

Metropolitan Council Wastewater Utility Overview

Minneapolis Milling District: Early 1900s



Lock & Dam No. 1: April 5, 1917

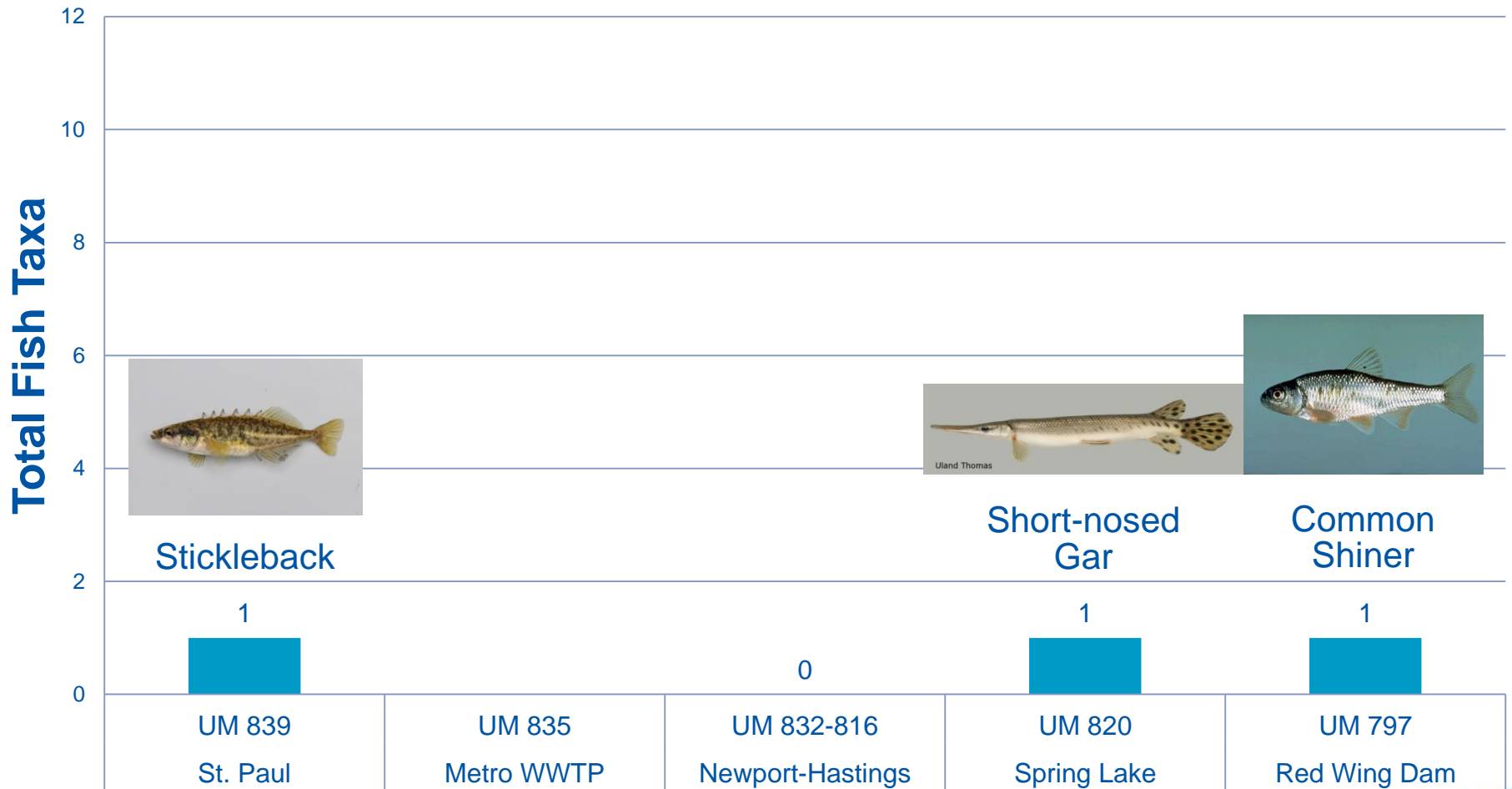


Lock & Dam No. 1.
April 5, 1917.
Upper gauge 745.95.
Lower gauge 723.95.

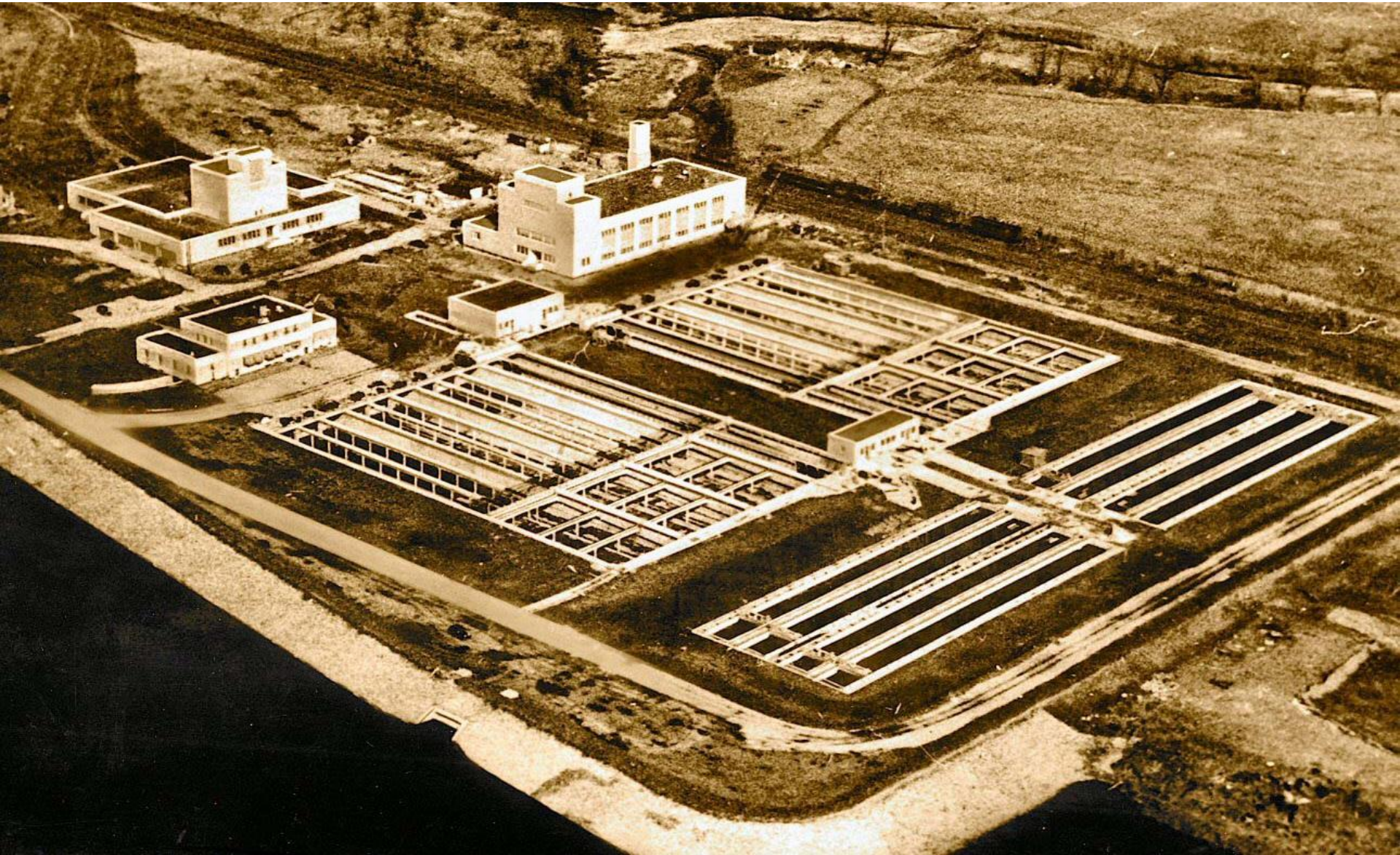
Sewage Mats on the Mississippi: June 1933



Mississippi River Fish Survey: 1926



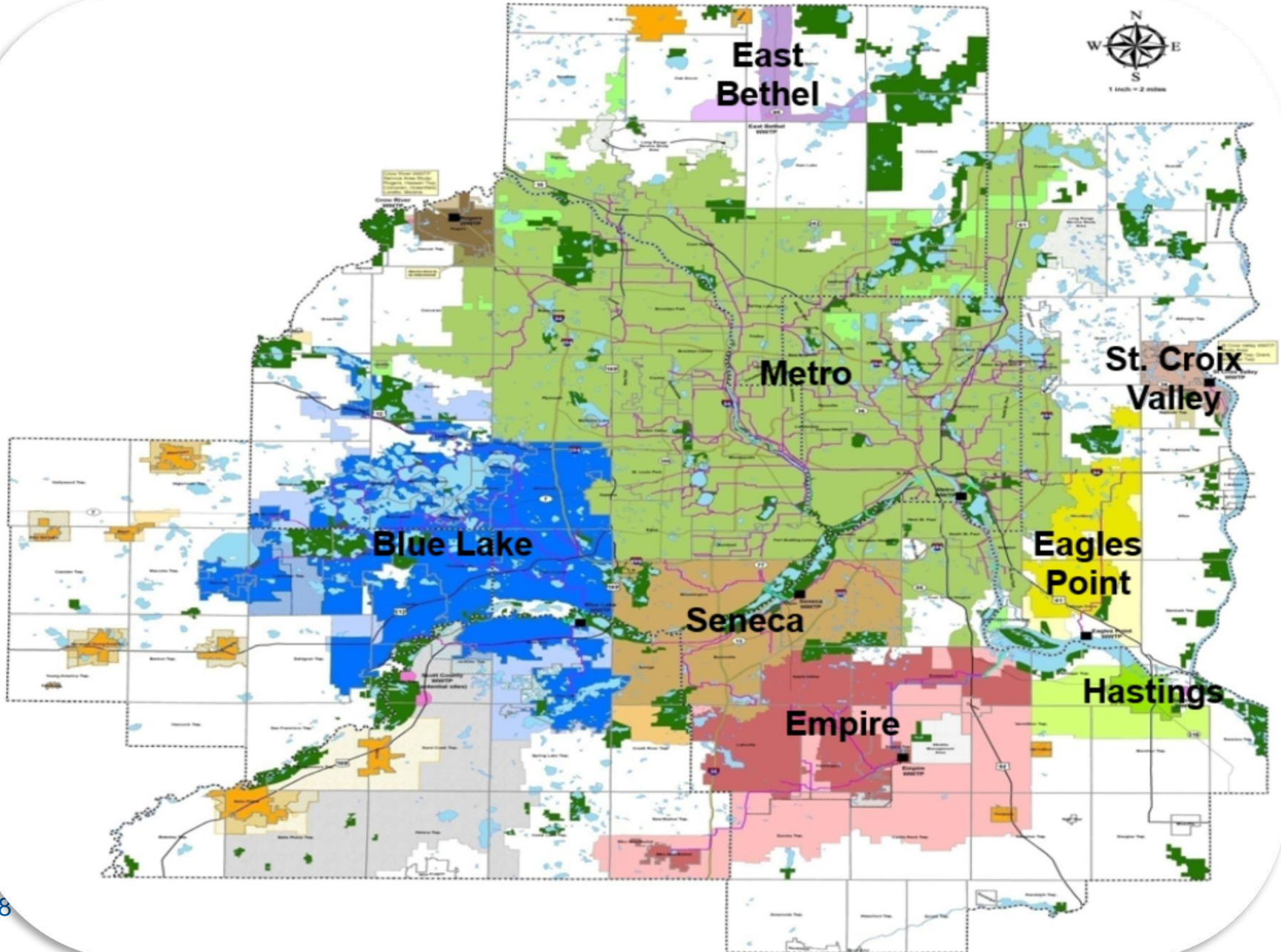
Metropolitan Wastewater Treatment Plant: 1938



Becoming a Regional Utility: 1969; 66th legislature



MCES Service Area and Facilities



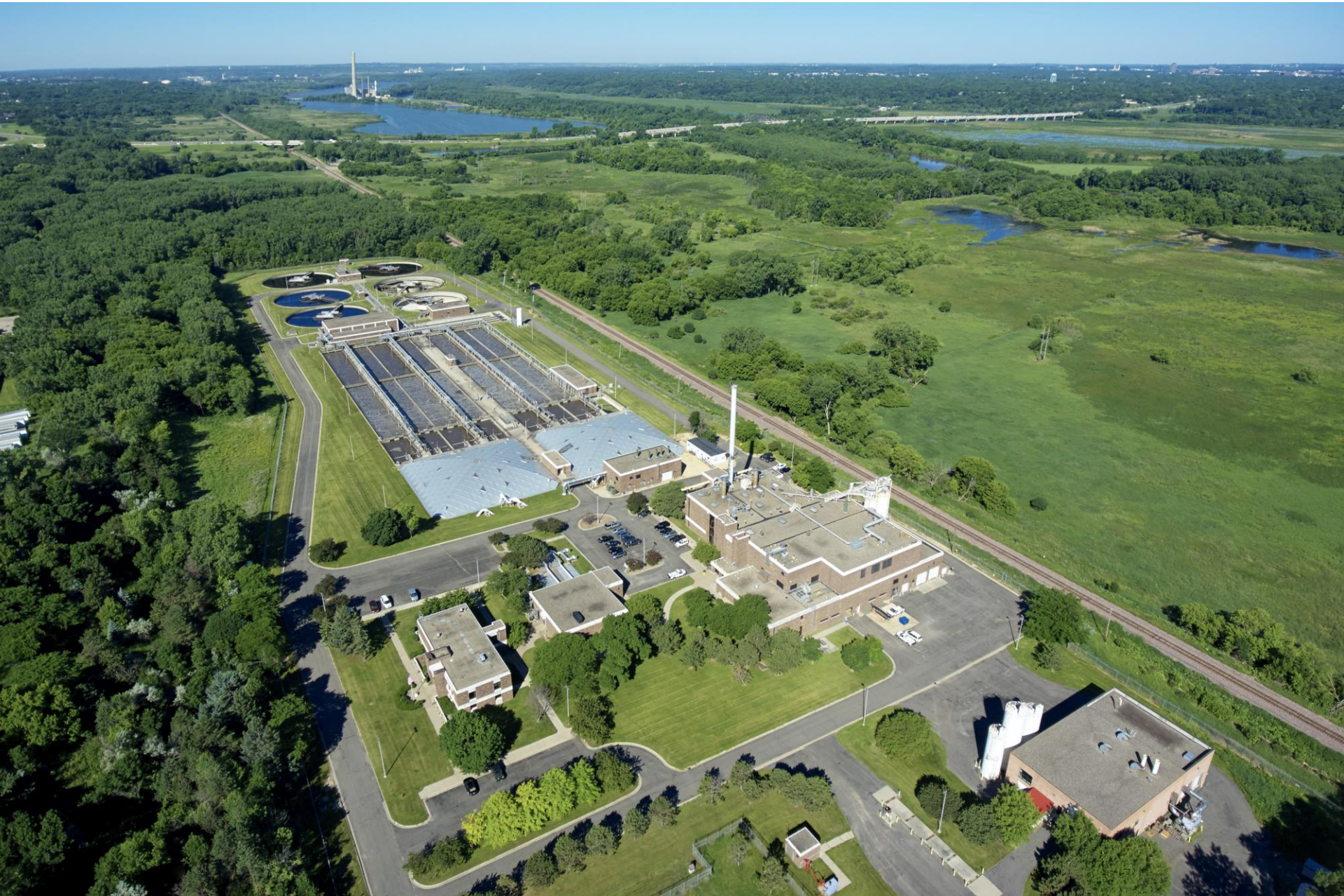
Metropolitan Plant



Blue Lake Plant



Seneca Plant



Eagles Point Plant



Hastings Plant



East Bethel Plant






St. Croix Plant



Wastewater Generation

A \$6-\$7B System...

-  8 wastewater treatment plants
-  610 miles of sewer pipe
-  60 pump stations

With ~130M per year
in capital investments

Why is it important to keep our
sewer system in good repair?



Protect public health



Manage assets effectively

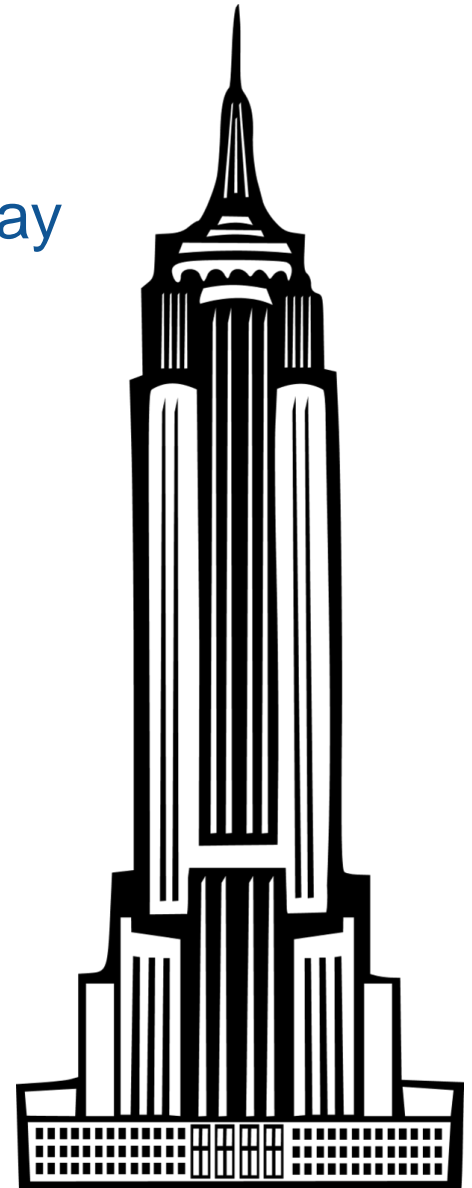


Protect other infrastructure

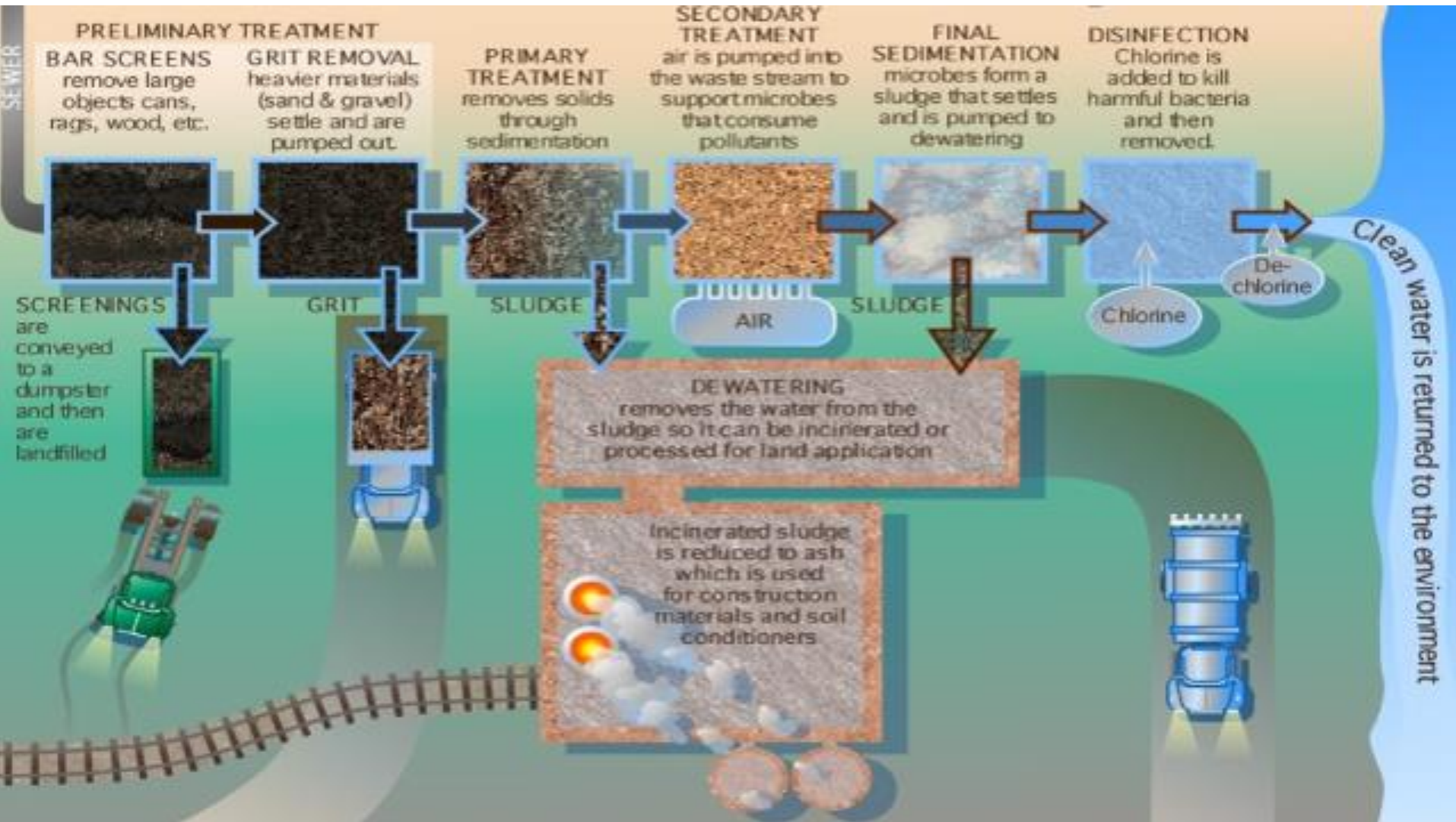


Wastewater Output

- Averages 250 million gallons day
 - Could fill the Empire State Building in 1 day



Wastewater Treatment





Washed/compacted screenings (to landfill)



AUG 19 2004



“Mixed Liquor” (waste plus bacteria)

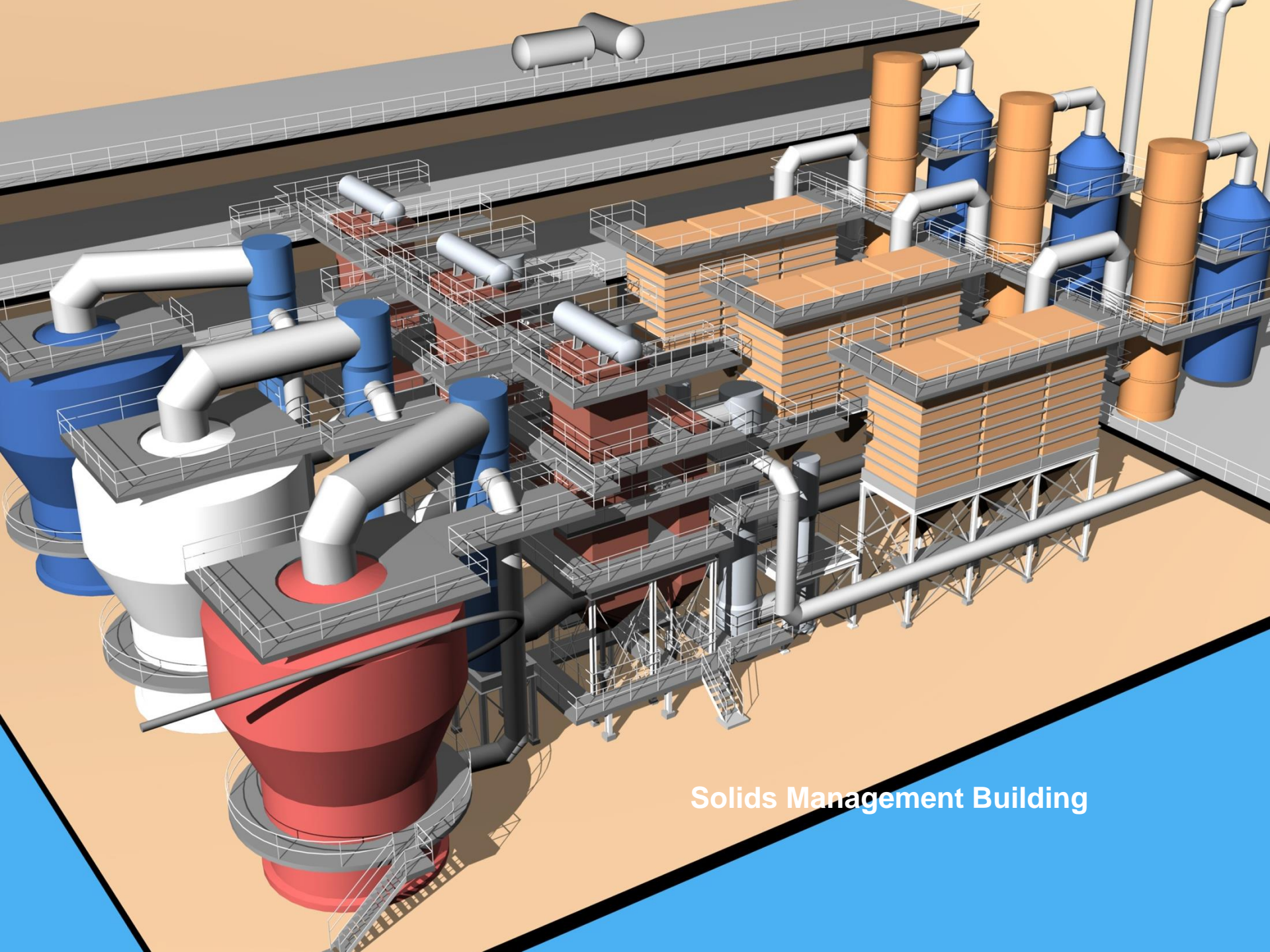


Air diffusers



220 dry tons per day (660 wet tons)





Solids Management Building

Sludge Incineration



Operations





Industrial Monitoring

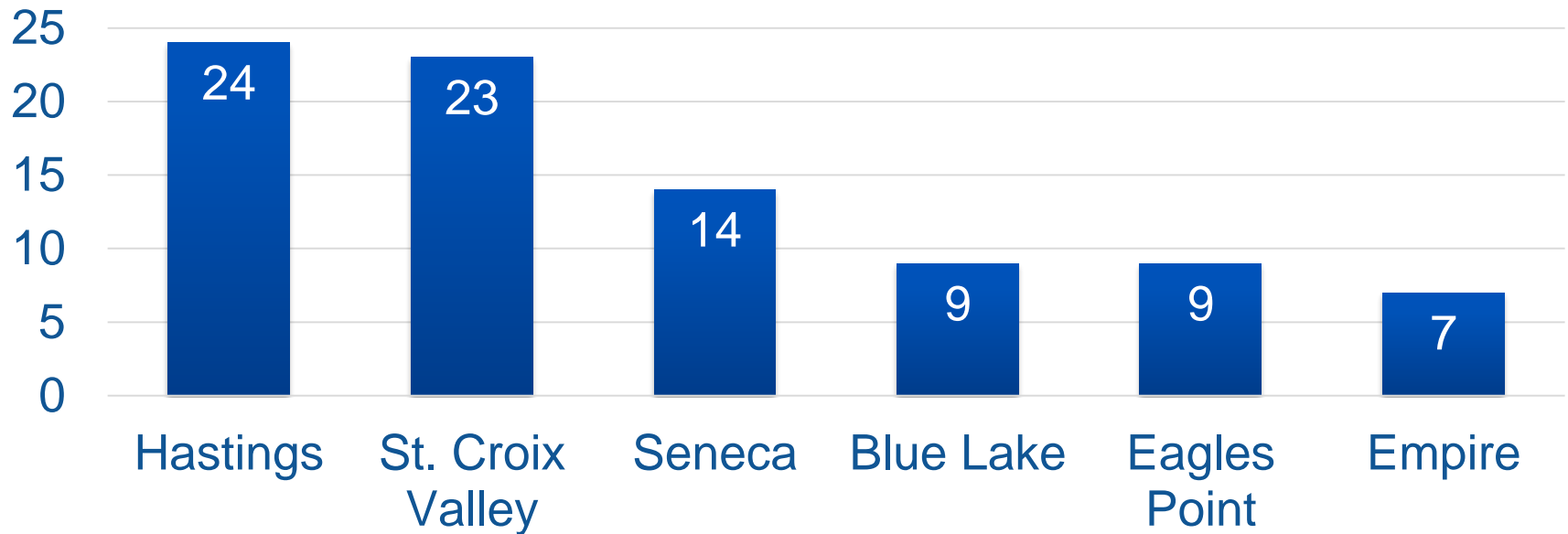


Processing Industrial Samples

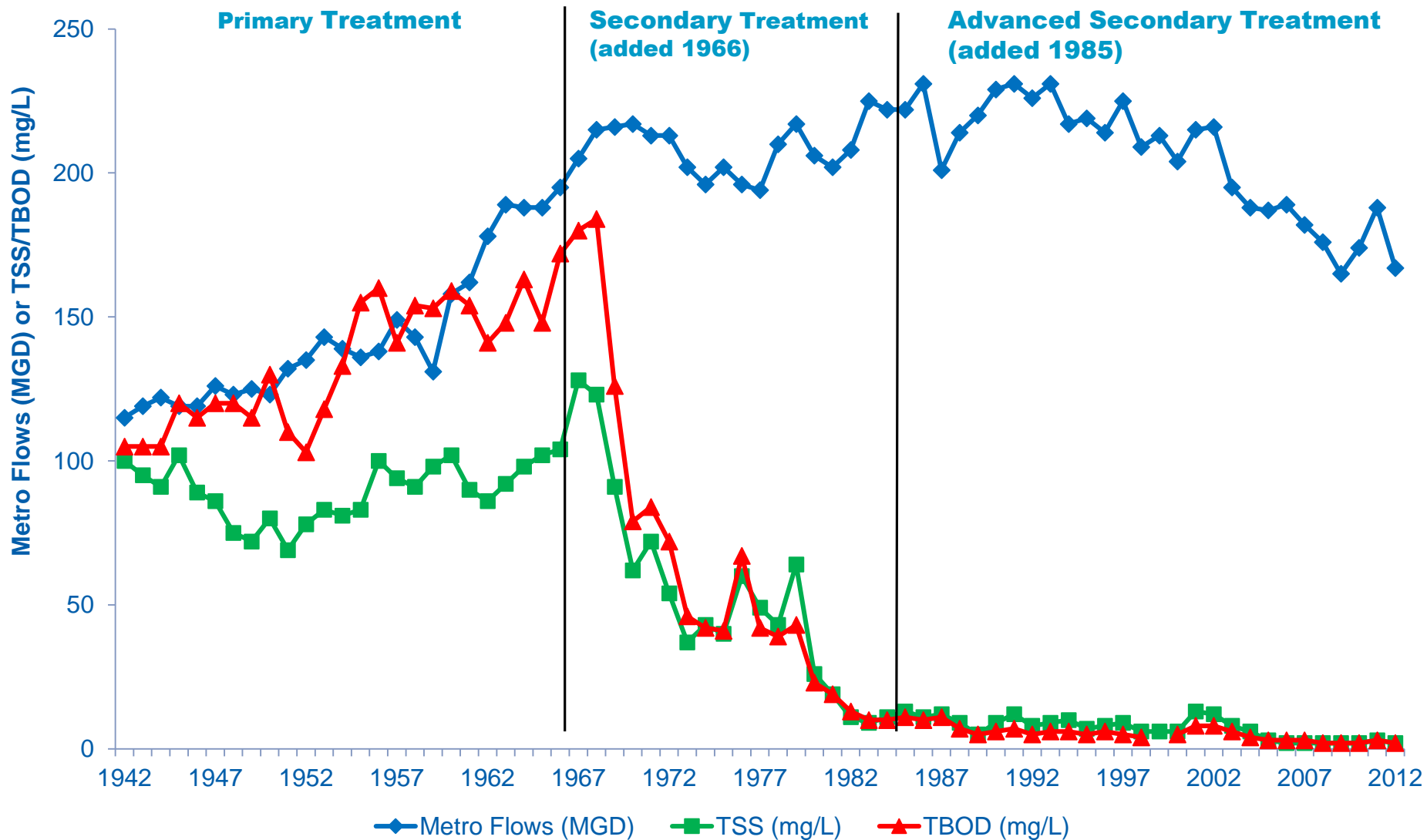


Compliance Performance

National NACWA Platinum Level Compliance

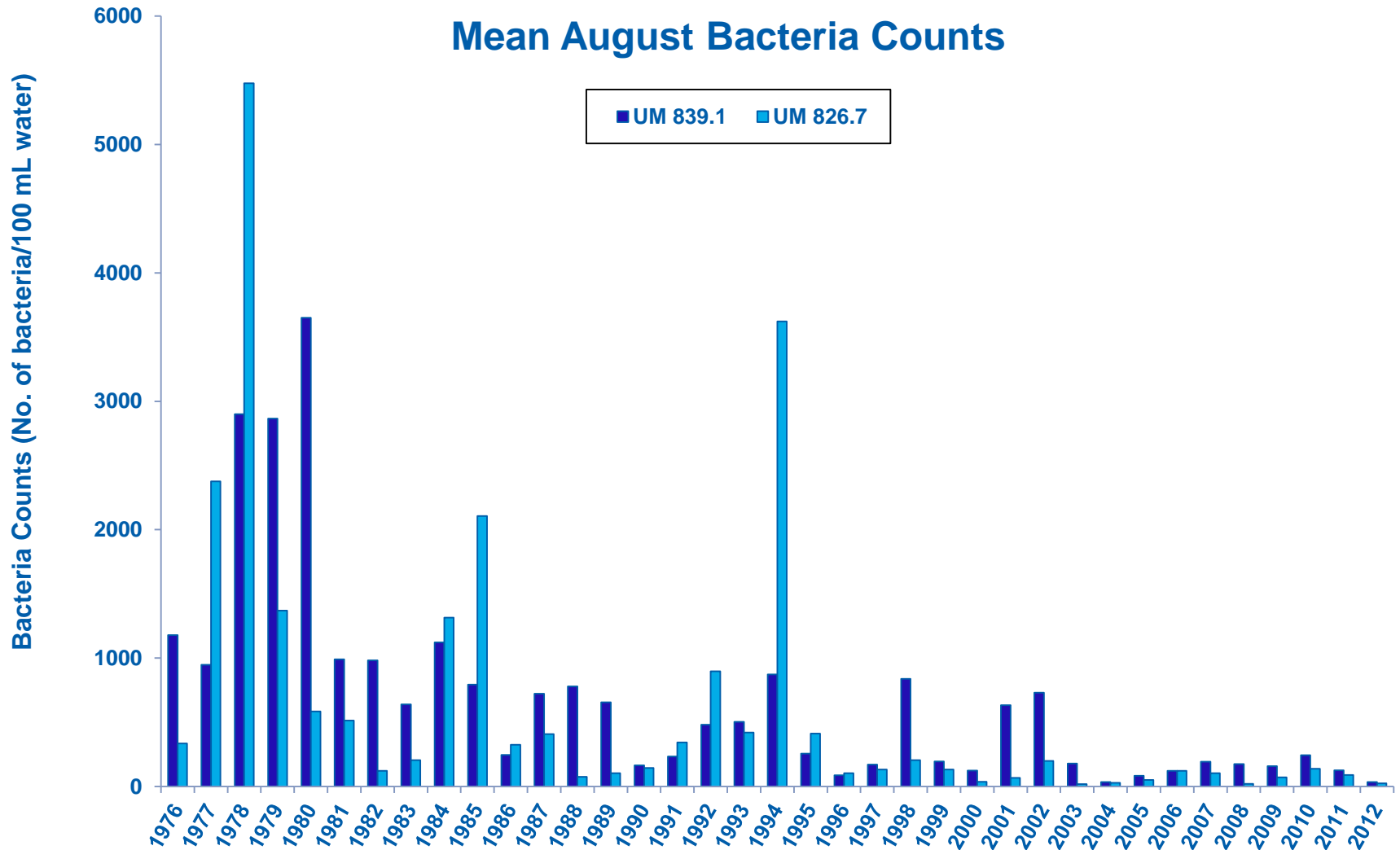


Metro Plant Performance: 1942-2012



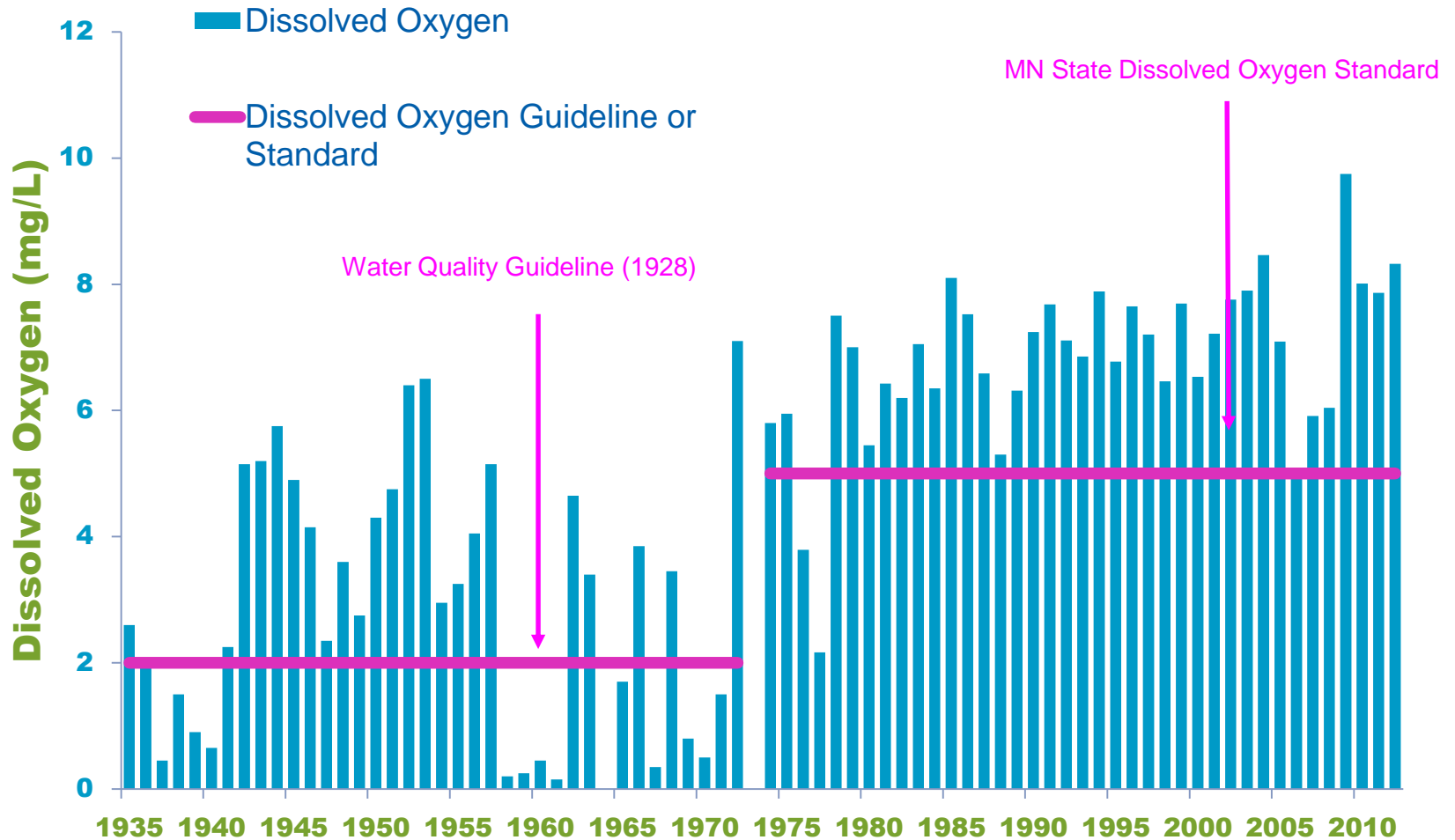
Mississippi River Bacteria Counts: 1976-2012

Mean August Bacteria Counts



Mississippi River Dissolved Oxygen Concentrations: 1935-2012

Mean August Dissolved Oxygen Concentration at Grey Cloud Island (UM 826.7)



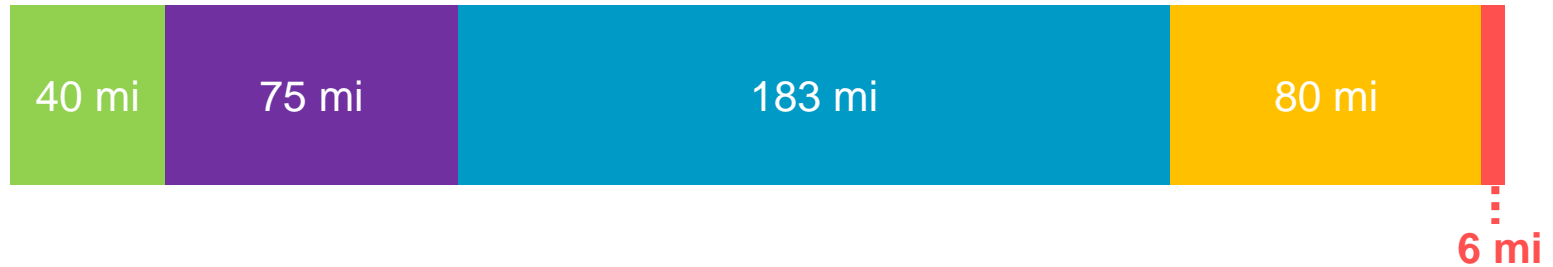
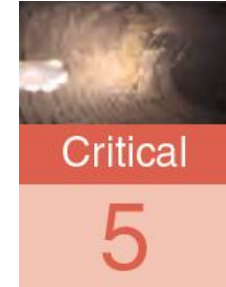
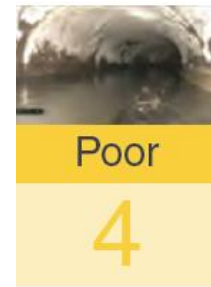
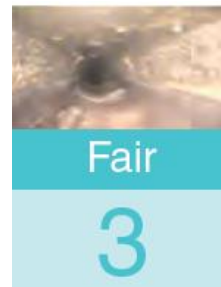
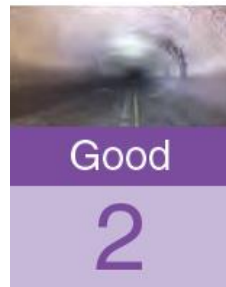
Walleye Return to the Mississippi



MCES Infrastructure Age



MCES Infrastructure Condition



INFLOW & INFILTRATION SOURCES

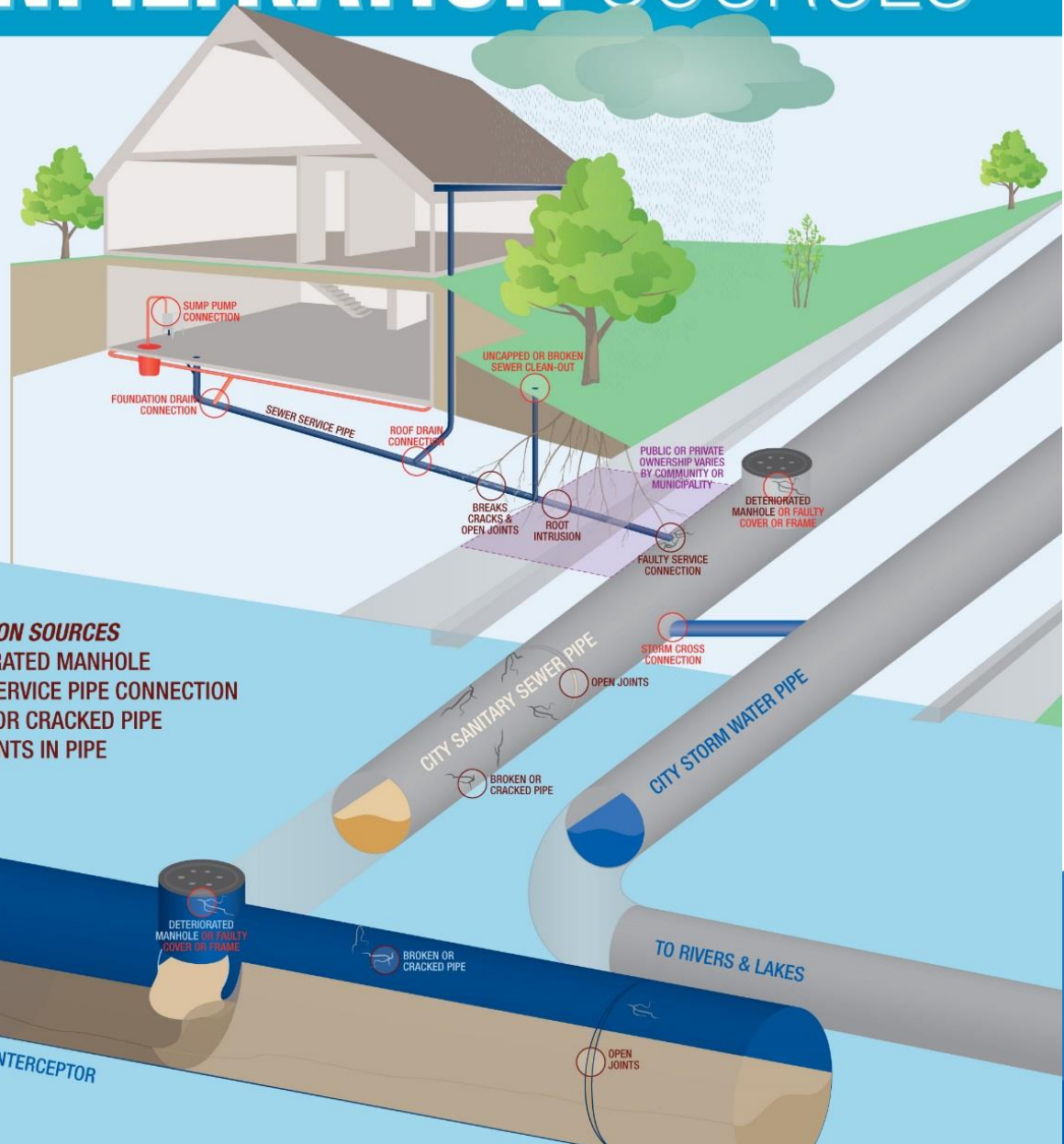
PRIVATE

INFLOW SOURCES

- SUMP PUMP CONNECTION
- CONNECTED FOUNDATION DRAIN
- ROOF DRAIN CONNECTION
- UNCAPPED OR BROKEN SEWER CLEAN-OUT
- BREAKS, CRACKS & OPEN JOINTS IN SERVICE PIPE

INFILTRATION SOURCES

- ROOT INTRUSION INTO SERVICE PIPE
- BREAKS, CRACKS & OPEN JOINTS IN SERVICE PIPE



PUBLIC

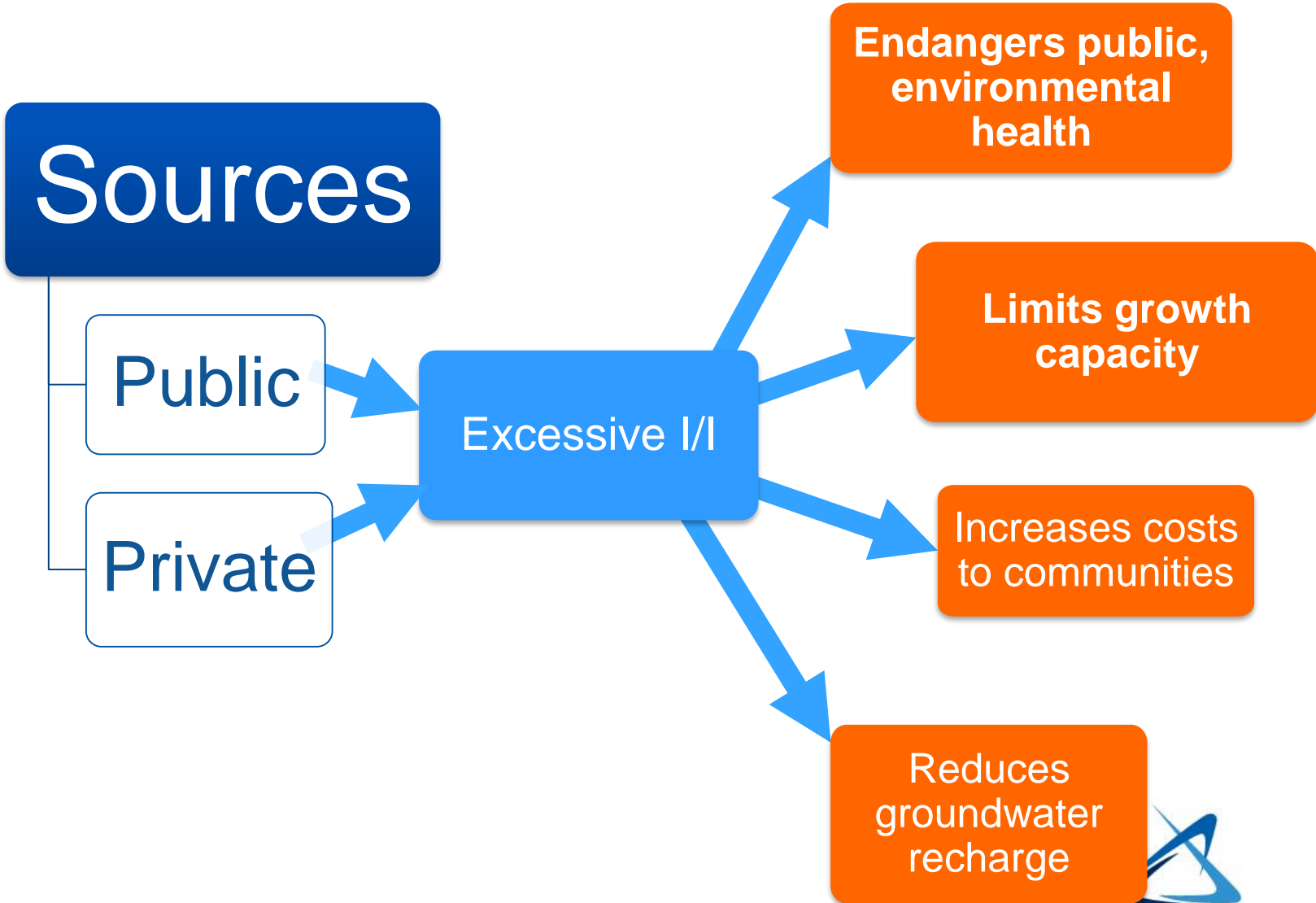
INFLOW SOURCES

- FAULTY MANHOLE COVER OR FRAME
- STORM WATER CROSS CONNECTION

INFILTRATION SOURCES

- DETERIORATED MANHOLE
- FAULTY SERVICE PIPE CONNECTION
- BROKEN OR CRACKED PIPE
- OPEN JOINTS IN PIPE

Inflow and Infiltration – I/I



I/I Program timeline

- July 1987 superstorm
 - **16” of rainfall** over one week in region
- 1990 MCES system evaluation
 - **20% of annual flow** from I/I
- 2002 MCES interceptor master plan
 - Future flow will **exceed capacity; not sustainable**
 - More **cost effective to address sources** than build capacity
- 2004 I/I Task Force of communities
 - Begin MCES I/I Program
 - **Incentive and resources** for communities
 - Revised 2010, 2016

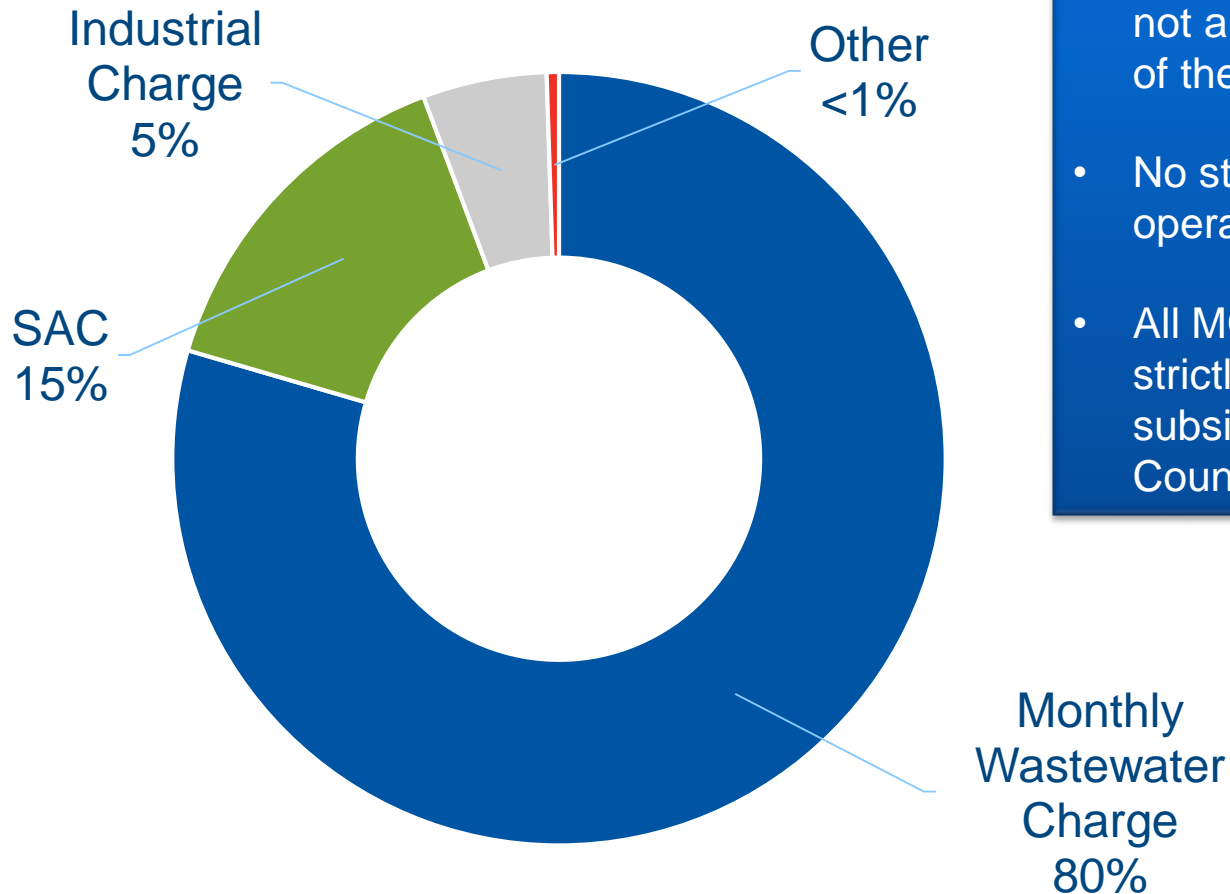
Energy Reduction, Cost Savings

- From 2008-2015, MCES has reduced energy consumption 23%, savings of \$4M annually
- The goal is to reduce energy consumption by 10% by 2020, saving an additional \$1M annually.

Through other grants, rebates, etc., MCES has saved \$7M on energy costs.

Met Council's Wastewater Treatment is 100% Funded by User Fees

Sources (2017 Budget* = \$267M)

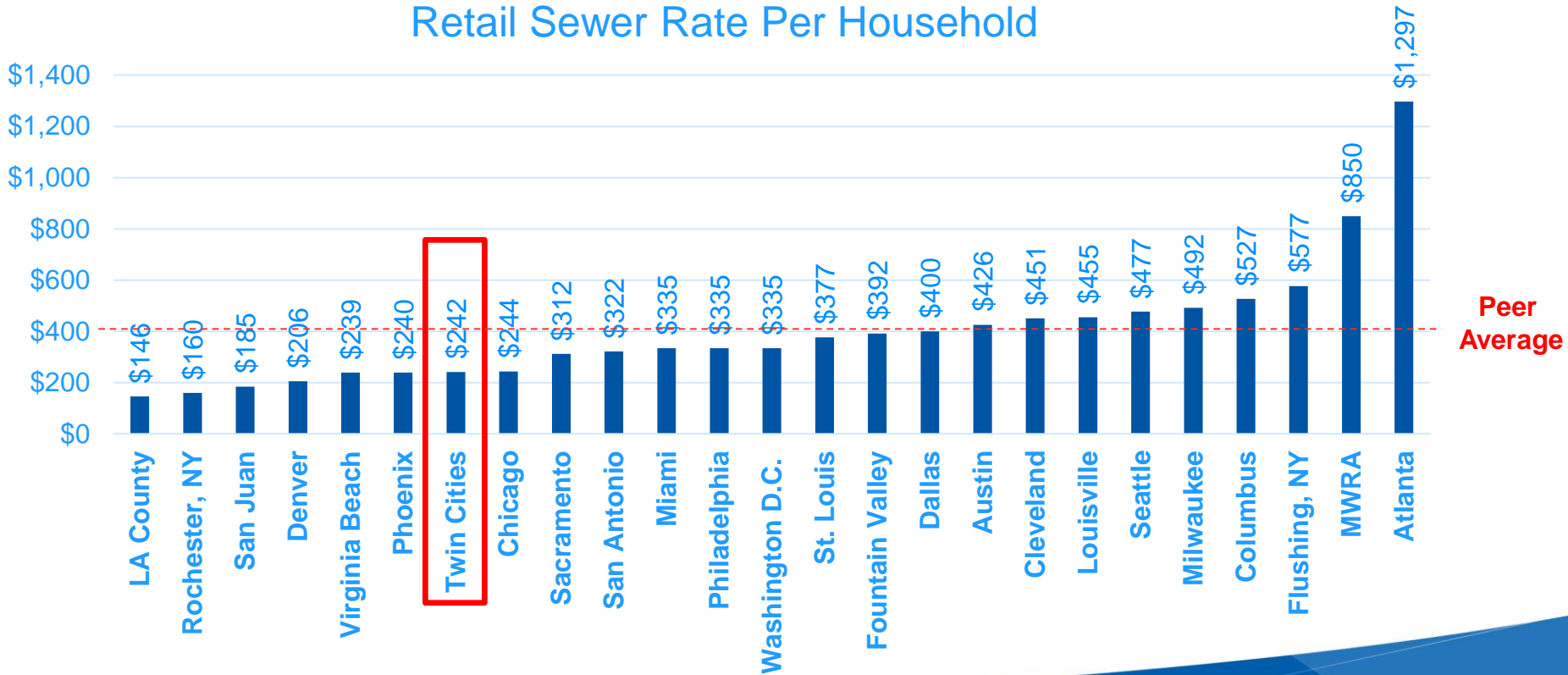


- Wastewater utility fees are not a tax; it is a fee for users of the service
- No state funds are used to operate the system
- All MCES revenue is used strictly for MCES: it does not subsidize any other Met Council divisions

Comparative Information

25 peer city average retail sewer rate per household = \$404

Retail Sewer Rate Per Household



2013 Rates (per 2014 NACWA survey)

Water Supply

Water Supply Planning – Minn. Stat. 473.1565

❑ 2005 Legislation

- “*Carry out planning activities addressing the water supply needs of the metropolitan area*”
- Twin Cities Metropolitan Area Master Water Supply Plan- 2010



❑ Metro Area Water Supply Advisory committee

- Municipalities/utilities
- Counties
- State agencies

❑ Purpose

- Assist and Guide Council water supply planning
- Approve Master Water Supply Plan **(2015)**
- Appoint Technical Advisory Committee **(2015)**

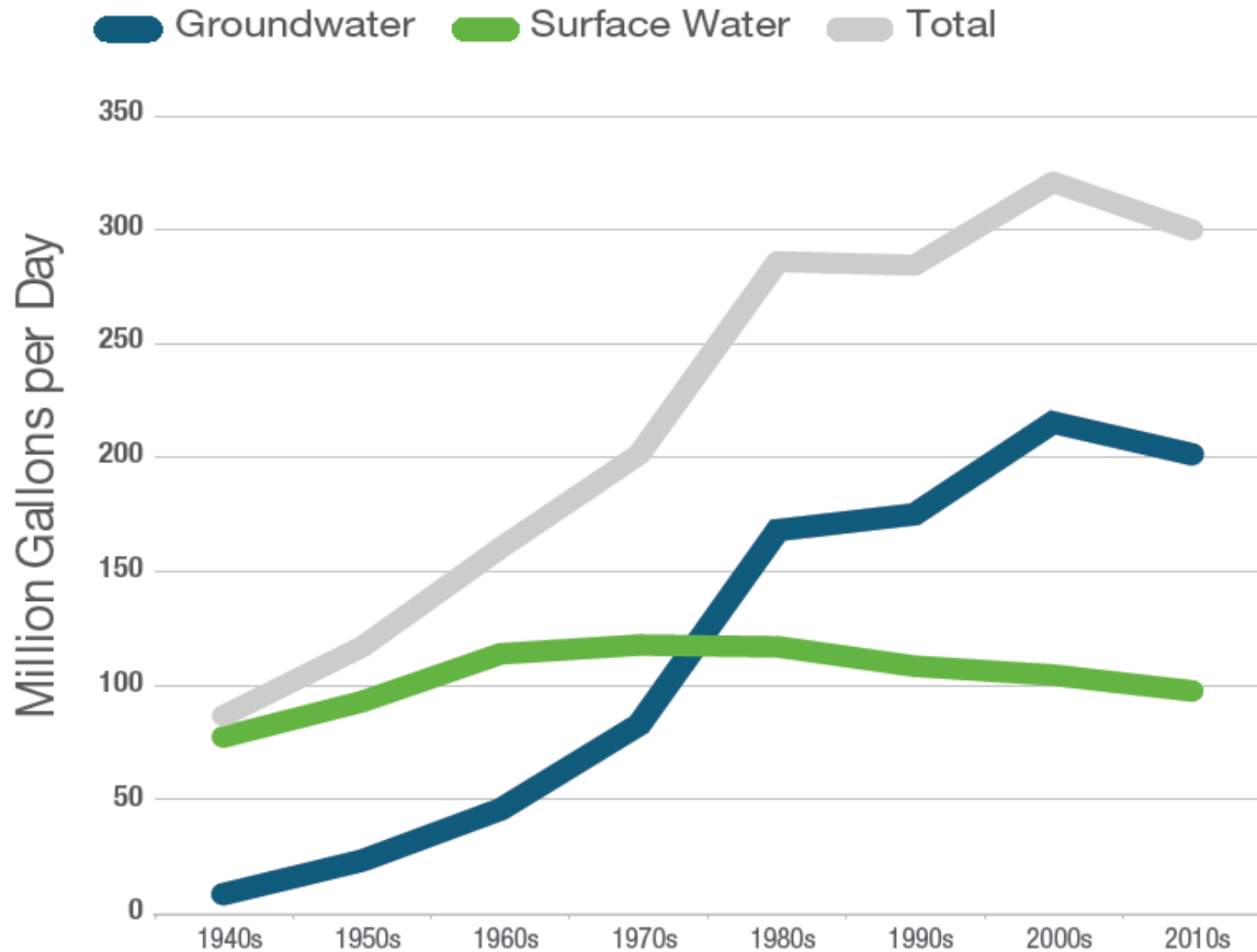


Planning Objectives for Regional Water Supply

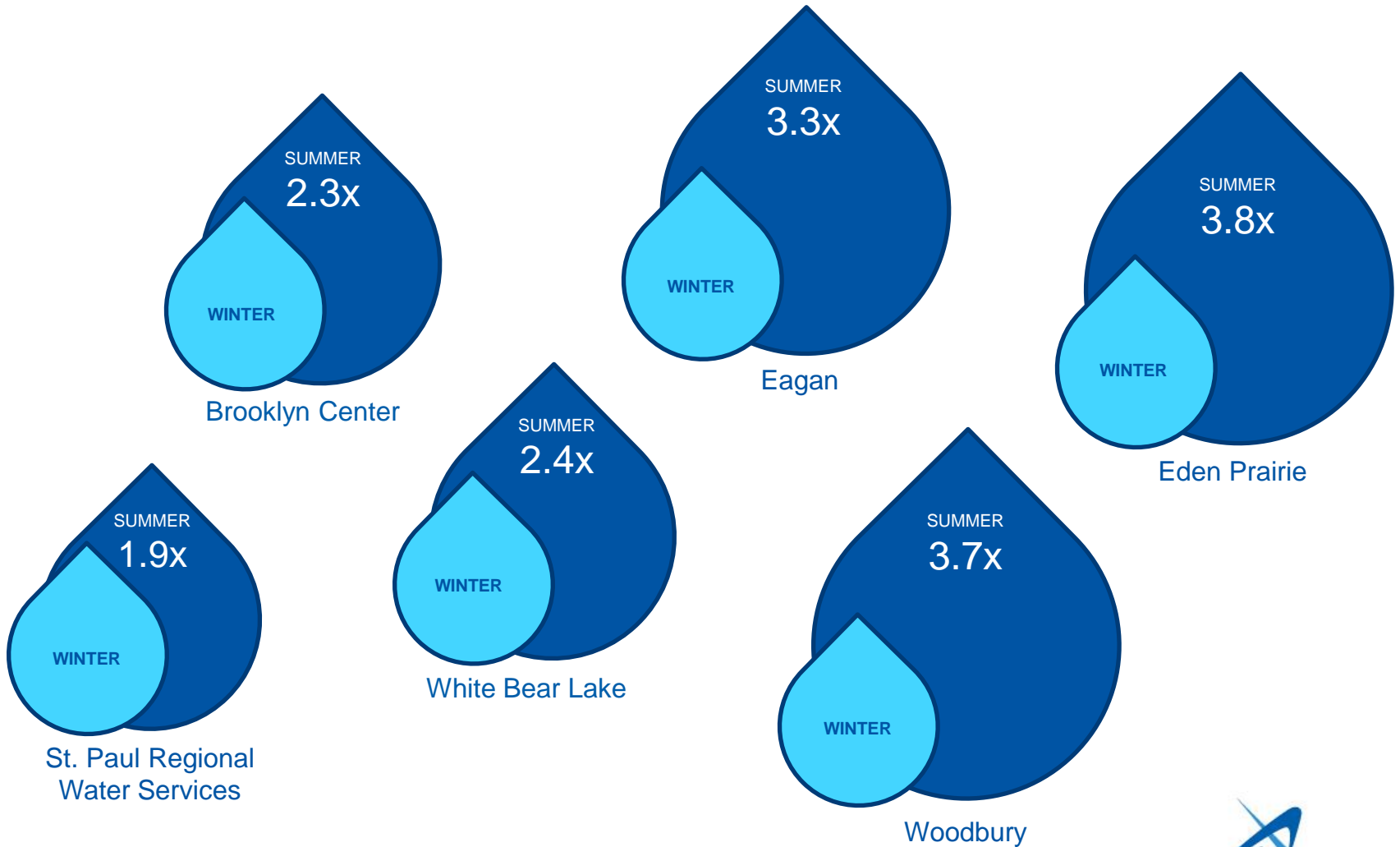
- Adequate water supplies are essential for our region's growth, livability and prosperity.
- Met Council Role in Regional Water Supply Planning
 - A regional water supply plan
 - Support Local government units making informed and effective decisions
 - Assistance to communities in developing and implementing local plans
 - Identify approaches for emerging issues, and
 - Strong collaborative relationship with stakeholders.

The Metropolitan Council is not a water supplier. Our intent is not to take over local water supply systems. The regional planning process has been designed and applied to ensure local water suppliers have control of and responsibility for their water supply systems.

Now we use more groundwater compared to river water



Summer Water Use Compared to Winter Water Use

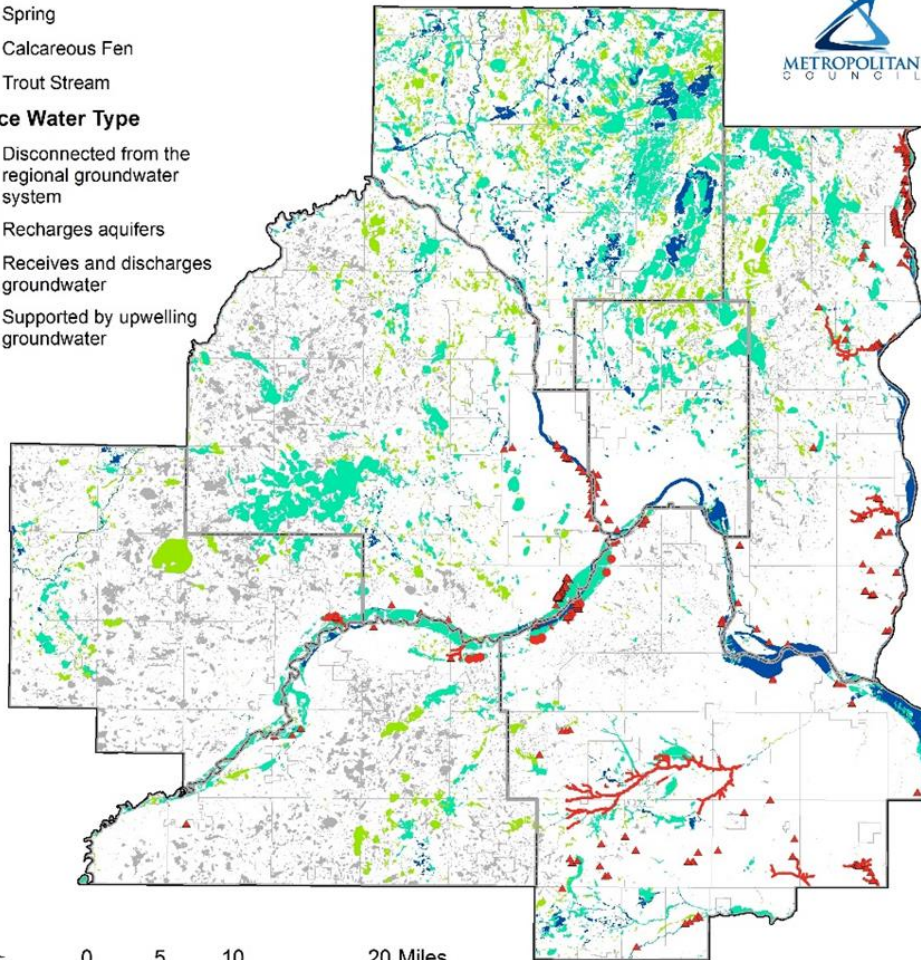


Aquifers & Surface Waters Do Interact

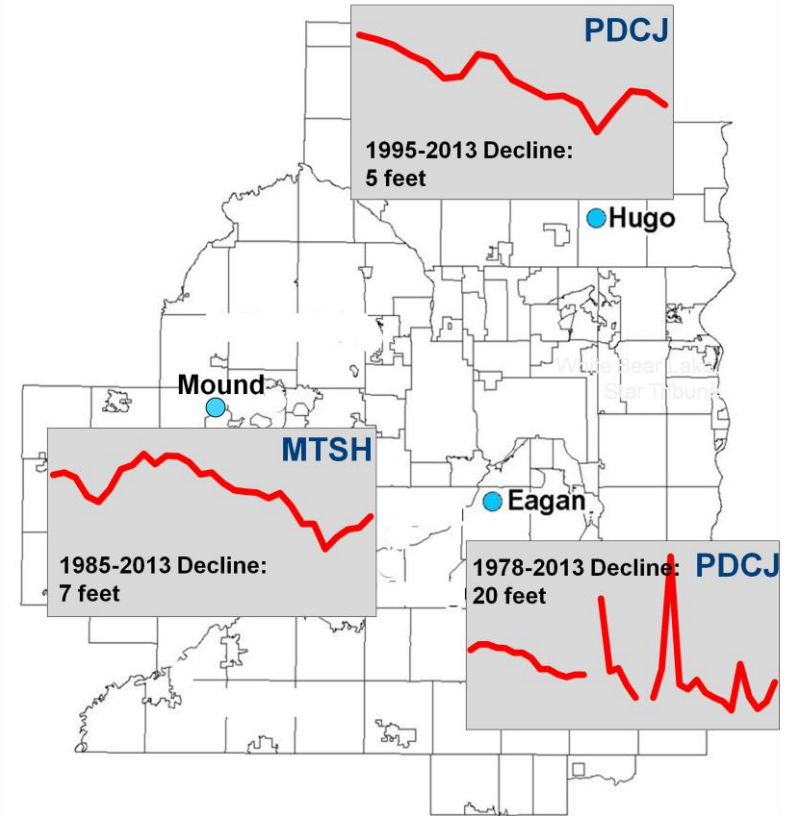
- ▲ Spring
- Calcareous Fen
- Trout Stream

Surface Water Type

- Disconnected from the regional groundwater system
- Recharges aquifers
- Receives and discharges groundwater
- Supported by upwelling groundwater



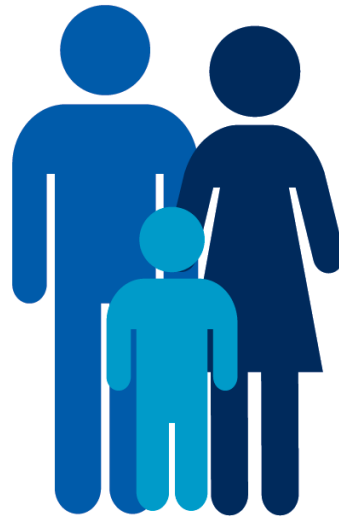
0 5 10 20 Miles



PDCJ: Prairie Du Chien-Jordan Aquifer
MTSH: Mount Simon Hinckley Aquifer



METROPOLITAN COUNCIL



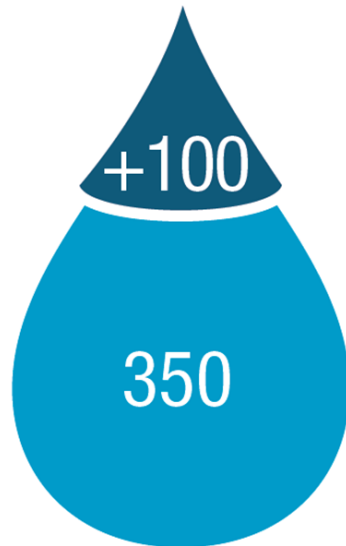
Growing population
increases water use

30%
Population



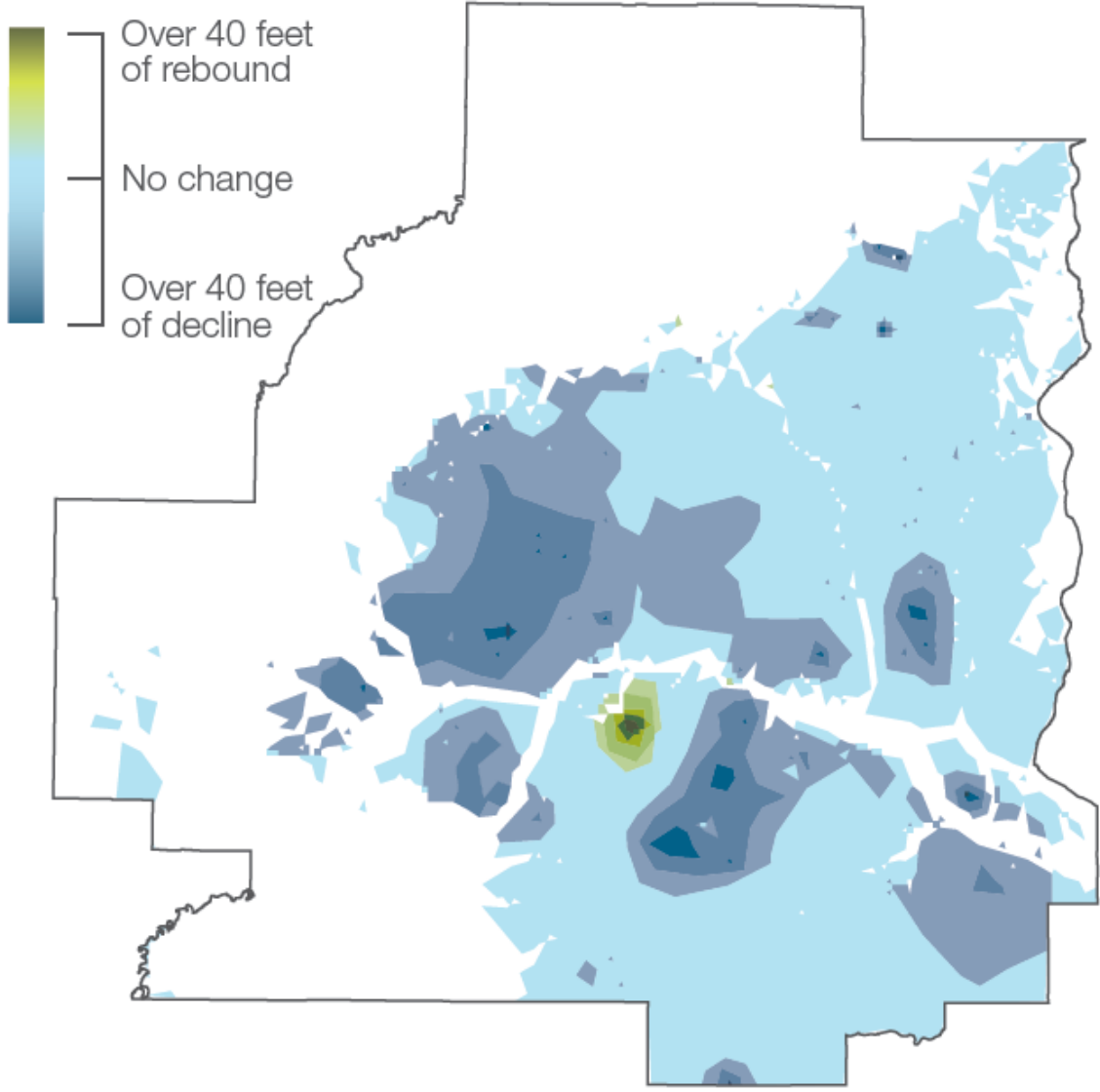
2040
More Use:

2015
Water Use:



Million Gallons
per Day

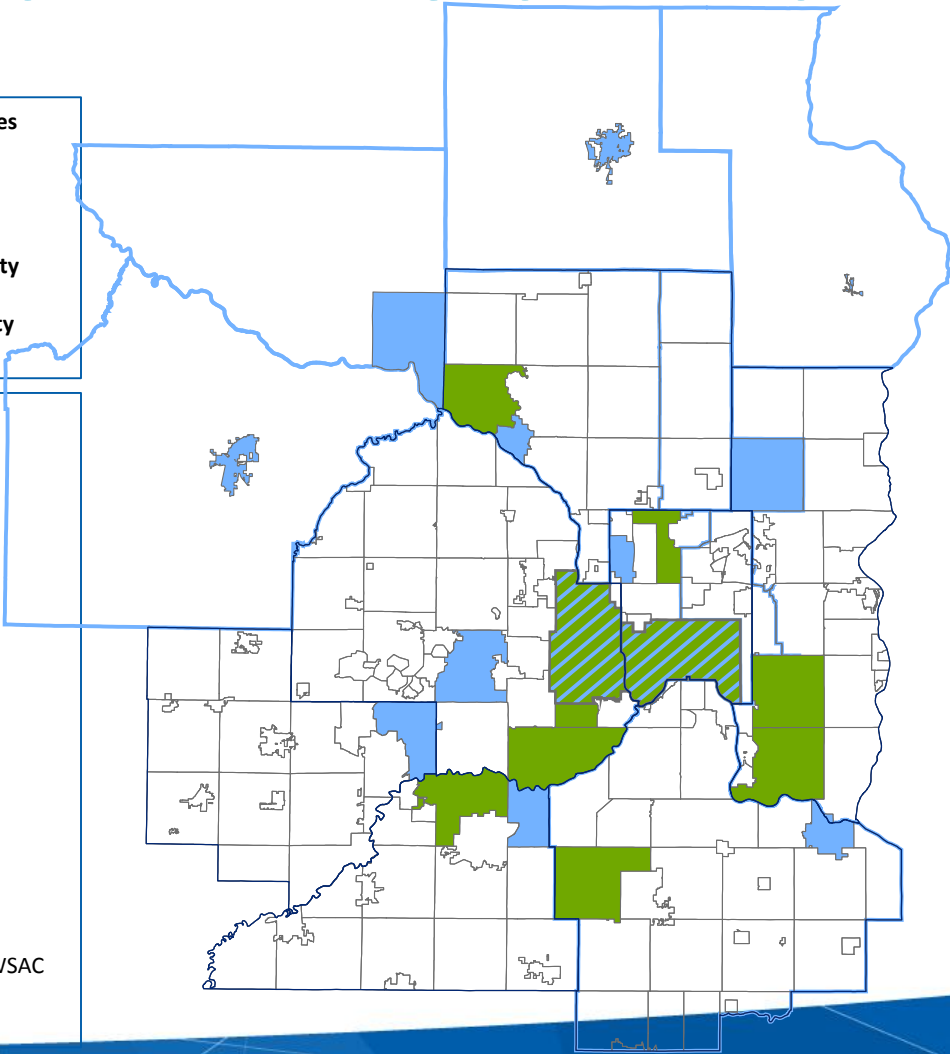
Change in Prairie Du Chien-Jordan Aquifer Levels from 2040 Pumping



Metropolitan Council MAWSAC and TAC

MAWSAC County Representatives
Metro
 Jamie Schurbon: **Anoka County**
 Georg Fischer: **Dakota County**
Greater Metro Area
 Michael Robinson: **Chisago County**
 Susan Morris: **Isanti County**
 Lisa Vollbrecht: **Sherburne County**
 Mark Daleiden: **Wright County**

Community Representatives
MAWSAC LGUs
 Patty Acomb: **Minnetonka**
 Todd Gerhardt: **Chanhassen**
 Phil Klein: **Hugo**
 Dean Lotter: **New Brighton**
 Barry Stock: **Savage**
MAWSAC Water Suppliers
 Glen Gerads: **Minneapolis**
 Steve Schneider: **St. Paul RWS**
TAC
 Bruce Westby: **Ramsey**
 Chris Petree: **Lakeville**
 Dale Folen: **Minneapolis**
 Jennifer Levitt: **Cottage Grove**
 Klayton Eckles: **Woodbury**
 Kristin Asher: **Richfield**
 Robert Cockriel: **Bloomington**
 Lon Schemel: **Shakopee**
 Mark Maloney: **Shoreview** (MAWSAC liaison)







MAWSAC Chair
 Sandy Rummel: **Council District 11**

State and Federal Agency Partners
MAWSAC Members
 Jeffrey Berg: **MDA**
 Randy Ellingboe: **MDH**
 Jeanne Daniels: **MDNR**
 Catherine Neuschler: **MPCA**
TAC Members
 Lih-in Rezanian: **MDH**
 Jamie Wallerstedt: **MPCA**
 James Stark: **USGS**

Consulting Industry
TAC Members
 John Dustman: Summit EnviroSolutions
 Ray Wuolo Barr Engineering

University of Minnesota
TAC Member
 Crystal Ng: Dept. of Earth Sciences

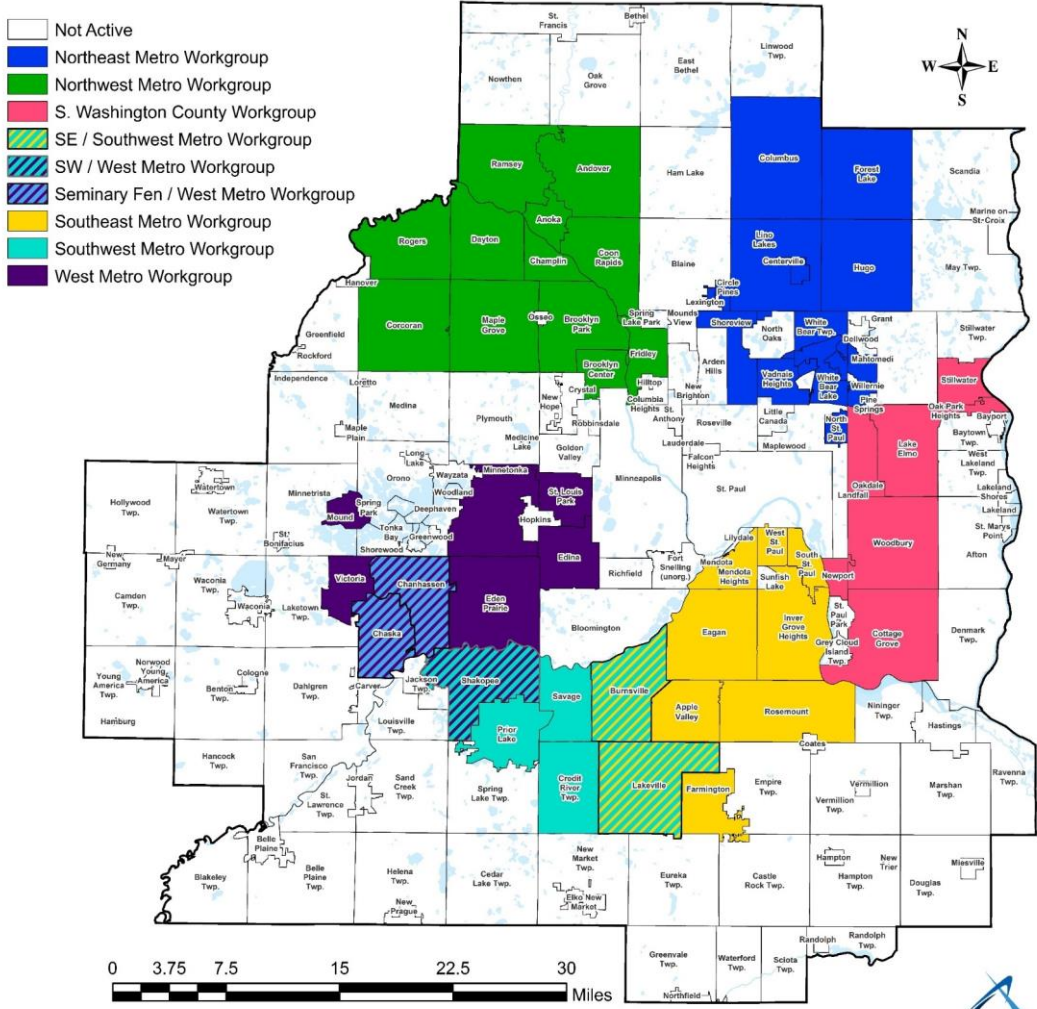
-  **MAWSAC Representation**
-  **TAC Representation**
-  **Counties and Council Districts Represented by MAWSAC**
-  **Metropolitan Council Water Supply Planning Area**

Existing Water Supply Sub-Regional Workgroups

“Groundwater doesn’t know community boundaries. We can have a greater impact if we work together on water supply sustainability.”

Russ Matthys, Public Work Director, Eagan Member of Southeast Work group

Communities in Metro Area Water Supply Work Groups



State General Fund
\$ 200,000 per year
 (FY 16-17 only)



- Master Water Supply Plan
 - Regional framework for Water Supply
- Response to members requests
 - Policy & technical recommendation analysis
- Meetings > 12 per year
 - Policy and technical Guidelines
 - Committees coordination

Clean Water Fund
\$ 1,225,000 per year



- Improved Water Use Efficiency
 - Tools: Conservation Tool Box
 - Grants and Projects
 - Water Saved annually: 220 million gallons
- Subregional Collaboration: Better Together
 - 7 active workgroup; 62 member cities
 - Subregional water supply alternatives and opportunities
- Technical information Supporting Good Decisions
 - Metro Model
 - Stormwater Reuse Guide
 - Water Rates tool
- Council Requested \$1,435,000 per year for FY 18 - 19

Met Council Fund
\$ 100,000 per year



- Local Water Supply Planning
 - 50 Plans in 2016
 - 55 Plans in 2017
 - 62 Plans in 2018
- Well Head Protection
- Comp Plan Amendments and ER documents

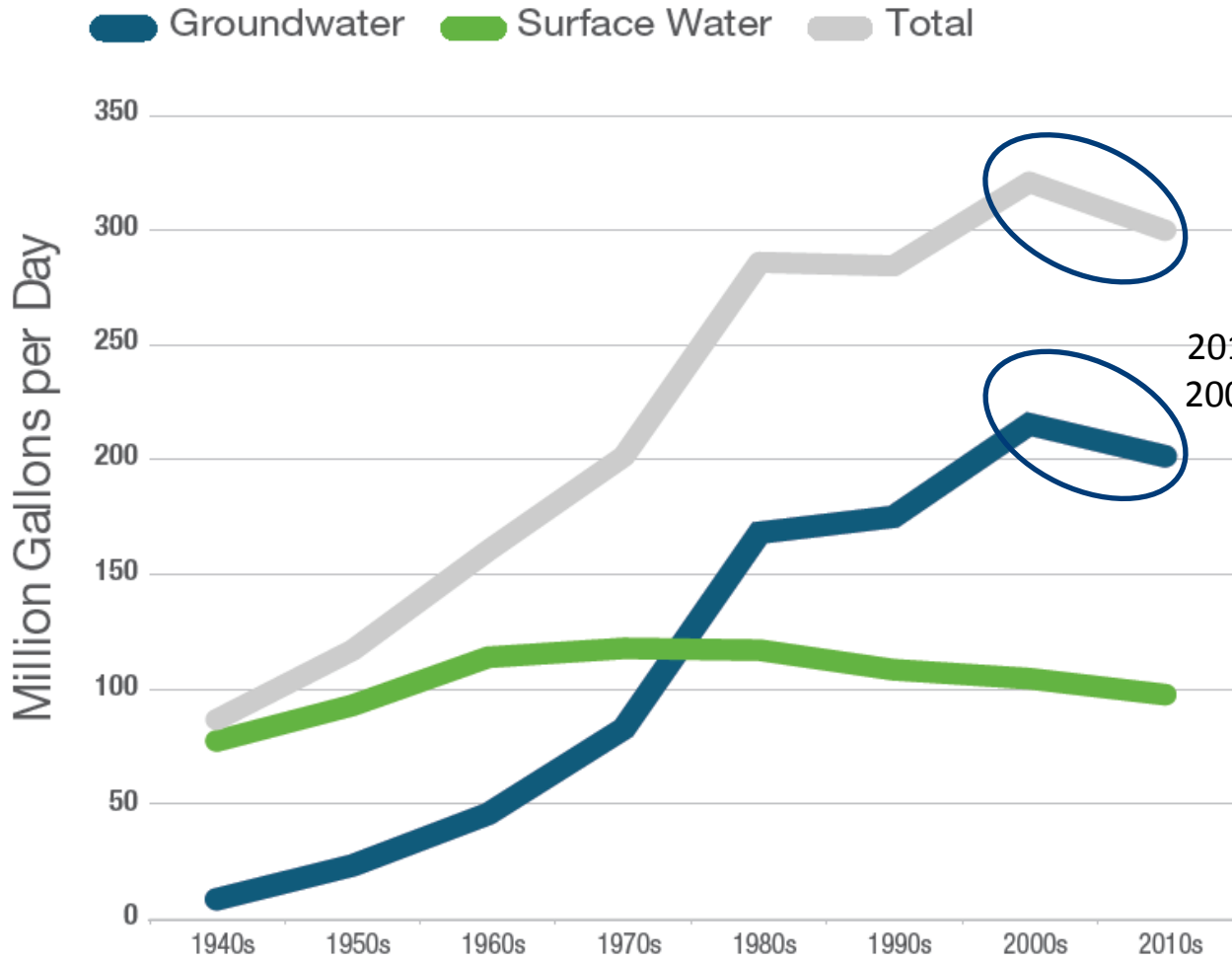
Outcomes of Water Supply Sustainability and Efficiency Programs



STATUS as of Jan. 17, 2017

- **Industrial Water Conservation Program (started 2012)**
 - 15 projects
 - 135 Million Gallons of water saved annually— **enough water for 4,000 people for a year**
 - Industries saved \$1.1 Million a year in water and energy cost
- **Municipal Water efficiency Grant Program (started 2016)**
 - 19 recipients
 - 85 Million Gallons of water Saved – **enough water for 2,500 people for a year**

Now we use more groundwater compared to river water



Groundwater Use
2011-2015 average is less than
2007-2010 average by **17 MGD**

Workplan to Achieve Sustainability by 2040

- **Target:** Master Water Supply Plan
 - **125 to 100** gpd per capita
- **Outcome:** Accommodate growth
 - Reducing water use by **78 MGD (28 BGY)**
 - Financial Saving \$ **92 M**
 - Average Cost of pumping and treating 28 BGY is \$ 92 M
- **Resources:**
 - Total Cost of this program is **\$125 - 150 M**

Level of Funding (annually)	Estimated Water Saved per Day (Million Gallons)	Years to Achieve Target
\$ 700,000 (current)	0.44	177
\$ 1,400,000	0.9	88
\$ 3,250,000	2.2	34

What do Stakeholders say?

- The Metropolitan Council's [Water Conservation Toolbox](#) includes information and an extensive list of resources for residents who want to use their water efficiently. (**City of St Louis Park**)
- Being Able to start from [Metro Model](#) to construct the groundwater model used for the New Brighton WHPA delineation made the work more efficient and cost lower. (**Grant Wyfels, Former Director of Public Works, New Brighton**)
- The public awareness that the Program- [efficiency Grant Program](#)- creates is a benefit as we work to educate the public on the importance of conserving water, even In Minnesota. (**Mark Burch, Director of Public Works, White Bear Lake**)
- The Metropolitan Council plays a valuable facilitating role in the discussions and provides a regional perspective for the group. Council funding of Southeast study was important because it isn't always easy to get local city councils to commit funds to something that reaches beyond their borders” Steve Albrecht. (**Steve Albrecht, Director of Public Works, Burnsville**)



Sewer Availability Charge (SAC) Overview

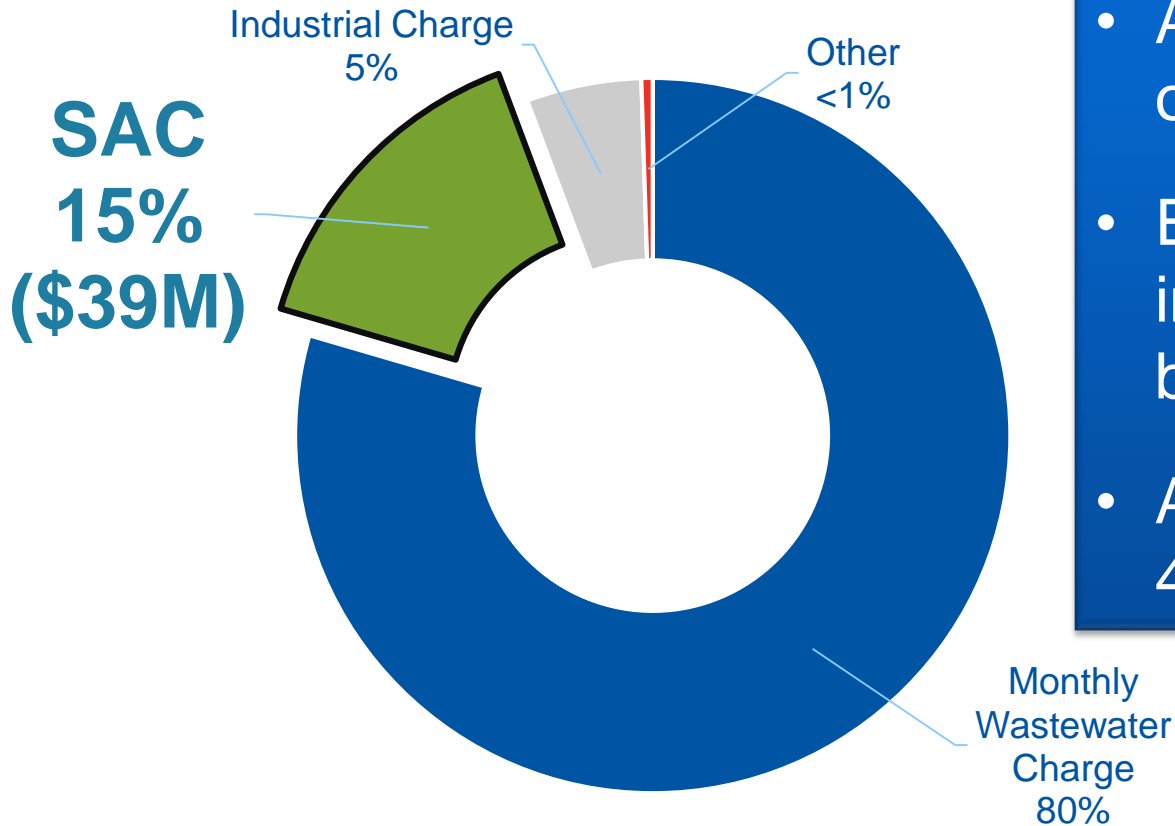
What is SAC?

- The Sewer Availability Charge, or SAC, is a one-time fee charged to local governments. (Some local governments also add additional fees to the SAC.)
- One single family home = 1 SAC unit
- Non-residential properties require a determination (or calculation) of the maximum potential wastewater capacity needed for the site.
- The Council charges SAC to local governments, who pass it on to business or property owners.



SAC is a critical revenue source

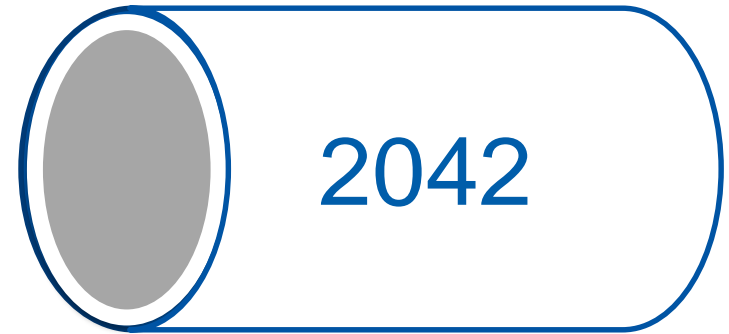
Sources (2017 Budget)



- A material component of waste water fees
- Elimination would increase monthly fees by ~20%
- Accrued benefits over 44 years

SAC allows MCES to build for the future, & charge in the future

- MCES builds pipes in anticipation of future growth, but distributes the cost over time and generations.
- SAC future-proofs our system, allowing *all* communities to grow



What was built in 1982



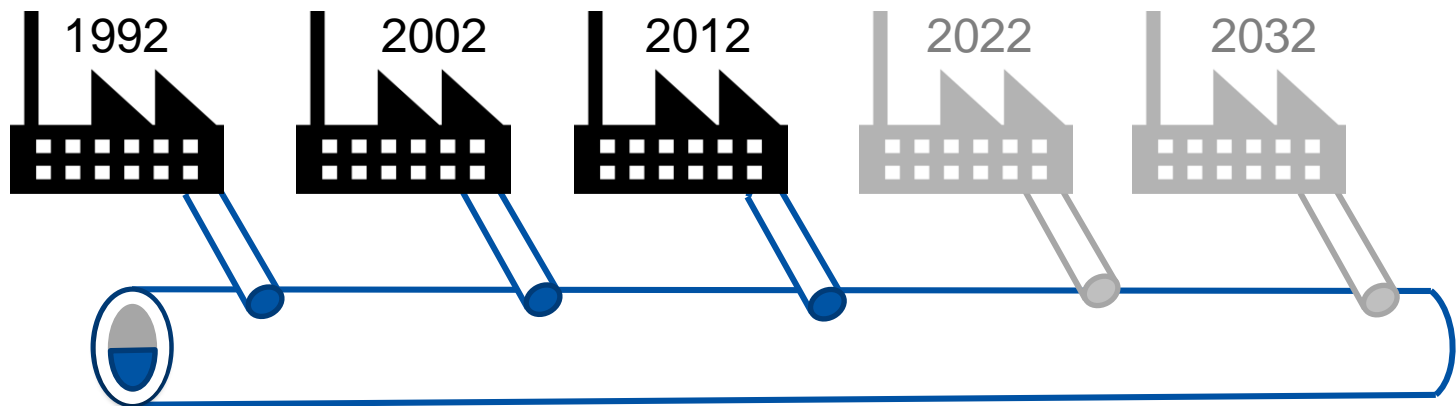
What was paid for in 1982



What was paid for in 2012

SAC serves the community

- Acts as a savings program: capacity built up front, users only pay when additional capacity is needed
- Promotes regional growth: development can occur anywhere in the region



- *Frequent meetings with stakeholders to verify the program serves its constituents*

2016-2017 Task Force Members

Chair

Wendy Wulff, *Metropolitan Council Member*

Community Government

James Dickenson, *Andover City Administrator*

Ron Hedberg, *Apple Valley Finance Director*

Sue Virnig, *Golden Valley Finance Director*

Merrill King, *Minnetonka Finance Director*

Katrina Kessler, *Minneapolis Public Works Director*

Kyle Klatke, *Brooklyn Park Plans Examiner*

Loren Olson, *Minneapolis Government Relations*

Kevin Schmieg, *Eden Prairie Building Official*

Brian Hoffman, *St Louis Park Building Official*

Bob LaBrossee, *Cottage Grove Building Official*

David Englund, *Roseville Building Official*

Steve Ubl, *St Paul Building Official*

Patricia Nauman, *Executive Director of Metro Cities*

Business Groups

Dan McElroy, *MN Hospitality representative (MN Restaurant Association)*

Tom Thomasser, *MN Chamber of Commerce representative (Summit Brewing)*

SAC is about providing capacity for the busiest day of the year

TCF Stadium

- Capacity (pipe size) needed for average flow VS.
- Capacity needed during a Gophers-Badger game

Result: 526 SAC



 Average Flow

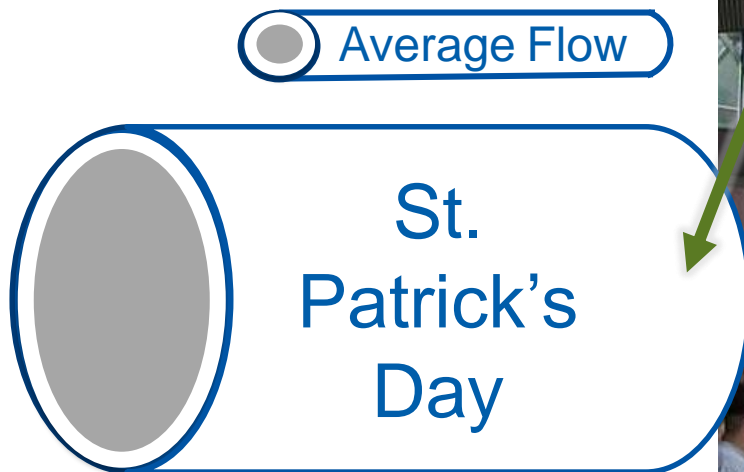
 Gophers-
Badgers
game

SAC is about providing capacity for the busiest day of the year

Irish Pub

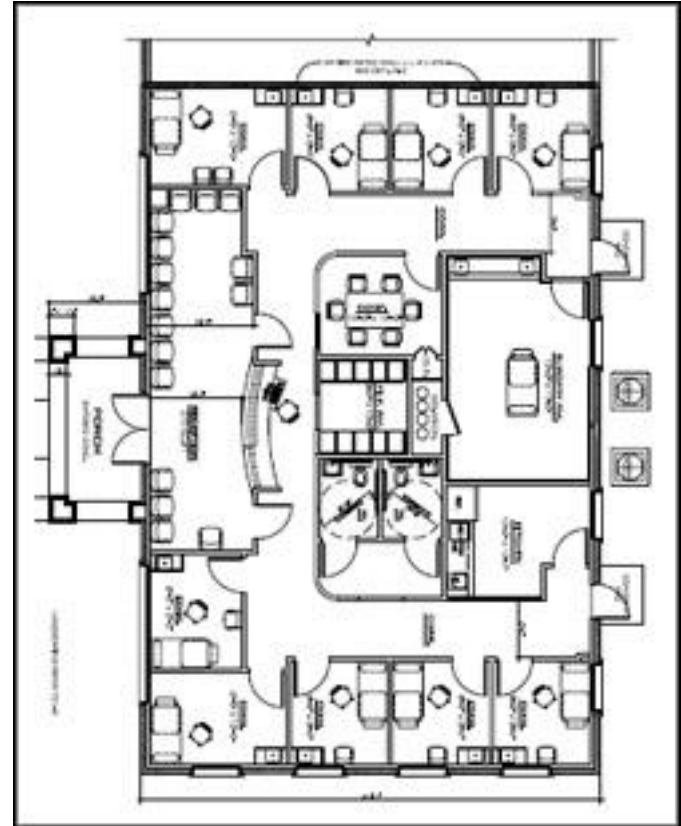
- Capacity (pipe size) needed for average flow VS.
- Capacity needed on St. Patrick's Day

Result: 41 SAC



SAC is only for increased capacity

- SAC is only charged when a new or existing business increases the capacity demand on the system
 - New construction
 - Remodel adds more seats
 - Remodel changes use to higher demand (e.g., bookstore to restaurant)
- There are programs to help small to medium businesses defer the cost of SAC



Questions?