



# WHITE BEAR TOWNSHIP

1858  
RAMSEY COUNTY  
MINNESOTA

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Board of Supervisors  
ROBERT J. KERMES, *Chair*  
ED M. PRUDHON  
STEVEN A. RUZEK

## AGENDA UTILITY COMMISSION MEETING JUNE 14, 2018

1. **7:00 p.m.** Call Meeting to Order at Township office Conference Room, 1281 Hammond Road.
2. Approval of June 14, 2018 Agenda (Additions/Deletions).
3. Approval of May 10, 2018 Minutes (Additions/Deletions).
4. Consent Agenda:
  - a. Receive Monthly Sewer & Water Report.
  - b. Receive EDAB Minutes.
  - c. Receive Republic Services Monthly Service Report.
5. Commissioner's Report.
6. Public Works Director Report.
7. Review of Utility Billing Cycle.
8. Utility Rate Changes.
9. Water Conservation:
  - a. Current Sprinkling Regulations.
  - b. Enforcement.
  - c. Changes.
10. Next Meeting Date / Agenda Items.
11. Added Agenda Items.
12. Adjournment.

### White Bear Township's Mission:

To provide White Bear Township residents, businesses and visitors with reliable, high quality municipal services while serving as open and responsible stewards of the public trust.



recycled paper



White Bear Township  
*Strategic Mission, Vision and Values*

**Mission:**

To provide White Bear Township residents, businesses and visitors with reliable, high quality municipal services while serving as open and responsible stewards of the public trust.

**Vision:**

White Bear Township as an attractive community that residents and businesses are proud to call home and provides the welcoming, practical and engaging spirit of Township “grassroots” government.

**What We Value:**

- ✚ **Real Citizen Participation:** Residents of White Bear Township having a voice in the operation and substance of their local government.
- ✚ **“Township Nice”:** Ensuring people feel comfortable and welcome when meeting with our Town Board and when interacting with Township staff.
- ✚ **Transparency and Trust:** Conducting our business in an open and public manner and be responsive to concerns. Provide a communication system to help residents and businesses to be well informed of Township activities.
- ✚ **Being Grounded in Common Sense:** Knowing who we are with a strong focus on essential functions.
- ✚ **Flexibility:** Showing a capacity to adjust, accommodate and be open to new ideas and methods.
- ✚ **Collaboration:** Working together with our neighbors, other communities and other levels of government to advance our Township Mission and Vision.
- ✚ **Financial Responsibility:** Demonstrating care in our management and allocation of the financial resources necessary to provide the services needed to sustain a vibrant future for our Township.



## Utility Commission Meeting June 14, 2018

**Agenda Number:** 1 – 2- 3

**Subject:** Call to Order – 7:00 p.m.  
WBT Administrative Conference Room

Approval of June 14, 2018 Agenda &  
May 10, 2018 Minutes

**Documentation:** June 14, 2018 Agenda &  
May 10, 2018 Minutes

### **Action / Motion for Consideration:**

Call meeting to order:	7:00 p.m.
Approval of Agenda:	June 14, 2018 (Additions / Deletions)
Approval of Minutes:	May 10 2018

**MINUTES  
UTILITY COMMISSION MEETING  
MAY 10, 2018**

The meeting was called to order at 7:00 p.m.

Present: Bernstein, DeLoach, Groschen, Fredericks, Hesse, McCune, Pehrson; Town Board Liaison: Kermes; Clerk: Short; Public Works Director: Reed.

**APPROVAL OF AGENDA (Additions/Deletions):** DeLoach moved approval of the agenda as submitted. Hesse seconded. Ayes all.

**APPROVAL OF APRIL 12, 2018 MINUTES (Additions/Deletions):** DeLoach moved approval of the April 12, 2018 Minutes. McCune seconded. Ayes all.

**CONSENT AGENDA:** Bernstein moved approval of the Consent Agenda as follows: 4A) Receive Monthly Sewer and Water Report; 4B) Receive EDAB Minutes; 4C) Receive Republic Services Monthly Service Report. Pehrson seconded. Ayes all.

**COMMISSIONER'S REPORT: Cambridge Downs:** The North Oaks development between Centerville Road and Peterson Road, north of County Road H-2 has started with initial work. The property is 50% wetland and 50% buildable. Twenty eight detached homes are proposed. The development meets the Town's density of three units per acre. The Metropolitan Council proposes 5 units per acre for the updated comprehensive plan. **Centerville Road Improvements:** A traffic signal will be installed at the north end of the Cub and Lunds/Byerlys parking lot. The Township approved the traffic signal to improve safety. The City of White Bear Lake has awarded the contract for the project. **Lakes Link Trail:** Legislation in the House passed providing \$4.4 million for the project. The Senate bill is still pending. **Vehicle Gateway Base Station:** The Town Board approved the purchase of a VGB station for automated meter reading. The Public Works Director recommends that the Town participate in a cost-share purchase with the City of Hugo. The Town currently reads the water meters using a handheld device. The VGB can be placed on the passenger side, or in a rear seat in a vehicle with a portable antenna mounted on the exterior. **Town's Mission Statement:** The Mission, Vision and Values Statements were developed by the Town Board in 2016 and will be displayed at the bottom of all future agendas. **Meter Testing:** Twelve additional meters have been sent to an independent lab for testing. The Town has been working with Sensus and Core & Main on a resolution relative to the meters which were misreading.

**PUBLIC WORKS DIRECTOR REPORT:** The Public Works Department Activity Report for the month of April 2018 was reviewed. **Water Meter Repair/Reading:** Commercial meter testing will begin soon with the information that has been provided by utility billing. **Storm Water Program:** Staff is meeting with Ramsey County Public Works to review Stillwater Street pavement conditions and drainage concerns. Ramsey County Public Works is proposing to mill and overlay Stillwater Street this year. **Outfalls:** The Town has received a grant of \$35,000 from RCWD for Outfalls #5 (St. Anthony) and #6 (Park Street). Both discharge into Bald Eagle Lake. Ramsey County Public Works has provided an agreement for a cost share for outfall #6 since a portion of the discharge is from East Bald Eagle Avenue. The cost share amount is \$11,600.00. **MS-4 and SWPPP:** The Town is renewing the current MS-4 permit and the SWPPP which need to be updated. **Additional Public Works Employee:** The 2019 budget includes an additional employee for Public Works. The position will work on stormwater

MINUTES  
UTILITY COMMISSION MEETING  
MAY 10, 2018

management and water conservation. The position will include both inside and outside work. **Well #5/Treatment Plant #1:** A valve limiter will be placed on cell "E" of the filter to reduce the frequency of backwashing required. Currently cell "E" fouls out before the remaining 4 cells are ready for backwash. The limiter should be installed within the next month by Tonka Water. **TH96 Interconnection:** An interconnect for area south of TH 96 with the City of White Bear Lake's water system is going to be proposed to the Town Board in 2018. The Engineer and Public Works Director will need to visit the possible interconnect locations in May to determine which is the most feasible. **South Water Tower Cleaning:** Water Tower Clean and Coat will complete the cleaning of the exterior of the South Water Tower during the week of May 14, 2018. **Well #1 Motor repair:** The motor, column piping, shaft and pump have been removed and inspected. Replacement components have been ordered. The bottom of the bore hole will have sediment removed before the well components re-installed. **Northeast Water Tower:** A concrete floor will be installed in the base of the tower. **Sanitary Sewer System Improvements/Issues:** The joint sealing work has been completed. The televising has been awarded to Visu-Sewer for Cottage Avenue, Prospect Avenue, and Lakeview Avenues and a small section of gravity line between the West Bald Eagle easement and Lift Station #3. The televising has been completed. A section of sanitary sewer gravity line just west of lift station #3 has been identified as a potential lining project. There are many joints within that section that groundwater is infiltrating. **Ramsey County Projects Within the Township:** 2018: 1) Mill and overlay of County Road J from Highway 61 to Portland Avenue North; 2) System improvements on Highway 96. 2019 –1) Mill and overlay of Century Avenue from County Road E to County Road F; 2) Mill and Overlay of South Shore Boulevard from White Bear Avenue to County Road F; 3) Concrete rehab of Highway 96 from I-35E to Highway 61; 2020 - 2022 Proposed: 1) Co. Rd F from McKnight Road to Century (East Co. Line); 2) Co. Road H-2 from Centerville Road to West Bald Eagle Boulevard; 3) Otter Lake Road from Goose Lake Road to CSAH 96; 4) Portland Avenue from Highway 96 to Taylor Avenue.

There was discussion regarding the Stillwater Street mill and overlay which Ramsey County Public Works proposes to do this year. It was noted that funds should be kept aside for the storm sewer improvements which are needed and which will be done when the County does a full street reconstruction. No major storm sewer work will be done as part of this year's project.

**RAMSEY COUNTY SOURCE-SEPARATED ORGANICS COLLECTION 2017 ANNUAL REPORT:** The 2017 report from Ramsey County was reviewed. Ramsey County's Environmental Health Division operates seven yard waste sites, four located in St. Paul and three located in the northern suburbs. All sites receive leaves, grass clippings, and other soft plant material. In addition, four of the seven sites also accept tree and shrub waste. In September 2013 the RC Board of Commissioners approved expansion of services at yard waste sites to include collection of source-separated organic materials. County staff began seeking local permits, where necessary, for the added service. Based on information that none of the other County SSO collection sites had experienced any issues since the service began in 2014, the City of Arden Hills approved the County's request and SSO collection began at the Arden Hills yard waste site in late July of 2017. SSO collection at the yard waste sites is available to all residents of Ramsey County and local community coordinators that generate SSO from small events. Each site has a designated area with one or more covered containers

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MAY 10, 2018**

in which people place SSO brought to the site in compostable bags. SSO is kept separate from yard waste. Acceptable materials include food waste/scraps and various types of soiled/low-grade/non-recyclable paper plus some other minor items typically accepted in SSO collection programs. The County provides Biodegradable Product Institute certified compostable bags free of charge to residents at site locations and local community centers. A waste hauler provides contracted hauling to service the collection containers. Containers are serviced weekly and SSO is hauled to a commercial organics composting facility. Collection is available five days per week April-November and during weekends December – March, weather permitting. The White Bear Township Conditional Use Permit required Ramsey County to report community-based participation during the first two years of organics collection (2014-2015). The County no longer records this data since it is no longer a requirement of the permit. Staff will contact the County to provide a presentation at a future meeting.

**WATER CONSERVATION: 1) CURRENT SPRINKLING REGULATIONS; 2) ENFORCEMENT; 3) CHANGES:** The Township does have sprinkling regulations in place. The Utility Commission has been discussing enforcement options. Information from a meeting recently attended by the Clerk relative to irrigation was reviewed. Information includes:

1. Surcharge on high water users.
2. Water re-use (stormwater). Discount on rain barrels.
3. Water rebate.
4. Odd/Even (change?)
5. No private wells.
6. Targeted conservation grants.
7. Smart irrigation controllers – give-away.
8. Water conservation education.
9. 50/50 cost share with local businesses.
10. Require all new irrigation systems to have “water sense” certified controllers.
11. Upgrade municipal irrigation systems.
12. Drought tolerant landscape.

Review of the list and comments included:

#1) Surcharge for high water users. A surcharge would make people notice.

#2) Water re-use (stormwater). This is new and becoming more common use. A separate pipe pumps water from storm water ponds into a separate pressurized underground system.

#4) Odd/Even. Is there any other way to handle sprinkling? Need to step up enforcement. Staff is working on ideas to step up enforcement. Regarding warnings and fines: behavior needs to be changed. A \$40 fine sometimes is not sufficient incentive to follow the rules. What is more effective: Odd/even or restricted hours? This is something worth thinking about. Ask staff what it will cost to hire outside help to enforce the irrigation ban. The Clerk will come back with a recommendation regarding expenses for enforcement either by the RCSO or a part time person at an hourly rate.

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#5) No private wells. The Township does not regulate private wells. The well permit is from the Minnesota Department of Health and regulated by Ramsey County. It was the consensus that the irrigation ban should apply to people with private wells.

#6) Targeted conservation grants. Analyze use and promote grants.

#8) Water conservation education. The Town already does this but could be increased.

#11) Upgrade all irrigation systems. The Township does have water controllers but may be able to do more.

#12) Drought tolerant landscaping. Can the Town research types of grass for turf management (species of grass and seed types). The DNR is planning to share information relative to turf management and water conservation for less water demand.

The judge did not define the residential irrigation ban. The Town needs firm direction and suggestions from the DNR as to what is appropriate for all. A definition for a watering ban plan is needed. Suggestions included:

- Exclude watering gardens on properties less than one acre and no grass.
- Is hand watering against the irrigation ban?

Questions were asked what a "water ban" really is and what is the difference between a yard and a garden. It was the consensus that irrigation is watering grass mechanically. Hand held hoses should be okay for watering except grass lawns.

Steps to be taken; 1) we now have watering regulations; 2) notify residents of the regulations; 3) put reminders on the utility bills; 4) put information on the Town's website and in the White Bear Press (News and Views). Regarding enforcement: allow watering 1-2 times per week to see what it would cost to enforce. Target water conservation grants and the water fund to absorb the costs.

**NEXT MEETING DATE / AGENDA ITEMS:** The next meeting is scheduled for Thursday, June 14, 2018. Agenda items: 1) Continued discussion on sprinkling regulations; changes; enforcement.

Bernstein moved to adjourn the meeting at 9:10 p.m. McCune seconded. Ayes all

Respectfully Submitted,

Joan J. Clemens  
Recording Secretary

DRAFT



**Utility Commission Meeting  
June 14, 2018**

**Agenda Number:** 4A - Consent

**Subject:** Receive Monthly Sewer & Water Report

**Documentation:** Watermain Leak Report

**Action / Motion for Consideration:**

Receive Information



## WATERMAIN LEAK REPORT

\*\*\*\*\*

**NO.:** 2

**LOCATION:**

**TIME REPORTED:** 6:00 AM.

**DATE:** 5.22.18

**REPORTED BY:** Ramsey Co. Sherriff

**ADDRESS:** 5214 East Bald Eagle Blvd.

**REPORT RECEIVED BY:** Matt S.

**DESCRIPTION OF RUPTURE OR BREAK:** 2" Hole

**PROBABLE CAUSE OF RUPTURE OR BREAK:** Rock against the pipe.

**SIZE AND MATERIAL OF PIPE:** 6"

**QUANTITY OF WATER ESCAPING:** 121,289 gallons

**G.P.M.:** 673

**TIME CREW REACHED SITE OF LEAK:** 8:15 AM.

**DATE:** 5.22.18

**TIME FLOW OF WATER WAS STOPPED:** 9:30 AM.

**DATE:** 5.22.18

**TIME WATER ON AFTER REPAIRS:** 12:45 PM.

**DATE:** 5.22.18

**ACTION TAKEN TO REPAIR LEAK:** 18" Stainless steel band was used to repair the leak.

**REMARKS:** East Bald Eagle Blvd was closed and traffic was detoured to Bald Eagle Blvd. to Stillwater St. to Division St. back to Park Ave.

**WORK PERFORMED BY:** Water Conservation Services Inc. was contacted to locate leak. St. Paul Water was contacted to complete the repair. Warning Lites of MN set up traffic control and the Public Works Dept. Patched the area.



## Utility Commission Meeting June 14, 2018

**Agenda Number:** 4B - Consent

**Subject:** Receive EDAB Minutes

**Documentation:** None

### Action / Motion for Consideration:

#### MINUTES ECONOMIC DEVELOPMENT ADVISORY BOARD MEETING MAY 8, 2018

The meeting was called to order at 6:00 p.m.

Present: Artner, Brunner, Horak, Keleher, McCune, Scherman; Town Board Liaison: Kermes;  
Clerk: Short; Guest: John Johnson, Water Gremlin Plant Manager.

**APPROVAL OF AGENDA (Additions/Deletions):** Artner moved to approve the agenda with the following amendment: Add 6A) Sara Hanson E-Mail. Horak seconded. Ayes all.

**APPROVAL OF FEBRUARY 13, 2018 MINUTES:** Artner moved approval of the February 13, 2018 Meeting Minutes. Scherman seconded. Ayes all.

**WELCOME NEW MEMBER – KENT BRUNNER:** The Clerk administered the Oath of Office to new EDAB member, Kent Brunner. Introductions were made and Kent was welcomed.

**WATER GREMLIN UPDATE – JOHN JOHNSON, PLANT MANAGER:** John Johnson, Water Gremlin Plant Manager reported that he has been serving as plant manager for about a year and he has also been given the duties that Dave Zinschlag use to perform. He stated that he wanted to attend the meeting to build a relationship with the EDAB. He reported that Water Gremlin is committed to growing and fully intends to continue with the project to enlarge the south campus building. He stated that new equipment which had been planned for the new expansion has been placed in their main facility. Discussions are underway regarding what equipment will be placed in the proposed new building. Corporate blessing has not been received as yet. The expansion was approved, then halted. The plans are drawn up and laid out. Part of the hang-up is that the poor soils will not support the weight of the equipment planned for the expansion. The Clerk noted that the plans and agreement to provide assistance has no set deadline. Water Gremlin cares about its neighbors and any complaints are addressed. They are partnering with the School District to provide scholarships for three students in manufacturing. They host tours for students to provide them with an understanding of manufacturing and automation. There is a shortage of workers. John Johnson stated that it is hard

to find equipment maintenance mechanics. Last year Water Gremlin transferred 22 temporary employees to full time and this year 30 temporary employees will become full time. He will keep the EDAB updated on Water Gremlin's expansion plans.

**SARA HANSON E-MAIL:** The email received from Sara Hanson regarding the Capital Campaign report was reviewed. Tom Horak and Sara Hanson met with the Johnson's regarding fundraising efforts. The next steps include business/organizations followed by a community wide push. The goal is to raise \$145,000. Total raised today is \$67,690 (which includes \$10,490 in grants) and \$9,600 in expenses. Work on the Town Hall continues. A site visit was held with an electrician who is willing to do the electrical work pro bono under his license with his company. Work should be completed in May. Historic Northern Bedrock will be building shutters for the exterior this summer and installing them in late June or early July. Bids have been received for drywall work for ceiling and walls. The work will be done once wiring and mechanical is done. The HVAC evaluation is underway and is funded through a Legacy grant. The final report for the historical markers has been submitted to the Minnesota Historical Society.

**OTHER: Priority Courier Services:** The company is looking for a new site. They need a large site and large parking lot. **White Bear Township Theater:** They have applied for and received a Liquor License and are undergoing a major renovation which will also include a new sign by the freeway. **Lunds/Byerlys:** The building is under construction. A traffic signal will be installed.

Artner moved to adjourn the meeting at 7:30 p.m. Horak seconded. Ayes all.

Respectfully Submitted,  
William F. Short  
Clerk-Treasurer



**Utility Commission Meeting  
June 14, 2018**

**Agenda Number:** 4C - Consent

**Subject:** Republic Services Monthly Service Report

**Documentation:** Report

**Action / Motion for Consideration:**

Receive Information

# Service Report By Month for White Bear Township

2018



Calls from residents, reported as 'missed pick-ups'

	Trash	YardWaste	Recycle	Totals
JANUARY	10	0	4	14
FEBUARY	8	0	9	17
MARCH	0	0	8	8
APRIL	6	0	11	17
MAY				0
JUNE				0
JULY				0
AUGUST				0
SEPTEMBER				0
OCTOBER				0
NOVEMBER				0
DECEMBER				0

Possible collection sites per system, per week	3,851
Possible collection sites per system, per month, with 4.33 weeks per month	16,675
Possible collection sites for all routes per month April 1 - Nov 30	50,024
Possible collection sites for all routes per month Dec 1 - March 31	33,350



**Utility Commission Meeting  
June 14, 2018**

**Agenda Number:** 5

**Subject:** Commissioner's Report

**Documentation:** None

**Action / Motion for Consideration:**

Receive Information



**Utility Commission Meeting  
June 14, 2018**

**Agenda Number:** 6

**Subject:** Public Works Director Report

**Documentation:** None

**Action / Motion for Consideration:**

Receive Information



**Utility Commission Meeting  
June 14, 2018**

**Agenda Number:** 7

**Subject:** Review of Utility Billing Cycle

**Documentation:** Finance Officer Memo

**Action / Motion for Consideration:**

Receive Information

## UTILITY BILLING CYCLES

The Town's current utility billing cycles currently are, March – May (1<sup>st</sup> quarter), June – August (2<sup>nd</sup> quarter), September – November (3<sup>rd</sup> quarter), and December – February (4<sup>th</sup> quarter). The reason for this is prior to 1993 Townships in Minnesota had a fiscal year of March to February. In 1993, the fiscal year for townships changed to a calendar year, but the Township never changed its utility billing cycles. Some of the reason to change to a calendar cycle are as follows;

1. Currently the finance staff has to accrue (estimate and record) December billing revenue. Changing to a calendar cycle eliminates this estimate.
2. Reporting water usage recorded in the annual water audit and DNR reports are recorded as of December 31<sup>st</sup> but our billing readings are as of November 30<sup>th</sup> with an estimated December usage. The change brings these to readings into sync.
3. As the Town considers different methods to encourage water conservation, if it were determined to have a summer water rate, the calendar billing cycle lines up better with summer months than our current billing cycles.
4. All other State and Federal reports are recorded and due based on calendar quarters.

While there is nothing requiring the Town to change to calendar quarterly billing cycle, the best reason to change is the annual water audit and DNR reports being on a calendar bases and having our billing reading coincide with those reports.

In addition, there is no requirement that we bill quarterly. The Town could bill monthly or every two months. While both of these would provide for better cash flows and more frequent and real time reads, which would allow residents to adjust their water usage more quickly. The cost and staff time required to process the bills and payments outweighs the benefits.

To implement the possible change to a calendar quarter, the Town would bill 4 months in the September – December billing cycle and then go back to the normal three-month bill of January, February, and March to start the year.



**Utility Commission Meeting  
June 14, 2018**

**Agenda Number:** 8

**Subject:** Utility Rate Changes

**Documentation:** Finance Officer Memo / Stats

**Action / Motion for Consideration:**

Receive Information / Discuss

## **UTILITY RATE CHANGES**

Annually, the Utility Commission reviews the Town's utility rates. The goal of the Town's utility rates is to cover 100% of operation costs and 75% of depreciation. Cash balances of each fund may increase or decrease from one year to the next based on improvement projects funded by each fund. Attached are the projected revenues, expenses and changes in cash balances based on proposed rate increases and improvement projects. Also attached is a sheet on how the proposed rates would change residential utility bills and the current 10-year CIP as it relates to the utility funds.

CURRENT AND NEW (2019) UTILITY RATES

		WATER RATES			Proposed
		2016	2017	2018	2019
		Gallons	Rate	Rate	Rate
Base Rate		\$ 17.75	\$ 19.20	\$ 20.50	\$ 21.25
Volume Rate:					
Tier 1	0 - 20,000	\$ 1.95	\$ 2.01	\$ 2.25	\$ 2.35
Tier 2	20,001 - 32,000	\$ 2.15	\$ 2.21	\$ 2.45	\$ 2.60
Tier 3	32,001 - 44,000	\$ 2.57	\$ 2.76	\$ 3.10	\$ 3.38
Tier 4	44,001 +	\$ 3.86	\$ 4.14	\$ 4.60	\$ 5.75
Irrigation:					
Residential		\$ 2.57	\$ 2.76	\$ 3.10	\$ 3.38
Commercial		\$ 2.57	\$ 2.76	\$ 3.85	\$ 4.20

		SEWER RATES				
		Gallons	Rate	Current	Current	Proposed
Base Rate:						
Residential	*		\$ 46.00	\$ 48.38	\$ 50.80	\$ 51.00
Commercial			\$ 40.60	\$ 42.82	\$ 45.00	\$ 45.15
Volume Rate:						
Residential	*		\$ 1.08	\$ 2.00	\$ 3.00	\$ 4.00
Commercial			\$ 2.50	\$ 5.00	\$ 7.50	\$ 10.00

\* Residential base rate includes up to 5,000 gallons of usage. Any usage over 5,000 gallons will be billed \$3.00 per 1,000 gallons plus the base rate.

		STORM WATER RATES				
		Gallons	Rate	Current	Current	Proposed
Per Quarter			\$ 17.00	\$ 20.00	\$ 20.00	\$ 20.60

All volume rates are per thousand gallons with the sewer rate based on winter quarter water usage for residential customers.

WATER USAGE	12/2016 - 2/2017		3/2017 - 5/2017		6/2017 - 8/2017		9/2017 - 11/2017		12/2017 - 2/2018		Average		Total		
	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	Per Customer	Total Customers	Total Consumption
Residential															
Gallons Used															
0 - 20,000	3,980	40,510,339	4,116	40,510,339	2,712	29,705,844	3,667	37,584,214	4,175	40,093,152	3,668	36,973,387	10,081	14,670	147,893,549
20,001 - 32,000	544	13,174,474	441	10,666,998	885	22,291,505	675	16,749,424	418	9,983,595	605	14,922,881	24,676	2,419	59,691,522
32,001 - 44,000	82	2,949,682	78	2,899,020	385	14,299,215	222	8,184,060	69	2,524,549	189	6,976,711	37,012	754	27,906,844
over 44,001	56	3,887,694	45	2,936,503	703	58,749,830	145	10,582,584	33	2,163,622	232	18,608,135	80,381	926	74,432,539
Totals	4,662	60,965,864	4,680	57,012,860	4,685	125,046,394	4,709	73,100,282	4,695	54,764,918	4,692	77,481,114	16,513	18,769	309,924,454
Commercial															
Gallons Used															
0 - 20,000	124	377,352	110	474,804	65	385,384	77	471,545	94	317,620	87	412,338	4,767	346	1,649,353
20,001 - 32,000	11	285,026	13	328,728	11	288,957	13	318,357	17	419,153	14	338,799	25,096	54	1,355,195
32,001 - 44,000	6	215,206	14	523,069	7	262,368	10	393,724	3	108,199	9	321,840	37,864	34	1,287,360
over 44,001	40	11,432,430	46	12,345,780	102	50,500,913	87	76,299,279	41	11,426,122	69	25,143,024	364,392	276	100,572,094
Totals	181	12,310,014	183	13,672,381	185	51,437,622	187	77,482,905	155	12,271,094	178	26,216,001	147,696	710	104,864,002
Grand Total	4,843	73,275,878	4,863	70,685,241	4,870	176,484,016	4,896	100,583,187	4,850	67,036,012	4,870	103,697,114	21,294	19,479	414,788,456
Residential															
Gallons Used															
0 - 20,000	3,986	40,254,944	3,962	39,803,442	2,711	29,109,298	3,915	38,959,101	3,980	40,954,014	3,642	37,206,464	10,216	14,568	148,825,855
20,001 - 32,000	512	12,313,483	512	12,528,184	822	20,627,300	484	11,977,105	544	13,174,474	591	14,564,266	24,664	2,362	58,257,063
32,001 - 44,000	81	2,978,175	100	3,699,179	394	14,704,340	131	4,892,490	82	2,949,682	177	6,546,423	37,038	707	26,185,691
over 44,001	40	3,016,113	55	13,719,333	708	56,891,025	113	17,367,991	56	3,887,694	233	22,966,511	98,569	932	91,866,043
Totals	4,619	58,562,815	4,629	69,690,138	4,635	121,331,963	4,643	73,146,687	4,662	60,965,864	4,642	81,283,663	17,510	18,569	325,134,652
Commercial															
Gallons Used															
0 - 20,000	103	377,754	65	331,103	57	332,195	64	339,735	124	377,352	78	345,096	4,453	310	1,380,385
20,001 - 32,000	10	254,764	17	413,550	10	258,875	12	293,477	11	285,026	13	312,732	25,019	50	1,250,978
32,001 - 44,000	5	185,121	7	257,231	3	118,847	6	222,871	6	215,206	6	203,539	37,007	22	814,155
over 44,001	39	11,429,826	39	13,240,383	58	20,775,225	46	14,728,561	40	11,432,430	46	15,044,150	328,834	183	60,176,599
Totals	157	12,247,465	128	14,242,267	128	21,485,142	128	15,584,644	181	12,310,014	141	15,905,517	112,605	565	63,622,067
Grand Total	4,776	70,810,280	4,757	83,932,405	4,763	142,817,105	4,771	88,731,331	4,843	73,275,878	4,784	97,189,180	20,318	19,134	388,756,719

	12/2014 - 2/2015		3/2015 - 5/2015		6/2015 - 8/2015		9/2015 - 11/2015		12/2015 - 2/2016		Average		Total	
	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	Per Customer	% of Customers
Residential														
Gallons Used	4,001	41,168,366	3,812	39,058,770	3,129	33,092,272	3,452	35,581,107	3,987	40,265,596	3,595	36,999,436	10,292	73.8%
0 - 20,000	477	11,439,501	616	14,917,961	772	19,256,586	684	17,058,769	512	12,313,483	646	15,886,700	24,592	13.3%
20,001 - 32,000	71	2,622,586	114	4,179,550	304	11,321,556	250	9,348,183	81	2,978,175	187	6,956,866	37,153	3.8%
32,001 - 44,000	38	2,926,508	52	3,359,471	392	32,489,815	246	18,736,936	40	3,016,216	183	14,400,610	76,907	3.7%
over 44,001	4,587	58,156,961	4,594	61,515,752	4,587	96,160,229	4,632	80,724,995	4,620	58,573,470	4,611	74,243,612	16,102	94.7%
Totals	4,587	58,156,961	4,594	61,515,752	4,587	96,160,229	4,632	80,724,995	4,620	58,573,470	4,611	74,243,612	16,102	94.7%
Commercial														
Gallons Used	113	311,012	96	347,226	67	374,055	75	379,032	102	367,102	85	366,854	4,316	1.7%
0 - 20,000	8	203,504	10	248,123	10	250,270	11	260,796	10	254,764	10	253,483	24,731	0.2%
20,001 - 32,000	7	266,203	9	346,374	3	110,532	4	153,669	5	185,121	5	198,974	37,890	0.1%
32,001 - 44,000	44	11,194,952	58	12,793,324	93	31,031,620	88	24,162,050	39	11,422,826	70	19,854,205	285,672	1.4%
over 44,001	172	11,975,671	173	13,795,047	173	31,766,477	178	24,955,547	156	12,236,813	170	20,673,471	171,609	3.5%
Totals	172	11,975,671	173	13,795,047	173	31,766,477	178	24,955,547	156	12,236,813	170	20,673,471	171,609	3.5%
Grand Total	4,759	70,132,632	4,767	75,250,799	4,770	127,926,706	4,810	105,680,542	4,776	70,810,283	4,781	94,917,083	19,854	98.2%
Residential														
Gallons Used	3,848	40,899,990	3,992	40,204,463	2,752	29,912,751	3,622	37,557,071	4,001	41,168,366	3,592	37,210,663	10,360	73.8%
0 - 20,000	549	13,316,976	456	11,020,055	871	21,873,803	595	14,688,259	477	11,439,501	600	14,755,405	24,603	12.3%
20,001 - 32,000	99	3,623,030	82	2,930,723	437	16,300,332	194	7,204,318	71	2,622,586	196	7,264,490	37,064	4.0%
32,001 - 44,000	48	3,213,845	32	3,365,196	507	131,277,331	171	13,777,238	38	2,926,508	187	37,836,568	202,335	3.8%
over 44,001	4,544	61,053,841	4,562	57,520,437	4,567	199,364,217	4,582	73,226,886	4,587	58,156,961	4,575	97,067,125	21,219	93.9%
Totals	4,544	61,053,841	4,562	57,520,437	4,567	199,364,217	4,582	73,226,886	4,587	58,156,961	4,575	97,067,125	21,219	93.9%
Commercial														
Gallons Used	94	333,837	103	429,477	60	309,218	62	309,754	113	311,012	85	338,365	4,004	1.7%
0 - 20,000	6	153,699	7	180,728	8	191,517	12	307,981	8	203,504	9	220,933	25,249	0.2%
20,001 - 32,000	4	151,699	7	273,921	5	180,145	8	309,489	7	266,203	7	257,440	38,139	0.1%
32,001 - 44,000	44	11,195,994	39	9,912,489	97	37,207,222	90	24,162,050	44	11,194,952	68	20,619,178	305,469	1.4%
over 44,001	148	11,835,229	156	10,796,615	170	37,888,102	172	25,083,274	172	11,975,671	168	21,435,916	127,976	3.4%
Totals	148	11,835,229	156	10,796,615	170	37,888,102	172	25,083,274	172	11,975,671	168	21,435,916	127,976	3.4%
Grand Total	4,692	72,889,070	4,718	68,317,052	4,737	237,252,319	4,754	98,310,160	4,759	70,132,632	4,742	118,503,041	24,990	97.4%

Residential	12/2012 - 2/2013		3/2013 - 5/2013		6/2013 - 8/2013		9/2013 - 11/2013		12/2013 - 2/2014		Average		Total			
	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	Per Customer	% of Customers	# of Customers	Total Consumption
0 - 20,000	3,584	38,138,245	3,791	39,419,576	2,743	29,133,639	2,534	26,605,855	3,848	40,899,990	3,229	34,014,765	10,534	66.3%	17,916	136,059,060
20,001 - 32,000	532	12,819,358	443	10,575,364	845	21,398,520	924	23,183,773	549	13,316,976	690	17,118,658	24,801	14.2%	2,761	68,474,633
32,001 - 44,000	89	3,250,489	57	2,118,889	391	14,598,150	456	17,066,328	99	3,523,030	251	9,351,624	37,295	5.1%	1,003	37,406,497
over 44,001	59	4,275,068	40	2,758,891	447	43,988,222	601	44,769,262	48	3,213,845	284	23,682,555	83,389	5.8%	1,136	94,730,220
Totals	4,264	58,483,160	4,331	54,872,820	4,426	109,118,531	4,515	111,625,218	4,544	61,055,841	4,454	84,167,603	18,897	91.5%	17,816	336,670,410
Commercial																
Gallons Used	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	# of Customers	Total Consumption	Per Customer	% of Customers	# of Customers	Total Consumption
0 - 20,000	102	321,367	106	402,469	57	305,030	55	295,779	94	333,837	78	334,279	4,286	1.0%	312	1,337,115
20,001 - 32,000	5	128,431	7	185,608	8	209,564	8	211,775	6	153,699	7	190,187	26,233	0.1%	29	760,746
32,001 - 44,000	4	162,831	7	272,640	11	434,059	5	189,094	4	151,699	7	261,873	38,796	0.1%	27	1,047,492
over 44,001	39	210,750,373	44	11,428,951	91	132,118,869	100	62,567,276	44	11,195,994	70	54,327,773	778,893	1.4%	279	217,311,090
Totals	150	211,363,002	164	12,289,668	167	133,067,622	168	63,263,924	148	11,835,229	162	55,114,111	340,736	3.3%	647	220,456,443
Grand Total	4,414	269,846,162	4,495	67,162,488	4,593	242,186,153	4,683	174,889,142	4,692	72,889,070	4,616	139,281,713	30,175	94.8%	18,463	557,126,853

WATER FUND

Total

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
% Increase												
Total Expenses	Actual	Actual	Budget	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
105.00%	\$326,665	\$344,518	\$363,318	\$381,484	\$400,558	\$420,586	\$441,615	\$463,696	\$486,881	\$511,225	\$536,786	\$563,625
	\$128,864	\$182,724	\$222,950	\$229,639	\$236,528	\$243,623	\$250,932	\$258,460	\$266,214	\$274,200	\$282,426	\$290,899
103.00%	\$537,520	\$697,231	\$621,780	\$650,433	\$669,946	\$690,045	\$710,746	\$732,069	\$754,031	\$776,651	\$799,951	\$823,950
103.00%	\$0	\$0	\$0	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0.00%	\$317,323	\$306,255	\$333,750	\$337,500	\$341,250	\$345,000	\$348,750	\$352,500	\$356,250	\$360,000	\$363,750	\$367,500
100.00%	\$336,208	\$326,030	\$282,750	\$286,625	\$37,969	\$38,836	\$39,605	\$0	\$0	\$0	\$0	\$0
0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Expenses	\$1,646,580	\$1,856,758	\$1,824,548	\$2,385,681	\$1,686,251	\$1,738,090	\$1,791,649	\$1,806,725	\$1,863,375	\$1,922,077	\$1,982,914	\$2,045,974
Total Revenues	\$1,397,921	\$1,594,611	\$1,582,142	\$1,890,475	\$1,917,860	\$1,997,204	\$2,068,112	\$2,124,483	\$2,183,953	\$2,241,848	\$2,301,587	\$2,364,489
Gain/(Loss)	(248,658.74)	(262,147.36)	(242,406.38)	(495,205.33)	231,608.39	259,113.48	276,463.16	317,758.47	320,577.51	319,770.90	318,673.03	318,514.81
Cash Balance	2,276,379.01	937,786.51	952,142.09	(221,202.07)	353,520.10	962,383.32	1,513,185.20	2,165,979.52	2,685,820.26	3,242,344.62	3,900,166.93	4,508,877.60

WATER FUND

Fixed (Flat) Rates

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
% Increase	Actual	Actual	Budget	Projected								
105.00%	\$244,999	\$258,389	\$272,489	\$286,113	\$300,419	\$315,439	\$331,211	\$347,772	\$365,161	\$383,419	\$402,590	\$422,719
103.00%	12,177	11,586	13,750	14,163	14,587	15,025	15,476	15,940	16,418	16,911	17,418	17,941
103.00%	168,862	166,874	179,780	185,173	190,729	196,450	202,344	208,414	214,667	221,107	227,740	234,572
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
100.00%	0	0	0	0	0	0	0	0	0	0	0	0
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Expenses	\$426,038	\$436,849	\$466,019	\$485,449	\$505,735	\$526,915	\$549,031	\$572,126	\$596,246	\$621,436	\$647,748	\$675,232
Total Revenues	\$425,941	\$483,274	\$444,257	\$464,588	\$465,371	\$515,665	\$556,942	\$583,091	\$611,732	\$638,183	\$665,848	\$696,036
Gain/(Loss)	(\$97)	\$46,425	(\$21,762)	(\$20,861)	(\$40,364)	(\$11,250)	\$7,911	\$10,964	\$15,487	\$16,747	\$18,101	\$20,804
Quarterly Expenses	\$106,509.49	\$109,212.13	\$116,504.63	\$121,362.21	\$126,433.64	\$131,728.74	\$137,257.80	\$143,031.59	\$149,061.40	\$155,359.04	\$161,936.91	\$168,807.96
Penalties	\$38,893.79	\$33,294.81	\$33,294.81	\$33,294.81	\$33,294.81	\$33,294.81	\$33,294.81	\$33,294.81	\$33,294.81	\$33,294.81	\$33,294.81	\$33,294.81
2.00% Interest Earnings	\$21,587	(\$4,310)	\$4,689	\$4,761	(\$1,106)	\$1,768	\$4,812	\$7,566	\$10,830	\$13,429	\$16,212	\$19,501
Quarterly Expenses for Rates	\$84,922	\$80,227	\$78,521	\$83,307	\$94,245	\$96,666	\$99,151	\$102,171	\$104,937	\$108,635	\$112,430	\$116,012
Cash Balance	\$2,276,379	\$937,787	\$952,142	-\$221,202	\$353,520	\$962,383	\$1,513,185	\$2,165,980	\$2,685,820	\$3,242,345	\$3,900,167	\$4,508,878
Flat (Base) Rate	\$17.75	\$19.20	\$20.50	\$21.25	\$22.50	\$24.50	\$26.00	\$26.78	\$27.58	\$28.41	\$29.26	\$30.14
Flat (Base) Rate	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
% of Revenue Residential	4,642	4,642	4,642	4,695	4,695	4,695	4,695	4,695	4,695	4,695	4,695	4,695
# of Residential Customers	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
% of Revenue Commercial	141	141	141	155	155	155	155	155	155	155	155	155
# of Commercial Customers	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Revenue per Quarter	\$84,898.25	\$91,833.60	\$98,051.50	\$103,062.50	\$109,125.00	\$118,825.00	\$126,100.00	\$129,883.00	\$133,779.49	\$137,792.87	\$141,926.66	\$146,184.46

WATER FUND

Volume (Usage) Rate

%	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Increase												
Volume Based												
105.00%	\$81,666	\$86,130	\$90,830	\$95,371	\$100,140	\$105,146	\$110,404	\$115,924	\$121,720	\$127,806	\$134,197	\$140,906
103.00%	116,687	171,138	209,200	215,476	221,940	228,598	235,456	242,520	249,796	257,290	265,008	272,959
103.00%	368,658	530,357	442,000	465,260	479,218	493,594	508,402	523,654	539,364	555,545	572,211	589,377
0.00%	0	0	0	500,000	0	0	0	0	0	0	0	0
100.00%	317,323	306,155	333,750	337,500	341,250	345,000	348,750	352,500	356,250	360,000	363,750	367,500
0.00%	336,208	326,030	282,750	286,625	37,969	38,836	39,605	0	0	0	0	0
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Expenses	\$1,220,542	\$1,419,910	\$1,358,530	\$1,900,232	\$1,180,517	\$1,211,175	\$1,242,617	\$1,234,598	\$1,267,130	\$1,300,641	\$1,335,166	\$1,370,742
Total Revenues	\$971,980	\$1,111,337	\$1,137,885	\$1,425,888	\$1,452,489	\$1,481,539	\$1,511,169	\$1,541,393	\$1,572,221	\$1,603,665	\$1,635,738	\$1,668,453
Gain/(Loss)	(\$248,562)	(\$308,573)	(\$220,644)	(\$474,344)	\$271,972	\$270,363	\$268,552	\$306,794	\$305,091	\$303,024	\$300,572	\$297,711
Quarterly Expenses	\$305,135.50	\$354,977.38	\$339,632.38	\$475,057.99	\$295,129.15	\$302,793.83	\$310,654.36	\$308,649.60	\$316,782.45	\$325,160.15	\$333,791.49	\$342,685.59
Beginning Cash Balance	2,725,129.75	2,276,379.01	997,786.51	952,142.09	(221,202.07)	353,520.10	962,383.32	1,513,185.20	2,165,979.52	2,685,820.26	3,242,344.62	3,900,166.83
Gain/(Loss) From Volume	(248,561.80)	(308,573.50)	(220,644.42)	(474,344.16)	271,972.17	270,363.22	268,551.88	306,794.32	305,090.74	303,024.35	300,572.31	297,710.67
Gain/(Loss) From Fixed	(95.94)	46,425.14	(21,761.96)	(20,861.17)	(40,363.78)	(11,249.74)	7,911.28	10,964.15	15,486.77	16,746.54	18,100.71	20,804.14
Plus Depreciation	423,097.00	408,340.00	445,000.00	450,000.00	455,000.00	460,000.00	465,000.00	470,000.00	475,000.00	480,000.00	485,000.00	490,000.00
Less Improvements	623,189.00	1,438,360.00	210,000.00	1,036,500.00	38,500.00	6,500.00	66,500.00	6,500.00	141,500.00	106,500.00	6,500.00	56,500.00
Ending Cash Balance	2,276,379.01	937,786.51	952,142.09	(221,202.07)	353,520.10	962,383.32	1,513,185.20	2,165,979.52	2,685,820.26	3,242,344.62	3,900,166.93	4,508,877.60
Volume (Usage) Rate												
Current Residential Rate	1.95	2.01	2.25	2.35	2.40	2.44	2.49	2.54	2.59	2.65	2.70	2.75
1 - 20,000 gallons	2.15	2.21	2.45	2.60	2.64	2.69	2.74	2.80	2.85	2.91	2.97	3.03
20,001 - 32,000 gallons	2.57	2.76	3.10	3.38	3.43	3.50	3.57	3.64	3.71	3.78	3.86	3.94
32,001 - 44,000 gallons	3.86	4.14	4.60	5.75	5.83	5.94	6.06	6.18	6.31	6.43	6.56	6.69
44,001 + gallons												
% of Revenue Commercial												
Current Commercial Rate	1.95	2.01	2.25	2.40	2.45	2.50	2.55	2.60	2.65	2.70	2.76	2.81
1 - 20,000 gallons	2.15	2.21	2.45	2.64	2.69	2.75	2.80	2.86	2.91	2.97	3.03	3.09
20,001 - 32,000 gallons	2.57	2.76	3.10	3.43	3.50	3.57	3.64	3.71	3.79	3.86	3.94	4.02
32,001 - 44,000 gallons	3.86	4.14	4.60	5.83	5.95	6.07	6.19	6.32	6.44	6.57	6.70	6.84
44,001 + gallons												
Revenue per Quarter	\$242,995.05	\$255,034.22	\$284,471.27	\$356,471.95	\$363,122.19	\$370,384.64	\$377,792.33	\$385,348.18	\$393,055.14	\$400,916.24	\$408,934.57	\$417,113.26

\* Supplies include chemicals, other operating supplies, equipment repair parts, and street materials.  
 \*\* Other Services & Charges include engineering, legal, miss professional services, gopher state locates, electricity, gas, and repair maintenance.  
 2019 improvements are for water meter replacement  
 \*\* 2019 includes \$10,000 for irrigation enforcement.

SANITARY SEWER FUND

Total

%	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	Actual	Actual	Budget	Projected								
Increase												
105.00%	\$300,161	\$313,752	\$329,440	\$345,912	\$363,207	\$381,368	\$400,436	\$420,458	\$441,481	\$463,555	\$486,732	\$511,069
103.00%	\$36,490	\$29,928	\$37,900	\$39,037	\$40,208	\$41,414	\$42,657	\$43,936	\$45,255	\$46,612	\$48,011	\$49,451
103.00%	\$297,736	\$421,622	\$729,880	\$751,776	\$774,330	\$797,560	\$821,486	\$846,131	\$871,515	\$897,660	\$924,590	\$952,328
108.50%	\$810,335	\$839,533	\$904,955	\$968,302	\$1,036,083	\$1,108,609	\$1,186,211	\$1,269,246	\$1,358,093	\$1,453,160	\$1,554,881	\$1,663,723
0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
100.00%	\$227,502	\$225,548	\$228,750	\$228,750	\$228,750	\$228,750	\$228,750	\$228,750	\$228,750	\$228,750	\$228,750	\$228,750
0.00%	\$59,048	\$55,760	\$55,127	\$56,663	\$55,763	\$57,036	\$58,167	\$0	\$0	\$0	\$0	\$0
0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Expenses	\$1,731,272	\$1,886,143	\$2,286,052	\$2,390,440	\$2,498,341	\$2,614,736	\$2,737,707	\$2,808,521	\$2,945,093	\$3,089,737	\$3,242,964	\$3,405,321
Total Revenues	\$1,315,559	\$1,550,392	\$1,926,272	\$2,141,334	\$2,454,493	\$2,848,639	\$2,982,743	\$3,112,493	\$3,258,895	\$3,411,328	\$3,570,027	\$3,735,234
Gain/(Loss)	(\$415,713)	(\$335,751)	(\$359,779)	(\$249,106)	(\$43,848)	\$233,903	\$245,036	\$303,972	\$313,801	\$321,591	\$327,063	\$329,913
Cash Balance	\$1,274,228	(\$128,962)	(\$438,483)	(\$466,151)	(\$41,399)	\$658,267	\$871,228	\$1,635,290	\$2,406,344	\$3,182,351	\$3,960,993	\$4,739,648



SANITARY SEWER FUND  
Volume (Usage) Rate

%	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	Actual	Actual	Budget	Projected								
Increase												
105.00%	\$75,040	\$78,438	\$82,360	\$86,478	\$90,802	\$95,342	\$100,109	\$105,114	\$110,370	\$115,889	\$121,683	\$127,767
103.00%	24,682	18,608	23,000	23,690	24,401	25,133	25,887	26,663	27,463	28,287	29,136	30,010
103.00%	53,865	162,402	463,400	477,302	491,621	506,370	521,561	537,208	553,324	569,924	587,021	604,632
107.00%	810,335	839,533	904,955	968,302	1,036,083	1,108,609	1,186,211	1,269,246	1,358,093	1,453,160	1,554,881	1,663,723
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
100.00%	227,502	225,548	228,750	228,750	228,750	228,750	228,750	228,750	228,750	228,750	228,750	228,750
0.00%	59,048	55,760	55,127	56,663	55,763	57,036	58,167	0	0	0	0	0
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Expenses	\$1,250,472	\$1,380,289	\$1,757,592	\$1,841,185	\$1,977,420	\$2,021,239	\$2,120,685	\$2,166,982	\$2,278,001	\$2,396,009	\$2,521,471	\$2,654,882
Total Revenues	\$363,738	\$620,157	\$930,236	\$1,136,859	\$1,421,074	\$1,776,343	\$1,865,160	\$1,958,418	\$2,056,339	\$2,159,156	\$2,267,114	\$2,380,469
Gain/(Loss)	(\$886,734)	(\$760,131)	(\$827,356)	(\$704,325)	(\$506,345)	(\$244,895)	(\$255,525)	(\$208,564)	(\$221,662)	(\$236,854)	(\$254,358)	(\$274,413)
Quarterly Expenses	\$312,618	\$345,072	\$439,398	\$460,296	\$481,855	\$505,310	\$530,171	\$541,745	\$569,500	\$599,002	\$630,368	\$663,720
Beginning Cash Balance	\$1,676,890	\$1,274,228	(\$128,962)	(\$438,483)	(\$466,236)	(\$41,573)	\$658,000	\$870,864	\$1,634,823	\$2,405,770	\$3,181,664	\$3,960,188
Gain (Loss) From Volume	(886,734)	(760,131)	(827,356)	(704,325)	(506,345)	(244,895)	(255,525)	(208,564)	(221,662)	(236,854)	(254,358)	(274,413)
Gain (Loss) From Fixed	471,021	424,380	467,577	455,135	462,409	478,706	500,463	512,433	535,355	558,332	581,303	604,203
Special Assessments/Collections	0	41,340	109,008	100,187	97,350	94,513	91,676	88,840	86,003	83,166	80,329	77,492
Depreciation	303,336	300,730	305,000	305,000	305,000	305,000	305,000	305,000	305,000	305,000	305,000	305,000
Less Improvements	(290,285)	(1,484,691)	(440,000)	(260,000)	(10,000)	(10,000)	(505,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)
Ending Cash	1,274,228	(128,962)	(438,483)	(466,236)	(41,573)	658,000	870,864	1,634,823	2,405,770	3,181,664	3,960,188	4,738,721
Volume (Usage) Rate	\$1,0800	\$2,000	\$3,000	\$4,000	\$5,000	\$6,250	\$6,560	\$6,890	\$7,240	\$7,600	\$7,980	\$8,380
Current Rate	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
% of Revenue Residential	56,813,473	37,755,864	37,755,864	31,289,918	31,289,918	31,289,918	31,289,918	31,289,918	31,289,918	31,289,918	31,289,918	31,289,918
# of Residential Gallons	56,813	37,756	37,756	31,290	31,290	31,290	31,290	31,290	31,290	31,290	31,290	31,290
# of Residential Gallons per 1,000	\$2,5000	\$5,000	\$7,500	\$10,000	\$12,500	\$15,630	\$16,410	\$17,230	\$18,090	\$18,990	\$19,940	\$20,940
Commercial/Industrial Rate	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
% of Revenue Commercial	21,435,915	15,905,517	15,905,517	26,216,001	26,216,001	26,216,001	26,216,001	26,216,001	26,216,001	26,216,001	26,216,001	26,216,001
# of Commercial Gallons	21,436	15,906	15,906	15,906	15,906	15,906	15,906	15,906	15,906	15,906	15,906	15,906
# of Commercial Gallons per 1,000	\$90,934,54	\$155,039,31	\$232,558,97	\$284,214,84	\$355,268,55	\$444,085,69	\$466,289,98	\$489,604,47	\$514,084,70	\$539,788,93	\$566,778,38	\$595,117,30
Revenue per Quarter												

\* Supplies include chemicals, other operating supplies, equipment repair parts, and building repair supplies.  
\*\* Other Services & Charges include electricity and repair maintenance.





STORMWATER FUND

%	2016 Actual	2017 Actual	2018 Budget	2019 Projected	2020 Projected	2021 Projected	2022 Projected	2023 Projected	2024 Projected	2025 Projected	2026 Projected	2027 Projected
0.00%	2,794	214	1,000	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305
103.00%	5,712	8,550	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572
0.00%	34,604	222,596	460,000	525,000	255,000	305,000	305,000	330,000	340,000	305,000	305,000	805,000
0.00%	20,407	19,080	22,500	23,625	24,806	26,047	27,349	28,716	30,152	31,660	33,243	34,905
0.00%	29,004	27,389	27,078	27,833	27,391	28,016	28,571	0	0	0	0	0
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
0.00%	0	0	0	0	0	0	0	0	0	0	0	0
Total Fixed Expenses	\$92,521	\$277,829	\$525,578	\$592,938	\$324,172	\$376,546	\$378,928	\$377,265	\$389,257	\$356,338	\$359,511	\$860,781
Total Revenues	\$157,693	\$368,279	\$280,558	\$285,630	\$298,849	\$311,949	\$325,752	\$340,161	\$355,195	\$370,919	\$387,253	\$404,316
Gain/(Loss)	\$65,171	\$90,449	(\$245,020)	(\$307,308)	(\$25,322)	(\$64,597)	(\$53,176)	(\$37,104)	(\$34,062)	\$14,582	\$28,742	(\$456,465)
Quarterly Expenses	\$23,130.34	\$69,457.29	\$131,394.50	\$148,234.50	\$81,042.91	\$94,136.55	\$94,732.01	\$94,316.18	\$97,314.25	\$89,064.44	\$89,627.77	\$215,195.31
Beginning Cash Balance	452,800.70	745,181.27	892,279.70	690,809.30	428,551.58	449,854.18	433,535.62	430,374.39	445,109.01	464,800.37	535,144.97	621,760.48
Gain/(Loss) From Improvements	65,171.23	90,449.45	(245,020.40)	(307,307.72)	(25,322.40)	(64,597.32)	(53,176.41)	(37,103.82)	(34,061.52)	14,581.59	28,741.85	(456,464.81)
Gain/(Loss) From Operating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Depreciation	27,209.34	25,440.00	30,000.00	31,500.00	33,075.00	34,728.75	36,465.19	38,288.45	40,202.87	42,213.01	44,323.66	46,539.85
Grant Proceeds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Special Assessment Collection	0.00	31,209.00	13,550.00	13,550.00	13,550.00	13,550.00	13,550.00	13,550.00	13,550.00	13,550.00	13,550.00	13,550.00
Transfers In	200,000.00											
Ending Cash Balance	745,181.27	892,279.70	690,809.30	428,551.58	449,854.18	433,535.62	430,374.39	445,109.01	464,800.37	535,144.97	621,760.48	225,385.51
Rate to Fund Improvements	\$8.97	\$10.72	\$5.72	\$5.71	\$6.00	\$6.30	\$6.61	\$6.94	\$7.29	\$7.65	\$8.03	\$8.44
Current Rate	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
% of Revenue Residential	4,395	4,395	4,395	4,395	4,395	4,395	4,395	4,395	4,395	4,395	4,395	4,395
# of Residential Customers	43,500	43,500	43,500	44,812	46,962	48,819	50,887	53,037	55,270	57,600	60,001	62,502
Commercial Customers												
Revenue per Quarter	\$39,423.15	\$90,614.40	\$68,639.40	\$69,907.57	\$73,212.31	\$76,487.22	\$79,937.90	\$83,540.22	\$87,298.87	\$91,229.83	\$95,313.23	\$99,579.11

\* Supplies include chemicals, other operating supplies, equipment repair parts, and building repair supplies.  
 \*\* Other Services & Charges include electricity and repair maintenance.

Residential Bills	2015	2016	2017	2018	Proposed	
Residential Water Use	61,053,841	58,156,961	58,573,470	81,283,663	77,481,114	
# Customers	4,544	4,587	4,620	4,642	4,692	
Average Residential Water Use	13,436	12,679	12,678	17,510	16,513	
Quarterly Bill Based on Proposed Rates						
<b>If used average water use:</b>						% Change
Water Base Charge	\$16.50	\$17.75	\$19.20	\$20.50	\$21.25	
Water Usage Charge	\$22.19	\$24.72	\$25.48	\$39.40	\$38.81	
Sewer Base Charge	\$46.39	\$46.00	\$48.38	\$50.80	\$51.00	
Sewer Usage Charge	\$7.83	\$8.29	\$15.36	\$23.03	\$32.31	
Storm Water Charge	\$12.48	\$17.00	\$20.00	\$20.00	\$20.60	
Total Bill	\$105.39	\$113.76	\$128.42	\$153.73	\$163.96	6.66%
<b>3,668 Accounts with 0 - 20,000 gallons used</b>						
<b>Average consumption 10,081 gallons</b>						
Water Base Charge	\$16.50	\$17.75	\$19.20	\$20.50	\$21.25	
Water Usage Charge (Average Consumption)	\$18.01	\$20.07	\$20.69	\$23.16	\$23.69	
Sewer Base Charge	\$46.39	\$46.00	\$48.38	\$50.80	\$51.00	
Sewer Usage Charge (Average winter consumption)	\$5.20	\$5.51	\$10.20	\$15.30	\$18.41	
Storm Water Charge	\$12.48	\$17.00	\$20.00	\$20.00	\$20.60	
Total Bill	\$98.58	\$106.33	\$118.46	\$129.75	\$134.95	4.01%
<b>605 Accounts with 20,001 - 32,000 gallons used</b>						
<b>Average consumption 24,676 gallons</b>						
Water Base Charge	\$16.50	\$17.75	\$19.20	\$20.50	\$21.25	
Water Usage Charge (Average Consumption)	\$43.15	\$48.87	\$50.35	\$56.25	\$59.16	
Sewer Base Charge	\$46.39	\$46.00	\$48.38	\$50.80	\$51.00	
Sewer Usage Charge (Average winter consumption)	\$19.43	\$20.57	\$38.10	\$57.15	\$75.54	
Storm Water Charge	\$12.48	\$17.00	\$20.00	\$20.00	\$20.60	
Total Bill	\$137.95	\$150.19	\$176.03	\$204.70	\$227.54	11.16%
<b>189 Accounts with over 32,001 - 44,000 gallons used</b>						
<b>Average consumption 37,012 gallons</b>						
Water Base Charge	\$16.50	\$17.75	\$19.20	\$20.50	\$21.25	
Water Usage Charge (Average Consumption)	\$67.65	\$78.04	\$80.94	\$90.37	\$95.14	
Sewer Base Charge	\$46.39	\$46.00	\$48.38	\$50.80	\$51.00	
Sewer Usage Charge (Average winter consumption)	\$32.40	\$34.31	\$63.54	\$95.30	\$126.35	
Storm Water Charge	\$12.48	\$17.00	\$20.00	\$20.00	\$20.60	
Total Bill	\$175.42	\$193.10	\$232.06	\$276.98	\$314.34	13.49%
<b>232 Accounts with over 44,001 gallons used</b>						
<b>Average consumption 80,381 gallons</b>						
Water Base Charge	\$16.50	\$17.75	\$19.20	\$20.50	\$21.25	
Water Usage Charge (Average Consumption)	\$185.95	\$230.38	\$244.35	\$272.17	\$327.95	
Sewer Base Charge	\$46.39	\$46.00	\$48.38	\$50.80	\$51.00	
Sewer Usage Charge (Average winter consumption)	\$71.81	\$76.04	\$140.81	\$211.22	\$242.26	
Storm Water Charge	\$12.48	\$17.00	\$20.00	\$20.00	\$20.60	
Total Bill	\$333.13	\$387.17	\$472.74	\$574.69	\$663.06	71.26%

**EXPENDITURES CONTINUED:**

Project Name	Page #	Priority Ranking	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Park Acquisition Fund</b>												
Bald Eagle Trail Development	79	33.30		100,000	100,000							
Bruce Vento Trail Development	80	31.80		100,000								
Buffalo Street Trail Development	81	33.30			150,000							
Centerville Road Trail Development	82	33.30			150,000							
County Road H2 Trail Development	83	33.30		300,000								
County Road J Trail Development	84	33.30			100,000							
County Road K Trail Development	85	33.30			30,000							
Northeast Area Trail Development	86	33.30				110,000						
Fox Meadow Park Trail Development	87	33.30								55,000		
Brandewood Park Trail Development	88	33.30	110,000									
Rutherford Park/Lake Links Trail Development												
<b>Community (Polar Lakes) Park Fund</b>												
Baseball Field Improvements	89	27.15	30,000									
Grandstand Construction	90	15.50				400,000						
Soccer Field Restroom Facility Construction	91	28.50	250,000									
Baseball Field Restroom Facility Construction	92	28.50		250,000								
Purchase Baseball Field #3 Scoreboard	93	20.40		15,000								
Replace Dugout Roofs	94	24.70	125,000									
Repair/Replace Signs	95	27.35										3,000
General Polar Lakes Park Improvements	96	23.20	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000
Construct Amphitheatre/Band Shell	97	24.40			500,000							
Parking Lot Expansion	98	38.45		132,000								
Replace Playground Equipment	99	28.40		200,000								
<b>Improvement Fund</b>												
Road Mill and Overlay/Reconstruction Projects	100	36.20		3,200,000	3,100,000	3,100,000	4,300,000	2,600,000	2,600,000	2,600,000	2,600,000	2,600,000
Sealcoat Projects	101	36.95	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000
Annual Curb Repair and Replacement	102	38.30	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
<b>Water Fund</b>												
Well Pumphouse Improvements	103	30.35	5,000	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
Water Improvements - Northeast Tower	104	24.75	20,000									
Water Tower Painting - Hammond Road Tower	105	24.75		1,000,000								
Hydrant Rehabilitation	106	41.25	30,000	30,000								
Installation of Radio Read Devices	107	24.10	25,000						100,000	100,000		
Well Pump Rehabilitation	108	37.85	30,000		32,000		60,000		35,000			50,000
GIS Integration of Township Infrastructure	109	30.35	200,000	50,000	25,000							

**EXPENDITURES CONTINUED:**

Project Name	Page #	Priority Ranking	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Sewer Fund</b>												
Replace Jet/Vac Truck	110	56.55					160,000					
Sanitary Sewer Lining Project	111	35.30					1,500,000					
Rehabilitation of Lift Stations	112	31.20	330,000	250,000								
Sanitary Sewer Manhole Grouting	113	33.80	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Purchase Televising (Camera) Trailer	114	44.25	100,000									
<b>Storm Water Utility Fund</b>												
South Area Storm Water Improvements	115	28.20		500,000								
Replacement of Storm Water Culverts	116	29.30	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000
Storm Water Structure Repairs	117	36.75	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Pond/Ditch Cleaning	118	36.75	125,000	130,000	200,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Park Avenue/Stillwater Street Drainage Survey	119	31.35		10,000								
Stillwater Street Drainage Improvements	120	31.35				500,000						
Beaver Street Drainage Improvements	121	31.35						25,000				
Allendale Drive Ditch Cleaning	122	31.35	30,000									
Pioneer Lane Ditch Cleaning	123	31.35	50,000									
Lake and Overlake Avenue Drainage Pipe	124	41.20	40,000						35,000			
Otterview Trail Drainage Improvements	125	31.35										
Storm Water Outfall Reconstruction	126	41.20	150,000									
Birch Road Drainage Improvements	127	35.45		30,000								
<b>Total Expenditures</b>			<b>2,711,950</b>	<b>7,245,900</b>	<b>1,505,700</b>	<b>5,893,000</b>	<b>2,612,100</b>	<b>5,158,000</b>	<b>1,272,900</b>	<b>3,480,900</b>	<b>634,200</b>	<b>3,711,000</b>

General Fund - Road & Bridge	0	200,000	25,000	0	0	0	0	0	0	0	0	0
General Fund - Park & Rec	18,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
Park Acquisition Fund	110,000	400,000	530,000	110,000	0	0	0	0	0	55,000	0	0
Improvement Funds	160,000	960,000	160,000	935,000	160,000	1,235,000	160,000	160,000	160,000	810,000	160,000	785,000
Special Assessments	0	2,650,000	0	2,325,000	1,005,000	3,225,000	0	1,950,000	0	1,950,000	0	1,875,000
Community Park Improvement Fund	456,000	648,000	51,000	951,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	54,000
Park Improvement Fund	95,000	236,000	80,000	30,000	60,000	60,000	60,000	60,000	55,000	10,000	0	0
Water Fund	210,000	1,036,500	38,500	6,500	66,500	66,500	6,500	141,500	106,500	106,500	6,500	56,500
Sewer Fund	440,000	260,000	10,000	10,000	505,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Storm Water Utility Fund	450,000	525,000	255,000	805,000	305,000	330,000	340,000	340,000	305,000	305,000	305,000	305,000
Capital Building Fund	377,800	110,000	0	105,000	0	0	0	0	0	0	0	0
Capital Equipment Fund	373,650	216,900	347,700	604,500	431,100	284,000	471,900	167,900	167,900	167,900	98,200	615,000
Trade-In/Salvage Value	21,000	0	5,000	7,500	25,000	13,000	40,000	12,000	12,000	12,000	0	7,000
Grants	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total Revenue Sources</b>		<b>2,711,950</b>	<b>7,245,900</b>	<b>1,505,700</b>	<b>5,893,000</b>	<b>2,612,100</b>	<b>5,158,000</b>	<b>1,272,900</b>	<b>3,480,900</b>	<b>634,200</b>	<b>3,711,000</b>	<b>3,711,000</b>



## Utility Commission Meeting June 14, 2018

**Agenda Number:** 9

**Subject:** Water Conservation:  
a. Current Sprinkling Regulations  
b. Enforcement  
c. Changes

**Documentation:** Various Water Conservation Information

### Action / Motion for Consideration:

Receive Information / Discuss

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**Minutes**  
Utility Commission Meeting  
May 10, 2018

**WATER CONSERVATION: 1) CURRENT SPRINKLING REGULATIONS; 2) ENFORCEMENT; 3) CHANGES:** The Township does have sprinkling regulations in place. The Utility Commission has been discussing enforcement options. Information from a meeting recently attended by the Clerk relative to irrigation was reviewed. Information includes:

1. Surcharge on high water users.
2. Water re-use (stormwater). Discount on rain barrels.
3. Water rebate.
4. Odd/Even (change?)
5. No private wells.
6. Targeted conservation grants.
7. Smart irrigation controllers – give-away.
8. Water conservation education.
9. 50/50 cost share with local businesses.
10. Require all new irrigation systems to have “water sense” certified controllers.
11. Upgrade municipal irrigation systems.
12. Drought tolerant landscape.

Review of the list and comments included:

#1) Surcharge for high water users. A surcharge would make people notice.

#2) Water re-use (stormwater). This is new and becoming more common use. A separate pipe pumps water from storm water ponds into a separate pressurized underground system.

#4) Odd/Even. Is there any other way to handle sprinkling? Need to step up enforcement. Staff is working on ideas to step up enforcement. Regarding warnings and fines: behavior needs to be changed. A \$40 fine sometimes is not sufficient incentive to follow the rules. What is more effective: Odd/even or restricted hours? This is something worth thinking about. Ask staff what it will cost to hire outside help to enforce the irrigation ban. The Clerk will come back with a recommendation regarding expenses for enforcement either by the RCSO or a part time person at an hourly rate.

#5) No private wells. The Township does not regulate private wells. The well permit is from the Minnesota Department of Health and regulated by Ramsey County. It was the consensus that the irrigation ban should apply to people with private wells.

#6) Targeted conservation grants. Analyze use and promote grants.

#8) Water conservation education. The Town already does this but could be increased.

#11) Upgrade all irrigation systems. The Township does have water controllers but may be able to do more.

#12) Drought tolerant landscaping. Can the Town research types of grass for turf management (species of grass and seed types). The DNR is planning to share information relative to turf management and water conservation for less water demand.

The judge did not define the residential irrigation ban. The Town needs firm direction and suggestions from the DNR as to what is appropriate for all. A definition for a watering ban plan is needed. Suggestions included:

- Exclude watering gardens on properties less than one acre and no grass.
- Is hand watering against the irrigation ban?

Questions were asked what a "water ban" really is and what is the difference between a yard and a garden. It was the consensus that irrigation is watering grass mechanically. Hand held hoses should be okay for watering except grass lawns.

Steps to be taken; 1) we now have watering regulations; 2) notify residents of the regulations; 3) put reminders on the utility bills; 4) put information on the Town's website and in the White Bear Press (News and Views). Regarding enforcement: allow watering 1-2 times per week to see what it would cost to enforce. Target water conservation grants and the water fund to absorb the costs.

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Current Regulations  
Ordinance No. 12

## **SECTION 24. SPRINKLING.**

**24-1. RESTRICTED HOURS.** The use of the Town Water Supply System for lawn sprinkling and irrigation, shall be limited to the following hours and days for the entire year:

**24-1.1.** Even numbered houses may use their Water System for the above stated uses only on even numbered days from 6:00 a.m. to 10:00 a.m. and 6:00 p.m. to 10:00 p.m.

**24-1.2.** Odd numbered houses may use their Water System for the above stated uses only on odd numbered days from 6:00 a.m. to 10:00 a.m. and 6:00 p.m. to 10:00 p.m.

**24-1.3.** The Town Board may, by resolution, revise the hours of sprinkling.

**24-1.4.** The Town Clerk may temporarily revise the hours for sprinkling when water system storage levels fall below the standards provided in the Town Community Water Supply Plan for an unreasonable period of time. The temporary revision of hours for sprinkling shall remain in effect until the next meeting of the Town Board. At its next meeting, the Town Board, by resolution, may adopt the revised hours or otherwise change the hours for sprinkling. If no action is taken by the Town Board, the hours for sprinkling shall return to the times provided in Sections 24-1.1 and 24-1.2, or Section 24-1.3.

## **24-2. SPRINKLING VIOLATIONS.**

**24-2.1.** Any person found to have violated the restricted sprinkling hours set out in Section 24-1 shall receive one written warning.

**24-2.2.** Any person found to have violated the restricted sprinkling hours set out in Section 24-1 two times within the same calendar year, shall receive a written sprinkling violation and will be charged a \$40.00 Administrative Fee for the second and any following violations. The \$40.00 fee will be added to their quarterly utility bill. This fee shall be in addition to any other penalties imposed by this Ordinance.

## **24-3. APPEAL PROCEDURE.**

**24-3.1.** If any resident wishes to appeal their \$40.00 Administrative Fee for violation of the sprinkling restrictions, the resident may provide the Town Clerk with a written request stating the circumstances surrounding the violation(s), and request that the Town Board reconsider the Administrative Fee. The matter will then be placed on a future meeting agenda of the Town Board for consideration.

**24-3.2.** At the meeting the objecting person may:

**24-3.2.(a).** Appear and give their written or oral testimony; and/or

**24-3.2.(b).** Give written or oral testimony of witnesses.

**24-3.3.** Town Board may give its decision orally at the meeting or at a later date. The Town Board shall:

**24-3.3.(a).** Find for the objecting person and waive the \$40.00 Administrative Fee; or

**24-3.3.(b).** Find against the objecting person and impose the \$40.00 Administrative Fee; or

**24-3.3.(c).** Find against the objecting person and suspend collection of the \$40.00 Administrative Fee on the condition that no further sprinkling violations occur within a calendar year. However, in the event another sprinkling violation is received, the suspended fee, plus the additional fee, shall both be added to the person's quarterly utility bill.

## North & East Metro Groundwater Management Area

### Accomplishments within the GWMA by Advisory Team Organizations (2017)

#### City of Cottage Grove

- Installed two temporary water treatment plants to meet new health based values related to PFC's.
- Due to well impacts from the new PFC health based values, implemented an emergency watering ban in the summer of 2017 that reduced the City's total water pumping by 32%.
- In 2017 implemented a pilot program to supply smart irrigation controllers to residents at a reduced rate. This program was very successful and will be expanded in 2018 with additional funding from the South Washington Watershed District.
- Completed a water rate study, which included implemented a water conservation surcharge for high water users. These funds will be used to implement the City's water conservation program.
- Started a rain barrel rebate program in 2017.
- Drilled Well #12 to supplement water supply contaminated by PFCs.
- Drilled a monitoring well down stream of 3M Woodbury disposal site, through the Wellhead Protection Program. Results show increased levels of PFCs in the plum upstream of the City's main wellfield.

#### City of Hugo

- The City completed the start up of Beaver Ponds Water reuse system. The system is capable of pumping 100 gpm and will supply stormwater to irrigate the 5.5 acre Beaver Pond Park. The project reduces potable water use by approximately 3.8 MGY. (Construction Contract - \$172,500)
- The City completed construction of phase 1 of the Water's Edge reuse system. The system is capable of pumping 375 gpm and will supply stormwater to irrigate the 30 acre Water's Edge townhome community. The project is estimated to reduce potable water use by approximately 16.9 MGY. (Construction Contract - \$347,900)
- Street sweeping twice annually and additional sweeping as required
- General MS4 compliance items
- Approved preliminary plat and phase 1 final plat for 220-acre Adelaide Landing development that incorporates water reuse for all living units, parklands, open spaces, and boulevards.
- Installation of 2nd water re-use pump in Clearwater Cove neighborhood serving all irrigation needs for living units, park, etc.
- Replaced baseline smart controllers at Hanifl Soccer Fields (\$9,200)
- Water rebate program – replacement of irrigation controllers, etc.
- City serves as LGU, and required installation in 2017 of numerous stormwater BMP's for water quality and quantity improvements concurrent with construction and development.
- Adoption of new water resources management plan
- Completion of Phase 2 design for Water Edge reuse system
- Completion of design for CSAH 8 reuse system
- Adoption of new water rates, including increased rates for high-end users and irrigation systems
- The City has completed a number of Wellhead Protection Implementation activities such as; updating the City's website with educational materials related to abandoned/unused wells, well management, WHP Planning, Proper disposal of hazardous materials, stormwater management, and turf management. Additionally, the City sent out educational brochures for residents to inform them on Groundwater, Steps the City has taken to develop a wellhead protection plan, and information about why WHP Planning is important and how it protects groundwater sources.

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## Minnesota Department of Health

### Source Water Protection:

- Wellhead Protection activities for Public Water Supply Systems continues to help preserve drinking water quality for the residents of Minnesota. In 2017 MDH worked with DNR staff to develop conservation activities to be included in Wellhead Protection plans to reinforce the message of efficient water use. Financial support through MDH Source Water Implementation grants are available biannually to Public Water Suppliers to fund activities within an MDH approved Wellhead Protection plan: <http://www.health.state.mn.us/divs/eh/water/swp/grants/index.html>. Additionally, MDH recently created a new surface water planner and hydrogeologist team that will be working on protecting surface water sources for drinking water use.

### Water Re-use:

- A new report to the Minnesota Legislature lays out a path for safe and sustainable water reuse to become a bigger part of the state's overall water management picture in the near future. "Water reuse in Minnesota has been hampered by a lack of a clear approval process for projects, by a lack of information on reuse water quality and standards and by uncertainties about costs and risks to health and the environment," said Minnesota Health Commissioner Jan Malcolm. "The benefits, costs and risks of water reuse all need to be balanced. This report helps us clarify how to evaluate the resources and take the next steps to successfully advance water reuse in Minnesota." To view the full report, go to the MDH website at [Advancing Safe and Sustainable Water Reuse in Minnesota \(PDF\)](#).

### Flooding threats to private well water users due to climate change:

- Climate change is an existential threat that will challenge public health for the foreseeable future. MDH scientist Dr. Brenda Hoppe and MN the Climate and Health Program are working to help ensure that MN communities are ready to respond to the effects of a changing climate. Dr. Hoppe will present results of a study (vulnerability assessment) of the likely impacts of future precipitation on risk for Minnesotans on private wells. Climate change vulnerability assessments can identify, quantify and map key factors that influence a population's exposure to climate hazards and the potential threats to health, homes, and well-being. By including future climate estimates, decision-makers can manipulate these factors to represent a range of scenarios, taking the long view to explore potential threats alongside opportunities to mitigate these threats through targeted climate adaptation strategies. Dr. Hoppe will describe important partnerships across MDH as well as other state agencies within this work and lessons learned from applying future climate estimates to public health investigations.

### Ramsey Conservation District

- Approximately 4500 property parcels were review for compliance with the new state buffer law
- Wetland Conservation Act efforts
  - 2 violation/incident responses
  - 70 consults
  - 14 TEP Reviews
- 263 site visits for storm water BMP's / water quality projects
- 136 concept plans for storm water BMPs/water quality projects
- 100 construction document designs for storm water BMPs/water quality projects
- 60 installations of storm water BMPs/water quality projects
- 928 construction inspections for sediment and erosion control
- 18 aquatic biovolume surveys conducted
- 1 storm water pond survey

## Ramsey County

- TCAAP / Rice Creek Commons - collaborating with Rice Creek Watershed District, the City of Arden Hills, and Alatus, LLC to identify and develop potential water reuse systems for the redevelopment of the former Twin Cities Army Ammunition Plant
- Monitoring lake water quality on 30 Ramsey County lakes including sampling lakes for chloride impairment
- Monitoring lake water levels on 30 county lakes
- Public Works staff hosted and attended clinics for reducing winter salt application
- Inspection of 906 outfalls from the county's storm sewer system, 33 structural pollution control devices, and 30 ponds
- Hosted household hazardous waste collection events at 13 locations including one permanent collection facility and one waste oil / antifreeze collection facility
- Constructed 3 storm water BMP's (2 filtration basins and 1 pond)
- Performed maintenance on 19 county ponds/sediment basins & 15 pollution control & infiltration BMPs
- Field staff underwent annual training for spill prevention and illicit discharge detection
- Street sweeping on 1,870 total lane miles

## Rice Creek Watershed District

### Stormwater Reuse for Irrigation Assessment Methodology

Stormwater reuse for irrigation is gaining attention for its potential to reduce the amount of stormwater runoff entering rivers and other waterways while also reducing groundwater use. With funding from the Board of Water and Soil Resources (BWSR), RCWD developed an assessment methodology that is a step-by-step, repeatable planning process for identifying sites that would be suitable locations for reuse projects. Technical criteria are used to evaluate the feasibility of locations, and qualitative criteria are used to prioritize those technically feasible sites.

The methodology has been used initially within the RCWD but was developed with the intention that it would be used by other watersheds and regional entities throughout the state. Qualitative criteria can be modified to meet different community goals. A workshop was held in March 2017 which provided technical training on how to use the reuse assessment.

### Stormwater Reuse for Irrigation Projects and Initiatives to Protect Groundwater and Surface Water

- Forest Lake High School Stormwater Reuse Partnership Project: Partnership with Forest Lake Area Schools and the City of Forest Lake to implement this innovative reuse project at the Forest Lake High School athletic fields.
- Water's Edge Stormwater Reuse Partnership Project: Partnership to fund construction and implementation of the City of Hugo's innovative reuse project that will reduce groundwater used for irrigation and protect downstream surface waters.
- Bald Eagle Lake TMDL Implementation: Collaboration with City of Hugo for project maintenance and monitoring of Bald Eagle Lake Stormwater Reuse/Phosphorus Reduction Project located at Oneka Ridge Golf Course in City of Hugo.
- Clear Lake Subwatershed Assessment Study – Developed this plan in partnership with the City of Forest Lake to identify high priority stormwater reuse and water quality management projects that would also reduce groundwater use in this urbanizing area.
- Southeast White Bear Lake Drainage Area Subwatershed Plan- Developed this study in collaboration with Washington Conservation District and the cities located within this drainage area to identify high priority stormwater reuse and water quality management projects.

- RCWD pursues partnerships with city partners to identify the most productive sites for reduction of groundwater use (for irrigation). RCWD has increased funding to its Urban Stormwater Cost-Share program to incentivize regional stormwater reuse projects by city and county partners.

#### Other Water Quality and Reuse Projects & Programs Related to N&E Metro GWMA Objectives

- Oasis Pond Iron Enhanced Sand Filter Project: Collaboration with the City of Roseville to design and implement this iron enhanced sand filter project.
- Hanson Park Project: Project implementation and construction of this regional flood control and water quality improvement project to protect Long Lake and portions of the southwest region of the RCWD.
- Mirror Pond Project: Project implementation and construction of this regional flood control and water quality improvement project to protect Long Lake and portions of the southwest region of the RCWD.
- Middle Rice Creek Restoration: Project implementation and construction of this stream restoration BMPs in location of the former TCAAP in Arden Hills.
- Carp Management: Project implementation and construction of the Long Lake watershed carp management project.
- Implementation of the Anoka Chain of Lakes TMDL projects- RCWD continues to pursue competitive grant opportunities to implement water quality BMPs with local partners.
- Ongoing implementation of targeted Water Quality /TMDL implementation projects.
- Urban Stormwater Cost Share projects – Increased funding for cost-share with city/county partners to further incentivize regional stormwater reuse, flood control, and water quality projects.
- Water Quality Cost - Share: Provides technical and financial assistance to private landowners to implement water quality restoration and/or protection projects.
- RCWD 2017 Buffer Compliance Incentive Payment - The Board of Managers approved a special cost-share program to provide additional financial incentive to landowners complying with the State Buffer Law
- Water Quantity, Flood Control and Water Quality Permit Program – This regulatory program addresses stormwater quantity and quality from new developments and re- development projects along with the administration of the Wetland Conservation Act in 25 of the District's 28 cities & towns.
- Lake & Stream Management: Program includes monitoring, development of lake management plans, invasive species control, and support of volunteer Stream and Wetland Monitoring Program.
- Water Education and Outreach Program: Provides support for the Master Water Steward program, the RCWD City /County partnership meeting series, East Metro Water Resources Education Program (EMWREP), Blue Thumb, Metro Watershed Partners, and general outreach to cities and landowners; efforts include offering workshops that support water resource issues such as Winter Road Maintenance.

#### City of Shoreview

- Shoreview's existing odd/even water use restrictions were modified to include a mid-day (11:00 a.m. to 5:00 p.m.) ban.
- All of Shoreview's water use restrictions were made to apply equally to properties regardless of water source e.g. City water, private well, surface water appropriation.
- New private well drilling in Shoreview was prohibited. Residents are allowed to continue to operate functional private wells but no new wells within our public water service area are allowed.
- An efficiency study was completed in 2017 indicating that WaterSmart (launched in 2016) helped reduce water consumption by single-family customers by 1.1% equating to more than 3.2 million gallons.
- Shoreview's already aggressive street sweeping program was modified to result in every city street being swept a minimum of 5 times per calendar year.

- Shoreview received Met Council/Watershed grant funding to advance a significant storm water re-use project that will offset an estimated 6 million gallons per year. Construction in 2018.
- The City evaluated and compared effectiveness of two leak detection and notification methods; one via WaterSmart and the other using direct consumption reports from our meter reading software.
- The City continued to implement various programs and services e.g. illicit discharge detection, erosion control inspection, storm water BMP construction and maintenance, etc. in accordance with MS4 responsibilities.

## USGS

- Presentation to the Minnesota Legislative Water Commission titled “Water-Level Changes in Lakes in the Northeast Metro: Why do they differ?” This presentation highlighted results from a recently completed study of lakes in the northeast Twin Cities Metropolitan Area that were published in a USGS Scientific-Investigations Report (<https://pubs.er.usgs.gov/publication/sir20165139A>).
- Presentation titled “Characterizing Groundwater and Surface-Water Exchanges in White Bear Lake, Minnesota, USA, Using Hydrologic, Geophysical, and Water-Quality Techniques” at the Geological Society of America 2017 Annual Meeting in Seattle, WA..
- Presentation titled “Simulation and Assessment of Groundwater Flow and Surface-Water Exchanges in Lakes of the Northeast Twin Cities Metropolitan Area, Minnesota, 2003 through 2013” at the Minnesota Water Resources Conference in St. Paul, MN
- Presentation presentation titled “Use of Continuous Seismic-Reflection Profiling and Ground-Penetrating-Radar Surveys to Characterize Lake-sediment Lithology” at the USGS/Bad River Tribe TESNAR Geophysical Workshop in Odanah, Wisconsin.
- The second chapter of a two-part report on Simulation and Assessment of Groundwater Flow and Groundwater and Surface-Water Exchanges in Lakes of the Northeast Twin Cities Metropolitan Area was published. The new chapter, Chapter B of Water levels and groundwater and surface-water exchanges in lakes of the northeast Twin Cities Metropolitan Area, Minnesota, 2002 through 2015, was written by Perry Jones with five MN WSC co-authors. The report has significant implications for water management within the State of Minnesota.
- Participated with Minnesota Department of Natural Resources, Metropolitan Council, Minnesota Department of Health, and Minnesota Department of Agriculture in a meeting updating progress on the northeast Twin Cities Metropolitan Area transient groundwater-flow model hosted by Matt Tonkin, SS Papadopolous & Associates.
- Participated with Minnesota Department of Natural Resources, Metropolitan Council, Minnesota Department of Health, and Minnesota Department of Agriculture in a meeting updating progress on the northeast Twin Cities Metropolitan Area transient groundwater-flow model hosted by Matt Tonkin, SS Papadopolous & Associates.
- Congressional Interactions: Perry Jones (MN WSC) received a letter from Congresswoman Betty McCollum (Fourth Congressional District, Minnesota), congratulating him on the USGS’s Best Groundwater Report recognition for a 2016 report on the Northeast Metro Lakes project.
- Participated in a review of the Biological Monitoring Program at the Great Lakes National Program Office, USEPA Region 5.
- Met with Metropolitan Council Staff to represent results from the groundwater and surface-water exchange study of northeast Twin Cities Metropolitan Area lakes.
- Attended a meeting of the Minnesota Legislature’s Clean Water Council in St. Paul. Stark provided a briefing on a study of groundwater and surface water interactions in the northeast portion of the Twin Cities Metropolitan Area.
- Briefed the Minnesota Legislative Water Commission regarding USGS studies focused on analysis of lake level changes and groundwater and surface-water exchanges in the northeast Twin Cities Metropolitan Area.
- Presented results from the study “Characterizing Groundwater and Surface-Water Interactions in

Selected Northeast Twin Cities Lake” to Minnesota Legislative Water Commission.

### Washington County

- Provided grants to home owners sealing a total of 29 abandoned wells.
- Provided grants to home owners to replace 5 septic systems and loans to replace 22 septic systems.
- Partnered with MNTAP to provide water use assessments to a hospital and a correction facility in Washington County.
- Partnered with MNTAP to provide an intern at DiaSorin in Stillwater that resulted in water savings of 3.7 million gallons/year.
- Provided water efficiency grants to two schools and three cities in Washington County – work included toilet and urinal replacement (saving 2.22 and 2.87 gallons of water per flush), sprinkler system upgrades, funding for rain barrels and 81 smart controllers (smart controllers saving a potential 3,240,000 gallons of water per year).
- Funded the Washington Conservation District to update the county Minnesota Land Cover Classification System that can be used by local units of government for mapping natural areas, pollinator habitat, and use in water management planning.
- Funded the East Metro Water Resources Education Program to bring groundwater and water resources education to 4th and 5th grade classrooms – over 300 students were taught about where their water comes from and about water conservation practices they can do at home.
- Funded the Washington Conservation District to inventory the animal holding facilities in the county (including horse stables holding more than 10 horses) as a first step to target outreach around water quality efforts.
- Provide well testing services for water quality including coliform bacteria and nitrates, and also providing services for testing VOCs and PFCs.

### White Bear Lake Restoration Association

- The primary focus of WBLRA (White Bear Lake Restoration Association) as it relates to the above activities is to educate and disseminate science and factually based information to its members and the public in the N&E MGWA and beyond not only on the issues surrounding White Bear Lake and its low water levels, but also the science of ground water and surface water interaction. Continuing the Mission of White Bear Lake Restoration Association to preserve and protect White Bear Lake for future generations, and educate the public in issues regarding the vitality of White Bear Lake now and into the future.
- Provide up to date scientific resources and information regarding bullets 1-4 to over 1,000 WBLRA members from all over the country through website, interviews, and public forums.
- Testify in WBLRA et WBLHOA vs. DNR et White Bear Lake and White Bear Township court case on bullets 1-4. Part of a public court record and a summary of the WBLRA activities since its founding in 2012.
- Meet with representatives from MN State Legislative districts and cities surrounding WBL throughout 2017 to discuss bullets 1-4. Meet with Governor Dayton’s Chief Water Advisor to discuss and clarify misleading information provided to Governor Dayton regarding bullets 2, 3, and 4.
- Testify in Senate and House Environmental Committee hearings regarding bullets 1-4
- Continue to assist H2O non-profit and Race to Reduce (R2R) the local arm of H2O in private fundraising for their water based curriculum in schools/cities surrounding White Bear Lake. Funding assisted R2R in developing curriculum to meet MN State Education and Environmental Education standards. Also WBLRA was the initial connection between Sen. Chuck Wiger and R2R that led to MN State funding of the non-profit environmental education effort. 2017, Senator Wiger proposed renewing MN state funding for H2O in 2018 legislative session. WBLRA promoted and created that connection.
- Attend and participated in DNR and NEMGWA public events 2017.
- Coordinate a public event in White Bear Lake for WBLRA members and friends with USGS Scientist and 2012 & 2016 lead author of N&E MGWA studies Perry Jones, on the science and facts of ground and surface water supply and interactions, and its impact on White Bear Lake and the NEMGW area.

- Coordinate with City of Dellwood to include water conservation information and tips in biannual newsletter. Including links to Washington County water conservation resources, yard care and hearty native plant landscaping, and replacing appliances with Water Sense approved appliances (Ongoing for the past 5 years).
- Completed a fundraising campaign of \$400,000.00 plus for an independent study of White Bear Lake by a nationally recognized water resource-based engineering and environmental consulting firm identifying lead causes and factors in the decline of White Bear Lake. Held public forum to disseminate this information and educate the public regarding the science surrounding N&E MGWA ground water and surface water issues.
- Speak at Forest Lake Rotary Club about items 1-4
- With legal partners and members, won a landmark court case against MN DNR and cities of White Bear Lake and White Bear Township regarding the proper management of groundwater and surface water and their interactions as related to White Bear Lake. This case provided an opportunity to educate people throughout the state about water resources, water science and bullets 1-4 through print, media and on-line interviews and coverage which continues to this day. Outreach numbers in the hundred of thousands plus.
- As private citizens, and without remuneration, the board members of WBLRA consistently communicate a message of water conservation, proactive and progressive water resource management, and the hope that cities, municipalities, legislators and governing bodies will join together, beyond their geographical boundaries and financial motivations, to provide this area with a long term sustainable and safe water supply by reducing our reliance on the unsustainable practice of draining our finite ground water resources.

### **City of Woodbury**

#### Identify and embrace water conservation best practices 2017

- Promoted water conservation to individuals during the summer months through City newsletter and social media (ie. Smart irrigation month).
- Distributed 360 smart irrigation controllers to residents with irrigation systems. Estimated water efficiency improvement of up to 10.5 million annually.
- Provided \$85,000 in cost share assistance (50%) to 22 commercial and association properties to implement irrigation efficiency upgrades. Water efficiency improvements are being monitored but are estimated to be in the several million annually.
- Updated irrigation system at City-owned golf course.
- Updated city code to require all irrigation systems have working, moisture-sensing technology and require all new controllers be WaterSense certified. Update includes an enforcement element and penalties.
- Implemented and completed \$75,000 of irrigation system efficiency upgrades at 26 City owned and managed irrigation systems. Water efficiency improvement being monitored but are estimated to be in the several million annually.

#### Protect surface waters 2017

- Implementation where applicable of stormwater infiltration practices in new development. Protect surface waters
- 20 development projects reviewed and approved meeting city/state/watershed district stormwater treatment requirements
- Installation of 2 infiltration basins with roadway rehabilitation project
- Pond maintenance (dredging) of 18 ponds
- Sump installation with roadway rehab project
- Education
- Restoration of a five acre farmed wetland in collaboration with SWWD
- Developing lake management plans for all SWWD lakes in Woodbury in collaboration with SWWD

- 100% infiltration of water in the Central Draw in CD-P85 and CD-P86 (runoff from 65% of Woodbury's land area and upstream communities)
- Purchase of 23 acres of land adjacent to Battle Creek Lake for open space/stormwater/wetland preservation purposes

# 100+ WAYS TO CONSERVE WATER

When it comes to conserving water, small adjustments can have a big impact. Conserve water with ideas from our 100+ water-saving tips that you can download, print or share on social media.

VIEW: GRID | LIST

SORT: ALL | OUTDOOR TIPS | INDOOR TIPS | OFFICE | KIDS

## INDOOR TIPS

### KITCHEN

- #1 There are a number of ways to save water, and they all start with you.
- #2 When washing dishes by hand, don't let the water run. Fill one basin with wash water and the other with rinse water.
- #3 Dishwashers typically use less water than washing dishes by hand. Now, Energy Star dishwashers save even more water and energy.
- #4 If your dishwasher is new, cut back on rinsing. Newer models clean more thoroughly than older ones.
- #5 Designate one glass for your drinking water each day, or refill a water bottle. This will cut down on the number of glasses to wash.
- #6 Soak pots and pans instead of letting the water run while you scrape them clean.
- #7 Use the garbage disposal sparingly. Instead, compost vegetable food waste and save gallons every time.
- #8 Wash your fruits and vegetables in a pan of water instead of running water from the tap.
- #9 Don't use running water to thaw food. For water efficiency and food safety, defrost food in the refrigerator.
- #10 Install an instant water heater near your kitchen sink so you don't have to run the water while it heats up. This also reduces energy costs.
- #11 Keep a pitcher of drinking water in the refrigerator instead of running the tap. This way, every drop goes down you and not the drain.
- #12 Reuse leftover water from cooked or steamed foods to start a nutritious soup, it's one more way to get eight glasses of water a day.
- #13 Cook food in as little water as possible. This also helps it retain more nutrients.
- #14 Select the proper pan size for cooking. Large pans may require more cooking water than necessary.
- #15 If you accidentally drop ice cubes, don't throw them in the sink. Drop them in a house plant instead.
- #16 Collect the water you use while rinsing fruit and vegetables. Use it to water house plants.
- #17 When shopping for a new dishwasher, use the Consortium for Energy Efficiency website to compare water use between models.

### LAUNDRY ROOM

- #18 When doing laundry, match the water level to the size of the load.
- #19 Washing dark clothes in cold water saves water and energy, and helps your clothes retain their color.
- #20 When shopping for a new washing machine, compare resource savings among Energy Star models. Some can save up to 20 gallons of water per load.
- #21 Have a plumber re-route your greywater to trees and plants rather than the sewer line. Check with your city and county for codes.
- #22 When buying a washer, check the Consortium for Energy Efficiency website to compare water use between models.

### BATHROOM

- #23 If your shower fills a one-gallon bucket in less than 20 seconds, replace the showerhead with a WaterSense® labeled model.

- #24 Shorten your shower by a minute or two and you'll save up to 150 gallons per month.
- #25 Time your shower to keep it under 5 minutes. You'll save up to 1,000 gallons per month.
- #26 Toilet leaks can be silent! Be sure to test your toilet for leaks at least once a year.
- #27 Put food coloring in your toilet tank. If it seeps into the bowl without flushing, there's a leak. Fix it and start saving gallons.
- #28 When running a bath, plug the bathtub before turning on the water. Adjust the temperature as the tub fills.
- #29 Upgrade older toilets with water-saving WaterSense® labeled models.
- #30 If your toilet flapper doesn't close properly after flushing, replace it.
- #31 Use a WaterSense® labeled showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- #32 Turn off the water while you brush your teeth and save up to 4 gallons a minute. That's up to 200 gallons a week for a family of four.
- #33 If your toilet was installed before 1992, purchasing a WaterSense® labeled toilet can reduce the amount of water used for each flush.
- #34 Consider buying a dual-flush toilet. It has two flush options: a half-flush for liquid waste and a full-flush for solid waste.
- #35 Plug the sink instead of running the water to rinse your razor and save up to 300 gallons a month.
- #36 Turn off the water while washing your hair and save up to 150 gallons a month.
- #37 When washing your hands, turn the water off while you lather.
- #38 Take 5-minute showers instead of baths. A full bathtub requires up to 70 gallons of water.
- #39 Install water-saving aerators on all of your faucets.
- #40 Drop tissues in the trash instead of flushing them and save water every time.
- #41 Look for WaterSense® labeled toilets, sink faucets, urinals and showerheads.
- #42 One drip every second adds up to five gallons per day! Check your faucets and showerheads for leaks.
- #43 While you wait for hot water, collect the running water and use it to water plants.

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## GENERAL INDOOR

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- #44 Teach children to turn off faucets tightly after each use.
- #45 Watch the Home Water Challenge video or use the Home Water Audit Calculator to see where you can save water.
- #46 When the kids want to cool off, use the sprinkler in an area where your lawn needs it most.
- #47 Encourage your school system and local government to develop and promote water conservation among children and adults.
- #48 Play fun games while learning how to save water!
- #49 Monitor your water bill for unusually high use. Your bill and water meter are tools that can help you discover leaks.
- #50 Learn how to use your water meter to check for leaks.
- #51 Reward kids for the water-saving tips they follow.
- #52 Avoid recreational water toys that require a constant flow of water.
- #53 Grab a wrench and fix that leaky faucet. It's simple, inexpensive, and you can save 140 gallons a week.
- #54 Hire a GreenPlumber® to help reduce your water, energy, and chemical use.
- #55 Be a leak detective! Check all hoses, connectors, and faucets regularly for leaks.
- #56 We're more likely to notice leaky faucets indoors, but don't forget to check outdoor faucets, pipes, and hoses.
- #57 See a leak you can't fix? Tell a parent, teacher, employer, or property manager, or call a handyman.
- #58 At home or while staying in a hotel, reuse your towels.
- #59 Make suggestions to your employer or school about ways to save water and money.
- #60 Run your washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- #61 See how your water use stacks up to others by calculating your daily water use.

## OUTDOOR TIPS

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### XERISCAPE LANDSCAPING

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- #62 Use porous material for walkways and patios to prevent wasteful runoff and keep water in your yard.
- #63 Group plants with the same watering needs together to avoid overwatering some while underwatering others.
- #64 Choose the right Arizona-friendly plants and watch them thrive in our desert environment.
- #65 Reduce the amount of lawn in your yard by planting shrubs and ground covers appropriate to your site and region.
- #66 Plant species native to your region.
- #67 Plant in the spring and fall, when the watering requirements are lower.
- #68 When sprucing up your front or backyard, consider xeriscaping. This landscape method uses low-water-use plants to limit your water use.
- #69 Consider attending a landscape class hosted by a water provider. Most workshops occur in the spring and fall.
- #70 Avoid planting grass in areas that are hard to water, such as steep inclines and isolated strips along sidewalks and driveways.
- #71 Leave lower branches on trees and shrubs and allow leaf litter to accumulate on the soil. This keeps the soil cooler and reduces evaporation.
- #72 Start a compost pile. Using compost in your garden or flower beds adds water-holding organic matter to the soil.
- #73 Use a layer of organic mulch on the surface of your planting beds to minimize weed growth that competes for water.
- #74 Spreading a layer of organic mulch around plants helps them retain moisture, saving water, time and money.
- #75 Use 2 to 4 inches of organic mulch around plants to reduce evaporation and save hundreds of gallons of water a year.
- #76 Visit your local xeriscape garden to view plants that thrive in our hot desert environment.
- #77 Next time you add or replace a flower or shrub, choose a low-water-use plant and save up to 550 gallons each year.
- #78 Call your local conservation office for more information about xeriscaping with water-thrifty trees, plants, and ground covers.
- #79 Collect water from your roof by installing gutters and downspouts. Direct the runoff to plants and trees.
- #80 For automatic water savings, direct water from rain gutters and HVAC systems to water-loving plants in your landscape.

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### LAWN CARE

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- #81 Hire a qualified pro to install your irrigation system and keep it working properly and efficiently.
- #82 Hire a Smartscape Certified professional landscaper who has received landscape training specific to the Sonoran Desert.
- #83 Adjust your lawn mower to the height of 1.5 to 2 inches. Taller grass shades roots and holds soil moisture better than short grass.
- #84 Leave lawn clippings on your grass, this cools the ground and holds in moisture.
- #85 If installing a lawn, select a lawn mix or blend that matches your climate and site conditions.
- #86 Aerate your lawn periodically. Holes every six inches will allow water to reach the roots, rather than run off the surface.
- #87 If walking across the lawn leaves footprints (blades don't spring back up), then it is time to water.
- #88 Let your lawn go dormant (brown) during the winter. Dormant grass only needs to be watered every three to four weeks, less if it rains.
- #89 Avoid overseeding your lawn with winter grass. Ryegrass needs water every few days, whereas Dormant Bermuda grass needs water monthly.
- #90 Remember to weed your lawn and garden regularly. Weeds compete with other plants for nutrients, light and water.
- #91 While fertilizers promote plant growth, they also increase water consumption. Apply the minimum amount of fertilizer needed.
- #92 Water your summer lawns once every three days and your winter lawn once every five days.
- #93 Catch water in an empty tuna can to measure sprinkler output. 3/4 to 1 inch of water is enough to apply each time you irrigate.

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### LANDSCAPE

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- #94 Read the Landscape Watering by the Numbers guidebook to help you determine how long and how much to water.
- #95 Use a trowel, shovel, or soil probe to examine soil moisture depth. If the top two to three inches of soil are dry, it's time to water.
- #96 Set a kitchen timer when using the hose as a reminder to turn it off. A running hose can discharge up to 10 gallons per minute.

- #97 Check your sprinkler system frequently and adjust sprinklers so only your lawn is watered and not the house, sidewalk or street.
- #98 Minimize evaporation by watering during the early morning hours when temperatures are cooler and winds are lighter.
- #99 Timing is everything when it comes to irrigation. Learn how to set your controller properly.
- #100 Look for WaterSense® labeled irrigation controllers.
- #101 Learn how to shut off your automatic watering system in case of malfunctions or rain.
- #102 Apply water only as fast as the soil can absorb it.
- #103 If water runs off your lawn easily, split your watering time into shorter periods to allow for better absorption.
- #104 Water only when necessary. More plants die from over-watering than from under-watering.
- #105 Signs of overwatering: Leaves turn lighter shades of green or yellow, young shoots wilt, and sometimes algae or fungi grow.
- #106 Adjust your watering schedule each month to match seasonal weather conditions and landscape requirements.
- #107 Install a rain sensor on your irrigation controller so your system won't run when it's raining.
- #108 Water dry spot by hand instead of running the whole irrigation system longer.
- #109 Don't water your lawn on windy days when most of the water blows away or evaporates.
- #110 Use drip irrigation for shrubs and trees to apply water directly to the roots, where it's needed.
- #111 Water your plants deeply but less frequently to encourage deep root growth and drought tolerance.
- #112 Use sprinklers that deliver big drops of water close to the ground. Smaller drops and mist often evaporate before hitting the ground.
- #113 Use a rain barrel to harvest rainwater from gutters for watering gardens and landscapes.
- #114 For hanging baskets, planters and pots, put ice cubes on top of the soil to give your plants a cool drink of water without overflow.
- #115 Remember to periodically check your sprinkler system valves for leaks, and to keep sprinkler heads in good shape.
- #116 Spring is a great time to give your irrigation system a checkup to ensure it's working efficiently.
- #117 Pruning properly can help your plants use water more efficiently.

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## POOL

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- #118 Use a pool cover to help keep your pool clean, reduce chemical use and prevent water loss through evaporation.
- #119 Make sure your swimming pools, fountains and ponds are equipped with recirculating pumps.
- #120 If you have an automatic refilling device, check your pool periodically for leaks.
- #121 When back-washing your pool, consider using the water on salt-tolerant plants in the landscape.
- #122 Minimize or eliminate the use of waterfalls and sprays in your pool. Aeration increases evaporation.
- #123 Don't overfill the pool. Lower water levels will reduce water loss due to splashing.
- #124 Keep water in the pool when playing, it will save water.
- #125 Instead of building a private pool, join a community pool.
- #126 Trickling or cascading fountains lose less water to evaporation than those that spray water into the air.
- #127 Use a grease pencil to conduct a bucket test to check for pool leaks. An unnatural water level drop may indicate a leak.

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## GENERAL OUTDOOR

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- #128 Winterize outdoor spigots when temperatures dip below freezing to prevent pipes from leaking or bursting.
- #129 For more immediate hot water and energy savings, insulate hot water pipes.
- #130 Use a commercial car wash that recycles water. Or, wash your car on the lawn, and you'll water your grass at the same time.
- #131 Use a hose nozzle or turn off the water while you wash your car. You'll save up to 100 gallons every time.
- #132 Wash your pets outdoors, in an area of your lawn that needs water.
- #133 When cleaning out fish tanks, give the nutrient-rich water to your non-edible plants.
- #134 When you give your pet fresh water, don't throw the old water down the drain. Use it to water your trees or shrubs.
- #135 Use a broom instead of a hose to clean patios, sidewalks and driveways, and save water every time.
- #136 Evaporative coolers require a seasonal maintenance check. For more efficient cooling, check your evaporative cooler annually.

- #137 If you have an evaporative cooler, direct the water drain to plants in your landscape.
- #138 Set water softeners for a minimum number of refills to save both water and chemicals, plus energy, too.
- #139 If you have an evaporative cooler, install a recirculating pump to keep water from bleeding off with one pass.
- #140 Report broken pipes, leaky hydrants and errant sprinklers to property owners or your local water provider.
- #141 Know where your master water shut-off valve is located. Were a pipe to burst, this could save gallons of water and prevent damage.
- #142 Install a thermostat and timer on your evaporative cooler so it only operates when necessary.

## OFFICE

- #10 Install an instant water heater near your kitchen sink so you don't have to run the water while it heats up. This also reduces energy costs.
- #29 Upgrade older toilets with water-saving WaterSense® labeled models.
- #39 Install water-saving aerators on all of your faucets.
- #41 Look for WaterSense® labeled toilets, sink faucets, urinals and showerheads.
- #54 Hire a GreenPlumber® to help reduce your water, energy, and chemical use.
- #143 Some commercial refrigerators and ice-makers are cooled with water. Upgrade to air-cooled appliances for significant water savings.
- #144 Post a hotline in bathrooms and kitchens to report leaks or water waste to facility managers or maintenance personnel.
- #145 Create a suggestion and incentives system at your organization to recognize water-saving ideas.
- #146 Include a water-saving tip in your employee newsletter. Find 100+ tips at [wateruseitwisely.com](https://wateruseitwisely.com).
- #147 Implement a water management plan for your facility, then educate employees on good water habits through newsletters and posters.
- #148 Publish your organization's monthly water use to show progress toward water-saving goals.
- #149 Invite your water utility conservation staff to your organization for Earth Day and other environmental events to help promote water savings.
- #150 Water audit your facility to find out your recommended water use, then monitor your utility bills to gauge your monthly consumption.
- #151 Have maintenance personnel regularly check your facilities for leaks, drips and other water waste.
- #152 If you use processed water in your business or facility, look into water recycling.
- #153 Contact your water utility to see if rebates are available for purchasing water-efficient fixtures, equipment or for facility audits.
- #154 Consider and compare water use when purchasing ice makers, dishwashers, reverse osmosis units, coolers and cleaning equipment.
- #155 Become or appoint a water ambassador within your organization who creates, implements and maintains your water conservation program.
- #156 Become a proud WaterSense® partner and let all your customers know.
- #157 As part of the WaterSense® Fix-A-Leak Week in March, plan an employee campaign to look for leaks.
- #158 Determine how your on-site water is being used by installing sub-meters where feasible, then monitoring for savings.
- #159 Conduct a facility water use inventory and identify water management goals.
- #160 Don't forget hidden water use costs, like energy for pumping, heating and cooling, chemical treatment, and damage and sewer expenses.
- #161 Show your company's dedication to water conservation through a policy statement. Commit management, staff and resources to the effort.
- #162 Shut off water to unused areas of your facility to eliminate waste from leaks or unmonitored use.
- #163 Create a goal of how much water your company can save and plan a celebration once that goal is met.
- #164 Ask employees for suggestions on saving water and give prizes for the best ideas. Incentivize it!
- #165 Write feature articles on your employee website that highlight water-saving ideas and successes.
- #166 Test your co-workers or employees on topics like xeriscape, WaterSense®, and high-efficiency toilets. See how water-wise they are.
- #167 Hire a WaterSense® irrigation partner to help with your landscape.
- #168 Saving water on your landscape adds up quickly. Send the person in charge of your landscape to an irrigation workshop.

- #169 Marry the weather with your landscape water use. Water use should decrease during rainy periods and increase during hot, dry periods.
- #170 Visit your local Water Conservation office's website to get information on programs available to businesses.
- #171 Make sure your contract plumber and/or maintenance personnel knows about GreenPlumbers®.
- #172 Ask your company to support water conservation events and education. ProjectWet hosts local events throughout the country.
- #173 Support Tap Into Quality and forgo those plastic water bottles to lower your carbon footprint.
- #174 Scrape dishes rather than rinsing them before washing.
- #175 Use water-conserving icemakers.
- #176 A recent study showed that 99% of business managers surveyed ranked water conservation as a "top five" priority over the next decade.
- #177 If your facility relies on cooling towers, have maintenance maximize cycles of concentration by providing efficient water treatment.
- #178 Be sure your irrigation system is watering only the areas intended, with no water running onto walks, streets or down the gutter.
- #179 While cleaning sidewalks, a hose and nozzle use 8-12 gallons of water per minute. A pressurized Waterbroom® uses closer to 3 gallons.
- #180 Inspect your landscape irrigation system regularly for leaks or broken sprinkler heads and adjust pressures to specification.
- #181 Give your landscape proper amounts of irrigation water. Determine water needs, water deeply but infrequently, and adjust to the season.
- #182 Establish a monthly water budget for your landscape based on the water needs of your plants.
- #183 Limit turf areas at your facility. Instead, landscape using xeriscape principles to cut water use in half.
- #184 Put decorative fountains on timers and use only during work or daylight hours. Check for leaks if you have automatic refilling devices.
- #185 Wash company vehicles at commercial car washers that recycle water.
- #186 Wash company vehicles as needed rather than on a schedule. Stretch out the time in between washes.
- #187 Consider turning your high-maintenance water feature/fountain into a low-maintenance art feature or planter.
- #188 When buying new appliances, consider those that offer cycle and load size adjustments. They are more water and energy efficient.
- #189 Support projects that use reclaimed wastewater for irrigation and industrial uses.
- #190 When ice cubes are leftover from your drink, don't throw them out. Pour them on a plant.

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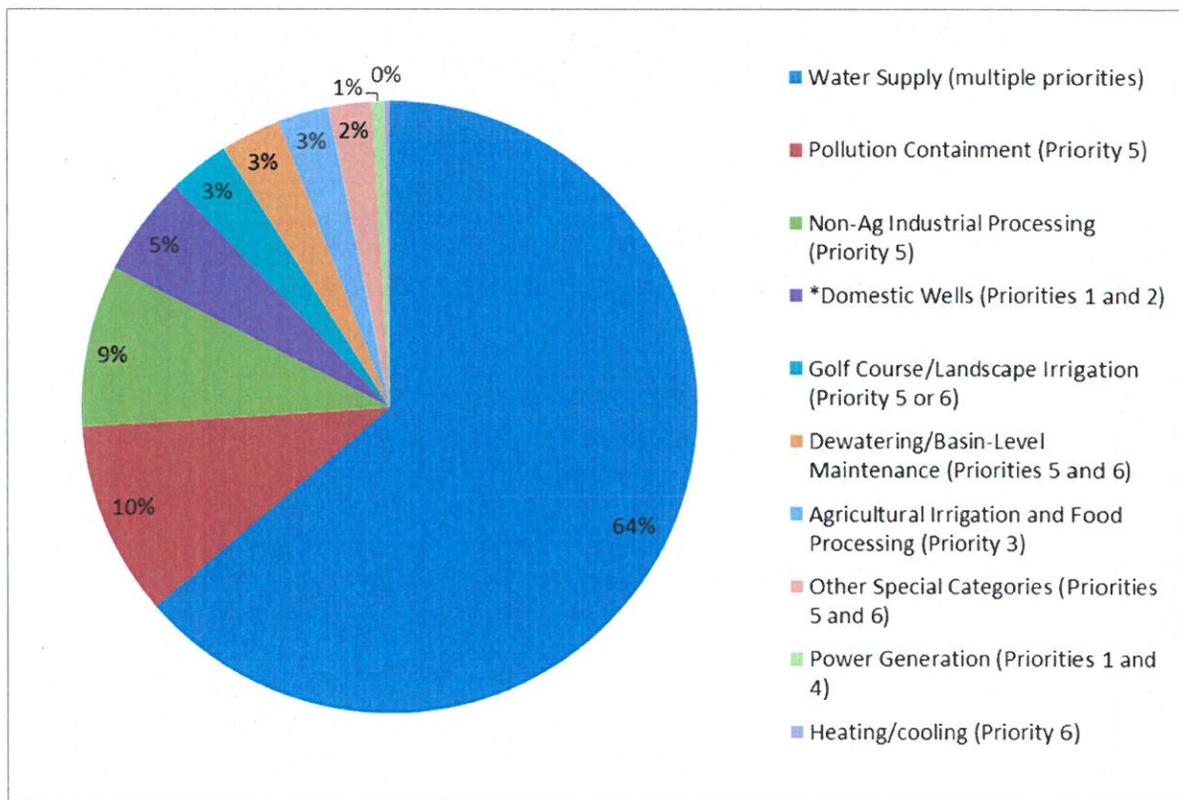
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## March 28, 2014 N&E Metro GWMA Update

### Average Groundwater Use By Category in the North & East Metro GWMA



Breakdown of average groundwater use (2008-2012) into several groups/categories. Note that domestic well use was estimated rather than reported by users, whereas all other categories are uses reported by permit holders. Priorities are based on Minnesota Statute 103G.261 but are general and may not apply to all uses within a category.

### GROUNDWATER APPROPRIATIONS AND USE

There are 259 active permits to appropriate groundwater in the area. The annual average of the reported groundwater use in the area over the five-year period 2008 through 2012 was 29.0 billion gallons (BG) with the total reported groundwater use in 2012 at 30.0 BG (several permittees did not yet

report 2012 use). This compares to total permitted groundwater appropriations of 62.5 billion gallons per year (BGY) in 2012. Total groundwater use over the five-year period was 30.6 BGY after adding domestic well pumping estimated by Metropolitan Council for 2010 (1.6 BGY). This use is broken down into several categories in the Figure.

Nearly two-thirds of total groundwater use was for water-supply systems (64%) including municipal and other public and private potable water supplies. The largest other categories of water uses included pollution containment (10%) and non-agricultural industrial processing (9%). Relatively small amounts of groundwater were used for domestic wells (estimated 5%), dewatering and basin (lake)-level maintenance (3%), agricultural/food uses (3%), golf course and landscape irrigation (3%), other special categories (2%), power generation (1%), and heating/cooling (<1%). Only one once-through heating/cooling system permit (1980-6214) remains active in the area because the discharge is used to maintain a wetland.

The pollution-containment category includes pumping of contaminated groundwater or pumping to prevent the further migration of contaminated groundwater. These uses are essential for protecting drinking-water supplies and public and ecological health. In some cases, additional uses have been found for water pumped to contain or remediate contamination plumes. Some water pumped from the former 3M facility in Woodbury is used for industrial cooling and power generation at 3M facilities in Cottage Grove prior to discharge to the Mississippi River. Water pumped for the City of New Brighton public-water supply requires treatment to remove contaminants originating at the former Twin Cities Army Ammunition Plant (TCAAP) in Arden Hills, but this municipal pumping also intercepts contaminated groundwater that would otherwise migrate down gradient. Nevertheless, potential secondary uses for water pumped to contain/remediate pollution are limited by the contaminants in the water and costs/practicality of treatment.

924<sup>0</sup> - Jun 05 (Summer)  
923<sup>5</sup> - Jun 06 (Summer)

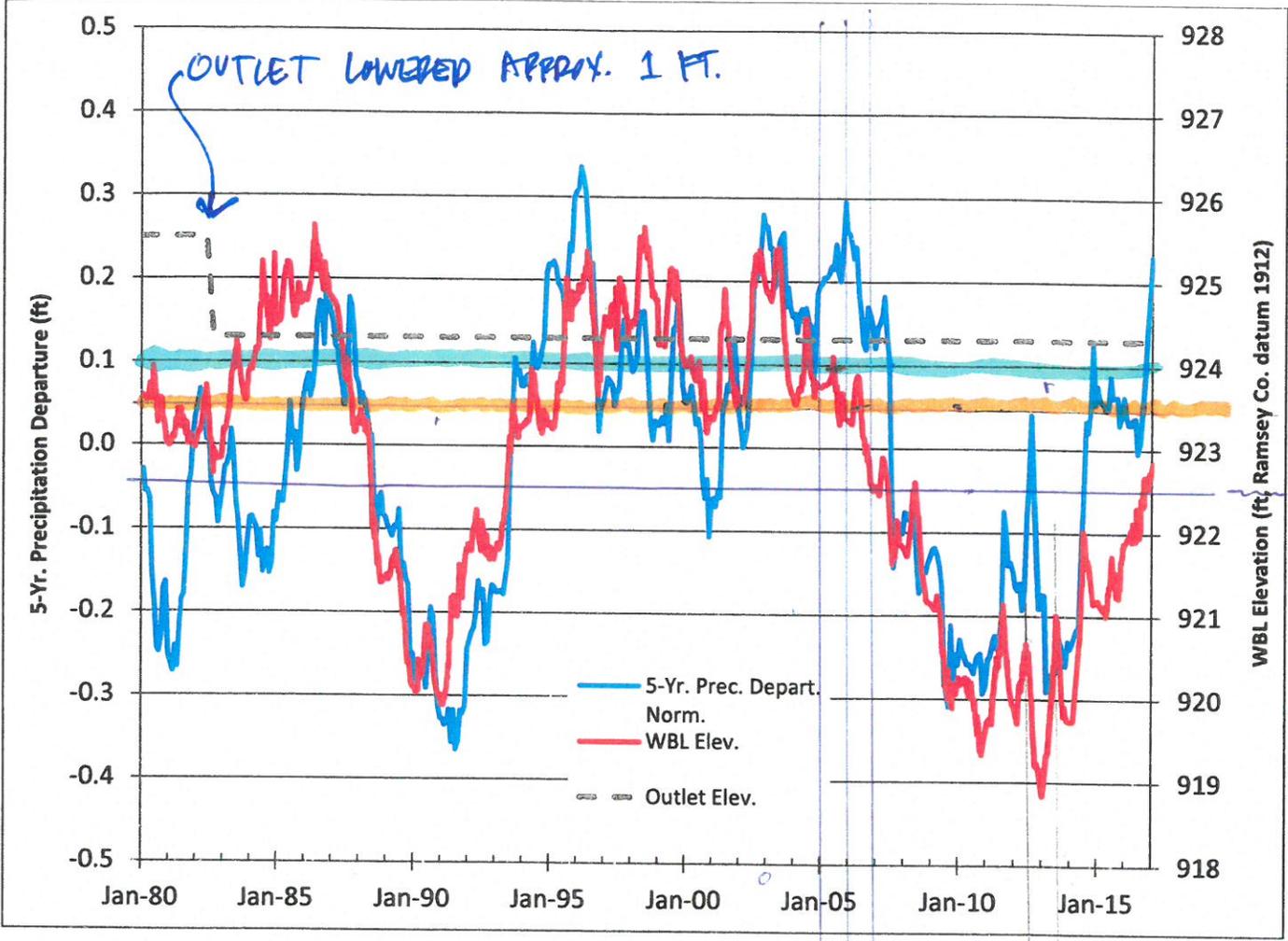


Figure 24 (updated) Comparison of five-year precipitation departure from normal with WBL water levels.



## Utility Commission Meeting June 14, 2018

**Agenda Number:** 10

**Subject:** Next Meeting Date – Agenda Items

**Documentation:**

**Action / Motion for Consideration:**

July 2018 						
Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	<u>4</u>	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

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**Utility Commission Meeting  
June 14, 2018**

**Agenda Number:** 11 - 12

**Subject:** Added Agenda Items  
Adjournment

**Documentation:** FYI Items

**Action / Motion for Consideration:**

