

Alternatives to Open-Lake Disposal of Dredged Sediment

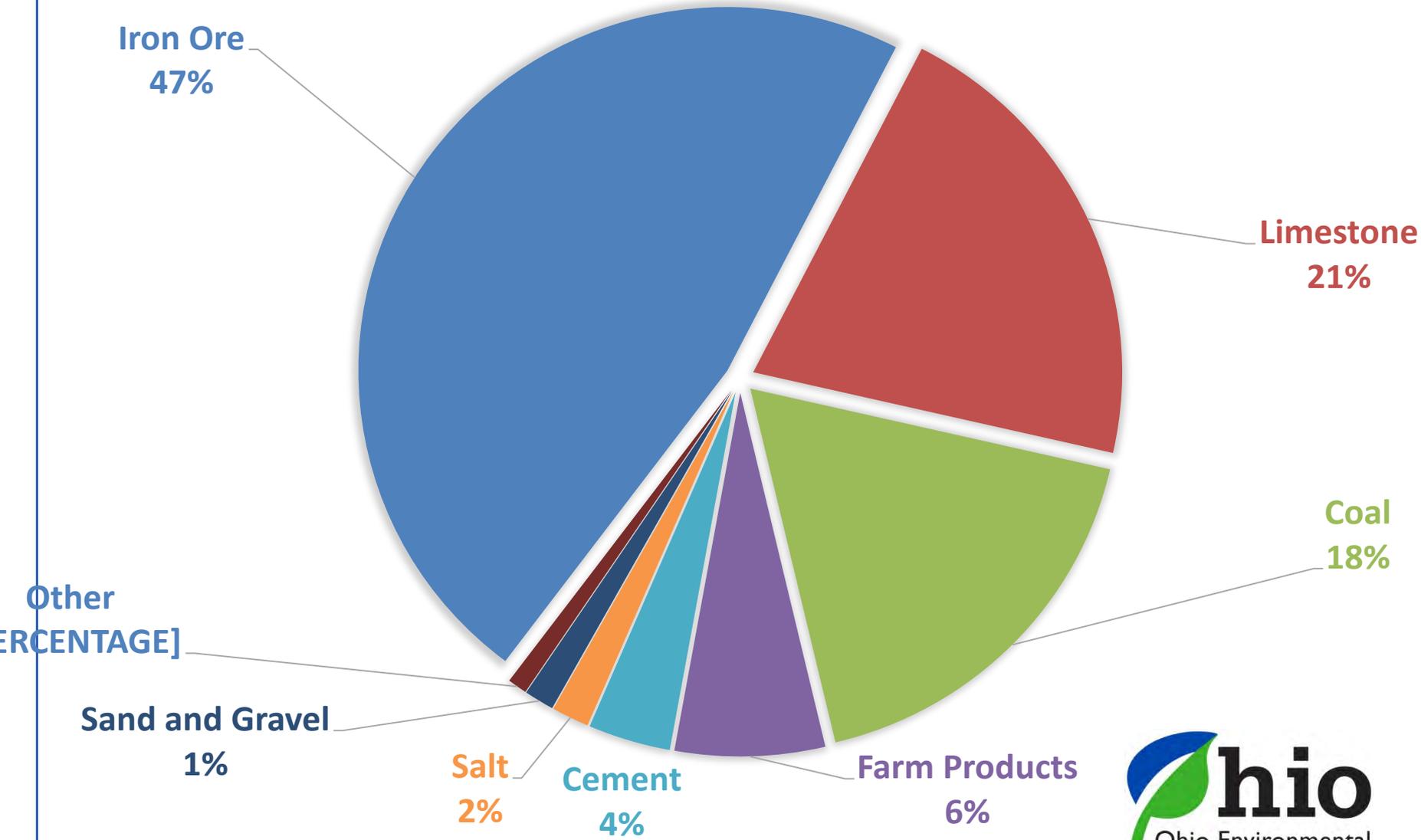


David Emerman,
Ohio Lake Erie Commission

Ohio's Federal Harbors

- 8 Federal commercial harbors
- 35 million tons of commodities
- \$25 billion in business revenue
- 130,000 jobs

Commodities



Dredging in Ohio

1.5 million cubic yards of sediment per year

Primarily open lake disposal



The Challenge

Open Lake Disposal

Banned

Coming July 1, 2020

Strategy

1. Committing to mutual ownership of the challenge
2. Generating options
3. Identifying constraints and flexibility
4. Local management
5. Project scoping
6. Stakeholder outreach
7. Adaptive management and Contingency planning
8. Securing funding
9. Implementation 

Beneficial Use of Dredged Material



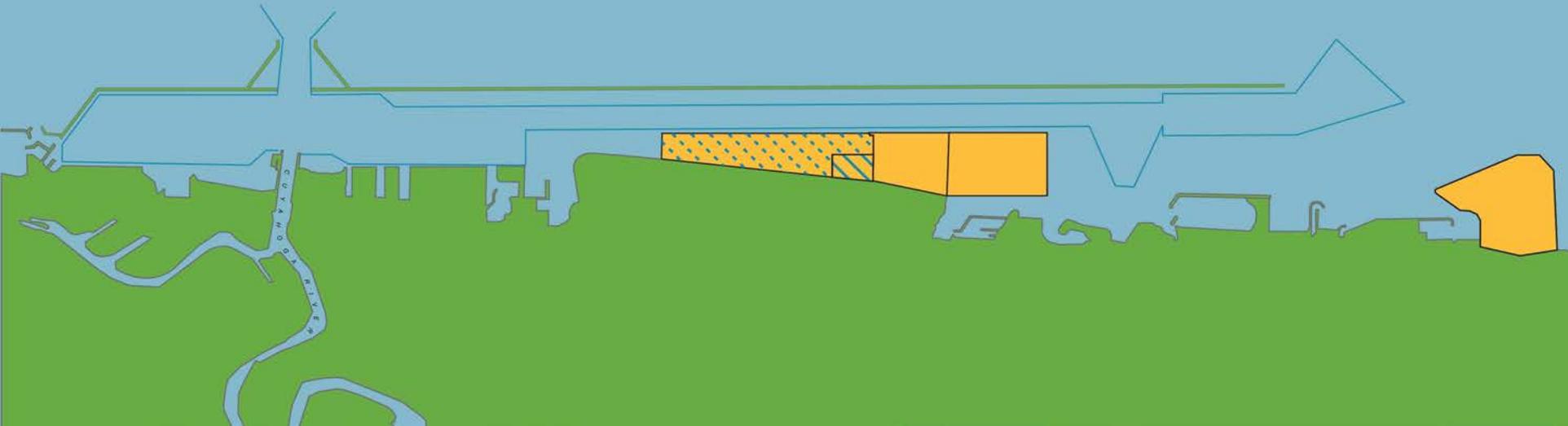
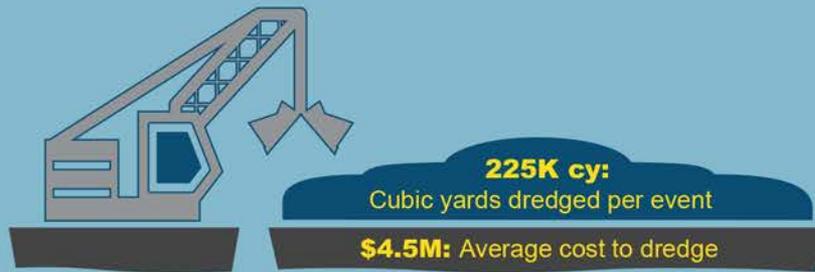
HARBOR FACTS:

- \$10.52B annual business revenue
- Last dredged FY2018
- Target dredging in FY2019

- Beneficial Use Areas
- Active CDFs
- Closed CDFs

70,500 JOBS

Direct and Indirect





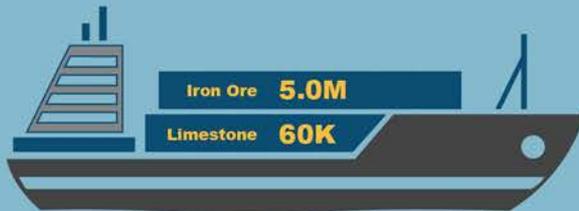
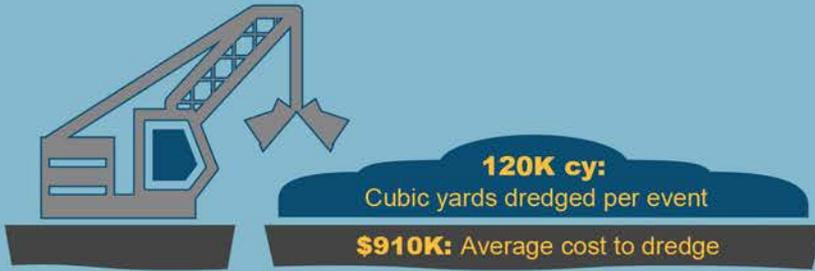
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HARBOR FACTS:

- \$3.16B annual business revenue
- Last dredged FY2018
- Target dredging in FY2019
- Major Stakeholders

18,700 JOBS

Direct and Indirect

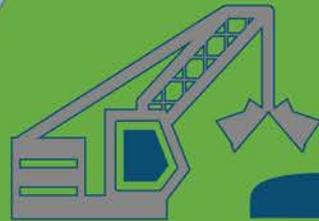


HARBOR FACTS:

- \$215M annual business revenue
- Last dredged FY2016
- Target dredging in FY2019
- Active CDF
- Major Stakeholders

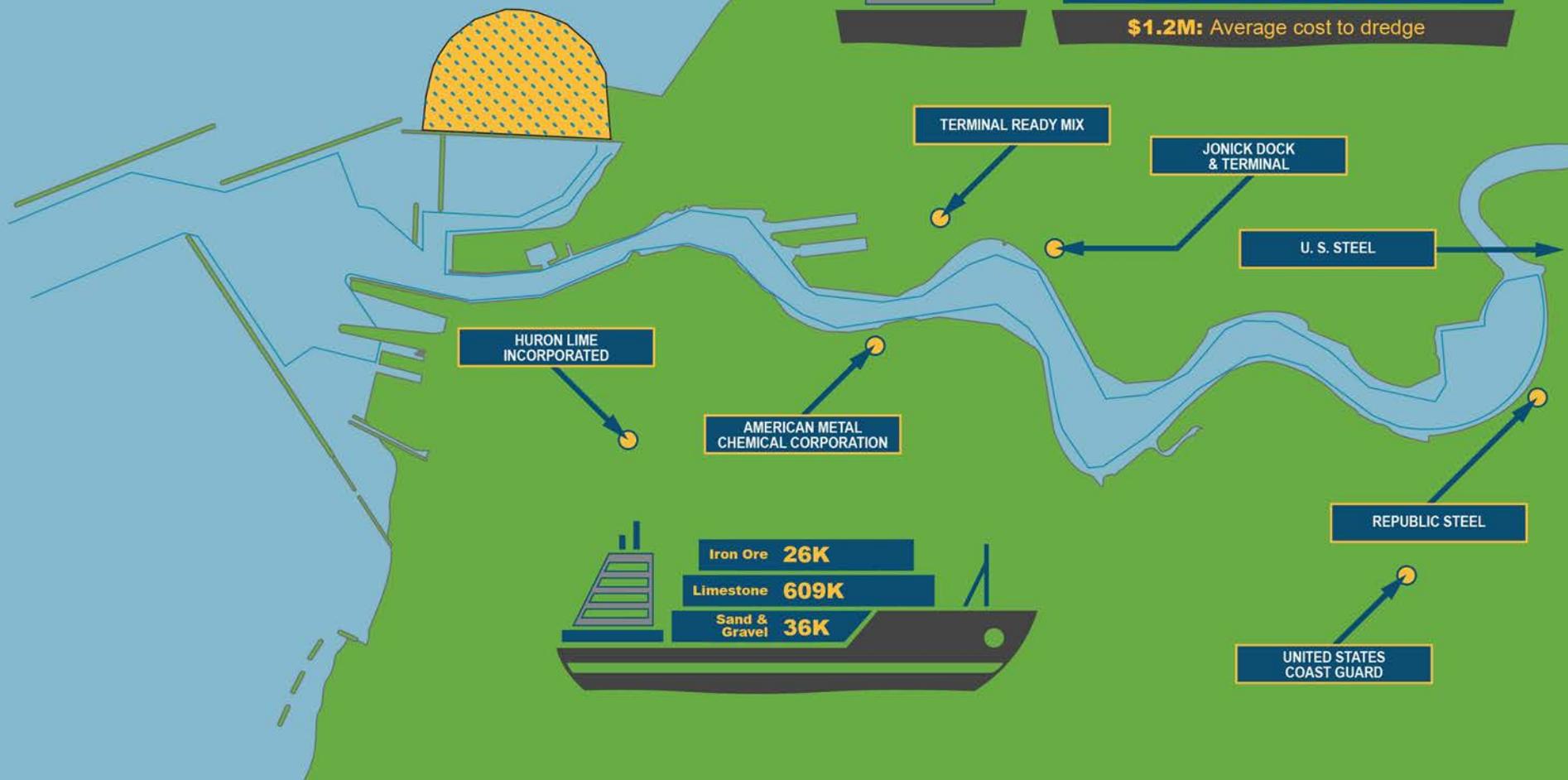
LORAIN HARBOR

1,300 JOBS
Direct and Indirect



150K cy:
Cubic yards dredged per event

\$1.2M: Average cost to dredge



HURON LIME INCORPORATED

AMERICAN METAL CHEMICAL CORPORATION

TERMINAL READY MIX

JONICK DOCK & TERMINAL

U. S. STEEL

REPUBLIC STEEL

UNITED STATES COAST GUARD

Iron Ore	26K
Limestone	609K
Sand & Gravel	36K



LEGEND

-  US Route
-  State Route
-  River Mile
-  Black River Dredge Reuse Facility Site Boundary (Approximate)



LEGEND

- Black River Dredge Reuse Facility Site Boundary (Approximate)
- Receiving and Processing Area; No Ground Disturbance
- Previously Restored Areas to be Avoided
- City of Lorain Reclamation Site
- Existing Access Road

CITY OF LORAIN

CITY OF LORAIN

POTENTIAL
STORMWATER POND

DOCKING/MOORING

REPUBLIC ENGINEERED PRODUCTS

RECEIVING AND
PROCESSING

CITY OF LORAIN



CITY OF LORAIN



BLACK RIVER DREDGING REUSE FACILITY

NOVEMBER 2018

FIGURE 2



HARBOR FACTS:

- \$161M Annual business revenue
- Last dredged FY2017
- Target dredging in FY2019

■ Major Stakeholders

1,000 JOBS

Direct and Indirect





Image NOAA

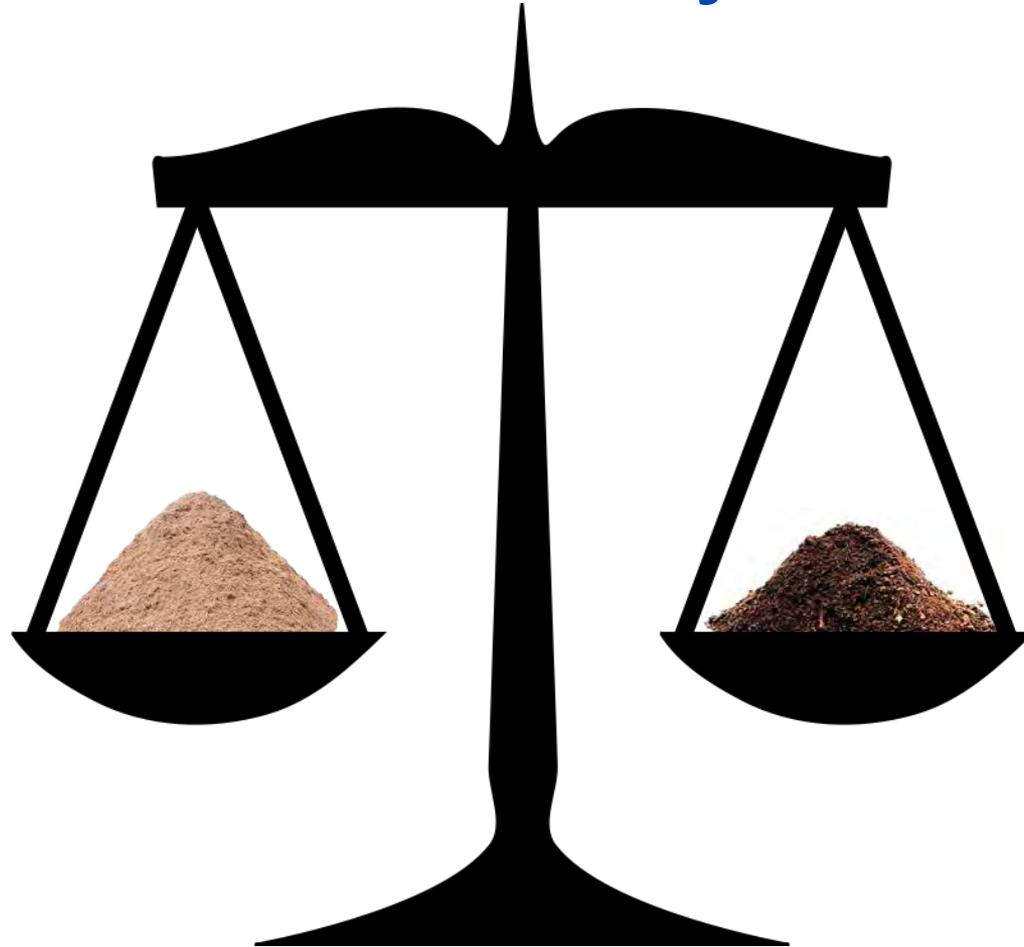
Image © 2018 TerraMetrics

Google Earth

1994

Imagery Date: 7/6/2018 41°44'14.00" N 81°13'45.46" W elev 591 ft eye alt 15767 ft

New Rules: It's just dirt



HARBOR FACTS:

- \$2.96B annual business revenue
 - Last dredged FY2017
 - Target dredging in FY2019 and FY2021
- Beneficial Use Area
- Major Stakeholders

17,200 JOBS

Direct and Indirect

KINDER MORGAN
TERMINAL

NORFOLK SOUTHERN
RAILWAY

UNITED STATES
COAST GUARD

Iron Ore **630K**

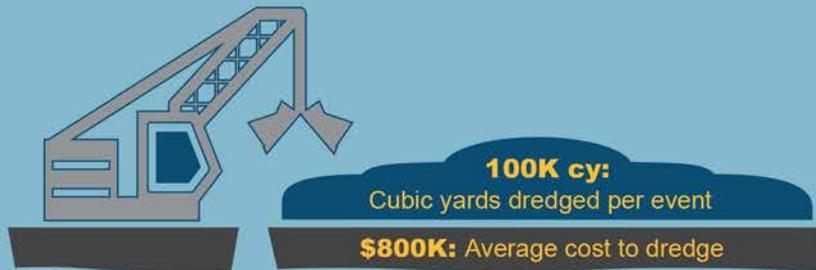
Limestone **1.2M**

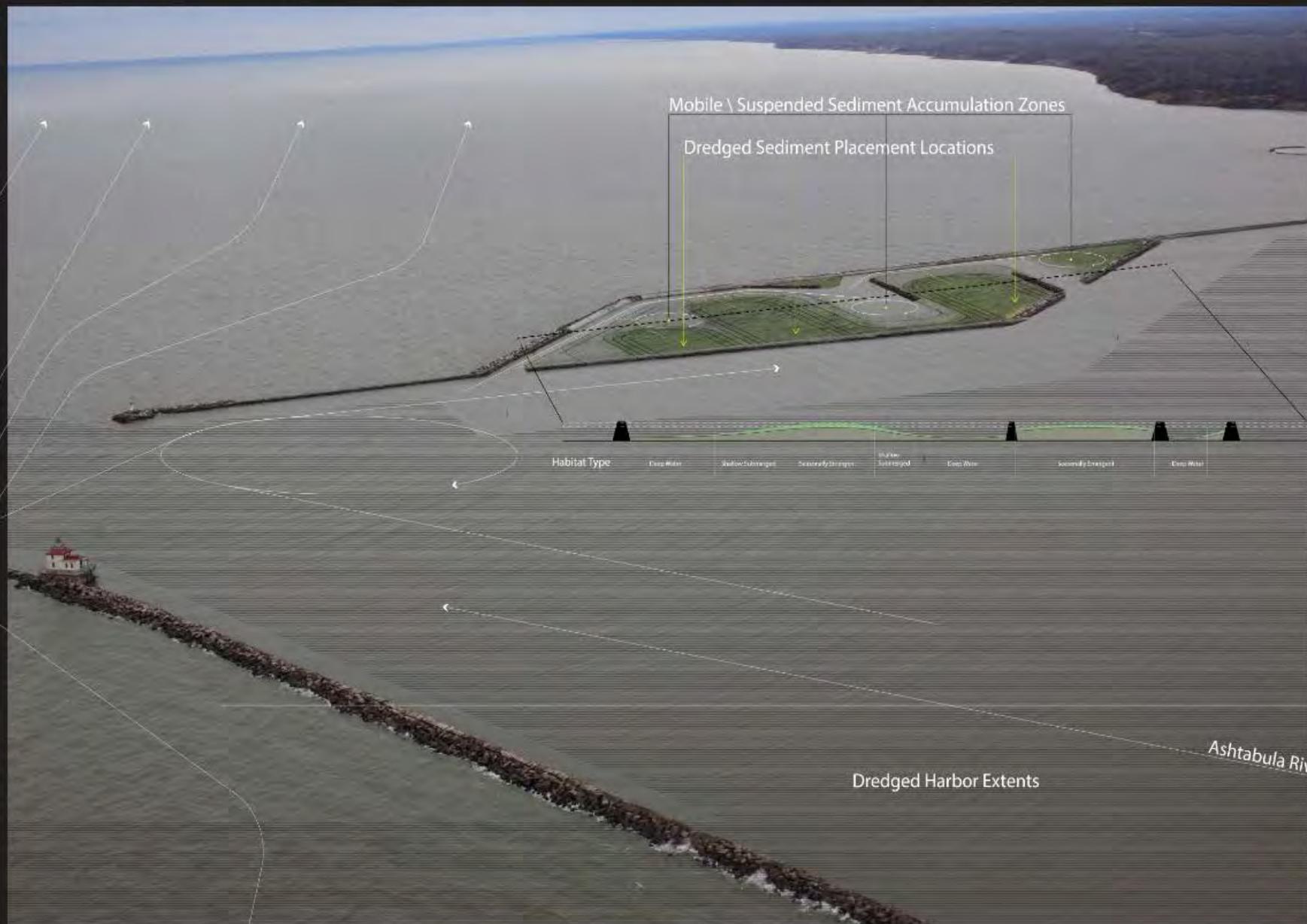
Non-magnetic
Ores & Scrap **260K**

100K cy:

Cubic yards dredged per event

\$800K: Average cost to dredge





Mobile \ Suspended Sediment Accumulation Zones

Dredged Sediment Placement Locations

Habitat Type

Emerg. Water

Shallow Submerged

Secondary Emerg.

Shallow Submerged

Emerg. Water

Secondary Emerg.

Emerg. Water

Dredged Harbor Extents

Ashtabula River Flow

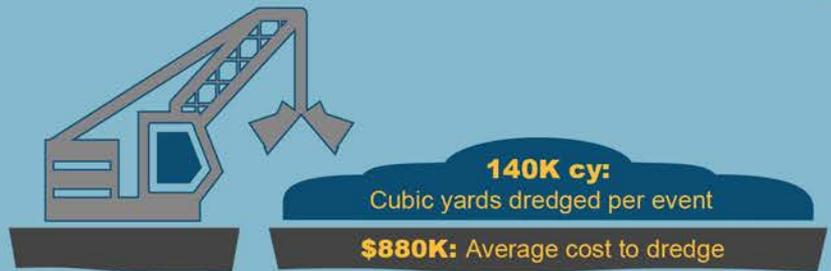
Longshore Drift

HARBOR FACTS:

- \$604M annual business revenue
 - Last dredged FY2018
 - Target dredging in FY2019
- Major Stakeholders

3,400 JOBS

Direct and Indirect

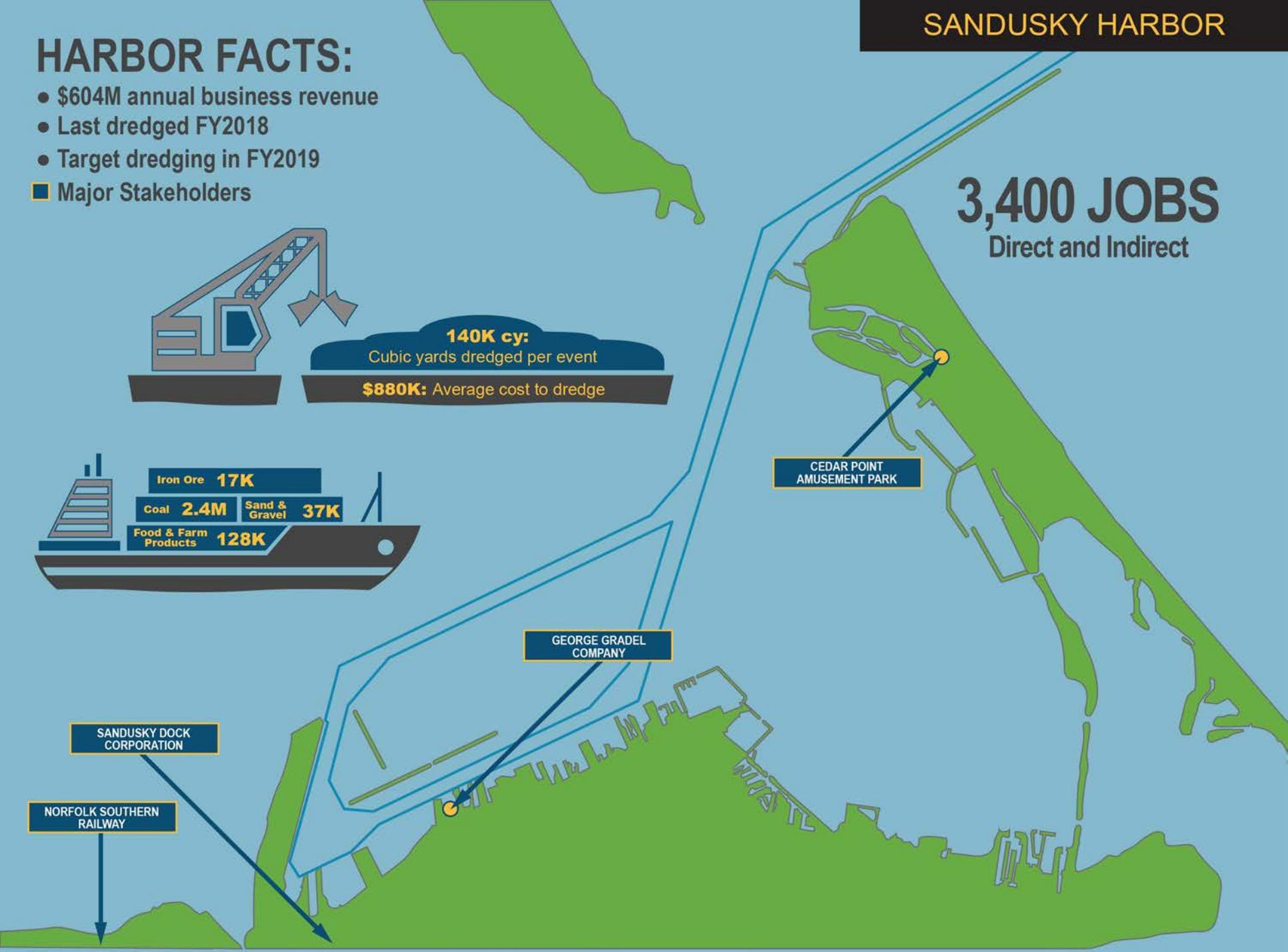


CEDAR POINT AMUSEMENT PARK

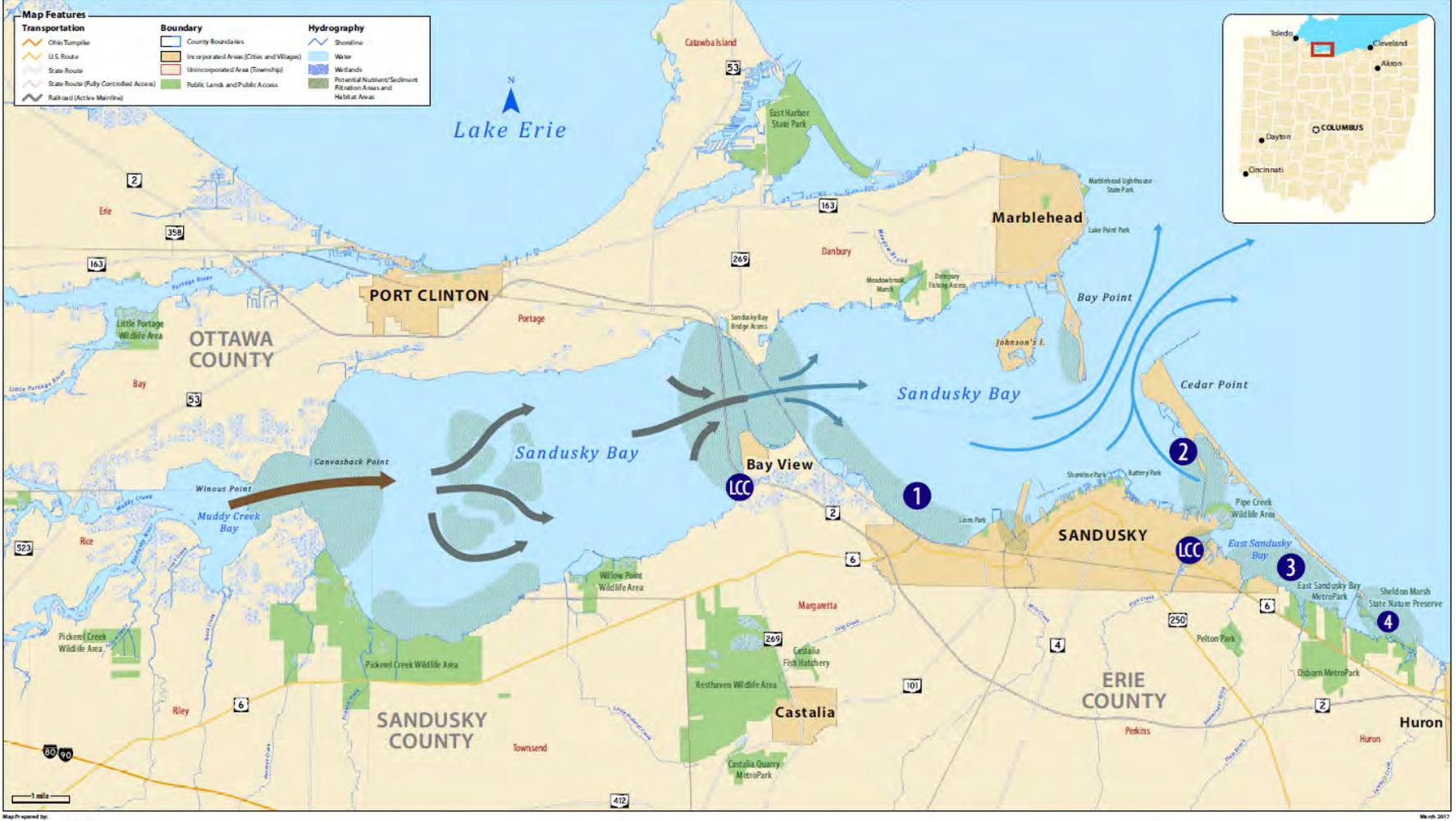
GEORGE GRADEL COMPANY

SANDUSKY DOCK CORPORATION

NORFOLK SOUTHERN RAILWAY



Sandusky Bay Initiative



HARBOR FACTS:

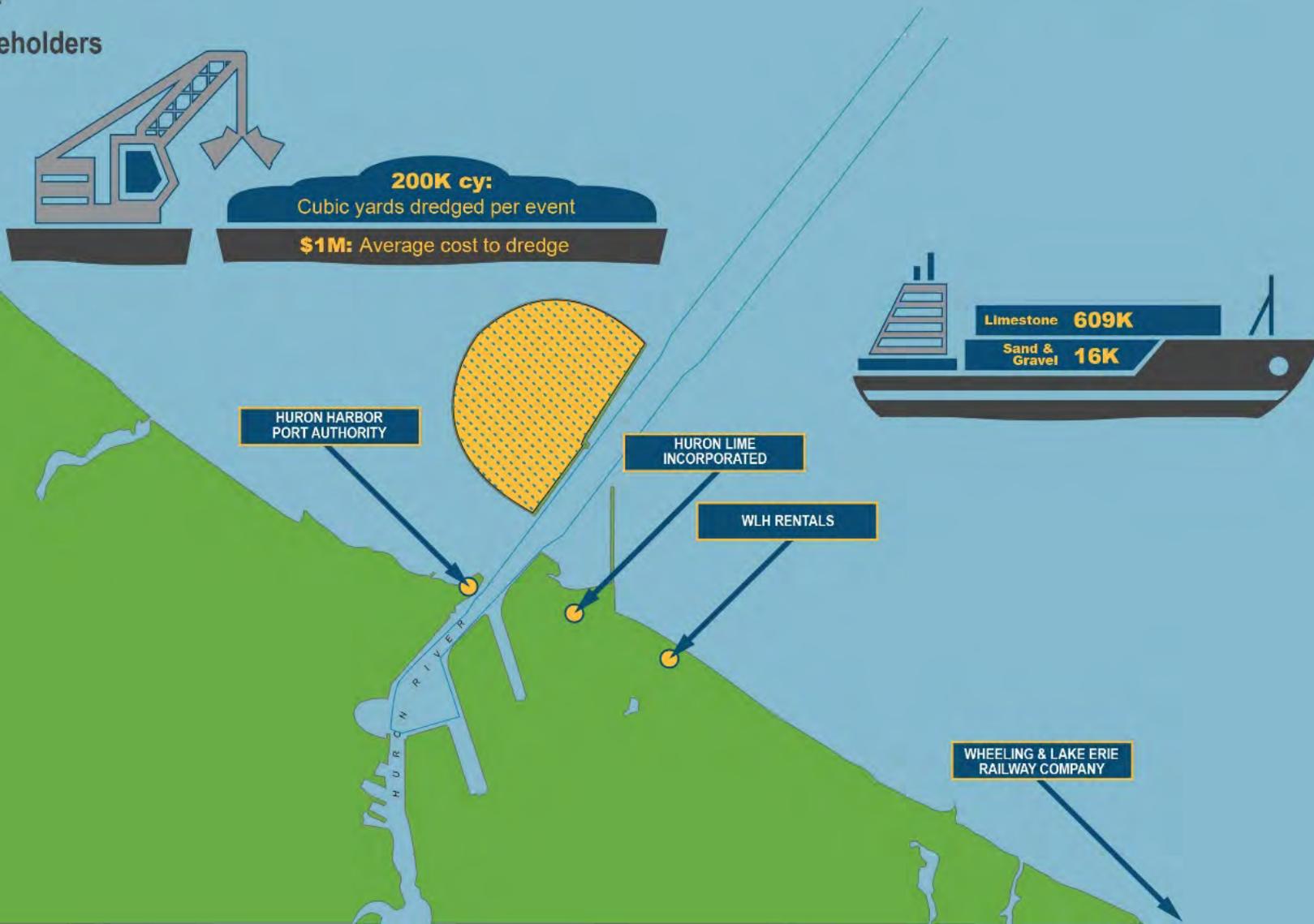
- \$63M Annual business revenue
- Last dredged FY2016
- Target dredging in FY2019

■ Active CDF

■ Major Stakeholders

300 JOBS

Direct and Indirect



TOLEDO HARBOR

HARBOR FACTS:

- \$7.07B annual business revenue
- Last dredged FY2018
- Target dredging in FY2019

■ Beneficial Use Areas

▣ Active CDFs

38,700 JOBS

Direct and Indirect



17 Miles

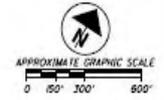
800K cy:

Cubic yards dredged per event

\$4M: Average cost to dredge



- PROPOSED 2019 CONFINED DISPOSAL AREA PERIMETER AND CROSS DIKES
- PROPOSED 2019 AGRICULTURAL USE STAGING IMPOUNDMENT DIKE



NO.	DATE	BY	DESCRIPTION

Center of Dredge Innovation



UB
LAG
landscape affairs group
urban | landscape | design | research





Contact Information

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