2017 WASTEWATER REUSE POLICY TASK FORCE REPORT

November 2017

METROPOLITAN COUNCIL

The vision of Metropolitan Council Environmental Services is to be a valued leader and partner in water sustainability

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The Metropolitan Council is the regional planning organization for the seven-county Twin Cities area. The Council operates the regional bus and rail system, collects and treats wastewater, coordinates regional water resources, plans and helps fund regional parks, and administers federal funds that provide housing opportunities for low- and moderate-income individuals and families. The 17-member Council board is appointed by and serves at the pleasure of the governor.

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Executive Summary

Thrive MSP 2040 states that the Council will pursue wastewater reuse where economically feasible as a means to promote sustainable water resources. The *2040 Water Resources Policy Plan* states that the Council will strive to "maximize regional benefits from regional investments." Environmental Services has received expressions of interest in wastewater reuse that raise policy-related issues for which guidance is needed.

To address these issues, the Metropolitan Council, in March 2017, authorized formation of the Wastewater Reuse Policy Task Force charged with reviewing the Council's existing wastewater reuse policies and recommending clarifications needed to respond to opportunities for wastewater reuse.

The task force focused on the following specific areas:

- Regional benefit of reuse: do MCES community customers see a regional benefit to wastewater reuse projects? If so, is cost sharing appropriate between the reclaimed water user and MCES ratepayers as a whole? If so, what level of cost sharing would be appropriate?
- How should MCES partner with local and regional water providers for reclaimed water services?

The task force members listed included representatives with public works, wastewater utility, finance, and city manager experience. The membership was diverse in terms of community size, geographic coverage, and with or without history of interest or experience in wastewater reuse.

2017 Wastewater Reuse Policy Task Force

Task Force Chair

Sandy Rummel, Council Member, District 11, Metropolitan Council

Task Force Members

Bryan Bear, City Administrator, City of Hugo
Jon Eaton, Superintendent of Utilities, City of Eagan
Beverly Farraher, Public Works Operations Manager, City of St. Paul
Mark Graham, City Engineer/ Public Services Director, City of Vadnais Heights
Debra Heiser, Engineering Director, City of St. Louis Park
Mary Hurliman, Deputy Director of Public Works, City of Bloomington
Steven Huser, Government Relations Specialist, Metro Cities
Jennifer Levitt, Community Development Director/City Engineer, City of Cottage Grove
Chris Petree, Public Works Director, City of Lakeville
Michael Thompson, Public Works Director, City of Plymouth
Kurt Ulrich, City Administrator, City of Ramsey

The task force ***reached consensus*** on the following policy issues and recommendations related to wastewater reuse:

- Regional benefit evaluation. MCES will evaluate the potential regional benefit of a potential wastewater reuse project. Criteria to be used for evaluating whether there is a regional benefit to a potential wastewater reuse opportunity shall include the following:
  - The wastewater reuse opportunity advances water sustainability by increasing the region's wastewater reuse capability.
  - The wastewater reuse opportunity provides an environmental benefit for the region, such as:
    - Extending/supplementing surface or ground water
    - Mitigating contamination
    - Restoring/enhancing habitat
    - Providing a new source of energy, reducing energy use, or producing energy
    - Helping to meet solid waste management goals
  - The wastewater reuse opportunity fosters the region's economy and economic development (e.g., through job creation, facilitating development that otherwise would not happen, or

uniquely adding to the region's portfolio of industries, businesses, etc.). But for reclaimed water, the potential project associated with the opportunity would not go forward.

- Funding from non-Council funds. MCES shall pursue sources of non-Council funding for the cost of MCES facilities needed to provide the reclaimed water service. Possible funding sources include Clean Water Legacy Funds, state bonding funds, existing or future reuse grants, etc.

The task force ***did not reach consensus*** on whether a regional cost share is warranted if a regional benefit existed. Because of this, the task force believes the Metropolitan Council should decide if and how to proceed with a regional cost share for such wastewater reuse projects. If the Council decides to proceed with implementing a regional cost share for projects that have a regional benefit, the task force recommends that the Council implement a pilot wastewater reuse program with the following elements:

- Cap on regional cost share. The regional cost share for external wastewater reuse projects under this pilot program shall not exceed 0.75% of MCES' annual municipal wastewater charge (MWC) budget (approximately $1 increase in average annual MWC per residential equivalent (REC)).
- Public hearing. A public hearing would be held to obtain public input before recommending a regional cost share to the Council's governing body.
- Council board decision-making. Metropolitan Council will make the final decision about regional benefit and any regional cost share.
- User agreement. The Council's decision regarding the regional cost share (and resulting reclaimed water rate) will be incorporated in the user agreement for reclaimed water service.
- Reporting on MCES reuse activities. MCES will report to the Council board annually or as needed regarding the pilot program's performance in meeting the regional goals set for wastewater reuse. MCES will report on its wastewater reuse activities during its annual customer workshops.

The next steps for acting on the task force's findings and recommendations are:

- Task force reports its findings and recommendation to Environment Committee
- Environment Committee considers and acts on task force's findings and recommendations. Assuming Committee approves recommendations, they are passed on to the Council.
- Council considers and acts on task force's findings and recommendations, as passed on by Environment Committee. Assuming Council approves the policy recommendations, Council approves a public hearing on the proposed policy changes to the *Water Resources Policy Plan*.
- MCES holds a public hearing on the policy changes to the *Water Resources Policy Plan*. Assuming no adverse public comments, the Council adopts the changes to the *Water Resources Policy Plan*.

If the Council decides to implement a pilot wastewater reuse program, the need for additional policy amendments can be taken up at any time at the direction of the Council. All water-related policies are reviewed and updated during the *Water Resources Policy Plan* update process that happens every 10 years. The latest plan was adopted May 2015. The next update is scheduled for 2025. Therefore, policies automatically will be reviewed and updated by 2025.

Introduction

Thrive MSP 2040 states that the Council will pursue wastewater reuse where economically feasible as a means to promote sustainable water resources. The *2040 Water Resources Policy Plan* states that the Council will strive to "maximize regional benefits from regional investments." One implementation strategy is to "Invest in wastewater reuse when justified by the benefits for supplementing groundwater and surface water as sources of nonpotable water to support regional growth, and by the benefits for maintaining water quality."

MCES has received expressions of interest in wastewater reuse that raise policy-related issues for which guidance is needed. These issues include determining the regional benefit of the reuse; financial aspects; partnership, such as joint partnerships with local water utilities; etc.

To address these issues, the Metropolitan Council at its March 22, 2017 meeting, authorized the formation of the Wastewater Reuse Policy Task Force. The Council charged the task force with reviewing the Council's existing wastewater reuse policies and recommending clarifications needed to respond to opportunities for wastewater reuse.

The task force focused on the following specific areas:

- Regional benefit of reuse: do MCES community customers (ratepayers) see a regional benefit to local wastewater reuse projects? If so, is cost sharing appropriate between the reclaimed water user and MCES ratepayers as a whole? If so, what level of cost sharing would be appropriate?
- How should MCES partner with local and regional water providers for reclaimed water services?

The task force members listed below, included community staff with public works, wastewater utility, finance, or city manager responsibilities. The membership was diverse in terms of the represented community's size, geographic coverage, and history of interest or experience in wastewater reuse.

Task Force Chair

- Sandy Rummel, Council Member, District 11, Metropolitan Council

Task Force Members

- Bryan Bear, City Administrator, City of Hugo
- Jon Eaton, Superintendent of Utilities, City of Eagan
- Beverly Farraher, Public Works Operations Manager, City of Saint Paul
- Mark Graham, City Engineer/Public Services Director, City of Vadnais Heights
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Under Minnesota 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." Reuse is consistent with the Council's comprehensive plan, and reusing effluent water qualifies as treatment and disposal of sewage under this statute.

MCES' current policy for wastewater reuse is contained in *Thrive MSP 2040* and the *2040 Water Resources Policy Plan*, but clarification is needed regarding what are considered regional benefits and how MCES should partner with local communities on wastewater reuse projects.

Thrive MSP 2040's wastewater reuse policy states: "Pursue wastewater reuse where economically feasible as a means to promote sustainable water resources." Wastewater reuse policy is addressed in the *2040 Water Resources Policy Plan* in three sections:

Water Conservation and Reuse (Page 33)

- Policy: The Council will work with our partners to identify emerging issues and challenges for the region as we work together on solutions that include the use of water conservation, wastewater and stormwater reuse, and low-impact development practices to promote a more sustainable region.
- Implementation Strategy*:* To supplement groundwater and surface water, investigate reusing treated wastewater as sources of nonpotable water to support regional growth, and when cost-effective, implement reuse.

Investment (Page 39)

- Policy*:* The Council will strive to maximize regional benefits from regional investments.
- Implementation Strategy: Invest in wastewater reuse when justified by the benefits for supplementing groundwater and surface water as sources of nonpotable water to support regional growth, and by the benefits for maintaining water quality.

Wastewater Sustainability (Page 40)

- Policy: The Council will provide efficient, high-quality, and environmentally sustainable regional wastewater infrastructure and services.
  The Council shall conduct its regional wastewater system operations in a sustainable manner as is economically feasible. Sustainable operations relates not only to water resources but also to increasing energy efficiency and using renewable energy sources, reducing air pollutant emissions, and reducing, reusing, and recycling solid wastes."
- Implementation Strategy: Reuse treated wastewater to meet nonpotable water needs within Council wastewater treatment facilities where economically feasible.

Task Force Findings and Recommendations

The task force ***reached consensus*** on the following policy issues and recommendations related to wastewater reuse:

Reason for wastewater reuse program. MCES is developing its wastewater reuse capabilities in conformance with the Council's mission to support the orderly economic development of the region. Developing wastewater reuse capabilities also conforms to Council policies in *Thrive MSP 2040* and the *Water Resources Policy Plan*.

Responsive approach. MCES will continue to respond, on a first-come, first-served basis, to entities that have interest in reclaimed water service.

Cooperation and partnership rather than competition. Using a joint powers agreement, MCES will partner, where appropriate, with local communities and water suppliers as it builds its

wastewater reuse capabilities. Implementation of wastewater reuse projects shall be consistent with the comprehensive plan of the local community in which a wastewater reuse project would be located. MCES does not desire to compete with municipal water suppliers.

Cost-of-service basis for reclaimed water rate. MCES will determine the reclaimed water rate on a cost-of-service, case-by-case (i.e., project-specific) basis rather than use the same charge for all reclaimed water customers. The rate shall not vary on a seasonal or volume basis.

Regional benefit evaluation. MCES will evaluate the potential regional benefit of a potential wastewater reuse project. Criteria to be used for evaluating whether there is a regional benefit to a potential wastewater reuse opportunity shall include the following:

- The wastewater reuse opportunity advances water sustainability by increasing the region's wastewater reuse capability.
- The wastewater reuse opportunity provides an environmental benefit for the region, such as:
  - Extending/supplementing surface or ground water
  - Mitigating contamination
  - Restoring/enhancing habitat
  - Providing a new source of energy, reducing energy use, or producing energy
  - Helping to meet solid waste management goals
- The wastewater reuse opportunity fosters the region's economy and economic development (e.g., through job creation, facilitating development that otherwise would not happen, or uniquely adding to the region's portfolio of industries, businesses, etc.). But for reclaimed water, the potential project associated with the opportunity would not go forward.

Funding from non-Council funds. MCES shall pursue sources of non-Council funding for the cost of MCES facilities needed to provide the reclaimed water service. Possible funding sources include Clean Water Legacy Funds, state bonding funds, existing or future reuse grants, etc.

The task force ***did not reach consensus*** on whether a regional cost share is warranted if a regional benefit exists. Because of this, the task force believes the Metropolitan Council should decide if and how to proceed with a regional cost share for such wastewater reuse projects. If the Council decides to proceed with implementing a regional cost share for projects that have a regional benefit, the task force recommends that the Council implement a pilot wastewater reuse program with the following elements:

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- Reporting on MCES reuse activities. MCES will report to the Council board annually or as needed regarding the pilot program's performance in meeting the regional goals set for wastewater reuse. MCES will report on its wastewater reuse activities during its annual customer workshops.

The next steps for acting on the Task Force's findings and recommendations are as follows:

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Conclusions

The Wastewater Reuse Policy Task Force concluded its work in November 2017 with consensus on a number of items related to wastewater reuse (the consensus items are listed in this document) and recommendations for a pilot wastewater reuse program if the Council decides to implement a Regional cost share for wastewater reuse projects.

The task force was very engaged and expressed appreciation to the Council for the chance to provide input.

Appendices

Task force meeting notes and presentation material are provided in Appendices 1-4.

- Appendix 1- Meeting Notes and Presentations from Task Force Meeting 1
- Appendix 2- Meeting Notes and Presentations from Task Force Meeting 2
- Appendix 3- Meeting Notes and Presentations from Task Force Meeting 3
- Appendix 4- Meeting Notes and Presentations from Task Force Meeting 4

Appendix 1

Meeting Notes and Presentations from Task Force Meeting 1

Metropolitan Council Environmental Services
Wastewater Reuse Policy Task Force

Meeting #1
April 19, 2017
9:30-11:30 am

St. Croix Room
League of Minnesota Cities
145 University Ave West
Saint Paul, MN 55103

Members Present

Mary Hurliman, City of Bloomington
Jennifer Levitt, City of Cottage Grove
Jon Eaton, City of Eagan
Bryan Bear, City of Hugo
Michael Thompson, City of Maplewood
Steven Huser, Metro Cities
Sandy Rummel, Metropolitan Council
Kurt Ulrich, City of Ramsey
Beverly Farraher, City of St. Paul
Mark Graham, City of Vadnais Heights

Members Absent

Debra Heiser, City of St. Louis Park
Chris Petree, City of Lakeville

Metropolitan Council Staff Present

Deborah Manning
Bryce Pickart
Jeannine Clancy
Michael Nguyen
Dave Brown
Noah Johnson
Jeff Syme

Others Present

Joe Lynch, Inver Grove Heights
Eric Roper, Star Tribune

Meeting Notes

1. **Welcome & Introductions**
2. **Task Force Purpose**
    a. Review the Council's current wastewater reuse policy
    b. Recommend clarifications needed to respond to opportunities for wastewater reuse
3. **Task Force members**
    a. Make up of Task Force is an attempt to reflect the diversity of the communities in the Metropolitan Council Environmental Services (MCES) service area.
    b. Future meetings will engage stakeholders from the business community, regulatory agencies, MAWSAC-TAC (Metropolitan Area Water Supply Advisory Committee's Technical Advisory Committee), and others as needed.
4. **Meeting Goals – develop an understanding of:**
    a. Wastewater reuse from national, state, and regional perspectives
    b. Metropolitan Council's wastewater reuse policies and drivers
    c. Regional benefit, partnership, and cost issues related to wastewater reuse

5. **Task Force Issues, Approach, Schedule, Outcome, & Report**
    a. MCES is a wholesaler of wastewater service, billing communities for our service and communities billing the businesses and residents of their community.
    b. MCES is a fee-for-service organization. The sewer availability charge covers buying capacity in the system. Industrial charges cover higher strength waste and permit administration fees. The bulk of MCES' revenue is from municipal wastewater charges that are paid by communities based on their share of the total wastewater volume for the year.
    c. MCES' regional cost-of-service approach provides benefits for the entire Region. Decisions are made not according to what might appear to be in the best interests of one community or another for a particular project. Decisions are made according to what is judged to be the best approach for the Region. One rate is in effect for all served communities across the Region, even though, if one looks at a piece of the system, that part might be less expensive than another part for various reasons.
    d. There are two fundamental issues before the Task Force:
        i. How would MCES allocate the cost for reclaimed water? Is the basis strictly a cost-of-service approach in which the user pays for the entire cost of the reclaimed water (above what MCES already incurs for conveyance and treatment) or does the cost basis consider that wastewater reuse provides a benefit to the orderly, economic development of the Region? If the latter, what issues should be considered in determining the regional benefit cost component?
        ii. Because MCES is a wholesaler of wastewater services and the communities are the water suppliers, should MCES sell reclaimed water to the community (wholesale approach), or directly to users (retail approach), or some combination based on circumstances?
6. **What is Wastewater Reuse?**
    a. Wastewater reuse is the practice of treating and reusing wastewater. Reclaimed water is wastewater treatment plant effluent that has received additional treatment to meet regulatory guidance for various uses.
    b. Some typical reasons people reclaim water
        i. Conserve potable water and avoid new water source development
        ii. Solve problems such as salt water intrusion or land subsidence due to declining groundwater levels
        iii. Support/augment wetlands or other surface features
7. **Mankato Wastewater Reuse**
    a. Ten-year history of wastewater reuse.
    b. Driver for reuse was the Mankato Energy Center (MEC) looking to locate and needing a large water supply.
    c. Reclaimed water is used for MEC cooling water (1.5 – 2 mgd), city street sweeping, irrigation in parks and green spaces (750,000 gallons/year), and a tree farm at the Water Reclamation Facility (WRF). The WRF has piping to MEC as well as an on-site piping setup for filling contractor trucks.
    d. Benefits

i. Economic benefit – construction jobs, permanent jobs, MEC paid for the 6.2 mgd reclamation facility which helped improve treatment plant as a whole
ii. Environmental benefits – groundwater preservation and no new appropriation from or discharge to the Minnesota River
iii. WWTP – increased plant capacity and delayed next construction phase as well as benefits from cost sharing

8. Other wastewater reuse in MN:

a. Shakopee Mdewakanton Sioux Community: use about 0.14 mgd for wetland enhancement and golf course irrigation
b. Various spray irrigation in communities who don't have a surface water discharge point

9. Minnesota Pollution Control Agency (MPCA) guidance

a. No federal regulations or Minnesota regulations for wastewater reuse
b. MPCA generally follows California's regulations as a baseline then adjusts on a case-by- case basis
c. Goal is public health protection. Guidance is based on different uses that have more or less potential for human contact.
d. Wastewater reuse is regulated through National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) permits.
e. MPCA's guidance considers acute health protection only; it does not provide guidance about all the treatment that might be needed to meet a user's requirements (e.g., cooling water).

10. MCES Wastewater Reuse Authority, Policy, & Drivers

a. MCES has broad authority under statute for handling wastewater for the Region, and in that sense, has statutory authority for reclaiming water.
    i. Reuse is consistent with the Council's comprehensive plan.
    ii. Council does not have statutory authority to provide retail water service.
b. Thrive MSP 2040 Plan – Plan directs MCES to pursue wastewater reuse where economically feasible as a means to promote sustainable water resources.
c. MCES wastewater reuse drivers
    i. Alleviate future regional conveyance pipe capacity constraint
    ii. Conserve and supplement groundwater and surface water
    iii. Future regulatory requirements may drive effluent quality closer to reuse standards

11. MCES Wastewater Reuse Initiative

a. East Bethel Water Reclamation Plant – smaller plant with high level of treatment
    i. Treat for phosphorous, nitrogen, and total coliform reduction. Have membrane bio-reactors and UV disinfection. Infiltrate reclaimed water to surficial sand aquifer.
    ii. Plant was also designed as a demonstration plant for wastewater reuse processes.
    iii. Hope to do irrigation with reclaimed water in the future.
b. Reuse at WWTPs – Currently, MCES recycles its WWTP effluent for use in air quality scrubbers, coolers, yard hydrants, tank cleaning. In the near future, MCES will install additional treatment at Metro WWTP of a side stream of effluent

to treat to reclaimed water levels. MCES will then shift some current groundwater use to reclaimed water.

c. Southeast (SE) Metro Potential Wastewater Reuse Scenario – Developed a scenario consisting of potential water users, demand, and quality requirements.
    i. Three categories of users: (1) industrial process and cooling water, (2) agricultural irrigation, and (3) irrigation at residences or commercial businesses in areas of growth.
    ii. Costs for reclaimed water ranged from $5 to $10 per 1,000 gallons above what is already incurred for wastewater treatment. Current municipal water rates in the Region are $1-$5 per 1,000 gallons.
d. Eagan Reuse – MCES is collaborating with the City of Eagan on a water reuse project at the Seneca WWTP. The concept is to use underdrain dewatering water for irrigation. While this is not specifically wastewater reuse it is part of MCES' efforts to lead in water sustainability.
e. SE Metro Study to Evaluate the Impacts of Infiltrating Reclaimed Water on Surface Water and Groundwater - Study wrapping up. Next step is sharing results with stakeholders.
f. SKB/Enerkem Potential Project
    i. Potential waste-to-fuel facility in Inver Grove Heights.
    ii. Choices for 1.6 mgd water supply are ground water or reclaimed water from MCES.
    iii. If reclaimed water, a side stream of effluent from Empire WWTP would be treated to reclaimed water level at a satellite treatment plant and then conveyed to SKB/Enerkem site.
g. Reuse sampling program at WWTPs - Sampling for parameters of interest for reclaimed water. Findings include levels of total dissolved solids that would have impacts on irrigation ranging from slight (E. Bethel) to high (Seneca).

12. Reclaimed Water Rates

a. American Water Works Association survey done in 2000 and updated in 2007 found:
    i. Percentage of annual operating costs recovered through reclaimed water rates – most utilities are not reclaiming 100% of costs. They have other drivers for using reclaimed water that they believe justifies a lower than full cost rate.
    ii. Revenue to meet operating costs – utilities reported getting revenue from wastewater customers, water customers (not feasible in MCES's case), and municipal or regional funding/subsidy.
    iii. Reclaimed water rate as a percentage of potable water rate – Ranges from 20%-100% with majority in the 70%-90%.
    iv. Development of reclaimed water rates – Rates set at a level to promote use, based on market analysis, trying to match cost of service, as a percentage of the potable water rate, or other, including some with no charge for reclaimed water.

13. Discussion and Agenda Building

a. The Task Force is looking at wastewater reuse scenarios with reclaimed water coming from MCES' WWTPs, not wastewater that's captured at an industrial, residential, or commercial site and then reused.

b. Will the Task Force get into source separation such as a gray water system in individual homes? No.
c. Will potable reuse be discussed? MCES is not focusing on potable reuse at this time largely due to public acceptance and cost issues.
d. Is MCES considering deep well injection of reclaimed water? No. Deep well injection is prohibited by state statute.
e. What level of treatment is MCES targeting for reclaimed water? In general, MCES is targeting the 2.2 MPN/100 mL total coliform level for high level of public health protection. The reclaimed water may need further treatment by an industry or user to meet user-specific needs.
f. In doing wastewater reuse, MCES is taking on risk management by changing from a collection/treatment/disposal service to providing a product. Risk management is a policy issue.
g. Who is paying for studies such as those involving an industry? MCES has been absorbing those costs because they are part of MCES' effort to understand how wastewater reuse would occur in the Region.
h. Are we close enough to the limit of sustainable water supply to push reuse? DNR and PCA need to be tied into Task Force discussion. When DNR limits groundwater appropriation permits in a significant area of the Region, impacting the Region's economic health, then there will be a strong driver for wastewater reuse.
i. Task Force members raised the following questions. Staff will endeavor to provide information in response in upcoming meetings:
    i. What systems currently recover 100% of reclaimed water cost? What are the characteristics of those systems and can we do that? What is the Met Council's policy on cost recovery?
    ii. What are the best practices of similar regional entities, their policies, and the lessons they learned related to wastewater reuse?
    iii. There's a need to discuss reuse with cities. For example, does a particular reuse application have a regional benefit vs a city benefit? Who should pay for the treatment? Is there justification for a higher cost to receive a regional benefit?
    iv. Who is the customer, city, or industry? Will the city buy from MCES and sell to industry or will MCES direct sell to industry? How to deal with competing with cities as a water supplier?
    v. What impact would conservation and infiltration/inflow efforts have on the need for wastewater reuse? What is the cost of conservation vs. the cost of reuse?
    vi. Are there current examples with wastewater where a regional benefit justified higher cost?
    vii. How would MCES distribute costs and benefits when many of those are sub-regional rather than regional?
    viii. Does MCES have an estimate of the demand for reclaimed water?
    ix. What is the regional problem wastewater reuse would help solve and what is the standard level of treatment to get there?

14. Next Steps, Meeting

a. Meeting 2 will be end of May/early June. Agenda will be designed to address the issues and questions raised by the Task Force, focusing on stakeholder input, delving into the regional benefit of wastewater reuse, and potential approaches to developing a reclaimed water rate.

Wastewater Reuse Policy Task Force

Meeting 1

April 19, 2017 | 9:30 – 11:30 AM

League of MN Cities

METROPOLITAN COUNCIL

Welcome

Presented by:
Sandy Rummel, Metropolitan Council Member, District 11

METROPOLITAN COUNCIL

Agenda

Welcome & Introductions

Task Force Purpose

Task Force Issues, Approach, Schedule, Product

What is Wastewater Reuse

MCES Authority, Policy & Drivers

MCES Wastewater Reuse Initiative

Reclaimed Water Rates

Discussion and Agenda Building

Next Steps & Meeting

METROPOLITAN COUNCIL

Task Force Purpose

To review the Council's existing wastewater reuse policies and recommend clarifications needed to respond to opportunities for wastewater reuse.

Approved by Metropolitan Council, March 22, 2017

METROPOLITAN COUNCIL

Task Force Composition

Representation of communities which are served by MCES…

- Large and small ratepayers
- Geographic diversity
- With or without history of interest in wastewater reuse

METROPOLITAN COUNCIL

Appointed Task Force Members

Community	Name	Title
Bloomington	Mary Hurliman	Deputy Director of Public Works
Cottage Grove	Jennifer Leavitt	Community Development Director/City Engineer
Eagan	Jon Eaton	Superintendent of Utilities
Hugo	Bryan Bear	City Administrator
Lakeville	Chris Petree	Public Works Director
Maplewood	Michael Thompson	Public Works Director
Ramsey	Kurt Ulrich	City Administrator
St. Paul	Beverly Farraher	Public Works Operations Manager
St. Louis Park	Debra Heiser	Engineering Director
Vadnais Heights	Mark Graham	City Engineer/Public Services Director
Metro Cities	Steven Huser	Executive Director/Government Relations Specialist
Metropolitan Council	Sandy Rummel	Metropolitan Council District 11 and Chair, Environment Committee

Planned stakeholder input:

- Business community
- Regulatory
- MAWSAC-TAC
- Other as needed

METROPOLITAN COUNCIL

Meeting Purpose

To develop an understanding of:

- Wastewater reuse from national, state, and regional perspectives
- Metropolitan Council's wastewater reuse policies and drivers
- Regional benefit, partnership, and cost issues related to reuse

METROPOLITAN COUNCIL

Task Force Issues, Outcomes, Approach, Schedule, Product

Presented by:
Bryce Pickart, Metropolitan Council Environmental Services

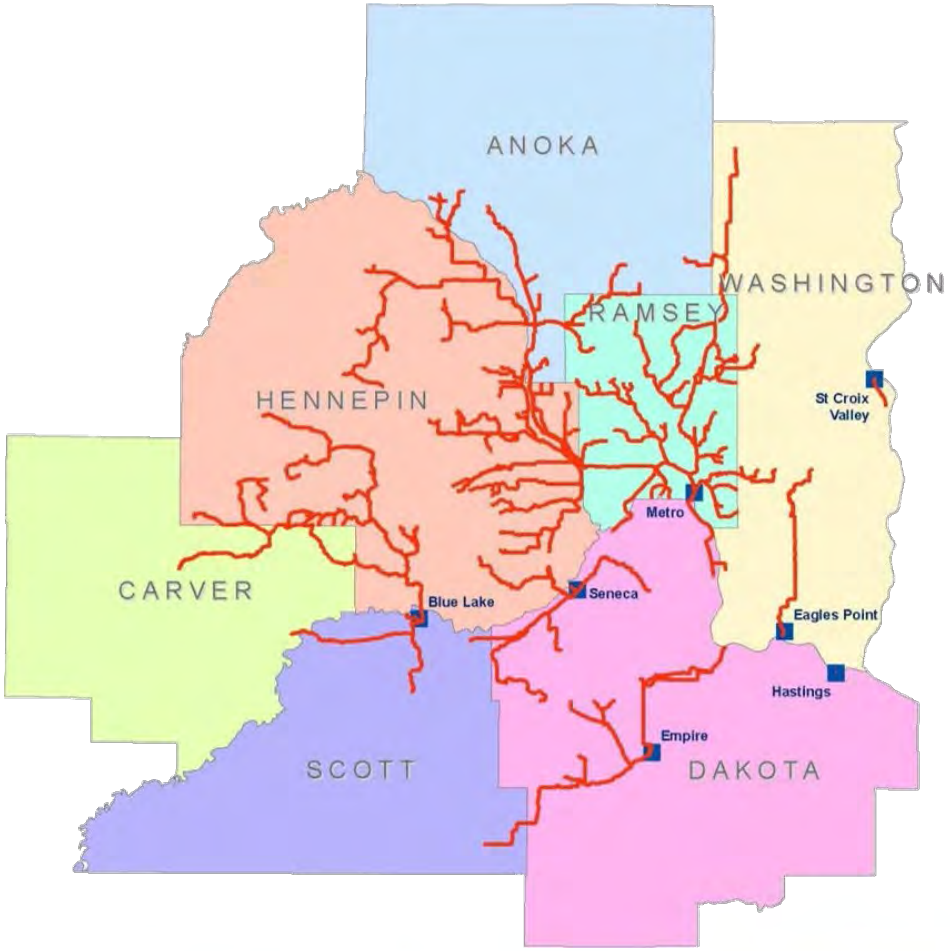
Metropolitan Council



The Council's mission is to foster efficient and economic growth for a prosperous region.

- Transportation
- Wastewater collection & treatment
- Planning & development
- Parks
- Housing

Regional Wastewater System



WHO WE SERVE

7-county Twin Cities Metro Area
109 communities
2,600,000 customers

OUR FACILITIES

8 wastewater treatment plants
610 miles of interceptors
250 million gallons per day (on average)

OUR ORGANIZATION

600+ employees
$7 billion in valued assets
$140 million per year capital program

METROPOLITAN COUNCIL

Task Force Issues, Meeting Plans, Report

Issues:

- Reclaimed water rate: full cost of service or consideration of regional benefit
- Guidance for institutional relations

- **Meeting 1, April 19:** Overview: wastewater reuse & reclaimed water costs
- **Meeting 2, May:** Stakeholder input, regional benefit of wastewater reuse, potential reclaimed water rate approach
- **Meeting 3, June:** Institutional relationships, reclaimed water rate structure, other issues identified by task force
- **Meeting 4, July:** Draft task force report
- **Task Force Report Finalized: Fall, 2017**

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What is Wastewater Reuse?

Presented by:
Deborah Manning, Metropolitan Council Environmental Services

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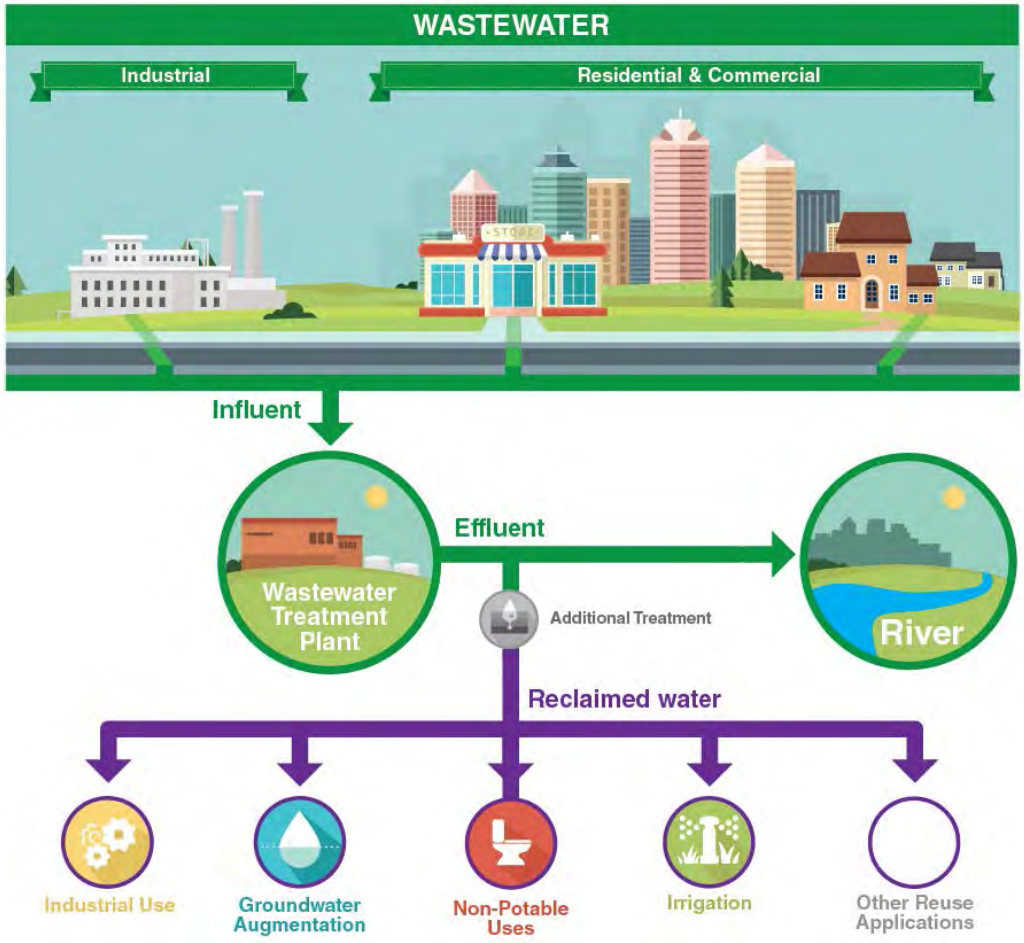
Wastewater Reuse

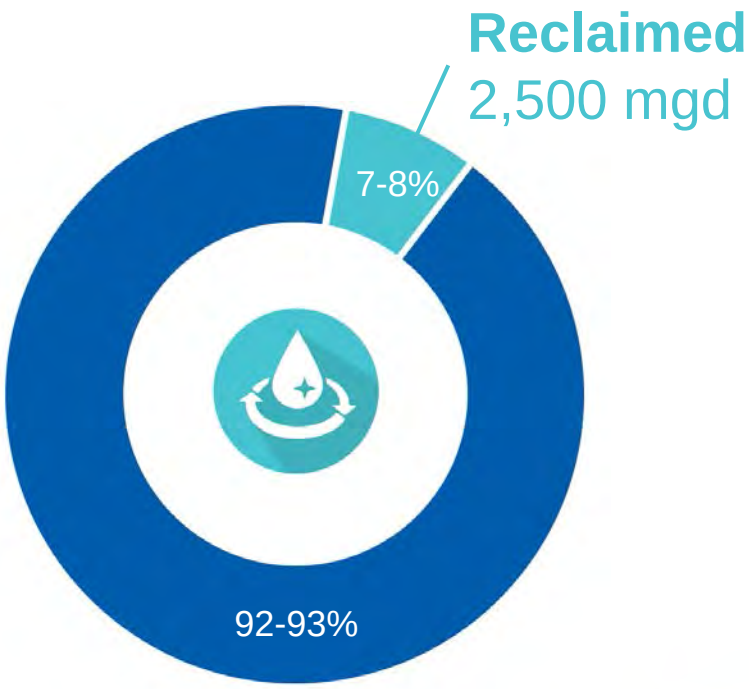


Wastewater reuse: practice of treating and reusing wastewater treatment plant (WWTP) effluent for beneficial use before releasing it back into the water cycle.

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

Reclaimed Water in the U.S.

~32 billion gallons of municipal effluent produced in the U.S. **every day.**



TYPICAL DRIVERS

- **Conserve potable water, avoid new water source development**
- **Mitigate salt water intrusion, land subsidence, etc. due to declining groundwater levels**
- **Support/augment wetlands, other surface features**

90% of reuse occurs in:

Reuse is increasing across North America

Source: *2012 Guidelines for Water Reuse*, U.S. EPA

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Wastewater Reuse in Minnesota

City of Mankato

- 1.5 – 2 mgd Mankato Energy Center cooling water
- 750,000 gallons: city parks and green spaces
- 175,000 gallons: street sweeping
- Irrigate gravel bed tree farm on WRF site

Golf course irrigation

- Multiple locations
- 0.2 mgd

Shakopee Mdewakanton Sioux Community

- Approx. 1 mgd wetland enhancement

Numerous spray irrigation applications

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Wastewater Reuse in Minnesota

City of Mankato – Information from Mary Fralish's presentation at MN APWA Fall Meeting, Nov. 2016

- 1.5 – 2 mgd Mankato Energy Center cooling water
- Water supply options: MN River, groundwater, reclaimed water from Mankato WWTP
- Peak demand: 6.2 mgd; return: 1.55 mgd
- Service agreement: 25-yr contract; 4 ten year renewal options
- MEC: funded capital costs for 6.2 mgd WRF, pipelines, O&M
- City: provide quality water, upfront O&M costs (reimbursed); capital cost of WRF expansion from 6.2 to 12 mgd
- Groundbreaking at WRF: 4/1/15
- WRF complete: 6/1/06
- MEC electricity to grid: June 2006

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Wastewater Reuse in Minnesota

City of Mankato – Information from Mary Fralish's presentation at MN APWA Fall Meeting, Nov. 2016

- Economic benefits:
  - 300 construction jobs at peak; 20-25 permanent jobs
  - Increased bond rating for City
  - $20+ million to City
  - Increase in City/County tax base
- Environmental benefits
  - Reuse of treated effluent
  - MN River water quality improvement
  - Groundwater preservation
  - No new collection or discharge points to MN River
- Benefits to WWTP:
  - Increased plant capacity
  - Delay next construction phase
  - Cost sharing

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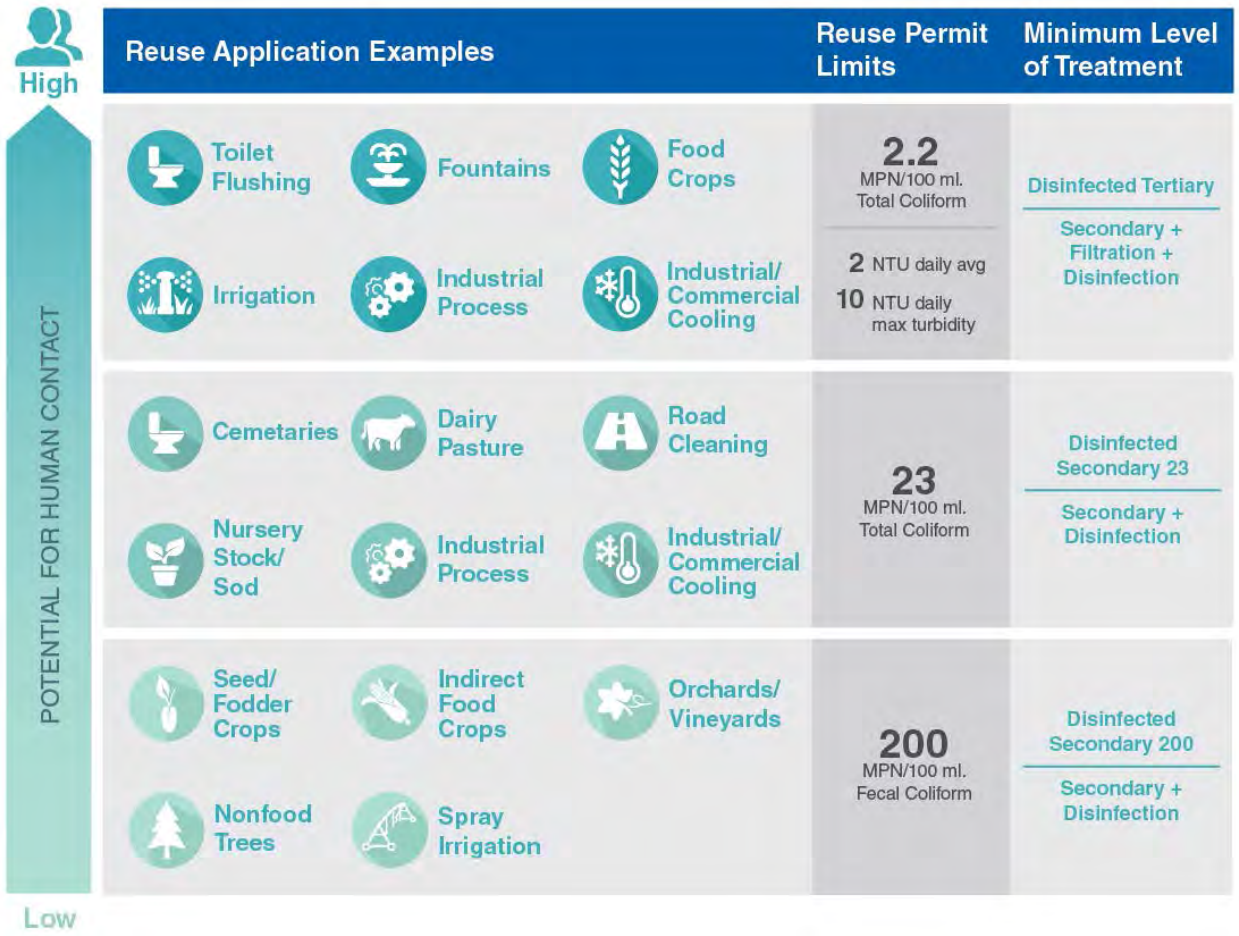
MPCA Wastewater Reuse Guidance



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

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MCES Wastewater Reuse Authority, Policy & Drivers

Presented by:
Bryce Pickart, Metropolitan Council Environmental Services

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

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MCES Wastewater Reuse Policies

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

Promote a more sustainable region

Maximize regional benefits

Provide efficient, high-quality, sustainable wastewater services

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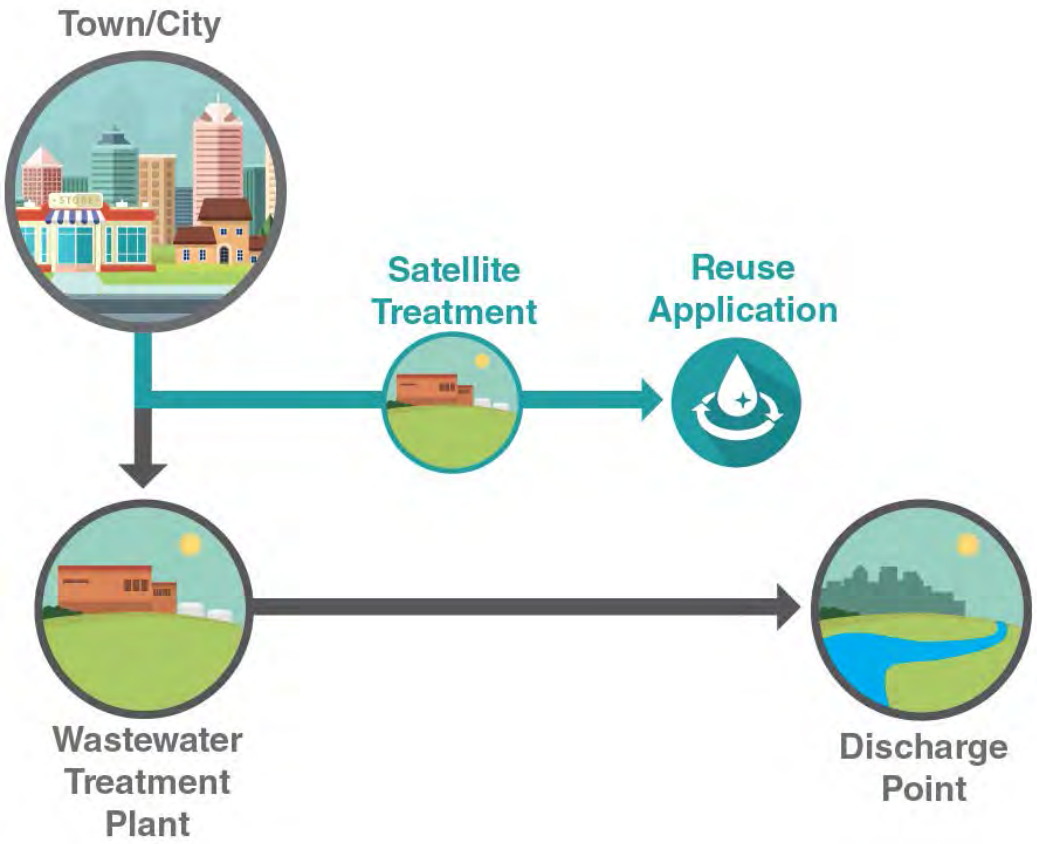
MCES Wastewater Reuse Drivers

Alleviate future regional conveyance pipe capacity constraint



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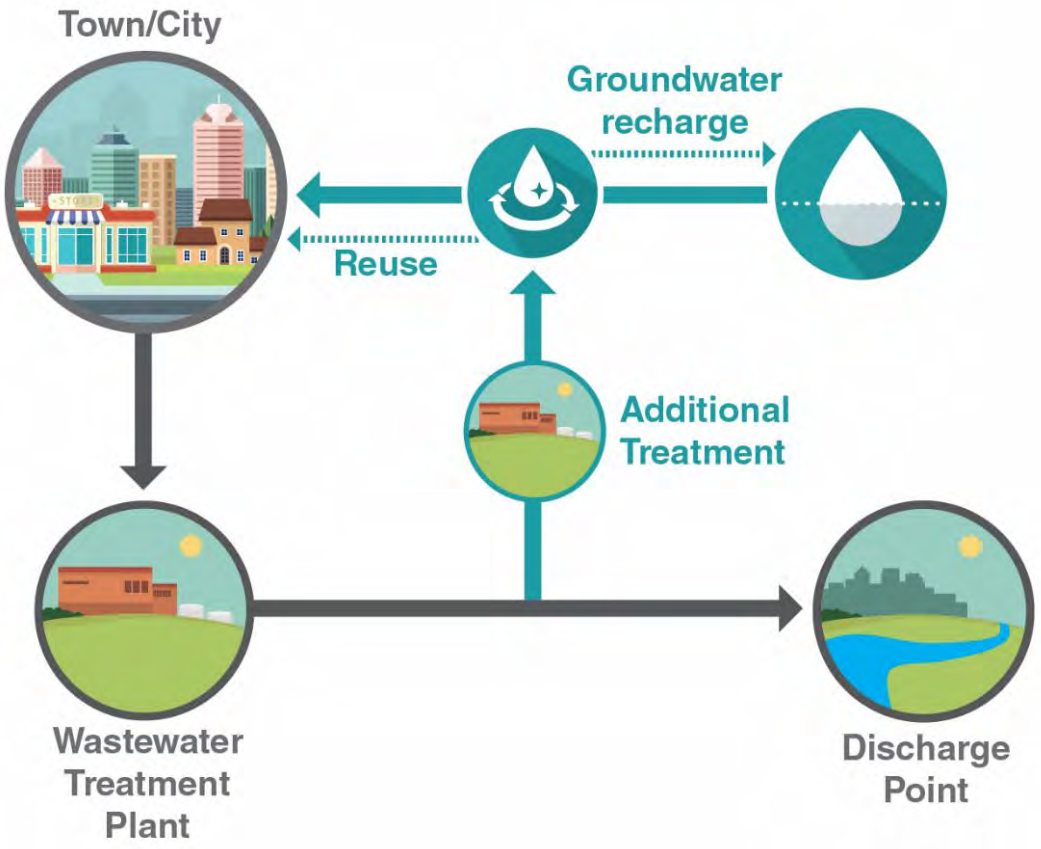
MCES Wastewater Reuse Drivers

Conserve & supplement groundwater & surface water



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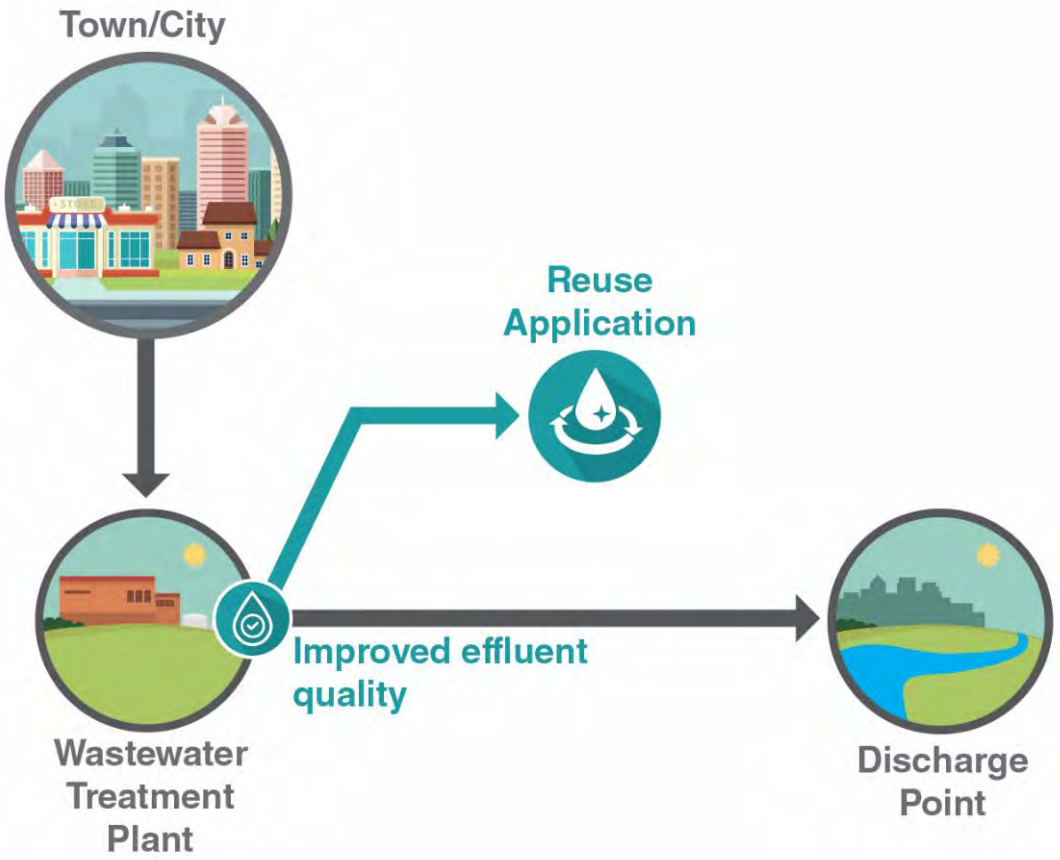
MCES Wastewater Reuse Drivers

Future regulatory requirements may drive effluent quality closer to reuse standards



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Policy Issues

- **Regional benefit:**
  How to define, assess, and quantify?
- **Cost effectiveness:**
  How to evaluate, particularly when potential regional benefits have more to do with water supply or surface water management?
- **Partnerships:**
  Should MCES partner to provide reclaimed water service in some cases?

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MCES Wastewater Reuse Initiative

Presented by:
Deborah Manning, Metropolitan Council Environmental Services

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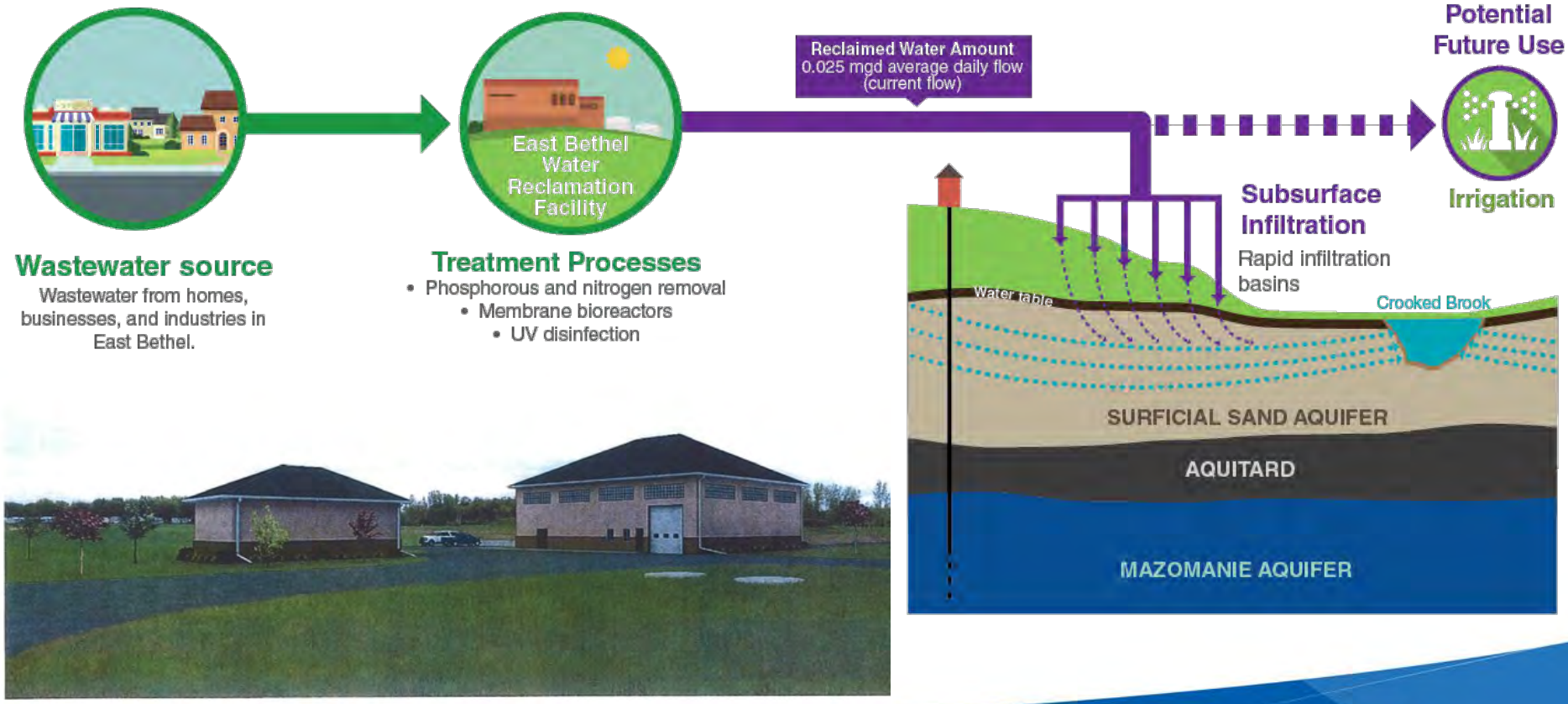
East Bethel Water Reclamation Plant

MCES WASTEWATER REUSE INITIATIVE



Wastewater source

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

Treatment Processes

- Phosphorous and nitrogen removal
- Membrane bioreactors
- UV disinfection

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Reuse at MCES Wastewater Treatment Plants

MCES WASTEWATER REUSE INITIATIVE

Metro Plant

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 WATER REUSE

- **Metro WWTP**
  - Install reclaimed water system; shift some city water &/or service water (groundwater) uses to reclaimed water; 1,150 gpm average reduction
- **Seneca WWTP**
  - Recover underdrain water for irrigation
- **Other WWTPs**

MCES Technical & Sub-Regional Studies

- *Recycling Treated Municipal Wastewater for Industrial Use* (LCCMR-funding)
- Metro Regionwide Survey of Potential Reclaimed Water Users
- SE Metro Wastewater Reuse Scenario Development
- NE Metro Wastewater Reuse Scenario Development
- *Wastewater Treatment Plant Effluent and Underdrain Monitoring Report, 2015-2016*
- *Eagan Water Reuse Feasibility Report*
- Collaborative Studies with City of Rosemount
- Etc.

Studies are done in response to requests from MCES member communities and/or to address technical questions

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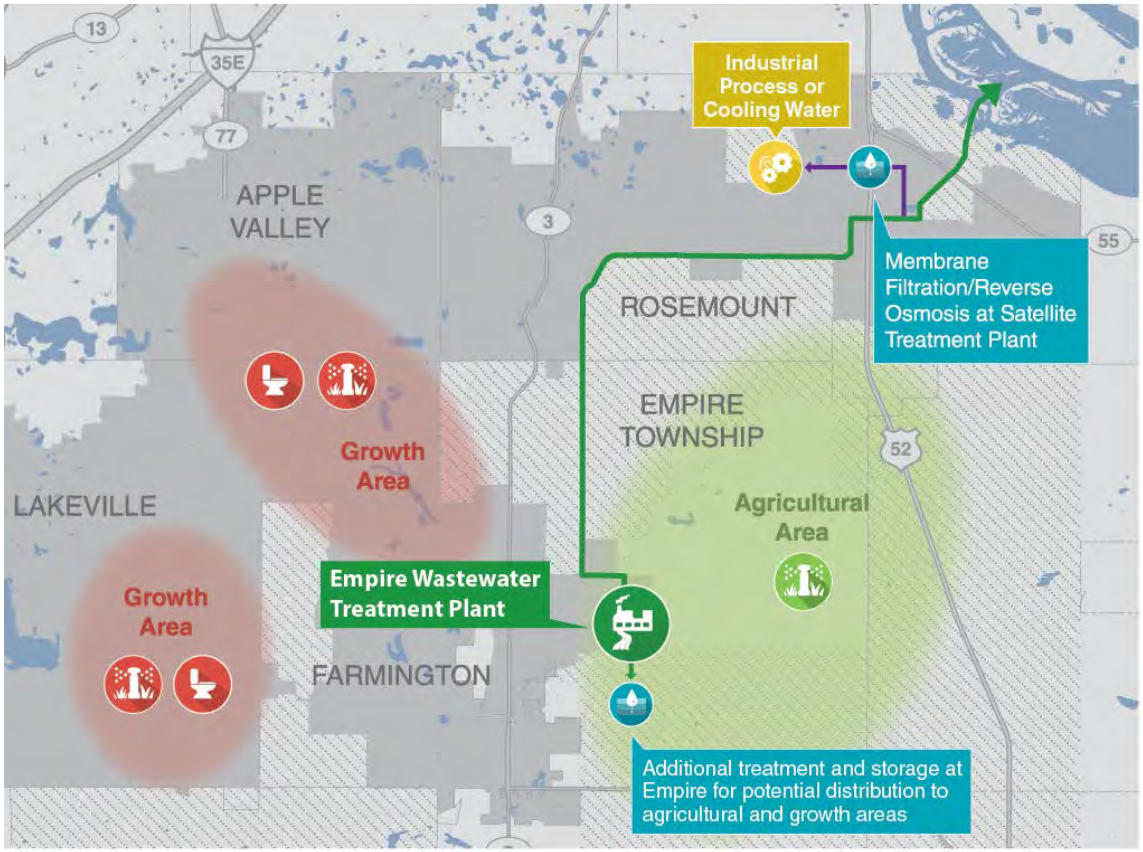
SE Metro Potential Wastewater Reuse Scenario



Reclaimed water incremental production costs

$5 - $10 per 1,000 gallons

Current municipal water rates

$1 - $5 per 1,000 gallons

Cost factors

Key factors driving reclaimed water production costs are treatment requirements, distribution costs, and seasonality of use.

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Eagan Water Reuse Study

Utilize underdrain dewatering water for landscape irrigation

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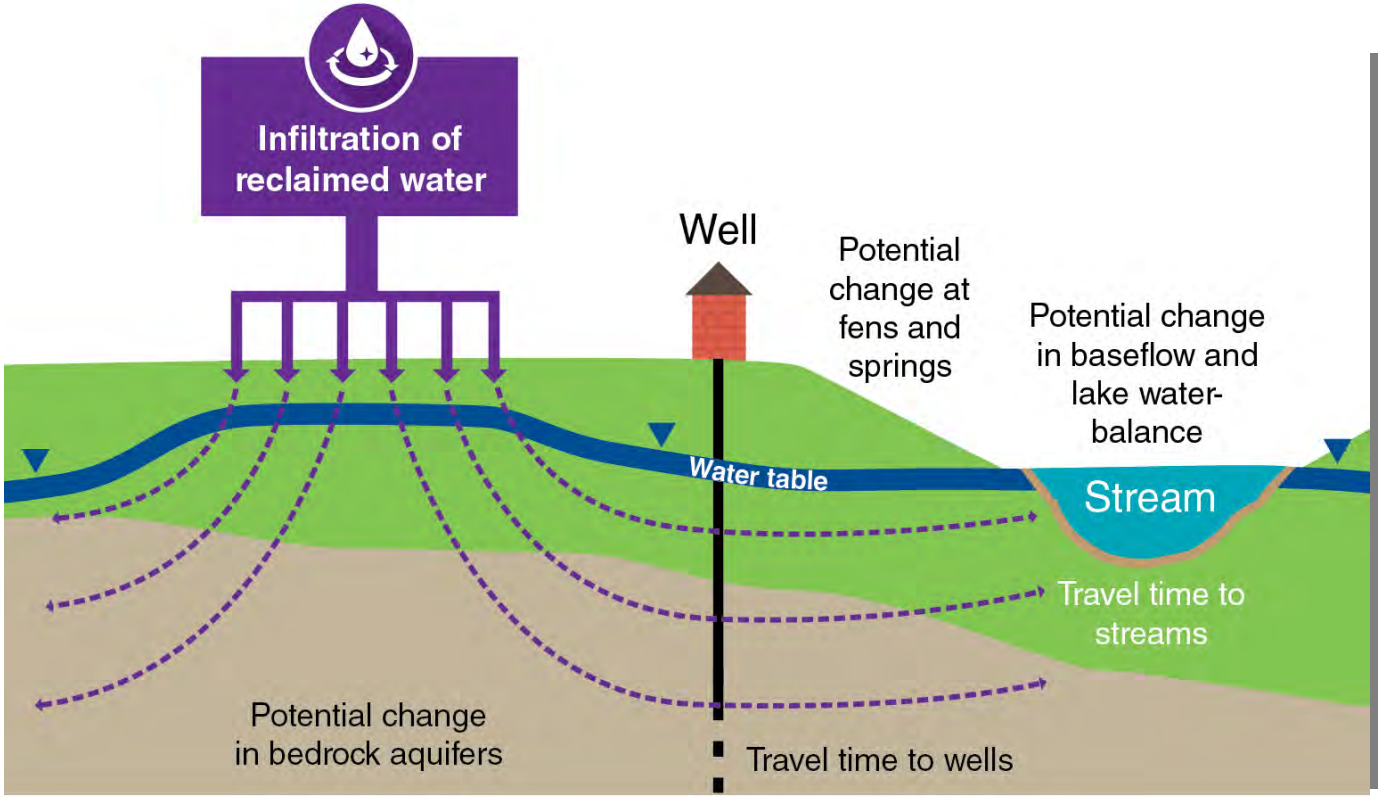
SE Metro Infiltration Study

MODELING TO ASSESS IMPACTS OF POTENTIAL INFILTRATION IN SE METRO



What impact would infiltrating reclaimed water have on groundwater and surface water in the SE Metro?

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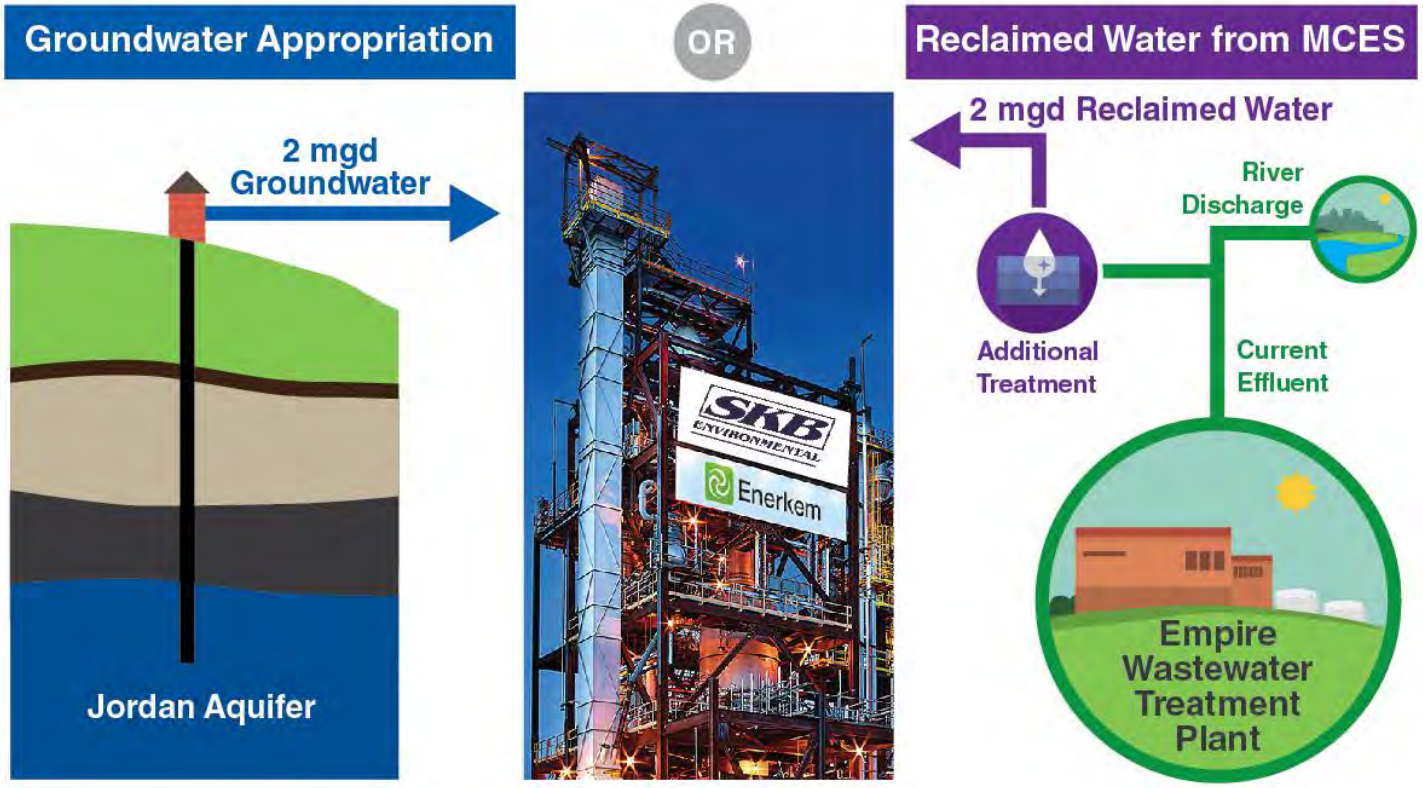
SKB/Enerkem's Potential Waste-to-Fuel Project



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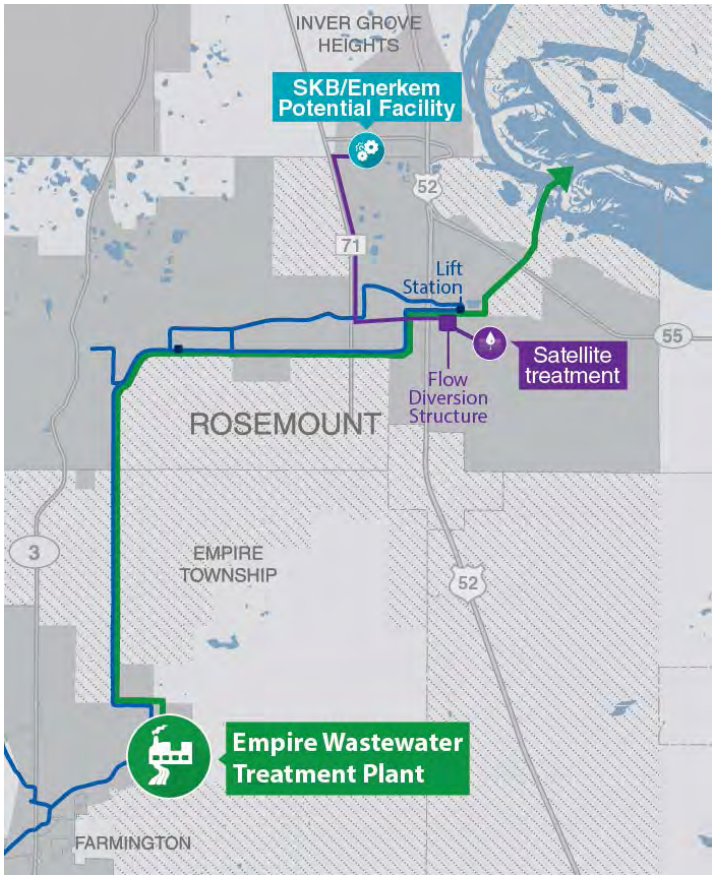
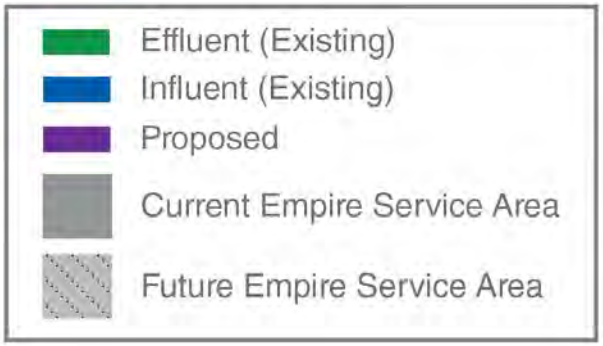
SKB/Enerkem Potential Waste-to-Fuel Project



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



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Reuse Sampling Program at WWTPs

Total Dissolved Solids, Sodium, & Chloride Likely Need to be Reduced for Some Reclaimed Water Uses

Constituents	Degree of Restriction on Irrigation		
	None	Slight to Moderate	Severe
Total Dissolved Solids, mg/L	< 450	450 – 2,000	> 2,000
Sodium, mg/L	< 70	> 70	
Chloride, mg/L	< 100	> 100	

Degree of restriction information from Food & Agriculture Organization of the United Nations (FAO). 1985. FAO Irrigation and Drainage Paper, 29 Rev.1. FAO: Rome, Italy (as reported in *2012 Guidelines for Water Reuse*, EPA, September 2012).

Constituent	Metro	E. Bethel	Other WWTPs (Avg. & Range)
Total Dissolved Solids, mg/L	797	654	1236 (688 – 2176)
Sodium, mg/L	144	127	276 (132 – 508)
Chloride, mg/L	270	195	385 (244 – 489)

WWTP sampling data is average for 3 months of sampling (1) sample/week) June – August, 2015 by MCES.

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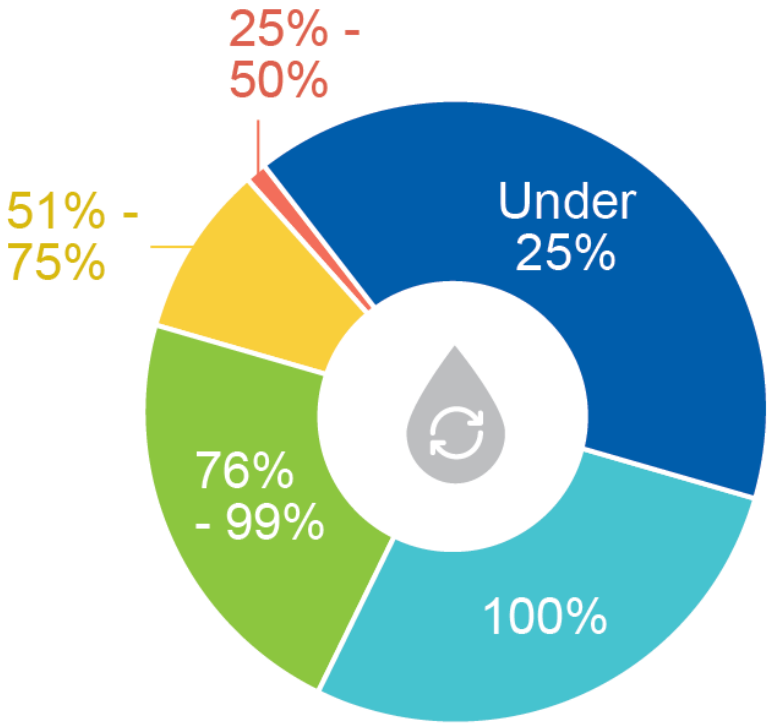
Reclaimed Water Rates

Presented by:
Deborah Manning, Metropolitan Council Environmental Services

Reclaimed Water Rates

Percentage of Annual Operating Costs Recovered Through Reclaimed Water Rates -2007



Source: *Water Reuse Rates and Charges, 2000 and 2007 Survey Results*, American Water Works Association, June 2008

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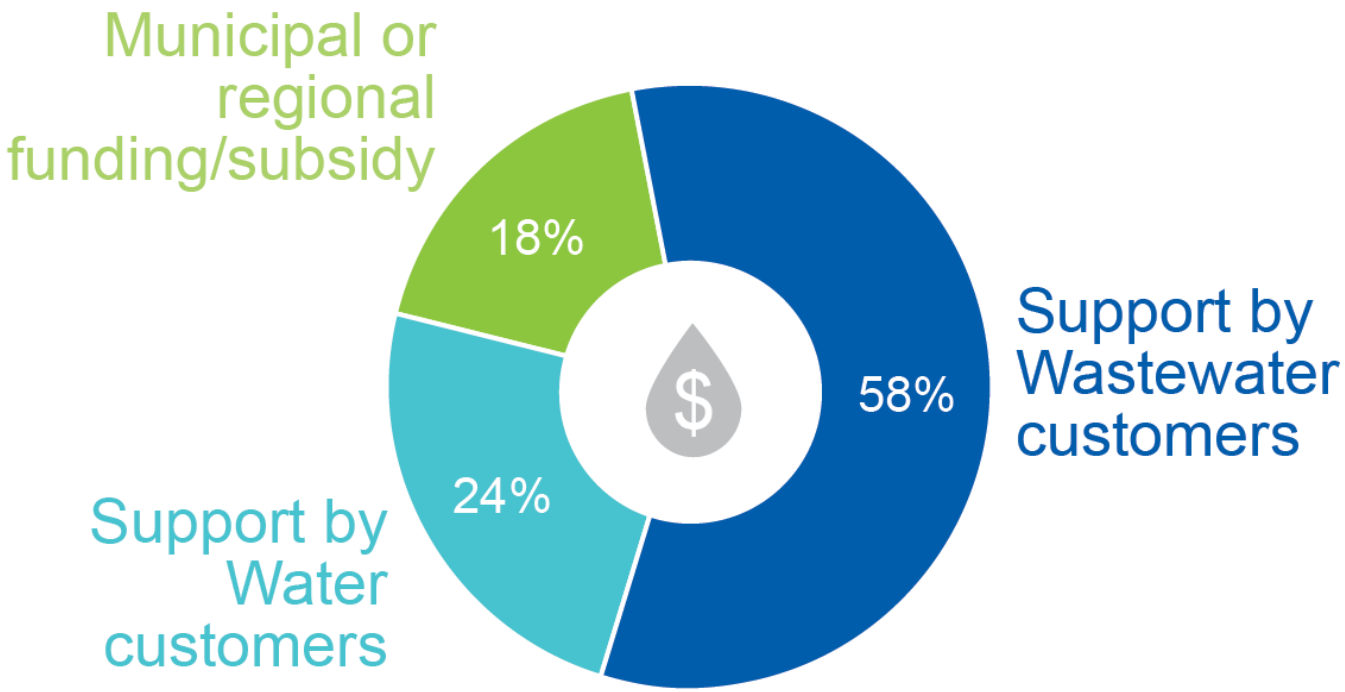
Reclaimed Water Rates

Revenue to Meet Operating Costs



Source: *Water Reuse Rates and Charges, 2000 and 2007 Survey Results*, American Water Works Association, June 2008

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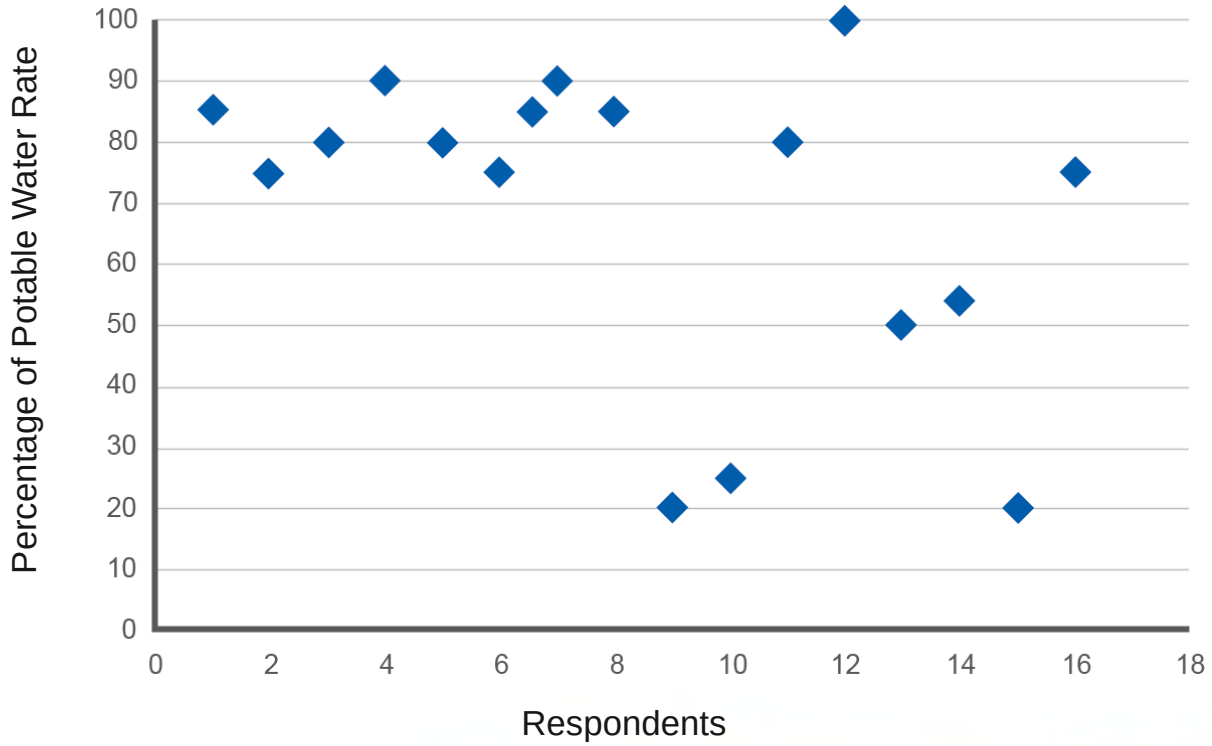
Reclaimed Water Rates

Reclaimed Water Rate as a Percentage of Potable Water Rate



Source: *Water Reuse Rates and Charges, 2000 and 2007 Survey Results*, American Water Works Association, June 2008

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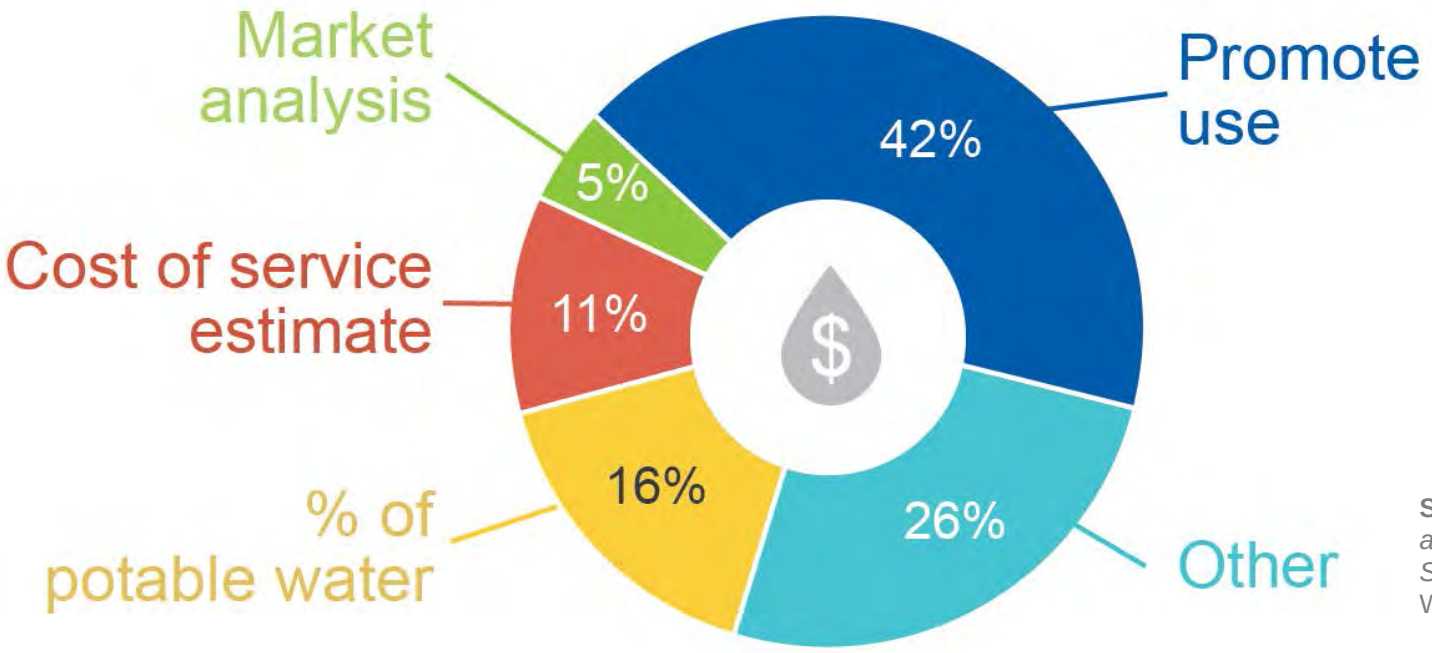
Reclaimed Water Costs

Development of Reclaimed Water Rates - 2007



Source: *Water Reuse Rates and Charges, 2000 and 2007 Survey Results*, American Water Works Association, June 2008

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Discussion and Agenda Building

Led by:
Sandy Rummel, Metropolitan Council Member, District 11

Next Steps & Meeting

Led by:
Sandy Rummel, Metropolitan Council Member, District 11

THANK YOU!

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Appendix 2

Meeting Notes and Presentations from Task Force Meeting 2

Metropolitan Council Environmental Services
Wastewater Reuse Policy Task Force

Meeting #2
June 6, 2017
1 – 3 p.m.

St. Croix Room
League of Minnesota Cities
145 University Ave West
Saint Paul, MN 55103

Members Present

Mary Hurliman, City of Bloomington
Jennifer Levitt, City of Cottage Grove
Jon Eaton, City of Eagan
Bryan Bear, City of Hugo
Michael Thompson, City of Maplewood
Debra Heiser, City of St. Louis Park
Steven Huser, Metro Cities
Sandy Rummel, Metropolitan Council
Kurt Ulrich, City of Ramsey
Beverly Farraher, City of St. Paul
Mark Graham, City of Vadnais Heights
Chris Petree, City of Lakeville

Members Absent

None

Metropolitan Council Staff Present

Deborah Manning
Bryce Pickart
Jeannine Clancy
Michael Nguyen
Dave Brown
Noah Johnson
Ned Smith
Rene Heflin
Jeanne Landkamer
Angela Mazur

Others Present

Barb Huberty, MN Legislative Water Commission
Jason Moeckel, DNR
Julie Ekman, DNR
Dan Miller, DNR Appropriation Program
Mark Maloney, City of Shoreview

Meeting Notes

1. **Welcome & Introductions**
2. **MCES staff responded to several questions using PowerPoint slides:**
    a. What problem(s) would wastewater reuse help solve?
        i. Wastewater reuse must support the Council's fundamental mission: To foster efficient and economic growth for a prosperous region.
        ii. Future regional interceptor system expansion needed to support efficient and economic regional growth, from increasing interceptor capacity to alternatives like having satellite treatment of flow and beneficial reuse.
        iii. Projected future aquifer decline may challenge growth. Could wastewater reuse provide part of the solution to that?
        iv. Future MPCA regulations may require large regional investment in wastewater treatment. Region receives more benefit from regional investment.
    b. Will I/I program help meet future water quality regulations?
        v. Help reduce flow quantity: defer or eliminate need for increased system capacity.

vi. Does not improve flow quality: N&P effluent load reduction would still be needed.

3. **Regional water supply issues and wastewater reuse. Jason Moeckel/DNR spoke about the relationship between water supply and wastewater reuse. He then answered questions as follows:**
    a. DNR adopted phrase 'we tend to think of, for the state of MN, that we're in the urgency room rather than the emergency room'.
        i. Ground water is not unlimited as previous assumed. We are not in immediate crisis but there are limits to the amount of water we can pump from various geographies.
    b. How do we understand those constraints? What are concerns?
        i. Contamination
        ii. Small aquifers that don't recharge quickly
        iii. It's not just a matter of whether there's enough water to pump, it's a matter of what the flow does with those changes.
        iv. The challenge is putting these into context in space and time.
        v. Climate uncertainty adds another variable into the mix.
    c. Questions about what water source we should be using and how
        i. As other parts of the country get drier, does wet industry look to relocate?
        ii. What opportunities do we then have, and how do we decide if they're prudent?
        iii. What infrastructure investments do we need to make if we do this?
        iv. Where are we underutilizing something that could be available to us?
    d. Question: If you had to focus your effort in the areas of recharge or reuse, would you target that drawdown that the Metro Model 3 had, or are there other areas in the metro we should focus on if we're doing either recharge or reuse? Is that the guide, or are there other more strategic areas we should focus on?
        i. Response: areas we've identified where this might be a problem sooner – those are a good place to start, since it's what the best tool we currently have tells us. If you're only retrofitting where stuff already is, are we missing other opportunities? We have a transient model that's being constructed right now for the North and East Metro that will give us a better look at the dynamics; we'll eventually have transient groundwater models for the entire Metro area, but we should still use the information we currently have.
    e. Question: Would you consider recharge first? Is there something else on your radar that you perceive as more important than recharge?
        i. Response: not taking out as much can have the same effect as putting more in. It is worth looking at opportunities to enhance recharge. Conversation with Metropolitan Council on work they've done in Dakota County - Impact of recharging water table vs. just deep aquifers. Offsetting and diversifying supplies is important to look at, too.
        ii. Response: Bedrock aquifers – a lot of us draw from there. We don't have many opportunities for recharge. But still, deep or surface discharge both have an impact. But how do we hold onto water as much as we can, in as many ways as we can?
        iii. Response: in some parts of the Metro more than others, the Prairie du Chien is being recharged from the water table directly over it. (Concerns of horizontal vs. vertical water discharge, how fast it happens, how far it travels, etc.)
        iv. Response: quality is the thing that concerns me, contaminants flowing into groundwater. Leads to question: what is the time of travel is from the surface to the Prairie du Chien? Aquifer pumping tests DNR has run in Dakota County show immediate response in the Prairie du Chien, and nearly immediate response in the water table. When we're pumping, we're producing movement. Would it move that fast naturally? Probably not. That's what our pumping is doing in our aquifers, and we're

not seeing it. The tests to find this stuff out are expensive, so we don't have them widely distributed across the Metro.

f. Question: I was a little confused because he was asking about contaminants. So, is your answer yes?
    i. Response: Yes. We have to be concerned about the quality of the water we're recharging with. Treated effluent? Pretty high quality. Raw runoff? Not so much.
g. Question: Can you speak a little about water appropriation issues and what factors you consider?
    i. Response: We're required to consider water levels, surface water ecosystems, contaminants, and other users, and we're supposed to look at them over a long-term period. For a new appropriation permit, we'd screen for what's in the area on those factors. We have a sense of where the problem areas are, for the most part, but occasionally, someone comes in for an area we don't have much information for.
h. Question: One of the things MCES is starting to hear as people are expressing interests in wastewater reuse, is the possibility of getting a water appropriation especially in the SE metro - not that they couldn't, but that it would be complex. Can you speak to that? Are you seeing a shift in the ability to get water appropriations in that area?
    i. Response: Projected drawdowns suggest that's a more problematic area. If I'm an industry that's going to invest millions of dollars, I'd want certainty, so it would generate a level of interest in something else that might be more reliable, complicated but in different ways complicated, but with a level of certainty. Industry is ranked behind home water users and agricultural uses if there's a shortage, so you wouldn't want to end up somewhere where you get cut off.

4. Regional Water Supply (MAWSAC-TAC) Input. Mark Maloney, Chair of the Metro Area Water Supply Advisory Committee's Technical Advisory Committee (MAWSAC-TAC) spoke about regional water supply and wastewater reuse and responded to task force member questions as follows:

a. How do local water suppliers view the way wastewater reuse may impact them?
    i. TAC that has been meeting was put together to have representation from all corners of the Twin Cities who are dealing with water issues that are quite varied for a diversity of viewpoints. Local water suppliers are mostly interested in right-sizing their infrastructure for what's in their comp plans. It was thought that water suppliers were going to try to build as much infrastructure as they can for business reasons. I've had a different experience, and others on the TAC are coming from the same place - right size/type of infrastructure, infrastructure that is sustainable. I feel pretty good that the Master Water Supply Plan that was adopted is reasonable. If the Met Council is looking at expanding a regional service, it would have to be in very close concert with local communities and their comp plans. My community depends on groundwater, and we're always looking for ways to offset potable water use with other sources.
b. Question: What do you think the observations of the TAC about regional benefit – if one area in the Region many benefit from a practice but not the whole Region?
    i. Response: We haven't gotten down to that level of detail yet. People will probably feel differently about this - some will say, if it's good for the region, it's good for us. We're playing together pretty well on these topics. Water forces us to get past a tendency to be overprotective of things only within our borders. We're (the TAC) is open to hearing about these topics. The TAC would look at wastewater reuse as just another tool.
c. Questions: Water regionalization, the Minneapolis or Saint Paul system, have you guys delved into that? Just being more reliant on surface water solutions?

i. Response: That topic gets pulled along in the discussion. We haven't had a lot of interest for supporting wholesale changes. It's more about better managing what we have.

d. Question: Mark, going back to your statement that water suppliers are playing well together, does that extend as far as the Region contributing to reclaimed water rates? If the rate has a regional component, like the way MCES does interceptor projects, with the cost being shared around the Region. Could you see something like that being supported in terms of a cost-sharing element on a regional basis for wastewater reuse?
   i. Response: Measuring the benefit would be difficult across the Region. I would think there would need to be more science to support that, that would be my first reaction to that. But we're in a much better place than we were several years ago in terms of locals being able to understand the issue more regionally.

5. Lessons Learned: Other Reclaimed Water utilities

a. MWRD of Greater Chicago has just started to look at wastewater reuse. Being driven by increasing water rates.
b. King County, WA - Their drivers have evolved – drought, regulatory-driven for discharge to Puget Sound, sustainability commitment, rates in Kirkland area
c. LOTT - Lacey, Olympia, Tumwater, Thurston County entirely driven by wastewater issues - Puget Sound nitrogen discharge limit resulted in no additional discharges, so they had to find another solution.
d. San Elijo Joint Powers Authority - Originally driven by drought. Now they're looking to offset potable demands.
e. Lessons learned: regional benefit, rate structure/factors, partnership
   i. Regional benefit - King County tried to assess, but this effort was not finished. LOTT - no additional regional benefit assessed, though they are seeing aquifer recharge as a positive side benefit. SEJPA - reclaimed water offsets potable water demands and need for costly imported water. Chicago - basically outsourced their effort.
   ii. Rate approach: Cost of service (e.g., San Elijo) - many wastewater operators say that's where they want to head. Subsidized (e.g., King County). Free or nearly so (e.g., LOTT)
f. Question: You didn't touch a lot on the economic development impact. Obviously there had to be some job creation, additional tax base, etc. generated from this, but I didn't hear that in these examples. Do you have any data on this?
   i. Response: I think they all decided that it wasn't worth the effort because they had a defined driver that wasn't based on a particular economic scenario.
   ii. Response: Yes, it seemed like the drivers were environmental or regulatory
   iii. Response: or reaction to a water rate.
   iv. Response: wanted to add that as far as the economic driver, Illinois American Water is attempting to do something like that, but at this point they say the economics don't work for 2 mgd for Ford Motor Company.
g. Question: What can our region attract in terms of business or industry to create tax base, jobs, etc. We have a unique opportunity to utilize an innovation to support a bigger, broader goal than just water.
   i. Response: I think that's a good point. A lot of that is culture, corporate identity. They might be more willing to relocate somewhere to incorporate wastewater reuse into their identity.
   ii. Response: We have been getting inquiries from DEED about industries wanting to relocate that use a lot of water, like data centers. Our estimate right now for wastewater reuse is usually out of the ballpark on the costs they're looking for. It hasn't resulted in “let's take it a step farther” yet.

6. **SE Metro Case Studies: SKB/Enerkem Potential Project**
    a. They're looking for 1.6 mgd per day. They're concerned they either couldn't get an appropriation or it would be very complicated, so they turned to MCES for reclaimed water. The concept would be to divert some flow from Empire Plant outflow, doing some more treatment, and then provide it to SKB/Enerkem. Would process 600,000 tons of municipal solid waste (MSW) per year and generate biofuels.
    b. Environmental/Economic Benefits: Production of ethanol; ensure Dakota County meets/exceeds its waste processing goals; sustainable MSW management alternative to landfilling; will use reclaimed water rather than water from the aquifer; would create new jobs, etc.
    c. Questions: This is a company that went to Inver Grove Heights (IGH) and wanted to build?
        i. Response: they already have a landfill in IGH. Initially, they were talking to Rosemount because it's closer to MCES facility, but it didn't quite match the city's comp plan, so they started looking at IGH. It would be a new facility at their current site, and a new business for them -- no one's currently doing this in the U.S.
        ii. Response: I think you're on the right track trying to develop these things from a regional standpoint. Cities are increasingly cooperative on regional issues, but not all cities are going to get the interest from companies on stuff like this. So, I think you're really on the right track, plus you have a funding - if you come to Vadnais Heights or Maplewood and are seeking to increase costs, you'd have a tough go of it, but if you're saying that regional costs are just going up incrementally and it's spread around, I think you'll have a lot more opportunity. I struggle sometimes when I hear about big things like this; it's not going to happen in a lot of parts of the Twin Cities Metro.
    d. Question: I'm trying to understand how to connect the dots. There's a lot of benefits you've gone through for doing this kind of thing. At the beginning, we talked about the huge capital and O&M costs you face with new regulations, etc. So how did you decide to charge them?
        i. Response: We haven't charged them yet. We developed the estimate at their request, since they needed a range to work with to plan. This is part of a bigger question on how we'd charge for this, hence the task force.
        ii. Response: But there's an argument that there's a regional benefit and economic benefit, that the reclaimed water could be free, right?
        iii. Response: We're getting down to the basics of why we asked the task force to give us advice, because lacking any clarity of our policy, we'd resort to our normal full cost of service. It's just a starting point for further discussion, because ultimately, they have to decide on a business decision whether this is the place to move forward, in which case they need to pull the trigger on permit applications, etc. at which point we'd examine in more detail. But we hoped the task force could advise us how much to consider regional benefit in this pricing.
    e. Question: Would new infrastructure be paid by SKB?
        i. Response: Yes, this was considered in the $2.80/1,000 gallons.
        ii. Question: Who owns it then?
        iii. Question: And are they guaranteed to keep buying until it's paid for?
        iv. Response: Presumption at this time would be that MCES would own it and recover the cost via fee for service. That would be part of the wastewater service agreement, and would be negotiated.
        v. Response: When you say consideration of regional benefit, does that mean some cost could be absorbed by MWC?
        vi. Response: Yes; that's why we have the task force. To determine whether jobs, etc. are worth that as a Regional benefit.
        vii. Question: Then don't we need to figure out the variables first to figure out the Regional benefit?

viii. Response: No, this is a broader policy question. Do communities feel there is a Regional benefit here? If yes, how do we want to establish criteria or boundaries? Nobody has done analysis that would let us directly compute the dollar amount of Regional benefit. If we could just calculate it all, we'd certainly do that.

ix. Response: My opinion - when you talk about the Regional benefit, in my mind I'm thinking, this case is an industry that's localized. It seems like it would be a hard sell to say to Maple Grove that you're benefiting from this on the other side of the Twin Cities, if you're only looking at the one instance. I'm not sure I'd feel comfortable making that leap. I'd want to see something bigger, more regional than that. If we take ten of these points, that's bigger Regional; does that meet where you're going. Right now, I don't think we have the points you need to get there. I'm thinking much more Regional in terms of recharge for the Region to offset water you take out. Or if you're giving water in a variety of areas that's relatively available to everyone, treat it to a certain level, and then any business that needed it after that could treat further and go for it.

x. Response: That's what we're trying to discuss. The principle of Regionalism is that what we do in one community affects others. So, I would offer that we have a Regional system, a number of Regional systems because of that concept, so I would strongly argue that if we took that view very narrowly, we would start having difficulties.

xi. Response: I completely agree with you. It's a sliding scale, and I'm only looking at one small point. It's what's it going to collectively take to get over to that area.

xii. Response: As Jon pointed out, most cities around the table, we have business subsidy policies that govern who we subsidize, and there's a hierarchy of priority of who we're going to subsidize and encourage. It sounds like you're trying to set that policy. I would still advocate from a state level, there's a state benefit to more jobs, etc. so the burden shouldn't just be borne by one city.

xiii. Response: Is it fair or is it reasonable to expect a true evaluation of a benefit without knowing the value of that benefit? In order to have a benefit, do we have to have a value associated with it? Should we be looking for a benefit or aspect that everyone shares, such as surface water, where no matter what community you're in, you have some component of surface water that your community gets some type of benefit from, whether it's economic or quality of life or whatever?

7. SE Metro Case Studies: Eagan Water Reuse Feasibility Study

a. The City of Eagan is looking at reuse options for sustainability regions. When Metro Model 2 was updated, it showed some significant water sustainability issues in and near Eagan. Other communities in our region talk a lot, and this was a hot topic for us for a while. Just talking about how we could be more sustainable spurred a great discussion. We are lucky enough to have the Seneca plant nearby, and wanted to start looking at options for reducing some of our groundwater use, creating a more sustainable supply, and looking to our neighbors with the same points that were brought up with water knowing no municipal boundaries. We could be more sustainable if working together with our neighboring towns. We can't do this alone. We talked to Egan's City Council about doing a feasibility study, and they agreed, and are very interested in outcome. We're looking to reduce our peak flows. The way we were going to do it was to work with MCES as partners - we're looking for the easy low- hanging fruit, like underdrain dewatering water at Seneca. We were looking at diverting that and treating it to certain level and bringing it to a couple of customers that are very close by. That would knock off about a tenth of a percent of our annual consumption. We are looking at other customers that could help us. In the feasibility studies and discussions we've had with MCES, we were also looking at the potential to reuse effluent. We came up with some potential uses, but also constraints. City Council has allocated $5 M over next three years to do this reuse project with

MCES. We're looking at grants, too. Also talking to other nearby cities to discuss other opportunities and cost-sharing.

b. Question: Who are the communities around you?
    i. Response: Apple Valley, Rosemount, Inver Grove Heights, Lakeville, Burnsville, Savage
    ii. Question: And you're mostly thinking about irrigation?
    iii. Response: Irrigation, bus/truck washing, maybe extending line to central maintenance location to do a demo for the project for truck washing, irrigation, supplemental water use there.

8. Wastewater Reuse Policies

a. MCES Wastewater reuse policies - handout in binder. Task force policy input needed on non-wastewater benefits of reuse. Maximizing value of Regional benefits is generally the policy; how do we do that with wastewater reuse?

b. We try to make good overall decisions on the development of our wastewater system. Of course, it was originally designed to meet different circumstances; so, facilities are mostly clustered in the south. This inherently impedes reuse to some extent. (e.g. cost of new plant vs. forcemain to serve an area).

c. The other thing that was mentioned was additional treatment requirements that could be forthcoming. The issue regarding load limits for protecting river quality and so forth is that generally without too much increased cost, we can handle higher strength waste with the same process. So, to the extent that we divert water from our discharge to the river, we're effectively deferring the time until we must do the additional treatment. We can put numbers on that value, but it depends on the length of time. Added value could be taken to offset risk taken on as a water supplier, even of non-potable water. In the next task force meeting a business panel, will help us focus on other regional benefits, economic development, general long-term water sustainability benefits, land-use compatibility - certain kinds of uses need certain land use areas, and we have very few of those in the Metro Area anymore. So, we might be able to develop some criteria around that. And then there's the basic concept that there's some value to just getting started. If we have a water supply problem that's going to be well defined 25 years from now and we want to help address that with reclaimed water, we know we're a little slow, and it takes time to develop a new industry.

9. Closing

a. We need to know what's on your mind, and would like to facilitate the task force's next steps, so if you have input, please pass it on to Deborah. Thanks group for time. We're planning on inviting business and industry stakeholders to the next meeting for a panel so they can weigh in on how wastewater reuse fits their business plans. MCES will confirm meeting dates with you and send out an invitation. Please fill out your meeting evaluation and leave it with your name tent. Thank you for your time and input.

Wastewater Reuse Policy Task Force

Meeting 2

June 6, 2017 | 1:00 – 3:00 PM

League of MN Cities

METROPOLITAN COUNCIL

Welcome and Introductions

Presented by:
Sandy Rummel, Metropolitan Council Member, District 11

Agenda

Welcome & Introductions

Agenda

Regional Water Problem(s) and Wastewater Reuse

Regional Water Supply Issues and Wastewater Reuse – DNR Perspective

Regional Water Supply (MAWSAC-TAC) Input

Lessons Learned: Other Reclaimed Water Utilities

Southeast Metro Wastewater Reuse Case Studies

Wastewater Reuse Policies

Discussion and Agenda Building

Evaluation and Next Meeting

METROPOLITAN COUNCIL

Regional Water Problem(s) and Wastewater Reuse

Presented by:
Deborah Manning, MCES

METROPOLITAN COUNCIL

Regional Water Problem(s) and Wastewater Reuse

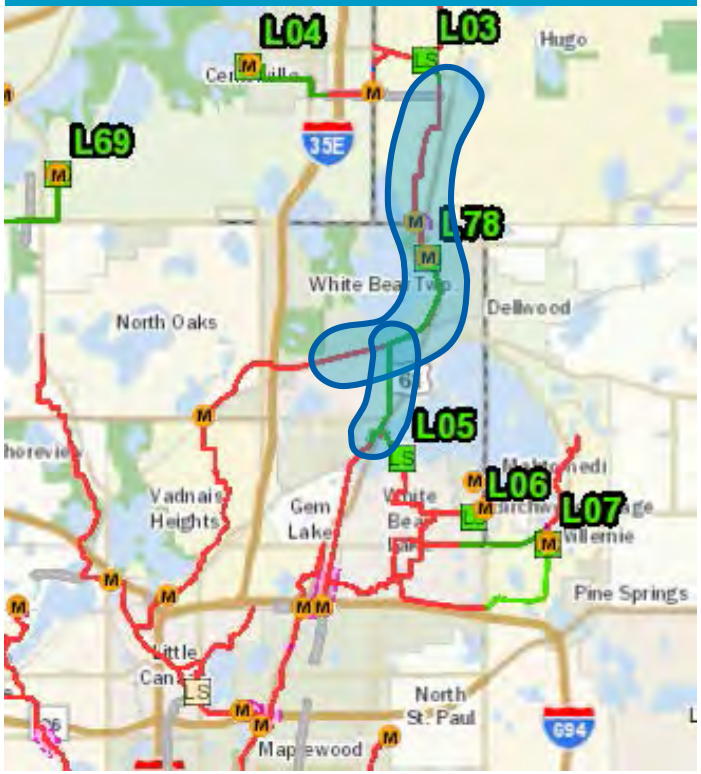
Wastewater reuse must support the Council's fundamental mission:

To foster efficient and economic growth for a prosperous region.

METROPOLITAN COUNCIL

Problem: Future Regional Interceptor System Expansion Needed to Support Efficient and Economic Regional Growth

Northeast Interceptor System



Future Capacity Constraints

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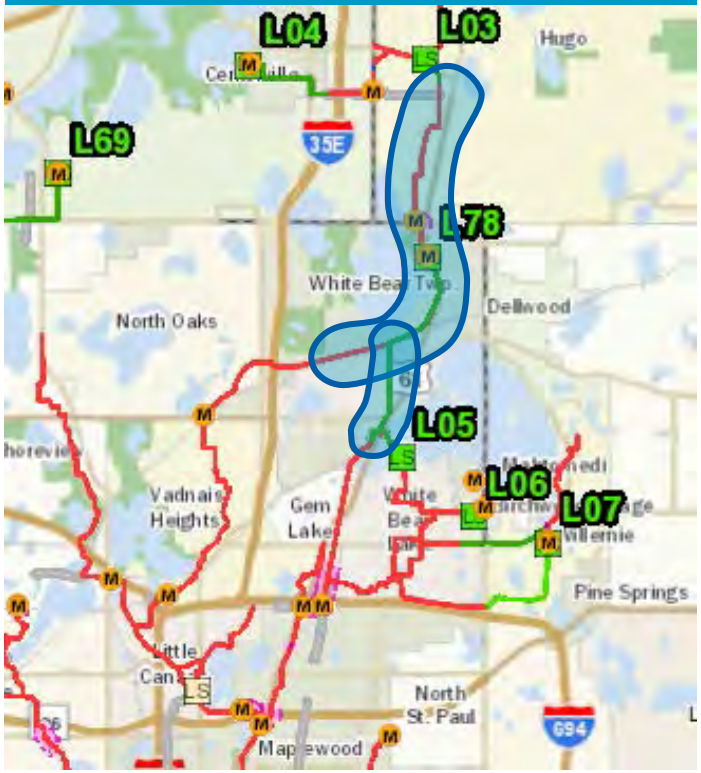
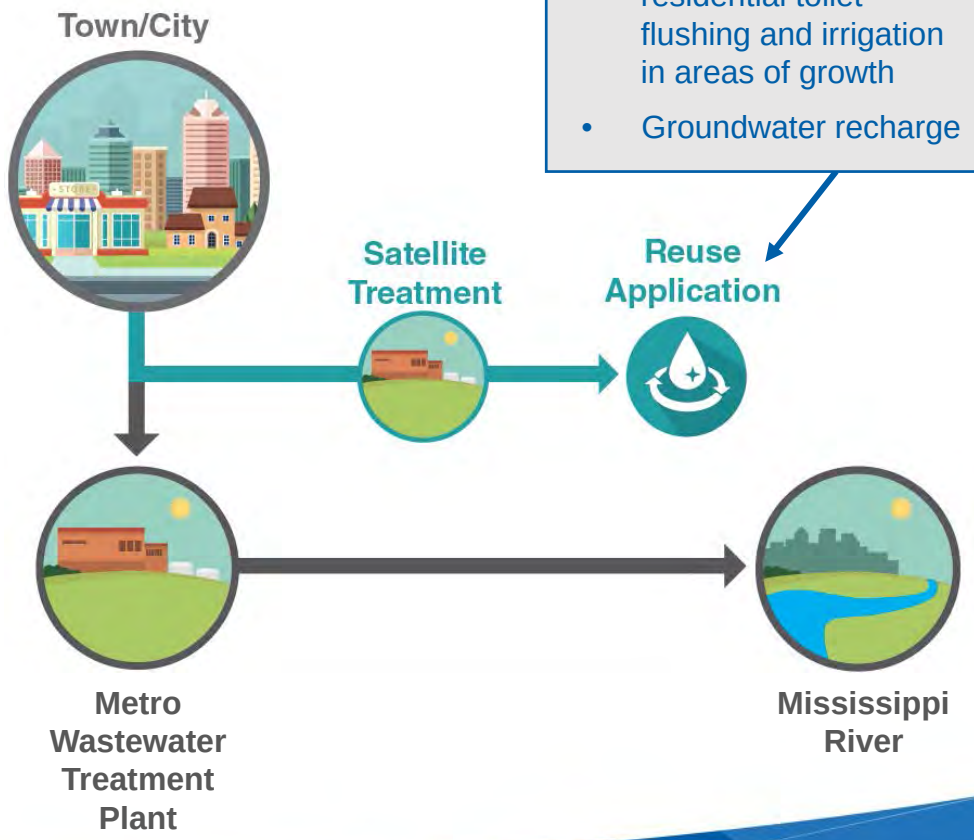
Wastewater Reuse: A Solution that Avoids Interceptor Expansion and May Provide Other Benefits

Northeast Interceptor System





- Commercial & residential toilet flushing and irrigation in areas of growth
- Groundwater recharge

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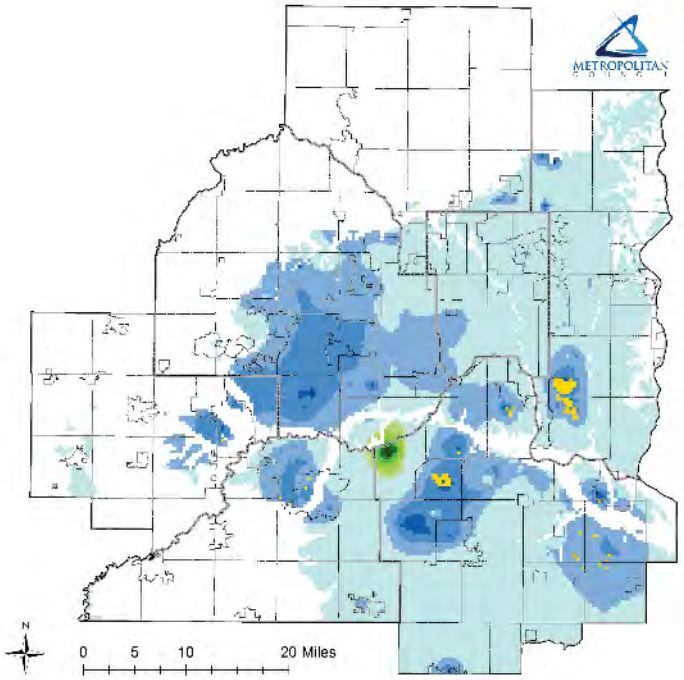
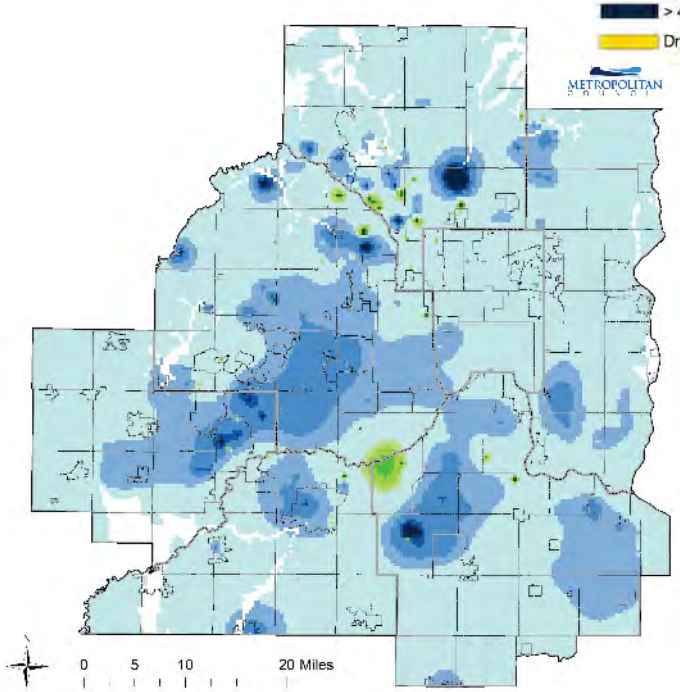
Problem: Projected Future Aquifer Decline May Limit Growth

Projected 2040 drawdown in the under average pumping



Prairie du Chien-Jordan aquifer

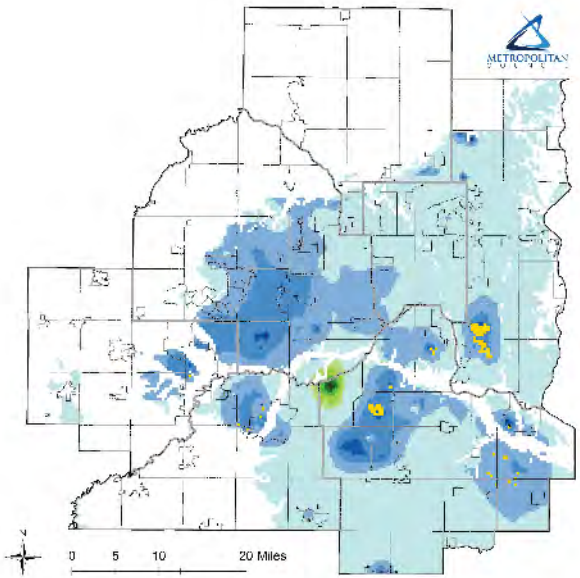


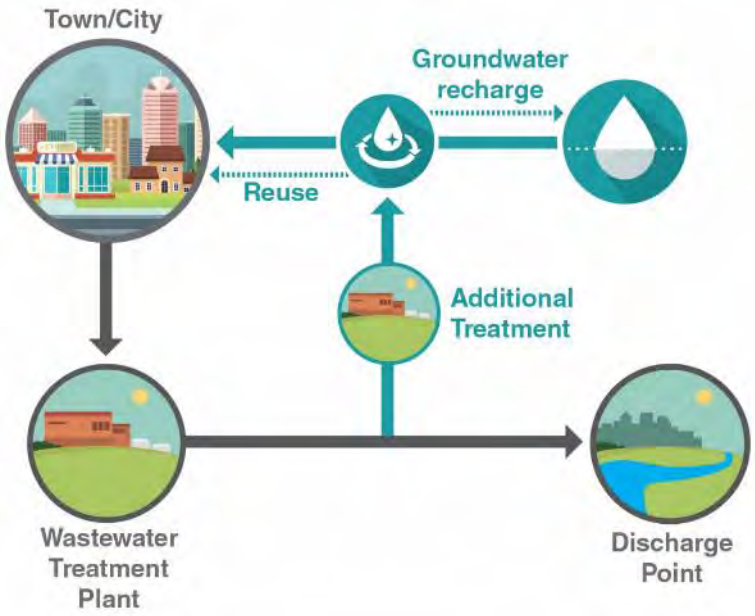
Tunnel City-Wonewoc aquifer

METROPOLITAN COUNCIL

Wastewater Reuse: A Solution that Could Augment Groundwater Resources

Projected 2040 drawdown under average pumping





- > 40 feet of rebound
- 30 to 40 feet of rebound
- 20 To 30 feet of rebound
- 10 to 20 feet of rebound
- 5 to 10 feet of rebound
- Less than 1 meter (3.28 feet) of change
- 5 to 10 of drawdown
- 10 to 20 of drawdown
- 20 to 30 of drawdown
- 30 to 40 of drawdown
- > 40 feet of drawdown
- Drawdown exceeds 50% of available head

NE Metro

- 1.6 mgd residential & commercial toilet flushing & irrigation in growth areas
- 3 mgd gw recharge

SE Metro

- 3 mgd industrial cooling water
- 3 mgd residential & commercial toilet flushing & irrigation in growth areas
- 4 mgd agricultural irrigation

METROPOLITAN COUNCIL

Problem: Future MPCA regulations may require large Regional investment in water used only once in Region

	EFFLUENT LIMIT	CAPITAL	ANNUAL O&M
P	0.3 mg/L Total Phosphorus	$400 million	$15 million
P	0.1 mg/L Total Phosphorus	$2 billion	$30 million
N	10 mg/L Total Phosphorus	$1 billion	$20 million
N	5 mg/L Total Phosphorus	$1.5 billion	$30 million
Cl	Chloride	Not estimated	Not estimated

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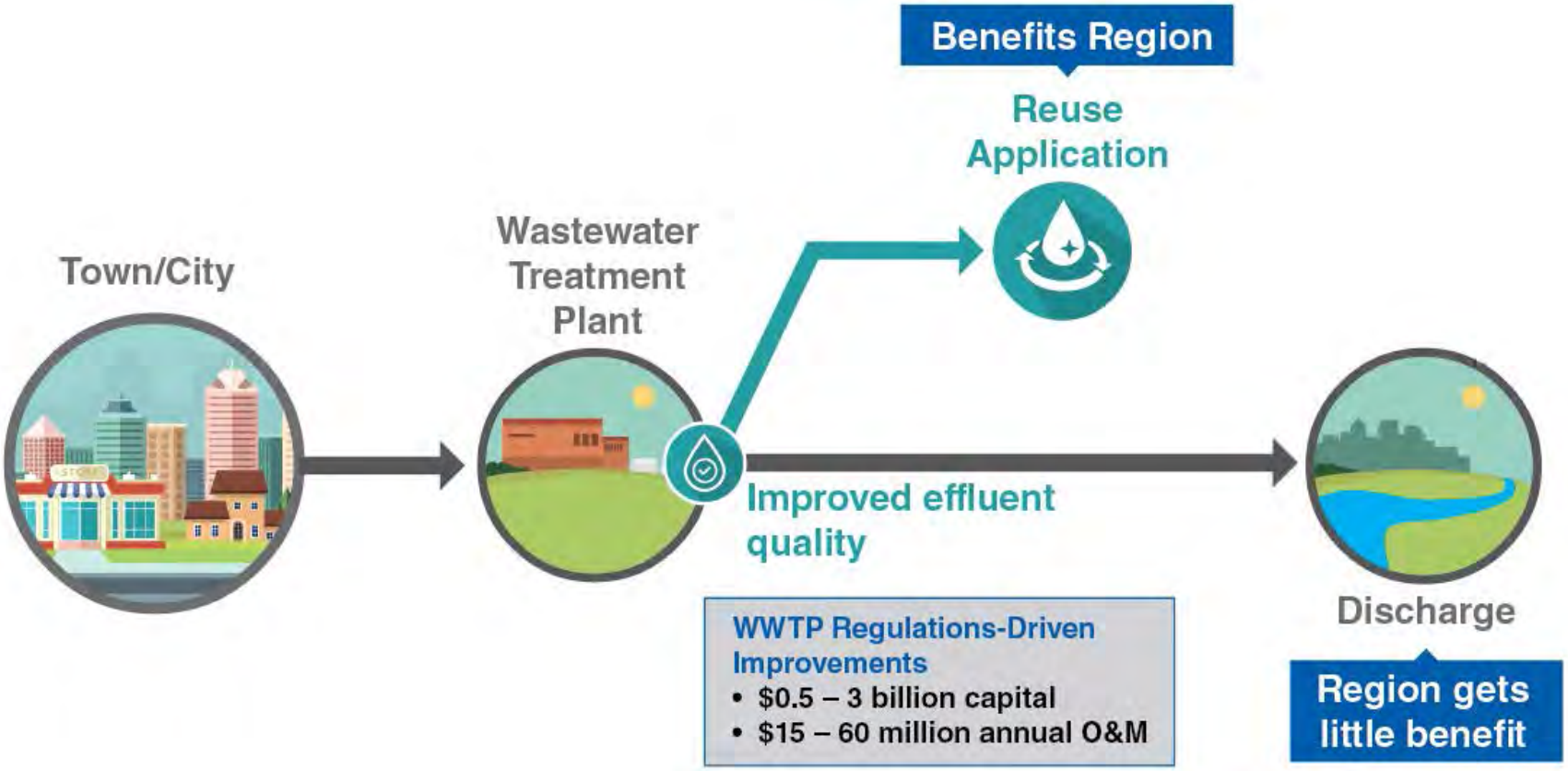
Wastewater Reuse: Region Receives More Benefit from Regional Investment



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TF: Will I/I Program help meet future water quality regulations?

- Help reduce flow quantity: defer or eliminate need for increased system capacity
- Does not improve flow quality: N & P effluent load reduction would still be needed

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Regional Water Supply Issues and Wastewater Reuse

Presented by:
Jason Moekel, MN DNR

METROPOLITAN COUNCIL

Regional Water Supply (MAWSAC-TAC) Input

Presented by:
Mark Maloney, Chair, MAWSAC-TAC

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Lessons Learned:
Other Reclaimed Water Utilities

Presented by:
Deborah Manning, MCES

METROPOLITAN COUNCIL

Metropolitan Water Reclamation District (MWRD) of Greater Chicago

Regional Wastewater and Stormwater Utility

- Serves Chicago and 128 suburban communities (883 square mi)
- 7 water reclamation plants; 1.4 bgd treated

Wastewater Reuse Drivers

- Chicago's increasing water rates ($4.70/1,000 gal)
- District's resource recovery goal

Wastewater Reuse Program

- No reuse at this time
- Contract with Illinois American Water (IAW)
- Effluent from Calumet WRP (350 mgd) available to IAW.
- IAW to treat to reuse level, market, & sell reclaimed water to users
- IAW to provide any additional user-required treatment and distribute

Calumet Water Reclamation Plant

Potential Reclaimed Water Customers

- Ford-Chicago Assembly Plant (2 miles from the Calumet WRP)
- Need customers to make economics work
- Rates:
  - › Reclaimed Water: to be determined
  - › Potable Water: $3-$13/1,000 gal

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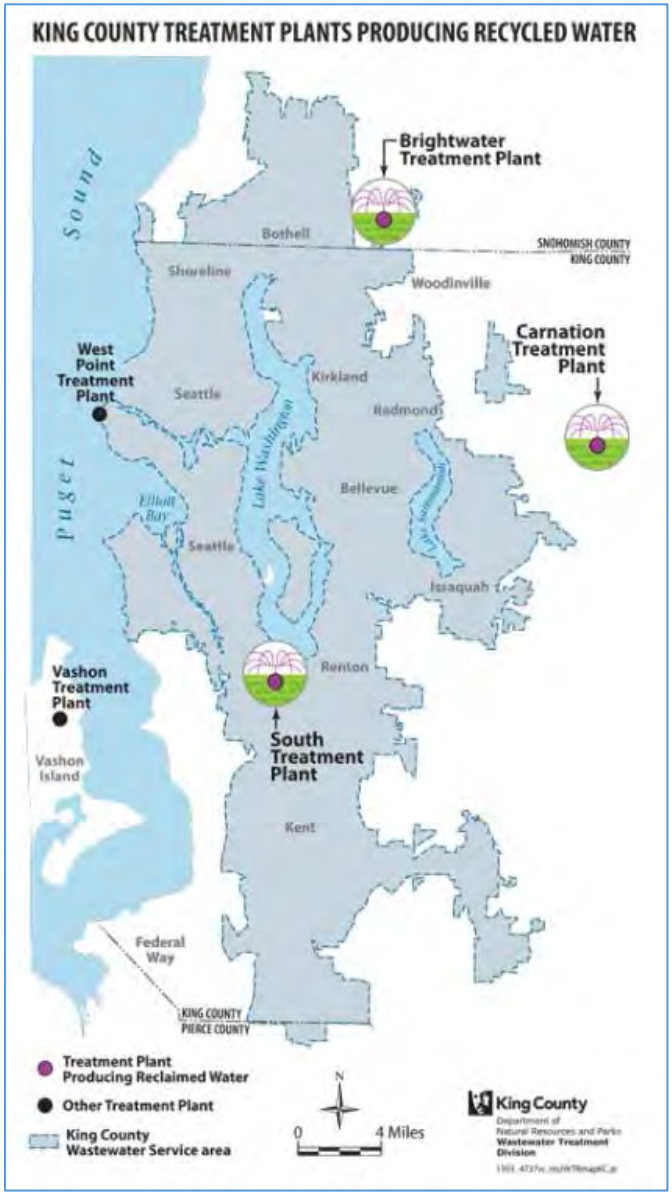
King County, WA Wastewater Treatment Division



Regional wastewater utility

- Wholesale wastewater services to 17 cities and 17 local sewer utilities in King, Snohomish, and Pierce Counties.
- WWTPs (5), pipelines, and pump stations

Wastewater reuse drivers evolved over time

- Drought
- Regulatory: Puget Sound nitrogen limit resulted in no additional discharge
- Brightwater WWTP permit requires reuse
- Improve salmon habitat
- Sustainability commitment

3 WWTPs Produce Class A Reclaimed Water

- South
- Brightwater
- Carnation

Reclaimed Water Customers

- Golf course irrigation
- Athletic field irrigation
- City of Kirkland fill station
- Wetland enhancement

Rates

- **Reclaimed water:**
  - Determined on case-by-case basis
  - King County charges $1.40 per 1,000 gallons (recovers O&M costs; capital subsidized by King Co. and rolled into sanitary sewer rates)
  - Cities then determine end user rate, generally 80% of PW
- **Potable water:** $6-$20, depending on amount and season

LOTT – Lacey, Olympia, Tumwater, Thurston County

Regional wastewater utility

- Stand alone, non-profit corporation of Lacey, Olympia, Tumwater and Thurston County provides wholesale wastewater services to those entities
- Owns and operates 3 WWTPs and related pipelines, pump stations, and other facilities

Wastewater reuse drivers

- Puget Sound N discharge limit resulted in no additional discharges
- Community directive that wastewater is a resource and should be reused

2 WRPs Produce Class A Reclaimed Water

- Budd Inlet: 1.5 mgd
- Martn Way: 1.5 mgd)

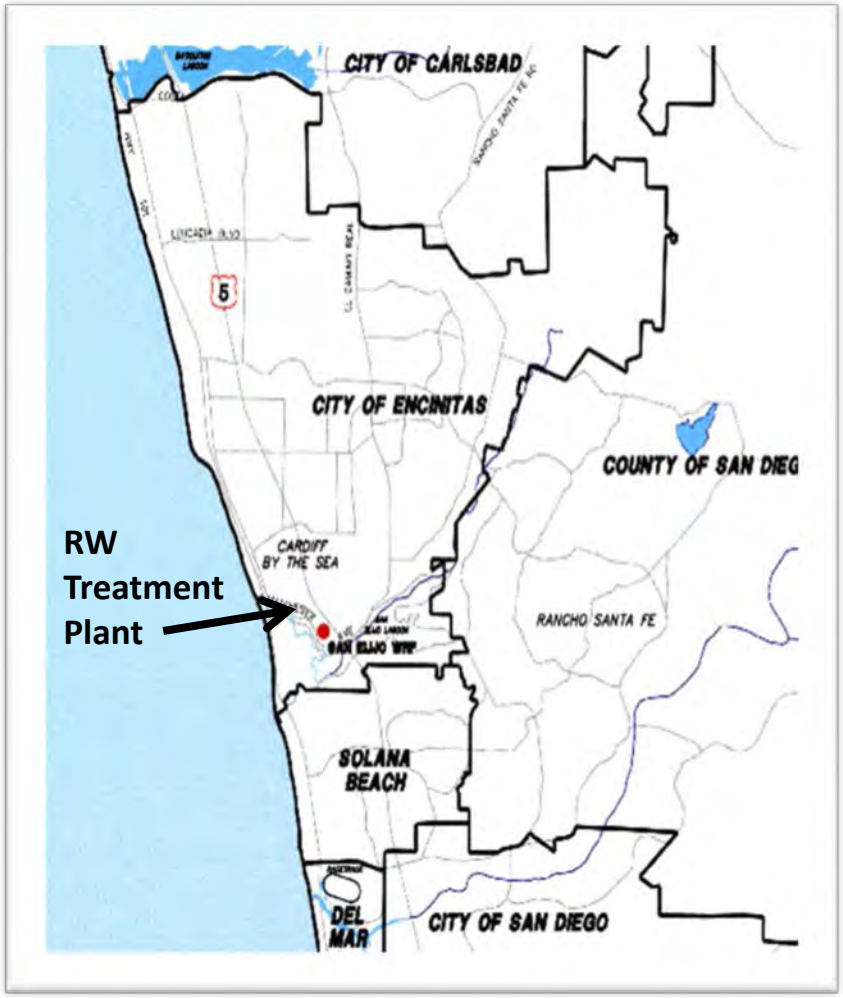
Major Reclaimed Water Customers/Users

- Municipal irrigation
- Children's Museum toilet flushing and wading stream
- Golf course irrigation
- Groundwater recharge

Rates

- **Reclaimed water:**
  - LOTT provides reclaimed water to each of its partner jurisdiction at $1 per year
  - Water purveyors contract with end users; reclaimed rate at discretion of jurisdiction. ~70% of the irrigation water rate.
- **Potable water (irrigation):**
  - $2-8/1,000 gallons, depending on amount and season

San Elijo Joint Powers Authority



Regional Wastewater Utility

- The San Elijo Joint Powers Authority (SEJPA) owns and operates the San Elijo Water Reclamation Facility (SEWRF), a publicly owned wastewater treatment and water recycling facility responsible for collecting, treating and safely disposing of, or recycling wastewater and its residuals for residents and businesses in the Solana Beach, Rancho Santa Fe, Olivenhain and Cardiff communities.
- Owns and operates 1 WWTP (the SEWRF), 20 miles of recycled water distribution pipelines, three recycled water reservoirs, and operates and maintains nine wastewater lift stations.

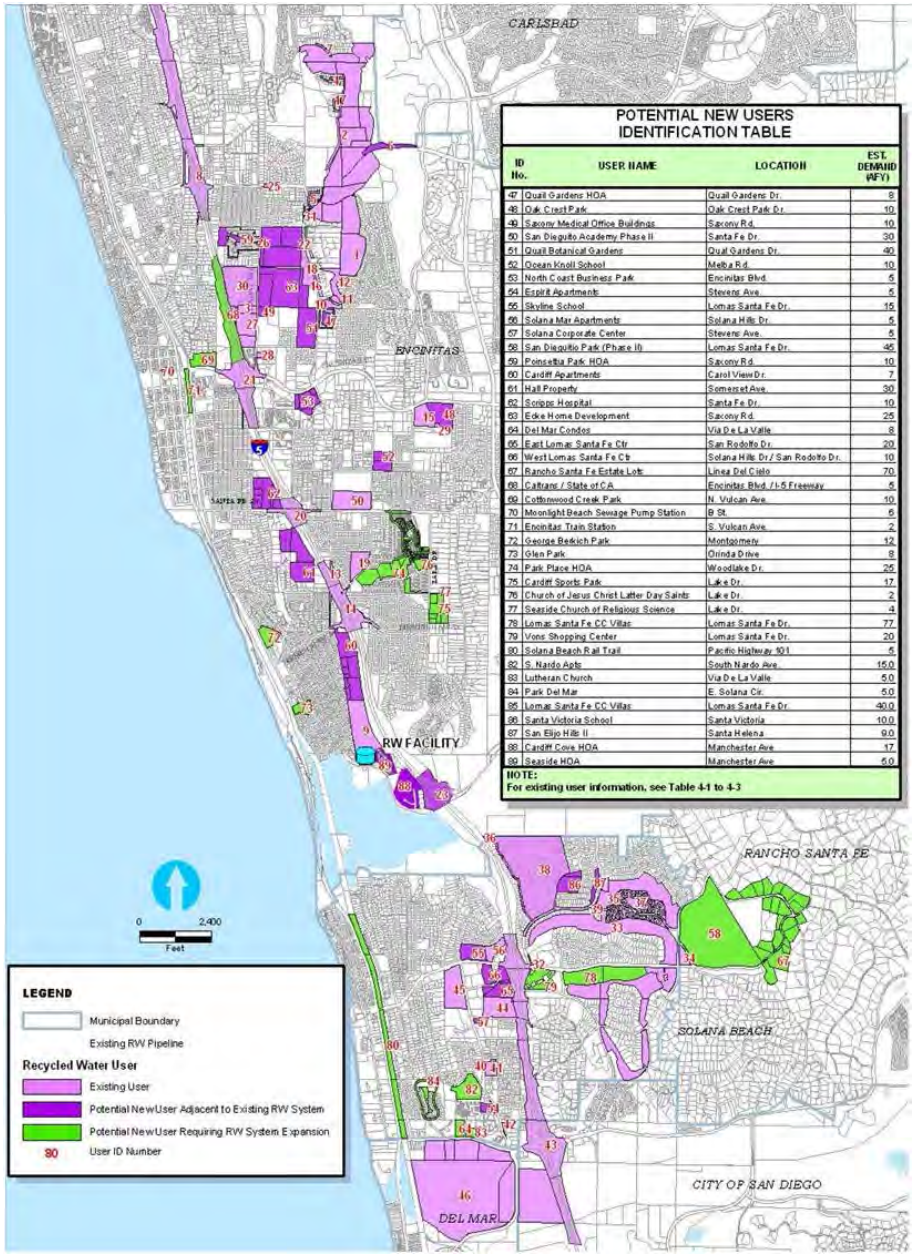
Wastewater Reuse Drivers

- Drought response (initial driver)
- Offset potable demands (later benefit/driver)
- Currently exploring to potable reuse due to increasing cost of imported water

1 WWTP Produces Recycled Water (Disinfected Tertiary)

- San Elijo Water Reclamation Facility (2.5 MGD)

San Elijo Joint Powers Authority



POTENTIAL NEW USERS IDENTIFICATION TABLE

ID No.	USER NAME	LOCATION	EST. DEMAND (AFY)
47	Quail Gardens HOA	Quail Gardens Dr.	8
48	Oak Crest Park	Oak Crest Park Dr.	10
49	Saxony Medical Office Buildings	Saxony Rd.	10
50	San Dieguito Academy Phase II	Santa Fe Dr.	30
51	Quail Botanical Gardens	Quail Gardens Dr.	40
52	Ocean Knoll School	Melba Rd.	10
53	North Coast Business Park	Encinitas Blvd.	5
54	Esprit Apartments	Stevens Ave.	5
55	Skyline School	Lomas Santa Fe Dr.	15
56	Solana Mar Apartments	Solana Hills Dr.	5
57	Solana Corporate Center	Stevens Ave.	5
58	San Dieguito Park (Phase II)	Lomas Santa Fe Dr.	45
59	Poinsettia Park HOA	Saxony Rd.	10
60	Cardiff Apartments	Carol View Dr.	7
61	Hall Property	Somerset Ave.	30
62	Scripps Hospital	Santa Fe Dr.	10
63	Ecke Home Development	Saxony Rd.	25
64	Del Mar Condos	Via De La Valle	8
65	East Lomas Santa Fe Ctr	San Rodolfo Dr.	20
66	West Lomas Santa Fe Ctr	Solana Hills Dr / San Rodolfo Dr.	10
67	Rancho Santa Fe Estate Lots	Linea Del Cielo	70
68	Caltrans / State of CA	Encinitas Blvd. / I-5 Freeway	5
69	Cottonwood Creek Park	N. Vulcan Ave.	10
70	Moonlight Beach Sewage Pump Station	B St.	6
71	Encinitas Train Station	S. Vulcan Ave.	2
72	George Beckish Park	Montgomery	12
73	Glen Park	Orinda Drive	8
74	Park Place HOA	Woodlake Dr.	25
75	Cardiff Sports Park	Lake Dr.	17
76	Church of Jesus Christ Latter Day Saints	Lake Dr.	2
77	Seaside Church of Religious Science	Lake Dr.	4
78	Lomas Santa Fe CC Villas	Lomas Santa Fe Dr.	77
79	Vons Shopping Center	Lomas Santa Fe Dr.	20
80	Solana Beach Rail Trail	Pacific Highway 101	5
82	S. Nardo Apts	South Nardo Ave.	15.0
83	Lutheran Church	Via De La Valle	5.0
84	Park Del Mar	E. Solana Cir.	5.0
85	Lomas Santa Fe CC Villas	Lomas Santa Fe Dr.	40.0
86	Santa Victoria School	Santa Victoria	10.0
87	San Elijo Hills II	Santa Helena	9.0
88	Cardiff Cove HOA	Manchester Ave.	17
89	Seaside HOA	Manchester Ave.	5.0

NOTE:
For existing user information, see Table 4-1 to 4-3

Reclaimed Water Customers/Uses

- Irrigation for parks, schools, churches, golf courses, freeway and street landscaping, commercial and homeowners association landscaping; industrial cooling tower use.

Partnerships

- Provides wholesale to 3 local jurisdictions and retail to one user (golf course)

Water Rates

- Contracts on a case-by-case basis but with consistent approach
- Rates initially at 85% of potable
- Now – Cost of Service based rates

Lessons Learned

Regional benefit

- Environment
- Fisheries
- Community and social
- Economic development
- Water supply

Rate structure/factors

- Evolution
- Free
- Subsidized
- % of potable water
- Case-by-case
- Cost of service
- Same as potable water

Partnership

- Wholesaler
- Retailer
- Hybrid (wholesaler & retailer)
- Outsource

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Case Studies: Lessons Learned

Regional Benefit

- **King County:**
  - Attempted to assess in Reclaimed Water Comprehensive Plan. Planning effort broke down. Used WateReuse framework for assessment.
  - County's Water Reuse Policies: reuse projects to consider beneficial impacts on environment, fisheries, community and social, economic development.

- **LOTT:**
  - Reclaimed water serves wastewater treatment needs.
  - No additional regional benefit assessed.

- **San Elijo Joint Powers Authority, CA**
  - Reclaimed water offsets potable water demands & need for costly imported water.
  - San Diego County Water Authority & Metropolitan Water District of Southern California provide financial incentives for SEJPA's reclaimed water for above benefits.

Case Studies: Lessons Learned

Partnership

Wholesaler (LOTT):

- Provides reclaimed water to LOTT's 4 members based on an agreed-upon allocation system.
- Members are responsible after that (use, marketing, distribution, fee, etc.).

Retailer

Hybrid: Wholesaler/Retailer (King County):

- Provides reclaimed water to several local communities who use or distribute it
- Provides reclaimed water directly to several users

Outsource (MWRDGC):

- Contract with Illinois American Water for reclaimed water program. Illinois American to produce, market, and distribute reclaimed water.

Case Studies: Lessons Learned

Rate Approach

Cost of Service

- New CA court decision causing utilities to move to cost-of-service approach
- CA law requires that reclaimed water be used if it is available

Subsidized (King County):

- Actual rate determined on a case-by-case basis
- County charges $1.40 per 1,000 gallons – recovers O&M costs, capital subsidized by King Co. and rolled into sanitary sewer rates. If wholesaling, cities determine end user rate (generally 80% of PW rate).
- Water rates in area: $6 – 19/1,000 gallons, depending on time of year and quantity

Nearly Free with Resale at % of Potable Water (LOTT):

- Charges its 4 members $1/year for reclaimed water. Members generally set reclaimed water rate at 70% of irrigation water rate.

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SE Metro Case Studies: SKB/Enerkem Potential Project

Presented by:
Deborah Manning, MCES

METROPOLITAN COUNCIL

SKB/Enerkem's Potential Project Case Study

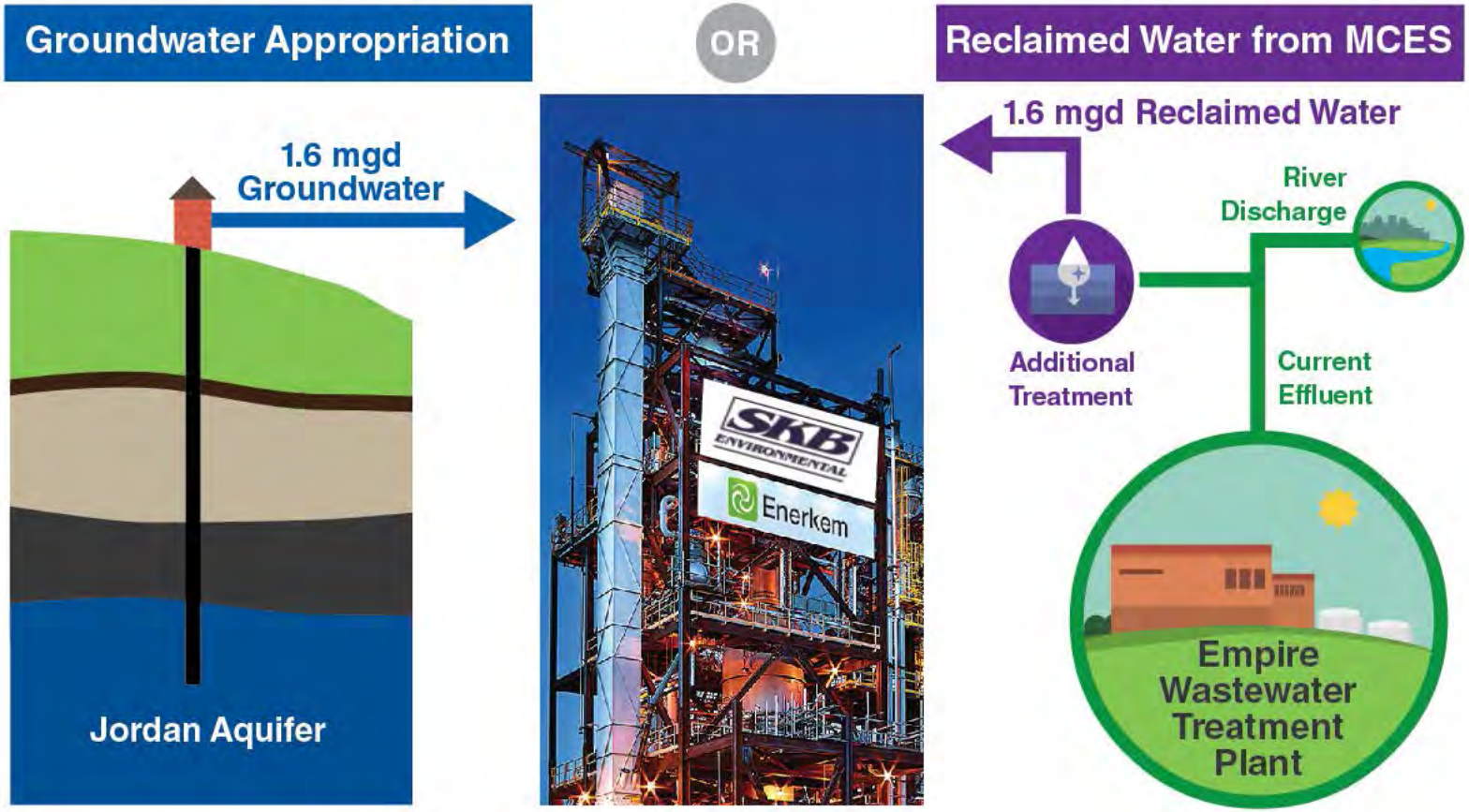
SKB Environmental

- MN solid waste management firm founded in 1983
- Industrial, construction & demolition, and municipal solid waste (MSW)

Enerkem

- Montreal-based waste-to-energy firm founded in 2000
- Edmonton, Alberta facility:
  - Project launched in 2008
  - 100,230 tons/yr MSW processed
  - Biomethanol production began 2015 (initial timeframe 2012)
  - Ethanol production began in 2017
- 10 million gallons/yr capacity

SKB/Enerkem's Potential Project Case Study



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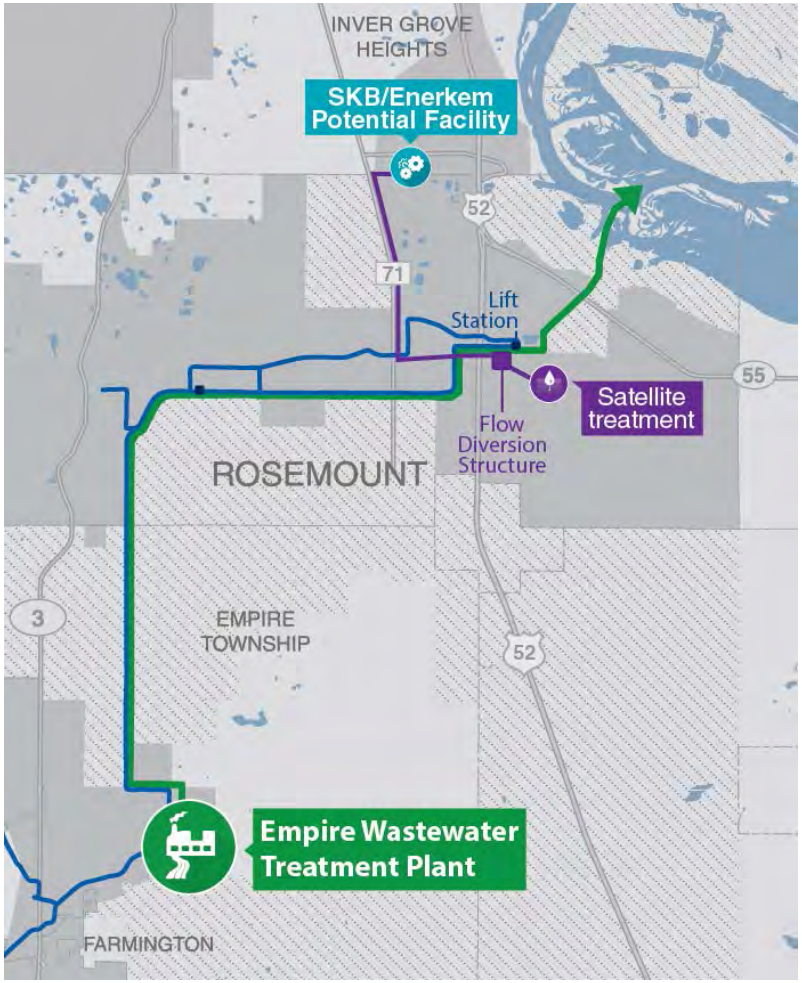
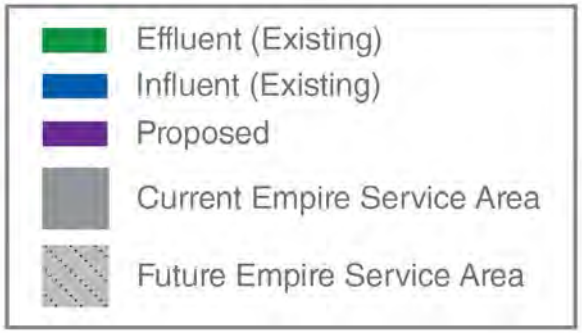
SKB/Enerkem's Potential Project Case Study



- 600,000 tons of MSW per year disposed
- 20 million gallons per year of biofuels and renewable chemicals produced



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SKB/Enerkem's Potential Project Case Study

Capital and O&M costs

TREATMENT

- 1.6 MGD of Empire WWTP effluent treated at satellite treatment plant
- Disinfected tertiary (2.2 total coliform) level
- Onsite storage
- Likely additional treatment by SKB/Enerkem needed at their facility

CONVEYANCE

- 5 mile force main

ESTIMATED COST

- $2.80/1000 gallons
- Does not include:
  - Any additional treatment by SKB/Enerkem
  - Cost of discharging to local or regional sewers
  - Industrial waste pretreatment program charges
- Compare with Inver Grove Heights potable water cost of $3.20/1000 gallons

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SKB/Enerkem Potential Project Case Study Per SKB/Enerkem Benefits

Environmental Benefits

- Ensure Dakota County meets and exceeds its waste processing goals in the Solid Waste Master Plan
- Ethanol reduces GHG emissions by 60% when compared to gasoline
- Sustainable MSW management alternative to landfilling
- Will use reclaimed water rather than water from the aquifer

Economic Benefits

- Create over 100 high quality jobs
- Most inexpensive feed stock
- Abundant resource

SKB/Enerkem's Potential Project Case Study

Regional Benefits

CONSERVE WATER RESOURCES

- Avoids additional groundwater use in area with projected future aquifer decline

SUPPORTS ECONOMIC GROWTH

- Allows for economic growth in a part of the Region in which water availability may impact development

SUPPORTS INDUSTRIAL GROWTH

- Allows for economic growth in a part of the Region in which water availability may impact development

LARGE-SCALE REUSE

- Demonstrates larger-scale wastewater reuse than any other project

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SE Metro Case Studies:
Eagan Water Reuse Feasibility Study

Presented by:
Jon Eaton, City of Eagan

METROPOLITAN COUNCIL

Eagan Reuse Feasibility Study- Building Partnerships

The City of Eagan is looking to promote a sustainable water supply

The City cannot do water reuse projects alone and is looking for partners

Conservation has reduced the peak flows but more needs to be done

Non-potable water use for irrigation and commercial/industrial processes is a simple solution

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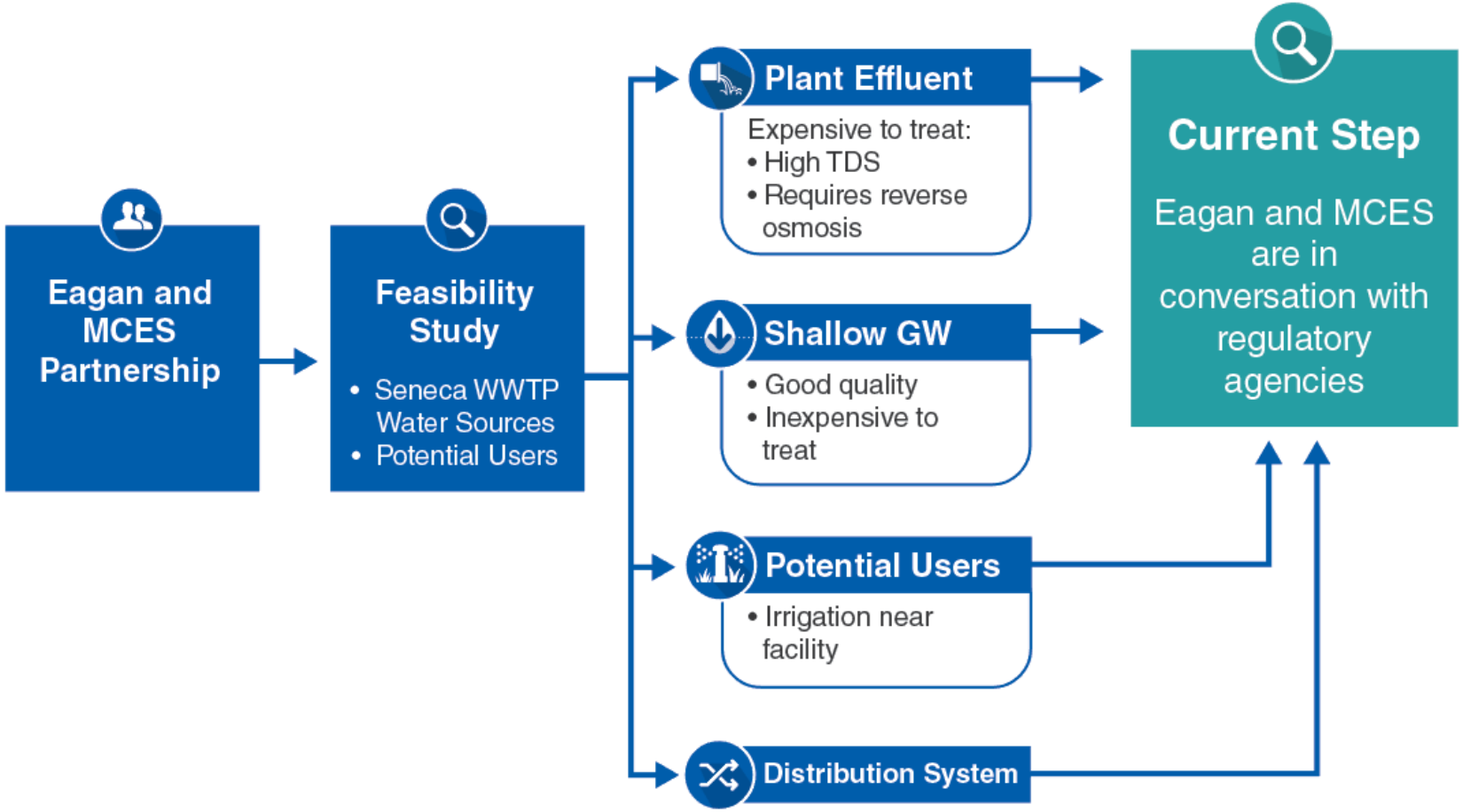
Eagan Reuse Feasibility Study- Overview



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Wastewater Reuse Policies

Presented by:
Bryce Pickart, MCES

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MCES Wastewater Reuse Policies

Thrive MSP 2040 Plan

Page 125

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

2040 Water Resources Policy Plan

- **Work with our partners**
- **Promote a more sustainable region**
- **Maximize regional benefits**
- **Provide efficient, high-quality, sustainable wastewater services**

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2040 Water Resources Policy Plan

Refer to handout

WATER REUSE

Policy

Wastewater reuse "has the potential for both recharging groundwater and reducing potable water demand by providing an alternate water source for nonpotable purposes such as industrial cooling, irrigation, and toilet flushing.

Implementation Strategy

1. Increase wastewater reuse within Council wastewater treatment facilities – that is, lead by example.
2. Implement groundwater recharge and irrigation (for example, golf courses) in East Bethel as a demonstration project for the region.
3. Pursue wastewater reuse for industrial cooling water, where feasible.
4. Develop and implement a plan to address the key implementation challenges associated with a nonpotable water system for toilet flushing and irrigation uses.
5. Integrate nonpotable water systems into plans for future regional wastewater reclamation facilities.
6. Partner with communities and other entities such as the University of Minnesota's UMore Park to identify and pursue wastewater reuse opportunities.

INVESTMENT

Policy

The Council will strive to maximize regional benefits from regional investments.

Implementation Strategy

Invest in wastewater reuse when justified by the benefits for supplementing groundwater and surface water as sources of nonpotable water to support regional growth, and by the benefits for maintaining water quality.

WASTEWATER SUSTAINABILITY

Policy

The Council will provide efficient, high-quality, and environmentally sustainable regional wastewater infrastructure and services.

The Council shall conduct its regional wastewater system operations in a sustainable manner as is economically feasible. Sustainable operations relates not only to water resources but also to increasing energy efficiency and using renewable energy sources, reducing air pollutant emissions, and reducing, reusing, and recycling solid wastes.

Implementation Strategy

Reuse treated wastewater to meet nonpotable water needs within Council wastewater treatment facilities where economically feasible.

WATER CONSERVATION & REUSE

Policy

The Council will work with our partners to identify emerging issues and challenges for the region as we work together on solutions that include the use of water conservation, wastewater and stormwater reuse, and low-impact development practices to promote a more sustainable region.

Implementation Strategy

To supplement groundwater and surface water, investigate reusing treated wastewater as sources of nonpotable water to support regional growth, and when cost-effective, implement reuse.

Discussion and Agenda Building

Led by:
Sandy Rummel, Metropolitan Council Member, District 11

Evaluation and Next Meeting

Led by:
Sandy Rummel, Metropolitan Council Member, District 11

THANK YOU!

METROPOLITAN COUNCIL

Appendix 3

Meeting Notes and Presentations from Task Force Meeting 3

Metropolitan Council Environmental Services
Wastewater Reuse Policy Task Force

Meeting #3
September 11, 2017
8:30-10:30 am

St. Croix Room
League of Minnesota Cities
145 University Ave West
Saint Paul, MN 55103

Members Present

Mary Hurliman, Bloomington
Jennifer Levitt, Cottage Grove
Jon Eaton, Eagan
Bryan Bear, Hugo
Chris Petree, Lakeville
Steven Huser, Metro Cities
Debra Heiser, St. Louis Park
Kurt Ulrich, Ramsey
Beverly Farraher, Saint Paul
Mark Graham, Vadnais Heights
Michael Thompson, Maplewood
Sandy Rummel, Metropolitan Council

Metropolitan Council Staff Present

Deborah Manning
Bryce Pickart
Jeannine Clancy
Michael Nguyen
Dave Brown
Noah Johnson
Ned Smith
Rene Heflin
Jeanne Landkamer

Others Present

Patti Craddock, SEH
Matt Stark, Springsted
Dave MacGillivray, Springsted
Gene Goddard, Greater MSP
Joe Lynch, Inver Grove Heights
Keith Boulais, Premier Materials
Anders Victor, Greater MSP
Chris Eng, Washington County
Barb Huberty, MN Legislative Water Commission

Purpose

1. To consider and comment on draft wastewater reuse policy language covering:
    a. Regional benefit of wastewater reuse projects
    b. Local partnerships for implementing wastewater reuse projects
2. To understand community review and response process
3. To understand Met Council processes:
    a. Review and adopt policy recommendations
    b. Future policy review cycles

Meeting Notes

1. Welcome, Introductions, Meeting Purpose, Agenda

a. Today's meeting has draft policy language and a case study
b. Policies are to support MCES in responding to Wastewater Reuse (hereafter WWR) opportunities. MCES is not soliciting projects.
c. Current wastewater rates are based on cost of service; would be the same for reclaimed water – fair cost share reflecting regional benefits, not a subsidy.
    i. Rates determined case-by-case, would be consistent for that user
    ii. Potential cost share, if any, would depend on regional benefits
    iii. Definition of "regional" will be discussed (MCES service area vs. larger)
    iv. Pipelines would be MCES assets, but private vs. public infrastructure questions would also be assessed on a case-by-case basis

2. **Review key issues from meetings one and two**
    a. WWR is meant to augment, not replace, other water management tools
    b. It depends on case-by-case drivers
    c. Policy review is needed to respond to specific opportunities
    d. Task force focus is on regional benefit and reclaimed water rates, as well as the relationships between communities/MCES reflecting a partnership approach to WWR
    e. MCES wants feedback from task force; recommendations will then be taken to Environment Committee for approval and then passed on to Council if supported.
    f. If Council approves, policy document would be included in 2040 Water Resources Policy Plan (WRPP) after public hearing process. Any updates would be reviewed again in the next WRPP update in about five years.
3. **Regional benefit: case study (intro and framework, economic, environmental, and reclaimed water rate/impact)**
    a. Case study: SKB/Enerkem
        i. Potential waste-to-fuel facility in Inver Grove Heights
        ii. SKB/Enerkem interested in 1.6 MGD of reclaimed water that would be produced from Empire Wastewater Treatment Plant (WWTP) effluent
        iii. Reclaimed water would be produced at a satellite Water Reclamation Facility (WRF) from flow diverted from the Empire outfall pipe
        iv. Cost cited is cost of facilities MCES would need to produce reclaimed water; does not include cost of any additional facilities needed to meet additional SKB/Enerkem water quality requirements
        v. In this case, wastewater discharged from SKB/Enerkem would go to the local sewer system and, ultimately, MCES' interceptor system
    b. Potential regional benefits
        i. Economic (developed by SEH and Springsted)
            1. Public revenue, jobs, offset of cost of services to residents, positive impacts to local businesses that supply new industries
            2. Framework used to assess is intended to be similar to what cities use to evaluate tax increment/tax abatement projects
        ii. Environmental
            3. Could help reduce nutrients in wastewater to help meet future requirements in some cases, but impact is currently too difficult to quantify
            4. Positive impact to amount of water drawn from aquifers – this could be a tool to mitigate projected water supply concerns, particularly in the southeast part of the region.
                i. Has potential to simplify access to water for industry in places where permitting is very complex due to environmental impacts
4. **Regional benefit: community development perspective**
    a. Communities, counties, state want to attract businesses to area
        i. Business wish-list includes land availability, workforce availability, lack of liability due to potential future environmental issues, financial incentives
        ii. In some parts of the region, a majority of residents leave their county for work, which negatively impacts local businesses

iii. Parts of the region that have large tracts of land, available workforce, desire to have more local industry may still face environmental challenges to doing so
iv. WWR could be an economic development tool by helping address these

5. Open discussion – policy recommendations

a. Challenges of assessing what "regional benefit" means, how its value would be calculated to determine rates, appropriateness of subsidies, etc. How to quantify larger regional benefits to growth, water supply, other big-picture topics
   i. Benefit to communities with already diverse water supply vs. those without
   ii. How to deal with situations where benefit is regional, but impact is much larger in only part of region
   iii. Diverse water supply as way to mitigate possible long-term impacts of lake level lawsuits
   iv. How to deal with challenges of finding people to actually use the reclaimed water
   v. Who pays to re-plumb, who pays additional costs to transport so that cities farther from existing reclaimed water sources could also share in benefits? Cost-benefit analysis looks different for cities based on location.

b. Overall approach is intended to reflect regional cost-sharing, benefit-sharing philosophy used for wastewater, to have a minimal financial impact on customer communities, and proceed carefully to minimize risk
   i. Example of this approach as it applies to wastewater: a city having MCES system rehabilitation work or new wastewater infrastructure installed doesn't pay higher rates than everyone else the next year, because the cost of that work is part of maintaining the system better for all communities and is shared by all communities.
   ii. Organizations involved in water supply/treatment/management recognize siloing as a barrier to addressing water issues; can we start addressing it through initiatives like this?

c. Messaging
   i. What types of benefits should be emphasized for maximum appeal to public?
   ii. Policy elements like caps in funding or limits on project type would be key to making it politically feasible
   iii. Positive impact must not just be obvious to public works professionals, but must also be able to be conveyed effectively to city administration and elected officials.
   iv. Benefit of using political capital on this vs. other conservation/sustainability investments needs to be clearer, given difficulty of quantifying local benefit
   v. Should consider other areas where cost/benefit is currently shared that could be positively impacted by this – for example, disposal, treatment, containment of municipal solid waste.
   vi. More detail wanted regarding if reuse can help avoid/delay capital improvements

vii. Rate increases are sensitive locally even if regional benefits are large

d. Development of framework for decision-making – more details wanted
    i. Language/examples in context of evaluation methods used for this project
    ii. Comparison of this to other regional systems, assets, benefits, and the allocation thereof
    iii. Assessing how much detail and information is necessary to evaluate
    iv. What would process be to assess/rank multiple proposed projects?

Wastewater Reuse Policy Task Force

Meeting 3

September 11, 2017 | 8:30 – 10:30 AM

League of MN Cities

METROPOLITAN COUNCIL

Welcome, Introductions, Meeting Purpose

Presented by:
Sandy Rummel, Metropolitan Council Member, District 11

Meeting Purpose

To consider and comment on draft wastewater reuse policy language covering:

- Regional benefit of wastewater reuse projects
- Local partnerships for implementing wastewater reuse projects

To understand community review and response process

To understand Met Council processes:

- Review and adopt policy recommendations
- Future policy review cycles

Agenda

ITEM	LEAD	TIME
Welcome, Introductions, Meeting Purpose, Agenda	Sandy Rummel	*10 min*
Key Issues from Meetings 1 & 2	Jeannine Clancy & Deborah Manning	*5 min*
Potential Policy Recommendations	Deborah Manning & Bryce Pickart	*10 min*
Case Study		*30 min*
Introduction & Framework	Deborah Manning	
Economic	Patti Craddock & David MacGillivray	
Environmental	Deborah Manning	
Reclaimed Water Rate & Impact	Deborah Manning	
Community Development Perspective	Jennifer Levitt & Chris Eng	*10 min*
Partnerships	Bryce Pickart	*10 min*
Open Discussion – Policy Recommendations	Jeannine Clancy	*40 min*
Agenda Building, Evaluation and Next Meeting	Sandy Rummel	*5 min*

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Key Issues from Meetings 1 and 2

Presented by:
Jeannine Clancy & Deborah Manning, MCES

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Key Issues from Meetings 1 and 2

- Wastewater reuse:
  - Tool in the water management toolbox
  - Use depends on case-by-case drivers
- Policy review needed to respond to reuse opportunities
- Task Force focus:
  - Regional benefit and reclaimed water rates
  - City-MCES partnership approaches
- Today's meeting: Draft policy language and case study developed to illustrate issues and generate Task Force member input

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Potential Policy Recommendations

See draft Policy Language handout

Presented by:
Deborah Manning, MCES and Bryce Pickart, MCES

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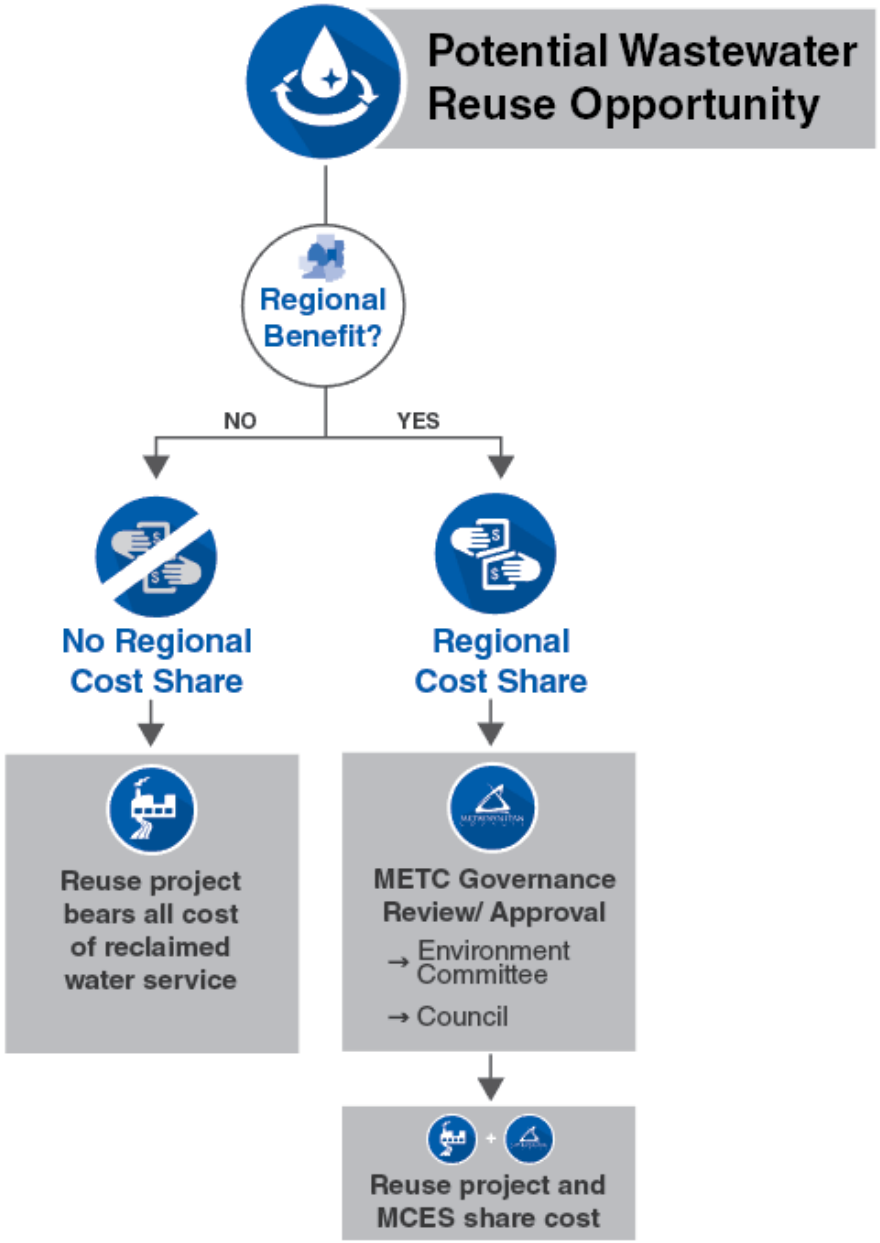
Wastewater Reuse Opportunity Assessment Methodology



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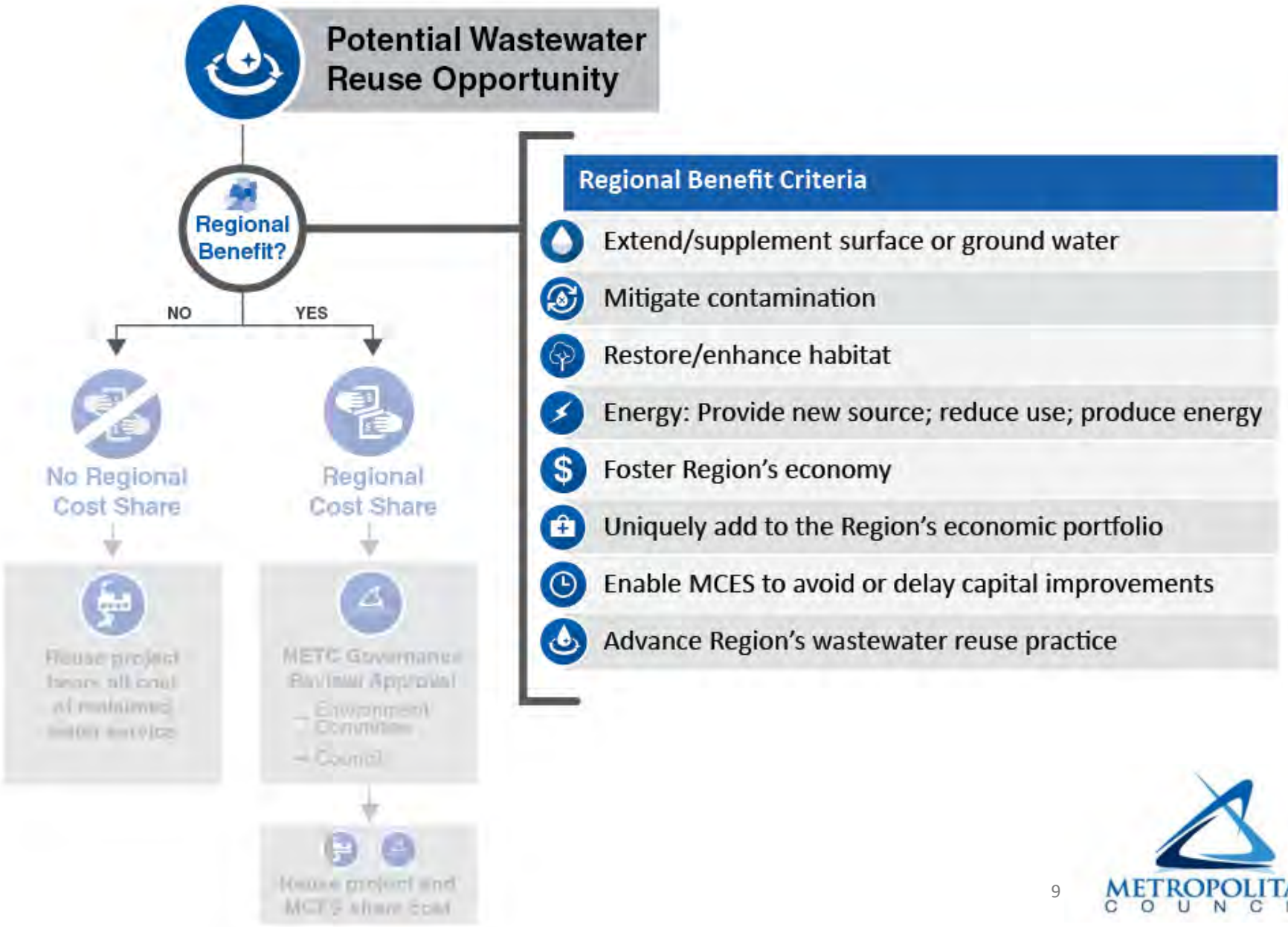
Wastewater Reuse Opportunity Assessment Methodology



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Wastewater Reuse Opportunity Assessment Methodology

ENVIRONMENTAL FACTORS

- Water resources
- Waste
- Habitat
- Historical/cultural
- Visual
- Energy
- Air pollution
- Noise
- Transportation

ECONOMIC FACTORS

- Construction impacts
- Operational impacts:
  - *Taxes on facilities*
  - *Equipment*
  - *Land*
  - *Product*
  - *Utilities consumption*
  - *Operating supplies*
  - *Contracted services*
  - *Jobs*

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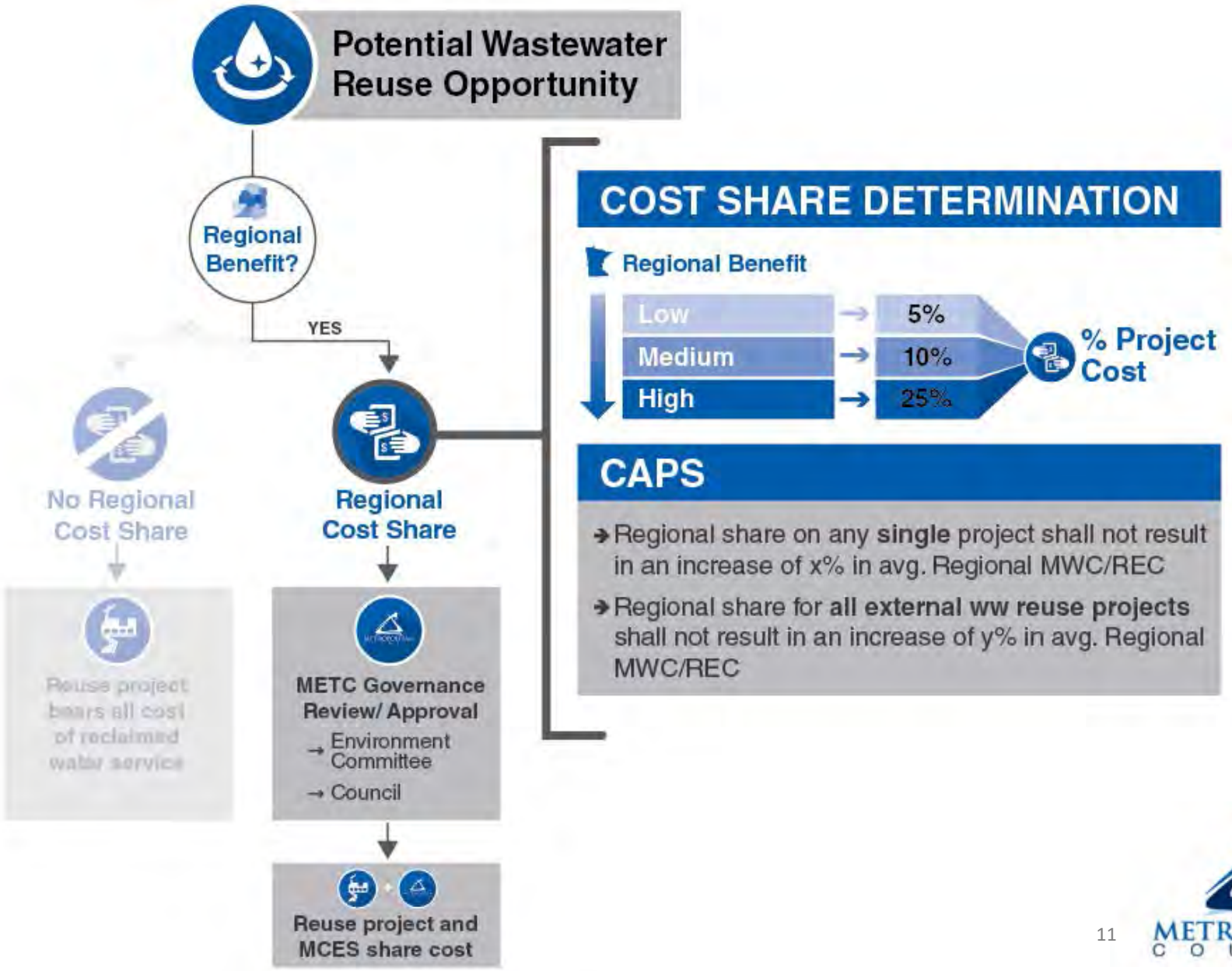
Wastewater Reuse Opportunity Assessment Methodology



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Applying Draft Methodology: SKB/Enerkem Case Study

Presented by:
Patti Craddock, SEH, David MacGillivray, Springsted, Deborah Manning, MCES

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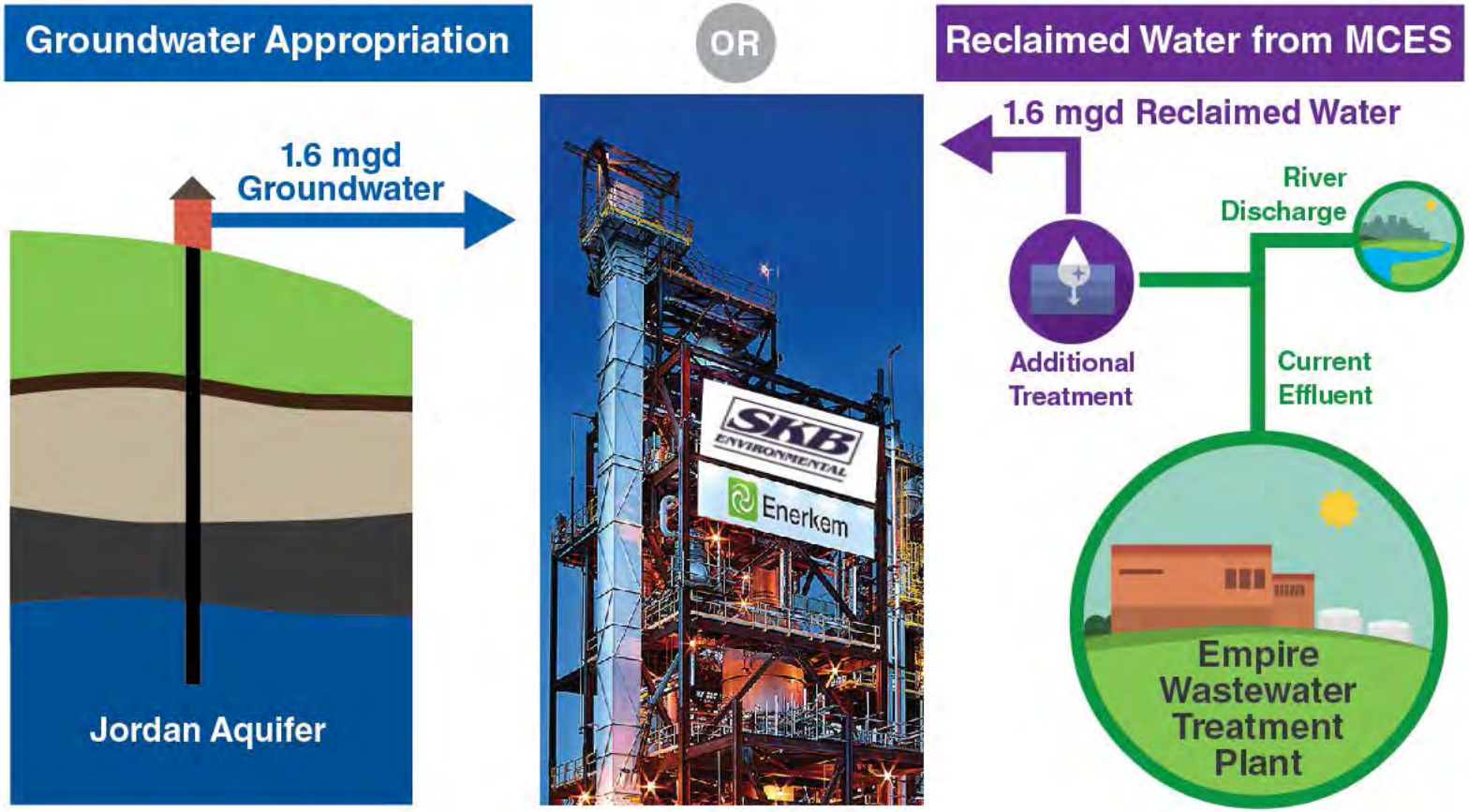
SKB/Enerkem Case Study



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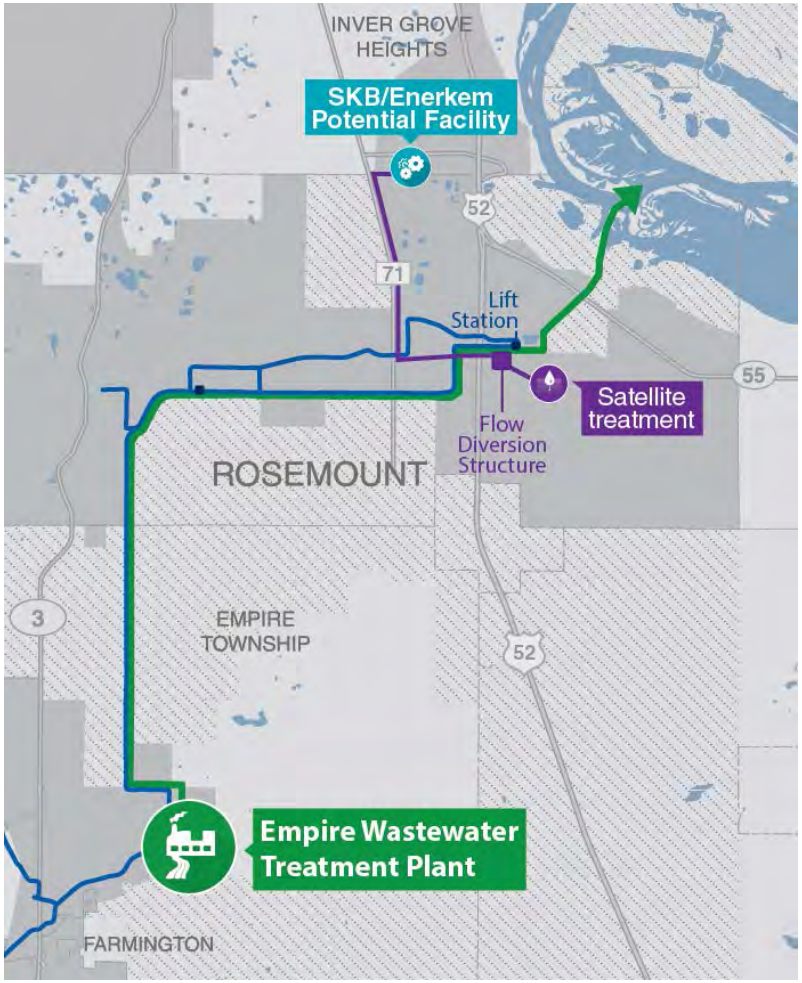
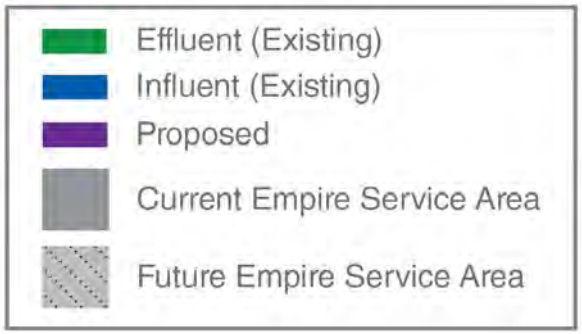
SKB/Enerkem Case Study



- Consistent with local land use & comprehensive plan
- WW discharge to local & regional sewers: 0.6 mgd
- 400,000 tons/yr MSW processed
- 20 million gallons per year of biofuels and renewable chemicals produced



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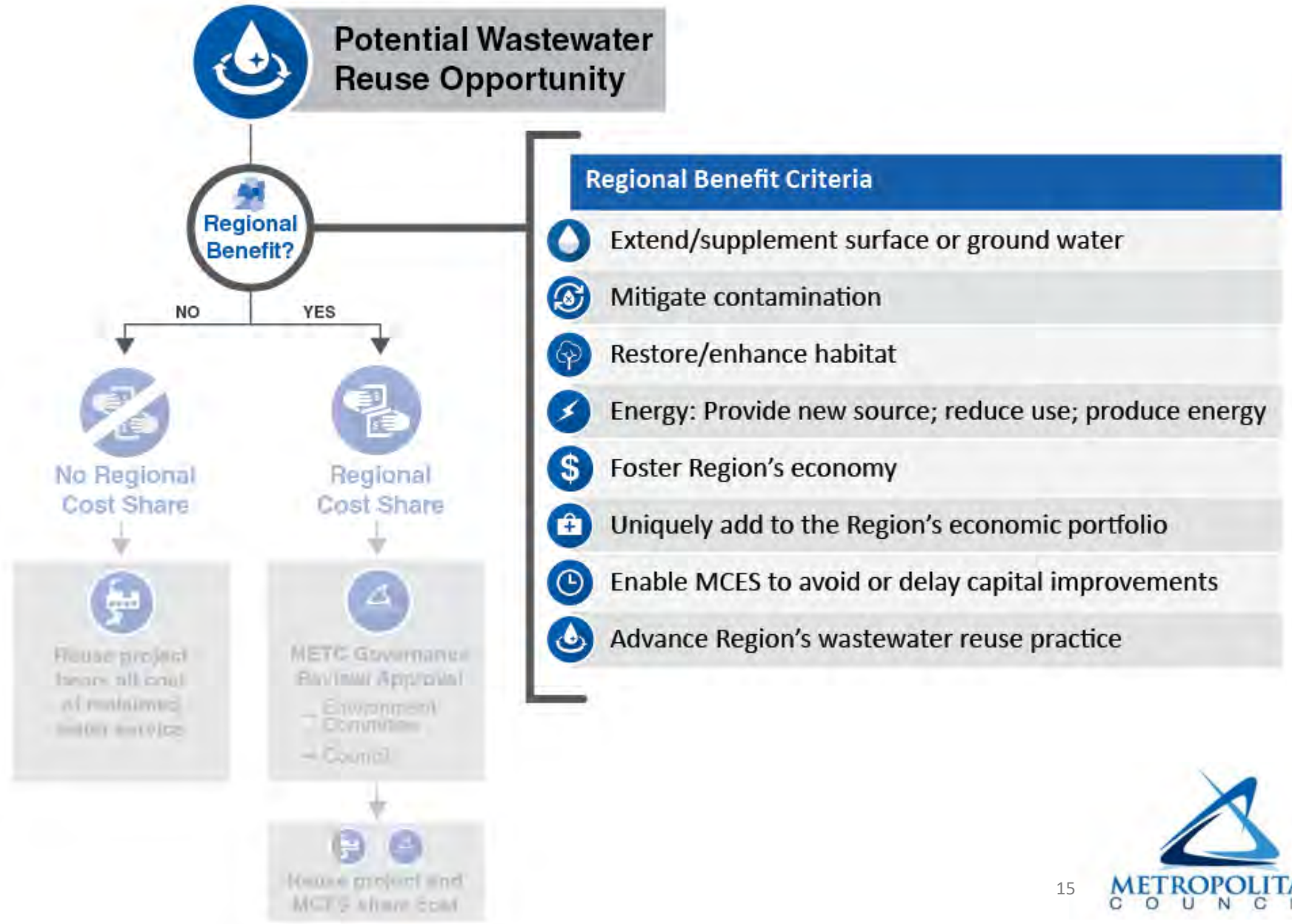
SKB/Enerkem Case Study



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SKB/Enerkem Case Study: Economic and Environmental Factors

ENVIRONMENTAL FACTORS

- Water resources
- Waste
- Habitat
- Historical/cultural
- Visual
- Energy
- Air pollution
- Noise
- Transportation

ECONOMIC FACTORS

- Construction impacts
- Operational impacts:
  - *Taxes on facilities*
  - *Equipment*
  - *Land*
  - *Product*
  - *Utilities consumption*
  - *Operating supplies*
  - *Contracted services*
  - *Jobs*

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SKB/Enerkem Case Study: Economic

Presented by:
Patti Craddock, SEH & David MacGillivray, Springsted

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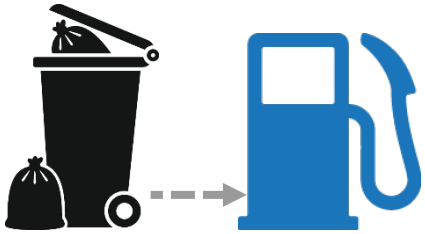
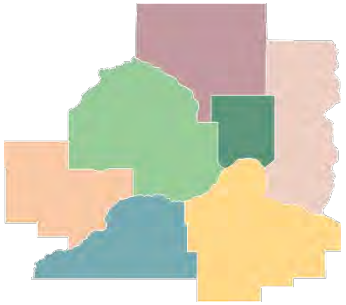
Economic Impacts of Potential SKB/Enerkem Project

Process applicable to potential future projects

REVIEW ECONOMIC ACTIVITY



IDENTIFY & QUANTIFY ECONOMIC BENEFITS* TO REGION



*Excludes revenues collected by host city, county or school district

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Sources of Benefits

DIRECT IMPACTS

Site specific activity

INDIRECT IMPACTS

Maintenance

Materials

Professional Services

Supplies

INDUCED IMPACTS

New workers and families consumer spending

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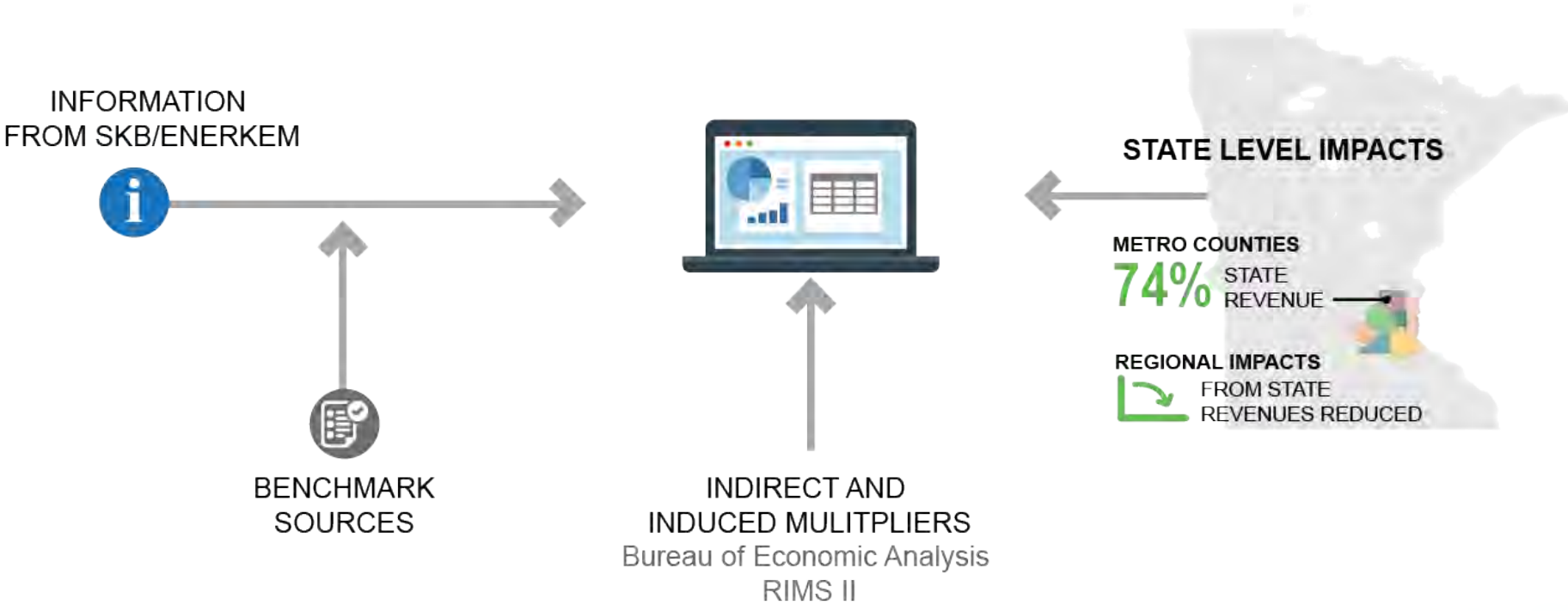
Economic Analysis – Inputs



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Annual Impacts

DIRECT IMPACTS (activity at the new site)

114 FT JOBS

$6.4M PAYROLL

25M GALLONS BIOFUEL PRODUCTION

$11M TAXABLE PROPERTY VALUE

REVENUE		1
INCOME TAXES	$450,000	$330,000
EXCISE TAXES	$7.1M	$4.4M [2]
FISCAL DISPARITIES CONTRIBUTION	$130,000	$130,000
STATE GENERAL LEVY	$100,000	$75,000

TOTAL DIRECT IMPACTS

$7.8M	$5.0M

1. Metro area receives approx. 73.8¢ on each dollar it pays in State revenues.
2. Metro area receives approx. 61.5¢ on each dollar paid in State transportation revenues.

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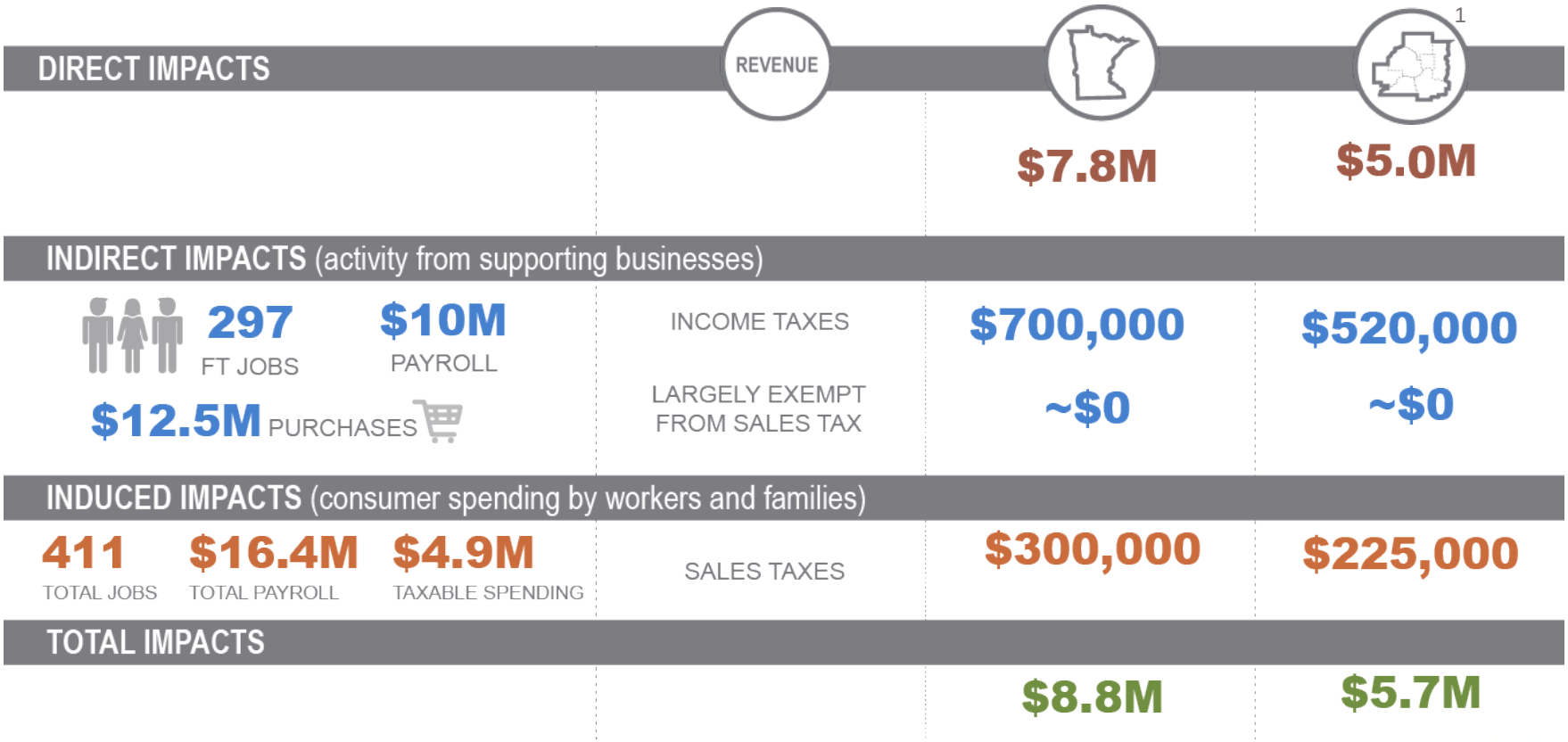
Annual Impacts (continued)



1. Metro area receives approx. 73.8¢ on each dollar it pays in State revenues..

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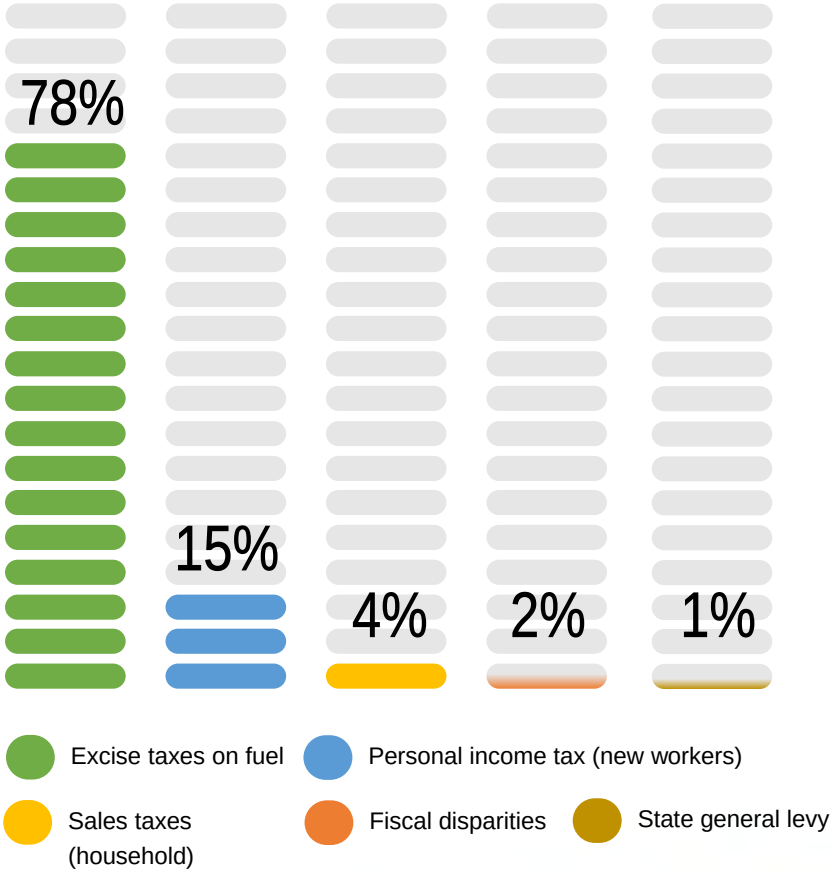
Summary of Total Impacts



Three-quarters of total impact is related to excise taxes on fuel production.

- Assumptions related to production levels, tax rates and rebates, State/Metro spending ratio have largest effect on overall impact
- Property value and payroll assumptions have minimal effect on bottom line.

Each project will have unique characteristics leading to different levels of Regional benefit.

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SKB/Enerkem Case Study - Environmental

Presented by:
Deborah Manning, MCES

SKB/Enerkem Potential Project Case Study: Environmental

	Potential Impact of Using Reclaimed Water vs. Groundwater	Local Impact	Regional Impact
Water Supply	No 1.6 mgd groundwater appropriation No demand on IGH water infrastructure	+ +	Likely + NA
Groundwater	No increase in projected 2040 aquifer drawdown	+	Likely +
Surface water	No adverse impact on surface waters due to additional GW pumping	+	?
Wastewater	Advances Region's wastewater reuse practice	+	+
Stormwater	No difference with or without reclaimed water	NA	NA

+ Positive impact
- Negative impact
NA Not applicable

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SKB/Enerkem Potential Project Case Study: Environmental, cont'd

	Potential Impact of Project with or without Wastewater Reuse	Local Impact	Regional Impact
Waste	Reduction of landfilled MSW in the Region	+	+
Visual	Expansion of industrial base visually consistent with surrounding area	+	+
Energy	Production of biofuels and renewable chemicals	Likely +	Likely +
Air pollution	Potential increase in stationary emissions	TBD	TBD
	Potential increase in vehicular emissions & dust & odor		
	Potential reduction in GHGs using ethanol vs. gasoline		
Noise	Potential increase in noise in heavily industrial area	Likely -	NA
Traffic	Traffic during construction will increase	-	?
	Traffic during operation will increase	-	?

+ **Positive impact**
- **Negative impact**
NA Not applicable

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SKB/Enerkem Case Study: Regional Benefit

Extending/supplementing surface or ground water	Likely +
Mitigating contamination	NA
Restoring/enhancing habitat	NA
Energy: providing new; reducing use or producing energy	Likely +
Fostering Region's economy & economic development	+
Uniquely adding to the Region's portfolio of industries, businesses, etc.	+
Enabling MCES to avoid or delay capital improvements	NA
Advancing Region's wastewater reuse practice	+

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SKB/Enerkem's Potential Project Case Study: Reclaimed Water Rate and Impact

Assuming high Regional benefit level: 25% Regional cost share

Project Component	WW Customer Rate Increase, $/yr/REC
Treatment	$0.05
Storage	$0.10
Conveyance	$0.06
Total	**$0.21**

REC
Residential Equivalent Connection

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Regional Benefit: Community Development Perspective

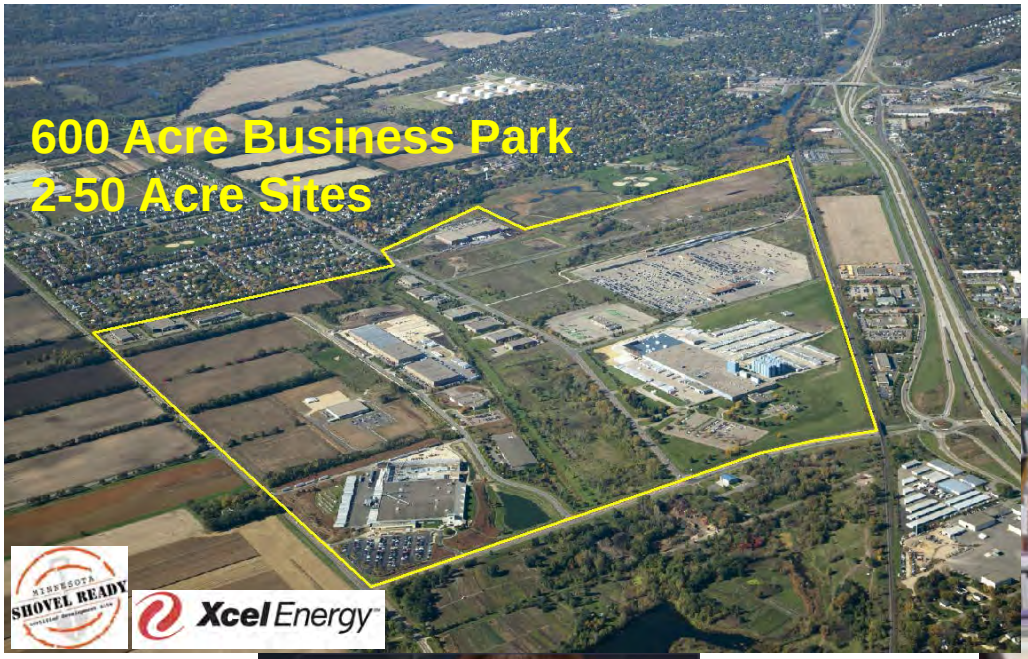
Presented by:
Jennifer Levitt, Community Development Director and City Engineer, City of Cottage Grove
Chris Eng, Economic Development Director, Washington County

REGIONAL BENEFIT: COMMUNITY DEVELOPMENT PERSPECTIVE

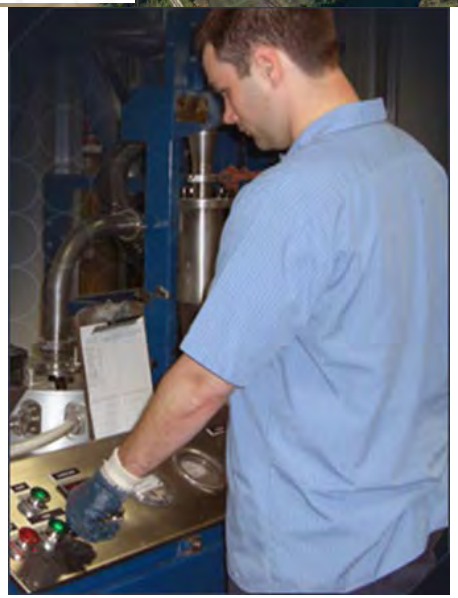
Chris Eng, Washington County Economic Development Director
Jennifer Levitt, Cottage Grove Community Development Director/City Engineer

Cottage Grove
Where Pride and Prosperity Meet

What are Companies/Business Looking For?



- ✓ Large tracts of land
- ✓ Access
- ✓ Environmental Work Completed
- ✓ Zoning Compliance



- ✓ Workforce Availability
- ✓ Financial Incentives
- ✓ Local Political Support
- ✓ Fast-tracking Capabilities

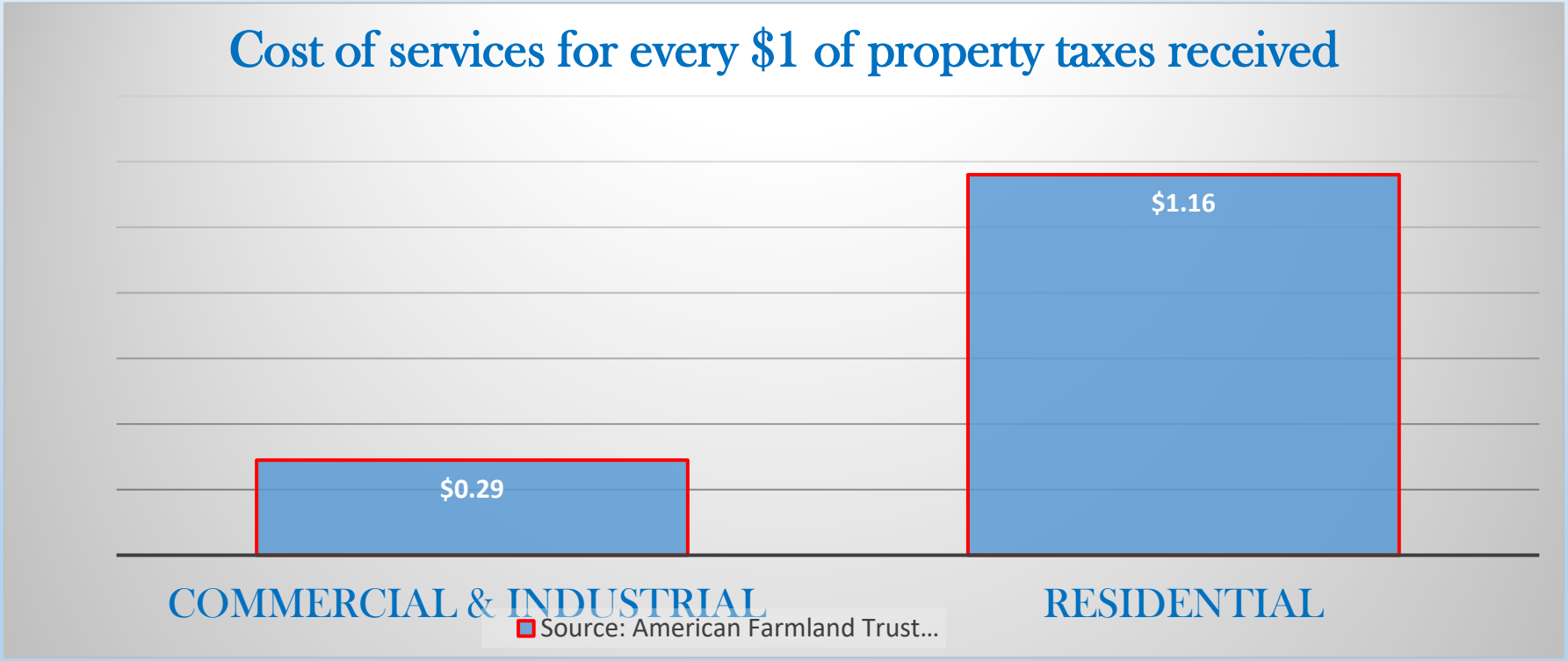
cda WASHINGTON COUNTY Community Development Agency

Chris Eng, Economic Development Director

2016 Commercial/Industrial Market Values as a Percentage of Total

Source: MN Department of Revenue	
HENNEPIN	21.25%
RAMSEY	20.58%
METRO COUNTIES AVERAGE	18.02%
DAKOTA	15.58%
ANOKA	14.81%
STATEWIDE AVERAGE	12.75%
SHERBURNE	12.59%
SCOTT	12.35%
WASHINGTON	10.85%
WRIGHT	10.24%
CARVER	9.66%
CHISAGO	8.00%

How does commercial/industrial market value expansion impact the cost of services?



Fiscal Disparities

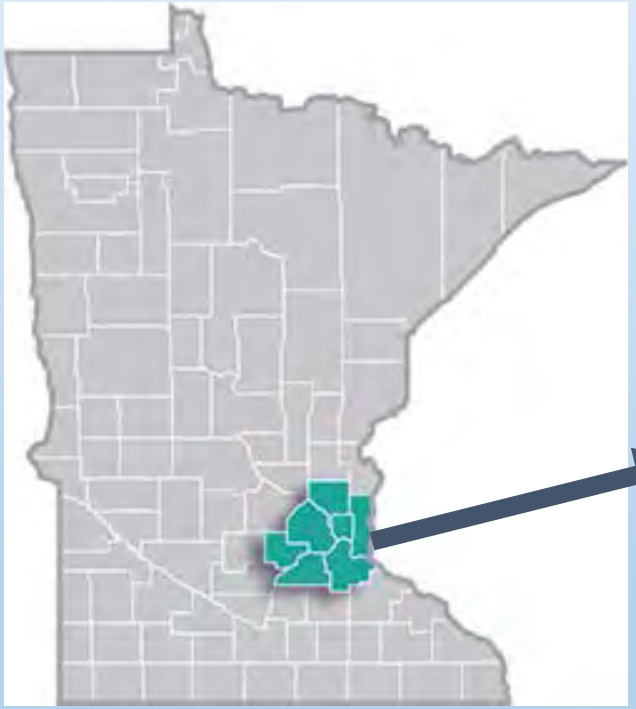
- Spreads Property Tax Base Around The Region
- Up to 40% of a Commercial/Industrial Building's Value Becomes Part of Area Wide Base
- Shared with Every Metro Area City, County, School District

Property Tax Bill – Commercial/Industrial

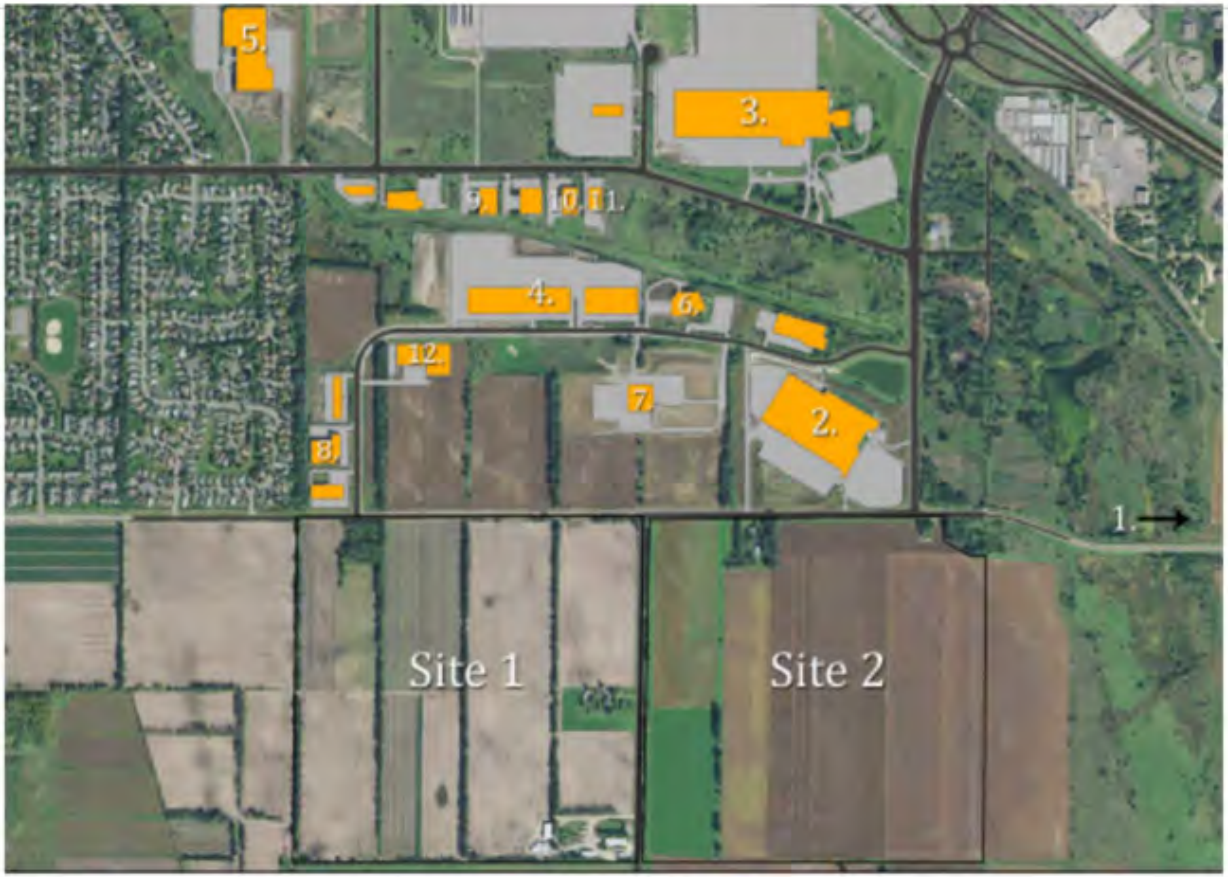
- 40 – 45% Local Taxes (City, County, School District)
- 20 – 25% Area Wide Tax
- 30 – 35% Statewide General Tax
- 100% Total Tax To Be Paid

City of Cottage Grove

Population: 35,596
In 2030: 42,200
In 2040: 47,000



- 4 miles south of I-494 on Highway 61
- 9 miles south of I-94
- 20 minutes from MSP Airport
- 10-15 minutes from downtown St. Paul



1. 3M — Manufacturing/Research & Development - Houses six divisions of 3M that produce a wide range of products

2. Renewal by Andersen — Manufacturing - Full service design, manufacture and install custom windows

3. US North Plastics — Manufacturing - Manufacture high quality polyethylene products like trash bags, silage bags and shrink films

4. Orgill — Transportation and Warehousing - Provide distribution to a wide range of agricultural and pet products around the country

5. WE Werner Electric — Wholesale Trade - Provide customers with electrical products and services throughout the Midwest.

6. Advance Corporation — Manufacturing - Design and create awards, braille signs and identification signs

7. leafline labs — Wholesale Trade - Grow and sell medical cannabis

8. DMC — Manufacturing - Offers a wide range of services for manufacturing of various products

9. AIMIA CCS Technologies — Manufacturing - Contract manufacturer of fine particles 200 mesh(75 micron) and finer size range

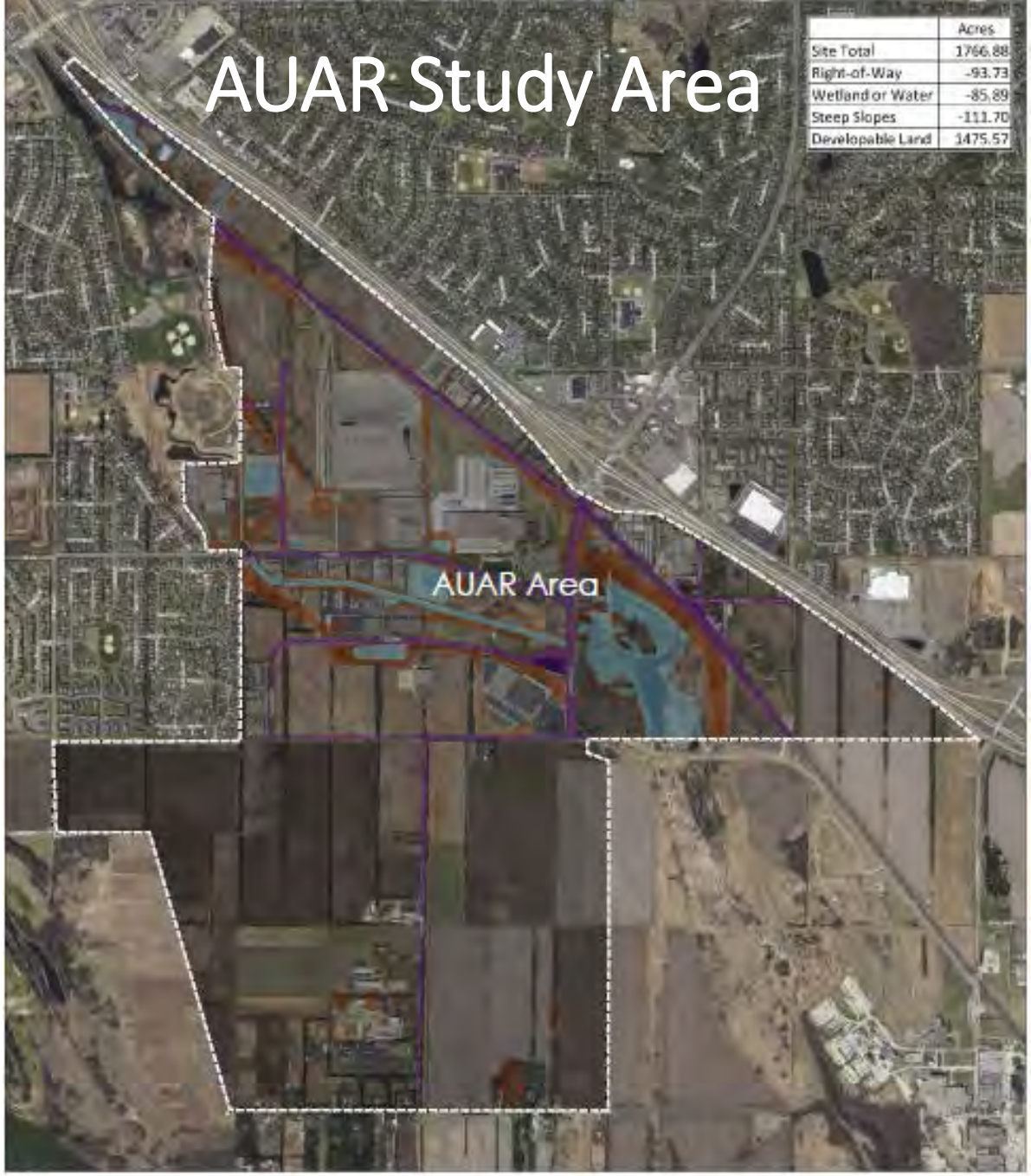
10. CCC — Manufacturing - Create and manufacture various cleaning products for retail sale

11. Plastic Source — Manufacturing - Create custom gift cards for retail trade businesses

12. Garden World — Wholesale Trade - Distributor of perennials for retail sale

AUAR Study Area

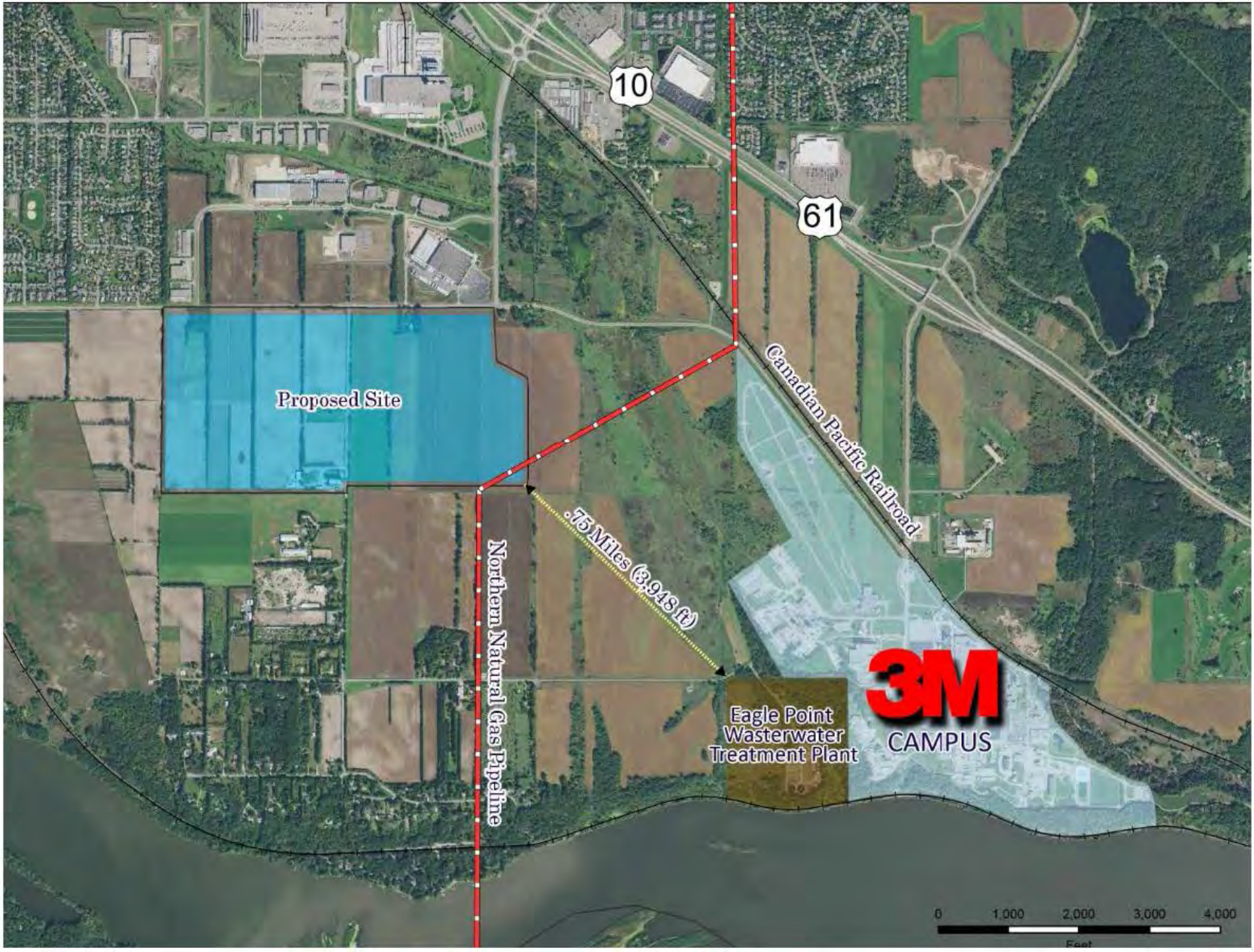
	Acres
Site Total	1766.88
Right-of-Way	-93.73
Wetland or Water	-85.89
Steep Slopes	-111.70
Developable Land	1475.57



Potential Larger User Sites

Cottage Grove
Where Pride and Prosperity Meet

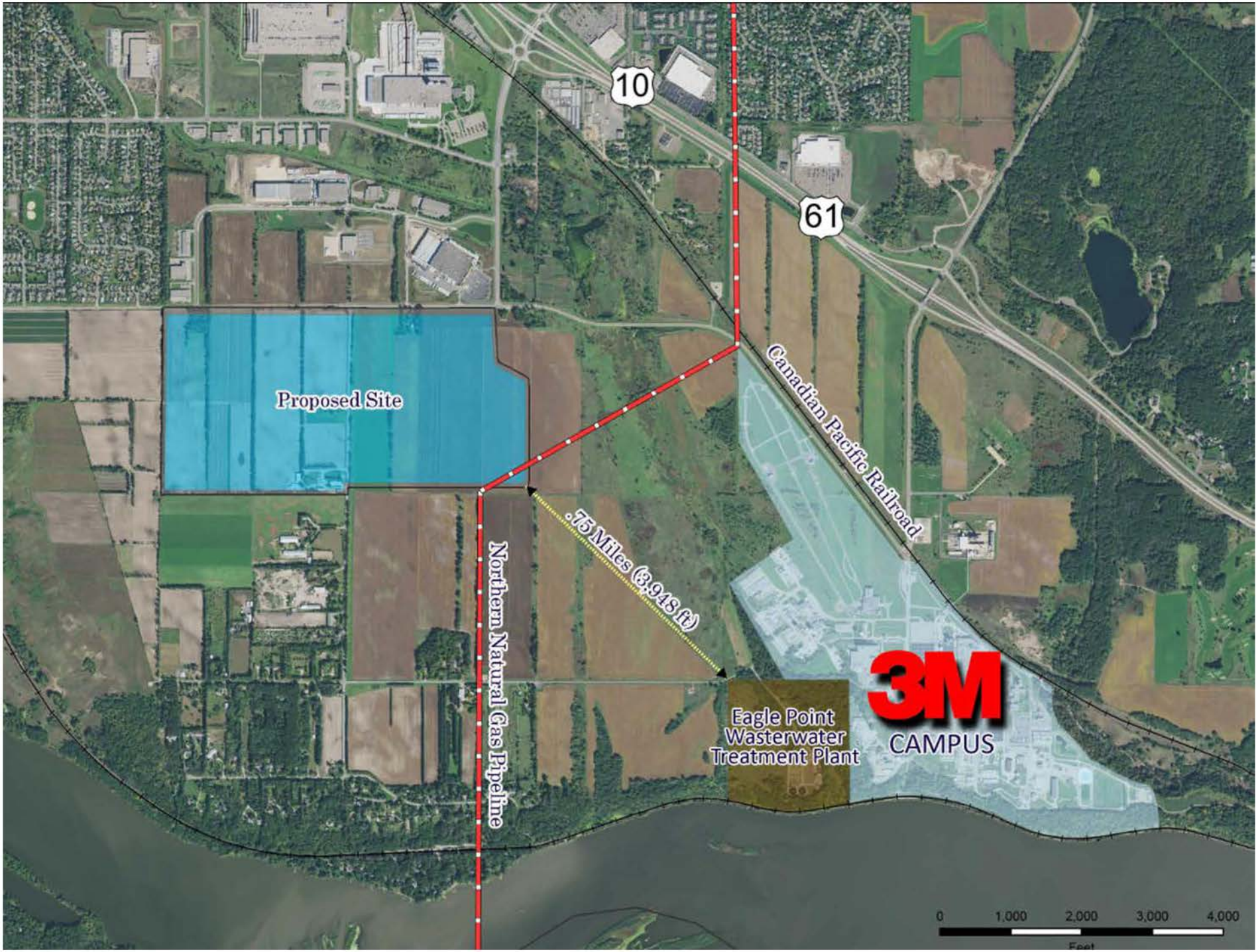
Buildable Area


10
61
Proposed Site
Canadian Pacific Railroad
.75 Miles (3,948 ft)
Northern Natural Gas Pipeline
Eagle Point
Wasterwater
Treatment Plant
3M
CAMPUS
0
1,000
2,000
3,000
4,000
Feet

Eagles Point Wastewater Treatment Plant

- Type: Advanced secondary with UV disinfection
- Capacity: 10 million gallons per day
- Discharge to: Mississippi River
- Interceptors to plant: 10 miles

Cottage Grove
Where Pride and Prosperity Meet


10
61
Proposed Site
Canadian Pacific Railroad
.75 Miles (3,948 ft)
Northern Natural Gas Pipeline
Eagle Point
Wasterwater
Treatment Plant
3M
CAMPUS
0
1,000
2,000
3,000
4,000
Feet

QUESTIONS

Chris Eng, Economic Development Director
Email: ChrisE@washingtoncountycda.org
Phone: 651-202-2814

Jennifer Levitt, Community Development Director/City Engineer
Email: Jlevitt@cottage-grove.org
Phone: 651-458-2890

Cottage Grove
Where Pride and Prosperity Meet

Partnerships

Presented by:
Bryce Pickart, MCES

METROPOLITAN COUNCIL

Partnerships

Background

Minnesota Statutes sections 471.59 and 473.504 allow the Council to enter into joint powers and other cooperative agreements with other governments.
It is assumed that the reclaimed water service must be consistent with the Comprehensive Plan of the community in which the service will be provided.

Task Force Policy Recommendation

The Wastewater Reuse Policy Task Force recommends the following:

- That the relationship (e.g., wholesale, retail, joint powers, etc.) between the community in which the reclaimed water service will be provided and MCES be determined on a case-by-case basis
- That the community amend its Comprehensive Plan to reflect the reclaimed water relationship prior to implementation of the reclaimed water service

Open Discussion: Regional Benefit and Partnerships Policy

Led by:
Jeannine Clancy, MCES

METROPOLITAN COUNCIL

Agenda Building, Evaluation, Next Meeting

Led by:
Sandy Rummel, Metropolitan Council Member, District 11

THANK YOU!

METROPOLITAN COUNCIL

Appendix 4

Meeting Notes and Presentations from Task Force Meeting 4

Metropolitan Council Environmental Services
Wastewater Reuse Policy Task Force

Meeting #4
November 13, 2017
9:00-11:00 am

St. Croix Room
League of Minnesota Cities
145 University Ave West
Saint Paul, MN 55103

Members Present

Jennifer Levitt, City of Cottage Grove
Bryan Bear, City of Hugo
Michael Thompson, City of Maplewood
Patricia Naumann (representing Metro Cities in place of Steven Huser)
Sandy Rummel, Metropolitan Council
Kurt Ulrich, City of Ramsey
Beverly Farraher, City of Saint Paul
Mark Graham, City of Vadnais Heights
Chris Petree, City of Lakeville

Members Not Present

Jon Eaton, City of Eagan
Steven Huser, Metro Cities
Debra Heiser, City of St. Louis Park
Beverly Farraher, City of Saint Paul

Metropolitan Council Staff Present

Deborah Manning
Bryce Pickart
Michael Nguyen
Dave Brown
Ned Smith

Others Present

Gene Goddard, Springsted
Randy Ellingboe, Minnesota Department of Health

Purpose

1. To consider and comment on draft Task Force findings and recommendations
2. To provide initial comments on Task Force Report and understand review process
3. To understand Met Council processes:
    a. Review and adopt findings and recommendations
    b. Next steps

Meeting Notes

1. Open Discussion – Draft Task Force Findings and Recommendations and Draft Policy Amendment
    a. MCES staff have differentiated between topics we think the task force has reached consensus on and those where consensus has not been reached. In setting up the task force, the Council hoped to hear different opinions, and that is reflected in the findings. We consider that a success.
2. Consensus Items
    a. Reasons for a wastewater reuse (WWR hereafter) program. WWR is an area where Met Council should move ahead with a responsive approach. Respond to opportunities, don't market WWR. That would be seen as competing with water utilities.
    b. Cooperation and partnership rather than competition. WWR should be pursued in close cooperation with the community that a project is in or with the water utility that serves that community.

c. Cost-of-service basis for reclaimed water rate. Use a case-by-case evaluation of reclaimed water costs and what MCES reclaimed water rate should be.
d. Regional benefit evaluation. The potential regional benefit of a project should be evaluated as a part of evaluating the overall project.
e. Funding from non-Council sources. MCES should seek such funding sources.

3. Non-consensus Item
    a. Regional cost-share. There isn't consensus among task force members whether MCES wastewater customers should provide some funding for projects that have a regional benefit.
4. The draft Task Force Report documents the task force findings as staff have understood them. What questions/comments do task force members have?
    a. Question: Would the next step for the draft report would be a public hearing?
        i. Next steps: staff will revise the report based on today's feedback and email to members by 11/15, with comments due 11/22. The Council's Environment Committee will consider recommending its acceptance on 12/12, and the full Council would consider the recommendation on 12/13.
        ii. At its 12/12 meeting, the Environment Committee will consider draft policy amendments to the WRPP (WRPP hereafter) related to the task force's work. The Environment Committee could chose to recommend the Council authorize a public hearing on the WRPP amendments. The full Council would consider that at its 12/13 meeting. Council policy is such that after the full Council authorizes a public hearing it is at least 45 days until the public hearing.
    b. Question: Would the potential amendments to the WRPP also be intended to include what if any action the Council might take on the funding? See bottom paragraph page 8 "the Task Force believes the Metropolitan Council should decide if and how to proceed with a regional cost-share."
        i. Yes, the policy is drafted, "The Council will use a cost-of-service, case-by-case approach to wastewater reuse in cooperation and partnership with local communities." Then the second part gets into regional benefit: "The Council will evaluate the potential regional benefit of a potential wastewater reuse project and, if the Council's criteria are met, will determine an appropriate regional cost-share, provided that the cumulative regional cost-share shall not exceed 0.75% of the total municipal wastewater charges."
        ii. Under implementation strategies, there would be a discussion of criteria which we've simplified down to whether or not there is a regional benefit. So those are the elements in the report but reorganized as policy and implementation steps.
        iii. One criterion would be that WWR opportunity will increase the region's WWR capability. The second criteria is the WWR opportunity fosters regional economic development through job creation and/or uniquely adding to the region's portfolio of industries/businesses by facilitating industrial/business development that would not happen without reclaimed water. That's the but/for criteria. The third part of making it economical, it has to be in the vicinity of where MCES can do it economically. There are parts of the region that we wouldn't be able to do reuse economically at this point because our wastewater system is designed to for classic wastewater going downhill, down river, and so forth, so you've got a lot of the region where until someday we get to be better with technology and make it

more economical, we couldn't do reuse unless you're in the vicinity of one of the treatment plants.

iv. The next part deals with process. The second part would deal with holding a public hearing on this if there is a determination on a preliminary basis by the Council on the regional benefit and a regional cost-share. There would be a public hearing on that to see what the feedback is before making a decision on a project.

v. Third item is saying that each WWR project has to be consistent with the comprehensive plan of the community in which the use occurs.

vi. Fourth, that MCES would enter into a joint powers agreement with the community in order to define the institutional arrangements. We're trying to avoid being in competition. We only would want to do this where it makes sense from the local water supply standpoint.

vii. Fifth, we would enter into a long-term reclaimed water service agreement with each user, using a cost-of-service approach, considering the regional cost-share and dealing with risk and other issues in a user agreement.

viii. Lastly, pursuing sources of non-Council funding to complement the Council funding.

c. Question: Can you go over how the cost-of-service basis approach is formulated?
   i. In this case, the cost of service we're referring to is those capital and operating costs associated with facilities that are needed beyond the existing treatment system. Using the SKB/Enerkem potential project, the facility is a withdrawal from the outfall line at the our old Rosemount treatment plant site and building filtration and additional disinfectant facilities. The cost for that treatment facility, some storage, and pumping to the user facility is $15-20 million, so the annualized capital cost plus the annual O&M cost would be the cost of service. The annual cost would be our cost of service with the charge to the user and that would only be reduced if in fact one of two things happens: (1) that the Council decided there should be a regional cost-share or (2) If there could be any state funds made available for some cost-share in the facility as it stands now.
d. Question: Is there a 'not to exceed' cost-share?
   i. Yes, based on feedback, there is a proposed cap of about 0.75% of the annual municipal wastewater charge on all cost-shares that might go to projects. Task force members previously asked what that means in terms of a household rate. We have residences, then we have businesses and industries that because of the SAC system that we have an estimate of what the Residential Equivalent Connection (REC) is. This is using a calculation that takes our cumulative SAC units and equating it. The 0.75% that we picked was about $1 per household. We thought that was an understandable, reasonable, modest amount. In 2016 the overall wastewater charge for the year was about $219 million. If the cap was 0.75% of that, that would equate to about $1.6 million. Our estimated number of RECs in the Region in 2016 was 1.7 million. The cap per REC ends up being around the $1 amount for the residents. Obviously if you're in industry you may have 100 RECs or $100 per year. If you look at it another way, average annual residential wastewater fee was $130 in 2016. The impact of all WWR projects regional cost-share on a residential bill would be $1 out of that $130.

e. Question: That's on a per project basis, correct? If you had three projects, they could each receive that cap? Or is that a total cap?
    i. That is a total cap under the pilot program. If there were more projects that might to exceed that cap either we wouldn't be able to propose a regional cost-share or we'd have to go back for a policy amendment.
f. Comment: When you think about the value of these projects, how much financial expenditure, that doesn't seem like a lot of money being generated to support a project. Especially if you wanted to encourage more pilot project opportunities.
g. Question: In this instance there would be a $1.7 million for all the reuse projects. If there are three different projects, one project is $5 million, one is $8 million, and one is $10 million. What's the portion of the $1.7 million that will go to each. Will it relate to the assessment of the regional benefit? That kind of ties into how that determination would be done. Maybe some part of a project has a regional benefit but some other portion does not. Can you clarify on that a little bit?
    i. Yes, we'd need to do regional benefit evaluation. In meeting 3 we walked through criteria of what that might be. We don't necessarily want to have all those criteria listed out in policy because if we do that some project will come along with some benefits we hadn't anticipated. We would work to a process similar to that per project. This is also somewhat first come, first served. We recently talked about 25% of the cost of the project being eligible. We don't want to use up all the funds on one project. I also want to reiterate this cost-share, if approved, is just for cost of MCES facilities. We wouldn't be applying it to treatment that an industry would need to do above and beyond what MCES would need to do in order to provide regional water. We're not providing money for a user's facility.
h. Question: So, this isn't a one-time contribution? It could be an annual operating contribution for MCES infrastructure, not just a one-time contribution for construction or capital costs?
    i. If we have a 20-year user agreement that corresponds to 20-year financing, we have the debt service on the capital plus the operating costs we need to recover from the cost of service.
i. Question: Is the industry involved responsible for the remainder of the cost?
    i. Yes. The industry would have to pay our full cost of service or a little less if in there is a determination of regional benefit.
j. Question: There would be cases of reuse where there is no regional cost-share?
    i. There could be. We're so early in the process it's hard to speculate.
    ii. The problem initially is the economic one. There are areas now where the DNR is hesitant to issue additional water appropriation permits and those areas may be suitable for a variety of development but, depending on what the options are on land availability and so forth for business, if they're looking at the price of groundwater supply versus what it costs us to provide reclaimed water and the fact that our quality isn't the same as groundwater and they need to do some removal of dissolved solids, it's a quandary. We're trying to find a balance point where the region makes a bit of a contribution based on regional benefit, knowing mostly that the project is going to have to stand on its own.
k. Question: On the regional benefit evaluation, I know you have two criteria in there and it looks more like some tiff language than a but/for clause and it's all related to economics, but we have talked about the preservation of the aquifer, energy, air pollution,

transportation, and other criteria. Do you think that we're too limiting in just these two criteria versus seeing some other benefits, not just economics?

i. We're still trying to put a value on the environmental benefit that can be anticipated with a project. It's an open topic. We tried to narrow it a bit. The potential environmental issues and the general water sustainability issues are important. But we're really coming at this from a standpoint of our wastewater system and wastewater finances. We've kept it narrow to make sure it would be possible to build clear consensus on regional benefit and regional cost-share.

l. Comment: Thinking of myself as a consumer incurring a $1/year, I would be more amenable to the additional fee if I knew that there are these other benefits that we can't measure very well but that are occurring. I might not understand the economics, but I might understand the aquifers.

i. We were trying to respond to previous task force feedback and focus on areas that are strictly focused on wastewater responsibilities.

m. Question: Does WWR impact how we determine our community charges, MWC? If there is an additional fee put onto the wastewater fee for reuse, how does that tie back into how cities are charged under the municipal wastewater charge? We want to be careful, making sure it's transparent, cost of service and we don't stray from that.

i. It won't change the flow that's coming into the system. We measure at the front door and this is the stuff that's happening at the back door. So it wouldn't change the total flow for the total region. Which would also mean it wouldn't change any community's flow. When you're asking how is that charge allocated across the communities, it would be baked into our total budget, it would be allocated based on each communities percent of total flow, just like we do the MWCs today. If a community was 20.22% of $270 million, and then it's $271.6 million with the reuse amount added, that community will still pay 20.22% of the new total.

n. Question: Would there be an explanation that this is the community's cost of service charge, and then here's the dollar a year charge for the regional benefit? How do the cities or residential users understand how it's baked in? Where is the transparency?

i. Transparency is an important issue. I think we should present it as a separate item within the budget. We would need to account for it separately because it wouldn't go into the debt service pool that SAC pays, it would be a separate little pool. The regional cost-share dollars would be added to the basic municipal wastewater charges and then allocated based on volume.

ii. I wouldn't see it as a line item that the Council would send to communities. It wouldn't be, "Your MWCs are $20.2 million, and there's $80,000 for the regional benefit." It would just be one bill. The transparency would be in MCES' budget presentation. The budget would show that there is $1.6 million included, but I wouldn't see MCES itemizing that on the individual letters to communities with their 2019 bill.

1. Question: Why not? It's such an important regional issue and it's educational, we're bringing in industry, fostering some economic growth, so, why not?
2. I think we need to and could be more transparent.

o. Comment: Getting back to the issue of whether we should broaden the criteria used to evaluate regional benefit, broadening it to cover issues like groundwater impact is

something we should support, particularly if there is outside funding. I would support seeking outside funding. That should be criteria for cost-share.

i. Comment: I think broadening helps, too. I think you have it here a little bit in the first criterion by mentioning water sustainability. But that's a fuzzy way of talking about things it might be helpful to articulate that a little bit better. Narrowing it too much just based on the wastewater system gets you right back to where you started. The question is if the wastewater system can support it then you don't need the policy. You need the regional benefit, you're suggesting on one hand that economic development is a regional benefit and that's interesting that doesn't just move waste, that's the economic development benefit. Is it different with the water sustainability question? In my view, probably not. If we're going to try to make a case for regional benefits probably both of those.
    1. Thinking from a city perspective, if you do include issues such as groundwater impact, then your typical resident can relate more to that and what that benefit is.
    2. As I read it, I feel the environmental component is there in the first criterion but maybe it just needs to be more specific.
    3. Maybe the two issues in criterion one need to be separated. There's an impact on water sustainability which would get to the aquifer. That also increases the region's WWR capability and maybe projects that don't do a whole lot in terms of protecting the aquifer, but they don't advance reuse capability. It may be covering two different things and not as clear as it should be.

p. Comment: One lens Metro Cities would be looking at this through, particularly if there is a decision by the Metropolitan Council to put a cost on a wastewater charge, is what kind of precedent that sets for use of that fee. We've been very concerned about that in the past with respect to using the SAC mechanism or using the MWC mechanism for just any purpose. We want to be sure it's transparent and that there is close adherence to the purpose of that charge. I agree that the first bullet should be fleshed out further. Depending on how we look at economic competitiveness or if that opens up the charge to other purposes, we might have some concerns. Depending on how it's worded, Metro Cities would want to see further clarity on this.

q. Comment: For the first bullet point, could it just be continued rather than separated? For me the WWR capability is the sustainability. They are directly connected. We could say "therefore reducing future groundwater demands" or something so that it's explicit.

r. Comment: Does there need to be guidance on what risk assessment is/how it is evaluated? If it is a good project, we can talk about it or have the Council talk about how WWR by its nature promotes sustainability and might have a positive impact on economic development. But some projects are going to do a better job meeting those criteria than others.
    i. Risk assessment is part of what we do in evaluating projects and risk issues would be dealt with in the service agreement also. MCES didn't want to define a lot what risk assessment means in the draft policy language. But we did want to acknowledge that that was a concern.
    ii. If we enter into a long-term user agreement that's causing us to expend a lot of money, we need to deal with risk management in the user agreement. We haven't drafted a user agreement, but certainly we deal with risk in our contracts

and this would just be a little bit different. We'd have to deal with the obvious, what if the business shut down? What pathway we'd have to recover our cost and things of that nature. Similarly, we have to deal with the risks associated with guaranteeing supply and quality of water. That's in the user agreement side.

s. Question: Let's say we take it for granted that WWR is going to accomplish these two things. How do we make sure a bad project with cost and inefficiency doesn't go and a good project does go? Is that the guidance that we need in here?
    i. Normally our policy language is pretty broad. Then the question would be do we go to the Council with a more detailed procedure that gives them some assurance that we're really looking with rigor at everything.
    ii. Are you saying your question is about the risk of whether a project in the end fulfills these two criteria?
t. Comment: I see these things differently. You've got this risk assessment attached to the regional benefit evaluation, as you've described it, the risk assessment seems completely different to me. The question is, if you start with the presumption that there's a regional benefit to WWR, then you do an evaluation of how much regional benefit balanced against the cost to the region, should there be some criteria that we use to help balance those. How do we know whether to add a regional cost for a very small benefit or a very large benefit? As a project comes forward to the Metropolitan Council how will you know how to make a recommendation?
u. Question: To paraphrase, a land is zoned commercial and one project can create 20 jobs and one can create 200. As a city we're going to pick the one that's going to create more jobs. So, I kind of get the question as how do you pick, if you have a limited pot of money, which project to fund?
    i. At this stage, what we're proposing has a limited scope. By capping it like we have and with the first come, first serve I don't anticipate very many reuse projects with regional cost-share possibility. This wouldn't come into play for most commercial/industrial development. It's only an issue where it's a significant industry or business that is unique for the region that is likely to be sited only in certain places. Because of that, there could be a water supply issue, too. Therefore, you'd have the "but/for reclaimed water project would not be able to go ahead." I'm fine with the discussion of broadening the criteria. Some projects might seem like they're worth more as a regional cost-share than others.
v. Comment: Earlier on we went over the criteria in the example that you provided about how the Met Council was assessing regional benefit, would it help to provide that as an attachment. Use it as a question for looking at regional benefit even if the group hasn't come to a complete conclusion.
    i. We could do that with some caveats like you said that there's not a group consensus on the criteria. Certainly in the future there could be something that comes up that wasn't anticipated in the criteria so we don't want to limit it to only that. Also, this isn't like a grant program where we can look at five projects and evaluate them and cross evaluate. They're going to come up on case by case, one at a time. We'll be lucky if we have two at a time, so there isn't that opportunity to really compare among projects.
w. Question: Every community, every member of this Task Force is going to have a different interpretation on what risk assessment means, what it means to their

community or the region. From a procedural stand point, when you talk about risk assessments moving forward, what would that process look like?

    i. We weren't sure what the group was thinking in terms of risk assessment. We included the risk assessment language to really think about it. So far, we've talked about two categories: the likelihood that a project will achieve the regional benefit we anticipated and then the risks associated normally covered in the user agreement We address risk in all of our agreements but it's just got some unusual additional features this time around compared to what our usual agreements involve.

x. Comment: Speaking on behalf of my community I would be supportive of what's contained here. I think some of the concern or skepticism is all related to risk assessment and how that would be evaluated or individual projects and how those might come forward since we're kind of dealing with limited funds. How do we ensure that not only is there a regional benefit but how can I relay that information to my city council or my users?

y. Comment: It's very possible to keep the policy language more general and provide guidance at the same time. For example, the kind of things you would want to evaluate when describing a regional benefit - how many jobs are being created, how many gallons of water are being preserved, or whatever those things are. You probably want to have those as factors that would be considered through any kind of evaluation. Then on the other side you have some costs factors, some impacts, that you would want to evaluate that would be part of an assessment so that there's a little bit of guidance looking forward. There's some things that we're considering for regional benefit and maybe the numbers can be there but they're not there in thresholds.

z. Comment: In meeting 3, there were eight regional benefit criteria that could be helpful as a checklist.

aa. Comment: When you go to a public hearing, you want the applicant to be able to discern and be able to display to the public all of these benefits. We know that they're not always going to fit into one bucket but in many and they should be able to articulate that to the public in a public hearing. How many gallons of water are they going to preserve? How much air pollution are they going to reduce? How many jobs are they going to create? We should give the applicants guidance to know what they need to achieve. When the Council is evaluating regional benefit, it should have those criteria. The one thing too on the risk assessment it just doesn't seem necessarily appropriate under the evaluation but up in your cooperative agreement/partnerships because really your Joint Powers Agreement is going to talk about your risk financially, what financial guarantees you're going to establish with them, what they need to be able to produce and what they're obligated to achieve, assuming both parties are going to agree on the actual water quality that you're achieving. So when you look at the risk, I don't see how that really comes into play in the regional benefit evaluation but more in the agreement that you are aware that you have concerns such as having enough financial guarantee for X amount of years. But I don't know if that's necessarily a criterion because that should be a goal of number two, your economic development criteria.

bb. Question: Should the policy document say that in five years the policy should be reconsidered? This is not a lot of money to do many projects

    i. We could put in a timeframe. The only reason we didn't is that within a few years we will be updating the WRPP anyway.

ii. Could we say it will be reviewed at that point? (Yes.)
iii. Can we say that we will review it after the pilot project?
1. We discussed reporting on the pilot program at our customer forum workshops, and also reporting back to the Environment Committee. If that's not in this version we can add it back in.

5. Are we comfortable with the general statement that there's general support for the findings and the policy with caveats that have been offered?
a. Yes.
6. Process for Task Force Report acceptance and WRPP amendment
e. Two actions result from this task force: (1.) The Metropolitan Council accepting the Task Force Report and (2) Amending the WRPP.
11/15: Revised draft distributed to task force members
11/22: Comments returned
11/30: Draft report ready for Environment Committee meeting
12/12: Environment Committee meeting
12/13: Full Council meeting
12/12: Draft policy language for WRPP amendment presented to the Environment Committee
12/13: Council reviews draft policy amendment and, if it agrees, authorizes a public hearing.
≈45 days from authorization: Public hearing
As needed: Policy language revision
Mid-March 2018: Environment Committee and Council act on adoption of policy amendment
f. Question: Does that mean, if part of this policy implies approval of the SKB/Enerkem deal, does that mean we can't even talk to SKB/Enerkem until mid-March of 2018? It would seem to me that it would be risky to be out talking to SKB/Enerkem about a reuse project when it's not officially approved policy.
i. We're proceeding on the premise that the WWR is already embodied in the WRPP and we're fully on safe ground with our ongoing discussion with SKB/Enerkem. Everything discussed at this point regarding regional cost-share is with caveats that that may or may not happen. But we are continuing to have discussions with them because they need to decide if they're really going to pursue this here versus invest in other locations around the country and the world. We'll have some more feedback and we'll see. We've told them that a decision on regional cost-share is in the mid-summer timeframe.
ii. Our current policy says to pursue WWR where economically feasible. Then it gets into economically feasibility right now means strict cost of service, no cost-share, and that's the basis of our conversations right now. Any cost-share would have to wait for this process.
g. Question: Does this meet the industry standard in terms of whether this meets the expectations of the magnitude of a regional cost-share or is what's been discussed stick with the what the industry expectations might be?
i. Yes, we've told them that the regional cost-share has significant boundaries. So they're still looking at a price for water that from us that would be more than if they could get a well themselves and then they still have to treat it. They are working on the overall economics of the project.

        ii. When you mean standard of the industry do you mean other places that do WWR? Or just in the context of the conversation?
    h. Comment: I want the policy to be responsive to the industries' expectations of what regional cost-share or benefit would be. I don't want to develop a policy that wouldn't be used because it's not worth the effort and time. I want to make sure there's some usability to this policy and program as we're developing it.
7. Next steps
    a. We'll get the revised Task Force Report out to you in a couple of days so you have time to mull it over. Please provide any final comments by 11/22.
    b. Jennifer Levitt has volunteered to present the Task Force Report at the Environment Committee meeting.

Wastewater Reuse Policy Task Force

Meeting 4

November 13, 2017 | 9:00 – 11:00 AM

League of MN Cities

METROPOLITAN COUNCIL

Welcome, Introductions, Meeting Purpose & Agenda

Presented by:
Sandy Rummel, Metropolitan Council Member, District 11

Meeting Purpose

To consider and comment on draft Task Force findings and recommendations

To provide initial comments on Task Force Report and understand review process

To understand Met Council processes:

- Review and adopt findings and recommendations
- Next steps

Agenda

ITEM	LEAD	TIME
Welcome, Introductions, Meeting Purpose, Agenda	Sandy Rummel	*10 min*
Open Discussion - Draft Task Force Findings and Recommendations	Deborah Manning & Jeannine Clancy	*60 min*
Process for Task Force Report Adoption and Policy Plan Amendment	Deborah Manning & Bryce Pickart	*30 min*
Other Task Force Business	Sandy Rummel	*10 min*
Thanks and Conclusion	Sandy Rummel	*10 min*

METROPOLITAN COUNCIL

Open Discussion - Draft Task Force Findings and Recommendations

Presented by:
Jeannine Clancy & Deborah Manning, MCES

METROPOLITAN COUNCIL

Open Discussion - Draft Task Force Findings and Recommendations

Consensus Items:

- Reasons for wastewater reuse program
- Responsive approach
- Cooperation and partnership rather than competition
- Cost-of-service basis for reclaimed water rate
- Regional benefit evaluation
- Funding from non-Council funds

Non-consensus item:

- Regional cost share

See Draft Task Force Report

METROPOLITAN COUNCIL

Open Discussion - Draft Task Force Findings and Recommendations, cont'd

If Met Council decides to implement a Regional cost share, Task Force recommends pilot program:

- Cap on regional cost share
- Public hearing
- Council governance decision making
- User agreement
- Reporting in MCES' reuse activities

See Draft Task Force Report

METROPOLITAN COUNCIL

Process for Task Force Report Adoption and Policy Plan Amendment

Presented by:
Deborah Manning, MCES and Bryce Pickart, MCES

METROPOLITAN COUNCIL

Draft Task Force Report & Policy Plan Update

Met Council action needed to:

1. **Accept Task Force Report**
2. Amend Water Resources Policy Plan

Task Force Report	Date
Complete draft to Task Force members	11/15/17
Comments from Task Force members to MCES	11/22/17
Draft report finalized	11/29/17
Draft report distributed to Met Council Environment Committee	11/30/17
Environment Committee meeting	12/12/17
Met Council meeting: adoption of report and authorization of Public Hearing regarding Policy Plan amendment	12/13/17

METROPOLITAN COUNCIL

Draft Task Force Report & Policy Plan Update

Met Council action needed to:

1. Accept Task Force Report
2. **Amend Water Resources Policy Plan**

Update Water Resource Policy Plan	Date
Met Council meeting: adoption of report and authorization of Public Hearing regarding Policy Plan amendment	12/13/17
Policy Plan Amendments Public Hearing	Early Feb. 2018
Environment Committee action on Policy Plan amendment	Late Feb. 2018
Met Council action on Policy Plan amendment	Mid-March 2018

METROPOLITAN COUNCIL

Other Task Force Business

Led by:
Sandy Rummel, Metropolitan Council Member, District 11

Thanks and Conclusion

Led by:
Sandy Rummel, Metropolitan Council Member, District 11

THANK YOU!

METROPOLITAN COUNCIL

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