



# **APPENDIX H**

## **WATER SUPPLY PLAN**

**DEPARTMENT OF NATURAL RESOURCES - DIVISION OF WATERS and  
METROPOLITAN COUNCIL  
WATER EMERGENCY AND CONSERVATION PLANS**

These guidelines are divided into four parts. The first three parts, Water Supply System Description and Evaluation, Emergency Response Procedures and Water Conservation Planning apply statewide. Part IV, relates to comprehensive plan requirements that apply only to communities in the Seven-County Twin Cities Metropolitan Area. If you have questions regarding water emergency and conservation plans, please call (651) 259-5703 or (651) 259-5647 or e-mail your question to [wateruse@dnr.state.mn.us](mailto:wateruse@dnr.state.mn.us). Metro Communities can also direct questions to the Metropolitan Council at [watersupply@metc.state.mn.us](mailto:watersupply@metc.state.mn.us) or (651) 602-1066.

DNR Water Appropriation Permit Number(s)	796300
Name of Water Supplier	City of Watertown
Address	309 Lewis Ave S.
Contact Person	Doug Kammerer
Title	Public Works Supt.
Phone Number	952-955-1957
E-Mail Address	dkammerer@ci.watertown.mn.us

**PART I. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION**

The first step in any water supply analysis is to assess the current status of demand and supplies. Information in Part I, can be used in the development of Emergency Response Procedures and Conservation Plans.

**A. ANALYSIS OF WATER DEMAND.**

Fill in Table 1 for the past 10 years water demand. If your customer categories are different than the ones listed in Table 1, please note the changes below.

**TABLE 1 Historic Water Demand**

Year	Total Population	Population Served	Total Connections	Residential Water Sold (MG)	C/I/A Water Sold (MG)	Wholesale Deliveries (MG)	Total Water Sold (MG)	Total Water Pumped (MG)	Percent Unmetered/Unaccounted	Average Demand (MGD)	Maximum Demand (MGD)	Residential gallons/capita/day	Total gallons/capita/day
1996	2550		724	65.45	25.07		91.22	90.52	<1%	.248	.473	70.3	97.3
1997	2595		730	70.25	24.75		98.35	95.0	3%	.260	.534	74.2	100.2
1998	2621		755	68.35	30.91		97.26	99.27	-	.272	.416	71.5	103.8
1999	2850		793	93.70	15.48		114.64	109.18	5%	.299	.507	90.1	104.9
2000	3000		870	93.54	21.33		118.75	114.87	3%	.314	.480	85.4	104.7
2001	3100		943	95.43	14.95		110.38	100.38	9%	.275	.513	84.3	88.7
2002	3200		1050	99.12	11.38		111.75	100.50	10%	.275	.471	84.9	85.9
2003	3400		1128	86.95	31.50		118.45	116.19	2%	.318	.678	70.1	93.5
2004	3700		1179	88.04	34.2		122.24	114.03	7%	.312	.818	65.2	84.3
2005	3800		1229	92.35	32.4		124.75	117.65	6%	.322	.934	66.6	80.5
<b>MG - Million Gallons      MGD - Million Gallons per Day      C/I/A - Commercial, Industrial, Institutional</b>													

**Residential.** Water used for normal household purposes, such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens.

**Institutional.** Hospitals, nursing homes, day care centers, and other facilities that use water for essential domestic requirements. This includes public facilities and public metered uses. You may want to maintain separate institutional water use records for emergency planning and allocation purposes.

**Commercial.** Water used by motels, hotels, restaurants, office buildings, commercial facilities, both civilian and military.

**Industrial.** Water used for thermoelectric power (electric utility generation) and other industrial uses such as steel, chemical and allied products, food processing, paper and allied products, mining, and petroleum refining.

**Wholesale Deliveries.** Bulk water sales to other public water suppliers.

**Unaccounted.** Unaccounted for water is the volume of water withdrawn from all sources minus the volume sold.

**Residential Gallons per Capita per Day = total residential sales in gallons/population served/365 days      Total Gallons per Capita per Day = total water with draws/population served/365 days**

**NOTE:** Non-essential water uses defined by Minnesota Statutes 103G.291, include lawn sprinkling, vehicle washing, golf course and park irrigation and other non-essential uses. Some of the above categories also include non-essential uses of water.

**Water Use Trends.** Discuss factors that influence trends in water demand (i.e. growth, weather, industry, conservation). If appropriate, include a discussion of other factors that affect daily water use, such as use by non-resident commuter employees or large water consuming industry.  
 All of our increase in usage is because of growth.

**TABLE 2 Large Volume Users - List the top 10 largest users.**

Customer	Gallons per year	% of total annual use
Riverside Mobile Home	7,060,000	6%
Watertown Mobile Home	4,721,000	4%
High/Middle School	2,332,336	2%
Elim Nursing Home	1,588,800	1.4%
Mobile Mart	1,360,300	1.2%
Elementary School	1,228,815	1%
Waters Edge Town Homes	849,000	.7%
Riverside Apartments	642,000	.5%
Marketplace Foods	622,543	.5%
Oasis Market	610,000	.5%

**B. TREATMENT AND STORAGE CAPACITY.**

**TABLE 3(A) Water Treatment**

<b>Water Treatment Plant Capacity</b>	1,130,000 per day <i>785 gpm</i>	Gallons
Describe the treatment process used (i.e., softening, chlorination, fluoridation, Fe/Mn removal, reverse osmosis, coagulation, sedimentation, filtration, others). Also, describe the annual amount and method of disposal of treatment residuals, if any.		
We have a sand filter, aeration, detention tanks with Potassium Permanganate chemical addition for Manganese removal. We also add chlorine and hydrofluoric Acid. The backwash goes to a detention tank which it settles out for at least 24 hours. When the well is called upon to add more water the reclaim pump also starts up and the water is reclaimed back to the head of the plant. We clean out this tank by hosing it down and pumping the solids to our Wastewater facility this happens every 6 months.		

**TABLE 3(B) Storage Capacity - List all storage structures and capacities.**

<b>Total Storage Capacity</b>	<b>Average Day Demand (average of last 5 years)</b>	
400,000 Gallons	301,000 day	Gallons per
<b>Type of Structure</b>	<b>Number of Structures</b>	<b>Gallons</b>
Elevated Storage	1	300,000
Ground Storage	1	100,000
Other:		

**C. WATER SOURCES.** List all groundwater, surface water and interconnections that supply water to the system. Add or delete lines to the tables as needed.

**TABLE 4(A) Total Water Source Capacity for System** (excluding emergency connections)

<b>Total Capacity of Sources</b>	1450	Gallons per minute
<b>Firm Capacity (largest pump out of service)</b>	750	Gallons per minute

**TABLE 4(B) Groundwater Sources** - Copies of water well records and well maintenance information should be included with the public water supplier's copy of the plan in Attachment A. If there are more wells than space provided or multiple well fields, please use the List of Wells template (see Resources) and include as Attachment

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Well # or name	Unique Well Number	Year Installed	Well & Casing Depth (ft)	Well Diameter (in)	Capacity (GPM)	Geologic Unit	Status
1	239956	1925	164	16	150	Drift	seasonal
2	239957	1955	153	12	400	Drift	secondary
3	239958	1943	209	12	350	Drift	seasonal
4	674059	2002	475	16	700	Franconia/iron on/galesville	Primary

Status: Active use, Emergency, Standby, Seasonal, Peak use, etc. GPM - Gallons per Minute  
 Geologic Unit: Name of formation(s), which supplies water to the well

**TABLE 4(C) Surface Water Sources**

Intake ID	Resource name	Capacity (GPM/MGD)
	N/A	

GPM - Gallons per Minute MGD - Million Gallons per Day

**TABLE 4(D) Wholesale or Retail Interconnections** - List interconnections with neighboring suppliers that are used to supply water on a **regular** basis either wholesale or retail.

Water Supply System	Capacity (GPM/MGD)	Wholesale or retail
N/A		

GPM - Gallons per Minute MGD - Million Gallons per Day

**TABLE 4(E) Emergency Interconnections** - List interconnections with neighboring suppliers or

private sources that can be used to supply water on an emergency or occasional basis. Suppliers that serve less than 3,300 people can leave this section blank, but must provide this information in Section II C.

Water Supply System	Capacity (GPM/MGD)	Note any limitations on use
N/A		

GPM – Gallons per Minute MGD – Million Gallons per Day

**D. DEMAND PROJECTIONS.**

**TABLE 5 Ten Year Demand Projections**

Year	Population Served	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Projected Demand (MGY)
2006	3850	.327	.818	119.4
2007	4350	.370	.925	135.1
2008	4800	.408	1.02	148.9
2009	5250	.446	1.12	162.8
2010	5700	.485	1.21	176.8
2011	6150	.523	1.31	190.8
2012	6600	.561	1.4	204.8
2013	7050	.599	1.5	218.7
2014	7500	.638	1.6	232.7
2015	7950	.676	1.7	246.6

MGD – Million Gallons per Day MGY – Million Gallons per Year

**Projection Method.** Describe how projections were made, (assumptions for per capita, per household, per acre or other methods used).  
 Assumptions per capita times 85 gallons. Maximum day I took average maximum day to average day ration for the last five years which came out to be 2.5. Projected demand I took the Average day times 365.

**E. RESOURCE SUSTAINABILITY**

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**Sustainable water use: use of water to provide for the needs of society, now and in the future, without unacceptable social, economic, or environmental consequences.**

**Monitoring.** Records of water levels should be maintained for all production wells and source water reservoirs/basins. Water level readings should be taken monthly for a production well or observation well that is representative of the wells completed in each water source formation. **If water levels are not currently measured each year, a monitoring plan that includes a schedule for water level readings must be submitted as Attachment B.**

**TABLE 6 Monitoring Wells - List all wells being measured.**

Unique well number	Type of well (production, observation)	Frequency of Measurement (daily, monthly etc.)	Method of Measurement (steel tape, SCADA etc.)
239956	Production	Monthly	Steel tape
239957	Production	Monthly	Steel Tape
239958	Production	Monthly	Steel Tape
674059	Production	Monthly	Steel Tape

**Water Level Data.** Summarize water level data including seasonal and long-term trends for each ground and/or surface water source. If water levels are not measured and recorded on a routine basis then provide the static water level (SWL) when the well was constructed and a current water level measurement for each production well. Also include all water level data taken during well and pump maintenance.

**Attachment C: Provide monitoring data (graph or table) for as many years as possible.**

**Ground Water Level Monitoring** – DNR Waters in conjunction with federal and local units of government maintain and measure approximately 750 observation wells around the state. Ground water level data are available online [www.dnr.state.mn.us/waters](http://www.dnr.state.mn.us/waters). Information is also available by contacting the Ground Water Level Monitoring Manager, DNR Waters, 500 Lafayette Road, St. Paul, MN 55155-4032 or call (651) 259-5700.

**Natural Resource Impacts.** Indicate any natural resource features such as calcareous fens, wetlands, trout streams, rivers or surface water basins that are or could be influenced by water withdrawals from municipal production wells. Also indicate if resource protection thresholds have been established and if mitigation measures or management plans have been developed.

South Fork of the Crow

**Sustainability.** Evaluate the adequacy of the resource to sustain current and projected demands. Describe any modeling conducted to determine impacts of projected demands on the resource.

None

<b>Source Water Protection Plans.</b> The emergency procedures in this plan are intended to comply with the contingency plan provisions required in the Minnesota Department of Health's (MDH) Wellhead Protection (WHP) Plan and Surface Water Protection (SWP) Plan.	
<b>Date WHP Plan Adopted:</b>	Sent in for review by MDH in 1996
<b>Date for Next WHP Update:</b>	1/15/2009
<b>SWP Plan:</b>	<input type="checkbox"/> In Process <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Not Applicable

**F. CAPITAL IMPROVEMENT PLAN (CIP)**

<b>Adequacy of Water Supply System.</b> Are water supply installations, treatment facilities and distribution systems adequate to sustain current and projected demands? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No. If no, describe any potential capital improvements over the next ten years and state the reasons for the proposed changes (CIP Attachment D ).
We are revising the CIP and we are currently looking at adding a 750,000 gallon elevated storage tank.

<b>Proposed Water Sources.</b> Does your current CIP include the addition of new wells or intakes? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No. If yes, list the number of new installations and projected water demands from each for the next ten years. Plans for new production wells must include the geologic source formation, well location, and proposed pumping capacity.

<b>Water Source Alternatives.</b> If new water sources are being proposed, describe alternative sources that were considered and any possibilities of joint efforts with neighboring communities for development of supplies.
Nearest community is 5-9 miles away.

Deleted: Proposed

<b>Preventative Maintenance.</b> Long-term preventative programs and measures will help reduce the risk of emergency situations. Identify sections of the system that are prone to failure due to age, materials or other problems. This information should be used to prioritize capital improvements, preventative maintenance, and to determine the types of materials (pipes, valves, couplings, etc.) to have in stock to reduce repair time.
The City needs to pull our wells and inspect them every 5-7 years, I have contacted the well contractors and we are set up to do this from now on. We are starting to pull amp draws and draw downs now on a monthly basis. We have our water tower inspected every 3 years this is on a program that it just gets done. The city currently flushes water mains every spring and fall. We do not have a program to exercise valves in the streets because of man power issues. We do have a supply of materials needed to fix a broken main or valve. We contract out these digs anyway

and the contractor usually has the materials we need.

## PART II. EMERGENCY RESPONSE PROCEDURES

Water emergencies can occur as a result of vandalism, sabotage, accidental contamination, mechanical problems, power failures, drought, flooding, and other natural disasters. The purpose of emergency planning is to develop emergency response procedures and to identify actions needed to improve emergency preparedness. In the case of a municipality, these procedures should be in support of, and part of, an all-hazard emergency operations plan. If your community already has written procedures dealing with water emergencies we recommend that you use these guidelines to review and update existing procedures and water supply protection measures.

### Federal Emergency Response Plan

Section 1433(b) of the Safe Drinking Water Act as amended by the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Public Law 107-188, Title IV – Drinking Water Security and Safety) requires community water suppliers serving over 3,300 people to prepare an Emergency Response Plan. Community water suppliers that have completed the Federal Emergency Response Plan and submitted the required certification to the U.S. Environmental Protection Agency have satisfied Part II, Sections A, B, and C of these guidelines and need only provide the information below regarding the emergency response plan and source water protection plan and complete Sections D (Allocation and Demand Reduction Procedures), and E (Enforcement).

Provide the following information regarding your completed Federal Emergency Response Plan:

Emergency Response Plan	Contact Person	Contact Number
Emergency Response Lead	Doug Kammerer	952-955-2681
Alternate Emergency Response Lead	Mike Barthel	952-955-2856
Emergency Response Plan Certification Date	5/11/2004	

**Operational Contingency Plan.** An operational contingency plan that describes measures to be taken for water supply mainline breaks and other common system failures as well as routine maintenance is recommended for all utilities. Check here X if the utility has an operational contingency plan. At a minimum a contact list for contractors and supplies should be included in a water emergency telephone list.

*Communities that have completed Federal Emergency Response Plans should skip to Section D.*

**EMERGENCY RESPONSE PROCEDURES**

**A. Emergency Telephone List.** A telephone list of emergency contacts must be included as Attachment \_\_\_\_\_ to the plan (complete template or use your own list). The list should include key utility and community personnel, contacts in adjacent communities, and appropriate local, state and federal emergency contacts. Please be sure to verify and update the contacts on the emergency telephone list on a regular basis (once each year recommended). In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the warning point for that community. Responsibilities and services for each contact should be defined.

**B. Current Water Sources and Service Area.** Quick access to concise and detailed information on water sources, water treatment, and the distribution system may be needed in an emergency. System operation, water well and maintenance records should be maintained in a central secured location so that the records are accessible for emergency purposes and preventative maintenance. A detailed map of the system showing the treatment plants, water sources, storage facilities, supply lines, interconnections, and other information that would be useful in an emergency should also be readily available. Check here  if these records and maps exist and staff can access the documents in the event of an emergency.

**C. Procedure for Augmenting Water Supplies.** List all available sources of water that can be used to augment or replace existing sources in an emergency. In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the warning point for that community. Copies of cooperative agreements should be maintained with your copy of the plan and include in Attachment \_\_\_\_\_. Be sure to include information on any physical or chemical problems that may limit interconnections to other sources of water. Approvals from the MN Department of Health are required for interconnections and reuse of water.

**TABLE 7 (A) Public Water Supply Systems – List interconnections with other public water supply systems that can supply water in an emergency.**

Water Supply System	Capacity (GPM/MGD)	Note any limitations on use
N/A		

GPM – Gallons per Minute    MGD – Million Gallons per Day

**TABLE 7 (B) - Private Water Sources – List other sources of water available in an emergency.**

Name	Capacity (GPM/MGD)	Note any limitations on use
N/A		

GPM – Gallons per Minute    MGD – Million Gallons per Day

**D. Allocation and Demand Reduction Procedures.** The plan must include procedures to address gradual decreases in water supply as well as emergencies and the sudden loss of water due to line breaks, power failures, sabotage, etc. During periods of limited water supplies public water suppliers are required to allocate water based on the priorities established in Minnesota Statutes 103G.261.

**Water Use Priorities (Minnesota Statutes 103G.261)**

**First Priority.** Domestic water supply, excluding industrial and commercial uses of municipal water supply, and use for power production that meets contingency requirements.

*NOTE:* Domestic use is defined (MN Rules 6115.0630, Subp. 9), as use for general household purposes for human needs such as cooking, cleaning, drinking, washing, and waste disposal, and uses for on-farm livestock watering excluding commercial livestock operations which use more than 10,000 gallons per day or one million gallons per year.

**Second Priority.** Water uses involving consumption of less than 10,000 gallons per day.

**Third Priority.** Agricultural irrigation and processing of agricultural products.

**Fourth Priority.** Power production in excess of the use provided for in the contingency plan under first priority.

**Fifth Priority.** Uses, other than agricultural irrigation, processing of agricultural products, and power production.

**Sixth Priority.** Non-essential uses. These uses are defined by Minnesota Statutes 103G.291 as lawn sprinkling, vehicle washing, golf course and park irrigation, and other non-essential uses.

List the statutory water use priorities along with any local priorities (hospitals, nursing homes, etc.) in Table 8. Water used for human needs at hospitals, nursing homes and similar types of facilities should be designated as a high priority to be maintained in an emergency. Local allocation priorities will need to address water used for human needs at other types of facilities such as hotels, office buildings, and manufacturing plants. The volume of water and other types of water uses at these facilities must be carefully considered. After reviewing the data, common sense should dictate local allocation priorities to protect domestic requirements over certain types of economic needs. In Table 8, list the priority ranking, average day demand and demand reduction potential for each customer category (modify customer categories if necessary).

**Table 8 Water Use Priorities**

Customer Category	Allocation Priority	Average Day Demand (GPD)	Demand Reduction Potential (GPD)
Residential	1	269,000	100,000
Institutional	1	58,000	15,000
Commercial			
Industrial			
Irrigation			
Wholesale			
Non-essential	6		
<b>TOTALS</b>		327,000	115,000

GPD – Gallons per Day

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**Demand Reduction Potential.** The demand reduction potential for residential use will typically be the base demand during the winter months when water use for non-essential uses such as lawn watering do not occur. The difference between summer and winter demands typically defines the demand reduction that can be achieved by eliminating non-essential uses. In extreme emergency situations lower priority water uses must be restricted or eliminated to protect first priority domestic water requirements. Short-term demand reduction potential should be based on average day demands for customer categories within each priority class.

**Triggers for Allocation and Demand Reduction Actions.** Triggering levels must be defined for implementing emergency responses, including supply augmentation, demand reduction, and water allocation. Examples of triggers include: water demand >100% of storage, water level in well(s) below a certain elevation, treatment capacity reduced 10% etc. Each trigger should have a quantifiable indicator and actions can have multiple stages such as mild, moderate and severe responses. Check each trigger below that is used for implementing emergency responses and for each trigger indicate the actions to be taken at various levels or stages of severity in Table 9.

- |                                     |  |                                     |                         |
|-------------------------------------|--|-------------------------------------|-------------------------|
| <input checked="" type="checkbox"/> | Water Demand   | <input checked="" type="checkbox"/> | Water Main Break        |
| <input checked="" type="checkbox"/> | Treatment Capacity   | <input checked="" type="checkbox"/> | Loss of Production      |
| <input checked="" type="checkbox"/> | Storage Capacity   | <input checked="" type="checkbox"/> | Security Breach         |
| <input checked="" type="checkbox"/> | Groundwater Levels   | <input checked="" type="checkbox"/> | Contamination           |
| <input type="checkbox"/>            | Surface Water Flows or Levels  | <input type="checkbox"/>            | Other (list in Table 9) |
| <input checked="" type="checkbox"/> | Pump, Booster Station or Well Out of Service                                 |                                     |                         |
| <input checked="" type="checkbox"/> | Governor's Executive Order – Critical Water Deficiency (required by statute) |                                     |                         |

**Table 9 Demand Reduction Procedures**

Deleted: -

Condition	Trigger(s)	Actions
<b>Stage 1 (Mild)</b>	1) W/M break, 2) Loss of Production 3) Well out of Service	We would monitor levels in storage
<b>Stage 2 (Moderate)</b>	1) Water Demand 2) Treatment capacity 3) Storage capacity	Would put on water ban on all three of these
<b>Stage 3 (Severe)</b>	1) Security breach 2) Contamination	Testing and boil orders
<b>Critical Water Deficiency (M.S. 103G.291)</b>	Executive Order by Governor & as provided in above triggers	Stage 1: Restrict lawn watering, vehicle washing, golf course and park irrigation and other nonessential uses Stage 2: Suspend lawn watering, vehicle washing, golf course and park irrigation and other nonessential uses

Note: The potential for water availability problems during the onset of a drought are almost impossible to predict. Significant

increases in demand should be balanced with preventative measures to conserve supplies in the event of prolonged drought conditions.

**Notification Procedures.** List methods that will be used to inform customers regarding conservation requests, water use restrictions, and suspensions. Customers should be aware of emergency procedures and responses that they may need to implement.

We use flyers, we put up portable traffic signs in the entrance of developments, we have cable TV channel, local newspaper and we can also use the metro TV stations

**E. Enforcement.** Minnesota Statutes require public water supply authorities to adopt and enforce water conservation restrictions during periods of critical water shortages.

**Public Water Supply Appropriation During Deficiency.**  
Minnesota Statutes 103G.291, Subdivision 1.

Declaration and conservation.

(a) If the governor determines and declares by executive order that there is a critical water deficiency, public water supply authorities appropriating water must adopt and enforce water conservation restrictions within their jurisdiction that are consistent with rules adopted by the commissioner.

(b) The restrictions must limit lawn sprinkling, vehicle washing, golf course and park irrigation, and other nonessential uses, and have appropriate penalties for failure to comply with the restrictions.

An ordinance that has been adopted or a draft ordinance that can be quickly adopted to comply with the critical water deficiency declaration must be included in the plan (include with other ordinances in Attachment 7 for Part III, Item 4). Enforcement responsibilities and penalties for non-compliance should be addressed in the critical water deficiency ordinance.

Sample regulations are available at [www.dnr.state.mn.us/waters](http://www.dnr.state.mn.us/waters)

**Authority to Implement Water Emergency Responses.** Emergency responses could be delayed if city council or utility board actions are required. Standing authority for utility or city managers to implement water restrictions can improve response times for dealing with emergencies. Who has authority to implement water use restrictions in an emergency?

Utility Manager       City Manager       City Council or Utility Board  
 Other (describe):

**Emergency Preparedness.** If city or utility managers do not have standing authority to implement water emergency responses, please indicate any intentions to delegate that authority. Also indicate any other measures that are being considered to reduce delays for implementing emergency responses.

Depends on the emergency. The city council does the water restrictions. Other types of emergencies will be taken care of by the Public Works Supt and or the Utility Supt.

### PART III. WATER CONSERVATION PLAN

Water conservation programs are intended to reduce demand for water, improve the efficiency in use and reduce losses and waste of water. Long-term conservation measures that improve overall water use efficiencies can help reduce the need for short-term conservation measures. Water conservation is an important part of water resource management and can also help utility managers satisfy the ever-increasing demands being placed on water resources.

Minnesota Statutes 103G.291, requires public water suppliers to implement demand reduction measures before seeking approvals to construct new wells or increases in authorized volumes of water. Minnesota Rules 6115.0770, require water users to employ the best available means and practices to promote the efficient use of water. Conservation programs can be cost effective when compared to the generally higher costs of developing new sources of supply or expanding water and/or wastewater treatment plant capacities.

**A. Conservation Goals.** The following section establishes goals for various measures of water demand. The programs necessary to achieve the goals will be described in the following section.

<b>Unaccounted Water</b> (calculate five year averages with data from Table 1)	
Average annual volume unaccounted water for the last 5 years	9,200,000 gallons
Average percent unaccounted water for the last 5 years	7 percent
AWWA recommends that unaccounted water not exceed 10%. Describe goals to reduce unaccounted water if the average of the last 5 years exceeds 10%.	
The problems we have are developers and contractors taking water without paying. Also looking at installing a water station for contractors	

<b>Residential Gallons Per Capita Demand (GPCD)</b>	
Average residential GPCD use for the last 5 years (use data from Table 1)	86.58 GPCD
In 2002, average residential GPCD use in the Twin Cities Metropolitan Area was 75 GPCD. Describe goals to reduce residential demand if the average for the last 5 years exceeds 75 GPCD.	
Education to the consumer.	

<b>Total Per Capita Demand:</b> From Table 1, is the trend in overall per capita demand over the past 10 years <input type="checkbox"/> increasing or <input checked="" type="checkbox"/> decreasing? If total GPCD is increasing, describe the goals to lower overall per capita demand or explain the reasons for the increase.	
Decreasing or staying the same	

<b>Peak Demands</b> (calculate average ratio for last five years using data from Table 1)	
Average maximum day to average day ratio	2.24
If peak demands exceed a ratio of 2.6, describe the goals for lowering peak demands.	

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**B. Water Conservation Programs.** Describe all short-term conservation measures that are available for use in an emergency and long-term measures to improve water use efficiencies for each of the six conservation program elements listed below. Short-term demand reduction measures must be included in the emergency response procedures and must be in support of, and part of, a community all-hazard emergency operation plan.

1. **Metering.** The American Water Works Association (AWWA) recommends that every water utility meter all water taken into its system and all water distributed from its system at its customer's point of service. An effective metering program relies upon periodic performance testing, repair, repair and maintenance of all meters. AWWA also recommends that utilities conduct regular water audits to ensure accountability. Complete Table 10 (A) regarding the number and maintenance of customer meters.

**TABLE 10 (A) Customer Meters**

	Number of Connections	Number of Metered Connections	Meter testing schedule (years)	Average age/meter replacement schedule (years)
Residential		1150	No	50% less than 15 years old/50% 15 years older /
Institutional				/
Commercial		76	No	15 years old average /
Industrial		3	No	15 years old Average /
Public Facilities				/
Other				/
<b>TOTALS</b>		1229		

**Unmetered Systems.** Provide an estimate of the cost to install meters and the projected water savings from metering water use. Also indicate any plans to install meters.

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**TABLE 10 (B) Water Source Meters**

	Number of Meters	Meter testing schedule (years)	Average age/meter replacement schedule (years)
Water Source (wells/intakes)	4	10 years	15 Years /
Treatment Plant	1	4Years	4 Years /

2. **Unaccounted Water.** Water audits are intended to identify, quantify, and verify water and revenue losses. The volume of unaccounted-for water should be evaluated each billing cycle. The AWWA recommends a goal of ten percent or less for unaccounted-for water. Water audit procedures are available from the AWWA and MN Rural Water Association.

Frequency of water audits:  each billing cycle  yearly  other:

Leak detection and survey:  every year  every years  periodic as needed  
 Year last leak detection survey completed: Have never had one.

**Reducing Unaccounted Water.** List potential sources and efforts being taken to reduce unaccounted water. If unaccounted water exceeds 10% of total withdrawals, include the timeframe for completing work to reduce unaccounted water to 10% or less.  
 Hiring a leak detector company and installing a water station.

3. **Conservation Water Rates.** Plans must include the current rate structure for all customers and provide information on any proposed rate changes. Discuss the basis for current price levels and rates, including cost of service data, and the impact current rates have on conservation.

**Billing Frequency:**  Monthly  Bimonthly  Quarterly  
 Other (describe):

**Volume included in base rate or service charge:** 0 gallons or cubic feet

**Conservation Rate Structures**

- Increasing block rate: rate per unit increases as water use increases
- Seasonal rate: higher rates in summer to reduce peak demands
- Service charge or base fee that does not include a water volume

**Conservation Neutral Rate Structure**

- Uniform rate: rate per unit is the same regardless of volume

**Non-conserving Rate Structures**

- Service charge or base fee that includes a large volume of water
- Declining block rate: rate per unit decreases as water use increases
- Flat rate: one fee regardless of how much water is used (unmetered)

**Other (describe):**

**Water Rates Evaluated:**  every year  every years  no schedule

Date of last rate change: 1/1/2006

Declining block (the more water used, the cheaper the rate) and flat (one fee for an unlimited

volume of water) rates should be phased out and replaced with conservation rates. Incorporating a seasonal rate structure and the benefits of a monthly billing cycle should also be considered along with the development of an emergency rate structure that could be quickly implemented to encourage conservation in an emergency.

**Current Water Rates.** Include a copy of the actual rate structure in Attachment E or list current water rates including base/service fees and volume charges below.

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**Non-conserving Rate Structures.** Provide justification for the rate structure and its impact on reducing demands or indicate intentions including the timeframe for adopting a conservation rate structure.

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4. **Regulation.** Plans should include regulations for short-term reductions in demand and long-term improvements in water efficiencies. Sample regulations are available from DNR Waters. Copies of adopted regulations or proposed restrictions should be included in Attachment E of the plan. Indicate any of the items below that are required by local regulations and also indicate if the requirement is applied each year or just in emergencies.

Time of Day: no watering between 10:00 am and 5:00 pm

(reduces evaporation)  year around  seasonal  emergency only

Odd/Even: (helps reduce peak demand)  year around  seasonal  emergency only

Water waste prohibited (no runoff from irrigation systems)

Describe ordinance:

Limitations on turf areas for landscaping (reduces high water use turf areas)

Describe ordinance:

Soil preparation (such as 4"-6" of organic soil on new turf areas with sandy soil)

Describe ordinance:

Tree ratios (plant one tree for every \_\_\_\_\_ square feet to reduce turf evapotranspiration)

Describe ordinance:

Prohibit irrigation of medians or areas less than 8 feet wide

Describe ordinance:

Permit required to fill swimming pool  every year  emergency only

Other (describe):

**State and Federal Regulations (mandated)**

**Rainfall sensors on landscape irrigation systems.** Minnesota Statute 103G.298 requires "All automatically operated landscape irrigation systems shall have furnished and installed technology that inhibits or interrupts operation of the landscape irrigation system during periods of sufficient moisture. The technology must be adjustable either by the end user or the professional practitioner of landscape irrigation services."

**Water Efficient Plumbing Fixtures.** The 1992 Federal Energy Policy Act established manufacturing standards for water efficient plumbing fixtures, including toilets, urinals, faucets, and aerators.

**Enforcement.** Are ordinances enforced?  Yes  No If yes, indicate how ordinances are enforced along with any penalties for non-compliance.

**5. Education and Information Programs.** Customers should be provided information on how to improve water use efficiencies a minimum of two times per year. Information should be provided at appropriate times to address peak demands. Emergency notices and educational materials on how to reduce water use should be available for quick distribution during an emergency. If any of the methods listed in the table below are used to provide water conservation tips, indicate the number of times that information is provided each year and attach a list of education efforts used for the last three years.

<b>Current Education Programs</b>	<b>Times/Year</b>
Billing inserts or tips printed on the actual bill	2
Consumer Confidence Reports	1
Local news papers	4
Community news letters	4
Direct mailings (water audit/retrofit kits, showerheads, brochures)	0
Information at utility and public buildings	all year
Public Service Announcements	0
Cable TV Programs	all year
Demonstration projects (landscaping or plumbing)	0
K-12 Education programs (Project Wet, Drinking Water Institute)	0
School presentations	1
Events (children's water festivals, environmental fairs)	0
Community education	0
Water Week promotions	0
Information provided to groups that tour the water treatment plant	4
Website (include address: <a href="http://www.ci.watertown.mn.us">www.ci.watertown.mn.us</a> )	
Targeted efforts (large volume users, users with large increases)	0
Notices of ordinances (include tips with notices)	2
Emergency conservation notices (recommended)	2
Other:	

List education efforts for the last three years in Attachment G of the plan. Be sure to indicate whether educational efforts are on-going and which efforts were initiated as an emergency or drought management effort.

**Proposed Education Programs.** Describe any additional efforts planned to provide conservation information to customers a minimum of twice per year (required if there are no current efforts).

We have tried to have some informational meetings at night on water conservation and no one shows up. So we have resorted to putting it into our Newsletter and on the TV.

A packet of conservation tips and information can be obtained by contacting DNR Waters or the Minnesota Rural Water Association (MRWA). The American Water Works Association (AWWA) [www.awwa.org](http://www.awwa.org) or [www.watervisit.org](http://www.watervisit.org) also has excellent materials on water conservation that are available in a number of formats. You can contact the MRWA 800/367-6792, the AWWA bookstore 800/926-7337 or DNR Waters 651/259-5703 for information regarding educational materials and formats that are available.

6. **Retrofitting Programs.** Education and incentive programs aimed at replacing inefficient plumbing fixtures and appliances can help reduce per capita water use as well as energy costs. It is recommended that communities develop a long-term plan to retrofit public buildings with water efficient plumbing fixtures and that the benefits of retrofitting be included in public education programs. You may also want to contact local electric or gas suppliers to see if they are interested in developing a showerhead distribution program for customers in your service area.

A study by the AWWA Research Foundation (Residential End Uses of Water, 1999) found that the average indoor water use for a non-conserving home is 69.3 gallons per capita per day (gpcd). The average indoor water use in a conserving home is 45.2 gpcd and most of the decrease in water use is related to water efficient plumbing fixtures and appliances that can reduce water, sewer and energy costs. In Minnesota, certain electric and gas providers are required (Minnesota Statute 216B.241) to fund programs that will conserve energy resources and some utilities have distributed water efficient showerheads to customers to help reduce energy demands required to supply hot water.

**Retrofitting Programs.** Describe any education or incentive programs to encourage the retrofitting of inefficient plumbing fixtures (toilets, showerheads, faucets, and aerators) or appliances (washing machines).

None

**Plan Approval.** Water Emergency and Conservation Plans must be approved by the Department of Natural Resources (DNR) every ten years. Please submit plans for approval to the following address:

DNR Waters  
Water Permit Programs Supervisor  
500 Lafayette Road  
St. Paul, MN 55155-4032

or Submit electronically to  
[wateruse@dnr.state.mn.us](mailto:wateruse@dnr.state.mn.us).

**Adoption of Plan.** All DNR plan approvals are contingent on the formal adoption of the plan by the city council or utility board. Please submit a certificate of adoption (example available) or other action adopting the plan.

Metropolitan Area communities are also required to submit these plans to the Metropolitan Council. Please see PART IV. ITEMS FOR METROPOLITAN AREA PUBLIC SUPPLIERS.

**METROPOLITAN COUNCIL**

**PART IV. ITEMS FOR METROPOLITAN AREA PUBLIC SUPPLIERS**

Minnesota Statute 473.859 requires water supply plans to be completed for all local units of government in the seven-county Metropolitan Area as part of the local comprehensive planning process. Much of the required information is contained in Parts I-III of these guidelines. However, the following additional information is necessary to make the water supply plans consistent with the Metropolitan Land Use Planning Act upon which local comprehensive plans are based. Communities should use the information collected in the development of their plans to evaluate whether or not their water supplies are being developed consistent with the Council's Water Resources Management Policy Plan.

**Policies.** Provide a statement(s) on the principles that will dictate operation of the water supply utility: for example, "It is the policy of the city to provide good quality water at an affordable rate, while assuring this use does not have a long-term negative resource impact."  
 This is our mission statement: To provide water that promotes the health and well being of the citizens of Watertown.

**Impact on the Local Comprehensive Plan.** Identify the impact that the adoption of this water supply plan has on the rest of the local comprehensive plan, including implications for future growth of the community, economic impact on the community and changes to the comprehensive plan that might result.  
 Our engineer has given us a water supply plans already. One in 1994 and a updated one in 2001. I feel for a small community we are doing fine.

**Demand Projections**

Year	Total Community Population	Population Served	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Projected Demand (MGY)
2010		3600			
2020		4500			
2030					
Ultimate					

Population projections should be consistent with those in the Metropolitan Council's *2030 Regional Development Framework* or the Communities 2008 Comprehensive Plan update. If population served differs from total population, explain in detail why the difference (i.e., service to other communities, not complete service within community etc.).  
 These are the numbers from the 2020 comprehensive study. As you can see we are almost at the 2020 population and its only 2006.

**PLAN SUBMITTAL AND REVIEW OF THE PLAN**

The plan will be reviewed by the Council according to the sequence outlined in Minnesota Statutes 473.175. **Prior to submittal to the Council, the plan must be submitted to adjacent governmental units for a 60-day review period.** Following submittal, the Council determines if the plan is complete for review within 15 days. If incomplete, the Council will notify the community and request the necessary information. When complete the Council will complete its review within 60 days or a mutually agreed upon extension. The community officially adopts the plan after the Council provides its comments.

Plans can be submitted electronically to the Council; however, the review process will not begin until the Council receives a paper copy of the materials. Electronic submissions can be via a CD, 3 ½" floppy disk or to the email address below. Metropolitan communities should submit their plans to:

Reviews Coordinator  
Metropolitan Council  
390 Robert St,  
St. Paul, MN 55101

electronically to:  
[watersupply@metc.state.mn.us](mailto:watersupply@metc.state.mn.us)