Appendix A: Water Supply Plan

Local Water Supply Plan Template
Third Generation for 2016-2018

Revised April 10, 2017

Formerly called Water Emergency & Water Conservation Plan

DEPARTMENT OF NATURAL RESOURCES

Cover photo by Molly Shodeen

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

This information is available in an alternative format upon request.

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

Table of contents

INTRODUCTION TO WATER SUPPLY PLANS (WSP)

Who needs to complete a Water Supply Plan

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

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

Groundwater Management Areas (GWMA)

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

Benefits of completing a WSP

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

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

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

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

WSP Approval Process

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

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

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

Table 1. General information regarding this WSP

Requested Information	Description
DNR Water Appropriation Permit Number(s)	**1975-6216**
Ownership	☒ Public or ☐ Private
Metropolitan Council Area	☒ Yes or ☐ No (and county name)
Street Address	**4100 Lakeview Avenue**
City, State, Zip	**ROBBINSDALE, MN, 55422**
Contact Person Name	Richard McCoy
Title	Public Works Director / City Engineer
Phone Number	763-531-1260
MDH Supplier Classification	Municipal

PART 1. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION

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

A. Analysis of Water Demand

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

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

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

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

Year	Pop. Served	Total Connections	Residential Water Delivered (MG)	C/I/I Water Delivered (MG)	Water used for Non-essential	Wholesale Deliveries (MG)	Total Water Delivered (MG)	Total Water Pumped (MG)	Water Supplier Services	Percent Unmetered/ Unaccounted	Average Daily Demand (MGD)	Max. Daily Demand (MGD)	Date of Max. Demand	Residential Per Capita Demand (GPCD)	Total per capita Demand (GPCD)
2005	14123	4942	354242	46153		0	400395	482612		17.04	1.32	2.25	7-Aug	68.72	93.62
2006	14123	5052	366385	44476		0	410861	502385		18.22	1.37	2.31	30-Jul	71.08	97.46
2007	14123	5046	389608	40116		0	429724	494733		13.14	1.35	2.68	7-Jul	75.58	95.97
2008	14123	4945	350486	45818		0	396304	487102		18.64	1.33	2.27	9-Jul	67.99	94.49
2009	14123	5096	412131	66032		0	478163	499327		4.24	1.36	2.36	4-Jun	79.95	96.86
2010	14123	5119	338101	68186		0	406287	434677		6.53	1.19	1.92	31-May	65.59	84.32
2011	13953	5131	328205	72756		0	400961	439845		8.84	1.21	1.69	8-Jul	64.44	86.37
2012	13953	5133	338852	40333		0	379185	433785		12.59	1.19	2.03	3-Sep	66.53	85.18
2013	13953	4966	340972	32423		0	373395	440519	10342	15.24	1.21	2.18	26-Aug	67.88	88.79
2014	13953	5084	297697	26010		0	323707	411623	7756	21.36	1.13	1.78	7-Aug	58.45	80.82
2015	13953	5116	300358	28230		0	328588	392480	5910	16.28	1.08	1.41	2-Aug	58.98	77.06
2016	13953	5091	297583	28951		0	326534	390488	6889	16.28	1.07	1.66	4-Jul	58.43	76.67
Avg. 2011-2016	13953	5087	317278	38117		0	355395	418123	7724	15.11	1.15	1.79	3-Aug	62.59	82.48

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

See Glossary for definitions. A list of Acronyms and Initialisms can be found after the Glossary.

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

Table 3. Large volume users

Customer	Use Category (Residential, Industrial, Commercial, Institutional, Wholesale)	Amount Used (Gallons per Year)	Percent of Total Annual Water Delivered	Implementing Water Conservation Measures? (Yes/No/Unknown)
1. ROBBINSDALE REHABILITATION	INSTITUTIONAL	4,404,000	1.35	UNKNOWN
2. COPPERFIELD HILL APARTMENTS BUILDING #1	RESIDENTIAL	3,925,000	1.20	UNKNOWN
3. CITY OF ROBBINSDALE (SPLASH PAD)	INSTITUTIONAL	3,603,000	1.10	YES
4. ROBBINS LANDING APARTMENTS	RESIDENTIAL	3,570,000	1.10	UNKNOWN
5. LOADS OF LAUNDRY	COMMERCIAL	2,901,000	0.89	YES
6. LEE SQUARE COOPERATIVE	RESIDENTIAL	2,689,000	0.82	UNKNOWN
7. COPPERFIELD HILL APARTMENTS BUILDING #2	RESIDENTIAL	2,578,000	0.79	UNKNOWN
8. FRESENIUS MEDICAL CARE	COMMERCIAL	2,551,000	0.78	UNKNOWN
9. BRIDGEWAY APARTMENTS	RESIDENTIAL	2,472,000	0.76	UNKNOWN
10. ROBBINSDALE TOWN CENTER	COMMERCIAL	2,162,000	0.66	UNKNOWN

B. Treatment and Storage Capacity

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

Table 4. Water treatment capacity and treatment processes

Treatment Site ID (Plant Name or Well ID)	Year Constructed	Treatment Capacity (GPD)	Treatment Method	Treatment Type	Annual Volume of Residuals	Disposal Process for Residuals	Do You Reclaim Filter Backwash Water?
Plant #1	1963 (last rehab in 1992)	1,440,000	Chemical addition, pressure filtration	Chlorination, fluoridation and FE/Mn removal	386,000	Discharge to Sanitary	Yes
Plant #2	1963 (last rehab in 1992)	1,440,000	Chemical addition, pressure filtration	Chlorination, fluoridation and FE/Mn removal	357,000	Discharge to Sanitary	Yes
Plant #3	1963 (last rehab in 1992)	1,440,000	Chemical addition, pressure filtration	Chlorination, fluoridation and FE/Mn removal	248,000	Discharge to Sanitary	Yes
Total	NA	4,320,000	NA	NA	991,000	NA	

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

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

Structure Name	Type of Storage Structure	Year Constructed	Primary Material	Storage Capacity (Gallons)
Tower 1	Elevated storage	1937 (?)	Steel	125,000
Tower 2	Elevated storage	1956	Steel	500,000
Ground Storage 1	Ground storage	1963	Steel	750,000
Ground Storage 2	Ground storage	1963	Steel	500,000
Total	NA	NA	NA	1,875,000

Treatment and storage capacity versus demand

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

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

Current storage and treatment capacity meet the current average daily demands and those projected for the forthcoming 10 years. It should be noted however, that due to operational and general asset management considerations, it is probable that the City will soon be embarking on a replacement program for the treatment plants (consolidate into 1 centralized gravity treatment plant with large clear well) and will be replacing the current Tower 1 (larger tower that is less reactive to changes in demand throughout the day).

C. Water Sources

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

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

Table 6. Water sources and status

Resource Type (Groundwater, Surface water, Interconnection)	Resource Name	MN Unique Well # or Intake ID	Year Installed	Capacity (Gallons per Minute)	Well Depth (Feet)	Status of Normal and Emergency Operations (active, inactive, emergency only, retail/wholesale interconnection))	Does this Source have a Dedicated Emergency Power Source? (Yes or No)
Groundwater	Well 1	00211995	1937	700	376	Active	Yes
Groundwater	Well 2	00211996	1945	470	413	Active	Yes
Groundwater	Well 3	00200215	1948	600	478	Active	No

Resource Type (Groundwater, Surface water, Interconnection)	Resource Name	MN Unique Well # or Intake ID	Year Installed	Capacity (Gallons per Minute)	Well Depth (Feet)	Status of Normal and Emergency Operations (active, inactive, emergency only, retail/wholesale interconnection))	Does this Source have a Dedicated Emergency Power Source? (Yes or No)
Groundwater	Well 4	00211997	1953	600	404	Active	Yes
Groundwater	Well 5	00211998	1956	675	467	Active	No

Limits on Emergency Interconnections

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

none

D. Future Demand Projections – *Key Metropolitan Council Benchmark*

Water Use Trends

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

The population served over the past ten years has remained relatively steady, which is a reflection of the City being a fully built out first ring City. The total per capita demand during this time is showing a steady decreasing trend. Average daily demand is also exhibiting a decreasing trend over this time. The decreasing trend may be a result of change to increasing block rates, such that higher usage will significantly increase the amount paid per gallon above an established amount leading to greater awareness of water usage.

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

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

Table 7. Projected annual water demand

Year	Projected Total Population	Projected Population Served	Projected Total Per Capita Water Demand (GPCD)	Projected Average Daily Demand (MGD)	Projected Maximum Daily Demand (MGD)
2016	13953	13953	80	1.15	1.80

Year	Projected Total Population	Projected Population Served	Projected Total Per Capita Water Demand (GPCD)	Projected Average Daily Demand (MGD)	Projected Maximum Daily Demand (MGD)
2017	14,400	14,400	80	1.15	1.84
2018	14,500	14,500	80	1.16	1.86
2019	14,600	14,600	80	1.17	1.87
2020	14,750	14,750	80	1.18	1.89
2021	14,800	14,800	75	1.11	1.78
2022	14,850	14,850	75	1.11	1.78
2023	14,900	14,900	75	1.12	1.79
2024	15,000	15,000	75	1.13	1.80
2025	15,050	15,050	75	1.13	1.81
2030	15,100	15,100	75	1.13	1.81
2040	15,300	15,300	75	1.15	1.84

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

Projection Method

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

Projected per capita water demand is based on trending and assumes further modest reductions. Projected population and therefore Average Daily Demand is based on Met Council projections for population growth in Robbinsdale. Projected Maximum Daily Demand is based on Average Demand x the average of the past five years Max Daily/Average Daily.

E. Resource Sustainability

Monitoring – *Key DNR Benchmark*

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

Table 8. Information about source water quality and quantity monitoring

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
00211995	☒ production well ☐ observation well ☐ source water intake ☐ source water reservoir	☐ routine MDH sampling ☒ routine water utility sampling ☐ other	☒ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☒ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
00211996	☒ production well ☐ observation well ☐ source water intake ☐ source water reservoir	☐ routine MDH sampling ☒ routine water utility sampling ☐ other	☒ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☒ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge
00200215	☒ production well ☐ observation well ☐ source water intake ☐ source water reservoir	☐ routine MDH sampling ☒ routine water utility sampling ☐ other	☒ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☒ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge
00211997	☒ production well ☐ observation well ☐ source water intake ☐ source water reservoir	☐ routine MDH sampling ☒ routine water utility sampling ☐ other	☒ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☒ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge
00211998	☒ production well ☐ observation well ☐ source water intake ☐ source water reservoir	☐ routine MDH sampling ☒ routine water utility sampling ☐ other	☒ continuous ☐ hourly ☐ daily ☐ monthly ☐ quarterly ☐ annually	☒ SCADA ☐ grab sampling ☐ steel tape ☐ stream gauge

Water Level Data

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

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

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

Table 9. Water level data

Unique Well Number or Well ID	Aquifer Name	Seasonal Variation (Feet)	Long-term Trend in water level data	Water level measured during well/pumping maintenance
00211995	Prairie du Chien / Jordan	10	☐ Falling ☒ Stable ☐ Rising	Measurements of static and operational conditions were made mid-month in Jan-Mar-Jul-Oct
00211996	Prairie du Chien / Jordan	21	☐ Falling ☒ Stable ☐ Rising	Measurements of static and operational conditions were made mid-month in Jan-Mar-Jul-Oct
00200215	Prairie du Chien / Jordan	26	☐ Falling ☒ Stable ☐ Rising	Measurements of static and operational conditions were made mid-month in Jan-Mar-Jul-Oct
00211997	Prairie du Chien / Jordan	8	☐ Falling ☒ Stable ☐ Rising	Measurements of static and operational conditions were made mid-month in Jan-Mar-Jul-Oct
00211998	Prairie du Chien / Jordan	21	☐ Falling ☒ Stable ☐ Rising	Measurements of static and operational conditions were made mid-month in Jan-Mar-Jul-Oct

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

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

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

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

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

Steps for completing Table 10

1. ***Identify the potential for natural resource impacts/issues within the community***
   First, review available information to identify resources that may be impacted by the operation of your water supply system (such as pumping).
   Potential Sources of Information:
   - County Geologic Atlas
   - Local studies
   - Metropolitan Council System Statement (for metro communities)
   - Metropolitan Council Master Water Supply Plan (for metro communities)

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

2. ***Identify where your water supply system is most likely to impact those resources (and vice versa).***
   Potential Sources of Information:
   - Drinking Water Supply Management Areas
   - Geologic Atlas - Sensitivity
   - If no WHPA or other information exists, consider rivers, lakes, wetlands and significant within 1.5 miles of wells; and calcareous fens and trout streams within 5 miles of wells

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

3. ***Within focus areas, identify specific features of value to the community***
   You know your community best. What resources are important to pay attention to? It may be useful to check in with your community's planning and zoning staff and others.

   Potential Sources of Information:
   - Park plans
   - Local studies
   - Natural resource inventories
   - Tourist attractions/recreational areas/valued community resource

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

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

Potential Sources of Information:

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

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

5. ***Describe how the risk was assessed***

Potential Sources of Information:

- Local studies
- Monitoring data (community, WMO, DNR, etc.)
- Aquifer testing
- County Geologic Atlas or other hydrogeologic studies
- Regional or state studies, such as DNR's report 'Definitions and Thresholds for Negative Impacts to Surface Waters'
- Well boring logs

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

6. ***Describe protection threshold/goals***

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

Potential Sources of Information:

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

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

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

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

Potential Sources of Information:

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

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

8. ***Describe work to evaluate these risks going forward.***

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

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

Potential Sources of Information:

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

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

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

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

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

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

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

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

The emergency procedures in this plan are intended to comply with the contingency plan provisions required in the Minnesota Department of Health's (MDH) Wellhead Protection (WHP) Plan and Surface Water Protection (SWP) Plan.

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

Plan Type	Status	Date Adopted	Date for Update
WHP	☐ In Process ☒ Completed ☐ Not Applicable	Approved by MDH on April 16, 2007	Currently being updated to include the new wells being proposed. MDH has allowed extension of the due date.
SWP	☐ In Process ☐ Completed ☒ Not Applicable		

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

F. Capital Improvement Plan (CIP)

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

Adequacy of Water Supply System

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

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

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

Table 12. Adequacy of Water Supply System

System Component	Planned action	Anticipated Construction Year	Notes
Wells/Intakes	☐ No action planned - adequate ☒ Repair/replacement ☐ Expansion/addition	Starting 2019	Work will involve providing new wells in less vulnerable areas and decommissioning existing.
Water Storage Facilities	☐ No action planned - adequate ☒ Repair/replacement ☐ Expansion/addition	TBD	Replace inadequate 1937 vintage tower with larger facility.

System Component	Planned action	Anticipated Construction Year	Notes
Water Treatment Facilities	☐ No action planned - adequate ☒ Repair/replacement ☐ Expansion/addition	Starting 2019	Rationalize 3 existing pressure filter facilities into 1 centralized gravity filter facility with clear well.
Distribution Systems (Pipes, valves, etc.)	☐ No action planned - adequate ☒ Repair/replacement ☐ Expansion/addition	Ongoing	New pipes / valves and hydrants are installed as part of the annual Capital Improvement Plan.
Pressure Zones	☒ No action planned - adequate ☐ Repair/replacement ☐ Expansion/addition		City is within a single pressure zone.
Other:	☒ No action planned - adequate ☐ Repair/replacement ☐ Expansion/addition		

Proposed Future Water Sources

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

Table 13. Proposed future installations/sources

Source	Installation Location (approximate)	Resource Name	Proposed Pumping Capacity (gpm)	Planned Installation Year	Planned Partnerships
Groundwater	Lee Park Lee Park Manor Park	Well 7 Well 8 Well 9	1,000 1,000 800	Starting 2019	none
Surface Water	none	none	none	none	none
Interconnection to another supplier	June Avenue (3554) Quail Avenue (4154)	No names prescribed yet.	TBD. Both / either would only be used in emergency situations.	June Avenue 2020 Quail Avenue TBD	City of Crystal (June) Joint Water Commission (Quail)

Water Source Alternatives - *Key Metropolitan Council Benchmark*

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

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

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

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

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

Table 14. Alternative water sources

Alternative Source Considered	Source and/or Installation Location (approximate)	Estimated Amount of Future Demand (%)	Timeframe to Implement (YYYY)	Potential Partners	Benefits	Challenges
☐ Groundwater	NA	NA	NA	NA	NA	NA
☐ Surface Water	NA	NA	NA	NA	NA	NA
☐ Reclaimed stormwater	NA	NA	NA	NA	NA	NA
☐ Reclaimed wastewater	NA	NA	NA	NA	NA	NA
☐ Interconnection to another supplier	NA	NA	NA	NA	NA	NA

PART 2. EMERGENCY PREPAREDNESS PROCEDURES

The emergency preparedness procedures outlined in this plan are intended to comply with the contingency plan provisions required by MDH in the WHP and SWP. Water emergencies can occur as a result of vandalism, sabotage, accidental contamination, mechanical problems, power failings, drought, flooding, and other natural disasters. The purpose of emergency planning is to develop emergency response procedures and to identify actions needed to improve emergency preparedness. In the case of a municipality, these procedures should be in support of, and part of, an all-hazard emergency operations plan. Municipalities that already have written procedures dealing with water emergencies should review the following information and update existing procedures to address these water supply protection measures.

A. Emergency Response Plan

Section 1433(b) of the Safe Drinking Water Act, (Public Law 107-188, Title IV- Drinking Water Security and Safety) requires community water suppliers serving over 3,300 people to prepare an Emergency Response Plan. MDH recommends that Emergency Response Plans are updated annually.

Do you have an Emergency Response Plan? Yes ☒ No ☐

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

When did you last update your Emergency Response Plan? _____1997_____

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

Table 15. Emergency Response Plan contact information

Emergency Response Plan Role	Contact Person	Contact Phone Number	Contact Email
Emergency Response Lead	JOEL KONKOL	763-238-7665	JKONKOL@CI.ROBBINSDALE.MN.US
Alternate Emergency Response Lead	RICHARD MCCOY	763-442-1095	RMCCOY@CI.ROBBINSDALE.MN.US

B. Operational Contingency Plan

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

Do you have a written operational contingency plan? Yes ☒ No ☐

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

C. Emergency Response Procedures

Water suppliers must meet the requirements of MN Rules 4720.5280. Accordingly, the Minnesota Department of Natural Resources (DNR) requires public water suppliers serving more than 1,000 people to submit Emergency and Conservation Plans. Water emergency and conservation plans that have been approved by the DNR, under provisions of Minnesota Statute 186 and Minnesota Rules, part 6115.0770, will be considered equivalent to an approved WHP contingency plan.

Emergency Telephone List

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

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

Current Water Sources and Service Area

Quick access to concise and detailed information on water sources, water treatment, and the distribution system may be needed in an emergency. System operation and maintenance records should be maintained in secured central and back-up locations so that the records are accessible for emergency purposes. A detailed map of the system showing the treatment plants, water sources, storage facilities, supply lines, interconnections, and other information that would be useful in an emergency should also be readily available. It is critical that public water supplier representatives and emergency response personnel communicate about the response procedures and be able to easily obtain this kind of information both in electronic and hard copy formats (in case of a power outage).

Do records and maps exist? Yes ☒ No ☐

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

Yes ☒ No ☐

Does the appropriate staff know where the materials are located?

Yes ☒ No ☐

Procedure for Augmenting Water Supplies

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

In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the warning point for that community. Municipalities are encouraged to execute cooperative agreements for potential emergency water services and copies should be included in **Appendix 6**. Outstate Communities may consider using nearby high capacity wells (industry, golf course) as emergency water sources.

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

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

Other Water Supply System Owner	Capacity (GPM & MGD)	Note Any Limitations On Use	List of services, equipment, supplies available to respond
City of Minneapolis / Joint Water Commission (JWC)	TBD	NOT KNOWN AT THIS TIME ALTHOUGH TRANSMISSION PIPE HAS BEEN DOWNSIZED FROM 36" TO 24"	RESOURCES OF THE CITY UTILITY DEPARTMENT WOULD BE AVAILABLE TO RESPOND
Add rows as needed			

GPM – Gallons per minute MGD – million gallons per day

Table 17. Utilizing surface water as an alternative source

Surface Water Source Name	Capacity (GPM)	Capacity (MGD)	Treatment Needs	Note Any Limitations On Use
Insert name of surface water source here	NA	NA	NA	NA
Add rows as needed				

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

NA

Allocation and Demand Reduction Procedures

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

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

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

Water used for human needs at hospitals, nursing homes and similar types of facilities should be designated as a high priority to be maintained in an emergency. Lower priority uses will need to address water used for human needs at other types of facilities such as hotels, office buildings, and manufacturing plants. The volume of water and other types of water uses at these facilities must be carefully considered. After reviewing the data, common sense should dictate local allocation priorities to protect domestic requirements over certain types of economic needs. Water use for lawn sprinkling, vehicle washing, golf courses, and recreation are legislatively considered non-essential.

Table 18. Water use priorities

Customer Category	Allocation Priority	Average Daily Demand (GPD)	Short-Term Emergency Demand Reduction Potential (GPD)
Residential	1	870,000	760,000
Institutional	2	<10,000	<10,000
Commercial	2	105,000	80,000
Industrial	2	<10,000	<10,000
Irrigation	NA	NA	NA
Wholesale	NA	NA	NA
Non-Essential	6	155,500	50,000
TOTAL	NA	1,150,000	910,000

GPD – Gallons per Day

Tip: Calculating Emergency Demand Reduction Potential

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

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

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

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

Notification Procedures

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

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

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
☒ Short-term demand reduction declared (< 1 year)	☒ Website ☒ Email list serve ☒ Social media (e.g. Twitter, Facebook) ☒ Direct customer mailing, ☒ Press release (TV, radio, newspaper), ☐ Meeting with large water users (> 10% of total city use) ☐ Other: _____	☐ Daily ☒ Weekly ☐ Monthly ☐ Annually	Local Community Newspaper Local Community Cable Access Channel
☒ Long-term Ongoing demand reduction declared	☒ Website ☒ Email list serve ☒ Social media (e.g. Twitter, Facebook) ☒ Direct customer mailing, ☒ Press release (TV, radio, newspaper), ☐ Meeting with large water users (> 10% of total city use) ☐ Other: _____	☐ Daily ☒ Weekly ☐ Monthly ☐ Annually	Local Community Newspaper Local Community Cable Access Channel
☒ Governor's critical water deficiency declared	☒ Website ☒ Email list serve ☒ Social media (e.g. Twitter, Facebook)	☐ Daily ☒ Weekly ☐ Monthly ☐ Annually	Local Community Newspaper Local Community Cable Access Channel

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
	☒ Direct customer mailing, ☒ Press release (TV, radio, newspaper), ☐ Meeting with large water users (> 10% of total city use) ☐ Other: _____		

Enforcement

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

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

Important Note:

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

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

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

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

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

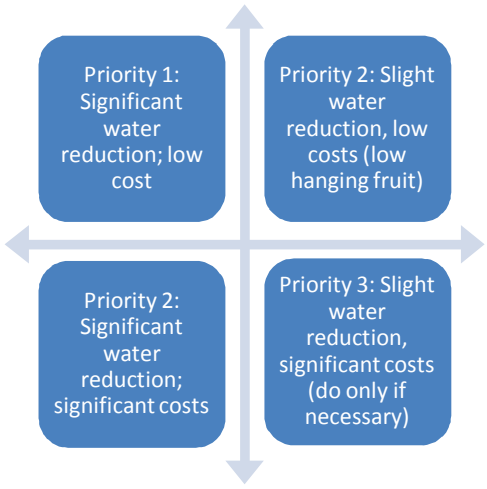
If yes, cite the regulatory authority reference: _____NA_____.

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

City Council

PART 3. WATER CONSERVATION PLAN

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



There are many incentives for conserving water; conservation:

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

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

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

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

Progress since 2006

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

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

NA

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

Table 21. Implementation of previous ten-year Conservation Plan

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

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

The change in water rate structure seems to have created a trend of reduction in water demand based on per capita demand.

A. Triggers for Allocation and Demand Reduction Actions

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

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

Objective	Triggers	Actions
Protect surface water flows	☒ Low stream flow conditions	☒ Increase promotion of conservation

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

B. Conservation Objectives and Strategies – *Key benchmark for DNR*

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

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

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

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

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

Yes ☒ No ☐

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

Perform leak detection on entire system annually.

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

What is the date of your most recent water audit? The City audits the system for lost water annually. The most recent audit for 2016 was conducted in early 2017.

Frequency of water audits: ☒ **yearly** ☐ **other (specify frequency) _____**
Leak detection and survey: ☒ **every year** ☐ **every other year** ☐ **periodic as needed**
Year last leak detection survey completed: ___2017_____

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

The City will continue to replace ageing and vulnerable water main each year as part of street projects. In addition, leak detection will continue to be performed each year. Other projects within the plan horizon include meter replacement starting 2019 through 2021, the construction of a new, centralized Water Treatment Plant starting 2019 through 2020, and the replacement of 3 drinking water wells starting 2019 through 2021.

Metering -AWWA recommends that every water supplier install meters to account for all water taken into its system, along with all water distributed from its system at each customer's point of service. An effective metering program relies upon periodic performance testing, repair, maintenance or

replacement of all meters. Drinking Water Revolving Loan Funds are available for purchase of new meters when new plants are built. AWWA also recommends that water suppliers conduct regular water audits to account for unmetered unbilled consumption, metered unbilled consumption and source water and customer metering inaccuracies. Some cities install separate meters for interior and exterior water use, but some research suggests that this may not result in water conservation.

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

Table 23. Information about customer meters

Customer Category	Number of Customers	Number of Metered Connections	Number of Automated Meter Readers	Meter testing intervals (years)	Average age/meter replacement schedule (years
Residential			The City has 1 vehicle Transceiver Unit plus 2 handheld units.	There is no established testing schedule. Meters are tested upon failure or if customer complaint.	_20_ / _2019_
Irrigation meters	NA	NA			NA
Institutional	377	159			Meters larger than 1" are provided and maintained by the property owners.
Commercial					
Industrial	NA	NA			NA
Public facilities					NA
Other	NA	NA			NA
TOTALS	5115	4932			NA

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

The City has no unmetered systems. Existing meters are scheduled for replacement starting 2019 through 2021. The current estimated replacement cost is $1.2M. Projected water savings have not been calculated at this time.

Table 24. Water source meters

	Number of Meters	Meter testing schedule (years)	Number of Automated Meter Readers	Average age/meter replacement schedule (years
Water source (wells/intakes)	5	There is no established testing schedule	The City has 1 vehicle Transceiver Unit plus 2 handheld units	_20_ / _2021_
Treatment plant	3			_20__ / _2021_

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

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

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

What was your 2010 – 2015 five-year average residential per capita water demand? _62.6__ g/person/day

Describe the water use trend over that timeframe:

The trend over the five year period is showing a steady decline.

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

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

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

Objective 3: Achieve at least 1.5% annual reduction in non-residential per capita water use (For each of the next ten years, or a 15% total reduction over ten years.) This includes commercial, institutional, industrial and agricultural water users.

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

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

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

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

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

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

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

Residential and Commercial / Institutional per capita demand have seen a steady decline over the 10 year period. The City does not have any Industrial customers.

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

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

Calculate a ten-year average (2005 – 2014) of the ratio of maximum day demand to average day demand: _1.6__

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

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

Objective 6: Implement Demand Reduction Measures

Water Conservation Program

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

Current Water Rates

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

Volume included in base rate or service charge: __0___ gallons or ____ cubic feet ___ other

Frequency of billing: ☐ Monthly ☒ Bimonthly ☐ Quarterly ☐ Other: _____

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

Date of last rate change: __Dec 2016_____

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

Customer Category	Conservation Billing Strategies in Use *	Conservation Neutral Billing Strategies in Use **	Non-Conserving Billing Strategies in Use ***
Residential	☐ Monthly billing ☒ Increasing block rates (volume tiered rates) ☐ Seasonal rates ☐ Time of use rates ☐ Water bills reported in gallons ☐ Individualized goal rates ☒ Excess use rates ☐ Drought surcharge ☐ Use water bill to provide comparisons ☒ Service charge not based on water volume ☐ Other (describe)	☐ Uniform ☐ Odd/even day watering	☐ Service charge based on water volume ☐ Declining block ☐ Flat ☐ Other (describe)
Commercial/ Industrial/ Institutional	☒ Monthly billing ☒ Increasing block rates (volume tiered rates) ☐ Seasonal rates ☐ Time of use rates ☐ Water bills reported in gallons ☐ Individualized goal rates ☐ Excess use rates ☐ Drought surcharge ☐ Use water bill to provide comparisons ☒ Service charge not based on water volume ☐ Other (describe)	☐ Uniform	☐ Service charge based on water volume ☐ Declining block ☐ Flat ☐ Other (describe)
☐ Other			

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

- **Monthly billing:** is encouraged to help people see their water usage so they can consider changing behavior.
- **Increasing block rates (also known as a tiered residential rate structure):** Typically, these have at least three tiers: should have at least three tiers.
    - The first tier is for the winter average water use.
    - The second tier is the year-round average use, which is lower than typical summer use. This rate should be set to cover the full cost of service.
    - The third tier should be above the average annual use and should be priced high enough to encourage conservation, as should any higher tiers. For this to be effective, the difference in block rates should be significant.

- **Seasonal rate:** higher rates in summer to reduce peak demands
- **Time of Use rates:** lower rates for off peak water use
- **Bill water use in gallons:** this allows customers to compare their use to average rates
- **Individualized goal rates:** typically used for industry, business or other large water users to promote water conservation if they keep within agreed upon goals. **Excess Use rates**: if water use goes above an agreed upon amount this higher rate is charged
- **Drought surcharge:** an extra fee is charged for guaranteed water use during drought
- **Use water bill to provide comparisons**: simple graphics comparing individual use over time or compare individual use to others.
- **Service charge or base fee that does not include a water volume** – a base charge or fee to cover universal city expenses that are not customer dependent and/or to provide minimal water at a lower rate (e.g., an amount less than the average residential per capita demand for the water supplier for the last 5 years)
- **Emergency rates** -A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These higher rates can help to protect the city budgets during times of significantly less water usage.

****Conservation Neutral****

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

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

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

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

NA

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

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

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

☐	Participate in the GreenStep Cities Program, including implementation of at least one of the 20 "Best Practices" for water
☐	Prepare a master plan for smart growth (compact urban growth that avoids sprawl)
☐	Prepare a comprehensive open space plan (areas for parks, green spaces, natural areas)
☐	Adopt a water use restriction ordinance (lawn irrigation, car washing, pools, etc.)
☐	Adopt an outdoor lawn irrigation ordinance
☐	Adopt a private well ordinance (private wells in a city must comply with water restrictions)
☐	Implement a stormwater management program

☐	Adopt non-zoning wetlands ordinance (can further protect wetlands beyond state/federal laws- for vernal pools, buffer areas, restrictions on filling or alterations)
☐	Adopt a water offset program (primarily for new development or expansion)
☐	Implement a water conservation outreach program
☐	Hire a water conservation coordinator (part-time)
☐	Implement a rebate program for water efficient appliances, fixtures, or outdoor water management
☐	Other

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

Success of water reduction programs will be measured by the average GPCD amount relative to Twin Cities Metropolitan area averages.

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

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

C. Regulation

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

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

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

Regulations Utilized	When is it applied (in effect)?
☐ Rainfall sensors required on landscape irrigation systems	☐ Ongoing ☐ Seasonal ☐ Only during declared Emergencies
☐ Water efficient plumbing fixtures required	☐ New development ☐ Replacement ☐ Rebate Programs

Regulations Utilized	When is it applied (in effect)?
☐ Critical/Emergency Water Deficiency ordinance	☐ Only during declared Emergencies
☒ Watering restriction requirements (time of day, allowable days, etc.)	☐ Odd/even ☐ 2 days/week ☐ Only during declared Emergencies ☒ Time of Day restriction
☐ Water waste prohibited (for example, having a fine for irrigators spraying on the street)	☐ Ongoing ☐ Seasonal ☐ Only during declared Emergencies
☐ Limitations on turf areas (requiring lots to have 10% - 25% of the space in natural areas)	☐ New development ☐ Shoreland/zoning ☐ Other
☐ Soil preparation requirement s (after construction, requiring topsoil to be applied to promote good root growth)	☐ New Development ☐ Construction Projects ☐ Other
☐ Tree ratios (requiring a certain number of trees per square foot of lawn)	☐ New development ☐ Shoreland/zoning ☐ Other
☐ Permit to fill swimming pool and/or requiring pools to be covered (to prevent evaporation)	☐ Ongoing ☐ Seasonal ☐ Only during declared Emergencies
☐ Ordinances that permit stormwater irrigation, reuse of water, or other alternative water use (Note: be sure to check current plumbing codes for updates)	☐ Describe

D. Retrofitting Programs

Education and incentive programs aimed at replacing inefficient plumbing fixtures and appliances can help reduce per capita water use, as well as energy costs. It is recommended that municipal water suppliers develop a long-term plan to retrofit public buildings with water efficient plumbing fixtures and appliances. Some water suppliers have developed partnerships with organizations having similar conservation goals, such as electric or gas suppliers, to develop cooperative rebate and retrofit programs.

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

Retrofitting Programs

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

Table 30. Retrofitting programs (Select all that apply)

Water Use Targets	Outreach Methods	Partners
☐ Low flush toilets, ☐ Toilet leak tablets, ☐ Low flow showerheads, ☐ Faucet aerators;	☐ Education about ☐ Free distribution of ☐ Rebate for ☐ Other	☐ Gas company ☐ Electric company ☐ Watershed organization
☐ Water conserving washing machines, ☐ Dish washers, ☐ Water softeners;	☐ Education about ☐ Free distribution of ☐ Rebate for ☐ Other	☐ Gas company ☐ Electric company ☐ Watershed organization
☐ Rain gardens, ☐ Rain barrels, ☐ Native/drought tolerant landscaping, etc.	☐ Education about ☐ Free distribution of ☐ Rebate for ☐ Other	☐ Gas company ☐ Electric company ☐ Watershed organization

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

The City is not planning any retrofitting programs at this time.

E. Education and Information Programs

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

Proposed Education Programs

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

Table 31. Current and Proposed Education Programs

Education Methods	General summary of topics	#/Year	Frequency
Billing inserts or tips printed on the actual bill			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Consumer Confidence Reports	Comparison of water quality compared to required standards	1/Year	☒ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Press releases to traditional local news outlets (e.g., newspapers, radio and TV)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies

Education Methods	General summary of topics	#/Year	Frequency
Social media distribution (e.g., emails, Facebook, Twitter)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Paid advertisements (e.g., billboards, print media, TV, radio, web sites, etc.)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Presentations to community groups			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Staff training			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Facility tours			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Displays and exhibits	PW staff attend a 'booth' at community events with a board showing the water supply system to help educate members of the community.	variable	☒ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Marketing rebate programs (e.g., indoor fixtures & appliances and outdoor practices)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Community news letters	Include articles of a topical nature as available space permits	2/ Year	☐ Ongoing ☒ Seasonal ☐ Only during declared emergencies
Direct mailings (water audit/retrofit kits, showerheads, brochures)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Information kiosk at utility and public buildings	Postings could include important information during emergencies or other general information.	As req'd	☒ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Public service announcements	Announcements could include important information during emergencies or other general information.	As req'd	☒ Ongoing ☐ Seasonal ☐ Only during declared emergencies

Education Methods	General summary of topics	#/Year	Frequency
Cable TV Programs	Short video articles have been produced by the local cable channel relating to hydrant flushing and a visit to a water treatment plant. They are available to view on the City website.	variable	☒ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Demonstration projects (landscaping or plumbing)	The City has constructed raingardens at City Hall and Public Works as a demonstration of native plantings and benefits for stormwater.	variable	☒ Ongoing ☐ Seasonal ☐ Only during declared emergencies
K-12 education programs (Project Wet, Drinking Water Institute, presentations)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Community events (children's water festivals, environmental fairs)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Community education classes			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Water week promotions			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Website (include address): http://www.robbinsdalemn.com/city-government/city-departments/public-works	Water conservation tips Wellhead Protection Plan	Year Round	☒ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Targeted efforts (large volume users, users with large increases)			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies
Notices of ordinances	Reminders of water use restrictions and rules	As req'd	☐ Ongoing ☐ Seasonal ☒ Only during declared emergencies
Emergency conservation notices	Explanation of limitations on water usage	As req'd	☐ Ongoing ☐ Seasonal ☒ Only during declared emergencies

Education Methods	General summary of topics	#/Year	Frequency
Other:			☐ Ongoing ☐ Seasonal ☐ Only during declared emergencies

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

Continue with existing programs and investigate opportunity for new programs.

PART 4. ITEMS FOR METROPOLITAN AREA COMMUNITIES

Minnesota Statute 473.859 requires WSPs to be completed for all local units of government in the seven-county Metropolitan Area as part of the local comprehensive planning process.

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

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

A. Water Demand Projections through 2040

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

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

B. Potential Water Supply Issues

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

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

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

C. Proposed Alternative Approaches to Meet Extended Water Demand Projections

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

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

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

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

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

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

Source Water Protection Strategies

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

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

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

Local Control	Schedule to Implement	Potential Partners
☒ None at this time	Review with WHP Amendment process	
☐ Comprehensive planning that guides development in vulnerable drinking water supply management areas		
☐ Zoning overlay		
☐ Other:		

Technical assistance

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

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

GLOSSARY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Acronyms and Initialisms

AWWA – American Water Works Association
C/I/I – Commercial/Institutional/Industrial
CIP – Capital Improvement Plan
GIS – Geographic Information System
GPCD – Gallons per capita per day
GWMA – Groundwater Management Area – North and East Metro, Straight River, Bonanza,
MDH – Minnesota Department of Health
MGD – Million gallons per day
MG – Million gallons
MGL – Maximum Contaminant Level
MnTAP – Minnesota Technical Assistance Program (University of Minnesota)
MPARS – MN/DNR Permitting and Reporting System (new electronic permitting system)
MRWA – Minnesota Rural Waters Association
SWP – Source Water Protection
WHP – Wellhead Protection

APPENDICES TO BE SUBMITTED BY THE WATER SUPPLIER

Appendix 1: Well records and maintenance summaries
Go to Part 1C for information on what to include in appendix

Appendix 2: Water level monitoring plan
Go to Part 1E for information on what to include in appendix

Appendix 3: Water level graphs for each water supply well
Go to Part 1E for information on what to include in appendix

Appendix 4: Capital Improvement Plan
Go to Part 1E for information on what to include in appendix

Appendix 5: Emergency Telephone List
Go to Part 2C for information on what to include in appendix

Appendix 6: Cooperative Agreements for Emergency Services
Go to Part 2C for information on what to include in appendix

Appendix 7: Municipal Critical Water Deficiency Ordinance
Go to Part 2C for information on what to include in appendix

Appendix 8: Graph of Ten Years of Annual Per Capita Water Demand for Each Customer Category
Go to Objective 4 in Part 3B for information on what to include in appendix

Appendix 9: Water Rate Structure
Go to Objective 6 in Part 3B for information on what to include in appendix

Appendix 10: Ordinances or Regulations Related to Water Use
Go to Objective 7 in Part 3B for information on what to include in appendix

Appendix 11: Implementation Checklist
Provide a table that summarizes all the actions that the public water supplier is doing, or proposes to do, with estimated implementation dates.

Appendix 12: Sources of Information for Table 10
Provide links or references to the information used to complete Table 10. If the file size is reasonable, provide source information as attachments to the plan.

Appendix 1

Well Records and Maintenance Summaries

Unique No. 00211995

County Name Hennepin

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

Update Date 2003/04/30

Entry Date 1991/08/24

Township Name	Township	Range	Dir	Section	Subsection
	29	24	W	6	BDDAAD

Well Depth 627 ft | Depth Completed 376 ft | Date Well Completed /19/37

Well Name ROBBINSDALE 1

Drilling Method Cable Tool

Contact's Name ROBBINSDALE 1
4129 HUBBARD N AV
ROBBINSDALE MN 55422

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No
From ft to ft

Use Community Supply (municipal)

Casing Drive Shoe? ☐ Yes ☐ N

Hole Diameter

Casing Diameter Weight(lbs/ft)
20 in. to 162 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT			0	60
ST PETER SANDSTONE			60	202
SHAKOPEE LIMEROCK			202	329
JORDAN SANDROCK			329	397
SHALE			397	423
LIMEROCK			423	460
SHALE			460	627

Screen N

Open Hole From 162 ft to 627 ft

Make Type

Static Water Level 51 ft from Land surface Date /19/38

PUMPING LEVEL (below land surface)
ft. after hrs pumping g.p.m.

Well Head Completion
Pitless adapter mfr Model
Casing Protection ☐ 12 in. above grade
☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr name
Model HP 0 Volts
Drop Pipe Length ft. Capacity g p m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

REMARKS, ELEVATION, SOURCE OF DATA, etc.

PER WAYNE JUNES CITY OF ROBBINSDALE:

WELL REHABILITATED 1995 BACKFILLED WITH GROUT

TO 376'

USGS Quad: Minneapolis North Elevation 883

Aquifer: OSPC Alt Id: 75-6216

Well CONTRACTOR CERTIFICATION Lic Or Reg No 27022

License Business Name

Name of Driller

Report Copy

Unique No. 00211996
County Name Hennepin

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

Update Date 2003/04/30
Entry Date 1991/08/24

Township Name	Township	Range	Dir	Section	Subsection
	29	24	W	6	ACCBCB

Well Depth 624 ft | Depth Completed 413 ft | Date Well Completed 1945/00/00

Well Name ROBBINSDALE 2

Drilling Method Cable Tool

Contact's Name ROBBINSDALE 2
4123 HUBBARD N AV
ROBBINSDALE MN 55422

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No
From ft to ft

Use Community Supply (municipal)

Casing Drive Shoe? ☐ Yes ☐ N

Hole Diameter

Casing Diameter Weight(lbs/ft)
20 in. to 148 ft
14 in. to 280 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT			0	58
ST PETER SANDROCK			58	200
SHAKOPEE LIMEROCK			200	324
JORDAN SANDROCK			324	333
SANDROCK			333	415
SHALE			415	427
SHALE			427	495
SHALE			495	584
SANDROCK			584	624

Screen N | Open Hole From 280 ft to 413 ft

Make Type

Static Water Level 52 ft from Land surface Date 1992/12/29

PUMPING LEVEL (below land surface)
82 ft. after hrs pumping 900 g p m

Well Head Completion
Pitless adapter mfr Model
Casing Protection ☐ 12 in above grade
☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Material	From	To (ft.)	Amount(yds/bags)	
G	0	148	0	
6	0	280	0	S

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y
Mfr name LAYNE &BOWLER
Model HP 40 Volts 230
Drop Pipe Length 110 ft Capacity 900 g p m
Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

Well CONTRACTOR CERTIFICATION Lic Or Reg No 27022
License Business Name
Name of Driller WENDT, F.

REMARKS, ELEVATION, SOURCE OF DATA, etc.

GAMMA LOGGED 7-14-1992.

RELINED OLD WELL 1-7-1993. GROUTED UP BOTTOM OF WELL FROM 558-413 FT.

USGS Quad: Minneapolis North Elevation 883
Aquifer: OPCJ Alt Id: 75-6216

Report Copy

HE-01205-06 (Rev. 9/96)

Unique No. 00200215
County Name Hennepin

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

Update Date 2000/10/19
Entry Date 1991/08/24

Township Name	Township	Range	Dir	Section	Subsection
	29	24	W	8	BDCAAC

Well Depth 478 ft | Depth Completed 478 ft | Date Well Completed 1948/00/00

Well Name ROBBINSDALE 3

Drilling Method Cable Tool

Contact's Name ROBBINSDALE 3

ROBBINSDALE MN 55422

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No
From ft to ft

Use Community Supply (municipal)

Casing Drive Shoe? ☐ Yes ☐ N

Hole Diameter

Casing Diameter Weight(lbs/ft)
20 In. to 335 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT			0	79
LIMEROCK			79	90
SANDROCK & SHALE			90	273
LIMEROCK & SANDROCK			273	382
SANDROCK			382	468
SHALE & SANDROCK			468	478

Screen ~~N~~ Y | Open Hole From 335 ft. to 478 ft

Make Type
Diameter 12" Slot Length 117.2' set 360.5' to 477.7'

Static Water Level 26 ft from Land surface Date /19/54

PUMPING LEVEL (below land surface)
ft after hrs pumping g p m

Well Head Completion
Pitless adapter mfr Model
Casing Protection ☐ 12 in. above grade
☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr name
Model HP 0 Volts
Drop Pipe Length ft Capacity g p m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

USGS Quad: Minneapolis North Elevation 928
Aquifer: OPCJ Alt Id: 75-6216

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No 27022
License Business Name
Name of Driller

Report Copy

HE-01205-06 (Rev. 9/96)

Unique No. 00211997
County Name Hennepin

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

Update Date 2003/12/15
Entry Date 1991/08/24

Township Name	Township	Range	Dir	Section	Subsection
	29	24	W	6	CCAABC

Well Depth 404 ft | Depth Completed 404 ft | Date Well Completed 1953/00/00

Well Name ROBBINSDALE 4

Drilling Method Cable Tool

Contact's Name ROBBINSDALE 4

ROBBINSDALE MN 55422

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No
From ft to ft

Use Community Supply (municipal)

Casing Drive Shoe? ☐ Yes ☐ N

Hole Diameter

Casing Diameter Weight(lbs/ft)
24 in. to 65 ft
20 In. to 157 ft
16 in. to 213 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
SAND & GRAVEL			0	39
SOFT SANDROCK ST. PETE			39	54
HARD SANDROCK ST. PETE			54	85
SOFT SANDROCK ST. PETE			85	132
SHALE & LIMESTONE			132	135
RED SHALE			135	151
HARD SHALE & SANDROCK			151	185
SANDROCK, SHALE MIXED			185	202
SHAKOPEE LIMEROCK			202	303
JORDAN SANDROCK			303	402
SHALE			402	404

Screen N | Open Hole From 213 ft to 404 ft.

Make Type

Static Water Level 36 ft from Land surface Date /19/53

PUMPING LEVEL (below land surface)
61 ft. after hrs. pumping 900 g.p.m.

Well Head Completion
Pitless adapter mfr Model
Casing Protection ☐ 12 in. above grade
☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☐ Yes ☐ No

Nearest Known Source of Contamination
ft. direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed Y
Mfr name
Model HP 75 Volts 220
Drop Pipe Length 111 ft. Capacity E+03 g.p.m
Type T

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

REMARKS, ELEVATION, SOURCE OF DATA, etc.

38TH AND SCOTT (NEAR SENIOR HIGH SCHOOL)

USGS Quad: Minneapolis North Elevation 871
Aquifer: OPCJ Alt Id: 75-6216

Well CONTRACTOR CERTIFICATION Lic Or Reg No 27058
License Business Name
Name of Driller KEYS WELL

Report Copy

HE-01205-06 (Rev. 9/96)

Unique No. 00211998
County Name Hennepin

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

Update Date 1993/12/07
Entry Date 1991/08/24

Township Name	Township	Range	Dir	Section	Subsection
	29	24	W	8	BDCAAC

Well Depth 467 ft | Depth Completed 467 ft | Date Well Completed 1956/00/00

Well Name ROBBINSDALE 5

Drilling Method Cable Tool

Contact's Name ROBBINSDALE 5
3201 LOWRY AV
ROBBINSDALE MN 55422

Drilling Fluid

Well Hydrofractured? ☐ Yes ☐ No
From ft to ft

Use Community Supply (municipal)

Casing Drive Shoe? ☐ Yes ☐ N

Hole Diameter
0 in. to 467 ft

Casing Diameter Weight(lbs/ft)
24 in. to 280 ft
16 in. to 280 ft

GEOLOGICAL MATERIAL	COLOR	HARDNESS	FROM	TO
DRIFT SAND & GRAVEL			0	87
HARD PLATTEVILLE LIMER			87	90
BROKEN LIMEROCK & HAR			90	100
HARD ST PETER SANDSTO			100	121
SOFT ST PETER SANDSTO			121	207
RED SHALE			207	259
SHAKOPEE LIMEROCK			259	380
JORDAN SANDROCK			380	460
SHALE			460	467

Screen N
Make Type

Open Hole From 280 ft. to 467 ft.

Static Water Level 0 ft from Land surface Date /19/56

PUMPING LEVEL (below land surface)
ft after hrs pumping g.p.m.

Well Head Completion
Pitless adapter mfr Model
Casing Protection ☐ 12 in. above grade
☐ At-grade(Environmental Wells and Borings ONLY)

Grouting Information Well grouted? ☑ Yes ☐ No

Nearest Known Source of Contamination
ft direction type
Well disinfected upon completion? ☐ Yes ☐ No

Pump ☐ Not Installed Date Installed
Mfr name
Model HP 0 Volts
Drop Pipe Length ft Capacity g.p.m
Type

Any not in use and not sealed well(s) on property? ☐ Yes ☐ No

Was a variance granted from the MDH for this Well? ☐ Yes ☐ No

Well CONTRACTOR CERTIFICATION Lic. Or Reg. No.
License Business Name
Name of Driller

USGS Quad: Minneapolis North Elevation 928
Aquifer: MTPL Alt Id: 75-6216

Report Copy

HE-01205-06 (Rev. 9/96)

Drinking Water Well Maintenance Summaries – 2010-2017

Well #1 (00211995)

October 2016 – Total Rehabilitation

Well #2 (00211996)

February 2010 – Inspection and Maintenance

June 2012 – Inspection and Maintenance

Well #3 (00200215)

None in the time frame (last rehabilitation in July 2004)

Well #4 (00211997)

April 2016 – Total Rehabilitation

Well #5 (00211998)

October 2017 – Total Rehabilitation

Appendix 2

Water Level Monitoring Plan

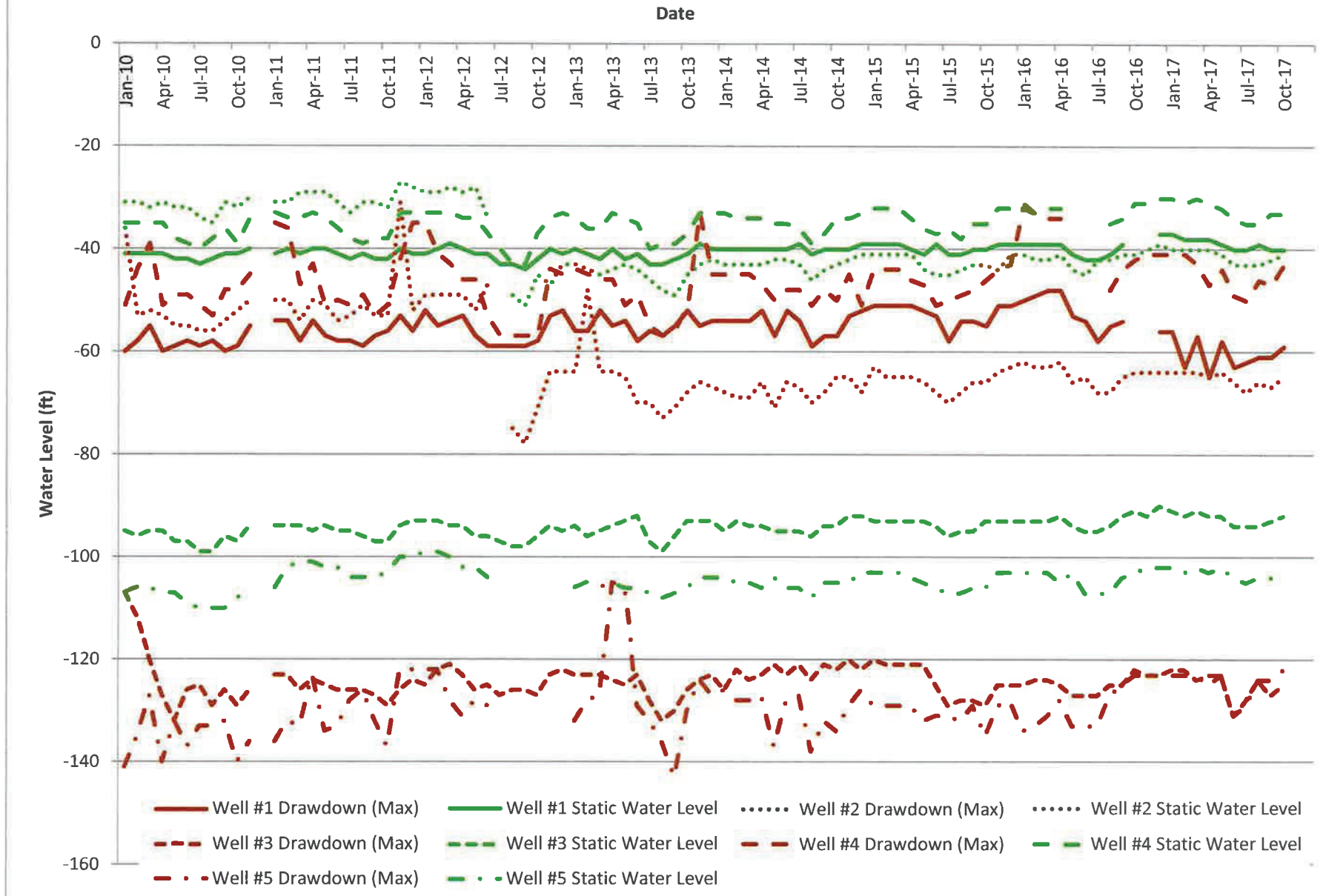
The existing 5 production wells include continuous SCADA monitoring. Daily maximum and minimum water levels for each well will be recorded as part of the daily utility system report.

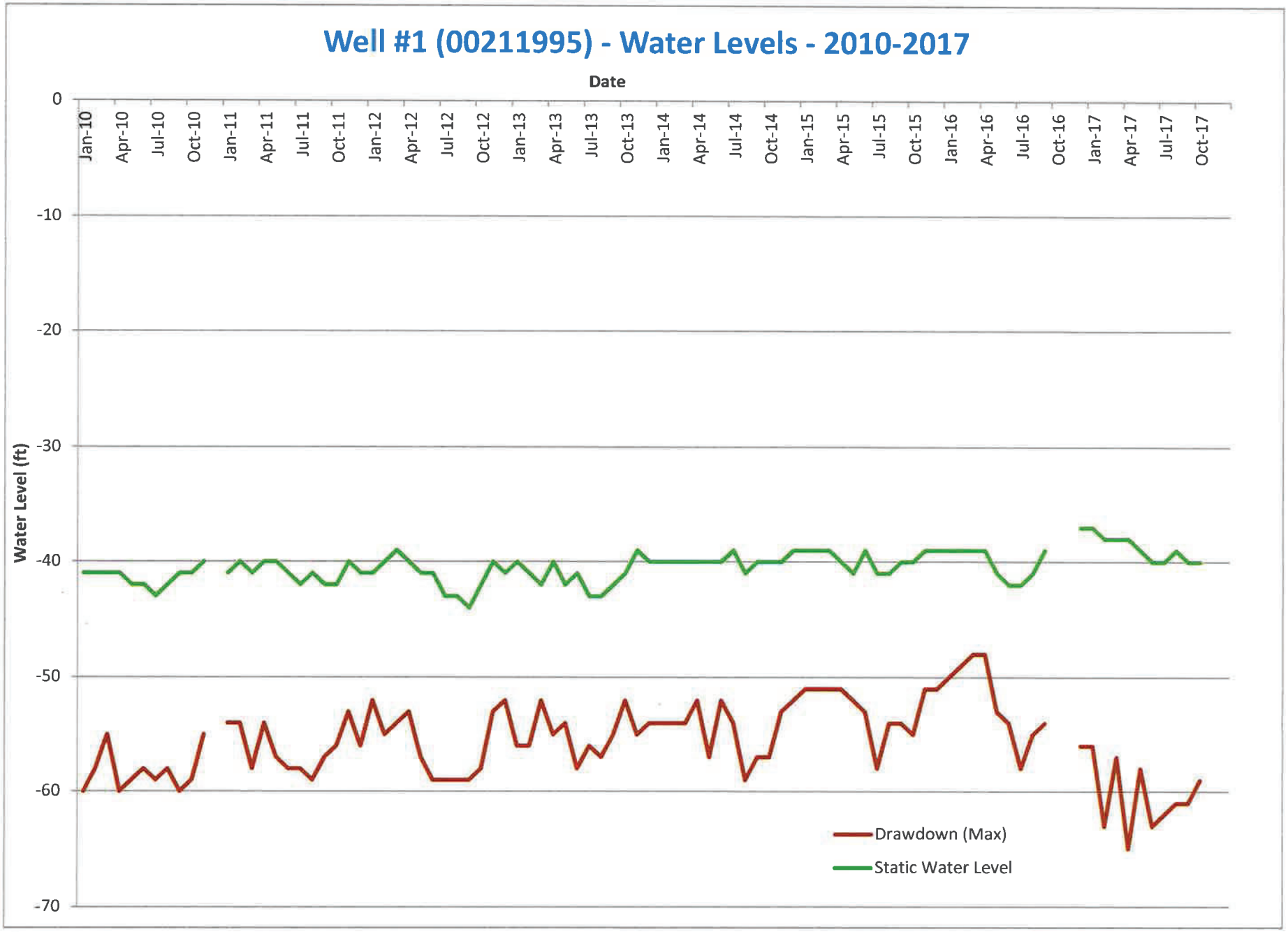
Any future replacement wells will also include daily maximum and minimum water levels recorded as part of the daily utility system report.

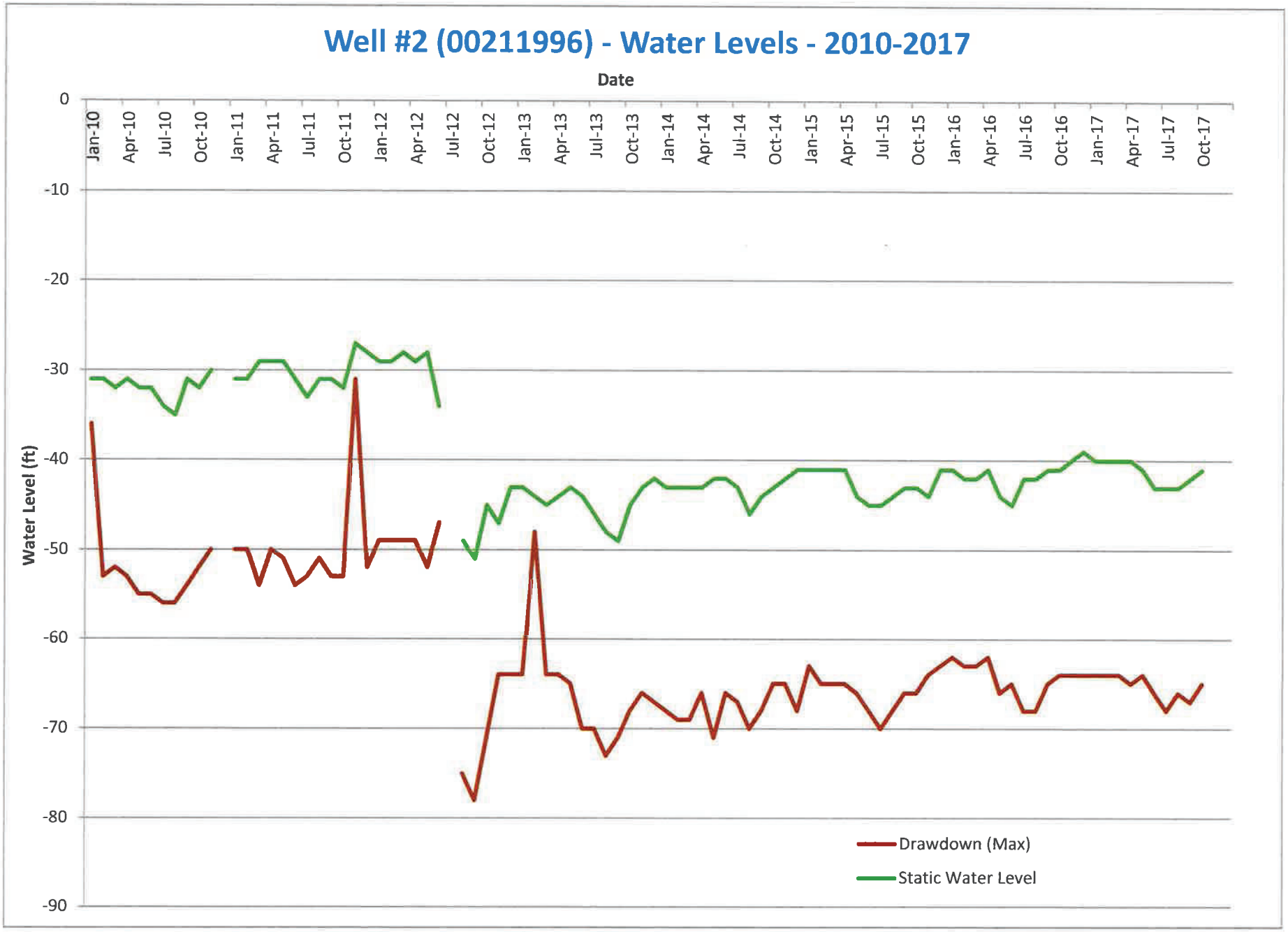
Appendix 3

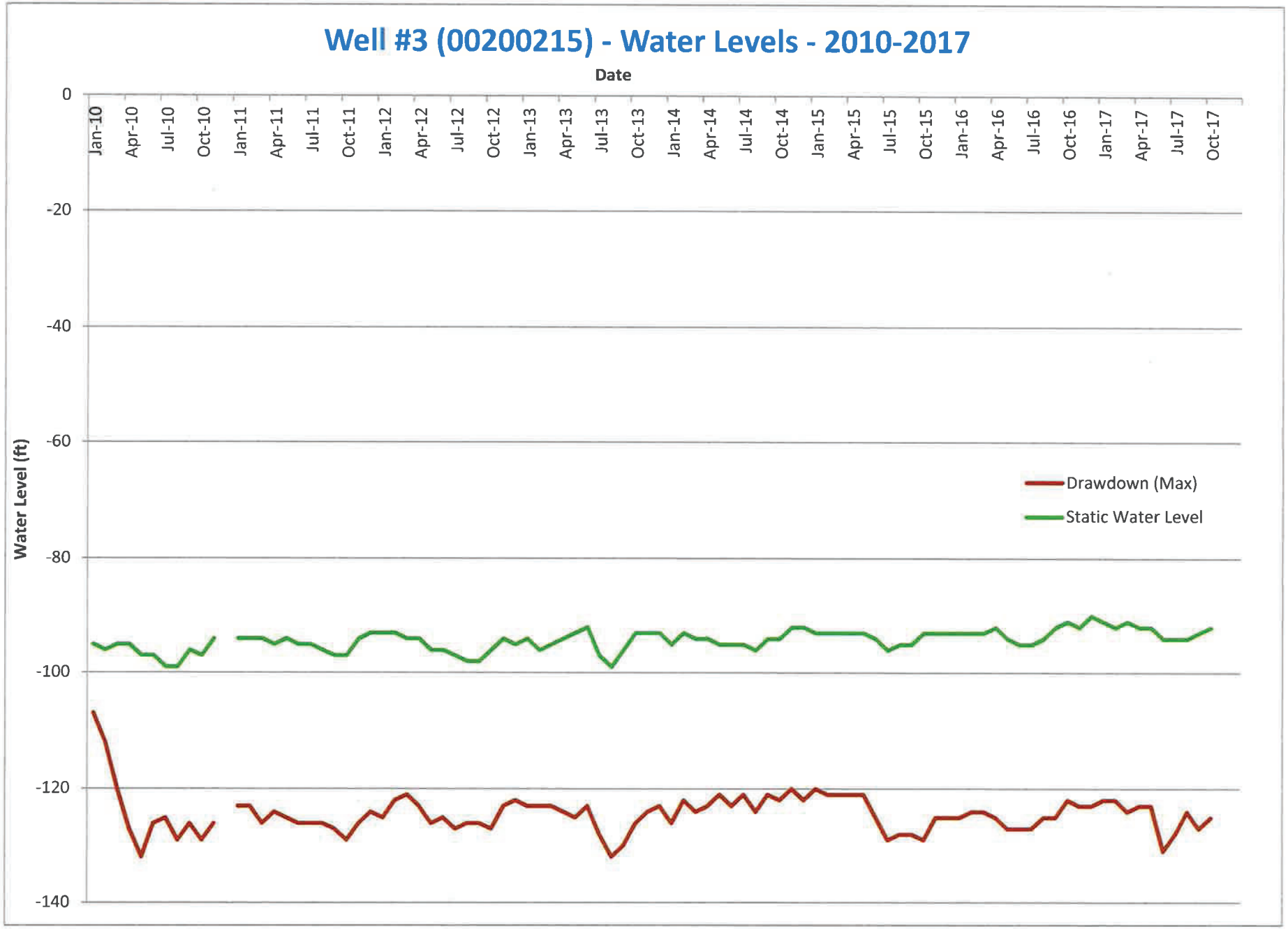
Water Level Graphs for Each Water Supply Well

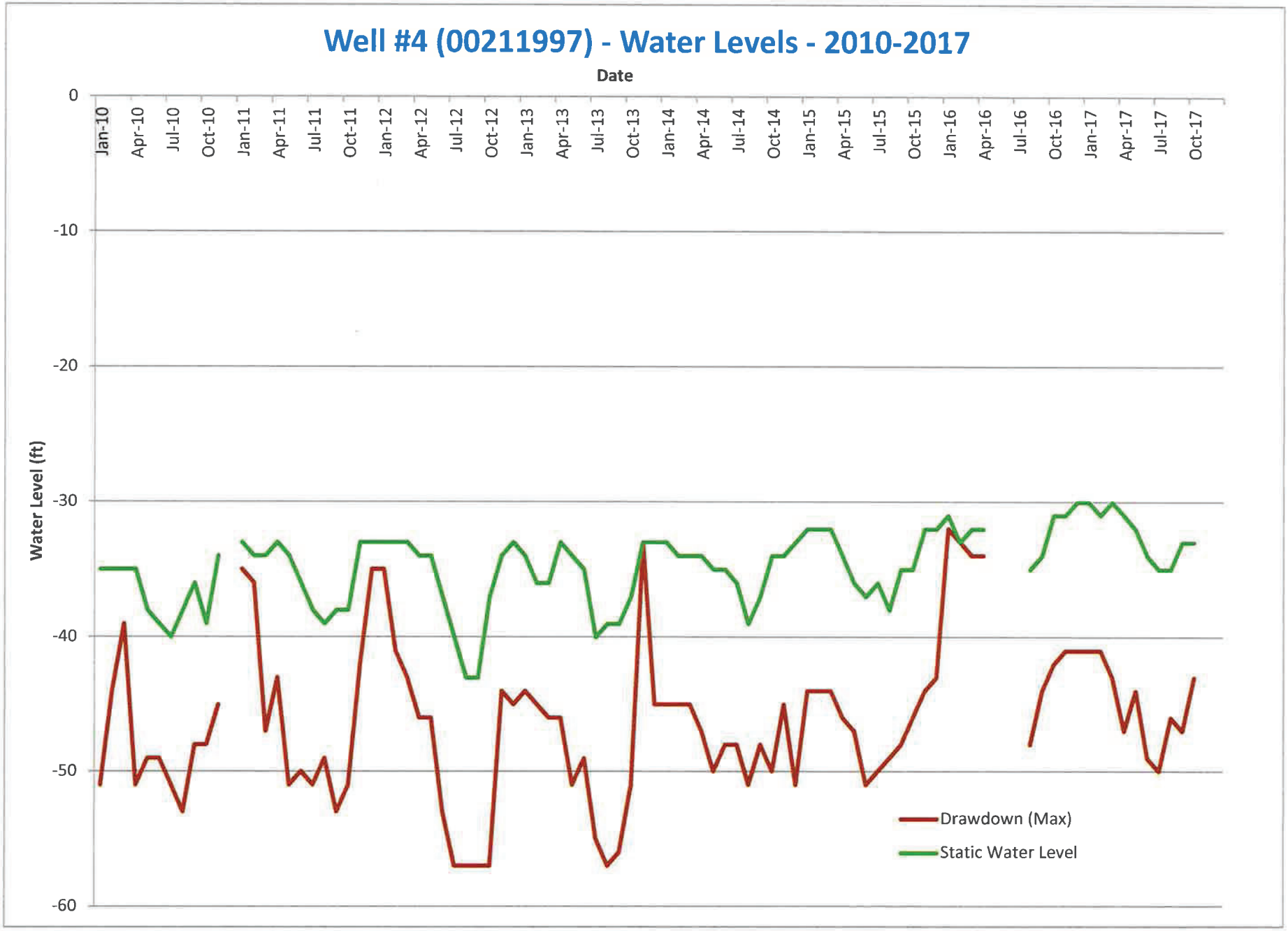
Appendix 3 - Water Levels for Each Water Supply Well (2010-2017)

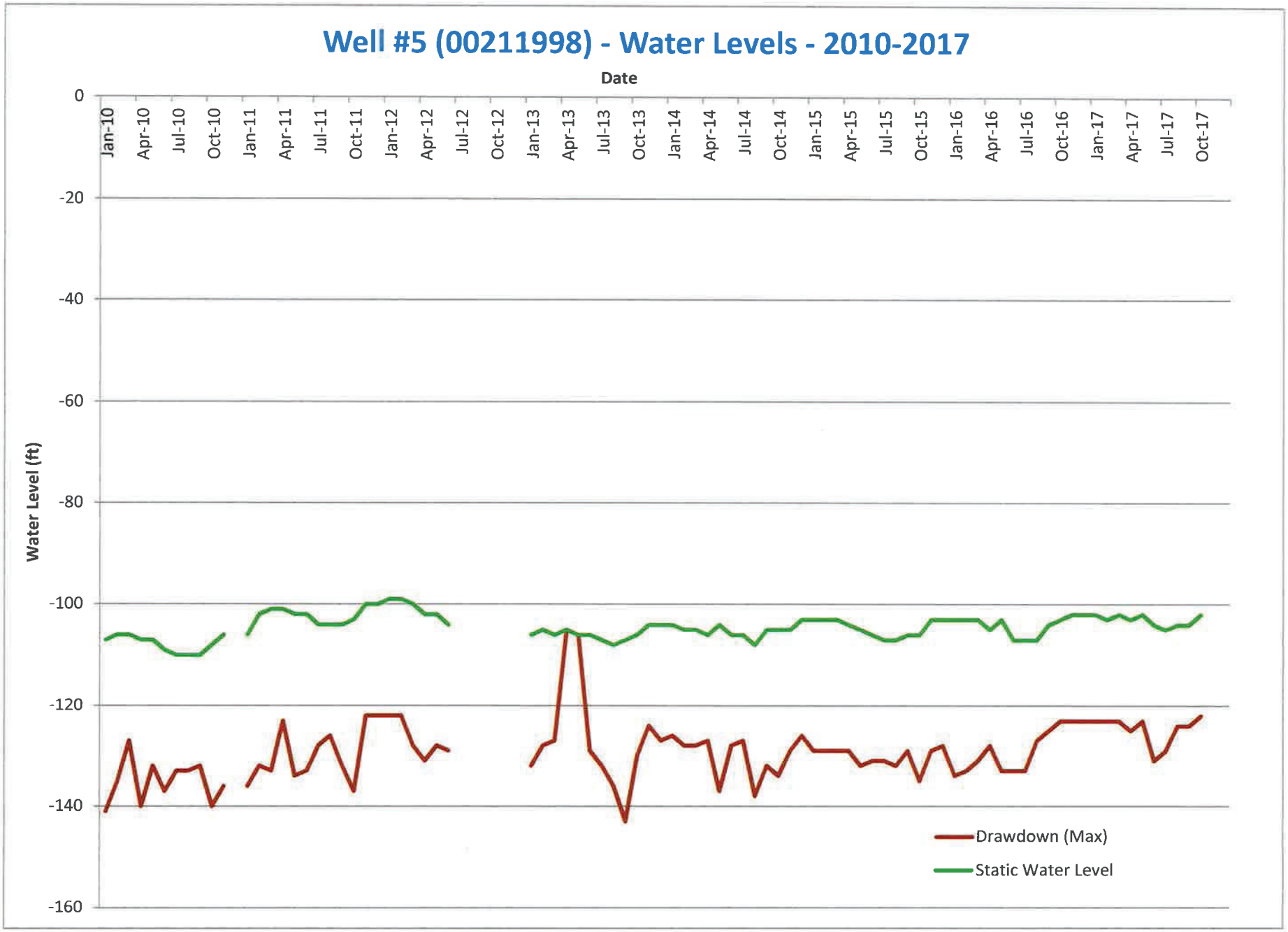



Well #1 (00211995) - Water Levels - 2010-2017
Date
Water Level (ft)
0
-10
-20
-30
-40
-50
-60
-70
Jan-10
Apr-10
Jul-10
Oct-10
Jan-11
Apr-11
Jul-11
Oct-11
Jan-12
Apr-12
Jul-12
Oct-12
Jan-13
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Drawdown (Max)
Static Water Level


Well #2 (00211996) - Water Levels - 2010-2017
Date
Water Level (ft)
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
Jan-10
Apr-10
Jul-10
Oct-10
Jan-11
Apr-11
Jul-11
Oct-11
Jan-12
Apr-12
Jul-12
Oct-12
Jan-13
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Drawdown (Max)
Static Water Level


Well #3 (00200215) - Water Levels - 2010-2017
Date
Water Level (ft)
0
-20
-40
-60
-80
-100
-120
-140
Jan-10
Apr-10
Jul-10
Oct-10
Jan-11
Apr-11
Jul-11
Oct-11
Jan-12
Apr-12
Jul-12
Oct-12
Jan-13
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Drawdown (Max)
Static Water Level

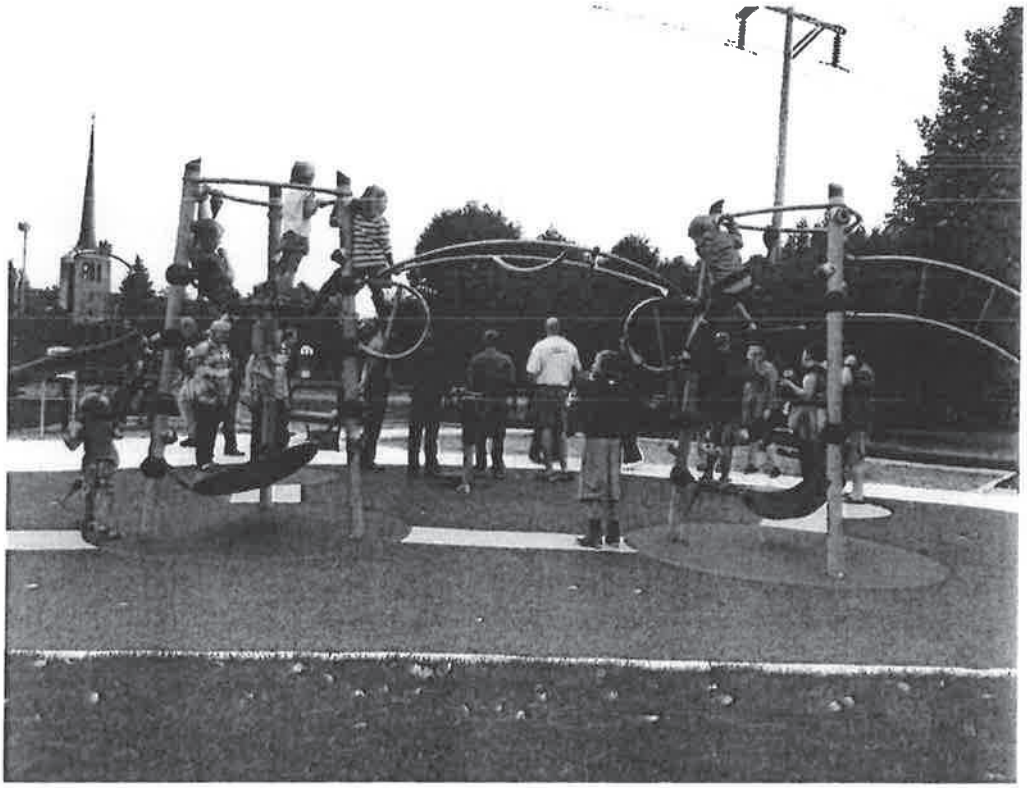

Well #4 (00211997) - Water Levels - 2010-2017
Date
Water Level (ft)
0
-10
-20
-30
-40
-50
-60
Jan-10
Apr-10
Jul-10
Oct-10
Jan-11
Apr-11
Jul-11
Oct-11
Jan-12
Apr-12
Jul-12
Oct-12
Jan-13
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Drawdown (Max)
Static Water Level


Well #5 (00211998) - Water Levels - 2010-2017
Date
Water Level (ft)
0
-20
-40
-60
-80
-100
-120
-140
-160
Jan-10
Apr-10
Jul-10
Oct-10
Jan-11
Apr-11
Jul-11
Oct-11
Jan-12
Apr-12
Jul-12
Oct-12
Jan-13
Apr-13
Jul-13
Oct-13
Jan-14
Apr-14
Jul-14
Oct-14
Jan-15
Apr-15
Jul-15
Oct-15
Jan-16
Apr-16
Jul-16
Oct-16
Jan-17
Apr-17
Jul-17
Oct-17
Drawdown (Max)
Static Water Level

Appendix 4

Capital Improvement Plan

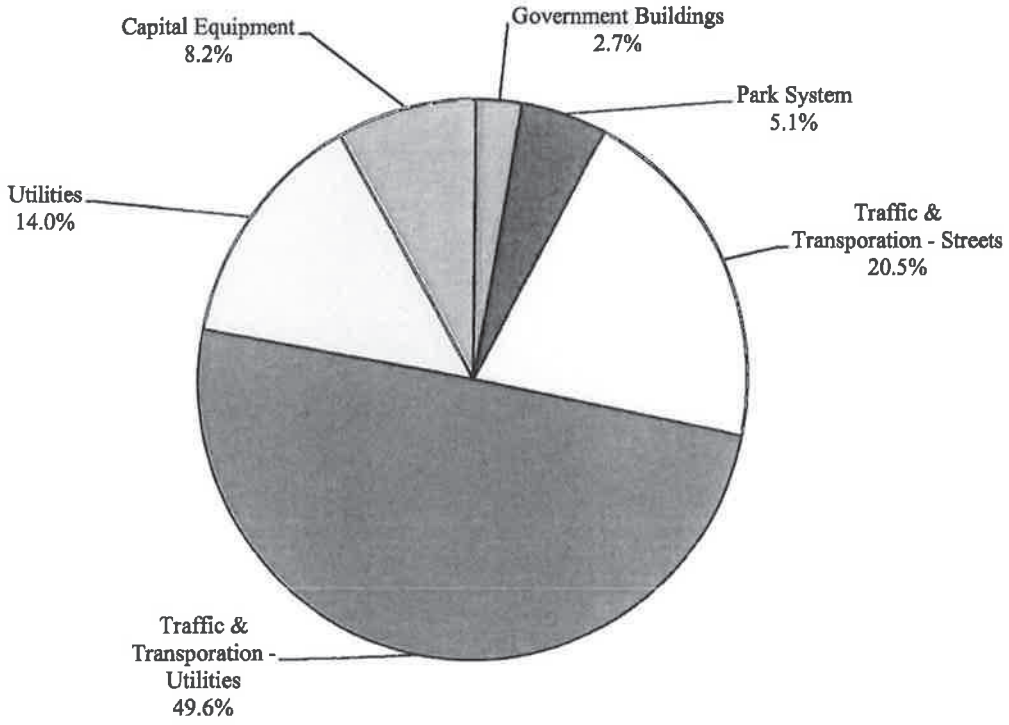
Proposed
Capital Improvement Plan
2017-2021



City of Robbinsdale, Minnesota

City of Robbinsdale, Minnesota
Capital Improvement Plan 2017-2021

2017-2021 CIP by Section

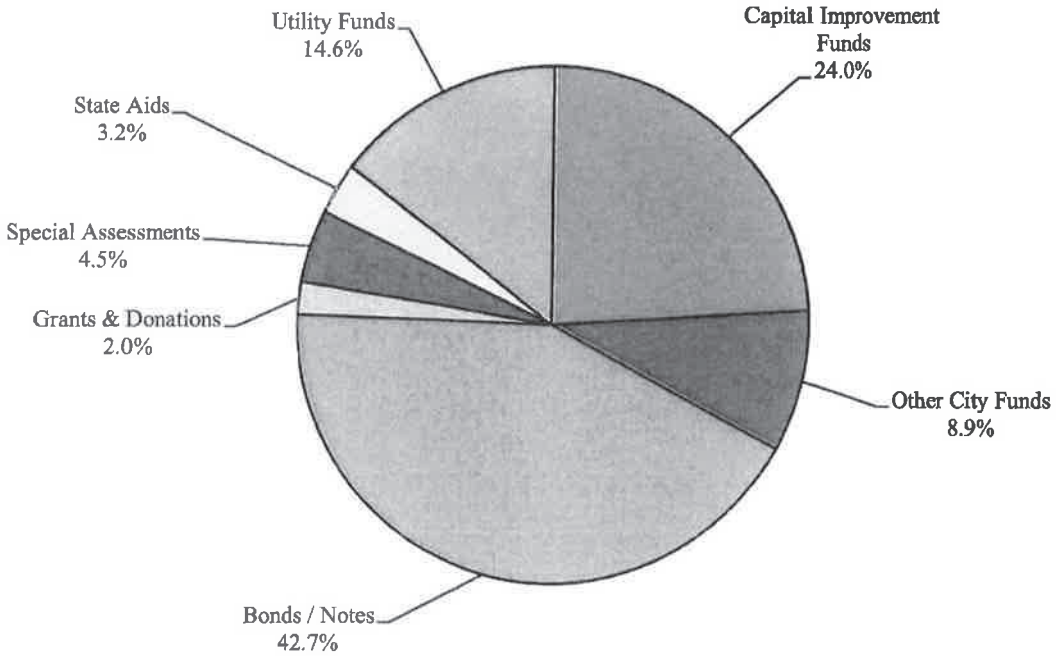


Government Buildings	$	1,741,760
Park System		3,294,500
Traffic & Transportation - Streets		13,342,213
Traffic & Transportation - Utilities		32,335,717
Utilities		9,102,000
Capital Equipment		5,326,100
Total	$	65,142,290

Note: Traffic & Transportation - Utilities refers to costs associated with the replacement of the undeground pipes related to street reconstruction projects.

City of Robbinsdale, Minnesota
Capital Improvement Plan 2017-2021

2017-2021 CIP by Funding Source



Capital Improvement Funds	
Capital Improvement Fund	$ 2,217,000
Permanent Improvement Revolving Fund	13,448,213
Total Capital Improvement Funds	15,665,213
Other City Funds	
Central Garage Fund	3,884,160
Central Services Fund	1,027,400
Equipment Replacement Fund	855,200
Total Other City Funds	5,766,760
Bonds / Notes	27,822,970
Grants & Donations	1,325,600
Special Assessments	2,959,694
State & County Aids	2,105,860
Utility Funds	9,496,193
Total	$ 65,142,290

City of Robbinsdale, MN

5 Year Capital Improvement Plan 2016 - 2020

2017 thru 2021

PROJECTS & FUNDING SOURCES BY DEPARTMENT

Department	Project#	Priority	2017	2018	2019	2020	2021	Total
1 - Government Buildings								
City Hall - Replace Broken Subsided Concrete Walk	101	2	20,000	5,000				25,000
PW Garage - Roof Replacement	112	4	25,000	250,000				275,000
PW Garage - Yard Enhancements	119	2	12,000					12,000
PW Garage - Building and Yard Security	122	2	38,000					38,000
City Hall - Roof Replacement	140	2	250,000					250,000
Public Works - Wall & Parking along Sth Boundary	145	3				21,260		21,260
PW Garage - Stormwater Treatment Area	149	2	20,000					20,000
PW Garage - Above Ground Fuel Storage	153	3					10,000	10,000
Library - Rehabilitation	154	1	35,000					35,000
Library - Parking Lot Construction	158	2		22,500				22,500
Police & Fire - Energy Efficiency Improvements	160	2	30,000					30,000
Library - Energy Efficiency Improvements	161	2	4,000					4,000
PW Garage - Energy Efficiency Improvements	162	2	16,000					16,000
City Hall - Energy Efficiency Improvements	163	2	15,000					15,000
City Hall - Replace Rooftop Glass	164	2	70,000					70,000
City Hall - Screening of Rooftop AC Units	165	2	4,000					4,000
Police & Fire - Solar Hot Water	169	2				100,000		100,000
Police & Fire - Lighting Upgrade	171	2	30,000					30,000
City Buildings - New Master Key System	177	1	18,000					18,000
City Hall - Railings and Access Improvements	178	2	14,000					14,000
PW Garage - Repairs	181	1	40,000	40,000	40,000	40,000	40,000	200,000
City Hall - LED Light Retrofit	183	2	30,000	30,000				60,000
Library - Downstairs Accessibility	184	3	22,000	220,000				242,000
City Hall - Security Improvements	186	2	12,000					12,000
City Hall - Council Chambers Sliding Doors	187	2		30,000				30,000
City Hall - Entry Monument Sign Replacement	188	1	50,000					50,000
PW Garage - Salt Shed Painting	189	2	12,000					12,000
PW Garage - Repainting	190	1	8,000					8,000
PW Garage - Reroof Salt Shed	191	2		40,000				40,000
City Hall - New Inspections Window	192	1	30,000					30,000
Buildings Small Works	197	2	9,000	9,500	9,500	10,000	10,000	48,000
1 - Government Buildings Total			**814,000**	**647,000**	**49,500**	**171,260**	**60,000**	**1,741,760**
Central Garage Fund - Building			171,000	330,000	40,000	61,260	40,000	642,260
Central Garage Fund - Equipment Replacement							10,000	10,000
Central Services Fund			521,000	74,500	9,500	75,400	10,000	690,400
CIF Government Buildings			39,000	22,500				61,500
CIF Park Improvements			9,000					9,000

Department	Project#	Priority	2017	2018	2019	2020	2021	Total
Grants			22,000	220,000		34,600		276,600
PIR Other Infrastructure			50,000					50,000
Water Utility Fund			2,000					2,000
1 - Government Buildings Total			814,000	647,000	49,500	171,260	60,000	1,741,760
2 - Park System								
Lee Park Improvements	207	1	40,000	465,000	375,000			880,000
Graeser Park Improvements	211	4		10,000			180,000	190,000
Triangle Park - Reconstruction	231	2		885,000				885,000
Parkview Park Playground Equipment	232	2	70,000					70,000
Sunset Park Playground Equipment	235	4			70,000			70,000
Sanborn Park Playground Equipment	236	3		100,000				100,000
Lakeview Terrace Park Playground Equipment	239	4					120,000	120,000
Lakeview Terrace Park Concession Stand Improvement	240	4	25,000					25,000
Manor Park Playground Equipment	241	4			100,000			100,000
Sanborn and Manor Park Backstops and Fencing	242	4		75,000				75,000
Lakeview Terrace Park - Reconstruction	249	2	168,500	219,000				387,500
Hollingsworth Park - Prairie Maintenance	254	2		2,000		2,000		4,000
Hollingsworth Park - Repairs to Fishing Dock	264	1	28,000					28,000
Lee Park - 2nd Exit to Park Building	265	1	5,000					5,000
Norma Kelly Park - Playground Replacement	272	2	140,000					140,000
Sunset Park - Stormsewer Replacement	274	2	45,000					45,000
Lee Park - Trail Connections	275	2	20,000	36,000				56,000
Sanborn Park - Resurface Tennis Courts	276	2		14,000				14,000
Manor Park - Splash Pad Joint Sealing	277	1	2,000					2,000
Triangle Park - Wading Pool Drains	278	1	4,000					4,000
Triangle Park - Wading Pool Painting	279	1	8,500					8,500
Park Furniture Replacement Program	296	2	7,500	7,500	7,500	7,500	7,500	37,500
Parks Small Works	297	2	9,000	9,000	10,000	10,000	10,000	48,000
2 - Park System Total			**572,500**	**1,822,500**	**562,500**	**19,500**	**317,500**	**3,294,500**
CIF Park Improvements			448,500	1,096,500	262,500	19,500	317,500	2,144,500
Grants			59,000	600,000	300,000			959,000
PIR Pedestrian / Bicycle Facilities			20,000	36,000				56,000
Storm Sewer Utility Fund			45,000	90,000				135,000
2 - Park System Total			**572,500**	**1,822,500**	**562,500**	**19,500**	**317,500**	**3,294,500**
3 - Traffic & Transport								
Alley Reconstruction Program	301	1	20,000	20,000	25,000	25,000	25,000	115,000
France Avenue - Reconstruction 27th to Lowry Ave	311	3		160,560	170,300		1,712,740	2,043,600
Lowry Ave - Reconstruct York to Abbott Ave	317	3			58,830		867,170	926,000
Noble Avenue - Reconstruct 36th to 41st Ave	318	3	6,455,000					6,455,000
Tree Removal - West Broadway 40th - 42nd	333	1	40,000	40,000	40,000	40,000	40,000	200,000
France - Reconstruct 31st to 33rd	344	3		318,460		1,488,540		1,807,000
County Road 9 - Reconstruction CR81 to Parkway	352	3	290,000	290,000	290,000	290,000		1,160,000

Department	Project#	Priority	2017	2018	2019	2020	2021	Total
36th Avenue - Video Detectors for Signals at Noble	354	3	40,000					40,000
Halifax / Grimes / 46th Reconstruction	369	3			223,450	1,713,550		1,937,000
Xenia / Welcome / 41st Reconstruction	370	3					254,770	254,770
Yates / Zane / 41st Reconstruction	371	4					255,360	255,360
Grimes / Halifax / Islemount / 42nd / 43rd	372	4			272,320		3,132,680	3,405,000
38th Avenue - Reconstruction Railroad to Hubbard	376	3	58,000	443,000				501,000
Drew / McNair - 27th to Lowry Reconstruction	378	3		22,000		1,869,000		1,891,000
Shoreline/Chowen - CR81 to 43rd - Reconstruction	379	3	100,000		4,554,000			4,654,000
Lee/Major/37th/39th - Reconstruction	381	4		38,000		3,305,000		3,343,000
France/Grimes/Hubbard/37th/38th - Reconstruction	382	3	34,000	2,961,000				2,995,000
Chowen Avenue - 43rd to Lake Drive	383	4	18,000		1,578,000			1,596,000
Xerxes / York - 26th to Parkview - Reconstruction	384	4				30,000	2,703,000	2,733,000
36th Ave/Regent Ave - Traffic Control Improvements	385	2			25,000	100,000		125,000
Toledo/Scott - 37th to 39th - Reconstruction	389	2	50,000	1,000,000				1,050,000
Boulevard Native Plantings	391	2	10,000	10,000	12,000	12,000	24,000	68,000
Downtown Impovements	393	2	10,000	10,000	10,000	10,000	10,000	50,000
CR81 Light Knockdown Inventory	394	2	5,000	5,000	5,000	5,000	5,000	25,000
Alternate Street Light Trial & Implementation	396	2	45,000	45,000	50,000	50,000	50,000	240,000
Small Works Program	397	2	25,000	25,000	30,000	30,000	30,000	140,000
Road Resheeting Program	398	2	800,000	1,000,000	600,000	600,000	500,000	3,500,000
Sidewalk Replacement Program	399	2	15,000	15,000	15,000	15,000	15,000	75,000
Bridge Maintenance Program	402	2	10,000		10,000		10,000	30,000
West Broadway - Repaint Poles and Move Signs	403	2	20,000					20,000
County Road 9 - Reconstruct Regent to W B'dway	406	3		250,300	1,918,900			2,169,200
Oakdale Avenue - Reconstruct W Broadway to Abbott	430	2	400,000					400,000
June Avenue - Reconstruction 35th to cul-de-sac	431	3		50,000	700,000			750,000
Hubbard Avenue - Reconstruct 41 1/2 to CR 9	432	2		50,000	400,000			450,000
41 1/2 Avenue - Pedestrian Promenade	433	3		220,000				220,000
41 1/2 Avenue - Streetscape Plaza	434	1	4,000					4,000
Signal Flashing Left Turn Arrows	435	2	32,000	18,000				50,000
3 - Traffic & Transport Total			**8,481,000**	**6,991,320**	**10,987,800**	**9,583,090**	**9,634,720**	**45,677,930**
Donations			20,000			50,000		70,000
GO Special Assessment Bonds				600,256	470,000	1,656,285	231,800	2,958,351
GO Street Reconstruction Bonds				1,384,214	2,505,000	2,746,185	1,380,890	8,016,289
GO Utility Rev Bonds - Sanitary			800,000	365,530	734,000	1,039,115	844,420	3,783,065
GO Utility Rev Bonds - Storm			2,000,000	363,895	570,000	908,850	463,620	4,306,365
GO Utility Rev Bonds - Water			700,000	623,605	380,000	1,089,815	685,480	3,478,900
PIR Alley Reconstruction			20,000	20,000	25,000	25,000	25,000	115,000
PIR Other Infrastructure			167,000	143,000	147,000	149,000	147,000	753,000
PIR Pedestrian / Bicycle Facilities			49,000	45,000	225,000	25,000	25,000	369,000
PIR Street Overlay and Resurface			800,000	1,000,000	600,000	600,000	500,000	3,500,000
PIR Street Reconstruction			2,160,700	1,084,320	2,850,513	113,920	2,395,760	8,605,213
Sanitary Sewer Utility Fund			152,250	402,250	770,275	152,250	386,808	1,863,833
Special Assessments			850,000	186,500	302,272	430,350	1,190,572	2,959,694
State Aids			624,300	210,000		471,560	800,000	2,105,860
Storm Sewer Utility Fund			82,065	157,065	736,205	82,065	393,880	1,451,280
Water Utility Fund			55,685	205,685	572,535	55,685	452,490	1,342,080

Department	Project#	Priority	2017	2018	2019	2020	2021	Total
3 - Traffic & Transport Total			8,481,000	6,791,320	10,887,800	9,595,090	9,922,720	45,677,930
4 - Utilities								
Valve Replacement Program	504	2	19,000	20,000	20,000	20,000	20,000	99,000
Water - Well No. 3 Replacement	507	1	660,000					660,000
Well No. 5 - Upgrade	508	3	26,000					26,000
Reconstruct Tower No. 1	510	2					40,000	40,000
Well No. 4 - Upgrade	512	2		27,000				27,000
Water - Repair Broken Valve Plant No. 2	517	2	40,000					40,000
37th Avenue Loop Connection	518	3	35,000					35,000
Well No. 2 - Upgrade	525	2	26,000					26,000
Replacement of City Wide Water Meters	531	5			1,200,000			1,200,000
New Gravity Treatment Plant	532	2	80,000	1,000,000	3,500,000			4,580,000
Plant #1 - Energy Efficiency Improvements	533	2	4,000					4,000
Bottineau Light Rail - Utility Replacements	536	4	100,000	600,000	400,000			1,100,000
Water Plant Equipment	599	2	20,000	20,000	20,000	20,000	20,000	100,000
Lift No. 3 (Toledo) - Rehab	603	2	150,000					150,000
Sanitary Sewer Manhole Rehabilitation	607	2	15,000	15,000	15,000	15,000	15,000	75,000
Portable Flow Meters	612	1	10,000					10,000
Installation of Grit Chambers / GPT's	700	2	18,000	20,000	20,000	20,000	20,000	98,000
Catch Basin Replacement Program	702	2	17,500	17,500	20,000	20,000	20,000	95,000
Lift No. 11 (Crystal Lake) - Improvements	709	4	80,000					80,000
France Avenue - GPT on Mainline Storm Sewer	718	3		200,000				200,000
Crystal Lake - Invasive Weed Treatment	719	1	10,000	10,000	10,000	10,000	10,000	50,000
Sediment Delta Removal	720	1	16,000		18,000		20,000	54,000
38th Ave / Abbott Ave - Improvements	721	2	15,000	50,000				65,000
Implemenation of TMDL Projects	722	2	20,000	20,000	20,000	20,000	20,000	100,000
Twin / Ryan Lake - Invasive Weed Treatment	723	1	8,000					8,000
Twin Lake Channel - Rip Rap Restoration	725	1	70,000					70,000
Pond Dredging	796	2		22,500		22,500		45,000
Storm Sewer Small Works	797	2	12,000	12,000	12,000	14,000	15,000	65,000
4 - Utilities Total			1,451,500	2,034,000	5,255,000	161,500	200,000	9,102,000
GO Utility Rev Bonds - Sanitary			150,000					150,000
GO Utility Rev Bonds - Storm			80,000	50,000				130,000
GO Utility Rev Bonds - Water				1,000,000	3,500,000			4,500,000
Sanitary Sewer Utility Fund			65,000	215,000	215,000	15,000	15,000	525,000
Storm Sewer Utility Fund			196,500	402,000	100,000	106,500	105,000	910,000
Water Utility Fund			960,000	367,000	1,440,000	40,000	80,000	2,887,000
4 - Utilities Total			1,451,500	2,034,000	5,255,000	161,500	200,000	9,102,000
5 - Capital Equipment								
Server Replacements - IT	7102	2	25,000	25,000	26,000	26,000	27,000	129,000
Network Equipment	7103	2	23,000	24,000	24,000	25,000	25,000	121,000
Squad Car Purchases	8000	2	70,000	71,000	71,000	72,000	72,000	356,000

Department	Project#	Priority	2017	2018	2019	2020	2021	Total
Sewer Vac Truck	8001	3					350,000	350,000
Street Sweeper	8004	3			200,000			200,000
Engineering Van	8025	3			35,000			35,000
Patch Trailer	8026	n/a				20,000		20,000
Tractor / Mower for Parks	8029	3			60,000			60,000
Parks Mower	8030	3		89,000				89,000
Road Grader	8051	4	250,000					250,000
Ball Field Drag	8073	4	23,000					23,000
Utility Truck	8074	4	37,000					37,000
Small Dump Truck	8075	4	80,000					80,000
Pick Up Trucks	8082	4	35,000	35,000				70,000
Dump Trucks	8083	3	180,000	180,000				360,000
Sidewalk Machine	8095	2	200,000					200,000
Pick Up Trucks (3)	8101	3			105,000			105,000
Dump Truck (1 Ton)	8102	2			70,000			70,000
Loader	8103	3				200,000		200,000
Asphalt Roller	8104	3				35,000		35,000
Toolcat	8107	2	4,800	4,800	4,800	4,800		19,200
Vehicle Transceiver and Laptop Meter Reading	8108	2	17,500					17,500
Pick Up (1/2 Ton 4 Door)	8110	3				30,000		30,000
Pick Up Trucks with Plows (1 Ton)	8111	3				74,000		74,000
Tractor / Mower	8112	3			50,000			50,000
Skid Steer Loader	8113	2	49,500	3,600	3,600	3,600	3,600	63,900
Wheel Balancer	8114	2	5,000					5,000
Chop Saw	8115	2	3,000					3,000
Water Truck	8116	4					175,000	175,000
Dump Truck	8117	3				195,000		195,000
Engineering Inspection Vehicle	8118	3			35,000			35,000
Dump Truck	8119	4					195,000	195,000
Sidewalk Machine	8120	4					200,000	200,000
Locator	8121	2	2,000					2,000
Historic Library Water Heater	8122	1	2,000					2,000
Trailer Mounted Pressure Washer	8123	1	14,000					14,000
Public Safety Building Boilers	8124	2		87,000				87,000
Body Cameras\ Squad Cameras	8125	n/a	70,000					70,000
Fire Radios	8126	n/a	112,000					112,000
Fire Truck\Apparatus	8127	n/a			750,000			750,000
SCBA Air Pack Replacement	8128	n/a					281,500	281,500
Vehicle for water resources\engineering	8129	n/a	25,000					25,000
Police radios	8130	n/a		130,000				130,000
5 - Capital Equipment Total			**1,227,800**	**649,400**	**1,434,400**	**685,400**	**1,329,100**	**5,326,100**
Central Garage Fund - Equipment Replacement			948,500	378,600	629,600	629,600	645,600	3,231,900
Central Services Fund			48,000	136,000	50,000	51,000	52,000	337,000
CIF Government Buildings			2,000					2,000
Equipment Replacement Fund			179,300	134,800	254,800	4,800	281,500	855,200
GO Capital Equipment Notes					500,000			500,000
Grants			20,000					20,000

Department	Project#	Priority	2017	2018	2019	2020	2021	Total
Sanitary Sewer Utility Fund							350,000	350,000
Storm Sewer Utility Fund			12,500					12,500
Water Utility Fund			17,500					17,500
5 - Capital Equipment Total			1,227,800	849,400	1,434,400	685,400	1,329,100	5,526,100
Grand Total			12,546,800	12,144,220	18,289,200	10,620,750	11,541,320	65,142,290

City of Robbinsdale, MN

5 Year Capital Improvement Plan 2016 - 2020

2017 thru 2021

PROJECTS BY FUNDING SOURCE

Source	Project#	Priority	2017	2018	2019	2020	2021	Total
Central Garage Fund - Building								
PW Garage - Roof Replacement	*112*	4	25,000	250,000				*275,000*
PW Garage - Yard Enhancements	*119*	2	12,000					*12,000*
PW Garage - Building and Yard Security	*122*	2	38,000					*38,000*
Public Works - Wall & Parking along Sth Boundary	*145*	3				21,260		*21,260*
PW Garage - Stormwater Treatment Area	*149*	2	20,000					*20,000*
PW Garage - Energy Efficiency Improvements	*162*	2	16,000					*16,000*
PW Garage - Repairs	*181*	1	40,000	40,000	40,000	40,000	40,000	*200,000*
PW Garage - Salt Shed Painting	*189*	2	12,000					*12,000*
PW Garage - Repainting	*190*	1	8,000					*8,000*
PW Garage - Reroof Salt Shed	*191*	2		40,000				*40,000*
Central Garage Fund - Building Total			**171,000**	**330,000**	**40,000**	**61,260**	**40,000**	***642,260***
Central Garage Fund - Equipment Re								
PW Garage - Above Ground Fuel Storage	*153*	3					10,000	*10,000*
Squad Car Purchases	*8000*	2	70,000	71,000	71,000	72,000	72,000	*356,000*
Street Sweeper	*8004*	3			200,000			*200,000*
Engineering Van	*8025*	3			35,000			*35,000*
Patch Trailer	*8028*	n/a				20,000		*20,000*
Tractor / Mower for Parks	*8029*	3			60,000			*60,000*
Parks Mower	*8030*	3		89,000				*89,000*
Road Grader	*8051*	4	250,000					*250,000*
Ball Field Drag	*8073*	4	23,000					*23,000*
Utility Truck	*8074*	4	37,000					*37,000*
Small Dump Truck	*8075*	4	80,000					*80,000*
Pick Up Trucks	*8082*	4	35,000	35,000				*70,000*
Dump Trucks	*8083*	3	180,000	180,000				*360,000*
Sidewalk Machine	*8095*	2	200,000					*200,000*
Pick Up Trucks (3)	*8101*	3			105,000			*105,000*
Dump Truck (1 Ton)	*8102*	2			70,000			*70,000*
Loader	*8103*	3				200,000		*200,000*
Asphalt Roller	*8104*	3				35,000		*35,000*
Pick Up (1/2 Ton 4 Door)	*8110*	3				30,000		*30,000*
Pick Up Trucks with Plows (1 Ton)	*8111*	3				74,000		*74,000*
Tractor / Mower	*8112*	3			50,000			*50,000*
Skid Steer Loader	*8113*	2	49,500	3,600	3,600	3,600	3,600	*63,900*
Wheel Balancer	*8114*	2	5,000					*5,000*
Chop Saw	*8115*	2	3,000					*3,000*
Water Truck	*8116*	4					175,000	*175,000*
Dump Truck	*8117*	3				195,000		*195,000*
Engineering Inspection Vehicle	*8118*	3			35,000			*35,000*
Dump Truck	*8119*	4					195,000	*195,000*
Sidewalk Machine	*8120*	4					200,000	*200,000*
Locator	*8121*	2	2,000					*2,000*

Source	Project#	Priority	2017	2018	2019	2020	2021	Total
Trailer Mounted Pressure Washer	8123	1	14,000					14,000
Central Garage Fund - Equipment Replacement Total			**948,500**	**378,600**	**629,600**	**629,600**	**655,600**	**3,241,900**
Central Services Fund								
City Hall - Replace Broken Subsided Concrete Walk	101	2	20,000	5,000				25,000
City Hall - Roof Replacement	140	2	250,000					250,000
Police & Fire - Energy Efficiency Improvements	160	2	30,000					30,000
City Hall - Energy Efficiency Improvements	163	2	15,000					15,000
City Hall - Replace Rooftop Glass	164	2	70,000					70,000
City Hall - Screening of Rooftop AC Units	165	2	4,000					4,000
Police & Fire - Solar Hot Water	169	2				65,400		65,400
Police & Fire - Lighting Upgrade	171	2	30,000					30,000
City Buildings - New Master Key System	177	1	7,000					7,000
City Hall - Railings and Access Improvements	178	2	14,000					14,000
City Hall - LED Light Retrofit	183	2	30,000	30,000				60,000
City Hall - Security Improvements	186	2	12,000					12,000
City Hall - Council Chambers Sliding Doors	187	2		30,000				30,000
City Hall - New Inspections Window	192	1	30,000					30,000
Buildings Small Works	197	2	9,000	9,500	9,500	10,000	10,000	48,000
Server Replacements - IT	7102	2	25,000	25,000	26,000	26,000	27,000	129,000
Network Equipment	7103	2	23,000	24,000	24,000	25,000	25,000	121,000
Public Safety Building Boilers	8124	2		87,000				87,000
Central Services Fund Total			**569,000**	**210,500**	**59,500**	**126,400**	**62,000**	**1,027,400**
CIF Government Buildings								
Library - Rehabilitation	154	1	35,000					35,000
Library - Parking Lot Construction	158	2		22,500				22,500
Library - Energy Efficiency Improvements	161	2	4,000					4,000
Historic Library Water Heater	8122	1	2,000					2,000
CIF Government Buildings Total			**41,000**	**22,500**				**63,500**
CIF Park Improvements								
City Buildings - New Master Key System	177	1	9,000					9,000
Lee Park Improvements	207	1	40,000	75,000	75,000			190,000
Graeser Park Improvements	211	4		10,000			180,000	190,000
Triangle Park - Reconstruction	231	2		635,000				635,000
Parkview Park Playground Equipment	232	2	70,000					70,000
Sunset Park Playground Equipment	235	4			70,000			70,000
Sanborn Park Playground Equipment	236	3		100,000				100,000
Lakeview Terrace Park Playground Equipment	239	4					120,000	120,000
Lakeview Terrace Park Concession Stand Improvement	240	4	25,000					25,000
Manor Park Playground Equipment	241	4			100,000			100,000
Sanborn and Manor Park Backstops and Fencing	242	4		25,000				25,000
Lakeview Terrace Park - Reconstruction	249	2	168,500	219,000				387,500
Hollingsworth Park - Prairie Maintenance	254	2		2,000		2,000		4,000
Hollingsworth Park - Repairs to Fishing Dock	264	1	14,000					14,000
Lee Park - 2nd Exit to Park Building	265	1	5,000					5,000
Norma Kelly Park - Playground Replacement	272	2	95,000					95,000
Sanborn Park - Resurface Tennis Courts	276	2		14,000				14,000
Manor Park - Splash Pad Joint Sealing	277	1	2,000					2,000

Source	Project#	Priority	2017	2018	2019	2020	2021	Total
Triangle Park - Wading Pool Drains	278	1	4,000					4,000
Triangle Park - Wading Pool Painting	279	1	8,500					8,500
Park Furniture Replacement Program	296	2	7,500	7,500	7,500	7,500	7,500	37,500
Parks Small Works	297	2	9,000	9,000	10,000	10,000	10,000	48,000
CIF Park Improvements Total			**457,500**	**1,096,500**	**262,500**	**19,500**	**317,500**	**2,153,500**
Donations								
36th Avenue - Video Detectors for Signals at Noble	354	3	20,000					20,000
36th Ave/Regent Ave - Traffic Control Improvements	385	2				50,000		50,000
Donations Total			**20,000**			**50,000**		**70,000**
Equipment Replacement Fund								
Toolcat	8107	2	4,800	4,800	4,800	4,800		19,200
Body Cameras\ Squad Cameras	8125	n/a	50,000					50,000
Fire Radios	8126	n/a	112,000					112,000
Fire Truck\Apparatus	8127	n/a			250,000			250,000
SCBA Air Pack Replacement	8128	n/a					281,500	281,500
Vehicle for water resources\engineering	8129	n/a	12,500					12,500
Police radios	8130	n/a		130,000				130,000
Equipment Replacement Fund Total			**179,300**	**134,800**	**254,800**	**4,800**	**281,500**	**855,200**
GO Capital Equipment Notes								
Fire Truck\Apparatus	8127	n/a			500,000			500,000
GO Capital Equipment Notes Total					**500,000**			**500,000**
GO Special Assessment Bonds								
France Avenue - Reconstruction 27th to Lowry Ave	311	3					231,800	231,800
France - Reconstruct 31st to 33rd	344	3				568,060		568,060
Drew / McNair - 27th to Lowry Reconstruction	378	3				288,195		288,195
Shoreline/Chowen - CR81 to 43rd - Reconstruction	379	3			470,000			470,000
Lee/Major/37th/39th - Reconstruction	381	4				800,040		800,040
France/Grimes/Hubbard/37th/38th - Reconstruction	382	3		600,256				600,256
GO Special Assessment Bonds Total				**600,256**	**470,000**	**1,656,295**	**231,800**	**2,958,351**
GO Street Reconstruction Bonds								
France Avenue - Reconstruction 27th to Lowry Ave	311	3					380,890	380,890
Halifax / Grimes / 46th Reconstruction	369	3			105,000	400,000		505,000
Xenia / Welcome / 41st Reconstruction	370	3					125,000	125,000
Yates / Zane / 41st Reconstruction	371	4					225,000	225,000
Grimes / Halifax / Isiemount / 42nd / 43rd	372	4					650,000	650,000
38th Avenue - Reconstruction Railroad to Hubbard	376	3		147,040				147,040
Drew / McNair - 27th to Lowry Reconstruction	378	3				808,970		808,970
Shoreline/Chowen - CR81 to 43rd - Reconstruction	379	3			2,400,000			2,400,000
Lee/Major/37th/39th - Reconstruction	381	4				1,537,215		1,537,215
France/Grimes/Hubbard/37th/38th - Reconstruction	382	3		1,237,174				1,237,174
GO Street Reconstruction Bonds Total				**1,384,214**	**2,505,000**	**2,746,185**	**1,380,890**	**8,016,289**

Source	Project#	Priority	2017	2018	2019	2020	2021	Total
GO Utility Rev Bonds - Sanitary								
France Avenue - Reconstruction 27th to Lowry Ave	*311*	3					130,780	*130,780*
Noble Avenue - Reconstruct 36th to 41st Ave	*318*	3	800,000					*800,000*
France - Reconstruct 31st to 33rd	*344*	3				217,250		*217,250*
Halifax / Grimes / 46th Reconstruction	*369*	3				268,070		*268,070*
Grimes / Halifax / Islemount / 42nd / 43rd	*372*	4					713,640	*713,640*
38th Avenue - Reconstruction Railroad to Hubbard	*376*	3		52,800				*52,800*
Drew / McNair - 27th to Lowry Reconstruction	*378*	3				191,150		*191,150*
Shoreline/Chowen - CR81 to 43rd - Reconstruction	*379*	3			734,000			*734,000*
Lee/Major/37th/39th - Reconstruction	*381*	4				362,645		*362,645*
France/Grimes/Hubbard/37th/38th - Reconstruction	*382*	3		312,730				*312,730*
Lift No. 3 (Toledo) - Rehab	*603*	2	150,000					*150,000*
GO Utility Rev Bonds - Sanitary Total			**950,000**	**365,530**	**734,000**	**1,039,115**	**844,420**	***3,933,065***
GO Utility Rev Bonds - Storm								
France Avenue - Reconstruction 27th to Lowry Ave	*311*	3					51,220	*51,220*
Noble Avenue - Reconstruct 36th to 41st Ave	*318*	3	2,000,000					*2,000,000*
France - Reconstruct 31st to 33rd	*344*	3				136,290		*136,290*
Halifax / Grimes / 46th Reconstruction	*369*	3				290,160		*290,160*
Grimes / Halifax / Islemount / 42nd / 43rd	*372*	4					412,400	*412,400*
38th Avenue - Reconstruction Railroad to Hubbard	*376*	3		57,020				*57,020*
Drew / McNair - 27th to Lowry Reconstruction	*378*	3				296,500		*296,500*
Shoreline/Chowen - CR81 to 43rd - Reconstruction	*379*	3			570,000			*570,000*
Lee/Major/37th/39th - Reconstruction	*381*	4				185,900		*185,900*
France/Grimes/Hubbard/37th/38th - Reconstruction	*382*	3		306,875				*306,875*
Lift No. 11 (Crystal Lake) - Improvements	*709*	4	80,000					*80,000*
38th Ave / Abbott Ave - Improvements	*721*	2		50,000				*50,000*
GO Utility Rev Bonds - Storm Total			**2,080,000**	**413,895**	**570,000**	**908,850**	**463,620**	***4,436,365***
GO Utility Rev Bonds - Water								
France Avenue - Reconstruction 27th to Lowry Ave	*311*	3					118,050	*118,050*
Noble Avenue - Reconstruct 36th to 41st Ave	*318*	3	700,000					*700,000*
France - Reconstruct 31st to 33rd	*344*	3				145,380		*145,380*
Halifax / Grimes / 46th Reconstruction	*369*	3				304,050		*304,050*
Grimes / Halifax / Islemount / 42nd / 43rd	*372*	4					567,430	*567,430*
38th Avenue - Reconstruction Railroad to Hubbard	*376*	3		119,640				*119,640*
Drew / McNair - 27th to Lowry Reconstruction	*378*	3				221,185		*221,185*
Shoreline/Chowen - CR81 to 43rd - Reconstruction	*379*	3			380,000			*380,000*
Lee/Major/37th/39th - Reconstruction	*381*	4				419,200		*419,200*
France/Grimes/Hubbard/37th/38th - Reconstruction	*382*	3		503,965				*503,965*
New Gravity Treatment Plant	*532*	2		1,000,000	3,500,000			*4,500,000*
GO Utility Rev Bonds - Water Total			**700,000**	**1,623,605**	**3,880,000**	**1,089,815**	**685,480**	***7,978,900***
Grants								
Police & Fire - Solar Hot Water	*169*	2				34,600		*34,600*
Library - Downstairs Accessibility	*184*	3	22,000	220,000				*242,000*
Lee Park Improvements	*207*	1		300,000	300,000			*600,000*
Triangle Park - Reconstruction	*231*	2		250,000				*250,000*
Sanborn and Manor Park Backstops and Fencing	*242*	4		50,000				*50,000*
Hollingsworth Park - Repairs to Fishing Dock	*264*	1	14,000					*14,000*

Source	Project#	Priority	2017	2018	2019	2020	2021	Total
Norma Kelly Park - Playground Replacement	272	2	45,000					45,000
Body Cameras\ Squad Cameras	8125	n/a	20,000					20,000
Grants Total			**101,000**	**820,000**	**300,000**	**34,600**		**1,255,600**
PIR Alley Reconstruction								
Alley Reconstruction Program	301	1	20,000	20,000	25,000	25,000	25,000	115,000
PIR Alley Reconstruction Total			**20,000**	**20,000**	**25,000**	**25,000**	**25,000**	**115,000**
PIR Other Infrastructure								
City Hall - Entry Monument Sign Replacement	188	1	50,000					50,000
Tree Removal - West Broadway 40th - 42nd	333	1	40,000	40,000	40,000	40,000	40,000	200,000
Boulevard Native Plantings	391	2	10,000	10,000	12,000	24,000	12,000	68,000
CR81 Light Knockdown Inventory	394	2	5,000	5,000	5,000	5,000	5,000	25,000
Alternate Street Light Trial & Implementation	396	2	45,000	45,000	50,000	50,000	50,000	240,000
Small Works Program	397	2	25,000	25,000	30,000	30,000	30,000	140,000
Bridge Maintenance Program	402	2	10,000		10,000		10,000	30,000
Signal Flashing Left Turn Arrows	435	2	32,000	18,000				50,000
PIR Other Infrastructure Total			**217,000**	**143,000**	**147,000**	**149,000**	**147,000**	**803,000**
PIR Pedestrian / Bicycle Faclities								
Lee Park - Trail Connections	275	2	20,000	36,000				56,000
Downtown Impovements	393	2	10,000	10,000	10,000	10,000	10,000	50,000
Sidewalk Replacement Program	399	2	15,000	15,000	15,000	15,000	15,000	75,000
West Broadway - Repaint Poles and Move Signs	403	2	20,000					20,000
41 1/2 Avenue - Pedestrian Promenade	433	3		20,000	200,000			220,000
41 1/2 Avenue - Streetscape Plaza	434	1	4,000					4,000
PIR Pedestrian / Bicycle Faclities Total			**69,000**	**81,000**	**225,000**	**25,000**	**25,000**	**425,000**
PIR Street Overlay and Resurface								
Road Resheeting Program	398	2	800,000	1,000,000	600,000	600,000	500,000	3,500,000
PIR Street Overlay and Resurface Total			**800,000**	**1,000,000**	**600,000**	**600,000**	**500,000**	**3,500,000**
PIR Street Reconstruction								
France Avenue - Reconstruction 27th to Lowry Ave	311	3		160,560	170,300			330,860
Lowry Ave - Reconstruct York to Abbott Ave	317	3			58,830		485,700	544,530
Noble Avenue - Reconstruct 36th to 41st Ave	318	3	1,700,700					1,700,700
France - Reconstruct 31st to 33rd	344	3		108,460				108,460
Halifax / Grimes / 46th Reconstruction	369	3			5,950	20,920		26,870
Xenia / Welcome / 41st Reconstruction	370	3					17,420	17,420
Yates / Zane / 41st Reconstruction	371	4					30,360	30,360
Grimes / Halifax / Islemount / 42nd / 43rd	372	4			272,320		49,010	321,330
38th Avenue - Reconstruction Railroad to Hubbard	376	3	58,000					58,000
Drew / McNair - 27th to Lowry Reconstruction	378	3		22,000		63,000		85,000
Shoreline/Chowen - CR81 to 43rd - Reconstruction	379	3	100,000					100,000
Lee/Major/37th/39th - Reconstruction	381	4		38,000				38,000
France/Grimes/Hubbard/37th/38th - Reconstruction	382	3	34,000					34,000
Chowen Avenue - 43rd to Lake Drive	383	4	18,000		640,843			658,843
Xerxes / York - 26th to Parkview - Reconstruction	384	4				30,000	1,543,270	1,573,270

Source	Project#	Priority	2017	2018	2019	2020	2021	Total
36th Ave/Regent Ave - Traffic Control Improvements	385	2			25,000			25,000
Toledo/Scott - 37th to 39th - Reconstruction	389	2	50,000	405,000				455,000
County Road 9 - Reconstruct Regent to W B'dway	406	3		250,300	1,337,270			1,587,570
Oakdale Avenue - Reconstruct W Broadway to Abbott	430	2	200,000					200,000
June Avenue - Reconstruction 35th to cul-de-sac	431	3		50,000	340,000			390,000
Hubbard Avenue - Reconstruct 41 1/2 to CR 9	432	2		50,000			270,000	320,000
PIR Street Reconstruction Total			**2,160,700**	**1,084,320**	**2,850,513**	**113,920**	**2,395,760**	**8,605,213**
Sanitary Sewer Utility Fund								
Lowry Ave - Reconstruct York to Abbott Ave	317	3					59,750	59,750
County Road 9 - Reconstruction CR81 to Parkway	352	3	152,250	152,250	152,250	152,250		609,000
Halifax / Grimes / 46th Reconstruction	369	3			37,500			37,500
Xenia / Welcome / 41st Reconstruction	370	3					48,120	48,120
Chowen Avenue - 43rd to Lake Drive	383	4			133,625			133,625
Xerxes / York - 26th to Parkview - Reconstruction	384	4					278,938	278,938
Toledo/Scott - 37th to 39th - Reconstruction	389	2		250,000				250,000
County Road 9 - Reconstruct Regent to W B'dway	406	3			256,900			256,900
June Avenue - Reconstruction 35th to cul-de-sac	431	3			150,000			150,000
Hubbard Avenue - Reconstruct 41 1/2 to CR 9	432	2			40,000			40,000
Bottineau Light Rail - Utility Replacements	536	4	40,000	200,000	200,000			440,000
Sanitary Sewer Manhole Rehabilitation	607	2	15,000	15,000	15,000	15,000	15,000	75,000
Portable Flow Meters	612	1	10,000					10,000
Sewer Vac Truck	8001	3					350,000	350,000
Sanitary Sewer Utility Fund Total			**217,250**	**617,250**	**985,275**	**167,250**	**751,808**	**2,738,833**
Special Assessments								
Lowry Ave - Reconstruct York to Abbott Ave	317	3					122,220	122,220
Noble Avenue - Reconstruct 36th to 41st Ave	318	3	650,000					650,000
Halifax / Grimes / 46th Reconstruction	369	3				430,350		430,350
Grimes / Halifax / Islemount / 42nd / 43rd	372	4					740,200	740,200
38th Avenue - Reconstruction Railroad to Hubbard	376	3		66,500				66,500
Chowen Avenue - 43rd to Lake Drive	383	4			242,272			242,272
Xerxes / York - 26th to Parkview - Reconstruction	384	4					328,152	328,152
Toledo/Scott - 37th to 39th - Reconstruction	389	2		120,000				120,000
Oakdale Avenue - Reconstruct W Broadway to Abbott	430	2	200,000					200,000
June Avenue - Reconstruction 35th to cul-de-sac	431	3			60,000			60,000
Special Assessments Total			**850,000**	**186,500**	**302,272**	**430,350**	**1,190,572**	**2,959,694**
State Aids								
France Avenue - Reconstruction 27th to Lowry Ave	311	3					800,000	800,000
Noble Avenue - Reconstruct 36th to 41st Ave	318	3	604,300					604,300
France - Reconstruct 31st to 33rd	344	3		210,000		421,560		631,560
36th Avenue - Video Detectors for Signals at Noble	354	3	20,000					20,000
36th Ave/Regent Ave - Traffic Control Improvements	385	2				50,000		50,000
State Aids Total			**624,300**	**210,000**		**471,560**	**800,000**	**2,105,860**
Storm Sewer Utility Fund								
Lee Park Improvements	207	1		90,000				90,000
Sunset Park - Stormsewer Replacement	274	2	45,000					45,000

Source	Project#	Priority	2017	2018	2019	2020	2021	Total
Lowry Ave - Reconstruct York to Abbott Ave	317	3					128,000	128,000
County Road 9 - Reconstruction CR81 to Parkway	352	3	82,065	82,065	82,065	82,065		328,260
Halifax / Grimes / 46th Reconstruction	369	3			37,500			37,500
Xenia / Welcome / 41st Reconstruction	370	3					9,860	9,860
Chowen Avenue - 43rd to Lake Drive	383	4			441,600			441,600
Xerxes / York - 26th to Parkview - Reconstruction	384	4					226,020	226,020
Toledo/Scott - 37th to 39th - Reconstruction	389	2		75,000				75,000
County Road 9 - Reconstruct Regent to W B'dway	406	3			125,040			125,040
June Avenue - Reconstruction 35th to cul-de-sac	431	3			50,000			50,000
Hubbard Avenue - Reconstruct 41 1/2 to CR 9	432	2					30,000	30,000
Bottineau Light Rail - Utility Replacements	536	4	10,000	100,000				110,000
Installation of Grit Chambers / GPT's	700	2	18,000	20,000	20,000	20,000	20,000	98,000
Catch Basin Replacement Program	702	2	17,500	17,500	20,000	20,000	20,000	95,000
France Avenue - GPT on Mainline Storm Sewer	718	3		200,000				200,000
Crystal Lake - Invasive Weed Treatment	719	1	10,000	10,000	10,000	10,000	10,000	50,000
Sediment Delta Removal	720	1	16,000		18,000		20,000	54,000
38th Ave / Abbott Ave - Improvements	721	2	15,000					15,000
Implemenation of TMDL Projects	722	2	20,000	20,000	20,000	20,000	20,000	100,000
Twin / Ryan Lake - Invasive Weed Treatment	723	1	8,000					8,000
Twin Lake Channel - Rip Rap Restoration	725	1	70,000					70,000
Pond Dredging	796	2		22,500		22,500		45,000
Storm Sewer Small Works	797	2	12,000	12,000	12,000	14,000	15,000	65,000
Vehicle for water resources\engineering	8129	n/a	12,500					12,500
Storm Sewer Utility Fund Total			**336,065**	**649,065**	**836,205**	**188,565**	**498,880**	**2,508,780**

Water Utility Fund

City Buildings - New Master Key System	177	1	2,000					2,000
Lowry Ave - Reconstruct York to Abbott Ave	317	3					71,500	71,500
County Road 9 - Reconstruction CR81 to Parkway	352	3	55,685	55,685	55,685	55,685		222,740
Halifax / Grimes / 46th Reconstruction	369	3			37,500			37,500
Xenia / Welcome / 41st Reconstruction	370	3					54,370	54,370
Chowen Avenue - 43rd to Lake Drive	383	4			119,660			119,660
Xerxes / York - 26th to Parkview - Reconstruction	384	4					326,620	326,620
Toledo/Scott - 37th to 39th - Reconstruction	389	2		150,000				150,000
County Road 9 - Reconstruct Regent to W B'dway	406	3			199,690			199,690
June Avenue - Reconstruction 35th to cul-de-sac	431	3			100,000			100,000
Hubbard Avenue - Reconstruct 41 1/2 to CR 9	432	2			60,000			60,000
Valve Replacement Program	504	2	19,000	20,000	20,000	20,000	20,000	99,000
Water - Well No. 3 Replacement	507	1	660,000					660,000
Well No. 5 - Upgrade	508	3	26,000					26,000
Reconstruct Tower No. 1	510	2					40,000	40,000
Well No. 4 - Upgrade	512	2		27,000				27,000
Water - Repair Broken Valve Plant No. 2	517	2	40,000					40,000
37th Avenue Loop Connection	518	3	35,000					35,000
Well No. 2 - Upgrade	525	2	26,000					26,000
Replacement of City Wide Water Meters	531	5			1,200,000			1,200,000
New Gravity Treatment Plant	532	2	80,000					80,000
Plant #1 - Energy Efficiency Improvements	533	2	4,000					4,000
Bottineau Light Rail - Utility Replacements	536	4	50,000	300,000	200,000			550,000
Water Plant Equipment	599	2	20,000	20,000	20,000	20,000	20,000	100,000
Vehicle Transceiver and Laptop Meter Reading	8108	2	17,500					17,500
Water Utility Fund Total			**1,035,185**	**572,685**	**2,012,535**	**95,685**	**532,490**	**4,248,580**

Source	Project#	Priority	2017	2018	2019	2020	2021	Total
GRAND TOTAL			12,546,800	11,944,220	18,189,200	10,632,750	11,829,320	65,142,290

CITY OF ROBBINSDALE, MINNESOTA
2017-2021 Capital Improvement Plan
Projected Financial Position

City of Robbinsdale, Minnesota
Capital Improvements Plan 2017-2018

Capital Improvement Fund - Park Improvement Section
Projected Financial Position 2017-2018

Category	2017 Proposed	2018 Projected	2019 Projected	2020 Projected	2021 Projected
Revenue & Other Financing Sources					
Intergovernmental:					
State Grants & Aids	$ 14,000	600,000	$ 300,000	$	
Other local grants					
Total Intergovernmental	14,000	600,000	300,000		
Donations & Gifts					
Investment Income	4,000	$ 13,819	(21,588)		
Other Income	39,000				
Operating transfers from:					
PIR Fund		36,000			
Liquor Operations Fund	150,000	150,000	150,000	150,000	$ 150,000
License Center	50,000	50,000	50,000	50,000	50,000
Storm Sewer Fund - Lee Park		90,000			
Total Operating Transfers	200,000	326,000	200,000	200,000	200,000
Total	257,000	939,819	478,412	200,000	200,000
Expenditures & Other Uses					
Other Services & Charges	12,000	2,500	2,500	2,500	2,500
Capital Equipment and Improvements	457,500	1,822,500	562,500	19,500	317,500
Operating Transfers to:					
General Fund					
Total	469,500	1,825,000	565,000	22,000	320,000
Designated Fund Balance					
Change in Fund Balance	(212,500)	(885,181)	(86,588)	178,000	(120,000)
Fund Balance, January 1	557,978	345,478	(539,703)	(626,291)	(448,291)
Fund Balance, December 31	$ 345,478	$ (539,703)	$ (626,291)	$ (448,291)	$ (568,291)

City of Robbinsdale, Minnesota
Capital Improvement Plan 2017-2018

Capital Improvement Fund - Traffic & Transportation Section
Projected Financial Position 2017-2018

Category	2017 Proposed	2018 Projected	2019 Projected	2020 Projected	2021 Projected
Revenue & Other Financing Sources					
Special Assessments	$ 431,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000
Intergovernmental:					
State Grants & Aids	819,405	210,000		471,560	800,000
Other local grants					
Total Intergovernmental	819,405	210,000		471,560	800,000
Charges for Services	66,062	11,800	9,400	7,900	6,500
Franchise Fees	299,000	307,970	317,209	326,725	336,527
Investment Income	122,000	123,762	103,189	85,828	68,460
Proceeds from the issuance of Bonds	2,750,700	3,068,790	5,825,513	4,516,400	4,008,450
Transfers From:					
REDA TIF Development					
Solid Waste Fund	150,000	150,000	150,000	150,000	150,000
Total Transfers From	150,000	150,000	150,000	150,000	150,000
Total	4,638,167	4,372,322	6,905,311	6,058,413	5,869,937
Expenditures & Other Uses					
Other Services & Charges	142,500	146,775	151,178	155,714	160,385
Capital Equipment and Improvements	4,761,000	4,709,290	7,124,785	6,267,310	6,696,022
Transfers to other funds	196,130	202,014	208,074	214,317	220,746
Total	5,099,630	5,058,079	7,484,038	6,637,340	7,077,153
Designated Fund Balance					
Change in Fund Balance	(461,463)	(685,757)	(578,726)	(578,927)	(1,207,216)
Fund Balance, January 1	4,586,865	4,125,402	3,439,645	2,860,919	2,281,992
Fund Balance, December 31	$ 4,125,402	$ 3,439,645	$ 2,860,919	$ 2,281,992	$ 1,074,776
State Aid Account					
Beginning Balance	$ 873,000	$ 800,295	$ 1,153,396	$ 1,733,390	$ 1,859,224
Additions	546,700	563,101	579,994	597,394	615,316
Withdrawals	619,405	210,000		471,560	800,000
Ending Balance	$ 800,295	$ 1,153,396	$ 1,733,390	$ 1,859,224	$ 1,674,540

Note: The State Aid account represents the City's state aid allocation for the improvements of state aid designated roads.

City of Robbinsdale, Minnesota
Capital Improvements Plan 2017-2018

Capital Improvement Fund - Cable Grant Program
Projected Financial Position 2017-2021

Category	2017 Proposed	2018 Projected	2019 Projected	2020 Projected	2021 Projected
Revenue & Other Financing Sources					
Cable Grant	$ 30,586	$ 28,650	$ 28,650	$ 28,650	$ 28,650
Investment Income	2,604	3,629	3,945	4,264	4,586
Total	33,190	32,279	32,595	32,914	33,236
Expenditures & Other Uses					
Other Charges & Services	700	700	700	700	700
Capital Equipment and Improvements					
Total					
Designated Fund Balance					
Change in Fund Balance	32,490	31,579	31,895	32,214	32,536
Fund Balance, January 1	330,391	362,881	394,459	426,354	458,568
Fund Balance, December 31	$ 362,881	$ 394,459	$ 426,354	$ 458,568	$ 491,103

City of Robbinsdale, Minnesota
Capital Improvement Plan 2017-2021

Central Garage Internal Service Fund
Projected Financial Position 2017-2021

	Year				
	2017	2018	2019	2020	2021
Operating Statement					
Operating Revenues					
Garage Space Rental	$ 164,188	$ 172,397	$ 181,017	$ 190,068	$ 199,572
Equipment Repair Charges	482,663	506,796	532,136	558,743	586,680
Mobile Equipment Replacemente Charges	421,134	463,247	509,572	560,529	616,582
Total Operating Revenues	1,067,985	1,142,441	1,222,725	1,309,340	1,402,834
Operating Expenses					
Other	619,201	637,777	656,910	676,618	696,916
Depreciation	343,500	377,850	415,635	457,199	502,918
Total Operating Expenses	962,701	1,015,627	1,072,545	1,133,816	1,199,835
Operating Income (Loss)	105,284	126,814	150,180	175,524	202,999
Non-Operating Revenues:					
Gain on Sale of Equipment	17,500	18,375	19,294	20,258	21,271
Professional Fees					
Investment Income	25,000	29,880	36,587	33,473	32,515
Total Non-Operating Revenues:	42,500	48,255	55,880	53,731	53,786
Net Income (Loss) before Transfers	147,784	175,069	206,060	229,256	256,786
Transfers:					
from other funds					
Net Income (Loss)	147,784	175,069	206,060	229,256	256,786
Net Assets:					
Beginning of Year	3,177,296	3,325,080	3,500,149	3,706,209	3,935,465
End of Year	$ 3,325,080	$ 3,500,149	$ 3,706,209	$ 3,935,465	$ 4,192,251
Capital Equipment / Improvements					
Building Improvements	$ 171,000	$ 330,000	40,000	61,260	40,000
Vehicle Maintenance					
Vehicle Replacement	948,500	378,600	$ 629,600	$ 629,600	$ 655,600
Total	$ 1,119,500	$ 708,600	$ 669,600	$ 690,860	$ 695,600
Fund Cash Position					
Beginning Cash	$ 1,494,007	$ 1,829,333	$ 1,673,652	$ 1,625,747	$ 1,621,342
Cash Receipts	1,110,485	1,190,696	1,278,606	1,363,072	1,456,620
Cash Disbursements					
Operating	(344,341)	637,777	656,910	676,618	696,916
Capital	1,119,500	708,600	669,600	690,860	695,600
Ending Cash Balance	$ 1,829,333	$ 1,673,652	$ 1,625,747	$ 1,621,342	$ 1,685,445

City of Robbinsdale, Minnesota
Capital Improvement Plan 2017-2018

Central Services Internal Service Fund
Projected Financial Position 2017-2018

	Year				
	2017	2018	2019	2020	2021
Operating Statement					
Operating Revenues					
Information Technology	$ 681,909	$ 716,004	$ 751,805	$ 789,395	$ 828,865
General Office	64,616	66,554	68,551	70,608	72,726
Building Rental	561,087	589,141	618,598	649,528	682,005
Total Operating Revenue	1,307,612	1,371,700	1,438,954	1,509,531	1,583,595
Operating Expenses					
Other	936,371	983,189	1,032,348	1,083,966	1,138,164
Depreciation	57,800	67,900	67,900	67,900	67,900
Operating Income (Loss)	313,441	320,611	338,706	357,665	377,531
Non-Operating Revenues	12,000	32,770	39,093	50,679	61,175
Transfers from other funds					
Net Income (Loss)	325,441	353,381	377,799	408,344	438,706
Net Assets:					
Beginning of Year	1,581,527	1,906,968	2,260,350	2,638,149	3,046,493
End of Year	$ 1,906,968	$ 2,260,350	$ 2,638,149	$ 3,046,493	$ 3,485,198
Capital Equipment / Improvements					
Building & Other Improvements	$ 521,000	$ 161,500	9,500	75,400	10,000
Capital Equipment	75,200	49,000	$ 50,000	$ 51,000	$ 52,000
Total	$ 596,200	$ 210,500	$ 59,500	$ 126,400	$ 62,000
Fund Cash Position					
Beginning Cash	$ 1,045,994	$ 1,092,328	$ 1,303,110	$ 1,689,309	$ 2,039,153
Cash Receipts	1,319,612	1,404,470	1,478,047	1,560,210	1,644,770
Cash Disbursements					
Operating	677,078	983,189	1,032,348	1,083,966	1,138,164
Capital	596,200	210,500	59,500	126,400	62,000
Ending Cash Balance	$ 1,092,328	$ 1,303,110	$ 1,689,309	$ 2,039,153	$ 2,483,758

Exhibit 2

Member _____ moved and Member _____ seconded a motion that the following resolution be read and adopted this 20th day of December 2016

RESOLUTION NO.

A RESOLUTION ADOPTING THE CITY'S CAPITAL IMPROVEMENT PLAN 2017-2021

WHEREAS, on December 20, 2016, the City Council of the City of Robbinsdale (the "City") held a public hearing regarding its Five-Year Capital Improvement Plan (the "Plan") to hear and consider public comment regarding the plan, as required by Minnesota Statutes Section 475.521, as amended, and therefore the City may Bond for various capital improvement projects that the City deems necessary, which are included within the Plan; and

WHEREAS, the City Council has reviewed said Five Year Capital Improvement Plan and finds it to be reasonable and advisable; and

WHEREAS, adopting the Plan does not allocate funding at this time for any of the projects contained in the Plan; and

WHEREAS, the City Council considers the proposed City's Capital Improvement Plan 2017-2021 to be an excellent plan;

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Robbinsdale that:

The City Council hereby adopts the Plan.

The question was on the adoption of the resolution and upon a vote being taken thereon, the following voted in favor thereof:

and the following voted against the same.

WHEREUPON SAID RESOLUTION WAS DECLARED DULY PASSED AND ADOPTED THIS 20TH DAY OF DECEMBER 2016.

_____
Regan L. Murphy, Mayor

ATTEST:

_____
Tom Marshall, City Clerk

Appendix 5

Emergency Telephone List

Attachment
Emergency Telephone List

Emergency Response Team	Name	Work Telephone	Alternate Telephone
Emergency Response Lead	Jim Franzen (Police Chief)	763-531-1222	763-442-1133
Alternate Emergency Response Lead	Patrick Foley (Police Captain)	763-531-1232	763-442-1173
Water Operator	Joel Konkol	763-531-1201	763-238-7665
Alternate Water Operator	Mike Powell	763-531-1201	763-238-7666
Public Communications	Marcia Glick (City Manager)	763-531-1258	612-859-9717

State and Local Emergency Response Contacts	Name	Work Telephone	Alternate Telephone
State Incident Duty Officer	Minnesota Duty Officer	800/422-0798 Out State	651-649-5451 Metro
County Emergency Director	Eric Waage	612-596-0252	911
National Guard	Minnesota Duty Officer	800/422-0798 Out State	651-649-5451 Metro
Mayor/Board Chair	Regan Murphy	763-783-2306	763-537-0935
Fire Chief	Guy Dorholt	763-442-1519	763-233-5650
Sheriff	Richard Stanek	612-348-3744	911
Police Chief	Jim Franzen	763-531-1222	763-442-1133
Ambulance	North Memorial	911	763-520-5200
Hospital	North Memorial Hospital	763-520-5200	911
Doctor or Medical Facility	North Memorial Hospital	763-520-5200	911

State and Local Agencies	Name	Work Telephone	Alternate Telephone
MDH District Engineer		651-201-5000	888-345-0823
MDH	Drinking Water Protection	651-201-4700	
State Testing Laboratory	Minnesota Duty Officer	800/422-0798 Out State	651-649-5451 Metro
MPCA	John Linc Stine - Commissioner	651-296-6300	800-657-3864
DNR Area Hydrologist	Jason Speigel	651-259-5822	
County Water Planner			

Utilities	Name	Work Telephone	Alternate Telephone
Electric Company	Xcel Energy	800-895-1999	
Gas Company	Center Point	612-372-5050	1-800-722-9326
Telephone Company	Century Link	800-871-9244	612-752-1397
Gopher State One Call	Utility Locations	800-252-1166	651-454-0002
Highway Department	State of Minnesota (MDOT)	651-296-3000	

Mutual Aid Agreements	Name	Work Telephone	Alternate Telephone
Neighboring Water System	Joint Water Commission Jeff Oliver (Golden Valley) Mark Ray (Crystal)	 763-593-8034 763-531-1160	 763-593-8030 (cell) 612-760-6712 (cell)
Emergency Water Connection	Minneapolis	612-673-5600	612-673-3000
Materials	Core & Main	763-428-7473	

Technical/Contracted Services/Supplies	Name	Work Telephone	Alternate Telephone
MRWA Technical Services	MN Rural Water Association	800-367-6792	218-685-5197
Well Driller/Repair	E H Renner & Sons	763-427-6100	Jerry 651-755-3200
Pump Repair	Quality Flow	952-758-9445	612-680-0768 Pager
Electrician	Kilmer Electric	763-425-2525 (24 hours)	Aid Electric 763-571-7267 Brian Kovar 763-784-6306
Plumber			
Backhoe	Robert Skurka	763-531-1203	763-442-1573
Chemical Feed	Joel Konkol	763-531-1201	763-238-7665
Meter Repair	Joel Konkol	763-531-1201	763-238-7665
Generator	Joel Konkol	763-531-1201	763-238-7665
Valves	Joel Konkol	763-531-1201	763-238-7665
Pipe & Fittings	Joel Konkol	763-531-1201	763-238-7665
Water Storage	Joel Konkol	763-531-1201	763-238-7665
Laboratory	N/A	N/A	N/A
Engineering firm	Richard McCoy - City Engineer	763-531-1260	763-442-1095

Communications	Name	Work Telephone	Alternate Telephone
News Paper	Sun Post	763-425-3323	952-392-6867 Laci.gagliano@ecm-inc.com
News Paper	Star Tribune	612-673-4000	releases@startribune.com tim.harlow@startribune.com
Radio Station	MN Public Radio	651-290-1500	
School Superintendent	Carlton Jenkins	763-504-8011	763-504-8000
Property & Casualty Insurance			
TV	Northwest Community Television (Channel 12)	763-533-8196	news@ccxmedia.org news_mjohnson@ccxmedia.org
TV	Fox 9	953-944-9999	Fox9news@foxtv.com
TV	WCCO – Channel 4	612-339-4444	wcconewstips@wcco.cbs.com
TV	KARE 11	763-546-1111	news@Kare11.com
TV	KSTP – Channel 5	612-588-6397	newsreply@kstp.com

Critical Water Users	Name	Work Telephone	Alternate Telephone
Hospital Critical Use:	Fresenius Medical Care – 4098 Lakeland Divita Dialysis – 3461 West Broadway	800-881-5101 763-521-4865	
Nursing Home Critical Use:	Good Samaritan - 3815 West Broadway Copperfield Assisted Living – 4020 Lakeland Robbinsdale Rehabilitation & Care Center – 3130 Grimes	612-332-4262 763-277-1001 763-588-0771	
Public Shelter Critical Use:			

Appendix 6

Cooperative Agreements for Emergency Services

The City of Robbinsdale does not have any cooperative agreements for emergency services as it relates to water supply.

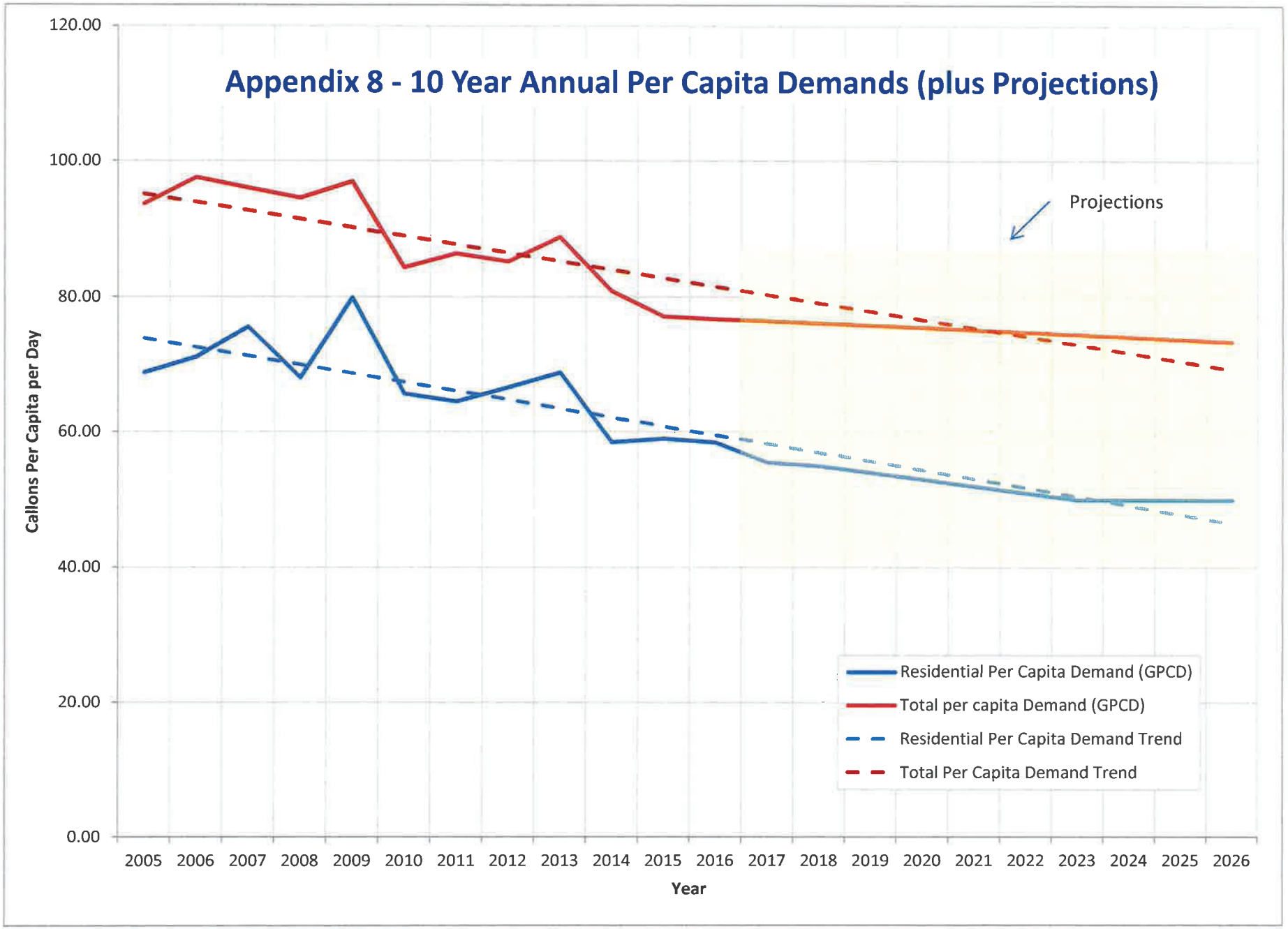
Appendix 7

Municipal Critical Water Deficiency Ordinance

The City of Robbinsdale does not currently have a Critical Water Deficiency Ordinance. It is understood that such an Ordinance is required within 6 months and that a copy will be supplied to the Department of Natural Resources (DNR) upon adoption.

Appendix 8

Graph Showing Annual Per Capita Water Demand for each Customer Category During the Last 10 Years


Appendix 8 - 10 Year Annual Per Capita Demands (plus Projections)
Callons Per Capita per Day
120.00
100.00
80.00
60.00
40.00
20.00
0.00
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
Year
Projections
Residential Per Capita Demand (GPCD)
Total per capita Demand (GPCD)
Residential Per Capita Demand Trend
Total Per Capita Demand Trend

Appendix 9

Water Rate Structure

City of Robbinsdale
2017 Utility Rates

Service	Monthly Rate	For Two Months
Water Service - Pays for maintenance and replacement of mains	$5.01	$10.02
Water that you use (for two months) - Pays for pumping and treating the water		
The first 12,000 gallons	$2.96 per 1,000 gallons	
usage from 12,001 - 26,000 gallons	$3.97 per 1,000 gallons	
usage from 26,001 - 40,000 gallons	$5.15 per 1,000 gallons	
usage over 40,000 gallons	$7.54 per 1,000 gallons	
(Average home uses 13,000 gallons for two months in the winter)		
Water Capital Surcharge - Saving for well repairs, water tower replacement, etc.	$0.55 per 1,000 gallons	
Irrigation usage - Pays for pumping and treating the water (Commercial and Homeowner Associations)		
The first 20,000 gallons	$5.15 per 1,000 gallons	
usage over 20,000 gallons	$7.54 per 1,000 gallons	
Note: Residential Homeowner Associations include a multiplier to the tier ranges for the number of residential units		
Sanitary Sewer Service - Pays for maintenance and replacement of mains and lift stations	$7.48	$14.96
Sanitary Sewer - Based on the average winter water consumption. If actual use is less than winter average, you will be charged for actual usage.	$4.33 per 1,000 gallons	
Storm Sewer - Includes effort to remove contaminants from storm run off (Residential)	$9.82	$19.64
Garbage		
32 gallon, including taxes and recycling credit	$25.34	$50.68
64 gallon, including taxes and recycling credit	$28.67	$57.34
96 gallon, including taxes and recycling credit	$32.23	$64.46
Need an extra garbage container?		
Extra 32 gallon container:	$10.31	($20.62 each 2-month bill)
Extra 64 gallon container:	$12.54	($25.08 each 2-month bill)
Extra 96 gallon container	$14.49	($28.98 each 2-month bill)

Questions? Call the utility billing department at 763-531-1211.

Appendix 10

Adopted or Proposed Regulations to Reduce Demand / Improve Water Efficiency

Member Blonigan moved and Member Ruffenach seconded a motion that the following resolution be read and adopted this 19th day of June, 1990.

RESOLUTION NO. 4358

A RESOLUTION ESTABLISHING A SPRINKLING BAN FOR WATER CONSERVATION PURPOSES.

WHEREAS, the Robbinsdale City Council has determined there is a need to preserve the water in our aquifers, and

WHEREAS, lawn sprinkling is a major water user; and

WHEREAS, controlled lawn sprinkling can lower water usage while still providing enough water for the lawns root system.

NOW THEREFORE BE IT RESOLVED, by the City Council of the City of Robbinsdale, Minnesota, that a daily lawn sprinkling ban is hereby effective every year for the period of April 15 through September 15 between the hours of 11:00 A.M. to 6:00 P.M.

The question was on the adoption of the resolution and upon a vote being taken thereon the following voted in favor thereof: Ruffenach, Holtz, Johnson, Blonigan, Mayor Robb;
and the following voted against the same: none.

WHEREUPON SAID RESOLUTION WAS DECLARED DULY PASSED AND ADOPTED THIS 19th DAY OF June, 1990.

Joy J. Robb
Joy J. Robb, Mayor

ATTEST:
Bernadette H. Leaf
Bernadette H. Leaf, City Clerk
(seal)

Appendix 11

Implementation Checklist

Appendix 11 - Implementation Checklist

Category	Action	Proposed Implementation Date
Capital Projects	New Water Treatment Plant	starting 2019 thru 2021
	Replacement Wells	starting 2019 thru 2021
	Replace Ageing Underground Infrastructure	ongoing annually
	Replace Water Meters	starting 2019 thru 2021
Maintenance	Leak Detection Survey	ongoing annually
	Main Break Repairs	ongoing as necessary
	Valve Replacement / Repair	ongoing annually
Administrative	Sprinkling Ban During Day	in place and operational
	Critical Water Deficiency Ordinance	in place by 31-Dec-17
	Wellhead Protection Plan Amendment	starting 2018 thru 2019