Pursuant to due call and notice thereof, a regular meeting of the North Mankato City Council was held in the Municipal Building Council Chambers on March 6, 2017. Mayor Dehen called the meeting to order at 7:00 p.m. asking that everyone join in the Pledge of Allegiance. The following were present for roll call: Mayor Dehen, Council Members Norland and Freyberg, Finance Director McCann, City Attorney Kennedy, Community Development Director Fischer, Public Works Director Swanson and City Clerk Van Genderen. Absent: Council Members Steiner and Whitlock and City Administrator Harrenstein.

#### **Approval of Agenda**

Council Member Norland moved, seconded by Council Member Freyberg, to approve the agenda as presented. Vote on the motion: Norland, Freyberg, and Dehen aye; no nays. Motion carried.

#### **Approval of Council Meeting Minutes**

Council Member Freyberg moved, seconded by Council Member Norland, to approve the minutes of the Council meeting of February 21, 2017. Vote on the motion: Norland, Freyberg, and Dehen aye; no nays. Motion carried.

#### Public Hearing-Revision of Code of Ordinances.

Community Development Director Fischer reported the City annually makes code revisions and recodifies the City Code.

Douglas Schaller, 55656 Hemlock Road, Mankato appeared before Council and requested the City remove the sentence in the proposed code revisions that require landlords to provide their social security numbers because it is required by State Statute. He claimed he did not believe the law applied to him because he is not a business and he reports his rent income on a Schedule E, not a Schedule C, so the IRS does not recognize him as a business. He stated there was no penalty for the City if they did not collect the information so the City should just not collect the information. Attorney Kennedy stated he had reviewed information that Mr. Schaller had provided to him and he would like more time to consider the information and requested the Council remove this particular sentence from the Code changes and review the issue at the first meeting in April. Sharon Schaller, Sharon's Craft-N-Floral, 241 Belgrade Avenue, appeared before Council and stated parcel identification numbers should be used instead of Social Security numbers to manage rental property income. Barb Church, 102 Wheeler Avenue, appeared before Council and questioned why City Code requires fences to follow the lay of the land. She stated if you follow the lay of the land property owners cannot purchase premade fences. Ms. Church also requested clarification on if the changes to City Code 156.035 was in reference to 'granny pods.' Community Development Director Fischer stated the language ensuring fences follow the lay of the land was not new language; he also stated caregiver homes would not be required to have separate water and sewer as the homes would be temporary. With no one else appearing before Council, Mayor Dehen closed the Public Hearing.

#### Public Hearing-Amend City Code, Chapter 91: Animals.

With no one appearing before Council, Mayor Dehen closed the Public Hearing.

#### **Consent Agenda**

Council Member Norland moved, seconded by Council Member Freyberg, to approve the Consent Agenda which included:

A. Bills and Appropriations.

C. Approved Parade Permit for the Monroe PTO, Color Run on May 6, 2017, from 7 a.m. to 12 p.m.

#### Vote on the motion: Norland, Freyberg, and Dehen aye; no nays. Motion carried.

#### **Public Comments**

Sharon Schaller, Sharon's Craft-N-Floral, 241 Belgrade Avenue, appeared before Council and stated she received a letter from the City indicating the organizers of Bumpers on Belgrade were submitting an application to host Bumpers on Belgrade on eight Thursdays between June 1, 2017, and September 2, 2017, beginning at 4:30 p.m. She stated she did not want the event to return because it hurt her business. If it did return she thought the cars should be subject to the following 1) a charge per car, per space 2) no drinking beer in the street 3) no advertising of vehicles for sale.

#### **Business Items**

Consider Ordinance No. 86, Fourth Series An Ordinance Amending the Code of Ordinances for the City of North Mankato, Minnesota Revising, Updating and Compiling Certain Ordinances of the City Dealing with the Subjects Embraced in the Code of Ordinances, and Providing Penalties for the Violation of the Code of Ordinances. Council Member Freyberg moved, seconded by Council Member Norland to Table the Ordinance until March 20, 2017. Discussion was held that Attorney Kennedy would like until April 3, 2017, to review the Social Security number requirement. Council Member Freyberg motioned, seconded by Council Member Norland to accept a friendly amendment to his motion to table Ordinance No. 86 from March 20, 2017, until April 3, 2017. Vote on the motion: Norland, Freyberg, and Dehen aye; no nays. Motion carried.

Ordinance No. 87, Fourth Series an Ordinance of the City of North Mankato, Minnesota, Amending North Mankato City Code, Title IX General Regulations, Chapter 91: Animals. Council Member Norland moved, seconded by Council Member Freyberg to Adopt Ordinance No. 87, Fourth Series an Ordinance of the City of North Mankato, Minnesota, Amending North Mankato City Code, Title IX General Regulations, Chapter 91: Animals. Vote on the motion: Norland, Freyberg, and Dehen aye; no nays. Motion carried.

#### **City Administrator and Staff Comments**

Public Works Director Swanson stated a large rock tumbled from the bluff across the street from City Hall. He indicated the rock would probably be repurposed on public grounds.

#### **Mayor and Council Comments**

Mayor Dehen stated the City received thank yous from Echo Food Shelf, Climb to Feed Kids, Toys for Tots, Backpack Food and Troop 29 for charitable gambling donations.

#### **Public Comments**

<u>Barb Church, 102 Wheeler Avenue</u>, appeared before Council and stated that during her comments at the previous Council meeting she forgot to mention that she respects the right for people to listen to what they choose, but others have the right not to listen. She stated that in 2013 Orfield Laboratories conducted testing and determined the Mankato amphitheater was not out of compliance,

but low-frequency intrusion may be an issue. Ms. Church requested clarification on what the City of North Mankato was going to do about the noise. Council Member Freyberg stated the City of North Mankato does not have jurisdictional control over the park and Ms. Church needs to take the fight to where the fight is; the City of Mankato. Council Member Freyberg stated the MPCA has very clear procedures to resolve noise issues and the proof lays on the complainant and would need to be brought to the Blue Earth County Attorney who would then prosecute. Ms. Church requested clarification on why North Mankato was not going to pursue the issue City to City. Council Member Freyberg stated the City had discussed and worked with Mankato to resolve the issue, but North Mankato is not the complainant it is Ms. Church. He requested Ms. Church show him a petition with signatures of the majority of the approximately 15,000 North Mankato residents, indicating Ms. Church is the only individual the City of North Mankato has heard from. Attorney Kennedy stated that if Ms. Church wanted to write a petition the language would need to be very carefully worded. Ms. Church asked if the City could help her word the petition. Attorney Kennedy indicated she would need to complete the petition. Mayor Dehen stated Ms. Church should make her presentation to the full Mankato City Council, they were the ones that could make a difference and if nothing resulted from the meeting than she should begin reviewing a petition or taking other action. Council Member Norland stated taking her presentation to the City of Mankato Council and posing the request as Mankato being a good neighbor would be a good approach.

Gary Zellmer, 1591 Sharon Drive, appeared before Council and stated the North Mankato Taylor Library just had their Community Read Book Release at the Library, and the book for 2017 is The Wright Brothers by David McCollough. Mr. Zellmer thanked Mayor Dehen for meeting with the library board where they discussed the Endowment Fund, the KTV computer, closing the library on Sundays and Art Splash. He stated these issues were reviewed and reported they had discussed ways to ensure better communication will occur between the Library Board and the City Council. He indicated they had a good conversation with the new Interim Library Director Katie Heintz. Mr. Zellmer indicated an employee satisfaction questionnaire should be completed, and they should outsource some of the Human Resources. Council Member Norland noted an anonymous employee satisfaction report was conducted in 2016 and the results were very positive with additional monthly meetings occurring between administration and departments.

Sharon Schaller, Sharon's Craft-N-Floral, 241 Belgrade Avenue, appeared before Council and expressed concerns over the former Library Director's resignation. She stated the Library Endowment Fund was used for City events. Mayor Dehen corrected her and said all Library Endowment funds were used for their intended purpose of supporting library events.

There being no further business, on a motion by Council Member Norland, seconded by Council Member Freyberg, the meeting adjourned at 7:55 p.m.

Mayor

City Clerk

City of North Mankato, MN



# **Claims List - Regular**

By Vendor Name

Date Range: 3-20-17

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Bank Code: APBNK-AF	PBNK					
	**Void**	03/07/2017	Regular	0	-	87009
02433	ADVANCED AUTO PARTS	03/20/2017	Regular	0	139.50	87016
02539	ALL AMERICA PRESSURE WASHER MFG., INC.	03/20/2017	Regular	0	950.00	87017
00137	BENCO ELECTRIC COOPERATIVE	03/07/2017	Regular	0	27,220.21	87008
00145	BETTER HOUSEKEEPING VACUUMS, INC.	03/20/2017	Regular	0	59.95	87018
00174	BOLTON & MENK, INC.	03/20/2017	Regular	0	26,568,63	87019
00195	BROCK WHITE COMPANY LLC	03/20/2017	Regular	0	375 50	87020
00221	CARGILLINC	03/20/2017	Regular	0	1 909 21	87021
00255	ΟΤΥ ΟΕ ΜΑΝΚΑΤΟ	03/20/2017	Regular	Û Û	68 773 55	87022
00255		03/20/2017	Regular	© 0	40 005 34	87022
00263		03/20/2017	Regular	0	45,005.54	07023
00305	CROB PRODUCTION SERVICES INC	03/20/2017	Regular	0	207.00	07029
00334	CROF PRODUCTION SERVICES, INC.	03/20/2017	Regular	0	010.09	87025
00354		03/20/2017	Regular	0	121.14	87020
00550	DISPLAY SALES, INC.	03/20/2017	Regular	0	10,070.00	87027
00387	ENERGENCY AUTOMOTIVE TECHNOLOGY, INC	03/20/2017	Kegular	0	141.26	87028
00401	EXPRESS SERVICES, INC.	03/20/2017	Kegular	0	1,028.02	87029
00427	FLAGSHIP RECREATION, LLC	03/20/2017	Regular	0	1,323.85	87030
00447	FREE PRESS	03/20/2017	Regular	0	1,714.84	87031
00462	G & K SERVICES	03/20/2017	Regular	0	191.53	87032
00482	GMS INDUSTRIAL SUPPLIES, INC.	03/20/2017	Regular	0	177.11	87033
00506	GREATER MANKATO GROWTH, INC.	03/20/2017	Regular	0	100.00	87034
00533	HARRENSTEIN, JOHN	03/20/2017	Regular	0	242.51	87035
00560	HILDI, INC.	03/20/2017	Regular	0	1,025.00	87036
00680	J.J. KELLER & ASSOCIATES, INC.	03/20/2017	Regular	0	604.50	87037
00632	JAVENS MECHANICAL CONTRACTING CO.	03/20/2017	Regular	0	267.52	87038
00639	JOHN DEERE FINANCIAL	03/20/2017	Regular	0	435.00	87039
00746	LAW ENFORCEMENT LABOR SERVICES, INC.	03/13/2017	Regular	0	637.00	87012
00776	LLOYD LUMBER CO.	03/20/2017	Regular	0	366.62	87040
00793	M & M SIGNS, INC.	03/20/2017	Regular	0	1.760.00	87042
00819	MANKATO FORD. INC.	03/20/2017	Regular	0	8.600.41	87043
00825	MANKATO MOTOR COMPANY	03/20/2017	Regular	0	287.89	87044
00832	MANKATO TENT & AWNING CO	03/20/2017	Regular	0	231 50	87045
00874	MENARDS-MANKATO	03/20/2017	Regular	0	1 118 59	87046
00889	ΜΙΟΨΕΣΤ ΤΔΡΕ/ΗΟΟΡΙ Δ	03/20/2017	Regular	0	681.85	87047
00911	MINNEAPOLIS FINANCE DEPARTMENT	03/20/2017	Regular	0	204.00	87048
00950	MINNESOTA STATE LINIVERSITY MANKATO	03/20/2017	Regular	0	966.02	87040
00951		03/20/2017	Regular	0	576.01	97050
00956	MINNESOTA WASTE BROCESSING CO	03/20/2017	Pogular	0	10 101 20	07030
01018	NCDEDS MAININESOTA LINIT 662400	03/20/2017	Regular	0	10,121.50	07031
01018	NOPERS MININESULA-UNIT 662400	03/13/2017	Regular	0	208.00	87013
01064		03/06/2017	Regular	0	165.64	87007
01004	NORTHERN STATES SUPPLY, INC.	03/20/2017	Regular	0	47.77	87052
02540		03/20/2017	Regular	0	7,512.00	87053
01099	PET EXPO DISTRIBUTORS	03/20/2017	Regular	U	50.00	87054
01106	PETTY CASH	03/20/2017	Regular	0	6,400.00	87055
01106	PETTY CASH	03/20/2017	Regular	0	37.79	87056
01133	POWERPLAN/RDO EQUIPMENT	03/20/2017	Regular	0	952.42	87057
02542	PRESTON, MILES	03/20/2017	Regular	0	1,500.00	87058
01191	RELIANCE ELECTRIC OF SOUTHERN MINNESOT	03/20/2017	Regular	0	10.00	87059
01211	RIVER BEND BUSINESS PRODUCTS	03/20/2017	Regular	0	202.21	87060
01262	SCHUMACHER, GREG	03/20/2017	Regular	0	193.68	87061
01290	SLETTEN, CORY	03/20/2017	Regular	0	193.68	87062
02205	SMITH LAWN AND LANDSCAPE	03/20/2017	Regular	0	4,029.50	87063
01352	STREICHER'S, INC	03/20/2017	Regular	0	358.00	87064
01365	SWANSTON EQUIPMENT CORPORATION	03/20/2017	Regular	0	3,361.32	87065
01371	TACTICAL SOLUTIONS	03/20/2017	Regular	0	203.00	87066
01402	TIRE ASSOCIATES	03/20/2017	Regular	0	137.79	87067
01419	TRAVERSE DES SIOUX LIBRARY COOPERATIVE	03/20/2017	Regular	0	2,394.50	87068

01429	TURFWERKS	03/20/2017	Regular	0	62,222.00	87069
01433	TYLER TECHNOLOGIES	03/20/2017	Regular	0	250.00	87070
01465	VANEPS, ERIC	03/20/2017	Regular	0	606.66	87071
01477	VIKING ELECTRIC SUPPLY, INC.	03/20/2017	Regular	0	847.34	87072
01486	VON BERGE, DAVID	03/20/2017	Regular	0	135.98	87073
01492	WACO SCAFFOLDING & SUPPLY CO.	03/20/2017	Regular	0	62.50	87074
02282	WARD EINESS STRATEGIES	03/20/2017	Regular	0	2.000.00	87075
01523	WENZEL AUTO ELECTRIC CO	03/20/2017	Regular	0	22.86	87076
01525	WEST CENTRAL SANITATION, INC.	03/20/2017	Regular	0	26.335.10	87077
00101	AT&T MOBILITY	03/14/2017	Bank Draft	0	25.99	DET0000992
00241	CHARTER COMMUNICATIONS	03/03/2017	Bank Draft	0	7 95	DET0000953
00241	CHARTER COMMUNICATIONS	03/03/2017	Bank Draft	0	15.91	DET0000954
00241	CHARTER COMMUNICATIONS	03/03/2017	Bank Draft	0 0	30.81	DET0000955
00241	CHARTER COMMUNICATIONS	03/08/2017	Bank Draft	ů N	15 01	DET0000959
00241	CHARTER COMMUNICATIONS	03/08/2017	Bank Droft	ů.	402.06	DET0000303
02058		03/06/2017	Bank Draft	Ő	403.50	DF10000970
02058	CONSOLIDATED COMMONICATIONS	03/00/2017	Book Droft	0	30.53	DF10000958
02058		03/00/2017	Bank Draft	0	42.94	DFT0000959
02058	CONSOLIDATED COMMONICATIONS	03/05/2017	Pank Draft	0	32.30	0FT0000960
02058		03/06/2017	Dank Draft	0	254.83	DF10000961
02038		03/06/2017	Bank Draft	0	40.54	DF10000962
02056		03/06/2017	Bank Uraft	0	37.94	DFT0000963
02058	CONSOLIDATED COMMUNICATIONS	03/08/2017	Bank Draft	0	3,062.49	DFT0000968
00311	CULLIGAN WATER CONDITIONING	03/06/2017	Bank Draft	0	47.25	DFT0000956
00411	FINANCE & COMMERCE	03/10/2017	Bank Draft	0	305.32	DFT0000977
00465	GALE/CENGAGE LEARNING	03/03/2017	Bank Draft	0	325.60	DFT0000952
00608	INGRAM LIBRARY SERVICES	03/13/2017	Bank Draft	0	611.53	DFT0000981
00733	LAKES GAS CO #10	03/15/2017	Bank Draft	0	79.80	DFT0000993
00749	LAWSON PRODUCTS, INC	03/15/2017	Bank Draft	0	684.21	DFT0000995
02059	MANKATO REFRIGERATION, LLC	03/14/2017	Bank Draft	0	86.00	DFT0000991
00851	MAYO CLINIC HEALTH SYSTEM - MANKATO	03/03/2017	Bank Draft	0	365.00	DFT0000951
00857	MC GOWAN WATER CONDITIONING, INC.	03/10/2017	Bank Draft	0	42.75	DFT0000976
02179	MES (MUNICIPAL EMERGENCY SERVICES)	03/10/2017	Bank Draft	0	1,473.20	DFT0000979
02179	MES (MUNICIPAL EMERGENCY SERVICES)	03/15/2017	Bank Draft	0	162.57	DFT0000994
00910	MINNESOTA VALLEY TESTING LAB, INC.	03/08/2017	Bank Draft	0	59.50	DFT0000967
00910	MINNESOTA VALLEY TESTING LAB, INC.	03/08/2017	Bank Draft	0	192.50	DFT0000967
02538	OCCASIONAL COOKIE	03/10/2017	Bank Draft	0	135.00	DFT0000978
02538	OCCASIONAL COOKIE	03/15/2017	Bank Draft	0	135.00	DFT0000996
01335	STAPLES ADVANTAGE	03/03/2017	Bank Draft	0	406.97	DFT0000950
01337	STAR TRIBUNE	03/10/2017	Bank Draft	0	430.04	DFT0000974
02541	UNIVERSAL MEDIA CORP	03/13/2017	Bank Draft	0	92.50	DFT0000990
01470	VERIZON WIRELESS	03/10/2017	Bank Draft	0	485.61	DFT0000973
02178	WASTE MANAGEMENT OF WI-MN	03/06/2017	Bank Draft	0	100.73	DFT0000957
01525	WEST CENTRAL SANITATION, INC.	03/10/2017	Bank Draft	0	3,332.25	DFT0000975
00039	ALL AMERICAN TOWING	03/22/2017	EFT	0	45.00	125
00102	AUDIO EDITIONS	03/22/2017	EFT	0	105.18	126
00216	C & S SUPPLY CO, INC.	03/22/2017	EFT	0	249.10	127
00310	CRYSTEEL TRUCK EQUIPMENT, INC	03/22/2017	EFT	0	25.00	128
00493	GOODWIN, TONY	03/22/2017	EFT	0	600.00	129
01275	JADD SEPPMANN & SONS, LLP	03/22/2017	EFT	0	48.22	130
00691	KENNEDY & KENNEDY LAW OFFICE	03/22/2017	EFT	0	8 924 98	131
00743	LARKSTUR ENGINEERING & SUPPLY, INC.	03/22/2017	EFT	0	157 77	132
00796	MAC QUEEN EQUIPMENT, INC.	03/22/2017	EFT	0	5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	133
00935	MINNESOTA PIPE & FOLIPMENT	03/22/2017	FFT	ň	128 60	134
01009	NAPA AUTO PARTS - MANKATO	03/22/2017	FFT	0	100.00	125
01052		03/22/2017	FFT	0	20./9	135
02005	ΡΑΝΤΗΕΩΝ COMPLITERS	03/22/2017	FFT	0	05,04	120
01090	PARAGON PRINTING MAILING & CRECIALTICS	03/22/2017	E. T	0	2,224.41	100
01263	SCHMICKERT'S TECTA AMERICA U.C.	03/22/2017	L, , FCT	0	0,219.13	120
01281		02/22/2017	ECT	0	905.00	139
V1201	JIGIN E NU	05/22/2017	Eri	υ.	21.00	140

386,472.59 115

#### All Council

The above manual and regular claims lists for 3-20-17 are approved by:

MARK DEHEN- MAYOR

DIANE NORLAND- COUNCIL MEMBER

WILLIAM STEINER- COUNCIL MEMBER

ROBERT FREYBERG- COUNCIL MEMBER

JAMES WHITLOCK- COUNCIL MEMBER

### **RESOLUTION NO.**

#### RESOLUTION APPROVING DONATIONS/CONTRIBUTIONS/GRANTS

WHEREAS, the Minnesota Statute 465.03 and 465.04 allows the governing body of any city, county, school district or town to accept gifts for the benefit of its citizens in accordance with terms prescribed by the donor;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF NORTH MANKATO, MINNESOTA, that the following donations/contributions/grants are approved as follows:

Donor	Restriction	Amount
Anonymous	Library Endowment Fund	\$350.00
		\$350.00

Adopted by the City Council this 20<sup>th</sup> day of March 2017.

Mayor

NM	Minnesota NORTH MANKATO	LARGE	E GROUP RMIT	1001 Belgrade Ave North Mankato, MN 56003 507-625-4141 www.northmankato.com
Permit #: Date:	-2017 <u>5 /<i>וו</i> / 18</u>	Start time: Stop time:	<u>5:00pm</u>	
Location: _ Event Nam	1800 Commerce Dr 10: South Point F	ive inancial Credit	Union Grand Open	wing
Name: Sc	wthPaint Finance	ial Credit Whit	2 March 19 M	
Address:	1800 Commerce	Drive Suite A-	North Mankets	
Phone: 8	577-794-6712		# of People:	150
Use of Te Notes:	ents (or anything requiring *Bounce House requi	g staking)  □ No )ズ ires waiver	Yes * If Yes, Please conta 800-252-1166 one v	nct <b>Gopher State One Call</b> veek prior to event.
Alcoholi	Beverages (wine & be	eronivi) 🕅 No F	1 Ves * \$250 refundable	deposit and \$25 ked permit
Please	e specify: Cans	Keg Catering* (musi	contact City Hall)	deposit and \$20 key permit
Audio (re	quires audio permit)		Yes * If Yes, Please fill o	out Audio Permit.
Allowed		,	Prohibited	
<ul> <li>Keg beer pro</li> <li>Fishing/ice fit</li> <li>Pets in Bens</li> <li>Canoes and under 12 mus</li> <li>Hoo roasts p</li> </ul>	wided a permit is obtained shing on Ladybug Lake and Spri on Park and Bluff Park provided kayaks on Ladybug Lake and S st be accompanied by an adult a rovided thev are on a hard-surfa	ing Lake only they are on a 6' leash pring Lake (children nd wear a life preserver) aced lot	any reason unless permission is Pets (allowed in Benson Park a Glass containers Campfires / Bonfires / Fire Ring Snowmobiles, ATVs, golfing, su flotation devices Dunk Tanks Audio equipment may not be plat the reasonable use of the park b end at 10 PM	s given from the Parks Department. nd Bluff Park only) s vimming, boating and motorized ayed so loud as to interfere with by others. All audio devices must
I, the the in to ser	undersigned, understand tha stallation of additional tents o vice lines.	t the park shelter reservati r stakes and causes disru	on fee is non-refundable. If prio ption of utility services, I agree f	r approval is not obtained for o be held liable for any repairs
I, the may t	undersigned, have received t erminate the event and preve	he Audio Permit Instruction Int future ability to obtain a	ns and understand that failure to n audio permit.	comply with the audio instructions
	Ilinh()	1 X		stixlin
SIGNED:	Applicant		D	ate
	$\cup$			
REFER T	O COUNCIL City C	lerk		Date
Receipt #	В	ook Online	Park Poli	ce Staff Initials



1001 Belgrade Avenue North Mankato, MN 56003 507-625-4141 Fax: 507-625-4151 www.northmankato.com

Audio Permit	2017
Park Permit	2017

# Audio Permit

#### About:

An audio permit is required for anyone operating outdoor amplified sound (i.e., a loudspeaker, public address system, or sound amplifying equipment). All Audio Permits must be approved by the Council. The sound system cannot be operated before 7:00 am or after 10:00 pm. There is a \$25 fee.

#### Audio Permit Responsibilities:

- An onsite event coordinator must be available by mobile during the event.
- An applicant will provide a schedule of any music or entertainment proposed to occur during the event.
- A beginning and end time must be supplied on the application, and the event coordinator must ensure compliance.
- Applicants must comply with City Code Ordinance 90.045 and Minnesota Rules Chapter 7030 which limits noise.
- Noise levels cannot exceed 60 dBA more than 50 percent of the time.

#### What happens if there is a noise complaint?

- A North Mankato Patrol Officer will meet with the complainant and evaluate and measure the noise using a decibel reader at the location of the complainant.
- If the noise is found out of compliance, the Patrol Officer will contact the onsite event coordinator and the amplified sound must be turned down.
- If the onsite event coordinator does not comply, the event will be immediately terminated, and the group will be disbursed.
- Failure to comply will affect future ability to obtain an audio permit.

AMPLIFIED SOUND:	LIVE MUSIC/BAND DJ/KARAOKE MACHINE OTHER:	DATE OF EVENT: 5-18-17 BEGIN TIME: 5'00pm END TIME: 7:00pm						
LOCATION / SHELTER: 1800 Lonmerce Drive								
EVENT NAME: Grand OF	soning							
ONSITE COORDINATOR:	PRINT NAME: KIM Pe	reison						
	MOBILE NUMBER: 507-	469-9675						
I, THE UNDERSIGNED, HAVE RECEIVED THE AUDIO PERMIT AND UNDERSTAND THAT FAILURE TO COMPLY WITH THE AUDIO POLICY MAY TERMINATE THE EVENT AND PREVENT FUTURE ABILITY TO OBTAIN AN AUDIO PERMIT.								
SIGNATURE:	DATE: <u>3/10/17</u>							
CITY CLERK:		DENIED 🗔 APPROVED						
🗖 book 🔲 police 🔲 c	STAFF INTIALS							

# **CITY OF NORTH MANKATO**

# **REQUEST FOR COUNCIL ACTION**



Agenda Item # 7D	Dept: Administration	Council Meeting Date: 3/20/17				
TITLE OF ISSUE: Consider Approving	the Terms and Conditions of	the Mankato Area Foundation Grant.				
<b>3ACKGROUND AND SUPPLEMENTAL INFORMATION:</b> The Mankato Area Foundation awarded the City of North Mankato a \$50,000 grant for the Spring Lake Park Outdoor Skating and Recreation Facility project. The Terms and Conditions are attached.						
		If additional space is required, attach a separate sheet				
For Clerk's Use:	SUPPOR'	TING DOCUMENTS ATTACHED				
Motion By:	Resolution Ordina	ance Contract Minutes Map				
Second By:						
Vote Record: Aye Nay Morland Freyberg Whitlock Steiner Dehen	Other (specify) Conditions	Grant Award Letter and Terms and				
Workshop	Ref	er to:				
X Regular Meeting	Tab	le until:				
Special Meeting	Oth	er:				



March 3, 2017

City of North Mankato Attention: John Harrenstein, City Administrator 1001 Belgrade Avenue P.O. Box 2055 North Mankato, MN 56002-2055

Dear John.

On behalf of the Board of Directors for the Mankato Area Foundation (MAF), I am pleased to inform you that a grant of \$50,000 has been awarded for the Spring Lake Park Outdoor Skating and Recreation Facility project.

We are honored to partner with you in your efforts to enhance liveability in the Mankato community.

An electronic copy of MAF's logo can be found at <u>http://www.mankatoareafoundation.com/news-press/media-kit/</u> Additionally, MAF requests recognition on all materials stating, "This project is funded (in part) through a philanthropic gift from the Mankato Area Foundation.

MAF requires a final report to be submitted within 30 days of project completion. This form can be found at <a href="http://www.mankatoareafoundation.com/for-grantseekers/mankato-area-foundation-grants/">http://www.mankatoareafoundation.com/for-grantseekers/mankato-area-foundation-grants/</a>

If there is a change in contact information at your organization or there are any other major project changes, please contact Sarah at <u>sarah@mankatoareafoundation.com</u> or 507-344-7267.

If for some reason your project is not implemented within one year, MAF requests the return of this contribution or a letter requesting an extension 30 days prior to the proposed end date. MAF will not provide additional funding until any current MAF-supported projects are complete, the final report has been submitted in a timely fashion, and all requirements have been met.

Once again, we would like to congratulate you for the ongoing impact you make in this community. Best wishes in 2017!

Sincerely,

mun

Nancy T. Zallek, Executive Director Mankato Area Foundation

## Terms and Conditions

• A final report is required to be submitted within 30 days of project completion. This form can be found at:

http://www.mankatoareafoundation.com/for-grantseekers/mankato-areafoundation-grants

- If for some reason your project is not implemented within one year, the Mankato Area Foundation requests the return of the contribution or a letter requesting an extension 30 days prior to the proposed end date.
- The Mankato Area Foundation will not provide additional funding until any current Foundation supported projects are complete, the final report has been submitted in a timely fashion, and all requirements have been met.
- If there is a change in contact information at your organization or there are any other major project changes please contact:

Sarah Beiswanger Grants and Scholarships Manager 507-344-7267 sarah@mankatoareafoundation.com

• The Mankato Area Foundation requests recognition on all materials stating, "This project is funded (in part) through a philanthropic gift from the Mankato Area Foundation." An electronic copy of the Mankato Area Foundation's logo can be found at:

http://www.mankatoareafoundation.com/news-press/media-kit

I have read the accompanying grant award letter from the Mankato Area Foundation and hereby do agree and accept these terms and conditions set forth.

Signature of Authorized Representative

Name and Title (Please print)

Organization Name

Date

#### CONSENT ASSESSMENT AGREEMENT

This Agreement is made between the City of North Mankato (City) and Joshua Black and Victoria Partridge (Owner).

The parties are guided in reaching this agreement by the following facts:

- Owner's property is described as follows: 706 Belgrade Avenue PIN #18.661.0020 LOT 2 SUBDIVISIONCD 18661 SUBDIVISIONNAME J B NELSEN'S ADD
- 2. Owner replaced the water line to the property.
- 3. Owner desires to waive all of the procedures mandated by Chapter 429 of Minnesota Statutes and to consent to the imposition of an assessment directly upon the described property.
- 4. City is willing to pay for the repair in consideration for the owner's consent to the assessment.

The parties therefore make the following agreement:

 As a result of the improvement, a special assessment shall be filed against owner's land in the amount of \$5,649.00 The assessment shall be payable in equal installments extending over a period of five (5) years and bear interest at the rate of 7.00% per annum from the date of this agreement. The City may transmit notice of this assessment to the County Auditor.

Adopted this \_\_\_\_\_ day of \_\_\_\_\_ , 2017.

City of North Mankato

Property Owner

#### **RESOLUTION NO.**

#### RESOLUTION APPROVING CONSENT ASSESSMENT AGREEMENT

WHEREAS, the City of North Mankato has, at the property owner's request, paid for certain improvements that will benefit such property, specifically repair/replacement of water line for the following described real estate:

706 Belgrade Avenue PIN #18.661.0020 LOT 2 SUBDIVISIONCD 18661 SUBDIVISIONNAME J B NELSEN'S ADD Cost: \$5,649.00

WHEREAS, the property owner desires that the cost of the water line to the property be made as a special assessment against the property; and

WHEREAS, the property owner has executed a consent assessment agreement;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF NORTH MANKATO, MINNESOTA, as follows:

That the attached consent assessment agreement is approved and that the City Clerk is directed to forward a certified copy of this resolution along with a copy of the consent assessment agreement to the Nicollet County Auditor.

Adopted by the City Council this 20th day of March 2017.

Mayor

ATTEST:

City Clerk



Billing Address Joshua Black 706 Belgrade Avenue North Mankato, MN 56003 USA Mr. Rooter Plumbing of South Central Minnesota 415 Truman St. North Mankato, MN 56003 Invoice 52167938 Invoice Date 3/2/2017 Completed Date 3/2/2017 Technicians Joe Hunt Luke Lowe Customer PO

> Job Address Joshua Black 706 Belgrade Avenue North Mankato, MN 56003 USA

#### **Description of Work**

	1.1	
New water	line	sen/ice
11044 440101	11310	SCIVICC

Task #	Description	Quantity	Standard Price	Your Price	Your Total	Signature
D2205	Install 3/4" Ball Valve in exposed copper Main shut off valve. Excavate meter box and slit new main water service in.	1.00	\$6,254.73	\$5,500.00	\$5,500.00	) ~
B20	Advantage Plan Membership - 5 Years	1.00	\$149.00	\$149.00	\$149.00	~~~
		******	Sub Tax	-Total		\$5,649.00 \$0.00
			Tot Pay	al Due ment		\$5,649.00 \$0.00
			Bala	ance Due		\$5,649.00
			Me	mbership	Discount	\$754.73

#### Thank you for your business.

IMPORTANT NOTICE: You and your service professional are responsible for meeting the Terms and Conditions of this contract. If you sign this contract and you fail to meet the terms and conditions of this contract, you may lose legal ownership rights to your home. I agree that initial price quoted prior to the start of work does not include any additional or unforeseen tasks, nor materials which may be found to be necessary to complete repairs or replacements. I also agree to hold Mr. Rooter Plumbing® or its assigns harmless for parts deemed corroded, unusable or unreliable for completion of stated work to be done. I hereby authorize Mr. Rooter Plumbing® to perform proposed work and agree to all agreement conditions as displayed and further acknowledge that this invoice is due upon receipt. Independently owned and operated franchise. Amount to Authorize: \$5,649.00

Acceptance of work performed: I find the service and materials performed & installed have been completed in accordance with this agreement. I agree to pay reasonable attorney fees, collection fees and court costs in the event of legal action pursuant to collection of amount due. Total Due: \$5,649.00

# **CITY OF NORTH MANKATO**

# **REQUEST FOR COUNCIL ACTION**



Agenda Item # 9A Dept:	Public Works Council Meeting Date: 3/20/17
TITLE OF ISSUE: Consider Approving the ]	Resolution Adopting the City of North Mankato Water Supply Plan.
BACKGROUND AND SUPPLEMENTAL IN	<b>NFORMATION:</b> The Department of Natural Resources has approved the
Water Supply Plan for the City of North Manka	to. In accordance with the DNR's requirements the City must adopt the
Water Supply Plan.	
	If additional space is required, attach a separate sheet
REQUESTED COUNCIL ACTION: Adopt t	he Resolution Adopting the City of North Mankato Water Supply
r ian.	
For Clerk's Use:	SUPPORTING DOCUMENTS ATTACHED
Motion By:	Resolution Ordinance Contract Minutes Map
Vote Record: Aye Nay	
Norland	Other (specify) Letter from the DNR approving the
Whitlock	North Mankato water Suppry Flan, water Suppry Flan
Steiner	
Dehen	
Workshop	Refer to:
X Regular Meeting	Table until:
Special Meeting	Other:

#### RESOLUTION ADOPTING THE CITY OF NORTH MANKATO WATER SUPPLY PLAN

WHEREAS, the City of North Mankato is required by the Minnesota Department of Natural Resources (DNR) to prepare and submit a water supply plan; and

WHEREAS, the goal of the Water Supply Plan is to help water suppliers implement long term water sustainability and conservation measures as well as develop critical emergency preparedness measures; and

WHEREAS, completion of the plan creates eligibility for funding request to the Minnesota Department of Health (MDH) for the Drinking Water Revolving Fund, and allows the city to submit request for new wells or expanded capacity of existing wells; and

WHEREAS, completion of the plan fulfills the contingency plan provisions required in the MDH wellhead protection plan, and fulfills the demand reduction requirements of Minnesota Statutes, Section 103G.291, Subdivision 3 and 4.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL FOR THE CITY OF NORTH MANKATO, MINNESOTA, that the North Mankato Water Supply Plan is adopted.

Adopted by the City Council this 20<sup>th</sup> day of March 2017.

Mayor

ATTEST:

City Clerk

# Minnesota Department of Natural Resources

DNR ECOLOGICAL & WATER RESOURCES 21371 State Highway 15 New Ulm, MN 56073



City of North Mankato Duane Rader, Water Superintendent 1001 Belgrade Avenue; P.O. Box 2055 North Mankato, MN 56002-2055

Dear Mr. Rader:

#### RE: Water Supply Plan Approval, City of North Mankato, Nicollet County

Our office has completed the review of your water supply plan for the public water supply authorized under DNR Water Appropriation Permit No. 1975-4230. I am pleased to advise you that in accordance with Minnesota Statutes, Section 103G.291, Subdivision 3, and on behalf of the Commissioner of the Department of Natural Resources, I hereby **approve your water supply plan**. We encourage cities to complete the attached "Certificate of Adoption" form. Please upload the form to the Minnesota DNR Permitting and Reporting System (MPARS) as soon as the city officially adopts the plan.

The DNR and Minnesota Rural Water Association encourage the city to educate its customers on how they can reduce household water use. As mentioned at the water supply planning workshops, the DNR will be contacting you periodically regarding the progress the city has made on their water conservation goals. We encourage you to keep records of your success.

Thank you for your efforts in planning for the future of the City of North Mankato water supply and for conserving the water resources of the State of Minnesota. If you have any questions or need additional assistance with the city's water appropriation permit, please contact Area Hydrologist Garry Bennett at (320) 234-2550, ext. 230 or garry.bennett@state.mn.us.

Best regards, DNR-ECOLOGICAL & WATER RESOURCES

Robert Collett Regional Manager

e-copy: Carmelita Nelson, DNR Ecological & Water Resources Garry Bennett, DNR Ecological & Water Resources Kevin Ostermann, Nicollet County SWCD Minnesota Permitting and Reporting System (MPARS)





#### CERTIFICATION OF ADOPTION WATER SUPPLY PLAN

City or Water System Name:

Name of Person Authorized to Sign Certification on Behalf of the System:

Title:

Address:

Telephone:

Fax:

E-mail:

I certify that the Water Supply Plan approved by the Department of Natural Resources has been adopted by the city council or utility board that has authority over water supply services.

Signed:

Date:



Real People. Real Solutions.

# January 2017 Water Supply Plan

# North Mankato, Minnesota

M22.111766

Submitted by:

Bolton & Menk, Inc. 1960 Premier Drive Mankato, MN 56001 P: 507-625-4171 F: 507-625-4177

# City of North Mankato Water Supply Plan

Formerly called Water Emergency & Water Conservation Plan





Cover photo by Molly Shodeen



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

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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.

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

# **INTRODUCTION TO WATER SUPPLY PLANS (WSP)**

# Who needs to complete a Water Supply Plan

Public water suppliers serving more than 1,000 people, and 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 webpage at http://www.dnr.state.mn.us/gwmp/areas.html

## Benefits of completing a WSP

Completing a WSP using this template, fulfills a water supplier's statutory obligations under M.S. <u>M.S.103G.291</u> 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 <u>www.mndnr.gov/watersupplyplans</u>
- 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.
- 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 webpage <u>http://www.metrocouncil.org/Handbook/Plan-Elements/Water-Resources/Water-Supply.aspx</u>. All out-state water suppliers do *not* need to complete the content addressed in Part 4.
- 7. Use the Plan instructions and Checklist document to insure all data is complete and attachments are included. This will allow for a quicker approval process. <u>www.mndnr.gov/watersupplyplans</u>
- 8. Plans should be submitted electronically no paper documents are required. https://webapps11.dnr.state.mn.us/mpars/public/authentication/login
- 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)		754230		
Ownership	Public	CITY OF NORTH MANKATO		
Metropolitan Council Area	No,	(Nicollet and Blue Earth County)		
Street Address		1001 Belgrade Avenue		
City, State, Zip	North Mankato, MN, 56003			
Contact Person Name		Duane Rader		
Title		Water Superintendent		
Phone Number		507-625-3382		
MDH Supplier Classification	MunicipaDN	on-municipal transient, non-municipal		
	non-transier	it, etc.		

# 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:

Year	Pop.	Total	Residential	C/I/I Water	Water used	Wholesale	Total Water	Total Water	Water	Percent	Average Daily	Max. Daily	Date of Max.	Residential	Total per
	Served	Connections	Water	Delivered	for Non-	Deliveries	Delivered	Pumped	Supplier	Unmetered/	Demand	Demand	Demand	Per Capita	capita
			(MG)	(MG)	essential	(MG)	(IVIG)	(IVIG)	Services	Unaccounted	(NGD)	(MGD)		Demand (GPCD)	Demand (GPCD)
2006	12,557	5907	373.36	93.28	0.65	0	503.04	523.44	36.40	3.90%	1.434	2.696	2-Jun	81.46	114.21
2007	12,817	6083	351.65	95.82	0.89	0	480.61	541.46	33.14	11.24%	1.483	2.845	3-Aug	75.17	115.74
2008	12,935	6196	320.61	100.06	0.82	0	452.85	516.65	32.17	12.35%	1.415	3.045	11-Jul	67.91	109.43
2009	13,003	4751	332.75	81.84	0.79	0	443.46	500.63	28.86	11.42%	1.372	2.809	19-May	70.11	105.48
2010	13,045	4799	315.06	81.71	1.00	0	427.82	467.21	31.04	8.43%	1.280	2.466	20-Apr	66.17	98.12
2011	13,394	6375	337.63	73.29	0.57	0	442.11	468.07	31.19	5.55%	1.282	2.267	28-Apr	69.06	95.74
2012	13,426	6480	351.57	77.29	1.12	0	460.26	533.98	31.40	13.81%	1.463	3.030	3-Jul	71.74	108.96
2013	13,462	6572	316.10	80.03	6.68	0	432.28	510.65	36.16	15.35%	1.399	2.420	29-Aug	64.33	103.93
2014	13,520	6682	298.02	80.63	5.34	0	412.21	548.81	33.56	24.89%	1.504	2.871	24-Jul	60.39	111.21
2015	13,610	6799	274.39	103.49	4.22	0	410.48	479.87	32.60	14.46%	1.315	2.503	6-May	55.24	96.60
Avg. 2010- 2015	13,410	6285	315.46	82.74	3.16	0	430.86	501.43	32.66	13.75%	1.374	2.593	-	64.49	102.43

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

MG – Million Gallons

MGD – Million Gallons per Day

GPCD – Gallons per Capita per Day

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	Table 3	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 Coloplast Corp	Commercial	5,500,600	1.46%	Unknown
2 Camelot Park	Residential	3,444,010	0.91%	Unknown
3 Four Season Truck Wash	Commercial	3,428,600	0.91%	Unknown
4 Cliff Viessman Inc	Commercial	3,408,800	0.90%	Unknown
5 Best Western	Commercial	3,174,000	0.84%	Unknown
6 Navitor Midwest	Commercial	2,513,640	0.67%	Unknown
7 Kato Engineering	Commercial	2,335,900	0.62%	Unknown
8 Wis-Pak	Commercial	2,241,000	0.59%	Unknown
9 Kwik Trip	Commercial	2,137,720	0.57%	Unknown
10 Nath & Associates	Commercial	1,862,600	0.49%	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)	Treatme nt Method	Treatment Type	Annual Amount of Residuals	Disposal Process for Residuals	Do You Reclaim Filter Backwas h Water?
Water Treatment Plant No. 1	1959 (re- habilitated in 1994)	1,800,000	Gravity Filter	Fe removal, Chlorination, Fluoridation	4.95 MG	Discharge to Wastewater Treatment Facility	No
Water Treatment Plant No. 2	1971 (re- habilitated in 2001)	2,640,000	Gravity Filter	Fe/Mn removal & Radium removal, Chlorination, Fluoridation, Poly- phosphate	11.53 MG	Discharge to Wastewater Treatment Facility	No
Total	NA		NA	NA		NA	

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

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

Structure Name	Type of Storage	Year	Primary Material	Storage Capacity
	Structure	Constructed		(Gallons)
1 Water Tower 1	Elevated storage	2009	Steel	500,000
2 Water Tower 2	Elevated storage	1993	Steel	500,000
3 Ground Storage Reservoir 1	Ground storage	1959	Concrete	500,000
4 Hillside Reservoir 1	Ground storage	1959	Concrete	190,000
5 Hillside Reservoir 2	Ground storage	1959	Concrete	60,000
6 Ground Storage Reservoir 2	Ground storage	1971	Concrete	750,000
7	Other -			
Total	NA	NA	NA	2,500,000

#### 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 well and water treatment capacities are sufficient to meet future projected average daily and maximum day demands. Current well firm capacities are 1.6 MGD and 3.2 MGD in the lower and upper systems respectively. Treatment capacity of Plant No. 1 is 1.8 MGD and Plant No. 2 is 2.6 MGD for a combined treatment of 4.4 MGD, while the future peak demand is estimated at 3.46 MGD.

### 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.** 

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 No. 5	209823	1950	1000	680	Active*	No
Groundwater	Well No. 6	209821	1959	1440	687	Active	No
Groundwater	Well No. 7	112207	1975	1100	860	Active	Yes
Groundwater	Well No. 8	415943	1986	1100	845	Active	Yes
Groundwater	Well No. 9	809695	2015	1100	845	Active	Yes
Interconnection	Mankato Water System	N/A		1500	N/A	Emergency interconnection	N/A
Interconnection	Wis-Pak Bottling	N/A		900	N/A	Emergency interconnection	N/A
* The City is capabl	e of providing wate	r from the upper	system to the lo	wer system, wh	nere Well No	.5 is, in the event of an	emergency.

#### Table 6. Water sources and status

#### **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.

The City of North Mankato must request the use of the interconnection with the City of Mankato, there is a limit of 2.16 MGD.

The interconnection with Wis-Pak Bottling would require temporary pipe modifications and has a limit of 1.296 MGD.

## **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?

1) The population served has been steadily increasing at an annual rate of 0.9%, this is because North Mankato and Mankato are the regional center and largest cities of the surrounding counties.

2) The total per capita water demand has fluctuated between 95.7 and 115.7, staying relatively stable at 102.4 with a standard deviation of 7.2 gpcd. This is likely due to annual variation in rainfall and lawn watering practices.

3) The average day demand has fluctuated between 1.28 and 1.50, staying relatively stable at 1.37 with a standard deviation of 0.08 MGD.

4) The maximum day demand has fluctuated between 2.27 and 3.05, staying relatively stable at 2.59 with a standard deviation of 0.27 MGD. The average and max day demand trends are again likely due to variations in rainfall and lawn watering practices.

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	14149	14149	102.43	1.45	2.90
2017	14333	14333	102.43	1.47	2.94
2018	14519	14519	102.43	1.49	2.97
2019	14708	14708	102.43	1.51	3.01
2020	14899	14899	102.43	1.53	3.05
2021	15090	15090	102.43	1.55	3.09
2022	15283	15283	102.43	1.57	3.13
2023	15479	15479	102.43	1.59	3.17
2024	15677	15677	102.43	1.61	3.21
2025	15904	15904	102.43	1.63	3.26
2030	16900	16900	102.43	1.73	3.46
2040	18970	18970	102.43	1.94	3.89

**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 population was determined by the average of the City Census growth trend of 1.28% annually and the average portion of the City/Nicollet County census population multiplied with the MN State Demographics Office population projections for Nicollet County.

The average Total per Capita Demand and Peaking Factor from the past 6 years were used to determine Average Daily and Maximum Day Demands.

## E. Resource Sustainability

#### Monitoring - Key DNR Benchmark

Complete Table 8 by inserting information about source water quality monitoring efforts. The list should include all production wells, observation wells, and source water intakes or reservoirs. Additional information on groundwater level monitoring program at:

<u>http://www.dnr.state.mn.us/waters/groundwater\_section/obwell/index.html\_</u>Add rows to the table as needed.

Table 8. Information about source water quality monitoring

MN Unique Well #	Type of monitoring	Monitoring program	Frequency of	Monitoring Method
or Surface Water ID	point		monitoring	
209823	☑ production well	□Routine MDH	□continuous	
	observation well	sampling	□hourly	□ grab sampling
	□ source water	⊠Routine water	🗆 daily	🗵 steel tape
	intake	utility sampling	$\Box$ monthly	🗆 stream gauge
	□ source water	🗆 other	⊠quarterly	
	reservoir		□annually	
209821	☑ production well	□Routine MDH	⊠continuous	⊠SCADA
	observation well	sampling	□hourly	□ grab sampling
	□ source water	⊠Routine water	🗆 daily	steel tape
	intake	utility sampling	$\Box$ monthly	🗆 stream gauge
	□ source water	□ other	□quarterly	
	reservoir		□annually	
112207	☑ production well	□Routine MDH	⊠continuous	⊠SCADA
	□ observation well	sampling	□hourly	$\Box$ grab sampling
	□ source water	⊠Routine water	🗆 daily	steel tape
	intake	utility sampling	$\Box$ monthly	🗆 stream gauge
	□ source water	$\Box$ other	□quarterly	
	reservoir		□annually	
415943	☑ production well	□Routine MDH	⊠continuous	⊠SCADA
	□ observation well	sampling	□hourly	$\Box$ grab sampling
	□ source water	⊠Routine water	🗆 daily	steel tape
	intake	utility sampling	$\Box$ monthly	🗆 stream gauge
	□ source water	$\Box$ other	□quarterly	
	reservoir		□annually	
809695	☑ production well	□Routine MDH	⊠continuous	⊠SCADA
	observation well	sampling	□hourly	$\Box$ grab sampling
	□ source water	☑Routine water	🗆 daily	steel tape
	intake	utility sampling	$\Box$ monthly	🗆 stream gauge
	□ source water	$\Box$ other	□quarterly	
	reservoir		□annually	

#### 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.
Provide water level data graphs for each well in **Appendix 3** for the life of the well, or for as many years as water levels have been measured. See DNR website for Date Time Water Level <a href="http://www.dnr.state.mn.us/waters/groundwater">http://www.dnr.state.mn.us/waters/groundwater</a> section/obwell/waterleveldata.html

#### 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			
209823	Mt. Simon	N/A*	☐ Falling	MM/DD/YY:			
209821	Mt. Simon	39	☐ Falling ☐ Stable	MM/DD/YY: MM/DD/YY:			
			⊠ Rising	MM/DD/YY:			
112207	Mt. Simon	41	⊠ Falling	MM/DD/YY:			
			□ Stable	MM/DD/YY:			
			□ Rising	MM/DD/YY:			
415943	Mt. Simon	26	⊠ Falling	MM/DD/YY:			
			□ Stable	MM/DD/YY:			
			Rising	MM/DD/YY:			
809695	Mt. Simon	N/A**	□ Falling	MM/DD/YY:			
			□ Stable	MM/DD/YY:			
			□ Rising	MM/DD/YY:			
* Well No. 5 (209823) became an active well in 2016 and is manually monitored quarterly, 2006-2015 it was an							

\* Well No. 5 (209823) became an active well in 2016 and is manually monitored quarterly, 2006-2015 it was an emergency well and no data was collected.

\*\*Well No. 9 (809695) was constructed in 2016, therefore a trend has not yet been observed.

# 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 be impacted by permitted water withdrawals. If known, 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.

#### Table 10. Natural resource impacts

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection	Mitigation Measure or Management	Describe How Changes to
				I nresnola*	Plan	are Monitored
⊠ River or stream	1) Minnesota River (M-055) 2) Blue Earth River (M-055-076) 3) Le Sueur River (M-055-076- 001) 4) Minneopa Creek (M-055-078) 5) Unnamed (M-055-072) 6) Unnamed (M-055-073) 7) Unnamed (M-055-074) 8) Unnamed (M-055-074) 9) Unnamed (M-055-076-011) 10)Unnamed (M-055-076-011) 10)Unnamed (M-055-071.5-003) 12)Unnamed (M-055-071.5-001) 13)Unnamed (M-055-072-002)	<ul> <li>Flow/water level decline</li> <li>Degrading water quality trends and/or MCLs exceeded</li> <li>Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts</li> <li>Other: No impacts are anticipated because municipal well water is appropriated from a confined aquifer with very limited or no connectivity with surface waters.</li> </ul>	<ul> <li>□ GIS</li> <li>analysis</li> <li>□ Modeling</li> <li>□ Mapping</li> <li>□ Monitoring</li> <li>□ Aquifer</li> <li>testing</li> <li>⊠ Other:</li> <li>Inferred</li> </ul>	Q90 (the 90% exceedance flow)	<ul> <li>Revise permit</li> <li>Change groundwater pumping</li> <li>Increase conservation</li> <li>Other: No Impact; no mitigation measure or management plan needed</li> </ul>	N/A
⊠ Calcareous fen	Lime 30 Fen	<ul> <li>Flow/water level decline</li> <li>Degrading water quality trends and/or MCLs exceeded</li> <li>Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts</li> <li>Other: No impacts are anticipated because the Lime 30</li> <li>Fen is dependent upon upwelling water from the Jordan Aquifer.</li> <li>The city appropriates water from the much deeper Mt. Simon aquifer.</li> </ul>	<ul> <li>□ GIS</li> <li>analysis</li> <li>⊠ Modeling</li> <li>(DNR)</li> <li>⊠ Mapping</li> <li>(DNR)</li> <li>□</li> <li>Monitoring</li> <li>□ Aquifer</li> <li>testing</li> <li>□ Other:</li> <li></li> </ul>	State Law prohibits any activity that may negatively impact a calcareous fen	<ul> <li>Revise</li> <li>permit</li> <li>Change</li> <li>groundwater</li> <li>pumping</li> <li>Increase</li> <li>conservation</li> <li>Other: No</li> <li>impact; no</li> <li>mitigation</li> <li>measure or</li> <li>management</li> <li>plan needed</li> </ul>	N/A

Resource Type	Resource Name	Risk	Risk Assessed	Describe	Mitigation	Describe How
			Through	Resource	Measure or	Changes to
				Protection	Management	Thresholds
				Threshold*	Plan	are
						Monitored
☑ Lakes and	1) Hiniker (7-147P)	Flow/water level decline	🗆 GIS	N/A	Revise	N/A
Wetlands	2) Spring (52-2W)	Degrading water quality trends	analysis		permit	
	3) Unnamed (52-63W)	and/or MCLs exceeded	🗆 GIS		Change	
	4) Unnamed (7-71W)	Impacts on endangered,	analysis		groundwater	
	5) Unnamed (7-73W)	threatened, or special concern	□ Modeling		pumping	
		species habitat or other natural	Mapping		Increase	
		resource impacts			conservation	
		⊠Other: No risk due to distance	Monitoring		⊠ Other:	
		from production wells and	🗆 Aquifer		N/A	
		because municipal well water is	testing			
		Appropriated from a Confined	⊠ Other:			
		aquifer with very limited or no	Inferred			
		connectivity with surface waters				
I Trout	1)Unnamed (M-055-081)	Flow/water level decline		State law	□ Revise	N/A
Stream (and	2)Unnamed (M-055-81-002)	Degrading water quality trends	analysis	prohibits any	permit	
designated	3)Unnamed (M-055-071.5-003)	and/or MCLs exceeded	□ Modeling	activity that	Change	
tributaries)		Impacts on endangered,	Mapping	may	groundwater	
		threatened, or special concern		negatively	pumping	
		species habitat or other natural	Monitoring	impact a	Increase	
		resource impacts	🗆 Aquifer	trout stream	conservation	
		⊠Other: No impacts are	testing	or designated	🗵 Other: No	
		Anticipated because municipal	☑ Other:	trout stream	impact; no	
		well water is appropriated from a	Inferred	tributary	mitigation	
		confined aquifer with very limited			measure or	
		or no connectivity with surface			management	
		waters.			plan needed	

Resource	Resource Name	Risk	Risk	Describe	Mitigation	Describe How
Туре			Assessed	Resource	Measure or	Changes to
			Through	Protection	Management	Thresholds are
				Threshold*	Plan	Monitored
🗵 Aquifer	1)Sh sand and gravel (QBAA)	I Flow/water level decline	🗆 GIS	No threshold	□ Revise	Aquifer static and
	2)Sm sand and gravel (QBAA)	Degrading water quality trends	analysis	for Mount	permit	pumping water levels
	3)Se sand and gravel (QBAA)	and/or MCLs exceeded	□ Modeling	Simon at this	Change	will be monitored with
	4)St sand and gravel (QBAA)	□ Impacts on endangered,	Mapping	time; DNR in	groundwater	the SCADA system.
	5)Ss surficial sand and gravel	threatened, or special concern	X	investigating	pumping	Declines in water
	(QWTA)	species habitat or other natural	Monitoring		⊠ Increase	levels will be reviewed
	6)Os Shakopee (Prairie du	resource impacts	🗆 Aquifer		conservation	with the proper state
	Chien)	⊠Other: The city impacts/pumps	testing		Other	agencies. The DNR's
	7)Ej Jordan	water from the Mount Simon	□ Other:			Mount Simon Users
	8)Etc upper Tunnel City	Aquifer. No impacts are anticipated				Group is under
	9)Ew Wonewok	to other aquifers because of very				contract to monitor
	10) Em Mount Simon	limited, or no, connectivity with				the wells, separate
		those aquifers.				from the City
						monitoring.

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold*	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
☑ Endangered, threatened, or special concern species habitat, other Natural resource impacts	Various	<ul> <li>Flow/water level decline</li> <li>Degrading water quality trends and/or MCLs exceeded</li> <li>Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts</li> <li>Other: No impacts are anticipated. Endangered species are vascular plants dependent on soil moisture and not water level</li> </ul>	<ul> <li>GIS</li> <li>analysis</li> <li>Modeling</li> <li>Mapping</li> <li>Monitoring</li> <li>Aquifer</li> <li>testing</li> <li>Other:</li> <li>Inferred</li> </ul>	Endangered and threatened species may not be impacted without a DNR Takings Permit	<ul> <li>Revise</li> <li>permit</li> <li>Change</li> <li>groundwater</li> <li>pumping</li> <li>Increase</li> <li>conservation</li> <li>Other:</li> <li>No impact;</li> <li>no mitigation</li> <li>measure or</li> <li>management</li> <li>plan needed</li> </ul>	N/A

\* Examples of thresholds: 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.

## 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.

Plan Type	Status	Date Adopted	Date for Update
WHP	🗵 In Process		
	□Completed		
	🗆 Not Applicable		
SWP	🗆 In Process		
	Completed		
	🗵 Not Applicable		

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

**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	<ul> <li>No action planned - adequate</li> <li>Repair/replacement</li> <li>Expansion/addition</li> </ul>	As needed	Periodic repairs and replacements as required.
Water Storage Facilities	<ul> <li>No action planned - adequate</li> <li>Repair/replacement</li> <li>Expansion/addition</li> </ul>	As needed	Ground storage reservoirs to be drained, inspected, and maintained every 3 to 5 years.
Water Treatment Facilities	<ul> <li>No action planned - adequate</li> <li>Repair/replacement</li> <li>Expansion/addition</li> </ul>	As needed	Both WTFs likely to be rehabilitated or reconstructed. At time of significant rehabilitation, consider expanding WTF No. 2 and decommissioning WTF No. 1.
Distribution Systems (pipes, valves, etc.)	<ul> <li>No action planned - adequate</li> <li>Repair/replacement</li> <li>Expansion/addition</li> </ul>	As needed	Older portions to be replaced and increase size as required. Watermains evaluated for improvement and/or replacement during street reconstruction.
Pressure Zones	<ul> <li>☑ No action planned - adequate</li> <li>□ Repair/replacement</li> <li>□ Expansion/addition</li> </ul>		
Other:	<ul> <li>No action planned - adequate</li> <li>Repair/replacement</li> <li>Expansion/addition</li> </ul>		

## Proposed Future Water Sources

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

Table 13. Proposed future installations/sources
-------------------------------------------------

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

#### Water Source Alternatives - Key Metropolitan Council Benchmark

Do you anticipate the need for alternative water sources in the next 10 years? \_\_\_\_Yes X 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	Estimated Amount of	Timeframe to	Potential Partners	Benefits	Challenges
	Location	Future	Implement			
	(approximate)	Demand (%)	(YYYY)			
□ 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	NA	NA	NA	NA	NA	NA
another supplier						

# 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. Federal 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.

#### Do you have a federal emergency response plan? ☑ Yes □ No

#### If yes, what was the date it was certified? May 12, 2004

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

Emergency Response Plan Role	Contact Person	Contact Phone Number	Contact Email
Emergency Response Lead	CHRIS BOYER	507-625-4141	701@NMPD.ORG
Alternate Emergency	BRAD	507-625-4601	BSWANSON@NORTHMANKATO.COM
Response Lead	SWANSON		

#### Table 15. Emergency Preparedness Plan contact information

## **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? $\boxtimes$ Yes $\square$ 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**. A template is available at <u>www.mndnr.gov/watersupplyplans</u>

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? $\boxtimes$ Yes $\square$ 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 s	supply systems to su	upply water in an emergency
Tuble 10. Interconnections	with other watch a	appiy systems to st	apply water in an emergence

Other Water Supply System Owner	Capacity (GPM & MGD)	Note Any Limitations On Use	List of services, equipment, supplies available to respond
CITY OF MANKATO	1500/2.16	MUST REQUEST USE	
WIS-PAK BOTTLING	900/1.296	TEMPORARY PIPE	
		MODIFICATIONS	

GPM – Gallons per minute MGD – million gallons per day

#### Table 17. Utilizing surface water as an alternative source

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

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

#### **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 (GDP)	Short-Term Emergency Demand Reduction Potential (GPD)
Residential	1	896,203	144,450
Institutional	1	33,411	13,760
Commercial & Industrial	2 & 3	204,245	37,750
Irrigation	4		
Wholesale	5		
Non-Essential	6		
TOTAL	-	1,133,859	186,960

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)

#### **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.

Notification Methods (select all that apply)		Up	date	Partners		
Trig	ger(s)			Fre	quency	
X	Short-term demand		Website Email list serve		Daily Weekly	
	reduction	X	Social media (e.g. Twitter,		Monthly	
	declared (< 1		Facebook)		Annually	
	year)	$\times$	Direct customer mailing,	X	As Needed	
		$\times$	Press release (TV, radio,			
			newspaper),			
		$\times$	Meeting with large water users (>			
			10% of total city use)			
			Other:			
$\mathbf{X}$	Long-term	$\times$	Website		Daily	
	Ongoing		Email list serve		Weekly	
	demand	$\mathbf{X}$	Social media (e.g. Twitter,		Monthly	
	reduction		Facebook)		Annually	
	declared	$\mathbf{X}$	Direct customer mailing,	$\times$	As Needed	
		$\times$	Press release (TV, radio,			
			newspaper),			
		$\times$	Meeting with large water users (>			
			10% of total city use)			
			Other:			
$\times$	Governor's	$\times$	Website		Daily	
	Critical water		Email list serve		Weekly	
	deficiency	×	Social media (e.g. Twitter,		Monthly	
	declared		Facebook)		Annually	
			Direct customer mailing,	×	As Needed	
		$\mathbf{X}$	Press release (TV, radio,			
			newspaper),			
			Meeting with large water users (>			
			10% of total city use)			
			Other:			

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

#### 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)  $\boxtimes$  Yes  $\Box$  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: <u>Mayor and Utility Manager</u>.

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

# PART 3. WATER CONSERVATION PLAN



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

There are many incentives for conserving water; conservation:

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

The City of North Mankato distributes a yearly Consumer Confidence Report and two Community Newsletters per year. The public works department continues to work on locating and fixing leaks and other sources of unaccounted water. A conservation neutral rate structure is currently in use.

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	<b>Conservation Plan</b>
--------------------------	----------------------	--------------------------

2006 Plan Commitments	Action Taken?
Change Water Bates Structure to provide conservation pricing	
	□ 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	□ Yes
washers, washing machines, irrigation systems, rain barrels, water softeners, etc.	⊠ 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?

Due to the new leak detection methods used since the summer 2015, unaccounted water has gone down. 10 leaks were found in 2015 and 4 leaks have been found in 2016 (up to October 2016). Chemical injectors have been metered since 9/2014 and has noticeably reduced unaccounted water usage.

With the implementation of the rate structure, water usage has also declined.

# 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.

Objective	Triggers	Actions
Protect Surface Water Flows	$\Box$ Low stream flow	□ Increase promotion of conservation
	conditions	measures
	Reports of declining	□ Other:
	wetland and lake levels	
	□ Other:	
Short-term demand reduction	Extremely high seasonal	Adopt (if not already) and enforce the
(less than 1 year	water demand (more than	critical water deficiency ordinance to
	double winter demand)	restrict or prohibit lawn watering,
	Loss of treatment capacity	vehicle washing, golf course and park
	Lack of water in storage	irrigation & other nonessential uses.
	🗵 State drought plan	Supply augmentation through
	🗵 Well interference	emergency wells/ interconnections
	🗆 Other:	Water allocation through public
		notification
		Meet with large water users to discuss
		user's contingency plan.
Long-term demand reduction	🗵 Per capita demand	Develop a critical water deficiency
(>1 year)	increasing	ordinance that is or can be quickly
	Ital demand increase	adopted to penalize lawn watering,
	(higher population or more	vehicle washing, golf course and park
	industry)Water level in	irrigation & other nonessential uses.
	well(s) below elevation of	I Enact a water waste ordinance that
		targets overwatering (causing water to
	□ Other:	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.
		Image: Enhanced monitoring and reporting:
		audits, meters, billing, etc.
Governor's "Critical Water	🗵 Describe	🗵 Describe
Deficiency Order" declared	Unsustainable	Evaluate Surface Water Supply
	Groundwater Supply	

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

# 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 Waters 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 ten-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)

Until 2016 the City surveyed 10% of the system every year and periodically as needed. In 2015 the City began testing 100% of the system yearly for leaks.

*Water Audits* - are intended to identify, quantify and verify water and revenue losses. The volume of unaccounted-for water should be evaluated each billing cycle. The American Water Works Association (AWWA) recommends that ten percent or less of pumped water is unaccounted-for water. Water audit procedures are available from the AWWA and MN Rural Water Association <u>www.mrwa.com</u>. Drinking Water Revolving Loan Funds are available for purchase of new meters when new plants are built.

What is the date of your most recent water audit? 2015.

Frequency of water audits:	🗵 yearly	other (specify frequency)		
Leak detection and survey:	every year	$\Box$ every other year	⊠ periodic as needed	
*Leak detection will be done o	n a yearly basis	after 2016.		
Year last leak detection survey	completed: Sur	<u>nmer 2016.</u>		

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 5-year average unaccounted water for North Mankato is 14.70%. The City will continue to locate and seal water leaks. With the introduction of yearly detecting leaks in 100% of the system, it is expected that the amount of unaccounted water will decrease. A portion of the unaccounted water is unmetered water that is used by public drinking fountains, irrigation systems for City Hall and planters at Wheeler Park.

*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. AWWA also recommends that water suppliers conduct regular water audits

to ensure accountability. 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.

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	6,395	6,395	6,395	As needed	N/A
Irrigation meters					/
Institutional					/
Commercial	257	257	257	As needed	N/A
Industrial					/
<b>Public Facilities</b>	30	30	30	As needed	N/A
Other					/
TOTALS	6,682	6,682	6,682	NA	NA

#### Table 23. Information about customer meters

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.

There are no known unmetered connections 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	2	5	NA / 15 years
Treatment Plant	2	2	2	NA / 15 years

#### **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 2005 – 2014 ten-year average residential per capita water demand? 64.5 g/capita/day

Describe the water use trend over that timeframe:

Overall the trend has been decreasing since 2006.

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 a	nd timeframe to	reduce residential	per	capita demand
			P	

Strategy	y 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:	
	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	As needed
	Offer free or reduced cost water use audits) for	
	residential customers.	
×	Implement a notification system to inform customers	Implemented
	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	
X	Conduct audience-appropriate water conservation	Implemented
	education and outreach.	
	Describe other plans	

**Objective 3:** Achieve at least a 1.5% per year water reduction for Institutional, Industrial, **Commercial, and Agricultural GPCD over the next 10 years or a 15% reduction in ten years.** 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	y 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	
X	Repair leaking system components (e.g., pipes, valves)	As needed
$\mathbf{X}$	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.	
	[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. Proposed plumbing code 4714.1702.1	
	http://www.dli.mn.gov/PDF/docket/4714rule.pdf	
	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 per capita demand has been decreasing since 2005. It may continue to decrease, but will eventually plateau as there is a minimal per capita demand. C/I/I per capita use had also been decreasing from 2005 to 2014, but has increased above 2004 levels in 2015.

## Objective 5: Reduce Peak Day Demand so that the Ratio of Average Maximum day to the Average Day is 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: <u>1.89</u>

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 a Conservation Water Rate Structure and/or a Uniform Rate Structure with a Water Conservation Program**

#### 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: <u>0</u> gallons or cubic feet other						
Frequency of billing:	🗵 Monthly	□ Bimonthly	Quarterly	🗆 Other	r:	
Water Rate Evaluation	Frequency: 🗵 🤅	every year	□ everyy	vears [	no schedule	
Date of last rate change: <u>December 1, 2015</u> .						

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

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

#### \* 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:

A uniform rate was implemented to eliminate the declining block rate and to avoid the increasing block rate.

## **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)
X	Prepare a Comprehensive Open Space Plan (areas for parks, green spaces, natural areas)
X	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)
X	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?**

Observing a reduction in unaccounted water usage. Observing an increase (regenerating) in water table levels. Achieving a lower per capita water usage.

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

- a) The DNR District Hydrologist or Groundwater Appropriation 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
☑ 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
□ Water waste prohibited (for example, having a fine for irrigators	🗆 -Ongoing
spraying on the street)	Seasonal
	Only during declared Emergencies
□ Limitations on turf areas (requiring lots to have 10% - 25% of the	New Development
space in natural areas)	Shoreland/zoning
	🗆 Other
Soil preparation requirement s (after construction, requiring topsoil	🗵 New Development
to be applied to promote good root growth)	Construction Projects
	🗆 Other
□ Tree ratios (requiring a certain number of trees per square foot of	New development
lawn)	Shoreland/zoning
	🗆 Other
□ Permit to fill swimming pool and/or requiring pools to be covered (to	Ongoing
prevent evaporation)	Seasonal
	Only during declared Emergencies
Ordinances that permit stormwater irrigation, reuse of water, or	🗆 Describe
other alternative water use (Note: be sure to check current plumbing	
codes for updates)	

# 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.

Water Use Targets	Outreach Methods	Partners
⊠ low flush toilets,	Education about	🗆 Gas company
$\Box$ toilet leak tablets,	$\Box$ free distribution of	Electric company
$\Box$ low flow showerheads,	🗆 rebate for	□ Watershed organization
□ faucet aerators;	$\Box$ other	
united water conserving washing machines,	Education about	🗆 Gas company
$\Box$ dish washers,	$\Box$ free distribution of	Electric company
□ water softeners;	🗆 rebate for	□ Watershed organization
	$\Box$ other	
🗆 rain gardens,	Education about	🗆 Gas company
$\Box$ rain barrels,	$\Box$ free distribution of	Electric company
□ Native/drought tolerant landscaping, etc.	🗆 rebate for	□ Watershed organization
	🗆 other	

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

Low flush toilets are required by code.

# E. Education and Information Programs

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

## **Proposed Education Programs**

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

#### Table 31. Current and Proposed Education Programs

Education Methods	General summary of topics	#/Year	Frequency
Billing inserts or tips printed on the actual bill	Conservation tips on water bill when space is available	Varies	<ul> <li>☑ Ongoing</li> <li>□ Seasonal</li> <li>□ Only during</li> <li>declared emergencies</li> </ul>
Consumer Confidence Reports	Description of source water and treatment, results of monitoring	1	<ul> <li>Ongoing</li> <li>Seasonal</li> <li>Only during</li> <li>declared Emergencies</li> </ul>
Press releases to traditional local news outlets (e.g., newspapers, radio and TV)			<ul> <li>Ongoing</li> <li>Seasonal</li> <li>Only during</li> <li>declared Emergencies</li> </ul>
Social media distribution (e.g., emails, Facebook, Twitter)	Facebook page		<ul> <li>☑ Ongoing</li> <li>□ Seasonal</li> <li>□ Only during</li> <li>declared Emergencies</li> </ul>
Paid advertisements (e.g., billboards, print media, TV, radio, web sites, etc.)			<ul> <li>Ongoing</li> <li>Seasonal</li> <li>Only during</li> <li>declared Emergencies</li> </ul>
Presentations to community groups			<ul> <li>Ongoing</li> <li>Seasonal</li> <li>Only during</li> <li>declared Emergencies</li> </ul>
Staff training	Process controls and water efficiency		<ul> <li>Ongoing</li> <li>Seasonal</li> <li>Only during</li> <li>declared Emergencies</li> </ul>
Facility tours	Describe treatment processes	Varies	<ul> <li>Ongoing</li> <li>Seasonal</li> <li>Only during</li> <li>declared Emergencies</li> </ul>
Displays and exhibits			<ul> <li>Ongoing</li> <li>Seasonal</li> <li>Only during</li> <li>declared Emergencies</li> </ul>
Marketing rebate programs (e.g., indoor fixtures & appliances and outdoor practices)			<ul> <li>Ongoing</li> <li>Seasonal</li> <li>Only during</li> <li>declared Emergencies</li> </ul>
Community news letters	Dates of hydrant flushing	2	<ul> <li>☑ Ongoing</li> <li>□ Seasonal</li> <li>□ Only during</li> <li>declared Emergencies</li> </ul>
Direct mailings (water audit/retrofit kits, showerheads, brochures)			<ul> <li>Ongoing</li> <li>Seasonal</li> <li>Only during</li> <li>declared Emergencies</li> </ul>

Education Methods	General summary of	#/Year	Frequency
	topics		
Information kiosk at utility and public			Ongoing
buildings			Seasonal
			Only during
			declared Emergencies
Public Service Announcements			Ongoing
			Seasonal
			Only during
			declared Emergencies
Cable TV Programs			Ongoing
			Seasonal
			Only during
			declared Emergencies
Demonstration projects (landscaping or			Ongoing
plumbing)			Seasonal
			Only during
			declared Emergencies
K-12 Education programs (Project Wet,			Ongoing
Drinking Water Institute, presentations)			Seasonal
			Only during
			declared Emergencies
Community Events (children's water festivals,			Ongoing
environmental fairs)			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:	In design stage. Water		☑ Ongoing
https://www.northmankato.com/citynorthma	personnel, description of		Seasonal
nkato/water-department )	distribution system, states		Only during
	daily sampling and testing		declared Emergencies
	is done.		
Targeted efforts (large volume users, users			Ongoing
with large increases)			Seasonal
			Only during
			declared Emergencies
Notices of ordinances			Ongoing
			Seasonal
			Only during
			declared Emergencies
Emergency conservation notices			Ongoing
			Seasonal
			Only during
			declared Emergencies

Education Methods	General summary of topics	#/Year	Frequency
Other: Flyers handed out to new homeowners and citizens with high usage	Causes of high water use, conservation tips, utility rates		<ul> <li>Ongoing</li> <li>Seasonal</li> <li>Only during</li> </ul>
			declared Emergencies

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

None at this time.

# 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.

Local Control	Schedule to Implement	Potential Partners
□ None at this time		
□ Comprehensive planning that guides development in vulnerable drinking water supply management areas		
Zoning overlay		
Other:		

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

#### **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?

- $\hfill\square$  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**

Appendix 1: Well records and maintenance summaries - see Part 1C

**Appendix 2: Water level monitoring plan** – see Part 1E

Appendix 3: Water level graphs for each water supply well - see Part 1E

Appendix 4: Capital Improvement Plan - see Part 1E

Appendix 5: Emergency Telephone List – see Part 2C

Appendix 6: Cooperative Agreements for Emergency Services – see Part 2C

Appendix 7: Municipal Critical Water Deficiency Ordinance – see Part 2C

**Appendix 8: Graph showing annual per capita water demand for each customer category during the last ten-years** – see Part 3 Objective 4

Appendix 9: Water Rate Structure – see Part 3 Objective 6

Appendix 10: Adopted or proposed regulations to reduce demand or improve water efficiency – see Part 3 Objective 7

Appendix 11: Implementation Checklist – summary of all the actions that a community is doing, or proposes to do, including estimated implementation dates – see <a href="https://www.mndnr.gov/watersupplyplans">www.mndnr.gov/watersupplyplans</a>

Appendix 1:

Well Records and Maintenance Summaries

	INVOICE		
	EMIT         P.O. BOX 778 SPICER, MN 56288 (320) 796-211	1	WELLS – PUMPS SALES – SERVICE Since 1893
SOLD TO:	DATE: INVOICE NO.: TERMS: DUE DATE:	4/7/08 2835 Net 30 Day 5/7/08	ys
CITY OF PO BOX NORTH	F NORTH MANKATO ( 2055 MANKATO, MN 56003		
PLEASE DET			EXPIRATION DATE
QUANTITY	DESCRIPTION	پ ۱۸۹۲ کور	AMOUNT ENCLOSED
$   \begin{array}{r}     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     2.00 \\     3.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\     1.00 \\  $	WELL #5 MAINTENANCE PULL PUMP & MOTOR ASSEMBLY, TRANSPORT TO SHOP, INSPECT & REPORT, REINSTALL PUMP 75 HP MOTOR MOTOR INSPECTION PACKING REPLACE BEARING INSERTS SHOP LABOR - CLEAN & STRAIGHTEN SHAFTS PAINT DISCHARGE HEAD PAINT COLUMN PAINT COUPLINGS PAINT BOWLS REPLACE WEAR RINGS MACHINE PUMP & INSTALL WEAR RINGS MACHINING HEADSHAFT SHOP LABOR TELEVISE WELL 8" GASKET STUFFING BOX GASKET	<ul> <li>4,000.</li> <li>4,417.</li> <li>300.</li> <li>35.</li> <li>15.</li> <li>78.0</li> <li>200.0</li> <li>900.0</li> <li>300.0</li> <li>300.0</li> <li>150.0</li> <li>200.0</li> <li>128.0</li> <li>78.0</li> <li>1,000.0</li> <li>12.0</li> <li>10.0</li> </ul>	OO         4,000.0(           00         4,417.0(           00         300.00           00         300.00           00         300.00           00         35.00           00         30.00           00         234.00           00         200.00           00         300.00           00         300.00           00         300.00           00         300.00           00         300.00           00         300.00           00         300.00           00         390.00           00         1,000.00           00         12.00           00         10.00
	We will add finance charges on invoices more than 30 days overdue		

WVOICE BERGERSON-CASIVELL, INC. WILL DRILLING AND FUMPS DISTRIBUTIONS SECTION Maple Plain, MN 48450

BILL

City of North Mankato 1001 Belgrade Ave P.O. Box 2055 North Mankato, MN 56002

33660T-North Mankato Well-#5&6 1001 Belgrade Ave P.O. Box 2055 North Mankato, MN 56002

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*All annlicable State and Fed	eral Taxes have been paid on all Installed Materials	fau thia	
Installation and are included	in the Material Prices.	Tor, this	
1	LS Mobilize/demobilize	8,000.00	8.000.0
1	LS Remove pump installation	1,750.00	1,750.0
. 1	LS Video tape the well	950.00	950.0
1	LS Ream well casing to clear any sharp objects	1,750.00	1,750.0
1	LS Install packer with cap pipe and test		•
_	pump	4,000.00	4,000.0
4	HR Inflate packer and run test pump in FIG		·
	formation	250.00	1,000.0
1	LS Remove and reinstall packer without cap for		
	testing Mt. Simon	3,500.00	3,500.0
4	HR Inflate packer and run test pump in Mt.		
2	Simon	250.00	1,000.0
2	LS Collect water samples	500.00	1,000.0
2	LS Send water samples to laboratory for analysis	800.00	1,600.0
1 •	LS Remove packers and testing equipment	1,000.00	1,000.0
1	LS Reinstall pumping equipment and test	1,750.00	1,750.0
. <b>L</b>	LS DISINIECT THE WELL	100.00	100.00
ĩ	service	100.00	400 00
		100.00	100.00
		SALE AMOUNT	n na sense se s

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500.00

BERGERSON-CASWELL, INC. WILL DRILLING AND PUMPS 5215 Induced Street Ample Pidin, MN, 57355 1257 141: 763-775-9155 FX: 763-775-9155

BILL TO

#### City of North Mankato 1001 Belgrade Ave P.O. Box 2055 North Mankato, MN 56002

33660T-North Mankato Well-#5&6 1001 Belgrade Ave P.O. Box 2055 North Mankato, MN 56002

CUSTOMER: PURCHASE CODE: NO.		veramis.	INVOIGE DATE PAGE
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18934344(e), (0)43-3734852	[e]::(:(a)::);{((a)});		EDISCICE
4	EA 10' Section (epoxy coated column, shaft, &	k.	
	spider)	800.00	3,200.00
1	LS Shop Labor clean the surfaces of the spide	ſ	
	assemblies, and clean, straighten line shafting	1,500.00	1,500.00
1	LS Modify the well head and install 1"		
	drawdown tubing	250.00	250.00
<b>1</b>	LS Re-Video well once all work has been	050.00	
1	Completed LS Robuild nume howly locuted 10 MCZ 2 state	950.00	950.00
	1 100 GPM @ 170' TDH _ set of how! hearings		600.00
4	FA Replace rubber bearings in spider	000.00	000.00
8	assemblies	25.00	100.00
1	EA 5'x10" Tailpipe welded to excisting tailpipe	450.00	450.00
1	EA 10" SIS Conestrainer	825.00	825.00

INVOICE

1 EA Delivery and installation cost 500.00

		·
		35,875.00
THANK YOU FOR YOUR BUSINESS!	and the first second	
PAST DUE ACCOUNTS SUBJECT TO 1.5% FINANCE		
CHARGES PER MONTH PLUS ALL COLLECTION COSTS.		
	1(0)7AL	\$35,875.00

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## **BERGERSON - CASWELL INC.**

Commercial • Municipal • Residential Geothermal • Irrigation Submersible & Turbine Pumps Environmental Drillers



Certified Well Drillers Certified Pump Installers

Well Drilling, Abandonment & Repair Since 1948

January 11, 2008

#### **CITY OF NORTH MANKATO**

Attn: Mr. Rich Peterson P.O. Box 2055 North Mankato, MN 56002

(507) 381-6604 (507) 625-4151

#### **RE: TOTAL PROJECT INVOICE AMOUNT FOR WELL & PUMP #6**

Dear Mr. Peterson, Bergerson Caswell Inc. appreciates the opportunity to assist you with your well and pump needs. We have completed the project at well #6, and below is an itemized breakdown of the project costs to complete.

PROJECT COST

Labor & Equipment to remove, and inspect owner's pump(shaft clamps):		
9.5 hrs @ \$235.00/hr, and 9 hrs @ \$175.00	\$	3,807.50
Video Investigation (10-26-07)	\$	750.00
Brush 20" well Casing (10-27-07)	\$	1,750.00
Furnish, Install, & Remove Air-Lifting Equipment (680')	\$	5,500.00
Operate air lift; 40.5 hrs @ \$240.00/hr	\$	9,720.00
Field labor Fishing metal debris (2 men): 26 hrs @ \$175.00/hr;	• \$	4,550.00
Shop labor to load / unload material required for project \$ 65.00/hr; 11 hrs	• \$	• 715.00
Re-Video investigate well when project is complete (12-17-07) a gamma complete (12-17-07)	·\$	750.00
Room & Board (out of town work) 4 days @ \$175.00/day	\$	700.00
Pump Repairs		
1) Pump Motor. General Maintenance and bearing replacement	\$	2,650.00
2) Column Pipe: Replace 185'x 10" column pipe @ 49.00 ft	\$	9,065.00
Furnish New Lakos PPS-825-I sand separator (tail pipe)	\$	5,900.00
3) Pump Shafts and components		
Replace head bushing/ bearing	\$	150.00
Replace packing	\$	65.00
Replace 1.685"x 10' SS Line-shaft (10 tpi)	\$	495.00
Replace 1.685"x 5' SS Line-shaft (10 tpi)	\$	380.00
Replace 1.685" Head shaft assembly	\$	650.00
Furnish & Install (20) each line-shaft sleeves, @ \$70.00/each	\$	1,400.00
Replace (5) shaft couplings @ \$75.00/each (1.685"x 10 tpi. SS)	\$	375.00
Replace 10 each Spider bearing assemblies @ \$225.00/each	\$	2,250.00
Replace 9 each Spider bearing inserts @ \$30.00/each	\$	270.00
Recondition discharge head (Sandblast & paint, gaskets)	\$	280.00
Sandblast & Paint Column Pipe & Couplings (2 part Epoxy)	\$	1,650.00
Sandblast & Paint Pump Bowl, & sand separator (2 part Epoxy)	\$	450.00
4) Replace pump bowl assembly with American Marsh 13 MC 5 stage	\$	5,275.00
Designed to produce 1400 GPM @ 320'TDH		
Shop Labor to clean & straighten line shaft 25 hrs @ \$65.00/hr	\$	1,625.00
5) Labor & Equipment to reinstall well pump, start up, test and balance:	\$	2,800.00
TOTAL PROJECT INVOICE AMOUNT \$ 63,9	972.5	0
- [1] · · · · · · · · · · · · · · · · · · ·		

I have enclosed all paper work relating to this project along with this invoice. If you have any questions, require additional information; or would like to discuss this project, please do not hesitate to contact us at (763) 479-3121 ext210, cell # (612) 369-3652.

Project Manager

Sincerely,

BERGERSON CASWELL INC. Tim Berquam

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BERGERSO WELL DRII 5115 In Maple F PH: FX:	N-CASWELI LING AND PUM ndustrial Street Plain, MN 55359 763-479-3121 763-479-2183	4, INC. IPS	· •		
City of North N	Mankato	IOR	33660T-North Ma	ankato Well-#5&	6
TO 1001 Belgrade	e Ave		1001 Belgrade Av	ve	
P.O. Box 2055 North Mankato	o, MN 56002		P.O. Box 2055 North Mankato, I	MN 56002	
ISTOMER PURCHASE	order No	Sector Bible T			OICE DATE PAGE
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Job #33660T					
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TOTAL	

## INVOICE

## BERGERSON-CASWELL, INC.

WELL DRILLING AND PUMPS 5115 Industrial Street Maple Plain, MN 55359 PH: 763-479-3121 FX: 763-479-2183

BILL	
TO	

City of North Mankato 1001 Belgrade Ave P.O. Box 2055 North Mankato, MN 56002

JOB

33660T-North Mankato Well-#5&6 1001 Belgrade Ave P.O. Box 2055 North Mankato, MN 56002

CUSTOMER PURCHASE OF	RDER NO.		BILL THRU	TERMS	INVOICE DATE PAGE
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ITEM NO.	QUANTITY	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
	8	EA Replace 10"x10' column sections	600.00	4,800.00
	1	EA Replace 10"x5' Column section	450.00	450.00
	85	FT Epoxy coat column pipe 85'	12.00	1,020.00
		S Replace rubber boot on sand separator	200.00	200.00
	1	S Shop labor	1,500.00	1,500.00
	1 (d. 1	S Revideo well after all work has been		
		completed	950.00	950.00
	5	EA Rebuild the pump bowl assembly, machine		
		mpeller and install wear ring; 5 stages	350.00	1,750.00
		S Set of bowls bearings	650.00	650.00
		S Bowl Shaft	650.00	650.00

THANK YOU FOR YOUR BUSINESS!	 - SALE AMOUNT	51,220.00
PAST DUE ACCOUNTS SUBJECT TO 1.5% FINANCE CHARGES PER MONTH PLUS ALL COLLECTION COSTS.		
	TOTAL	\$51,220.00



## Bergerson - Caswell Inc. 5115 Industrial Street Maple Plain, MN 55359

August 27, 2009

CITY OF NORTH MANKATO

Attn: Mr. Rich Peterson P.O. Box 2055 North Mankato, MN 56002

(507) 381-6604 (507) 625-4151

RE:

#### INVOICE FOR REPAIRING WELL PUMP #7

Dear Mr. Peterson;

Bergerson Caswell Inc. appreciates the opportunity to assist you with your well and pump needs. As requested we have repaired and reinstalled this installation as described and broken down below. **PROJECT COST**Labor & Equipment to remove, and inspect owner's pump(shaft clamps):

Labor & Equipment to remove, and inspect owner's pump(shart clamps).	
14.5 hrs @ \$235.00/hr, and 7 hrs @ \$75.00	\$ 3,932.50
Video Investigation (8-19-09, & 8-21-09)	\$ 1,450.00
Field labor Fishing tail pipe and pump case (2 men): 14 hrs @ \$175.00/hr;	\$ 2,450.00
Shop labor to load / unload, clean & evaluate materials for project \$ 75.00/hr; 24 hrs	\$ 1,800.00
1) Pump Motor: General Maintenance and bearing replacement	\$ 3,250.00
2) Column Pipe: Replace 350'x 10" column pipe @ 63.50 ft	\$ 22,225.00
Replace tail pipe and bleed back check valve	\$ 2,100.00
3) Pump Shafts and components	· .
Replace head bushing/ bearing & packing	\$ 225.00
Replace Column flange adapter	\$ 925.00
Replace 1.685"x 5' SS Line-shaft (10 tpi)	\$ 380.00
Replace 1.685" Head shaft assembly	\$ 650.00
Furnish & Install (10) each line-shaft sleeves, @ \$70.00/each	\$ 700.00
Replace (3) shaft couplings @ \$75.00/each (1.685"x 10 tpi. SS)	\$ 225.00
Replace 2 each Spider bearing assemblies @ \$125.00/each	\$ 250.00
Replace 35 each Spider bearing inserts @ \$25.00/each	\$ 875.00
Recondition discharge head (Sandblast & paint, gaskets)	\$ 280.00
(2) each 1" poly tubes for water level monitoring @ 1.00/ft (700')	\$ 700.00
4) Replace pump bowl assembly American Marsh 13 MC 5 stage	\$ 6,375.00
Designed to produce 1100 GPM @ 385'TDH	
Shop Labor to clean & straighten line shaft 25 hrs @ \$65.00/hr	\$ 1,625.00
5) Labor & Equipment to reinstall well pump, start up, test and balance:	\$ 3,400.00

TOTAL PROJECT INVOICE AMOUNT

\$ 53,817.50

If you have any questions, require additional information, or would like to discuss this project, please do not hesitate to contact us at (763) 479-3121 ext210, cell # (612) 369-3652. Sincerely,

BERGERSON CASWELL INC.

Project Manager Tim Bergu

Bergerson Caswell Inc. 5115 Industrial Street • Maple Plain, MN 55359 Telephone: 763 - 479 - 3121 Fax: 763 - 479 - 2183 E-Mail: info@BergersonCaswell.com

## TURBINE PUMP (MOTOR, PUMP, PERFORMANCE RECORD)

(AS INSTALLED)					DATE: August 26, 2009				
GENERAL INFO:			•						
Customer/Owner: City of North Mankato							Well/Pump 7		
Address/Location: Treatment Plant									
Persons on Jo	b Site Duane, Rich, 7	Гот - Е	lectric						
<b>MOTOR INFO:</b>									
Horsepower	200	Stand Still Volts		494/496/491		Running Volt 490/488/490			
Manufacturer	US	R.P.M	1770	Full Load Ar	nps <u>228</u>		S.F.Amps	1.15	
BOWL DESIGN: G.P.M.	1100	T.D.H.	385'	Megger Rea	ding_1000				
PERFORMANCE TEST: Static Water Level 238'		238'		Well Diameter 20"		Well Depth <u>836</u> '		1 836'	
Test #1: HZ AMPS	149/152/146	G.P.M	. 1250	Water Level	288'	P.S.I.	47	T.D.H. <u>396'</u>	
Test #2: HZ AMPS	149/150/138	G.P.M	. 1100	Water Level	287'	P.S.I.	55	T.D.H. 414'	
Test #3: HZ AMPS		G.P.M	•	Water Level		P.S.I.		Т.D.H.	
Therefore: $150^{\circ} + (50\# x 2.31 \text{ or } 115.5^{\circ}) + 3.5^{\circ} = 269^{\circ} \text{ T.G.H.}$ OR The pump is producing 1000 G.P.M. at 269° T.D.H.									
Does Well Pump Sand?	Yes / NO		If So, How Much?	? Test # Test # Test #	1 <u>1/2"</u> 2 <u>1/4"</u> 3	in Ga in Ga in Ga	allon Jar allon Jar allon Jar		
Closed Valve Test:	P.S.I. Reading		n t. t.	Water Leve					
Vibration Record:	Vibration in Mils:	A B C D	0.9 0.8 0.6 0.6	90* from Dise In Line with I 90* from Dise In Line with I	charge Discharge charge Discharge		·		
Tested By: Tom D., Euge	ene D., Mike Tashe								
Problems/Comments:This installation ran extremly smooth.									
					· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	······	
Customer/Owner Comment:									
		·					<u></u>		

	INVOICE	· .	.*		
	THEIN W	ELL	WELLS – SALES –	PUMPS SERVICE	
RE T	MIT P.O. BOX 778 SPICER, MN 56288 (3) D: www.theinwell.com	20) 796-2111	Since	1893	
	INVC	DATE: 12/22/11 DICE NO.: 3993 TERMS: Net 30 D	lays		
SOLD TO:		NORTH		,	
CITY OF N	IORTH MANKATO	CRE	DIT CARD PAYMENT AU	THORIZATION	
PO BOX 2 NORTH M	055 ANKATO. MN 56003		CARD ACCOU	NT NUMBER	
			EXPIRATION DATE		
		V754	CARD HOLDER SIGNATURE		
		\$			
PLEASE DET	ACH & RETURN THIS FORTION WITH PATMENT			NOLOGED	
QUANTITY	DESCRIPTION		UNITPRICE	AMOUNT	
	PO#11612 WELL #8				
1.00			0.400.00	0 400 00	
1.00	& RETURN TO SERVICE	IFEC I	9,400.00	9,400.00	
1.00	GENERAL MAINTENANCE OF MOTOR		1,500.00	1,500.00	
1.00	REPLACE BEARINGS		700.00	700.00	
1.00	ADDITIONAL COST FOR THRUST BEARING	•	290.00	290.00	
1.00	MOTOR GUIDE BEARING		200.00	200.00	
105.00	FEET - 10" COLUMN PIPE		50.00	5,250.00	
10.00	FEET - 10" TAILPIPE	40.00	400.00		
1.00	PACKING	75.00	75.00		
1.00	SHAFT SLEEVE	50.00	50.00		
1.00	SANDBLAST & PAINT DISCHARGE HEAD		300.00	300.00	
1.00	SANDBLAST COLUMN PIPE - PRIME & PAINT		1,000.00	1,000.00	
1.00	SANDBLAST PUMP - PRIME & PAINT		250.00	250.00	
1.00	REMOVE & REINSTALL POLY WATER LEVEL LINE		100.00	100.00	
1.00	1" POLY TUBE FOR WATER LEVEL MONITORING		350.00	350.00	
1.00	12" GASKET		18.00	18.00	
1.00	7/8" AND 3/4" BOLTS & NUTS	•	45.00	45.00	
2.00	ROLLS - PIPE WRAP		17.50	35.00	
	Thank 40	j			
	We will add finance charges on invoices more the	nan 30 days overdue.			
		Su	ubtotal	19,963.00	
	Check/Credit Memo No:	Total Invoice A	mount	\$19,963.00	
		Payment/Credit A	pplied	. ·	

MEMBER	THEIN WELL P.O. BOX 778 SPICER, MN 56288 (320) 796-2111	
AWWA	CERTIFIED MASTER WATER WELL CONTRACTOR	
	TANA BAAUFATER IN (201) AND FEEL HADITORY A LINE (200) AND 1000	

\$19,963.00

OTHER I OCATIONS - ROCHESTER MN (507) 288-5554 - MONTICELLO MN (762) 271-4200 - CLARA CITY MN (220) 847-2207

Appendix 2:

Water Level Monitoring Plan

The City of North Mankato monitors water levels in Wells 6, 7, 8, and 9 continuously through a SCADA system and manual drawdown tests are performed twice a year. Well 5 has manual drawdown tests every two months.



# 2016 Water Supply Plan

City of North Mankato



# **Appendix 2**

# August, 2016



Appendix 3:

Water Level Graphs for each Water Supply Well










































Appendix 4:

**Capital Improvement Plan** 





# Comprehensive Plan

February, 2015 DRAFT



# 

#### Introduction

The City of North Mankato has a significant investment in its existing public utilities systems (water, wastewater and stormwater). The continued expansion and development within the growth areas identified in this Comprehensive Plan will require the extension of public utilities into those areas. In general, the existing infrastructure system is well-positioned and of adequate size to support the required expansion into the growth areas. However, coordination will be required between community development and the required expansion of the utility system. In some cases, the cost of providing utility service may dictate where and when future growth will occur and when.

The following sections provide a general description of the existing water system, wastewater system and storm drainage system within the City of North Mankato. Also included are schematic concepts demonstrating how the public utility systems may be expanded into most of the growth areas identified in this plan. This Chapter is not intended to be a detailed infrastructure master plan, but rather a source of information that will assist stakeholders (citizens, City staff, and potential developers) with the information about these systems and factors that may impact decision-making regarding development strategies.

#### Water System

#### Existing Systems

The City of North Mankato operates an extensive water treatment and supply system, serving residential, commercial and industrial users in two pressure zones: the upper system and the lower system.

Under normal circumstances, the two systems operate independently, each with their own supply, treatment, storage, and distribution systems. However, there is a connection between the two systems to facilitate the transfer of water between systems in the event of an emergency.

Water supply in the lower system is provided by two groundwater wells, Well No. 5 and Well No. 6, both located near Water Treatment Plant No. 1 at the intersection of Belgrade Avenue and Nicollet Avenue. The upper system is currently provided by two groundwater wells, Well No. 7 and Well No. 8. Well No. 7 is located near Water Treatment Plant No. 2 on Howard Drive. Well No. 8 is located in the Caswell Park complex, just east of Water Treatment Plant No. 2. A third well, Well No. 9, is currently in the design phase and will be constructed in 2014 and 2015. Table 7-A below shows a summary of the well characteristics:

Table 7-A: Well Data					
Well No.	5-Lower	6-Lower	7-Upper	8-Upper	9-Upper (proposed)
Year Constructed	1950	1959	1975	1986	2014-2015
Well Depth (ft)	680	687	860	845	845
Casing Diameter (in)	16	24/20	24/20	30/24/18	30/24/18
Water Bearing Foundation	Ironton / Galesville / Mt. Simon	Ironton / Galesville / Mt. Simon	Franconia / Mt. Simon	Mt. Simon	Mt. Simon
Pump Type	Vertical Turbine	Vertical Turbine	Vertical Turbine	Vertical Turbine	Vertical Turbine
Capacity (gal/min)	1000	1440	1100	1100	1100



As mentioned previously, two water treatment plants treat the well water before it is pumped into the distribution system. Treated water for the lower system is provided by Water Treatment Plant No. 1, located at the intersection of Belgrade Avenue and Nicollet Avenue. This facility was initially constructed in 1959 with rehabilitation work completed most recently in 1994. The facility consists of a steel gravity filter which treats the raw water for iron and manganese and has a capacity of 1,500 gallons per minute (gpm). Treated water for the upper system is provided by Water Treatment Plant No. 2, located on Howard Drive just east of the Caswell Park athletic complex. This facility was constructed in 1975 and most recently rehabilitated in 2001, and expanded. The treatment capacity was increased to 2200 gpm in 2001.



## 2015 Comprehensive Plan

City of North Mankato



## Figure 7.1 Existing Water System



The existing treated water storage for the City of North Mankato consists of five reservoirs. Three groundlevel storage reservoirs provide a total of 750,000 gallons of water storage for the lower system. One of the ground storage reservoirs (500,000 gallons) is located at Water Treatment Plant No. 1. The other two reservoirs for the lower system with a combined capacity of 250,000 gallons are located in the hillside bluff overlooking the lower North Mankato area and thus act as elevated reservoirs for the lower system. The upper system is served by two 500,000 gallon elevated water towers, one located on Tower Drive, constructed in 2011 and one located on Carlson Drive, constructed in 1993. In addition, a 750,000 gallon ground storage reservoir is located adjacent to Water Treatment Plant No. 2.

High service pumps are utilized to pump water from the two ground storage reservoirs located at the water treatment plants. Two high service pumps at Water Treatment Plant No. 1 are capable of pumping 1,200 gpm each and approximately 2,000 gpm when operating together. In addition, the pumps at this plant are capable of transferring water from the lower system to the upper system at a rate of approximately 1,000 gpm. High service fixed speed pumps at Water Treatment Plant No. 2 are capable of delivering 2,200 gpm from the ground storage reservoir ar Water Treatment Plant No. 2. A variable speed pump at this location is capable of delivering up to 1,100 gpm to the distribution system.

The existing water distribution system consists of 4-inch diameter through 16-inch diameter mains. The oldest watermains are in the lower area. Those that have not been replaced with ductile iron or polyvinyl chloride (PVC) pipe within the past 20 to 25 years are cast iron pipe. Most of the upper system is ductile iron or PVC pipe. Dead end mains have, in general, been minimized, which provides for adequate circulation and very few areas of stagnant water throughout the lower and upper systems. The City's water department staff flushes the system on a regular basis in order to clean sediment and rust from the system. Numerous reconstruction projects over the past 25 to 30 years, primarily in the lower system, have greatly improved the water supply and pressure, and have increased the reliability of the system. The existing water system in North Mankato is shown on **Figure 7.1**.

#### **Future Improvements**

Table 7-B: Water Usage						
	Lower System		Upper System		Overall System	
Year	Annual Water Use (mg)	Peak Day Water Use (gpm)	Annual Water Use (mg)	Peak Day Water Use (gpm)	Annual Water Use (mg)	Peak Day Water Use (gpm)
Current	140	700	403	1,967	840	2,667
2020	140	700	417	2,025	840	2,725
2025	140	700	429	2,085	840	2,785
2035	140	700	452	2,200	840	2,900

The following table shows the current and projected water usage demands for the City of North Mankato:

With the proposed construction of new Well No. 9 in the upper system, the well capacity is adequate to meet the projected water demands throughout the planning period. Firm peak day capacity, calculated over 24 hours with the largest well in each system out of service is 1,000 gallons per minute (gpm) in the lower system and 2,200 gpm in the upper system. The City will continue to implement an on-going well maintenance program in order to maximize the useful lives of the well casings, pumps, piping and equipment. Periodic repairs and replacements will be performed as required.



The capacity of the water treatment plants and high service pumping should equal the maximum day demands for the planning period. The projected future peak day demands for the planning period are 1.2 mgd in the lower system and 2.5 mgd in the upper system. Treatment capacity of Plant No. 1 is 1.8 mgd and Plant No. 2 is 2.6 mgd. Since the capacity of each treatment plant exceeds the projected peak day demand for each facility, the treatment capacity is adequate for the planning period. However, Water Treatment Plant No. 1 is 55 years old and was most recently rehabilitated 20 years ago. Water Treatment Plant No. 2 is 39 years old and was most recently rehabilitated 13 years ago. Therefore it is likely that both water treatment facilities will need to be rehabilitated or reconstructed within the planning period. At such time that significant rehabilitation is required at one or both of the facilities, consideration should be given to the cost-effectiveness of maintaining two separate water treatment facilities as compared to the option of expanding Water Treatment Plant No. 2 and decommissioning Water Treatment Plant No. 1.

Water storage for the City of North Mankato is located in both the upper and lower distribution zones. Storage adequacy can be assessed in several ways. The recommended water storage volume is based on fire demand, emergency reserve and equalization. Based on average day demand, a worst case fire event, and equalization volume equal to 20 percent of the average daily flow, an analysis indicates that the water storage provided in the upper area by the ground storage/high service pumps and the two elevated water towers is adequate to meet the projected storage requirements through the planning period. A similar analysis indicates that the lower system is currently deficient in storage by approximately 200,000 gallons. Since water demand in the lower system is not expected to increase significantly during the planning

period, the lower system will be approximately 200,000 deficient in storage at the end of the planning period. However, water from the upper system can be diverted to the lower system without limiting services in the upper system, so the need to add storage in the lower system is not anticipated. However, the hillside ground storage reservoirs in the lower system are over 50 years and the rehabilitation or replacement of these reservoirs will likely be required at some point during the planning period. It is recommended that the reservoirs be drained, inspected and maintained every 3 to 5 years.

In general the water distribution system for the City of North Mankato is well maintained and well managed. Although much of the old cast iron watermain system has been replaced through numerous reconstruction projects in the lower system in recent years, portions of the old system still remain. These segments should be replaced and, where required, increased in size as street construction projects are implemented. As previously noted, most of the upper system is much newer (relatively speaking) than the lower system and consists primarily of ductile iron and cast iron pipe. As with the lower area, the existing watermain system in the upper system should be evaluating for improvement and/or replacement when the City is contemplating street reconstruction projects.

Most of the water system improvements in the upper area will be driven by residential, commercial and/or industrial development in the undeveloped areas within the City limits and the projected growth areas beyond the City limits. A system of trunk watermains ranging in size from 10 to 16 inches in diameter will be extended into these growth areas as they develop. The approximate configuration of the trunk watermain systems within the projected growth areas is shown in **Figures 7.2**, **7.3**, and **7.4**.



2015 Comprehensive Plan

City of North Mankato



## Figure 7.2 Future Water System Improvements







## Figure 7.3 Future Water System Improvements

2015 Comprehensive Plan 

City of North Mankato



## Figure 7.4 Future Water System Improvements



#### Water System Goals, Objectives, and Policies

The following section outlines the primary goals for the water system followed by a series of objectives and policies intended to influence future development efforts that align with the community visions in this plan.

## GOAL 1: Expand existing water system infrastructure to meet the demands generated by continued development.

#### Objective 1.1: Expand the trunk watermain system into future growth areas.

- Policy 1.1.1: Implement the expansion of the trunk watermain system as areas outside the limits of the existing water distribution system are developed.
- Policy 1.1.2: The trunk watermain system within the future growth areas should generally follow the configuration as shown in Figures 7.2, 7.3 and 7.4. Final trunk watermain sizes and locations should be based on the type, location and sequence of development within the projected growth areas.
- Policy 1.1.3.: Develop a financing strategy for funding the expansion of the trunk watermain system.

#### GOAL 2: Monitor, evaluate and improve the condition of the City's existing water system infrastructure

#### Objective 2.1: Replace aging water distribution system infrastructure.

- Policy 2.1.1: Prepare a study to document the condition of deficient watermains based on age, materials and history of breaks, leaks, freezing and other deficiencies.
- Policy 2.1.2: Utilize the information from the watermain condition study, in conjunction with the condition information for other infrastructure elements, to develop, expand and prioritize projects to be included in the capital improvements.

## Objective 2.2: Monitor the condition of existing water supply, treatment, and storage infrastructure and replace as required.

- Policy 2.2.1: Monitor changes in drinking water quality standards and identify possible changes to the treatment processes currently utilized by the City's two water treatment facilities.
- Policy 2.2.2: Monitor the condition of Water Treatment Plant No. 2 and continue with regular maintenance and miscellaneous equipment replacement as required.
- Policy 2.2.3: Prepare a study to evaluate the condition of Water Treatment Plant No. 1, to determine the estimated remaining useful life of the existing equipment, to develop alternatives for upgrades or replacement, and to develop alternatives for financing any required improvements.
- Policy 2.2.4: Monitor the condition of the existing wells and related equipment and continue with regular inspections, maintenance and miscellaneous equipment replacement as required.
- Policy 2.2.5: Monitor the condition of the water storage facilities and related equipment and continue with regular inspections, maintenance and miscellaneous equipment replacement as required.

Appendix 5:

**Emergency Telephone List** 

## **Emergency Contact List**

Duane Rader, Water Superintendent	507-380-2106
Rudy Kleist, Water Foreman	507-420-7971
North Mankato City Hall	507-625-4141
North Mankato Police Station	507-625-2305 ext 700
North Mankato Fire Department	507-625-5561 ext 434
Nicollet County Dispatch	507-931-1570
Ron McCabe, Minnesota Pipe Company	507-381-2554
Travis Lakeberg, Hawkins Chemical	763-482-1182

Appendix 6:

**Cooperative Agreements for Emergency Services** 

An informal agreement exists between the City of North Mankato and the City of Mankato as well as between the City of North Mankato and Wis-Pak Bottling. The infrastructure exists to transfer water to the City of North Mankato in the case of an emergency from either or both of these sources.

Appendix 7:

Municipal Critical Water Deficiency Ordinance

#### **Phase Requirements**

- Phase 1 In the event of a short term water supply shortage the city will issue a press release via the newspaper, television, and radio urging all customers to conserve water. Large customers would be contacted directly by the water utility requesting that they voluntary cut back on their usage.
- Phase 2 The city is divided into two different water zones. We would initiate an alternate day sprinkling ban. The lower system would be allowed to sprinkle on even days, and the upper system would be allowed to sprinkle on odd days.
- Phase 3 The city would initiate a complete ban on priority six water use. This would include washing cars, sprinkling, and any recreational use.
- Phase 4 At this phase, the city would implement a complete ban on all nonessential priority six uses. Likewise, all priority three, four, and five users would have water supplies reduced by 40 percent by the water utility. Priority One and Two would have water supplies reduced by 10 percent at this time.
- Phase 5 At this phase, the city would implement a complete ban on all nonessential Priority Six uses. The city would restrict water supply to priority One by 20 percent. Priority Two through Five would be restricted and decreased at the discretion of the City.

Throughout all of these phases, public water service announcements urging water conservation would continue to be broadcast via television, radio and newspaper. In a Phase Two or higher emergency, city utility personnel and the police department would include looking for water use violations as a part of their normal job duties. In addition, residential water users would be urged to use water only for essential purposes such as drinking, cooking and sanitation.

#### **Emergency Conservation Plan Continued**



1. Production capacity drops to a daily volume equal to the daily peak volume for that month, or the previous days pumping lowered our total storage to 40 percent at any one time, and the demand is expected to continue. Under this situation, Phase One would be implemented.



2. Production capacity drops to a daily volume below the daily peak volume for that month, or the previous days pumping lowered our total storage to 35 percent at any one time, and the demand is expected to continue. Under this situation, Phase Two would be implemented



3. Production capacity drops to a daily volume equal to the daily average volume for that month, or the previous days pumping lowered our total storage to 30 percent at any one time, and the demand is expected to continue. Under this situation, Phase Three would be implemented.



4. Production capacity drops to a daily volume below the daily average volume for that month, or the previous days pumping lowered our total storage to 25 percent at any one time, and the demand is expected to continue. Under this situation, Phase Four would be implemented.



5. Upper or Lower system failure. When the remaining system is incapable of providing the daily peak volumes of both systems for that time of year. Under this situation, Phase Five would be implemented.



#### **Enforcement**

The City Council **will** address an ordinance and the enforcement procedures the next time the city updates the city ordinances. At this time they will address disconnects, fines, and anything else pertinent to compliance enforcement.

#### North Mankato - Public Works

#### § 52.07 RESTRICTED HOURS FOR SPRINKLING.

Whenever the city shall determine that a shortage of water threatens the city, it may limit the times and hours during which water may be used from the city water system for lawn and garden sprinkling, irrigation, car washing, air conditioning, and other uses, or either or any of them. It is unlawful for any water consumer to cause or permit water to be used in violation of such determination after public announcement thereof has been made through the news media specifically indicating the restrictions thereof.

(1975 Code, § 3.70, Subd. 6) Penalty, see § 10.99

1.

V-16

Appendix 8:

Annual per Capita Water Demand Graphs



Appendix 9:

Water Rate Structure

#### **GENERAL BILLING INFORMATION**

Utility bills are mailed before the last working day of each month for water, sewer, garbage and recycling. Payment is due on or before the due date specified on the bill. (Due date is usually the 10<sup>th</sup> of each month.) You will have the full day of the due date to get your bill payment to our office or in the drop box. Delinquent payments and meter readings will be subject to penalties.

#### PAYMENT

Automatic Bank Payment is available. Authorization forms can be found online at <u>www.northmankato.com</u> and at City Hall. Once signed up, your payment will be withdrawn from your account on the due date.

Credit Card Payment is available. Convenience fees apply.

You will still need to submit meter readings each month and you can do so through the City of North Mankato web page (www.northmankato.com) or by mail or drop off.

#### WATER CHARGES

All customers are sent a utility bill and charged for water according to their usage. In order for water usage to be calculated and charged, water meter readings are needed. The City of North Mankato does not provide meter readers. It is the responsibility of the customer to send in accurate meter readings. Do not estimate or round numbers, enter the actual reading.

#### SEWER CHARGES

All customers pay a sewer charge based on actual water consumption, plus a surcharge for any excessive strength sewage. Installation of a second water meter for outdoor use is permitted. Water that is metered through a second meter will be based on actual consumption and will not be subject to a sewer charge.

#### PENALTIES

A 10% penalty will be charged to the account when a payment is not received by the due date. When a meter reading is not received by the due date the account will be charged a \$3 penalty. Three (3) consecutive months of no readings will result in an additional \$20 charge.

#### SHUT OFF

All customers will be subject to their services being shut off for non-payment and/or failure to report monthly meter readings.

#### **MONTHLY UTILITY RATES**

#### WATER

Meter S	Size	Monthly Ch	arge
-1/4" c	or smaller	\$	5.00
-1/2" t	o 6"		8.26

Consumption –Cost per 1,000 Gal Indoor Usage Outdoor Usage	Billing Rate \$3.43 
Fire Connections	Monthly Charge \$ 10 30
8"	
10"	
12"	53.55
16"	118.10

#### SEWER

Water Consumption	Billing Rate
0 Gal to 2,250 Gal	\$11.40
2,251 Gal or more	\$6.35/1,000 Gal
Excessive strength sewage is b	oilled a surcharge

#### GARBAGE

Account	<b>Billing Rate</b>
35 Gallon	\$ 9.00
65 Gallon	14.00
95 Gallon	19.00
Senior Discount (65+) - \$1.25 off any size	e garbage
Solid Waste Mgmt Tax (State Mano	lated 9.75%)
Curbside Recycling	6.00
Extra Bag Tag	3.50
Valet Service/per Cart	

#### STORM WATER

(This charge is to pay for improvem	ents and upkeep of
the storm water system.)	
Account	<b>Billing Rate</b>
Single-family Residential	\$ 3.25
All Other (Based on lot size)	
0 to 10,000 sq ft	\$ 3.25
10,001 sq. ft or more	\$0.325/1,000 sq. ft

#### **STATE FEES and CHARGES**

Sales tax, solid waste management fees and water surcharges, which are set by the State of Minnesota, may be added to your billing in addition to the above charges which are set by the City.

#### **RURAL MONTHLY UTILITY RATES**

WATER				
Meter Size	Monthly Charge			
1-1/4" or smaller	\$ 10.00			
1-1/2" to 3"				

Consumption –Cost per 1,000 Gal	<b>Billing Rate</b>
1-1/4" or smaller	\$4.43
1-1/2" to 3"	6.12

#### **SEWER**

Water Consumption	<b>Billing Rate</b>
0 Gal to 2,250 Gal	\$ 11.40
2,251 Gal or more	\$7.45/1,000 Gals

A service charge of \$40.00 will be charged to your utility bill each time water is shut off at the curb box whether it be upon the request of the resident or due to nonpayment of the utility bill.

When a water user moves, the billing department must be notified in advance, and the user must supply a final meter reading.

> City of North Mankato 1001 Belgrade Avenue 507-625-4141

Missed Garbage/Recycle Collections West Central Sanitation 1-800-246-7630

> Riverbend Recycling Center 600 Webster Avenue 507-625-8632

Find all of this information and more at: <u>www.northmankato.com</u>

Appendix 10:

Water Efficiency Improvements

The City of North Mankato has begun checking 100% of their distribution system for leaks on a yearly basis, this should reduce the amount of unaccounted water. City code requires that low flush toilets be installed during retrofits. Below are water conservation tips, distributed to citizens, to help reduce water demand.

## Water Conservation Tips for Consumers

#### Bathroom

#### **Toilets:**

- If you happen to live in an older home with original fixtures, you may be flushing at a rate of 5 to 7 gallons per flush. You can save water per flush by installing a toilet dam. (Toilet dams displace water in the tank so that the toilet uses less water each time it's flushed.)
- Your toilet is not a wastebasket don't use it to flush away cigarette butts, Kleenex, baby wipes, hearing aid batteries, etc.
- Most new toilets presently available on the market are engineered for low volume use.
- Put a few drops of food coloring in your tank. If colored water shows in the bowl without flushing, there's a leak and repairs are needed.

#### **Bathing:**

Bathing usually consumes the second greatest quantity of water in the home.

- A shower generally uses less water than a bath.
- Do your showering and hair washing in one step.
- Fill the tub only 1/4 full. This is enough to cover an adult's body or float a child's toy.
- Most showers can be fitted with a flow restrictor or low-volume head to conserve water.
- Don't turn the shower on until you're ready to step in.

#### Sink:

- Don't leave water running while washing your face, shaving or brushing your teeth.
- An electric razor uses less energy than it takes to heat up the water for razor shaving.

#### **Kitchen and Laundry**

Twenty-five percent of the daily household water use occurs in the kitchen and laundry with much of this water being wasted.

#### Cooking:

- Remove frozen food from freezer before you're ready to use them so you won't have to use running water to hasten thawing.
- Always use lids on pots and pans.
- Use the smallest amount of water possible in cooking to save both water and nutrients. Most frozen vegetables require about 1/2 to 1 cup of water, not half a saucepan.
- Rather than letting the water run while peeling vegetables, rinse them briefly at the beginning and end of the chore.
- Don't let the faucet run for a cold drink. Keep a jug of water cooling in the refrigerator.

#### Washing Dishes:

- When washing dishes by hand, use a stopper in the sink and don't rinse with running water.
- Use low-sudsing detergents they require less rinsing.
- Adding 1/4 to 1/2 cup of vinegar to your wash water cuts grease more readily than hot water alone.
- Run your dishwater only when you have a full load.
- Use the prewash, rinse-hold and scrub cycles of your dishwasher only when necessary.

#### Laundry:

- If your washer has a variable load control, always adjust water levels to fit the size of the load. This saves both water and the energy needed to heat the extra hot water.
- Run your washer when you have a full load.
- Remember that in soft water clothes get cleaner and require less detergent and less rinse water.
- When buying a new washing machine, look for models with water or energy-saving controls.

#### **All Around the House**

- Check every faucet for leaks. Just a slow drip can waste 15 to 20 gallons a day.
- Use a broom, not the hose, to clean the garage, sidewalks, and driveway. Wash the car from a bucket. Use the hose only to rinse it off afterwards.
- Insulate the hot water heater, pay special attention to the insulation qualities of the shell. Avoid buying a larger tank than is necessary for your needs.

#### Lawn and Yard

- Morning is the best time to water most lawns. Before 10:00 am is best because rising heat later on tends to steal a lot of water by evaporation. Another benefit is that grass and leaves have a chance to dry off quickly. Evening or night-time watering leaves the grass wet and can allow lawn diseases to develop.
- A lush green lawn requires 1 to 1 1/2 inches of water a week. Keep in mind the amount of rainfall that might fall on your yard and adjust your watering schedule accordingly.
- If you let your grass grow to about 1 1/2 to 2 inches in the summer, water loss will be reduced because the blades will provide shade for the roots.
- Avoid watering when windy or in the heat of the day.
- Don't allow sprinklers to run unattended. Use a timer as a reminder when it's time to move or turn off the sprinkler.
- Lawns that are frequently aerated absorb water better.
- High nitrogen fertilizers stimulate lawn growth and increase water requirements.
- Thatch build-up in a lawn can create a rapid run-off situation. Every spring the lawn should be raked and dead grass removed.
- Sprinklers throwing large drops in a flat pattern are more effective than those with fine, high sprays.
- Forget about watering streets, walks and driveways. They don't grow a thing.
- Mulch shrubs and other plantings so the soil holds moisture longer.
- When possible, flood irrigate vegetables and flower gardens rather than using sprinklers. Irrigation allows deeper soaking with less water. Sprinklers result in high evaporation loss of water.

	TYPICAL USAGE	GOOD, WATER-SAVING HABITS
Showering	20-40 gallons (5 gallons per minute)	5 gallons (wet down, soap up, rinse off)
Tub Bathing	36 gallons (full)	10-15 gallons (low-level)
Toilet Flushing	6 gallons	1.6 gallon with new standard toilet
Teeth Brushing	2 gallons (tap running)	1 pint (wet, brush, rinse briefly)
Hand Washing	2 gallons (tap running)	1 gallon (fill basin, rinse briefly)
Shaving	3-5 gallons (tap running)	1 gallon (fill basin, rinse briefly)
Dish Washing	20 gallons (tap running)	5 gallons (wash, rinse, in pan or sink)
Automatic Dishwasher	15 gallons (full cycle)	DO ONLY FULL LOADS
Clothes Washer	36-60 gallons (full cycle)	DO ONLY FULL LOADS
Outdoor Watering	5-10 gallons per minute	Be sensible

#### Water Use Habits

#### Do you think you have <u>High Water Usage</u>???

#### **Culprits of unexplained high consumption**

- A running/leaky toiletWater softener
- Outdoor watering

Don't let your toilet waste water.

A silent leak in your toilet can waste several thousand gallons of high quality water each year and place unnecessary demands on your sewer system or septic tank.

Follow these easy steps to discover if your toilet leaks.

- 1. Lift off the lid from your toilet tank.
- 2. Place 3 or 4 drops of ordinary food coloring into the toilet tank (note- do not use dye it could stain).
- 3. Do not flush the toilet for 2 hours or longer.
- 4. If the color shows up in the bowl, you have a leak.

#### You can check for leaks by watching your water meter.

This can be done either overnight or during the day when you know there will be no water being used.

- 1. Read your meter before going to bed or before leaving for the day.
- 2. Read it again when you first get up or get home.
- 3. There should be NO change. If there is, you have a leak.

You may need to contact a plumber.

A	Leakage Can Be Costly				
$\cap$	Leak This Size	Water Loss in Gallons		Annual Loss in Dollars	
		Per Day	Per Month	@ \$5.00 per 1,000 Gal. Rate	
	•	185	5,550	333	
	•	735	22,050	1,323	
Ľ	•	1,655	49,650	2,979	
	•	2,945	88,350	5,301	
	•	6,620	198,600	11,916	
C'	•	11,770	353,100	21,186	
		18,395	551,850	33,111	
		26,485	794,550	47,673	
		36,050	1,081,500	64,890	
Es		47,090	1,412,700	84,762	
Leakage estimates based on 50psi pressure Source: Drapar Aden Associates					

**Faucet Leaks** 



Appendix 11:

**Summary of Actions** 

- Monthly well monitoring
- Annual leak detection
- Developing a Wellhead Protection Plan
- Wells, water storage, treatment facilities, and distribution system will be rehabilitated or replaced as needed
- Conservation tips are given to new residents and provided as water bill inserts
- Annual distribution of Consumer Confidence Report
- Two Community Newsletters released per year
- Continued staff training
- Code requires retrofits with low flush toilets
- Comprehensive Plan for City Parks
- Stormwater Management Program MS4

## **CITY OF NORTH MANKATO**

## **REQUEST FOR COUNCIL ACTION**



Agenda Item # 9B Dept: Adm	inistration Council Meeting Date: 3/20/17				
TITLE OF ISSUE: Consider Adopting Local Government Business Development Infrastructure Application.					
<ul> <li>BACKGROUND AND SUPPLEMENTAL INFORMATION: The City is proposing to submit a Business</li> <li>Development Public Infrastructure (BDPI) grant application to the Department of Employment and Economic</li> <li>Development (DEED) to seek matching funds for the extension of municipal utilities in the North Port Industrial Park.</li> <li>The estimated cost of the improvements is \$824,255.66 as shown on the attached preliminary engineer's estimate. The</li> <li>BDPI program can fund up to 50 % of the total project cost or \$412,127.83. The location of the utility project is shown on the attached map.</li> <li>The proposed utility extension would accommodate a new industrial development at the intersection of Rockford Road and Timm Road as well as other future industries in the Industrial Park. As part of the application process, it is necessary for the City to adopt of Local Government Resolution.</li> </ul>					
If additional space is required, attach a separate sheet REQUESTED COUNCIL ACTION: Adopt the Local Government Resolution Business Development Infrastructure Application.					
For Clerk's Use:	SUPPORTING DOCUMENTS ATTACHED				
Motion By:	Resolution Ordinance Contract Minutes Map				
Second By: Vote Record: Aye NayNorlandFreybergWhitlockSteinerDehen	X   X     Other (specify)   Preliminary Engineer's Estimate				
Workshop X Regular Meeting Special Meeting	Refer to:    Table until:    Other:				

#### LOCAL GOVERNMENT RESOLUTION BUSINESS DEVELOPMENT INFRASTRUCTURE APPLICATION

BE IT RESOLVED that the City of North Mankato act as the legal sponsor for project(s) contained in the Business Development Infrastructure Application to be submitted on or before \_\_\_\_\_\_ and that John Harrenstein, City Administrator and Mike Fischer, City Planner are hereby authorized to apply to the Department of Employment and Economic Development for funding of this project on behalf of the City of North Mankato.

BE IT FURTHER RESOLVED that the City of North Mankato has the legal authority to apply for financial assistance, and the institutional, managerial, and financial capability to ensure matching funds, adequate construction, operation, maintenance and replacement of the proposed project for its design life.

BE IT FURTHER RESOLVED that the City of North Mankato has not violated any Federal, State, or local laws pertaining to fraud, bribery, kickbacks, collusion, conflict of interest or other unlawful or corrupt practice.

BE IT FURTHER RESOLVED that upon approval of its application by the state, the City of North Mankato, may enter into an agreement with the State of Minnesota for the above-referenced project(s), and that it will comply with all applicable laws and regulations as stated in all contract agreements.

BE IT FURTHER RESOLVED that upon approval of its application by the state, the City of North Mankato, will commit \$412,127.83 towards the local match requirement.

BE IT FURTHER RESOLVED that the City of North Mankato will the repay the grant if milestones are not realized by the completion date identified in the Application.

The City of North Mankato certifies that it will comply with all applicable laws, regulations, and rules of the Business Development Infrastructure Application.

NOW, THEREFORE BE IT RESOLVED that John Harrenstein, City Administrator and Mike Fischer, City Planner, or their successors in office, are hereby authorized to execute such agreements, and amendments thereto, as are necessary to implement the project(s) on behalf of the applicant.

I CERTIFY THAT the above resolution was adopted by the City Council of the City of North Mankato on the 20th day of March, 2017.

WITNESSED:

SIGNED:

City Administrator	March 20, 2017	Mayor	March 20, 2017
SIGNED:		WITNESSED:	
City Planner	March 20, 2017	City Clerk	March 20, 2017



## 2017 Lookout Dr - Timm Rd Utility Extension

**Location Map** 

February 2017



City of North Mankato, MN


# PRELIMINARY ENGINEERS ESTIMATE

LOOKOUT DRIVE & TIMM ROAD UTILITY EXTENSIONS NORTH MANKATO, MINNESOTA BMI PROJECT NO. M18.113124 Updated 03-16-2017

ITEM NO.	ITEM	UNIT	UNIT PRICE	EST QUANT	AMOUNT
			\$12 000 00	1	£1E 000 00
1			\$13,000.00	1	\$15,000.00
2		L3 8V	\$95 00	120	\$3,000.00
3		51	\$00.00 \$29.00	30	\$11,030.00
м Б		LI QE	\$25.00	400	\$3,400,00
0 6		3F QE	00.00 \$49.00	94	\$1,400.00
7	18" STORM SEWER	1 6	\$45.00	70	\$3 150 00
2 2			\$65.00	985	\$64.025.00
à	36" STORM SEWER	1 5	\$72.00	540	\$38,880,00
10	42" STORM SEWER		\$85.00	465	\$39 525 00
11	MANHOLE STRUCTURE		\$450.00	40.0	\$18,000,00
12	CONNECT TO EXISTING STORM	FA	\$450.00	1	\$450.00
13	DBAIN THE BEPAIR		\$15.00	200	\$3,000,00
14	STORM SEWER CASTING	E. FA	\$700.00	4	\$2,800.00
15	12" WATERMAIN	 {F	\$35.00	3650	\$127,750.00
16	TRENCHLESS 12" WATERMAIN	LF	\$175.00	200	\$35,000.00
17	6" WATERMAIN	LF	\$25.00	300	\$7,500.00
18	HYDRANT	EA	\$2,800.00	6	\$16,800,00
19	6" GATE VALVE & BOX	EA	\$1,200.00	11	\$13,200,00
20	12" GATE VALVE	EA	\$4,500.00	2	\$9,000.00
21	CONNECT TO EXISTING WATERMAIN	EA	\$500.00	2	\$1,000.00
22	2" POLYSTYRENE INSULATION	SY	\$15.00	28	\$420.00
23	WATERMAIN FITTINGS	LB	\$6.00	2700	\$16,200.00
24	12" SANITARY SEWER	LF	\$45.00	3500	\$157,500.00
25	CONSTRUCT SANITARY MANHOLE	LF	\$280.00	130.0	\$36,400.00
26	SANITARY CASTING ASSEMBLY	EA	\$575.00	11	\$6,325.00
27	CONNECT TO EXISTING SANITARY SEWER	EA	\$500.00	1	\$500.00
28	6" SANITARY SEWER SERVICE	LF	\$25.00	70	\$1,750.00
29	12"x 6" SERVICE WYE	EA	\$250.00	5	\$1,250.00
30	SILT FENCE	LF	\$1.50	3000	\$4,500.00
31	SEEDING	ACRE	\$1,000.00	2.22	\$2,220.00
32	SEED MIX 25-131	LBS	\$2.50	450	\$1,125.00
33	HYDRAULIC MATRIX, TYPE BONDED FIBER	TON	\$2,200.00	3.88	\$8,536.00
34	FERTILIZER	LBS	\$0.75	450 _	\$337.50
				_	\$651,585.50
			10% CON	ITINGENCY	\$65,158.55
		ESTIMATEI	CONSTRUC	TION COST	\$716,744.05
	PROJECT DE	VELOPMENT, DESIGN & CONST	RUCTION ENG	GINEERING	\$107,511.61
		LOOKOUT DRIVE & TIMM ROAD	TOTAL PRO	JECT COST	\$824,255.66
				=	

# **CITY OF NORTH MANKATO**

# **REQUEST FOR COUNCIL ACTION**



Agenda Item # 9C	Dept: Comm	unity Develo	pment	Council Meet	ng Date: 3/2	20/17
TITLE OF ISSUE: Consider Authorizi	ng the City A	dministrato	r to Exe	ecute a Develo	pment Agr	eement with
H&H Development and Michael A. Dru	ummer and J	ulie K. Dru	nmer; E	Benson West.		
BACKGROUND AND SUPPLEMENT	AL INFORM	AATION: C	ity Adm	inistrator Harr	enstein and	Community
Development Director Fischer will provid	le information	n on the prope	osed dev	elopment agre	ement.	
				If additional space	is required. atta	ach a separate sheet
<b>REQUESTED COUNCIL ACTION: A</b>	uthorize the	City Admini	strator	to Execute a	Developme	nt Agreement with
H&H Development and Michael A. Dru	ummer and J	lulie K. Dru	nmer; I	Benson West.		
For Clerk's Use:		SUI	PPORT	ING DOCUM	ENTS ATT	TACHED
Motion By:		Resolution	Ordinan	ce Contract	Minutes	Мар
Second By:						
Vote Decords Asia Nov						
Norland		Other (sp	ecify)	Develop	nent Agreem	ent
Freyberg		(- <b>r</b>	,/		0	
Whitlock						
SteinerDehen						
Workshop			Defer	to:		
Workshop			Kelei			
X Regular Meeting			Table	until:		
Special Meeting			Other			

# CITY OF NORTH MANKATO NICOLLET COUNTY, MINNESOTA

## DEVELOPER AGREEMENT WITH H&H DEVELOPMENT AND MICHAEL A.

# DRUMMER AND JULIE K. DRUMMER; BENSON WEST

**THIS AGREEMENT**, made and entered into this \_\_\_\_\_\_ day of \_\_\_\_\_, 2017, by and between the City of North Mankato, a municipal corporation, in the State of Minnesota, hereafter called "City" and, H&H Development and Michael A. Drummer and Julie K. Drummer, hereafter called the "Developer." The City has approved a plat legally described in Exhibit "A" attached hereto.

### NOW THEREFORE IT IS HEREBY AGREED AS FOLLOWS:

A. Developer's Responsibilities

1. The City has been petitioned by the Developer for permission to privately construct the improvements itemized in Exhibit "B" attached hereto (the "Improvements") to be paid for by the Developer.

2. The following plans shall be delivered to the City by the Developer on a time schedule set forth in this agreement.

A. Final Plat

B. Engineering Plans and Specifications for the Improvements

If the plans vary from the written terms of this Agreement, the written terms of this Agreement shall control. All of the foregoing plans will be prepared by and will be delivered to the City with the signature of a Minnesota registered engineer and/or surveyor.

3. The Developer shall privately finance the Improvements.

4. The Developer shall install or ensure installation at its sole cost and expense and in accordance with all state, federal and local rules, regulations, ordinances and laws the following:

A. Site Grading Improvements

B. Surveying and Staking

C. Street Improvements

D. Sanitary Sewer Improvements

- E. Water main improvements
- F. Storm water Drainage and Storm Water Management Improvements
- G. Temporary and Permanent Erosion Control Improvements
- H. Setting of Lot and Block Monuments
- I. Gas, Telephone, Cable TV and Electrical Utilities
- J. Street Lights
- K. Traffic Control Signage
- L. Sidewalks
- M. Mailboxes

Unless extended in writing by the City, the Developer shall complete the Improvements within one year from the date of this Agreement. Developer shall be responsible for the necessary repairs to maintain the Improvements.

Following completion of the Improvements, the Developer shall be solely responsible for maintenance and repair of the Improvements, including but not limited to snow and ice removal, cleaning of roadway, and storm water catch basins. In the event the Developer fails to perform necessary work within 12 hours of notification from the City, the City may perform all necessary services and bill Developer for all costs to the City. No building permits or certificate of occupancy permits will be issued to the Developer if payment for services is not paid to the City within 10 days.

5. The Developer hereby grants the City, its agents, employees, officers and contractors under the Construction Contract a license to enter the platted property to perform all work and inspections deemed appropriate by the City during the installation of Improvements under this Agreement. The license shall expire after all Improvements to be installed pursuant to this Agreement have been installed and accepted by the City.

6. If the Developer does not complete the Improvements, the Developer acknowledges that the City can complete the Improvements and specially assess against the Property described on Exhibit A the City's cost of the construction of the Improvements. The Developer hereby waives the requirements of any public hearings and agrees to waive its rights to appeal the amount of the special assessments, provided that the special assessments do not exceed the City's cost to complete the Improvements.

7. The Developer shall promptly clean dirt and debris from streets, curb and gutter and perform all other erosion and sediment control work as required by the MPCA NPDES Construction Stormwater Permit and Stormwater Pollution Prevention Plan (SWPPP).

8. All costs associated with the Benson West subdivision, including City Engineer, City Attorney, permit fees and any other city costs outlined in this Agreement shall be paid by the Developer within 15 days of receiving an invoice from the City.

9. The Developer shall warranty all work to be free of all defects in workmanship and materials for a period of two years from the date of completion of the Improvements.

10. The Developer shall be responsible for all costs associated with construction inspections and engineering review as performed by the City Engineer.

11. Construction Staking. The Developer will provide all staking services for grading, sanitary sewer, watermain, storm sewer, lot services, sidewalks, and all roadway improvements.

12. The Developer shall pay for all costs incurred by it and the City in conjunction with the development of the plat, included without limiting the generality thereof, legal, planning, engineering, inspection expenses, permits in connection with approval and acceptance of the plat, the preparation of this Agreement, and all costs and expenses incurred by the City in monitoring and inspecting development of the plat.

13. The Developer shall hold the City and its officers, agents and employees harmless from claims made by itself and third parties for damages sustained or costs incurred resulting in plat approval or supervision or obligation that the City has undertaken pursuant to this Agreement. The Developer shall indemnity the City and its officers, agents and employees for all costs, damages or expenses which the City may pay or incur in consequence of such claims, including attorney's fees. The Developer shall reimburse the City for costs incurred in the enforcement of this Agreement, including engineering, attorney's fees and costs of litigation. This is a personal obligation of the Developer and shall continue in full force and effect even if the Developer sells one or more lots, the entire plat or any part of it.

14. In the event of default by the Developer as to any of the work to be preformed by it hereunder, the City may, at its option, perform the work and the Developer shall promptly reimburse the City for any expense incurred by the City, provided the Developer is first given the notice of work in default, not less than 48 hours in advance. This Agreement is a license for the City to act, and it shall not be necessary for the City to seek a Court order for permission to enter the land. When the City does any such work, the City may, in addition to its other remedies, assess the cost in whole or in part and withhold the issuance of any building permit or occupancy permit.

15. The Developer represents to the City that the plat complies with all city, county, state and federal laws and regulations, including but not limited to: subdivision ordinances, zoning ordinances and environmental regulations. City staff and consulting engineers shall diligently work to review compliance with the above mentioned laws and regulations. If the City determines that the plat does not comply, the City may, at its discretion and upon written notification to the Developer, refuse to allow construction or development work in the plat area until the Developer complies. Upon the City's demand, the Developer immediately shall cease work until there is compliance.

16. Third parties shall have no recourse against the City under this Agreement. Breach of the terms of this Agreement by the Developer shall be grounds for denial of building permits or certificates of occupancy. If any portion, section, subsection, sentence, clause, paragraph or phase of this Agreement is for any reason held invalid, such decision shall not affect the validity of the remaining portion of this Agreement.

17. The Developer shall place iron monuments at all lot and block corners and at all other angle points on boundary lines. If iron monuments are disturbed, they shall be replaced at the Developer's expense before a certificate of occupancy is granted.

18. The Developer agrees to maintain, at all times before acceptance of the streets by the City, an access road suitable for use by emergency, police and fire department equipment. The adequacy of such road shall be solely determination by the City. Furthermore, such access road shall be located no more than 150 feet from any structure built within the Subdivision.

19. The Improvements must meet the Adopted Standard Construction Specifications and Details of the City.

20. The Developer shall be responsible for obtaining the necessary permits including: MPCA Sanitary Sewer Extension Permit, Minnesota Department of Health Plan Review Permit, Minnesota Pollution Control Agency, NPDES Construction Stormwater Permit and any other permits necessary to construct the Improvements.

## **Building Permits**

1. The City agrees that building permits may be issued upon approval of the Final Plat by the City Council.

2. The first course of asphalt must be completed within six months of issuance of the first building permit within the subdivision.

3. The final lift of asphalt shall be completed when ordered by the City.

4. Any stormwater ponds must be satisfactorily built in accordance with the approved plans before a building permit is issued.

5. The City agrees that certificates of occupancy will be granted when gas, electric, and telephone service are provided to the development and all other requirements have been met by the Developer.

6. If building permits are issued prior to the completion and acceptance of the improvements, the Developer assumes all liability and cost resulting in delays in completion of the Improvements and damage to the Improvements caused by the City, Developer, its contractors, subcontractors, material men, employees, agents or third parties. No construction of a building and/or structure may be initiated prior to obtaining a City building permit.

# **Recording and Release**

1. The Developer agrees that the terms of this Agreement shall be a covenant on any and all property included in the Subdivision. The Developer agrees that the City shall have the right to record a copy of this Agreement with the Nicollet County Recorder to give notice to future purchasers and Developer.

# **Property Taxes**

1. Should the recording of the Final Plat occur after July 1, any and all property taxes on any public property dedicated as a part of this plat shall be the responsibility of the Developer. The Developer must continue to pay all property taxes on the land described in Exhibit A on a timely manner. Failure to pay property taxes on any property on the land described in Exhibit A and owned by the Developer and described in Exhibit A or its assigns will result in the City not issuing any additional building permits.

# **General Provisions**

1. The action or inaction of the City shall not constitute a waiver or amendment to the provisions of this Agreement. To be binding, amendments or waivers shall be in writing, signed by the parties and approved by written resolution of the City Council. The City's failure to promptly take legal action to enforce this Agreement shall constitute a waiver or release.

2. This Agreement shall run with the land and may be recorded against the title to the property. After the Developer has completed the work required of them under this Agreement, at the Developer's request the City will execute and deliver to the Developer a release of this Agreement.

3. Each right, power or remedy herein conferred upon the City is cumulative and in addition to every other right, power or remedy, expressed or implied, now or hereafter arising

available to the City, a law or in equity, or under any other agreement, and each and every right, power and remedy herein set forth or otherwise so existing may be exercised from time to time as often and in such order an may be deemed expedient by the City and shall not be a waiver of the right to exercise at any time thereafter any other rights, power or remedy.

4. The Developer shall require any contractor to maintain liability and personal injury insurance with limits of liability of not less than \$1,000,000.00 per person and \$2,000,000 in the aggregate. The City must be named as additional insured under such policy. The contractor must also maintain the adequate worker's compensation insurance and property insurance. The term of the insurance shall be renewable until the construction of the Improvements is complete.

5. All disputes associated with this Agreement, shall be submitted to District Court in Nicollet County, Minnesota. Minnesota law shall apply to all disputes.

6. Required notices to the Developer shall be in writing and shall be either hand delivered to the Developer, its employees or agents or mailed to the Developer by registered mail at the following address:

H+H Development Do Box 2111 North Markato, MN 56003

Notices to the City shall be in writing and shall be either hand delivered to the City Administrator, or mailed to the City by registered mail in care of the City Administrator at the following address:

City of North Mankato P.O. Box 2055 North Mankato, MN 56002-2055 Attention: City Administrator

# **CITY OF NORTH MANKATO**

# Ву \_\_\_\_

(SEAL)

Mayor

By \_\_\_\_

City Administrator

# **STATE OF MINNESOTA**

# **COUNTY OF NICOLLET**

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2017, by \_\_\_\_\_\_, Mayor and by \_\_\_\_\_\_ Administrator of North Mankato, a Minnesota municipal corporation, on behalf of the , City corporation and pursuant to the authority of the City Council.

Notary Public

H&H D	)evelo	oment	11	,	
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Adam	n Huir	as	V		

Its Dun

# **STATE OF MINNESOTA**

# **COUNTY OF BLUE EARTH**

7

Mista M. Wolmer.

Notary Public



8212065v3

# **H&H Development**

By Jeremy Henninger MŽ n Its

# STATE OF MINNESOTA

# **COUNTY OF BLUE EARTH**



1.13 By Michael A. Drummer Its men

# STATE OF MINNESOTA

# **COUNTY OF BLUE EARTH**

The foregoing instrument was ackno	wledged before me this 16th day of
March, 2017, by Michael A.	Drymmer.
(Pat)	DAVID PATRICK DRUMMER
Notary Public	Minnesota
Notary I done	My Commission Expires January 31, 2022

8

8212065v3

By Julie K. Drummer Member Its

1 ....

# STATE OF MINNESOTA

# **COUNTY OF BLUE EARTH**

The foregoing instrument was ack March, 2017, by Julie K	nowledged before me this $\frac{16+4}{100}$ day of
Notary Public	DAVID PATRICK DRUMMER Notary Public Minnesota My Commission Expires January 31, 2022

EXHIBIT A





EXHIBIT B



12/19/16 LE NO 43355

www.is-erp.c

CSAH Proj. No.

CITY OF NORTH MANKATO

	ITEM		(TOTOT)		
	2021.501 MOBILIZATION	LS	1		
	2104.501 REMOVE CURB AND GUTTER	LF	225		
	2104.501 REMOVE WATER MAIN	LF	· 32		
	2104-501 REMOVE METAL CULVERT	LF CV	45		
	2104.505 REMOVE BITUMINOUS PAVEMENT	51	304		
	2105.501 COMMON EXCAVATION (P)(EV)	CY	12137		
	2105.522 COMMON BORROW (CV)	CY	4076		
	2105.541 STABILIZING AGGREGATE 0"-4" (CV)	CY	50		
	2112.505 SUBGRADE PREPPARATION 6"-12"	STA	8		
	2211.503 AGGREGATE BASE (CV) (P), CLASS 3	CY CY	720		
	2360.503 TYPE SP 12.5 WEAR CRS MIX (3.C) 1.5" THICK	SY	3740		
	2360.503 TYPE SP 19.0 NON WEAR CRS MIX (3,8) 2.5" THICK	SY	3714		
	2502.521 12" HDPE PIPE DRAIN	LF	656		
	2502 S41 6" PERF PVC PIPE DRAIN, SDR 35	LF	1743		
	2503.511 8" PVC PIPE SEWER, SDR 35	LF	1067		
	2503.541 15" RC PIPE SEWER DESIGN 3006 CLASS V	16	103		
	2503.541 24" RC PIPE SEWER DESIGN 3006 CLASS V	LF	485		
	2503.602 CONNECT TO EXISTING STORM SEWER	EA	1		
	2503.602 CONNECT TO EXISTING SANITARY SEWER	EA	1		
	2503.602 6" CLEAN-OUT ASSEMBLY	EA	4		
	2503.602 8" x 4" PVC WYE, SDR 26 HEAVY WALL	EA	52		
	2503.602  4" PLUG SDR 26	EA	52		
	2503.602 [8" PLUG SDR 35 2503.603 [4" PL/C SANITARY SERVICE PIPE SDR-26	LA IE	2318		
	2503.603 2" INSULATION	UF	500		
	2504.602 6" GATE VALVE AND BOX	EA	3		
	2504.602 8" GATE VALVE AND BOX	EA	4		
	2504.602 HYDRANT	EA	3		
	2504.602 1" CORPORATION STOP	EA	52		
	2504.602 1" CURB STOP & BOX	EA	32		
	2504.603 6" PVC WATERMAIN	LF	65		
	2504.603 8" PVC WATERMAIN	LF	971		
	2504.608 WATERMAIN FITTINGS	LBS	858		
	2506.501 CONST DRAINAGE STRUCTURE DESIGN 4007C	UF	52		
	2506.501 CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4022	UF	17		
	2506.501 CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	UF	19		
	2506.501 CONSTRUCT DRAINAGE STRUCTURE 12" PVC IN-LINE DRAIN	FA	15		
	2506.502 ICONSTRUCT DRAINAGE STRUCTURE TYPE 1 C.B.	EA	15		
	CASTING ASSEMBLY, NEENAH R-1733-0078 W/ HEAVY LID &	64	7		
	2506.516 CONCEALED PICK HOLES	EA	/		
	2506.516 CASTING ASSEMBLY, NYLOPLAST H-25 W\1599CGS GRATE	EA	3		
	2506-516 [CASTING ASSEMBLY, NYLOPLAST H-25 W/2499CGS GRATE	EA	2		
	2506.510 JLASTING ASSEMBLT, NEENAH R1735 W\SOLID GRATE	EA	2		
	2506.516 CASTING ASSEMBLY, NEENAH R3067 W\ TYPE C GRATE	EA	8		
	2531.501 CONCRETE CURB AND GUTTER DESIGN S 418	LF	2319		
	2531.604 6" CONCRETE VALLEY GUTTER	SY	63		
	2564.602 END OF ROADWAY MARKER OM4-2	EA	4		
	2573.530 STORM ORAIN INLET PROTECTION	EA	17		
	2573.602 ISTABILIZED CONSTRUCTION EXIT	EA	1		
	2573-503 PERINCIER PROJECTION 2574-508 FERTILIZER TYPE 3	LB	1000		
	2575.502 SEED MIXTURE 25-131	LB	1100		
	2575.505 SODDING TYPE SALT TOLERANT	SY	238		
	2575.523 EROSION CONTROL BLANKETS CATEGORY 3	SY	965		
	2582.502 4" SOLID LINE WHITE-PAINT	LF	540		
No. 13-15260 SAP Proj No.	Architecture	L HORDING	CERTIFY THAT THIS FLOW WAS CO IN DIRECT SUPERVISION AND THAT	REVISIONS 0 N.T.S.	STATEMENT OF ESTIMATED QUANTITIES
oj. No13-15260_ SAP Proj. No	Architecture Engineering	LINER	CERTEY THE THE PLAN WAS ON DETECT SUPERVISED AND THE OFFICE SUPERVISED AND THE OFFICE UNDER THE OFFICE UNDER THE OFFICE O	CROOTD BY M OF REVISIONS 0 N.T.S.	STATEMENT OF ESTIMATED QUANTITIES
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oj. No. 13-15260 SAP Proj. No	ISG Architecture Engineering Environmental Planning		CHARLES J. BR	ANDEL	STATEMENT OF ESTIMATED QUANTITIES BENSON WEST NORTH MANKATO, MN
oj. No. <u>13–15260</u> SAP Proj. No j. No Federal Proj. No Proj. No CAD File Name <u>15860 2-50620455</u>	ISG HSG Architecture Engineering Environmental Planing		CHARLES J. BR	ANDEL	STATEMENT OF ESTIMATED QUANTITIES BENSON WEST NORTH MANKATO, MN

					01	Oldin OF HEL	COCHEDOL	- test								
DESIGNATION	STATION	LOCATION	LN FT	SING ELEVATION	PIPE ELEVATION	TYPE	CASTING	GRATE	DESIGNATION	SZE	TYPE	ave	LENGTH	GRADE	TD	ELEVATION
						ROLLING GREEN TR	UL EAST-WEST				_		-	_		
EKS-1	0+15	315 RT	4.62	906.77	W2.15		NEENAH R-3067	TYPEC							1.1	
**A-2	0+37	157 RT	4.38	966.50	\$62.52	4022-48	NEENAHR-3067	TYPEC	P-2	24	ACP.	5	27	0.25%	EXS-1	682.45
A-2A	0+29	17811	4.38	987.27	962.69	TYPE 1	NEENAH R-3067	TYPEC	P.2A	15	RCP	5	34	0.50%	A.2	960 72
"A-3A	1+85	16 RT	479	987.68	983.05	4022-48	NEEWAHR-3067	TYPEC	P.3	24	RCP	3	148	525%	A-2	98272
A-38	1+85	135 RT	4.26	068.38	\$64.12	24" NYLOPLAST	NYLOPLAST H-25	2499CGS	P.38	12	HOPE	5	119	0.50%	A-3A	983 62
**Å-4	3+47	16.7 RT	365	1908.56	564 51	4022-48	NEDNAH R-3067	TYPEC	P.4	-24	RCP	3	162	1.00%	A.3A	983.25
A-5	4+50	a	4.43	C8 692	985.40	4020-48	NEENAHR-2573	TYPEB	P-5	24	RCP	5	117	0.25%	A-4	265.11
A-6	4+90	a	367	369333	985.68	4020-48	NEENAH R-2573	TYPE B	P-6	24	RCP	3	31	0.25%	A-5	985.60
"A-7	1+87	15.8°LT	4.51	987.83	963.37	4022-48*	NEENAH R-3067	TYPEC	P.7	18	RCP	3	31	0.25%	A-3A	983.29
					in the second	ROLLING GREEN TRAI	L NORTH-SOUTH	in the second	1	-			-			
A-8	9+43	12.3 LT	5.23	989.03	\$83.60	4020-48	NEENAH R-1733	SOLD	P-8	18	RCP.	3	96	0.25%	"A-7	983.66
A-9	10+43	12.9 LT	5.62	\$950.07	984.25	4020-46	NEENAHR-1733	SOLD	P.9	18	RCP	3	100	0.25%	A-0	964.00
A-10	10+77	JO LT	5.82	990.35	984.54	TYPE 1	NEDWAHR 3067	TYPEC	P-10	15	RCP	5	41	025%	A.0	984.44
A-11	11+04	75 LT	2.97	987.90	984.93	24" NYLOPLAST	NYLOPLASTH-25	24MACGS	P-11	12	HOPE	5	47	0.36%	A-10	98476
A-12	12+69	77 LT	2.00	1960.73	966.73	12" PVC N-LINE DRAIN	NYLOPLAST H-25	1599CGS	P-12	12	HOPE	5	165	037%	A-11	\$8513
A-13	10+43	16 81	5.09	990.47	985.38	TYPE 1	NEENAH R-3067	TYPEC	P.13	15	RCP	5	28	076%	A-9	085.17
A-14	10+43	133" RT	5.05	001 22	988.17	12" PVC N LNE DRAN	NYLOPLASTH-25	1500CGS	P.14	12	HOPE	5	117	0.50%	A-13	985.58
A-15	12+51	133 RT	5.02	992.43	987.41	12" PVC N-LNE DRAN	NYLOPLASTH-25	1500CGS	P.15	12	HOPE	5	208	0.50%	A-14	9993 37

"BENDS, TEES, WYES AND REDUCERS ARE INCIDENTAL TO PIPE CONSTRUCTION

BLOCK	LOT NUMBER	SERVICE	GARAGE FLOOR ELEVATION	TOP BACK OF CURB	CURB STOP	SANITARY PLUG ELEVATION	SANITARY WYE	TOP OF BLOCK ELEVATION	DRIVEWAY LENGTH (FT)	DRIVEWAY ELEVATION CHANGE AT 2% (FT)	MAXIMUM DRIVEWAY GRADE (%)	MAXIMUM TOP BACK OF CURB	CURB AT DRIVEWAY	BUILDING HEIGHT ABOVE REQUIRED ELEVATION
NOCK 1	1	1	989.20	986.91	988.16	982.17	961.45	989.53	43	0.86	5.33%	987.67	986.91	0,76
	1	2	989.20	986.82	985.19	982.21	981.49	989.53	43	0.86	5.40%	987.67	986.58	0.79
	1	3	989.20	987.10	988.23	982.29	981.57	989.53	43	0.86	4.88%	987.67	987.10	0.57
-	1	4	989.20	987.21	968.28	982.36	981.64	989.53	43	0.86	4.63%	987,67	987.21	0.46
-		3	989.20	987.33	988.35	982.43	961.71	989.53	43	0.85	4.33%	987.67	987.33	0.34
-	2	1	990.10	987.85	989.09	982.72	982.02	990.43	43	0.86	5,23%	986.57	987.85	0.22
-	2	2	990.10	987.90	989 12	982.76	982.06	990.43	43	0.86	5.12%	988.57	987.90	0.67
	2	3	990.10	988.03	989.18	982.84	982.14	990.43	43	0.86	4.81%	988.57	988.03	0.54
	2	4	990.10	988.15	989.24	983.01	982.31	990.43	43	0.86	4.53%	988.57	984.15	0.42
	2	5	990.10	988.27	989.28	983.13	982.39	990.43	43	0.86	4.26%	988.57	988.27	0.30
	.2	6	990.10	988.34	989.29	983.99	983.05	990.43	43	0.86	4.09%	988,57	988.34	0.23
ROCK 2	1	1	992.00	989.34	990.74	983.98	983.38	992.33	41	0.82	6.49%	990.51	939.34	1.17
	1	2	992.00	969.28	990 71	983.94	983.34	992.33	41	0.82	6.63%	990.51	989.28	1.23
	1		992.00	989.08	990.58	983.85	983.28	992.33	41	0.82	2.125	990.51	989.19	1.32
-	1	5	992.00	958.97	990.51	981.74	983.14	992.33	41	0.82	7 19%	990.51	988.97	1.43
	1	6	992.00	988.76	990.42	983.68	983.08	992.33	41	0.82	7.90%	990.51	988.76	1.75
-	1	7	992.00	988.54	990.33	983.59	982.99	992.33	41	0.82	8.44%	990.51	988.54	1.97
	2	1	991.44	988.54	990.03	983.35	982.75	991.77	41	0.82	7.07%	989.95	988.54	1.41
	2	2	991.44	988.60	990.07	983.31	982.71	991.77	41	0.87	6.93%	989.95	988.60	1.35
	2	3	991.44	988.68	990.11	983.28	982.68	991.77	41	0.82	6.73%	989.95	988.68	1.27
	2	4	991.44	988.93	989.99	983.40	982.80	991.77	41	0.82	6.12%	989.95	988.93	1.02
	3	1	992.20	989.28	990.73	983.49	982.89	992.53	41	0.82	7.12%	990.71	989.28	1.43
	3	2	992.20	989.47	990.93	983.59	982.99	992.53	41	0.82	6.66%	990.71	989.47	1.24
-	3	3	992.20	989.69	991.04	983.67	983.07	992.53	41	0.82	6.12%	990.71	989.69	1.02
	3	4	992.20	989.91	991.12	983.74	983.14	992.53	41	0.82	5.59%	990.71	939.91	0.80
-	4	2	992.90	990.40	991.79	983.90	983.30	993.23	41	0.82	6.10%	991.41	990.40	0.78
-	4	3	992.90	990.79	991.95	984.16	983.56	993.23	41	0.82	5 15%	991.41	990.79	0.62
-	4	4	992.90	990.97	992.02	984.22	283.62	993.23	41	0.82	4 71%	991.41	990.97	0.44
_	4	5	992.90	991.12	992.08	984.27	983.67	993.23	41	0.82	4.34%	991.41	991.12	0.29
	5	1	994.40	991.61	992.89	984.42	983.82	994.73	41	0.82	6.80%	992.91	991.61	1.30
	5	2	994,40	991.80	993.15	984.52	983.92	994.73	41	0.82	6.34%	992.91	991.80	1.11
	5	3	994,40	992.01	993.28	984.59	983.99	994.73	41	0.82	5.83%	992.91	992.01	0.90
	5	4	994.40	992.46	993.17	984.76	984.16	994.73	41	0.82	4.7.5%	992.91	992.46	0.45
-	6	1	995.10	992.68	993.91	984.83	984.23	995.43	41	0.82	5 90%	993.61	992.68	0.93
-	6	2	995.10	992.96	994.1	984.94	984.34	995.43	41	0.82	5,22%	993.61	992.96	0.65
-	0	3	995.10	993.17	994.10	985.01	984.41	995.43 665.43	41	0.82	4,71%	993.61	993.17	0.44
0773	1		990.00	993-32	989 53	983.76	981.88	990.13	43	0.84	6.56%	993.01	933.32	0.29
	1	2	590.00	987.45	988.86	982.66	981.78	990 33	43	0.86	5.93%	988.47	987.45	1.02
-	1	3	990.00	987.34	938.81	982.58	961.70	990.33	43	0.86	6.19%	988.47	987.34	1.13
	3	.4	990.00	987.22	988.76	982.51	981.63	990.33	43	0.86	6.47%	988.47	987.22	1.25
	1	5	990.00	987.10	988,70	982.44	981.56	990.33	43	0.86	6.74%	988.47	987.10	1.37
	1	6	990,00	986.98	988.64	982.37	981.49	990.33	43	0.86	7.02%	988.47	986.98	1.49
	2	1	991.00	988.01	991.14	984.61	983.75	991.33	58	1.16	5.16%	989.17	988.01	1.16
	2	2	991.00	989.09	991.32	984.68	983.82	991.33	55	11	3,47%	989.23	989.09	0.14
	2	3	991.00	01.881	991.53	984.76	983.90	991.33	53	1.06	5.47%	969.27	988.10	1.17
	2	3	991.00	988.04	991.9	984.90	984.04	991.33	52	1.04	5.69%	989.29	988.04	1.75
	2	6	991.00	987.95	992.1	984.97	984.11	991.33	52	1.04	5.87%	989.29	987.95	1.34
	2	7	991.00	987.87	992.29	585.00	984.14	991.33	52	1.04	6.02%	989.29	987.87	1.42
	3	1	990.80	987.79	992.78	985.22	984.36	991.13	52	1.04	5.79%	989.09	987.79	1.30
	3	2	990.80	987.70	992.98	985.30	984.44	991.13	52	1.04	5.96%	989.09	987.70	1.39
	3	3	990.80	987.64	993.06	985.35	984.49	991.13	52	1.04	6.08%	989.09	987.64	1.45
	3	4	990.80	987.55	993.16	985.40	984.50	991.13	52	1.04	6.25%	989.09	987.55	1.54

			-	W	ATERMA	IN SCH	EDULE				1
	STATION	LOCATION	G MAN	S'MAN	GATEVALVE	WEI TAP	TEES & OROSS	60ND	PLUGHEDUCER	HYDRANT	1
			Lari	CHIT	BENSON N	ORTHWATE	MAN	(LBS)	((.85)	200	1
	00+15 00+15 TO 2+99	STITIO FIT	-	375		1				-	
	00+20	118 LT		210	-	-		8"x45" (59)			
	82-00	115 LT				-		8"x45" (59)			
	(0+45	1211	-	-				6"x45" (50)		-	
	2+50	717		_	-	-		8"x45" (50)			
	2+97	3211		-	8'	-		0.840-108)		-	
	2+09	3911			DING ON S	ANT WE THE	8"x8" TEE (90)				
	7+69	TELT	1	1	BONSON	ACO PRATON		-		1	
	7+60	GUTTO IALT	.4			-					
	7+60	10 LT			0	-			8'x6" (40)		
	7+691013+56	GUTIOSUT		5/12	1			Pr. 100 110			
	7+00	TLT				-		8"x45" (59) 5"x45" (59)			
	9+01	211			0	ONNECTION	ENSON NORTH V	ATORMAN TEL			
	12+72	SLT			6-	-	8"x6" TEE (80)				
	12+72	5'LTTO 45'LT	40			-					
	12+72	4517			0.	1			-	1	
	12+75	SLT			8"						
	13+56	SLT			0	-			8" (26)		
	12+92 TO 13+13	204"LT TO 200"LT	21					15.05.05	2		
	12+02	200 LT	-			-		8"x45" (59) 8"x45" (59)		-	
	0+03	25'LT			-28				8'x0" (40)		
	0+18	201	-	-	6.	-	-			3	
		TOTALS	65	971	3-6" 4-8"	1	170	582	106	3	
			s	ANIT	ARY SE	NER SC	HEDULE				
STRUCTURE	. Contesta	PAY HGT	TRING	STRUCT	URE INVERTO :	STRUCTURE	CASTNG"	PPE	PIPE PIPE	PPE P	E DRANS PIPE IND
DESIGNATION STATIO	LOCATE	N INFT	REVATION	PPE F	LEVATION	TYPE"	SOUTH	DESCNA	NON SIZE TYPE	LENGTH GR	TO ELEVATION CAP
\$-1 11+22	20271	822	968,13	9	79.91 [k	FD0T 4007C	NEENAH R-1733	0078 EX SP	1		
5-2 0+40	33'RT	6.21	986.76		00.55 M	H001 4007C	NEENAH R-1733- NEENAH R-1733-	0078 SP-2 0078 SP-3	8 509-33	212 04	0% SP-1 980.01
				R	OLLING GREEN	TRAIL EAST	-WEST			1 10 10	
5-4 0+64 5-44 7+07	6.3 RT	6.63	969.35	- 3	61.66 (A 82.72 (A	h001400/0 h001400/0	NEENAH R-1733-	0078 59-4	6 SDR-35	184 0.4	2% SP-4 981.96
8-6 10-62	6.9 RT	6.00	69075	9	82.75 N	HD014007C	NEENAH R-1733	0078 SP-5	8 509-35	151 0.4	5% SP-5 981.98
\$-6 13+28	5.4 RT	9.54	993.34	9	83.80 W	H001 4007C	NEENAH R-1733-	0078 SP-6	8 SDH-35 8 SDH-35	240 0.4	2% SP45 582.82 5% CAP 580.71 1
	TOTAL	51.86								1067	
	"MEENAH R	1733-0078 SHALL	HAVEHEAV	Y LID& O	ONSEALED PO	CHOLES					
			ł	STATION	LOCATION	CONNEC	TRON 6" PERF.	PVC PIPE			
			H	0+15.5	RO I RT	LLING GREE	N TRAIL				
			- 1			-	24	D-1			
			ł	0+36.7		A-2	A				
			- 4	1.67			146	0-2			
			1	0+36.7	RT	A		-			
			F	1+85	BT		155	D-3			
			- t	1+85	RT	AS					
				7+08	11	00	269	04			
			- t	1+87	LT LT	A.1					
				1+85	IT	A	219	0.5			
			t		ROLLIN	GGREEN	TRAIL WEST				
			ł	6+94	RI		140	00			
			t t	8+35	RT	A.4					
			- t	0+30			205	0.7			
			F	10+43	RT	A-1	3				
			- 1				310	0.6			
				13+54		C0					
			- 1				275	0.9			
			- F	13*54	1 11	1 00	TOTAL 1743				
							_				
1 HORDE CURSIN THIS THE PLAN UNDER WE DIRECT SUPERMEAN AND UNDER WE DIRECT SUPERMEAN AND UNDER PROVIDENCES. (MEMORY S	THAT I AN A DAY	REVI	SIONS	-	0 1	I.T.S.		U	TILITY SO	CHEDUL	.E
THE OF MAKED	NOCE THE LANS OF THE				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
CHADIFC I	NOCY THE UNITS OF THE				HORIZ.						
CAA -	BRANDEL				HORIZ.	¥			BENSON	WEST	
Chile J.	BRANDEL BALL			_	HORIZ.	VERT			BENSON NORTH MAN	WEST KATO, MN	
Olla J.	BRANDEL BL 10 43359				HORIZ.	YWRT O		SHEET	BENSON NORTH MAN	west kato, mn	Sheets





















#### CONSTRUCTION ACTIVITY NOTES:

EROSION PREVENTION:

Construction of silt fence and all other erosion control measures shall be complete before other construction activity occurs.

Use phased construction wherever practical and establish turf as soon as possible to minimize sediment transport.

Turf establishment or temporary seeding or mulching of all exposed soil not being actively worked should be practiced following the table below:

Temporary cover during construction is incidental.

Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours after connection to a surface water.

Type of Slope	Time Area can Remain Open Without Being Actively Worked
or Disturbance Area	Normal Water
Steeper than 3:1	7 days
10:1 to 3:1	7 days
Flotter 10:1	7 days
Ditches	1 day
Pipe Ends	1 day
Within 200' of Surface Water	1 day
Lost 200° of the wetted ditch perimeter from the ditch outlet	1 day

All exposed soils shall be seeded or sodded at the earliest possible time to prevent/reduce erosion.

A Seed shall be MinOOT mixture 25-131 and shall be placed in accordance with MinOOT 2575. Seed shall meet MinOT Specification 2016. MixEd shall be MinOT 3882 Type T mulch. MixEd shall be oppied at a rate of 15 bran/core. MixEd shall be fear downeed. Frettiere shall be oppied to seeded areas incidental to seeding. Frettiaer shall be a 24-12-24 (Kn-g-4) oppied at a rate of 350 bi/core. Seed shall be specied in accordance with MinOT 2575. Seed shall be appied to all dirutted areas not being solded, at a rate of 20 bi/core.

B. Temporary mulching shall be applied at a rate of 2 tons/acre. Mulch shall be disc anchored.

Additional erosion prevention measures may be found in the permit and MPCA's Best Management Practices.

#### SEDMENT CONTROL PRACTICES:

Construction of silt fence and all other erosion control measures shall be complete prior to land disturbing activities occur.

A rock construction entrance or other approved alternative must be constructed at the entry point to the project alte. Rock construction entrance must be  $40^{\circ} k25^{\circ}$  (min.) of  $2^{\circ}$  -  $4^{\circ}$  crushed rock,  $\delta^{\circ}$  deep.

iniet erosion protection shall be installed and maintained until turl or pavement has been established.

The contractor shall be responsible to control ension from leaving the construction zone. All ended material that leaves the construction zone shall be collected by the contractor and returned to the site of the contractor's expense.

All streets must be swept within 24 hours when any tracking occurs.

Eng. Proj. No. 13-15260 SAP Proj. No.

City Proj. No.

CSAH Proj. No.

County Proj. No.

Sit fance or other effective ensoin control measures must be installed around the perimeter of any soil stocipied, including temporary stocipies, of this location or any other on the project site. Stocipies cannot be placed in surface waters, including storm water conveyances such as curb and guider systems, or conclusis and diffuse.

Perimeter control shall be installed along the book of curb immediately following curb installation at all locations with pastive drainage to parking to cod/or streets, and shall remain until stabilization is oblived. This shall be accompliated through the use of sill fence, biantile, Rock logs, or other methods approved by the engineer.

Federal Proj. No.

CAD File Name 15260 12-SWPPP

CONSTRUCTION ACTIVITY NOTES: DEWATERING AND BASIN DRAINING:

Dewater sediment-loden water to sedimentation basins it possible, or use other BMP's to prevent erasion when discharging to surface waters. Use appropriate energy dissipation measures on all discharges.

Dewatering practices cannot cause nuisance conditions, erosion or in receiving channels or inundation of wetlands resulting in adverse impacts.

#### POLLUTION PREVENTION:

All solid waste collected from the construction site must be disposed in accordance with all applicable regulations.

All hazardous materiais (ail, gasaline, fuel, paint, etc.) must be properly stored to prevent splits, loads or other discharge, starage areas shall provide secondary containment and a hazardous materiais split kit. Starage and disposal of hazardous waste must be in compliance with a logicical regulations.

Equipment maintenance areas must be limited to a defined area of the site. All runoff containing any hazardous material must be properly collected and disposed. No engine degreasing shall be allowed on site.

The contractor is responsible for monitoring air publiclo and ensuring it does not encode levels set by local, data, or federal regulations. This includes dust created by work being performed on the site. Air polation and dast control correction is considered incidental to the unit bid prices for which work is being performed. Additional dust control measures may be required by the Engineer.

Concrete washout onsite: All liquid and solid wastes generated by concrete washout operations must be contained in a teak-proof containment locitity or impermeable liner. A compacted doys into that does not allow washout liquids to enter ground water is considered on impermeable liner. The liquid and solid wastes must not contact the ground, and there must not be runoff from the concrete washout operations or areas. Liquid and solid wastes must be disposed of property and in complexice with MPCA regulations. A sign must be installed adjacent to each washout footily to inform concrete explorent operators to utilize the proper facilities.

#### INSPECTION AND WAINTENANCE:

The Permittees must routinely inspect the construction site once every seven (7) days during octive construction and within 24 hours of a rainfall event greater than 0.5 inches in a 24 hour period.

All inspections performed during construction must be recorded and records relained with the SWPPP in accordance with the Starmwater Permit.

Contractor is responsible for keeping a record of all rainfall information & erosion control maintenance until final establishment of turf.

All silt fences must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches X of the height of the fence.

Erosion control, and other BMP's must be replaced, repaired, or supplemented when they reach 33% desion load.

See MPCA website for example of SWPPP inspection and maintenance forms. http://www.pcs.state.mn.us/publications/wq-strm2-75.pdf

#### FINAL STABILIZATION:

CITY OF NORTH MANKATO

The Permittees must ensure final stabilization of the site. The Permittees must submit a notice of termination within 30 days after final stabilization is complete or control has been passed to another owner.

All temporary erasion control measures and BMP's must be removed as part of the final site stabilization.

The storm water permit further defines final stabilization and its requirements













# **CITY OF NORTH MANKATO**

# **REQUEST FOR COUNCIL ACTION**



Agenda Item # 9D	Dept: Administration	Council Meeting Date: 3/20/17
TITLE OF ISSUE: Receive Spring Lak	e Park Swim Facility Ass	essment.
BACKGROUND AND SUPPLEMENT Lake Park Swim Facility Assessment.	AL INFORMATION: Ci	ity Administrator Harrenstein will discuss the Spring
		If additional space is required attach a separate sheet
REQUESTED COUNCIL ACTION: A	uthorize the City Adminis	strator to Execute a Contract with USAquatics to
Complete the Design Documents.		
For Clerk's Use:	SUP	PORTING DOCUMENTS ATTACHED
Motion By:	Resolution	Ordinance Contract Minutes Map
Vote Record: Aye Nay Norland	Other (spe	cify) Facility Assessment, PowerPoint
Freyberg Whitlock	Presentatio	on
Steiner Dehen		
Workshop		Refer to:
X Regular Meeting		Table until:
Special Meeting		Other:

# **Facility Assessment**

- For -

# North Mankato Swim Pond North Mankato, MN



February 23, 2017

- By -



124 BRIDGE AVENUE, P.O. BOX 86 DELANO, MN 55328 763-972-5897

### **AQUATIC CONSULTING & DESIGN**

USAQUATICS INC.

North Mankato Swim Pond Facility Assessment February 23, 2017

**Executive Summary** 

# **Statement of Understanding**

North Mankato owns and operates an existing outdoor sand bottom swim pond that is aging and has a number of accessibility and operational concerns. The majority of the equipment being utilized is undersized and a facility assessment is clearly warranted to determine the condition of the existing equipment, as well as to provide some information and recommendations for renovation, replacement and/or improvement options.

#### **Assessment Process**

Tom Schaffer and Paul Schaffer of USAquatics, along with City staff, completed an on-site evaluation of the existing outdoor swim pond on February 10, 2017 to determine its condition and feasibility of repair and/or renovation. Additionally, Tom Schaffer and Ryan Johnson of USAquatics met with Brad Swanson from the city of North Mankato Public Works on February 13<sup>th</sup> to discuss additional information and preliminary findings.

### **Scope of Study**

The scope of this study covers the following areas of the facility:

- Swim Pond structure, recirculation, filtration, concrete deck area, fencing and sanitation equipment
- Compliance with new Federal and State Main Drain Laws
- Compliance with new Americans with Disabilities Act Laws
- Review of MN Department of Health swimming pool code
- · Provide recommendations for repairs, renovations and upgrades including possible features
- Provide associated budget estimates

### **Study Criteria**

The criteria used in our assessment include:

- Facility condition and other observable conditions
- Facility code requirements and compliance
- Existing Pool Facility plans provided by City
- An understanding of cause and effect associated with various aquatic designs including sand bottom swim ponds and operating procedures as presented to us through the assessment, review, and design of several thousand aquatic facilities

### **Intent of Report**

The intent is to present a summary of necessary repairs and improvements, as well as expenses associated with those repairs and improvements. The goal of this study is to aid in the making of important decisions concerning the future of the outdoor sand bottom swim pond and related operating equipment by providing options for repairs, renovations and/or upgrades.

### Summary

Based on discussions with staff, a physical assessment of the existing facility and conditions at the North Mankato outdoor swim pond, USAquatics has determined that the facility warrants a number of repairs and improvements. Several recommended and required repairs are listed for consideration. These options provide a range of facility improvements and repairs that would address operational, safety and code issues. USAquatics will also identify and provide several options for possible facility upgrades.

# **AQUATIC CONSULTING & DESIGN**

# USAQUATICS INC.

North Mankato Swim Pond Facility Assessment February 23, 2017

The existing facility is a sand bottom swim pond with a concrete diving well. Minor renovations have taken place in prior years to keep the facility operational and running, but not necessarily running more efficiently or with any less maintenance requirements. The swim pond is in need of major renovations.

The outdoor swim pond is a very unique and attractive facility. Minnesota is one of the few states where swim ponds are even possible – and only 13 exist within the State. These swim ponds are not under the jurisdiction of the MN Department of Health and do not need to follow swimming pool code. Using the State health code as a reference to establish a standard for good water quality to create a healthy and safe swim environment for patrons at the facility should be the goal. The location of the swim pond is ideal as it adequately services the needs of the community while also drawing in outside or non-local patrons. The swim pond also compliments the other planned improvements to the park including the ice/warming house to the West of the bathhouse.

In order to remain open and within good operating conditions – several items must be addressed. Addressing these concerns will not only allow the facility to remain open, but will also aide in attracting patrons.

# **POOL DATA**

Existing Swim Pond Data	Recommended Swim Pond Data
Perimeter: 900 ft.	Perimeter: 900 ft.
Volume: 1,100,000 gallons	Volume: 1,100,000 gallons
Turnover Rate: 19 hours	Turnover Rate: 6 hours
Recirculation Rate: 1,000gpm	Recirculation Rate: 3,000gpm
Inlets: 59	Inlets: 86
Filter: 500sf D.E.	Filter(s): (2) 1,200sf Regenerative Media
Filtration Rate: 2gpm/sf	Filtration Rate: 1.25gpm/sf
Main Drain(s): single - 6"	Main Drain(s): dual – 12"
Surgetank: none	Surgetank: required (20,000 gallons)
Bather Load: 200	Bather Load: 800
Fixture Count: Men: 10 showers, 2 lavs, 3 toilets, 1 urinal Women: 5 showers, 2 lavs, 5 toilets Family: None	Fixture Count: Men: 5 showers, 2 lavs, 2 toilets, 3 urinals Women: 5 showers, 2 lavs, 5 toilets Family: 2 showers, 2 lavs, 2 toilets
USAQUATICS INC. North Mankato Swim Pond Facility Assessment February 23, 2017

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#### USAQUATICS INC.

North Mankato Swim Pond Facility Assessment February 23, 2017

#### SECTION ONE: ASSESSMENT

#### **Existing Site**

The existing swim pond facility is located just West of Highway 169 on Webster Avenue. An outdoor ice arena and ballfields surround the existing pool, which is also located in close proximity Spring Lake. On street parking is available on Webster Avenue and surrounding streets and nearby parking lots.

There is some shade available on site from umbrellas and shade canopies; however, there is able room surrounding the swim pond where more shade is needed to the South and additional umbrellas could easily be installed. Shade allows patrons to extend visits by providing a much needed break from the sunlight. Some deck space for lounging is available at the north end of the site near the diving well.

The site is surrounded by a 7' chain-link mesh fence with barbed wire at the top and bottom rather than a knuckled connection. Due to potential injury, most municipalities we have worked with remove the barbed wire during renovation.

We recommend the barb-wire fence around the facility should be replaced due to potential for injury/safety concerns. Most outdoor aquatic facilities are opting to have vinyl-coated chain link fence installed in its place. The fencing should be 8'-0" in height, which also allows for 2" mesh to be used. We also recommend the addition of shade structures around the facility.

#### Swim Pond

The swim pond is in need of major repairs. The pond loses a considerable amount of water daily. The original liner has easily exceeded its service life and is in need of replacement. The pond bottom is neither sand nor pear rock, but a coarse sand and small gravel material.

Our recommendation is to replace the existing material with new clean sand or pea rock that can be sourced for the facility that would be safer for patrons and create greater visibility in the water. The existing pvc liner should be replaced at the same time the fill material is replaced.

#### Accessibility

According to Federal accessibility regulations, large pools (those with more than 300 linear feet of pool wall – this pond has approximately 900') must provide at least two accessible means of entry/exit, one of which must be zero depth sloped entry. The existing swim pond currently offers no means of ADA access.

Our recommendation is to create a ramped, zero-depth access into the shallow end of the swim pond. This ramp would include a railing and would serve as a means of accessibility for those who need assistance. A water wheel-chair would also be included for those in need of assistance. For a second means of ingress/egress, an ADA lift would be installed along the North wall where the depth is close to 3'. Another option would be to install ADA stairs with transfer tiers.

#### **Deck Area**

The concrete deck at the deep end of the pool is in poor condition and needs of replacement. The curb surrounding the pool is in fair condition and largely in need of repair/replacement. Expansion joints have failed where the curb changes directions and some concrete deterioration has occurred in these areas. Ceramic tile depth markers should be added to the deeper water areas that have a gutter. These depth markers should accurately reflect the depth at those locations and be appropriately spaced. As part of demolition required for the main drains and larger piping, much of the concrete deck on the North end of the site would be removed and replaced. Additional information regarding curb elevations from the City is pending.

#### USAQUATICS INC.

North Mankato Swim Pond

Facility Assessment February 23, 2017 We also recommend the addition of several shade umbrellas around the deck area and demolition as required to properly slope all deck areas to slope away from the pond at the deep end.

#### **Recirculation System**

The swimming pond has an aluminum gutter system along the North end of the swim pond. The pond was not in operation during the time of the site visit. The majority of the gutter drop-outs were scaled shut and only a small percentage of the existing drop-outs were able to be located.

Perimeter piping and inlets are in need of replacement. If flow-rates are increased, there would be a need for 26 additional inlets. The main drain was unable to be inspected at the time of the site visit; however, it is likely they are in need of replacement along with the piping to the main drain as it is undersized.

According to Federal Law, the "Virginia Graeme Baker Pool and Spa Safety Act" requires that all public pools and spas have ASME/ANSI compliant stamped Drain Covers. This has been indicated in a guidance document prepared by the U.S. Consumer Product Safety Commission and was recently confirmed by our office in a Q&A phone conference with officials regarding interpretation of the new law.

We recommend demolition and removal of the existing gutter system and replacement with a new stainless steel recirculation gutter, grating and integral recirculation inlets that would be extended to the corners on the East and West sides. Additionally, the perimeter piping is in need of replacement to allow for new inlets which would all be pvc. The main drain and cover would be replaced along with related plumbing. The main drain covers would be ASME/ANSI compliant, per the Federal Law requirements.

#### Pool Equipment - General

The pool equipment is housed in a separate mechanical house on the North end of the facility. The equipment within is largely original to the facility with a few exceptions. The equipment has met the needs of the facility for several years; however, for the most part it is outdated and very inefficient in terms of operation. The plumbing is cast-iron and in fair condition; however, valves and gauges are in poor condition. The majority of the plumbing is undersized to handle the flows required.

We recommend complete replacement of valves, piping, and gauges.

#### Pump

The swim pond recirculation is handled by a single 7.5HP recirculation pump with an integral strainer that is in extremely poor condition and has well exceeded its useful lifespan. The pump is located above water level, which is problematic when it comes to priming. The pump does not have a strainer that would allow the operator to see potential blockages. The pump also lacks a flow meter and vacuum limit switch.

Rather than using funds on repairing the older pump, we recommend replacing it with a large pump that would be capable of pumping a larger amount of water which would result in flow rates and turn-over rates closer to those desired. Water from the main drains and gutter would gravity drain into a new surgetank that would be sized to meet the needs of the facility.

We recommend replacing the existing pump with a dual pump system, complete with variable frequency drives, that are capable of flow rates required to bring the turn-over rate considerably lower than the 21-22 hours the facility currently has.

#### Heater

The facility currently does not provide a heater, which would greatly increase patron comfort and allow for a longer swim season and/or longer hours. Heated water is the number one amenity that patrons ask for when

#### USAQUATICS INC.

North Mankato Swim Pond Facility Assessment February 23, 2017

questioned about improvements. Typically, heaters are present on outdoor pools unless they are located within a warmer climate. A pool heater will also aide in warming water at the beginning of the swim season, which further adds to patron comfort.

Heaters are expensive, but should be considered as an additional optional added amenity.

#### Filter

Pool filtration is currently handled by a vacuum DE filter that is very ineffective in terms of operation, as well as being undersized for the facility. Additionally, DE filters are known for requiring a very labor intensive cleaning process to maintain operation. For replacement, there are essentially two options: pressure sand filtration and regenerative media filtration. Regenerative media filters require a much smaller footprint and would easily fit within the current equipment building while pressure sand filters would need to be installed outside and within close proximity to the equipment building which would likely result in additional concrete work and fencing.

Regenerative media filters have a higher initial cost; however, they offer an actual payback scenario as the filters do not require backwashing as pressure sand filters do. Regenerative media filters are drained and rinsed when media is replaced.

We recommend replacement of the existing vacuum DE filter with Regenerative Media filtration. As part of this assessment, calculations will be completed to determine the payback scenario for both pressure sand and regenerative media filtration. To filter the volume of water required, two filters will be required.

#### **Chemical Control**

The existing system does not provide a chemical control system or way to control ph. All testing and chemical treatments are completely manually, which typically results in more operational problems and difficulty in balancing water chemistry. The new chemical control system and chemical delivery would be automated. A new controller would constantly monitor water for feeding chlorine and ph control.

We recommend the addition of a chemical controller with a user friendly web-based chemical controller that is up to date technology that can adequately meet the needs of the facility. Web-based chemical controllers require minimal attention and adjustments that can be completed remotely on a smart-phone or from a computer. Chemical injection points should be located on the return to pool pipe post-filter.

#### **Turn-over Rate**

The turn-over rate for the pool is estimated at 19-20 hours, which is approximately 800gpm. While swimming pool code requires a maximum turn-over rate of 6 hours. This is a good standard to adopt for this swim pond. This would also result in a much better water quality with higher visibility.

With the recommend changes listed above to the recirculation pump and filters -a turn-over closer to 6 hours would be attainable.

#### Features

The facility currently offers no features or amenities aside from two 1M diving boards. The addition of some above ground spray features and a tot slide in the shallow water area would be good options that would yield positive results. Other options include an aquatic climbing wall located at the deep end of the pool between the 1M diving boards. The addition of these features would likely result in the need for a dedicated "fall zone" that would be separated with rope and floats and would also require a dedicated lifeguard or attendant, depending on which feature was selected. Existing ladders would be replaced, and two new ladders would be added to service the features.

#### USAQUATICS INC.

North Mankato Swim Pond Facility Assessment February 23, 2017

Another option would be the addition of one or two body flume waterslides to the East of the diving boards where the water level is 3'-6". There is plenty of deck space near the service gate for the slides and stair tower. A zip-line would also be an option for this facility. A starting platform would be located along the North end at the deeper water and the ride would extend South toward the shallower water. The addition of play features or amenities would attract additional patrons and keep entertainment levels up, while also increasing lengths of patrons stays. Longer patron stays will in turn result in greater concession sales and revenue. Revenue from attendance is also increased by allowing for a higher admission cost.

We recommend the addition of 2-3 above ground play features in the shallow water area, as well as additions of play features or amenities that are geared toward older patrons as well. With the exception of the climbing wall, any other feature listed would require a feature pump to supply water. This feature pump could be sized to allow for multiple features or future feature additions.

#### **Diving Well**

The concrete in the diving well is in fair to poor condition. The walls along the North end of the pond are in the same condition and in need of attention. The top of the concrete curb around the diving well is completely missing and the pvc waterstop is exposed. Since the concrete is in poor condition and the main drain is in need of replacement, a new 8" thick reinforced shotcrete shell should be installed in the diving well and North walls. The existing concrete would be utilized as a form only to place the new 8" thick reinforced shotcrete. The additional 8" to the walls would also allow for a larger gutter along the North side of the pond. The new liner could also terminate at the new pvc waterstop to prevent potential leaks.

We recommend the addition of 8" thick reinforced floors on top of the existing floors when the main drain is replaced, along with the addition of 8" thick reinforced walls along the North end.

USAQUATICS INC. North Mankato Swim Pond Facility Assessment February 23, 2017

### SECTION TWO: EXISTING FACILITY PHOTOGRAPHS

### **Swimming Pond**



Swimming Pond at deep end



Swim Pond conditions



Swimming Pond conditions



Swim Pond at shallow end



Inlet scaled shut



Wall conditions/deterioration

USAQUATICS INC. North Mankato Municipal Pool Assessment and Project Study February 20, 2017



Cast-iron piping w/ lever valves



Pipe/Pump conditions



Vacuum DE filter



Plumbing into pump

USAQUATICS INC.

North Mankato Municipal Pool Assessment and Project Study February 20, 2017

#### SECTION THREE: RECOMMENDED RENOVATIONS/REPAIRS

#### Site Work

Based on our review and analysis, it is our opinion that the existing site is in need of some improvements to address some operational and safety concerns. The following work would also address some areas noted as lacking or where additions would increase patron comfort.

• Remove existing barbed-wire fence and replace with 8' vinyl coated chain-link fence.

Probable cost estimate: \$ 45,000

• Select demo and replacement of concrete deck.

Probable cost estimate: \$ 32,000

• Addition of shade structures around swim pond perimeter (8 total) Probable cost estimate: \$ 35,500

Subtotal:	\$112,500
Soft Costs (20%)	\$ 22,500

#### Estimated Site Work Total: \$135,000

#### Swim Pond

Based on our review and analysis, it is our opinion that the swim pond is in need of major renovations. The following repair work would be necessary for the facility to maintain operations and lengthen the lifespan of the facility, while also creating a suitable environment for patrons.

٠	Remove existing bottom fill material and replace approx	. 58,000sf of pvc liner.	
		Probable cost estimate: \$360,000	
٠	Installation of new fill material (approx. 1,000 cubic yards).		
		Probable cost estimate: \$ 86,000	
٠	Select demo and replacement of concrete curb.		
		Probable cost estimate: \$ 32,000	
٠	Addition of concrete ramp w/ rails at shallow end to create ADA access.		
		Probable cost estimate: \$ 29,000	
٠	<ul> <li>Removal and replacement of perimeter piping to include new inlets.</li> </ul>		
		Probable cost estimate: \$ 36,000	
٠	• Addition of new depth marking tile and no diving tile per code.		
		Probable cost estimate: \$ 8,000	
٠	Remove and replace all rail goods.		
		Probable cost estimate: \$ 12,000	
٠	Addition of 2 ADA stairs on NE and NW sides of pond.		
		Probable cost estimate: \$ 18,000	
٠	• Demo and replace existing aluminum gutter with ss recirculation system (approx. 350')		
		Probable cost estimate: \$ 42,000	
٠	<ul> <li>Demo and replace existing main drain and related plumbing.</li> </ul>		
		Probable cost estimate: \$ 28,000	
٠	<ul> <li>Add 8" reinforced shotcrete at North end wall and diving well.</li> </ul>		
		Probable cost estimate: \$160,000	

#### USAQUATICS INC.

North Mankato Municipal Pool Assessment and Project Study February 20, 2017

Subtotal:	\$811,000
Soft Costs (20%)	\$162,000

#### Estimated Swim Pond Total: \$973,000

#### Features & Amenities

Based on our review and analysis, the swim pond is lacking in features and amenities that draw patrons in and keep patrons entertained at facilities for longer timespans. While none of these options are required, adding features and amenities would have a direct impact on revenue and attendance while simply making operational repairs would have little effect on either.

• Install Aquatic Climbing wall between existing IM boards.

Probable cost estimate: \$ 42,000

• Install 3-4 above ground spray features in shallow water area. Work would include related pump and plumbing necessary for feature installation along with anchoring system/base.

Probable cost estimate: \$ 78,000

- Addition of 1 open flume waterslide and stair tower, approx. 35' high (includes pump) *Probable cost estimate: \$190,000*
- Addition of 2<sup>nd</sup> enclosed body flume waterslide.

Probable cost estimate: \$ 72,000

- Addition of heaters sized appropriately for heating swim pond. *Probable cost estimate: \$ 96,000*
- Addition of a Zip-Line type feature.

Probable cost estimate: \$ 36,000

Subtotal:	\$514,000
Soft Costs (20%)	<u>\$102,800</u>

Estimated Optional Features Total: \$616,800

#### Mechanical Equipment

Based on our review and analysis, it is our opinion that the filters and pumps are very undersized resulting in a turn-over rate that is well below recommended guidelines. The work listed below would improve operation, water quality and allow for less on-going maintenance.

• Demo/remove existing DE filter, replace with dual regenerative media filter system.

Probable cost estimate: \$148,000

- Demo/remove existing recirculation pump and create recessed pump pit for new pumps. *Probable cost estimate: \$ 15,000*
- Provide and install dual recirculation pumps with premium efficient motors and VFD. Probable cost estimate: \$ 68,000
- Addition of chemical control system and related work.

Probable cost estimate: \$ 15,500

Probable cost estimate: \$ 30,500

• Replacement of piping, valves, gauges, etc.

	Subtotal:	\$277,000
	Soft Costs (20%)	\$ 55,400
Estimated Main Po	ool Renovation Total:	\$332,400
Estimated Renova	tion Total for all work:	\$2,057,200

Page 12 of 12

# **USAquatics**



March 20th, 2017



124 BRIDGE AVE. E; PO BOX 86 Delano, MN 55328 Phone (763) 972-5897 Fax (763) 972-5864 www.usaquaticsinc.com

# **Assessment Summary**

Based on discussions with staff, a physical assessment of the existing facility and conditions at the North Mankato outdoor swim pond, USAquatics has determined that the facility warrants a number of repairs and improvements. Several recommended and required repairs are listed for consideration. These options provide a range of facility improvements and repairs that would address operational, safety and code issues. USAquatics will also identify and provide several options for possible facility upgrades.

The existing facility is a sand bottom swim pond with a concrete diving well. Minor renovations have taken place in prior years to keep the facility operational and running, but not necessarily running more efficiently or with any less maintenance requirements. The swim pond is in need of major renovations.

The outdoor swim pond is a very unique and attractive facility. Minnesota is one of the few states where swim ponds are even possible – and only 13 exist within the State. These swim ponds are not under the jurisdiction of the MN Department of Health and do not need to follow swimming pool code. Using the State health code as a reference to establish a standard for good water quality to create a healthy and safe swim environment for patrons at the facility should be the goal. The location of the swim pond is ideal as it adequately services the needs of the community while also drawing in outside or non-local patrons. The swim pond also compliments the other planned improvements to the park including the ice/warming house to the West of the bathhouse.

In order to remain open and within good operating conditions – several items must be addressed. Addressing these concerns will not only allow the facility to remain open, but will also aide in attracting patrons.



# **Pool** Data

Existing Swim Pond Data Perimeter: 900 ft.

Volume: 1,100,000 gallons

Turnover Rate: 19 hours

Recirculation Rate: 1,000gpm

Inlets: 59

Filter: 500sf D.E.

Filtration Rate: 2gpm/sf

Main Drain(s): single - 6"

Surgetank: none

Bather Load: 200

Fixture Count: Men: 10 showers, 2 lavs, 3 toilets, 1 urinal Women: 5 showers, 2 lavs, 5 toilets Family: None Recommended Swim Pond Data Perimeter: 900 ft.

Volume: 1,100,000 gallons

Turnover Rate: 6 hours

Recirculation Rate: 3,000gpm

Inlets: 86

Filter(s): (2) 1,200sf Regenerative Media

Filtration Rate: 1.25gpm/sf

Main Drain(s): dual – 12"

Surgetank: required (20,000 gallons)

Bather Load: 800

Fixture Count: Men: 5 showers, 2 lavs, 2 toilets, 3 urinals Women: 5 showers, 2 lavs, 5 toilets Family: 2 showers, 2 lavs, 2 toilets



# **Aquatic Features and Amenities**



### **Design – Sustainability**

### Regenerative Media Filtration





## Design – Sustainability





Variable Frequency Drives (VFD)
Web-based Controllers





### Amenities – Slides





### Amenities – Slides









### Amenities – Tot Slides



### Amenities – Play Features



### Amenities – Zip Line









### Amenities – Climbing Walls





### **Amenities – Shade Structures**







## **Amenities – Site Fence**





# Comments / Questions



#### RESOLUTION REQUESTING THE NICOLLET COUNTY ROAD AUTHORITY & ENGINEER APPROVE TWO ACCESS POINTS FOR PARCEL #01.103.0100

WHEREAS, the North Mankato Port Authority is consulting with businesses seeking to locate on parcel #01.103.0100 according to the land records of Nicollet County, Minnesota; and

WHEREAS, the Minnesota Department of Transportation, Nicollet County, the North Mankato Port Authority, and the North Mankato City Council worked to complete construction of the Highway 14/41 interchange as well as improvements to County State Aid Highway 41; and

WHEREAS, a business seeking to locate on parcel #01.103.0100 requests one access point on County State Aid Highway 41 and one access point on County State Aid Highway 6; and

WHEREAS, approval of this request is dependent upon approval from the Nicollet County Road Authority or the Nicollet County Engineer; and

WHEREAS, the County Administrator, County Engineer, and members of the Nicollet County/North Mankato Liaison Committee have been informed of this request; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL FOR THE CITY OF NORTH MANKATO, MINNESOTA, that the Nicollet County Engineer or the Nicollet County Road Authority approve granting two access points for parcel #01.103.0100 as shown on the map attached to this resolution.

Adopted by the City Council this d

day of \_\_\_\_\_.

ATTEST:

Mayor

City Clerk





Location Map March 2017

