



Beneficial Use of Dredge Material for Environmental Restoration

Cedar Point Causeway Wetlands

Sandusky Bay Initiative

Sandusky Bay Initiative Landscape Conservation Design

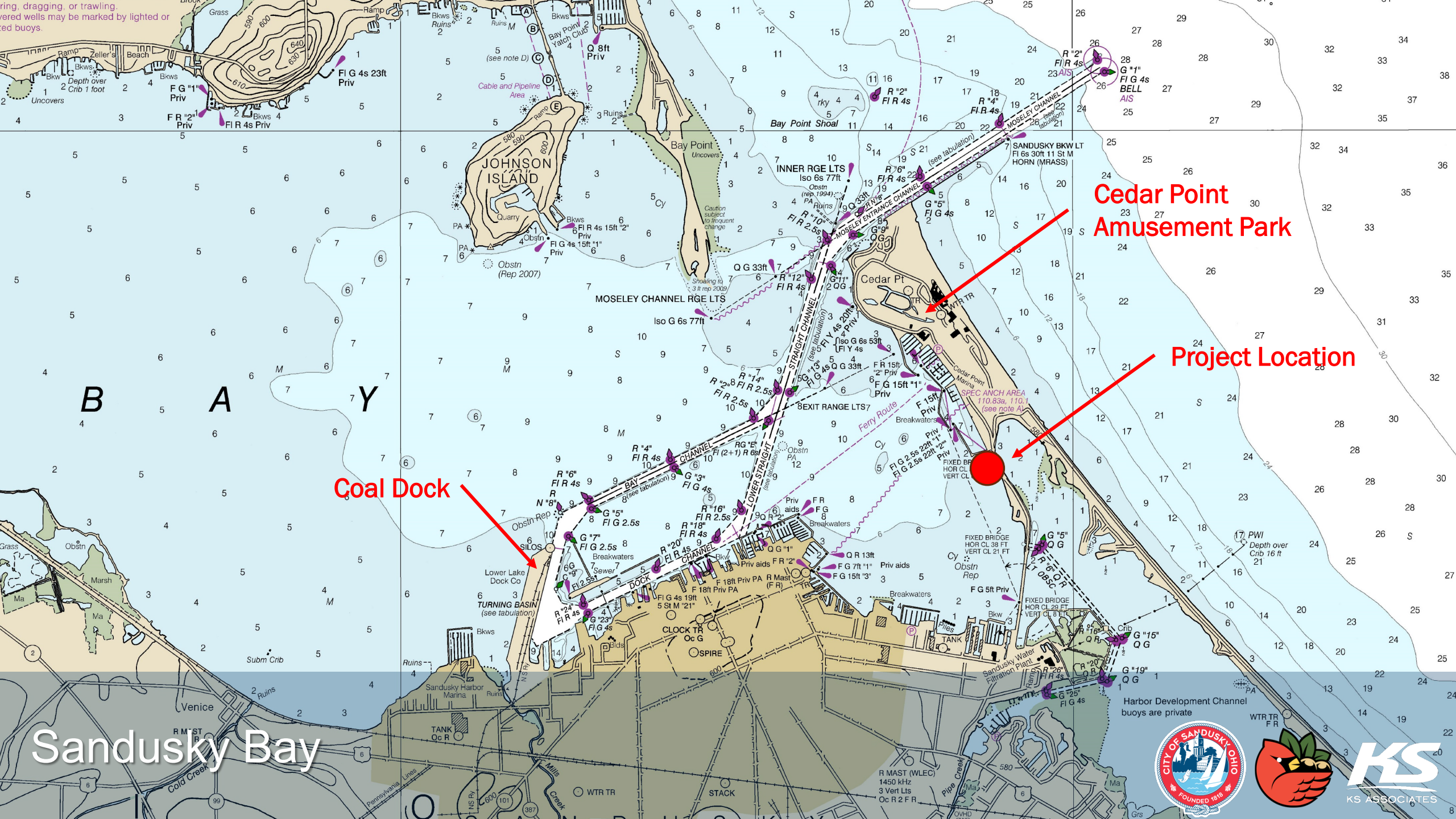
Map Features	Boundary	Hydrography
Transportation	County Boundaries	Shoreline
Ohio Turnpike	Incorporated Areas (Cities and Villages)	Water
U.S. Route	Unincorporated Area (Township)	Wetlands
State Route	Public Lands and Public Access	Potential Nutrient/Sediment Filtration Areas and Habitat Areas
State Route (Fully Controlled Access)		
Railroad (Active Mainline)		
Navigation Channel		



**Cedar Point Causeway
Wetland Restoration Project**

64 sq mi
16,576 ha





Cedar Point Amusement Park

Project Location

Coal Dock

Sandusky Bay




KS
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- Accommodate 500,000 cy
- Realistic construction costs

Project Goals



- 
- Prioritize soft edges
 - Maximize emergent backwater habitat
 - Experimental and replicable
 - Tolerate some loss/resuspension of material
 - Naturalize over time

Project Goals





Existing Conditions



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Design Concept

CEDAR POINT & LAKE ACCESS





SCRUB SHRUB

- SILVER MAPLE
- COTTONWOOD
- BLACK WILLOW
- SANDBAR WILLOW
- GRAY DOGWOOD
- STAGHORN SUMAC
- BOX ELDER

AQUATIC

- AMERICAN LOTUS
- WHITE WATER-LILY
- COONTAIL
- WILD CELERY
- PONDWEED

EMERGENT

- GIANT BURREED
- ARROWHEAD
- PICKERELWEED
- BULRUSH
- RICE CUTGRASS
- NARROW-LEAVED CATTAIL

SEDIMENT FILL

INTERIOR BREAKWATER
GEOTUBE STORAGE

CEDAR POINTE
CAUSEWAY EXPANSION

BREAKWATER

AWL 572

OHWL 573.3

SITE 2, CONCEPT 3, SECTION C
*GRAPHIC IS NOT TO SCALE

OPEN WATER

SCRUB SHRUB SPECIES

EMERGENT

AQUATIC

EMERGENT

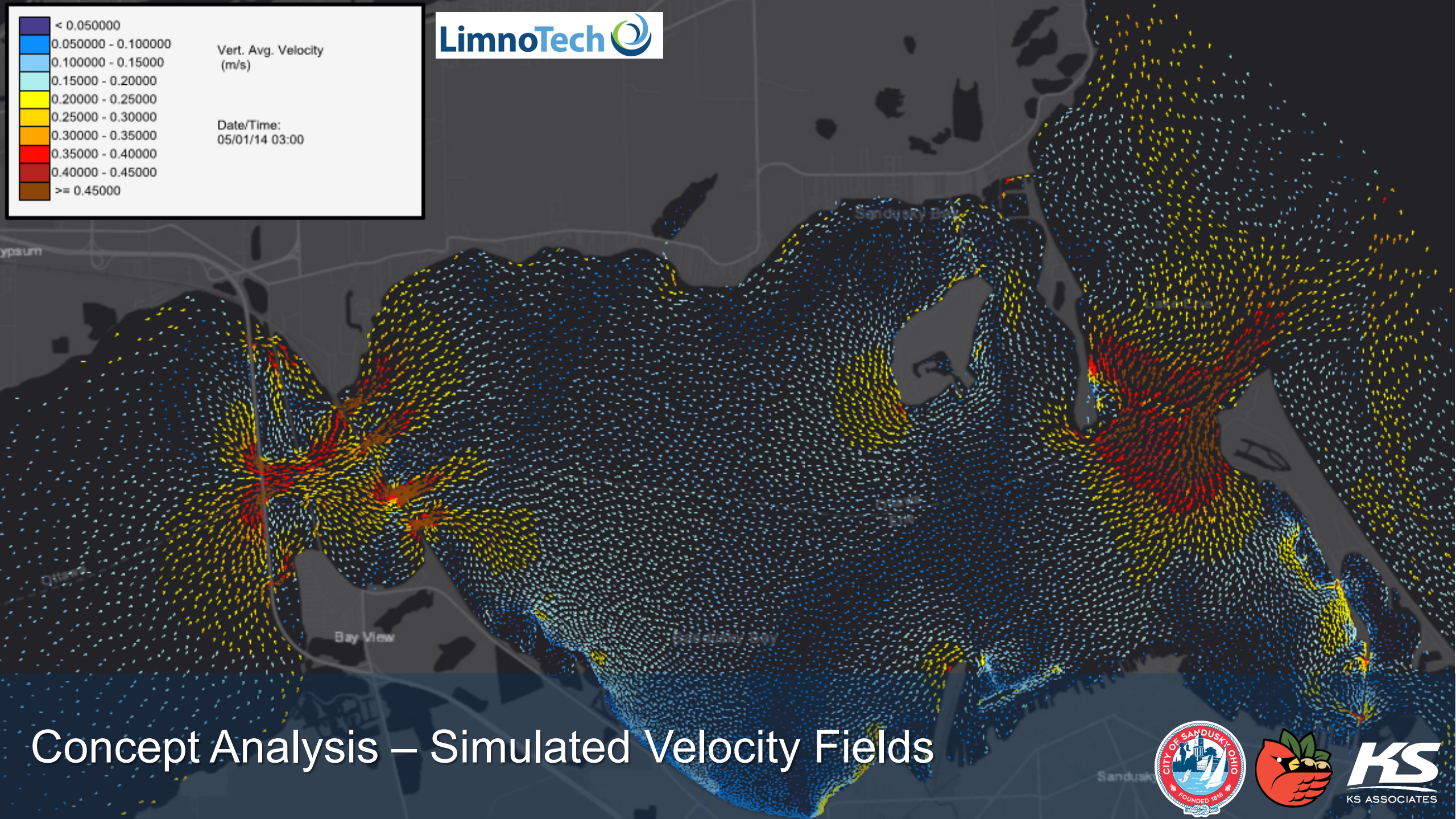
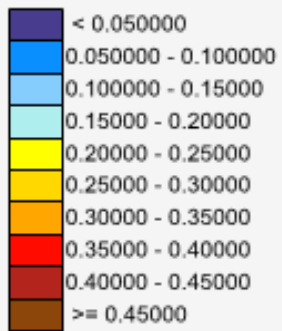
SCRUB SHRUB SPECIES

Design Concept



Vert. Avg. Velocity
(m/s)

Date/Time:
05/01/14 03:00



Concept Analysis – Simulated Velocity Fields





AQUATIC VEGETATION



EMERGENT VEGETATION



PHASE 1

PHASE 2

PHASE 4

PHASE 3

EASTERN SANDUSKY BAY

BACK BAY

LAKE ERIE

GEORGE POINT DRIVE

Potential Phasing



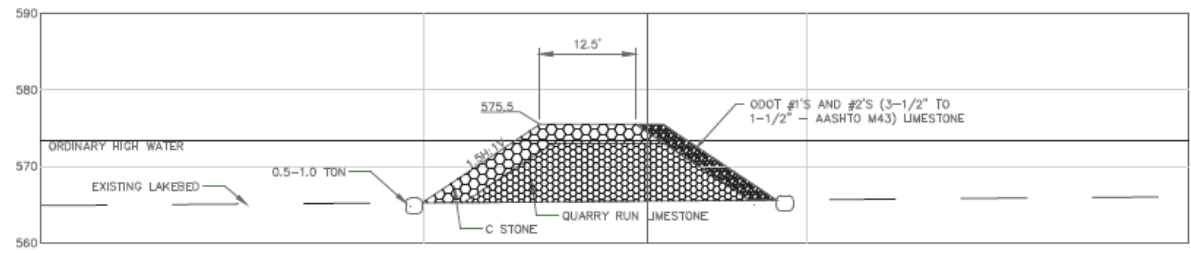
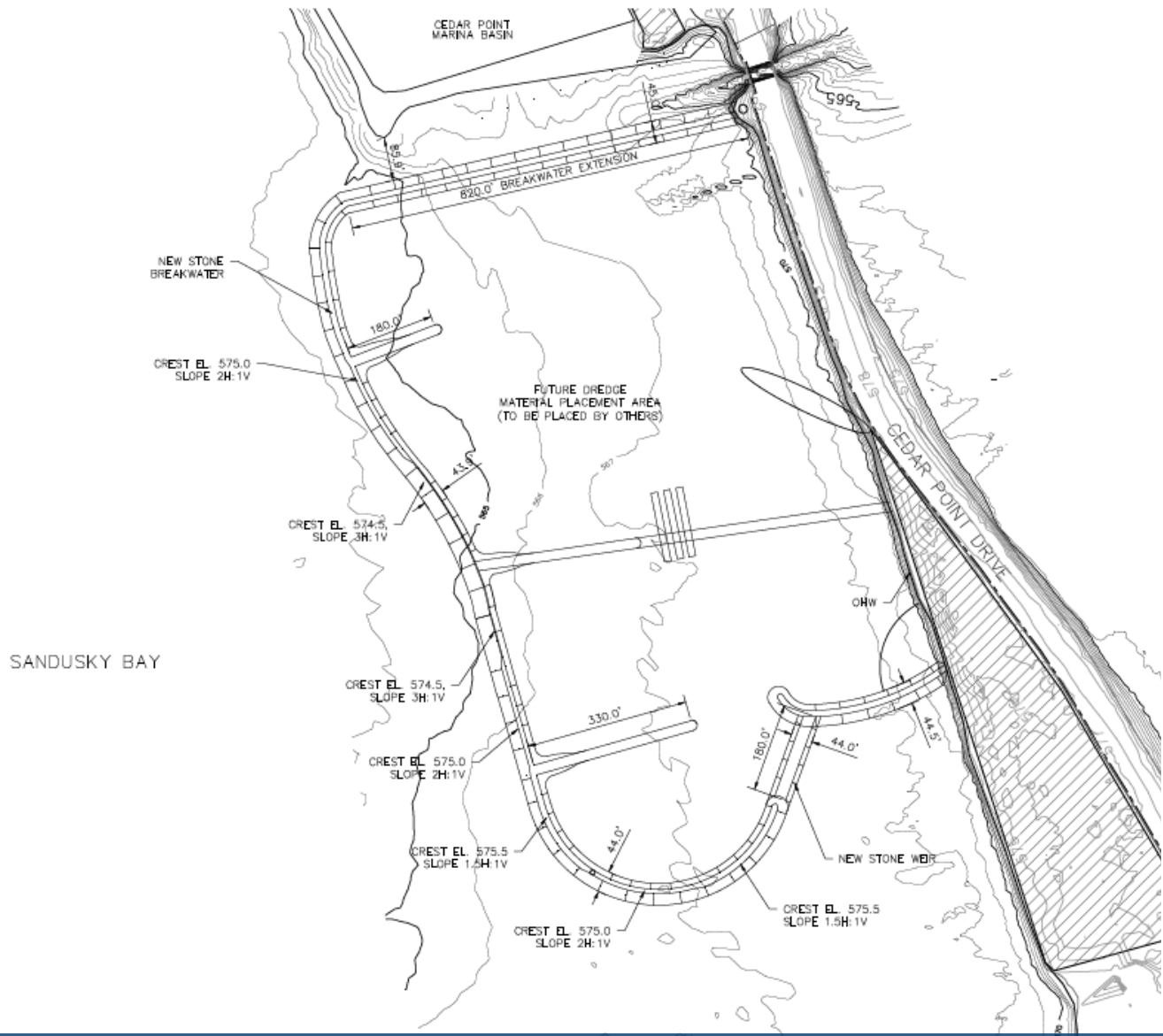
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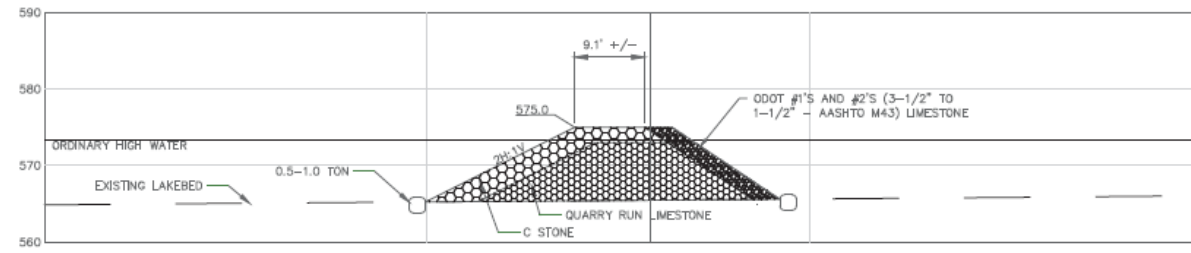
- Capacity: 260,000 cy
- 3,300 Linear Feet of Breakwater
- 31.5 Total Acres of Sandusky Bay
 - 7.7 Acres of Aquatic Habitat
 - 15.2 Acres of Emergent Habitat
 - 0.5 Acres of Riparian Habitat
- Design leaves space for potential causeway expansion

Phase 1 – Currently Under Construction

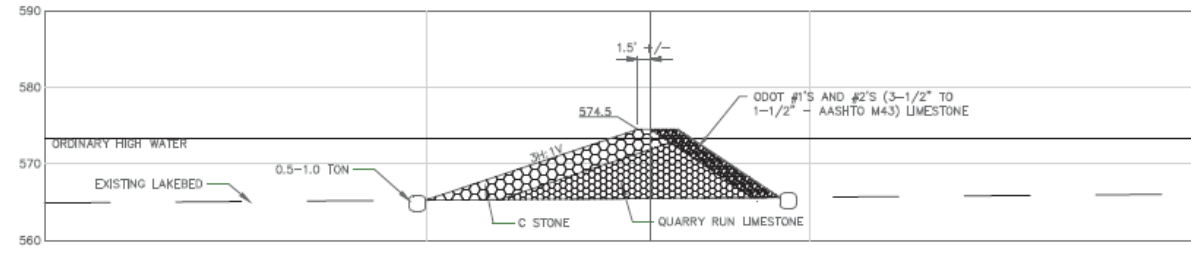




PERIMETER BREAKWATER SECTION A



PERIMETER BREAKWATER SECTION B



PERIMETER BREAKWATER SECTION C

Final Design



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Breakwater Construction





Breakwater Construction





Monitoring





Dredge Placement





Dredge Placement





Consolidation/Settlement





Dredge Placement





Consolidation/Settlement





Wetland Planting – Spring 2024





Scrub/Shrub

Emergent

Open Water

Future Wetlands





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Questions



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