

APPENDIX 2: COMMUNITY PROFILES

- A. Community Water Supply Profile Description
 - i. Content
 - ii. Assumptions
 - iii. References
 - iv. Notes
 - v. Public Access

- B. Summary Table of Water Supply Availability Issues by Community

- C. Individual Community Water Supply Profiles

Summary of Water Supply Issues by Community

Community	Potential for well interference	Potential for significant decline in aquifer water levels	Potential for impacts on surface water features	Potential for impacts to trout habitat or calcareous fen	Significant uncertainty regarding aquifer extent and productivity	Known groundwater contamination	Significant contamination vulnerability	Total Issues in the Community
Afton	x	x	x	x				4
Andover	x		x				x	3
Anoka	x						x	2
Apple Valley	x	x					x	3
Arden Hills	x					x		2
Bayport	x		x			x	x	4
Baytown Twp.	x	x				x	x	4
Belle Plaine	x				x			2
Belle Plaine Twp.	x				x			2
Benton Twp.	x				x			2
Bethel	x		x		x			3
Birchwood Village	x							1
Blaine	x		x				x	3
Blakeley Twp.	x				x			2
Bloomington	x		x	x			x	4
Brooklyn Center	x		x				x	3
Brooklyn Park	x	x	x		x		x	5
Burnsville	x	x	x				x	4
Camden Twp.	x				x			2
Carver	x							1
Castle Rock Twp.	x		x	x				3
Cedar Lake Twp.	x				x			2
Centerville	x		x				x	3
Champlin	x		x					2
Chanhassen	x		x	x				3
Chaska	x	x	x	x				4
Circle Pines	x		x		x		x	4
Coates	x	x		x				3
Cologne	x				x			2
Columbia Heights	x					x		2
Columbus	x		x		x			3
Coon Rapids	x		x		x		x	4
Corcoran	x		x		x			3
Cottage Grove	x	x	x				x	4
Credit River Twp.	x	x					x	3
Crystal	x						x	2
Dahlgren Twp.	x				x			2
Dayton	x		x		x			3

Community	Potential for well interference	Potential for significant decline in aquifer water levels	Potential for impacts on surface water features	Potential for impacts to trout habitat or calcareous fen	Significant uncertainty regarding aquifer extent and productivity	Known groundwater contamination	Significant contamination vulnerability	Total Issues in the Community
Deephaven	x							1
Dellwood	x							1
Denmark Twp.	x	x	x					3
Douglas Twp.	x			x				2
Eagan	x	x	x	x			x	5
East Bethel	x		x		x	x		4
Eden Prairie	x		x				x	3
Edina	x						x	2
Elko New Market	x							1
Empire Twp.	x	x	x				x	4
Eureka Twp.	x			x			x	3
Excelsior	x							1
Falcon Heights	x					x		2
Farmington	x		x	x			x	4
Forest Lake	x		x		x			3
Fort Snelling (unorg.)	x		x				x	3
Fridley	x		x			x	x	4
Gem Lake	x							1
Golden Valley	x						x	2
Grant	x	x					x	3
Greenfield	x				x			2
Greenvale Twp.	x		x					2
Greenwood	x							1
Grey Cloud Island Twp.	x	x	x					3
Ham Lake	x		x		x			3
Hamburg	x				x			2
Hampton	x							1
Hampton Twp.	x			x				2
Hancock Twp.	x				x			2
Hanover	x				x			2
Hassan Twp.	x		x		x			3
Hastings	x		x				x	3
Helena Twp.	x							1
Hilltop	x							1
Hollywood Twp.	x				x			2
Hopkins	x						x	2
Hugo	x		x				x	3
Independence	x		x		x			3
Inver Grove Heights	x	x	x			x	x	5
Jackson Twp.	x						x	2
Jordan	x				x			2

Community	Potential for well interference	Potential for significant decline in aquifer water levels	Potential for impacts on surface water features	Potential for impacts to trout habitat or calcareous fen	Significant uncertainty regarding aquifer extent and productivity	Known groundwater contamination	Significant contamination vulnerability	Total Issues in the Community
Lake Elmo	x	x	x			x	x	5
Lake St. Croix Beach	x			x				2
Lakeland	x			x		x	x	4
Lakeland Shores	x					x		2
Laketown Twp.	x				x			2
Lakeville	x			x			x	3
Landfall	x							1
Lauderdale	x					x		2
Lexington	x							1
Lilydale	x							1
Lino Lakes	x		x		x		x	4
Linwood Twp.	x		x		x			3
Little Canada	x							1
Long Lake	x							1
Loretto	x				x			2
Louisville Twp.	x		x					2
Mahtomedi	x							1
Maple Grove	x	x	x				x	4
Maple Plain	x		x		x			3
Maplewood	x	x	x					3
Marine on St. Croix	x							1
Marshan Twp.	x						x	2
May Twp.	x		x					2
Mayer	x				x			2
Medicine Lake	x						x	2
Medina	x			x	x			3
Mendota	x							1
Mendota Heights	x		x					2
Miesville	x							1
Minneapolis	x					x	x	3
Minnetonka	x						x	2
Minnetonka Beach	x				x			2
Minnetrissa	x				x			2
Mound	x				x			2
Mounds View	x					x		2
New Brighton	x					x		2
New Germany	x				x			2
New Hope	x							1
New Market Twp.	x							1
New Prague	x							1
New Trier	x							1

Community	Potential for well interference	Potential for significant decline in aquifer water levels	Potential for impacts on surface water features	Potential for impacts to trout habitat or calcareous fen	Significant uncertainty regarding aquifer extent and productivity	Known groundwater contamination	Significant contamination vulnerability	Total Issues in the Community
Newport	x	x	x			x	x	5
Nininger Twp.	x		x		x		x	4
North Oaks	x		x					2
North St. Paul	x							1
Northfield	x							1
Norwood Young America	x				x			2
Nowthen	x				x		x	3
Oak Grove	x		x		x			3
Oak Park Heights	x	x	x				x	4
Oakdale	x	x				x	x	4
Orono	x							1
Osseo	x		x				x	3
Pine Springs	x						x	2
Plymouth	x		x				x	3
Prior Lake	x	x		x			x	4
Ramsey	x		x					2
Randolph	x							1
Randolph Twp.	x						x	2
Ravenna Twp.	x				x			2
Richfield	x		x				x	3
Robbinsdale	x						x	2
Rockford	x							1
Rogers	x		x					2
Rosemount	x	x	x				x	4
Roseville	x					x		2
San Francisco Twp.	x				x			2
Sand Creek Twp.	x		x		x			3
Savage	x		x					2
Scandia	x		x	x				3
Sciota Twp.	x							1
Shakopee	x	x	x	x			x	5
Shoreview	x					x		2
Shorewood	x							1
South St. Paul	x	x	x				x	4
Spring Lake Park	x				x			2
Spring Lake Twp.	x				x			2
Spring Park	x				x			2
St. Anthony	x					x		2
St. Bonifacius	x				x			2
St. Francis	x		x		x			3
St. Lawrence Twp.	x		x		x			3

Community	Potential for well interference	Potential for significant decline in aquifer water levels	Potential for impacts on surface water features	Potential for impacts to trout habitat or calcareous fen	Significant uncertainty regarding aquifer extent and productivity	Known groundwater contamination	Significant contamination vulnerability	Total Issues in the Community
St. Louis Park	x						x	2
St. Marys Point	x			x				2
St. Paul	x	x	x					3
St. Paul Park	x	x	x			x	x	5
Stillwater	x	x		x			x	4
Stillwater Twp.	x			x			x	3
Sunfish Lake	x			x				2
Tonka Bay	x							1
Vadnais Heights	x		x				x	3
Vermillion	x			x				2
Vermillion Twp.	x			x				2
Victoria	x							1
Waconia	x				x			2
Waconia Twp.	x				x			2
Waterford Twp.	x							1
Watertown	x							1
Watertown Twp.	x				x			2
Wayzata	x							1
West Lakeland Twp.	x	x				x		3
West St. Paul	x							1
White Bear Lake	x						x	2
White Bear Twp.	x		x					2
Willernie	x							1
Woodbury	x	x		x			x	4
Woodland	x							1
Young America Twp.	x				x			2
Total Communities	186	30	68	29	54	22	62	

Note:

The issues identified in the community profiles and summarized here must be addressed in such a way as to ensure that more serious limitations do not ensue. A master list of issues and corresponding response thresholds and actions may be found in Appendices 3 and 4.

Community Water Supply Profiles

Purpose	Inform public water utilities and plan review staff of potential water supply issues in each community. Appendices 3 and 4 provide guidance to address issues.
Content	<p><i>Water Demand Projections</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Population served by the municipal water supply system (within and outside of the community)<input type="checkbox"/> Future demand (2010, 2020, 2030, 2040, 2050)<input type="checkbox"/> Estimated future demand, assuming 10% reduction due to conservation<input type="checkbox"/> Estimated additional wells needed to meet demand above current permit volume, assuming pumping rate of 300 gallons per minute (metro average) <p><i>Current Water Supply Sources</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Aquifers<input type="checkbox"/> Surface water<input type="checkbox"/> Purchase from another utility <p><i>Available Future Water Supply Source(s)</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Aquifers (all major aquifers physically present within the community)<input type="checkbox"/> Surface water (rivers adjacent to the community, reservoirs, quarries)<input type="checkbox"/> Interjurisdictional cooperation (existing interconnection, or 2004-2050 population growth >10,000 and >50% in community or neighbor) <p><i>Issues to be addressed in water supply planning and development</i></p> <ul style="list-style-type: none"><input type="checkbox"/> Well interference<input type="checkbox"/> Significant decline in aquifer water levels<input type="checkbox"/> Impacts of groundwater pumping on surface water features<input type="checkbox"/> Impacts to state protected trout habitat or calcareous fen<input type="checkbox"/> Significant uncertainty regarding aquifer productivity and extent<input type="checkbox"/> Known groundwater contamination<input type="checkbox"/> Significant vulnerability to contamination
Assumptions	<p>I. Model-predicted issues assume future growth will be met by expanding the most productive existing groundwater source(s).</p> <p>II. Local conditions affect the assessment of future water supply issues and mitigation strategies. The maps presented in the Metropolitan Area Master Water Supply Plan illustrate the geographic distribution of issues identified in community water supply profiles. It is also important to note that some communities may face as-yet unidentified water supply issues.</p>
References	<p>A. Metropolitan Council: Population and demand projections, Metro Model 2</p> <p>B. Minnesota Department of Health: Contaminant and source water vulnerability mapping</p> <p>C. Minnesota Department of Natural Resources: State Water Use Data System (SWUDS), 2008 local water supply plans, water resource mapping</p> <p>D. Minnesota Geological Survey: Geologic mapping</p> <p>E. State, regional, local agency correspondence and project-specific analyses</p>
Notes	<ol style="list-style-type: none">1. Demand projections are only reported for communities that own and operate municipal water supply systems. Growth in communities served by others is accounted for in the serving community's demand.2. The Conservation Toolbox provides guidance for reducing water demand.3. The Metropolitan Area Master Water Supply Plan, particularly Appendices 3 and 4, provides guidance for addressing the issues
Access	The Metropolitan Area Master Water Supply Plan is available in print and online. Data and community water supply profiles are available online through the Metropolitan Council MAPS website: http://gis.metroc.state.mn.us

Afton

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northern portion of the community under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Valley Branch, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

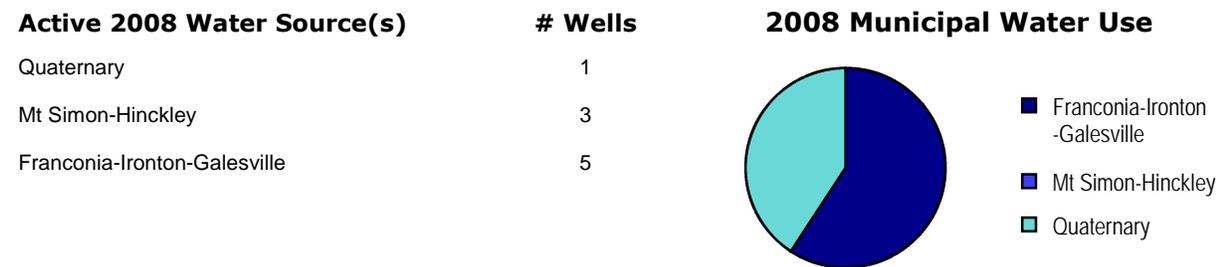
Andover

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	19500	24900	26300	35991	39757
Annual Total (Million Gal./Yr)	996.45	1273.85	1346.85	1843.14	2035.98
Average Day (Million Gal./Day)	2.73	3.49	3.69	5.05	5.58
Maximum Day (Million Gal./Day)	10.37	13.25	13.99	19.15	21.15
Maximum Day, Conserving 10%	9.33	11.93	12.59	17.23	19.03
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	3	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1272 million gallons per year



Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Ramsey, Anoka, Coon Rapids

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the eastern portion of the community and in Bunker Hills Regional Park under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

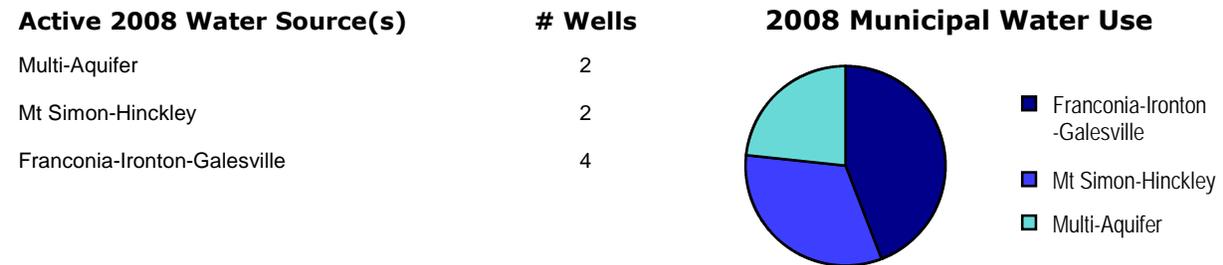
Anoka

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	19000	19800	20800	21993	23331
Annual Total (Million Gal./Yr)	850.45	850.45	850.45	899.23	953.92
Average Day (Million Gal./Day)	2.33	2.33	2.33	2.46	2.61
Maximum Day (Million Gal./Day)	6.70	6.70	6.70	7.08	7.52
Maximum Day, Conserving 10%	6.03	6.03	6.03	6.38	6.76
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1200 million gallons per year



Available Future Water Supply Source(s)^(D)

- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Ramsey, Andover, Coon Rapids
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

Apple Valley

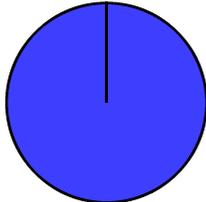
Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	61700	69100	71200	80116	87247
Annual Total (Million Gal./Yr)	3066.00	3467.50	3540.50	3983.84	4338.46
Average Day (Million Gal./Day)	8.40	9.50	9.70	10.91	11.89
Maximum Day (Million Gal./Day)	21.00	23.80	24.20	27.23	29.65
Maximum Day, Conserving 10%	18.90	21.42	21.78	24.51	26.69
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	2	0	2	2

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 3000 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	17	
Mt Simon-Hinckley	2	



- Mt Simon-Hinckley
- Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Burnsville, Farmington, Lakeville, Rosemount

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Arden Hills

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for St. Paul.

Current Water Supply^(C)

The community owns and operates their own water supply system.

Active 2008 Water Source(s)	# Wells
Served by St. Paul Regional Water Services (wholesale)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on St. Paul, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** New Brighton, Roseville

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Bayport

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	3170	3870	4570	5547	6163
Annual Total (Million Gal./Yr)	153.30	186.15	219.00	265.80	295.31
Average Day (Million Gal./Day)	0.42	0.51	0.60	0.73	0.81
Maximum Day (Million Gal./Day)	1.08	1.32	1.56	1.89	2.10
Maximum Day, Conserving 10%	0.97	1.19	1.40	1.70	1.89
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 172.8 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northwestern part of the community under projected 2050 demand conditions

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

Baytown Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2050 demand conditions

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

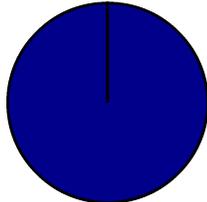
Belle Plaine

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	7300	11800	19425	20398	24897
Annual Total (Million Gal./Yr)	266.45	427.05	667.95	701.39	856.13
Average Day (Million Gal./Day)	0.73	1.17	1.83	1.92	2.35
Maximum Day (Million Gal./Day)	1.83	2.77	4.57	4.80	5.86
Maximum Day, Conserving 10%	1.65	2.49	4.11	4.32	5.27
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	1	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 300 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	3	 <p>A pie chart representing 100% of the 2008 municipal water use, which is entirely from the Quaternary source. The chart is a solid blue circle with a legend to its right showing a blue square next to the label 'Quaternary'.</p>

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Belle Plaine, Blakeley, and St. Lawrence Townships

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Belle Plaine Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Benton Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial, Prairie du Chien-Jordan, and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Bethel

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** St. Francis

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation across the community under projected 2050 demand conditions

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Birchwood Village

Water Demand Projections^(1, 2, A)

	2010	2020	2030	2040	2050
Population Served	950	930	930	927	944

Annual Total (Million Gal./Yr)

Average Day (Million Gal./Day)

Maximum Day (Million Gal./Day)

Maximum Day, Conserving 10%

Estimated Additional Wells,

(if groundwater sources were pumped at metro average rates to meet demand above permit)

Water demand projections for this community are included in projections for White Bear Lake.

Current Water Supply^(C)

The community owns and operates their own water supply system.

Active 2008 Water Source(s)

Wells

Served by White Bear Lake (wholesale)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on White Bear Lake, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** White Bear Lake

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

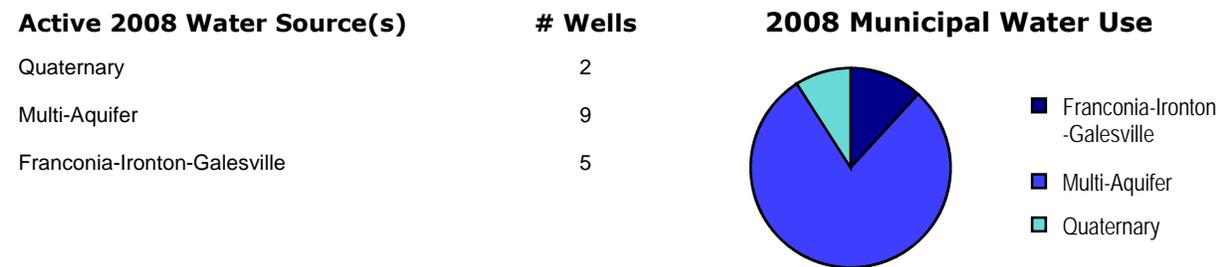
Blaine

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	60324	71534	74880	87928	96112
Annual Total (Million Gal./Yr)	2905.40	3445.60	3606.20	4234.59	4628.72
Average Day (Million Gal./Day)	7.96	9.44	9.88	11.60	12.68
Maximum Day (Million Gal./Day)	20.29	24.06	25.18	29.57	32.32
Maximum Day, Conserving 10%	18.26	21.65	22.66	26.61	29.09
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	1	3	2

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 3337 million gallons per year



Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Coon Rapids, Spring Lake Park, Mounds View, Shoreview, Circle Pines, Lino Lakes

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northeastern portion of the community and in Pioneer Park wetland under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

Blakeley Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Bloomington

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	87632	90503	93000	94827	98205
Annual Total (Million Gal./Yr)	4964.00	5073.50	5219.50	5322.06	5511.62
Average Day (Million Gal./Day)	13.60	13.90	14.30	14.58	15.10
Maximum Day (Million Gal./Day)	36.80	37.60	38.60	39.36	40.76
Maximum Day, Conserving 10%	33.12	33.84	34.74	35.42	36.68
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	7	0	0	0	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 4015 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Served by Minneapolis (wholesale)		
Prairie du Chien-Jordan	5	
Multi-Aquifer	1	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Minneapolis, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minneapolis Water Works

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the eastern portion of the community within the Minnesota River valley under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Unnamed Stream, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the

Notes and references can be found on the Appendix 2 cover page.

Bloomington

Minnesota Department of Natural Resources

- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

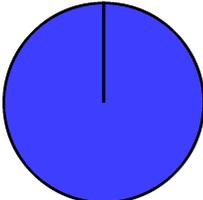
Brooklyn Center

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	29500	30500	29500	30228	30123
Annual Total (Million Gal./Yr)	1314.00	1346.85	1303.05	1335.22	1330.58
Average Day (Million Gal./Day)	3.60	3.69	3.57	3.66	3.65
Maximum Day (Million Gal./Day)	8.40	8.65	8.35	8.56	8.53
Maximum Day, Conserving 10%	7.56	7.79	7.52	7.70	7.67
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 2300 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	9	
Mississippi River		

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the north-central portion of the community under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

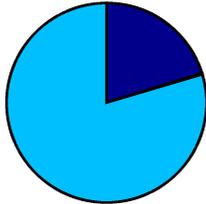
Brooklyn Park

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	78000	84000	85000	96016	102804
Annual Total (Million Gal./Yr)	3540.50	4088.00	4380.00	4947.64	5297.44
Average Day (Million Gal./Day)	9.70	11.20	12.00	13.56	14.51
Maximum Day (Million Gal./Day)	25.40	29.80	32.00	36.15	38.70
Maximum Day, Conserving 10%	22.86	26.82	28.80	32.53	34.83
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	3	1	3	2

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 3400 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	8	 <ul style="list-style-type: none"> ■ Franconia-Ironton-Galesville ■ Mt Simon-Hinckley ■ Multi-Aquifer
Prairie du Chien-Jordan	4	
Multi-Aquifer	3	
Mt Simon-Hinckley	1	
Franconia-Ironton-Galesville	5	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2050 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the western portion of the community under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan aquifer

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the

Notes and references can be found on the Appendix 2 cover page.

Brooklyn Park

Minnesota Department of Natural Resources

- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Burnsville

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	61400	63000	65000	70007	72430
Annual Total (Million Gal./Yr)	3047.75	3124.40	3226.60	3475.17	3595.41
Average Day (Million Gal./Day)	8.35	8.56	8.84	9.52	9.85
Maximum Day (Million Gal./Day)	24.54	25.13	25.86	27.85	28.82
Maximum Day, Conserving 10%	22.09	22.62	23.27	25.07	25.93
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	1	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 3400 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	14	
Multi-Aquifer	1	
Mt Simon-Hinckley	2	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Savage
- Surface water:** Burnsville Quarry

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northeastern portion of the community in the Minnesota River Valley under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Black Dog Fen Complex and Nicols Fen located within one mile of the community
- Harnack and One Mile creeks and an unnamed tributary, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources

Notes and references can be found on the Appendix 2 cover page.

Burnsville

of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Camden Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

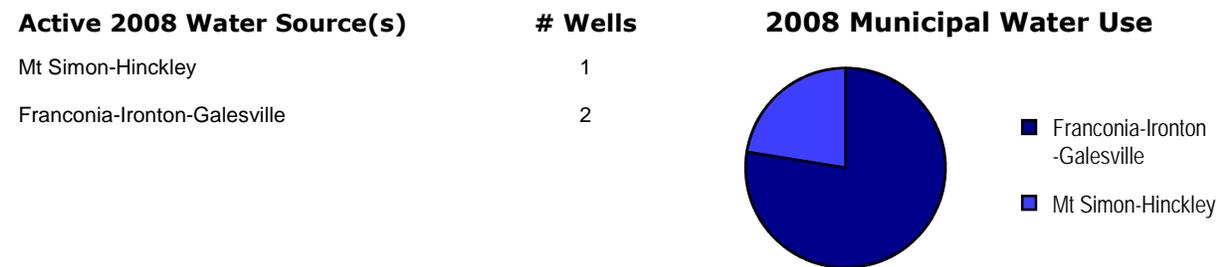
Carver

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	5380	17080	19560	25010	30475
Annual Total (Million Gal./Yr)	222.65	737.30	810.30	1036.06	1262.46
Average Day (Million Gal./Day)	0.61	2.02	2.22	2.84	3.46
Maximum Day (Million Gal./Day)	2.05	6.79	7.45	9.53	11.61
Maximum Day, Conserving 10%	1.85	6.11	6.71	8.57	10.45
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	3	0	1	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 352 million gallons per year



Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Chaska, Dahlgren and San Francisco Townships

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Castle Rock Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northern portion of the community under projected 2050 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- South Branch Vermillion River, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Cedar Lake Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Centerville

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	3730	4860	6200	7404	8613
Annual Total (Million Gal./Yr)	153.30	197.83	252.58	301.63	350.87
Average Day (Million Gal./Day)	0.42	0.54	0.69	0.83	0.96
Maximum Day (Million Gal./Day)	1.08	1.41	1.80	2.15	2.50
Maximum Day, Conserving 10%	0.97	1.27	1.62	1.93	2.25
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 108 million gallons per year

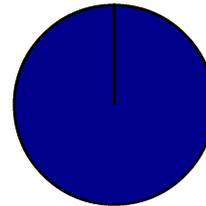
Active 2008 Water Source(s)

Prairie du Chien-Jordan

Wells

2

2008 Municipal Water Use



■ Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- **Prairie du Chien-Jordan aquifer**
- **Franconia-Ironton-Galesville aquifer**
- **Interjurisdictional cooperation:** Lino Lakes

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northwestern portion of the community under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

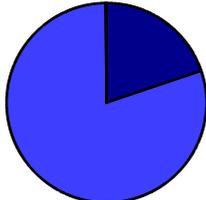
Champlin

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	24700	25800	27100	30034	31598
Annual Total (Million Gal./Yr)	1062.15	1109.60	1168.00	1294.46	1361.87
Average Day (Million Gal./Day)	2.91	3.04	3.20	3.55	3.73
Maximum Day (Million Gal./Day)	8.16	8.52	8.95	9.92	10.44
Maximum Day, Conserving 10%	7.34	7.67	8.06	8.93	9.39
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	1	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1131 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Multi-Aquifer	1	 <ul style="list-style-type: none"> ■ Franconia-Ironton-Galesville ■ Mt Simon-Hinckley ■ Multi-Aquifer
Mt Simon-Hinckley	3	
Franconia-Ironton-Galesville	2	

Available Future Water Supply Source(s)^(D)

- Franconia-Ironton-Galesville aquifer**
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southeast portion of the community under projected 2030 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Chanhassen

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	26300	34000	37500	45477	50071
Annual Total (Million Gal./Yr)	1314.00	1715.50	2080.50	2523.08	2777.96
Average Day (Million Gal./Day)	3.60	4.70	5.70	6.91	7.61
Maximum Day (Million Gal./Day)	11.10	14.50	17.80	21.59	23.77
Maximum Day, Conserving 10%	9.99	13.05	16.02	19.43	21.39
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	2	2	2	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1200 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	3	<ul style="list-style-type: none"> ■ Multi-Aquifer ■ Prairie du Chien-Jordan ■ Quaternary
Prairie du Chien-Jordan	9	
Multi-Aquifer	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Victoria, Chaska, Shorewod, Eden Prairie

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southern portion of the community within the Minnesota River Valley under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Seminary Fen located within one mile of the community
- Assumption Creek, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Chaska

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	24252	33000	35700	42628	47567
Annual Total (Million Gal./Yr)	1277.50	1752.00	1898.00	2266.65	2529.45
Average Day (Million Gal./Day)	3.50	4.80	5.20	6.21	6.93
Maximum Day (Million Gal./Day)	9.60	13.10	14.10	16.84	18.79
Maximum Day, Conserving 10%	8.64	11.79	12.69	15.16	16.91
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	3	0	2	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1271 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	1	
Prairie du Chien-Jordan	1	
Multi-Aquifer	2	
Mt Simon-Hinckley	1	
Franconia-Ironton-Galesville	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Carver, Dahlgren and Laketown Townships, Victoria, Chanhassen

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2050 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the eastern portion of the community within the Minnesota River Valley under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Seminary Fen located within one mile of the community
- Assumption Creek, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources

Notes and references can be found on the Appendix 2 cover page.

Chaska

- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Circle Pines

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	5400	5300	5400	5860	6125
Annual Total (Million Gal./Yr)	160.60	156.95	160.60	174.27	182.18
Average Day (Million Gal./Day)	0.44	0.43	0.44	0.48	0.50
Maximum Day (Million Gal./Day)	1.63	1.60	1.63	1.77	1.85
Maximum Day, Conserving 10%	1.47	1.44	1.47	1.59	1.66
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 200 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	1	
Franconia-Ironton-Galesville	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Lino Lakes

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northern portion of the community under projected 2050 demand conditions

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan aquifer

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

Coates

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

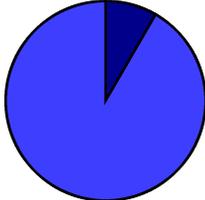
Cologne

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	3060	5500	9440	12627	15665
Annual Total (Million Gal./Yr)	111.69	200.75	344.56	460.87	571.79
Average Day (Million Gal./Day)	0.31	0.55	0.94	1.26	1.57
Maximum Day (Million Gal./Day)	0.86	1.54	2.64	3.54	4.39
Maximum Day, Conserving 10%	0.77	1.39	2.38	3.18	3.95
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 29 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Multi-Aquifer	1	 <ul style="list-style-type: none"> ■ Franconia-Ironton-Galesville ■ Multi-Aquifer
Franconia-Ironton-Galesville	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Columbia Heights

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for Minneapolis.

Current Water Supply^(C)

The community owns and operates their own water supply system.

Active 2008 Water Source(s)	# Wells
------------------------------------	----------------

Served by Minneapolis (wholesale)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Minneapolis, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minneapolis Water Works
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Columbus

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	5	1040	1620	2447	3148
Annual Total (Million Gal./Yr)	13.87	76.29	124.47	188.02	241.87
Average Day (Million Gal./Day)	0.04	0.21	0.34	0.52	0.66
Maximum Day (Million Gal./Day)	0.10	0.54	0.89	1.34	1.72
Maximum Day, Conserving 10%	0.09	0.49	0.80	1.21	1.55
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 0 million gallons per year

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation throughout the community and in the Carlos Avery State Wildlife Management Area under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Coon Rapids

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	65700	66000	65000	69442	70757
Annual Total (Million Gal./Yr)	3252.15	3310.55	3310.55	3536.78	3603.74
Average Day (Million Gal./Day)	8.91	9.07	9.07	9.69	9.87
Maximum Day (Million Gal./Day)	30.31	30.85	30.85	32.96	33.58
Maximum Day, Conserving 10%	27.28	27.77	27.77	29.66	30.22
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	1	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 3200 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	6	
Multi-Aquifer	12	
Mt Simon-Hinckley	1	
Franconia-Ironton-Galesville	5	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Andover, Anoka, Blaine, Spring Lake Park
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northeastern portion of the community under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan aquifer

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota

Notes and references can be found on the Appendix 2 cover page.

Coon Rapids

Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Corcoran

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served		4448	15003	20773	25778
Annual Total (Million Gal./Yr)		244.55	569.40	788.40	978.20
Average Day (Million Gal./Day)		0.67	1.56	2.16	2.68
Maximum Day (Million Gal./Day)		2.25	5.25	7.27	9.02
Maximum Day, Conserving 10%		2.03	4.73	6.54	8.12
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	1	2	1	1

Current Water Supply^(C)

The community does not currently have a municipal water supply but is actively planning for one.

Current Permitted Appropriation: 0 million gallons per year

Available Future Water Supply Source(s)^(D)

The community is anticipated to continue relying on private wells through 2010. As the community begins to develop a new municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities must be conducted.

- **Quaternary aquifer(s)**
- **Franconia-Ironton-Galesville aquifer**
- **Interjurisdictional cooperation:** Maple Grove, Medina, Greenfield, Hanover, and Hassan Township

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northern portion of the community along Rush Creek under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the surficial aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

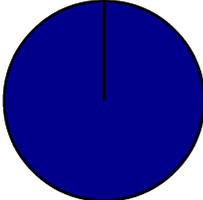
Cottage Grove

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	36000	45400	53000	63569	70809
Annual Total (Million Gal./Yr)	1350.50	1715.50	2080.50	2495.38	2779.60
Average Day (Million Gal./Day)	3.70	4.70	5.70	6.84	7.62
Maximum Day (Million Gal./Day)	13.40	16.30	18.70	22.43	24.98
Maximum Day, Conserving 10%	12.06	14.67	16.83	20.19	22.49
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	2	2	2	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1500 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	11	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Saint Paul Regional Water Services, St. Paul Park, Woodbury
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southern portion of the community within the Mississippi River Valley under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Cottage Grove

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Credit River Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2050 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Crystal

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for Minneapolis (through the Joint Water Commission).

Current Water Supply^(C)

The community owns and operates their own water supply system.

Active 2008 Water Source(s) # Wells

Served by Minneapolis (wholesale)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Minneapolis (through the Joint Water Commission), assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Golden Valley, New Hope, Minneapolis Water Works

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Dahlgren Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Dayton

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	3118	10318	17517	27021	37525
Annual Total (Million Gal./Yr)	182.50	620.50	1058.50	1632.79	2267.54
Average Day (Million Gal./Day)	0.50	1.70	2.90	4.47	6.21
Maximum Day (Million Gal./Day)	1.10	4.30	4.30	6.63	9.21
Maximum Day, Conserving 10%	0.99	3.87	3.87	5.97	8.29
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	2	2	2	3	4

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 20 million gallons per year



Available Future Water Supply Source(s)^(D)

- **Franconia-Ironton-Galesville aquifer**
- **Interjurisdictional cooperation:** Rogers, Champlin, Maple Grove, Ramsey
- **Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southeastern portion of the community under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the surficial aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Deephaven

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand projections for this community are included in projections for Minnetonka.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)		0	0	0	0

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by Minnetonka.

Current Permitted Appropriation: 0.3 million gallons per year

Active 2008 Water Source(s)	# Wells
Served by Minnetonka (retail)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Minnetonka, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minnetonka, Woodland

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Dellwood

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Denmark Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- **Quaternary aquifer(s)**
- **Prairie du Chien-Jordan aquifer**
- **Franconia-Ironton-Galesville aquifer**
- **Surface water:** St. Croix River, Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Franconia-Ironton-Galesville aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northeastern portion of the community and in the Mississippi River Valley under projected 2030 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Douglas Twp.

Water Demand Projections^(1, 2, A)

	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- **Quaternary aquifer(s)**
- **Prairie du Chien-Jordan aquifer**
- **Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- Pine Creek, Trout Brook, Judicial Ditch #1, an unnamed tributary to Trout Brook, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

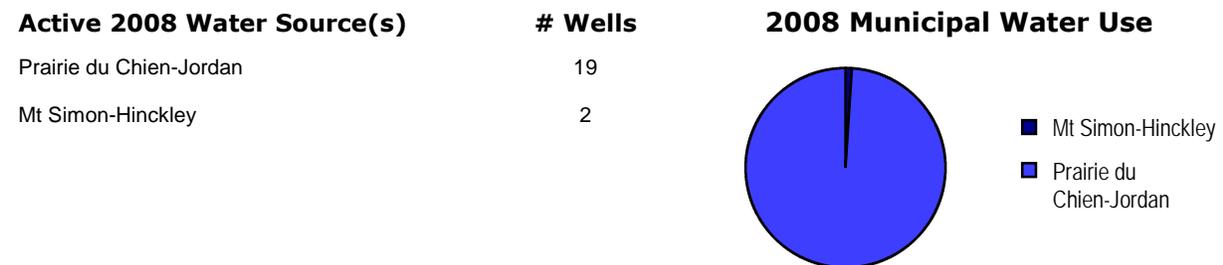
Eagan

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	70500	73000	75000	79900	82900
Annual Total (Million Gal./Yr)	3690.15	3993.10	4296.05	4576.73	4748.57
Average Day (Million Gal./Day)	10.11	10.94	11.77	12.54	13.01
Maximum Day (Million Gal./Day)	26.80	29.00	31.20	33.24	34.49
Maximum Day, Conserving 10%	24.12	26.10	28.08	29.91	31.04
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	1	1	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 3900 million gallons per year



Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Mendota Heights, Inver Grove Heights, Rosemount, Apple Valley, Burnsville

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the Minnesota River valley under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Black Dog, Fort Snelling, Nicols, & Quarry Island fens located within one mile of the community
- Kennaley's, Harnack, and One Mile creeks, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking

Notes and references can be found on the Appendix 2 cover page.

Eagan

water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

East Bethel

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	800	7800	13300	18925	23134
Annual Total (Million Gal./Yr)	146.00	511.00	850.45	1210.13	1479.27
Average Day (Million Gal./Day)	0.40	1.40	2.33	3.32	4.05
Maximum Day (Million Gal./Day)	1.00	3.50	5.83	8.30	10.14
Maximum Day, Conserving 10%	0.90	3.15	5.25	7.47	9.13
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	2	2	2	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 39 million gallons per year

Active 2008 Water Source(s)	# Wells
Multi-Aquifer	1
Mt Simon-Hinckley	1

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation throughout the community under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Eden Prairie

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	65000	69900	77124	90259	96779
Annual Total (Million Gal./Yr)	3376.25	3631.75	4004.05	4685.96	5024.50
Average Day (Million Gal./Day)	9.25	9.95	10.97	12.84	13.77
Maximum Day (Million Gal./Day)	26.90	28.92	31.90	37.33	40.03
Maximum Day, Conserving 10%	24.21	26.03	28.71	33.60	36.03
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	2	2	4	2

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 3450 million gallons per year

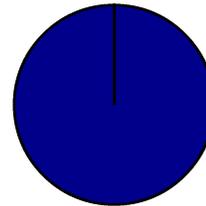
Active 2008 Water Source(s)

Prairie du Chien-Jordan

Wells

14

2008 Municipal Water Use



■ Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation across the community, but particularly north of the Minnesota Valley National Wildlife Refuge under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

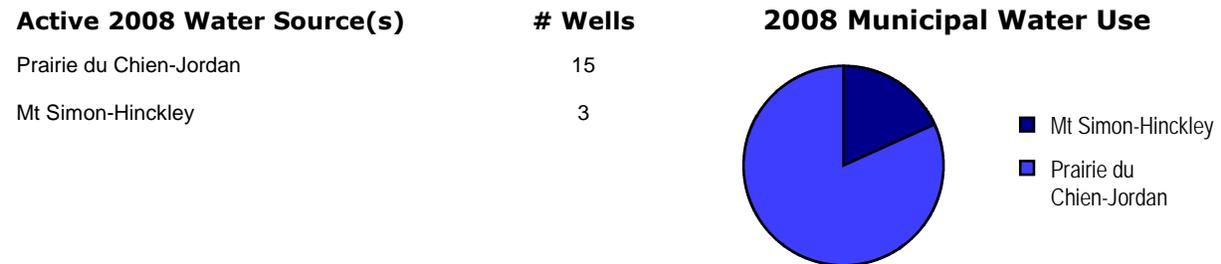
Edina

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	48500	49100	50000	50700	52103
Annual Total (Million Gal./Yr)	2774.00	2810.50	2847.00	2886.87	2966.74
Average Day (Million Gal./Day)	7.60	7.70	7.80	7.91	8.13
Maximum Day (Million Gal./Day)	22.70	23.00	23.40	23.73	24.38
Maximum Day, Conserving 10%	20.43	20.70	21.06	21.35	21.95
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system, with Minneapolis Water Works as a water source for the Morningside neighborhood.

Current Permitted Appropriation: 3000 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Elko New Market

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	5739	13137	20800	28674	35010
Annual Total (Million Gal./Yr)	186.15	423.40	1262.90	1737.40	2124.30
Average Day (Million Gal./Day)	0.51	1.16	3.46	4.76	5.82
Maximum Day (Million Gal./Day)	1.51	3.46	5.50	7.58	9.25
Maximum Day, Conserving 10%	1.36	3.11	4.95	6.82	8.33
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	2	5	3	2

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 205 million gallons per year

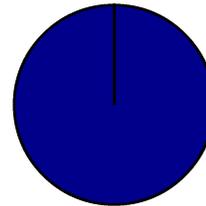
Active 2008 Water Source(s)

Prairie du Chien-Jordan

Wells

5

2008 Municipal Water Use



■ Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** New Market and Eureka Townships

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

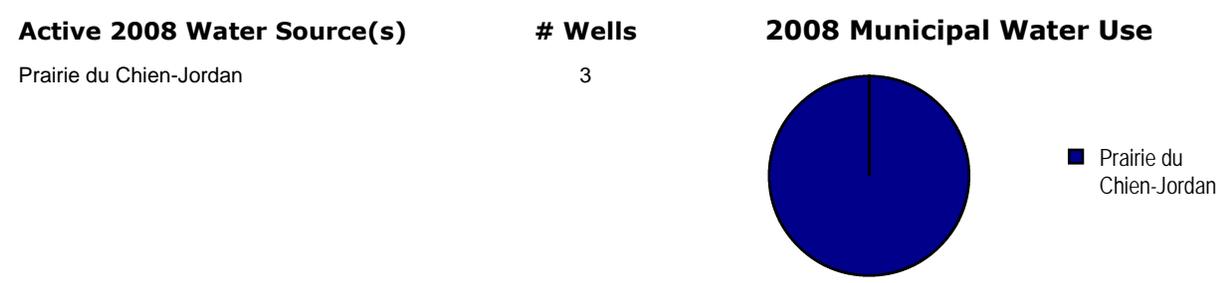
Empire Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	2500	5600	8490	11134	13494
Annual Total (Million Gal./Yr)	96.00	214.62	325.22	426.50	516.90
Average Day (Million Gal./Day)	0.26	0.59	0.89	1.17	1.42
Maximum Day (Million Gal./Day)	1.05	2.35	3.57	4.68	5.67
Maximum Day, Conserving 10%	0.95	2.12	3.21	4.21	5.10
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 90 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southern portion of the community, particularly along the Vermillion River and in the Empire Wetlands regional park under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Vermillion River and unnamed tributaries, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the

Notes and references can be found on the Appendix 2 cover page.

Empire Twp.

Minnesota Department of Natural Resources

- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Eureka Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- Vermillion River and unnamed tributaries, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

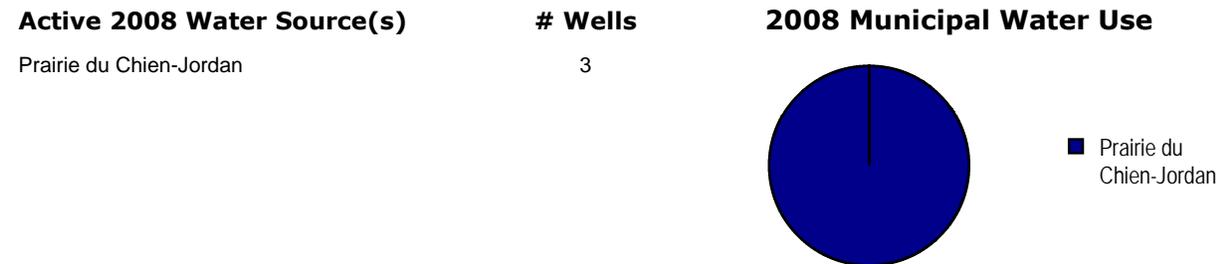
Excelsior

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	2420	2480	2540	3364	3443
Annual Total (Million Gal./Yr)	109.50	113.15	113.15	149.86	153.38
Average Day (Million Gal./Day)	0.30	0.31	0.31	0.41	0.42
Maximum Day (Million Gal./Day)	0.64	0.65	0.66	0.87	0.89
Maximum Day, Conserving 10%	0.58	0.59	0.59	0.79	0.81
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system, as well as supplying water to additional communities.

Current Permitted Appropriation: 175 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Falcon Heights

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for St. Paul.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by St. Paul.

Active 2008 Water Source(s)	# Wells
------------------------------------	----------------

Served by St. Paul Regional Water Services (retail)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on St. Paul, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Saint Paul Regional Water Services

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

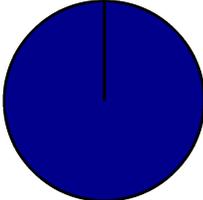
Farmington

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	20500	27500	32700	39015	46103
Annual Total (Million Gal./Yr)	945.35	1164.35	1383.35	1650.49	1950.37
Average Day (Million Gal./Day)	2.59	3.19	3.79	4.52	5.34
Maximum Day (Million Gal./Day)	7.77	9.57	11.38	13.58	16.04
Maximum Day, Conserving 10%	6.99	8.61	10.24	12.22	14.44
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	2	1	1	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1000 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	8	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Lakeville, Empire Township

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southern portion of the community, particularly along Vermillion River tributaries under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Vermillion River and unnamed tributaries, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources

Notes and references can be found on the Appendix 2 cover page.

Farmington

- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Forest Lake

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	22200	33300	38300	45265	52941
Annual Total (Million Gal./Yr)	810.30	1215.45	1397.95	1652.16	1932.36
Average Day (Million Gal./Day)	2.22	3.33	3.83	4.53	5.29
Maximum Day (Million Gal./Day)	3.88	5.82	6.70	7.92	9.26
Maximum Day, Conserving 10%	3.49	5.24	6.03	7.13	8.34
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	2	2	1	1	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 565.4 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Multi-Aquifer	1	<p>A pie chart titled '2008 Municipal Water Use' showing two categories: 'Mt Simon-Hinckley' (represented by a large dark blue slice, approximately 95%) and 'Multi-Aquifer' (represented by a small light blue slice, approximately 5%). A legend to the right of the chart identifies the colors: dark blue for Mt Simon-Hinckley and light blue for Multi-Aquifer.</p>
Mt Simon-Hinckley	2	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Hugo, Columbus

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation throughout the community, particularly near Hardwood Creek WMA under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Fort Snelling (unorg.)

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for Minneapolis.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by Minneapolis.

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Minneapolis, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minneapolis Water Works
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the Minnesota River valley under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Potential impacts to Camp Coldwater Spring, a historical and cultural resource

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Fridley

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	26635	26900	27500	28423	28965
Annual Total (Million Gal./Yr)	1580.45	1587.75	1609.65	1663.66	1695.40
Average Day (Million Gal./Day)	4.33	4.35	4.41	4.56	4.64
Maximum Day (Million Gal./Day)	10.96	11.03	11.19	11.57	11.79
Maximum Day, Conserving 10%	9.86	9.93	10.07	10.41	10.61
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 2400 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Served by New Brighton (wholesale)		
Quaternary	1	
Prairie du Chien-Jordan	6	
Multi-Aquifer	2	
Mt Simon-Hinckley	4	

Available Future Water Source(s)^(D)

The community is anticipated to rely on New Brighton, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minneapolis Water Works, New Brighton
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the Mississippi River valley under projected 2030 demand conditions

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Fridley

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Gem Lake

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Golden Valley

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served				24661	25877
Annual Total (Million Gal./Yr)	Water demand projections for this community are included in projections for Joint Water Commission.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by Joint Water Commission.

Active 2008 Water Source(s)	# Wells
Served by Minneapolis (wholesale)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Joint Water Commission, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Crystal, Minneapolis Water Works, New Hope

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Grant

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2050 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Brown's Creek, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

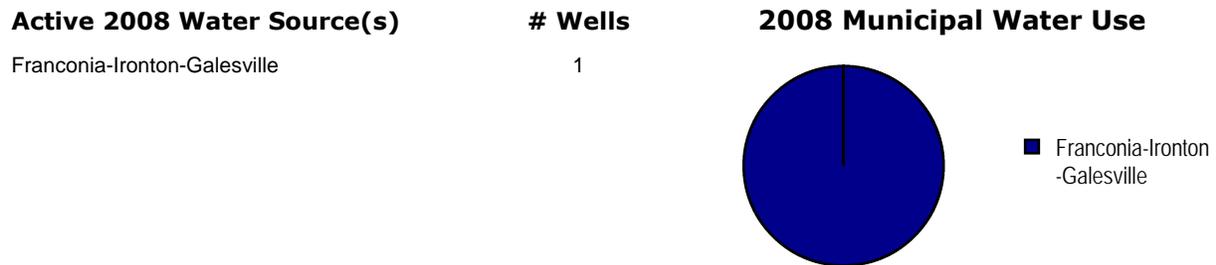
Greenfield

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	500	1292	1449	2284	3052
Annual Total (Million Gal./Yr)	27.65	71.45	80.13	113.15	153.30
Average Day (Million Gal./Day)	0.08	0.20	0.22	0.31	0.42
Maximum Day (Million Gal./Day)	0.20	0.48	0.56	0.80	1.07
Maximum Day, Conserving 10%	0.18	0.43	0.51	0.72	0.96
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 40 million gallons per year



Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Greenvale Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the central portion of the community under projected 2030 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Greenwood

Water Demand Projections^(1, 2, A)

	2010	2020	2030	2040	2050
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Population Served

Annual Total (Million Gal./Yr)

Average Day (Million Gal./Day)

Maximum Day (Million Gal./Day)

Maximum Day, Conserving 10%

Estimated Additional Wells,

(if groundwater sources were pumped at metro average rates to meet demand above permit)

Water demand projections for this community are included in projections for Excelsior.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by Excelsior.

Active 2008 Water Source(s)

Wells

Served by Excelsior (retail)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Excelsior, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Excelsior

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Grey Cloud Island Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- **Quaternary aquifer(s)**
- **Prairie du Chien-Jordan aquifer**
- **Franconia-Ironton-Galesville aquifer**
- **Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southwestern portion of the community, within the Mississippi River valley under projected 2030 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Ham Lake

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- **Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation throughout the community under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the surficial, Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Hamburg

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	600	750	1000	1169	1364
Annual Total (Million Gal./Yr)	18.25	21.90	29.20	34.14	39.84
Average Day (Million Gal./Day)	0.05	0.06	0.08	0.09	0.11
Maximum Day (Million Gal./Day)	0.10	0.12	0.16	0.19	0.22
Maximum Day, Conserving 10%	0.09	0.11	0.14	0.17	0.20
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 19 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Multi-Aquifer	1	<p>Legend: ■ Franconia-Ironton-Galesville ■ Multi-Aquifer</p>
Franconia-Ironton-Galesville	2	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

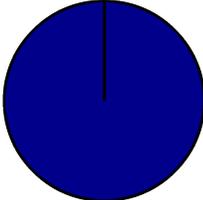
Hampton

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	770	845	925	1086	1214
Annual Total (Million Gal./Yr)	25.92	28.47	31.03	36.44	40.73
Average Day (Million Gal./Day)	0.07	0.08	0.09	0.10	0.11
Maximum Day (Million Gal./Day)	0.28	0.31	0.34	0.40	0.45
Maximum Day, Conserving 10%	0.25	0.28	0.31	0.36	0.40
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 22 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	2	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Hampton Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- Pine Creek and Judicial Ditch #1, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Hancock Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Hanover

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Hassan Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Rogers
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northern portion of the community under projected 2050 demand conditions

Significant uncertainty regarding the extent and productivity of the surficial aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Hastings

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	23000	27500	30000	35407	38740
Annual Total (Million Gal./Yr)	1168.00	1394.30	1522.05	1796.39	1965.47
Average Day (Million Gal./Day)	3.20	3.82	4.17	4.92	5.38
Maximum Day (Million Gal./Day)	7.43	8.89	9.70	11.45	12.53
Maximum Day, Conserving 10%	6.69	8.00	8.73	10.30	11.27
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	1	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1300 million gallons per year

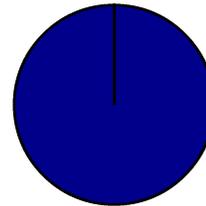
Active 2008 Water Source(s)

Prairie du Chien-Jordan

Wells

6

2008 Municipal Water Use



■ Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Niniger, Marshan, Ravenna and Denmark Townships
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northwestern portion of the community, within the Mississippi River valley under projected 2050 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

Helena Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Hilltop

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for Minneapolis.

Current Water Supply^(C)

The community owns and operates their own water supply system.

Active 2008 Water Source(s)	# Wells
Served by Minneapolis (wholesale)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Minneapolis, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minneapolis Water Works

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Hollywood Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

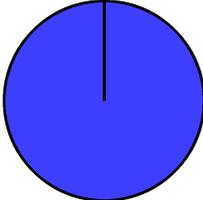
Hopkins

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	17900	18600	18900	19227	19737
Annual Total (Million Gal./Yr)	959.95	996.45	1014.70	1032.27	1059.65
Average Day (Million Gal./Day)	2.63	2.73	2.78	2.83	2.90
Maximum Day (Million Gal./Day)	5.53	5.74	5.56	5.66	5.81
Maximum Day, Conserving 10%	4.98	5.17	5.00	5.09	5.23
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	1	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1000 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	3	 <ul style="list-style-type: none"> ■ Multi-Aquifer ■ Prairie du Chien-Jordan
Multi-Aquifer	1	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

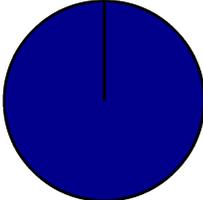
Hugo

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	15640	25900	36867	48716	59762
Annual Total (Million Gal./Yr)	649.70	1076.75	1533.00	2025.71	2485.04
Average Day (Million Gal./Day)	1.78	2.95	4.20	5.55	6.81
Maximum Day (Million Gal./Day)	6.41	10.62	15.12	19.98	24.51
Maximum Day, Conserving 10%	5.77	9.56	13.61	17.98	22.06
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	3	2	3	2

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 650 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	4	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Forest Lake, Lino Lakes, White Bear Township

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation across the community, including the Paul Hugo Farms WMA under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Independence

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the central portion of the community, particularly along Pioneer Creek under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the surficial aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

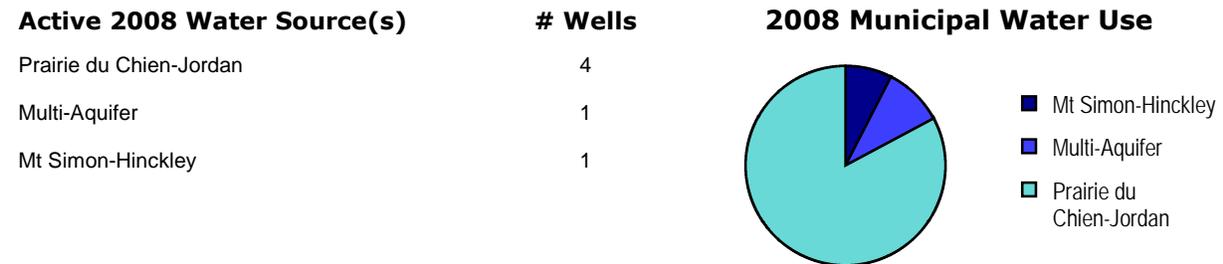
Inver Grove Heights

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	31541	38637	45674	51319	59742
Annual Total (Million Gal./Yr)	1091.35	1339.55	1584.10	1779.90	2072.03
Average Day (Million Gal./Day)	2.99	3.67	4.34	4.88	5.68
Maximum Day (Million Gal./Day)	7.79	9.54	11.28	12.67	14.75
Maximum Day, Conserving 10%	7.01	8.59	10.15	11.41	13.28
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	1	1	1

Current Water Supply^(C)

The community owns and operates their own water supply system, with Eagan as a water source for a small portion of the community.

Current Permitted Appropriation: 1250 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** St. Paul Regional Water Services, Eagan
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the eastern portion of the community, within the Mississippi River valley under projected 2030 demand conditions

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources

Notes and references can be found on the Appendix 2 cover page.

Inver Grove Heights

of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Jackson Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

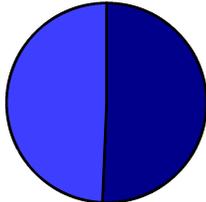
Jordan

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	5900	9700	13500	16928	20398
Annual Total (Million Gal./Yr)	244.19	397.85	618.31	775.31	934.22
Average Day (Million Gal./Day)	0.67	1.09	1.69	2.12	2.56
Maximum Day (Million Gal./Day)	0.86	1.51	2.46	3.81	4.59
Maximum Day, Conserving 10%	0.77	1.36	2.21	3.43	4.13
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	1	0	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 200 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Multi-Aquifer	1	 <ul style="list-style-type: none"> ■ Franconia-Ironton-Galesville ■ Mt Simon-Hinckley ■ Multi-Aquifer
Mt Simon-Hinckley	1	
Franconia-Ironton-Galesville	2	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** St. Lawrence and Sand Creek Townships

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

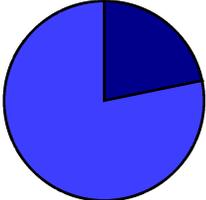
Lake Elmo

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	4712	12151	18759	26152	30751
Annual Total (Million Gal./Yr)	135.05	350.40	540.20	753.10	885.52
Average Day (Million Gal./Day)	0.37	0.96	1.48	2.06	2.43
Maximum Day (Million Gal./Day)	1.34	3.46	5.34	7.44	8.75
Maximum Day, Conserving 10%	1.21	3.11	4.81	6.70	7.88
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	1	1	1	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 60 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	1	 <ul style="list-style-type: none"> ■ Multi-Aquifer ■ Prairie du Chien-Jordan
Multi-Aquifer	1	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Saint Paul Regional Water Services, Woodbury

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the central portion of the community north and east of Lake Elmo regional park under projected 2030 demand conditions

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Lake Elmo

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Lake St. Croix Beach

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for Lakeland.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by Lakeland.

Active 2008 Water Source(s)	# Wells
Served by Lakeland (retail)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Lakeland, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- Valley Branch Creek, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

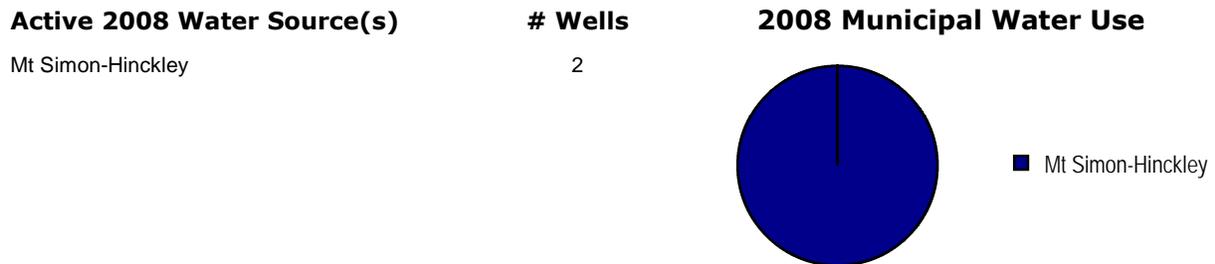
Lakeland

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	2860	2946	3030	3001	3030
Annual Total (Million Gal./Yr)	102.20	131.40	164.25	162.69	164.25
Average Day (Million Gal./Day)	0.28	0.36	0.45	0.45	0.45
Maximum Day (Million Gal./Day)	1.23	1.31	1.40	1.39	1.40
Maximum Day, Conserving 10%	1.11	1.18	1.26	1.25	1.26
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	-1	0

Current Water Supply^(C)

The community owns and operates their own water supply system, as well as supplying water to additional communities.

Current Permitted Appropriation: 103 million gallons per year



Available Future Water Supply Source(s)^(D)

- Interjurisdictional cooperation:** Lakeland Shores
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- Valley Branch Creek, trout habitat, located within one mile of the community

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Lakeland Shores

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for Lakeland.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by Lakeland.

Active 2008 Water Source(s)	# Wells
Served by Lakeland (retail)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Lakeland, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Interjurisdictional cooperation:** Lakeland
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Laketown Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Victoria, Waconia

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Lakeville

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	57997	77400	88800	108371	121633
Annual Total (Million Gal./Yr)	2339.65	2770.35	3146.30	3839.74	4309.63
Average Day (Million Gal./Day)	6.41	7.59	8.62	10.52	11.81
Maximum Day (Million Gal./Day)	19.74	23.40	26.55	32.40	36.37
Maximum Day, Conserving 10%	17.77	21.06	23.90	29.16	32.73
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	3	4	2

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 2812 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	15	<p>Legend: ■ Franconia-Ironton-Galesville ■ Prairie du Chien-Jordan</p>
Franconia-Ironton-Galesville	1	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Apple Valley, Burnsville, Farmington

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- An unnamed tributary to the Vermillion River and an unnamed stream, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Landfall

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for Oakdale.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by Oakdale.

Active 2008 Water Source(s)	# Wells
Served by Oakdale (retail)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Oakdale, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Oakdale

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Lauderdale

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for St. Paul.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by St. Paul.

Active 2008 Water Source(s) # Wells

Served by St. Paul Regional Water Services (retail)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on St. Paul, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Saint Paul Regional Water Services

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

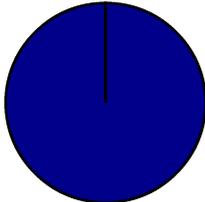
Lexington

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	2250	2250	2300	2474	2558
Annual Total (Million Gal./Yr)	94.34	89.62	86.79	93.35	96.54
Average Day (Million Gal./Day)	0.26	0.25	0.24	0.26	0.26
Maximum Day (Million Gal./Day)	1.54	1.29	1.04	1.11	1.15
Maximum Day, Conserving 10%	1.38	1.16	0.93	1.00	1.04
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 100 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	1	 <p>A pie chart representing 100% of the 2008 municipal water use, which is entirely from the Quaternary source. The chart is a solid blue circle with a legend to its right showing a blue square next to the label 'Quaternary'.</p>

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Lilydale

Water Demand Projections^(1, 2, A)

	2010	2020	2030	2040	2050
--	------	------	------	------	------

Population Served

Annual Total (Million Gal./Yr)

Average Day (Million Gal./Day)

Maximum Day (Million Gal./Day)

Maximum Day, Conserving 10%

Estimated Additional Wells,

(if groundwater sources were pumped at metro average rates to meet demand above permit)

Water demand projections for this community are included in projections for St. Paul.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by St. Paul.

Active 2008 Water Source(s)

Wells

Served by St. Paul Regional Water Services (retail)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on St. Paul, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

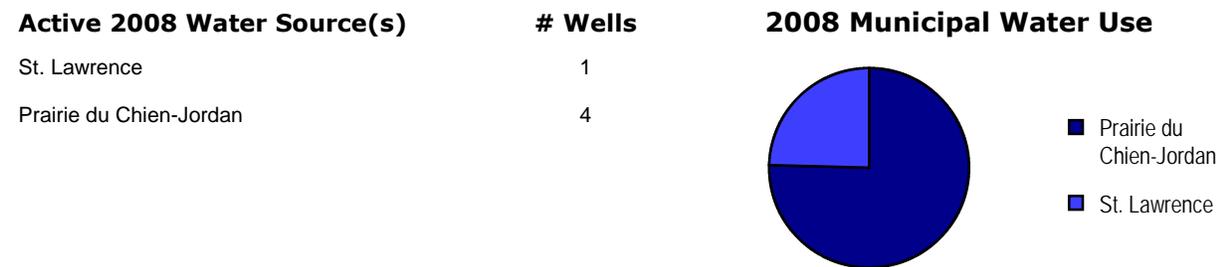
Lino Lakes

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	17514	23000	29000	38168	44244
Annual Total (Million Gal./Yr)	642.40	832.20	1047.55	1378.73	1598.20
Average Day (Million Gal./Day)	1.76	2.28	2.87	3.78	4.38
Maximum Day (Million Gal./Day)	4.76	5.93	7.46	9.82	11.38
Maximum Day, Conserving 10%	4.28	5.34	6.71	8.84	10.24
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	1	2	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 900 million gallons per year



Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Centerville, Circle Pines, Hugo, Blaine, Shoreview, White Bear Township

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northwestern portion of the community under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota

Notes and references can be found on the Appendix 2 cover page.

Lino Lakes

Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Linwood Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- **Quaternary aquifer(s)**
- **Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southeastern portion of the community under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Little Canada

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for St. Paul.

Current Water Supply^(C)

The community owns and operates their own water supply system.

Active 2008 Water Source(s) # Wells

Served by St. Paul Regional Water Services (wholes)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on St. Paul, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Saint Paul Regional Water Services

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

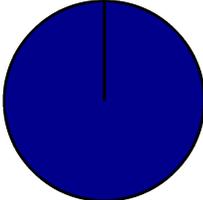
Long Lake

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	2100	2250	2450	2691	2937
Annual Total (Million Gal./Yr)	94.90	105.85	113.15	124.29	135.66
Average Day (Million Gal./Day)	0.26	0.29	0.31	0.34	0.37
Maximum Day (Million Gal./Day)	0.71	0.76	0.81	0.89	0.97
Maximum Day, Conserving 10%	0.64	0.68	0.73	0.80	0.87
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 178 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	2	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

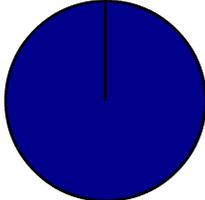
Loretto

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	690	700	700	766	797
Annual Total (Million Gal./Yr)	26.65	31.03	34.68	37.94	39.49
Average Day (Million Gal./Day)	0.07	0.09	0.10	0.10	0.11
Maximum Day (Million Gal./Day)	0.20	0.25	0.28	0.31	0.32
Maximum Day, Conserving 10%	0.18	0.23	0.25	0.28	0.29
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 40 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	1	 <ul style="list-style-type: none"> ■ Franconia-Ironton-Galesville ■ Multi-Aquifer ■ Prairie du Chien-Jordan
Multi-Aquifer	1	
Franconia-Ironton-Galesville	1	

Available Future Water Supply Source(s)^(D)

- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Louisville Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southern portion of the community, within the Minnesota River Valley under projected 2050 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Mahtomedi

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	8250	8550	8550	9735	10007
Annual Total (Million Gal./Yr)	313.54	313.54	313.54	356.99	366.96
Average Day (Million Gal./Day)	0.86	0.86	0.86	0.98	1.01
Maximum Day (Million Gal./Day)	2.15	2.16	2.16	2.45	2.52
Maximum Day, Conserving 10%	1.93	1.94	1.94	2.21	2.27
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	1	0

Current Water Supply^(C)

The community owns and operates their own water supply system, as well as supplying water to additional communities.

Current Permitted Appropriation: 315 million gallons per year

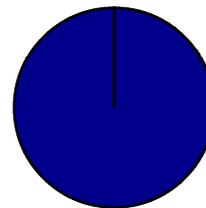
Active 2008 Water Source(s)

Prairie du Chien-Jordan

Wells

3

2008 Municipal Water Use



■ Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** White Bear Lake, Willernie

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Maple Grove

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	64500	75000	84000	100266	109311
Annual Total (Million Gal./Yr)	3248.50	4672.00	5767.00	6883.76	7504.72
Average Day (Million Gal./Day)	8.90	12.80	15.80	18.86	20.56
Maximum Day (Million Gal./Day)	23.40	32.90	39.20	46.79	51.01
Maximum Day, Conserving 10%	21.06	29.61	35.28	42.11	45.91
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	5	7	3

Current Water Supply^(C)

The community owns and operates their own water supply system, as well as supplying water to additional communities.

Current Permitted Appropriation: 5110 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	10	<p>Legend: ■ Mt Simon-Hinckley ■ Multi-Aquifer ■ Quaternary</p>
Multi-Aquifer	1	
Mt Simon-Hinckley	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Brooklyn Park, Plymouth, Dayton, Champlin, Corcoran, Osseo

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2050 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation throughout the community, including the Elm Creek and Fish Lake regional park reserves under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Maple Grove

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

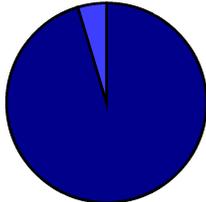
Maple Plain

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	2045	2284	2510	2673	2905
Annual Total (Million Gal./Yr)	98.55	109.50	120.45	128.25	139.39
Average Day (Million Gal./Day)	0.27	0.30	0.33	0.35	0.38
Maximum Day (Million Gal./Day)	0.68	0.75	0.82	0.87	0.95
Maximum Day, Conserving 10%	0.61	0.68	0.74	0.79	0.85
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	1	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 110 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Mt Simon-Hinckley	1	 <ul style="list-style-type: none"> ■ Franconia-Ironton-Galesville ■ Mt Simon-Hinckley
Franconia-Ironton-Galesville	2	

Available Future Water Supply Source(s)^(D)

- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northwestern portion of the community under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Maplewood

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for St. Paul and North St. Paul.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by St. Paul and North St. Paul.

Active 2008 Water Source(s)	# Wells
Served by St. Paul Regional Water Services (retail)	
Served by North St. Paul (retail)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on St. Paul and North St. Paul, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** North St. Paul, Saint Paul Regional Water Services

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northern portion of the community under projected 2030 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Marine on St. Croix

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- Old Mill Stream, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Marshan Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

May Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the western portion of the community, including the Big Marine regional park reserve under projected 2050 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Unnamed Stream, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

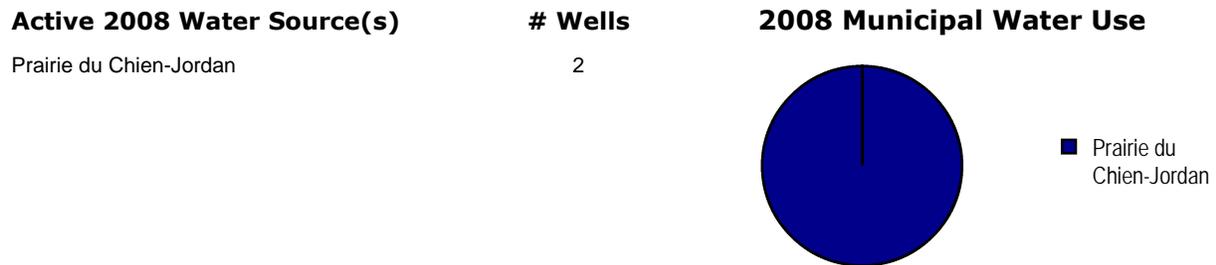
Mayer

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	3900	7000	9600	12355	15403
Annual Total (Million Gal./Yr)	142.35	255.50	350.40	450.97	562.19
Average Day (Million Gal./Day)	0.39	0.70	0.96	1.24	1.54
Maximum Day (Million Gal./Day)	1.05	1.90	2.60	3.35	4.17
Maximum Day, Conserving 10%	0.95	1.71	2.34	3.01	3.75
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 199 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Medicine Lake

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

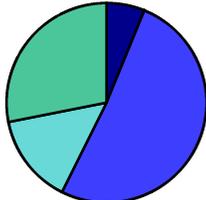
Medina

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	3200	6500	9500	13133	14787
Annual Total (Million Gal./Yr)	211.70	394.20	620.50	857.77	965.85
Average Day (Million Gal./Day)	0.58	1.08	1.70	2.35	2.65
Maximum Day (Million Gal./Day)	1.92	3.25	4.59	6.35	7.14
Maximum Day, Conserving 10%	1.73	2.93	4.13	5.71	6.43
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	1	1	1	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 209.5 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	5	 <ul style="list-style-type: none"> ■ Franconia-Ironton-Galesville ■ Mt Simon-Hinckley ■ Prairie du Chien-Jordan
Prairie du Chien-Jordan	1	
Mt Simon-Hinckley	1	
Franconia-Ironton-Galesville	2	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Plymouth, Long Lake, Orono, Maple Grove, Maple Plain

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

Mendota

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for St. Paul.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by St. Paul.

Active 2008 Water Source(s) # Wells

Served by St. Paul Regional Water Services (retail)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on St. Paul, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Saint Paul Regional Water Services
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Mendota Heights

Water Demand Projections^(1, 2, A)

Population Served

Annual Total (Million Gal./Yr)

Average Day (Million Gal./Day)

Maximum Day (Million Gal./Day)

Maximum Day, Conserving 10%

Estimated Additional Wells,

(if groundwater sources were pumped at metro average rates to meet demand above permit)

	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells,					
(if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for St. Paul.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by St. Paul.

Active 2008 Water Source(s)

Wells

Served by St. Paul Regional Water Services (retail)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on St. Paul, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Saint Paul Regional Water Services
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the western portion of the community, within the Mississippi River valley under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Fort Snelling and Quarry Island fens located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Miesville

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Minneapolis

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	471270	493550	510450	528789	554198
Annual Total (Million Gal./Yr)	22630.00	23323.50	23688.50	24539.57	25718.71
Average Day (Million Gal./Day)	62.00	63.90	64.90	67.23	70.46
Maximum Day (Million Gal./Day)	124.40	124.40	124.40	128.87	135.06
Maximum Day, Conserving 10%	111.96	111.96	111.96	115.98	121.56
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system, as well as supplying water to additional communities.

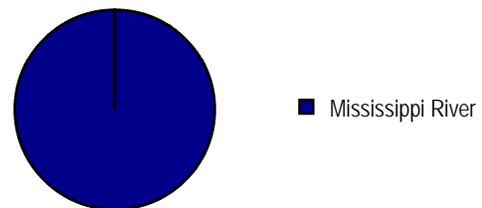
Current Permitted Appropriation: 125000 million gallons per year

Active 2008 Water Source(s)

Mississippi River

Wells

2008 Municipal Water Use



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Saint Paul Regional Water Services
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swa/

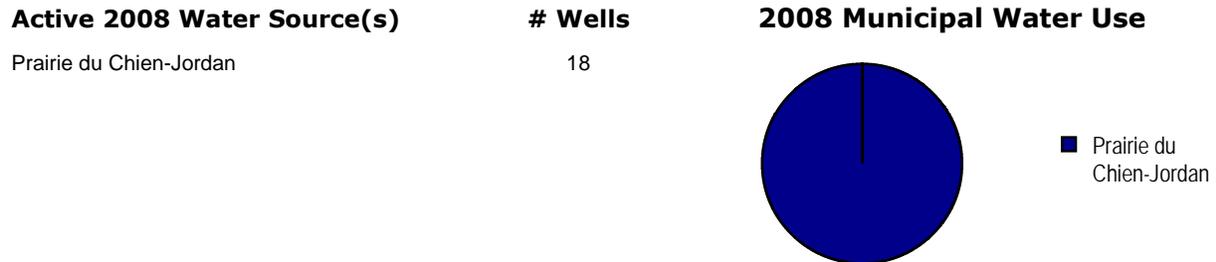
Minnetonka

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	52729	54185	55951	60309	62372
Annual Total (Million Gal./Yr)	2907.86	2980.86	3090.36	3331.06	3445.01
Average Day (Million Gal./Day)	7.97	8.17	8.47	9.13	9.44
Maximum Day (Million Gal./Day)	20.69	21.29	21.99	23.70	24.51
Maximum Day, Conserving 10%	18.62	19.16	19.79	21.33	22.06
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system, as well as supplying water to additional communities. Wayzata supplies a small number of residents.

Current Permitted Appropriation: 3500 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Deephaven, Wayzata, Woodland

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

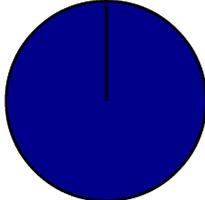
Minnetonka Beach

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	598	618	618	620	621
Annual Total (Million Gal./Yr)	51.10	51.10	51.10	51.23	51.34
Average Day (Million Gal./Day)	0.14	0.14	0.14	0.14	0.14
Maximum Day (Million Gal./Day)	0.49	0.50	0.50	0.50	0.50
Maximum Day, Conserving 10%	0.44	0.45	0.45	0.45	0.45
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 31 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	2	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Minnetrista

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	2375	8738	12919	16048	19578
Annual Total (Million Gal./Yr)	87.60	317.55	467.20	580.37	708.02
Average Day (Million Gal./Day)	0.24	0.87	1.28	1.59	1.94
Maximum Day (Million Gal./Day)	0.80	2.23	3.79	4.71	5.75
Maximum Day, Conserving 10%	0.72	2.01	3.41	4.24	5.17
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 285 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Multi-Aquifer	2	
Mt Simon-Hinckley	1	
Franconia-Ironton-Galesville	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Victoria, Mound, St. Bonifacius

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

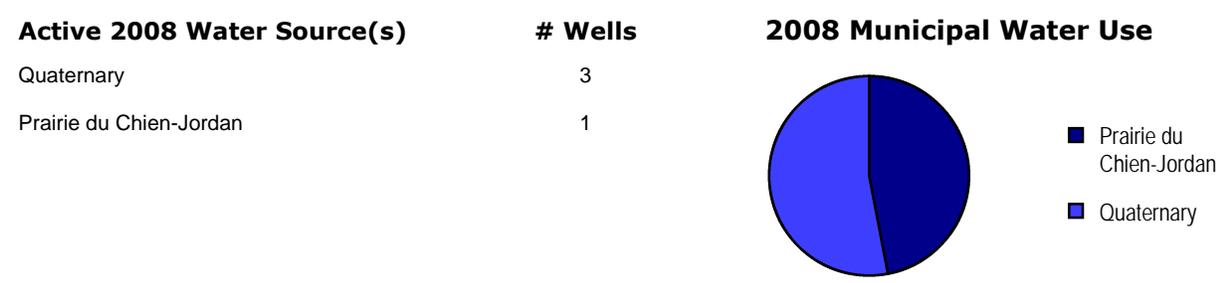
Mound

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	10400	11000	11400	11938	12579
Annual Total (Million Gal./Yr)	379.60	401.50	416.10	435.72	459.13
Average Day (Million Gal./Day)	1.04	1.10	1.14	1.19	1.26
Maximum Day (Million Gal./Day)	2.50	2.64	2.74	2.87	3.02
Maximum Day, Conserving 10%	2.25	2.38	2.47	2.58	2.72
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 307 million gallons per year



Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

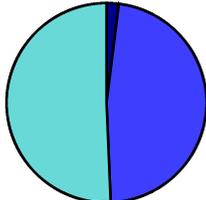
Mounds View

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	12900	13000	13400	14549	14908
Annual Total (Million Gal./Yr)	522.87	526.92	543.13	589.69	604.25
Average Day (Million Gal./Day)	1.43	1.44	1.49	1.62	1.66
Maximum Day (Million Gal./Day)	3.87	3.90	4.02	4.36	4.47
Maximum Day, Conserving 10%	3.48	3.51	3.62	3.93	4.03
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 594 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	2	 <ul style="list-style-type: none"> ■ Mt Simon-Hinckley ■ Multi-Aquifer ■ Prairie du Chien-Jordan
Multi-Aquifer	3	
Mt Simon-Hinckley	1	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

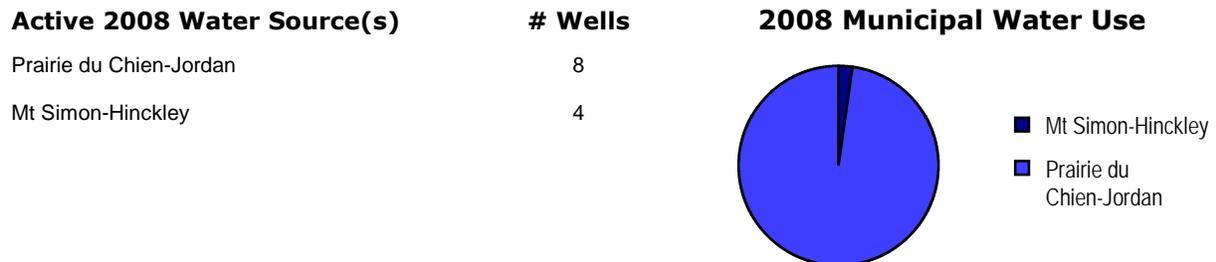
New Brighton

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	22400	22500	22800	23349	24096
Annual Total (Million Gal./Yr)	912.50	949.00	985.50	1009.21	1041.52
Average Day (Million Gal./Day)	2.50	2.60	2.70	2.76	2.85
Maximum Day (Million Gal./Day)	10.20	10.80	10.90	11.16	11.52
Maximum Day, Conserving 10%	9.18	9.72	9.81	10.05	10.37
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system, as well as supplying water to additional communities.

Current Permitted Appropriation: 1925 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Arden Hills, Fridley, Roseville

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

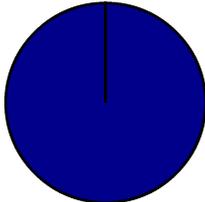
New Germany

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	620	1100	1500	1996	2310
Annual Total (Million Gal./Yr)	21.90	40.15	54.75	72.85	84.33
Average Day (Million Gal./Day)	0.06	0.11	0.15	0.20	0.23
Maximum Day (Million Gal./Day)	0.18	0.32	0.44	0.59	0.68
Maximum Day, Conserving 10%	0.16	0.29	0.40	0.53	0.61
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 35 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Franconia-Ironton-Galesville	2	 <p>■ Franconia-Ironton-Galesville</p>

Available Future Water Supply Source(s)^(D)

- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

New Hope

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for Joint Water Commission.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by Joint Water Commission.

Active 2008 Water Source(s) # Wells

Served by Minneapolis (wholesale)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Joint Water Commission, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- **Prairie du Chien-Jordan aquifer**
- **Franconia-Ironton-Galesville aquifer**
- **Interjurisdictional cooperation:** Crystal, Golden Valley, Minneapolis Water Works

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

New Market Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

New Prague

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 360 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Multi-Aquifer	2	<ul style="list-style-type: none"> ■ Franconia-Ironton-Galesville ■ Mt Simon-Hinckley ■ Multi-Aquifer
Mt Simon-Hinckley	1	
Franconia-Ironton-Galesville	2	

Available Future Water Supply Source(s)^(D)

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

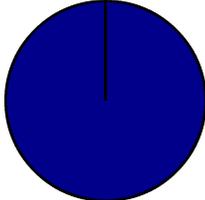
New Trier

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	120	120	120	119	120
Annual Total (Million Gal./Yr)	3.82	3.63	3.44	3.39	3.43
Average Day (Million Gal./Day)	0.01	0.01	0.01	0.01	0.01
Maximum Day (Million Gal./Day)	0.04	0.04	0.04	0.04	0.04
Maximum Day, Conserving 10%	0.04	0.04	0.04	0.04	0.04
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 5 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Franconia-Ironton-Galesville	2	 <p>■ Franconia-Ironton-Galesville</p>

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

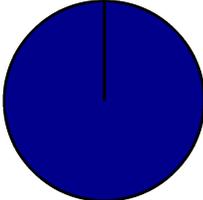
Newport

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	3800	4400	4890	5978	6049
Annual Total (Million Gal./Yr)	149.65	182.50	211.70	258.80	261.86
Average Day (Million Gal./Day)	0.41	0.50	0.58	0.71	0.72
Maximum Day (Million Gal./Day)	1.10	1.25	1.46	1.78	1.81
Maximum Day, Conserving 10%	0.99	1.13	1.31	1.61	1.63
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	1	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 200 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	2	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2050 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the western portion of the community, within the Mississippi River valley under projected 2030 demand conditions

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Newport

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Nininger Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northern portion of the community, within the Mississippi River valley under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

North Oaks

Water Demand Projections^(1, 2, A)

	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for White Bear Twp. (for a portion of the community only).

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by White Bear Twp. (for a portion of the community only).

Active 2008 Water Source(s)

Wells

Served by White Bear Twp. (retail)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on White Bear Twp. (for a portion of the community only), assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the western portion of the community under projected 2050 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

North St. Paul

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	14900	15000	15700	15038	15482
Annual Total (Million Gal./Yr)	496.40	500.05	521.95	499.96	514.69
Average Day (Million Gal./Day)	1.36	1.37	1.43	1.37	1.41
Maximum Day (Million Gal./Day)	4.08	4.11	4.30	4.12	4.24
Maximum Day, Conserving 10%	3.67	3.70	3.87	3.71	3.82
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 584 million gallons per year

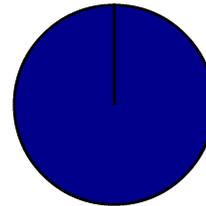
Active 2008 Water Source(s)

Wells

2008 Municipal Water Use

Prairie du Chien-Jordan

5



■ Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- **Prairie du Chien-Jordan aquifer**
- **Franconia-Ironton-Galesville aquifer**
- **Interjurisdictional cooperation:** Maplewood, Oakdale

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Northfield

Water Demand Projections^(1, 2, A)

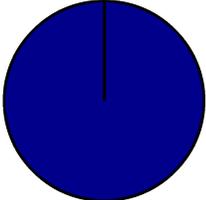
	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)		0	0	0	0

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Current Permitted Appropriation: 980 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	4	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

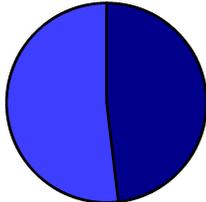
Norwood Young America

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	3532	7771	11871	15112	18576
Annual Total (Million Gal./Yr)	127.75	284.70	434.35	552.94	679.68
Average Day (Million Gal./Day)	0.35	0.78	1.19	1.51	1.86
Maximum Day (Million Gal./Day)	0.63	1.39	2.12	2.70	3.32
Maximum Day, Conserving 10%	0.57	1.25	1.91	2.43	2.99
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 234 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	1	 <ul style="list-style-type: none"> ■ Mt Simon-Hinckley ■ Multi-Aquifer ■ Quaternary
Multi-Aquifer	2	
Mt Simon-Hinckley	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial and Prairie du Chien-Jordan aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Nowthen

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** St. Francis

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

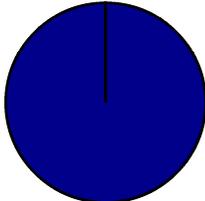
Oak Grove

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	660	842	842	2823	4115
Annual Total (Million Gal./Yr)	29.20	36.50	36.50	122.38	178.37
Average Day (Million Gal./Day)	0.08	0.10	0.10	0.34	0.49
Maximum Day (Million Gal./Day)	0.19	0.24	0.24	0.80	1.17
Maximum Day, Conserving 10%	0.17	0.22	0.22	0.72	1.06
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system, which began operating with a single well in 2007.

Current Permitted Appropriation: 6.5 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	1	 <p>A pie chart representing 100% of the 2008 municipal water use, which is entirely from the Quaternary source. The chart is a solid blue circle with a legend to its right showing a blue square next to the label 'Quaternary'.</p>

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** St. Francis

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southeastern portion of the community under projected 2030 demand conditions

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Oak Park Heights

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	5500	5600	5700	6477	7019
Annual Total (Million Gal./Yr)	266.45	273.75	277.40	315.19	341.61
Average Day (Million Gal./Day)	0.73	0.75	0.76	0.86	0.94
Maximum Day (Million Gal./Day)	2.20	2.20	2.30	2.61	2.83
Maximum Day, Conserving 10%	1.98	1.98	2.07	2.35	2.55
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	1	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 290.5 million gallons per year

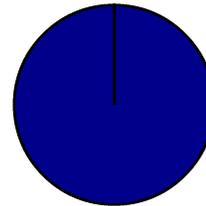
Active 2008 Water Source(s)

Prairie du Chien-Jordan

Wells

2

2008 Municipal Water Use



■ Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the eastern portion of the community under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

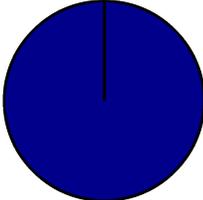
Oakdale

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	28000	28400	30000	32952	34649
Annual Total (Million Gal./Yr)	1222.75	1241.00	1310.35	1439.30	1513.41
Average Day (Million Gal./Day)	3.35	3.40	3.59	3.94	4.15
Maximum Day (Million Gal./Day)	8.80	10.41	10.76	11.82	12.43
Maximum Day, Conserving 10%	7.92	9.37	9.68	10.64	11.18
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1210 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	8	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- **Prairie du Chien-Jordan aquifer**
- **Franconia-Ironton-Galesville aquifer**
- **Interjurisdictional cooperation:** Lake Elmo, Landfall, North St. Paul, Saint Paul Regional Water Services, Woodbury

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2050 demand conditions

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota

Notes and references can be found on the Appendix 2 cover page.

Oakdale

Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Orono

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	3236	4113	4413	4985	5749
Annual Total (Million Gal./Yr)	145.34	189.28	191.44	216.25	249.41
Average Day (Million Gal./Day)	0.40	0.52	0.52	0.59	0.68
Maximum Day (Million Gal./Day)	1.29	1.77	1.89	2.14	2.47
Maximum Day, Conserving 10%	1.16	1.60	1.70	1.93	2.22
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system, with Wayzata as a water source for a small portion of the community.

Current Permitted Appropriation: 96 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	1	<p>Legend: ■ Prairie du Chien-Jordan ■ Quaternary</p>
Prairie du Chien-Jordan	2	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Osseo

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand projections for this community are included in projections for Maple Grove.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)		0	0	0	0

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by Maple Grove.

Current Permitted Appropriation: 139 million gallons per year

Active 2008 Water Source(s)	# Wells
------------------------------------	----------------

Served by Maple Grove (wholesale)

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Maple Grove, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Maple Grove

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northeastern portion of the community under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Pine Springs

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

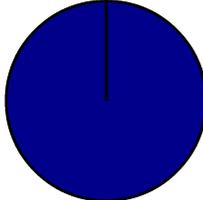
Plymouth

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	72800	75900	78500	86190	90797
Annual Total (Million Gal./Yr)	4252.25	4431.10	4584.40	5033.49	5302.57
Average Day (Million Gal./Day)	11.65	12.14	12.56	13.79	14.53
Maximum Day (Million Gal./Day)	29.13	30.35	31.40	34.48	36.32
Maximum Day, Conserving 10%	26.22	27.32	28.26	31.03	32.69
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	1	0	2	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 4100 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	16	 <ul style="list-style-type: none"> ■ Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation scattered throughout the community under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

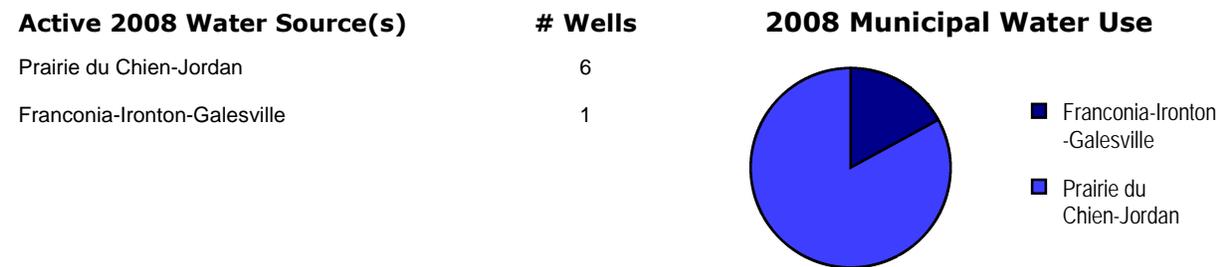
Prior Lake

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	26500	33300	40000	48925	56559
Annual Total (Million Gal./Yr)	839.50	1204.50	1460.00	1785.78	2064.42
Average Day (Million Gal./Day)	2.30	3.30	4.00	4.89	5.66
Maximum Day (Million Gal./Day)	6.70	9.90	12.00	14.68	16.97
Maximum Day, Conserving 10%	6.03	8.91	10.80	13.21	15.27
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	2	1	2	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 900 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Savage, Burnsville, Shakopee Mdewakanton Sioux Community

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Eagle Creek, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

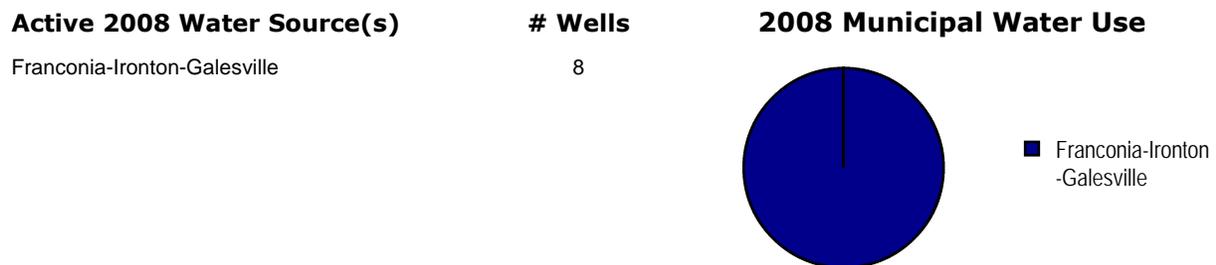
Ramsey

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	11683	20778	42000	51203	59240
Annual Total (Million Gal./Yr)	792.05	1292.10	2489.30	3034.76	3511.09
Average Day (Million Gal./Day)	2.17	3.54	6.82	8.31	9.62
Maximum Day (Million Gal./Day)	7.61	10.60	17.05	20.79	24.05
Maximum Day, Conserving 10%	6.85	9.54	15.35	18.71	21.64
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	3	7	3	3

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 850 million gallons per year



Available Future Water Supply Source(s)^(D)

- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Andover, Anoka, Dayton
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation throughout the community under projected 2030 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

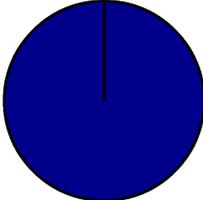
Randolph

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	390	425	485	527	592
Annual Total (Million Gal./Yr)	14.62	14.63	14.22	15.70	18.01
Average Day (Million Gal./Day)	0.04	0.04	0.04	0.04	0.05
Maximum Day (Million Gal./Day)	0.16	0.16	0.16	0.17	0.20
Maximum Day, Conserving 10%	0.14	0.14	0.14	0.15	0.18
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 21 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	1	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** Lake Byllesby Reservoir

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Randolph Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** Lake Byllesby Reservoir

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Ravenna Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

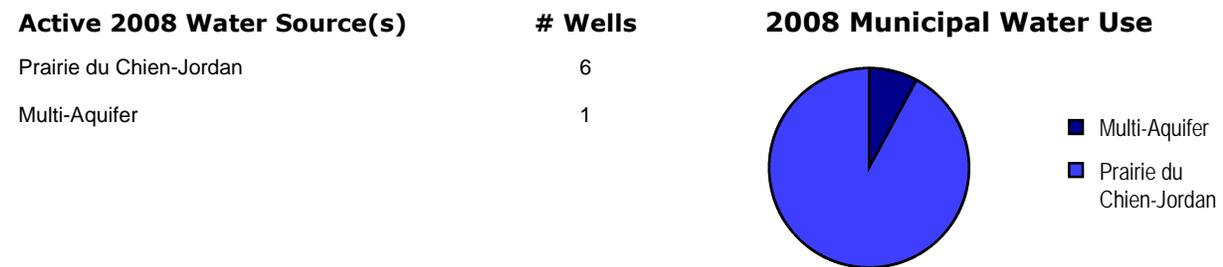
Richfield

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	37700	41300	45000	47547	51716
Annual Total (Million Gal./Yr)	1569.50	1715.50	1971.00	2082.56	2265.16
Average Day (Million Gal./Day)	4.30	4.70	5.40	5.71	6.21
Maximum Day (Million Gal./Day)	9.40	10.30	11.80	12.47	13.56
Maximum Day, Conserving 10%	8.46	9.27	10.62	11.22	12.20
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	1	0	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1900 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minneapolis Water Works

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the center of the community under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

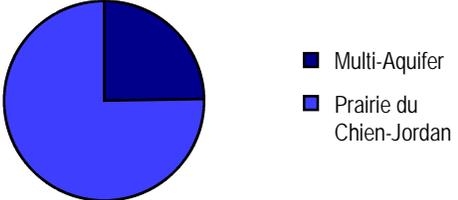
Robbinsdale

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	14100	14600	15000	15309	15861
Annual Total (Million Gal./Yr)	654.13	662.68	645.01	658.29	682.04
Average Day (Million Gal./Day)	1.79	1.82	1.77	1.80	1.87
Maximum Day (Million Gal./Day)	3.88	4.47	4.30	4.39	4.55
Maximum Day, Conserving 10%	3.49	4.02	3.87	3.95	4.09
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	1	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 650 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	4	
Multi-Aquifer	1	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Rockford

Water Demand Projections^(1, 2, A)

Population Served

Annual Total (Million Gal./Yr)

Average Day (Million Gal./Day)

Maximum Day (Million Gal./Day)

Maximum Day, Conserving 10%

Estimated Additional Wells,

(if groundwater sources were pumped at metro average rates to meet demand above permit)

2010 2020 2030 2040 2050

Water demand will be projected for this community as they develop a municipal supply.

0 0 0 0

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Current Permitted Appropriation: 197 million gallons per year

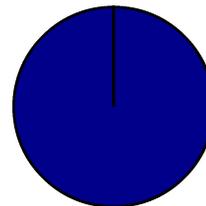
Active 2008 Water Source(s)

Wells

2008 Municipal Water Use

Quaternary

4



■ Quaternary

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Rogers

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	8500	15000	21200	28623	33666
Annual Total (Million Gal./Yr)	602.25	861.40	1219.10	1646.15	1934.50
Average Day (Million Gal./Day)	1.65	2.36	3.34	4.51	5.30
Maximum Day (Million Gal./Day)	5.04	6.14	8.68	11.72	13.78
Maximum Day, Conserving 10%	4.54	5.53	7.81	10.55	12.40
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	1	2	2	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 450 million gallons per year



Available Future Water Supply Source(s)^(D)

- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Dayton, Ramsey
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northern portion of the community under projected 2050 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Rosemount

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	21932	31502	40725	52876	61442
Annual Total (Million Gal./Yr)	1029.30	1697.25	2387.10	3099.32	3601.45
Average Day (Million Gal./Day)	2.82	4.65	6.54	8.49	9.87
Maximum Day (Million Gal./Day)	8.46	13.95	19.62	25.47	29.60
Maximum Day, Conserving 10%	7.61	12.56	17.66	22.93	26.64
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	4	4	4	3

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 960 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Inver Grove Heights, Eagan, Apple Valley, Coates, and Empire, Vermillion and Nininger Townships
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northeastern portion of the community, within the Mississippi River valley under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the

Notes and references can be found on the Appendix 2 cover page.

Rosemount

Minnesota Department of Natural Resources

- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Roseville

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community owns and operates their own water supply system.

Active 2008 Water Source(s) # Wells

Served by St. Paul Regional Water Services (wholes

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Arden Hills, New Brighton, Saint Paul Regional Water Services

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

San Francisco Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Sand Creek Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the western portion of the community, within the Minnesota River valley under projected 2050 demand conditions

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Savage

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	27009	32903	39188	42877	51476
Annual Total (Million Gal./Yr)	1124.20	1372.40	1397.95	1529.53	1836.32
Average Day (Million Gal./Day)	3.08	3.76	3.83	4.19	5.03
Maximum Day (Million Gal./Day)	9.55	11.65	11.85	12.97	15.57
Maximum Day, Conserving 10%	8.60	10.49	10.67	11.67	14.01
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	0	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1250 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	1	
Prairie du Chien-Jordan	2	
Mt Simon-Hinckley	4	
Franconia-Ironton-Galesville	2	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Burnsville, Shakopee

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation within the Minnesota River Valley, particularly near the Savage Fen under projected 2050 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Potential impacts to Boiling Springs, a historical and cultural resource
- Savage Fen located within one mile of the community
- Eagle Creek and the East Branch of Eagle Creek, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Scandia

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the western portion of the community, north of the Big Marine regional park reserve under projected 2050 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Gilbertson, Falls, Old Mill, and Unnamed creeks, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Sciota Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Shakopee

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	35547	37653	43533	54148	62665
Annual Total (Million Gal./Yr)	2336.00	2474.70	2861.60	3559.40	4119.19
Average Day (Million Gal./Day)	6.40	6.78	7.84	9.75	11.29
Maximum Day (Million Gal./Day)	17.91	18.98	21.94	27.29	31.58
Maximum Day, Conserving 10%	16.12	17.08	19.75	24.56	28.42
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	2	0	2	4	3

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 2159 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	14	
Multi-Aquifer	1	
Mt Simon-Hinckley	1	
Franconia-Ironton-Galesville	2	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Prior Lake, Savage, Shakopee Mdwakanton Sioux Community

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northern portion of the community, particularly within the Minnesota River valley under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Eagle Creek, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Shakopee

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Shakopee Mdewakanton Sioux Community

Water Demand Projections *	2010	2020	2030	2040	2050
Residential Population Served	300	350	410	480	560
Annual Total (Million Gal./Yr)	204.40	295.65	390.55	481.80	576.70
Average Day (Million Gal./Day)	0.56	0.81	1.07	1.32	1.58
Maximum Day (Million Gal./Day)	No data available				
Maximum Day, Conserving 10%	No data available				
Estimated Additional Wells	1	0	1	0	1

* Data provided by the Shakopee Mdewakanton Sioux Community

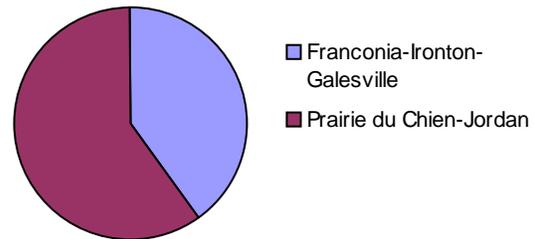
Current Water Supply *

The community owns and operates their own water supply system.

Current Permitted Appropriation: Not applicable

Active 2008 Water Source(s)	# Wells
Prairie du Chien-Jordan	2
Franconia-Ironton-Galesville	1

2008 Municipal Water Use



* Data provided by the Shakopee Mdewakanton Sioux Community

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Prior Lake, Shakopee

The following may need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers expanding their water supply systems should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

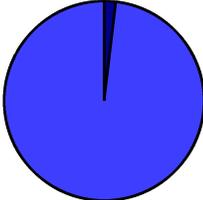
Shoreview

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	28500	29000	29000	29387	30435
Annual Total (Million Gal./Yr)	1197.20	1197.20	1197.20	1213.16	1256.46
Average Day (Million Gal./Day)	3.28	3.28	3.28	3.32	3.44
Maximum Day (Million Gal./Day)	10.61	10.75	10.75	10.89	11.28
Maximum Day, Conserving 10%	9.55	9.68	9.68	9.80	10.15
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1400 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	5	 <ul style="list-style-type: none"> ■ Multi-Aquifer ■ Prairie du Chien-Jordan
Multi-Aquifer	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Lino Lakes

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Shorewood

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	7850	8000	8100	8508	8792
Annual Total (Million Gal./Yr)	186.15	211.70	237.25	249.19	257.52
Average Day (Million Gal./Day)	0.51	0.58	0.65	0.68	0.71
Maximum Day (Million Gal./Day)	1.37	1.37	1.37	1.44	1.49
Maximum Day, Conserving 10%	1.23	1.23	1.23	1.30	1.34
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system, with Minnetonka as a water source for a small portion of the community.

Current Permitted Appropriation: 353 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	3	
Multi-Aquifer	1	
Franconia-Ironton-Galesville	2	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

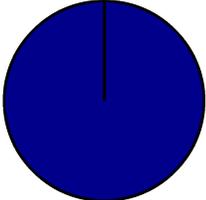
South St. Paul

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	19900	20000	20700	21405	22116
Annual Total (Million Gal./Yr)	1022.00	1022.00	1022.00	1056.81	1091.91
Average Day (Million Gal./Day)	2.80	2.80	2.80	2.90	2.99
Maximum Day (Million Gal./Day)	5.50	5.00	5.00	5.17	5.34
Maximum Day, Conserving 10%	4.95	4.50	4.50	4.65	4.81
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 1200 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	7	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the eastern portion of the community, within the Mississippi River valley under projected 2030 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota

Notes and references can be found on the Appendix 2 cover page.

South St. Paul

Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

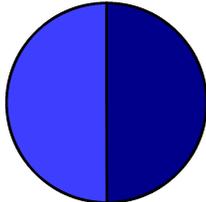
Spring Lake Park

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	6710	6710	6910	7520	7608
Annual Total (Million Gal./Yr)	281.05	281.05	281.05	305.87	309.42
Average Day (Million Gal./Day)	0.77	0.77	0.77	0.84	0.85
Maximum Day (Million Gal./Day)	2.20	2.20	2.20	2.39	2.42
Maximum Day, Conserving 10%	1.98	1.98	1.98	2.15	2.18
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 398.6 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Multi-Aquifer	2	 <p>Legend: ■ Mt Simon-Hinckley ■ Multi-Aquifer</p>
Mt Simon-Hinckley	2	

Available Future Water Supply Source(s)^(D)

- **Prairie du Chien-Jordan aquifer**
- **Franconia-Ironton-Galesville aquifer**
- **Interjurisdictional cooperation:** Minneapolis Water Works, Coon Rapids, Blaine

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Spring Lake Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Spring Park

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	1850	2000	2100	2181	2327
Annual Total (Million Gal./Yr)	91.25	98.55	103.66	107.66	114.85
Average Day (Million Gal./Day)	0.25	0.27	0.28	0.29	0.31
Maximum Day (Million Gal./Day)	0.63	0.68	0.71	0.74	0.79
Maximum Day, Conserving 10%	0.56	0.61	0.64	0.66	0.71
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 75 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	1	
Multi-Aquifer	1	
Mt Simon-Hinckley	1	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

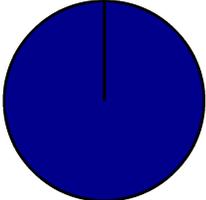
St. Anthony

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	9150	9400	10000	11638	12484
Annual Total (Million Gal./Yr)	379.60	386.90	412.45	480.02	514.92
Average Day (Million Gal./Day)	1.04	1.06	1.13	1.32	1.41
Maximum Day (Million Gal./Day)	2.20	2.26	2.40	2.79	3.00
Maximum Day, Conserving 10%	1.98	2.03	2.16	2.51	2.70
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	1	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 410 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	3	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- **Prairie du Chien-Jordan aquifer**
- **Franconia-Ironton-Galesville aquifer**
- **Interjurisdictional cooperation:** Minneapolis Water Works, Saint Paul Regional Water Services

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

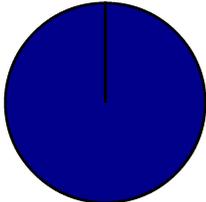
St. Bonifacius

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	2850	2750	2900	3151	3411
Annual Total (Million Gal./Yr)	105.85	102.20	105.85	115.02	124.52
Average Day (Million Gal./Day)	0.29	0.28	0.29	0.32	0.34
Maximum Day (Million Gal./Day)	0.74	0.72	0.75	0.81	0.88
Maximum Day, Conserving 10%	0.67	0.65	0.68	0.73	0.79
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	-1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 80 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Multi-Aquifer	2	 <p>A pie chart representing the 2008 Municipal Water Use. The chart is a single solid blue circle, indicating that 100% of the water used in 2008 came from the Multi-Aquifer source. A legend to the right of the chart shows a blue square next to the text 'Multi-Aquifer'.</p>

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minnetrista

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

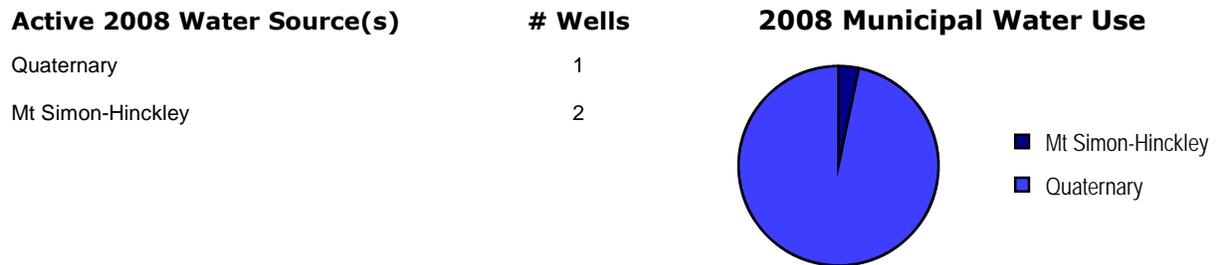
St. Francis

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	5480	10400	12800	15640	18340
Annual Total (Million Gal./Yr)	251.85	474.50	584.00	713.57	836.75
Average Day (Million Gal./Day)	0.69	1.30	1.60	1.95	2.29
Maximum Day (Million Gal./Day)	1.78	3.38	4.16	5.08	5.96
Maximum Day, Conserving 10%	1.60	3.04	3.74	4.57	5.36
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 200 million gallons per year



Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Bethel, Oak Grove, Nowthen

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the eastern portion of the community under projected 2050 demand conditions

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

St. Lawrence Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the central portion of the community under projected 2050 demand conditions

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

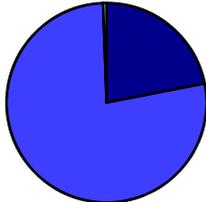
St. Louis Park

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	47000	49300	51500	53046	55902
Annual Total (Million Gal./Yr)	2492.95	2613.40	2730.20	2812.13	2963.59
Average Day (Million Gal./Day)	6.83	7.16	7.48	7.70	8.12
Maximum Day (Million Gal./Day)	12.22	12.82	13.39	13.79	14.53
Maximum Day, Conserving 10%	11.00	11.54	12.05	12.41	13.08
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 2500 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
St. Peter	1	 <ul style="list-style-type: none"> ■ Mt Simon-Hinckley ■ Prairie du Chien-Jordan ■ St. Peter
Prairie du Chien-Jordan	9	
Mt Simon-Hinckley	4	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

St. Marys Point

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- Valley Branch Creek, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

St. Paul

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	438410	458730	474470	500493	523823
Annual Total (Million Gal./Yr)	16133.00	16972.50	17812.00	18788.92	19664.75
Average Day (Million Gal./Day)	44.20	46.50	48.80	51.48	53.88
Maximum Day (Million Gal./Day)	84.00	88.30	92.80	97.89	102.45
Maximum Day, Conserving 10%	75.60	79.47	83.52	88.10	92.21
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system, as well as supplying water to additional communities.

Current Permitted Appropriation: 70300 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minneapolis Water Works
- Surface water:** Mississippi River, Vadnais Lake

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation within the Mississippi River valley under projected 2030 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

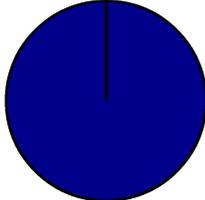
St. Paul Park

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	7650	9700	10400	13378	14666
Annual Total (Million Gal./Yr)	281.05	354.05	379.60	488.30	535.32
Average Day (Million Gal./Day)	0.77	0.97	1.04	1.34	1.47
Maximum Day (Million Gal./Day)	1.38	1.75	1.87	2.41	2.64
Maximum Day, Conserving 10%	1.24	1.58	1.68	2.16	2.37
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 250 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	4	 <p>■ Prairie du Chien-Jordan</p>

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Cottage Grove
- Surface water:** Mississippi River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the western portion of the community, within the Mississippi River valley under projected 2030 demand conditions

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Notes and references can be found on the Appendix 2 cover page.

St. Paul Park

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Stillwater

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	19100	21300	19900	24480	23665
Annual Total (Million Gal./Yr)	821.25	938.05	1058.50	1302.13	1258.78
Average Day (Million Gal./Day)	2.25	2.57	2.90	3.57	3.45
Maximum Day (Million Gal./Day)	5.84	6.68	7.53	9.26	8.95
Maximum Day, Conserving 10%	5.26	6.01	6.78	8.34	8.06
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	1	-1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 865 million gallons per year

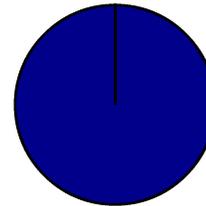
Active 2008 Water Source(s)

Prairie du Chien-Jordan

Wells

7

2008 Municipal Water Use



■ Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2050 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Brown's Creek, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

Stillwater Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)	Water demand will be projected for this community as they develop a municipal supply.				
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- Brown's Creek, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Sunfish Lake

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

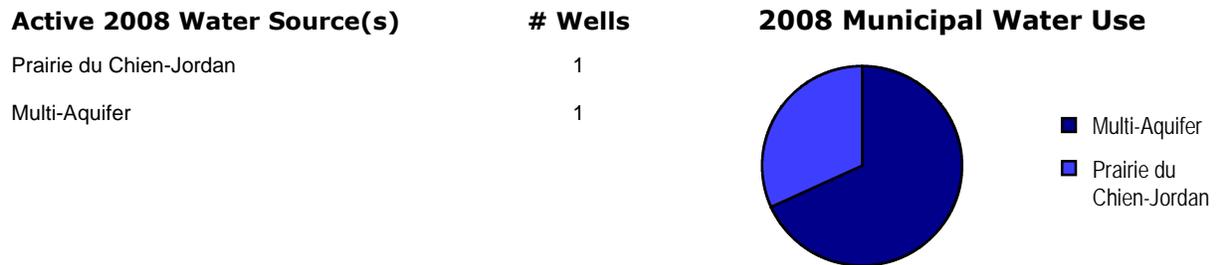
Tonka Bay

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	1620	1650	1650	1734	1750
Annual Total (Million Gal./Yr)	76.29	78.11	78.11	82.08	82.85
Average Day (Million Gal./Day)	0.21	0.21	0.21	0.22	0.23
Maximum Day (Million Gal./Day)	0.66	0.69	0.69	0.72	0.73
Maximum Day, Conserving 10%	0.59	0.62	0.62	0.65	0.65
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 100 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Vadnais Heights

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	13800	14300	16800	19238	20878
Annual Total (Million Gal./Yr)	564.40	584.85	687.09	786.80	853.87
Average Day (Million Gal./Day)	1.55	1.60	1.88	2.16	2.34
Maximum Day (Million Gal./Day)	4.76	4.93	5.80	6.64	7.20
Maximum Day, Conserving 10%	4.28	4.44	5.22	5.97	6.48
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 579 million gallons per year

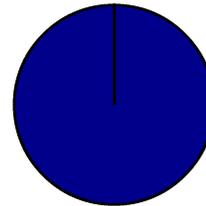
Active 2008 Water Source(s)

Prairie du Chien-Jordan

Wells

4

2008 Municipal Water Use



■ Prairie du Chien-Jordan

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the southeastern portion of the community under projected 2050 demand conditions

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

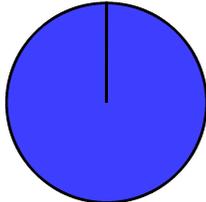
Vermillion

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	452	448	442	451	452
Annual Total (Million Gal./Yr)	17.89	17.52	17.52	17.88	17.92
Average Day (Million Gal./Day)	0.05	0.05	0.05	0.05	0.05
Maximum Day (Million Gal./Day)	0.15	0.15	0.14	0.14	0.14
Maximum Day, Conserving 10%	0.14	0.14	0.13	0.13	0.13
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 25 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	1	 <ul style="list-style-type: none"> ■ Mt Simon-Hinckley ■ Quaternary
Mt Simon-Hinckley	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- Vermillion River, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Vermillion Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts to state protected trout habitat or calcareous fen

- Vermillion, South Branch Vermillion, and an unnamed tributary to the Vermillion River, trout habitat, located within one mile of the community

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

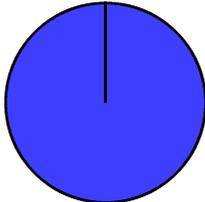
Victoria

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	10000	18900	27300	34677	43437
Annual Total (Million Gal./Yr)	375.95	711.75	1025.65	1302.82	1631.89
Average Day (Million Gal./Day)	1.03	1.95	2.81	3.57	4.47
Maximum Day (Million Gal./Day)	2.68	5.06	7.31	9.29	11.63
Maximum Day, Conserving 10%	2.41	4.55	6.58	8.36	10.47
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	2	2	1	1	2

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 186 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	3	 <ul style="list-style-type: none"> ■ Franconia-Ironton-Galesville ■ Quaternary
Franconia-Ironton-Galesville	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minnetrista, Shorewood, Chanhassen, Chaska, and Laketown Township

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

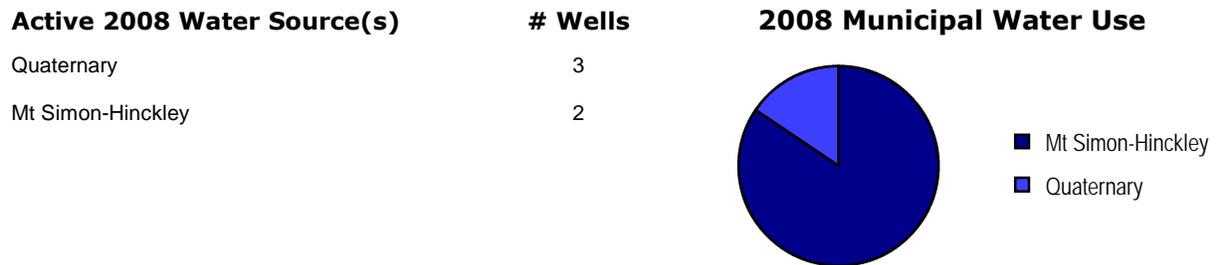
Waconia

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	10600	20000	25000	30514	36703
Annual Total (Million Gal./Yr)	386.90	730.00	912.50	1113.75	1339.65
Average Day (Million Gal./Day)	1.06	2.00	2.50	3.05	3.67
Maximum Day (Million Gal./Day)	2.33	4.40	5.50	6.71	8.07
Maximum Day, Conserving 10%	2.10	3.96	4.95	6.04	7.27
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	1	1	1	1

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 593 million gallons per year



Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Waconia Township, Laketown Township

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Franconia-Ironton-Galesville aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Waconia Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Waconia

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Waterford Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

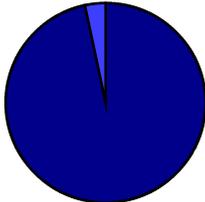
Watertown

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	4800	6500	7700	9259	10783
Annual Total (Million Gal./Yr)	175.20	237.25	281.05	337.94	393.57
Average Day (Million Gal./Day)	0.48	0.65	0.77	0.93	1.08
Maximum Day (Million Gal./Day)	2.40	2.40	2.40	2.89	3.36
Maximum Day, Conserving 10%	2.16	2.16	2.16	2.60	3.02
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 174 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	3	 <ul style="list-style-type: none"> ■ Franconia-Ironton-Galesville ■ Quaternary
Franconia-Ironton-Galesville	1	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Watertown Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the Prairie du Chien-Jordan aquifer

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Wayzata

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	4715	5481	5681	5561	5958
Annual Total (Million Gal./Yr)	386.90	448.95	467.20	457.36	489.95
Average Day (Million Gal./Day)	1.06	1.23	1.28	1.25	1.34
Maximum Day (Million Gal./Day)	2.12	2.46	2.55	2.50	2.67
Maximum Day, Conserving 10%	1.91	2.21	2.30	2.25	2.41
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	-1	0

Current Water Supply^(C)

The community owns and operates their own water supply system, with Minnetonka as a water source for a small portion of the community.

Current Permitted Appropriation: 350 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Quaternary	1	
Prairie du Chien-Jordan	2	

Available Future Water Supply Source(s)^(D)

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Minnetonka. Orono

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

West Lakeland Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Surface water:** St. Croix River

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer under projected 2030 demand conditions

Known groundwater contamination

- A Minnesota Department of Health Special Well Construction Area is present in the community (<http://www.health.state.mn.us/divs/eh/wells/swca/index.html>)

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

West St. Paul

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for St. Paul.

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by St. Paul.

Active 2008 Water Source(s)	# Wells
Served by St. Paul Regional Water Services (retail)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on St. Paul, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

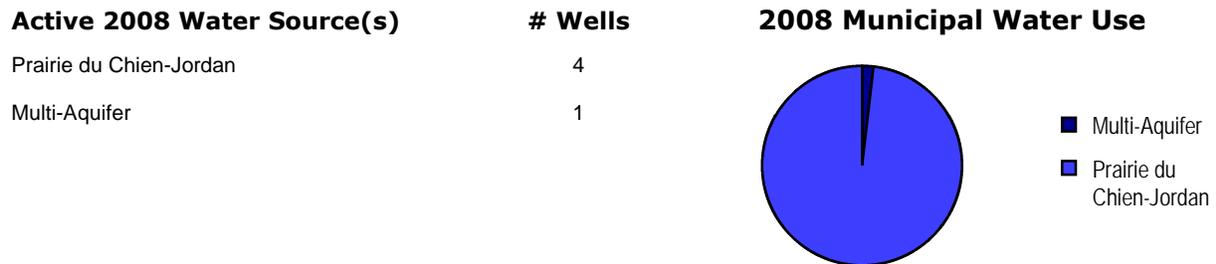
White Bear Lake

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	25630	26690	27710	29090	30787
Annual Total (Million Gal./Yr)	1058.50	1058.50	1058.50	1111.21	1176.04
Average Day (Million Gal./Day)	2.90	2.90	2.90	3.04	3.22
Maximum Day (Million Gal./Day)	8.10	8.10	8.10	8.50	9.00
Maximum Day, Conserving 10%	7.29	7.29	7.29	7.65	8.10
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	0	0	0	1

Current Water Supply^(C)

The community owns and operates their own water supply system, as well as supplying water to additional communities.

Current Permitted Appropriation: 1150 million gallons per year



Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Mahtomedi, White Bear Township, Willernie

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

White Bear Twp.

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	14900	17000	17300	18504	19701
Annual Total (Million Gal./Yr)	631.45	751.90	762.85	815.95	868.72
Average Day (Million Gal./Day)	1.73	2.06	2.09	2.24	2.38
Maximum Day (Million Gal./Day)	4.50	5.35	5.44	5.82	6.19
Maximum Day, Conserving 10%	4.05	4.82	4.90	5.24	5.58
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	1	0	0	0	0

Current Water Supply^(C)

The community owns and operates their own water supply system, as well as supplying water to additional communities.

Current Permitted Appropriation: 515 million gallons per year



Available Future Water Supply Source(s)^(D)

- **Prairie du Chien-Jordan aquifer**
- **Franconia-Ironton-Galesville aquifer**
- **Interjurisdictional cooperation:** Hugo, Lino Lakes, White Bear Lake

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for impacts of groundwater pumping on surface water features

- Predicted decline greater than one meter in water table elevation in the northern portion of the community under projected 2050 demand conditions

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Willernie

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for Mahtomedi.

Current Water Supply^(C)

The community owns and operates their own water supply system.

Active 2008 Water Source(s)	# Wells
Served by Mahtomedi (retail)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Mahtomedi, assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Quaternary aquifer(s)**
- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Mahtomedi, White Bear Lake

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

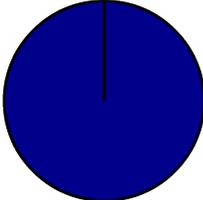
Woodbury

Water Demand Projections^(1, 2, A)	2010	2020	2030	2040	2050
Population Served	60000	73500	84000	96884	111125
Annual Total (Million Gal./Yr)	2482.00	3686.50	4234.00	4883.40	5601.22
Average Day (Million Gal./Day)	6.80	10.10	11.60	13.38	15.35
Maximum Day (Million Gal./Day)	24.30	30.30	34.00	39.21	44.98
Maximum Day, Conserving 10%	21.87	27.27	30.60	35.29	40.48
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)	0	5	3	4	4

Current Water Supply^(C)

The community owns and operates their own water supply system.

Current Permitted Appropriation: 2983 million gallons per year

Active 2008 Water Source(s)	# Wells	2008 Municipal Water Use
Prairie du Chien-Jordan	16	

Available Future Water Supply Source(s)^(D)

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Saint Paul Regional Water Services, Cottage Grove

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Potential for significant decline in aquifer water levels

- Predicted decline in available head greater than 50% in confined portions of the Prairie du Chien-Jordan aquifer and by 2050 in the Franconia-Ironton-Galesville aquifer under projected 2030 demand conditions

Potential for impacts to state protected trout habitat or calcareous fen

- Valley Creek, trout habitat, located within one mile of the community

Significant vulnerability to contamination

- Minnesota Department of Health designates all or part of the community as a drinking water supply management area with high or very high vulnerability to potential sources of contamination

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Notes and references can be found on the Appendix 2 cover page.

Woodland

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand projections for this community are included in projections for Minnetonka (for a portion of the community only).

Current Water Supply^(C)

The community is served by a municipal system that is owned and operated by Minnetonka (for a portion of the community only).

Active 2008 Water Source(s)	# Wells
Served by Minnetonka (retail)	

Available Future Water Supply Source(s)^(D)

The community is anticipated to rely on Minnetonka (for a portion of the community only), assuming contractual agreements continue, for demand through 2050. If a new water source is planned, aquifer capacity and withdrawal impacts should be assessed.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**
- Interjurisdictional cooperation:** Deephaven, Minnetonka

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance).^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/

Young America Twp.

Water Demand Projections ^(1, 2, A)	2010	2020	2030	2040	2050
Population Served					
Annual Total (Million Gal./Yr)					
Average Day (Million Gal./Day)					
Maximum Day (Million Gal./Day)					
Maximum Day, Conserving 10%					
Estimated Additional Wells, (if groundwater sources were pumped at metro average rates to meet demand above permit)					

Water demand will be projected for this community as they develop a municipal supply.

Current Water Supply^(C)

The community does not have a municipal supply. Private wells supply existing demand.

Available Future Water Supply Source(s)^(D)

Private wells are expected to meet demand until 2050. If the community plans to develop a municipal supply, an assessment of aquifer capacity, withdrawal impacts, and inter-jurisdictional opportunities should be conducted.

- Prairie du Chien-Jordan aquifer**
- Franconia-Ironton-Galesville aquifer**

The following will need to be addressed should water supplies be developed using the sources or in the areas noted (Appendix 3 provides guidance):^(3, A, B, C, D, E)

Potential for well interference

- Due to the pervasiveness of private wells in the metro area, suppliers requesting water appropriations should evaluate the need to address potential well interference

Significant uncertainty regarding the extent and productivity of the surficial, Prairie du Chien-Jordan, and Franconia-Ironton-Galesville aquifers

Minnesota Department of Natural Resources and Department of Health conditions

- Conditions identified on existing and future water appropriation permits issued by the Minnesota Department of Natural Resources
- Issues identified in Source Water Assessments, which can be found on the Minnesota Department of Health website www.health.state.mn.us/divs/eh/water/swp/swa/