

# U.S. Army Corps of Engineers,

## *Great Lakes and Ohio River Division, Buffalo District*

American Association of Port Authorities (AAPA)  
Beneficial Use Overview  
September 16, 2015

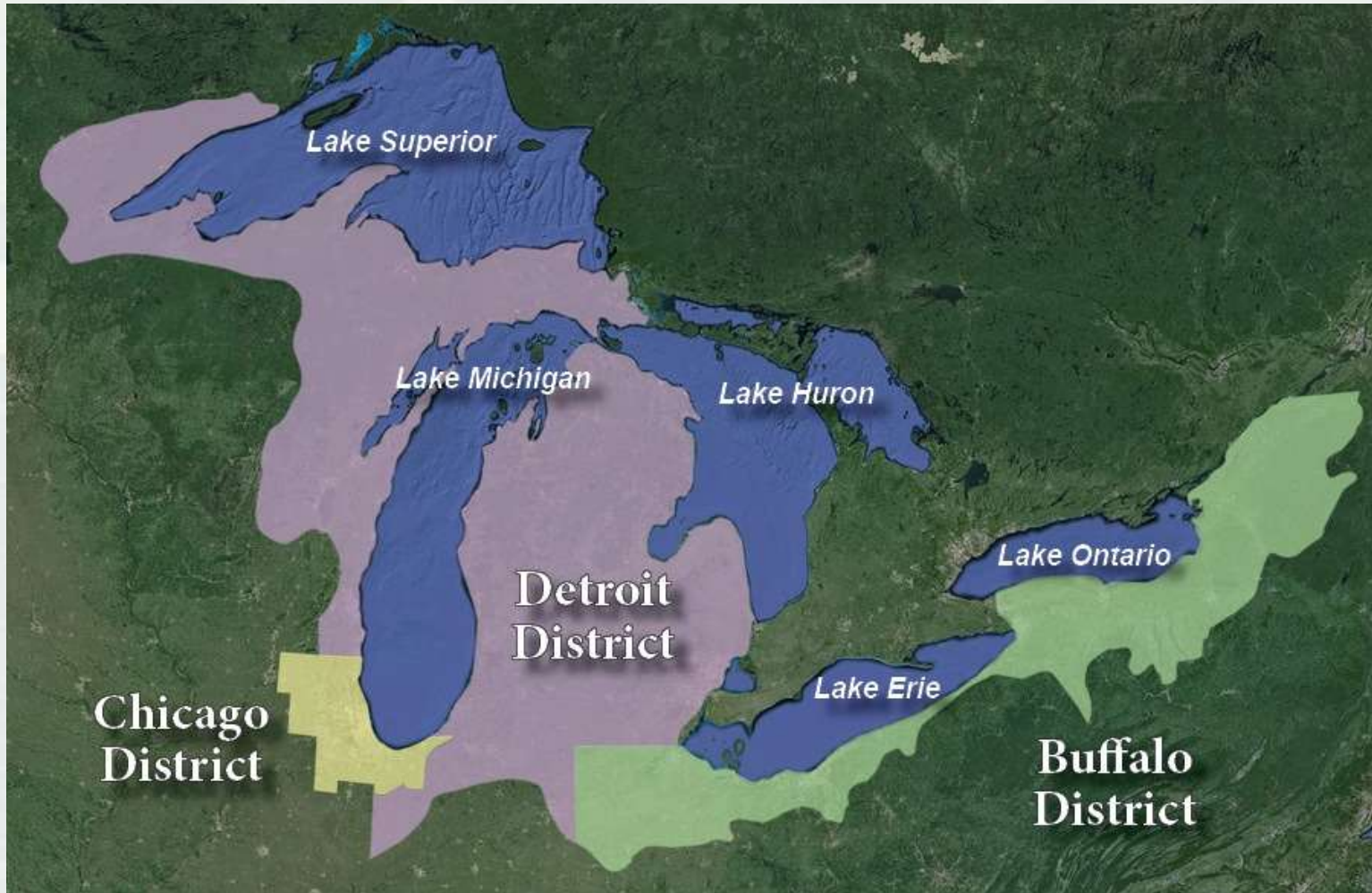
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# Great Lakes and Ohio River Division



# Great Lakes Districts



# Great Lakes Harbors

**60 Commercial harbors**  
**80 Recreational harbors**

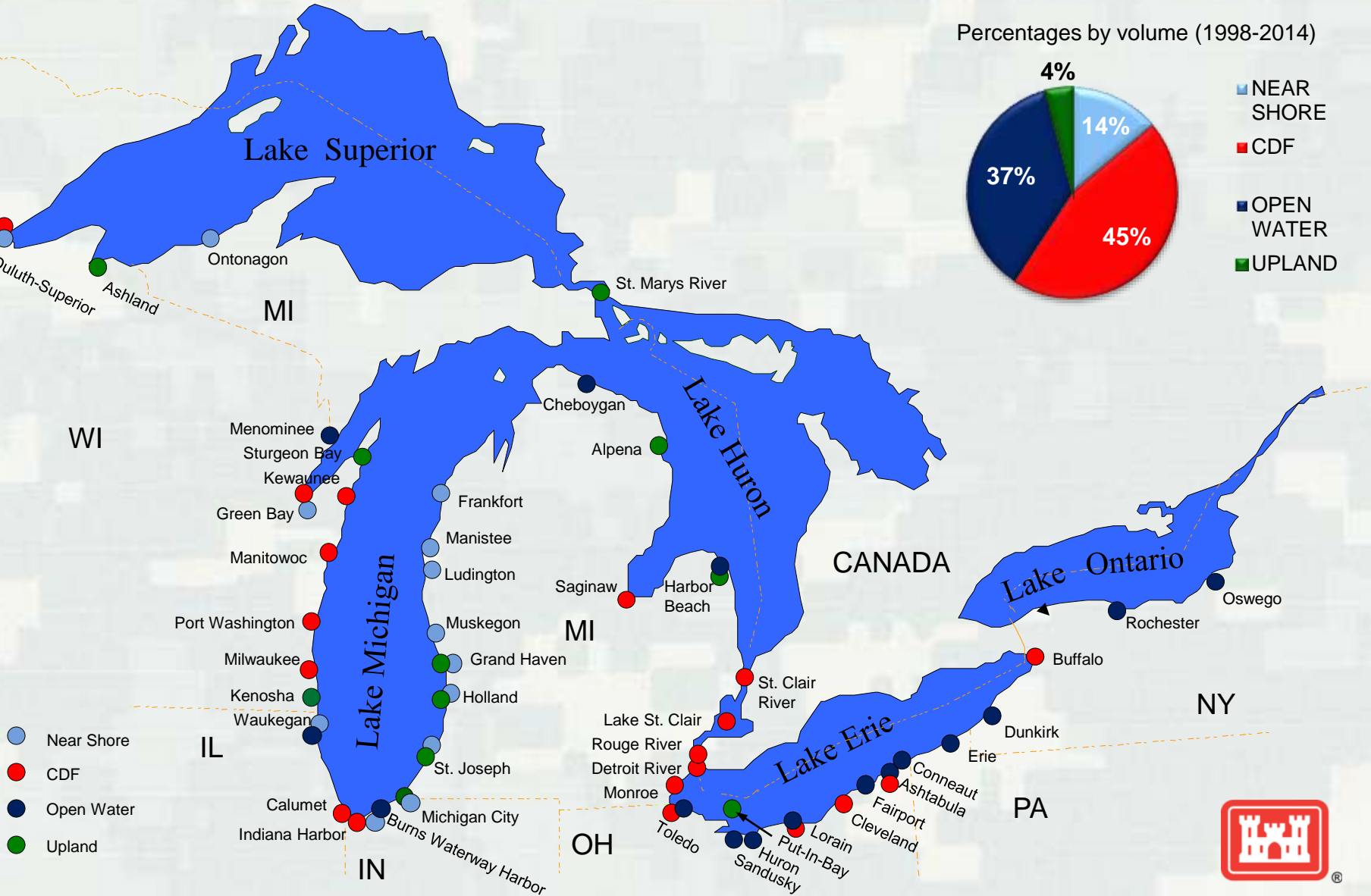
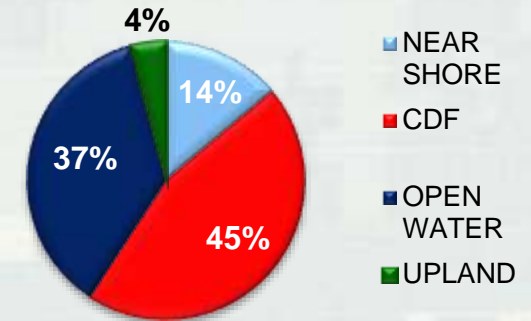


● Commercial  
 ▲ Recreational



# Current Dredged Material Placement Methods

Percentages by volume (1998-2014)

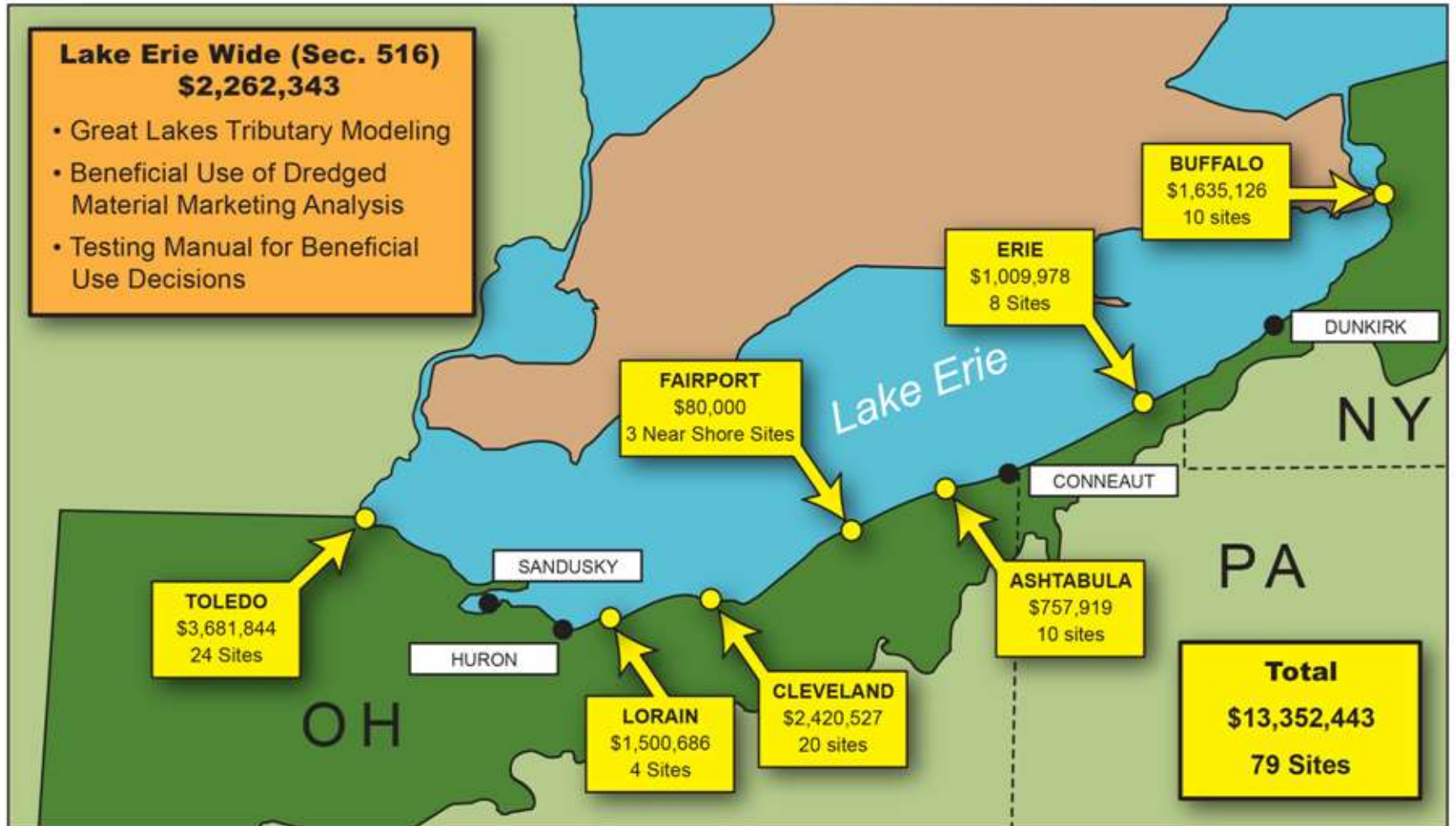


# Lake Erie Harbors – CDF Construction Costs (Rough Order of Magnitude)

Harbor	Dredge Frequency <sup>(a)</sup>	Dredge CY per Event	Estimated 20-year CY Capacity Need	Remaining Capacity at Existing CDF	Estimated New CDF CY Capacity 20-year Need	Estimated CDF Cost <sup>(b)</sup>	Estimated Non-Fed Cost Share (35%)
Ashtabula	Once/2 years	100,000	1,000,000	0	1,000,000	\$45,000,000	\$15,750,000.00
Barcelona	Infrequent	60,000	120,000	0	120,000	\$5,400,000	\$1,890,000.00
Buffalo	Once/2 years	115,000	1,150,000	1,200,000	0	\$0	\$0.00
Cattaraugus	Infrequent	20,000	40,000	0	40,000	\$1,800,000	\$630,000.00
Cleveland	Annual	250,000	5,000,000	300,000	4,700,000	\$211,500,000	\$74,025,000.00
Cooley Canal	Infrequent	7,000	14,000	0	14,000	\$1,000,000	\$350,000.00
Conneaut	Once/3 years	120,000	800,000	0	800,000	\$36,000,000	\$12,600,000.00
Dunkirk	Once/2 years	20,000	200,000	0	200,000	\$9,000,000	\$3,150,000.00
Erie	Once/5 years	100,000	400,000	380,000	20,000	\$900,000	\$315,000.00
Fairport	Once/2 years	150,000	1,500,000	0	1,500,000	\$67,500,000	\$23,625,000.00
Huron	Once/2 years	190,000	1,900,000	670,000	1,230,000	\$55,400,000	\$19,390,000.00
Kelly's Island	Infrequent	3,000	6,000	0	6,000	\$1,000,000	\$350,000.00
Lorain	Once/2 years	150,000	1,500,000	300,000	1,200,000	\$54,000,000	\$18,900,000.00
Put-In-Bay	Infrequent	3,000	6,000	0	6,000	\$1,000,000	\$350,000.00
Port Clinton	Infrequent	3,000	6,000	0	6,000	\$1,000,000	\$350,000.00
Rocky River	Once/5 years	30,000	120,000	0	120,000	\$5,400,000	\$1,890,000.00
Sandusky	Annual	140,000	2,800,000	0	2,800,000	\$126,000,000	\$44,100,000.00
Toledo	Annual	800,000	16,000,000	2,000,000	14,000,000	\$630,000,000	\$220,500,000.00
Vermillion	Once/4 years	30,000	150,000	0	150,000	\$6,800,000	\$2,380,000.00
West	Once/5 years	30,000	120,000	0	120,000	\$5,400,000	\$1,890,000.00
<b>Total</b>						<b>\$1,264,100,000</b>	<b>\$442,435,000</b>



# Beneficial Use Investigations



# Beneficial Use vs. Dredged Material Management

Toledo Habitat Restoration Alternatives			
Site	Project Site	Cubic Yards	Cost
1	Maumee River Island	200,000	\$14.7M
2	Cullen Park Site 1	510,000	\$32.7M
3	Cullen Park Site 2	200,000	\$20.6M
4	Island 18	510,000	\$39.8M
5	Heckman Ditch Outfall	170,000	\$14.5M
6	Uncover Site	260,000	\$23.2M
7	Toledo Harbor Light	15,600,000	\$300.0M



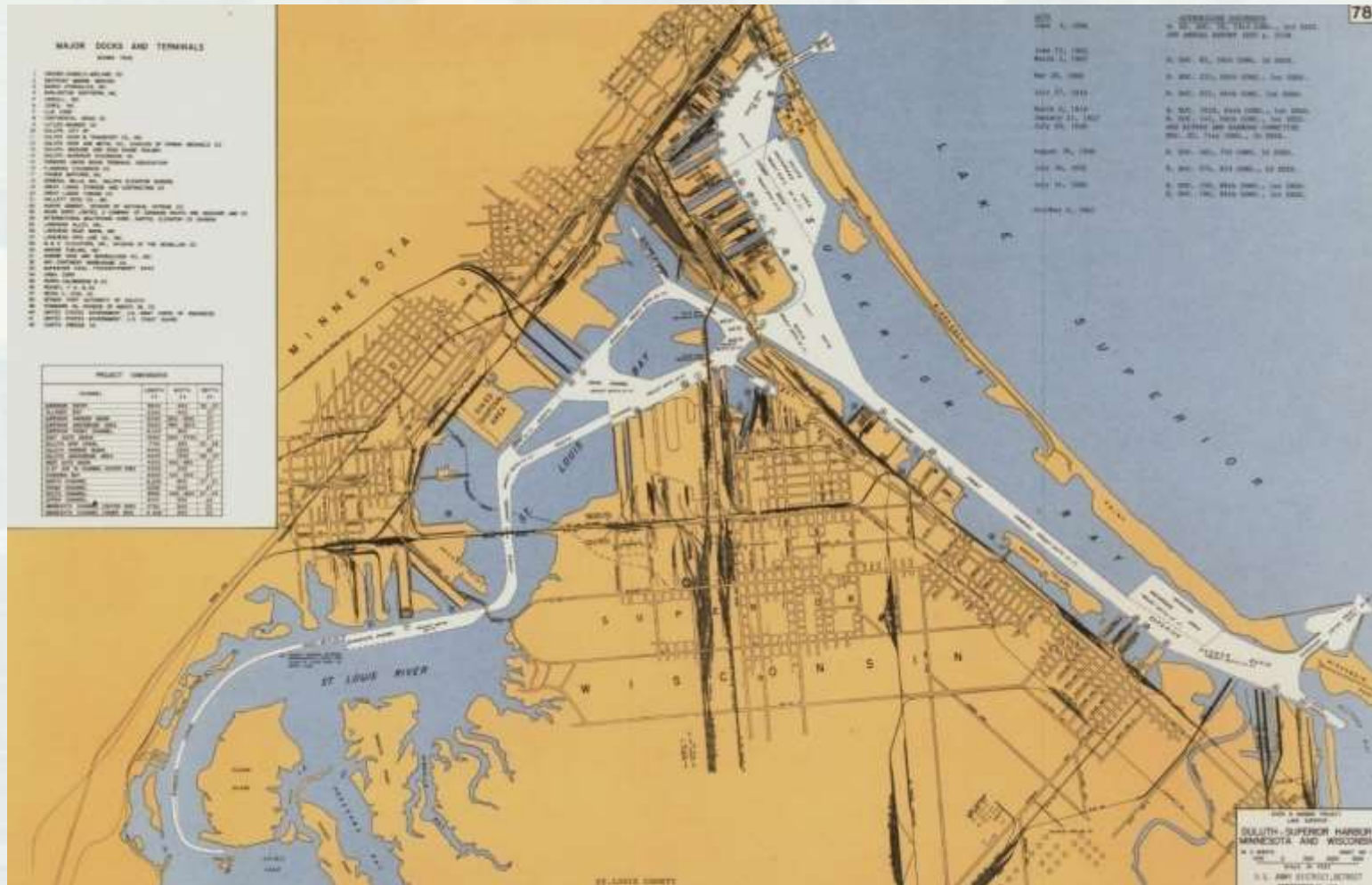


# **Redefining Dredged Material Management**

## ***Examples of Success***



# Duluth/Superior Harbor



# Erie Pier Confined Disposal Facility



# Duluth / Superior Harbor Technical Advisory Committee (HTAC)



**BUILDING STRONG®**

# Green Bay: Cat Islands





**BUILDING STRONG®**

# Presque Isle Bay, PA



# Presque Isle Bay Regional Sediment Management

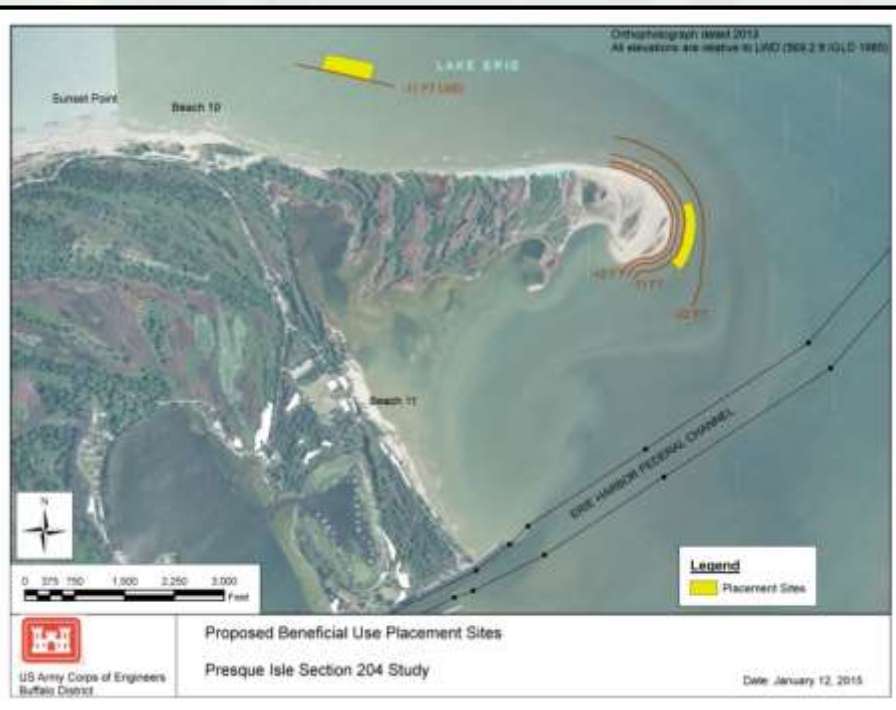
## Changing the Conversation:

- Partners allowing unconventional methods to be evaluated thru a collaborative process
- The ability to share the outcomes of this effort across the GL could open the door to further cost saving innovation over time

## *Sediment is a Resource*

- |            |                  |           |
|------------|------------------|-----------|
| ▪ Spoils   | Dredged Material | Sediment  |
| ▪ Negative | Neutral          | Positive  |
| ▪ Confined | Disposed         | Placement |

*We are shifting the way we think and talk about sediment*





# Toledo Harbor, Ohio



## Dredge Material Center of Innovation

**Challenge:** Beneficial use projects are becoming critical as harbors become “cleaner”

### Changing the Conversation:

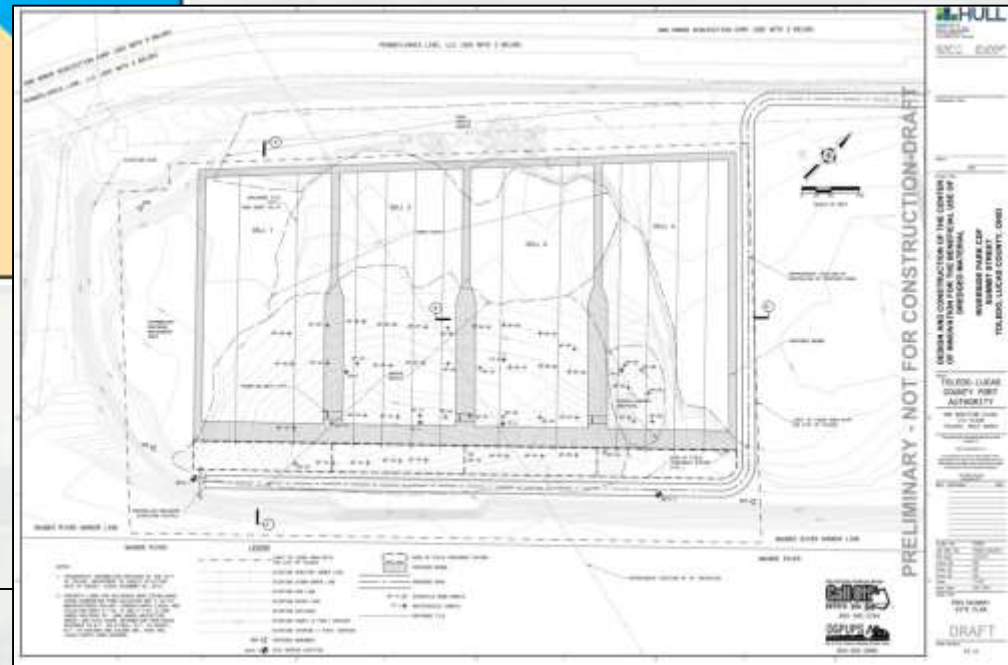
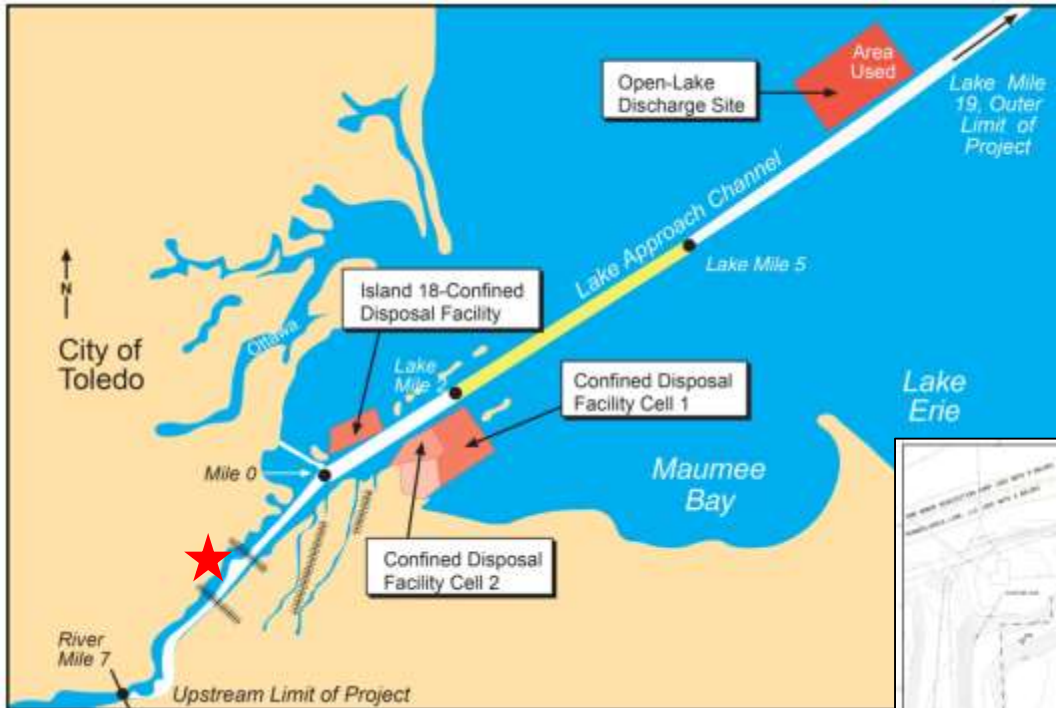
- A locally led initiative using lessons learned from Duluth to brainstorm cost neutral beneficial use opportunities that pique imaginations
- Partners have expressed an appreciation for less rigid opportunities with this project being a breakthrough opportunity for placement
- Toledo Harbor is a high visibility GL harbor with high volumes of dredged material generated annually



***" We need to change the perception of dredged material from a spoil to a valuable resource." - BG Kaiser, Great Lakes and Ohio River Division Commander***



# Toledo Harbor Dredge Material Center of Innovation



# Key Great Lakes Contacts

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[www.lre.usace.army.mil/greatlakes/navigation](http://www.lre.usace.army.mil/greatlakes/navigation)



# CONCLUSION and QUESTIONS

