Envisioning a Chicago Area Waterway System for the 21st Century

A Joint Project of the Great Lakes Commission and the Great Lakes and St. Lawrence Cities Initiative

Credit: © Jim Jurica

Public Meeting Presentation

Tim Eder, Executive Director, Great Lakes Commission

Dave Ullrich, Executive Director, Great Lakes & St. Lawrence Cities Initiative

*October 20, 2011 Chicago, IL and Hammond, IN * October 24, 2011, Webinar Presentation * October 25, 2011 Toronto, Ontario*

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Alliance des villes des Grands Lacs et du Saint-Laurent

Presentation Overview

- Project drivers
- Purpose and goals
- Project management and organization
- Schedule and progress to date
- Separation options; considerations and other key issues
- Next steps
- Take home messages

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A river reversed, a problem created

The Chicago and Calumet rivers were once tiny waterways that trickled into Lake Michigan. Begining in 1900 the city dug a series of canals that reversed their flows so they could carry the city's waste into the Mississippi River basin, and away from the lake – the city's drinking water source. A push is now under way to engineer a system to re-establish the natural hydrological divide between Lake Michigan and the Mississippi.

Sources: Great Lakes Fishery Commission

Map: Journal Sentinel

Proposed Long-term Solution: Ecological Separation

- Preventing the interbasin transfer of aquatic organisms—at all life stages— through Chicago-area waterways

- Ecological separation is currently only a concept

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Purpose and Goals

Develop options to separate the Great Lakes from the Mississippi River watershed that will

- PREVENT movement of Asian carp and other AIS
- IMPROVE transportation
- IMPROVE water quality
- IMPROVE stormwater, flood management

…in the Chicago area

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Leadership and Funding

Executive Committee:

- **Gov. Pat Quinn**, *Illinois*
- **Gov. John Kasich**, *Ohio*
- **Mayor Rahm Emanuel**, *Chicago, Ill.*
- **Mayor George Heartwell**, *Grand Rapids, Mich.*
- **Tim Eder**, Exec. Dir., *Great Lakes Commission*
- **David Ullrich**, Exec. Dir., *Great Lakes & St. Lawrence Cities Initiative*

Funding support from:

- **Joyce Foundation**
- **Great Lakes Protection Fund**
- **C.S. Mott Foundation**
- **Great Lakes Fishery Trust**
- **Wege Foundation**
- **Frey Foundation**

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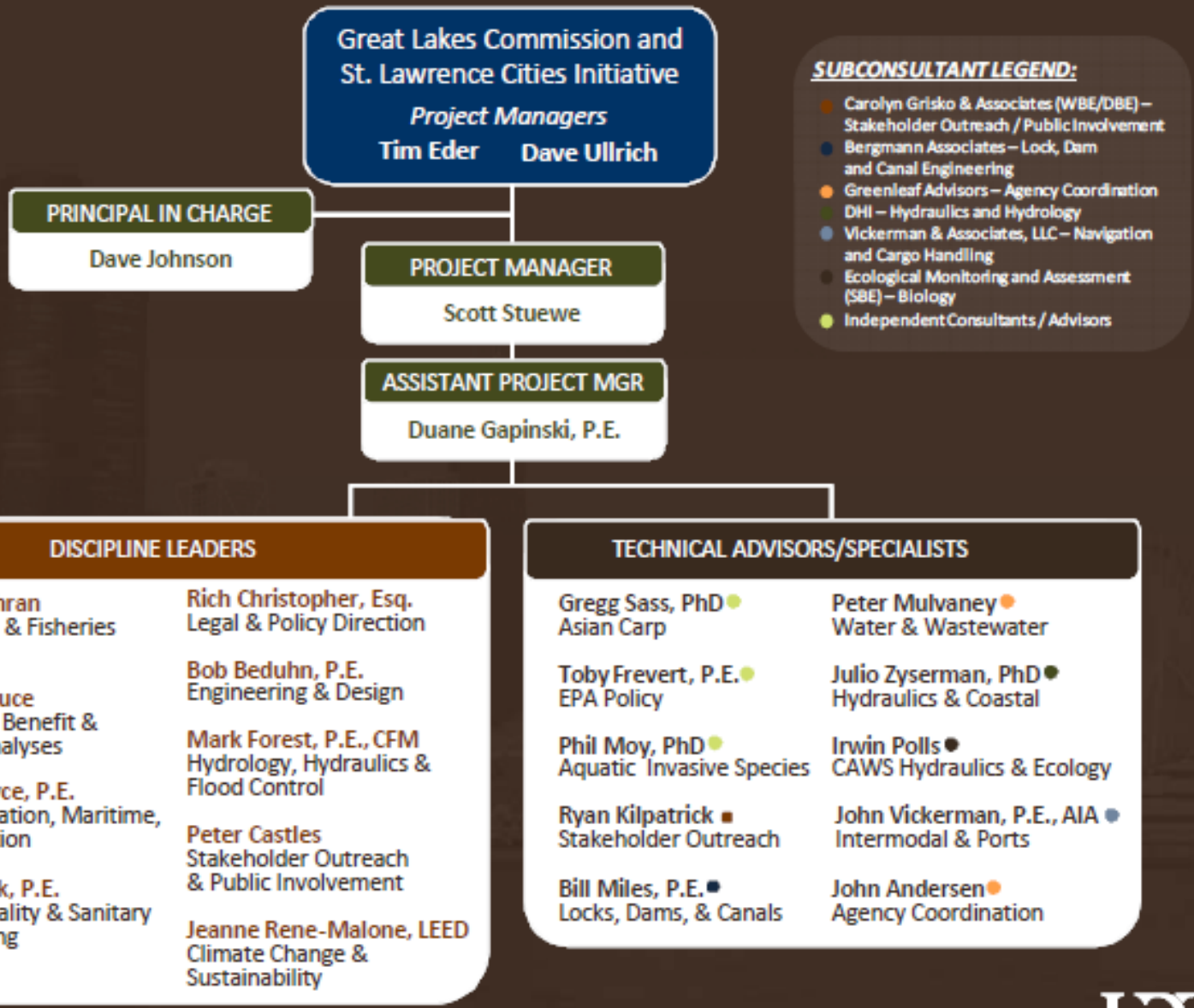
Consultant Team



Stakeholder Involvement

- Advisory Committee
  - Business, industry, environmental and other NGOs, community-based groups, etc. – from both Chicago area and Great Lakes region

- Resource Group
  - Governmental and quasi governmental entities with a direct interest in the project

    (e.g., Metropolitan Water Reclamation District of Chicago; U.S. EPA; U.S. Army Corps of Engineers; Great Lakes Fishery Commission; Tribal Representatives)

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Project Schedule

- **Phase I:** Hire consulting team and establish executive committee and advisory committee (July-Dec. 2010)
- **Phase II:** Identify options and scenarios for separation (Jan.-Oct. 2011)
- **Phase III:** Finalize and evaluate options, and prepare final reports (Oct.-Dec. 2011)

Final outcomes by January 2012

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Progress to date…

- Established and held 4 meetings of AC and RG, including additional small group "preview" meetings
- Hired lead consultant (HDR) with multi-disciplinary technical team
- Established criteria for developing and evaluating options
- Outlined framework for baseline, or "no project" conditions
- Conducted technical interviews
- Ongoing coordination with the Corps on GLMRIS
- Held 2 independent peer review sessions
- Currently finalizing three options to be evaluated

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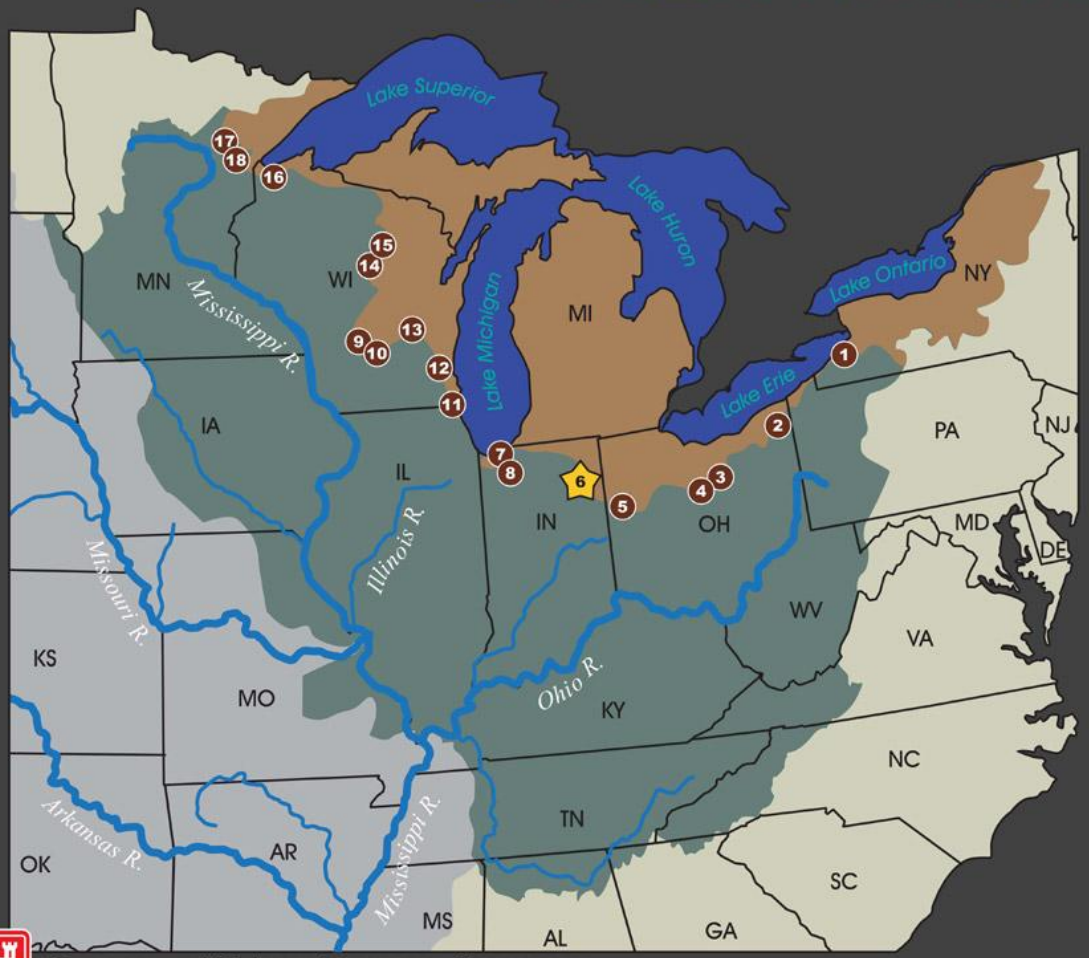
GLMRIS

GREAT LAKES AND MISSISSIPPI RIVER INTERBASIN STUDY

AQUATIC NUISANCE SPECIES | ECOSYSTEMS | NAVIGATION | RECREATION | FLOOD RISK MANAGEMENT | WATER USE

OTHER PATHWAYS



LEGEND

- Great Lakes
- Great Lakes Basin
- Upper Mississippi River Basin
- Lower Mississippi River Basin

Basins created from HUC data provided by The U.S. Department of Agriculture, Service Center Agencies

POTENTIAL AQUATIC PATHWAYS

	NAME	COUNTY	STATE
1	East Mud Lake	Chautauqua	NY
2	Mosquito Lake - Grand River	Trumbull	OH
3	Ohio and Erie Canal at Long Lake	Summit	OH
4	Little Killbuck Creek	Medina	OH
5	Grand Lake-St Mary's	Mercer	OH
6	Eagle Marsh, Fort Wayne	Allen	IN
7	Loomis Lake	Porter	IN
8	Parker Ditch - Cobb Ditch	Porter	IN
9	Portage (Upstream)	Columbia	WI
10	Portage (downstream)	Columbia	WI
11	Jerome Creek	Kenosha	WI
12	W. Menomonee Falls	Waukesha	WI
13	Rosendale - Brandon	Fond du Lac	WI
14	Hatley-Plover River	Marathon	WI
15	S. Aniwa Wetlands	Marathon-Shawano	WI
16	Brule Headwaters Portage	Douglas	WI
17	Swan River	Itasca	MN
18	Libby Branch of Swan River	Aitkin	MN

CREATED BY US ARMY CORPS OF ENGINEERS

MARCH 2011

LMETTE
MPING STATION

TO

DuPage

Chicago

BURNS HARBOR

Porter

ELECTRIC BARRIERS

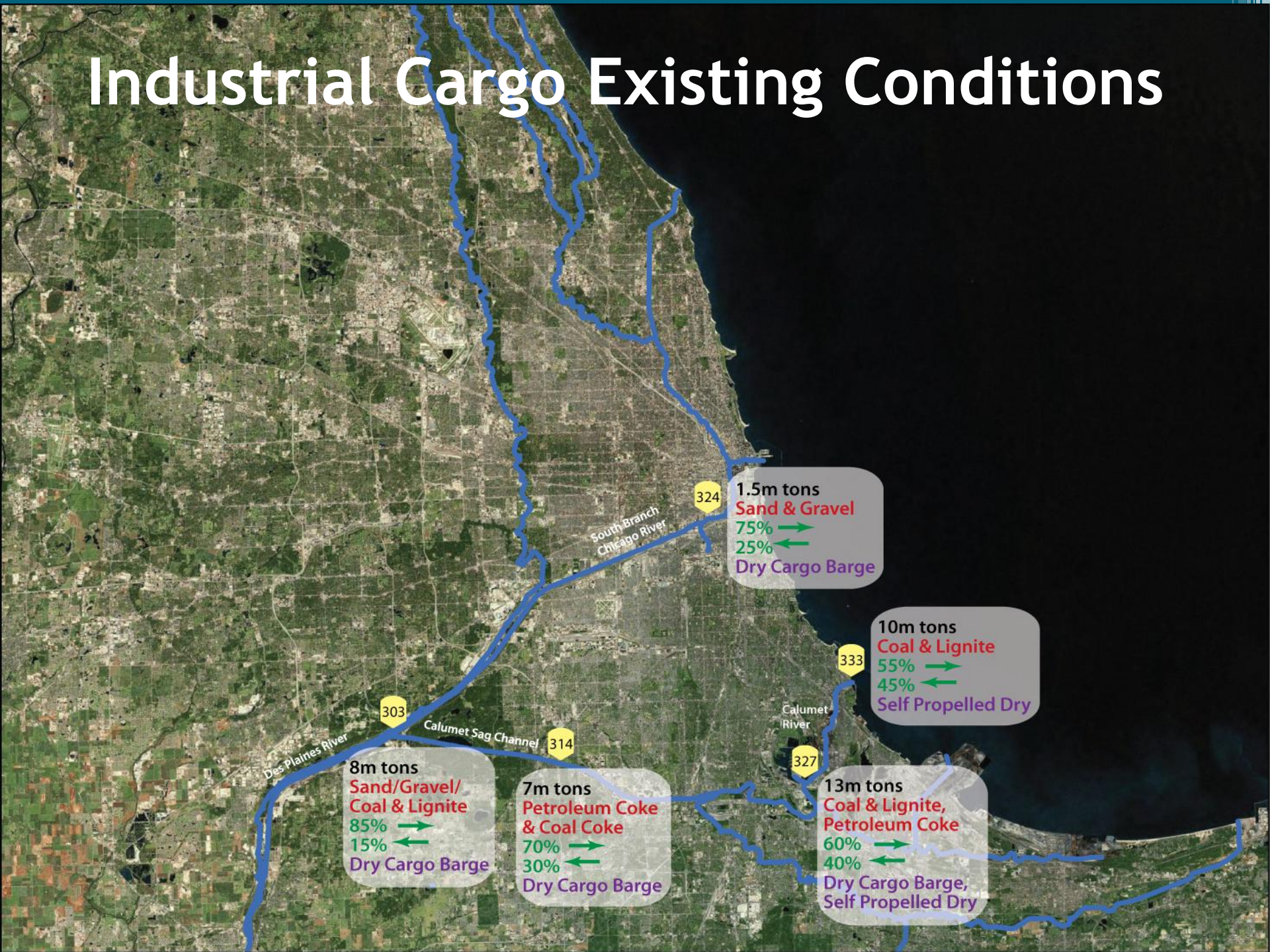
LOCKPORT
LOCK

Will

Stormwater Existing Conditions

Water Quality Existing Conditions

Industrial Cargo Existing Conditions



Passenger Existing Conditions

Considerations for separation

- Flooding, stormwater management
  - hydrology and conveyance capacities
- Water quality: CSOs and impacts to Lake Michigan
  - Discharges from WWTPs and ability to meet Lake MI standards
  - Disinfection/treatment of effluent and CSOs
- Balance risks of potential impacts:
  - CSOs vs. risk of flooding
  - flooding/CSOs vs. AIS movement
- Transportation: tour boats/recreation vessels in north and commercial vessels in south
  - Bringing barges close to ships; want to minimize cargo transfer and handling costs




What is an "option?"

- **Barrier location(s)**
- **Opportunities for improvement** – IMPORTANT; will impact costs, locations, and structure of options
- **Timeline**– when do we implement separation relative to projected completion of TARP or other anticipated system changes/improvements?
- **Cost estimate** – distinguish costs of separation project from costs to be incurred *anyway* for other improvements (e.g., WWTP upgrades, disinfection, TARP)
- **Cost-benefit analysis** – long-term return on investment

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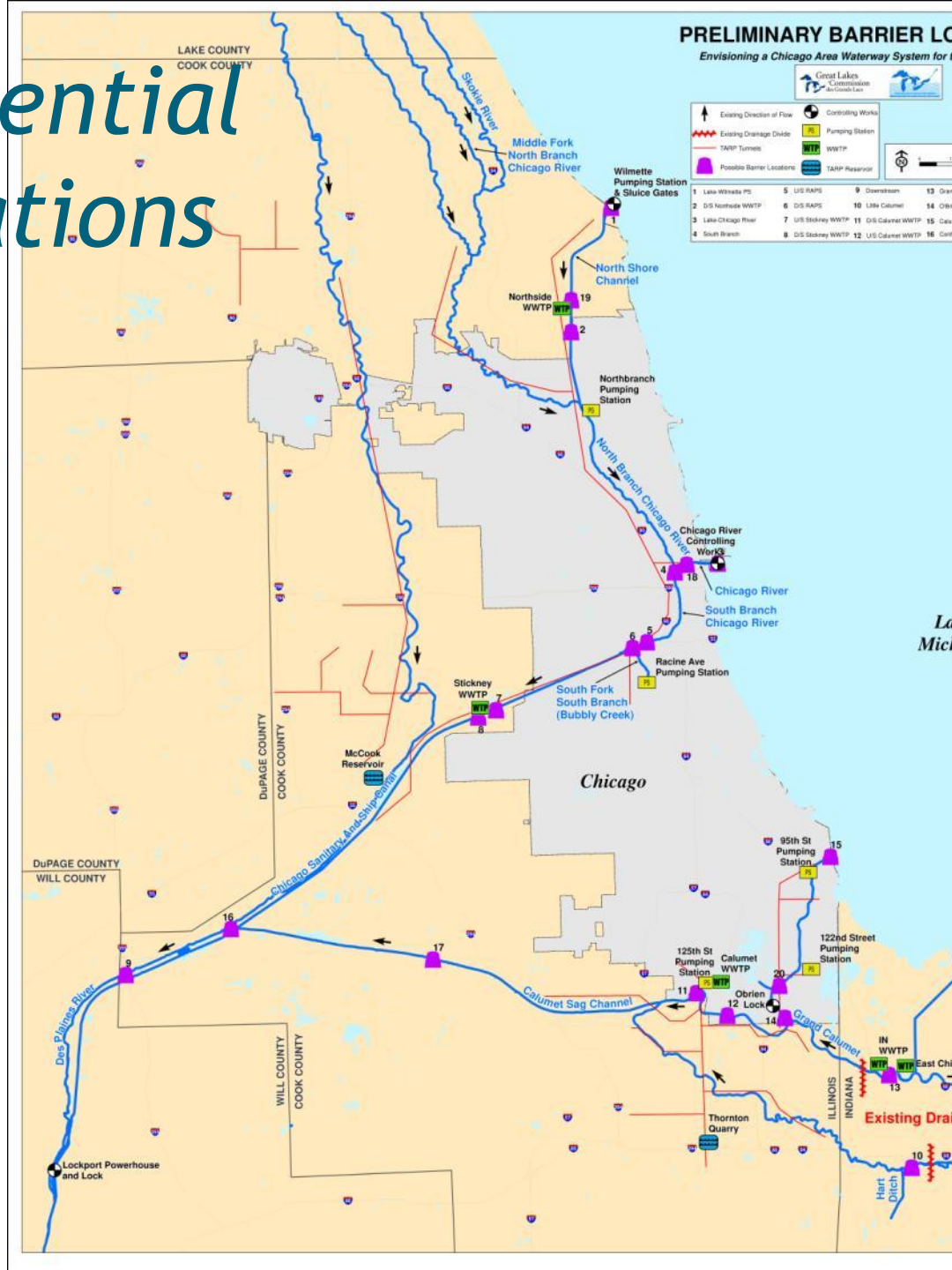
Preliminary Potential Separation Locations

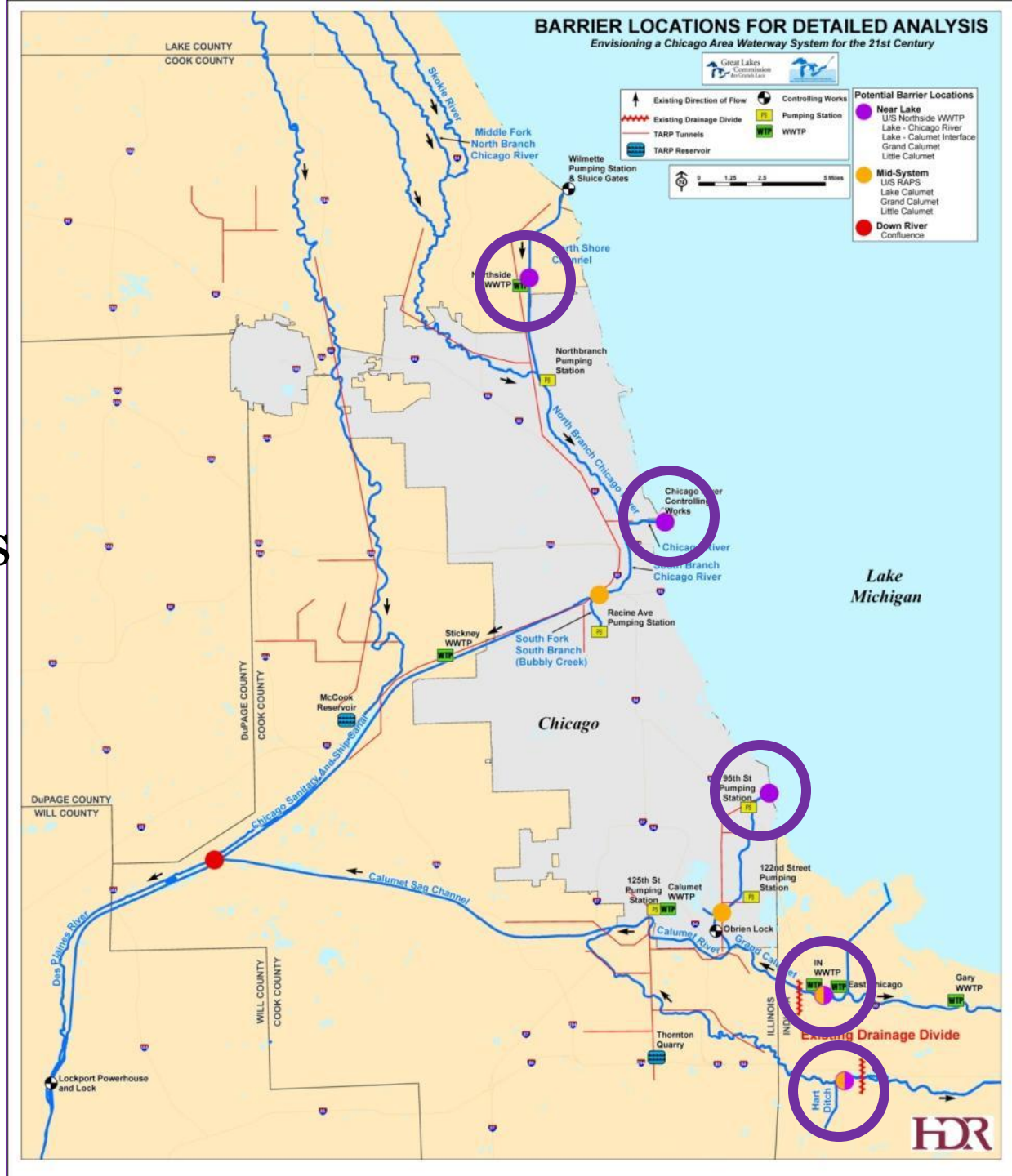
- Started with 20 locations near major infrastructure and inflows or confluences
- One barrier vs. “ensemble” of barriers
  - South of confluence OR
  - Barriers needed in north and south CAWS



Potential Separation Options

"Near Lake" Option

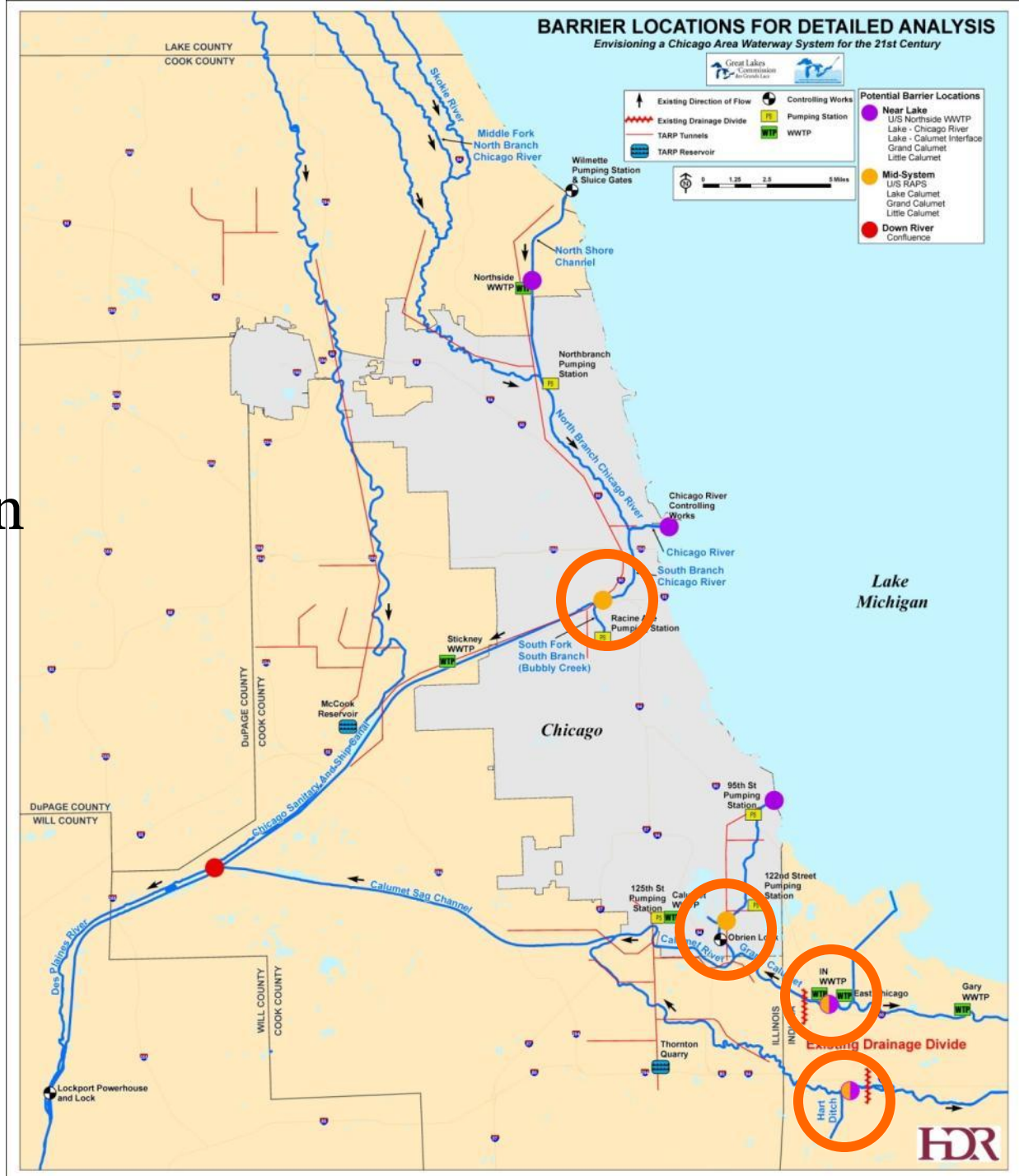
- includes 5 barriers



Potential Separation Options

"Mid System" Option

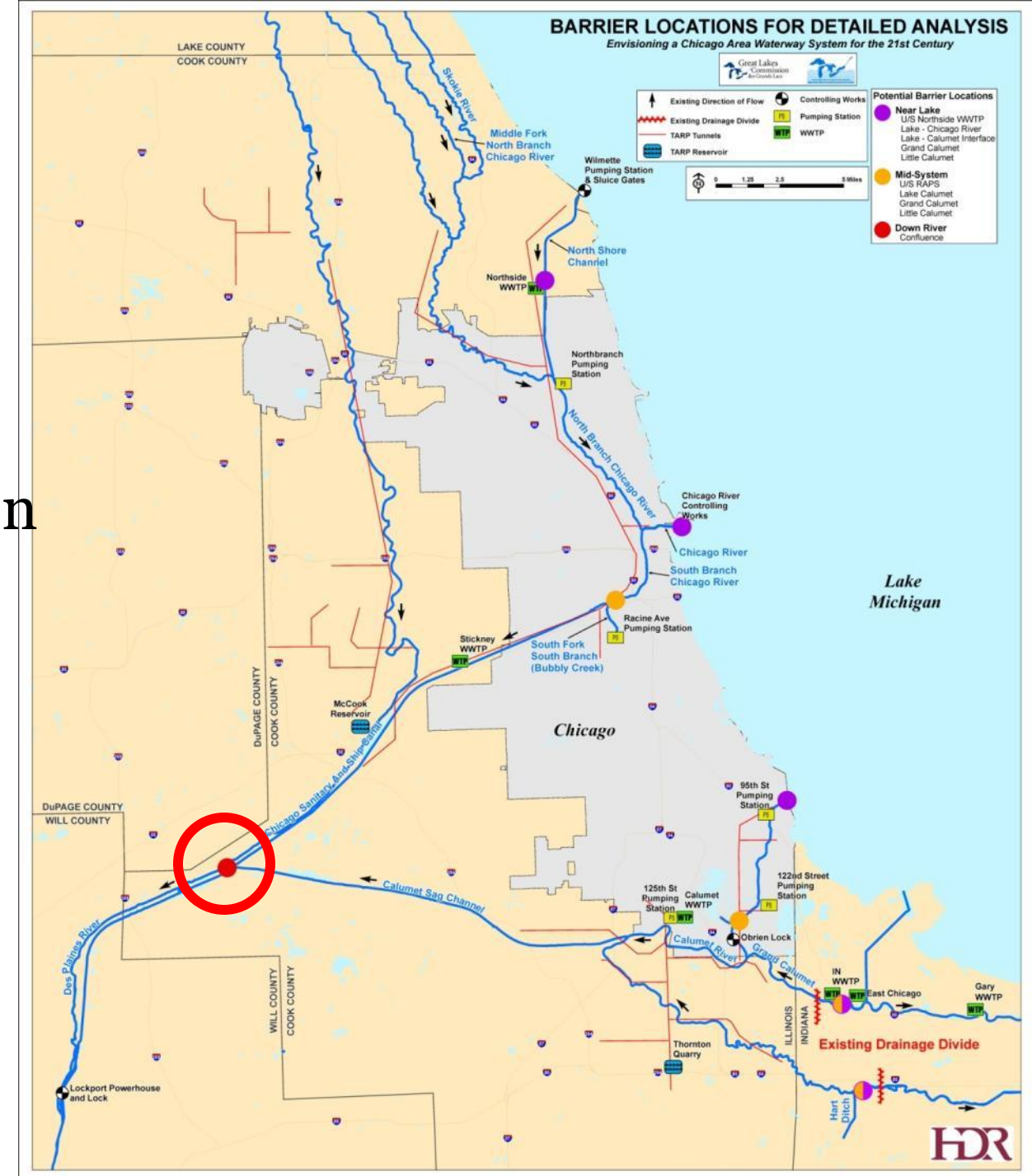
- includes 4 barriers

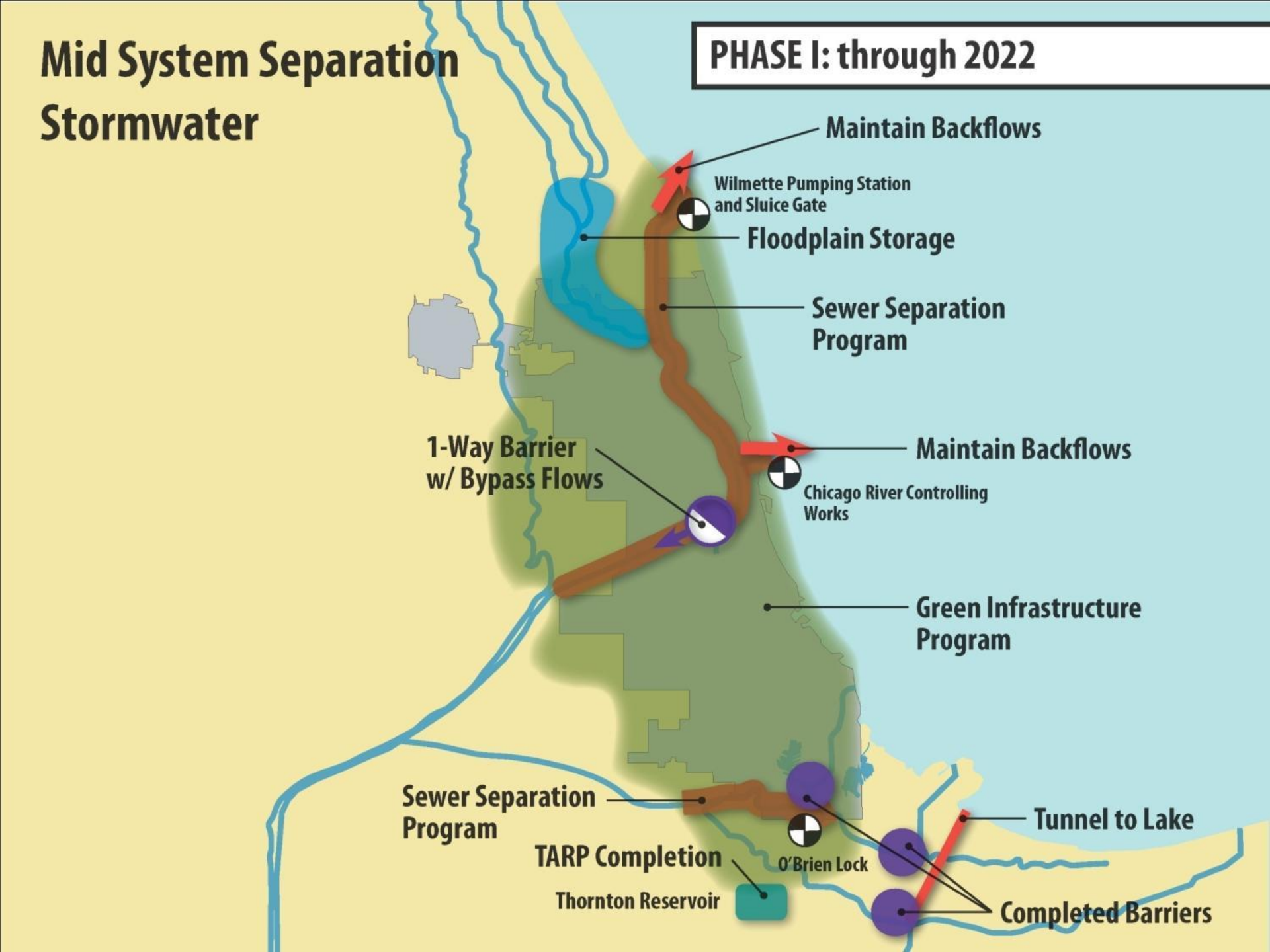


Potential Separation Options

"Down River" Option

- single barrier




Mid System Separation
Stormwater
PHASE I: through 2022
Maintain Backflows
Wilmette Pumping Station
and Sluice Gate
Floodplain Storage
Sewer Separation
Program
1-Way Barrier
w/ Bypass Flows
Maintain Backflows
Chicago River Controlling
Works
Green Infrastructure
Program
Sewer Separation
Program
Tunnel to Lake
TARP Completion
O'Brien Lock
Thornton Reservoir
Completed Barriers

Artists Rendering: Calumet River at O'Brien Lock

Next Steps

- Evaluate and finalize options, run analyses: **August-October**
- Final Advisory Committee meeting: **October**
- Regional public meetings: **October**
- Develop final report: **November-December**
- Release of final report: **January 2012**

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Take home messages…

- The study will be completed by Jan. 2012
- Study is focused separation, not other alternatives
  - Alternatives will be necessary in the interim
- This is not a consensus-building effort and will not recommend a preferred option for separation
  - A range of options for separation will be developed
- This effort includes extensive stakeholder engagement and input in the process
- Will complement, not supplant, important work of the Corps

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Questions and Discussion

More information:
www.glc.org/ans/chicagowaterway

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