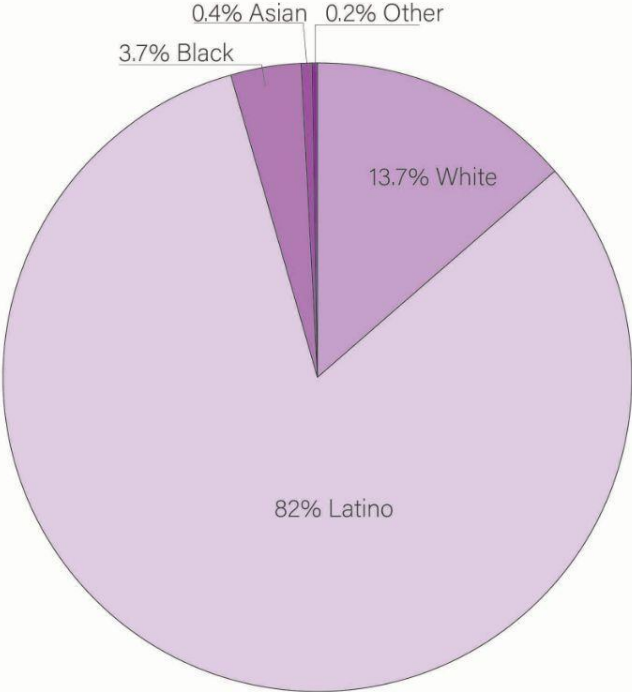
-  Metra
-  Bus Routes
-  Bike Routes



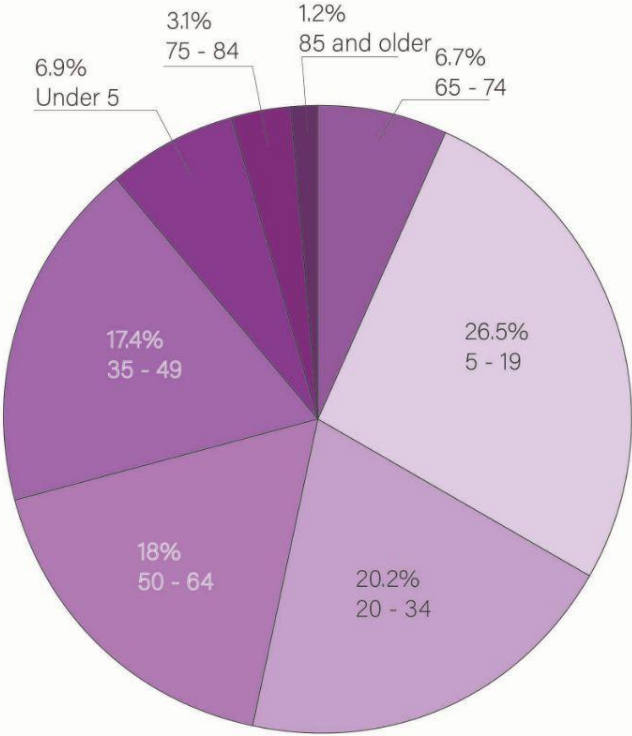
Transportation Through Community Zones



Race and Ethnicity



Ages



An aerial photograph of a beach. The foreground is covered in a dense layer of small, light-colored shells and pebbles. The background is a mix of dark, smooth rocks and lighter sand. The word "MATERIALS" is overlaid in the center in a bold, orange, sans-serif font.

MATERIALS

Site Visit

Granitic pebbles and sand

Quagga and Zebra mussels

Industrial Slag

A mix of indigenous rocks,
invasive lake species,
and industrial waste.



Steel Slag

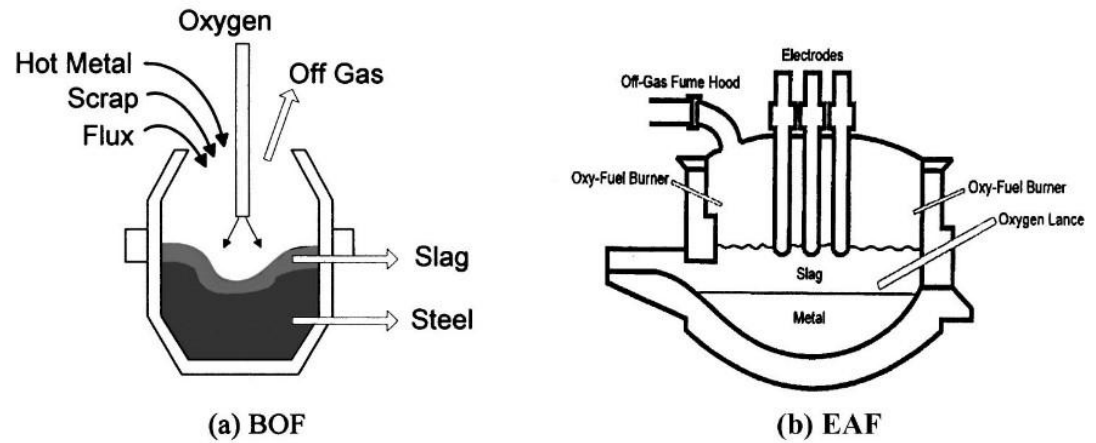


Fig. 1. Schematic illustration of basic oxygen furnace and electric arc furnace

Slag is the by product of converting iron to steel. In basic oxygen furnaces (BOF) use hot metal from blast furnaces and blasts a high pressure of oxygen to collect and remove impurities such as slag. Electric arc furnaces reheat only scrap material and is the more hazardous of the two. The chemical composition of slag depends on which furnace it was made in. Chromium and Vanadium are the two most toxic metals found in slag (if found in large quantities). Studies have shown that Vanadium is harder to remove.

PRECEDENTS

4 NATIVE ECOSYSTEM MODELS

4 NATURE-INTENSIVE PARKS

4 HUMAN-INTENSIVE PARKS



PINHOOK BOG



ORLAND GRASSLAND



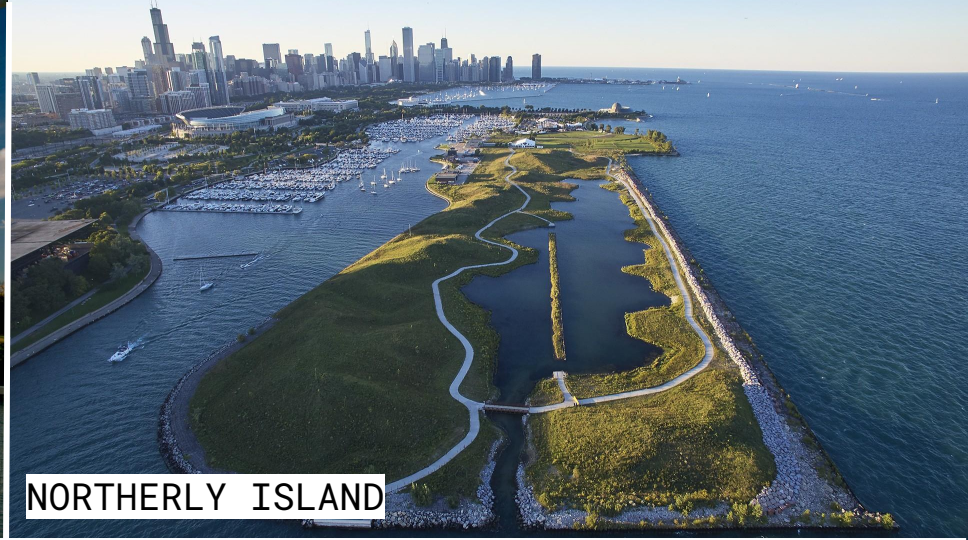
ILLINOIS BEACH STATE PARK



GREAT MARSH



OLYMPIA FIELDS PARK



NORTHERLY ISLAND



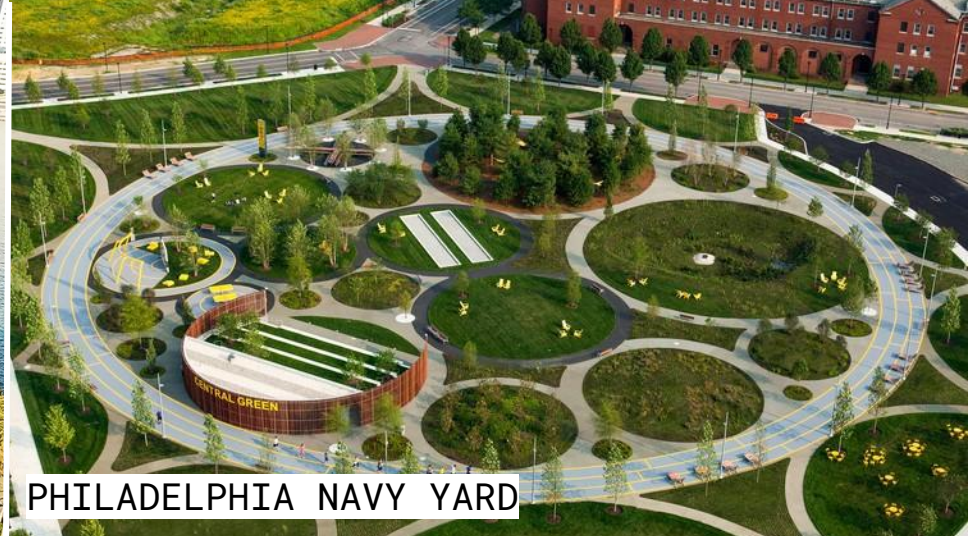
STEELWORKERS PARK



WEST 8 SCHELDT



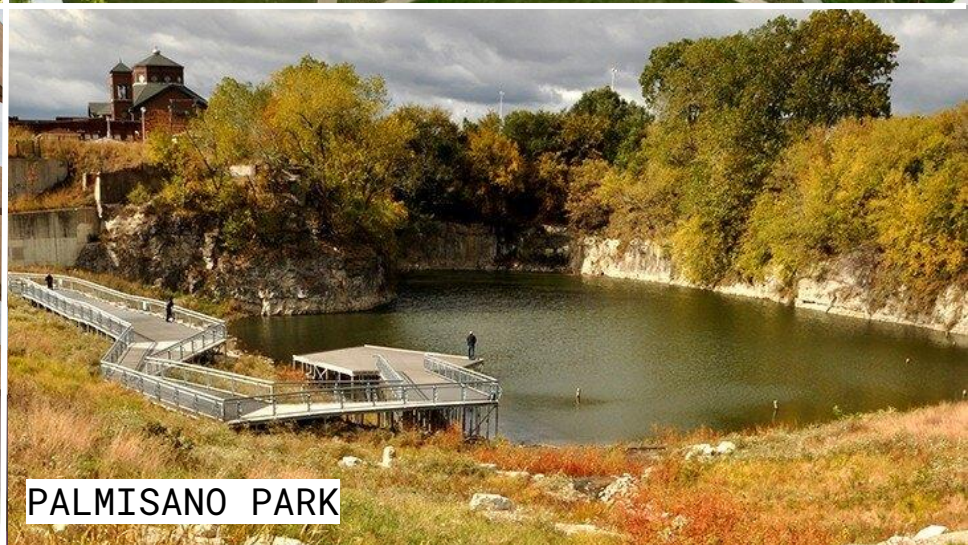
MILTON LEE OLIVE PARK



PHILADELPHIA NAVY YARD



LINCOLN PARK NATURE CENTER

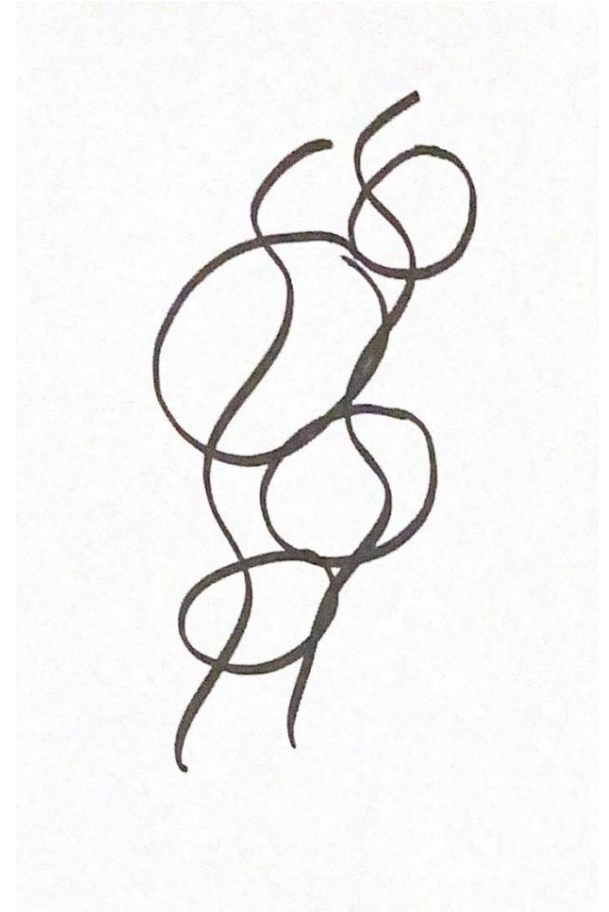


PALMISANO PARK

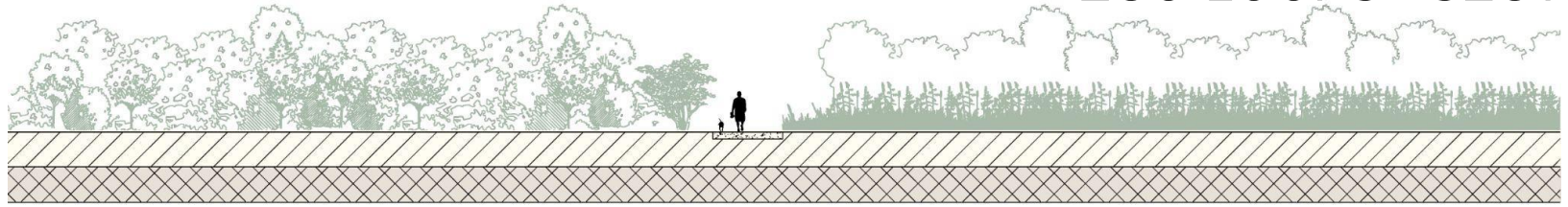
THREE SCENARIOS

Daniel Garczek

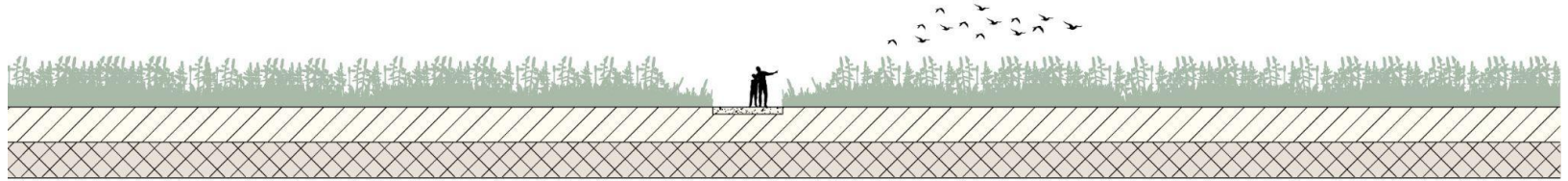
ECO-LOOPS - SITE PLAN



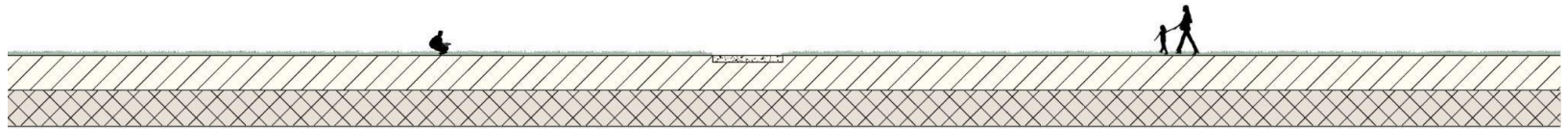
ECO-LOOPS - SECTIONS



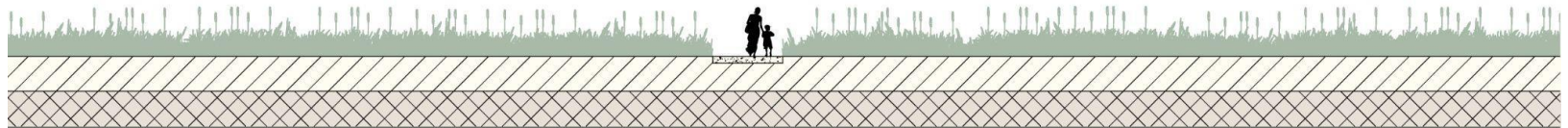
THICKET



PRAIRIE

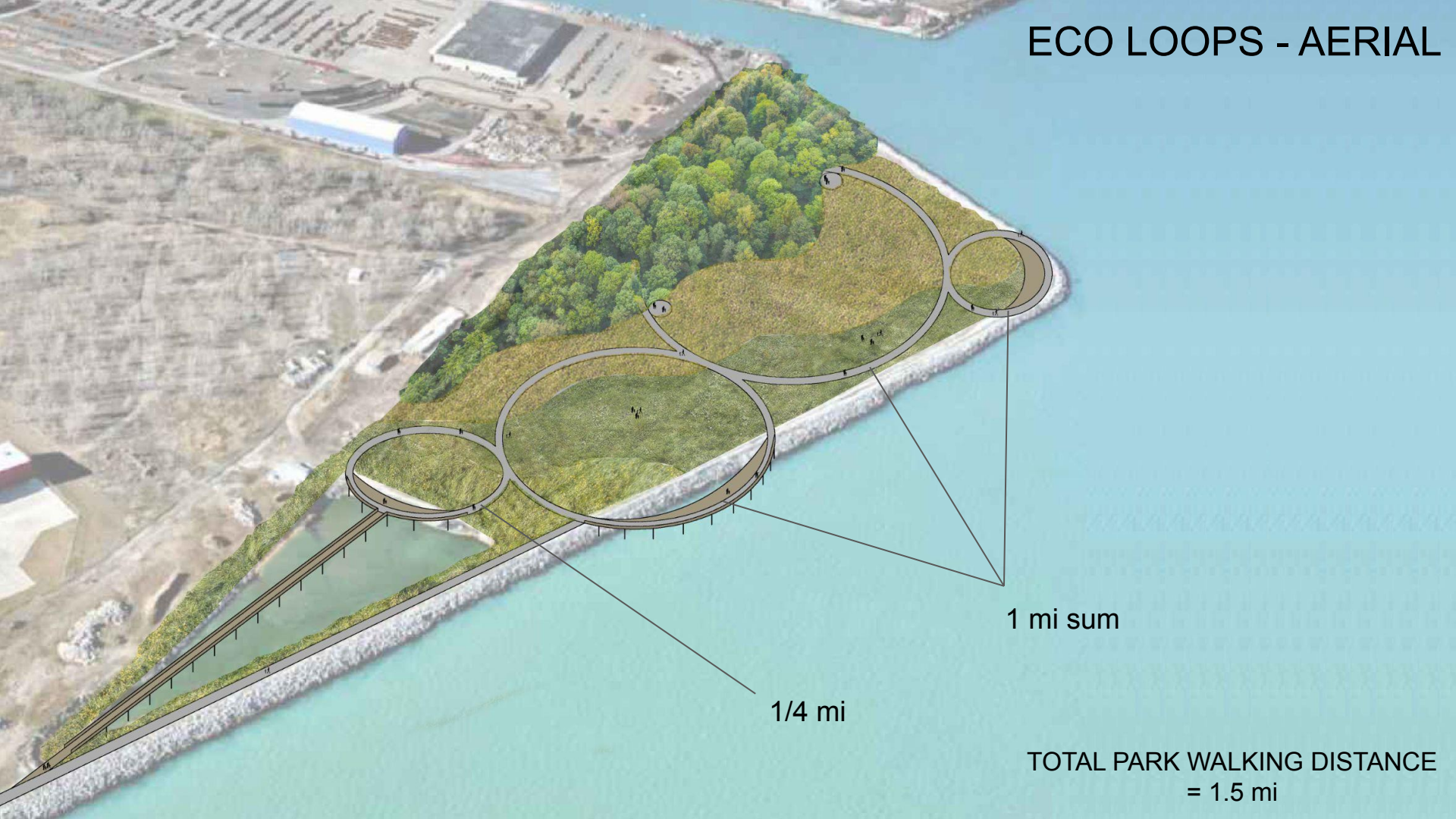


GRASS FIELD



WETLAND

ECO LOOPS - AERIAL

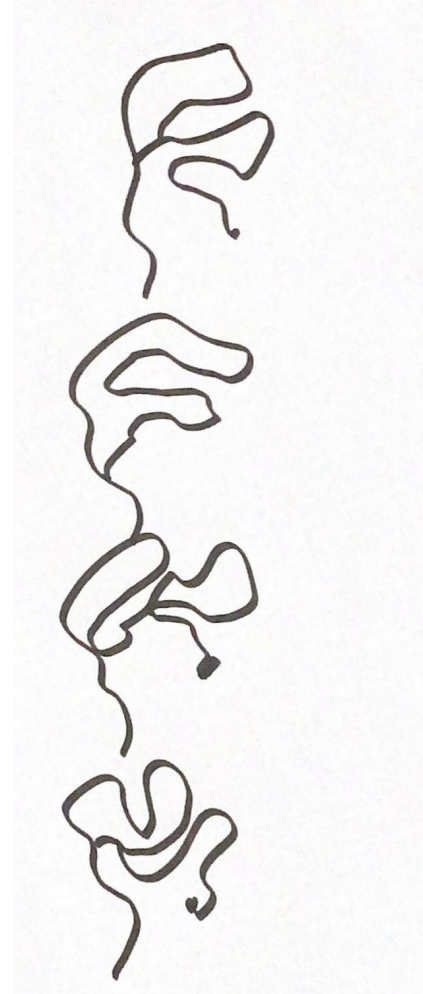


1 mi sum

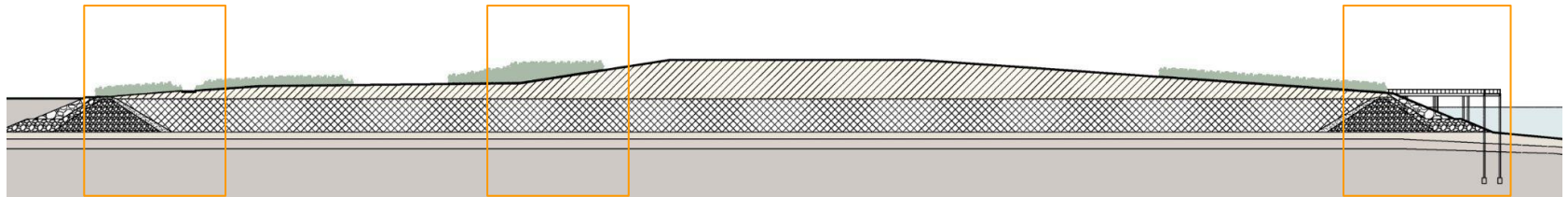
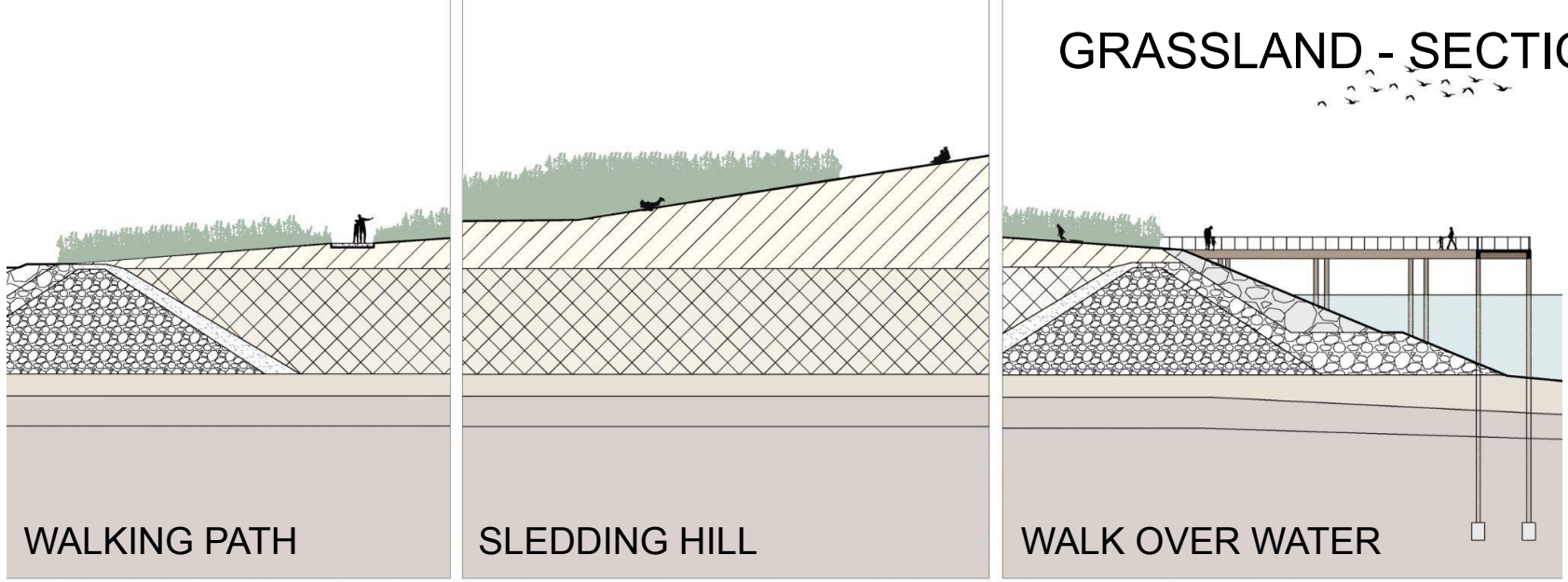
1/4 mi

TOTAL PARK WALKING DISTANCE
= 1.5 mi

GRASSLAND - SITE PLAN



GRASSLAND - SECTIONS

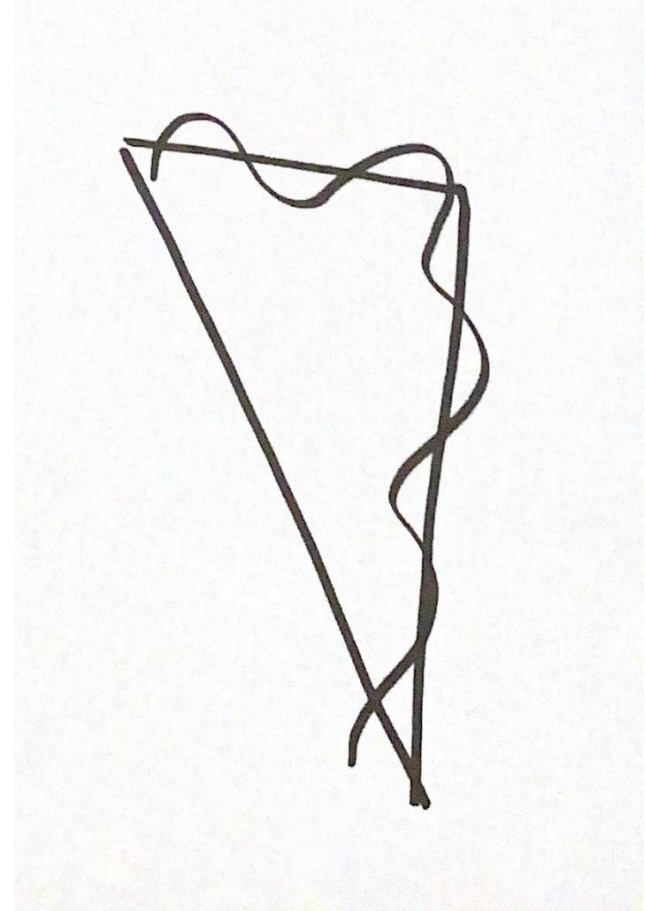


GRASSLAND - AERIAL

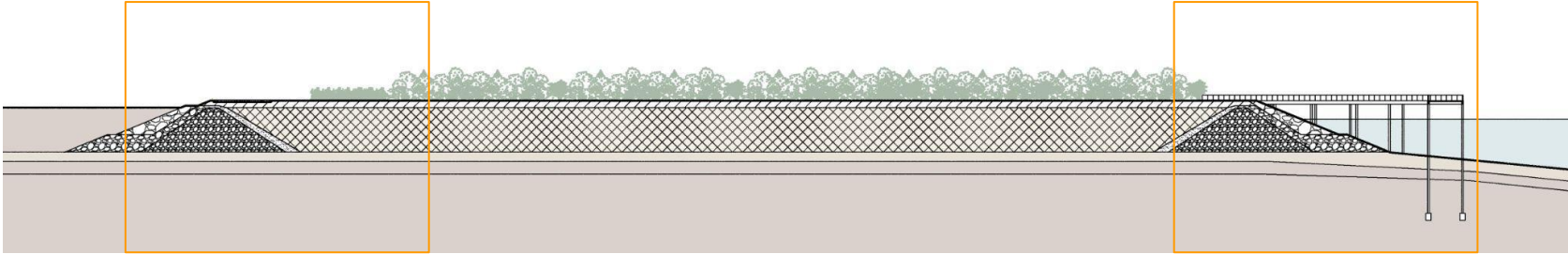
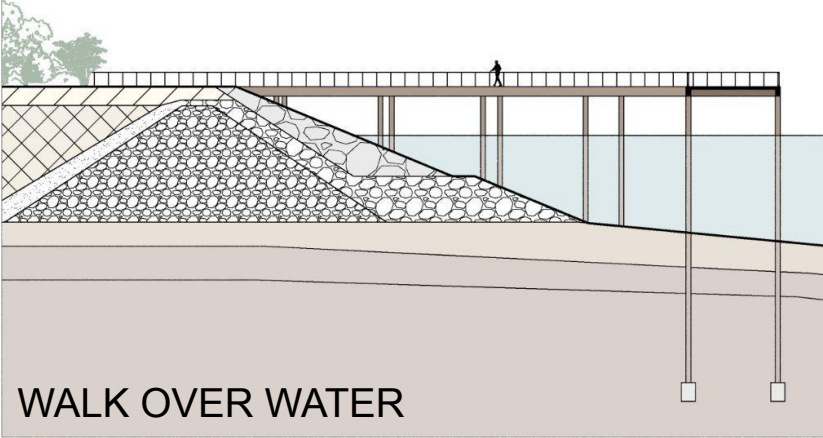
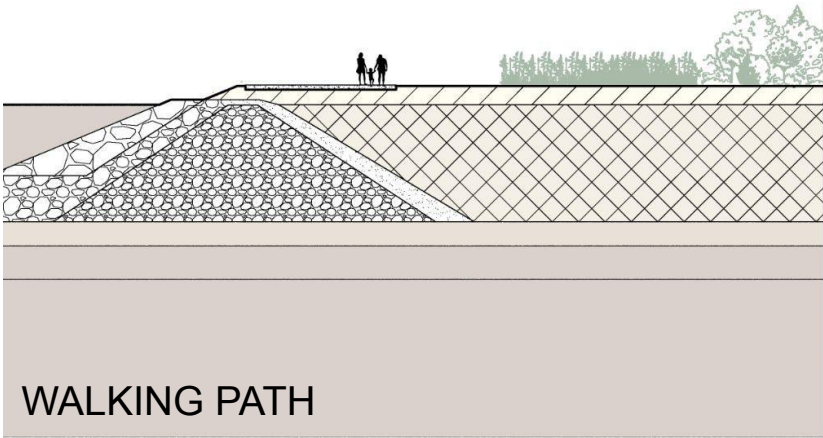


SLEDDING HILL

ACTIVE EDGE-SITE PLAN



ACTIVE EDGE - SECTIONS



ACTIVE EDGE - AERIAL



THREE SCENARIOS

Amanda Soto

Calumet Dunes

Perspective Progression of Design



First Iteration

Idea: A high density park with loose circulation so people could experience the park how they choose.

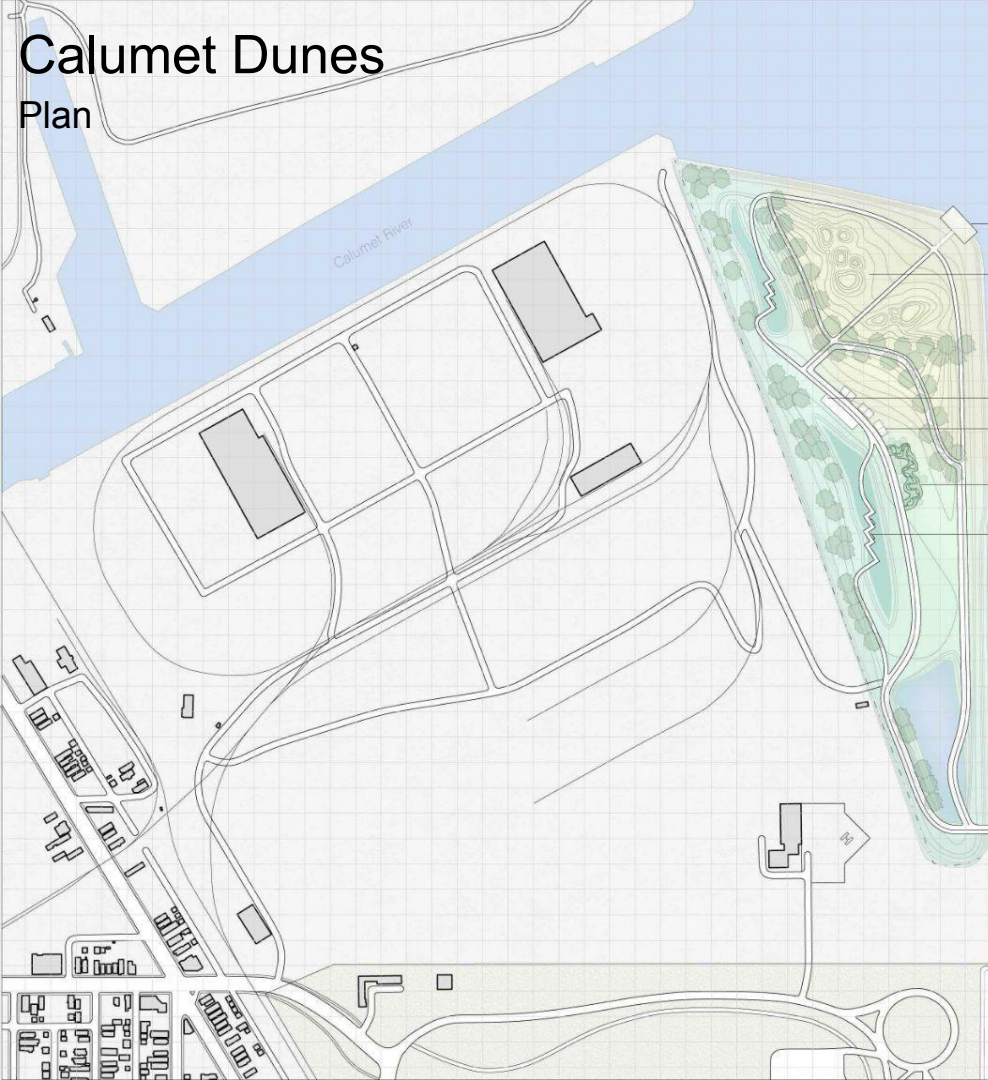


Current Design

Grove of Cottonwood that provides shade and marks the transition between the dune ecosystem to the prairie ecosystem.

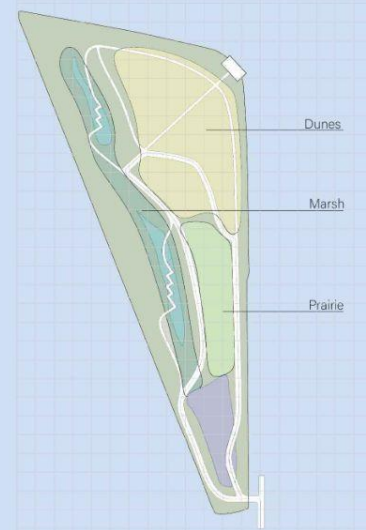
Dune ecosystem maintains a loose circulation pattern.

Calumet Dunes Plan

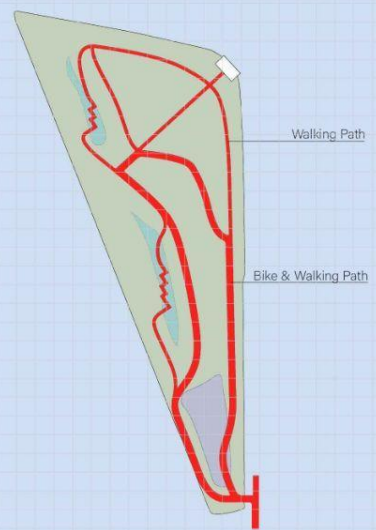


- Event Venue
- Dune Beach
- Picnic Seating
- Beach Volleyball
- Mini Golf Course
- Marsh Overlook
- Fishing Dock
- Bridge Connection

Ecosystem Diagram
 Three main Ecosystems:
 Dunes at the North East corner
 Marsh along the West border
 Prairie along the South end



Circulation Diagram
 Bike path loops around prairie and marsh.
 Walking paths with programming located in the middle of the site
 Event venue at North East corner accessed by walking paths.



Calumet Dunes

Section



Ecology within the Park

Trees

- Cottonwood
- Black Oak
- Jack Pine

Grasses

- Little Bluestem
- Marram Grass
- Woodland Sedge



Shrubs

- Viburnum

Herbaceous Plants

- Milkweed
- Wild Geraniums
- Asters



Eco-Lab

Perspective Progression of Design



First Iteration

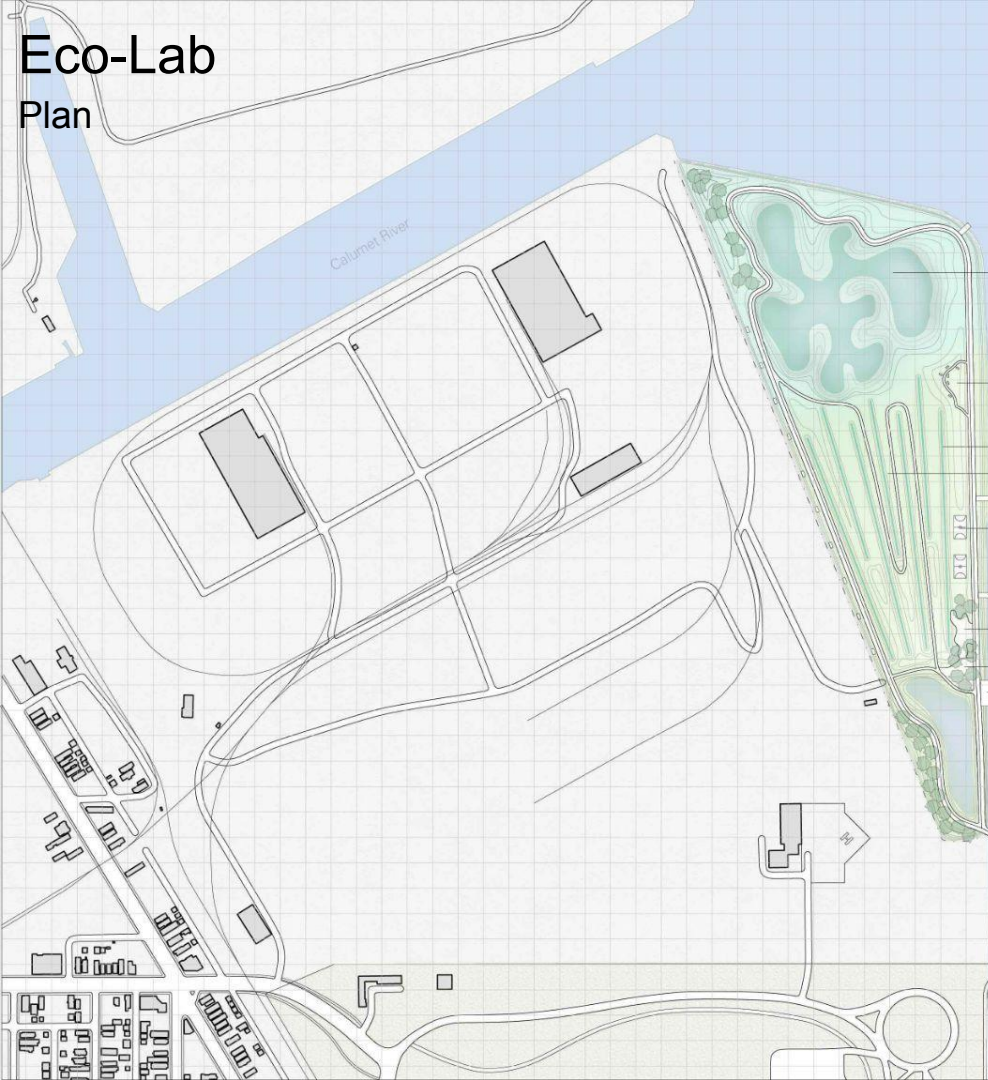
Idea: A winding path park that curved around native habitats of endangered species who have been on decline.



Current Design

A park that preserves the native habitat of shorebirds and pollinators. Maximizes the water's edge so shorebirds have more space to nest. People can view from afar.

Eco-Lab Plan



Indiana
Illinois

Calumet River

Shorebird Swamp

Sculpture Garden

Channels

Pollinator Prairie

Basketball Court

Fishing Dock

Exploration Area

Picnic Seating

Education & Preservation Center

Winding Bridge

Lake Overlook



Seed Distribution

The Pollinator Prairie has shallow channels that stay damp. Seed distributor stations located along the West side of the site let seeds disperse in the wind across the site.



Channels

Seed Stations

Circulation Diagram

Bike path loops around the perimeter of the park. More intimate walking paths meander through the center of the park. Program heavy boardwalk on along the East side border.

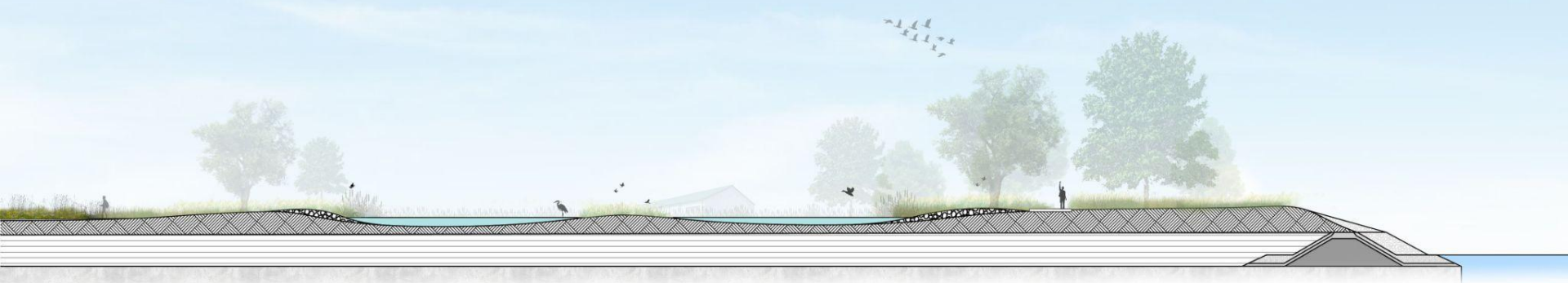


Bike Path

Walking Path



Eco-Lab Section



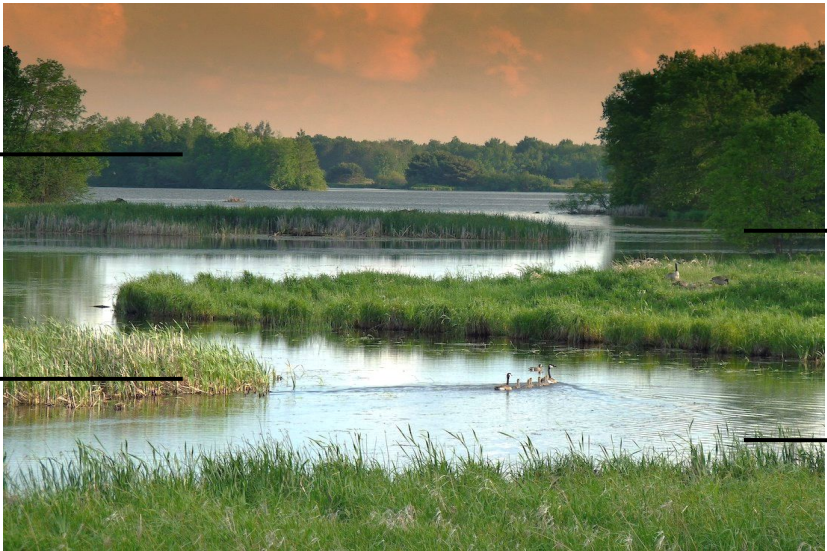
Ecology within the Park

Trees

- Cottonwood
- Swamp White Oak

Grasses

- Little Bluestem
- Prairie Dropseed
- Switch Grass

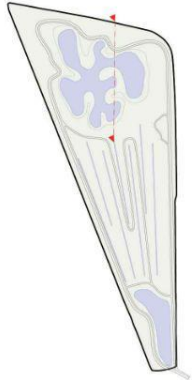


Shrubs

- Buttonbush
- Blueberry
- Raspberry

Herbaceous Plants

- Skunk Cabbage
- Blue Flag Iris
- Joe-pye-weed



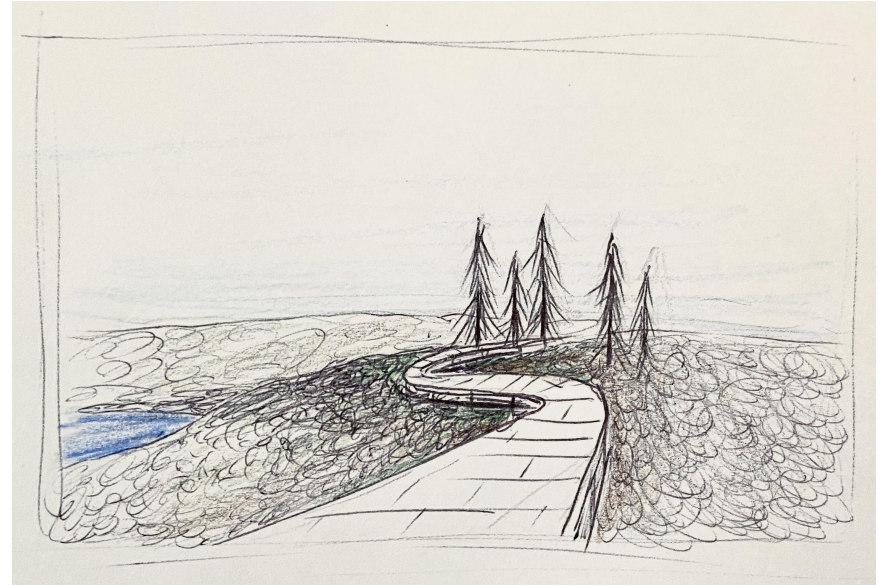
Iroquois Bog

Perspective Progression of Design



First Iteration

Idea: An elevated boardwalk park that restricted the area where people could walk.

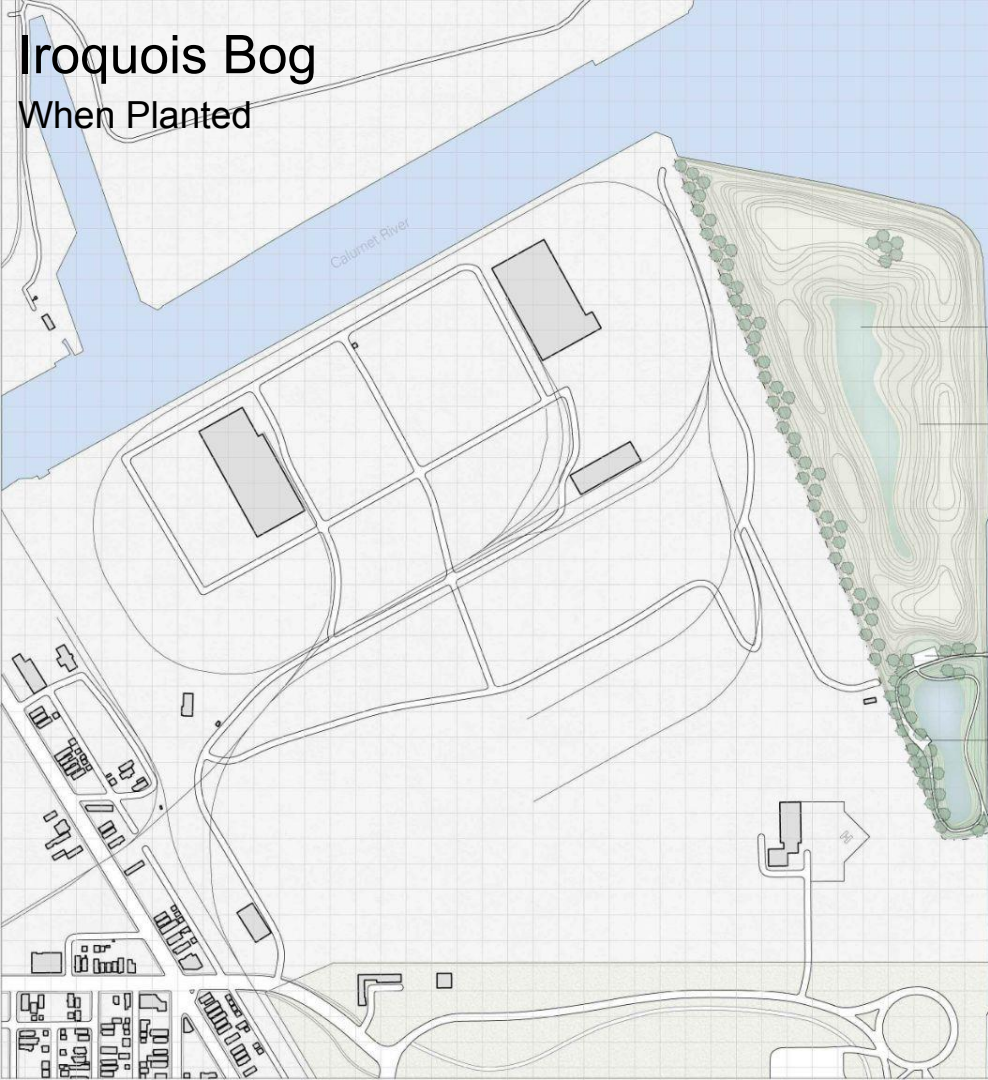


Current Design

A man made bog park that has stages to its development as the bog forms. Elevated walkway added after bog has settled.

Iroquois Bog

When Planted



Indiana
Illinois

Pinhook Bog Size Comparison
Located in La Porte, IN is part of the Indiana Dunes National Park.
Pinhook bog is a bit larger than the CDF site and has a East West orientation.

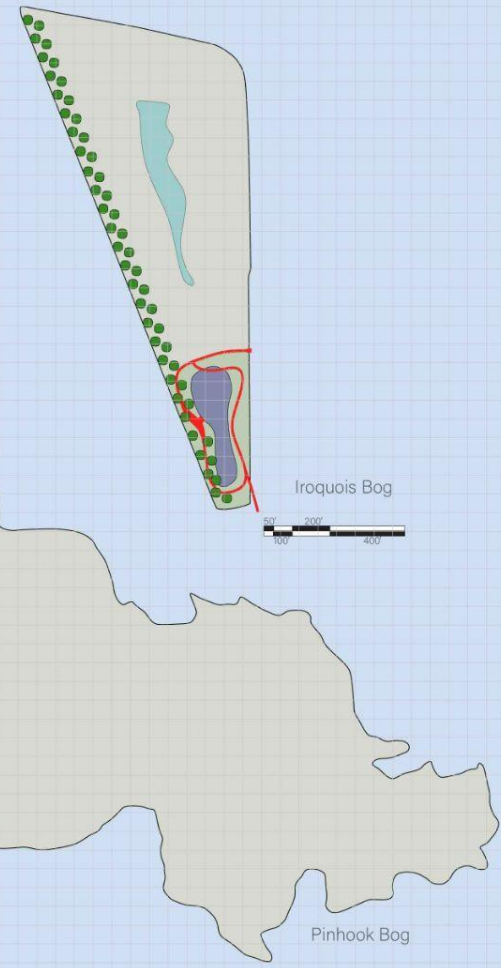
Stagnant Lake

Bog

Education Center

Overlook

Bridge Connection



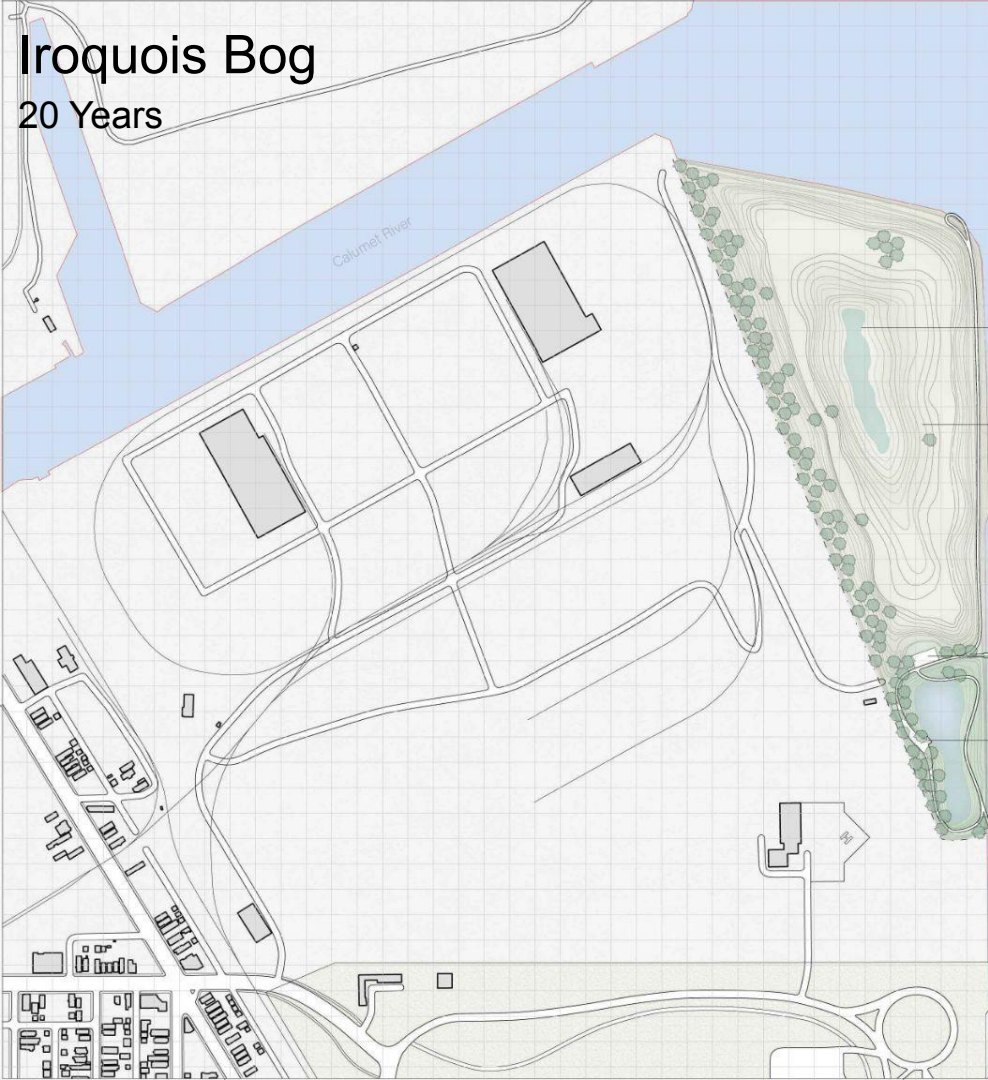
Iroquois Bog



Pinhook Bog

Iroquois Bog

20 Years



Indiana
Illinois

Acidity Level Diagram

Slag found in the Chicago / Gary area neutralizes acidity. By placing slag around the perimeter of the bog, more common plants can inhabit this area while the center of the bog remains acidic.



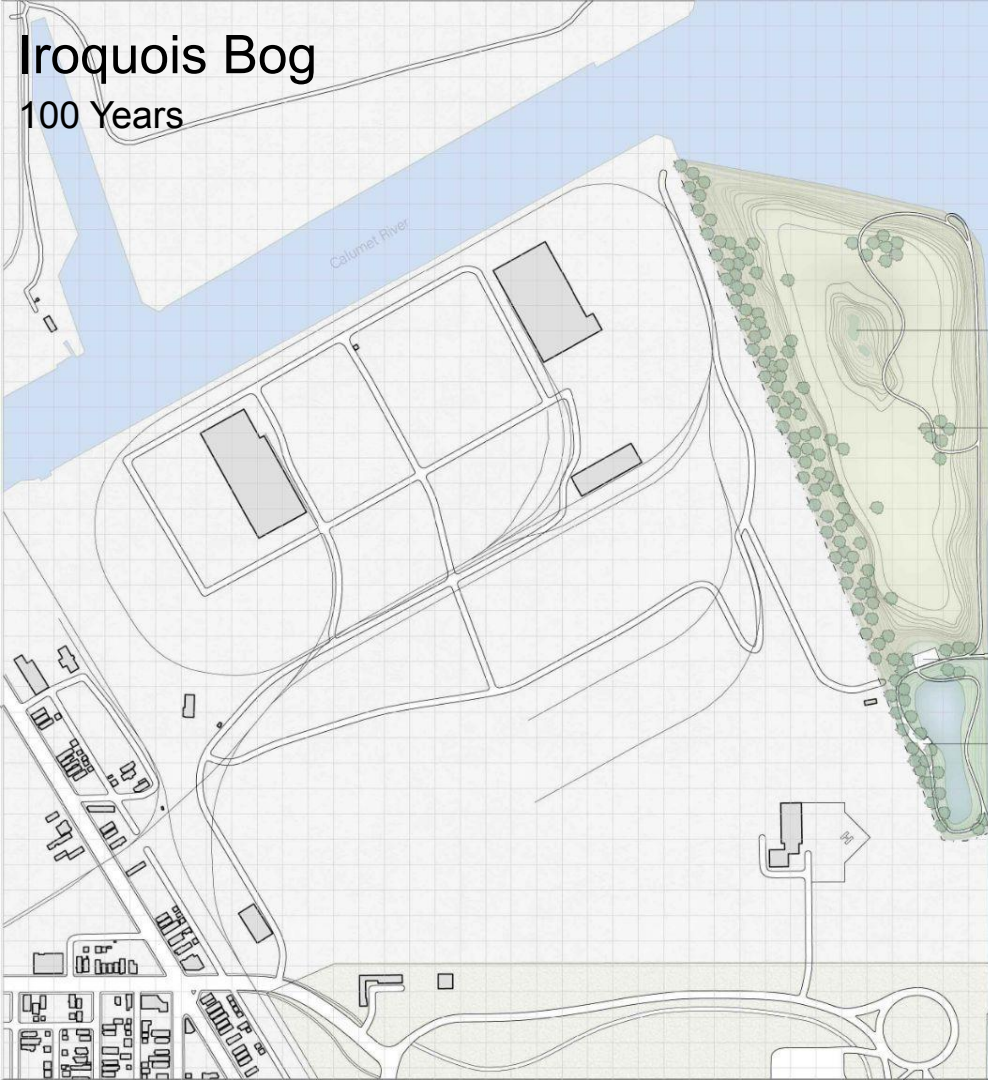
Circulation Diagram

Walking path extended to the corner of the park and hugs the perimeter tightly to avoid disturbing the bog.



Iroquois Bog

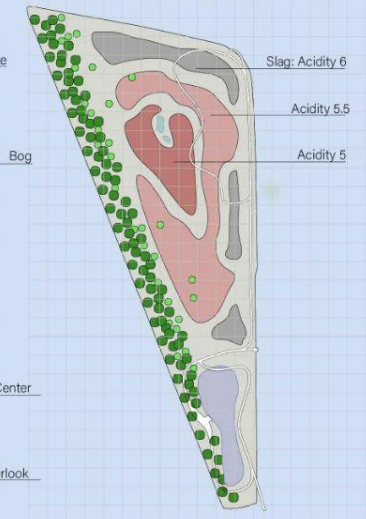
100 Years



Indiana
Illinois

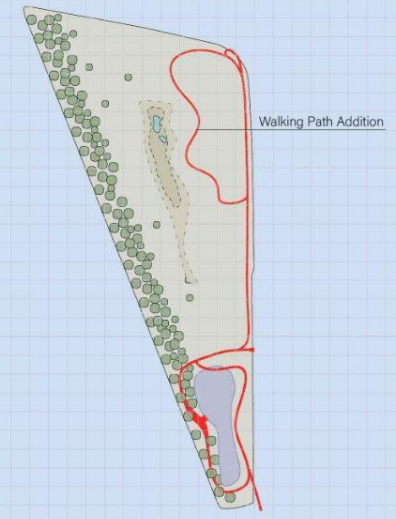
Acidity Level Diagram

High acidity levels continue to spread within the center of the bog creating the habitat for rare and endangered plants.



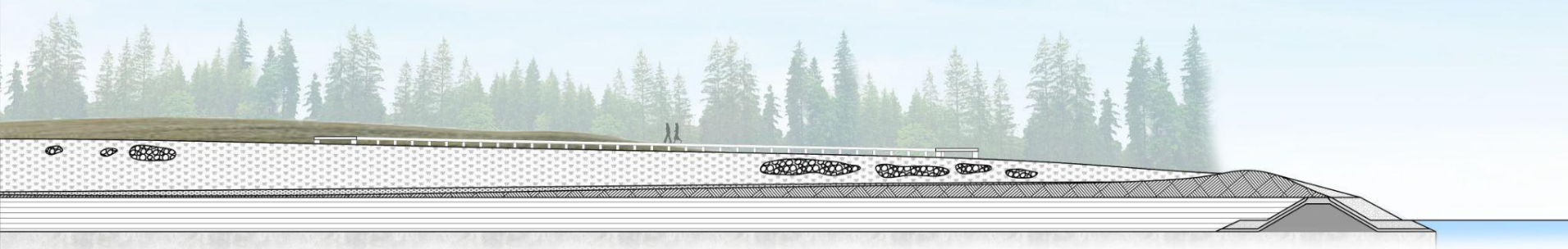
Circulation Diagram

As the bog starts to settle, a new boardwalk is added to allow access within the bog.



Iroquois Bog

Section



Ecology within the Park

Trees

- Tamarack
- Aspen

Acidity 5

- Sundews
- Sphagnum Moss
- Pitcher Plants

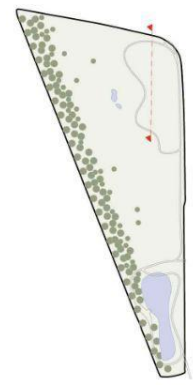


Acidity 6

- Blueberries
- Ferns
- Iris

Acidity 5.5

- Slipper Orchids
- Sedges



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LANDSCAPE ARCHITECTURE + URBANISM PROGRAM
TO JOIN YOUR COMMUNITY