CITY
OF
NORTHFIELD

PUBLIC WORKS DEPARTMENT

UTILITIES DIVISION

2016

YEAR-END REPORT

STRIVING FOR EXCELLENCE
COMMITTED TO SERVICE

City of Northfield

Vision Statement

STRIVING FOR EXCELLENCE, COMMITTED TO SERVICE

Mission Statement

The City of Northfield is dedicated to providing effective and responsive public services to develop and enhance a livable, vibrant community.

Water Division
Mission Statement

The Northfield Water Division was created in 1895 with the primary purpose of supplying a high quality of water for the publics well being. Also to provide a high quality of customer services in an efficient, cost effective and dependable manner; a safe, potable and adequate supply of water to customers in the service area for domestic, commercial, industrial and fire fighting purposes with reasonable development of water supplies including the promotion of conservation of those supplies.

MEMO

Public Works Department
Utilities Division

TO: David Bennett, Public Works Director

FROM: Justin Wagner, Utilities Manager
Andrew Tussing, Utilities Foreperson
Richard Kucera, Wastewater Plant Foreperson

DATE: February 15, 2017

SUBJECT: Utilities Division Year-End Report

Attached to this memo is a copy of the year-end report compiled by the Utilities Division personnel. It is based on our day-to-day and monthly records.

The information provided by this report allows us the opportunity to compare month-to-month readings on each individual well site along with a year-end total for comparisons. This data allows us to see any discrepancy or abnormal usage that may occur without having to refer back to page after page of hand written information. This information includes water usage, electrical usage, and chemicals used.

The first few pages of the report are retrieved from basic data entry. The data is compiled from daily readings automatically entered into the database or manually entered on a daily or monthly level. This data gives us a comparative reading on any portion of the water records to show us averages or any abnormalities in water pumpages.

All this information provides us with an overview of information used at the Water Division. This data is also used for reports submitted to the Minnesota Department of Health and other agencies. This data was also used to process the graphs, which are included in this report.

The final pages of this report deal with year-end statistics compiled by the Water Division and an overview of the general operation of the division and the water supply system. This includes meters sold and replaced, the Water Division history, and general water supply information.

This report is to be considered as a general overview of our previous year. Additional materials and information will be included in our Annual Report to Consumers on Water Quality which will come out mid-year.

2016 WATER DIVISION DATA

GENERAL ACTIVITY DESCRIPTION:

Provide safe potable drinking water for the citizens of Northfield, maintain the distribution system, and fire hydrants for fire protection. The Water Division also provides locating for the Gopher One-Call locations.

GENERAL PUMPING DATA:

Water for the City of Northfield is pumped from the Jordan Water Aquifer.
In 2016, the City of Northfield pumped a total of 724,603,000 gallons.
The daily average in 2016 was 1,985,214 gallons.
The largest single day pumpage for the year was 3,285,000 on October 11, 2016.
Water accountability in 2016 (Water pumped vs. sold) – Because hydrant flushing, fire department usage and miscellaneous water usages, the records will show we pumped approximately 2.67% more water than we sold.
Industrial water usage is about 31.27% of our yearly pumpage.
In 2016, the City pumped 20,141,000 less gallons than it did in 2015.
The City of Northfield has pumped **36,558,950,158** gallons since 1895 when the Water Division was created.

CITY WELL PUMPAGE / COLLEGE WATER USAGE:

#2 Well	201,731,000 gallons in 2016
#3 Well	208,487,000 gallons in 2016
#4 Well	140,571,000 gallons in 2016
#5 Well	173,814,000 gallons in 2016
City Wells - Total	**724,603,000 gallons in 2016**
Carleton	4,070,329 cu ft
St. Olaf	6,202,000 cu ft.
Total Colleges	10,272,329 cu ft.
Total Gallons by the Colleges (Cu. ft. X 7.48)	76,837,021 gallons
Total Gallons Pumped by the City and Carleton	**755,049,061 gallons**

CITY OF NORTHFIELD AND COLLEGES

	Carleton	St. Olaf	CuFt Total	Gallons	City of Nfld	Total *
January	374,301	512,200	886,501	6,631,027	53,355,000	56,154,771
February	443,109	541,100	984,209	7,361,883	50,010,000	53,324,455
March	341,492	473,400	814,892	6,095,392	54,316,000	56,870,360
April	412,284	595,200	1,007,484	7,535,980	55,759,000	58,842,884
May	446,613	653,900	1,100,513	8,231,837	67,717,000	71,057,665
June	334,707	332,400	667,107	4,989,960	68,384,000	70,887,608
July	194,930	405,600	600,530	4,491,964	74,401,000	75,859,076
August	222,094	337,900	559,994	4,188,755	71,469,000	73,130,263
September	350,545	674,800	1,025,345	7,669,581	62,105,000	64,727,077
October	477,537	634,900	1,112,437	8,321,029	62,756,000	66,327,977
November	294,885	580,500	875,385	6,547,880	52,831,000	55,036,740
December	177,832	460,100	637,932	4,771,731	51,500,000	52,830,183
Total	4,070,329	6,202,000	10,272,329	76,837,021	724,603,000	755,049,061
Average	339,194	516,833	856,027	6,403,085	60,383,583	62,920,755

*Carleton has their own well, distribution system, and sewer collection system. St. Olaf switched to City water in March 2001, although they still have their own distribution and sewer collection system. These amounts would be used as usage and infiltration figures. St. Olaf College shows more water usage because they take water from the City and all the water usage is reported. Carleton College only reports sewage (domestic water use) because they still have their own water wells and do not take water from the City of Northfield, other than emergency usage.

CHEMICAL COSTS:

Fluoride, Chlorine and Polyphosphates are fed into the water system at each individual well site as the water is pumped from the wells into the water distribution system.

Hydrofluosilicic Acid	1708 gal. X (10.3lbs/gal X $0.3620)	=	$6,368.45
Chlorine	10,447 lbs. X $.6505	=	$6,795.77
Polyphosphate	1,430gal. X $11.8000	=	$16,869.28
Total Costs for Chemicals			$30,033.50

MISC. WATER SYSTEM INFORMATION:

Water hardness:	18 grains per gal. 320 ppm
Fluoride is fed at a rate of:	0.7 M/L
Chlorine is fed at a rate of:	1.2 M/L
Polyphosphate is fed at a rate of	0.5 M/L
Iron content:	0.2 M/L
Manganese content:	0.11 M/L
P.H.:	7.4

Note: Fluoride feed rate changed in 2015 due to EPA guidance followed by the MDH.

METERS:

At the end of 2016, The City of Northfield has the following amount of service connections:

Residential (single family & townhomes)	5,282
Commercial	311
Industrial	74
City	12
Other (Institutions and Schools)	140
TOTAL SERVICES	**5,819**

METERS SOLD 1962 – PRESENT:

1962	30	1963	18	1964	19	1965	29	1966	40
1967	34	1968	32	1969	18	1970	51	1971	44
1972	49	1973	44	1974	64	1975	33	1976	57
1977	77	1978	93	1979	97	1980	70	1981	64
1982	46	1983	54	1984	62	1985	45	1986	67
1987	92	1988	60	1989	50	1990	45	1991	56
1992	88	1993	103	1994	98	1995	95	1996	99
1997	64	1998	89	1999	95	2000	137*	2001	204
2002	232	2003	241	2004	173	2005	239**	2006	219**
2007	179**	2008	102**	2009	64**	2010	46**	2011	50**
2012	42**	2013	90**	2014	62**	2015	58**	2016	52**

* Sprinkler Meters began to be installed.
** New Radio Read Meters.

METERS OVERHAULED AND REPLACED 1978 – PRESENT:

1978	166	1979	258	1980	285	1981	230	1982	288
1983	383	1984	396	1985	214	1986	210	1987	250
1988	300	1989	292	1990	300	1991	266	1992	155
1993	180	1994	258	1995	307	1996	128	1997	123
1998	53	1999	80	2000	119	2001	365	2002	453
2003	306	2004	132*	2005	43*	2006	105/50**	2007	458/19**
2008	497/9**	2009	546*	2010	2,316***	2011	721***	2012	0
2013	0	2014	0	2015	0	2016	0		

* New Radio Read Meters.
** Meters changed / Meters Retro-fitted
*** Accelerated Meter Change-out

METERS SOLD IN 2016:

Ward 1 Residential		
5/8X3/4 R900i =		5
5/8X3/4 R900i 2nd Meter =		5
	Total	10
Ward 2 Residential		
5/8X3/4 R900i =		22
5/8X3/4 R900i 2nd Meter =		8
	Total	30
Ward 3 Residential		
5/8X3/4 R900i =		6
5/8X3/4 R900i 2nd Meter =		4
3/4 R900i =		2
	Total	10

METER SALES 2016:

Meter Size	Price Each	Number Sold	Total Price
5/8X3/4''	$244.50	50	$12,225.00
3/4"	$278.75	2	$557.50
Total Neptune Sales for 2015			$12,785.50

Water meter wards do not represent the same boundaries as voting/council wards. Meter wards represent the following:

Ward 1 – Commercial & Industrial meters, & residential meters primarily in the Northeast area of Northfield
Ward 2 – Primarily residential meters in the south and southeast area of the City.
Ward 3 – Primarily residential meters in the western half of the City.

INVENTORY-RESALE JANUARY 2016 (LESS %):

14 – 5/8X3/4 T10 ecoder i @ $244.50 = $3,423

INVENTORY-MAINTENANCE JANUARY 2016:

12 – 5/8X1/2 T10 ecoder I	@ $244.50 =	$2,934
42 – 5/8X3/4 T10 ecoder i	@ $244.50 =	$10,269
2 – 3/4" T10 ecoder i	@ $294.24 =	$588.48
3 – 1" T10 ecoder i	@ $379.42 =	$1,138.26
1 – 1-1/2'' ecoder I	@ $615.99 =	$615.99
6 – MIU v3	@ $107.03 =	$642.18
TOTAL		$16,187.91

A retro-fitted meter involves changing a Badger water meter from a standard straight-read register to a radio-read register, then installing a Neptune MIU transmitter for transmitting the reading to the truck as it drives by.

GOPHER ONE-CALL LOCATES 1998 – PRESENT:

1998	1860	1999	1945	2000	2027	2001	2582	2002	2635
2003	2833	2004	3020	2005	3232	2006	3560	2007	3338
2008	2189	2009	1905	2010	1856	2011	1972	2012	2078
2013	1865	2014	2042	2015	2105	2016	2439		

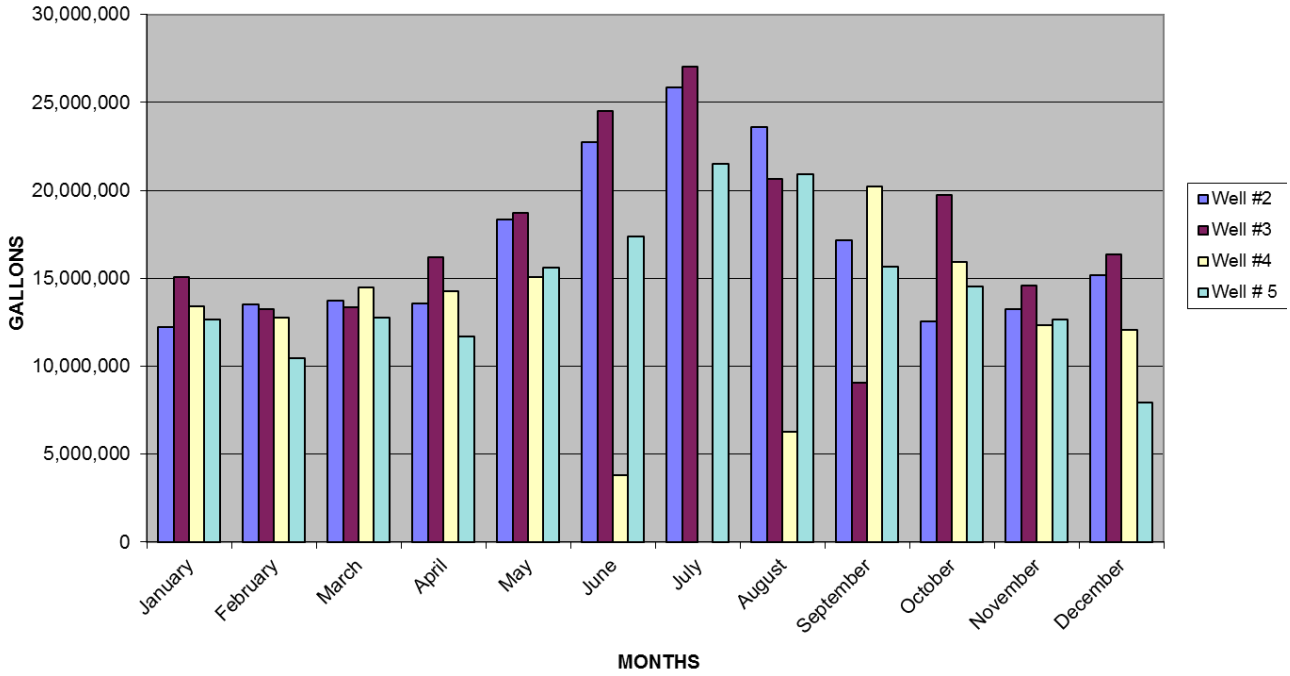
NORTHFIELD'S TOP 5 WATER USERS IN 2016:

Multek	18,489,883 cu ft.	138,304,324 gallons
Post-Consumer Brands	14,810,811 cu ft.	110,784,866 gallons
St. Olaf	6,245,800 cu ft.	46,718,584 gallons
All Flex	1,645,900 cu ft.	12,311,332 gallons
Viking Terrace Trailer Park	1,620,399 cu ft.	12,120,584 gallons

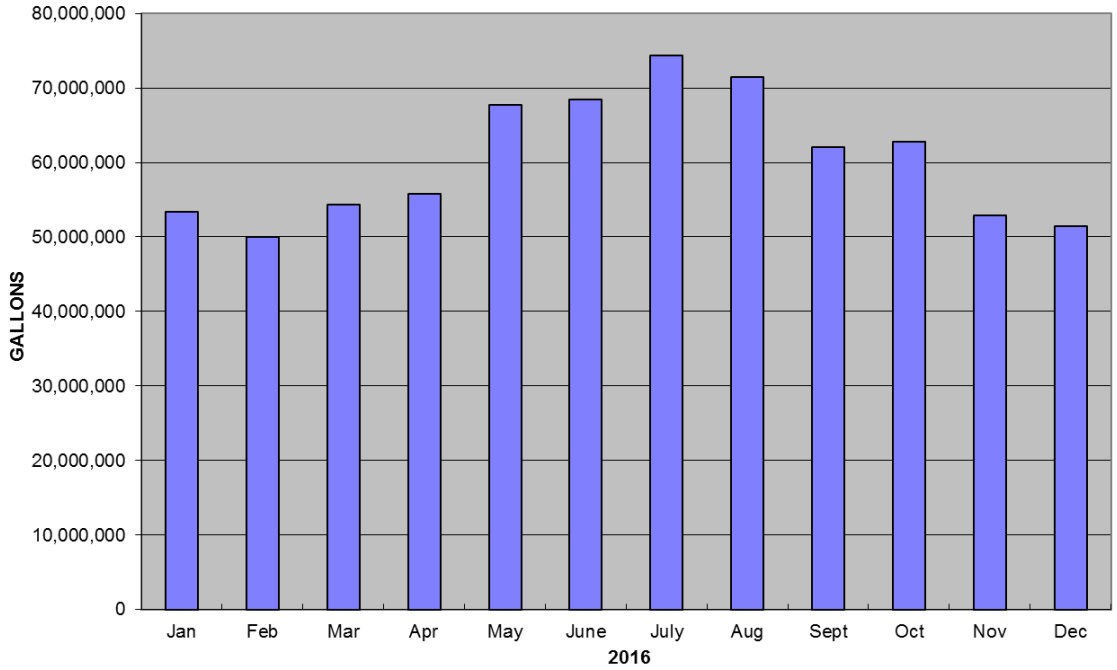
WELL SITE AND WATER INFORMATION:

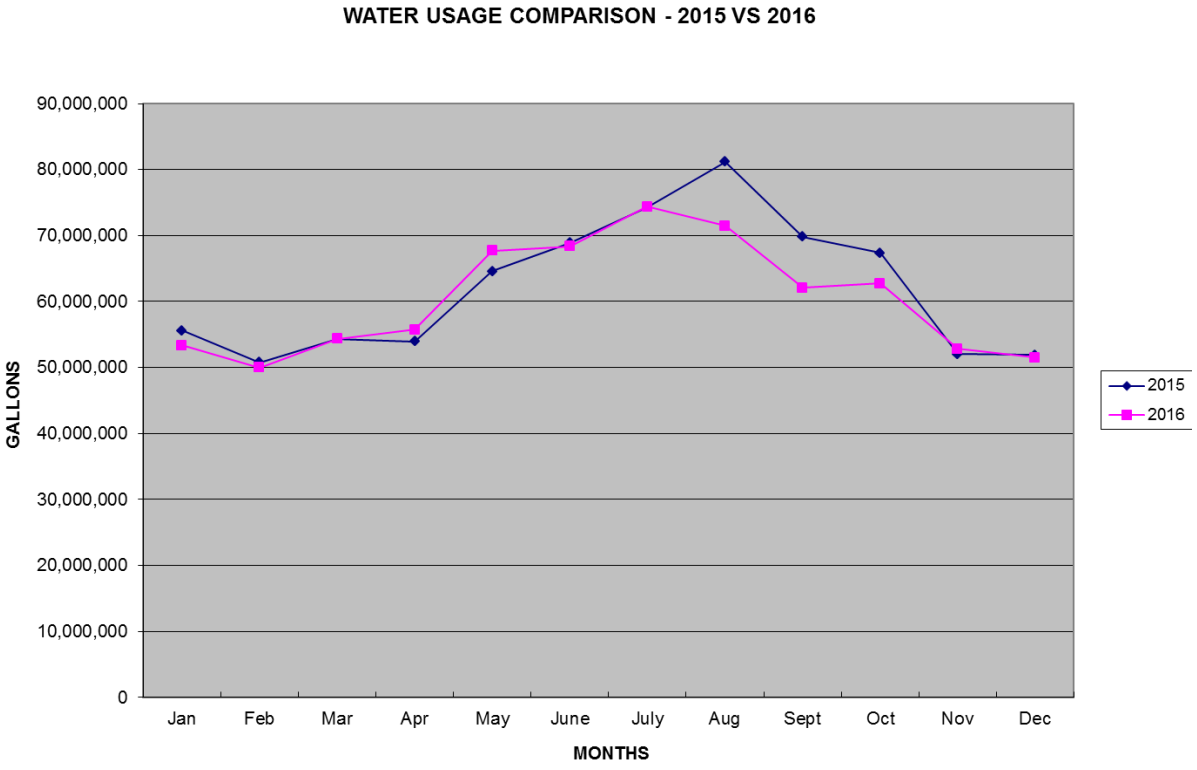
	PUMPING INFROMATION						
	Gallons Well #2	Gallons Well #3	Gallons Well #4	Gallons Well # 5	Gallons 2,3,4,5 Total	Gallons Daily Avg	Time Daily Avg
January	12,226,000	15,090,000	13,388,000	12,651,000	53,355,000	1,721,129	23.2
February	13,534,000	13,242,000	12,763,000	10,471,000	50,010,000	1,786,071	23.1
March	13,735,000	13,343,000	14,501,000	12,737,000	54,316,000	1,752,129	23.1
April	13,562,000	16,203,000	14,278,000	11,716,000	55,759,000	1,858,633	24.8
May	18,342,000	18,732,000	15,062,000	15,581,000	67,717,000	2,184,419	29.6
June	22,737,000	24,489,000	3,790,000	17,368,000	68,384,000	2,279,467	31.1
July	25,839,000	27,039,000	0	21,523,000	74,401,000	2,400,032	33.5
August	23,601,000	20,648,000	6,278,000	20,942,000	71,469,000	2,305,452	31.4
September	17,174,000	9,044,000	20,224,000	15,663,000	62,105,000	2,070,167	27.6
October	12,558,000	19,737,000	15,902,000	14,559,000	62,756,000	2,024,387	26.7
November	13,257,000	14,573,000	12,329,000	12,672,000	52,831,000	1,761,033	22.5
December	15,166,000	16,347,000	12,056,000	7,931,000	51,500,000	1,661,290	21.8
Total	201,731,000	208,487,000	140,571,000	173,814,000	724,603,000	23,804,210	318.4
Average	16,810,917	17,373,917	11,714,250	14,484,500	60,383,583	1,985,214	26.5

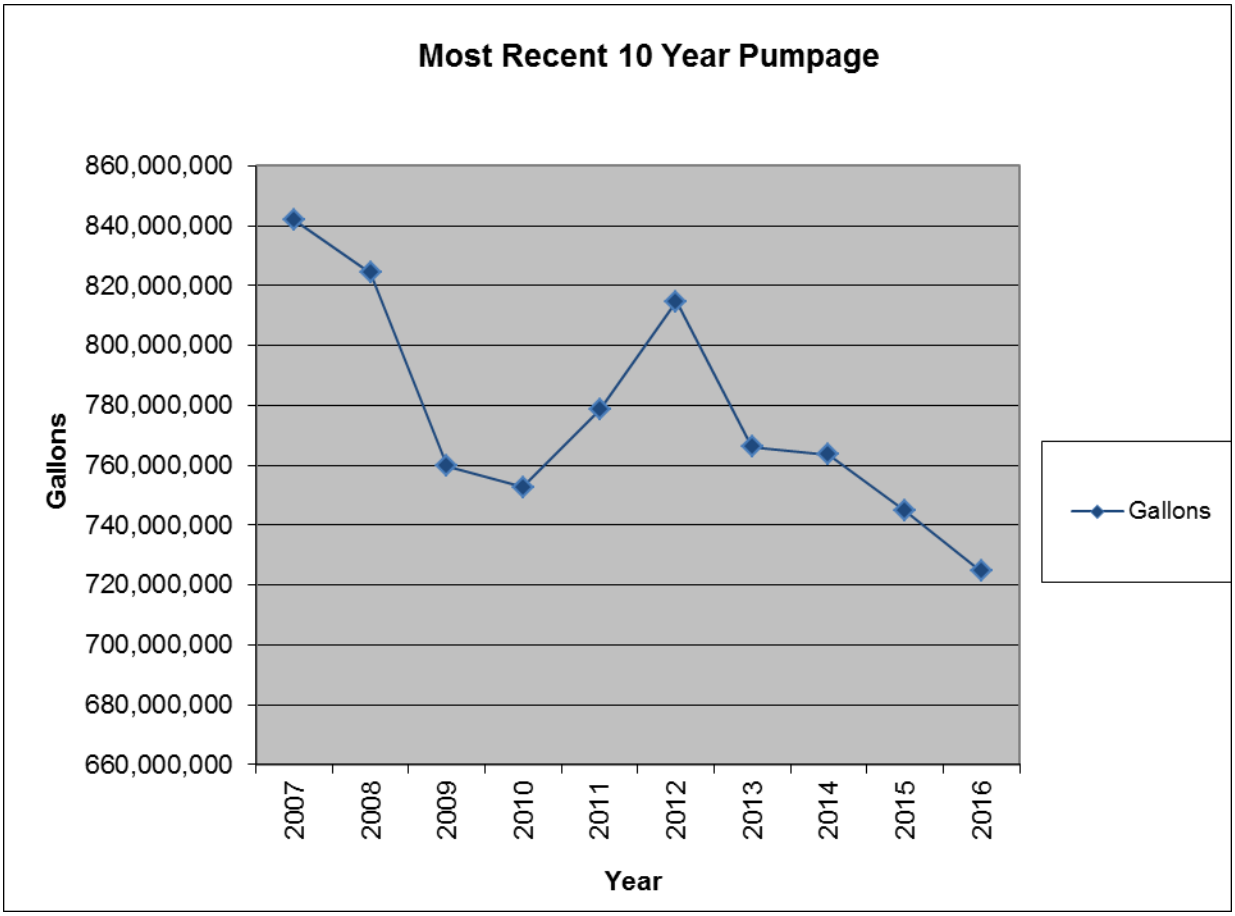
WELL SITE PUMPAGE - 2016



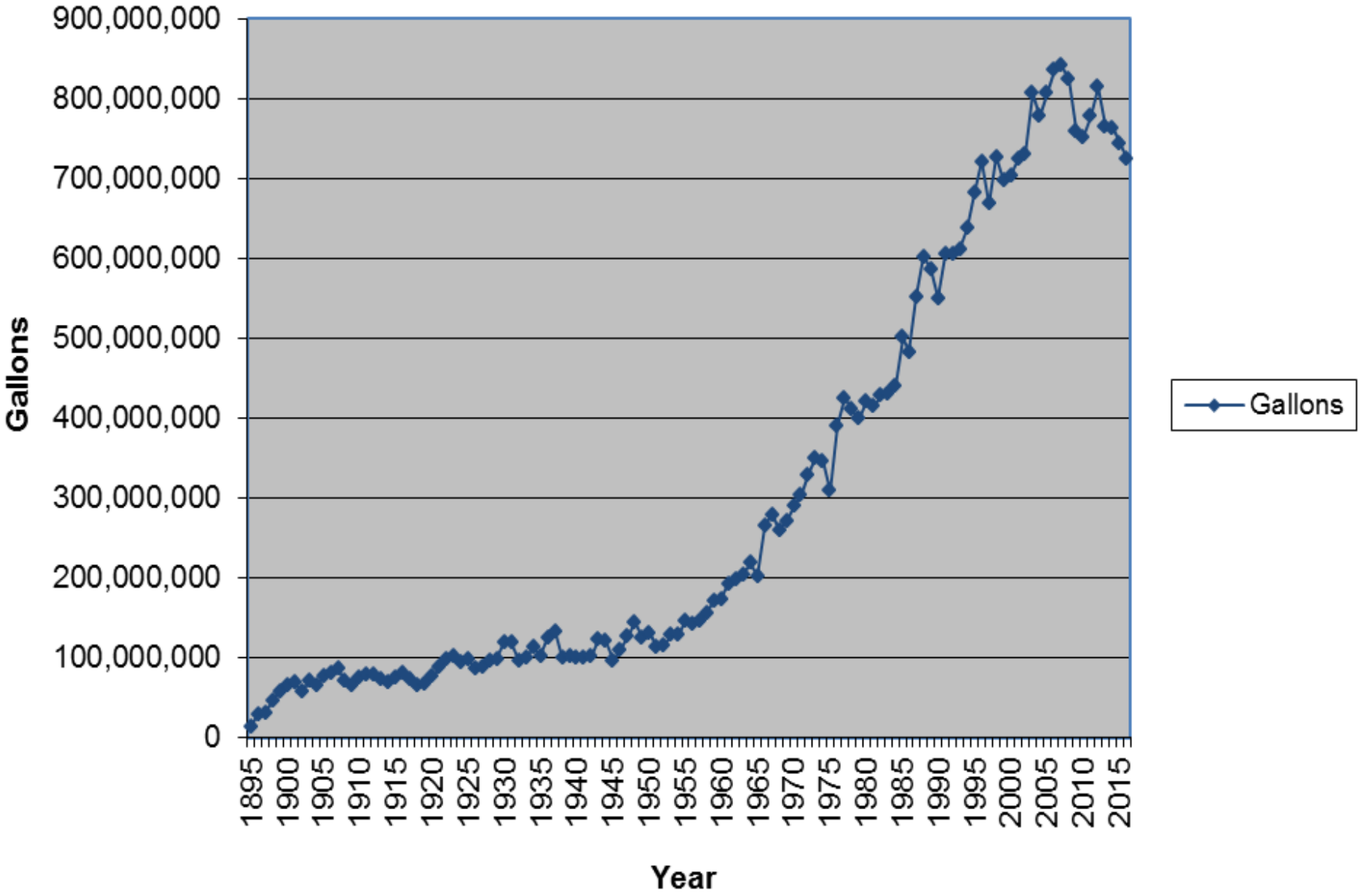
2016 MONTHLY COMPARISON - TOTAL PUMPAGE




WATER USAGE COMPARISON - 2015 VS 2016
90,000,000
80,000,000
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
0
GALLONS
Jan
Feb
Mar
Apr
May
June
July
Aug
Sept
Oct
Nov
Dec
MONTHS
2015
2016


Most Recent 10 Year Pumpage
860,000,000
840,000,000
820,000,000
800,000,000
780,000,000
760,000,000
740,000,000
720,000,000
700,000,000
680,000,000
660,000,000
Gallons
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
Year
Gallons

Northfield Water Division Yearly Pumpage



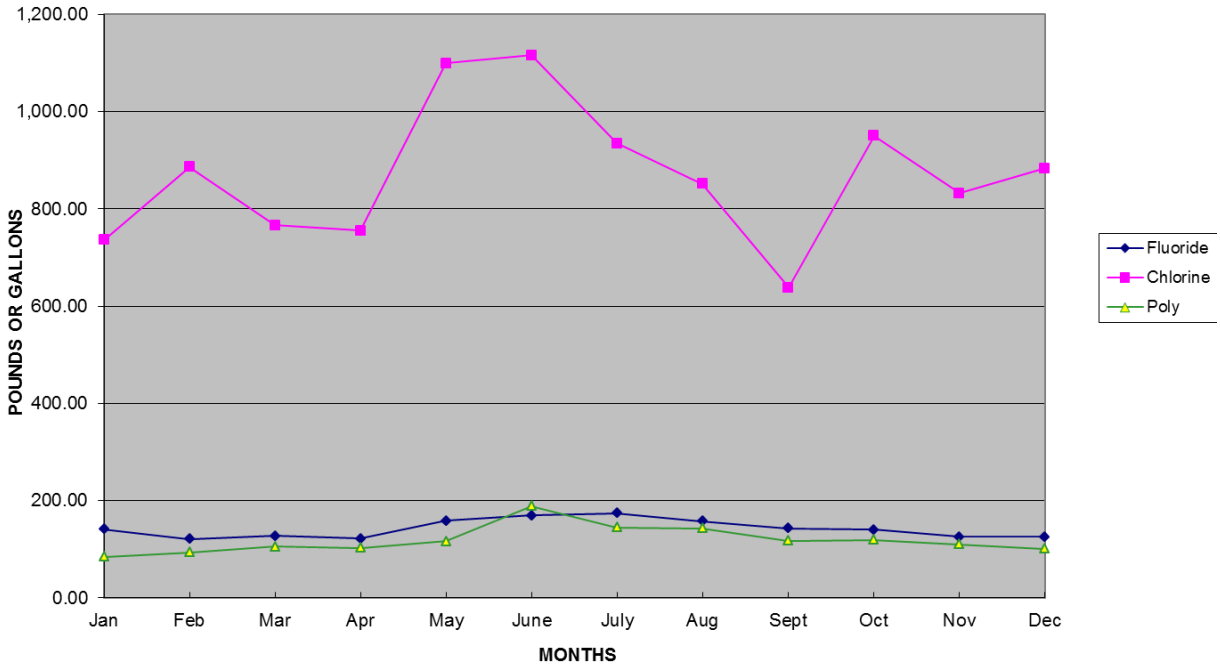
CHLORINE						
	Well #2	Well #3	Well #4	Well #5	Total	Cost
January	116	191	282	147	736	$478.77
February	89	206	462	129	886	$576.34
March	113	210	353	90	766	$498.28
April	89	241	292	133	755	$491.13
May	154	296	435	214	1099	$714.90
June	176	407	370	163	1116	$725.96
July	212	447	0	276	935	$608.22
August	136	280	256	179	851	$553.58
September	98	96	343	101	638	$415.02
October	93	318	409	130	950	$617.98
November	172	244	290	126	832	$541.22
December	150	279	371	83	883	$574.39
Total	1,598	3,215	3,863	1,771	10,447	$6,795.77
Average	133	268	322	148	871	$566.31

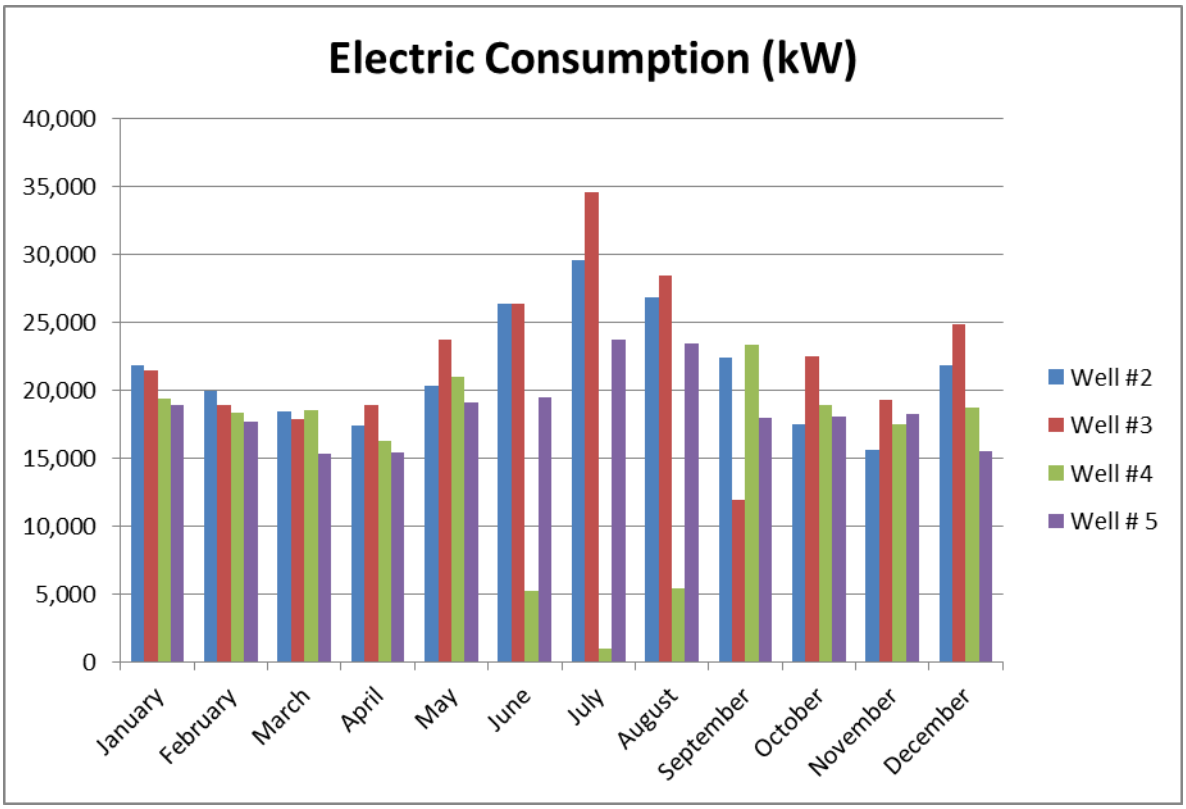
POLYPHOSPHATE						
	Well #2	Well #3	Well #4	Well #5	Total	Cost
January	7	27	27	24	85	$1,003.00
February	21	25	27	21	94	$1,109.20
March	27	22	31	26	106	$1,250.80
April	19	29	28	27	103	$1,210.68
May	28	28	31	30	117	$1,380.60
June	73	45	31	40	189	$2,230.20
July	48	53	0	44	145	$1,711.00
August	43	39	15	46	143	$1,687.40
September	35	19	29	35	118	$1,392.40
October	21	40	31	27	119	$1,404.20
November	26	26	28	30	110	$1,298.00
December	24	30	27	20	101	$1,191.80
Total	372	383	305	370	1,430	$16,869.28
Average	31	32	25	31	119	$1,405.77

HYDROFLUOSILICIC ACID						
	Well #2	Well #3	Well #4	Well #5	Total	Cost
January	30	36	32	43	141	$525.73
February	32	29	28	32	121	$451.16
March	29	50	25	24	128	$477.26
April	39	26	30	27	122	$454.89
May	50	40	32	37	159	$592.85
June	70	52	8	40	170	$633.86
July	67	58	0	49	174	$648.78
August	56	42	14	46	158	$589.12
September	44	20	40	39	143	$533.19
October	32	41	36	31	140	$522.00
November	35	34	28	29	126	$469.80
December	41	37	27	21	126	$469.80
Total	525	465	300	418	1708	$6,368.45
Average	44	39	25	35	142	$530.70

ELECTRIC (kW)					
	Well #2	Well #3	Well #4	Well # 5	Total
January	21,840	21,433	19,398	18,942	81,613
February	19,960	18,947	18,328	17,644	74,879
March	18,400	17,822	18,542	15,323	70,087
April	17,400	18,872	16,267	15,409	67,948
May	20,280	23,680	20,992	19,106	84,058
June	26,320	26,368	5,248	19,434	77,370
July	29,560	34,581	988	23,687	88,816
August	26,880	28,448	5,372	23,479	84,179
September	22,400	11,909	23,339	17,981	75,629
October	17,480	22,496	18,854	18,095	76,925
November	15,560	19,273	17,530	18,218	70,581
December	21,840	24,852	18,684	15,511	80,887
Total	257,920	268,681	183,542	222,829	932,972
Average	21,493	22,390	15,295	18,569	77,748

CHEMICAL USAGE - 2016





HISTORY OF THE WATER DIVISION:

The water system for the City of Northfield was started on May 2, 1895. Coal was the fuel used for powering a steam driven pump for pumping the water. The City used 44,700 lbs. of coal from September 16, 1896 to December 15, 1896. Some other statistics for that time frame were:

- Cost per ton of coal - $2.92
- Gallons of water pumped - 4,496,960 gal.
- Cost per 1 million gallons pumped - $14.00
- Gallons pumped per 1 lb. of coal - 100 gal.
- Average water pressure during pumping - 88 lbs.

Water pumped in the year 1898 was 46,361,170 gallons with a daily average of 127,000 gallons.

Water pumped in the year 1925 was 98,458,290 gallons with a daily average of 270,000 gallons.

No. 1 well at the College Street location was put on line for the 1st time on Oct. 6, 1945.

On July 13, 1950, they cut the main line service from the old Water Division at 103 N. Water Street (old Dairy Fresh building north of the Holiday Gas Station) which discontinued the service from that location.

The Water Division moved into its present location at 1101 College Street and resumed Water Division activities on December 8, 1950.

Total gallons pumped for 1950 was 131,548,900 with a daily average of 361,000 gallons.

No. 2 well was put on line for the 1st time on May 17, 1951.

The two 1,000,000 gallon storage tanks at St. Olaf were constructed in 1962.

Chlorine was added to the water system in 1962.

Fluoride was added to the water system on January 7, 1963.

No. 3 well was put on line for the 1st time on December 9, 1970.

Water pumped for the year of 1971 was 303,660,700 gallons with a daily average of 832,000 gallons.

In 1974, the City of Northfield began to use ductile iron for its water mains.

No. 4 well was put on line for the 1st time on September 29, 1978. The new shop addition was also added in 1978.

Water pumped for the year of 1980 was 421,335,600 gallons with a daily average of 1,151,200 gallons.

Water pumped for the year of 1992 was 605,800,000 gallons with a daily average of 1,659,726 gallons.

Polyphosphate was added to the water system in 1996.

No. 5 well was put on line for the 1st time on November 10, 1997.

The City Water Division began construction on the office and cold storage addition at the current office location of 1101 College Street in late fall of 1997. The construction was completed in the spring of 1998.

We began construction of well #5 in 1996 and had it in operation by November of 1997. There is a total of 890 sq. ft. including the generator garage.

Construction began on a new 1 million gallon elevated storage tank located off of Hall Avenue in 2002 and went into operation in August 2004. In addition, the installation of 200 k.w. standby generators were completed at well's #3 and #4 in 2003.

The Northwest Booster Station on North Avenue was put on line December 13, 2006.

The total facility size including 1101 College Street, 500 Ames, 1500 Maple Street, 1450 North Avenue and 1701 Archibald Street is 59,840 square feet.

From 1971 to 2015, water consumption went from a daily average of 832,000 gallons to a daily average of 2,040,395 gallons. We've only added 1 operator in this time period.

In 2016, the Water Division installed its first plastic C900 watermain in a residential area on Woodley Street from Division Street to Prairie Street.

EMPLOYMENT HISTORY:

Employee Name	Position	Started	Resigned	Retired
George Christen	Water Superintendent	28		8/55
Floyd Sellers	Water Superintendent	5/47	6/62	
Roger Ebersole	Utility Director	58		8/74
Larry Turner	Water Operator	5/62		7/95
	Appt. Crew Supervisor			
	Appt. Utility Director			
Rodney Johnson	Water Operator	8/62	4/64	
	Re-hired Water Operator	1/72		
	Appt. Crew Supervisor	5/1/75		
	Appt. Water Superintendent	5/84		12/84 (passed away)
Vic Swanson	Water Operator	1/63	5/64	
Dale Mortonson	Water Operator	5/64	2/66	
Warren DeWolf	Water Operator	5/64	2/67	
Dillard Forss	Water Operator	2/66	8/66	
	Re-hired Water Operator	3/68	4/73	
Dave Canedy	Water Operator	9/66	1/72	
Fred Becker	Water Operator	2/67	2/68	
Ron Taubman	Water Operator	3/73		3/00
Jim Grisim	Water Operator	3/74	8/74	
Doug Lien	Water Operator	5/12/75		
	Appt. Crew Supervisor	3/11/85		
	Appt. Water Superintendent	6/1/86		
	Appt. Utilities Manager	12/14/15		11/12/2016
Scott Murphy	Water Operator	4/85		
	Appt. Crew Leader	3/9/97		
	Water Operator	4/20/09		2018 ☺
Dean Huschle	Water Operator	12/7/87		8/10 (work comp)
Dale Nelson	Water Operator	4/27/98	7/6/01	
Jay Hall	Water Operator	7/18/01		
	Appt. Water Systems Tech.	4/20/09		
	Appt. Utilities Supervisor	7/23/12	6/21/13	
Lenny Moore	Water Operator	9/23/09		10/1/2016
Justin Wagner	Utility Operator	9/20/12		
	Appt. Utilities Supervisor	11/4/13		
	Appt. Utilities Foreperson	12/21/15		
	Appt. Utilities Manager	11/14/16		

Tim Valley	Utility Technician	9/20/12
Andrew Tussing	Utilities Operator	12/30/13
	Appt. Utilities Foreperson	11/28/16
Foster Transburg	Utilities Operator	2/29/16
Dean Erickson	Utilities Operator	10/3/16

Current Employees are Bold

THE NORTHFIELD WATER SUPPLY SYSTEM:

The primary purpose of the Northfield Water Division is to provide safe drinking water to the community. In addition, the water supply system must be capable of handling emergency situations such as firefighting. The Water Division has 4 Utilities Operators, a Utilities Foreperson, a Utilities Technician, a Utilities Manager and 4 seasonal employees to fill in during the busy summer months.

Northfield has 6 wells of which 4 are in current operation. These wells are approximately 400 feet deep connected to a very large underground body of water called the Jordan Aquifer. 3 of these wells are capable of producing up to 1400 gallons of water per minute and the 4th well produces 1250 gallons per minute. Well No. 6 pump house is currently in the construction phase. The well will be put into production in the third quarter of 2016.

The Northfield Water Division provides water to over 20,000 people through services in over 5,000 homes and businesses. It is estimated that the average daily use of water per person is over 100 gallons per day St Olaf and Carleton Colleges each have their own distribution systems and sewer collection systems, but St. Olaf started buying water from the City of Northfield starting in February of 2001 because of high radium levels in their own well water. Carleton College still supplies their water from their own well.

The Northfield water system also has the reserve capacity of 3 one million gallon storage tanks. These tanks are used as backup should the wells not produce the amount of water needed during high volume hours or during emergencies. A supervisory and control and data acquisition (SCADA) system is used to constantly monitor water usage and storage capacity. In 1997, a metering station was constructed to tie the water distribution systems of Dundas and Northfield. In 2006, a booster station was constructed on North Avenue to boost the water pressure at the hospital and the adjoining northwest properties.

Fluoride, chlorine and polyphosphates are fed into the water system at each individual well site as the water is pumped from the wells into the water distribution system. Fluoride is fed into the system at a rate of 0.7 parts per million, chlorine is fed at 1.2 parts per million and polyphosphates at a rate of 0.5 parts per million. Some other facts regarding the chemistry of the water are the water hardness of 320 p.p.m., an iron content of 0.2 parts per million, a manganese content of 0.11 parts per million, an alkalinity of 270 p.p.m. and a pH of 7.4.

Costs for electrical and gas usage in 2016 for the 4 wells, booster station, storage tanks and office amounted to $118,232.54. During high peak power demands, the Water Division works in cooperation with Xcel Energy in reducing electrical consumption. This conservation policy saves $3,500 per year and energy by not operating certain wells during this peak time. The Northfield Water Division also has emergency backup in case of power failure. Well #5 and #2 have a 175 k.w. electrical hookup for the emergency generator if there was a need for an emergency power supply at those locations, with a standby portable generator stored at #5 well. This portable generator can be moved to #2 well if needed. In 2003, the Water Division installed two natural gas powered, 200 kw stationary standby generators as back-up power supplies at well's #3 and #4. Wells #3, #4 and the booster station will come on automatically if we lose excel power. Well #5 and #2 have to share the portable 175 kW gen-set and we have to operate the gen-set manually. The 2 one million gallon storage tanks on the St. Olaf campus receives electrical power free from St. Olaf College. The College has their own backup generator for campus needs, so the Water Division does not have to provide backup power at that location. In 2015 the Hall Ave. storage tank has a 11 kw standby generator.

With the amount of new homes and businesses growing in Northfield, the water demand and distribution system are constantly growing. Water conservation is an important topic for all residents and businesses. This is the time to consider water usage for future generations. The two main areas of water conservation are

the savings of our natural resources and your personal financial savings. Although at the present time we have an adequate supply of water coming from the Jordan Aquifer, we must consider that it has taken thousands of years to build this supply and without protective measures, major problems could arise in the future.

The City of Northfield is doing its part in preparing for the future of Northfield's water supply by organizing a Wellhead Protection Committee. This committee includes City staff, township board members, county leaders and concerned business people and residents from the area. The Wellhead Protection Committee takes an active role in protecting the ground water, researching potential contaminant sources of water and provides informational materials to the public on how to protect our valuable water resource.

The normal household water usage is broken down into percentages: toilets 41%, bathing/washing 37%, kitchen 6%, laundry 4%, and misc. use 12%. By less water use, you are decreasing your water bill and reducing your electrical consumption by having to heat less water. If a family of four saves 21,900 gallons of showering water per year, that family would save approximately 3,460 KWH per year. At a typical rate of 10 cents per KWH, this savings amounts to approximately $346 per year. As you can see by the example, saving of water is important to each and everyone in the community. By reducing our water usage now, we can save this precious natural resource for future generations.

In recent news, there has been a lot of talk about lead and copper levels within drinking water. The city of Northfield began testing for lead and copper in 1992 and has taken tests every 3 years since that time including in 2016. The samples were tested by the Minnesota Department of Health and the results from the all of the samples have shown that Northfield is well under the guidelines set forth by the Department of Health in both copper and lead. Besides the discontinuation of lead water service pipes, changes in solder materials used in soldering water pipes has had a positive effect on water systems. A combination of 50% lead and 50% tin solder was discontinued in 1985. The current combination of 5% lead and 95% tin (or 95/5) is a standard in the water industry today. As a result, lead in water systems has drastically been reduced and will continue to be reduced with replacement of old watermains, water service pipes and household plumbing.

Should you have additional questions regarding the Northfield water system, please call Justin Wagner, City of Northfield Utilities Manager, at 645-3083 or Andrew Tussing, Northfield Utilities Foreperson, at 645-3088.