



Reuse of Wastewater Effluent through a Public and Private Partnership

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Presented by:

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Presentation Agenda

- Challenges associated with concept of effluent reuse.
- Recent legislation specific to resource recovery.
- Brief history of the Great Lakes region specific to the Chicago area.
- Details of a modern day effluent reuse opportunity through a public and private partnership.



Historical Challenges

- Wastewater has historically been viewed as something to dispose of, not something to use.
- Wastewater systems historically built for:
 - Disposal of waste water;
 - Separate water supply from wastewater;
- For reuse to be successful, the perception of wastewater and our current regulations need to evolve from considering wastewater a “liability” to a “resource” .
 - Land application recently being accepted by public





Resource Recovery Legislation

- Resource Recovery Bill signed into law in July 2014 (HB4716, now Public Act 098-0731).

- Grants the Metropolitan Water Reclamation District of Greater Chicago the authority to capture and sell recovered resources and produce renewable energy resources.

- “The District has the opportunity and the ability to change the approach to wastewater treatment from that of a waste material to be disposed of, to one of a collection of resources to be recovered, reused, and sold, with the opportunity to provide the District with additional sources of revenue and reduce operating costs.”

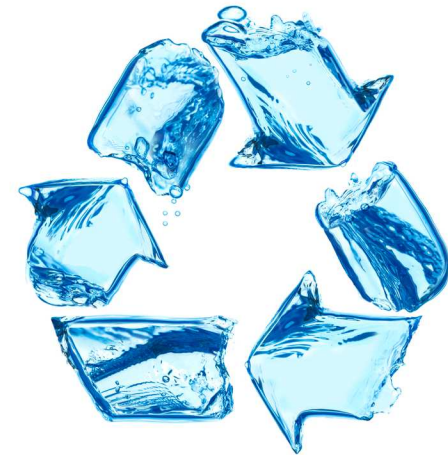




As a Result of Legislation...

MWRD 2015 Strategic Plan - “Recovering Resources, Transforming Water”

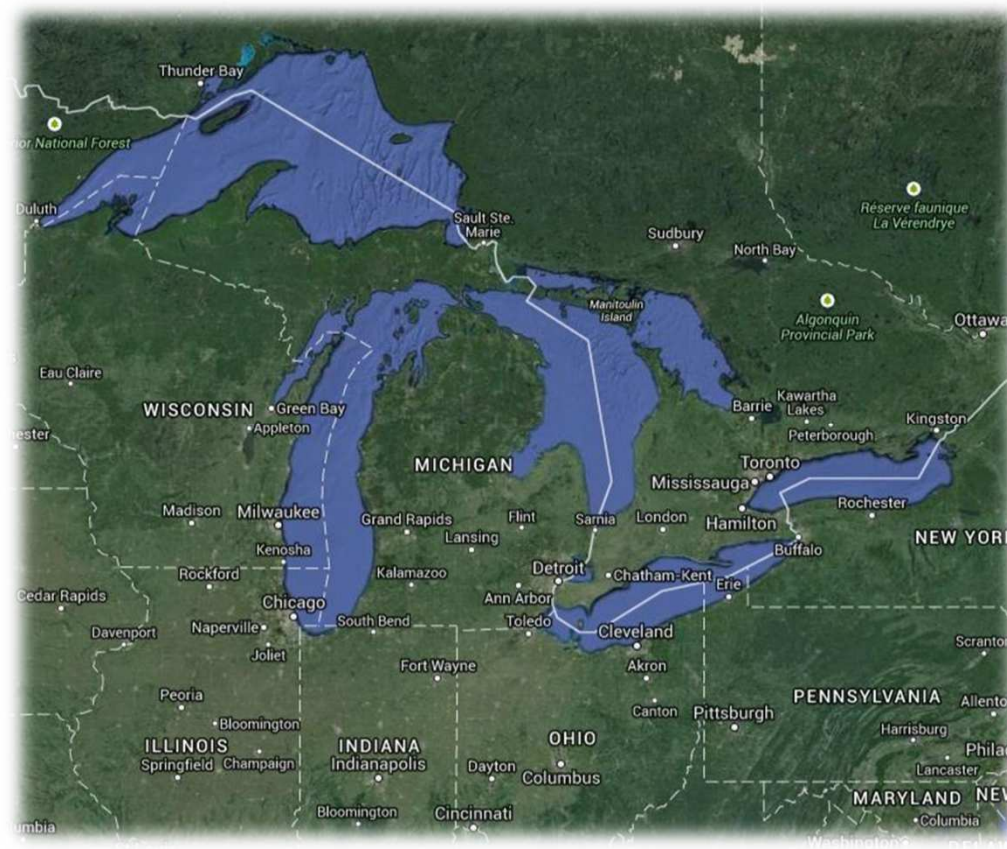
- The District’s 2015 strategic plan includes a goal: to pursue the recovery of natural resources, including pursuing reuse applications for the high quality water produced at its plants.
- This Public-Private partnership presents an opportunity to change the way we think about water reuse in the Midwest.





Why is a Water Reuse Project Being Evaluated in the Midwest?

- It all has to do with strategic vision and with the Great Lakes.



Why the Great Lakes Region? Some History...

- In the early 1900's, the Sanitary District of Chicago built a canal to reverse the flow of the Chicago & Calumet Rivers away from Lake Michigan and into the Illinois & Mississippi Rivers ²



- This reduced sewage flow into Lake Michigan
- But, it also diverted water away from Lake Michigan.





Legal Challenges

- In the 1920's, Ohio & other Great Lakes states claimed this diversion had:
 - "lowered water levels in all the Great Lakes and damaged the fragile ecosystem and economic sustainability of the region."



- **The Finding?**
 - US Supreme Court found that some diverted flow was necessary, but that the project was unlawful.
 - Entered a decree **regulating the amount of water the State of Illinois may divert from Lake Michigan** into the canal. ²





And Now The Modern Day Opportunity...

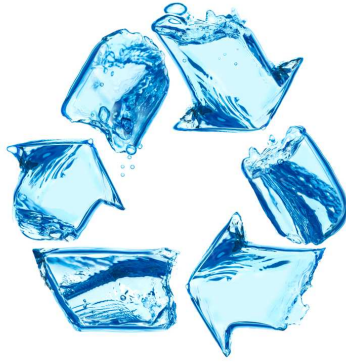
As a result of the Supreme Court decree, Illinois must continue to:

- Manage a limited amount of water allocation from the Great Lakes
- Plan for long term water supply



- The effluent re-use opportunity can potentially free up IDNR lake water allocation for use by other communities

A Modern Day Solution – Water Reuse



- Partnership formed to explore the viability of developing a non-potable, treated effluent water supply from the Calumet Water Reclamation Plant (CWRP) to large industrial users on south side of Chicago.
- CWRP treats & discharges approx 237 MGD from Chicago & its suburbs.¹
- CWRP plans to make up to 10 MGD available for reuse.





How would the project work?



Calumet Water Reclamation Plant (CWRP)

Sell wholesale effluent to Illinois American Water



Illinois American Water

Develop customer base

Build distribution infrastructure

Provide system O&M and customer service



Customers



Purchase non-potable effluent for use in processes
that do not require potable water



Concept Plan – Calumet WRP Effluent Reuse

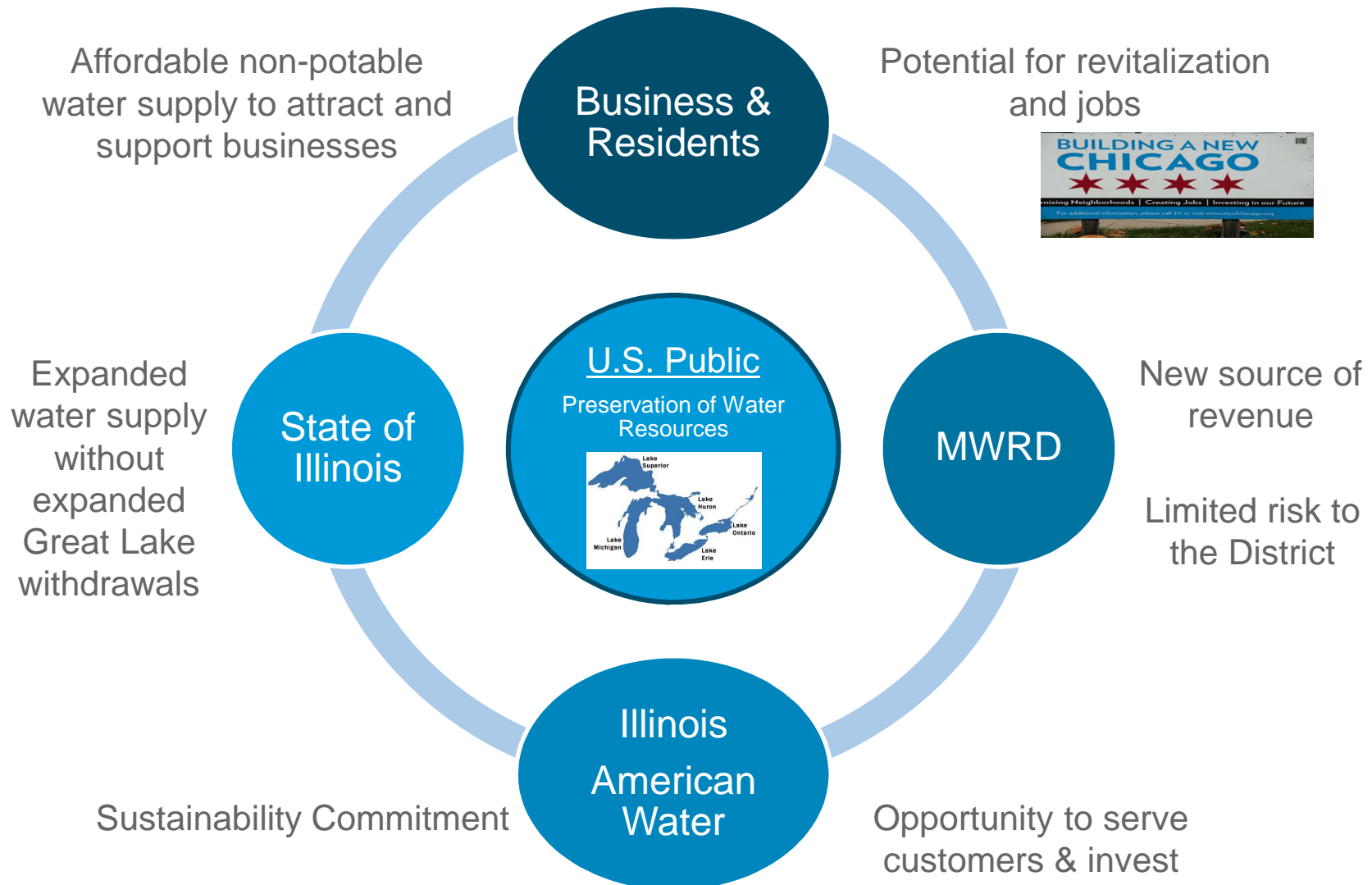


Exhibit 1 - CWRP Reuse Concept

	A Development Project for Beneficial Reuse of Effluent Water at the Calumet Water Reclamation Plant		<div><div><div>Scenario #1 Initial Pipeline</div><div>Scenario #2 Future Pipeline</div></div><div><div>Scenario #3 Future Pipeline</div><div>Potential Users</div></div><div><div>MWRD - Calumet WRP</div></div></div>		<div><div>N</div></div>
	GIS DEPARTMENT CHICAGO METRO DISTRICT 1000 INTERNATIONALE PARKWAY WOODRIDGE, IL 60517		CONCEPT LEVEL ONLY SCENARIO #1, #2 AND #3		
	DRAWN BY: SML DATE: 01-24-14 Rev By CHS DATE: 11-06-14 1 inch = 2,000 feet		PROSPECTIVE INDUSTRIAL/COMMERCIAL USERS OF EFFLUENT WATER		



Who does the project help?





Program Status / Next Steps

- **Conceptual infrastructure plan and finance model in place**
- **Outreach with target industrial end users to establish interest and potential customer base**
- **Outreach with regional planning & stakeholder groups to promote reuse concept**
- **Stakeholders partnered with Northwestern University (early 2016) in the concept design of a water intensive industrial park, utilizing effluent as primary source of non-potable water.**



A Public Private Partnership in Sustainability...

- **Opportunities arise where water needs exist :**
 - Where water sources are limited
 - Where effluent can be more cost effective approach
- **Public entity provides the vision & effluent source**
- **IAW provides the capital, construction and operations**
- **End user receives a sustainable product competitively priced based on Public Utility Commission oversight**

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References

- 1- www.mwrd.org/irj/portal/anonymous/waterreclamation (Metropolitan Water Reclamation District Website)
- 2- <http://www.supremecourt.gov/specmastrpt/Ohio's%20Memorandum.pdf> (Supreme Court website)