Working Together to Advance Water Supply Planning in Minnesota

Ali Elhassan, Twin Cities Metropolitan Council
Water Supply Planning Manager
September 2019
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
Population using Public/Municipal Supply:
Groundwater 54%
Surface Water 25%
Private Wells 21%

Minnesota: Land of 10,000 Lakes!

3 Million People
Major Rivers of the Twin Cities Metropolitan Area
Water Supply Sources of the Twin Cities Metro Area

- 186 Cities and townships
- 100+ Water utilities

Legend:
- **Light Blue**: Groundwater: private wells
- **Dark Blue**: Groundwater: municipal wells
- **Blue**: Groundwater + Surface water: municipal wells, intakes
- **Green**: Surface water: municipal intakes
- **Black**: Private (domestic) well
Growing Population Increases Municipal Water Use

- 2017: 3,075,953
- 2020: 3,160,000
- 2030: 3,459,000
- 2040: 3,738,000

2015 Water Use: 350 Million Gallons per Day

2040 More Use: +100 Million Gallons per Day
Water Supply Planning

**Council Role**
- Develop a regional plan led by local input
- Maintain a database of technical information
- Assist communities in developing local water supply plans
- Identify approaches for emerging issues.
- **NOT Regulator and NOT Supplier**

**Advisory committee**
- Metro Area Water supply Advisory Committee
- Technical Advisory Committee

**Purpose**
- Assist and Guide Council water supply planning
- **Approve Regional Water Supply Plan**
Regional Modeling Question:

What are the cumulative aquifer impacts of long-term planned growth & water demand in the Twin Cities metropolitan area?

- Water Demand (Past & Projected)
- Climate
- Well Information
- Contaminant Plumes
- Water Levels
- Land Cover
- Infiltration & Recharge
- Aquifer Properties
- Baseflow
- And more...
Metro Model 3: Exploring Multiple Scenarios

Aquifer change under projected 2040 groundwater pumping:

- Over 40 feet of rebound
- No change
- Over 40 feet of decline

Source: 2015 Master Water Supply Plan
2015 Master Water Supply Plan

Desired Outcomes

- Increased collaboration
- Improved planning & plan implementation
- Sustainable approaches are implemented
- Source waters are protected
- Water conservation

Strategies

- Facilitate Collaboration
- Support for local planning & implementation
- Technical studies
- Conservation & reuse
- Investments
Collaboration: Water Supply Sub-Regional Workgroups

Effective Platform for Collaboration

“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
GOAL 1: Dependably and affordably provide a high-quality public water supply

STRATEGY 1.1: Protect the quality and quantity of the groundwater supply

ACTION: Encourage the continued development of a metropolitan groundwater model, as a tool to define aquifers and aquifer recharge areas and as a basis for aquifer protection and management.
Woodbury Comprehensive Plan: Water Demand

“For this analysis, it should be noted that while the population is projected to increase through 2040, the average and maximum daily water demand is projected to remain flat due to a reduced per capita usage over this period.”
Council grants help growing communities use water more efficiently

$500,000 Water Efficiency Grants

4,510 TOTAL DEVICES REPLACED
52 million gallons SAVED ANNUALLY

2,380 toilets
29.8 million gallons SAVED ANNUALLY

1,190 irrigation controllers
18 million gallons SAVED ANNUALLY

940 clothes washers
4.2 million gallons SAVED ANNUALLY

19 Communities
- High growth
- Groundwater source
MN Technical Assistance Program: Supporting Industrial Water Efficiency

North Memorial Health

North Memorial Health, a series of hospitals and clinics, is a not-for-profit, integrated health system. They are located in the twin cities, including Hennepin County, and serve a diverse community. North Memorial Health Hospital in Robbinsdale has 700 full-time employees and sees over 55,000 visits. Maple Grove Hospital was founded as a spin-off entity between North Memorial Health and Fairview and has 900 full-time employees and sees over 40,000 visits.

Project Background

Management at North Memorial Health was aware of their past success in reducing water consumption at hospitals. They began a focused effort to reduce the volume of water at North Memorial Health and Maple Grove Hospital by 2010. They introduced a variety of actions to reduce water usage and water waste.

Incentives To Change

North Memorial Health has been trying to push forward to reduce their environmental footprint. At North Memorial Health Hospital, over 100,000 gallons of water, in the form of natural gas, and 5 million kWh of energy were saved in 2011. A large network of water pumpage, water systems, and energy systems were reduced through the efforts of the hospital.

KapStone Container Corp.

KapStone Container Corp. is a manufacturer of corrugated paperboard and is located in Minneapolis, Minn. Their commitment is to provide outstanding environmental stewardship and to reduce their environmental impact. KapStone is a major player in the paper industry, and their efforts are widely recognized.

Project Background

Large volumes of paper waste are used for packaging and corrugated products are used for shipping. KapStone is committed to reducing their environmental footprint and has made significant efforts to reduce their paper waste and increase their recycling initiatives.

Incentives To Change

KapStone Container Corp. has set a goal to reduce their paper waste by 10% by 2020. This goal is part of their broader commitment to sustainability and reducing their environmental impact. The company has made significant investments in their recycling capabilities and has implemented new technologies to reduce their paper waste.

Aveda Corporation

Aveda Corporation is a global leader in the production of natural products, particularly in the area of personal care and beauty. They are committed to environmental stewardship and have implemented numerous initiatives to reduce their environmental impact.

Project Background

Aveda Corporation is committed to reducing their environmental footprint and has taken numerous steps to reduce their water and energy usage. They have implemented water-saving technologies and have increased their efforts to recycle and reduce their paper waste.

Incentives To Change

Aveda Corporation has set a goal to reduce their paper waste by 25% by 2025. This goal is part of their broader commitment to sustainability and reducing their environmental impact. The company has made significant investments in their recycling capabilities and has implemented new technologies to reduce their paper waste.

Conclusion

Overall, the companies profiled in this document have demonstrated a commitment to reducing their environmental impact and have implemented various initiatives to reduce their water and energy usage. Their efforts are examples of how companies can make a positive impact on the environment and reduce their environmental footprint.
“The Metropolitan Council plays a valuable facilitating role in the discussions and provides a regional perspective for the group. Council funding of the 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
What We Have Learned

Working together to achieve better results

• Collaborations
  • Engage stakeholders early

• Partnerships
  • Facilitate relationships building

• Learning from each other
  • Understand other’s perspectives
Groundwater Use
2011-2015 average is less than 2007-2010 average by 17 MGD

Are we heading in the right direction?
If you want to go fast, go alone.
If you want to go far,
GO TOGETHER.

African Proverb

Questions
Ali Elhassan
MCES Manager Water Supply Planning
ali.elhassan@metc.state.mn.us
651-602-1066