

MINNEAPOLIS – JOINT WATER COMMISSION

Joint Water Task Force

Final Report

August 2008

Prepared by:

ENVIRONMENTAL FINANCIAL GROUP, INC.

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22 August 2008

Councilmember Sandra Colvin Roy
City of Minneapolis
350 South Fifth Street
Minneapolis, MN 55415-1330

Mayor Linda Loomis
Joint Water Commission
c/o City of Golden Valley
7800 Golden Valley Road
Golden Valley, Minnesota 55427-4588

Re: Joint Water Task Force: Final Report

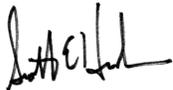
Dear CM Colvin Roy and Mayor Loomis:

Environmental Financial Group, Inc. (EFG) is pleased to provide to the City of Minneapolis and the Joint Water Commission the attached report documenting the work of the Joint Water Task Force that met between July 2005 and April 2008.

We are hopeful that the work of the task force will effectively set the course to strengthen a successful 40-year water supply partnership.

Thank you.

Very Truly Yours,
ENVIRONMENTAL FINANCIAL GROUP, INC.



Scott E. Harder, President

Cc: City of Minneapolis City Council
City of Golden Valley City Council
City of Crystal City Council
City of New Hope City Council
Joint Water Commission

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1 | Goals, Objectives and Accomplishments

The Joint Water Task Force (Task Force) came together in late 2005 to address several goals outlined in the 2003 Water Purchase Agreement between the City of Minneapolis (City) and the Joint Water Commission (JWC).

Goals

The water policy goals of the Task Force were as follows:

- ⇒ Compile and review existing technical planning information needed to make joint water supply planning decisions;
- ⇒ Consider a stronger governance role for the JWC;
- ⇒ Evaluate an emergency backup water supply;
- ⇒ Evaluate conjunctive use of JWC groundwater and Mississippi River water; and
- ⇒ Develop policy on emergency interconnections.

Work Process

The Task Force began its work by addressing various organizational matters and establishing a flow of work. Some of the ideas and issues that comprised these initial discussions included the following:

- ⇒ Choose chair, co-chair, other officers;
- ⇒ Consider work plan, budget and schedule at next meeting;
- ⇒ Set clear time, budget and schedule expectations/limits prior to proceeding;
- ⇒ Confirm joint staff support;
- ⇒ Structure quarterly meetings around each goal: 1/3 technical presentations, 2/3 discussion;
- ⇒ Invite Metropolitan Council, Department of Natural Resources, and Minnesota Department of Health to discuss roles and planning initiatives;
- ⇒ Organize discussion in a manner to encourage identification of discrete, and “votable” issues;
- ⇒ “All vote” supermajority to identify consensus and minority positions; and
- ⇒ Ongoing documentation with meeting minutes, report sections (technical memoranda), web portal.

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2 | Process

TABLE 1 | Joint Water Task Force Members

Name	Position	Representing
R.T. Rybak	Mayor	Minneapolis
Sandra Colvin Roy, Co-Chair	Council member	Minneapolis
Barbara Johnson	Council member	Minneapolis
Linda Loomis, Co-Chair	Mayor	Golden Valley
Bob Schaffer	Council member	Golden Valley
Tom Burt, JWC Chair	City manager	Golden Valley
ReNae Bowman	Mayor	Crystal
Mark Hoffman	Council member	Crystal
Anne Norris	City manager	Crystal
Martin Opem	Mayor	New Hope
Kirk McDonald	City manager	New Hope
Mary Gwin-Lenth, 2005-6	Council member	New Hope

TABLE 2 | Meeting Schedule

Topic	Date	Appendix
JWC Planning	July 20, 2005	A
Organizational	November 16, 2005	B
Kickoff and Chartering	January 11, 2006	C
Planning Information	March 22, 2006	D
Interconnections	November 15, 2006	E
Governance	March 21, 2007	F
Co-Chairs Committee	May 24, 2007	G
Advisory Governance and Conservation	September 13, 2007	H
Sustainable Strategies and Advisory Governance	April 22, 2008	I

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3 | Recommended Sustainable Strategies

Goals

- ⇒ Strengthen a 30-year regional water partnership;
- ⇒ Demonstrate a commitment to long-term water supply sustainability through conservation, climate-aware water supply planning, proactive drought planning and response, and preservation of future supplemental and emergency supplies; and
- ⇒ Celebrate stewardship of the Mississippi River.

Objectives

Position Minneapolis and its municipal partners to take advantage of emerging state and regional funding opportunities through:

- ⇒ Economies of scale;
- ⇒ “Best Practices” demand management policies and practices;
- ⇒ Grant-eligible projects offering substantial regional benefits; and
- ⇒ Stronger drought-management position with Federal government.

Collectively enhance water system sustainability by:

- ⇒ Providing advisory governance for effective budgetary and capital investment oversight;
- ⇒ Reducing material, energy, and greenhouse gas emissions;
- ⇒ Leveraging financial investments in system capacity through additional wholesale agreements;
- ⇒ Establishing interconnections with surrounding communities;
- ⇒ Maintaining future ability to supplement Mississippi River water with groundwater; and
- ⇒ Conserving and protecting Mississippi River supply.

Recommendations

- ⇒ Launch new Water Supply Advisory Board with budget and capital oversight; and
- ⇒ Commit to long-term water supply sustainability.

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4 | Recommended Water Advisory Board Concept

Purposes

The Water Supply Advisory Board shall communicate with and make recommendations to the City of Minneapolis regarding matters relating to its operation, maintenance, cost and cost apportionment, financing, operating budget, and capital planning.

Strengthen the regional water partnership through enhanced advisory governance with voting to be commensurate with the financial risks borne by each member.

Advocate for the protection of the Mississippi River surface water supply groundwater sources, and provide for the management of climate change impacts and water demand.

Membership

Minneapolis and wholesale customers shall be members. Members shall serve staggered, three-year terms.

Voting

Minneapolis shall maintain a minimum 51 percent of voting representation. Matters with the exception of approval of operating budgets and capital projects shall require a simple majority.

Operations

Advise on all matters pertaining to the quality and quantity of water deliveries to wholesale customers.

Finance

Advise on matters pertaining to Minneapolis Water Works annual operating budgets, capital improvement plans, and audits.

Duties and Responsibilities

- ⇒ Identify criteria to be considered in prioritizing capital improvement projects. Develop and recommend suggestions and recommendations to the proposed Capital Improvement Plan, specific capital projects, and in the capital planning and financing process.
- ⇒ Review and comment on the Minneapolis Water Works Capital Improvement Plan. Make a presentation to the Mayor of Minneapolis annually as part of the budgeting process.

- ⇒ Host an annual meeting to discuss the Capital Improvement Plan on a schedule sufficient to allow wholesale customers participation in Minneapolis Water Works capital budget review process.
- ⇒ Participate in review of the Minneapolis Water Works Operations and Maintenance budget. Ensure wholesale customers effectively participate in annual budget deliberations.
- ⇒ Review efforts to develop and implement water conservation and drought response plans. Make recommendations to the City of Minneapolis regarding demand management to ensure consistency in water conservation efforts throughout the service area. Advocate for the protection and prudent use of water resources.

A | Joint Water Commission Planning: July 20, 2005

Agenda

Meeting Minutes

Handouts

Presentations

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JOINT WATER COMMISSION

Water Planning and Governance Task Force

Meeting Notice

Wednesday, July 20, 2005

7:00 – 9:00 P.M.

Golden Valley City Hall – Council Conference Room

AGENDA

1. Introductions
2. Metropolitan Water Supply Planning Legislation – Status Report
3. Task Force Work Plan: Issues and Priorities
 - Stronger governance role for the JWC
 - Emergency backup supply
 - Conjunctive use of JWC groundwater and river water
 - Emergency interconnections with JWC neighbors
4. Draft Three-Meeting Organizational Phase
5. Background Documents
6. Other Business
7. Adjourn

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202.1 Sec. 147. [473.1565] [METROPOLITAN AREA WATER SUPPLY
202.2 PLANNING ACTIVITIES; ADVISORY COMMITTEE.]
202.3 Subdivision 1. [PLANNING ACTIVITIES.] (a) The Metropolitan
202.4 Council must carry out planning activities addressing the water
202.5 supply needs of the metropolitan area as defined in section
202.6 473.121, subdivision 2. The planning activities must include,
202.7 at a minimum:
202.8 (1) development and maintenance of a base of technical
202.9 information needed for sound water supply decisions including
202.10 surface and groundwater availability analyses, water demand
202.11 projections, water withdrawal and use impact analyses, modeling,
202.12 and similar studies;
202.13 (2) development and periodic update of a metropolitan area
202.14 master water supply plan that:
202.15 (i) provides guidance for local water supply systems and
202.16 future regional investments;
202.17 (ii) emphasizes conservation, interjurisdictional
202.18 cooperation, and long-term sustainability; and
202.19 (iii) addresses the reliability, security, and
202.20 cost-effectiveness of the metropolitan area water supply system
202.21 and its local and subregional components;
202.22 (3) recommendations for clarifying the appropriate roles
202.23 and responsibilities of local, regional, and state government in
202.24 metropolitan area water supply;
202.25 (4) recommendations for streamlining and consolidating
202.26 metropolitan area water supply decision-making and approval
202.27 processes; and
202.28 (5) recommendations for the ongoing and long-term funding
202.29 of metropolitan area water supply planning activities and
202.30 capital investments.
202.31 (b) The council must carry out the planning activities in
202.32 this subdivision in consultation with the metropolitan area
202.33 water supply advisory committee established in subdivision 2.
202.34 Subd. 2. [ADVISORY COMMITTEE.] (a) A metropolitan area
202.35 water supply advisory committee is established to assist the
202.36 council in its planning activities in subdivision 1. The
203.1 advisory committee has the following membership:
203.2 (1) the commissioner of agriculture or the commissioner's
203.3 designee;
203.4 (2) the commissioner of health or the commissioner's
203.5 designee;
203.6 (3) the commissioner of natural resources or the
203.7 commissioner's designee;
203.8 (4) the commissioner of the pollution control agency or the
203.9 commissioner's designee;
203.10 (5) two officials of counties that are located in the
203.11 metropolitan area, appointed by the governor;
203.12 (6) five officials of noncounty local governmental units
203.13 that are located in the metropolitan area, appointed by the
203.14 governor; and
203.15 (7) the chair of the Metropolitan Council or the chair's
203.16 designee, who is chair of the advisory committee.
203.17 A local government unit in each of the seven counties in
203.18 the metropolitan area must be represented in the seven
203.19 appointments made under clauses (5) and (6).
203.20 (b) Members of the advisory committee appointed by the

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203.21 governor serve at the pleasure of the governor. Members of the
203.22 advisory committee serve without compensation but may be
203.23 reimbursed for their reasonable expenses as determined by the
203.24 Metropolitan Council. The advisory committee expires December
203.25 31, 2008.
203.26 (c) The council must consider the work and recommendations
203.27 of the advisory committee when the council is preparing its
203.28 regional development framework.
203.29 Subd. 3. [REPORTS TO LEGISLATURE.] The council must submit
203.30 reports to the legislature regarding its findings,
203.31 recommendations, and continuing planning activities under
203.32 subdivision 1. The first report must be submitted to the
203.33 legislature by the date the legislature convenes in 2007 and
203.34 subsequent reports must be submitted by such date every five
203.35 years thereafter.
203.36 [EFFECTIVE DATE.] This section is effective the day
204.1 following final enactment and applies in the counties of Anoka,
204.2 Carver, Dakota, Hennepin, Ramsey, Scott, and Washington.

216.12 Sec. 158. [USE OF CREDIT ENHANCEMENT PROGRAM FUNDS.]
216.13 The Metropolitan Council must transfer any funds
216.14 originating from the proceeds of solid waste bonds and available
216.15 for the credit enhancement program under Minnesota Statutes
216.16 2004, section 473.197, subdivision 4, to the council's general
216.17 fund to the extent such funds are no longer pledged or otherwise
216.18 needed by the council to maintain a debt reserve fund as
216.19 provided for in ongoing Minnesota Statutes, section 473.197,
216.20 subdivision 4. The council must first use the transferred funds
216.21 for carrying out the metropolitan area water supply planning
216.22 activities required by Minnesota Statutes, section 473.1565, for
216.23 staff support of the advisory committee established under that
216.24 section, and for related purposes. If the council determines
216.25 that the transferred funds are no longer needed for such
216.26 purposes, the council may use any such funds for any general
216.27 purposes of the council.
216.28 [EFFECTIVE DATE.] This section is effective the day
216.29 following final enactment and applies in the counties of Anoka,
216.30 Carver, Dakota, Hennepin, Ramsey, Scott, and Washington.

343.27 final agency action have been exhausted or have expired.

JOINT WATER COMMISSION
Water Planning and Governance Task Force
Work Plan Items

Goal: *Compile and Review Existing Technical Planning Information
Needed to Make Sound Water Supply Planning Decisions*

Objectives:

1. Examine MWW water supply, treatment and distribution system
2. Examine JWC water storage and distribution system
3. Examine and compile JWC water supply and treatment planning information
4. Understand planning needs and information “gaps”
5. Understand opportunities and constraints

Time Frame: 4th Quarter, 2005

Resources: To Be Determined

Outcomes:

1. White paper technical planning information summary
2. Compilation of other background documents
3. Others?

JOINT WATER COMMISSION
Water Planning and Governance Task Force

Work Plan Items

Goal: *Consider a stronger governance role for the JWC*

Objectives:

1. Examine Minneapolis charter, MWW organization and responsibilities, JWC organization and powers
2. Examine JWC organization and powers
3. Examine application of nationwide and other models to MWW/JWC relationship

Time Frame: 4th Quarter, 2005 – 1st Quarter 2006

Resources: To Be Determined

Outcomes:

1. White paper describing regional models and applicability to MWW/JWC partnership
4. Consensus position on expanded JWC role in matters concerning capital investment in water treatment and water supply
5. Articulation of the feasibility of regional water board concept to be implemented if Met Council purview expanded to regulation of metropolitan area water supply development
6. Others

JOINT WATER COMMISSION
Water Planning and Governance Task Force

Work Plan Items

Goal: *Develop an emergency backup water supply*

Objectives:

1. Examine St. Paul interconnect project
2. Examine other emergency backup alternatives, available to the JWC, MWW, or both
3. Evaluate engineering, cost sharing, financing, and institutional issues
4. Establish consensus position for blueprint for emergency backup water supply

Time Frame: 1st Quarter 2006 – 3rd Quarter 2006

Resources: To Be Determined

Outcomes:

1. White paper describing planning basis for emergency backup water supply
2. White paper describing hydraulic, water quality, regulatory, financial and political aspects of backup supply development
3. Articulation of a blueprint for emergency backup water supply development
4. Others

JOINT WATER COMMISSION
Water Planning and Governance Task Force
Work Plan Items

Goal: *Develop plans to use JWC groundwater as a supplemental water supply to Mississippi River water*

Objectives:

1. Examine water demands and supply options
2. Examine joint supply alternatives, including pipeline hydraulics, seasonal supplies, emergency-only, aquifer storage and recovery, and others
3. Examine engineering, cost sharing, financing, and institutional issues
4. Develop consensus position on feasibility of the use of JWC groundwater supplies as a backup or supplemental supply to Minneapolis and the JWC

Time Frame: 4th Quarter 2006

Resources: To Be Determined

Outcomes:

1. White paper describing integrated river water and groundwater supply system for Minneapolis/JWC
2. Others

JOINT WATER COMMISSION
Water Planning and Governance Task Force
Work Plan Items

- Goal: *Develop emergency interconnections between JWC and its neighbors*
- Objectives:
1. Examine homeland security issues
 2. Evaluate opportunities for interconnections (meet with neighbors, examine possible points of interconnection)
 3. Evaluate hydraulic and water quality (blending) considerations
 4. Address liability, legal concerns
 5. Develop consensus position on JWC interconnections and impacts on MWW
- Time Frame: 4th Quarter 2006
- Resources: To Be Determined
- Outcomes:
1. White paper describing emergency interconnections and related hydraulic and water quality concerns
 2. Articulation of the feasibility of such interconnections and rules and regulations for their use
 3. Others

JOINT WATER COMMISSION
Water Planning and Governance Task Force
Three-Meeting Organizational Phase

Meeting #1: *Minneapolis/JWC Agreement and Task Force Charge*

Time Frame: September 2005

- Objectives:
1. Introductions
 2. Minneapolis/JWC Agreement
 3. Membership and Support Resources
 4. Goals and Objectives
 5. Consensus Model
 6. Other Housekeeping

Meeting #1: *Task Force Work Plan and Schedule*

Time Frame: October 2005

- Objectives:
1. Membership
 2. Draft Work Plan
 3. Draft Schedule
 4. Resources and Constraints

Meeting #1: *Charter*

Time Frame: November 2005

- Objectives:
1. Charter
 2. Final Work Plan
 3. Meeting Schedule through 2006

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B | Organizational: November 16, 2005

Agenda

Meeting Minutes

Handouts

Presentations

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**MINNEAPOLIS -- JOINT WATER COMMISSION
Joint Water Planning and Governance Task Force
Organizational Meeting**

November 16, 2005 6:00 PM to 8:00 PM
Minneapolis City Hall Room 333

WORKING AGENDA

Introductions

R. T. Rybak, Mayor
Sandra Colvin-Roy, Councilmember
Barb Johnson, Councilmember
Klara Fabry, Director of Public Works
Shahin Rezania, Interim Director of Water Works

Linda Loomis, Mayor
Scott Grayson, Councilmember
Tom Burt, City Manager

Mark Hoffmann, Councilmember
ReNae Bowman, Mayor
Anne Norris, City Manager

Mary Gwin-Lenth, Councilmember
Steve Sommer, Councilmember
Dan Donahue, City Manager

Scott Harder, Environmental Financial Group, Inc.
Others

Purpose of Meeting

1. *Review Minneapolis/JWC water purchase agreement (30 minutes)*
2. *Discuss agreement provisions related to joint task force (30 minutes)*
3. *Provide input into development of goals, objectives, work plan, schedule, and consensus model (60 minutes)*
4. *Review recent JWC groundwater development efforts and Minneapolis peer review (if time allows)*

Minneapolis/JWC Agreement

1. *Presentation by Shahin Rezania, MWW and Scott Harder, Environmental Financial Group, Inc.*
2. *Discuss provisions in agreement related to joint task force*

Task Force Goals and Recommended Work Plan Elements

1. *Compile and review existing technical planning information needed to make joint water supply planning decisions*

Recommended Work Plan Elements:

- a. Review MWW water supply, treatment and distribution system
- b. Review JWC water storage and distribution system
- c. Examine and compile JWC water supply and treatment planning information
- d. Identify planning needs and information “gaps”
- e. Identify opportunities and constraints

2. Goal from Agreement: *Consider a stronger governance role for the JWC*

Recommended Work Plan Elements:

- a. Examine Minneapolis Charter, MWW organization, CLIC, CEAC
- b. Examine JWC intergovernmental agreement, organization and powers
- c. Examine application of national and other models to MWW/JWC relationship

3. Goal from Agreement: *Evaluate an emergency backup water supply*

Recommended Work Plan Elements:

- a. Examine St. Paul interconnect project
- b. Examine other emergency backup alternatives, available to the JWC, MWW, or both

- c. Evaluate engineering, cost sharing, financing, and institutional issues
- d. Establish consensus position for emergency backup water supply

4. Goal from Agreement: Evaluate conjunctive use of JWC groundwater and MWW Mississippi River water

Recommended Work Plan Elements:

- a. Examine/review water demands and supply options
- b. Examine/review joint supply alternatives, including pipeline hydraulics, seasonal supplies, emergency-only, aquifer storage and recovery, and others
- c. Examine/review engineering, cost sharing, financing, and institutional issues
- d. Develop consensus position on feasibility of the use of JWC groundwater supplies as a backup or supplemental supply to Minneapolis and/or the JWC

5. Goal from Agreement: Develop policy on emergency interconnections

Recommended Work Plan Elements:

- a. Examine homeland security issues
- b. Evaluate opportunities for interconnections
- c. Evaluate hydraulic and water quality (blending) considerations
- d. Address liability, legal concerns
- e. Develop consensus position on JWC interconnections and impacts on MWW

Task Force Process

1. Up to four year process
2. Interim Report in 2 years (optionally separate reports)
3. Final Report in 3 years (optionally separate reports)

Recommended Work Flow and Consensus Process

- a. Choose chair, co-chair, other officers
- b. Consider work plan, budget and schedule at next meeting
- c. Set clear time, budget and schedule expectations/limits prior to proceeding
- d. Confirm joint staff support
- e. Structure quarterly meetings around each goal: 1/3 technical presentations, 2/3 discussion
- f. Invite Met Council, DNR and Health Department to discuss roles and planning initiatives
- g. Organize discussion in a manner to encourage identification of discrete, "votable" issues
- h. "All vote" supermajority to identify consensus and minority positions
- i. Ongoing documentation with meeting minutes, report sections (technical memoranda), web portal

JWC Groundwater Development Efforts (if time allows)

1. *Presentation by Scott Harder, Environmental Financial Group, Inc.*
2. *Discuss potential benefits to Minneapolis and JWC regional partnership*

Minneapolis Capacity and SCADA Peer Review (if time allows)

3. *Presentation by Shahin Rezaia, MWW*
4. *Discuss potential benefits to Minneapolis and JWC regional partnership*

Next Meeting

**MINNEAPOLIS -- JOINT WATER COMMISSION
Joint Water Planning and Governance Task Force
Organizational Meeting**

BACKGROUND INFORMATION

- 1. Minneapolis – Joint Water Commission Agreement**
- 2. History of Joint Water Commission Governance**
- 3. Executive Summary from JWC Aquifer Investigations (2003)**

**MINNEAPOLIS - JOINT WATER COMMISSION
WATER AGREEMENT - 2004**

This agreement made and entered into as of the 1st day of January, 2004, by and between the City of Minneapolis, a municipal corporation in Hennepin County, Minnesota, and the Joint Water Commission (“JWC”), a joint powers board formed pursuant to Minn. Stat. §471.59 by the cities of Golden Valley, Crystal and New Hope, Minnesota, all municipal corporations in Hennepin County, Minnesota,

WITNESSETH

RECITALS

WHEREAS, the City of Minneapolis operates a municipal water system known as the Minneapolis Water Works (“MWW”);

WHEREAS, it is deemed desirable by the City of Minneapolis and the JWC that the City of Minneapolis, through the MWW, sell water to the JWC pursuant to Minn. Stat. 471.59 and that the JWC receive water produced by the MWW;

WHEREAS, the MWW produces water in quantities sufficient to meet the obligations of this Agreement;

WHEREAS, the JWC has in place a water works system that serves the cities of New Hope, Crystal and Golden Valley;

WHEREAS, the City of Minneapolis has for many years via the MWW sold water to the JWC under arrangements that have served to the mutual advantage of the parties;

WHEREAS, the parties have a demonstrated history of mutual cooperation in the administration of the past agreement for the delivery of water by the City of Minneapolis through the MWW to the JWC;

WHEREAS, it is convenient for the purpose of this Agreement to refer to the City of Minneapolis in connection with the delivery of water hereunder and the other obligations pursuant to this Agreement as the MWW;

NOW THEREFORE, it is mutually agreed as follows:

1. Definition of Capitalized Terms.

- A. “Agreement” means this Agreement between the City of Minneapolis and the Joint Water Commission.
- B. “AWWA” means the American Water Works Association presently headquartered in Denver, Colorado.
- C. “Base - Extra Capacity Method” – see cost of service methodology defined below.
- D. “Base Needs”. The average daily water demand of JWC customers collectively during the months of December, January and February, as defined for emergency purposes in Section 6B.
- E. “Cost of Service Methodology”. The methodology to be used by MWW to determine the cost of providing water to the JWC. It refers specifically to the “Base - Extra Capacity Method” of allocating Cost of Service as described in the M1 Manual of Water Supply Practices published by the AWWA. As applied to this Agreement, “Cost of Service Methodology” defines the revenue requirements of the MWW on a utility basis as set forth in the M1 Manual and will be implemented using the cost of service analysis described in Section 6(B) in determining applicable water rates. The utility basis defines the costs of service as the sum of operations and maintenance costs, an allowance for depreciation and an allowance for return on capital. However, as used herein the definition of “Cost of Service Methodology” limits the revenue requirements of the MWW to operations and maintenance costs plus an allowance for depreciation but with return on capital set equal to zero. In other words, no allowance for return on capital.
- F. “Energy Surcharge”. A charge levied by a supplier of energy to a

customer in response to exceedence of a negotiated maximum level of energy usage during times of peak energy demand control.

- G. “Extra Ordinary Transfer”. The transfer of funds from the Water Works Fund to any other fund of the City of Minneapolis without the receipt of services in return therefore or the transfer to the Water Works Fund from any other fund of the City of Minneapolis where no services are provided in return for the transfer.
- H. “JWC”. The Joint Water Commission formed by the cities of Golden Valley, Crystal and New Hope in Hennepin County, Minnesota, pursuant to Minn. Stat. §471.59.
- I. “Minneapolis Inside City Residential Rate”. The published price charged to residential customers living within the Minneapolis city limits expressed on a dollars per hundred cubic feet (HCF) basis. The published price may involve a rate structure involving more than a single rate per HCF, based upon season, volume of water consumed or any other variable factor that is reasonable. The JWC rate will be based on the percentage of the Minneapolis Inside Residential Rate as determined by the “Cost of Service Methodology” as described in Section 1(E) using the Cost of Service analysis of Section 6(B).
- J. “MWW”. The City of Minneapolis, a municipal corporation in Hennepin County, Minnesota, as the operator of the Minneapolis Water Works.
- K. “Off Peak”. A restriction of water delivery to those times of the day of lowest Minneapolis internal water demand.
- L. “Points of Delivery”. The connection points of the MWW distribution system to the JWC facilities where water is delivered by the MWW to the JWC. The points of delivery are those connection points which are

immediately upstream of JWC metering stations located near the Golden Valley and Crystal reservoirs where water is delivered to the JWC.

- M. “Rate Index”. The water rate charged by MWW to JWC expressed as a percentage of the Minneapolis Inside City Residential Rate.
- N. “Total Revenue”. All sources of revenue presented on an audited income statement except borrowed funds, bond proceeds and other non-operating income such as federal, state, county or other outside revenue.
- O. “Water”. Water at a point of delivery that conforms to the Federal Safe Drinking Water Act as well as all applicable state or other environmental regulations relating to potable Water.
- P. “Customer“. As the term is used in this Agreement, Customer is a person, business, or entity recipient of water under this Agreement, other than the JWC or a municipality that is a member of the JWC.
- Q. “Outside Customer”. Persons, businesses, or entities outside the jurisdictional boundaries or corporate limits of the three cities constituting the JWC, Golden Valley, Crystal, and New Hope, but may include a municipality other than the members of the JWC at the time of the execution of this agreement.

2. Sale of Water.

- A. The MWW shall sell, furnish and deliver to JWC Water from the water works system of Minneapolis for the use of JWC within the corporate limits of the Cities of Golden Valley, Crystal and New Hope and to the limited extent hereinafter provided, outside those corporate limits, for a period of twenty (20) years in accordance with the terms and conditions of this Agreement.

- B. JWC shall resell Water purchased from the MWW exclusively to Customers located within the city limits of Golden Valley, Crystal and New Hope or other outside customers served by the JWC as of the execution date of this Agreement. On the date of execution of this Agreement, the JWC shall provide to the MWW, a written list that identifies the JWC's Outside Customers existing at the date of execution. The JWC shall obtain prior written approval from MWW to supply Water to additional new Outside Customers located outside the city limits of the three cities. Approval to supply water to additional Outside Customers, other than municipalities, shall not be unreasonably withheld.
 - C. MWW shall provide Water to the JWC as meets the definition of Water set forth in Section 1(O) above. Should the quality of the Water deviate from the standard set forth in the definition of Water in Section 1(O) above, MWW shall promptly inform the JWC thereof and address the deviation within a reasonable period of time. The JWC may review any water quality data maintained by MWW upon one-week prior notice. In the event of operational or water quality problems in the JWC Water system upstream of the Points of Delivery, both parties pledge to work cooperatively to resolve them in a timely manner.
3. Supply of Water
- A. The MWW will deliver up to the maximum amount of 21 million gallons of Water per day. The parties agree to develop and maintain a daily delivery schedule with an emphasis on "Off Peak" delivery and considering the water demand profile of the JWC.
 - B. The maximum amount to be delivered per day shall not be increased without subsequent written agreement executed by the parties, provided

however that if requested by the JWC, the MWW shall deliver Water on an intermittent but not sustained basis in excess of the 21 million gallons per day Off Peak provided such excess is available for delivery.

- C. In the event that the JWC develops a need to increase the maximum daily Water limit, the parties agree to negotiate in good faith a delivery schedule and rate to meet that need. The JWC understands however that MWW may be unable to meet that need due to the limited capacity in the MWW System. If such capacity is available, either On-Demand or Off Peak, MWW agrees to apply Cost of Service Methodology to determine an appropriate rate to apply to the sale of the additional Water.
- D. If increased maximum daily water limit requested under Section 3(C) is unavailable on a sustained basis, the JWC, after written notice to the MWW of the JWC's intent to supplement, may supplement water from sources other than the MWW. The JWC may develop an emergency backup water supply from other sources, including groundwater, should the MWW be unable to develop an emergency backup water supply similar to that envisioned in its plans to develop an interconnection with St. Paul. IF JWC develops an emergency backup water supply, this supply may be used only if the MWW notifies the JWC that the MWW is unable to supply the JWC's needs as defined in Sec. 3(A).
- E. The MWW shall deliver the Water to the JWC at the Points of Delivery.

4. Obligation of JWC

- A. JWC Facilities. JWC shall construct, own, operate and maintain the water distribution system and storage facilities necessary to supply Water to its consumers from the Points of Delivery. JWC shall make investments in, and own all facilities necessary to the metering,

transmission, storage and distribution of Water from the existing Points of Delivery. JWC shall finance and maintain, at no expense to the MWW, its entire water system from the Points of Delivery to and within JWC.

Reliable records of construction and maintenance sufficient to identify the location of all parts of such system shall be kept, all of which shall be subject to inspection by the MWW upon one week prior notice.

- B. Measurement of Water. Water delivered pursuant to this Agreement shall be measured by meters to be furnished and maintained by the JWC at its own cost and expense at existing locations. Such meters shall be subject to periodic inspection and testing by the MWW and verified by the JWC according to the AWWA standards for frequency of testing, accuracy and tolerances of such meters. The cost of testing shall be paid by the JWC.

5. Operations

- A. Working in territory of the other. The MWW and the JWC shall follow the right of way ordinances and permitting requirements of the cities in which work is carried out.
- B. Temporary Suspension of Service by MWW. Subject to the conditions and limitations set forth herein, when necessary to make repairs to, or changes in, its lines or system, the MWW may, without incurring any liability therefore, suspend service for such periods as may reasonably be necessary. Unless such repairs or changes are due to an emergency, the MWW agrees to provide the JWC with reasonable advance notice of the suspension in service and the repairs and changes to be made, and to cooperate with the JWC to adjust the daily delivery schedule in anticipation of the suspension of service. The parties recognize that such emergency temporary service interruptions may involve restrictions that

apply to all Minneapolis customers. In accommodating the needs of the JWC during periods when service is suspended, both emergency and otherwise, the JWC shall receive the same consideration as given to Minneapolis inside-city customers. The MWW shall not incur any liability for interruptions in service which result from its failure to supply Water due to the inability to secure processing materials, breakdown or damage to processing, pumping, transmission or distribution facilities, acts of war, sabotage, work stoppage, labor disruptions or conditions or circumstances beyond the authority of the MWW to control.

6. Water Rate

- A. Rates for calendar years 2004 through 2008 inclusive. The rate for Water sold to the JWC by the MWW up to 21 million gallons per day shall for the period January 1, 2004 to December 31, 2008 be as set out in **Attachment A**, subject however to any applicable Energy Surcharge calculated pursuant to Section 7 or adjustments due to Extra Ordinary Transfers pursuant to Section 8.
- B. Establishing rates for period of the Agreement beyond 2008. For the period after the year 2008, Water purchased by the JWC shall be at rates which are fair and equitable, calculated in accordance with the Cost of Service Methodology. Utilizing the Cost of Service Methodology, the MWW shall conduct a Cost of Service analysis using the calendar year 2007 data to serve as the basis for establishing the Water rates that will apply for the five-year period beginning January 1, 2009. In establishing the Water rate for the JWC, all costs of service which are incurred to provide Water to other customers of the City of Minneapolis but which are not incurred in providing Water to the JWC shall be set aside. In this

fashion the rate to be charged to the JWC will be expressed as a percentage of the Minneapolis – Inside City Residential Rate, based upon the second- to-the-last year’s study of the preceding 5 year period. For example, if it is determined, utilizing Cost of Service Methodology using 2007 data, that it cost 45% less to provide Water to the JWC than to a Minneapolis resident customer, then the rate applicable to the JWC for years 2009 through 2013 shall be indexed at 55% of the Minneapolis – Inside Residential Rate for the five-year period beginning January 1, 2009 and through December 31, 2013. Thus whatever the Minneapolis – Inside City Residential Rate might be at any point during the five-year period, for purposes of this example the JWC rate would be 55% thereof. The five-year periods consist of calendar years 2004 through 2008, 2009 through 2013, and 2014 through 2018.

Similar Cost of Service studies utilizing in each case the Cost of Service Methodology, shall be conducted at five-year intervals through the term of this Agreement and shall be completed and submitted to the JWC by June 31 of the last year of each five-year period, circumstances permitting. The Cost of Service studies shall be subject to JWC review of accuracy of the methodology and costs.

Water sold to the JWC by the MWW in excess of 21 million gallons per day shall at any time during the course of this Agreement be priced at a surcharge of 15% applied to the entire daily purchase unless the maximum amount of 21 million gallons of Water a day has been increased to a higher maximum amount pursuant to a written agreement pursuant to the

provisions of Section 3, in which case the 15% surcharge shall be applied only if that new higher maximum rate is exceeded.

7. Energy Surcharge

- A. Calculating the Energy Surcharge. This section defines the circumstances under which the JWC would reimburse Minneapolis for the JWC's portion of any Energy Surcharge and how the JWC's portion would be calculated. The calculation of any Energy Surcharge shall be based on the total scheduled Water demand requirement of Minneapolis (hereinafter the "Cumulative Minneapolis Water Demand". The Cumulative Minneapolis Water Demand is comprised of (a) Minneapolis' own portion of this total Water demand, (b) the "JWC Water Demand", which is the scheduled Water demand of the JWC then in effect per the delivery schedule, and (c) the scheduled Water demand of other suburbs or individuals that contract with Minneapolis for Water. When the energy level required to deliver the Cumulative Minneapolis Water Demand exceeds the negotiated maximum level with the energy supplier during times of peak energy demand control, Energy Surcharges may be imposed by the energy supplier.
- B. Liability for Charges. When Energy Surcharges have been levied by the energy supplier, the JWC will be responsible for reimbursing Minneapolis for a portion of the surcharges if (1) deliveries of Water to the JWC have occurred on the dates and during the times surcharges are imposed, and (2) the gallonage of the deliveries to the JWC on those dates and times exceed the scheduled daily JWC water demand in effect at that time.
- C. JWC Share of Surcharge. When Energy Surcharges have been levied and the JWC has received Water deliveries in excess of the scheduled JWC

Water Demand as described above, the JWC will reimburse Minneapolis for JWC's pro-rata share of those surcharges. The JWC's pro-rata share is the ratio of the amount of Water delivered to the JWC in excess of the scheduled JWC Water Demand to the total amount of Water in excess of the Cumulative Minneapolis Water Demand. The Energy Surcharges to be paid pursuant to this Section are not a part of the rates or of the rate calculations described in other sections of this Agreement, but are one-time charges added to the regular monthly Water billings.

- D. Notice. In the event that the JWC requests delivery of Water in excess of the scheduled delivery during times when Energy Surcharges are in effect, the MWW will inform the JWC of the surcharge requirement.
- E. Access to Records. The JWC shall have reasonable access to the records used to determine the surcharge apportionment described above.

8. Adjustment in Rates Due to Transfers of Water Funds

- A. The rates for Water sold by Minneapolis to the JWC shall be adjusted as necessary to reflect any Extra Ordinary Transfers. Though such transfers are not anticipated or intended, this Section will describe the adjustment of rates which shall occur in those events. In the event that Extra Ordinary Transfers occur the MWW shall notify the JWC of that fact within thirty (30) calendar days of the approval of a budget or budget change that relates to such a transfer of monies. Adjustments to the rate charged to the JWC shall thereafter be made as follows:
- B. The amount of the Minneapolis Water Works revenues transferred to the Minneapolis General Fund, or the amount of Minneapolis General Fund monies transferred to the Minneapolis Water Works Fund, whichever may be applicable, shall first be expressed as a percentage of the Total Revenue

of the approved budget to Minneapolis Water Works in the calendar year of the transfer.

- C. In response to an Extra Ordinary Transfer, the MWW shall adjust the Rate index accordingly through the application of the Cost of Service Methodology and the revenue requirements defined therein.

9. Consumer Volume Restrictions

Any restrictions imposed by the MWW upon its own consumers shall be simultaneously imposed by the JWC upon its consumers providing the cities of Golden Valley, Crystal, and New Hope are timely notified by the MWW. MWW will not require the JWC to impose any restriction on JWC customers that are not imposed on MWW customers except in the event of routine JWC exceedance of contract limits defined in Sec. 3 (A), and for nonpayment of water bills as required pursuant to Sec. 10, and in emergencies such as a pipe rupture affecting JWC customers but not other MWW customers. The JWC shall make reasonable efforts to achieve a goal of 18 million gallons per day (mgd) maximum daily purchase.

10. Meter Reading and Billing

Meter reading and billing for services provided under this contract shall be in accordance with current MWW practices as established by the MWW and are subject to change at any time by the MWW. Such services shall be provided to the JWC by the MWW without discriminating against the JWC. However, payments for billed services shall be made by JWC to the MWW within thirty days of the invoice date for water purchased during the previous calendar month.

11. Indemnification by JWC

JWC agrees to indemnify and save Minneapolis harmless from any and all claims or demands for damages arising out of JWC's operations or the actions or neglect

of JWC's officers, employees or agents, relating to this Agreement or relating to the transport, use or disposal of Water supplied pursuant to this Agreement, or from the use, installation, maintenance and repair of JWC's facilities downstream from the points of delivery of Water to the JWC as set forth in this Agreement, and will assume the defense of any actions arising therefrom in which Minneapolis is made party defendant; Minneapolis shall give JWC prompt notice of any such action. The foregoing indemnification, and any liability assumed by JWC as a result thereof, shall be subject to the limits of liability and other provisions set forth in Minnesota Statutes, Chapter 466.

Nothing in this Agreement constitutes a waiver of defenses or liability limits available to the JWC under law.

12. Indemnification by Minneapolis

Minneapolis agrees to indemnify and save JWC harmless for any and all claims based on the quality of the Water supplied to JWC by Minneapolis to the points of delivery, as described in Section 1(L) of this Agreement, which claims arise or may result from Minneapolis' operations or the actions or neglect of Minneapolis' officers, employees or agents pursuant to this Agreement, or from the use, installation, maintenance and repair of Minneapolis facilities inside or outside of Minneapolis or the reading of JWC's master meters by Minneapolis personnel, and will assume the defense of any actions arising therefrom in which JWC is made a party defendant. JWC shall give Minneapolis prompt notice of such action. The forgoing indemnification, and any liability assumed by Minneapolis as a result thereof, shall be subject to the limits of liability and other provisions set forth in Minnesota Statutes, Chapter 466, and subject to the limitations on MWW liability contained in Sec. 5(B).. Nothing in this Agreement constitutes a waiver of defenses or liability limits available to the MWW under law.

13. Amendment, Modification or Waiver

No amendment, modification or waiver of any condition, provision or term of this Agreement shall be valid or of any effect unless made in writing, signed by the party or parties to be bound or their duly authorized representative, and specifying with particularity the extent and nature of such amendment, modification or waiver. Any waiver by either party of any breach or default of this Agreement shall not impair or prejudice any right arising from any other breach or default.

14. This Agreement supercedes all other agreements and understandings between the JWC and MWW.

15. Default or Breach and Remedies

A. In the event that either party determines that the other is in default of, or has breached any of the terms or provisions of this Agreement, that party shall provide written notice to the other party. Notice shall state in particular the manner in which the Agreement has been violated. The party so notified shall have a reasonable period of time to correct the conditions specified in the notice, however the parties acknowledge that Minnesota Statutes §471.425, subd.2 (c) requires prompt payment by a joint powers organization within 45 days of receipt of the invoice.

B. Should the alleged default or breach relate to a matter of public health or safety, and the required correction is not made within a reasonable period of time, then the party alleging the default or breach shall have the option to immediately seek injunctive or other judicial relief to enforce the making of the correction.

C. Should the alleged default relate to the non-payment by the JWC of services billed pursuant to Section 10 of this Agreement, MWW shall have the right to seek payment by any lawful means and as provided by this contract, at its discretion, including by obtaining and enforcing money judgments and levying

property taxes against the JWC for the amount owing. The MWW shall have the right to terminate water service to the JWC in the event that the JWC fails to make payments lawfully due and noticed pursuant to the provisions of Sections 10 and 15(A). Failure of the JWC to make such payments will subject the JWC to cancellation or suspension of services as stated in Section 15. None of these remedies are waived by failure to assert them for any previous non-payment. The MWW's right to terminate delivery and to terminate this Agreement is not subject to the mediation provisions of this Agreement. The MWW may terminate this Agreement for repeated non-payment or late payments upon 6 months written notice notwithstanding any other provisions of this Section.

D. If the default or breach has not been cured within a reasonable period of time after the notice as required in subsection A of this Section 15, then in addition to, or in lieu of the remedies provided for in subsection B and C of this section 15, the party that has determined that a breach has occurred and given the required notice shall have the right to terminate this Agreement upon five years written notice. Provided, however, the parties agree that prior to initiation of termination they will be required to participate in mediation in good faith with the goal of resolving whatever conflict or issue that would otherwise give the right to terminate as provided therein. The mediation shall be led by a mutually-acceptable, independent third party. Should the parties agree that mediation has reached an impasse, or when mediation has been underway for six months without resolution, then the party seeking to terminate this Agreement may proceed to terminate this Agreement with five years written notice.

16. Joint Planning and Governance

The parties agree to participate in a joint MWW/JWC water task force that will meet regularly over the next four years to consider a stronger governance role for

the JWC in the MWW water system, emergency interconnections with neighbors of the JWC, conjunctive use of JWC groundwater and MWW river water, development of an emergency backup water supply, and the use of JWC groundwater to augment MWW's supplies. The parties agree to prepare an interim reports to the cities within two years and a final report or reports within three years. Such reports to be prepared either jointly or separately.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed
the day and year first above written.

WITNESSETH:

CITY OF MINNEAPOLIS
A Municipal Corporation

JOINT WATER COMMISSION

Printed Name of Department Head

By: _____
City of New Hope

Signature of Department Head

By: _____
City of Golden Valley

Approved as to Form:

By: _____
City of Crystal

City Attorney/ Assistant City Attorney

Printed Name of Finance Officer/Designee

Signature of Finance Officer/Designee

MINNEAPOLIS – JOINT WATER COMMISSION WATER AGREEMENT

Attachment “A”

Water rates for water sold by the MWW to the JWC, up to 21 million gallons per day, shall be as follows:

Year	Water Rate, per hundred cubic feet	Water Rate, per thousand gallons	Percentage Increase
2004	\$1.31	\$1.75	
2005	1.41	1.88	7.6
2006	1.50	2.00	6.6
2007	1.54	2.06	2.9
2008	1.59	2.12	2.8

(Based on 55.0% of the inside city rate in 2004. Before any adjustments due to transfers to or from the Water Works Fund.)

Water Supply and JWC History

- July 1961 Village of Golden Valley – Minneapolis Water Contract
Term: 30 years

Rate Standard: Rates to be fair, just, reasonable and equitable – proportional to cost of operating Minneapolis Water Department.

Initial Rate: 25¢ per 100 cubic feet down to 12¢ per 100 cubic feet for volume of 13,000,000 cubic feet or more [cubic foot = 7.481 gallons].
- Jan. 1962 Addendum made to Minneapolis/Golden Valley Water Agreement to allow Golden Valley to “furnish water bought by it under said contract to Crystal and New Hope”.
- Nov. 1963 Villages of Crystal, Golden Valley and New Hope enter into joint powers agreement to construct and operate joint water supply, storage and distribution system – water supply from Minneapolis.
- 1963 Agreement Agreed capital cost of \$7,033,800 allocated [Section 5.02].

Description	Est. Cost	Percentage to be paid by:		
		Golden Valley	Crystal	New Hope
Connection to Mpls. through Golden Valley	\$ 51,800	100%	None	None
Connection to Mpls. through Crystal & Robbinsdale	\$ 632,200	none	52.5%	47.5%
Cost of Necessary 12” Pipe or Equivalent	\$1,911.200	Actual Cost Within Each Municipality		
Cost of Oversizing Pipe	\$1,436,300	41.5%	31.0%	27.5%
Storage Cost (including Pumps and Piping)	\$3,002,300	37.0%	33.0%	30.0%
	\$7,033.800			

- 1963 Agreement Capital costs paid separately, by each party, not JWC obligation [Article 5].
- 1963 Agreement Golden Valley resells water to the parties “at no advance in price” [Article 6].
- 1963 System Operating

- Cost Allocation Until January 1, 1969, on same basis as capital cost allocation, thereafter all operating costs apportioned based on water used [Section 5.06].
- 1963 Pledge by each party Each party “pledges its full faith, credit and taxing powers” for prompt payment of all bills rendered for agreed upon capital costs, system operating costs and water cost [Section 5.08].
 - 1963 Agreement Establishes three member Joint Water Commission, one member appointed by each council [Section 3.02].
 - 1963 Agreement “The Commission and its members (regardless of the municipality by which the members are respectively appointed) shall be and are hereby constituted as agents and representatives of each and all of the participating municipalities for the purpose of exercising, in behalf of all such municipalities, the powers hereby conferred, and performing the duties hereby imposed on them. **No member shall be deemed a partisan representative of the municipality by which he was appointed.** Neither the Commission nor any member or officer thereof shall have any power or authority except as conferred by this Agreement, or an amendment thereto, or a statute hereafter enacted, **or which is reasonable to be implied as both suitable and necessary to the exercise of a power so expressed** and is not inconsistent with any limitations thereon or prohibitions expressed herein.”

(Emphasis added). [Section 3.09].
 - 1965 Amendment Gave JWC more specific powers, duties and functions:
 - “A. Operate, maintain, repair and replace joint facilities.
 - B. Allocate construction, operation, maintenance, repair and replacement costs and expenses of joint facilities among the parties.
 - C. Render and collect bills from the parties for construction, operation, maintenance, repair and replacement costs and expenses.
 - D. Pay costs of operation, maintenance, repair and replacement of joint facilities.
 - E. Safeguard the water supply against interconnections with private water supply systems, and other potential hazards to the water service to any portion of the water system where the water supply is endangered.

- F. Determine the amount of and allocate unaccounted for water to the parties.
- G. Assign to the parties responsibility for doing the work of operating, maintaining, repairing and replacing the joint facilities and the keeping of records regarding such work.
- H. Require reports from the parties as to any facilities comprising a part of or connected to the joint water facilities.
- I. Prepare or cause to be prepared all necessary maps and records necessary for the operation, maintenance, repair and replacement of the joint facilities.
- J. Engage such personnel as may be necessary to provide for the operation, maintenance, repair and replacement of the joint facilities and the conduct of the work of the commission.
- K. Adopt, and from time to time revise, rules and regulations for the conduct of the affairs of the Commission and for the discharging of the powers, duties and responsibilities of the Commission.
- L. Notwithstanding the foregoing provisions, responsibility for and costs and expenses of operation, maintenance, repair and replacement of the following described facilities shall be discharged by the respective parties within whose boundaries the facilities are located:

Watermains and pipes having a diameter of less than 14", together with appurtenances thereto, and services, fire hydrants and fire hydrants leads appurtenant to mains or pipes having a diameter of 14" or larger."

[Section 3.10].

- 1994

New Joint Powers Agreement which continued existing JWC board, eliminated historic language re construction of system, retained all other substantive provision, modified the provision concerning quorum and voting and added certain additional specific powers:

"Quorum and Voting. A quorum shall be two (2) members of the Commission. The Commission shall adopt its own rules of procedure for the conduct of its meetings. All actions by the Commission shall require a two-thirds (2/3) vote of all members; except the following which require unanimous action:

1. Amendment of this Agreement

2. Contract with the City of Minneapolis
3. Capital Improvements
4. Rate Schedules or Budgets
5. Depository and Check Signers”

[Section 2 C].

Additional Specific Powers:

- “m. To hire and/or contract for professional services, including legal, auditing, accounting, and engineering services.
- n. To adopt by resolution reasonable charges for water service and availability and collect fees and charges regarding the same, including the imposition of hookup fees, water usage fees and service and availability charges in an amount sufficient to defray all expenses of operation of the system, including all actual operation and data expenses, a reasonable sum to account for depreciation and replacement of equipment and budgeting for future capital needs of the system and to provide for the collection of the same using any and all methods permitted by Minnesota law.
- o. To purchase supplies, materials, equipment and other personal property.
- p. To purchase, hold and sell real estate.
- q. By resolution to adopt appropriate regulations, including, but not limited to, a permanent system to regulate use, connection with, disconnection from and tampering with the system, and providing for enforcement of the regulations by appropriate action, including criminal prosecution.
- r. To apply for and receive any grants, aids, gifts or contributions.

- s. To limit the number and location of connections to the systems.
- t. To enforce all rights which it has under this Agreement by appropriate action, including, but not limited to, legal action in the Courts of this State.”

[Section 3].

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*Evaluation of the Prairie du Chien-Jordan
Aquifer as a Potential Future Water Supply
for the Joint Water Commission*

November 2003



Executive Summary

This report describes the methodology and the results of a well-siting study that was conducted by Barr Engineering Company for the Joint Water Commission (JWC). The JWC is a joint powers agency created by the cities of Crystal, Golden Valley, and New Hope in 1963. The purpose of this study is to evaluate the potential for obtaining water from the Prairie du Chien-Jordan aquifer that underlies the JWC and to provide a scientific basis for submitting a Water Appropriations Permit application, should the JWC further pursue an alternative water supply. This study examines three general alternatives: a water supply entirely from groundwater (18 million gallons per day – MGD); a water supply in which a maximum of 14 MGD was obtained from groundwater and any additional demand was met by blending with Minneapolis water; and a water supply in which 8 MGD was obtained from groundwater, with the remaining demand met by blending with Minneapolis water.

The evaluation of the groundwater supply was performed by developing and calibrating a computer groundwater flow model using the code MODFLOW. The model underwent an extensive calibration process using automated inverse techniques. The model was calibrated to over 2,000 water level measurements in five aquifer units and data from three Minnesota Department of Natural Resources Observation Wells for the period 1988 through 1995. Excellent model calibration was attained.

An aquifer test was performed in September-October 2003 to collect data to further calibrate the model. This test was performed using wells at the General Mills corporate campus in southwest Golden Valley and involved controlled pumping at 930 gallons per minute of one well for 7 days, along with monitoring of the changes in water levels in nearby wells.

The calibrated model was then used to simulate the effects of pumping in four different possible well fields in the JWC. Demand scenarios involving 8, 14 and 18 million gallons per day were evaluated. In addition to these demand simulations, the model was used to evaluate how wells would have met the water supply demands for the period 1988 through 1995, which included both drought and wet years.

Based on this evaluation, the following conclusions are drawn:

1. Steady-state simulations of four well fields indicate that the Prairie du Chien-Jordan aquifer is capable of sustaining continuous withdrawal rates to meet both base demands (8 MGD) and peak demands (18 MGD) of the JWC. Drawdown in the Prairie du Chien-Jordan aquifer

is generally less than 5 feet, immediately beyond the JWC's borders, even under sustained pumping of 18 MGD.

2. Drawdown effects beyond the borders of the JWC can be minimized by selecting a well field near the center of the JWC, such as Sites 1, 2, or 3. The General Mills well field is also viable but higher drawdowns are predicted for this alternative in the north part of St. Louis Park. If this well field were pursued further, a more detailed examination of the effects of drawdown on St. Louis Park's wells would be needed. Well interference effects with other water supply wells should not be a significant issue. However, well fields at Sites 1, 2, and 3 offer the opportunity to minimize drawdowns outside the JWC and are therefore recommended over the General Mills well field.
3. Drawdown in the surficial (water table) aquifer is generally between 0.1 and 0.5 feet. Smaller drawdowns are predicted near surface-water bodies where the interaction of the surface water and groundwater serve to buffer the drawdown. Wells supplying water to the JWC should not adversely impact surface waters in the area. Pumping, even at 18 MGD, will have no measurable effect on groundwater inflows or outflows to surface-water bodies in the area.
4. Transient simulation of the period 1988 through 1995 indicates that the JWC could have supplied all of its demand from wells in the Prairie du Chien-Jordan aquifer without large drawdowns. This simulation, more than others, demonstrates that wells are a viable alternative water supply for the JWC because it reflects pumping and recharge conditions that actually occurred in both drought and normal conditions.

The finding of this evaluation is that the JWC can safely obtain sustainable supplies of groundwater from the Prairie du Chien-Jordan aquifer to meet its full current and projected demands or to blend with water from the City of Minneapolis. A well field near the center of the JWC (e.g., Sites 1, 2, and 3) is recommended over the General Mills well field because a well field in the center of the JWC will minimize drawdowns in adjacent communities.

Minneapolis - JWC Joint Water Task Force

	Activity Name	Start Date	Finish Date	2005		2006												2007					
				Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	JTF Meeting 1	11/17/05	11/18/05	▲																			
2	Develop workplan, budget, schedule	11/18/05	12/20/05		■																		
3	Interconnect Legislative Strategy	12/14/05	4/28/06			■	■	■	■	■													
4	Develop planning "gap" analysis	1/12/06	3/22/06			■	■	■															
5	JTF Meeting 2 (Work Plan and StP Interconnect Strategy)	1/11/06	1/12/06			▲																	
6	Prepare Governance Memo	3/15/06	5/23/06					■	■	■													
7	Prepare Backup Supply Memo	3/15/06	8/14/06					■	■	■	■	■	■										
8	JTF Meeting 3 (Planning Information)	3/15/06	3/16/06					▲															
9	JTF Meeting 4 (Governance)	6/21/06	6/22/06								▲												
10	Develop Groundwater Use Memo	6/21/06	12/25/06								■	■	■	■	■	■							
11	JTF Meeting 5 (Backup Supply)	9/20/06	9/21/06													▲							
12	Met Council Report Summary	12/1/06	12/14/06														■						
13	JTF Meeting 6 (Groundwater Use and Met C Plan Report)	12/20/06	12/21/06														▲						
14	Develop Interconnect Memo	1/6/07	2/13/07															■	■				
15	Prepare DRAFT Report	2/13/07	3/14/07																■	■			
16	JTF Meeting 7 (Interconnects and Reporting)	3/21/07	3/22/07																		▲		
17	Prepare FINAL Report	5/8/07	6/13/07																			■	
18	JTF Meeting 8 (Reporting)	6/20/07	6/21/07																				▲

D R A F T

C | Kickoff: January 11, 2006

Agenda

Meeting Minutes

Handouts

Presentations

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**Minneapolis—Joint Water Commission
Joint Water Planning and Governance Task Force
Organizational Meeting**

January 11, 2006 4:00 PM-6:00 PM
City of Golden Valley City Hall

AGENDA

Introductions

Approval of Meeting Minutes

Consensus Process Alternative, as Requested by Task Force (introduction by Scott Harder, discussion by all, handout for discussion purposes only)

Water System Interconnect Project (introduction/presentation by Shahin Rezania, discussion by all)

2005 JWC Groundwater Appropriation Legislation (handout, presentation/introduction by Scott Harder)

Schedule, Budget and Cost Sharing to Support the Work of the Task Force (handout, status report by Scott Harder)

Mailing List and Web Portal (handouts, status report by Scott Harder)

Next Meeting

**MINNEAPOLIS -- JOINT WATER COMMISSION
Joint Water Planning and Governance Task Force
Meeting**

January 11, 2006 4:00 PM to 6:00 PM
Golden Valley City Hall, Council Conference Room

MEETING MINUTES

Present

Minneapolis

Barbara Johnson, Council Member
Sandra Colvin Roy, Council Member
Peter Wagenius, Aide to Minneapolis Mayor R. T. Rybak
Klara Fabry, Director of Public Works
Shahin Rezania, Interim Director of Water Works

Golden Valley

Linda Loomis, Mayor
Bob Shaffer, Council Member
Tom Burt, City Manager

Crystal

ReNae Bowman, Mayor
Anne Norris, City Manager
Tom Mathisen, City of Crystal

New Hope

Martin Opem, Mayor
Mary Gwin-Lenth, Council Member
Dan Donahue, City Manager

Others

Scott Harder, Environmental Financial Group, Inc.
Lisa Dressler, Minneapolis Public Works Interagency Coordinator

Approval of Meeting Minutes

Decision: The Task Force unanimously approved the meeting minutes from the November 16th 2005 meeting. The Task Force confirmed that it liked the summary format of the minutes.

Appointment of Co-Chairs

Decision: The Task Force unanimously appointed Sandra Colvin Roy, council member from Minneapolis, and Linda Loomis, mayor of Golden Valley, as co-chairs. The group decided that the two co-chairs would alternate chairing the meetings, depending on which group hosted the meeting.

Consensus Process Alternative

Short introduction by Scott Harder, Environmental Financial Group, Inc.

Scott indicated that he had researched and discussed various non-voting, consensus-building processes since the November meeting. As a result, Scott indicated that the “1-2-3-4-5” method seemed to be a popular alternative. (A short description of this method was handed out to the Task Force. A copy is attached to these minutes as Exhibit 1.)

Some of the benefits of this process are as follows:

1. Avoids a strict “up or down” vote by allowing for various degrees of support, from strong support to strong opposition.
2. Provides for a means of continued refinement and discussion of consensus issues rather based on whether any of the group strongly oppose a given measure.
3. Allows the chair to move the discussion toward a re-working and breaking down of an issue that someone strongly disagrees with, providing for better end results.

Decision: The Task Force agreed to try the method. It was noted that it would be cumbersome to employ this method for each and every decision, but only for complex, substantive issues.

Water System Interconnection Project

Short presentation by Shahin Rezaia, Interim Director, Minneapolis Water Treatment and Distribution Services.

Shahin described the project. It is proposed to consist of two 42-inch diameter pipelines located in the area of Roselawn Avenue and State Highway 280. The pipeline would connect the St. Paul water system to Minneapolis’ transmission backbone that loops the city. It is designed to provide 100 percent of the winter daily water demand, or 60 million

gallons per day. It is estimated to cost \$34 million. Minneapolis has already expressed a commitment to the project.

Sandra Colvin Roy discussed an emerging legislative initiative to include the Project in the 2006 bonding bill. (She distributed a handout, included as Exhibit 2 to these minutes.) It is planned to be sponsored by the Minnesota Department of Health, which has already expressed its support. A State Senate committee meeting is scheduled for January 24th 2006 at which the Project is planned to be discussed. The meeting is scheduled for 3:30 P.M. in Capital Building Room 122.

Decision: The Task Force expressed their support for the legislative initiative and Linda Loomis indicated that she would attend the meeting. The Task Force also endorsed a letter of support to be sent to the Minnesota Department of Health.

2004 JWC Groundwater Appropriation Legislation

Short presentation by Scott Harder, President, Environmental Financial Group, Inc.

Scott distributed a handout describing the legislation that was sponsored by the JWC and subsequently passed into law during the 2004 legislative session. (A copy of this handout is attached as Exhibit 3 to these minutes.) The legislation endorses the withdrawal of groundwater to meet the future needs of the three cities comprising the JWC. State statute requires that groundwater withdrawals greater than 2 million gallons per day for municipal purposes need legislative approval in addition to normal permitting by the Minnesota Department of Natural Resources (MDNR). Passage of this legislation does not substitute for additional permitting, however, the MDNR expressed its support for the legislation based on aquifer testing and analysis conducted by the JWC in 2003.

Decision: The information was provided to the Task Force for background purposes only. No action is required of the Task Force on this matter.

Schedule, Budget and Cost Sharing

Short presentation by Scott Harder, President, Environmental Financial Group, Inc.

At its November meeting, the Task Force indicated that it wanted to confirm a budget, schedule and cost-sharing arrangement for services to support the work of the Task Force. Scott distributed a draft schedule that assumes quarterly Task Force meetings through 2007. It organizes the work of the Task Force into five topics matching the goals of the Task Force set forth in the Minneapolis/Joint Water Commission Water Purchase Agreement and confirmed by the Task Force at its November 2005 meeting. (The schedule is included as Exhibit 4 to these minutes.)

Sandra Colvin Roy suggested that the "Governance" topic might more logically be scheduled after the more technical topics.

Decision: Review and discussion by the Task Force generally confirmed the handout as a good working schedule as the work gets started.

Action Item: Scott Harder will revise the schedule, moving the Governance topic to later in the process.

Scott also provided a verbal summary of a budget for support services. It divides the work into "Core" services related to facilitating Task Force meetings, documenting results, preparing issues matrices and consensus-building materials; and "Optional" services that would extend the support services into more detailed memoranda and reports and provide for additional meeting facilitation.

Scott provided a preliminary budget estimate of \$80,000 for core services and an additional \$25,000 for Optional services. To the total estimated \$105,000 for both Core and Optional services, it was recommended that the Task Force authorize an additional \$25,000 as a contingency since it is difficult to anticipate at this point in time all of the technical work that might ultimately be required to support the decision-making of the Task Force. This results in a total working budget of \$130,000. The budget estimates assume that support services would be provided by Environmental Financial Group, Inc. with supplemental meeting facilitation (if desired) provided by Richardson Richter & Associates, Inc.

Decision: The Task Force generally supported the budget, expressing a need for staff to work through the numbers in more detail. The Task Force also expressed their commitment to share the cost on a 50/50 basis. The Task Force also expressed some concern about the need for supplemental meeting facilitation. The co-chairs agreed to discuss this item between themselves in the coming weeks.

Action Item: Scott Harder will work with staff to develop the budget in more detail and provide a detailed budget to the group prior to the next meeting.

Mailing List and Web Portal

Short report by Scott Harder, President, Environmental Financial Group, Inc.

At its November 2005 meeting, the Task Force expressed an interest in using an email list and web portal to enhance communications between meetings. Scott distributed a handout (included as Exhibit 5 to these minutes) that includes instructions about how to use the email list. Scott also distributed a handout presenting a mock-up of a home page for a simple web portal. (This is included as Exhibit 6 to these minutes.)

Decision: The Task Force expressed support for both of these tools.

Action Item: Scott indicated that the email list would be active within a few days and the web portal would be active within a few weeks.

Next Meeting

Decision: The group decided that the next meeting would be on Wednesday March 22nd at 4:00 – 6:00 P.M. at the Minneapolis City Hall. Parking information would be provided in the meeting notice.

EXHIBIT 1

CONSENSUS MODEL

1 -- I do not agree and will block it.

2 – I do not agree, but will not block it or speak negatively about it.

3 - I am neutral.

4 - It is a good idea and I will work for it.

5 – It is a great idea and I will be one of the leaders implementing it.

If there are any “1” votes, the voter is asked to state the reasons for his/her opposition. The group needs to continue to work on the issue to address the part of the proposal that is not acceptable and work to find a solution.

EXHIBIT 2

2006 STATE APPROPRIATION REQUEST: \$10,000,000

AGENCY PROJECT PRIORITY: 1 of 1

PROJECT LOCATION: Metro

Project At A Glance

This project would provide a \$10 million state grant to help fund an interconnection between the Minneapolis and St. Paul drinking water systems, providing backup water in case malicious or natural actions cause a water loss for either system.

Project Description

The Twin Cities area is the economic hub for the state, and its vitality is reliant on a secure and stable water system. Ensuring the security of each city's water system is a high priority for the entire region and for the state as well.

- ⇒ The Governor's Clean Water Cabinet has included this on their priority project list.
- ⇒ The Department of Homeland Security places a high priority on water system security.
- ⇒ The Environmental Protection Agency strongly encourages interconnections between systems.

A water system shutdown for Minneapolis or St. Paul would cause immense personal, business, and industrial consequences and would be an economic disaster for the entire state and the region. Water failures can have malicious, natural, or accidental origins.

- ⇒ Accidental or malicious origins include infrastructure destruction, spills, and contamination.
- ⇒ Natural causes include flooding, drought, and fire.

The Minneapolis and St. Paul systems are well designed and operated, but are stand-alone systems. An interconnection, which provides backup and

redundancy should one of the systems become totally or partially inoperative, would consist of two large diameter transmission pipes and a pumping station, providing water circulation. They would connect to a reservoir, allowing each city to supply and withdraw water.

The idea for a water system interconnection was first suggested in the 1930's, and has been regularly discussed by Minneapolis and St. Paul during the past two decades. Historically, the project has had only one of the two parties interested at any given time, but the events of 9/11 and recent natural disasters, which have shown the devastation that occurs when a major water system is lost, have added impetus to the efforts to complete an interconnection. State leadership and partnership at this point in time could bring successful completion to this project.

A \$10 million grant from the state would leverage the additional project funds needed at the local level. The estimated total project cost, as it was designed in 2003, was approximately \$33 million. More recent estimates put the project's final cost at approximately \$40 million, but this figure could still change once the final project details are known. No follow-up state operations or maintenance costs would be incurred.

Impact on Agency Operating Budgets (Facilities Notes)

For the two water systems, there would be no impact beyond what would be managed through normal operations and maintenance.

Previous Appropriations for this Project

None

Health, Department of Minneapolis/St. Paul Interconnection

Project Narrative

Other Considerations

⇒ Minneapolis and St. Paul Water Systems Serve 1,020,000 Residents in 18 communities:

Arden Hills	Hilltop	Minneapolis
Bloomington (Partial)	Lauderdale	New Hope
Columbia Heights	Little Canada	Roseville
Crystal	Maplewood	St. Paul
Falcon Heights	Mendota	West St. Paul
Golden Valley	Mendota Heights	Edina-Morningside

- ⇒ Loss of water impacts fire protection, drinking and cooking, sewage disposal, and personal hygiene.
- ⇒ Approximately 342,000 jobs are served by the Minneapolis water system. Payroll averages approximately \$78 million/week, total economic activity \$382 million/week.
- ⇒ Approximately 290,000 jobs are served by the St. Paul water system. Payroll averages approximately \$62 million/week, total economic activity \$275 million/week.

Project Contact Person

John Stine, Division Director
Minnesota Department of Health
625 Robert Street North
P.O. Box 64975
St. Paul, Minnesota 55155-2538
Phone: (651) 201-4675
E-mail: john.stine@state.mn.us

Governor's Recommendations

EXHIBIT 3

FACT SHEET on Joint Water Commission Groundwater Appropriation

Background

Forty years ago, the cities of Golden Valley, Crystal, and New Hope developed a partnership to jointly develop a regional drinking water system to serve residents of the three cities. Since that time, this joint powers agency, known as the Joint Water Commission (JWC), has successfully developed and maintained water infrastructure to store and deliver treated Mississippi River water purchased from the City of Minneapolis to its residents. Since its inception, the mission of the JWC has been to ensure that the three cities have a secure, reliable, and cost-effective supply of drinking water. It has been a very successful regional partnership and the three cities are committed to continue working together.

Problems

Beginning in the mid-1990s, the cost of purchased water from Minneapolis began to rise dramatically, increasing from \$0.89 per thousand gallons in 1997 to \$2.41 in 2004, a 171 percent increase. These cost increases were in part due to new federal regulations calling for a barrier against giardia, cryptosporidium, and other microorganisms. Further operating and capital cost increases are anticipated in the future as the City of Minneapolis turns its attention to the renewal and replacement of its aging treatment and transmission infrastructure. These cost increases, coupled with failed efforts by Minneapolis to augment its Mississippi River supply with other sources, raise serious issues as to the efficacy of continuing to rely on a regional surface water supply supported by only a single source. This situation is compounded in the current environment in which the vulnerability of public water systems to domestic terrorism and sabotage is actively being called into question.

In the interest of continuing to provide its residents a secure, reliable, and cost-effective future drinking water supply, the JWC has turned its attention to developing a groundwater-based supply and treatment system. The JWC has conducted aquifer tests and submitted its report to the Department of Natural Resources (DNR) for review. The three city councils have begun final deliberations to resolve the future water supply issue. Prior to making a final decision on a future water source for its residents, the JWC is seeking legislative approval of the consumptive use in excess of 2 million gallons per day related to its groundwater supply project. Two million gallons is approximately equal to the water usage in 7,300 homes.

Recommendations

The state statutes governing the waters of the state require that groundwater appropriations for a domestic water supply, exclusive of industrial and commercial uses, in excess of 2 million gallons per day (expressed on a rolling thirty day average basis) require approval of the legislature and approval by the commissioner of the Department of Natural Resources (DNR) through the normal groundwater appropriations permitting process. Pursuant to Minnesota Statutes, section 103G.265, subdivision 3, the legislature should approve of the consumptive use related to the three cities groundwater supply project.

A bill for an act
relating to the waters of the state.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Pursuant to Minnesota Statutes, section 103G.265, subdivision 3, the legislature approves the consumptive use of groundwater under a permit of more than 2,000,000 gallons per day average in a 30 day period in Golden Valley, Crystal, and New Hope in connection with a municipal water supply system operated as a joint powers board known as the Joint Water Commission, subject to the commissioner of the department of natural resources making a determination that the water remaining in the basin of origin will be adequate to meet the basin's need for water and subsequent approval by the commissioner.

EFFECTIVE DATE

The act is effective the day following final enactment.

EXHIBIT 4

EXHIBIT 5

Welcome to the **Watertaskforce@efg.com** mailing list!

To post to this list, send your email to:

watertaskforce@efg.com

The list will be active beginning **Friday, January 13**. Messages you receive from the list will have a subject beginning with: [WaterTaskForce]...

If you want to subscribe, unsubscribe, change your email address, include multiple email addresses, only receive a message "digest" rather than individual messages, or have any other questions, please send an email to:

seharder@efg.com

or call Scott Harder at 612-872-0510.

Changes should be active within one business day.

Thank you.

EXHIBIT 6

**Minneapolis - Joint Water Commission
Joint Water Task Force
Collaboration Portal**

Welcome to the Joint Water Task Force Collaboration Portal. This website is designed to help Task Force members check meeting dates, find documents, and contact other Task Force members.

The Joint Water Task Force was created in 2005 to explore ways to make the water partnership between Minneapolis, Golden Valley, Crystal, and New Hope a stronger one. This Task Force is evaluating ways to strengthen governance relationships, provide a backup water supply system, conjunctively use groundwater with river water, and provide for emergency interconnections with neighbors.

Minneapolis
City of Lakes

HOME
MEETING CALENDAR
CONTACT INFORMATION
DOCUMENTS
LOGOUT

JWC

Upcoming Meetings
1/11/06 - Task Force Meeting,
4-6PM, Golden Valley

Latest File Uploads

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D | Planning Information: March 22, 2006

Agenda

Meeting Minutes

Handouts

Presentations

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**MINNEAPOLIS -- JOINT WATER COMMISSION
Joint Water Planning and Governance Task Force
Meeting**

March 22, 2006 4:00 PM to 6:00 PM
Minneapolis City Hall, Mayor's Conference Room

MEETING MINUTES

Present

Minneapolis

Barbara Johnson, Council Member
Sandra Colvin Roy, Council Member
Klara Fabry, Director of Public Works

Golden Valley

Linda Loomis, Mayor
Bob Shaffer, Council Member
Tom Burt, City Manager

Crystal

ReNae Bowman, Mayor
Mark Hoffman, Council Member
Anne Norris, City Manager

New Hope

Mary Gwin-Lenth, Council Member
Steve Somer, Council Member
Dan Donahue, City Manager

Others

Lisa Dressler, Minneapolis Public Works Interagency Coordinator
Scott Harder, Environmental Financial Group, Inc.

Review and Approve Agenda

Decision: The Task Force unanimously approved the agenda for the meeting. There were no changes.

Approval of Meeting Minutes

Decision: The Task Force unanimously approved the meeting minutes from the January 11th 2006 meeting. There were no modifications from the draft minutes.

Revised Schedule

The Task Force reviewed a revised schedule that was distributed with the agenda beforehand. The schedule had been revised at the request of the Task Force so that governance issues would be considered after the technical topics. A copy of the revised schedule is attached as Exhibit 1 to these minutes.

Decision: The Task Force unanimously approved the revised schedule.

Budget and Cost-Sharing

Klara Fabry and Scott Harder discussed the budget for consulting support services. Prior to the meeting, Scott had met with both Klara and the Joint Water Commission to describe the scope of services in detail. The total budget of \$120,250 assumes seven task force meetings, four technical memoranda, and a final report. An additional contingency of \$25,000 (for a total of \$145,250) was recommended in case additional technical information is required, additional meetings are needed, or if additional issues arise that the Task Force needs to consider.

Scott then discussed the preliminary cost sharing arrangements that were discussed at the January 11, 2006 meeting. The purpose was to ensure that all Task Force members were supportive of such an arrangement.

Decision: The Task Force confirmed the budget and the 50% - 50% cost sharing arrangement.

Mailing List and Web Portal

Scott Harder solicited Task Force input on the mailing list to make sure that all members were receiving email notices and attached documents. Scott also indicated that the web portal would be available shortly, pending some final design modifications.

Decision: No Task Force decision was necessary for this informational item.

2006 Legislative Update

The Task Force had included this on the agenda in the event that the water system interconnection project required additional support at the legislature. In addition, Scott Harder distributed copies of backup water supply legislation secured by the City of St. Paul last year. The legislation is similar to that secured by the JWC in 2004.

Decision: No action is required of the Task Force on this matter.

Action Item: Scott Harder indicated that he would continue to monitor pending water supply legislation and send email notices of such legislation to the Task Force.

Metropolitan Council Regional Water Planning Update

Scott Harder presented slides shown to the Governor-appointed Advisory Committee overseeing the Metropolitan Council regional water supply planning process. The presentation included an overview of the regional aquifer system and other background information.

Linda Loomis (Advisory Committee member) briefed the Task Force on planned outreach efforts planned, including possible May workshops in Chanhassen and Hugo. Linda also indicated that the Council is seeking to reach out to environmental groups including MEI, MEP, and Friends of the Mississippi. She indicated that outreach plans and related key messages were still in development.

Decision: No action is required of the Task Force at this time.

Planning Information “Gap” Analysis

Presentation by Scott Harder. Discussion by all.

Prior to beginning work on specific water issues, the Task Force was interested in reviewing the current status of water supply system planning for Minneapolis and the JWC. The intent was to identify “gaps” in planning information that might inhibit a full exploration and understanding of the issues to be considered by Task Force. The planning information analysis focused on a back-up water supply, water quality, hydraulics, and the conjunctive use of river and groundwater.

The slides used to present this analysis are included as Exhibit 2 to these minutes.

The analysis highlighted the need for the following:

- better information on Minneapolis water system hydraulics,

- an understanding of the economics of backup supply options,
- emergency demand requirements,
- the feasibility of interconnections with other cities,
- blended water quality impacts, and
- aquifer impacts for demands greater than JWC.

Decision: No action is required of the Task Force at this time.

Next Meeting

Decision: The group decided that the date and time of the next meeting would be coordinated through Minneapolis and JWC staff.

Adjourn

The meeting was adjourned about 5:45 P.M.

Joint Water Planning and Governance Task Force

Minneapolis · Crystal · Golden Valley · New Hope

Planning Information Analysis

PRESENTATION BY
SCOTT HARDER, ENVIRONMENTAL FINANCIAL GROUP

22 March 2006



ENVIRONMENTAL FINANCIAL GROUP, INC.

PLANNING INFORMATION ANALYSIS

Objectives

- **Review recent Minneapolis and JWC planning documents**
- **Summarize primary recommendations**
- **Identify planning needs and information gaps**
- **Focus on**
 - ✓ **back-up water supply**
 - ✓ **water quality**
 - ✓ **hydraulics (interconnections)**
 - ✓ **Conjunctive use of ground and surface water**



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PLANNING INFORMATION ANALYSIS

Recent Documents

- **Water Supply, Emergency and Conservation Plan (Minneapolis, 1995)**
- **Treatment Process Feasibility Study (Minneapolis, 1997)**
- **Water Supply Plan Update (JWC, 1999)**
- **Water System Feasibility Study (JWC, 2002)**
- **Prairie du Chien / Jordan Aquifer Evaluation (JWC, 2003)**
- **Capacity and Scada Report (Minneapolis, 2005)**



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PLANNING INFORMATION ANALYSIS

Water Supply, Emergency and Conservation Plan (Minneapolis, 1995)

Conclusions and Recommendations

- **River resource adequate to meet current and projected demand under non-emergency conditions**
- **Supply system adequate to meet current and projected demands**
- **Demand management (off-peak delivery) enhances storage capacity**
- **MWW plans to build additional finished water storage**
- **Additional storage, coupled with conservation measures, will ease system demand peaks**



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PLANNING INFORMATION ANALYSIS

Water Supply, Emergency and Conservation Plan (Minneapolis, 1995) Conclusions and Recommendations

- **No two-way interconnections with suburban customers**
- **Supply size, pressure, and water quality differences prohibit interconnections with all adjacent communities except St. Paul**



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PLANNING INFORMATION ANALYSIS

Water Supply, Emergency and Conservation Plan (Minneapolis, 1995) Conjunctive Use of Ground and Surface Waters

- **USGS studied this in 1987**
- **Focus on area near MWW in Fridley**
- **Resulting 1990 study concluded that wells could draw contaminated water from areas around Fridley Softening Plant**
- **No existing high-capacity wells could be used to provide temporary supply in an emergency**
- **Potential of permitted downtown wells to provide 45 mgd of capacity**



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PLANNING INFORMATION ANALYSIS

Water Supply, Emergency and Conservation Plan (Minneapolis, 1995) Requirements for reserve raw water capacity

- **Short-term spill or contingency: 14 day / 80 mgd**
- **Long-term spill or contingency: not well defined**
- **Drought conditions: concluded that there is no absolute need for drought reserve**
- **Plant emergency or shut-down: 30 day supply**



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PLANNING INFORMATION ANALYSIS

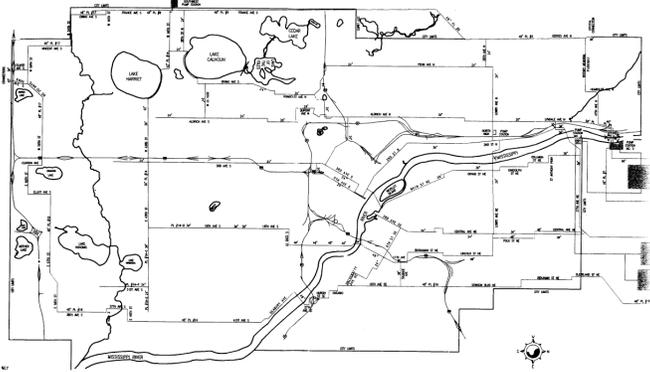
Water Supply, Emergency and Conservation Plan (Minneapolis, 1995) Narrowed to Three Potential Options

- **Create additional finished water storage**
- **Interconnect to St. Paul**
- **Pump from river and store in Minneapolis chain of lakes**

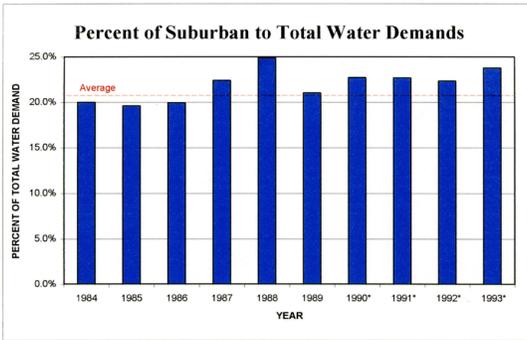


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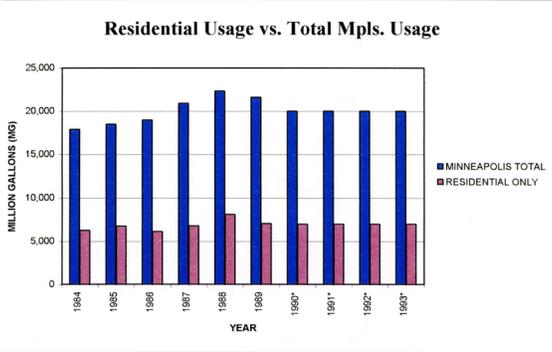
PLANNING INFORMATION ANALYSIS
Water Supply, Emergency and Conservation Plan (Minneapolis, 1995)



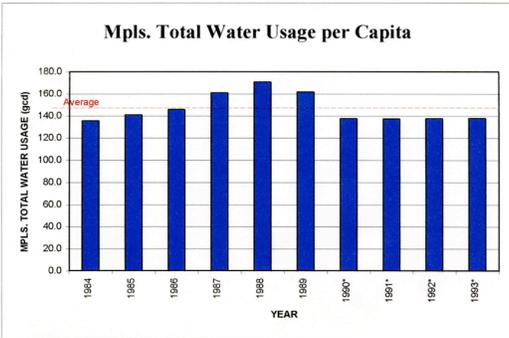
PLANNING INFORMATION ANALYSIS
Water Supply, Emergency and Conservation Plan (Minneapolis, 1995)



PLANNING INFORMATION ANALYSIS
Water Supply, Emergency and Conservation Plan (Minneapolis, 1995)

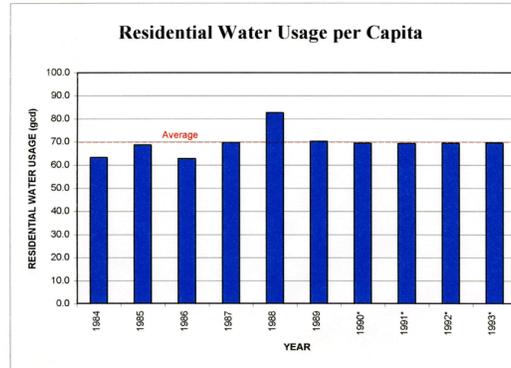


PLANNING INFORMATION ANALYSIS
Water Supply, Emergency and Conservation Plan (Minneapolis, 1995)



PLANNING INFORMATION ANALYSIS

Water Supply, Emergency and Conservation Plan (Minneapolis, 1995)



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PLANNING INFORMATION ANALYSIS

Treatment Process Feasibility Study (Minneapolis, 1997)

Conclusions and Recommendations

- **MWW has marginally sufficient storage for operational flexibility, need 36 mgd additional**
- **Needs alternative water supply: St. Paul interconnect or groundwater**
- **Identified nine reservoir sites**
- **Concluded that membrane filtration is a workable treatment strategy**



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PLANNING INFORMATION ANALYSIS
Water Supply Plan Update (JWC, 1999)
Conclusions and Recommendations

- **31.5 mgd of treated water storage, support average demands for 4 days**
- **Defers to Minneapolis on adequacy of supply and supply system**
- **No significant changes in population over planning period**
- **Projected reduction in per capita demands from 108 gpcd in 2000 to 100 gpcd by 2020**
- **No plans to expand or modify system**
- **Updated plan due 2006-2007**



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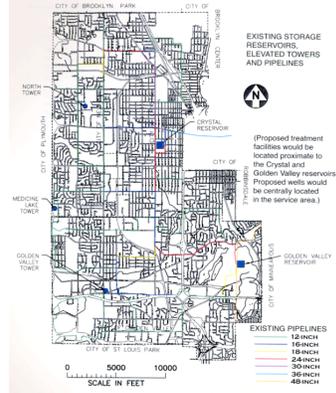
PLANNING INFORMATION ANALYSIS
Water Supply Plan Update (JWC, 1999)
Emergency Supply Augmentation

- **No interconnections with neighboring cities**
- **Considering 16-inch interconnection with St. Louis Park**
- **Other cities also interested in developing interconnections**
- **General Mills and Honeywell identified as having wells that might be used**
- **No plan to use groundwater as part of normal operations**



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PLANNING INFORMATION ANALYSIS Water Supply Plan Update (JWC, 1999)



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PLANNING INFORMATION ANALYSIS Water System Feasibility Study (JWC, 2002) Recommendations

- **Technically feasible to develop groundwater-based supply and treatment system**
- **\$45 million cost provide equivalent economics to Minneapolis pricing**
- **Membrane softening technology more cost-effective than conventional lime softening**
- **Groundwater modeling required to confirm yield, impacts**
- **Could be developed by 2005**



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PLANNING INFORMATION ANALYSIS
Water System Feasibility Study (JWC, 2002)
Risks and Mitigating Factors

- **Inability to obtain groundwater permit**
- **Impacts to neighboring wells**
- **Energy cost increases**
- **Difficulties in siting wells**
- **Operator error could damage membranes**
- **Fouling of membranes, or water quality problems**



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PLANNING INFORMATION ANALYSIS
Water System Feasibility
Additional Planning Information (2003-4)

- **Hydraulic analysis completed**
- **Shift focus to lime softening treatment**
- **Slightly reduced costs**
- **Preliminary well sites identified**
- **Preliminary treatment facility location identified**



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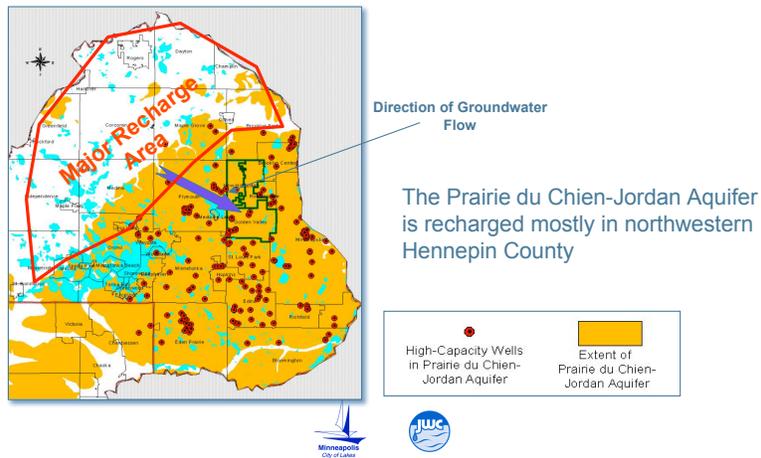
PLANNING INFORMATION ANALYSIS
Prairie du Chien / Jordan Aquifer Evaluation (JWC, 2003)
Recommendations

- **Aquifer capable of sustaining continuous withdrawal rates to meet base and peak demands**
- **Peak drawdown less than 5 feet at JWC borders**
- **Wellfield location can minimize drawdown impacts**
- **General Mills wellfield location may impact St. Louis Park wells**



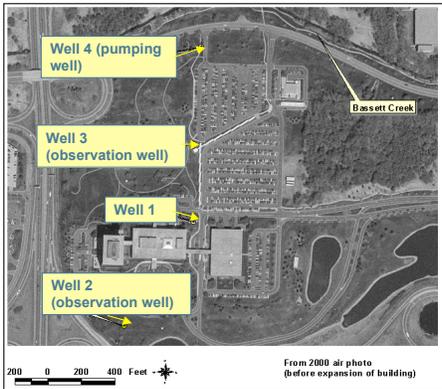
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PLANNING INFORMATION ANALYSIS
Prairie du Chien / Jordan Aquifer Evaluation (JWC, 2003)



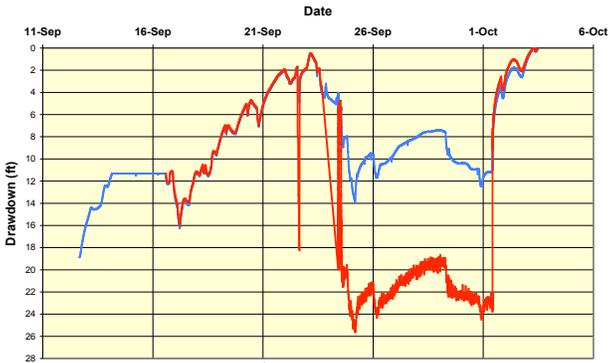
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PLANNING INFORMATION ANALYSIS
Prairie du Chien / Jordan Aquifer Evaluation (JWC, 2003)

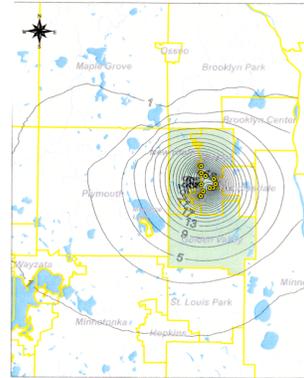


PLANNING INFORMATION ANALYSIS
Prairie du Chien / Jordan Aquifer Evaluation (JWC, 2003)

Drawdown in General Mills WHQ Wells W3 & W4



PLANNING INFORMATION ANALYSIS
Prairie du Chien / Jordan Aquifer Evaluation (JWC, 2003)



Prairie du Chien (Shakopee Formation) (Layer 3)
Contour Interval: 2 feet

● Alternative Well Locations



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PLANNING INFORMATION ANALYSIS
Capacity and SCADA Report (Minneapolis, 2005)
Recommendations

- **Develop alternative sources of water**
- **Periodically assess capacity needs and delivery scenarios**
- **Develop policies and procedures to address situations when water system is incapable of meeting demand**
- **Institute watering restrictions and other demand management practices in favor of building reserve or backup treatment capacity**
- **Implement Fridley membrane system without delay**



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PLANNING INFORMATION ANALYSIS
Capacity and SCADA Report (Minneapolis, 2005)
Capacity Issues

- **Stable growth and customer base**
- **Capacity needs based on 2% city growth and 10-15% suburban growth**
- **Substantially lower winter membrane capacity due to water viscosity**
- **Higher water costs does not lead to lower consumption**
- **Piping adequate to meet system needs**
- **Need state-of-the-art hydraulic model, possible link to GIS**



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PLANNING INFORMATION ANALYSIS
Capacity and SCADA Report (Minneapolis, 2005)
Capacity Definitions

- **Maximum/Firm: maximum amount of water that can be treated with the largest treatment unit offline or with a 10% loss of capacity, whichever is larger.**
- **Sustained: the treatment capacity that can be maintained over a long period of time**



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PLANNING INFORMATION ANALYSIS
Capacity and SCADA Report (Minneapolis, 2005)
Peak Distribution Flows

- **1988 data indicates that a watering ban can result in 30-40% reduction in water consumption**
- **Limited feasible options to develop additional water sources. St. Paul interconnect may be most feasible**
- **Water pressure normally maintained between 60 and 80 psi**



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PLANNING INFORMATION ANALYSIS
Capacity and SCADA Report (Minneapolis, 2005)
Storage Capacity

- **Additional finished water storage may not be advisable because it may degrade water quality over time**
- **Reservoir operation should be optimized with plant operation and system demand**
- **MWW should more fully evaluate impacts of chemical spill or other occurrence**
- **Using storage capacity to meet system demands could cause disinfection problems**



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PLANNING INFORMATION ANALYSIS
Capacity and SCADA Report (Minneapolis, 2005)
Findings

- **Demand-side management practices should be considered to manage peak demands**
- **165 mgd treatment capacity considered reasonable, however interconnection with St. Paul might place additional demands on the system**
- **Do not use Fridley plant to meet peak demands after membrane plant is implemented**



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PLANNING INFORMATION ANALYSIS
Capacity and SCADA Report (Minneapolis, 2005)
Recommendations

- **Install 70mgd cold water / 95mgd warm water membrane capacity at Fridley**
- **Model hydraulics of water system**
- **Develop policies to address instances of inability to meet demand**
- **Develop alternative source of water**
- **Institute water demand management policies in favor of building reserve treatment capacity**



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PLANNING INFORMATION ANALYSIS

Data Gaps and Needs: Backup Water Supply

- **Minneapolis and JWC normal demands well understood**
- **Hydraulics of Minneapolis system not modeled**
- **Economics of backup supply options not known**
- **Emergency demands only partially known**
- **Options not identified or evaluated**



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PLANNING INFORMATION ANALYSIS

Data Gaps and Needs: Water Quality

- **Minneapolis raw and treated water quality well understood**
- **JWC groundwater quality well understood**



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PLANNING INFORMATION ANALYSIS

Data Gaps and Needs: Interconnections and Hydraulics

- **Interconnection hydraulics not modeled**
- **Ability and willingness of neighbors to provide water on emergency basis only partially known**
- **JWC water distribution system hydraulics well understood (modeled)**
- **Two-way connection between JWC and Minneapolis not studied**



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PLANNING INFORMATION ANALYSIS

Data Gaps and Needs: Conjunctive Use of Ground and Surface Water

- **Water quality impacts from blending not studied**
- **PDC/J aquifer modeled and well understood to meet JWC needs**
- **PDC/J aquifer not modeled to meet JWC+ needs**
- **Two-way connection between JWC and Minneapolis not studied**



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PLANNING INFORMATION ANALYSIS

Objectives

- **Review recent Minneapolis and JWC planning documents**
- **Summarize primary recommendations**
- **Identify planning needs and information gaps**
- **Focus on**
 - ✓ **back-up water supply**
 - ✓ **water quality**
 - ✓ **hydraulics (interconnections)**
 - ✓ **Conjunctive use of ground and surface water**



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Metropolitan Area Water Supply Advisory Committee – Outreach Plan Draft for discussion 03/22/06

There will be 2 main aspects of the Outreach approach:

- Stakeholder Input Gathering
- Information Dissemination

Stakeholder Input Gathering

- Stakeholder Workshops
- Targeted Meetings

Stakeholder Workshops

Goal: Identify issues/concerns and provide information about the planning effort.

Advisory Committee Members will be asked to volunteer to host and participate in a workshop targeting stakeholder groups (i.e. municipalities, developers, etc) to identify issues/concerns related to water policies and practices in the region (see attached outreach tool summary). Attendees will be added to a Committee mailing list for regular updates on the work of the Committee. The stakeholder list and approach to the workshops will be further developed with Advisory Committee at the March meeting.

Targeted Meetings

Goal: Gather input and foster a climate of cooperation with agencies, utilities and others.

Council staff will periodically meet with various groups to discuss the progress of the effort, obtain input and request data or information necessary to the effort.

Information Dissemination

- Web site
- Email updates
- Press Releases/letters to the editor

Website: The Council's water supply planning website will be kept up to date to include the agendas, minutes and supporting documentation of the Advisory Committee meetings as well as provide an overview of the planning effort and Advisory Committee.

<http://www.metrocouncil.org/environment/WaterSupply/index.htm>

Email Updates: Council staff will maintain an email distribution list that will include agency, city, and county staff, as well as any other interested parties. This will be used to distribute the agenda and minutes of the Advisory Committee and periodically update the group to the progress of the efforts.

Press Releases: Council staff will periodically (quarterly) develop press releases and/or letters to the editor which can be used by Committee members for their local newsletters or other publications.

Draft for Discussion: March 22, 2006

Suggested Stakeholder Groups and Outreach Tools: Metro Water Supply Advisory Committee

Stakeholder Group	Meet with interest groups/trade associations	Workshops convened by Advisory Committee members	Web Site	Press Release/Letter to the Editor	Email Updates
1. Local Officials		X	X	X	X
2. Environmental Groups		X	X	X	X
3. Industrial Customers	X	X	X	X	X
4. Agencies	X	X	X	X	X
5. Suburban Utilities Superintendent Association (SUSA) / Technical committees	X		X	X	X
6. Developers		X	X	X	X
7. Watersheds		X	X	X	X
8. General Public			X	X	X

Key Messages:

A comprehensive approach to water planning:

- Maintain local control
- Seek regional benefits
- Ensure sustainable water supplies
- Work with partners

- **Increase reliability**
- **Provide for security**
- **Listen to stakeholder concern**

Metro Water Supply Advisory Committee Outreach - 3/22/06

Issues/Stakeholders	Local Officials	Environmental Groups	Industrial Customers	Agencies	Suburban Utilities Superintendent Association (SUSA)	Developers	Watersheds	General Public
Adequate supplies								
Water quality								
Regional funding mechanism								
Safety and Security								
Use of natural resources								
Local control								

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E | Interconnections: November 15, 2006

Agenda

Meeting Minutes

Handouts

Presentations

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**Minneapolis—Joint Water Commission
Joint Water Planning and Governance Task Force
Meeting**

November 15, 2006 4:00 PM-6:00 PM
Golden Valley City Hall
Council Conference Room

AGENDA

- 1. Review and Approve Agenda**
- 2. Approval of March 22, 2006 Meeting Minutes**
- 3. Metropolitan Council Regional Water Supply Plan**
(review of report to the legislature)
- 4. Interconnections** (presentation by Scott Harder, discussion by all)
 - Definitions
 - Best Management Practices
 - Minnesota Water Supply Plan Requirements
 - Opportunities
 - Issues Matrix
 - Memorandum of Understanding
- 5. Next Meeting**

**MINNEAPOLIS -- JOINT WATER COMMISSION
Joint Water Planning and Governance Task Force
Meeting**

November 15, 2006 4:00 PM to 6:00 PM
Golden Valley City Hall, Council Conference Room

MEETING MINUTES

Present

Minneapolis

R. T. Rybak, Mayor
Barbara Johnson, Council Member
Sandra Colvin Roy, Council Member
Steve Kotke, Director of Public Works

Golden Valley

Linda Loomis, Mayor
Bob Shaffer, Council Member
Tom Burt, City Manager

Crystal

ReNae Bowman, Mayor
Mark Hoffman, Council Member
Anne Norris, City Manager

New Hope

Mary Gwin-Lenth, Council Member
Dan Donahue, City Manager

Others

Peter Wagenius, City of Minneapolis
Shahin Rezania, Director of Water Works
Lisa Dressler, Minneapolis Public Works Interagency Coordinator
Scott Harder, Environmental Financial Group, Inc.

Review and Approve Agenda

Decision: The Task Force unanimously approved the agenda for the meeting. There were no changes.

Approval of Meeting Minutes

Decision: The Task Force unanimously approved the meeting minutes from the March 22nd 2006 meeting. There were no modifications from the draft minutes.

Schedule

The Task Force reviewed a schedule that was distributed with the agenda beforehand. A copy of the schedule is attached as Exhibit 1 to these minutes. (To limit the size of email attachments, printed copies of exhibits will be made available at the meeting.)

Decision: No action taken.

Metropolitan Council Regional Water Planning Update

Scott Harder presented an update of the Metropolitan Council regional water supply planning process. The summary included discussion and comments at public workshops and an overview of the planning process that is expected to continue through 2008. Also discussed were two recommendations included in an interim report that will be submitted to the legislature: 1) streamline regulations, and 2) fund the Metro Area interconnect. A copy of the presentation is attached as Exhibit 2 to these minutes. (To limit the size of email attachments, printed copies of exhibits will be made available at the meeting.)

Linda Loomis (Advisory Committee member) also briefed the Task Force on the conclusion of the Phase 1 planning process and interim report to the legislature.

Decision: No action is required of the Task Force at this time.

Interconnections

Scott Harder presented information on interconnections. The following information was presented:

- Restrictions on JWC interconnections as described in the water supply agreement.
- Types of interconnections commonly made between utilities.
- Best practices business arrangements (e.g. points of connection, pricing, hydraulics, limits, purposes).
- Common planning criteria.
- Security and reliability.
- A matrix of issues including problems and potential solutions.
- A proposed memorandum of understanding allowing the JWC to interconnect with its neighbors for emergency purposes.

A copy of the presentation is attached as Exhibit 3 to these minutes. (To limit the size of email attachments, printed copies of exhibits will be made available at the meeting.)

The Task Force discussed several issues related to interconnections, including:

1. Water quality compatibility concerns.
2. Interest in pursuing interconnections between the JWC and Plymouth, St. Louis Park, and Robbinsdale.
3. Relationship between interconnections and backup water supplies.
4. The need to discuss interconnections within a larger water supply reliability context.

Decision: The Task Force requested that the interconnection issue be combined with the backup water supply issue and discussed at a future Task Force meeting. The Task Force agreed that interconnections and backup supplies should be viewed in the context of overall water supply reliability and including scenario planning.

Next Meeting

Decision: The Task Force directed that the next meeting cover governance issues, allowing more time to conduct a detailed reliability analysis, including both interconnections and the efficacy of a backup water supply. The Task Force decided that the date and time of the next meeting would be coordinated through Minneapolis and JWC staff.

Adjourn

The meeting was adjourned about 6:00 P.M.

Joint Water Planning and Governance Task Force

Minneapolis · Crystal · Golden Valley · New Hope

Water System Interconnections

PRESENTATION BY
SCOTT HARDER, ENVIRONMENTAL FINANCIAL GROUP

15 November 2006



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WATER SYSTEM INTERCONNECTIONS

Objectives

- **What is a water system interconnection?**
- **What is allowed under the Minneapolis / JWC Agreement?**
- **Issues Matrix: Generic**
- **Minneapolis / JWC Issues**
- **Proposal for a Memorandum of Understanding**



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WATER SYSTEM INTERCONNECTIONS

What is an Interconnection?

**“A physical linkage or junction between pipes
both within and between utilities.”**



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WATER SYSTEM INTERCONNECTIONS

Types of Interconnections

- **Emergency only**
- **Year-around, daily use**
- **Seasonal use**
- **Semi-regular (peaking) use**
- **One-way or two-way**

The Minneapolis / JWC delivery pipelines are a form of one-way, year-around use water system interconnections.



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WATER SYSTEM INTERCONNECTIONS

Utility Business Arrangements

- **Water supply**
- **Hydraulic capacity**
- **Points of connection**
- **Pricing and terms**
- **Capacity and commodity**
- **Contract expiration date**
- **Peaking limits**
- **Minimums and limits**



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WATER SYSTEM INTERCONNECTIONS

Physical Controls

- **Valves**
- **Backflow prevention**
- **Meters**
- **Pressure regulation**



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WATER SYSTEM INTERCONNECTIONS Agreement Terms

- **None**
- **Pro forma**
- **Demand schedule**
- **Liability / hold harmless**
- **Water quality**



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WATER SYSTEM INTERCONNECTIONS Interconnection Planning Criteria

- **Reliability**
- **“Interconnection Reliability Target” concept**
- **IRT = 35% x average daily demand**
- **Often linked to “essential needs”**
 - ✓ **Eating**
 - ✓ **Drinking**
 - ✓ **Toilet flushing**
 - ✓ **Fire fighting**
 - ✓ **Hospital use**



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WATER SYSTEM INTERCONNECTIONS

What is allowed under the Water Supply Agreement?

- **No physical interconnections allowed without written permission of the City of Minneapolis**
- **No service to new “outside customers” located outside of the existing JWC service area**
- **Indemnification by Minneapolis for water delivered to Points of Delivery**
- **Indemnification by JWC for water downstream of Points of Delivery**



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WATER SYSTEM INTERCONNECTIONS

2003 GAO Report: *Experts' Views on How Future Federal Funding Could Best be Used to Improve Security*

1. **Develop common monitoring protocols**
2. **Improve relationships between utilities and public health agencies**
3. **Improve relationships between utilities and law enforcement agencies**
4. **Test local emergency response systems**
5. **Share resources among utilities**
6. **Establish physical interconnections between utilities**



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WATER SYSTEM INTERCONNECTIONS

2003 GAO Report: *Experts' Views on How Future Federal Funding Could Best be Used to Improve Security*

Useful in mitigating intentional contamination:

- Provides for continuation of full or partial service, possibly from another source
- Aids in isolating contamination
- Can allow fresh, clean water to be pumped in from an entirely different system



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WATER SYSTEM INTERCONNECTIONS

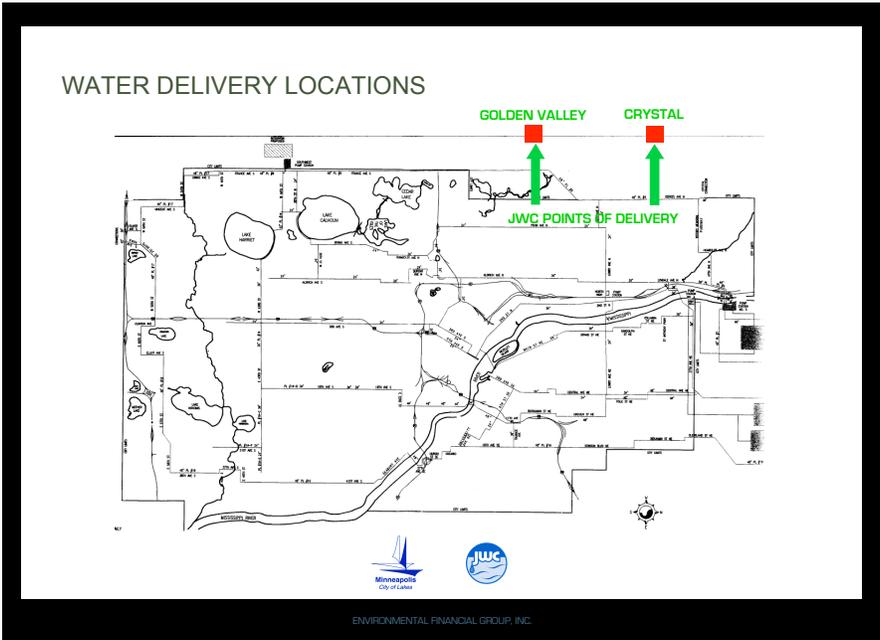
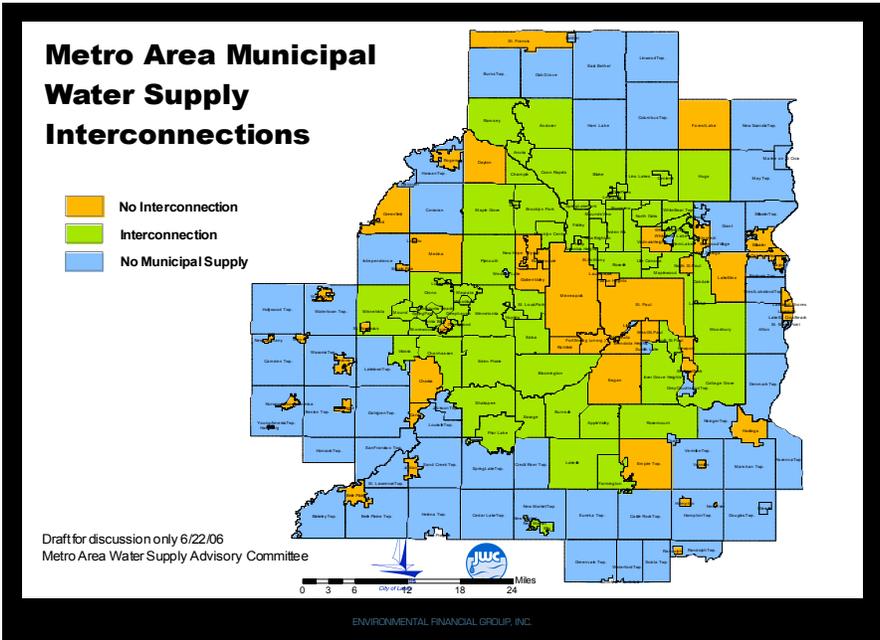
2003 GAO Report: *Experts' Views on How Future Federal Funding Could Best be Used to Improve Security*

Identified as a "high or highest" priority in Federal funding

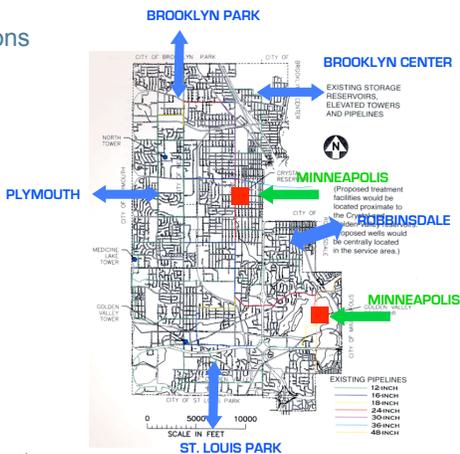
- Provide a higher degree of supply redundancy
- Possible use of distributed sources (e.g. wells and surface water)
- Redundant distribution of treated water (more than one pipe)
- Increased control over pipeline flows



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INTERCONNECTIONS Potential JWC Interconnections



WATER SYSTEM INTERCONNECTIONS Issues Matrix

ISSUE	PROBLEM	MITIGATION / SOLUTION
Quantity	<ul style="list-style-type: none"> • Insufficient upstream supply • Insufficient upstream pipeline capacity • Insufficient downstream pipeline capacity 	<ul style="list-style-type: none"> • Limit to joint emergency use only • Limit to downstream emergency use only • Limit to available supply depending on upstream conditions • Pursue multiple interconnections
Water Quality	<ul style="list-style-type: none"> • Hardness • Iron and Manganese • Chlorine/Disinfection • Others 	<ul style="list-style-type: none"> • Emergency use only • Limit quantity • Specify total quantity • Provide additional treatment
Liability	<ul style="list-style-type: none"> • Aesthetic (Staining) • Taste and Odor • Biological (Crypto/Giardia) 	<ul style="list-style-type: none"> • Emergency use only • Hold harmless



WATER SYSTEM INTERCONNECTIONS
Minneapolis - JWC Issues

ISSUE	PROBLEM	MITIGATION / SOLUTION
Quantity from St. Louis Park	<ul style="list-style-type: none"> • Insufficient upstream supply and pipeline capacity • Insufficient downstream pipeline capacity 	<ul style="list-style-type: none"> • Limit to joint emergency use only • Limit to downstream emergency use only • Limit to available supply depending on upstream conditions
Quantity from Plymouth	<ul style="list-style-type: none"> • Insufficient upstream supply and pipeline capacity • Insufficient downstream pipeline capacity 	<ul style="list-style-type: none"> • Limit to joint emergency use only • Limit to downstream emergency use only • Limit to available supply depending on upstream conditions
Quantity from Robbinsdale	<ul style="list-style-type: none"> • Insufficient upstream supply and pipeline capacity • Insufficient downstream pipeline capacity 	<ul style="list-style-type: none"> • Limit to joint emergency use only • Limit to downstream emergency use only • Limit to available supply depending on upstream conditions
Water Quality	<ul style="list-style-type: none"> • Hardness • Iron and Manganese 	<ul style="list-style-type: none"> • Emergency use only



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WATER SYSTEM INTERCONNECTIONS
Proposed Memorandum of Understanding

Seeking Task Force endorsement of a memorandum of understanding or contract amendment allowing the JWC to establish and maintain interconnections with its neighbors



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WATER SYSTEM INTERCONNECTIONS Minneapolis - JWC Memorandum of Understanding

- **Honor daily minimum purchase**
- **Hold Minneapolis harmless (downstream water quality, disinfection)**
- **No backflow to Minneapolis**
- **No backflow to JWC reservoirs**



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Joint Water Planning and Governance Task Force

Minneapolis · Crystal · Golden Valley · New Hope

Water System Interconnections

PRESENTATION BY
SCOTT HARDER, ENVIRONMENTAL FINANCIAL GROUP

15 November 2006



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F | Governance: March 21, 2007

Agenda

Meeting Minutes

Handouts

Presentations

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**Minneapolis—Joint Water Commission
Joint Water Planning and Governance Task Force
Meeting**

March 21, 2007 4:00 PM-6:00 PM
Minneapolis City Hall
Room 319, Third Floor
(Parking Information Attached)

AGENDA

- 1. Review and Approve Agenda**
- 2. Approval of November 15, 2006 Meeting Minutes**
- 3. Metropolitan Council Regional Water Supply Plan**
(Review of conservation and drought presentations)
- 4. Governance** (presentation by Scott Harder, discussion by all)
 - Existing Minneapolis Water Governance Structure
 - Case Study: St. Paul Regional Water Services
 - Case Study: Portland, Oregon
 - Comparative analysis of governance models
 - Water Authority
 - Compact or Joint Action
 - Stakeholder Advisory
 - Watershed model
 - Others
- 5. Next Meeting**

MINNEAPOLIS - JOINT WATER COMMISSION JOINT WATER PLANNING AND GOVERNANCE TASK FORCE



Governance



March 21, 2007

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Briefing on Metropolitan Council Regional Water Supply Plan

- Beginning Phase II: 2007-2008
- Add St. Paul rep to Advisory Committee
- February discussions on conservation, drought and river flows
- Recommendations forwarded to Legislature
- Metro Area Interconnect project funding

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Meeting Objective

“...consider a stronger governance role for the JWC in the MWW water system...”

Water System Governance

-  Existing Minneapolis Water Works governance
-  Existing Joint Water Commission governance
-  Case study: St. Paul Regional Water Board
-  Case study: Portland, Oregon
-  Other midwest case studies
-  Other governance structures

Existing Minneapolis Water Works Governance

- Authorized through Minneapolis Charter
- City Council governance
- Dedicated Water Fund
- Three advisory groups:
 - Capital Long Range Improvement Committee (CLIC)
 - Citizen's Environmental Advisory Committee (CEAC)
 - Charter Commission

Existing JWC Governance

- Minneapolis water contract with Golden Valley (July, 1961)
- Minneapolis water contract addendum (January, 1962)
- First joint powers agreement (November, 1963)
- Amendment to first joint powers agreement (March, 1965)
- Second joint powers agreement (September, 1994)
- Second water contract with Minneapolis (2005)

First JWC Joint Powers Agreement (1963)

- Golden Valley, New Hope, and Crystal jointly construct water storage and transmission system
- Golden Valley resells water to other two cities at “no advance in price”
- Capital costs paid separately by each city
- Each city pledges “full faith and credit”
- Establishes three member JWC, one member appointed by each city council
- Members are agents and representatives of “each and all” of the municipalities
- No member shall be deemed a “partisan representative”

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Subsequent JWC Agreements

- More specific powers
- Defined a quorum as two members
- Most actions require 2/3 vote
- Unanimous action required on budget, agreement, and capital improvements

...currently updating water supply plan with more aggressive conservation elements to enhance sustainability.

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Linking Stakeholder Interests to Governance

- Political leadership
- Reliability and sustainability
- Public health and safety
- Cost-effectiveness
- Financial needs and constraints
- Accountability
- Economic Development

St. Paul Regional Water Services

- Provides retail potable water service to St. Paul as well as Falcon Heights, Lauderdale, Lilydale, Maplewood, Mendota, Mendota Heights, and West St. Paul
- Wholesale potable water service is provided directly to Little Canada and Roseville and indirectly to Arden Hills via Roseville
- Department of the City of St. Paul
- Enterprise Fund
- Governed by Board of Commissioners
- Two city council members, two citizens, two suburban representatives

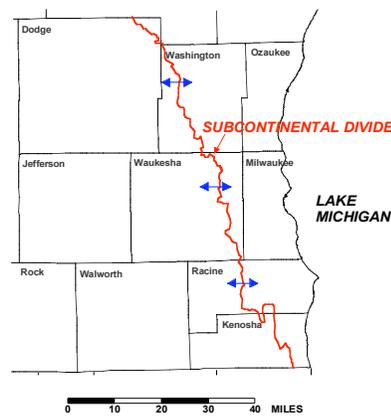
Milwaukee, Wisconsin: Wholesale Water Sales Agreements

- City sells potable water to several suburban communities
- Agreements define service area, amount of water, other terms and conditions
- Rates set by state Public Service Commission
- Current focus on economic development incentives
- Concern about protecting large commercial customers and tax base

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Milwaukee, Wisconsin: Wholesale Water Sales Agreements



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Cleveland, Ohio: Economic Development Agreements

- City sells potable water to several suburban communities
- Agreements define service area, amount of water, other terms and conditions
- Companion agreements provide unique economic development arrangements
 - Tax revenue sharing
 - General fund payment
 - Penalties for soliciting Cleveland companies

Portland, Oregon / Tualatin Valley Water District

- City sells potable water to District
- Defined annual firm supply
- Additional interruptible supply at City option
- Specific pressures and flow rates
- City held harmless for damages due to failure of supply, pressure, or water quality
- No purchase of any ownership rights
- Not precluded from joint ownership or joint operating agreements

Portland: Water Managers Advisory Board

- Two City reps, one rep from each purchaser
- City staff support
- Advisory in nature
- Conservation and Operations Coordination committees
- Recommend SOPs to enhance efficiency, reliability, and cost effectiveness

Portland: Water Managers Advisory Board

- Forecasting seasonal demands and peaks
- Minimize impact of peak period demands
- Security and emergency management
- Storage
- Timing of deliveries

Portland: Water Managers Advisory Board

- Rate review
- Assist in developing capital program addressing improvements used to serve Purchasers
- Identify criteria used to prioritize capital projects
- Opportunity to suggest and recommend changes, specific projects, and improvements in the planning process
- Annual capital planning meeting

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Portland: Water Managers Advisory Board

- Review City Water Works operating budget
- Periodic reports during budget process
- Final review two weeks prior to submission to mayor
- Report on final budget and financial plan

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Portland: Water Managers Advisory Board

- Cost (capital and operating)
- Setting priorities
- Conservation
- Accountability
- Reliability

Other Regional Governance Models

- Mutual aid arrangements
- Sharing arrangements
- Water purchase agreements
- Collaborative water resource development
- Contract services arrangements
- Consolidation

Advantages

- Short-term reliability
- Long-term sustainability
- Spreading costs
- Access to funding
- Consolidation of services
- Improve health and safety
- Flexibility and emergency preparedness

Disadvantages

- Reduced independence
- Varying needs and priorities
- Conflicting laws and regulations
- Differing costs and benefits on regional projects
- Consolidation impacts
- Lack of immediate benefits (e.g. rate reductions)

New Minneapolis-JWC Agreement

- Status Quo governance arrangements
- Cost control through 5-year cost reviews

Water Commission

- Cooperative coordinating council
- Representatives from all parties
- Facilitates collaborative efforts
- Informal
- Serves as liaison to governing councils
- Could focus on regional objectives

Water Commission: Disadvantages

- Perceived loss of local control
- Technical expertise
- Conflict between local needs and regional goals

Water Compact

- Binding legal authority
- Focus on goals, actions, and funding
- Ratification required
- Bound parties may include other stakeholders
- Often penalties for non-performance

Water Compact: Disadvantages

- Lone holdout can derail process
- Requires good-faith negotiating despite uncertain science
- Future amendments reopen negotiations

Legislated State Action (e.g. DNR)

- Provide guidelines to locals to effectively manage water resources
- Local plans address regional goals
- State enforcement
- Local plan flexibility combined with regional objectives
- State funding

Legislated State Action: Disadvantages

- Resistance to expansion of state powers
- Loss of local control
- State funding

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MINNEAPOLIS - JOINT WATER COMMISSION JOINT WATER PLANNING AND GOVERNANCE TASK FORCE



Discussion

March 21, 2007



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MINNEAPOLIS - JOINT WATER COMMISSION JOINT WATER PLANNING AND GOVERNANCE TASK FORCE



Governance



March 21, 2007

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EFGCarbon

Meeting Objective

“...consider a stronger governance role for the JWC in the MWW water system...”

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Portland, Oregon / Tualatin Valley Water District

- City sells potable water to District
- Defined annual firm supply
- Additional interruptible supply at City option
- Specific pressures and flow rates
- City held harmless for damages due to failure of supply, pressure, or water quality
- No purchase of any ownership rights
- Not precluded from joint ownership or joint operating agreements

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Portland: Water Managers Advisory Board

- ✓ Two City reps, one rep from each purchaser
- ✓ City staff support
- ✓ Advisory in nature
- ✓ Conservation and Operations Coordination committees
- ✓ Recommend SOPs to enhance efficiency, reliability, and cost effectiveness

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Portland: Water Managers Advisory Board

- ✓ Forecasting seasonal demands and peaks
- ✓ Minimize impact of peak period demands
- ✓ Security and emergency management
- ✓ Storage
- ✓ Timing of deliveries

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Portland: Water Managers Advisory Board

- ✓ Rate review
- ✓ Assist in developing capital program addressing improvements used to serve Purchasers
- ✓ Identify criteria used to prioritize capital projects
- ✓ Opportunity to suggest and recommend changes, specific projects, and improvements in the planning process
- ✓ Annual capital planning meeting

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Portland: Water Managers Advisory Board

- Review City Water Works operating budget
- Periodic reports during budget process
- Final review two weeks prior to submission to mayor
- Report on final budget and financial plan

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Portland: Water Managers Advisory Board

- Cost (capital and operating)
- Setting priorities
- Conservation
- Accountability
- Reliability

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Other Regional Governance Models

- Mutual aid arrangements
- Sharing arrangements
- Water purchase agreements
- Collaborative water resource development
- Contract services arrangements
- Consolidation

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Advantages

- Short-term reliability
- Long-term sustainability
- Spreading costs
- Access to funding
- Consolidation of services
- Improve health and safety
- Flexibility and emergency preparedness

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Disadvantages

- ✓ Reduced independence
- ✓ Varying needs and priorities
- ✓ Conflicting laws and regulations
- ✓ Differing costs and benefits on regional projects
- ✓ Consolidation impacts
- ✓ Lack of immediate benefits (e.g. rate reductions)

G | Co-Chairs Committee: May 24, 2007

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Presentations

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**Minneapolis—Joint Water Commission
Joint Water Planning and Governance Task Force
Meeting**

May 24, 2007 3:30 PM-5:00 PM
Minneapolis City Hall
Room 319, Third Floor

AGENDA

- 1. Review and Approve Agenda**
- 2. Portland Water Board – Follow-up Research**
- 3. Minneapolis Citizen’s Advisory Group**
- 4. Governance / Advisory Scenarios (Discussion)**
- 5. Next Meeting**

Regional Water Sales Agreement (20 Year)

April 3 2006

Page 1

SECTION 4 – WATER MANAGERS ADVISORY BOARD

A. General

A Water Managers Advisory Board (WMAB) shall be established no later than thirty (30) days after five or more Purchasers have approved a Water Sales Agreement with the City that includes this provision, and will continue during the term of this agreement. Purchaser is eligible for participation in the WMAB. The WMAB shall consist of two representatives of the City Bureau of Water Works, to be named by the Administrator, and one representative of each participating entity that has signed a contract to purchase water from the City containing a provision allowing its participation on the WMAB. The City of Portland Water Bureau will provide staff support to the WMAB and will be responsible for keeping the official records.

B. Meetings and Bylaws

The WMAB shall meet regularly to communicate with and make recommendations to the Administrator regarding matters relating to the City's sale of water to participating purchasers. The WMAB may adopt such bylaws concerning its organization and governance as a majority of the membership shall see fit. The role of this Board is advisory in nature and, except as specified herein, no rule, bylaw, or action of the WMAB may alter any term of this agreement.

C. Committees

The WMAB shall be responsible for establishing committees as needed to address ongoing needs, which may include:

1. Water Resource Conservation – Possible responsibilities for such a committee are outlined in Section 13 – Water Resource Conservation;
2. Operations Coordination – Possible responsibilities for such a committee may include coordinating supply system routine and emergency operations among the City and its wholesale Purchaser with the goal of providing efficient and cost-effective system operations; and
3. Other committees, as identified by the WMAB.

D. Creation of Operating and Information Standards

1. The WMAB shall recommend to the Administrator standard water system operating practices necessary or advisable to enhance the efficiency, reliability, and cost-effectiveness of the supply, transmission, and storage of water provided under this agreement. These standard operating practices will address issues such as, but not necessarily limited to,

Regional Water Sales Agreement (20 Year)

April 3 2006

Page 2

forecasting seasonal demands, forecasting peak demands, managing the system to minimize the impact of peak demand periods, security and emergency management, use of storage, and timing of deliveries of water. Pending recommendations from the WMAB, the Administrator shall adopt interim operating practices and upon receipt of the recommendations, the Administrator shall adopt the recommendations, with such alterations as he or she deems necessary or advisable. The Purchaser agrees to operate its system in a manner consistent with such established operating practices and in keeping with responsible use of the City's water supply system.

2. The WMAB shall recommend to the Administrator what information and data he or she shall require each participating Purchaser to provide, in order to allow efficient, reliable, and cost-effective provision of water under this Agreement. The Administrator shall adopt these recommended information requirements, with such alterations as he or she deems necessary or advisable. Such information may include, but is not necessarily limited to:
 - (a) System maps with mains, pump stations, tanks, and supply connections;
 - (b) Connections and usage from other supply sources;
 - (c) Total existing and new service connections by category;
 - (d) Key benchmarks to be identified by the Operations Group such as but not limited to standards for operational norms, notification deadlines, protocols for communication;
 - (e) Water quality data;
 - (f) Purchaser facilities' standards for operation to minimize peak and emergency events; and
 - (g) Emergency contact information for each provider and any agreements that have been signed by individual providers to address emergency response.
3. The WMAB shall periodically evaluate Purchasers' compliance with the information requirements and standard operating procedures and shall provide the Water Bureau Administrator with findings and recommendations to assure ongoing compliance.

Regional Water Sales Agreement (20 Year)

April 3 2006

Page 3

E. Rate Review

In order to provide timely notification to Purchaser of proposed changes in rates, charges, and rate design and an opportunity for Purchaser to evaluate such proposals and be heard before the City Council, City agrees that the following steps shall be taken annually.

1. Capital Improvement Program.
 - (a) On an annual basis, Purchaser, through the WMAB, shall be invited to participate in development of that portion of the Water Bureau's Capital Improvement Plan addressing capital improvements used to serve Purchaser or other participating Purchasers;
 - (b) Capital planning will take place in a manner sufficiently timely to ensure Purchaser effective participation in the City's capital budget deliberations each year;
 - (c) City and WMAB will identify criteria to be considered in prioritizing capital improvement projects. City will also share its proposed ranking of projects for funding and completion and its proposed schedule for such capital improvements. Purchaser will be provided reasonable opportunity to present suggestions and recommendations for changes to the proposed Capital Improvement Plan, specific capital projects, and for improvements in the capital planning and financing process;
 - (d) At a minimum, the City will host at least one meeting a year to discuss the Water Bureau's Capital Improvement Plan on a schedule sufficient to allow Purchaser participation in the City's capital budget deliberations each year.
2. Operation & Maintenance Budget
 - (a) On an annual basis, Purchaser, through the WMAB, shall participate in review of the Water Bureau's Operations and Maintenance budget for the water supply system used to serve Purchaser or other participating Purchasers;
 - (b) Water Bureau O & M budget development and review will take place in a manner sufficiently timely to ensure Purchaser effective participation in the budget deliberations each year;
 - (c) The WMAB will be provided the opportunity to participate in the budget development and review process, including steps such as:

Regional Water Sales Agreement (20 Year)

April 3 2006

Page 4

(i) The Administrator will report to WMAB at the commencement of annual financial plan and budget preparation, and report each month to the WMAB on progress in the budget preparation and any particular budgetary issues or concerns related to that part of the water supply system used to serve the Purchaser and other members of the WMAB. Reports may be in writing or at WMAB meetings.

(ii) A reasonable time, but no less than two weeks, prior to submission of the Water Bureau budget to the Mayor, the Administrator shall report to the WMAB on the current state of budget and financial plan preparation and provide his or her best estimate of the final budget for submission to the Mayor related to that part of the water supply system used to serve the Purchaser and other members of the WMAB and shall consult with the WMAB about the budget to be proposed to the Mayor.

(iii) The Administrator will provide WMAB a presentation concerning the Water Bureau budget request to the Mayor and the Water Bureau financial plan for the following fiscal year and provide copies of the budget request and financial plan for review and comment. The budget request and the financial plan will be made available to WMAB on or as soon as reasonably possible after the date they are submitted to the Mayor.

(iv) The City will advise Purchaser in writing of significant changes in the proposed Water Bureau Budget after its submission to the Mayor.

(v) When the City Bureau of Water Works files its annual rate ordinance with the City Council Clerk, a copy of said ordinance will be forwarded to Purchaser, accompanied by a letter giving the dates on which the City Council is scheduled to consider rates.

3. Purchaser, through the WMAB, may offer comments on the annual rate ordinance in writing or in personal testimony before the City Council.

F. Protection of Confidential Information

Information submitted to or produced by the WMAB or otherwise exchanged by the parties to this Agreement and similar wholesale water agreements may include documents related to the vulnerability or security of water supply systems. The parties agree that if either receives a public document request for such information, the party receiving that request shall, prior to release of any documents, expeditiously notify the entity about whose system information is sought and shall, in addition, assert all applicable exemptions to release of the documents available under the Oregon Public Records Law.

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H | Advisory Governance & Conservation: September 13, 2007

Agenda

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Presentations

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**Minneapolis—Joint Water Commission
Joint Water Planning and Governance Task Force
Meeting**

September 13, 2007 4:00 PM-6:00 PM
Minneapolis City Hall
Room 220, Second Floor

AGENDA

- 1. Review and Approve Agenda**
- 2. Water Advisory Board Concept**
- 3. Water Conservation**
- 4. Reliability Planning**
- 5. Next Meeting**

**MINNEAPOLIS -- JOINT WATER COMMISSION
Joint Water Planning and Governance Task Force
Meeting**

September 13, 2007 4:00 PM to 6:00 PM
Minneapolis City Hall

MEETING MINUTES

Present

Minneapolis

R.T. Rybak, Mayor
Sandra Colvin Roy, Council Member
Steven Kotke, Director of Public Works

Golden Valley

Linda Loomis, Mayor
Bob Shaffer, Council Member
Tom Burt, City Manager

Crystal

Mark Hoffman, Council Member
Anne Norris, City Manager

New Hope

Martin Opem, Mayor
Mary Gwin-Lenth, Council Member
Kirk McDonald, City Manager

Others

Brett Hjelle, Minneapolis Public Works Coordinator
Scott Harder, Environmental Financial Group, Inc.

Review and Approve Agenda

Decision: The Task Force unanimously approved the agenda for the meeting. There were no changes.

Revised Schedule

The Task Force reviewed a revised schedule that was distributed with the agenda beforehand. The schedule had been revised at the request of the Task Force so that governance issues would be considered after the technical topics. A copy of the revised schedule is attached as Exhibit 1 to these minutes.

Decision: The Task Force unanimously approved the revised schedule.

Budget and Cost-Sharing

Klara Fabry and Scott Harder discussed the budget for consulting support services. Prior to the meeting, Scott had met with both Klara and the Joint Water Commission to describe the scope of services in detail. The total budget of \$120,250 assumes seven task force meetings, four technical memoranda, and a final report. An additional contingency of \$25,000 (for a total of \$145,250) was recommended in case additional technical information is required, additional meetings are needed, or if additional issues arise that the Task Force needs to consider.

Scott then discussed the preliminary cost sharing arrangements that were discussed at the January 11, 2006 meeting. The purpose was to ensure that all Task Force members were supportive of such an arrangement.

Decision: The Task Force confirmed the budget and the 50% - 50% cost sharing arrangement.

Mailing List and Web Portal

Scott Harder solicited Task Force input on the mailing list to make sure that all members were receiving email notices and attached documents. Scott also indicated that the web portal would be available shortly, pending some final design modifications.

Decision: No Task Force decision was necessary for this informational item.

2006 Legislative Update

The Task Force had included this on the agenda in the event that the water system interconnection project required additional support at the legislature. In addition, Scott Harder distributed copies of backup water supply legislation secured by the City of St. Paul last year. The legislation is similar to that secured by the JWC in 2004.

Decision: No action is required of the Task Force on this matter.

Action Item: Scott Harder indicated that he would continue to monitor pending water supply legislation and send email notices of such legislation to the Task Force.

Metropolitan Council Regional Water Planning Update

Scott Harder presented slides shown to the Governor-appointed Advisory Committee overseeing the Metropolitan Council regional water supply planning process. The presentation included an overview of the regional aquifer system and other background information.

Linda Loomis (Advisory Committee member) briefed the Task Force on planned outreach efforts planned, including possible May workshops in Chanhassen and Hugo. Linda also indicated that the Council is seeking to reach out to environmental groups including MEI, MEP, and Friends of the Mississippi. She indicated that outreach plans and related key messages were still in development.

Decision: No action is required of the Task Force at this time.

Planning Information “Gap” Analysis

Presentation by Scott Harder. Discussion by all.

Prior to beginning work on specific water issues, the Task Force was interested in reviewing the current status of water supply system planning for Minneapolis and the JWC. The intent was to identify “gaps” in planning information that might inhibit a full exploration and understanding of the issues to be considered by Task Force. The planning information analysis focused on a back-up water supply, water quality, hydraulics, and the conjunctive use of river and groundwater.

The slides used to present this analysis are included as Exhibit 2 to these minutes.

The analysis highlighted the need for the following:

- better information on Minneapolis water system hydraulics,
- an understanding of the economics of backup supply options,
- emergency demand requirements,
- the feasibility of interconnections with other cities,
- blended water quality impacts, and
- aquifer impacts for demands greater than JWC.

Decision: No action is required of the Task Force at this time.

Next Meeting

Decision: The group decided that the date and time of the next meeting would be coordinated through Minneapolis and JWC staff.

Adjourn

The meeting was adjourned about 5:45 P.M.

Minneapolis - Joint Water Commission Water Task Force

13 September 2007

AGENDA

- [**Water Advisory Board Concept**
- [**Conservation**
- [**Sustainability**
- [**Other Business**
- [**Next Meeting and Schedule**

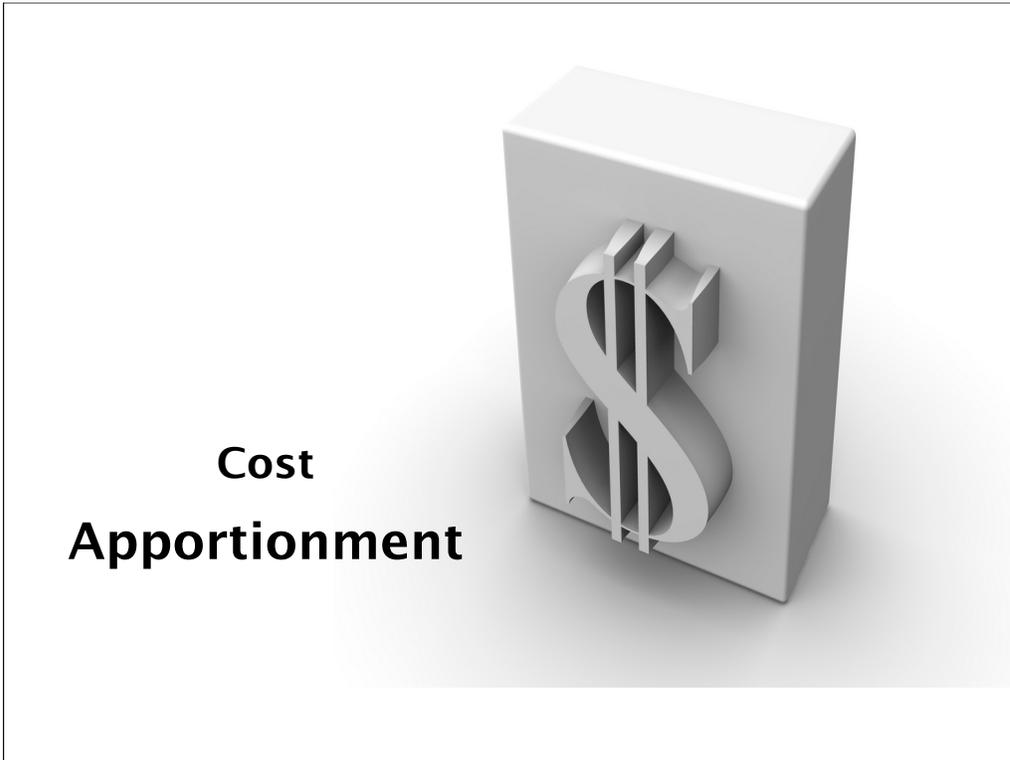
Minneapolis - Joint Water Commission Water Task Force

Water Advisory Board

13 September 2007

Water Advisory Board Concept

- [**Purposes**
 - [**MWW operating budget review**
 - [**MWW capital plans**
 - [**Cost apportionment**
 - [**Conservation planning**
 - [**River advocacy**
 - [**Sustaining our supply!**
- [**Membership**
- [**Conducting Business**
- [**Commitment**



**Minneapolis - Joint Water Commission
Water Task Force**

Conservation

13 September 2007

Conservation “Best Practices”

- [Awareness
- [Economic incentives through rates
- [Targeted programs (indoor/outdoor)
- [Sprinkling
 - [Residential
 - [Commercial
- [Drought Response
 - [Drought watch
 - [Restrictive
 - [Emergency
- [Sustainability metrics
 - [Water use
 - [Energy, materials, GHGs

7

Benefits of Joint Conservation Planning

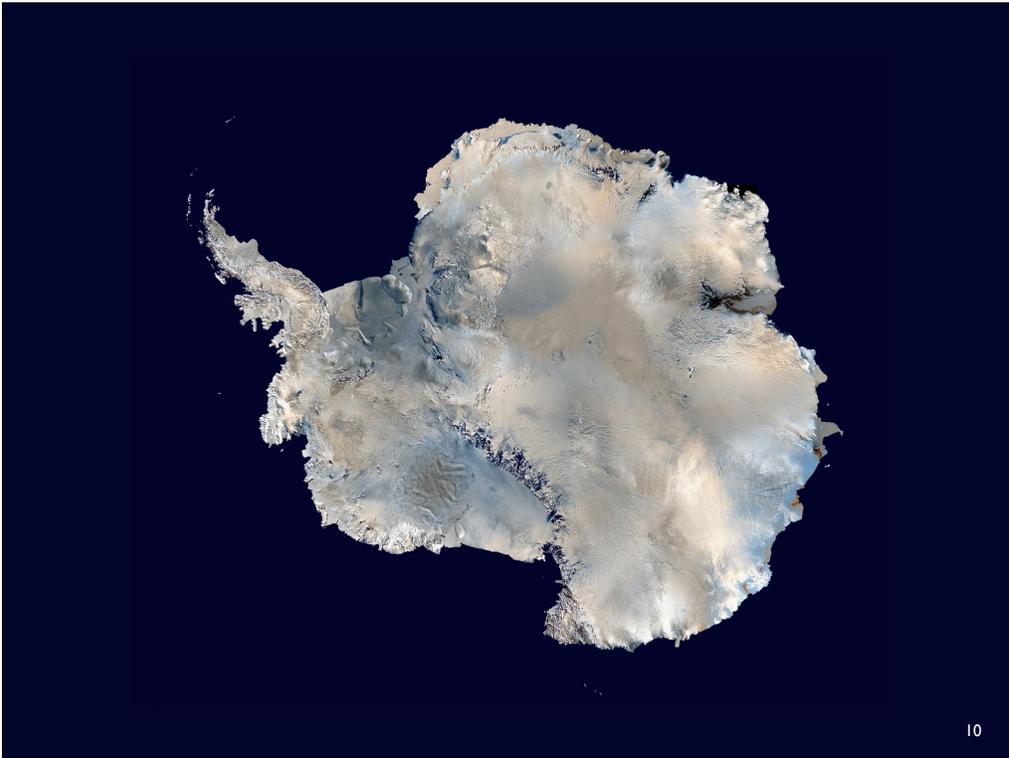
- [Stronger message
- [Scale
- [“Best Practices”
- [Position partnership to secure funding
- [Strengthen regional planning leadership
- [River focus

8

Minneapolis - Joint Water Commission Water Task Force

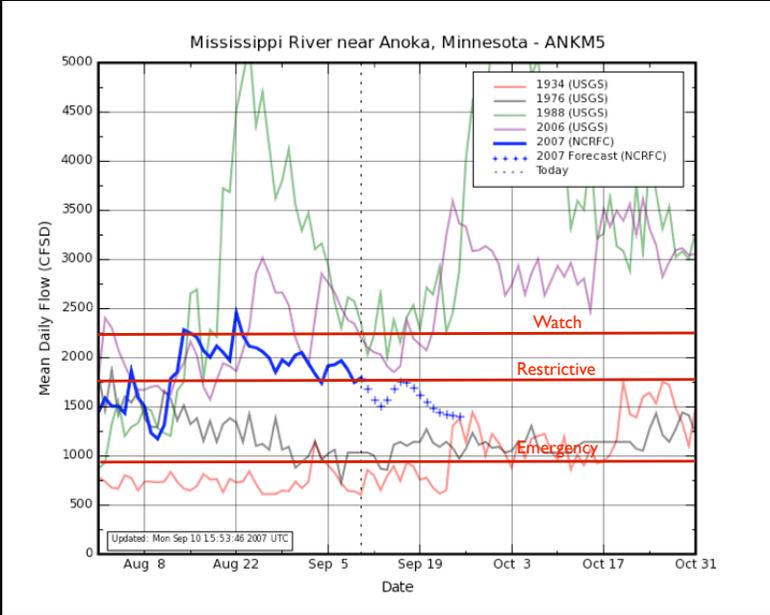
Sustainability and Reliability

13 September 2007



INTERNATIONAL PANEL ON CLIMATE CHANGE 4th Assessment Report

- [Scientific consensus
- [2°C Threshold to Avoid Tipping Points
- [More Clarity on Regional Impacts
- [Underscores Urgency to Address Problem



Mississippi River Drought Response Levels

Drought Watch	2240 cfs
Restrictive	1570 cfs
Emergency	900 cfs

17

Sustainability

“Sustainable development is that which meets the needs of the present without compromising the ability of future generations to meet their own needs.”

- World Commission on Environment and Development
(aka “Brundtland Commission”), 1987

18

Sustainability Suggests:

- [A decoupling of environmental degradation and resource consumption from economic and social development
- [A reorientation of public and private investment towards new, environmentally-friendly technologies

19

Sustainability...in Theory:

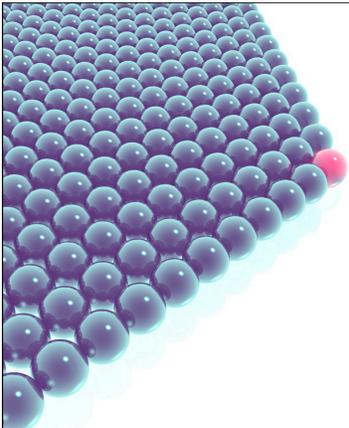
- Long term, economic growth, social cohesion and environmental protection must go hand in hand
- Offers a positive long-term vision of a society that is more prosperous and just
- Promises a cleaner, safer, healthier environment

20

Classic Sustainability Principles Promote “Triple Bottom-Line” Thinking

- Environmental
- Social
- Financial

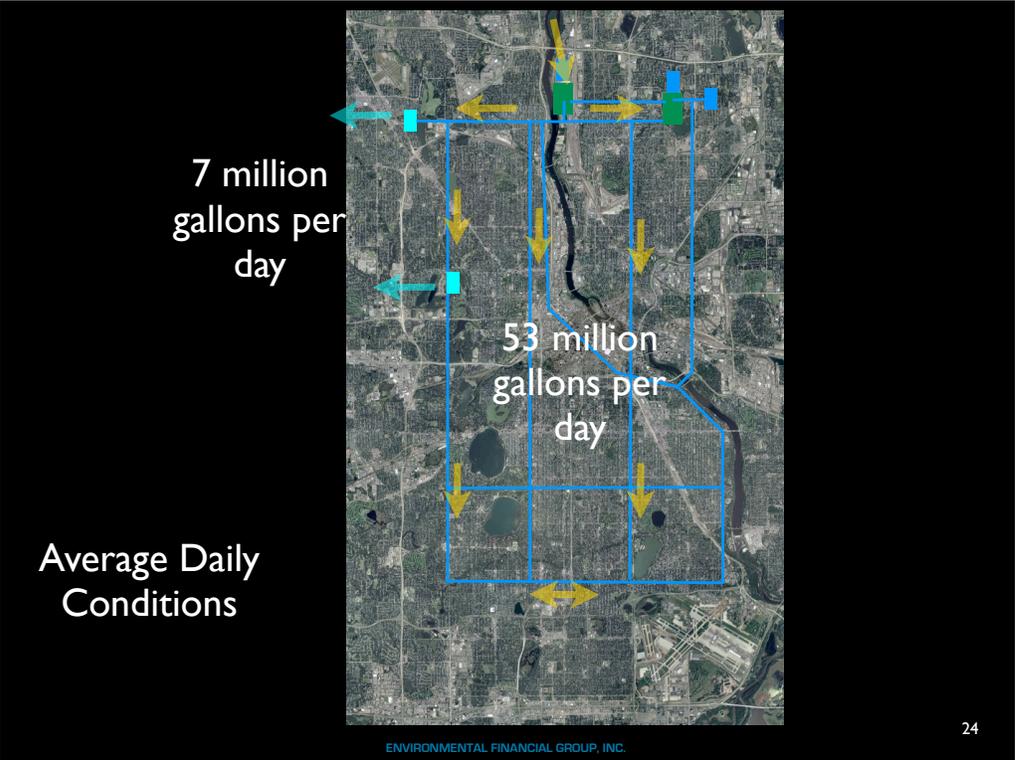
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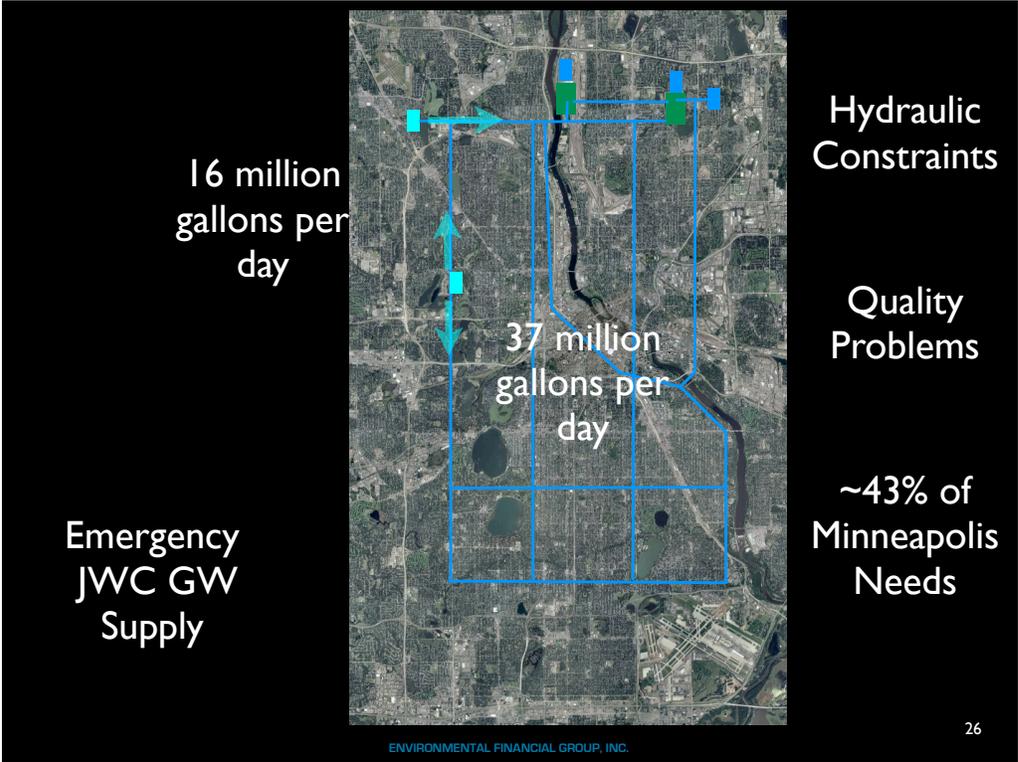
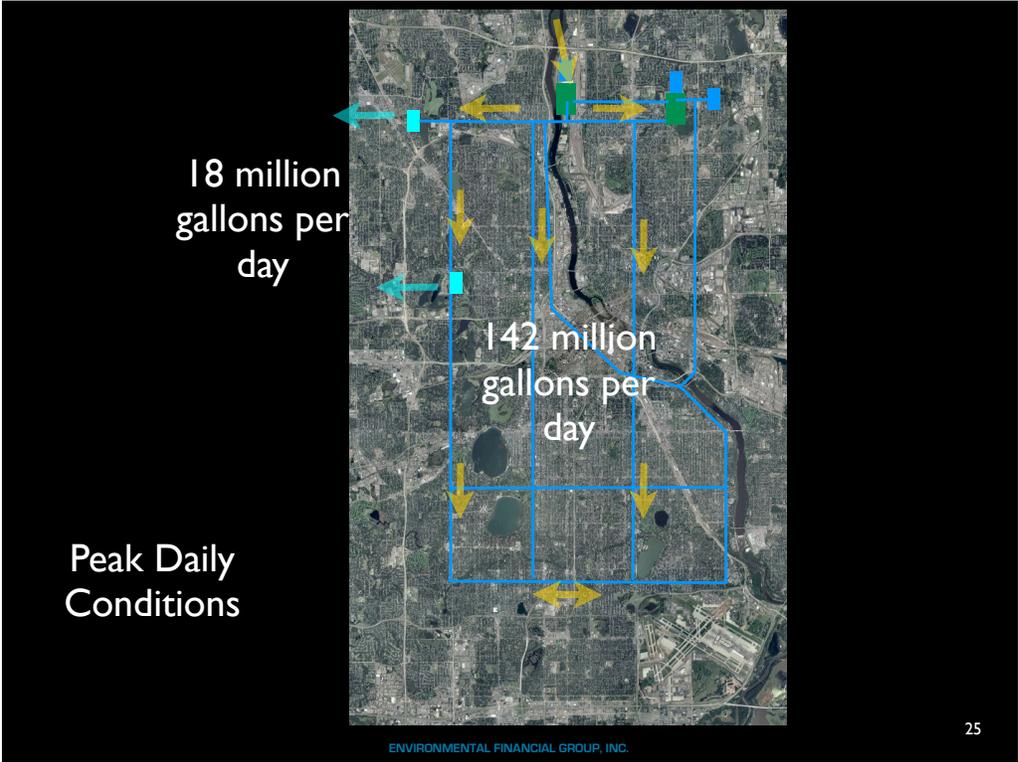


How Do We
**Provide Regional
Leadership?**

Sustainability Challenges

- [River Low-Flow Management
- [Potential Upstream River Water Users
 - [Ramsey (28 cfs v. Mpls 250 cfs)
 - [Others
- [Climate Change --> Variability
- [Contaminants (EDCs)
- [Catastrophes
- [Cost and Affordability
- [Conservation
- [Legal Treatment of Supplies
 - [Riparian Rights
 - [Prior Appropriation Doctrine





Key Messages

“Conserve to Protect”

“Reliability through Sustainability”

“Climate-aware supply planning”

27

Minneapolis - Joint Water Commission Water Task Force

Other Business

13 September 2007

WATER ADVISORY BOARD

Draft Concept

BYLAWS

PURPOSE: The Water Advisory Board (WAB) shall communicate with and make recommendations to the Director of the Minneapolis Water Works (MWW) regarding any matters relating to the MWW.

MEETINGS: The Chair of the WAB shall cause the Board to meet regularly at least quarterly. Designated support staff (see STAFF) will provide meeting summaries of the WAB.

MEMBERSHIP: Each wholesale customer shall have one voting member on the WAB. In addition, each wholesale customer may appoint an alternate to vote should the primary voting member be unavailable. The MWW shall have two voting members on the WAB.

OFFICERS: Members of the WAB shall elect annually in June a Chair and Vice-Chair, who will preside over the meetings for a term of one year beginning July 1 and ending June 30. The Chair and Vice-Chair shall be wholesale customers.

TERM OF OFFICE FOR MEMBERS: Appointed members of the WAB and their designated alternates shall serve until replaced by the wholesale customer they represent.

QUORUM: A quorum of the WAB shall be three (3) wholesale customer members and one MWW member. All issues brought before the WAB that require board approval will require a simple majority of the quorum.

COMMITTEES: The WAB may establish committees as it collectively sees fit. The WAB shall have three permanent standing committees: Operations, Conservation & Water Supply, and Finance. Composition of these committees shall consist of a minimum of three WAB members. Two shall be from the wholesale customer group and one shall be from the MWW. In no case shall the committee consist of a majority of the members of the WAB. The Chair of the WAB shall appoint committee chairs, who are responsible for conducting committee meetings and reporting the results back to the WAB.

REPORTS: Any actions of the WAB taken by majority vote shall be reported to all members of the WAB.

AGENDA: The agenda for the WAB meeting shall be set by the Chair or Vice-Chair. Any member may submit agenda items to the Chair or Vice-Chair.

STAFF: Administrative/secretarial support staff for the WAB shall be provided by the wholesale customers on a rotating basis.

EXPENSES: Administrative expenses of the WAB shall be provided by the wholesale customers on a rotating basis. The expense shall be incorporated in the cost of service to MWW wholesale customers.

AMENDMENT OF BY-LAWS: The By-laws of the WAB shall be amended by majority vote of eligible voting members.

DRAFT: 13 September 2007

DUTIES AND RESPONSIBILITIES

In order to provide timely notification to wholesale customers of proposed changes in rates, charges, and rate design and an opportunity for wholesale customers to evaluate such proposals and be heard before the City Council, MWW agrees that the following steps shall be taken annually.

Capital Improvement Program.

On an annual basis, wholesale customers, through the WAB, shall be invited to review and comment on the MWW Capital Improvement Plan

Capital planning will take place in a manner sufficiently timely to ensure wholesale customers effective participation in the City's capital budget review process.

MWW and WAB will identify criteria to be considered in prioritizing capital improvement projects. MWW will also share its proposed ranking of projects for funding and completion and its proposed schedule for such capital improvements. Purchaser will be provided reasonable opportunity to present suggestions and recommendations for changes to the proposed Capital Improvement Plan, specific capital projects, and for improvements in the capital planning and financing process.

At a minimum, the MWW will host at least one meeting a year to discuss the Capital Improvement Plan on a schedule sufficient to allow wholesale customers participation in MWW's capital budget review process.

Operation & Maintenance Budget

On an annual basis, wholesale customers, through the WAB, shall participate in review of the MWW Operations and Maintenance budget.

MWW O & M budget development and review will take place in a manner sufficiently timely to ensure wholesale customers effective participation in the budget deliberations each year.

The WAB will be provided the opportunity to participate in the budget development and review process, including steps such as:

- ⇒ The MWW Director will report to WAB early on in the budgeting process, and report to the WAB on any particular budgetary issues or concerns related to MWW water supply, treatment, and transmission system and other members of the WAB. Reports may be in writing or at WAB meetings.
- ⇒ A reasonable time prior to submission of the MWW budget to the Mayor, the MWW Director shall report to the WAB on the current state of budget and financial plan preparation and provide his or her best estimate of the final budget for submission to the Mayor related to the water supply, treatment, and transmission system and other members of the WAB and shall consult with the WAB about the budget to be proposed to the Mayor.

The MWW Director will provide WAB a presentation concerning the MWW budget and financial plan for the following fiscal year and provide copies of the budget request and

financial plan for review and comment. The budget and financial plan will be made available to WAB on or as soon as reasonably possible after the date they are submitted to the Mayor.

- ⇒ The City will advise the wholesale customers in writing of significant changes in the proposed MWW Budget after its submission to the Mayor.
- ⇒ When the MWW files its annual rate ordinance with the City Council Clerk, a copy of said ordinance will be forwarded to wholesale customers, accompanied by a letter giving the dates on which the City Council is scheduled to consider rates.

Wholesale customers, either individually or through the WAB, may offer comments on the annual rate ordinance in writing or in personal testimony before the City Council.

Conservation and Water Supply

On an annual basis, wholesale customers, through the WAB, shall review efforts to develop and implement water conservation and drought response plans. The WAB shall review water consumption data, Mississippi River flow data, and other information related to water conservation and the reliability of the water supply. The WAB shall make recommendations to the MWW as to demand management programs and concepts and attempt to ensure consistency in water conservation efforts throughout the service area.

I | Sustainable Strategies & Governance: September 13, 2007

Agenda

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Presentations

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Minneapolis – Joint Water Commission Water Task Force

Final Meeting Agenda

1. Review and Approve Agenda
2. Approve Minutes from September 13, 2007 Meeting
3. A Vision for a Sustainable Regional Water Supply
4. Water Advisory Board
5. Long-Term Water Supply Sustainability
6. Backup Water Supply
7. Next Steps
8. Adjourn and Dinner

A Vision for a Sustainable Regional Water Supply

Minneapolis – Joint Water Commission Water Task Force

Goal:

Strengthen a 30-year regional water partnership

Demonstrate a commitment to long-term water supply sustainability through conservation, climate-aware water supply planning, proactive drought planning and response, and preservation of future supplemental and emergency supplies

Celebrate stewardship of the Mississippi River

Objectives:

Position Minneapolis and its municipal partners to take advantage of emerging state and regional funding opportunities through

- ⇒ Economies of scale
- ⇒ “Best Practices” conservation policies and practices
- ⇒ Grantable projects offering substantial regional benefits
- ⇒ Stronger drought management position with Federal government

Collectively enhance water system sustainability by

- ⇒ Providing advisory governance for effective budgetary and capital investment oversight
- ⇒ Reducing material, energy, and greenhouse gas emissions
- ⇒ Leveraging financial investments in system capacity through additional wholesale agreements
- ⇒ Establishing interconnections with surrounding communities
- ⇒ Maintaining future ability to supplement Mississippi River water with groundwater
- ⇒ Conserving and protecting Mississippi River supply

Recommendations:

Launch new Water Supply Advisory Board with budget and capital oversight

Commit to long-term water supply sustainability

Proposed Water Supply Advisory Board

Minneapolis – Joint Water Commission Water Task Force

Purpose	The Water Supply Advisory Board shall communicate with and make recommendations to the City of Minneapolis regarding matters relating to its operation, maintenance, cost and cost apportionment, financing, operating budget, and capital planning.
Membership	Each wholesale customer shall have one member. In addition, each wholesale customer may appoint an alternate should the primary member be unavailable. Minneapolis shall have one greater than the total number of wholesale customer members. Members shall serve staggered, three-year terms.
Voting	Minneapolis shall maintain a minimum 51 percent of voting representation. Matters with the exception of approval of operating budgets and capital projects shall require a simple majority. Financial matters shall require a supermajority.
Operations	Advise on all matters pertaining to the quality and quantity of water deliveries to wholesale customers.
Conservation	Advocate for the protection of the Mississippi River surface water supply groundwater sources, and provide for the management of climate change impacts, and water demand.
Finance	Advise on matters pertaining to Minneapolis Water Works annual operating budgets, capital improvement plans, and audits.

DUTIES AND RESPONSIBILITIES

Identify criteria to be considered in prioritizing capital improvement projects. Present suggestions and recommendations to the proposed Capital Improvement Plan, specific capital projects, and in the capital planning and financing process.

Review and comment on the Minneapolis Water Works Capital Improvement Plan. Make a presentation to the Mayor of Minneapolis annually as part of the budgeting process.

Host an annual meeting to discuss the Capital Improvement Plan on a schedule sufficient to allow wholesale customers participation in Minneapolis Water Works capital budget review process.

Participate in review of the Minneapolis Water Works Operations and Maintenance budget. Ensure wholesale customers effectively participate in annual budget deliberations.

Review efforts to develop and implement water conservation and drought response plans. Make recommendations to the City of Minneapolis regarding demand management to ensure consistency in water conservation efforts throughout the service area. Advocate for the protection and prudent use of water resources.

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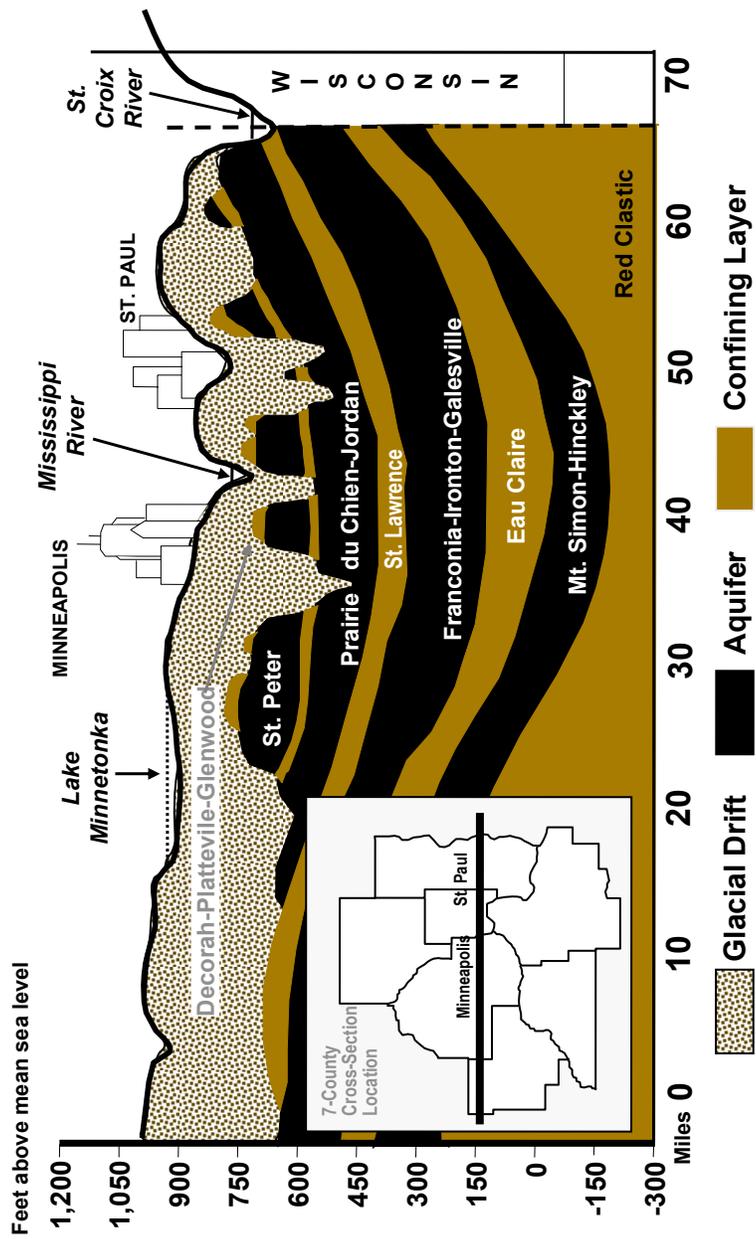


TWIN CITIES WATER SUPPLY

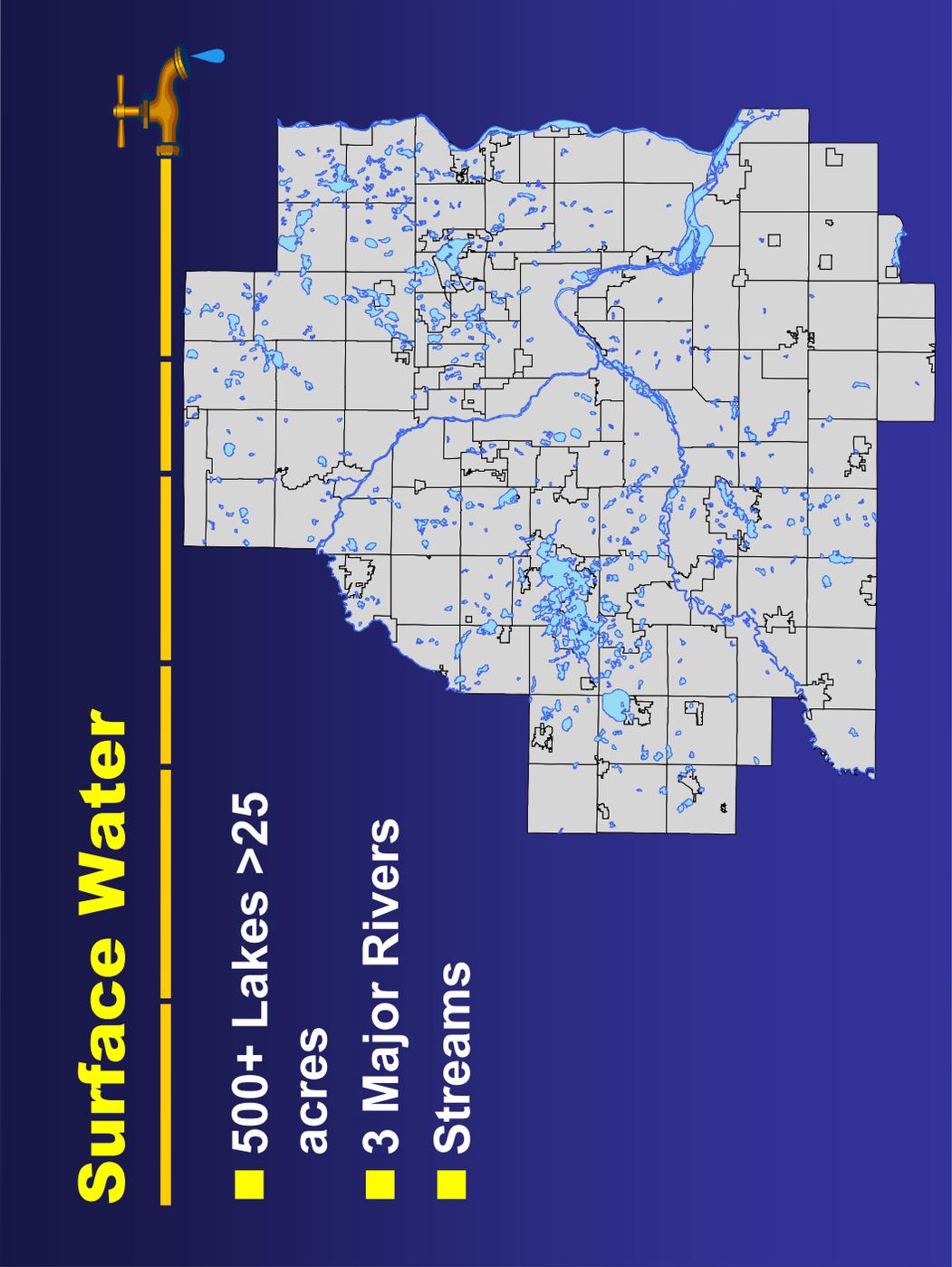
Metropolitan Area Geological Cross-Section



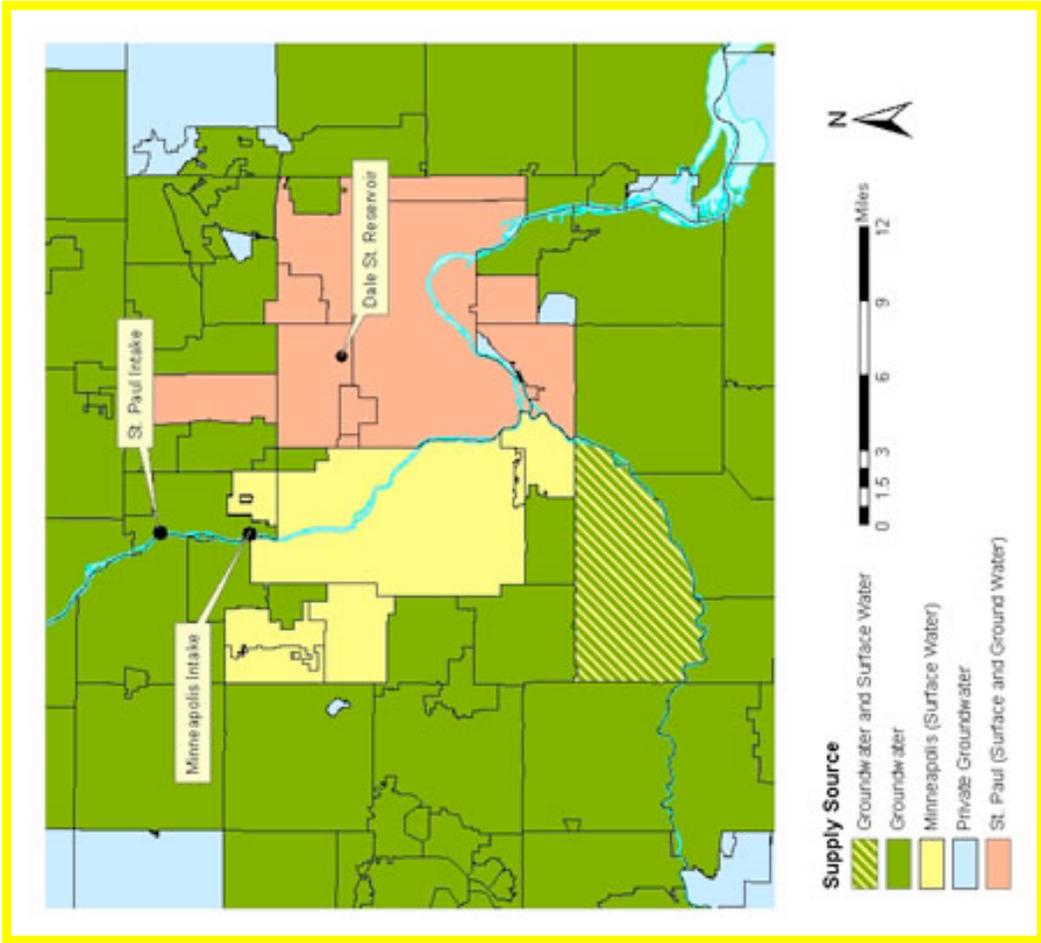
Vertical exaggeration approximately 130x



ENVIRONMENTAL
FINANCIAL
GROUP, INC



ENVIRONMENTAL
FINANCIAL
GROUP, INC



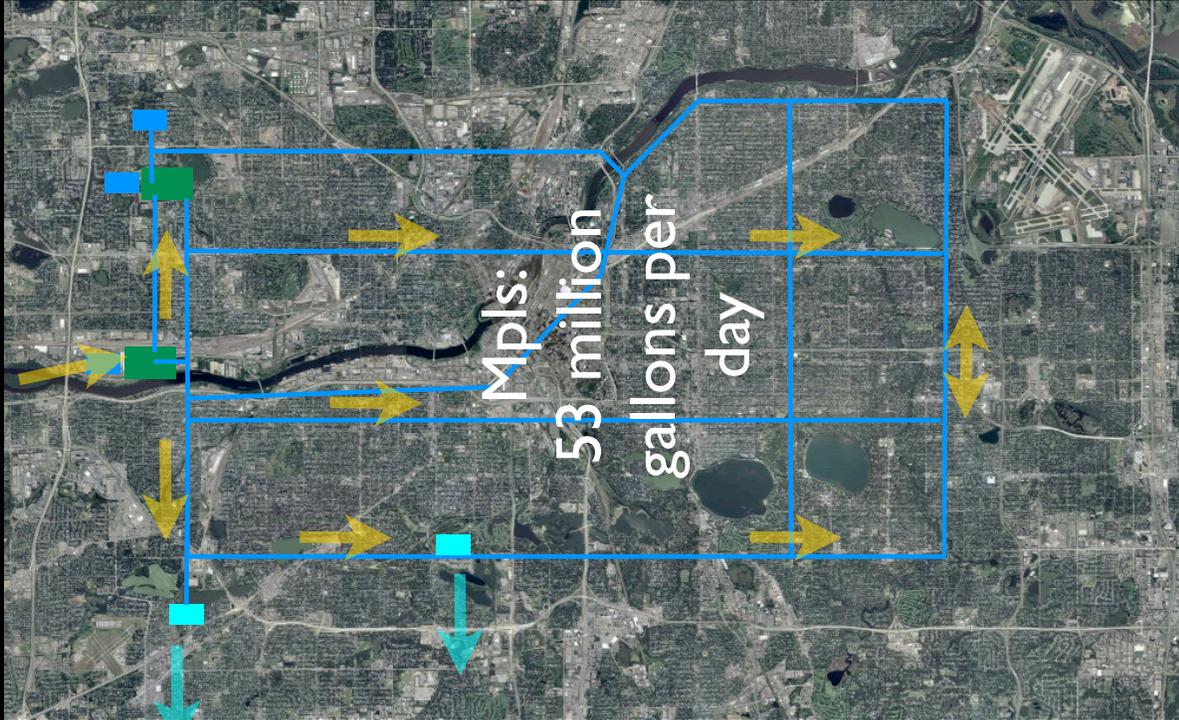
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BACKUP WATER SUPPLY

Backup Water Supply

JWC:
7 million
gallons per
day

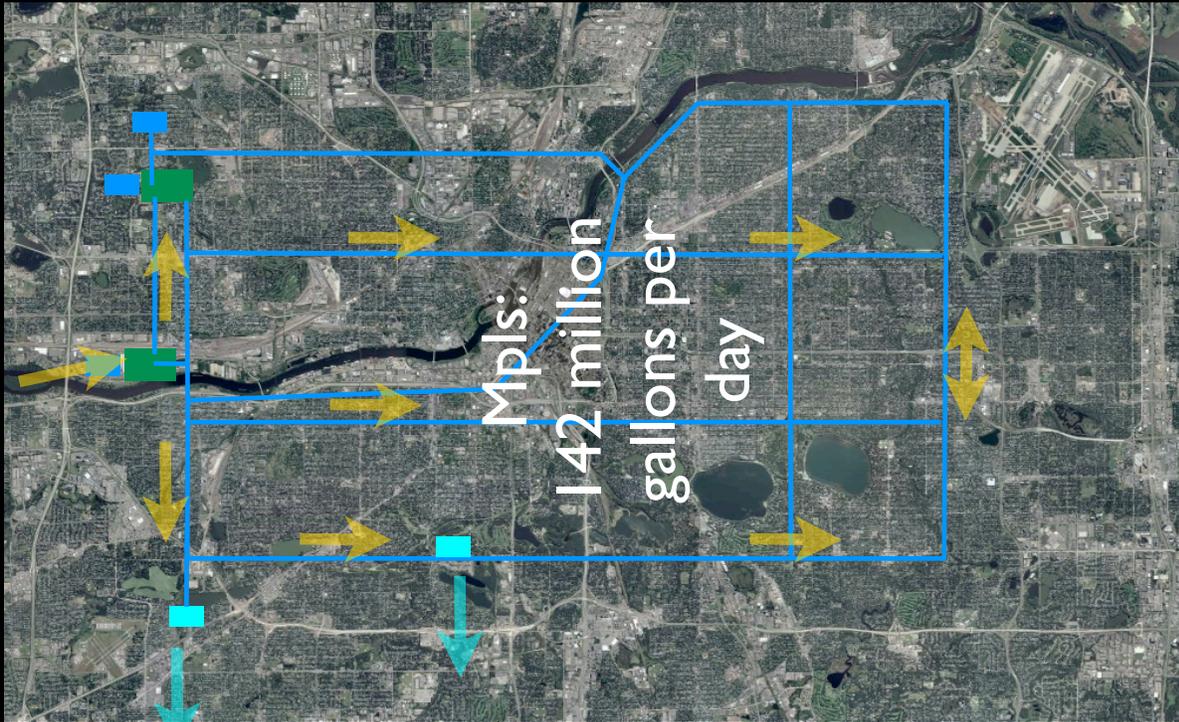


Average Daily Conditions

ENVIRONMENTAL FINANCIAL GROUP, INC.

Backup Water Supply

JWC:
18 million
gallons per
day



Peak Daily Conditions

ENVIRONMENTAL FINANCIAL GROUP, INC.

Backup Water Supply

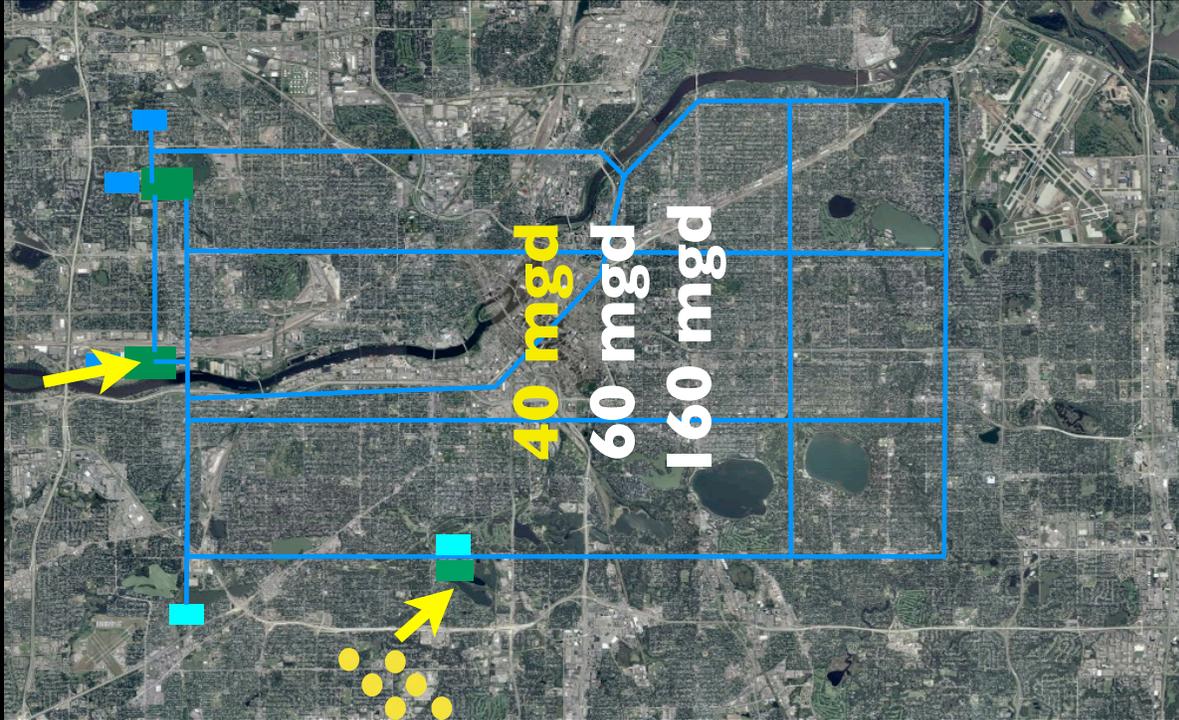
Emergency
Interconnection



Emergency
Interconnection

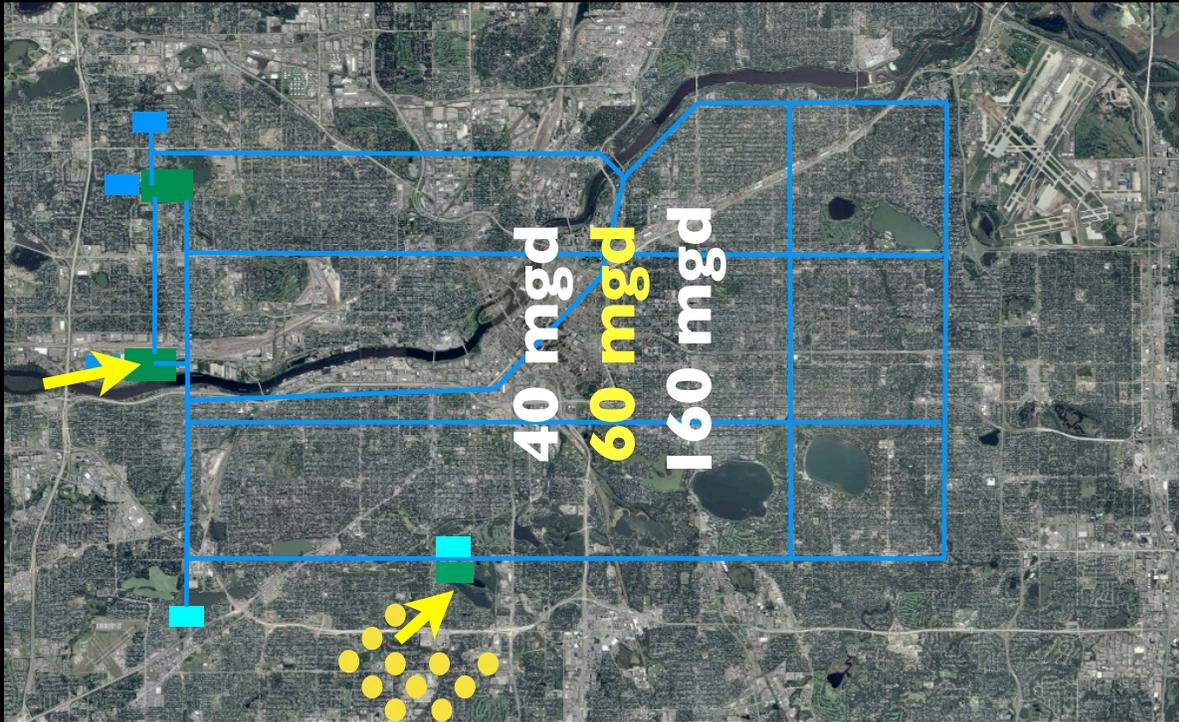
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Backup Water Supply



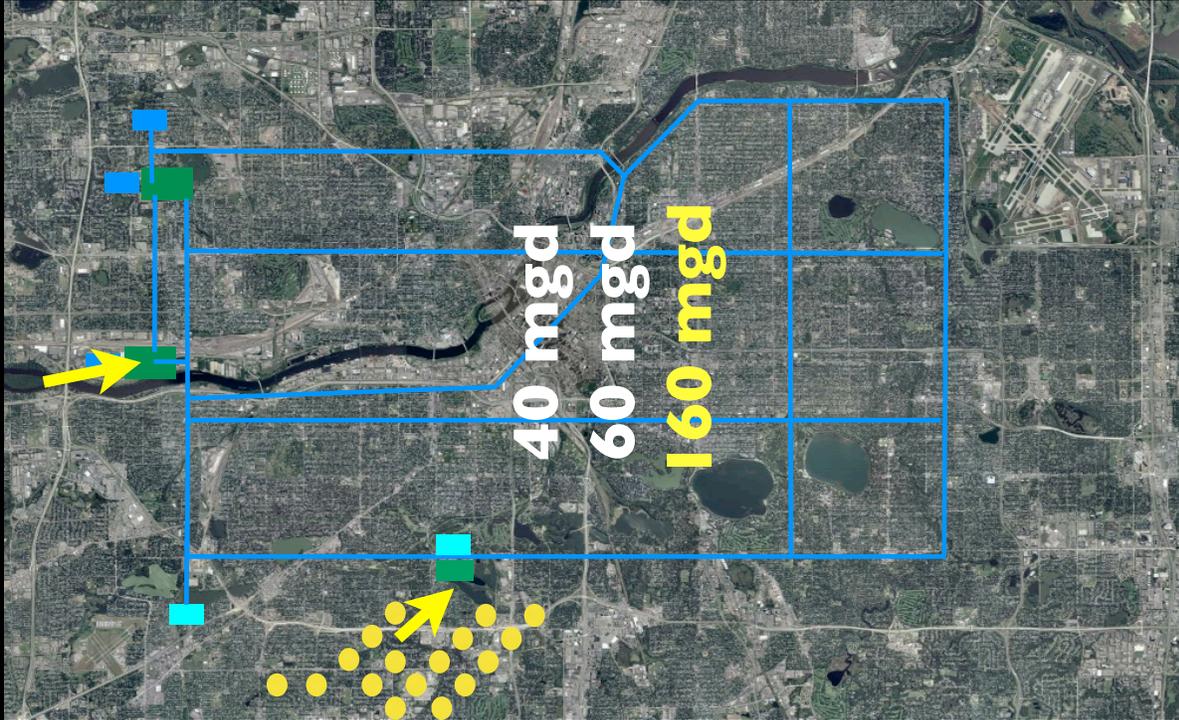
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Backup Water Supply



ENVIRONMENTAL FINANCIAL GROUP, INC.

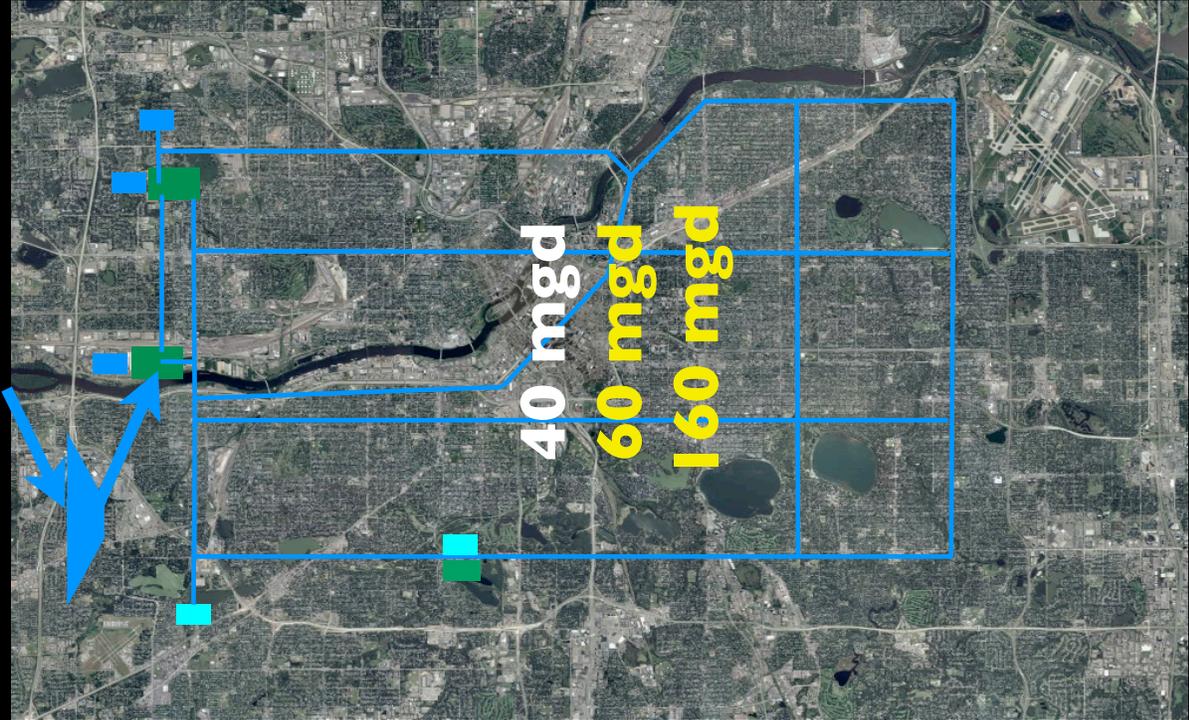
Backup Water Supply



ENVIRONMENTAL FINANCIAL GROUP, INC.

Backup Water Supply

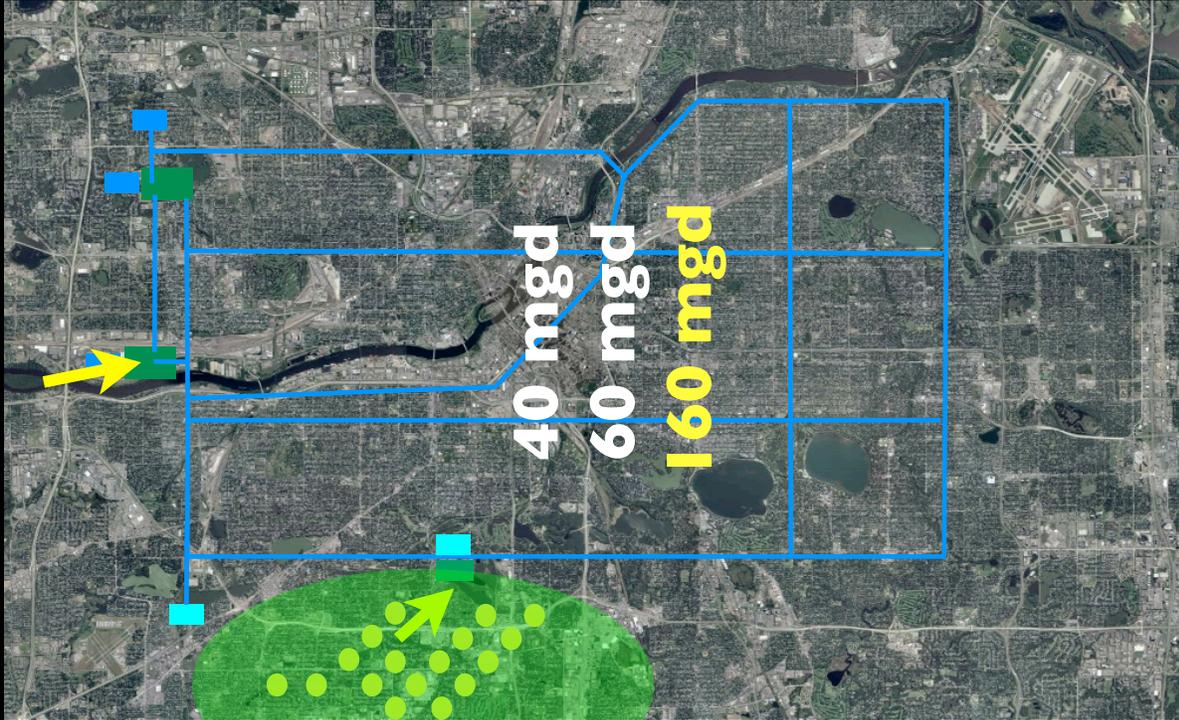
Off-Line Storage



ENVIRONMENTAL FINANCIAL GROUP, INC.

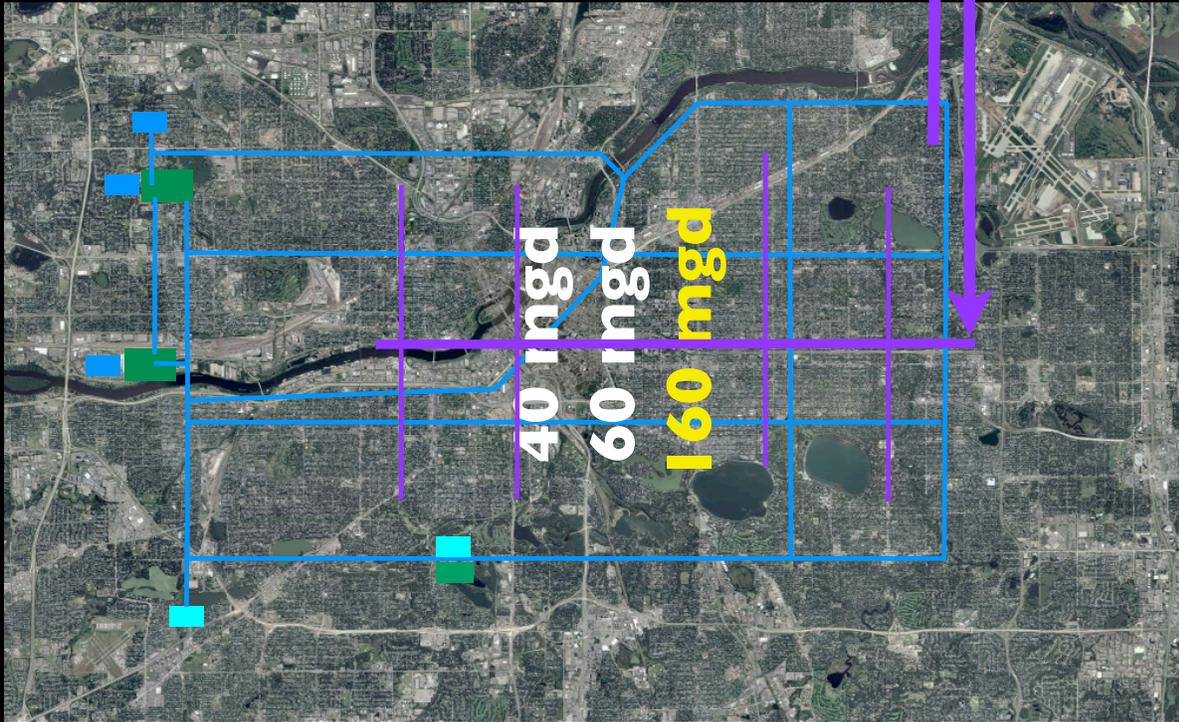
Backup Water Supply

Aquifer Storage & Recovery



ENVIRONMENTAL FINANCIAL GROUP, INC.

Backup Water Supply



ENVIRONMENTAL FINANCIAL GROUP, INC.

A Vision for a Sustainable Regional Water Supply

Minneapolis – Joint Water Commission Water Task Force

Goal:

Strengthen a 30-year regional water partnership

Demonstrate a commitment to long-term water supply sustainability through conservation, climate-aware water supply planning, proactive drought planning and response, and preservation of future supplemental and emergency supplies

Celebrate stewardship of the Mississippi River

Objectives:

Position Minneapolis and its municipal partners to take advantage of emerging state and regional funding opportunities through

- ⇒ Economies of scale
- ⇒ “Best Practices” demand management policies and practices
- ⇒ Grantable projects offering substantial regional benefits
- ⇒ Stronger drought management position with Federal government

Collectively enhance water system sustainability by

- ⇒ Providing advisory governance for effective budgetary and capital investment oversight
- ⇒ Reducing material, energy, and greenhouse gas emissions
- ⇒ Leveraging financial investments in system capacity through additional wholesale agreements
- ⇒ Establishing interconnections with surrounding communities
- ⇒ Maintaining future ability to supplement Mississippi River water with groundwater
- ⇒ Conserving and protecting Mississippi River supply

Recommendations:

Launch new Water Supply Advisory Board with budget and capital oversight

Commit to long-term water supply sustainability

Proposed Water Supply Advisory Board

Minneapolis – Joint Water Commission Water Task Force

Purposes

The Water Supply Advisory Board shall communicate with and make recommendations to the City of Minneapolis regarding matters relating to its operation, maintenance, cost and cost apportionment, financing, operating budget, and capital planning.

Strengthen the regional water partnership through enhanced advisory governance with voting to be commensurate with the financial risks borne by each member.

Advocate for the protection of the Mississippi River surface water supply groundwater sources, and provide for the management of climate change impacts and water demand.

Membership

Minneapolis and wholesale customers shall be members. Members shall serve staggered, three-year terms.

Voting

Minneapolis shall maintain a minimum 51 percent of voting representation. Matters with the exception of approval of operating budgets and capital projects shall require a simple majority. Financial matters shall require a supermajority.

Operations

Advise on all matters pertaining to the quality and quantity of water deliveries to wholesale customers.

Finance

Advise on matters pertaining to Minneapolis Water Works annual operating budgets, capital improvement plans, and audits.

DUTIES AND RESPONSIBILITIES

Identify criteria to be considered in prioritizing capital improvement projects. Develop and recommend suggestions and recommendations to the proposed Capital Improvement Plan, specific capital projects, and in the capital planning and financing process.

Review and comment on the Minneapolis Water Works Capital Improvement Plan. Make a presentation to the Mayor of Minneapolis annually as part of the budgeting process.

Host an annual meeting to discuss the Capital Improvement Plan on a schedule sufficient to allow wholesale customers participation in Minneapolis Water Works capital budget review process.

Participate in review of the Minneapolis Water Works Operations and Maintenance budget. Ensure wholesale customers effectively participate in annual budget deliberations.

Review efforts to develop and implement water conservation and drought response plans. Make recommendations to the City of Minneapolis regarding demand management to ensure consistency in water conservation efforts throughout the service area. Advocate for the protection and prudent use of water resources.