Information Item

Wastewater Reuse: Policy and Practice

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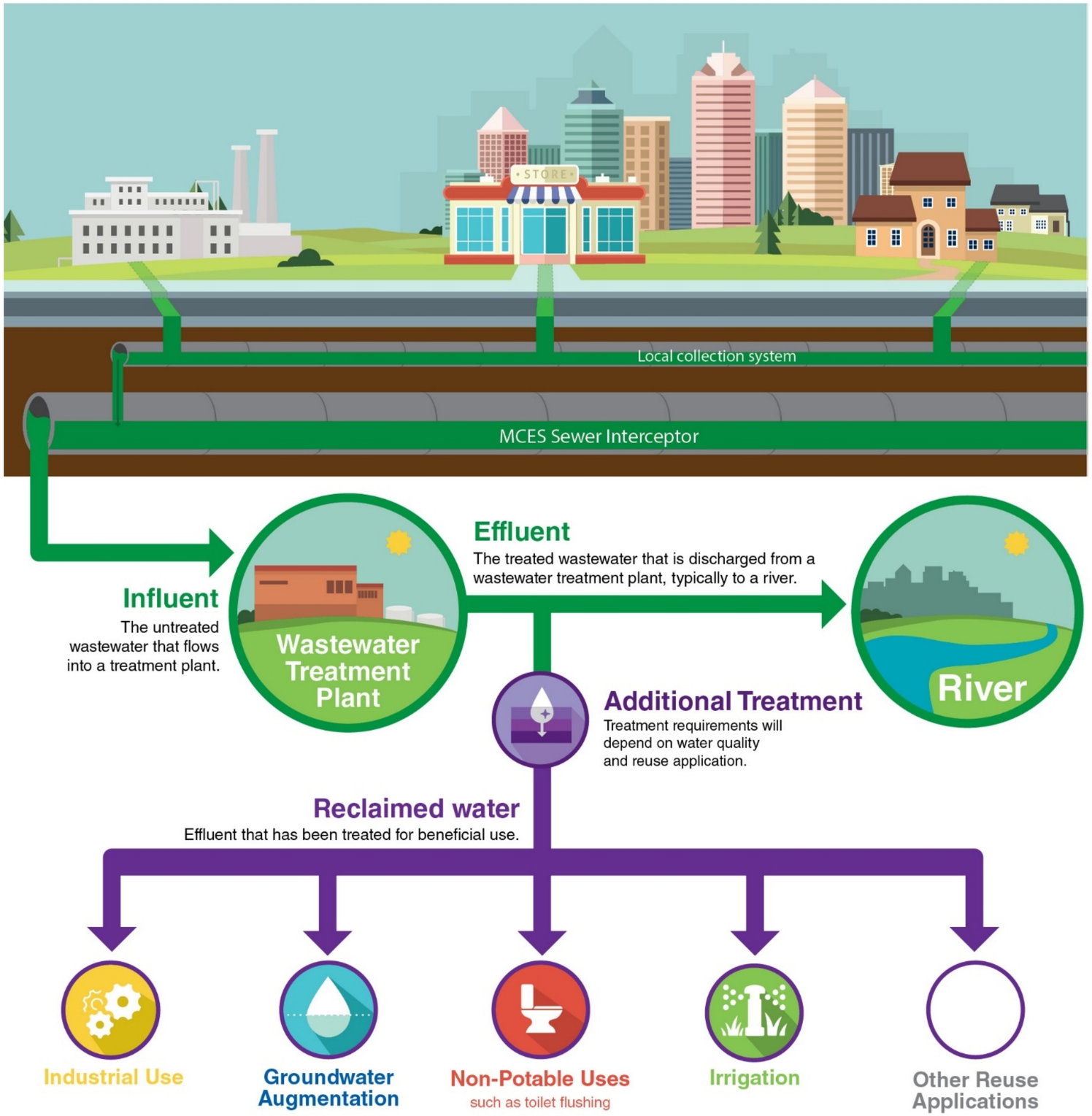
Council Meeting: April 22, 2020

METROPOLITAN COUNCIL

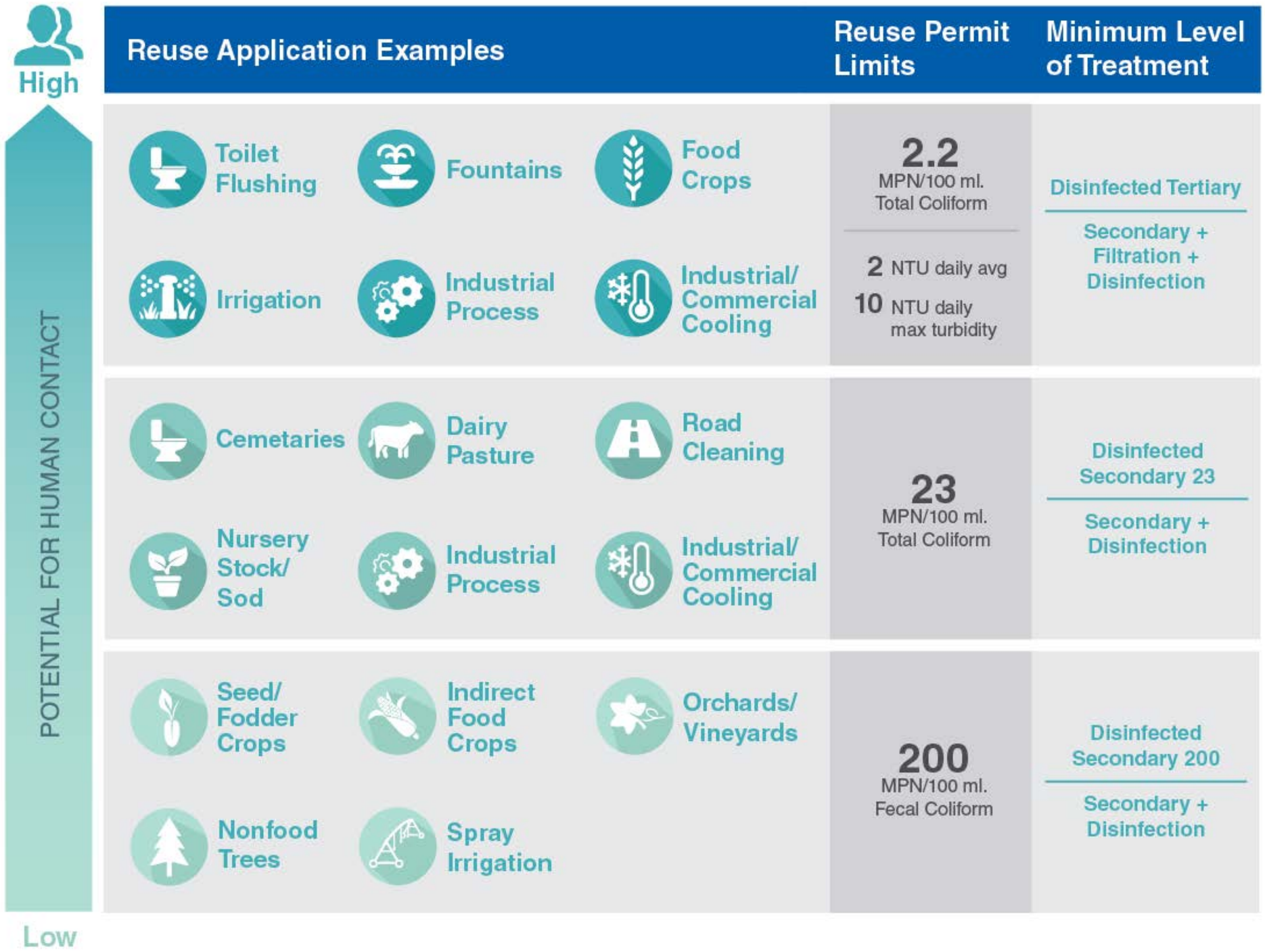
Wastewater Reuse

Wastewater reuse:
The practice of treating and reusing wastewater treatment plant (WWTP) effluent for beneficial use before releasing it back into the water cycle.

Reclaimed water:
Effluent that has received additional treatment to make it suitable for specific reuse applications or beneficial use.



MPCA Wastewater Reuse Guidance



Source: www.pca.state.mn.us/sites/default/iles/wq-wwr1-01.pdf

MCES Authority to Provide Reclaimed Water Service

MN Statute 473.511, sub. 1

Council has authority to construct, equip, operate and maintain interceptors and treatment works needed to implement the council's comprehensive plan for collection, treatment and disposal of sewage in the metro area.

Notes

- Reusing effluent qualifies as treatment and disposal of sewage
- Reuse is consistent with the Council's comprehensive plan

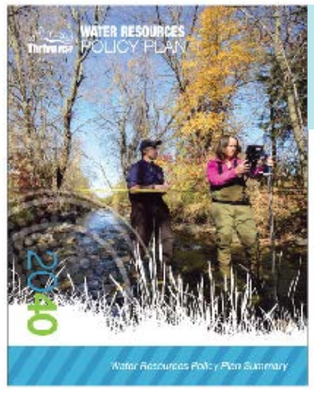
Limits

- Council does not have statutory authority to provide retail water service
- Council is prohibited from using its funds to give gifts

Key Council Documents

Thrive MSP 2040 Plan

Pursue wastewater reuse where economically feasible as a means to promote sustainable water resources.



2040 Water Resources Policy Plan

Work with our partners

Maximize regional benefits from regional investments

Provide efficient, high-quality, sustainable wastewater services

Process to Amend Wastewater Reuse-Related Water Policy Plan

APRIL - NOV. 2017
Wastewater Reuse Policy Task Force

FEB. 27 & MAR. 1, 2018
Public Workshops

APRIL 3, 2018
Public hearing

MAY 9, 2018
Metropolitan Council approved amendment

Task Force Policy Focus

Do wastewater reuse projects have a regional benefit?

If so, should the region, through MCES' municipal wastewater charge, contribute a regional cost share?

How should MCES partner with local communities or water utilities for wastewater reuse projects?

Key Policy Amendment Features

- **Pilot Program**
- **Cooperation with local communities & water suppliers**
- **Actual cost-of-service basis, not single rate**
- **Pursue non-Council funding**
- **Long-term reclaimed water service agreement with users**
- **Reporting at annual budget meetings**
- **Regional cost share based on regional wastewater system benefit**
- **Cap on cumulative regional cost share** *(approx. $1.65M/yr)*

Regional Cost Share Criteria:
Regional Wastewater System Benefit

- Proposed project is:
  - In sub-regional area where regional wastewater system built to serve long-term growth and
  - Water managers in that area now concerned about:
    - Sustainable water supply and impact of future water use
    - Difficulty to obtain a DNR groundwater use permit

  and/or

- Proposed project would reduce MCES' surface water discharge, delaying capital improvements to meet more stringent regulatory requirements

East Bethel Water Reclamation Facility

Wastewater source

Wastewater from homes, businesses, and industries in East Bethel.

Treatment Processes

- Phosphorous and nitrogen removal
- Membrane bioreactors
- UV disinfection

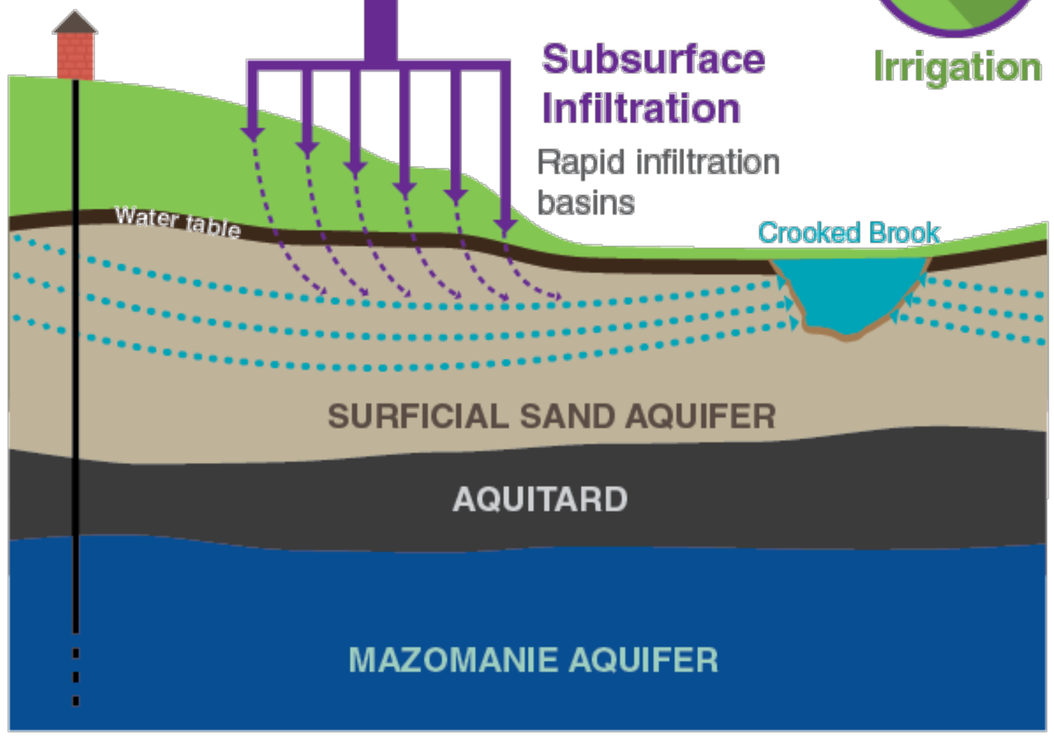
Reclaimed Water Amount
0.025 mgd average daily flow
(current flow)

Potential Future Use

Irrigation

Subsurface Infiltration

Rapid infiltration basins



Reuse at MCES Wastewater Treatment Plants

Metro Plant

MCES Wastewater Reuse Initiative

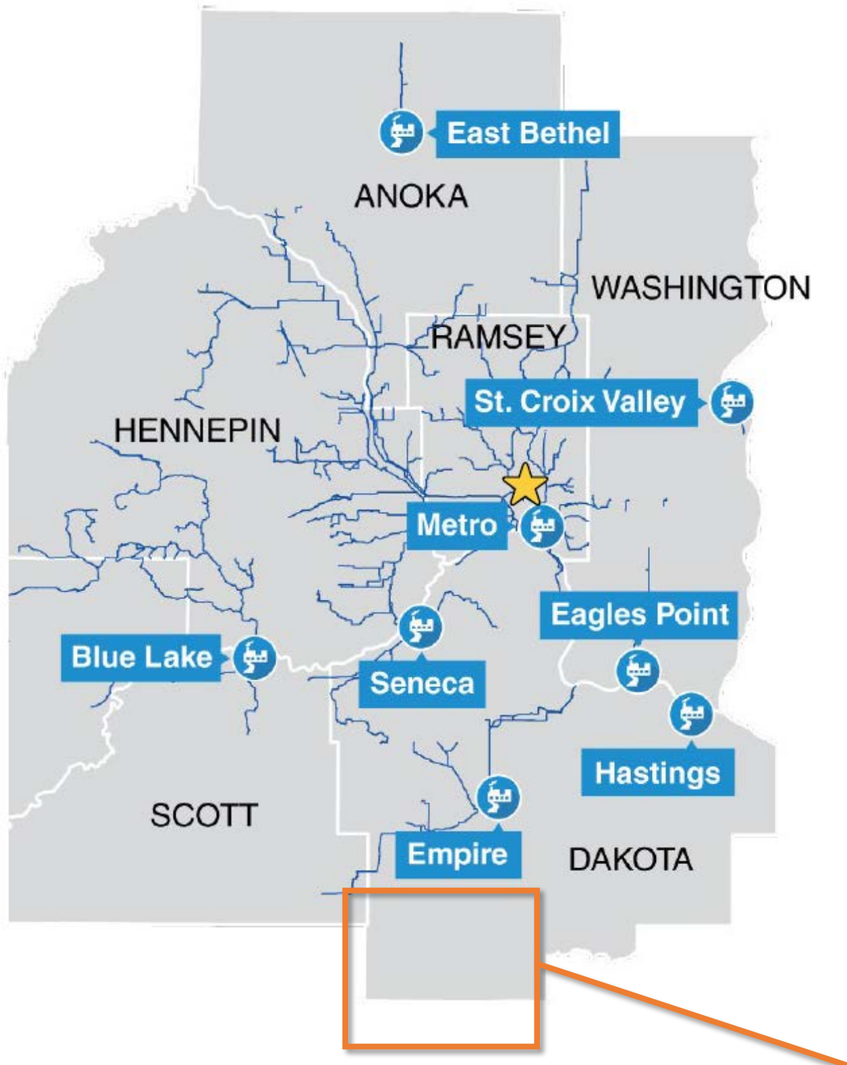
Current Effluent Reuse

- **Incineration:**
  - 6 mgd for Metro WWTP air quality scrubbers
  - 2 mgd for Seneca after cooler
- **Heat recovery:**
  - Eagle's Point WWTP
- **Yard hydrants, tank cleaning, service water in some WWTPs**

Future Wastewater Reuse

- **Metro WWTP Reclaimed Water Facilities – Under Design**
  - Install 1.5 mgd reclaimed water system; shift some city water &/or service water (groundwater) uses to reclaimed water
- **Southeast Metro Water Reclamation Facilities (treating Empire WWTP effluent to disinfected tertiary level) – Potential**
  - Reuse by the City of Rosemount

Wastewater Reuse: Opportunity and Location-Driven



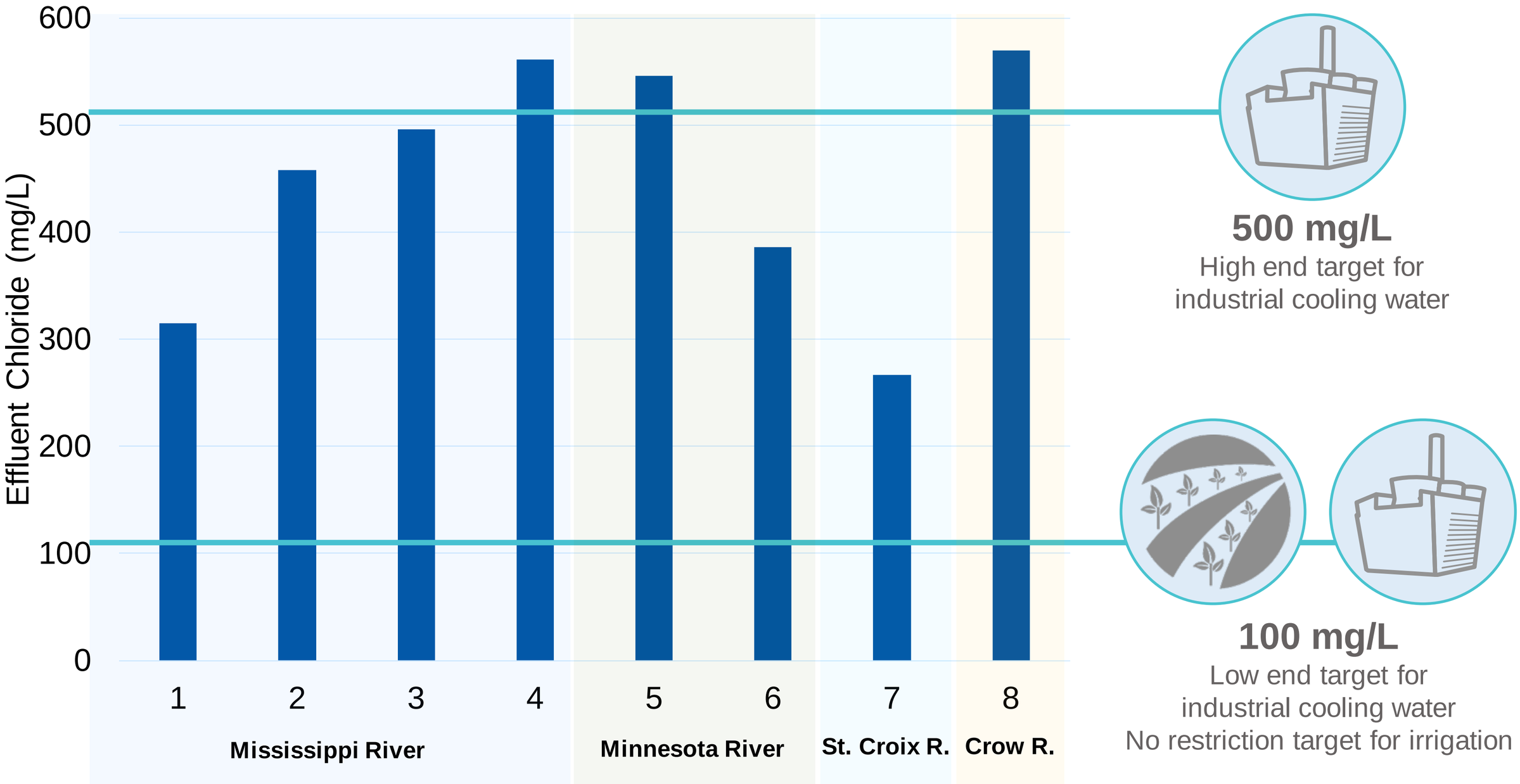
Potential for cost-effective reuse best when:

- Industrial area
- Growing area
- Effluent quantity & quality conducive to reuse
- Land available for required additional treatment
- Reclaimed water distribution system piping cost reasonable
- Reuse driver

Empire WWTP service area = high reuse potential

Request from City of Rosemount (Active)

Chloride:
Major Challenge For Wastewater Reuse



500 mg/L
High end target for
industrial cooling water

100 mg/L
Low end target for
industrial cooling water
No restriction target for irrigation

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