

Local Water Supply Plan Template Third Generation for 2016-2018

Revised April 10, 2017

Formerly called Water Emergency & Water Conservation Plan



Cover photo by Molly Shodeen



For more information on this Water Supply Plan Template, please contact the DNR Division of Ecological and Water Resources at (651) 259-5034 or (651) 259-5100.

Copyright 2015 State of Minnesota, Department of Natural Resources

This information is available in an alternative format upon request.

Equal opportunity to participate in and benefit from programs of the Minnesota Department of Natural Resources is available to all individuals regardless of race, color, creed, religion, national origin, sex, marital status, public assistance status, age, sexual orientation, disability or activity on behalf of a local human rights commission. Discrimination inquiries should be sent to Minnesota DNR, 500 Lafayette Road, St. Paul, MN 55155-4049; or the Equal Opportunity Office, Department of the Interior, Washington, DC 20240.

Table of contents

INTRODUCTION TO WATER SUPPLY PLANS (WSP)	6
Who needs to complete a Water Supply Plan.....	6
Groundwater Management Areas (GWMA)	6
Benefits of completing a WSP	6
WSP Approval Process	7
PART 1. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION	9
A. Analysis of Water Demand	9
B. Treatment and Storage Capacity	11
Treatment and storage capacity versus demand	12
C. Water Sources.....	12
Limits on Emergency Interconnections	13
D. Future Demand Projections – Key Metropolitan Council Benchmark	13
Water Use Trends	13
Projection Method.....	14
E. Resource Sustainability	14
Monitoring – Key DNR Benchmark	14
Water Level Data	15
Potential Water Supply Issues & Natural Resource Impacts – Key DNR & Metropolitan Council Benchmark.....	16
Wellhead Protection (WHP) and Source Water Protection (SWP) Plans	22
F. Capital Improvement Plan (CIP)	23
Adequacy of Water Supply System.....	23
Proposed Future Water Sources.....	24
Water Source Alternatives - Key Metropolitan Council Benchmark	24
PART 2. EMERGENCY PREPAREDNESS PROCEDURES.....	25
A. Emergency Response Plan	25
B. Operational Contingency Plan	25
C. Emergency Response Procedures	25

Emergency Telephone List.....	26
Current Water Sources and Service Area	26
Procedure for Augmenting Water Supplies.....	26
Allocation and Demand Reduction Procedures.....	27
Notification Procedures.....	29
Enforcement	30
PART 3. WATER CONSERVATION PLAN	31
Progress since 2006.....	31
A. Triggers for Allocation and Demand Reduction Actions	32
B. Conservation Objectives and Strategies – Key benchmark for DNR.....	33
Objective 1: Reduce Unaccounted (Non-Revenue) Water loss to Less than 10%.....	33
Objective 2: Achieve Less than 75 Residential Gallons per Capita Demand (GPCD).....	35
Objective 3: Achieve at least 1.5% annual reduction in non-residential per capita water use.....	36
Objective 4: Achieve a Decreasing Trend in Total Per Capita Demand	37
Objective 5: Reduce Ratio of Maximum day to the Average Day Demand to Less Than 2.6	37
Objective 6: Implement Demand Reduction Measures	38
Objective 7: Additional strategies to Reduce Water Use and Support Wellhead Protection Planning	40
Objective 8: Tracking Success: How will you track or measure success through the next ten years?.....	41
C. Regulation	41
D. Retrofitting Programs.....	42
Retrofitting Programs	42
E. Education and Information Programs	43
Proposed Education Programs	43
PART 4. ITEMS FOR METROPOLITAN AREA COMMUNITIES	46
A. Water Demand Projections through 2040	46
B. Potential Water Supply Issues.....	46

C. Proposed Alternative Approaches to Meet Extended Water Demand Projections.....	46
D. Value-Added Water Supply Planning Efforts (Optional)	47
Source Water Protection Strategies	47
Technical assistance.....	47
GLOSSARY	48
Acronyms and Initialisms	50
APPENDICES TO BE SUBMITTED BY THE WATER SUPPLIER.....	50
Appendix 1: Well records and maintenance summaries	50
Appendix 2: Water level monitoring plan.....	50
Appendix 3: Water level graphs for each water supply well	50
Appendix 4: Capital Improvement Plan.....	50
Appendix 5: Emergency Telephone List	50
Appendix 6: Cooperative Agreements for Emergency Services	50
Appendix 7: Municipal Critical Water Deficiency Ordinance	50
Appendix 8: Graph of Ten Years of Annual Per Capita Water Demand for Each Customer Category.....	50
Appendix 9: Water Rate Structure	50
Appendix 10: Ordinances or Regulations Related to Water Use.....	50
Appendix 11: Implementation Checklist	50
Appendix 12: Sources of Information for Table 10	50

DEPARTMENT OF NATURAL RESOURCES – DIVISION OF ECOLOGICAL AND WATER RESOURCES AND METROPOLITAN COUNCIL

INTRODUCTION TO WATER SUPPLY PLANS (WSP)

Who needs to complete a Water Supply Plan

Public water suppliers serving more than 1,000 people, large private water suppliers in designated Groundwater Management Areas, and all water suppliers in the Twin Cities metropolitan area are required to prepare and submit a water supply plan.

The goal of the WSP is to help water suppliers: 1) implement long term water sustainability and conservation measures; and 2) develop critical emergency preparedness measures. Your community needs to know what measures will be implemented in case of a water crisis. A lot of emergencies can be avoided or mitigated if long term sustainability measures are implemented.

Groundwater Management Areas (GWMA)

The DNR has designated three areas of the state as Groundwater Management Areas (GWMA) to focus groundwater management efforts in specific geographies where there is an added risk of overuse or water quality degradation. A plan directing the DNR's actions within each GWMA has been prepared. Although there are no specific additional requirements with respect to the water supply planning for communities within designated GWMA, communities should be aware of the issues and actions planned if they are within the boundary of one of the GWMA. The three GWMA are the North and East Metro GWMA (Twin Cities Metro), the Bonanza Valley GWMA and the Straight River GWMA (near Park Rapids). Additional information and maps are included in the [DNR Groundwater Management Areas webpage](#).

Benefits of completing a WSP

Completing a WSP using this template, fulfills a water supplier's statutory obligations under M.S. [M.S.103G.291](#) to complete a water supply plan. For water suppliers in the metropolitan area, the WSP will help local governmental units to fulfill their requirements under M.S. 473.859 to complete a local comprehensive plan. Additional benefits of completing WSP template:

- The standardized format allows for quicker and easier review and approval
- Help water suppliers prepare for droughts and water emergencies.
- Create eligibility for funding requests to the Minnesota Department of Health (MDH) for the Drinking Water Revolving Fund.
- Allow water suppliers to submit requests for new wells or expanded capacity of existing wells.
- Simplify the development of county comprehensive water plans and watershed plans.
- Fulfill the contingency plan provisions required in the MDH wellhead protection and surface water protection plans.
- Fulfill the demand reduction requirements of Minnesota Statutes, section 103G.291 subd 3 and 4.

- Upon implementation, contribute to maintaining aquifer levels, reducing potential well interference and water use conflicts, and reducing the need to drill new wells or expand system capacity.
- Enable DNR to compile and analyze water use and conservation data to help guide decisions.
- Conserve Minnesota's water resources

If your community needs assistance completing the Water Supply Plan, assistance is available from your area hydrologist or groundwater specialist, the MN Rural Waters Association circuit rider program, or in the metropolitan area from Metropolitan Council staff. Many private consultants are also available.

WSP Approval Process

10 Basic Steps for completing a 10-Year Water Supply Plan

1. Download the DNR/Metropolitan Council Water Supply Plan Template from the [DNR Water Supply Plan webpage](#).
2. Save the document with a file name with this naming convention:
WSP_cityname_permitnumber_date.doc.
3. The template is a form that should be completed electronically.
4. Compile the required water use data (Part 1) and emergency procedures information (Part 2)
5. The Water Conservation section (Part 3) may need discussion with the water department, council, or planning commission, if your community does not already have an active water conservation program.
6. Communities in the seven-county Twin Cities metropolitan area should complete all the information discussed in Part 4. The Metropolitan Council has additional guidance information on their [Water Supply webpage](#). All out-state water suppliers **do not** need to complete the content addressed in Part 4.
7. Use the Plan instructions and Checklist document from the [DNR Water Supply Plan webpage](#) to insure all data is complete and attachments are included. This will allow for a quicker approval process.
8. Plans should be submitted electronically using the [MPARS website](#) – no paper documents are required.
9. DNR hydrologist will review plans (in cooperation with Metropolitan Council in Metro area) and approve the plan or make recommendations.
10. Once approved, communities should complete a Certification of Adoption form, and send a copy to the DNR.

Complete Table 1 with information about the public water supply system covered by this WSP.

Table 1. General information regarding this WSP

Requested Information	Description
DNR Water Appropriation Permit Number(s)	1980-6002
Ownership	<input checked="" type="checkbox"/> Public or <input type="checkbox"/> Private
Metropolitan Council Area	<input checked="" type="checkbox"/> Yes or <input type="checkbox"/> No (Hennepin County)
Street Address	8535 Kennedy Memorial Drive
City, State, Zip	St. Bonifacius, Minnesota 55375
Contact Person Name	Brenda Fisk
Title	City Administrator
Phone Number	952-446-1061
MDH Supplier Classification	Municipal

PART 1. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION

The first step in any water supply analysis is to assess the current status of demand and availability. Information summarized in Part 1 can be used to develop Emergency Preparedness Procedures (Part 2) and the Water Conservation Plan (Part 3). This data is also needed to track progress for water efficiency measures.

A. Analysis of Water Demand

Complete Table 2 showing the past 10 years of water demand data.

- Some of this information may be in your Wellhead Protection Plan.
- If you do not have this information, do your best, call your engineer for assistance or if necessary leave blank.

If your customer categories are different than the ones listed in Table 2, please describe the differences below:

N/A

Table 2. Historic water demand (see definitions in the [glossary](#) after Part 4 of this template)

Year	Pop. Served	Total Connections	Residential Water Delivered (MG)	C/I/I Water Delivered (MG)	Water used for Non-essential	Wholesale Deliveries (MG)	Total Water Delivered (MG)	Total Water Pumped (MG)	Water Supplier Services	Percent Unmetered/Unaccounted	Average Daily Demand (MGD)	Max. Daily Demand (MGD)	Date of Max. Demand	Residential Per Capita Demand (GPCD)	Total per capita Demand (GPCD)
2006	2283	889	70.47	8.92	0	0	79.39	84.12	0.00	5.62%	0.23	0.57	7/1/2016	80.44	96.02
2007	2283	889	69.52	10.11	0	0	79.63	85.76	0.00	7.15%	0.23	0.57	8/3/2007	83.4	102.9
2008	2283	890	66.32	11.07	0	0	78.41	81.08	1.02	3.29%	0.22	0.49	8/7/2008	79.6	97.3
2009	2283	890	66.16	9.47	0	0	77.22	80.49	1.59	4.06%	0.22	0.45	8/3/2009	79.4	96.6
2010	2283	890	55.72	8.69	0	0	64.41	68.19	0.00	5.54%	0.19	0.34	8/6/2010	66.9	81.8
2011	2283	890	58.63	9.85	0	0	68.48	75.67	0.00	9.50%	0.21	0.37	9/9/2011	70.4	90.8
2012	2283	890	62.92	9.39	0	0	72.31	78.31	0.00	7.66%	0.21	0.46	7/18/2012	75.5	94.0
2013	2283	890	58.55	8.72	0	0	68.46	71.44	1.19	4.17%	0.20	0.52	8/8/2013	70.3	85.7
2014	2319	891	60.96	8.80	0	0	69.76	70.82	0.00	1.50%	0.19	0.42	8/7/2014	72.0	83.7
2015	2364	892	51.86	9.67	0	0	66.39	67.68	4.86	1.91%	0.19	0.37	5/6/2015	60.1	78.4
2016	2364	892	49.26	12.57	0	0	62.61	69.55	0.78	9.98%	0.19	0.47	12/23/2016	57.1	80.6
Avg. 2011-2016	2316	891	57.03	9.83	0	0	68.00	72.25	1.14	5.79%	.20	.44	N/A	67.6	85.5

MG – Million Gallons **MGD** – Million Gallons per Day **GPCD** – Gallons per Capita per Day

See [Glossary](#) for definitions. A list of [Acronyms and Initialisms](#) can be found after the Glossary.

Complete Table 3 by listing the top 10 water users by volume, from largest to smallest. For each user, include information about the category of use (residential, commercial, industrial, institutional, or wholesale), the amount of water used in gallons per year, the percent of total water delivered, and the status of water conservation measures.

Table 3. Large volume users

Customer	Use Category (Residential, Industrial, Commercial, Institutional, Wholesale)	Amount Used (Gallons per Year)	Percent of Total Annual Water Delivered	Implementing Water Conservation Measures? (Yes/No/Unknown)
1. KWIK TRIP	COMMERCIAL	3,154,000	5.04%	UNKNOWN
2. HOLIDAY CAR WASH	COMMERCIAL	2,588,000	4.13%	UNKNOWN
3. PARKLAND EST 921	RESIDENTIAL	2,325,000	3.71%	UNKNOWN
4. NORWESCO	INDUSTRIAL	817,000	1.30%	UNKNOWN
5. EVERWOOD CONDO	RESIDENTIAL	812,000	1.30%	UNKNOWN
6. FRANCONIA ASSN.	RESIDENTIAL	678,000	1.08%	UNKNOWN
7. ST. BONI APTS	RESIDENTIAL	665,000	1.06%	UNKNOWN
8. PARKLAND EST 901	RESIDENTIAL	654,000	1.04%	UNKNOWN
9. PARKLAND EST 905	RESIDENTIAL	606,000	0.97%	UNKNOWN
10. HOLIDAY	COMMERCIAL	578,000	0.92%	UNKNOWN

B. Treatment and Storage Capacity

Complete Table 4 with a description of where water is treated, the year treatment facilities were constructed, water treatment capacity, the treatment methods (i.e. chemical addition, reverse osmosis, coagulation, sedimentation, etc.) and treatment types used (i.e. fluoridation, softening, chlorination, Fe/MN removal, coagulation, etc.). Also describe the annual amount and method of disposal of treatment residuals. Add rows to the table as needed.

Table 4. Water treatment capacity and treatment processes

Treatment Site ID (Plant Name or Well ID)	Year Constructed	Treatment Capacity (GPD)	Treatment Method	Treatment Type	Annual Volume of Residua ls	Disposal Process for Residuals	Do You Reclaim Filter Backwash Water?
WTP 1	1997	600,000	Aeration, detention, followed by gravity filter with chemical addition	Fe/Mn Removal, Fluoridation, Chlorination	216,000	Sanitary Sewer System	Yes
Total	NA		NA	NA		NA	

Complete Table 5 with information about storage structures. Describe the type (i.e. elevated, ground, etc.), the storage capacity of each type of structure, the year each structure was constructed, and the primary material for each structure. Add rows to the table as needed.

Table 5. Storage capacity, as of the end of the last calendar year

Structure Name	Type of Storage Structure	Year Constructed	Primary Material	Storage Capacity (Gallons)
Tower 1	Elevated storage	1978	Steel	300,000
Clearwell	Ground storage	1997	Steel	56,000
Total	NA	NA	NA	356,000

Treatment and storage capacity versus demand

It is recommended that total storage equal or exceed the average daily demand.

Discuss the difference between current storage and treatment capacity versus the water supplier’s projected average water demand over the next 10 years (see Table 7 for projected water demand):

The City of St. Bonifacius currently has a total of 356,000 gallons of storage between one elevated storage tank and the clearwell located in the Water Treatment Plant. Typically it is desired to maintain a storage capacity greater than the average day demand (based on Ten States Standards). In 2017, the average day demand is projected to be 206,226 gallons per day. Using the Ten States Standards and comparing the average day demand to the total storage capacity, there is a surplus of 149,774 gallons, in 2017. By 2025, the projected average day demand actually drops to 193,950 gallons per day, due to a projected decrease in overall population in the City of St. Bonifacius. By 2040, the average day demand is 195,300 gallons per day, which yields a surplus of 160,700 gallons per day. Future projections indicate the storage capacity for St. Bonifacius is adequate for average day demand through 2040.

There is one water treatment plant in St. Bonifacius with a capacity of 600,000 gallons per day based on the treatment plant operating for 20 hours per day. It is common to operate water treatment plants for 20 hours per day to allow for backwashing and maintenance. Typically, water treatment plants are sized to treat the maximum daily demand projected for a community. The highest projected maximum daily demand is projected for 2017 at 412,000 gallons per day, which leaves the water treatment plant with a surplus of 188,000 gallons. The maximum day demand is projected to decrease from this points, so it is expected that the water treatment plant for the City of St. Bonifacius will continue to be adequate is size.

C. Water Sources

Complete Table 6 by listing all types of water sources that supply water to the system, including groundwater, surface water, interconnections with other water suppliers, or others. Provide the name of each source (aquifer name, river or lake name, name of interconnecting water supplier) and the Minnesota unique well number or intake ID, as appropriate. Report the year the source was installed or established and the current capacity. Provide information about the depth of all wells. Describe the status of the source (active, inactive, emergency only, retail/wholesale interconnection) and if the source facilities have a dedicated emergency power source. Add rows to the table as needed for each installation.

Include copies of well records and maintenance summary for each well that has occurred since your last approved plan in **Appendix 1**.

Table 6. Water sources and status

Resource Type (Groundwater, Surface water, Interconnection)	Resource Name	MN Unique Well # or Intake ID	Year Installed	Capacity (Gallons per Minute)	Well Depth (Feet)	Status of Normal and Emergency Operations (active, inactive, emergency only, retail/wholesale interconnection))	Does this Source have a Dedicated Emergency Power Source? (Yes or No)
Groundwater	Mt. Simon	212280	1972	N/A	480	Sealed	N/A
Groundwater	Mt. Simon	212279	1958	300	880	Active	Yes
Groundwater	Mt. Simon	602296	1998	500	427	Active	Yes
Groundwater	FIG Aquifer	77312	2009	450	338	Active	Yes

Limits on Emergency Interconnections

Discuss any limitations on the use of the water sources (e.g. not to be operated simultaneously, limitations due to blending, aquifer recovery issues etc.) and the use of interconnections, including capacity limits or timing constraints (i.e. only 200 gallons per minute are available from the City of Prior Lake, and it is estimated to take 6 hours to establish the emergency connection). If there are no limitations, list none.

None

D. Future Demand Projections – Key Metropolitan Council Benchmark

Water Use Trends

Use the data in Table 2 to describe trends in 1) population served; 2) total per capita water demand; 3) average daily demand; 4) maximum daily demand. Then explain the causes for upward or downward trends. For example, over the ten years has the average daily demand trended up or down? Why is this occurring?

Population served has increased from 2,283 in 2006 to 2,364 in 2016. This represents an increase of just 3%. It is actually projected (by the Met Council) that the population of St. Bonifacius will actually start to slowly decrease in the future, as can be seen on the population projections in Table 7.

The total per capita water demand has been trending downward over the past 10 years, even with the slight increase in population. In 2007 the total demand was at a 10 year high of 103 gpcd, but has since been trending downward with a total demand of 80 gpcd reported in 2016. Overall the trend is decreasing due to the implementation of various water conservation practices by the City.

The average day demand has remained fairly consistent over the past 10 years, ranging anywhere from .19 to .23 MGD. The average daily demand over the past 10 years is .21 MGD. The slight variation over the years can most likely be attributed to years of drought and years with significant rainfall.

The maximum daily demand has been between .34 MGD (2010) and .57 MGD (2006), with an average maximum daily demand of .46 MGD. It appears that the maximum daily demand is in a slight downward trend over the past

10 years. This most likely can be associated with water conservation practices. The maximum daily demand occurs generally during the height of the summer and can most likely be associated with lawn irrigation.

Use the water use trend information discussed above to complete Table 7 with projected annual demand for the next ten years. Communities in the seven-county Twin Cities metropolitan area must also include projections for 2030 and 2040 as part of their local comprehensive planning.

Projected demand should be consistent with trends evident in the historical data in Table 2, as discussed above. Projected demand should also reflect state demographer population projections and/or other planning projections.

Table 7. Projected annual water demand

Year	Projected Total Population	Projected Population Served	Projected Total Per Capita Water Demand (GPCD)	Projected Average Daily Demand (MGD)	Projected Maximum Daily Demand (MGD)
2016	2,335	2,335	90	0.210	0.420
2017	2,291	2,291	90	0.206	0.412
2018	2,248	2,248	90	0.202	0.405
2019	2,204	2,204	90	0.198	0.397
2020	2,160	2,160	90	0.194	0.389
2021	2,159	2,159	90	0.194	0.389
2022	2,158	2,158	90	0.194	0.388
2023	2,157	2,157	90	0.194	0.388
2024	2,156	2,156	90	0.194	0.388
2025	2,155	2,155	90	0.194	0.388
2030	2,150	2,150	90	0.194	0.387
2040	2,170	2,170	90	0.195	0.391

GPCD – Gallons per Capita per Day

MGD – Million Gallons per Day

Projection Method

Describe the method used to project water demand, including assumptions for population and business growth and how water conservation and efficiency programs affect projected water demand:

Population projections were done using the 2015 Met Council System Statement for St. Bonifacius.

Average day demand was projected using the 10-year historic total water per capita demand of 90 gpcd and multiplying that by the projected population served. The max day demand was calculated by taking the average day times a peaking factor of 2.0.

E. Resource Sustainability

Monitoring – Key DNR Benchmark

Complete Table 8 by inserting information about source water quality and quantity monitoring efforts. The list should include all production wells, observation wells, and source water intakes or reservoirs. Groundwater level data for DNR’s statewide network of observation wells are available online through the [DNR’s Cooperative Groundwater Monitoring \(CGM\) webpage](#).

Table 8. Information about source water quality and quantity monitoring

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
Well No. 1 212280	Sealed	N/A	N/A	N/A
Well No. 2 212279	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input checked="" type="checkbox"/> routine MDH sampling <input checked="" type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input checked="" type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input checked="" type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
Well No. 3 602296	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input checked="" type="checkbox"/> routine MDH sampling <input checked="" type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input checked="" type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input checked="" type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
Well No. 4 773212	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input checked="" type="checkbox"/> routine MDH sampling <input checked="" type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input checked="" type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input checked="" type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge

Water Level Data

A water level monitoring plan that includes monitoring locations and a schedule for water level readings must be submitted as **Appendix 2**. If one does not already exist, it needs to be prepared and submitted with the WSP. Ideally, all production and observation wells are monitored at least monthly.

Complete Table 9 to summarize water level data for each well being monitored. Provide the name of the aquifer and a brief description of how much water levels vary over the season (the difference between the highest and lowest water levels measured during the year) and the long-term trends for each well. If water levels are not measured and recorded on a routine basis, then provide the static water level when each well was constructed and the most recent water level measured during the same season the well was constructed. Also include all water level data taken during any well and pump maintenance. Add rows to the table as needed.

Groundwater hydrographs illustrate the historical record of aquifer water levels measured within a well and can indicate water level trends over time. For each well in your system, provide a hydrograph for the life of the well, or for as many years as water levels have been measured. Include the hydrographs in **Appendix 3**. An example of a hydrograph can be found on the [DNR’s Groundwater Hydrograph webpage](#). Hydrographs for DNR Observation wells can be found in the [CGM](#) discussed above.

Table 9. Water level data

Unique Well Number or Well ID	Aquifer Name	Seasonal Variation (Feet)	Long-term Trend in water level data	Water level measured during well/pumping maintenance
Well No. 1 212280	Mt. Simon	Sealed	N/A	N/A
Well No. 2 212279	Mt. Simon	No Data Available	No Data Available	No Data Available
Well No. 3 602296	Mt. Simon	No Data Available	No Data Available	No Data Available
Well No. 4 773212	FIG Aquifer	No Data Available	No Data Available	No Data Available

Potential Water Supply Issues & Natural Resource Impacts – Key DNR & Metropolitan Council Benchmark

Complete Table 10 by listing the types of natural resources that are or could potentially be impacted by permitted water withdrawals in the future. You do not need to identify every single water resource in your entire community. The goal is to help you triage the most important water resources and/or the water resources that may be impacted by your water supply system – perhaps during a drought or when the population has grown significantly in ten years. This is emerging science, so do the best you can with available data. For identified resources, provide the name of specific resources that may be impacted. Identify what the greatest risks to the resource are and how the risks are being assessed. Identify any resource protection thresholds – formal or informal – that have been established to identify when actions should be taken to mitigate impacts. Provide information about the potential mitigation actions that may be taken, if a resource protection threshold is crossed. Add additional rows to the table as needed. See the glossary at the end of the template for definitions.

Some of this baseline data should have been in your earlier water supply plans or county comprehensive water plans. When filling out this table, think of what are the water supply risks, identify the resources, determine the threshold and then determine what your community will do to mitigate the impacts.

Your DNR area hydrologist is available to assist with this table.

For communities in the seven-county Twin Cities metropolitan area, the [Master Water Supply Plan Appendix 1 \(Water Supply Profiles\)](#), provides information about potential water supply issues and natural resource impacts for your community.

Steps for completing Table 10

1. Identify the potential for natural resource impacts/issues within the community

First, review available information to identify resources that may be impacted by the operation of your water supply system (such as pumping).

Potential Sources of Information:

- County Geologic Atlas

- Local studies
- Metropolitan Council System Statement (for metro communities)
- Metropolitan Council Master Water Supply Plan (for metro communities)

ACTION: Check the resource type(s) that may be impacted in the column “Resource Type”

2. Identify where your water supply system is most likely to impact those resources (and vice versa).

Potential Sources of Information:

- Drinking Water Supply Management Areas
- Geologic Atlas - Sensitivity
- If no WHPA or other information exists, consider rivers, lakes, wetlands and significant within 1.5 miles of wells; and calcareous fens and trout streams within 5 miles of wells

ACTION: Focus the rest of your work in these areas.

3. Within focus areas, identify specific features of value to the community

You know your community best. What resources are important to pay attention to? It may be useful to check in with your community’s planning and zoning staff and others.

Potential Sources of Information:

- Park plans
- Local studies
- Natural resource inventories
- Tourist attractions/recreational areas/valued community resource

ACTION: Identify specific features that the community prioritizes in the “Resource Name” column (for example: North Lake, Long River, Brook Trout Stream, or Green Fen). If, based on a review of available information, no features are likely to be at risk, note “None”.

4. Identify what impact(s) the resource is at risk for

Potential Sources of Information:

- Wellhead Protection Plan
- Water Appropriation Permit
- County Geologic Atlas
- MDH or PCA reports of the area
- Metropolitan Council System Statement (for metro communities)
- Metropolitan Council Master Water Supply Plan (for metro communities)

ACTION: Check the risk type in the column “Risk”. If, based on a review of available information, no risk is identified, note “None anticipated”.

5. Describe how the risk was assessed

Potential Sources of Information:

- Local studies
- Monitoring data (community, WMO, DNR, etc.)
- Aquifer testing

- County Geologic Atlas or other hydrogeologic studies
- Regional or state studies, such as DNR’s report ‘Definitions and Thresholds for Negative Impacts to Surface Waters’
- Well boring logs

ACTION: Identify the method(s) used to identify the risk to the resource in the “Risk Assessed Through” column

6. Describe protection threshold/goals

What is the goal, if any, for protecting these resources? For example, is there a lower limit on acceptable flow in a river or stream? Water quality outside of an accepted range? A lower limit on acceptable aquifer level decline at one or more monitoring wells? Withdrawals that exceed some percent of the total amount available from a source? Or a lower limit on acceptable changes to a protected habitat?

Potential Sources of Information:

- County Comprehensive Water Plans
- Watershed Plans or One Watershed/One Plan
- Groundwater or Aquifer Plans
- Metropolitan Master Plans
- DNR Thresholds study
- Community parks, open space, and natural resource plans

ACTION: Describe resource protection goals in the “Describe Resource Protection Threshold” column or reference an existing plan/document/webpage

7. If a goal/threshold should trigger action, describe the plan that will be implemented.

Identify specific action, mitigation measures or management plan that the water supplier will implement, or refer to a partner’s plan that includes actions to be taken.

Potential Sources of Information:

- County Comprehensive Water Plans
- Watershed Plans or One Watershed/One Plan
- Groundwater or Aquifer Plans
- Metropolitan Master Plans
- Studies such as DNR Thresholds study

ACTION: Describe the mitigation measure or management plan in the “Mitigation Measure or Management Plan” column.

8. Describe work to evaluate these risks going forward.

For example, what is the plan to regularly check in to stay current on plans or new data?

Identify specific action that the water supplier will take to identify the creation of or change to goals/thresholds, or refer to a partner’s plan that includes actions to be taken.

Potential Sources of Information:

- County Comprehensive Water Plans
- Watershed Plans or One Watershed/One Plan
- Groundwater or Aquifer Plans
- Metropolitan Master Plans
- Studies such as DNR Thresholds study

ACTION: Describe what will be done to evaluate risks going forward, including any changes to goals or protection thresholds in the “Describe how Changes to Goals are monitored” column.

Table 10. Natural resource impacts (*List specific resources in Appendix 12)

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
<input checked="" type="checkbox"/> River or stream		<input checked="" type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> WRAPS or other watershed report <input type="checkbox"/> Proximity (<1.5 miles) <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> No data available <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ <input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Calcareous fen		<input checked="" type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> WRAPS or other watershed Report <input type="checkbox"/> Proximity (<5 miles) <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ <input type="checkbox"/> Other: _____

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
<input checked="" type="checkbox"/> Lake		<input checked="" type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> WRAPS or other watershed report <input type="checkbox"/> Proximity (<1.5 miles) <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ <input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Wetland		<input checked="" type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> WRAPS or other watershed report <input type="checkbox"/> Proximity (<1.5 miles) <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ <input type="checkbox"/> Other: _____

Resource Type	Resource Name	Risk	Risk Assessed Through *	Describe Resource Protection Threshold or Goal *	Mitigation Measures or Management Plan	Describe How Thresholds or Goals are Monitored
<input checked="" type="checkbox"/> Trout stream		<input checked="" type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> WRAPS or other watershed report <input type="checkbox"/> Proximity (< 5 miles) <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ <input type="checkbox"/> Other: _____
<input checked="" type="checkbox"/> Aquifer		<input checked="" type="checkbox"/> None anticipated <input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Geologic atlas or other mapping <input type="checkbox"/> Modeling <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Proximity (obwell < 5 miles) <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Additional data is needed to establish <input type="checkbox"/> See report: _____ <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Newly collected data will be analyzed <input type="checkbox"/> Regular check-in with these partners: _____ <input type="checkbox"/> Other: _____

Wellhead Protection (WHP) and Source Water Protection (SWP) Plans

Complete Table 11 to provide status information about WHP and SWP plans.

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.

Table 11. Status of Wellhead Protection and Source Water Protection Plans

Plan Type	Status	Date Adopted	Date for Update
WHP	<input type="checkbox"/> In Process <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Not Applicable	12/1/2011	12/1/2021
SWP	<input type="checkbox"/> In Process <input type="checkbox"/> Completed <input checked="" type="checkbox"/> Not Applicable		

WHP – Wellhead Protection Plan **SWP** – Source Water Protection Plan

F. Capital Improvement Plan (CIP)

Please note that any wells that received approval under a ten-year permit, but that were not built, are now expired and must submit a water appropriations permit.

Adequacy of Water Supply System

Complete Table 12 with information about the adequacy of wells and/or intakes, storage facilities, treatment facilities, and distribution systems to sustain current and projected demands. List planned capital improvements for any system components, in chronological order. Communities in the seven-county Twin Cities metropolitan area should also include information about plans through 2040.

The assessment can be the general status by category; it is not necessary to identify every single well, storage facility, treatment facility, lift station, and mile of pipe.

Please attach your latest Capital Improvement Plan as **Appendix 4**.

Table 12. Adequacy of Water Supply System

System Component	Planned action	Anticipated Construction Year	Notes
Wells/Intakes	<input type="checkbox"/> No action planned - adequate <input checked="" type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition	2018	Well 3 upgrades are underway
Water Storage Facilities	<input checked="" type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		
Water Treatment Facilities	<input checked="" type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		
Distribution Systems (Pipes, valves, etc.)	<input type="checkbox"/> No action planned - adequate <input checked="" type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition	Ongoing	Watermain breaks are repaired as they occur
Pressure Zones	<input checked="" type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		

System Component	Planned action	Anticipated Construction Year	Notes
Other:	<input checked="" type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		

Proposed Future Water Sources

Complete Table 13 to identify new water source installation planned over the next ten years. Add rows to the table as needed.

Table 13. Proposed future installations/sources

Source	Installation Location (approximate)	Resource Name	Proposed Pumping Capacity (gpm)	Planned Installation Year	Planned Partnerships
Groundwater	N/A				
Surface Water	N/A				
Interconnection to another supplier	N/A				

Water Source Alternatives - Key Metropolitan Council Benchmark

Do you anticipate the need for alternative water sources in the next 10 years? Yes No

For metro communities, will you need alternative water sources by the year 2040? Yes No

If you answered yes for either question, then complete table 14. If no, insert NA.

Complete Table 14 by checking the box next to alternative approaches that your community is considering, including approximate locations (if known), the estimated amount of future demand that could be met through the approach, the estimated timeframe to implement the approach, potential partnerships, and the major benefits and challenges of the approach. Add rows to the table as needed.

For communities in the seven-county Twin Cities metropolitan area, these alternatives should include approaches the community is considering to meet projected 2040 water demand.

Table 14. Alternative water sources

Alternative Source Considered	Source and/or Installation Location (approximate)	Estimated Amount of Future Demand (%)	Timeframe to Implement (YYYY)	Potential Partners	Benefits	Challenges
<input type="checkbox"/> Groundwater	N/A					
<input type="checkbox"/> Surface Water	N/A					
<input type="checkbox"/> Reclaimed stormwater	N/A					
<input type="checkbox"/> Reclaimed wastewater	N/A					
<input type="checkbox"/> Interconnection to another supplier	N/A					

PART 2. EMERGENCY PREPAREDNESS PROCEDURES

The emergency preparedness procedures outlined in this plan are intended to comply with the contingency plan provisions required by MDH in the WHP and SWP. Water emergencies can occur as a result of vandalism, sabotage, accidental contamination, mechanical problems, power failings, 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. Municipalities that already have written procedures dealing with water emergencies should review the following information and update existing procedures to address these water supply protection measures.

A. Emergency Response Plan

Section 1433(b) of the Safe Drinking Water Act, (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. MDH recommends that Emergency Response Plans are updated annually.

Do you have an Emergency Response Plan? Yes No

Have you updated the Emergency Response Plan in the last year? Yes No

When did you last update your Emergency Response Plan? _____

Complete Table 15 by inserting the noted information regarding your completed Emergency Response Plan.

Table 15. Emergency Response Plan contact information

Emergency Response Plan Role	Contact Person	Contact Number	Phone	Contact Email
Emergency Response Lead	SHAWN RUOTSINOJA	952-215-6862		SRUOT@FRONTIERNET.NET
Alternate Emergency Response Lead	PETE HILGERS	612-598-3688		STBONIFACIUS@OUTLOOK.COM

B. Operational Contingency Plan

All utilities should have a written operational contingency plan that describes measures to be taken for water supply mainline breaks and other common system failures as well as routine maintenance.

Do you have a written operational contingency plan? Yes No

At a minimum, a water supplier should prepare and maintain an emergency contact list of contractors and suppliers.

C. Emergency Response Procedures

Water suppliers must meet the requirements of MN Rules 4720.5280. Accordingly, the Minnesota Department of Natural Resources (DNR) requires public water suppliers serving more than 1,000 people

to submit Emergency and Conservation Plans. Water emergency and conservation plans that have been approved by the DNR, under provisions of Minnesota Statute 186 and Minnesota Rules, part 6115.0770, will be considered equivalent to an approved WHP contingency plan.

Emergency Telephone List

Prepare and attach a list of emergency contacts, including the MN Duty Officer (1-800-422-0798), as **Appendix 5**. An [Emergency Contact List template](#) is available at the [MnDNR Water Supply Plans webpage](#).

The list should include key utility and community personnel, contacts in adjacent water suppliers, and appropriate local, state and federal emergency contacts. Please be sure to verify and update the contacts on the emergency telephone list and date it. Thereafter, update on a regular basis (once a year is recommended). In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the Emergency Manager for that community. Responsibilities and services for each contact should be defined.

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 and maintenance records should be maintained in secured central and back-up locations so that the records are accessible for emergency purposes. 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. It is critical that public water supplier representatives and emergency response personnel communicate about the response procedures and be able to easily obtain this kind of information both in electronic and hard copy formats (in case of a power outage).

Do records and maps exist? Yes No

Can staff access records and maps from a central secured location in the event of an emergency?

Yes No

Does the appropriate staff know where the materials are located?

Yes No

Procedure for Augmenting Water Supplies

Complete Tables 16 – 17 by listing all available sources of water that can be used to augment or replace existing sources in an emergency. Add rows to the tables as needed.

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. Municipalities are encouraged to execute cooperative agreements for potential emergency water services and copies should be included in **Appendix 6**. Outstate Communities may consider using nearby high capacity wells (industry, golf course) as emergency water sources.

WSP should include information on any physical or chemical problems that may limit interconnections to other sources of water. Approvals from the MDH are required for interconnections or the reuse of water.

Table 16. Interconnections with other water supply systems to supply water in an emergency

Other Water Supply System Owner	Capacity (GPM & MGD)	Note Any Limitations On Use	List of services, equipment, supplies available to respond
Minnetrasta	N/A	EMERGENCY USE ONLY	

GPM – Gallons per minute MGD – million gallons per day

Table 17. Utilizing surface water as an alternative source

Surface Water Source Name	Capacity (GPM)	Capacity (MGD)	Treatment Needs	Note Any Limitations On Use
N/A				

If not covered above, describe additional emergency measures for providing water (obtaining bottled water, or steps to obtain National Guard services, etc.)

Emergency Interconnection with neighboring town, Minnetrista.

Allocation and Demand Reduction Procedures

Complete Table 18 by adding information about how decisions will be made to allocate water and reduce demand during an emergency. Provide information for each customer category, including its priority ranking, average day demand, and demand reduction potential for each customer category. Modify the customer categories as needed, and add additional lines if necessary.

Water use categories should be prioritized in a way that is consistent with Minnesota Statutes 103G.261 (#1 is highest priority) as follows:

1. Water use for human needs such as cooking, cleaning, drinking, washing and waste disposal; use for on-farm livestock watering; and use for power production that meets contingency requirements.
2. Water use involving consumption of less than 10,000 gallons per day (usually from private wells or surface water intakes)
3. Water use for agricultural irrigation and processing of agricultural products involving consumption of more than 10,000 gallons per day (usually from private high-capacity wells or surface water intakes)
4. Water use for power production above the use provided for in the contingency plan.
5. All other water use involving consumption of more than 10,000 gallons per day.
6. Nonessential uses – car washes, golf courses, etc.

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. Lower priority uses 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. Water use for lawn sprinkling, vehicle washing, golf courses, and recreation are legislatively considered non-essential.

Table 18. Water use priorities

Customer Category	Allocation Priority	Average Daily Demand (GPD)	Short-Term Emergency Demand Reduction Potential (GPD)
Residential	1	135,000	50,000
Industrial	2	3,750	500
Commercial	3	28,000	20,000
TOTAL	NA	NA	70,500

GPD – Gallons per Day

Tip: Calculating Emergency Demand Reduction Potential

The emergency demand reduction potential for all uses will typically equal the difference between maximum use (summer demand) and base use (winter demand). In extreme emergency situations, lower priority water uses must be restricted or eliminated to protect priority domestic water requirements. Emergency demand reduction potential should be based on average day demands for customer categories within each priority class. Use the tables in Part 3 on water conservation to help you determine strategies.

Complete Table 19 by selecting the triggers and actions during water supply disruption conditions.

Table 19. Emergency demand reduction conditions, triggers and actions (Select all that may apply and describe)

Emergency Triggers	Short-term Actions	Long-term Actions
<input checked="" type="checkbox"/> Contamination <input checked="" type="checkbox"/> Loss of production <input checked="" type="checkbox"/> Infrastructure failure <input checked="" type="checkbox"/> Executive order by Governor <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Supply augmentation through Minnetrista interconnection <input type="checkbox"/> Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input type="checkbox"/> Water allocation through____ <input type="checkbox"/> Meet with large water users to discuss their contingency plan.	<input type="checkbox"/> Supply augmentation through _____ <input checked="" type="checkbox"/> Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input type="checkbox"/> Water allocation through____ <input type="checkbox"/> Meet with large water users to discuss their contingency plan.

Notification Procedures

Complete Table 20 by selecting trigger for informing customers regarding conservation requests, water use restrictions, and suspensions; notification frequencies; and partners that may assist in the notification process. Add rows to the table as needed.

Table 20. Plan to inform customers regarding conservation requests, water use restrictions, and suspensions

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
<input checked="" type="checkbox"/> Short-term demand reduction declared (< 1 year)	<input checked="" type="checkbox"/> Website <input type="checkbox"/> Email list serve <input checked="" type="checkbox"/> Social media (e.g. Twitter, Facebook) <input type="checkbox"/> Direct customer mailing, <input type="checkbox"/> Press release (TV, radio, newspaper), <input type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Annually	
<input checked="" type="checkbox"/> Long-term Ongoing demand reduction declared	<input checked="" type="checkbox"/> Website <input type="checkbox"/> Email list serve <input checked="" type="checkbox"/> Social media (e.g. Twitter, Facebook) <input checked="" type="checkbox"/> Direct customer mailing, <input checked="" type="checkbox"/> Press release (TV, radio, newspaper), <input checked="" type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Annually	
<input checked="" type="checkbox"/> Governor’s critical water deficiency declared	<input checked="" type="checkbox"/> Website <input type="checkbox"/> Email list serve <input checked="" type="checkbox"/> Social media (e.g. Twitter, Facebook)	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Annually	

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
	<input checked="" type="checkbox"/> Direct customer mailing, <input checked="" type="checkbox"/> Press release (TV, radio, newspaper), <input checked="" type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____		

Enforcement

Prior to a water emergency, municipal water suppliers must adopt regulations that restrict water use and outline the enforcement response plan. The enforcement response plan must outline how conditions will be monitored to know when enforcement actions are triggered, what enforcement tools will be used, who will be responsible for enforcement, and what timelines for corrective actions will be expected.

Affected operations, communications, and enforcement staff must then be trained to rapidly implement those provisions during emergency conditions.

Important Note:

Disregard of critical water deficiency orders, even though total appropriation remains less than permitted, is adequate grounds for immediate modification of a public water supply authority’s water use permit (2013 MN Statutes 103G.291)

Does the city have a critical water deficiency restriction/official control in place that includes provisions to restrict water use and enforce the restrictions? (This restriction may be an ordinance, rule, regulation, policy under a council directive, or other official control) Yes No

If yes, attach the official control document to this WSP as **Appendix 7**.

If no, the municipality must adopt such an official control within 6 months of submitting this WSP and submit it to the DNR as an amendment to this WSP.

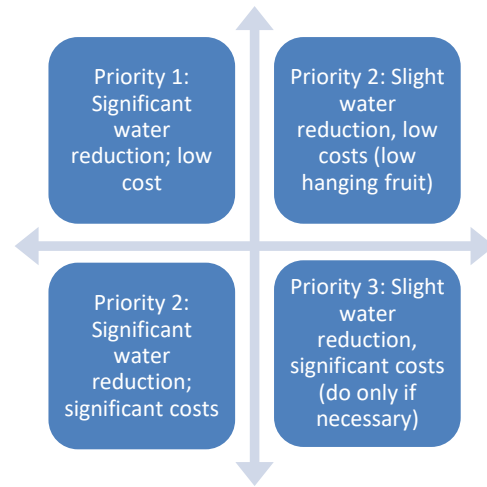
Irrespective of whether a critical water deficiency control is in place, does the public water supply utility, city manager, mayor, or emergency manager have standing authority to implement water restrictions? Yes No

If yes, cite the regulatory authority reference: **Emergency Manager**.

If no, who has authority to implement water use restrictions in an emergency?

PART 3. WATER CONSERVATION PLAN

Minnesotans have historically benefited from the state's abundant water supplies, reducing the need for conservation. There are however, limits to the available supplies of water and increasing threats to the quality of our drinking water. Causes of water supply limitation may include: population increases, economic trends, uneven statewide availability of groundwater, climatic changes, and degraded water quality. Examples of threats to drinking water quality include: the presence of contaminant plumes from past land use activities, exceedances of water quality standards from natural and human sources, contaminants of emerging concern, and increasing pollutant trends from nonpoint sources.



There are many incentives for conserving water; conservation:

- reduces the potential for pumping-induced transfer of contaminants into the deeper aquifers, which can add treatment costs
- reduces the need for capital projects to expand system capacity
- reduces the likelihood of water use conflicts, like well interference, aquatic habitat loss, and declining lake levels
- conserves energy, because less energy is needed to extract, treat and distribute water (and less energy production also conserves water since water is used to produce energy)
- maintains water supplies that can then be available during times of drought

It is therefore imperative that water suppliers implement water conservation plans. The first step in water conservation is identifying opportunities for behavioral or engineering changes that could be made to reduce water use by conducting a thorough analysis of:

- Water use by customer
- Extraction, treatment, distribution and irrigation system efficiencies
- Industrial processing system efficiencies
- Regulatory and barriers to conservation
- Cultural barriers to conservation
- Water reuse opportunities

Once accurate data is compiled, water suppliers can set achievable goals for reducing water use. A successful water conservation plan follows a logical sequence of events. The plan should address both conservation on the supply side (leak detection and repairs, metering), as well as on the demand side (reductions in usage). Implementation should be conducted in phases, starting with the most obvious and lowest-cost options. In some cases, one of the early steps will be reviewing regulatory constraints to water conservation, such as lawn irrigation requirements. Outside funding and grants may be available for implementation of projects. Engage water system operators and maintenance staff and customers in brainstorming opportunities to reduce water use. Ask the question: "How can I help save water?"

Progress since 2006

Is this your community's first Water Supply Plan? Yes No

If yes, describe conservation practices that you are already implementing, such as: pricing, system improvements, education, regulation, appliance retrofitting, enforcement, etc.

--

If no, complete Table 21 to summarize conservation actions taken since the adoption of the 2006 water supply plan.

Table 21. Implementation of previous ten-year Conservation Plan

2006 Plan Commitments	Action Taken?
Change water rates structure to provide conservation pricing	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Water supply system improvements (e.g. leak repairs, valve replacements, etc.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Educational efforts	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
New water conservation ordinances	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Rebate or retrofitting Program (e.g. for toilet, faucets, appliances, showerheads, dish washers, washing machines, irrigation systems, rain barrels, water softeners, etc.)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Enforcement	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe other	<input type="checkbox"/> Yes <input type="checkbox"/> No

What are the results you have seen from the actions in Table 21 and how were results measured?

<p>The total gallons/capita/day have been on a clear downward trend since 2006. Much of this can be attributed to water conservation measures required by the City. These results were measured through the normal water volume monitoring procedures the City has in place. Maximum day demand has also been on the decrease and can be attributed in part to the irrigation restrictions the City has in place.</p>

A. Triggers for Allocation and Demand Reduction Actions

Complete table 22 by checking each trigger below, as appropriate, and the actions to be taken at various levels or stages of severity. Add in additional rows to the table as needed.

Table 22. Short and long-term demand reduction conditions, triggers and actions

Objective	Triggers	Actions
Protect surface water flows	<input type="checkbox"/> Low stream flow conditions <input checked="" type="checkbox"/> Reports of declining wetland and lake levels <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Increase promotion of conservation measures <input type="checkbox"/> Other: _____
Short-term demand reduction (less than 1 year)	<input type="checkbox"/> Extremely high seasonal water demand (more than double winter demand) <input checked="" type="checkbox"/> Loss of treatment capacity <input checked="" type="checkbox"/> Lack of water in storage <input type="checkbox"/> State drought plan <input type="checkbox"/> Well interference <input type="checkbox"/> Other: _____	<input type="checkbox"/> Adopt (if not already) and enforce the critical water deficiency ordinance to restrict or prohibit lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input checked="" type="checkbox"/> Supply augmentation through Minnetrista interconnection. <input type="checkbox"/> Water allocation through _____ <input checked="" type="checkbox"/> Meet with large water users to discuss user's contingency plan.
Long-term demand reduction (>1 year)	<input checked="" type="checkbox"/> Per capita demand increasing <input checked="" type="checkbox"/> Total demand increase (higher population or more industry). Water level in well(s) below elevation of _____ <input type="checkbox"/> Other: _____	<input type="checkbox"/> Develop a critical water deficiency ordinance that is or can be quickly adopted to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input type="checkbox"/> Enact a water waste ordinance that targets overwatering (causing water to flow off the landscape into streets, parking lots, or similar), watering impervious surfaces (streets, driveways or other hardscape areas), and negligence of known leaks, breaks, or malfunctions. <input checked="" type="checkbox"/> Meet with large water users to discuss user's contingency plan. <input checked="" type="checkbox"/> Enhanced monitoring and reporting: audits, meters, billing, etc.
Governor's "Critical Water Deficiency Order" declared	<input type="checkbox"/> Describe	<input type="checkbox"/> Describe

B. Conservation Objectives and Strategies – Key benchmark for DNR

This section establishes water conservation objectives and strategies for eight major areas of water use.

Objective 1: Reduce Unaccounted (Non-Revenue) Water loss to Less than 10%

The Minnesota Rural Water Association, the Metropolitan Council and the Department of Natural Resources recommend that all water uses be metered. Metering can help identify high use locations and times, along with leaks within buildings that have multiple meters.

It is difficult to quantify specific unmetered water use such as that associated with firefighting and system flushing or system leaks. Typically, water suppliers subtract metered water use from total water pumped to calculate unaccounted or non-revenue water loss.

Is your five-year average (2005-2014) unaccounted Water Use in Table 2 higher than 10%?

Yes No

What is your leak detection monitoring schedule? (e.g. Monitor 1/3rd of the city lines per year)

Every 4 to 5 years

Water Audits - are designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. The American Water Works Association (AWWA) has a recommended water audit methodology which is presented in [AWWA's M36 Manual of Water Supply Practices: Water Audits and Loss Control Programs](#). AWWA also provides a free spreadsheet-based water audit tool that water suppliers can use to conduct their own water audits. This free water audit tool can be found on AWWA's [Water Loss Control webpage](#). Another resource for water audit and water loss control information is [Minnesota Rural Water Association](#).

What is the date of your most recent water audit? 2017

Frequency of water audits: **yearly** **other (specify frequency) _____**

Leak detection and survey: **every year** **every other year** **periodic as needed**

Year last leak detection survey completed: 2014

If Table 2 shows annual water losses over 10% or an increasing trend over time, describe what actions will be taken to reach the <10% loss objective and within what timeframe

N/A

Metering -AWWA recommends that every water supplier install meters to account for all water taken into its system, along with all water distributed from its system at each customer's point of service. An effective metering program relies upon periodic performance testing, repair, maintenance or replacement of all meters. Drinking Water Revolving Loan Funds are available for purchase of new meters when new plants are built. AWWA also recommends that water suppliers conduct regular water audits to account for unmetered unbilled consumption, metered unbilled consumption and source water and customer metering inaccuracies. Some cities install separate meters for interior and exterior water use, but some research suggests that this may not result in water conservation.

Complete Table 23 by adding the requested information regarding the number, types, testing and maintenance of customer meters.

Table 23. Information about customer meters

Customer Category	Number of Customers	Number of Metered Connections	Number of Automated Meter Readers	Meter testing intervals (years)	Average age/meter replacement schedule (years)
Residential	837	837	837	As needed	4 Yrs / As needed
Irrigation meters	0	0	0	As needed	4 Yrs / As needed
Institutional	5	5	5	As needed	4 Yrs / As needed
Commercial	39	39	39	As needed	4 Yrs / As needed
Industrial	11	11	11	As needed	4 Yrs / As needed
Public facilities	0	0	0	As needed	4 Yrs / As needed
Other	0	0	0	As needed	4 Yrs / As needed
TOTALS	892	892	892	NA	NA

For unmetered systems, describe any plans to install meters or replace current meters with advanced technology meters. Provide an estimate of the cost to implement the plan and the projected water savings from implementing the plan.

N/A

Table 24. Water source meters

	Number of Meters	Meter testing schedule (years)	Number of Automated Meter Readers	Average age/meter replacement schedule (years)
Water source (wells/intakes)	3	As needed	3	5 Yrs / as needed
Treatment plant	2	As needed	2	5 Yrs / as needed

Objective 2: Achieve Less than 75 Residential Gallons per Capita Demand (GPCD)

The 2002 average residential per capita demand in the Twin Cities Metropolitan area was 75 gallons per capita per day.

Is your average 2010-2015 residential per capita water demand in Table 2 more than 75? Yes No

What was your 2010 – 2015 five-year average residential per capita water demand? 67.6 g/person/day

Describe the water use trend over that timeframe:

The average residential per capita water demand has been trending lower over the past 10 years. In 2006, the residential GPCD was 84.6, while in 2016 the GPCD was 57.7.

Complete Table 25 by checking which strategies you will use to continue reducing residential per capita demand and project a likely timeframe for completing each checked strategy (Select all that apply and add rows for additional strategies):

Table 25. Strategies and timeframe to reduce residential per capita demand

Strategy to reduce residential per capita demand	Timeframe for completing work
<input type="checkbox"/> Revise city ordinances/codes to encourage or require water efficient landscaping.	
<input type="checkbox"/> Revise city ordinance/codes to permit water reuse options, especially for non-potable purposes like irrigation, groundwater recharge, and industrial use. Check with plumbing authority to see if internal buildings reuse is permitted	
<input type="checkbox"/> Revise ordinances to limit irrigation. Describe the restricted irrigation plan:	
<input type="checkbox"/> Revise outdoor irrigation installations codes to require high efficiency systems (e.g. those with soil moisture sensors or programmable watering areas) in new installations or system replacements.	
<input checked="" type="checkbox"/> Make water system infrastructure improvements	Ongoing
<input type="checkbox"/> Offer free or reduced cost water use audits) for residential customers.	
<input type="checkbox"/> Implement a notification system to inform customers when water availability conditions change.	
<input type="checkbox"/> Provide rebates or incentives for installing water efficient appliances and/or fixtures indoors (e.g., low flow toilets, high efficiency dish washers and washing machines, showerhead and faucet aerators, water softeners, etc.)	
<input type="checkbox"/> Provide rebates or incentives to reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	
<input type="checkbox"/> Identify supplemental Water Resources	
<input checked="" type="checkbox"/> Conduct audience-appropriate water conservation education and outreach.	Ongoing
<input type="checkbox"/> Describe other plans	

Objective 3: Achieve at least 1.5% annual reduction in non-residential per capita water use

(For each of the next ten years, or a 15% total reduction over ten years.) This includes commercial, institutional, industrial and agricultural water users.

Complete Table 26 by checking which strategies you will used to continue reducing non-residential customer use demand and project a likely timeframe for completing each checked strategy (add rows for additional strategies).

Where possible, substitute recycled water used in one process for reuse in another. (For example, spent rinse water can often be reused in a cooling tower.) Keep in mind the true cost of water is the amount on the water bill PLUS the expenses to heat, cool, treat, pump, and dispose of/discharge the water. Don't just calculate the initial investment. Many conservation retrofits that appear to be prohibitively expensive are actually very cost-effective when amortized over the life of the equipment. Often reducing water use also saves electrical and other utility costs. Note: as of 2015, water reuse, and is not allowed by the state plumbing code, M.R. 4715 (a variance is needed). However, several state agencies are addressing this issue.

Table 26. Strategies and timeframe to reduce institutional, commercial industrial, and agricultural and non-revenue use demand

Strategy to reduce total business, industry, agricultural demand	Timeframe for completing work
<input type="checkbox"/> Conduct a facility water use audit for both indoor and outdoor use, including system components	
<input type="checkbox"/> Install enhanced meters capable of automated readings to detect spikes in consumption	
<input type="checkbox"/> Compare facility water use to related industry benchmarks, if available (e.g., meat processing, dairy, fruit and vegetable, beverage, textiles, paper/pulp, metals, technology, petroleum refining etc.)	
<input type="checkbox"/> Install water conservation fixtures and appliances or change processes to conserve water	
<input checked="" type="checkbox"/> Repair leaking system components (e.g., pipes, valves)	Ongoing
<input checked="" type="checkbox"/> Investigate the reuse of reclaimed water (e.g., stormwater, wastewater effluent, process wastewater, etc.)	Yearly – for 2 existing car washes
<input type="checkbox"/> Reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	
<input type="checkbox"/> Train employees how to conserve water	
<input type="checkbox"/> Implement a notification system to inform non-residential customers when water availability conditions change.	
<input type="checkbox"/> Nonpotable rainwater catchment systems intended to supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, industrial processes, water features, vehicle washing facilities, cooling tower makeup, and similar uses shall be approved by the commissioner. Plumbing code 4714.1702, Published October 31, 2016	
<input type="checkbox"/> Describe other plans:	

Objective 4: Achieve a Decreasing Trend in Total Per Capita Demand

Include as **Appendix 8** one graph showing total per capita water demand for each customer category (i.e., residential, institutional, commercial, industrial) from 2005-2014 and add the calculated/estimated linear trend for the next 10 years.

Describe the trend for each customer category; explain the reason(s) for the trends, and where trends are increasing.

The trend for Residential water demand is trending downward in GPCD. This downward trend can be associated to increased education and water conservation efforts within the City of St. Bonifacius.

Commercial, Industrial, and Institutional water demands were combined as one to depict the trending. The trend for C/I/I water demand has been fairly steady over the past 10 years with no clear trend.

Objective 5: Reduce Ratio of Maximum day (peak day) to the Average Day Demand to Less Than 2.6

Is the ratio of average 2005-2014 maximum day demand to average 2005-2014 average day demand reported in Table 2 more than 2.6? Yes No

Calculate a ten-year average (2005 – 2014) of the ratio of maximum day demand to average day demand: 2.2

The position of the DNR has been that a peak day/average day ratio that is above 2.6 for in summer indicates that the water being used for irrigation by the residents in a community is too large and that efforts should be made to reduce the peak day use by the community.

It should be noted that by reducing the peak day use, communities can also reduce the amount of infrastructure that is required to meet the peak day use. This infrastructure includes new wells, new water towers which can be costly items.

Objective 6: Implement Demand Reduction Measures

Water Conservation Program

Municipal water suppliers serving over 1,000 people are required to adopt demand reduction measures that include a conservation rate structure, or a uniform rate structure with a conservation program that achieves demand reduction. These measures must achieve demand reduction in ways that reduce water demand, water losses, peak water demands, and nonessential water uses. These measures must be approved before a community may request well construction approval from the Department of Health or before requesting an increase in water appropriations permit volume ([Minnesota Statutes, section 103G.291, subd. 3 and 4](#)). Rates should be adjusted on a regular basis to ensure that revenue of the system is adequate under reduced demand scenarios. If a municipal water supplier intends to use a Uniform Rate Structure, a community-wide Water Conservation Program that will achieve demand reduction must be provided.

Current Water Rates

Include a copy of the actual rate structure in **Appendix 9** or list current water rates including base/service fees and volume charges below.

Volume included in base rate or service charge: 0 gallons

Frequency of billing: Monthly Bimonthly Quarterly Other: _____

Water Rate Evaluation Frequency: every year every ___ years no schedule

Date of last rate change: January 1, 2016

Table 27. Rate structures for each customer category (Select all that apply and add additional rows as needed)

Customer Category	Conservation Billing Strategies in Use *	Conservation Neutral Billing Strategies in Use **	Non-Conserving Billing Strategies in Use ***
Residential	<input checked="" type="checkbox"/> Monthly billing <input type="checkbox"/> Increasing block rates (volume tiered rates)	<input checked="" type="checkbox"/> Uniform <input checked="" type="checkbox"/> Odd/even day watering	<input type="checkbox"/> Service charge based on water volume <input type="checkbox"/> Declining block

Customer Category	Conservation Billing Strategies in Use *	Conservation Neutral Billing Strategies in Use **	Non-Conserving Billing Strategies in Use ***
	<input type="checkbox"/> Seasonal rates <input type="checkbox"/> Time of use rates <input checked="" type="checkbox"/> Water bills reported in gallons <input type="checkbox"/> Individualized goal rates <input type="checkbox"/> Excess use rates <input type="checkbox"/> Drought surcharge <input type="checkbox"/> Use water bill to provide comparisons <input checked="" type="checkbox"/> Service charge not based on water volume <input type="checkbox"/> Other (describe)		<input type="checkbox"/> Flat <input type="checkbox"/> Other (describe)
Commercial/ Industrial/ Institutional	<input checked="" type="checkbox"/> Monthly billing <input type="checkbox"/> Increasing block rates (volume tiered rates) <input type="checkbox"/> Seasonal rates <input type="checkbox"/> Time of use rates <input checked="" type="checkbox"/> Water bills reported in gallons <input type="checkbox"/> Individualized goal rates <input type="checkbox"/> Excess use rates <input type="checkbox"/> Drought surcharge <input type="checkbox"/> Use water bill to provide comparisons <input checked="" type="checkbox"/> Service charge not based on water volume <input type="checkbox"/> Other (describe)	<input checked="" type="checkbox"/> Uniform	<input type="checkbox"/> Service charge based on water volume <input type="checkbox"/> Declining block <input type="checkbox"/> Flat <input type="checkbox"/> Other (describe)
<input type="checkbox"/> Other			

*** Rate Structures components that may promote water conservation:**

- **Monthly billing:** is encouraged to help people see their water usage so they can consider changing behavior.
- **Increasing block rates (also known as a tiered residential rate structure):** Typically, these have at least three tiers: should have at least three tiers.
 - The first tier is for the winter average water use.
 - The second tier is the year-round average use, which is lower than typical summer use. This rate should be set to cover the full cost of service.
 - The third tier should be above the average annual use and should be priced high enough to encourage conservation, as should any higher tiers. For this to be effective, the difference in block rates should be significant.
- **Seasonal rate:** higher rates in summer to reduce peak demands
- **Time of Use rates:** lower rates for off peak water use
- **Bill water use in gallons:** this allows customers to compare their use to average rates
- **Individualized goal rates:** typically used for industry, business or other large water users to promote water conservation if they keep within agreed upon goals. **Excess Use rates:** if water use goes above an agreed upon amount this higher rate is charged
- **Drought surcharge:** an extra fee is charged for guaranteed water use during drought
- **Use water bill to provide comparisons:** simple graphics comparing individual use over time or compare individual use to others.

- **Service charge or base fee that does not include a water volume** – a base charge or fee to cover universal city expenses that are not customer dependent and/or to provide minimal water at a lower rate (e.g., an amount less than the average residential per capita demand for the water supplier for the last 5 years)
- **Emergency rates** -A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These higher rates can help to protect the city budgets during times of significantly less water usage.

****Conservation Neutral****

- **Uniform rate:** rate per unit used is the same regardless of the volume used
- **Odd/even day watering** –This approach reduces peak demand on a daily basis for system operation, but it does not reduce overall water use.

***** Non-Conserving *****

- **Service charge or base fee with water volume:** an amount of water larger than the average residential per capita demand for the water supplier for the last 5 years
- **Declining block rate:** the rate per unit used decreases as water use increases.
- **Flat rate:** one fee regardless of how much water is used (usually unmetered).

Provide justification for any conservation neutral or non-conserving rate structures. If intending to adopt a conservation rate structure, include the timeframe to do so:

Due to the modest water usage within the City of St. Bonifacius, the City does not feel that there is need to move away from a uniform rate schedule at this time.

Objective 7: Additional strategies to Reduce Water Use and Support Wellhead Protection Planning

Development and redevelopment projects can provide additional water conservation opportunities, such as the actions listed below. If a Uniform Rate Structure is in place, the water supplier must provide a Water Conservation Program that includes at least two of the actions listed below. Check those actions that you intent to implement within the next 10 years.

Table 28. Additional strategies to Reduce Water Use & Support Wellhead Protection

<input type="checkbox"/>	Participate in the GreenStep Cities Program, including implementation of at least one of the 20 “Best Practices” for water
<input type="checkbox"/>	Prepare a master plan for smart growth (compact urban growth that avoids sprawl)
<input type="checkbox"/>	Prepare a comprehensive open space plan (areas for parks, green spaces, natural areas)
<input checked="" type="checkbox"/>	Adopt a water use restriction ordinance (lawn irrigation, car washing, pools, etc.)
<input checked="" type="checkbox"/>	Adopt an outdoor lawn irrigation ordinance
<input type="checkbox"/>	Adopt a private well ordinance (private wells in a city must comply with water restrictions)
<input type="checkbox"/>	Implement a stormwater management program
<input type="checkbox"/>	Adopt non-zoning wetlands ordinance (can further protect wetlands beyond state/federal laws-for vernal pools, buffer areas, restrictions on filling or alterations)
<input type="checkbox"/>	Adopt a water offset program (primarily for new development or expansion)
<input type="checkbox"/>	Implement a water conservation outreach program
<input type="checkbox"/>	Hire a water conservation coordinator (part-time)
<input type="checkbox"/>	Implement a rebate program for water efficient appliances, fixtures, or outdoor water management

<input type="checkbox"/>	Other
--------------------------	-------

Objective 8: Tracking Success: How will you track or measure success through the next ten years?

Continue to monitor water demand trends and increase conservation efforts if trends change.

Tip: The process to monitor demand reduction and/or a rate structure includes:

- a) The DNR Hydrologist will call or visit the community the first 1-3 years after the water supply plan is completed.
- b) They will discuss what activities the community is doing to conserve water and if they feel their actions are successful. The Water Supply Plan, Part 3 tables and responses will guide the discussion. For example, they will discuss efforts to reduce unaccounted for water loss if that is a problem, or go through Tables 33, 34 and 35 to discuss new initiatives.
- c) The city representative and the hydrologist will discuss total per capita water use, residential per capita water use, and business/industry use. They will note trends.
- d) They will also discuss options for improvement and/or collect case studies of success stories to share with other communities. One option may be to change the rate structure, but there are many other paths to successful water conservation.
- e) If appropriate, they will cooperatively develop a simple work plan for the next few years, targeting a couple areas where the city might focus efforts.

C. Regulation

Complete Table 29 by selecting which regulations are used to reduce demand and improve water efficiencies. Add additional rows as needed.

Copies of adopted regulations or proposed restrictions or should be included in **Appendix 10** (a list with hyperlinks is acceptable).

Table 29. Regulations for short-term reductions in demand and long-term improvements in water efficiencies

Regulations Utilized	When is it applied (in effect)?
<input type="checkbox"/> Rainfall sensors required on landscape irrigation systems	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Water efficient plumbing fixtures required	<input type="checkbox"/> New development <input type="checkbox"/> Replacement <input type="checkbox"/> Rebate Programs
<input type="checkbox"/> Critical/Emergency Water Deficiency ordinance	<input type="checkbox"/> Only during declared Emergencies
<input checked="" type="checkbox"/> Watering restriction requirements (time of day, allowable days, etc.)	<input checked="" type="checkbox"/> Odd/even <input type="checkbox"/> 2 days/week <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Water waste prohibited (for example, having a fine for irrigators spraying on the street)	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input checked="" type="checkbox"/> Limitations on turf areas (requiring lots to have 10% - 25% of the space in natural areas)	<input checked="" type="checkbox"/> New development <input type="checkbox"/> Shoreland/zoning <input type="checkbox"/> Other

Regulations Utilized	When is it applied (in effect)?
<input checked="" type="checkbox"/> Soil preparation requirements (after construction, requiring topsoil to be applied to promote good root growth)	<input checked="" type="checkbox"/> New Development <input type="checkbox"/> Construction Projects <input type="checkbox"/> Other
<input checked="" type="checkbox"/> Tree ratios (requiring a certain number of trees per square foot of lawn)	<input checked="" type="checkbox"/> New development <input type="checkbox"/> Shoreland/zoning <input type="checkbox"/> Other
<input type="checkbox"/> Permit to fill swimming pool and/or requiring pools to be covered (to prevent evaporation)	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input checked="" type="checkbox"/> Ordinances that permit stormwater irrigation, reuse of water, or other alternative water use (Note: be sure to check current plumbing codes for updates)	<input checked="" type="checkbox"/> Describe – The 2 existing car washes in town utilize reuse of water

D. 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 municipal water suppliers develop a long-term plan to retrofit public buildings with water efficient plumbing fixtures and appliances. Some water suppliers have developed partnerships with organizations having similar conservation goals, such as electric or gas suppliers, to develop cooperative rebate and retrofit programs.

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

Complete Table 30 by checking which water uses are targeted, the outreach methods used, the measures used to identify success, and any participating partners.

Table 30. Retrofitting programs (Select all that apply)

Water Use Targets	Outreach Methods	Partners
<input type="checkbox"/> Low flush toilets, <input type="checkbox"/> Toilet leak tablets, <input type="checkbox"/> Low flow showerheads, <input type="checkbox"/> Faucet aerators;	<input type="checkbox"/> Education about <input type="checkbox"/> Free distribution of <input type="checkbox"/> Rebate for <input type="checkbox"/> Other	<input type="checkbox"/> Gas company <input type="checkbox"/> Electric company <input type="checkbox"/> Watershed organization
<input type="checkbox"/> Water conserving washing machines, <input type="checkbox"/> Dish washers, <input type="checkbox"/> Water softeners;	<input type="checkbox"/> Education about <input type="checkbox"/> Free distribution of <input type="checkbox"/> Rebate for <input type="checkbox"/> Other	<input type="checkbox"/> Gas company <input type="checkbox"/> Electric company <input type="checkbox"/> Watershed organization

Water Use Targets	Outreach Methods	Partners
<input checked="" type="checkbox"/> Rain gardens, <input checked="" type="checkbox"/> Rain barrels, <input type="checkbox"/> Native/drought tolerant landscaping, etc.	<input checked="" type="checkbox"/> Education about <input type="checkbox"/> Free distribution of <input type="checkbox"/> Rebate for <input type="checkbox"/> Other	<input type="checkbox"/> Gas company <input type="checkbox"/> Electric company <input checked="" type="checkbox"/> Watershed organization

Briefly discuss measures of success from the above table (e.g. number of items distributed, dollar value of rebates, gallons of water conserved, etc.):

Educational materials were distributed to residents informing them of the benefits of rain gardens and rain barrels, there has been interest among a few residents with implementing these items.

E. Education and Information Programs

Customer education should take place in three different circumstances. First, customers should be provided information on how to conserve water and improve water use efficiencies. Second, information should be provided at appropriate times to address peak demands. Third, emergency notices and educational materials about how to reduce water use should be available for quick distribution during an emergency.

Proposed Education Programs

Complete Table 31 by selecting which methods are used to provide water conservation and information, including the frequency of program components. Select all that apply and add additional lines as needed.

Table 31. Current and Proposed Education Programs

Education Methods	General summary of topics	#/Year	Frequency
Billing inserts or tips printed on the actual bill	Conservation, watering restrictions	4	<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Consumer Confidence Reports	City water usage and water quality data	1	<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Press releases to traditional local news outlets (e.g., newspapers, radio and TV)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Social media distribution (e.g., emails, Facebook, Twitter)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Paid advertisements (e.g., billboards, print media, TV, radio, web sites, etc.)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies

Education Methods	General summary of topics	#/Year	Frequency
Presentations to community groups			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Staff training			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Facility tours	Treatment methods, usage issues	1	<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Displays and exhibits			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Marketing rebate programs (e.g., indoor fixtures & appliances and outdoor practices)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Community news letters	Conservation, watering restrictions	4	<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Direct mailings (water audit/retrofit kits, showerheads, brochures)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Information kiosk at utility and public buildings			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Public service announcements			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Cable TV Programs			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Demonstration projects (landscaping or plumbing)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
K-12 education programs (Project Wet, Drinking Water Institute, presentations)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies

Education Methods	General summary of topics	#/Year	Frequency
Community events (children’s water festivals, environmental fairs)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Community education classes			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Water week promotions			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Website (www.ci.st-bonifacius.mn.us)	Conservation, watering restrictions		<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Targeted efforts (large volume users, users with large increases)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Notices of ordinances			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Emergency conservation notices			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Other:			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies

Briefly discuss what future education and information activities your community is considering in the future:

Additional website content

PART 4. ITEMS FOR METROPOLITAN AREA COMMUNITIES

Minnesota Statute 473.859 requires WSPs 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 information in Parts 1-3 addresses water demand for the next 10 years. However, additional information is needed to address water demand through 2040, which will make the WSP consistent with the Metropolitan Land Use Planning Act, upon which the local comprehensive plans are based.

This Part 4 provides guidance to complete the WSP in a way that addresses plans for water supply through 2040.

A. Water Demand Projections through 2040

Complete Table 7 in Part 1D by filling in information about long-term water demand projections through 2040. Total Community Population projections should be consistent with the community's system statement, which can be found on the Metropolitan Council's website and which was sent to the community in September 2015.

Projected Average Day, Maximum Day, and Annual Water Demands may either be calculated using the method outlined in *Appendix 2* of the *2015 Master Water Supply Plan* or by a method developed by the individual water supplier.

B. Potential Water Supply Issues

Complete Table 10 in Part 1E by providing information about the potential water supply issues in your community, including those that might occur due to 2040 projected water use.

The [Master Water Supply Plan](#) provides information about potential issues for your community in *Appendix 1 (Water Supply Profiles)*. This resource may be useful in completing Table 10.

You may document results of local work done to evaluate impact of planned uses by attaching a feasibility assessment or providing a citation and link to where the plan is available electronically.

C. Proposed Alternative Approaches to Meet Extended Water Demand Projections

Complete Table 12 in Part 1F with information about potential water supply infrastructure impacts (such as replacements, expansions or additions to wells/intakes, water storage and treatment capacity, distribution systems, and emergency interconnections) of extended plans for development and redevelopment, in 10-year increments through 2040. It may be useful to refer to information in the community's local Land Use Plan, if available.

Complete Table 14 in Part 1F by checking each approach your community is considering to meet future demand. For each approach your community is considering, provide information about the amount of

future water demand to be met using that approach, the timeframe to implement the approach, potential partners, and current understanding of the key benefits and challenges of the approach.

As challenges are being discussed, consider the need for: evaluation of geologic conditions (mapping, aquifer tests, modeling), identification of areas where domestic wells could be impacted, measurement and analysis of water levels & pumping rates, triggers & associated actions to protect water levels, etc.

D. Value-Added Water Supply Planning Efforts (Optional)

The following information is not required to be completed as part of the local water supply plan, but completing this can help strengthen source water protection throughout the region and help Metropolitan Council and partners in the region to better support local efforts.

Source Water Protection Strategies

Does a Drinking Water Supply Management Area for a neighboring public water supplier overlap your community? Yes No

If you answered no, skip this section. If you answered yes, please complete Table 32 with information about new water demand or land use planning-related local controls that are being considered to provide additional protection in this area.

Table 32. Local controls and schedule to protect Drinking Water Supply Management Areas

Local Control	Schedule to Implement	Potential Partners
<input type="checkbox"/> None at this time		
<input type="checkbox"/> Comprehensive planning that guides development in vulnerable drinking water supply management areas		
<input type="checkbox"/> Zoning overlay		
<input type="checkbox"/> Other:		

Technical assistance

From your community’s perspective, what are the most important topics for the Metropolitan Council to address, guided by the region’s Metropolitan Area Water Supply Advisory Committee and Technical Advisory Committee, as part of its ongoing water supply planning role?

- Coordination of state, regional and local water supply planning roles
- Regional water use goals
- Water use reporting standards
- Regional and sub-regional partnership opportunities
- Identifying and prioritizing data gaps and input for regional and sub-regional analyses
- Others: _____

GLOSSARY

Agricultural/Irrigation Water Use - Water used for crop and non-crop irrigation, livestock watering, chemigation, golf course irrigation, landscape and athletic field irrigation.

Average Daily Demand - The total water pumped during the year divided by 365 days.

Calcareous Fen - Calcareous fens are rare and distinctive wetlands dependent on a constant supply of cold groundwater. Because they are dependent on groundwater and are one of the rarest natural communities in the United States, they are a protected resource in MN. Approximately 200 have been located in Minnesota. They may not be filled, drained or otherwise degraded.

Commercial/Institutional Water Use - Water used by motels, hotels, restaurants, office buildings, commercial facilities and institutions (both civilian and military). Consider maintaining separate institutional water use records for emergency planning and allocation purposes. Water used by multi-family dwellings, apartment buildings, senior housing complexes, and mobile home parks should be reported as Residential Water Use.

Commercial/Institutional/Industrial (C/I/I) Water Sold - The sum of water delivered for commercial/institutional or industrial purposes.

Conservation Rate Structure - A rate structure that encourages conservation and may include increasing block rates, seasonal rates, time of use rates, individualized goal rates, or excess use rates. If a conservation rate is applied to multifamily dwellings, the rate structure must consider each residential unit as an individual user. A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These higher rates can help to protect the city budgets during times of significantly less water usage.

Date of Maximum Daily Demand - The date of the maximum (highest) water demand. Typically this is a day in July or August.

Declining Rate Structure - Under a declining block rate structure, a consumer pays less per additional unit of water as usage increases. This rate structure does not promote water conservation.

Distribution System - Water distribution systems consist of an interconnected series of pipes, valves, storage facilities (water tanks, water towers, reservoirs), water purification facilities, pumping stations, flushing hydrants, and components that convey drinking water and meeting fire protection needs for cities, homes, schools, hospitals, businesses, industries and other facilities.

Flat Rate Structure - Flat fee rates do not vary by customer characteristics or water usage. This rate structure does not promote water conservation.

Industrial Water Use - Water used for thermonuclear power (electric utility generation) and other industrial use such as steel, chemical and allied products, paper and allied products, mining, and petroleum refining.

Low Flow Fixtures/Appliances - Plumbing fixtures and appliances that significantly reduce the amount of water released per use are labeled "low flow". These fixtures and appliances use just enough water to be effective, saving excess, clean drinking water that usually goes down the drain.

Maximum Daily Demand - The maximum (highest) amount of water used in one day.

Metered Residential Connections - The number of residential connections to the water system that have meters. For multifamily dwellings, report each residential unit as an individual user.

Percent Unmetered/Unaccounted For - Unaccounted for water use is the volume of water withdrawn from all sources minus the volume of water delivered. This value represents water "lost" by miscalculated water use due to inaccurate meters, water lost through leaks, or water that is used but unmetered or otherwise undocumented. Water used for public services such as hydrant flushing, ice skating rinks, and public swimming pools should be reported under the category "Water Supplier Services".

Population Served - The number of people who are served by the community's public water supply system. This includes the number of people in the community who are connected to the public water supply system, as well as people in neighboring communities who use water supplied by the community's public water supply system. It should not include residents in the community who have private wells or get their water from neighboring water supply.

Residential Connections - The total number of residential connections to the water system. For multifamily dwellings, report each residential unit as an individual user.

Residential Per Capita Demand - The total residential water delivered during the year divided by the population served divided by 365 days.

Residential Water Use - Water used for normal household purposes such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens. Should include all water delivered to single family private residences, multi-family dwellings, apartment buildings, senior housing complexes, mobile home parks, etc.

Smart Meter - Smart meters can be used by municipalities or by individual homeowners. Smart metering generally indicates the presence of one or more of the following:

- Smart irrigation water meters are controllers that look at factors such as weather, soil, slope, etc. and adjust watering time up or down based on data. Smart controllers in a typical summer will reduce water use by 30%-50%. Just changing the spray nozzle to new efficient models can reduce water use by 40%.
- Smart Meters on customer premises that measure consumption during specific time periods and communicate it to the utility, often on a daily basis.
- A communication channel that permits the utility, at a minimum, to obtain meter reads on demand, to ascertain whether water has recently been flowing through the meter and onto the premises, and to issue commands to the meter to perform specific tasks such as disconnecting or restricting water flow.

Total Connections - The number of connections to the public water supply system.

Total Per Capita Demand - The total amount of water withdrawn from all water supply sources during the year divided by the population served divided by 365 days.

Total Water Pumped - The cumulative amount of water withdrawn from all water supply sources during the year.

Total Water Delivered - The sum of residential, commercial, industrial, institutional, water supplier services, wholesale and other water delivered.

Ultimate (Full Build-Out) - Time period representing the community's estimated total amount and location of potential development, or when the community is fully built out at the final planned density.

Unaccounted (Non-revenue) Loss - See definitions for "percent unmetered/unaccounted for loss".

Uniform Rate Structure - A uniform rate structure charges the same price-per-unit for water usage beyond the fixed customer charge, which covers some fixed costs. The rate sends a price signal to the customer because the water bill will vary by usage. Uniform rates by class charge the same price-per-unit for all customers within a customer class (e.g. residential or non-residential). This price structure is generally considered less effective in encouraging water conservation.

Water Supplier Services - Water used for public services such as hydrant flushing, ice skating rinks, public swimming pools, city park irrigation, back-flushing at water treatment facilities, and/or other uses.

Water Used for Nonessential Purposes - Water used for lawn irrigation, golf course and park irrigation, car washes, ornamental fountains, and other non-essential uses.

Wholesale Deliveries - The amount of water delivered in bulk to other public water suppliers.

Acronyms and Initialisms

AWWA – American Water Works Association
C/I/I – Commercial/Institutional/Industrial
CIP – Capital Improvement Plan
GIS – Geographic Information System
GPCD – Gallons per capita per day
GWMA – Groundwater Management Area – North and East Metro, Straight River, Bonanza,
MDH – Minnesota Department of Health
MGD – Million gallons per day

MG – Million gallons
MGL – Maximum Contaminant Level
MnTAP – Minnesota Technical Assistance Program (University of Minnesota)
MPARS – MN/DNR Permitting and Reporting System (new electronic permitting system)
MRWA – Minnesota Rural Waters Association
SWP – Source Water Protection
WHP – Wellhead Protection

APPENDICES TO BE SUBMITTED BY THE WATER SUPPLIER

Appendix 1: Well records and maintenance summaries

Go to [Part 1C](#) for information on what to include in appendix

Appendix 2: Water level monitoring plan

Go to [Part 1E](#) for information on what to include in appendix

Appendix 3: Water level graphs for each water supply well

Go to [Part 1E](#) for information on what to include in appendix

Appendix 4: Capital Improvement Plan

Go to [Part 1E](#) for information on what to include in appendix

Appendix 5: Emergency Telephone List

Go to [Part 2C](#) for information on what to include in appendix

Appendix 6: Cooperative Agreements for Emergency Services

Go to [Part 2C](#) for information on what to include in appendix

Appendix 7: Municipal Critical Water Deficiency Ordinance

Go to [Part 2C](#) for information on what to include in appendix

Appendix 8: Graph of Ten Years of Annual Per Capita Water Demand for Each Customer Category

Go to [Objective 4 in Part 3B](#) for information on what to include in appendix

Appendix 9: Water Rate Structure

Go to [Objective 6 in Part 3B](#) for information on what to include in appendix

Appendix 10: Ordinances or Regulations Related to Water Use

Go to [Objective 7 in Part 3B](#) for information on what to include in appendix

Appendix 11: Implementation Checklist

Provide a table that summarizes all the actions that the public water supplier is doing, or proposes to do, with estimated implementation dates.

Appendix 12: Sources of Information for Table 10

Provide links or references to the information used to complete Table 10. If the file size is reasonable, provide source information as attachments to the plan.

Appendix 1

Well Records and Maintenance Summaries

212280

County Hennepin
 Quad Mound
 Quad ID 105B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 08/24/1991
 Update Date 01/12/2016
 Received Date

Well Name ST. BONIFACIUS	Township 117	Range 24	Dir Section W 31	Subsection AAACCC	Well Depth 480 ft.	Depth Completed 480 ft.	Date Well Completed 10/00/1972
Elevation 968 ft.	Elev. Method 7.5 minute topographic map (+/- 5 feet)	Drill Method Cable Tool		Drill Fluid			
Address					Use municipal	Status Sealed	
Contact 8535 KENNEDY MEMORIAL DR ST BONIFACIUS MN					Well Hydrofractured? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> From To		
Well TOWER ST ST BONIFACIUS MN 55375					Casing Type Single casing Joint Welded		
Stratigraphy Information					Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Above/Below 1 ft.		
Geological Material	From	To (ft.)	Color	Hardness	Casing Diameter	Weight	Hole Diameter
SAND	0	15			10 in. To	336 ft. 40.4 lbs./ft.	9.7 in. To 480 ft.
CLAY & SAND	15	27			12 in. To	283 ft. 62.5 lbs./ft.	
CLAY	27	48			Open Hole From 336 ft. To 480 ft.		
LAYERS OF SAND,	48	238			Screen? <input type="checkbox"/> Type Make		
CLAY	238	265			Static Water Level		
SANDROCK	265	280			70 ft.	land surface	Measure 10/00/1972
LAYERS OF RD GRN	280	310			Pumping Level (below land surface)		
SHALE & SAND	310	320			104. ft.	24 hrs.	Pumping at 530 g.p.m.
SHALE & SAND	320	345			Wellhead Completion		
SANDROCK	345	478	BROWN		Pitless adapter manufacturer Model		
SHALE	478	480			<input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade		
					<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
					Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified		
					Material Amount From To		
					neat cement ft. ft.		
					Nearest Known Source of Contamination		
					feet	Direction	Type
					Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Pump <input type="checkbox"/> Not Installed Date Installed		
					Manufacturer's name TAIT		
					Model Number	HP	Volt
					8HACL	50	220
					Length of drop pipe	ft	Capacity g.p. Typ Submersible
					140		
					Abandoned		
					Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Variance		
					Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Miscellaneous		
					First Bedrock	Eau Claire Formation	Aquifer Mt.Simon
					Last Strat	Solor Church Formation	Depth to Bedrock 265 ft
					Located by Minnesota Department of Health		
					Locate Method GPS SA On (averaged)		
					System	UTM - NAD83, Zone 15, Meters	X 440828 Y 4972533
					Unique Number Verification	Information from	Input Date 09/21/1999
					Angled Drill Hole		
					Well Contractor		
					Hydro Engineering	10318	
					Lic. or Reg. No.	Name of Driller	

212279

County Hennepin
 Quad Mound
 Quad ID 105B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 08/24/1991
 Update Date 08/18/2014
 Received Date

Well Name ST. BONIFACIUS 117
Township 24
Range W 31
Dir Section AAACBB
Elevation 965 ft. **Elev. Method** 7.5 minute topographic map (+/- 5 feet)

Address
 Contact 8535 KENNEDY MEMORIAL DR ST BONIFACIUS MN
 Well TOWER ST ST BONIFACIUS MN 55375

Stratigraphy Information

Geological Material	From	To (ft.)	Color	Hardness
CLAY	0	25	YELLOW	
CLAY	25	107	BLUE	
CLAY & GRAVEL	107	119		
CLAY	119	176	BLUE	
CLAY & GRAVEL	176	180		
ROCK	180	186	RED	
SHALE	186	190	GREEN	
SANDROCK	190	207	YELLOW	
SANDROCK	207	230	YELLOW	
SANDROCK	230	255	WHITE	
SANDROCK	255	260	WHITE	
SHALE	260	265	YELLOW	
SANDROCK	265	275	YELLOW	
SHALE	275	280	BLUE	
SHALE	280	290	RED	
SHALE	290	300	BRN/GRN	
SHALE & ROCK	300	320		
SANDROCK	320	335	WHITE	
SANDROCK	335	470	WHITE	
SANDROCK	470	480	RED	
SHALE & TRACES	480	880	RED	

Well Depth 880 ft. **Depth Completed** 880 ft. **Date Well Completed** 12/05/1958
Drill Method Cable Tool **Drill Fluid**

Use community supply(municipal) **Status** Active
Well Hydrofractured? Yes No **From** **To**

Casing Type Step down **Joint**
Drive Shoe? Yes No **Above/Below**

Casing Diameter **Weight**
 8 in. To 322 ft. lbs./ft.
 12 in. To 184 ft. lbs./ft.

Open Hole From 322 ft. To 880 ft.

Screen? **Type** **Make**

Static Water Level
 100 ft. land surface Measure 12/05/1958

Pumping Level (below land surface)

Wellhead Completion
 Pitless adapter manufacturer Model
 Casing Protection 12 in. above grade
 At-grade (Environmental Wells and Borings ONLY)

Grouting Information Well Grouted? Yes No Not Specified

Nearest Known Source of Contamination
 feet Direction Type
 Well disinfected upon completion? Yes No

Pump Not Installed Date Installed
 Manufacturer's name
 Model Number HP Volt
 Length of drop pipe ft Capacity g.p. Typ Turbine

Abandoned
 Does property have any not in use and not sealed well(s)? Yes No

Variance
 Was a variance granted from the MDH for this well? Yes No

Miscellaneous
 First Bedrock Tunnel City Group Aquifer Mt.Simon
 Last Strat Solor Church Formation Depth to Bedrock 186 ft
 Located by Minnesota Department of Health
 Locate Method GPS SA On (averaged)
 System UTM - NAD83, Zone 15, Meters X 440820 Y 4972619
 Unique Number Verification Information from Input Date 09/21/1999

Angled Drill Hole

Well Contractor
 Minnesota Department of MDH
 Licensee Business Lic. or Reg. No. Name of Driller

Remarks
 GAMMA LOGGED 12-6-1995.

602296County Hennepin
Quad Mound
Quad ID 105BMINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
Minnesota Statutes Chapter 1031Entry Date 08/09/2000
Update Date 12/08/2016
Received Date

Well Name ST. BONIFACIUS	Township 117	Range 24	Dir Section W 31	Subsection AAACCC	Well Depth 427 ft.	Depth Completed 427 ft.	Date Well Completed 06/03/1998			
Elevation 968 ft.	Elev. Method 7.5 minute topographic map (+/- 5 feet)				Drill Method Cable Tool	Drill Fluid Water				
Address					Use community supply(municipal)	Status Active				
Contact 8535 KENNEDY MEMORIAL DR ST BONIFACIUS MN					Well Hydrofractured? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> From To					
Well TOWER ST ST BONIFACIUS MN 55375					Casing Type Step down Joint Welded					
Stratigraphy Information					Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Above/Below					
Geological Material	From	To (ft.)	Color	Hardness	Casing Diameter	Weight	Hole Diameter			
DRIFT	0	186	BROWN	SOFT	14 in. To 400 ft.	54.5 lbs./ft.	20 in. To 427 ft.			
FRANCONIA	186	207	GRN/RED	SOFT	20 in. To 200 ft.	78.6 lbs./ft.				
IRONTON	207	248	TAN	SOFT						
IRONTON	248	250	TAN	SOFT						
IRONTON	250	255	TAN	SOFT						
EAU CLAIRE	255	335	GRAY	SOFT						
MT. SIMON	335	427	WHITE	SOFT						
					Open Hole	From	ft.	To	ft.	
					Screen? <input checked="" type="checkbox"/>	Type stainless	Make COOK WIREWOUND			
					Diameter	Slot/Gauze	Length	Set		
					10 in.	45	30 ft.	377 ft. 427 ft.		
					Static Water Level					
					82.8 ft.	land surface	Measure	04/29/1998		
					Pumping Level (below land surface)					
					127. ft.	9 hrs.	Pumping at	500 g.p.m.		
					Wellhead Completion					
					Pitless adapter manufacturer	BAKER	Model	8151418WBW		
					<input type="checkbox"/> Casing Protection	<input checked="" type="checkbox"/> 12 in. above grade				
					<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)					
					Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified					
					Material	Amount	From	To		
					neat cement	30 Cubic yards	7 ft.	400 ft.		
					Nearest Known Source of Contamination					
					70 feet	East Direction	Septic tank/drain field Type			
					Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
					Pump <input type="checkbox"/> Not Installed	Date Installed	05/22/1998			
					Manufacturer's name	GOULDS				
					Model Number	7CHC	HP	30	Volt	480
					Length of drop pipe	180 ft	Capacity	500 g.p.	Typ	Submersible
					Abandoned					
					Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
					Variance					
					Was a variance granted from the MDH for this well? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
					Miscellaneous					
					First Bedrock	Wonewoc Sandstone	Aquifer	Mt.Simon		
					Last Strat	Mt.Simon Sandstone	Depth to Bedrock	248 ft		
					Located by Minnesota Department of Health					
					Locate Method GPS SA On (averaged)					
					System	UTM - NAD83, Zone 15, Meters	X 440828	Y 4972548		
					Unique Number Verification	Information from	Input Date	09/21/1999		
					Angled Drill Hole					
					Well Contractor					
					Bergerson-Caswell	27058	KROELLS, J.			
					Licensee Business	Lic. or Reg. No.	Name of Driller			

Remarks
ALL CONSOLIDATED FORMATIONS SOFT & RUNNY.
M.G.S. NO. 3874.

773212

County Hennepin
 Quad Mound
 Quad ID 105B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 10/12/2009
 Update Date 04/16/2015
 Received Date 12/28/2009

Well Name ST. BONIFACIUS	Township 117	Range 24	Dir Section W 30	Subsection DADABB	Well Depth 338 ft.	Depth Completed 338 ft.	Date Well Completed 10/09/2009
Elevation 1042	Elev. Method 7.5 minute topographic map (+/- 5 feet)				Drill Method Dual Rotary	Drill Fluid Water	
Address					Use community supply(municipal)	Status Active	
Contact 8535 KENNEDY MEMORIAL DR ST BONIFACIUS MN					Well Hydrofractured? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> From To		
Well ST BONIFACIUS MN 55375					Casing Type Step down Joint Welded		
Stratigraphy Information					Drive Shoe? Yes <input type="checkbox"/> No <input type="checkbox"/> Above/Below		
Geological Material	From	To (ft.)	Color	Hardness	Casing Diameter	Weight	Hole Diameter
TOP SOIL	0	2	BLACK	SOFT	18 in. To	244 ft. 70.5 lbs./ft.	17 in. To 338 ft.
CLAY & GRAVEL	2	25	BROWN	SOFT	12 in. To	275 ft. 49.5 lbs./ft.	
CLAY & GRAVEL	25	30	BRN/GRY	SOFT			
CLAY & GRAVEL	30	34	GRAY	SOFT			
CLAY & GRAVEL	34	40	BRN/GRY	SOFT			
CLAY & GRAVEL	40	62	GRAY	SOFT			
GRAVEL	62	64	GRAY	SOFT			
CLAY, GRAVEL, &	64	70	GRAY	SOFT			
CLAY & GRAVEL	70	80	GRAY	SOFT			
SAND & GRAVEL	80	90	GRAY	SOFT			
FINE SAND & SILT	90	100	BROWN	SOFT			
COARSE GRAVEL	100	102	VARIED	SOFT			
SAND & SILT	102	115	BROWN	SOFT			
FINE SAND (CLEAN)	115	130	BROWN	SOFT			
FINE SAND & SILT	130	160	GRAY	SOFT			
SILT/CLAY	160	200	GRAY	SOFT			
SAND & SILT	200	205	GRAY	SOFT			
CLAY	205	235	GRAY	SOFT			
COARSE	235	241	VARIED	SOFT			
SANDSTONE/SHALE	241	260	BRN/GRN	MEDIUM			
SANDSTONE	260	267	RED	MED-HRD			
SHALE	267	272	GREEN	MEDIUM			
SHALE	272	273	GREEN	MEDIUM			
SANDSTONE	273	274	RED	HARD			
SANDSTONE & SHALE	274	285	TAN/GRN	MEDIUM			
SANDSTONE (CLEAN)	285	295	TAN	SFT-MED			
SANDSTONE & SHALE	295	333	GRY/GRN	MEDIUM			
SANDSTONE & SHALE	333	338	TAN/GRN				
Remarks					Open Hole From 275 ft. To 338 ft.		
GAMMA LOGGED 10-9-2009. M.G.S. NO. 4972. LOGGED BY JIM TRAEN.					Screen? <input checked="" type="checkbox"/> Type stainless Make JOHNSON		
					Diameter Slot/Gauze Length Set		
					8 in. 40 60 ft. 268 ft. 328 ft.		
					8 in. 10 10 ft. 328 ft. 338 ft.		
					Static Water Level		
					138 ft. land surface Measure 10/09/2009		
					Pumping Level (below land surface)		
					180 ft. 6 hrs. Pumping at 186 g.p.m.		
					Wellhead Completion		
					Pitless adapter manufacturer Model		
					<input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade		
					<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
					Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified		
					Material Amount From To		
					neat cement 10.7 Cubic yards ft. 275 ft.		
					Nearest Known Source of Contamination		
					120 feet West Direction Sewer Type		
					Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
					Pump <input checked="" type="checkbox"/> Not Installed Date Installed		
					Manufacturer's name		
					Model Number HP Volt		
					Length of drop pipe ft Capacity g.p. Typ		
					Abandoned		
					Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
					Variance		
					Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
					Miscellaneous		
					First Bedrock Tunnel City Group Aquifer Wonewoc		
					Last Strat Eau Claire Formation Depth to Bedrock 241 ft		
					Located by Minnesota Department of Health		
					Locate Method GPS SA Off (averaged)		
					System UTM - NAD83, Zone 15, Meters X 440937 Y 4973334		
					Unique Number Verification Info/GPS from data Input Date 02/26/2010		
					Angled Drill Hole		
					Well Contractor		
					Mark J Traut Wells, Inc. 1404 TONY/DAN		
					Licensee Business Lic. or Reg. No. Name of Driller		

Appendix 2

Water Level Monitoring Plan

MN Unique Well # or Intake ID	Local Name	Type	Monitoring Frequency	Monitoring Method
212280	Well No. 1	Sealed	N/A	N/A
212279	Well No. 2	Production	Monthly	Steel Tape
602296	Well No. 3	Production	Monthly	Steel Tape
77312	Well No. 4	Production	Monthly	Steel Tape

Appendix 3
Water Level Data

No Water Level Data Available. The City of St. Bonifacius is going to begin measuring and recording water levels.

Appendix 4

Capital Improvement Plan

2019 BUDGET REPORT

405: Parks Capital Outlay RECEIPTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
GENERAL PROPERTY TAXES	\$5,492	\$5,237	\$7,000	\$858	\$7,000
Interest Earnings	\$7,791	\$341	\$4,500	\$367	\$4,000
TOTAL RECEIPTS	\$13,283	\$5,578	\$11,500	\$1,225	\$11,000

405: Parks Capital Outlay DISBURSEMENTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
Interest Allocation Misc.		\$1,179			
Capital Outlay	\$25,252	\$6,642	\$11,500	\$9,868	\$11,000
TOTAL DISBURSEMENTS	\$25,252	\$7,821	\$11,500	\$9,868	\$11,000

2019 BUDGET REPORT

406:Public Wrks Cap Outlay RECEIPTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
GENERAL PROPERTY TAXES	\$37,307	\$36,477	\$36,000	\$36,000	\$44,000
TOTAL RECEIPTS	\$37,307	\$36,477	\$36,000	\$36,000	\$44,000

406: Public Wrks Cap Outlay DISBURSEMENTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
Capital Outlay	\$0	\$0	\$0		
Capital Outlay/Truck Pmt (PIF 2020)	\$45,000	\$36,007	\$36,000	\$18,006	\$44,000
TOTAL DISBURSEMENTS	\$45,000	\$36,007	\$36,000	\$18,006	\$44,000

2019 BUDGET REPORT

502: PARKS/PUBLIC WORKS RECEIPTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
GENERAL PROPERTY TAXES	\$10,878	\$36,321	\$85,054	\$13,818	\$82,945
Local Government & Aids	\$115,881	\$119,130	\$119,426	\$0	\$119,590
County Road Aid	\$4,849	\$0	\$5,000	\$0	\$5,000
Refunds & Reimbursement	\$3,891	\$679	\$0	\$507	\$1,000
Field Fees	\$0	\$0	\$560	\$420	\$500
Transfer PW, W/S/St Wages	\$0	\$102,700	\$52,000	\$52,000	\$53,515
TOTAL RECEIPTS	\$135,499	\$258,830	\$262,040	\$66,745	\$262,550

502:PARKS/PUBLIC WORKS DISBURSEMENTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
Wages/Taxes/PERA	\$135,448	\$123,342	\$121,000	\$60,412	\$124,450
Parks Seasonal Wages	\$1,703	\$897	\$2,500	\$0	\$2,000
Health Insurance	\$37,331	\$37,952	\$41,360	\$28,270	\$38,500
Fuel	\$4,634	\$4,447	\$6,000	\$3,399	\$6,000
R&M and/or Supplies	\$22,564	\$26,316	\$25,000	\$15,710	\$25,000
Cell Phone/Uniforms					\$1,700
Insurance	\$8,333	\$8,196	\$9,000	\$8,211	\$7,800
Refuse Disposal	\$3,966	\$2,597	\$2,200	\$571	\$2,600
Utility Services	\$6,938	\$5,553	\$7,100	\$4,554	\$7,200
Clothing/Boots Allowance	\$408	\$300	\$300	\$280	\$500
Education & Training	\$0	\$0	\$0	\$0	\$500
Snow Removal	\$4,954	\$11,179	\$6,500	\$6,784	\$9,900
Sealcoating/crackfilling/	\$32,228	\$0	\$34,600	\$30,554	\$30,000
Street Patching		\$0	\$2,000	\$0	\$2,000
Street Sweeping	\$2,550	\$4,750	\$4,000	\$2,050	\$4,400
TOTAL DISBURSEMENTS	\$261,057	\$225,529	\$261,560	\$160,795	\$262,550

2019 BUDGET REPORT

601: Water Operating RECEIPTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
Special Assessments	\$12,695	\$12,118	\$15,000	\$279	\$12,500
Refunds/Reimbursement	\$2,679	\$637	\$0	\$0	\$500
Trunk Fees	\$2,300	\$0	\$2,300	\$2,300	\$2,300
Connection Fees	\$1,075	\$0	\$850	\$1,075	\$1,075
Charges	\$388,295	\$424,467	\$375,000	\$187,964	\$396,000
Transfer	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000
TOTAL RECEIPTS	\$439,044	\$469,221	\$425,150	\$223,618	\$444,375

601: Water Operating DISBURSEMENTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
Engineer Services	\$0	\$1,608	\$2,000	\$3,870	\$10,000
Bond Principal	\$117,000	\$118,000	\$119,000	\$3,785	\$124,000
Interest	\$16,507	\$15,025	\$13,525	\$2,978	\$11,670
Fiscal Agents Fees	\$495	\$495	\$500	\$0	\$500
Tower R&M	\$21,833	\$21,833	\$15,667	\$15,666	\$17,390
R&M and/or Supplies	\$75,540	\$37,417	\$60,000	\$53,510	\$40,000
Telephone	\$3,587	\$3,388	\$3,500	\$1,702	\$3,500
Insurance	\$8,333	\$8,196	\$8,700	\$8,211	\$7,800
Utility Services	\$27,273	\$33,978	\$29,000	\$12,804	\$29,000
Locates	\$394	\$331	\$500	\$147	\$350
Dues & Memberships	\$1,383	\$772	\$2,000	\$762	\$1,300
Education & Training	\$683	\$296	\$2,000	\$563	\$1,000
Water Testing	\$4,996	\$5,062	\$5,200	\$240	\$5,000
Sales Tax Transmittal	\$4,897	\$5,602	\$4,500	\$1,269	\$5,000
Copier/Computer	\$1,661	\$1,591	\$2,000	\$1,292	\$2,000
WTP on call/Comp Time	\$11,123	\$4,839	\$8,000	\$3,214	\$7,400
Transfer Public W Labor	\$70,000	\$74,600	\$36,400	\$36,400	\$37,460
Tsfr Office Staff Wage	\$53,680	\$55,290	\$41,014	\$41,014	\$30,800
Tsfr City Hall Utility	\$2,500	\$3,000	\$3,000	\$3,000	\$3,000
Miscellaneous	\$905	\$0	\$500	\$0	\$500
TOTAL DISBURSEMENTS	\$422,790	\$391,322	\$357,006	\$190,427	\$337,670

2019 BUDGET REPORT

602: Sewer Operating RECEIPTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
Special Assessments	\$9,035	\$7,191	\$10,500	\$218	\$8,100
Refunds/Reimbursement	\$2,679	\$638	\$0	\$0	\$500
Hunters Crest Sewer Charge	\$55,262	\$62,790	\$56,000	\$31,769	\$60,500
Sewer Availability Charges	\$2,485	\$0	\$2,485	\$2,485	\$2,485
Trunk Fees	\$900	\$0	\$900	\$900	\$900
Connection Fees	\$11,050	\$7,800	\$850	\$850	\$850
Charges	\$221,972	\$223,291	\$222,000	\$105,249	\$220,000
Transfers	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
TOTAL RECEIPTS	\$333,383	\$331,711	\$322,735	\$171,471	\$323,335

602: Sewer Operating DISBURSEMENTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
Engineer Services	\$0	\$0	\$1,000	\$0	\$1,000
Inflow & Infiltration, R&M	\$0	\$1,715	\$5,000	\$0	\$1,000
Lift Station	\$0	\$7,429	\$1,500	\$0	\$1,000
R&M and/or Supplies	\$4,321	\$4,923	\$5,000	\$1,590	\$4,200
Insurance	\$8,333	\$8,196	\$8,700	\$8,211	\$7,800
Utility Services	\$200,611	\$226,556	\$230,000	\$113,788	\$230,000
Transfer Public W Labor	\$24,854	\$28,100	\$10,400	\$10,400	\$10,705
Tsfr Office Staff Wage	\$53,680	\$55,290	\$24,609	\$24,609	\$18,480
Tsfr City Hall Utility	\$2,500	\$3,000	\$3,000	\$3,000	\$3,000
Televising	\$0	\$0	\$2,000	\$0	\$1,000
Dues & Memberships	\$0	\$0	\$1,000	\$0	\$1,000
Education & Training	\$0	\$0	\$1,000	\$23	\$1,000
SAC Transmittal	\$2,460	\$0	\$2,485	\$2,460	\$2,485
Copier/Computer	\$433	\$0	\$1,000	\$563	\$1,000
TOTAL DISBURSEMENTS	\$297,192	\$335,209	\$296,694	\$164,643	\$283,670

2019 BUDGET REPORT

603:Storm Water Operating RECEIPTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
Special Assessments	\$2,548	\$2,245	\$3,000	\$61	\$2,400
Connection Fees	\$250	\$0	\$250	\$250	\$250
Charges	\$60,633	\$59,525	\$60,500	\$32,108	\$60,500
Transfer	\$0	\$0	\$0	\$0	
TOTAL RECEIPTS	\$63,431	\$61,770	\$63,750	\$32,420	\$63,150

603:Storm Water Operating DISBURSEMENTS	2016 ACTUAL	2017 ACTUAL	2018 BUDGET	2018 THRU 6/30	2019 BUDGET
Engineer Services	\$15,530	\$9,022	\$15,000	\$1,544	\$45,000
Transfer PW labor			\$5,200	\$5,200	\$5,350
Transfer Office Staff Wages			\$16,406	\$16,406	\$12,320
Bond Principal	\$20,000	\$25,000	\$25,000	\$0	\$25,000
Interest	\$4,160	\$3,759	\$2,766	\$1,383	\$2,265
Storm Water Dredging	\$26,126	\$4,913	\$25,000	\$0	\$10,000
TOTAL DISBURSEMENTS	\$65,816	\$42,694	\$89,372	\$24,533	\$99,935

Appendix 5

Emergency Telephone List

Emergency Telephone List

Emergency Response Team	Name	Work Telephone	Alternate Telephone
Emergency Response Lead	Mayor Shawn Ruotsinoja	651-757-2683	952-215-6862
Alternate Emergency Response Lead	Pete Hilgers, Utility Supervisor	952-446-1061	612-598-3688
Water Operator	Pete Hilgers, Utility Supervisor	952-446-1061	612-598-3688
Alternate Water Operator	Bruce Meuleners, Parks/Streets Supervisor	952-446-1061	612-280-4767
Public Communications	Mayor Shawn Ruotsinoja	651-757-2683	952-215-6862

State and Local Emergency Response Contacts	Name	Work Telephone	Alternate Telephone
State Incident Duty Officer	Minnesota Duty Officer	800/422-0798 Out State	651-649-5451 Metro
County Emergency Director	Jim Grube	612-596-0307	612-596-0300
National Guard	Minnesota Duty Officer	800/422-0798 Out State	651-649-5451 Metro
Mayor/Board Chair	Shawn Ruotsinoja	651-757-2683	952-215-6862
Fire Chief	Shane Weber	952-446-1061	612-655-2388
Sheriff	Richard Stanek	952-258-5321	612-348-3744
Police Chief	Paul Falls (Minnetrissa)	952-446-1131	612-799-8101
Ambulance	Ridgeview Medical Center	952-442-2191	1-800-967-4620
Hospital	Ridgeview Medical Center	952-442-2191	1-800-967-4620
Doctor or Medical Facility	Lakeview Clinic	952-442-4461	911

State and Local Agencies	Name	Work Telephone	Alternate Telephone
MDH District Engineer	Amy Lynch	507-344-2713	651-201-4700
MDH	Drinking Water Protection	651-201-4700	
State Testing Laboratory	Minnesota Duty Officer	800/422-0798 Out State	651-649-5451 Metro
MPCA	Metro Office (St. Paul)	651-296-6300	1-800-422-0798
DNR Area Hydrologist	Jason Spiegel	651-259-5822	651-296-6157
County Water Planner	James Wisker (MCWD)	952-641-4509	952-641-4531

Utilities	Name	Work Telephone	Alternate Telephone
Electric Company	Xcel Energy – Troy Miller	952-470-3358	1-800-895-4999
Gas Company	Centerpoint Energy – Eric Yang	612-321-5334	1-800-245-2377
Telephone Company	Frontier Communications – Steve Storo	952-491-5557	507-519-0280
Gopher State One Call	Utility Locations	800-252-1166	651-454-0002
Highway Department	Jim Grube	612-596-0307	612-596-0300

Mutual Aid Agreements	Name	Work Telephone	Alternate Telephone
Neighboring Water System	City of Minnetrista	952-446-1660	
Emergency Water Connection	City of Minnetrista	952-446-1660	
Materials	City of Minnetrista	952-446-1660	
	MnWarn	1-800-422-0798	1-800-367-6792

Technical/Contracted Services/Supplies	Name	Work Telephone	Alternate Telephone
MRWA Technical Services	MN Rural Water Association	800-367-6792	
Well Driller/Repair	Dave Traut	320-250-5127	
Pump Repair	Dave Traut	320-250-5127	
Electrician	Mike Hilk	612-799-5975	
Plumber	Pavek Plumbing	952-986-6635	
Backhoe	Dennis Henning, Henning Exc.	952-353-2119	612-719-0736
Chemical Feed	Vessco	Clark Corbett	952-941-2678

Meter Repair	Pete Hilgers	952-446-1061	612-598-3688
Generator	Interstate PowerSystems	952-876-5782	
Valves	Henning Excavating	952-353-2119	612-741-9236
Pipe & Fittings	Henning Excavating	952-353-2119	612-741-9236
Water Storage	Utility Service Co.	612-619-6428	1-800-223-3695
Laboratory	Engel Water Testing	952-955-1800	
Engineering firm	Bolton & Menk, Inc.	952-448-8838	612-756-4319

Communications	Name	Work Telephone	Alternate Telephone
News Paper	Waconia Patriot	952-442-4414	952-442-4186
Radio Station	WCCO	612-370-0624	612-399-0316
School Superintendent	Pat Devine	952-442-0600	952-442-0601
Property & Casualty Insurance	Casualty Insurance	952-448-3800	651-281-1200

Appendix 6

Cooperative Agreements for Emergency Services

MEMO



TO: Brenda Fisk & Bill Engelhardt
FROM: Paul Heuer
RE: Highland Road Improvements
FILE: BRA File No. 260-00-111
DATE: September 10, 2001

Per past discussions, we are writing to request connection to the St. Bonifacius water system as a backup for both cities. Please see the attached construction plans for Highland Road Improvements. We propose to connect to the St. Bonifacius water system at the intersection of Highland Road and Wildwood Avenue. A valve will be placed at the connection point. This valve would be closed except in the case of emergency in either Minnetrista or St. Bonifacius. Such emergency may consist of 1) a house fire, in which case water from the other community could be provided in order to fight the fire, or 2) a water main break, in which case opening the valve would provide temporary service until repairs are made. Such a connection will provide much benefit to both communities. The exact nature of such sharing of water will be more clearly defined in an intercommunity water agreement.

Please notify us of your concurrence with such an intercommunity water connection, and of any other construction requirements that we should be aware of. If you are in agreement as to the benefit of this connection, then we would anticipate completing the connection in approximately three weeks. I can be reached at 651-604-4805 if you have any comments or questions. Thank you.

PART 1 C3

PART 2 C2

Cc: Dean Lotter, City of Minnetrista

Appendix 7

Municipal Critical Water Deficiency Ordinance

CITY OF ST. BONIFACIUS

8535 Kennedy Memorial Drive
St. Bonifacius, MN 55375
952-446-1061

ORDINANCE NO. 1

AN ORDINANCE REGULATING NONESSENTIAL WATER USAGE UPON CRITICAL WATER DEFICIENCY AS AUTHORIZED BY MINN. STAT. § 103G.291, SUBD. 1 AND 2.

The City Council of St. Bonifacius, Minnesota ordains:

SECTION 1. PURPOSE.

This ordinance establishes water conservation restrictions; and the plan will be in effect at any time the governor declares by executive order a critical water deficiency, pursuant to Minnesota Statutes section 103G.291.

SECTION 2. DEFINITIONS.

2.1 Clerk in statutory cities means the person assigned duties pursuant to Minn. Stat. § 412.151; or the city manager pursuant to Minn. Stat. § 412.601 – 412.751 or in charter cities as determined by city charter.

2.2 Department means the city water department.

2.3 Emergency means the declaration of a critical water deficiency by the governor.

2.4 Irrigation means the watering of shrubs, trees, sod, seeded areas, gardens, lawns, or any other outdoor vegetation, except outdoor vegetation utilized for agricultural purposes.

2.5 Notification to public means notification through local media, including interviews and issuance of news releases.

2.6 Public water supplier means the city or other entity that owns, manages, or operates a public water supply, as defined in Minn. Stat. § 144.382, subdivision 4.

2.7 Reclaimed water means water collected from rooftops, paved surfaces, or other collection devices and all water utilized more than once before re-entering the natural water cycle.

2.8 Water recirculation system means any system which enables a user to reuse water at least once prior to returning the water to the natural water cycle.

SECTION 3. APPLICATION.

3.1 This ordinance applies to all customers of public water suppliers who own or control water use on any premises.

3.2 No person shall make, cause, use, or permit the use of water received from a public water supply for residential, commercial, industrial, governmental, or any other purpose in any manner contrary to any provision in this ordinance.

3.3 Mandatory emergency conservation measures shall be implemented based upon the declaration of a critical water emergency by the governor.

SECTION 4. DECLARATION OF CRITICAL WATER DEFICIENCY.

Upon the declaration of a critical water deficiency by the governor, the public water supplier shall immediately post notice of the emergency declaration at the usual meeting place of the city council, or the official city bulletin board. The city shall provide notification to the public as quickly as possible or through established water supply plans emergency response plans or procedures.

SECTION 5. MANDATORY EMERGENCY WATER CONSERVATION MEASURES.

Upon declaration of a water emergency and notification to the public, the following mandatory restrictions upon nonessential water use shall be enforced:

- (1) Outdoor irrigation of yards, gardens, golf courses, parklands, and other non-agricultural land, except for those areas irrigated with reclaimed water, is prohibited.
- (2) Washing or spraying of sidewalks, driveways, parking areas, tennis courts, patios, or other paved areas with water from any pressurized source, including garden hoses, except to alleviate immediate health or safety hazards, is prohibited.
- (3) The outdoor use of any water-based play apparatus connected to a pressurized source is prohibited.
- (4) Restaurants and other food service establishments are prohibited from serving water to their customers, unless water is specifically requested by the customer.
- (5) Operation of outdoor misting systems used to cool public areas is prohibited.
- (6) The filling of swimming pools, fountains, spas, or other exterior water features is prohibited.
- (7) The washing of automobiles, trucks, trailers, and other types of mobile equipment is prohibited, except at facilities equipped with wash water recirculation systems, and for vehicles requiring frequent washing to protect public health, safety, and welfare.

SECTION 6. VARIANCES.

The City Clerk or their designee, is authorized to grant variances to this ordinance where strict application of its provisions would result in serious hardship to a customer. A variance may be granted only for reasons involving health or safety. An applicant may appeal the denial of a variance within five (5) days of the decision by submitting a written appeal to the City Clerk. The City Council shall hear the appeal at the next City Council meeting. The decision of the City Council is final.

SECTION 7. VIOLATION.

7.1 Violations shall be determined and cited by the City Clerk or his/her designee. A violator may appeal the citation within five (5) days of its issuance by submitting a written appeal to the City. The City Council shall hear the appeal at the next City Council meeting. The decision of the City Council is final. Violators may be granted an administrative waiver if evidence is provided that equipment failure was the cause of the violation. A letter from a qualified vendor or equipment invoice will be required to show proof of equipment failure.

7.2 Upon discovery of a first violation, the violator shall be issued, either personally or by mail, a warning letter that sets forth the violation and which shall describe the remedy and fines for future violations.

7.3 Upon subsequent violations at the same location, the violator shall be issued, either personally or by mail, a citation that sets forth the violation and shall describe the remedy. Fines shall be added to the monthly water bill of the owner or current occupant of the premises where the violation occurred. The imposition of the fine shall in no way limit the right of the City to pursue other legal remedies.

SECTION 8. ENFORCEMENT.

The City Clerk or his/her designee is authorized to designate city employees or law enforcement personnel to enforce the provisions of this ordinance.

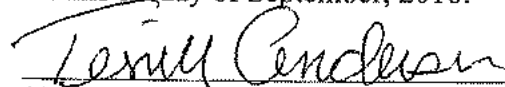
SECTION 9. SEVERABILITY.

If any provision of this ordinance or the application of any provision to a particular situation is held to be invalid by a court of competent jurisdiction, the remaining portions of the ordinance and the application of the ordinance to any other situation shall not be invalidated.


SECTION 10. EFFECTIVE DATE.

This ordinance becomes effective upon Publication (9/13/18).

Passed by the City Council of St. Bonifacius, Minnesota this 5th day of September, 2018.


Shawn Ruotsinoja, Mayor
Acting Mayor

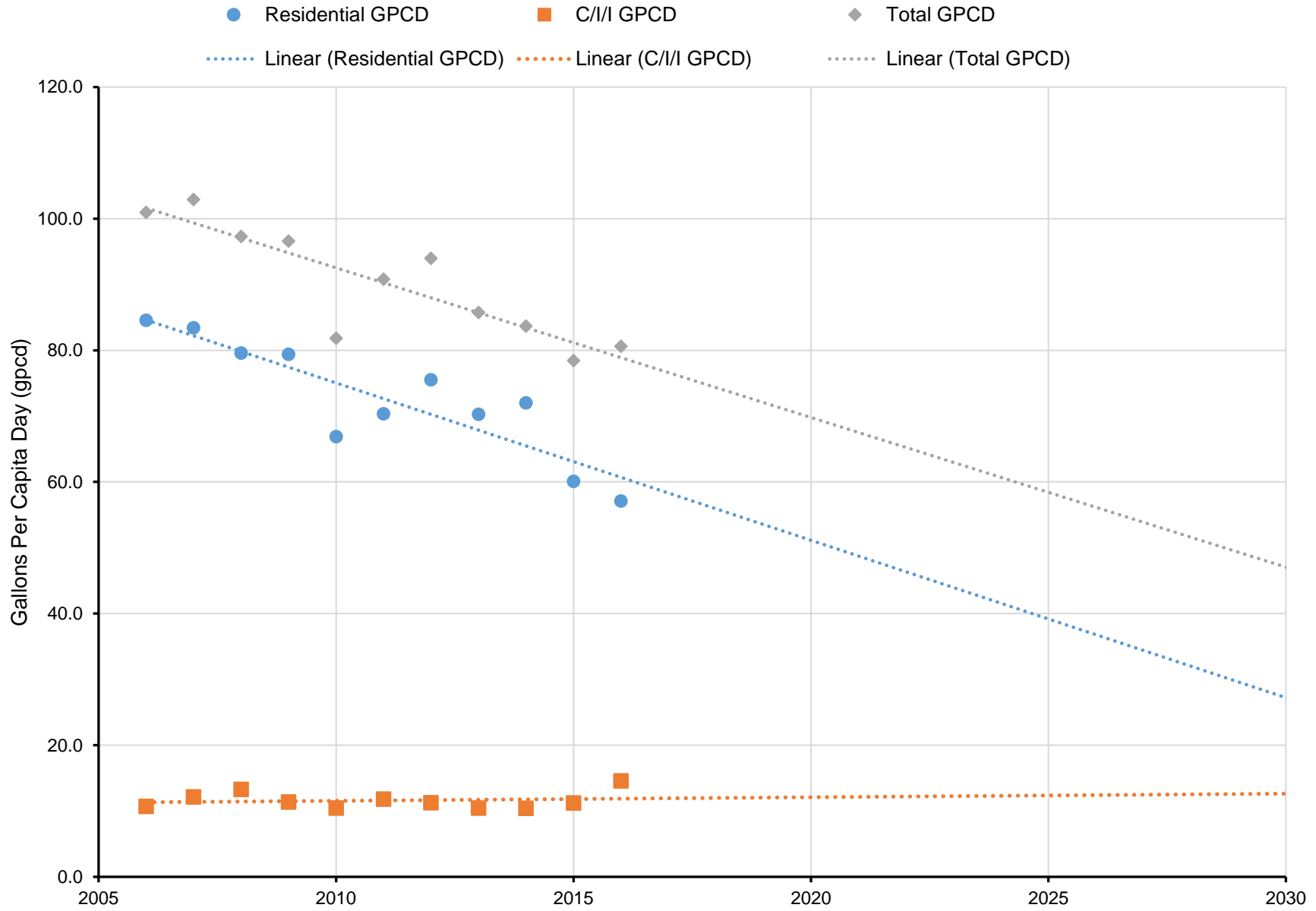
ATTEST:


Brenda Fisk, Administrator/Clerk/Treasurer

Appendix 8

Per Capita Water Demand Graph

St Bonifacius Water Usage



Appendix 9

Water Rate Structure

4. **PARK USE**
Missile Park Ballfield Use. Each team practice. Each game 35.00
No fee for the St. Boni Saints, St. Boni residents and St. Boni
non-profit organizations.
Light usage at Boniface Park per hour 10.00

5. **LIQUOR/ALCOHOLIC BEVERAGES**
3.2 Percent Malt Liquor Off-Sale 100.00
3.2 Percent Malt Liquor On-Sale 165.00
Sunday On-Sale 150.00
Liquor On-Sale 3000.00
Liquor Off-Sale 100.00
Drink Set-Up 300.00
Wine & Beer On-Sale 900.00

6. **WATER/SEWER/STORMWATER BILLING MONTHLY RATES**
Water 0 gals 6.75
Per 1000 gals 5.50
Sewer 0 gals 7.00
Per 1000 gals of water consumed monthly 3.05
June, July, August & September based on April water reading

Stormwater Maintenance Fee 6.50
Utility Penalty 2% of unpaid balance per month
Curb Stop Turn Off or On Labor (per visit) 25.00
Hydrant Usage \$50.00 to hook up at WTP per week for meter/regular
rate per 1,000 gal/deposit of \$500 or driver license, if appropriate.
Water Meter/Radio: Non-Compliance \$50.00/month

7. **UTILITY HOOK-UP CHARGES (ERU)**
Water Connection Fee 850.00
Sewer Connection Fee 850.00
Watermain Trunk Charge 2300.00
Sewermain Trunk Charge 900.00
Water Permit Fee (Residential) 30.00
Sewer Permit Fee (Residential) 30.00
Stormwater 250.00
SAC Charge (Metropolitan sewer system) 2485.00
Residential Water Meter 225.00
Residential Water Meter Horn 35.00
Street Opening Fee 100.00

RESOLUTION
2017-411
PART III
E.3

Appendix 10

Adopted Regulations to Reduce Demand or Improve Water Efficiency

204i.

24 hours after written notice has been given to the owner or occupant of the premises, the water will be shut off and will not be turned on until repairs are made and the sum as established by ordinance of the City Council has been paid.

(G) When the waste of water is great or when damage is likely to result in a leak, the water will be turned off if repair is not commenced immediately upon the giving of such notice.
(Ord. 63, passed 11-21-2001) Penalty, see § 51.99

§ 51.10 METERS REQUIRED; INSTALLATION, TESTING AND MAINTENANCE.

(A) *General.*

(1) No water service connection shall be extended into a building or structure of any sort unless the connection terminates in a water meter obtained from the City Administrator/Clerk/Treasurer. The deposit or charge for such meter shall be fixed by resolution when deemed necessary by the City Council. Replacement of water meters is the city's responsibility: residential, commercial, industrial.

(2) All water meters shall be installed horizontally.

(3) Gate valves of proper size and construction shall be placed on both sides of each meter so that it may be removed for repair and maintenance. The gate valve on the service connection side shall be placed in the line at the same time the meter is installed or prior to meter installation, but in no case shall the meter be on the line without the required valve.

(4) The person making the connection shall notify the city prior to extending the service into the building to ensure that the curb stop is closed. After installation of the required valve and meter, the city must again be notified to turn the curb stop on, at which time both the representative of the city and the person making the connection shall enter the premises to make certain that the valve is functioning properly without leakage.

(1994 Code, § 7-1.10)

(B) *Installation, testing and maintenance of meters.*

(1) Installation of water meters shall be in accordance with state requirements and the provisions of division (A) above. If any person or user feels that the meter as installed is not accurate, notification in writing shall be given to the City Administrator/Clerk/Treasurer who will supervise the testing of the meter.

(2) It shall be unlawful for any person to attempt to tamper, adjust or perform any form of maintenance on a meter without the consent and approval of the city. Costs of testing, adjustment or maintenance of meters shall be borne by the city unless the meter has been misused through improper

tampering. The evidence of tampering with a meter shall be prima facie reason for adding the costs of repair to the user's water bill.

(1994 Code, § 7-1.11)

Penalty, see § 51.99

§ 51.11 RIGHT TO ENTER ONTO PRIVATE LANDS.

Any authorized agent of the city may enter onto private lands and property to perform required inspection, reading, testing or maintenance of any portion of the water system, in accordance with § 10.20. However, when entry into a dwelling is required at such times as no person of the user's family allows entry or the dwelling is unoccupied, the city's agent shall notify the Police Department and enter the dwelling only accompanied by a police officer, and then only in an emergency or highly unusual situation.

(1994 Code, § 7-1.12)

§ 51.12 PRIVATE WATER SYSTEMS NOT AUTHORIZED; REPAIR.

(A) (1) Except with the specific consent and approval of the City Council, no wells for the purpose of providing domestic water for human household use shall be drilled, installed or constructed, and no existing well shall be further developed to provide potable water.

(2) After receiving city approval, new wells may be drilled for agricultural and horticultural use, but there shall be no cross-connections between these wells and the city water system. A cross-connection shall be any means by which a private system could contaminate the city water system and need not be a direct pipe connection.

(3) Any private well now providing water shall be completely disconnected from the plumbing system at such time as the consumer installs a service connection to the city system. A fee shall be paid by the person connecting to the city system for inspection costs. The inspection may be necessary to guarantee that there is no cross-connection between the private system and the city system.

(1994 Code, § 7-1.13)

(B) Existing private wells may not be repaired to the extent that well drilling or pulling equipment is required unless the well is for agricultural and horticultural use and then only with City Council approval.

(1994 Code, § 7-1.14)

§ 51.13 WATER SPRINKLING BAN.

A periodic water sprinkling ban as deemed necessary by the City Council may be imposed by means of a resolution adopted by the Council outlining restrictions with respect to water sprinkling. The

resolution will state the effective time period of the ban, and will be published and posted prior to the effective date of the ban.

(1994 Code, § 7-1.15) Penalty, see § 51.99

§ 51.14 WATER TRUNK AVAILABILITY.

(A) The City Council has determined that the city has expended substantial city resources developing a water distribution system including, but not limited to, the construction of wells, pumps, a municipal water tower and trunk lines to deliver water. The City Council has further determined that the water distribution system provides a definite benefit to undeveloped property within the corporate limits of the city, which undeveloped property has not paid its fair share of the cost of creating the water distribution system.

(B) At the time of the application for a building permit for any construction which requires a connection to the city's water distribution system a water trunk availability charge of an amount as set forth in the annual fee schedule shall be paid for each equivalent residential unit ("ERU"). Equivalent residential units shall be assigned by the city consistent with the assignment table set forth in division (C) below. If a particular use is not categorized in the table, the city, in its reasonable discretion will make the ERU assignment. A request for determination should be made by the landowner prior to the application for the building permit.

(C) ERU assignment:

<i>Use</i>	<i>Number of ERUs</i>
Agricultural retail	1 ERU/10 employees
Apartment complexes (common laundry area)	1 ERU/1.25 dwelling units
Apartment complexes (individual laundry hookups)	1 ERU/dwelling unit
Automobile service	1 ERU/2 service bays
Bank	1 ERU/10 employees
Barber shop	1 ERU/4 chairs
Beauty salon	1 ERU/4 cutting stations
Body repair shop	1 ERU/2 bays
Bowling alley	1 ERU/3 alleys
Car wash (self-service)	3 ERUs/stall
Car wash (automatic)	6 ERUs/stall
Churches	1 ERU/275 seats

St. Bonifacius - Public Works

<i>Use</i>	<i>Number of ERUs</i>
Clinic (medical)	1 ERU/17 fixture units
Cocktail lounge (bar, no food service)	1 ERU/23 seats
Daycare (based on number of children licensed for)	1 ERU/14 children
Dental office	1 ERU/chair
Dry cleaners	1 ERU/each
Elderly apartment housing	1 ERU/1.25 dwelling units
Elderly assisted living facility	1 ERU/1.25 dwelling units
Elderly board and lodging facility with special services	1 ERU/1.50 dwelling units
Funeral home (with allowed dwelling unit)	2 ERUs/each
Funeral home (no allowed dwelling unit)	1 ERU/each
Fire station (volunteer department force)	1 ERU/14 volunteers
General commercial and retail (facilities not explicitly named herein)	1 ERU/10 employees, plus 1 ERU/allowed dwelling unit
Government buildings	1 ERU/each
Grocery stores/butcher shops	1 ERU/10 employees
Laundromats	1 ERU/2 washing machines
Library	1 ERU/each
Manufactured housing	1 ERU/each
Manufacturers	1 ERU/8 employees
Motels and hotels	1 ERU/2 rooms
Multiple-family housing units	1 ERU/dwelling unit
Nursing home	1 ERU/3 beds
Restaurants (fast food, disposable paper plates, glasses and silverware)	1 ERU/22 seats
Restaurants (full service, washable silverware, glasses and dishes)	1 ERU/16 seats
Schools (nursery to grade 7)	1 ERU/18 students
Schools (grade 8 to grade 12)	1 ERU/14 students
Service station (convenience center and gas pumping only)	1 ERU/each
Service station (with service center and pumps)	1 ERU/each, plus 1 ERU/2 service bays

<i>Use</i>	<i>Number of ERUs</i>
Single-family residence	1 ERU/each
Theater	1 ERU/64 seats
Veterinary clinic	1 ERU/exam station
Warehouse	1 ERU/10 employees
NOTES TO TABLE: All fractional ERUs obtained by using the determination methods outlined herein shall be charged on a fractional method; rounding shall be excluded.	

(D) For lots of record (as defined in § 157.003 of this code of ordinances) which exist as of the effective date of this section, the water trunk availability charge will only be imposed for building permits applied for on or after 6-1-1997. For all other lots, the water trunk availability charge will be imposed for building permits applied for on or after the effective date of the section. (Ord. 15, passed 6-13-1996; Ord. 96, passed 8-15-2007; Ord. 100, passed 11-9-2007; Ord. 101, passed 11-14-2007; Ord. 101A, passed 12-5-2012; Ord. 101B, passed 3-5-2014)

§ 51.15 RECYCLED WATER FOR CAR WASHES; ALTERNATIVES.

(A) Any structure within the city which was put into service on or after 8-1-2007, for the purpose of washing the exterior of motor vehicles (both hand wash and mechanical systems) for a fee, or as a service provided to the operator of the motor vehicle purchasing a good or service, must have in place a water recycling system that reclaims at least 60% of the water taken from the city's water system on a daily basis. In order to facilitate compliance, a separate meter or submeter acceptable to the city must be installed.

(B) Any structure within the city which was put into service on or after 8-1-2007, for the purpose of washing the exterior of motor vehicles (both hand wash and mechanical systems) for a fee, or as a service provided to the operator of the motor vehicle purchasing a good or service, may, as an alternative to the recycling requirements of division (A) above, operate on a system that uses less than 45 gallons of water per vehicle washed. In order to proceed under this section, the time of the installation of the car washing equipment, the owner of the proposed car wash must provide detailed technical information to the City Administrator/Clerk/Treasurer and the Building Official demonstrating that less than 45 gallons of water are used per vehicle washed. Additionally, each car wash must have a separate meter measuring the water consumed therein and the owner of the car wash must, on an annual basis, on or before February 15 of each year, provide documentation to the city, for the prior calendar year, of the number of vehicles washed so the city can verify compliance with the 45 gallons or less per wash standard. The exception within this section is not available for any mechanical car wash which is hand-operated by any individual, including, but not limited to, the driver and or occupants of the vehicle being washed.

(Ord. 94, passed 8-15-2007; Ord. 94A, passed 5-7-2008)

§ 51.99 PENALTY.

(A) Any person violating any provision of this chapter for which no specific penalty is prescribed shall be subject to § 10.99 of this code of ordinances.

(B) Violation of water sprinkling ban provisions will be subject to a fine of \$50, per repeated offense.

(1994 Code, § 7-1.15)

CITY OF ST. BONIFACIUS

8535 Kennedy Memorial Drive
St. Bonifacius, MN 55375
952/446-1061

RESOLUTION 2008-12

**A RESOLUTION CALLING FOR TIME OF DAY
SPRINKLING CONSERVATION**

WHEREAS, The St. Bonifacius City Council did meet at its regular meeting on April 2, 2008 at 7:00 p.m. , in the City Council chambers at 8535 Kennedy Memorial Drive, St. Bonifacius, County of Hennepin, State of Minnesota; and

WHEREAS, The City Utility Department and Department Of Natural Resources recommend time of day conservation to conserve water resources and prevent the wasteful and harmful effects of irrigation during the mid-day hours; and

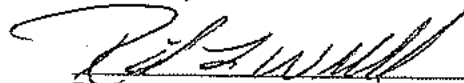
WHEREAS, A public meeting was held March 26, 2008 to review the City utility system's rates, structures and conservation methods.

NOW, THEREFORE, BE IT RESOLVED That the City Council of St. Bonifacius, hereby enforces City wide time of day conservation from 9:00 a.m. to 6:00 p.m. commencing May 1, 2008, effective until such time as City Council deems appropriate. The time of day conservation is in addition to the odd/even sprinkling ban. Upon written request submitted to the City Office, a 30 day grace period will be granted for new seed or sod from the date of planting.

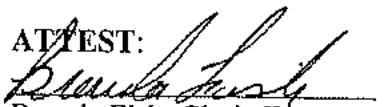
BE IT FURTHER RESOLVED The time of day conservation violations will be subject to a fine of \$50, per repeated offense, in accordance with City Code Section 7-1.15. Exceptions are hereby granted for hoses that are handheld by a person. Exceptions are hereby granted to employees and agents of the City in such instances where in lawn grass or turf used for play fields or areas owned and operated by the City require more frequent watering to prevent unreasonable damage thereto.

BE IT FURTHER RESOLVED, That notice of this time of day conservation shall be published, posted and included in the April newsletter.

Adopted this 2nd day of April, 2008, by the St. Bonifacius City Council.


Rick Weible, Mayor

ATTEST:


Brenda Fisk, Clerk-Treasurer

(Published in The Waconia Patriot April 10, 2008)

CITY OF ST. BONIFACIUS SPRINKLING BANS

1. ODD/EVEN:

Water users having house/business number ending in an odd number (8601) will be allowed to sprinkle on odd calendar days and house/business number ending in an even number (8602) will be allowed to sprinkle on even calendar days.

No exceptions will be made and violation of odd/even water sprinkling provisions will be subject to a fine of \$50 per offense, in accordance with City Code Section 7-1.15.

2. WATER CONSERVATION HOURS:

No sprinkling will be allowed under the City wide time of day conservation from 9:00 a.m. to 6:00 p.m. daily.

No exception will be made and violation of time of day conservation hours will be subject to a fine of \$50 per repeated offense.

**30 DAY GRACE
FOR NEW SEED OR SOD
FROM THE DATE OF PLANTING
UPON WRITTEN REQUEST
TO THE CITY OFFICE**

CITY OF ST. BONIFACIUS

Office of the Clerk-Treasurer
8655 Kennedy Memorial Drive
St. Bonifacius, MN 55375
612/446-1061

7/15/99

Per City Engineer
Keep in force,
have police
issue warning
to violators

Warning

RESOLUTION 1997-20

A RESOLUTION CALLING FOR
ODD/EVEN SPRINKLING

WHEREAS, The St. Bonifacius City Council did meet at its regular meeting on June 26, 1997 at 7:00 p.m., in the City Office at 8655 Kennedy Memorial Drive, St. Bonifacius, County of Hennepin, State of Minnesota; and

WHEREAS, The City Council is the governing body of the City of St. Bonifacius; and

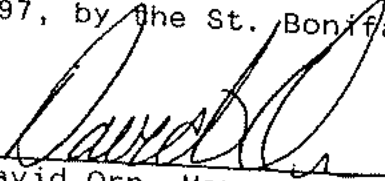
WHEREAS, The Public Works Foreman and City Engineer recommend odd/even sprinkling due to region lack of rainfall.

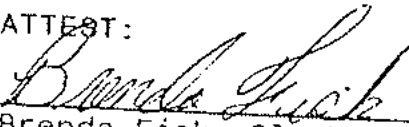
NOW, THEREFORE, BE IT RESOLVED That the City Council of St. Bonifacius, hereby enforces City wide odd/even sprinkling commencing July 1, 1997, effective until such time as City staff deems appropriate. Water users having house/business number ending in an odd number (8601) will be allowed to sprinkle on odd calendar days and house/business number ending in an even number (8602) will be allowed to sprinkle on even calendar days. A 30 day grace period will be granted for new seed or sod from the date of planting.

BE IT FURTHER RESOLVED That no exceptions will be made and violation of odd/even water sprinkling provisions will be subject to a fine of \$50, per repeated offense, in accordance with City Code Section 7-1.15.

BE IT FURTHER RESOLVED, That notice of this Water Sprinkling Ban shall be published, posted and delivered to each water service.

Adopted this 26th day of June, 1997, by the St. Bonifacius City Council.


David Orn, Mayor

ATTEST:

Brenda Fisk, Clerk

Appendix 11

Implementation Checklist

Summary of Actions

- Update outdated watermain infrastructure
- Replace failing watermain infrastructure
- Update outdated water billing system
- Increase conservation efforts through implementation of water conserving ordinances
- Continue with yearly water audits
- Continue periodic leak detection surveys as needed
- Continue to train employees on how to conserve water
- Notify individual customers with abnormal water usage
- Implement a water level monitoring program, as laid out in the Water Supply Plan
- Evaluate the need for rate blocks on water usage billings
- Adopt lawn irrigation ordinance
- Add additional water conservation information to the city website