

**DEPARTMENT OF NATURAL RESOURCES - DIVISION OF WATERS and  
METROPOLITAN COUNCIL  
WATER SUPPLY 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 supply 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)	806107
Name of Water Supplier	City of Lakeville
Address	20195 Holyoke Avenue
Contact Person	Christopher J. Petree
Title	Operations and Maintenance Director
Phone Number	952-985-2708
E-Mail Address	<a href="mailto:cpetree@lakeville.mn.gov">cpetree@lakeville.mn.gov</a>

## 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.

<b>Water Use Trends.</b> 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.
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Major factors that influence water use in Lakeville are growth and weather. Lakeville continues to grow at an average of 4 percent per year with a resulting average increase in winter quarter water use of 1.5 percent per year. Overall, water use has increased on an average of 5 percent per year since 1996. Weather and the effects of wet years and dry years have a significant impact on water use during the summer months of June, July, and August. Peak use rates and peak demand days correlate to the amount of rain received. In years with 15 or fewer rain days (a rain day being .10 inches or more), water use over the summer increased far in excess of the 5 percent historical average. Of the data collected, 2001, 2003, 2005, and 2007 are the best examples of the effect of weather on summer water use. The combination of high temperatures and 15 or fewer days of rain during those summers caused peaks in demand well above what had been primarily a growth derived upward trend in water use. In recent years, use of odd/even and time of day watering restrictions has made resource management more effective and reduced the amount of peak day demand.
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**TABLE 1 Historic Water Demand**

Year	Total Population	Population Served	Total Connections	Residential Water Sold (MG)	C/I/I 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
1998	38,506	37,306	10,994	1,165	196	None	1,362	1,417	4%	3.73	N/A	85.56	104.06
1999	40,315	39,115	11,695	1,202	178	None	1,405	1,581	13%	4.32	10.68	84.19	110.74
2000	43,128	41,928	12,407	1,459	209	None	1,668	1,893	13%	5.17	16.26	95.34	123.70
2001	44,751	43,551	12,922	1,634	225	None	1,852	1,998	8%	5.51	20.16	102.79	125.69
2002	46,285	45,085	13,476	1,385	198	None	1,580	1,698	7%	4.61	13.44	84.16	103.18
2003	47,523	46,323	14,215	1,866	230	None	2,094	2,183	5%	5.96	16.90	110.36	129.11
2004	49,097	47,897	15,218	1,645	215	None	1,857	2,069	11%	5.63	15.59	94.09	118.35
2005	51,722	50,522	15,634	1,620	259	None	1,875	2,059	10%	5.46	17.82	87.85	111.66
2006	52,323	51,123	16,566	1,875	306	None	2,176	2,354	8%	6.38	18.57	100.48	126.15
2007	52,835	51,635	16,871	2,096	282	None	2,375	2,553	7%	6.92	19.91	111.16	135.46

MG – Million Gallons      MGD – Million Gallons per Day      C/I/I- Commercial, Industrial, Institutional

**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 withdrawals/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.

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

<b>Customer</b>	<b>Gallons per year</b>	<b>% of total annual use</b>
Country View Mobile Home Park (374 units)	20,547,000	0.8%
Queen Ann Mobile Home Park (156 units)	16,992,000	0.7%
Cloverleaf Cold Storage Co.	13,945,000	0.5%
Arden International Kitchen	13,103,000	0.5%
Ardmor Village Mobile Home Park (340 units)	12,881,000	0.5%
CONAGRA Foods	10,484,000	0.4%
North Creek Mobile Home Park (165 units)	10,418,000	0.4%
Charles Cudd Company	8,728,000	0.3%
Imperial Plastic	7,977,000	0.3%
Springbrook Condominiums (154 units)	6,789,000	0.3%

**B. TREATMENT AND STORAGE CAPACITY.**

**TABLE 3(A) Water Treatment**

<b>Water Treatment Plant Capacity</b>	<b>20 Million Gallons per day</b>
Describe the treatment process used (ie, 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.	
<p>The Lakeville Water Treatment Facility (WTF) is an iron and manganese removal facility. Raw water is pumped from deep wells in the Jordan, Prairie du Chien, and Franconia-Ironton-Galesville aquifers to the WTF. The water is initially treated with chlorine and potassium permanganate (KMnO<sub>4</sub>). These chemicals are used as oxidants to bring the iron and manganese out of suspension so that they can be filtered out in the filter cells. The water then flows through approximately 36 inches of anthracite, manganese green sand, and a standard sand and gravel filter media where the iron and manganese (no longer in suspension) are trapped on the top of the media. The filtered water is treated again with chlorine as well as fluoride and potassium orthophosphate prior to flowing to the clearwell for storage until needed. From the clearwell, water flows by gravity to the high service pumping station to be pumped to the distribution system and reservoirs.</p> <p>Iron and manganese trapped on the filter media are removed by a process called backwashing, where the filters are air scrubbed and the flow of water is reversed through the filter media. The water from the backwash process is diverted to a holding tank where it is held until it is brought back into the WTF. When the backwash water is brought back into the WTF it is mixed with polymer to coagulate the iron and manganese and then moved through a plate settler where the iron and manganese settle to the bottom. The iron and manganese slurry is released to the sanitary sewer system via a timed valve. The clear water is pumped back to the beginning of the filtration process to be filtered again.</p> <p>The WTF was originally designed to treat 10 million gallons per day. In 2001 the facility was expanded to be able to treat 20 million gallons per day. This capacity can be further augmented by using two emergency backup wells that pump water directly into the distribution system.</p>	

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

<b>Total Storage Capacity</b>		<b>Average Day Demand</b> (average of last 5 years)	
8.85 Million Gallons		5.674 Million Gallons per Day	
Type of Structure	Number of Structures	Million of Gallons	
Elevated Storage	4	3.75	
Ground Storage	1	2.00	
Other: WTF Clearwell	1	3.10	

**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>	13,970 Gallons per minute
<b>Firm Capacity (largest pump out of service)</b>	12,470 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 . 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 .

Well # or name	Unique Well Number	Year Installed	Well & Casing Depth (ft)	Well Diameter (in)	Capacity (GPM)	Geologic Unit	Status
2	207708	1964	477/517	16	1200	CJDN	Active
3	207727	1968	363/460	16	1200	CJDN	Peak Use
4	212650	1969	434/505	16	1200	CJDN	Active
6	161409	1981	581/682	16	1200	CJDN	Active
7	161439	1984	375/479	18	1200	CJDN	Peak Use
8	433296	1990	522/615	18	1200	CJDN	Active
9	554192	1995	406/608	18	1200	CJDN	Active
10	554193	1995	425/616	18	1500	CJDN	Active
11	554215	1996	415/637	18	1300	CJDN	Active
12	562991	1997	389/585	18	1200	CJDN	Active
13	596650	1999	416/611	18	1200	CJDN	Active
14	603073	2001	365/600	18	1200	CJDN	Active
15	651737	2001	412/517	18	1200	CJDN	Active
16	655907	2003	466/570	24	1200	CJDN	Active
17	694913	2004	415/607	24	1200	CJDN	Active
18	745558	2007	677/864	12	400	CFIG	Active

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**

○ **Not Applicable to Lakeville.**

Intake ID	Resource name	Capacity (GPM/MGD)
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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.

- o **Not applicable to Lakeville**

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

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
City of Burnsville	3 MGD	System elevation limits capacity.
City of Apple Valley	1 MGD	System elevation limits capacity and supply area.
City of Farmington	1 MGD	System elevation limits capacity and supply area.

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)
2008	53,227	6.61	19.36	2,413
2009	54,819	6.80	19.92	2,482
2010	56,411	7.00	20.51	2,555
2011	58,301	7.24	21.21	2,643
2012	60,191	7.47	21.88	2,727
2013	62,081	7.71	22.59	2,814
2014	63,971	7.94	23.26	2,898
2015	65,531	8.13	23.82	2,967
2016	67,451	8.37	24.52	3,055
2017	69,341	8.61	25.22	3,143

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

<b>Projection Method.</b> Describe how projections were made, (assumptions for per capita, per household, per acre or other methods used).
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Population projections were based on growth data provided by the Metropolitan Council. The average annual growth rate for 2008 – 2010 is estimated at 3 percent and from 2011 – 2017 is estimated at 3.3 percent. Increases in the average day demand are based on the average per capita per day use rates for the last five years (from Table 1), 124.2 GPCD. Maximum day demand is based on the ratio of average day demand to maximum day demand (from Table 1) over the last 5 years resulting in a peaking factor of 2.93. Projected demand is based on the average day demand times the number of days in a year.

**E. RESOURCE SUSTAINABILITY**

**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 .**

**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.)
686711	Observation	Hourly	SCADA
686713	Observation	Hourly	SCADA
686712	Observation	Hourly	SCADA

**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.

**Well logs are provided in Attachment 1.**

**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.

None.

**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.

The City of Lakeville completed a well siting study in 2004 and a comprehensive water plan in 2008. The comprehensive water plan highlighted challenges to the continued growth of the Lakeville's water distribution system. The most serious in the context of sustainability is that 14 additional wells, a combination of high and low pressure wells in the Jordan-Prairie du Chien and Franconia-Ironton-Galesville aquifer, will be required to meet water demands between now and the city's full development in 2030. To support this estimate of needs, the well siting study modeled three different scenarios for the expansion of the city's well field to meet the expected growth. Significant in the findings was the potential for the city to dewater the upper portion of the Prairie du Chien – Jordan Aquifer particularly in the southwest and central portions of the City. The result, for the city and to maintain the ability of the aquifer to meet expected demands, is to expand the well field away from the impacted area. A copy of the well siting study is at Attachment 2. A copy of the comprehensive water plan is at Attachment 3.

<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>	January 8, 2004
<b>Date for Next WHP Update:</b>	January 2008
<b>SWP Plan:</b>	<input type="checkbox"/> In Process <input type="checkbox"/> Completed <input checked="" type="checkbox"/> Not Applicable

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

**Adequacy of Water Supply System.** Are water supply installations, treatment facilities and distribution systems adequate to sustain current and projected demands?  Yes  No If no, describe any potential capital improvements over the next ten years and state the reasons for the proposed changes.

To meet city growth and the corresponding increase in demand, the City of Lakeville has an ongoing program for the expansion of its water system. In 2006, the City drilled Well 18 into the Franconia-Ironton-Galesville (FIG) formation to determine the efficacy of that aquifer to supplement the City's Jordan-Prairie du Chien wells. While it does not perform to the same capacity, it does provide a continuous supplemental flow that does not appear to degrade that aquifer. The City is planning construction of Well 19 in 2008 and Well 20 in 2010 in the Jordan-Prairie du Chien aquifer. Additional wells are currently projected to be added approximately every two years. (See table below.)

**Proposed Water Sources.** Does your current CIP include the addition of new wells or intakes?  Yes  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.

**Additional information is in the well siting study, Attachment 2 and the comprehensive water plan, Attachment 3.**



Well # or name	Planned Installation	Projected Demand (MGD)	Proposed Pumping Capacity (GPM)	Geologic Source Formation	Location
19	2008	1.5	1200	CJDN	Gerdine Path and Dodd Blvd
20	2010	1.5	1200	CJDN	175 <sup>th</sup> Street and Dodd Blvd
21	2012	1.5	1200	CJDN	178 <sup>th</sup> Street and Dodd Blvd
22	2014	.5	600	CFIG	168 <sup>th</sup> Street and Gerdine Path
23	2016	1.5	1200	CJDN	185 <sup>th</sup> Street and Highview Ave
24	2018	1.5	1200	CJDN	Foliage Ave and Dodd Blvd

MGD – Millions of Gallons per Day

GPM – Gallons per Minute

Geologic Unit: Name of formation(s), which supplies water to the well

**Water Source Alternatives.** 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.

No new water sources are being considered.

**Preventative Maintenance.** 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 of Lakeville has an active and ongoing preventive maintenance program for all aspects of its water system.

- Vertical turbine pumps are removed, inspected, and repaired or replaced as part of a scheduled rehabilitation program every eight years.
- Submersible pumps are pulled, inspected, and repaired or replaced as part of a schedule rehabilitation program every 10 years.
- Wells piping is also pulled at the same time the corresponding pump and motor are removed. The piping is inspected for integrity and replaced as necessary.
- Emergency or peaking wells are rehabilitated every 15 years based on their low use rates
- During each rehabilitation, excess sand is baled from the wells to maintain an efficient water flow and minimize potential pump damage.
- Hydrants throughout the City are inspected and exercised annually.
- Gate valves operation is schedule as time permits.
- Reservoirs are periodically inspected with recondition planned every 15 years.
- Valve, meter, and equipment upgrades and replacement are planned and budgeted as necessary.

## PART II. EMERGENCY RESPONSE PROCECURES

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	Christopher J. Petree	952-985-2708
Alternate Emergency Response Lead	Ken Seurer	952-985-2740
Emergency Response Plan Certification Date	29 December 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  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 an attachment to this 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. Do these records and maps exist and can staff 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 included as an 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

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

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.

<b>Water Use Priorities</b> (Minnesota Statutes 103G.261)	
<b>First Priority.</b>	Domestic water supply, excluding industrial and commercial uses of municipal water supply, and use for power production that meets contingency requirements.
	<i>NOTE:</i> 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.
<b>Second Priority.</b>	Water uses involving consumption of less than 10,000 gallons per day.
<b>Third Priority.</b>	Agricultural irrigation and processing of agricultural products.
<b>Fourth Priority.</b>	Power production in excess of the use provided for in the contingency plan under first priority.
<b>Fifth Priority.</b>	Uses, other than agricultural irrigation, processing of agricultural products, and power production.
<b>Sixth Priority.</b>	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**

<b>Customer Category</b>	<b>Allocation Priority</b>	<b>Average Day Demand (GPD)</b>	<b>Demand Reduction Potential (GPD)</b>
Residential	1	5,742,000	0
Institutional	1	119,000	0
Commercial	3	418,000	0
Industrial	3	226,000	0
Irrigation	6	100,000	0
Wholesale	N/A	0	0
Non-essential	6	0	0
	<b>TOTALS</b>	<b>6,605,000</b>	<b>0</b>

GPD – Gallons per Day

**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 type="checkbox"/>            | Water Main Break        |
| <input type="checkbox"/>            | Treatment Capacity                                                           | <input checked="" type="checkbox"/> | Loss of Production      |
| <input 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**

Condition	Trigger(s)	Actions
<b>Stage 1 (Mild)</b>	Water Demand.	<ul style="list-style-type: none"> <li>Seasonal restrictions are implemented at the beginning of the summer season.</li> <li>When demand exceeds 12 MGD, enforcement activity is increased.</li> </ul>
	Groundwater Levels	<ul style="list-style-type: none"> <li>Monitor for impact of increased pumping.</li> </ul>
	Pump, Booster Station, or Well Out of Service	<ul style="list-style-type: none"> <li>Use additional wells as needed to meet demand</li> </ul>
	Loss of Production (Power Outage)	<ul style="list-style-type: none"> <li>Limit non-essential water use.</li> <li>Rent generators to use at Wells 12 and 14.</li> </ul>
	Security Breach or Contamination	<ul style="list-style-type: none"> <li>Follow emergency response plan.</li> <li>Determine threat credibility.</li> <li>Coordinate with law enforcement and MN Dept of Health.</li> </ul>

<b>Stage 2 (Moderate)</b>	Water Demand.	<ul style="list-style-type: none"> <li>When demand exceeds 17 MGD, increased enforcement of City water restrictions to 7 days per week and up to 24 hours per day.</li> </ul>
	Groundwater Levels	<ul style="list-style-type: none"> <li>As the in groundwater levels affects pump efficiency, emphasize enforcement of water restrictions.</li> <li>Notify the City Administrator and brief City Council concerning the impacts.</li> </ul>
	Pump, Booster Station, or Well Out of Service	<ul style="list-style-type: none"> <li>Change SCADA priorities and use emergency wells as needed to support the system.</li> <li>Begin limiting non-essential water use.</li> </ul>
	Loss of Production (Power Outage)	<ul style="list-style-type: none"> <li>Complete actions for Stage 1.</li> <li>Use interconnects with neighboring cities.</li> <li>Limit nonessential water use as necessary.</li> </ul>
<b>Stage 3 (Severe)</b>	Security Breach or Contamination	<ul style="list-style-type: none"> <li>Complete actions for Stage 1.</li> <li>Limit water use as the threat dictates.</li> </ul>
	Water Demand.	<ul style="list-style-type: none"> <li>Complete actions for Stages 1 and 2.</li> <li>Coordinate through the mayor to further restrict non-essential water use.</li> <li>Declaration of a City water emergency suspending all non-essential water use.</li> </ul>
	Groundwater Levels	<ul style="list-style-type: none"> <li>Suspend all non-essential water use.</li> </ul>
	Pump, Booster Station, or Well Out of Service	<ul style="list-style-type: none"> <li>Limit non-essential water use for duration of outage.</li> </ul>
<b>Stage 3 (Severe)</b>	Loss of Production (Power Outage)	<ul style="list-style-type: none"> <li>Complete actions for Stages 1 and 2.</li> <li>Restrict or suspend non-essential water use as necessary.</li> </ul>
	Security Breach or Contamination	<ul style="list-style-type: none"> <li>Complete actions for Stages 1 and 2</li> </ul>

<b>Critical Water Deficiency (M.S. 103G.291)</b>	Executive Order by Governor & as provided in above triggers	<ul style="list-style-type: none"> <li>• Stage 1: Restrict lawn watering, vehicle washing, golf course and park irrigation and other nonessential uses.</li> <li>• Stage 2: Suspend lawn watering, vehicle washing, golf course and park irrigation and other nonessential uses.</li> </ul>
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*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.

<p><b>Notification Procedures.</b> 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.</p>
<p>Notices to customers concerning changes to water restrictions or the declaration of a water emergency, along with any individual suspensions of use would be disseminated through:</p> <ul style="list-style-type: none"> <li>• City web site.</li> <li>• Local newspapers.</li> <li>• Government access cable channel.</li> <li>• Letters to residents.</li> </ul> <p>Emergency notification of conservation measures or water emergencies resulting from contamination, loss of production, or groundwater levels would be done through:</p> <ul style="list-style-type: none"> <li>• Government access cable channel.</li> <li>• Door to door delivery of notices.</li> <li>• Postings at City facilities.</li> <li>• Postings at commercial properties</li> </ul>

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

<p style="text-align: center;"><b>Public Water Supply Appropriation During Deficiency. Minnesota Statutes 103G.291, Subdivision 1.</b></p> <p>Declaration and conservation.</p> <p>(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.</p> <p>(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.</p>
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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): Mayor

**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.

Access to or the availability of the Mayor to implement changes to City water restrictions does not hinder the City's response to water emergencies. There are no current plans to delegate this function below the mayoral level.



### 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.

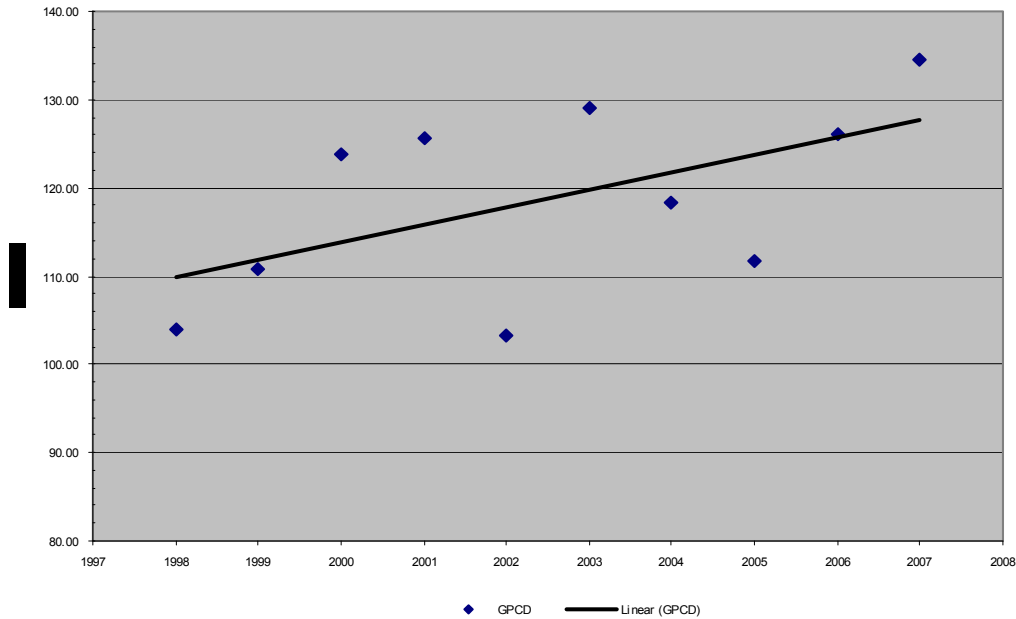
<b>Unaccounted Water</b> (calculate five year averages with data from Table 1)	
Average annual volume unaccounted water for the last 5 years	185,170,000 gallons
Average percent unaccounted water for the last 5 years	8.3 percent
AWWA recommends that unaccounted water not exceed 10%. Describe goals to reduce unaccounted water if the average of the last 5 years exceeds 10%.	

<b>Residential Gallons Per Capita Demand (GPCD)</b>	
Average residential GPCD use for the last 5 years (use data from Table 1)	100.79 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.	
The continued enforcement of time of day and odd-even water use restrictions established in 2004 along with aging of current residential areas is expected to slowly bring about a reduction in average residential GPCD. Recent dry summers have caused significant increases in use rates. Water use is monitored throughout the critical summer months and enforcement activities are increased to notify residents of water restrictions. Changes to the water rate structure in 2007 to include a third tier for high rate users and an accumulative surcharge will also help to curb non-essential uses that drive high per capita amounts. The City continues to make education the centerpiece of its efforts to reduce high water use through weekly reminders in the local newspaper and daily water conservation tips and water conservation programming on the government access channel.	

<b>Total Per Capita Demand:</b> From Table 1, is the trend in overall per capita demand over the past 10 years <input checked="" type="checkbox"/> increasing or <input type="checkbox"/> decreasing? If total GPCD is increasing, describe the goals to lower overall per capita demand or explain the reasons for the increase.	
The trend in per capita demand shows a steady increase over the past 10 years. The increase can be attributed to a combination of hot, dry summers and the significant growth in the City beginning in 1999. Between 1999 and 2005, the City saw its population grow by 30 percent. Corresponding with this population increase was growth in new landscaped area around residences and an upswing	

in the installation of automated in-ground sprinkler systems. Lowering the increasing demand continues to be a goal of the education process in water conservation and the enforcement of water use restrictions. Direct notification to residents of a water use violation does result, generally, in compliance with time of day and odd/even restrictions. However, dry summers see increased use as residents make maximum use of the time available for lawn watering. To counter higher usage, the City has introduced a tiered water rate structure and an accumulating surcharge for those who repeatedly violate the restrictions. Continued monitoring of water use rates will show the impact of these disincentives in reducing overall per capita demand.

**Total Per Capita Demand**



<b>Peak Demands</b> (calculate average ratio for last five years using data from Table 1)	
Average maximum day to average day ratio	2.93
If peak demands exceed a ratio of 2.6, describe the goals for lowering peak demands.	
Young and predominantly residential municipalities generally have higher peaking factors due to irrigation demands. Additionally, extensive growth within the City between 1999 and 2005 continues to drive average daily demand and peaking factors through the establishment of new landscaping. With expected growth trends over the next 10 years and the continued emphasis on residential growth, reducing the peaking factor through continued water conservation education and strong enforcement of existing water use restrictions is a priority.	
Specific efforts to reduce peak water demands include:	
<ul style="list-style-type: none"> <li>• Installation of automatic meter reading technologies to better monitor and trend water use.</li> <li>• Installation of pressure reducing valves on residential services.</li> <li>• A tiered water rate structure.</li> <li>• An accumulative surcharge for violations.</li> <li>• Water conservation videos on the government access cable channel.</li> <li>• Periodic water restriction and water conservation reminders in the local newspaper.</li> <li>• A City ordinance detailing odd/even and time of day water use restrictions.</li> </ul>	

**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 Accounts	Number of Metered Connections	Meter testing schedule (years)	Average age/meter replacement schedule (years)
Residential	16,394	16,394	As needed	10 years / 20 years
Institutional	71	71	As needed	5 years / 20 years
Commercial	304	304	As needed	5 years / 20 years
Industrial	101	101	As needed	5 years / 20 years
Public Facilities	0	0		/
Other	0	0		/
<b>TOTALS</b>	<b>16,870</b>	<b>16,870</b>		

<b>Unmetered Systems.</b> 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.

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

	Number of Meters	Meter testing schedule (years)	Average age/meter replacement schedule (years)
Water Source (wells/intakes)	16	As needed	5 years / 20 years
Treatment Plant	2	As needed	9 years / 20 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 (for

known/suspected leaks)

Year last leak detection survey completed:

**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.

The City established a metering program for City facilities and irrigation systems in 2007, as well as a single, metered fill point for all commercial bulk water users. The City continues to have an active water meter rental program for bulk users.

3. **Conservation Water Rates.** Plans must include the current rate structure for all customers and provide information on any proposed rate changes.

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

**Volume included in base rate or service charge:** None.

**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: 2007

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 4 or list current water rates including base/service fees and volume charges below.

**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.

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 4 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 11:00 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: Where the topsoil is removed, sufficient topsoil shall be set aside for respreading over the developed area. Topsoil shall be restored or provided to a minimum depth of four inches (4") and shall be of a quality at least equal to the soil quality prior to development
- Tree ratios (plant one tree for every            square feet to reduce turf evapotranspiration)  
Describe ordinance: A plan and inventory certified by a forester or landscape architect indicating all of the significant trees and their locations in the proposed development or on the lot. The tree preservation plan shall include the size, species, tag numbers, and location of all significant trees proposed to be saved and removed on the area of development, and the measures proposed to protect the significant trees to be saved.
- Prohibit irrigation of medians or areas less than 8 feet wide  
Describe ordinance:
- Permit/meter 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.

<p><b>Enforcement.</b> Are ordinances enforced? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, indicate how ordinances are enforced along with any penalties for non-compliance.</p>
<p>City staff actively canvases the City throughout the May 1 to September 30 water restriction period and issues warnings to either time of day or odd/even violators. Repeat violators are assessed a water surcharge for each violation after the first warning. In 2007, staff worked throughout the summer, during and after business hours as well as nights and weekends, accumulating approximately 922 staff hours to aggressively enforce Lakeville’s time of day and odd/even water restrictions. In total, 2,761 warning notices were issued, of that 346 surcharges were applied to utility bills for continuing violations.</p>

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>2007 Current Education Programs</b>	<b>Times/Year</b>
Billing inserts or tips printed on the actual bill	
Consumer Confidence Reports	1
Local news papers	
Community news letters (weekly, included in local newspaper)	22
Direct mailings (water audit/retrofit kits, showerheads, brochures)	
Information at utility and public buildings	1
Public Service Announcements (multiple times per day)	155
Cable TV Programs (including council meetings)	110
Demonstration projects (landscaping or plumbing)	
K-12 Education programs (Project Wet, Drinking Water Institute)	
School presentations	
Events (children’s water festivals, environmental fairs)	
Community education	
Water Week promotions	
Information provided to groups that tour the water treatment plant	3
Website (include address: <a href="http://www.ci.lakeville.mn.us">www.ci.lakeville.mn.us</a> )	1
Targeted efforts (large volume users, users with large increases)	
Notices of ordinances (include tips with notices)	2,761
Emergency conservation notices (recommended)	
Other: Permanent signs on major city streets highlighting conservation requirements.	340

List education efforts for the last three years in Attachment 5 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).

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.waterwiser.org](http://www.waterwiser.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).

All current state code requirements for water conserving fixtures are enforced by the Lakeville Inspections Department. A retrofitting program has not been pursued due to small number of older residences.

**Plan Approval.** Water Supply 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.

<p><b>Policies.</b> 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."</p>
<p>The City of Lakeville will provide safe, clean water to meet the needs of its residents and continue to follow requirements established federal and state agencies such as the Environmental Protection Agency, Minnesota Department of Health, and Minnesota Department of Natural Resources.</p>

<p><b>Impact on the Local Comprehensive Plan.</b> 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.</p>
<p>There is no anticipated impact by this water supply plan on local comprehensive or development plans.</p>

### Demand Projections

Year	Total Community Population	Population Served	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Projected Demand (MGY)
2010	59,500	58,300	8.82	25.57	3,212
2020	78,400	77,400	9.56	27.72	3,489
2030	88,800	88,800	10.37	30.07	3,785
Ultimate	101,000	101,000	11.25	32.62	4,106

<p>Population projections should be consistent with those in the Metropolitan Council's <i>2030 Regional Development Framework</i> or the Communities 2008 Comprehensive Plan update. If population served differs from total population, explain in detail why the difference (ie, service to other communities, not complete service within community etc.).</p>
<p>Metropolitan Urban Service Area does not cover all of Lakeville and as a result, water and sanitary sewer service does not extend to entire population.</p>

## 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  
230 E 5<sup>th</sup> Street,  
St. Paul, MN 55101

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

**ATTACHMENT 1**

**WELL LOGS**

**ATTACHMENT 2**  
**LAKEVILLE WELL SITING STUDY**

**COPY PROVIDED UNDER SEPARATE COVER**

**ATTACHMENT 3**  
**COMPREHENSIVE WATER PLAN**

**ATTACHMENT 4**  
**ADOPTED REGULATIONS**

**ATTACHMENT 5**

**EDUCATION AND INFORMATION PROGRAMS**