PUBLIC SERVICE COMMISSION OF WISCONSIN REPORT ON WATER CONSERVATION PROGRAMS

Utility Name:	Waukesha Water Utility - 6240
Report Date:	03/22/2019
Report Period:	01/01/2018 - 12/31/2018
Report Frequency:	Annual
Billing Frequency:	Quarterly
Person Submitting Report:	Joseph Ciurro

Waukesha Water Utility is submitting this report to the Public Service Commission, as required by PSC 185.97. This report addresses each of the points requested by the Commission, including the following information.

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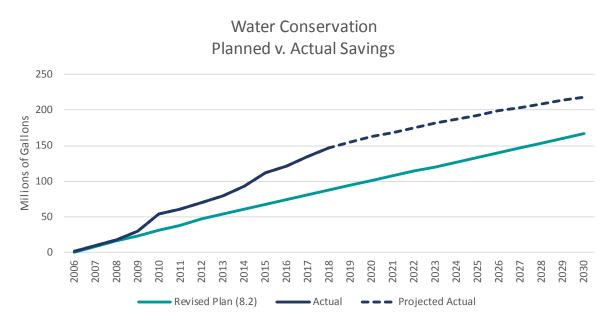
I. EXECUTIVE SUMMARY

Water conservation is important in the City of Waukesha. Since 2006, the Utility has implemented a variety of conservation programs, and the City's conservation efforts became more focused with the passage of NR 852.



This report shows that the Utility is addressing all the requirements of NR 852; and that by addressing the requirements, the City's consumption has steadily decreased. Since its passage in 2010, the City's annual pumpage and average day pumpage have decreased by 11%.

Waukesha is exceeding its conservation goals. The 2012 Conservation Plan projected a cumulative savings of 98.6 million gallons by 2017. As shown in the graph below, the Utility is ahead of it's conservation goals. If Waukesha stays on track, the Utility will exceed savings of 0.8 million gallons per day by 2050.



Finally, because the Utility uses the criterion recommended in the 2012 Plan (cost effectiveness) to guide it's efforts, the Utility achieves its goals by spending only a modest amount.

II. ANNUAL BUDGET AND EXPENDITURES

Per Docket 6240-WR-107 the PSC determined that a "reasonable level of conservation costs recoverable in rates for the test year (2012) is \$62,271." Subsequently, with Docket 6240-WR-109, the PSC agreed that the same level of costs was reasonable with a revised test year of 2017.

The actual costs since 2012 are as follows:

			Actual		
	2018	2017	2016	2015	2014
Revenue					
Rates	\$ 62,271	\$ 62,271	\$ 62,271	\$ 62,271	\$62,271
Sewer Reimbursement	30,000	30,000	30,123	41,354	30,484
	92,271	92,271	92,394	103,625	92,755
Expenses					
Program Administration	8,954	17,873	15,205	14,493	9,831
Customer Outreach and Education	15,102	22,030	22,440	20,216	15,681
Other Program Costs	2,951	1,544	859	-	3,829
Leak Surveys	11,450	15,197	10,206	10,290	
Toilet Rebates	17,589	32,824	17,652	11,225	7,976
Grants & Incentives	15,428	2,819	4,298	36,773	29,626
	71,474	92,287	70,660	92,998	66,943
Excess(Deficit)	\$ 20,797	\$ (16)	\$ 21,735	\$ 10,627	\$25,812

Program revenue remained consistent from 2017 to 2018. The current rate order (Docket #6240-WR-109), effective on December 1, 2017, allows for \$62,271 in conservation costs to be recoverable by water rates, with \$30,000 of funding charged to the City's Sewer Department.

It is important to note that the Utility spent all of the money generated through water rates, \$62,271, while spending \$9,203 of the funding from the City's Sewer Department. The average excess generated by the program since 2012 has increased from \$8,210 per year in 2017 to \$10,008 per year in 2018.

The significant expenses change between 2018 and 2017 was a decrease in toilet rebates (197 vs. 330) and labor time spent specifically on conservation outreach. In 2018, the Utility's outreach included conservation topics, but had a strong focus around the overall great lakes water supply project and sustainability. The Utility plans to continue its efforts of replacing inefficient toilets and promoting its business conservation incentive program in 2019.

III. INCENTIVE PROGRAMS

The Utility has five incentive programs:

- 1. Toilet Rebate Program
- 2. Shower Head Rebate Program
- 3. Rain Barrel Rebate Program
- 4. A Pilot Rebate Program for Irrigation Controllers
- 5. Grants for Innovative Site Specific Water Savings Measures

Water Sense



1. Toilet Rebate Program

Waukesha Water Utility's High-Efficiency, 1.28 gpf (gallons per flush), WaterSense toilet rebate program has been in effect since October 2008. From October 2008 to July 2012, the program offered a \$25 rebate. In 2012, the Utility increased the rebate to \$100, although less is paid if the actual cost to the customer is less.

In 2018, there were 179 toilet rebates given out. This included 92 residential toilets and 87 nonresidential. The non-residential toilets are classified as commercial but are related to two multifamily apartment buildings.

- JJGR Real Estate, a multi-family apartment building, changed out 5 of their old 5 gpf toilets from 1968-1972 with 1.28 gpf toilets.
- Mountain Village Apartments (MVA), a large multi-family apartment complex, originally planned to change out 200 of their 3.5 – 4.5 gpf toilets with 1.28 gpf toilets. However, because the toilets were coming from China, their order was delayed due to the tariffs and trade charges. For this reason, MVA was only able changed out 82 toilets this past year and plan to do the rest in the near future when they receive their order.

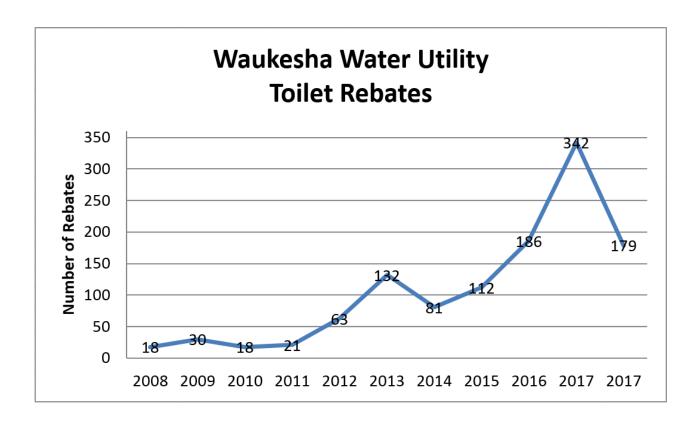


JJGR Real Estate changed out 5 more of their old 5 gpf toilets from 1968-1972 with 1.28 gpf toilets.



Mt. Village Apartment complex changed out 82 additional toilets – from 3.5-4.5 gpf to 1.28 gpf toilets.

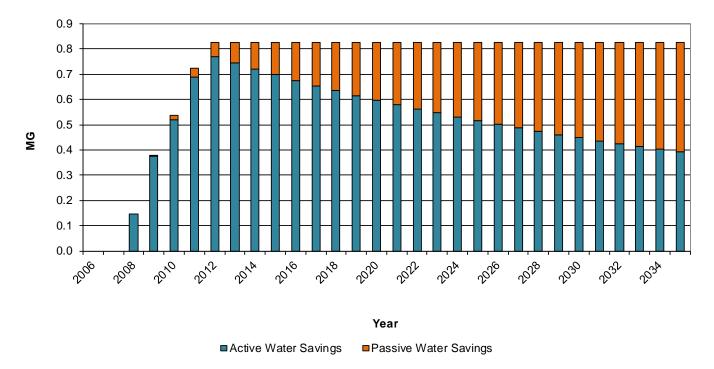
Historically, the following rebates have been awarded:



Using the Alliance for Water Efficiency (AWE) Conservation Tracking Tool, the annual cost effectiveness of the program is demonstrated below.

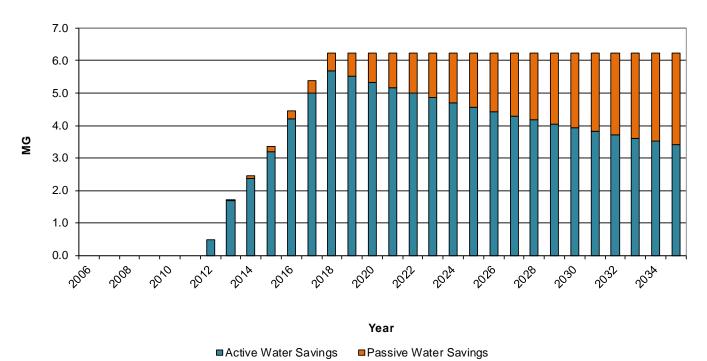
				Unit				
		Unit Cost	PV	Benefit	PV	Avoided	Avoided	B/C
Class	Activity Name	(\$/MG)	Cost	(\$/MG)	Benefit	Supply	Wastewater	Ratio
Residential	Residential HE Toilets, \$25 Rebate	412.18	8,729.64	1,662.09	35,201.33	19,596.13	15,605.20	4.03
Residential	Residential HE Toilets, \$100 Rebate	654.80	97,753.53	1,868.65	278,967.48	155,478.69	123,488.79	2.85
Commercial	Commercial HE Toilet, Large MF \$100 Rebate	329.85	57,852.49	1,946.97	341,481.93	190,398.94	151,082.98	5.90
Industrial	CII Tank-Type HE Toilet, \$50 Rebate (Industrial)	147.91	475.55	1,948.21	6,263.97	3,492.59	2,771.37	13.17

The projected water savings through 2035 is demonstrated by the four graphs below. The first relates to water savings from the \$25 residential rebates.

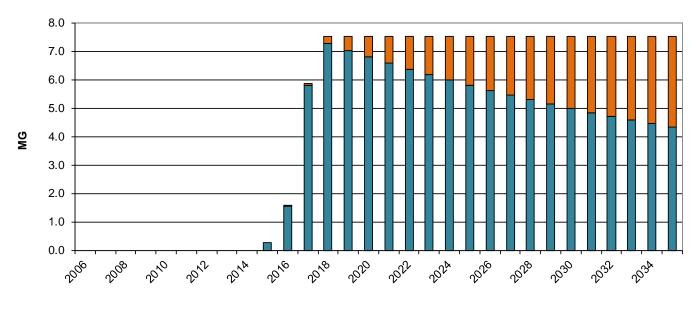


Residential HE Toilets, \$25 Rebate Annual Water Savings

The second graph relates to water saved by the \$100 residential rebates.



Residential HE Toilets, \$100 Rebate Annual Water Savings



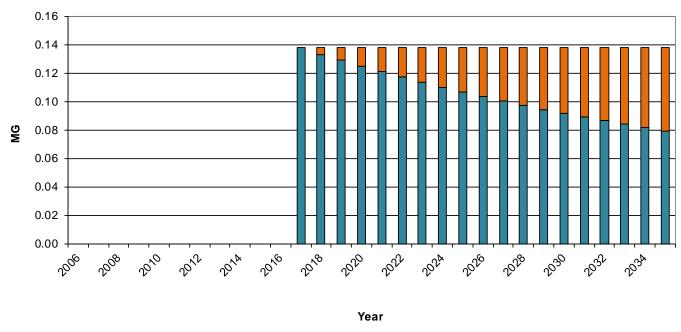
The third graph relates to water saved by the \$100 commercial rebates.



Year
 Active Water Savings
 Passive Water Savings

The last graph relates to water saved by the \$50 industrial rebates awarded in 2017.





Active Water Savings

Passive Water Savings

Water Sense[®]



2. Shower Head Rebate Program

In late 2016, the Utility implemented a shower head rebate program. Customers who replace their 1992 or older shower head with a high-efficiency WaterSense shower head would be eligible for a \$25 rebate. In 2017, there were 11 rebates. In 2018, there were 17 shower head rebates.

The toilet & showerhead rebate application is shown on the following two pages. The press release, ad on our website, and the ad in Waukesha's Activity Guide, is shown under the public Education section.







Waukesha Water Utility P. O. Box 1648 Waukesha, WI 53187-1648 <u>www.waukesha-water.com</u> Phone: 262-409-4423 Fax: 262-521-5265

HIGH-EFFICIENCY TOILET & SHOWER HEAD REBATES

<u>\$100 Toilet Rebate</u>	Replace a <u>1993 or Older</u> toilet with a <u>WaterSense</u> High-Efficiency <u>1.28 gallons per flush</u> toilet and receive up to a \$100 rebate. (Residential customers can save 9,000 – 11,000 gals. of water/year, depending on family size.)
\$25 Shower Head Rebate	Replace a <u>1992 or Older</u> shower head with a <u>WaterSense</u> model shower head and receive up to a \$25 rebate. (Residential customers can save approximately 2,900 gals. of water/year, and approximately 300 kwh of electricity annually.)

Customer Eligibility/Program Rules:

- 1. Rebates are available on first-come, first-served basis until funds are exhausted.
- 2. The property where toilet/showerhead is installed is a customer of Waukesha Water Utility.
- 3. High efficiency toilets must replace toilets installed in 1993 or prior.
- 4. Shower heads must replace shower heads installed in 1992 or prior.
- 5. New construction is not eligible.
- 6. New toilet/showerhead must have the WaterSense logo (as shown on top of this page).
- 7. Applicant must be the owner of the property listed on the rebate application.
- An original, unaltered, dated sales receipt listing the make and model numbers, MUST accompany the rebate application.
- A picture showing proof of installation is required and needs to be attached to the application in order to receive the rebate.
- 10. Owners who occupy the dwelling (live full-time at the dwelling) may either use a licensed plumber to install the toilet/fixture or do it themselves. Owners who do not occupy the dwelling (i.e. landlords) must use a licensed plumber to install the toilet/fixture.
- Applicant agrees and understands that Waukesha Water Utility or its representatives reserve the right to inspect the installation before or after the rebate credit is mailed out.
- 12. The Utility will withhold the rebate until all conditions are met.
- Rebates are not available for the costs of installation.
- 14. Old toilets/showerheads cannot be reused.
- 15. Submit the application materials to the Waukesha Water Utility (address listed above).

Toilet & Shower Head Rebate Application Front Side



Waukesha Water Utility P.O. Box 1648 Waukesha, WI 53187-1648 Phone: (262) 409-4423 Fax: (262) 521-5265

TOILET & SHOWER HEAD REBATE FORM

Please Print & Read All Program Rules, on the Other Side of This Form, Prior to Submitting

NAME:	Owner Occupant Acco	ount #:
SERVICE ADDRESS (Where toilet/showerheit	ad installed):	
MAIL REBATE TO THIS ADDRESS:		
	STATE:	ZIP:
PHONE (Day):	PHONE (Evening):	
EMAIL:	Preferred Method of Contact	
How did you hear about this program?		

Number of	Number of Toilets	Number of	Number of Showerheads	Number of	
Toilets at this	Currently Replaced for	Showers at	Currently Replaced for this		
Address:	this Rebate Application:	this Address:	Rebate Application:	Household:	
Old Toilet(s) Infe	ormation: (this information i	may be found in t	he toilet tank or under the tank	lid.)	
Year of old toilet	(s): Size, Make,	and Model:			
		(si	zes) (makes) (mo	del numbers)	
	Or				
Measurement(s)	of the height, depth, and w	idth of the wate	r level (when the tank(s) is fu)	
((height) (dept	h)	(width)		
New Toilet/Show	wer Head Information:				
Tallati Data af a			Durahasa Dr		
Tollet: Date of p	ourchase: Store where	purchased from	n: Purchase Pri	ice: \$	
			Is this a 1.28 gal/flush T	oilet?	
Manufacturer	Model Name	Model Numbe	Is this a 1.28 gal/flush To Is this a WaterSense To	ilet?	
			In this of 0.0 and the t		
Manufacturer	Model Name		Is this a 1.28 gal/flush Te Is this a WaterSense To		
Manufacturer	Woder Name	Model Numbe	is this a water sense to	liet?	
Date(s) installed:	Install Cost:\$	Inst	alled by: Do-it yourself	Plumber	
Shower Head:	Date of nurchase: St	ore where purch	nased from: Price		
Shower fielda.	Jate of purchase of	ore where pare			
			Is this a WaterSense Fi	xture?	
Manufacturer	Model Name	Model Numb	er How Many Installed?		
			Is this a WaterSense Fi	vturo?	
Manufacturer	Model Name	Model Numb	er How Many Installed?		
Manufacturer	Model Maille	anouer runn.	i now many matalicu:		
Date installed:	Install Cost: \$	Ins	talled by: Do-it yourself	Plumber	
I have read and un	iderstand the policy as stated	in the program g	uidelines and I agree to a poss	ible site visit by	
Waukesha Water Utility for installation verification. <u>Reminder: Receipt & Installation Pictures Must Be Attached</u> .					

Property Owner Signature

Date

Toilet & Shower Head Rebate Application Back Side

Using the Alliance for Water Efficiency (AWE) Conservation Tracking Tool, the annual cost effectiveness of the program is demonstrated below. A B/C Ratio just under 1 indicates that the program currently costs more than the cost of the water saved.

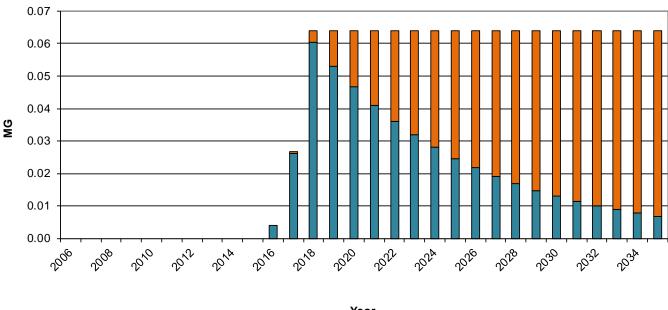
The Utility undertook this program because it was part of the 2012 Conservation Plan. The 2012 plan indicated a larger positive B/C Ratio, but the fixed costs of developing the program were underestimated.

The Utility hopes that as more showerhead programs are implemented, the fixed costs will go down and the program will yield a better ratio.

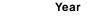
Still, water is being conserved and that is the ultimate goal of the program.

				Unit				
		Unit Cost	PV	Benefit	PV	Avoided	Avoided	B/C
Class	Activity Name	(\$/MG)	Cost	(\$/MG)	Benefit	Supply	Wastewater	Ratio
Residential	LF Showerhead	1,400.04	683.01	1,105.90	539.51	297.59	241.93	0.79

The projected water savings through 2035 is demonstrated below.



LF Showerhead Annual Water Savings



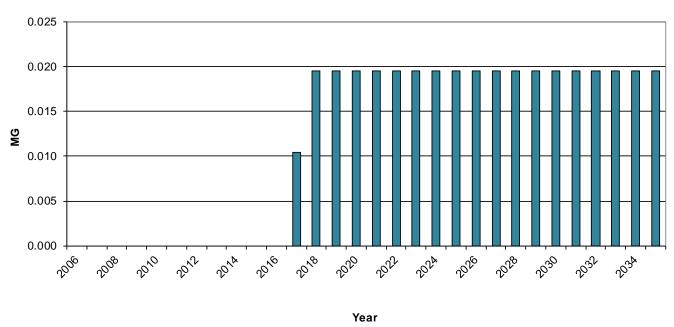
Active Water Savings
Passive Water Savings



3. Rain Barrel Rebate Program

In May 2017, the Utility implemented a rain barrel rebate program. Customers who purchase and install a qualifying rain barrel, and submit their application with their original receipt and post-installation picture, are eligible for a \$20 rebate. In 2018, there were 7 rain barrel rebates.

The projected water savings through 2035 is demonstrated by the graph below:



Rain Barrel Rebate, \$20 Annual Water Savings

Active Water Savings Passive Water Savings

The rain barrel rebate application is shown below. The press release and website information is shown in the Education section.

<u>TO QUALIFY</u> is must be installed in the Waukesha ity's service area. ay be eligible to participate with the nsent of the property owner.	<u>TIPS FOR INSTALLATION & USE</u> Raise the barrel up on cinder blocks to increase pressure. (But make sure the barrel is on a level, firm surface to prevent the barrel from falling over – a full 55 gal. barrel weighs over 400 lbs.)
barrels must be newly purchased, a size of 50 gallons, and designed for ed purpose of rain capture.	 Make sure the overflow from the barrel is directed away from your house. Disconnect the barrel in the winter and turn it uncide down overlap it incide. If
e rain barrels do not quairly for the s must have a secure lid for child l rust-proof screening or sealed er the top and on the overflow spigot	 Curring upside down or take it inside. It your downspout has been cut off for the rain barrel, be sure to add an extension hose for the winter. Enclose the top of the barrel, where the
to, rodent, and debris control. s must not be connected to the ater) irrigation system.	water enters the barrel, with a tight- fitting, fine-mesh screen to prevent a nesting site for mosquitoes.
<u>al</u> purchase receipt, that includes the mount and barrel size, must be within 90 days of purchase.	barrel. Water from your roof is not safe to drink, but is fine to water your yard. It is <u>not</u> recommended to water vegetable gardens with your rain barrel.
lation pictures must be included with tion. of 2 rain barrels allowed per address.	Do not connect the rain barrel to your sprinkler systems or put the hose, which is connected to your house, into the rain barrel, as unintended suction can
e available on a first-come, first- is and are subject to the availability	contaminate the water in your home. (The best way to prevent this is to <u>only</u> hook a garden hose, or isolated drip irrigation system, to the outlet of your barrel and water your landscape directly.)

- Rain barrels Water Utilit
- Renters may written con

Waukesha, WI 53187-1648

P.O. Box 1648

Fax: (262) 521-5265 Phone: (262) 409-4423

Waukesha Water Utility

- minimum si Qualifying b the intende
- Homemade rebate.

RAIN BARREL

\$20 REBATE

- designs over Rain barrels for mosquit safety; and
- Rain barrels potable wa
- The original purchase ar submitted v
- Post-installa the applicat
- Maximum o
- Rebates are served basis of funds.

- great for watering plants and washing Naturally soft, chlorine-free water is windows or cars. ->

Saves most homeowners about 1,300

0

gallons of water during the summer.

WAUKESHA WATER UTILITY \$20 RAIN BARREL REBATE APPLICATION
Name: Owner □ Occupant □ Account Number:
Service Address (Where rain barrel is installed ~ <u>must be installed in the Waukesha Water Utility service area):</u>
Mail Rebate to this Address:
Phone (Day): Phone (Evening): Email Address:
How Did You Hear About the Rain Barrel Rebate Program?:
Number of Rain Barrels at this Address:
Date of Purchase: Store/Place Where Purchased From: Purchased Price:
Type of Barrel: Date Installed: Capacity (Gallons): Date Installed:
If you are the renter, is the required written consent of the property owner attached: Yes 🛛 No 🗆 Or, not required, I am the Property Owner: 🗆
s the required photo attached showing the installed Rain Barrel (on a level, firm surface, under the downspout, with a secure lid): Yes 🛛 No 🗆
s the required original purchase receipt attached. Yes D No D
have read the rain barrel rebate program qualifications, along with the tips for installing and using the rain barrel (on the back of this brochure). I have all the necessary paperwork and photos attached, and agree to a possible site visit by the Waukesha Water Utility for installation verification.

Rain Barrel Rebate Application Back Side

Signature

Date

Water Sense



WaterSense labeled Irrigation Controller

4. Rebate Pilot Program for Irrigation Controllers

In 2015, the Utility implemented a pilot rebate program for WaterSense Irrigation Controllers for the new Cloverland Farms Subdivision.

The Utility chose Cloverland Farms subdivision because prior to the rebate program, the Wisconsin Water Conservation Coalition, which the Utility is a partner of, talked with the developer about a partnering opportunity to do a WaterSense Irrigation case study. The developer company was interested in participating and placed a deed restriction on the entire subdivision. The deed restriction is as follows:

If a home is equipped with an irrigation system, they are required to use an EPA WaterSense approved system.

The deed restriction is a great foundation for the Utility's pilot program. Any owner, in this subdivision, who installs a WaterSense labeled controller on their irrigation system would be eligible for a \$175 rebate. (Per WaterSense, the irrigation controllers tell the sprinkler systems "when to turn on and off, use local weather and landscape conditions to tailor watering schedules....[and] allow watering schedules to better match plants' water needs.")

2015 - 2018, the Utility contacted all 3 builders of this subdivision and informed/reminded them about the rebate program. In 2017, we did receive one inquiry about the irrigation controllers from a customer living in this area. According to the inquiry, most of the residents in this subdivision do not have automatic sprinklers. A copy of the Irrigation Rebate Application is shown on the next page.



Waukesha Water Utility Attn: Mary P. O. Box 1648 Waukesha, WI 53187 Phone: (262) 409-4423 Fax: (262) 521-5265



Cloverland Farms \$175 Rebate for WaterSense Labeled Irrigation Controller

Contact Information:	
Owner:	Acct No.:
Address:	
Daytime Phone:	Email Address:

Irrigation Controller Information:					
Date of Purchase: Controller Purchase Price:					
Manufacturer:	Model Name:				
Model Number: Is this a 'WaterSense' labeled Controller?					
Date Installed: Installer:					
Has the Controller been set to comply with Waukesha's annual Sprinkling Ordinance as stated below?					
Addresses Ending With An	May Water On These Days	During These Hours			
Odd Number	Tuesdays & Saturdays Before 9 a.m. or After 5 p				
Even Number	Thursdays & Sundays Before 9 a.m. or After 5 p.m				

Rebates will be provided on a first come/first served basis, subject to availability of funds. All questions on this form must be answered and <u>a copy of the receipt must be attached</u> in order to qualify for a rebate. I agree to a possible site visit by Waukesha Water Utility for installation verification. Please note, it could take up to six weeks to receive the rebate check. For more information on water saving tips or WaterSense labeled products, please visit our website at <u>www.waukesha-water.com</u>.

Property Owner's Signature

Date

p:\conservation\2015\cloverlandfarmsrebate

Irrigation Controller Rebate Form for Cloverland Farms



5. Grants for Innovative Site Specific Water Saving Measures

In 2014, Waukesha Water Utility began to support innovative, site specific, water saving measures for non-residential accounts. In 2015, the Utility added more structure to the program which consists of the following:

- The program focuses on the replacement of capital assets incenting organizations to replace equipment with new technology that will conserve water.
- In order to receive an incentive, an Incentive Application must be completed and the company must receive approval prior to the new technology being ordered.
- The Utility ranks the Applications with respect to pay back periods and cost benefit ratios; and incentives are granted in rank order until the annual funds are exhausted.

Over the past 4 years, letters with the Incentive Application were mailed to the top 50 water users in the commercial, public, and industrial sectors.

The Incentive Letter, Application, and information on a 2018 incentive payout is shown on the following pages.



Telephone: (262) 521-5272 • Fax: (262) 521-5265 • E-mail: contactus@waukes ha-water.com

August 1, 2018

Re: Water Conservation Incentive Program

To Whom It May Concern:

Waukesha Water Utility is sending you a reminder about our Conservation Incentive program for non-residential customers. The purpose of the program is to incent organizations to replace equipment with new technology that will conserve water. Incentives are available to help implement those projects.

In order to be eligible for an incentive, the organization must complete a *Water Conservation Incentive Application* **no later than September 17, 2018;** and receive approval for the project *before* the new technology is ordered. Waukesha Water will assess pending projects to determine if the project is eligible for an incentive.

For more information about the program, please refer to the enclosed Incentive Application or visit Waukesha Water Utility's website at www.waukesha-water.com.

For questions, please call Waukesha Water Utility at (262) 409-4423.

Sincerely,

WAUKESHA WATER UTILITY Customer Service

Enclosure: Water Conservation Incentive Application

Copy of the Business Incentive Cover Letter Mailed to the Top 50 Industrial, Commercial, and Public Water Users



Water Conservation Incentive

SECTION 11 INCENTIVE INFORMATION

Incentives are calculated on a case-by-case basis depending on the application and the size of the facility. See Section 2 for customer eligibility information. Customers must work with the Utility to determine if their project would qualify and then obtain approval (in the form of an Incentive Agreement) prior to purchasing the equipment. Incentives are available to help implement projects that otherwise would not be completed, or to complete projects sooner than scheduled.

SECTION 21 APPLICATION REQUIREMENTS

- The purpose of this form is to assess pending projects to determine if the project is eligible for a custom incentive. Funding provided through custom incentives is contingent upon the following requirements and upon receiving all requested documents:

 You MUST receive pre-approval from Waukesha Water Utility prior to beginning any custom projects, including ordering equipment.

 Custom incentives will not be provided for projects falling under a 1.5 year payback.
- Based on project type, technology and situation, projects may be limited to a maximum simple payback of four to ten years.
- Custom incentives cannot be more than 50 percent of the project cost. Custom incentives that are less than 10% of the project cost may be considered.
- The total maximum incentive a customer may receive for custom projects combined is \$20,000 per calendar year, per EIN.

		Tax Identific	ation Number (complete O	NE only, mi	ist be 9 digits):	
		FEIN:		OR SSN:		<u> </u>
Company Contact Name:	need	lite le	tion of Customer (Check ON			
		Corporation	Partnership 📮 Sole Prop	rietorship		
Street Address:			City:		State:	Zip Code:
Owner Name (Corporations exclude	led): P	hone:	Fax:		Email:	1
SECTION 4: PAYMENT I	NFORMAT	CION (All inform	nation is required to recei	ve paymer	nt)	
Make Incentive Check Payable to	(check ONE):	Company	Name 🔲 Business	Owner's L	egal Name (Or	nly if Sole Proprietor)
Make Check to the Attention of:						
Alternate Mailing Address (if differ	ent from add	ress above):	City:		State:	Zip Code:
SECTION 5: JOB SITE II	NFORMAT	ION (Where p	roject will occur)			
Job Site Name:			Project Contact Name:			
Job Site Name: Job Site Street Address (physical a	ddress):		Project Contact Name: City:		State:	Zip Code:
Job Site Street Address (physical a	ddress): Project Cont	act Fax :	-		referred Mean	s of communication:
		act Fax :	City:		referred Mean	Zip Code: s of communication: ax
Job Site Street Address (physical a Project Contact Phone	Project Cont		City: Project Contact E-mail: Customer #:		referred Mean Phone 🗖 Fa	s of communication:

P:\CONSERVATION\2015\Grants\Application Form\App Water Conservation Incentive2.docx

Front Side of Incentive Application



Water Conservation Incentive

SECTION 6: PROJECT PARAMETERS - project specific information will be held as confidential

Project Description (including costs):

Projected Annual Ga	allons Saved	3 yr. Average Annual C	consumption:	Project Start Date	:	Project (completion Date:
		Hours of	Operation (i.e. 8 a.m. ·	- 9 p.m.)			
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATUR	DAY	SUNDAY
to	to	to	to	to	to		to

Information on existing equipment, system operation and building operation attached (If available).

Specification sheets and/or project proposals attached (If available).

SECTION 7: BACKGROUND QUESTIONS

1. Check which best describes where you are right now with your project:

- Considering project
- Assessing feasibility
 Getting vendor bids and/or savings estimates
 Received management approval
 Started installation

- 2. Check your reasons for pursuing this project:

 - Reduce maintenance costs
 Replace worn out equipment
 Reduce energy costs
 Comply with regulatory equipment
 Achieve company goal or mandate

APPLICANT:	WAUKESHA WATER UTILITY:
Name:	Name:
Signature:	Signature:
Date:	Date:

P:\Conservation\2015\Grants\Application Form\App Water Conservation Incentive_Back Side.docx

Back Side of Incentive Application

After sending out the Business Incentive letters, the Utility received a call from Eaton/Cooper Power Systems on Lincoln Avenue.



Eaton's 2nd Recirculating Water Chiller



Eaton's 3rd Recirculating Water Chiller

A. Eaton/Cooper Power Systems (on Lincoln Avenue) – Industrial

Eaton/Cooper Power Systems, on Lincoln Avenue, is a manufacturer of power transformers and used to be one of Waukesha's top 10 water users. The main reason for the high water usage was due to Eaton using city water to cool their equipment and then sending the exiting heated water right to the sanitary sewer.

In 2015, Eaton submitted an Incentive Application to have their three water cooled vacuum pump systems, that sent the water right to the drain, replaced with three recirculating water chillers that sent no water to the drain. Each new chiller would cost approximately \$150,000. In July of 2015, Eaton replaced their first vacuum pump system and received an incentive from the Utility, but the other two chiller systems were put on hold.

In 2018, after the incentive letters were sent out, the Utility was notified by the new project manager that the original project manager had retired and that the other two recirculating water chillers had been installed.

The Utility calculated the water savings for these two additional water chillers to be 4.6 million gallons per year. Using the cost benefit ratio of \$1:310 gallons of water saved, the incentive payout was \$14,837.51. Eaton's remittance letter for the 2018 financial payout is shown on the following page.



115 DELAFIELD STREET WAUKESHA, WI 53188-3615

Telephone: (262) 521-5272 • Fax: (262) 521-5265 • E-mail: contactus@waukesha-water.com

October 30, 2018

Eaton PLC Attention: Patricia Olsen 1319 Lincoln Avenue Waukesha, WI 53186

Dear Jim Sager & Patricia Olsen,

Thank you for participating in Waukesha Water Utility's Conservation Incentive program. Waukesha Water is remitting this check for \$14,837.51. The monies are to be used to offset the costs associated with installing the 2 additional recirculating water chillers at the Lincoln Avenue facility. We are pleased that this new system will eliminate the need to send cooling water to the drain.

Your efforts, with these 2 additional new water chillers, are estimated to save 4.6 million gallons of water per year!

Thank you for helping our community conserve this important natural resource.

Sincerely,

Waukesha Water Utility

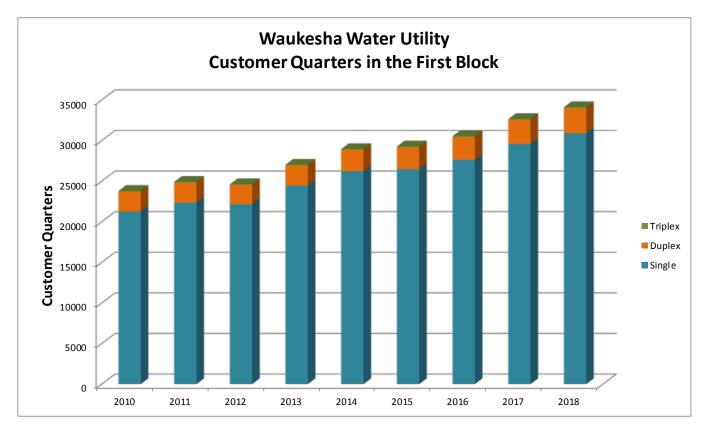
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Mary Adelmeyer O Customer Relations Coordinator

2018 Remittance Letter for Eaton

IV. EFFECTS OF WATER RATES STRUCTURE

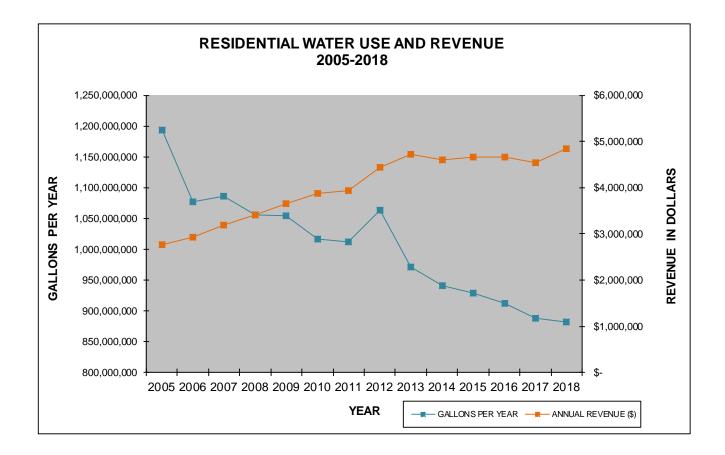
While the Utility implemented an inclining rate block structure in 2007, it wasn't until 2010 that it had data separated into single, duplex and triplex customers. Since 2010 the number of customers that have been in the first block has increased. Regardless, it is impossible to know whether the rate structure alone is causing an increase in "frugal" cusomers, or whether other conservation measures are involved.



The detailed data, on the next three pages, supplements the consumption history; supplied in previous years' reports. In order to provide a more accurate picture of "# of customers," volumes associated with final reads have been excluded.

		%		25.9%	65.8%	8.3%	100.0%		27.9%	66.2%	5.9%	100.0%		0 21.2%	67.3%	11.4%	100.0%		28.0%	66.0%	6.0%	100.0%		25.6%	66.4%	8.0%	100.0%
	2018	Consumption	Quarter 1	49,277,700	125,403,200	15,850,800	190,531,700	Quarter 2	51,168,800	121,607,500	10,789,800	183,566,100	Quarter 3	44,197,800	140,303,800	23,825,600	208,327,200	Quarter 4	51,610,700	121,690,100	11,063,900	184,364,700	Annual	196,255,000	509,004,600	61,530,100	766.789.700
	50	%	Quai	47.8%	50.7%	1.5%	100.0%	Quai	49.5%	49.1%	1.4%	100.0%	Quai	42.4%	54.3%	3.2%	100.0%	Quai	49.4%	49.1%	1.5%	100.0%	Ani	47.3%	50.8%	1.9%	100.0%
		# of Customers		7,785	8,271	246	16,302		8,087	8,015	233	16,335		6,932	8,884	530	16,346		8,098	8,041	252	16,391		7,726	8,303	315	16 344
		%		25.4%	68.8%	5.8%	100.0%		27.2%	67.3%	5.5%	100.0%		21.0%	67.3%	11.6%	100.0%		24.2%	67.1%	8.6%	100.0%		24.4%	67.6%	8.0%	100.0%
	17	Consumption	ter 1	47,052,400	127,505,300	10,734,000	185,291,700	ter 2	49,685,600	122,668,700	10,005,600	182,359,900	ter 3	43,901,300	140,510,800	24,290,900	208,703,000	ter 4	47,228,200	130,856,700	16,839,200	194,924,100	ual	187,867,500	521,541,500	61,869,700	771 278 700
	2017	%	Quarter 1	46.5%	52.0%	1.5%	100.0%	Quarter 2	48.5%	50.0%	1.5%	100.0%	Quarter 3	41.8%	54.8%	3.4%	100.0%	Quarter 4	45.4%	52.1%	2.5%	100.0%	Annual	45.5%	52.2%	2.2%	100 0%
		# of Customers		7,521	8,413	249	16,183		7,862	8,106	247	16,215		6,792	8,893	554	16,239		7,390	8,486	401	16,277		7,391	8,475	363	16 220
		%		24.3%	70.1%	5.6%	100.0%		24.3%	69.6%	6.1%	100.0%		17.6%	66.4%	16.0%	100.0%		23.6%	68.7%	7.7%	100.0%		22.2%	68.6%	9.2%	100 0%
ption	16	Consumption	ter 1	45,343,100	131,111,300	10,477,200	186,931,600	ter 2	45,445,300	130,437,000	11,490,800	187,373,100	ter 3	39,552,100	149,021,400	35,959,100	224,532,600	ter 4	45,894,500	133,649,700	14,907,700	194,451,900	ual	176,235,000	544,219,400	72,834,800	703 780 700
/ Consum	2016	~	Quarter	44.4%	54.0%	1.6%	100.0%	Quarter 2	45.1%	53.1%	1.8%	100.0%	Quarter 3	38.1%	57.1%	4.7%	100.0%	Quarter	44.1%	53.7%	2.1%	100.0%	Annual	42.9%	54.5%	2.6%	100.0%
Single Family Consumption		# of Customers		7,072	8,592	260	15,924		7,253	8,536	290	16,079		6,160	9,233	767	16,160		7,121	8,669	344	16,134		6,902	8,758	415	16 074
0,		%		22.3%	71.1%	6.6%	100.0%		23.4%	69.7%	6.9%	100.0%		16.8%	68.6%	14.6%	100.0%		22.2%	68.8%	8.9%	100.0%		21.0%	69.5%	9.5%	100 0%
	15	Consumption	ter 1	43,099,000	137,314,900	12,756,600	193,170,500	ter 2	44,187,600	131,722,000	12,975,200	188,884,800	ter 3	37,547,200	153,361,500	32,575,600	223,484,300	ter 4	44,013,900	136,245,600	17,644,200	197,903,700	ual	168,847,700	558,644,000	75,951,600	803 443 300
	201	%	Quart	42.5%	55.8%	1.7%	100.0%	Quart	44.2%	54.0%	1.8%	100.0%	Quart	36.6%	58.8%	4.6%	100.0%	Quart	42.7%	54.7%	2.6%	100.0%	Annual	41.5%	55.8%	2.7%	100 0%
		# of Customers		6,715	8,830	269	15,814 1		7,042	8,592	290	15,924		5,875	9,422	737	16,034 1		6,842	8,757	412	16,011 1		6,619	8,900	427	15 946 1
		%		21.3%	71.6%	7.1%	100.0%		20.0%	68.8%	11.2%	100.0%		18.2%	71.1%	10.7%	100.0%		22.0%	70.3%	7.7%	100.0%		20.3%	70.5%	9.2%	100.0%
	14	Consumption	ter 1	41,519,300	139,750,000	13,828,400	195,097,700	ter 2	41,039,600	141,451,900	22,980,000	205,471,500	ter 3	38,701,200	151,431,200	22,878,200	213,010,600	ter 4	43,272,300	138,233,600	15,098,300	196,604,200	ual	164,532,400	570,866,700	74,784,900	810 184 000
	2014	%	Quarter 1	42.0%	56.0%	2.0%	100.0%	Quarter 2	40.9%	56.0%	3.1%	100.0%	Quarter 3	38.1%	58.5%	3.4%	100.0%	Quarter 4	42.7%	55.1%	2.2%	100.0%	Annual	40.9%	56.4%	2.7%	100.0%
		# of Customers		6,707	8,944	312	15,963		6,552	8,969	490	16,011		6,109	9,374	539	16,022		6,856	8,844	357	16,057		6,556	9,033	425	16 013 '
		Interval		0-10,000	10,001-30,000	>30,000	Q Total	 	0-10,000	10,001-30,000	>30,000	Q Total		0-10,000	10,001-30,000	>30,000	Q Total		0-10,000	10,001-30,000	>30,000	Q Total		0-10,000	10,001-30,000	>30,000	Total

Γ		;	%		24.7%	71.6%	3.7%	100.0%		28.5%	71.5%	0.0%	100.0%		20.4%	67.3%	12.3%	100.0%		17.8%	65.3%	16.9%	100.0%		22.6%	68.8%	8.6%	100.0%
	17		Consumption	ter 1	456,700	1,324,500	69,200	1,850,400	Quarter 2	513,400	1,288,800		1,802,200	ter 3	406,200	1,339,900	245,300	1,991,400	Quarter 4	363,900	1,336,000	345,800	2,045,700	Annual	1,740,200	5,289,200	660,300	7,689,700
	2017		%	Quarter 1	43.4%	55.3%	1.3%	100.0%	Quar	46.7%	53.3%	%0.0	100.0%	Quarter	39.5%	56.6%	3.9%	100.0%	Quar	36.0%	58.7%	5.3%	100.0%	Anr	41.4%	56.0%	2.6%	100.0%
		# of	Customers		33	42	1	76		35	40		75		30	43	3	76		27	44	4	75		31	42	2	76
			บี %	T	27.5%	63.1%	9.4%	100.0%		28.1%	71.9%	0.0%	100.0%		17.0%	83.0%	0.0%	100.0%		22.3%	74.6%	3.1%	100.0%		23.6%	73.2%	3.2%	100.0%
	7		Consumption	er 1	512,100	1,174,800	175,000	1,861,900	er 2	475,900	1,216,900	-	1,692,800	er 3	316,200	1,548,800	-	1,865,000	er 4	430,300	1,440,400	60,500	1,931,200	lal	1,734,500	5,380,900	235,500	7,350,900
	2017		%	Quarter 1	46.7%	50.7%	2.7%	100.0%	Quarter 2	44.0%	56.0%	0.0%	100.0%	Quarter 3	31.6%	68.4%	0.0%	100.0%	Quarter 4	40.8%	57.9%	1.3%	100.0%	Annual	40.7%	58.3%	1.0%	100.0%
		# of	Customers		35	38	2	75		33	42	•	75		24	52	•	76		31	44	1	76		31	44	1	76
			%	T	18.7%	81.3%	0.0%	100.0%		20.1%	75.7%	4.2%	100.0%		18.6%	78.1%	3.4%	100.0%		22.0%	73.4%	4.7%	100.0%		19.8%	77.2%	3.0%	100.0%
ption	16		Consumption	ter 1	358,600	1,560,400	'	1,919,000	ter 2	365,700	1,380,500	76,800	1,823,000	ter 3	372,300	1,566,800	67,400	2,006,500	ter 4	413,300	1,379,100	87,700	1,880,100	ual	1,509,900	5,886,800	231,900	7,628,600
y Consum	2016		%	Quarter 1	36.5%	63.5%	0.0%	100.0%	Quarter 2	38.7%	60.0%	1.3%	100.0%	Quarter 3	35.1%	63.6%	1.3%	100.0%	Quarter 4	40.0%	58.7%	1.3%	100.0%	Annual	37.5%	61.5%	1.0%	100.0%
Three Family Consumption		# of	Customers		27	47	'	74		29	45	1	75		27	49	1	77		30	44	1	75		28	46	1	75
			Cu %		17.3%	77.6%	5.1%	100.0%		20.2%	71.4%	8.4%	100.0%		17.0%	63.6%	19.4%	100.0%		19.8%	71.8%	8.4%	100.0%		18.5%	70.9%	10.6%	100.0%
	15		Consumption	ter 1	364,300	1,636,200	107,900	2,108,400	ter 2	398,800	1,412,700	166,600	1,978,100	ter 3	386,200	1,441,000	440,000	2,267,200	ter 4	400,400	1,448,000	169,200	2,017,600	ual	1,549,700	5,937,900	883,700	8,371,300
	2015		%	Quarter 1	33.3%	65.3%	1.3%	100.0%	Quarter 2	36.0%	61.3%	2.7%	100.0%	Quarter 3	36.4%	57.1%	6.5%	100.0%	Quarter 4	39.5%	57.9%	2.6%	100.0%	Annual	36.3%	60.4%	3.3%	100.0%
		# of	Customers		25	49	1	75		27	46	2	75		28	44	5	77		30	44	2	76		28	46	3	76
			%		15.2%	41.3%	43.5%	100.0%		18.4%	37.8%	43.8%	100.0%		16.3%	39.3%	44.5%	100.0%		17.3%	44.3%	38.5%	100.0%		0.0%	0.0%	0.0%	100.0%
	14		Consumption	ter 1	332,900	907,600	954,600	2,195,100	ter 2	385,900	792,100	916,600	2,094,600	ter 3	339,700	819,800	928,300	2,087,800	ter 4	354,400	907,500	788,400	2,050,300	ual	24	35	16	8,427,800
	2014		%	Quarter 1	32.0%	44.0%	24.0%	100.0%	Quarter 2	34.7%	40.0%	25.3%	100.0%	Quarter 3	32.0%	42.7%	25.3%	100.0%	Quarter 4	32.0%	46.7%	21.3%	100.0%	Annual	32.7%	43.3%	24.0%	100.0%
		# of	Customers		24	33	18	75		26	30	19	75		24	32	19	75		24	35	16	75		25	33	18	75
			Interval		0-20,000	20,001-60,000	>60,001	Q Total		0-20,000	20,001-60,000	>60,001	Q Total	1	0-20,000	20,001-60,000	>60,001	Q Total		0-20,000	20,001-60,000	>60,001	Q Total	1	0-20,000	20,001-60,000	>60,001	Total



A review of residential revenue and gallons billed indicates that, in general, the Utility has done a good job of using the rate making process to offset the decrease in revenue that would come from fewer gallons consumed.

V. CONSERVATION EFFICIENCY MEASURES - NONRESIDENTIAL CUSTOMERS

Commercial, Industrial and Public rates were set in 2012 with declining blocks and the Utility had a rate increase approved by the PSC, effective December 1, 2017.

	er 1,000 Gallons nber 1, 2017
Gallons	Commercial, Industrial, Public
0 - 75,000	\$3.60
75,001 - 1,500,000	\$3.40
Over 1,500,000	\$3.00

As seen below, there appears to be enough variation in consumption within the classes to question whether the structure is affecting utilization. Anecdotally, consumption seems to move with the economy and the weather.

		Me	tered Usage fo	r Non-Residen	tial		
Billing	2012	2013	2014	2015	2016	2017	2018
Class	(Gallons)	(Gallons)	(Gallons)	(Gallons)	(Gallons)	(Gallons)	(Gallons)
Commercial	816,621,116	795,377,000	780,972,720	774,316,900	763,290,200	729,873,000	707,267,000
Industrial	334,776,300	266,539,000	270,877,200	262,476,500	237,069,700	232,668,900	230,557,100
Public	114,020,400	92,508,000	92,618,300	99,075,700	83,040,900	72,384,600	67,338,800
Irrigation	n/a	n/a	n/a	n/a	n/a	n/a	4,447,476

Therefore the Utility uses efforts, other than the rate structure, to incent conservation.

To bolster the rate increase, the Utility has additional conservation programs that affect Non-Residential customers and some that affect all customer classes. The additional programs include the following:

- 1. Irrigation Rates (for all customer classes) (New in Dec. 2017)
- 2. Sprinkling Ordinance (for all customer classes)
- 3. Irrigation Ordinance (for all customer classes)
- 4. Sewer Ordinance Change (for all customer classes)
- 5. Yard Sign Campaign (for all customer classes)
- 6. Waukesha Rain Barrel Promotion Program (for all customer classes)
- 7. Rain Garden Plants Sale (for all customer classes)
- 8. Outdoor Conservation Tips (for all customer classes)
- 9. Pre-rinsed Spray Valves (for non-residential classes)
- 10. Why it's Important To Conserve & What You Can Do (for all customer classes)
- 11. How Much Water Do You Use? & Things to do to Lower Your Bill (all customer classes)
- 12. Program on Finding & Fixing Leaks (for all customers)
- 13. Web Based Consumption History and Comparisons Available (for all customers)
- 14. Audit Program (for residential & non-residential customers)

1. Irrigation Rates

Effective December 1, 2017, the Wisconsin Public Service Commission (PSC) approved our application to offer Irrigation Rates to our customers.

The irrigation rates were designed with two goals in mind. First, to bill for water used outside that is not collected into the sewer system. Second, to encourage conservation of a limited resource.

The Utility notified customers about the new irrigation rates by mailing letters to accounts that were billed water only (for the accounts that had a public sprinkling meter) and to accounts who previously had and still have sewer credit meters. A copy of the letter is shown on the following page.

In addition to the mailings, the account type for the public sprinkling meters was changed on our billing system to an Irrigation account; and the volumetric rate was increased to \$5.70 per thousand gallons, as opposed to the residential or commercial step rate.

Finally, an Application for Irrigation Meters was created and placed on our website. This Application includes a cover letter, instructions on what needs to be done to get an irrigation meter installed, and a meter installation specification sheet.

In 2018, the Utility received 11 applications for irrigation meters. A copy of the Irrigation Application, with all of its attachments, is also shown on the following pages.



115 DELAFIELD STREET WAUKESHA, WI 53188-3615

Telephone: (262) 521-5272 • Fax: (262) 521-5265 • E-mail: contactus@waukesha-water.com

Dear Customer:

We would like to inform you that the Wisconsin Public Service Commission (PSC) has approved our application to offer irrigation rates to our customers. You have a meter that is subject to these new rates.

Irrigation rates are designed with two goals in mind. First, to bill for water that is used outside and is not collected into the sewer system. Second, to encourage the conservation of a limited resource; one that we will soon have to buy from Lake Michigan.

The rates that became effective on December 1, 2017 are as follows:

Quarterly Char	ge		
Meter Size	\$	Meter Size	\$
5/8	27.00	3	198.00
3/4	27.00	4	270.00
1	45.00	6	438.00
1 1/4	66.00	8	666.00
1 1/2	75.00	10	960.00
2	117.00	12	1260.00
Volumetric Cha	arge	\$5.70 per 1,0	00 gallons

If you have questions about these new irrigation rates or would like to install an irrigation meter, please contact us at 262 521 5272.

Thank you,

The Wankesha Water Utility

C:\Users\mka\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\JJUU611E\Irrigation Letter to Water Only - public and sprinkling Customers.docx

Initial Irrigation Letter Mailed Out to Accounts Billed Water Only for Public Sprinkling Meters



115 Delafield Street Waukesha, WI 53188-3615

Telephone: (262) 521-5272 • Fax: (262) 521-5265 • E-mail: contactus@waukesha-water.com

Re: Irrigation Meter

Dear Customer:

This letter is regarding your inquiry into an irrigation meter for your property. If you are interested in the installation of an irrigation meter, please review the instructions, complete the enclosed application, and return it to the Waukesha Water Utility with a check for \$125.00 for each irrigation meter you would like to install. Please note that in order to complete the application, you will need to obtain a plumbing permit. The permit can be obtained at City Hall.

Also, when considering an irrigation meter, please remember that the city of Waukesha has a Sprinkling Ordinance. Every year, beginning May 1st – October 1st, addresses ending in an Odd number, may only water on Tuesdays & Saturdays (before 9 a.m. or after 5 p.m.); addresses ending in an Even number, may only water on Thursdays & Sundays (before 9 a.m. or after 5 p.m.). If you have an automatic sprinkling system, please be sure to schedule the sprinkling times appropriately.

The billing rates for an irrigation meter, effective on December 1, 2017, are as follows:

Quarterly Cha	rge		
Meter Size	<u>\$</u>	Meter Size	\$
5/8	27.00	3	198.00
3/4	27.00	4	270.00
1	45.00	6	438.00
1 1/4	66.00	8	666.00
1 1/2	75.00	10	960.00
2	117.00	12	1260.00
Volumetric Ch	narge	\$5.70 per 1,	000 gallons

If you have any further questions, please call us at 262.521.5272 between 8:00 a.m. and 4:00 p.m.

Sincerely,

Waukesha Water Utility

P/ADMIN/Multiple Meter Ap 10 15 18



IRRIGATION METER

In order to install an irrigation meter and radio, please do the following:

1. Complete the attached application

You may need to work with a plumber or our customer service staff to complete the application. Please be aware that you will receive a separate bill for this meter.

2. Obtain a plumbing permit from City Hall

Plumbing permits are issued by the Building Inspector. They may be obtained in room 200 in the City Hall at 201 Delafield St. The office is open from 8:00 to 4:30. The telephone is (262) 524-3750.

3. Pay the application fee (\$125)

The fee is paid at the Water Utility. It covers the time our engineering staff spends to ensure that the meter will be the appropriate size to meet your needs from information supplied by you or your plumber. It also covers the administrative time spent processing the application. Finally, it covers the time our field crew will spend installing the meter and radio at the premises.

4. Install the fixtures for the irrigation meter and radio

Whether you intend to do-it-yourself or hire a plumber, the pipes, meter valve, and the copperhorn for the meter must installed according to the attached specifications. The materials must also be in compliance with Wisconsin Administrative Code. Because you pay for all of these materials and work, you will own all of this plumbing.

5. Set an appointment with the Water Utility to install the meter and radio

To have the meter installed, please call Customer Service at (262) 521-5272. You will want to make this appointment at least a week in advance, especially if you want to coordinate the work so that it gets done on the same day that a plumber is present. The Water Utility owns, operates and maintains only the meter and the radio. If your installation of the meter and radio requires additional hardware, you will be invoiced for that additional hardware.

6. Schedule your sprinkling times according to Waukesha's Sprinkling Ordinance Every year, beginning May 1st – October 1st, Waukesha has the following Sprinkling Ordinance: addresses ending in an Odd number, may only water on Tuesdays & Saturdays (before 9 a.m. or after 5 p.m.); addresses ending in an Even number, may only water on Thursdays & Sundays (before 9 a.m. or after 5 p.m.). If you have an automatic sprinkling system, please be sure to schedule the sprinkling times appropriately.

115 Delafield Street P.O. Box 1648 Waukesha, WI 53187-1648

Questions regarding the application process: (262) 521-5272

Fax Number: (262) 521-5265

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Instruction Sheet for Irrigation Meters



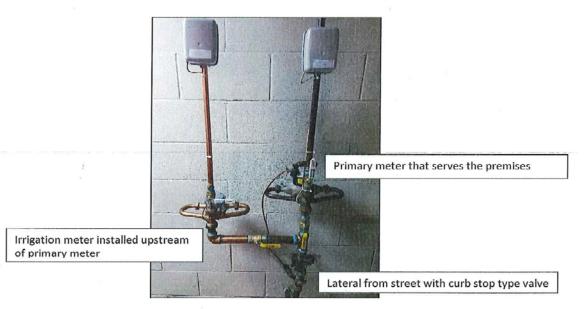
APPLICATION FOR IRRIGATION METER

1.	Property Address
2.	Building TypeSingle FamilyDuplexTriplexApartment (> 4 units)Condo
3.	Owner's Name Phone
4.	Owner's Address
5.	Plumber's Name Phone
6.	Plumber's Address
7.	Please list the number of water using devices that will be measured by this meter
	34" Garden Hose 1/2" Garden Hose Underground Sprinkler
8.	Gallons per minute needed
9,	City Plumbing Permit #
10.	Who is responsible for payment?OwnerPlumber
11.	Are you aware of Waukesha's Sprinkling Ordinance (as explained in the cover letter)?YesNo
	Nignatura Data
2	Signature Date
D-\	ADMIN\Applications for New Services\Irrigation Meter App\Irrigation Meter Ap 3 18.docx

Irrigation Meter Application Form



IRRIGATION METER SPECIFICATIONS



Installation of a 5/8 inch irrigation meter

NOTE 1: Copperhorns shall comply with ANSI/AWWA C-800, have a lead free brass body with copper arms and swivel connections manufactured by Ford in the following sizes.

Meter Size	Copperhorn							
5/8"	No. 1 provided with union nuts							
3/4"	No. 3 provided with union nuts							
1 "	No. 4 provided with union nuts							

NOTE 2: The Utility will install the meter valve and the copperhorn upon the request of the applicant. The cost will be billed to the applicant as outlined in the current Waukesha Water Utility Fee Schedule.

NOTE 3: The Utility Rules and Regulations Manual requires a four foot clearance around the meter.

NOTE 4: All brass must be lead free.

NOTE 5: The Utility will replace (at the cost of the applicant) any copperhorn or valve that does not comply with the specifications, above.

NOTE 6: Certified vacuum breakers shall be installed at each hose bib.

NOTE 7: Fixtures serving, and served by, the irrigation should be separately labeled.

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Irrigation Meter Installation Specifications Sheet

In addition to the Irrigation Rates, the Utility also uses the next seven programs (previously listed) to encourage conservation during the summer months.

There is a discussion of each of these tools below; followed by data that demonstrates the efficacy of the Utility's approach.

2. Sprinkling Ordinance

City Ordinance 13.11 was enacted in 2006 and applies to all customers in Waukesha. The ordinance is in effect from May 1 to Oct 1 each year. This ordinance bans all sprinkling during the daytime hours of 9 AM to 5 PM during the stated time period. Customers are allowed to irrigate two days a week according to their address.

A brochure that explains the ordinance is placed at several public locations.



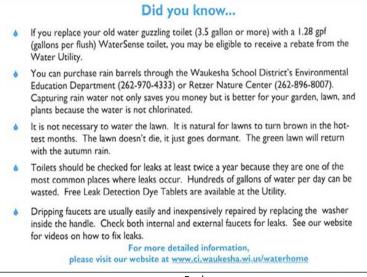
Brochure Outside



Brochure Inside

In addition to the Sprinkling Ordinance brochure, **Bill stuffers** are sent to all customers each year beginning in April and ending in June. The stuffers are designed to remind customers of the Ordinance. A copy of the stuffer is below.

	An	City of Waukesha nual Sprinkling Ord May Ist - October	inance		
	Addresses Ending With An	May Water On The Following Days	During These Hours		
	Odd Number	Tuesdays & Saturdays	Before 9 am or After 5 pm		
	Even Number	Thursdays & Sundays	Before 9 am or After 5 pm		
	Hand water	ing may be done any day a	at any time.		
first watering violation result in fines as per	arnings will be given for th on. Subsequent offenses wi Ordinance. Violations ma ously at (262) 521-5272.	Save Money & Mow Less: Join "My Brown Lawn is GREEN" campaign. Since established lawns go dormant in the summer and turn green again with the autumn rain, watering the grass is unnecessary.			
AND AND AND					
		Front			



Back

Street signs, alerting the public to the Ordinance, have been place on every major street.



Time Warner Cable aired a **public service announcement** that addressed the Sprinkling Ordinance in 2012. The same announcement is broadcast annually on the City's TV25. TV25 airs information pertaining to local government and community events.

Reminders are placed in **local papers** (as seen on the next page).

Fines are approved and in place for violations to this Ordinance, as follows:

1 st Citation	\$172
2 nd Citation	\$298
3 rd Citation	\$424
4 th Citation	\$676

Before citations are issued, **Notices are sent to violators** to encourage them to comply. In 2018, there were 5 violators who received notices. Compared to previously years, the number of notices mailed out had decreased. This decrease was due to the amount of rainfall this past year - the lawns were green for the majority of the summer.

Contact: Mary Adelmeyer 115 Delafield Street Waukesha, WI 53188 Phone 262-409-4423 Fax 262-521-5265

Waukesha Water Utility

For Immediate Release

Press Release

June 2018 - With the arrival of hot weather, the Waukesha Water Utility would like to remind city residents of the annual Sprinkling Ordinance in effect from May 1st – October 1st.

Odd-numbered street addresses may water on Tuesdays and Saturdays prior to 9 a.m. or after 5 p.m.

Even-numbered street addresses may water on Thursdays and Sundays prior to 9 a.m. or after 5 p.m.

A hand-held watering can, container, or hose may be used at any time to water gardens, trees, or shrubs, but only if the water device is utilized manually and not left unattended.

The City developed the sprinkling ordinance as part of an ongoing water conservation program. Additional water conservation is needed to protect local water resources and reduce demand during peak hours. The City is requiring customers to refrain from watering during daytime hours, when up to 40% of the water applied by a sprinkler can be lost to evaporation.

To help with the sprinkling, a \$20 rebate for rain barrels is available for Waukesha Water Utility customers; along with a yard sign, that can be picked up at 115 Delafield Street, that reads "My Brown Lawn is Green" to show your dedication to conservation.

For additional information on the sprinkling ordinance and rebates, please visit the Water Utility's website at <u>www.waukesha-water.com/conservation.html</u> or phone the Utility at (262) 521-5272.

Sprinkling Ordinance Press Release



115 DELAFIELD STREET WAUKESHA, WI 53188-3615

Telephone: (262) 521-5272 • Fax: (262) 521-5265 • E-mail: contactus@waukesha-water.com

Re:

Dear Water Utility Customer:

It has been observed that you have been sprinkling at your property during unauthorized periods, specifically on ______ at _____ a.m./p.m.

Conservation Ordinance #20-06, Chapter 13.11 of the City Municipal Code was passed by the Waukesha Common Council in April 2006 which restricts the days and times for outdoor water sprinkling. These restrictions are in effect Annually from May 1st through October 1st, and are as follows:

Addresses ending with an Odd Number may water on Tuesdays and Saturdays, before 9:00 a.m. or after 5:00 p.m.

Addresses ending with an Even Number may water on Thursdays and Sundays, before 9:00 a.m. or after 5:00 p.m.

Please adjust your sprinkling times to coordinate with the days and times that are applicable to your address; and please adjust your sprinklers so that they are not watering the sidewalks or driveway.

Enclosed is a brochure to help answer any questions you may have. If you would like additional information, please contact the Waukesha Water Utility at 262-521-5272.

We appreciate your prompt response and your assistance in helping protect and maintain our water supplies for the future.

Sincerely,

WAUKESHA WATER UTILITY Customer Service

Violation Letter

City of Waukesha | Mayor's Office | Common Council | Contact Us

Waukesha Water Utility Serving Waukesha Since 1886								
	Department Home	Customer Service	Great Lakss Application	UEBity and Commission	Conservation			

Sprinkling Ordinance

City Ordinance 13.11 applies to all customers in Waukesha and is in effect from May 1 to October 1 each year.

	Addresses	May Water On The	During These
	Ending With An	Following Days	Hours
	Odd Number	Tuesdays & Saturdays	Before 9 am or After 5 pm
1. j	Even Number	Thursdays & Sundays	Before 9 am or After 5 pm
	Hand water	ing may be done any day	at any time.
watering violat	unings will be given for the on. Subsequent offenses with Ordenace. Violations ma ownly at (262) 521-5272.	a onetre carping	Since established lawns go d sum green again with sh-

Sprinkling Tips

- Established lawns need only one inch of water per week.
- Place a tuna can or small container outside to measure this amount.
- Set a timer as a reminder to move sprinklers.
 Water before 8:00 a.m. this will limit the amount
- Water before 8:00 a.m. this will mill the amount of water lost to evaporation.
- Avoid watering at night this will reduce the chance of lawn diseases.
- Raise your lawn mower blade to at least three inches, or to its highest level - this will provide protection to the roots and allow moisture to remain in the soll.
- Avoid over fertilizing fertilizers increase the need for water.
- Purchase a slow release, water-insoluble form of nitrogen for your fertilizing needs.
- Do not water on windy days.
- Position sprinklers to avoid watering the roof, driveway, sidewalk, or street.
- Use sprinklers that have larger holes water evaporates faster with sprinklers that spray a fine mist.
- Use drip irrigation systems for plants, trees, shrubs, and vegetable gardens. Or use soaker hoses but turn them upside down (so that holes are on the bottom). This will also help prevent evaporation.



Last updated 06/05/2015

Sprinkling Ordinance & Tips Posted on the Website

Water Sense



3. Landscape Irrigation System Ordinance

In May of 2015, the Utility began working on an ordinance to incent the installation of water efficient irrigation systems. With the assistance of DJ's Sprinkler Systems and Milwaukee Sprinkler Systems, the City Building Inspector, and the City Attorney, the Utility drafted the ordinance and permitting documents. The Wisconsin Public Service Commission was unaware of other utilities in the state that had ordinances, so Waukesha analyzed aspects of the ordinances from Dallas and Denver.

Ordinance 19.175, Landscape Irrigation Systems, was adopted in the fourth quarter of 2015 by the Common Council. In short, the ordinance exists to ensure that all Landscape Irrigation Systems in the City of Waukesha are designed, installed, maintained, altered, and operated in a manner that prevents the waste of water, promotes the most efficient usage of water, controls erosion, and applies the minimum amount of water required to maintain healthy individual plants. The ordinance can be found at:

http://waukesha-water.com/downloads/PressReleases/Irrigation_Ordinance_Final_10_15_15.pdf

In addition to conservation minded landscape design, the ordinance mandates the use of a WaterSense labeled controller. Waukesha Water Utility is a WaterSense partner and as such relied on the research WaterSense had already done. They found that a Water Sense controller can save a home between 30-50% on its summer water bills, and reduces landscape run off by as much as 71%.

The administrative duties are performed by the City Building Inspector's Office and, to a much lesser degree, the Water Utility. The Inspector's Office performs the plan review, issues the permit, and retains the records surrounding the installation of the systems. The Utility will educate the public about the new ordinance and supply the Inspector's Office with the permitting forms.

In 2018, there were 2 permits for new residential accounts.

Copies of the application, instructions and contractor certificate can be found below.

CITY OF WAUKESHA DEPARTMENT OF COMMUNITY DEVELOPMENT- BUILDING INSPECTION 201 DELAFIELD STREET * WAUKESHA, WI 53188 * (262) 524-3530



PERMIT NO: _____

APPLICATION FOR IRRIGATION SYSTEM PERMIT

Owner	Phone				
Address					
Job Address (if different)				
Contractor	License (if applicable)				
Address	Phone				
	SYSTEM DESCRIPTION				
Single Family	2 Family3 FamilyMulti FamilyCommercialIndustrial _	_Public			
Fixtures	Туре	Quantity			
Backflow Preventer	Annual Inspection Required Y N				
Irrigation Controller	WaterSense Labeled Y N Provide Cut Sheet				
Estimated System Cost					
Signature of Applicant	Date				
The nonrefundable	permit fee of \$50.00 and the applicable plan review fee per approved fee was collected, and the permit is hereby approved.	schedule			
Signature	Title Date				
White Copy – Contractor Yellow Copy – Owner Pink Copy – City of Waukesha, Building Inspector This form is also available online at http://www.ci.waukesha.wi.us/deot/ouliding/FORMS.htm					
P:\Conservation\2015\Imgation P	lumbing Ordinance\Permit 10 15 15.docx8/12/15				

Application for Irrigation System Permit

CITY OF WAUKESHA DEPARTMENT OF COMMUNITY DEVELOPMENT- BUILDING INSPECTION 201 DELAFIELD STREET * WAUKESHA, WI 53188 * (262) 524-3530

INSTRUCTIONS FOR IRRIGATION SYSTEM PERMIT

City of Waukesha Ordinance 19.175 requires that a permit be issued before an irrigation system may be installed, materially altered, or completely replaced. The purpose of this ordinance is to require all irrigation systems to be installed, materially altered, or completely replaced in a manner that is consistent with the City's water conservation goals. Systems shall prevent the waste of water, control erosion, promote the most efficient use of water, and apply the least amount of water that is required to maintain healthy individual plant material.

The Ordinance, available at <u>http://www.ci.waukesha.wi.us/web/quest/chapter19</u>, outlines the features required of irrigation systems, and the procedures required when the system is turned over to the owner.

A permit must be issued before the work commences.

The contractor shall prepare an irrigation plan to scale for each site where a new irrigation system will be installed or altered. Plans shall:

- 1. Be drawn to scale and indicate the scale used.
- 2. Include the name and dated signature of the designer.
- Designate the location of the parcel.
- Depict both areas to be and not to be irrigated within the parcel.
- Reveal the major physical features and boundaries of the areas to be watered.
- Indicate the location and type of each:
 - water source, backflow prevention device, controller, sensor, and electrical splice.
 - water emission device, including, but not limited to, spray heads, rotary sprinklers, guick couplers, bubblers, drip, or micro sprays.
 - valve, including but not limited to, zone valves, station solenoid valves, automatic master valve, and isolation valve.

Back flow preventers are required to be installed by licensed plumbers.

All systems subject to the ordinance must include a WaterSense labeled Irrigation Controller. A list of controllers is available at http://www.epa.gov/watersense/product_search.html?Category=5. A cut sheet of the controller must be submitted with the application.

The permit fee is due at the time of application and is nonrefundable.

The application must be submitted to Building Inspection. The review may take as many as 10 business days before a permit can be issued.

Upon completion of the system, the Contractor must review the Contractor Certificate specified in the ordinance and secure the owner's signature. A copy of the signed Contractor Certificate shall be sent to the Department.

Failure to follow these instructions subjects the violator to the fines specified in the ordinance.

This form is also available online at http://www.cl.waukesha.wl.us/dept/building/FORMS.htm

P:\Conservation\2015\Irrigation Plumbing Ordinance\Permit 10 15 15.docx8/12/15

Instructions for Irrigation System Permit

CITY OF WAUKESHA DEPARTMENT OF COMMUNITY DEVELOPMENT- BUILDING INSPECTION 201 DELAFIELD STREET * WAUKESHA, WI 53188 * (262) 524-3530

PERMIT NO: _____

IRRIGATION SYSTEM CONTRACTOR CERTIFICATE

Within 30 days of completion of the installation of the System, the Contractor shall:

· complete and deliver this signed and dated Certificate to the Owner

· deliver a fully signed copy to the Department

I, _____, installed an Irrigation System installed at

_____, and certify that I have:

(Check those that apply)

Installed the System in accordance with all applicable ordinances, statutes, codes, rules and regulations; confirmed the correct operation of the entire System; and confirmed that the System has been installed substantially according to the Irrigation Plan and all terms and conditions of the permit.

Provided the Owner with a copy of the Irrigation Plan indicating the System, as built.

Performed a final walk-through with the Owner to explain the operation of the System.

Supplied the Owner with the manufacturers' manuals for the controller and other components of the System.

Supplied the Owner with a list of System components that require maintenance, and the recommended frequency for maintenance.

Informed the Owner of their responsibility to drain the System before November 1st of each year.

White Copy – Contractor Yellow Copy – Owner Pink Copy – City of Waukesha, Building Inspector

This form is also available online at http://www.cl.waukesha.wl.us/deot/buildino/FORMS.htm

P:\Conservation\2015\Irrigation Plumbing Ordinance\Permit 10 15 15.docx8/12/15

Irrigation System Contractor Certificate



4. <u>Sewer Ordinance Change</u> (Sprinkling Credit Meters)

In December 2016, Waukesha's Sewer Credit Meter Ordinance was revised to better support Waukesha's water conservation efforts. The recent Ordinance change was focused on eliminating water use for activities that are considered non-essential – such as outdoor water use.

Prior to the Ordinance change, customers who had a sewer credit meter could have their wastewater charges reduced by the amount of water used outdoors. However, as of January 1, 2017, sewer credit meter accounts, installed for more than seven years, will no longer receive a credit.

Sewer credit meters installed for less than seven years will be phased out. The Utility calculated that it takes an average of seven years for customers to recover the money they spent for the meter and installation costs. Therefore, sewer credit meters installed between January 1, 2010 and December 31, 2016 will expire seven years from the date they were installed.

In 2018, the Utility mailed 29 letters to customers who reached their 7 year phase out period and were scheduled to have their sewer credit discontinued. A copy of the letter is shown on the following page.

There are 167 sewer credit accounts remaining.



P O Box 1648 Vaukesha, WI 53187-1648

SERVING WAUKESHA SINCE 1886

Telephone: (262) 521-5272 • Fax: (262) 521-5265 • E-mail: contactus@waukesha-water.com

February 2018

RE: Sewer Credit Ordinance Change Service Address, Account #Account Number

Dear Customer Name:

The City updated its Sewer Credit Ordinance to sunset the use of sewer credit meters. The ordinance was changed to ultimately support the Water Utility's water conservation efforts, but also, to allow customers to recover the cost of buying and installing a sewer credit meter. On average, a home owner is able to recover these costs in seven years.

You are being contacted as the related meter on your property has been in use for seven years.

You have until May 20, 2018, to provide a final reading from your sewer credit meter. That reading will be used to calculate the last sewer credit that you are entitled to. You may send in a meter card or phone in a reading.

The sewer credit meter is customer owned but does not need to be removed. The Water Utility will "disconnect" the meter in our records. As a result, your bill will no longer be reduced by the value of the water that passes through your sewer credit meter.

Please keep in mind that Waukesha's water conservation program is an important factor leading to its ability to secure water from Lake Michigan. This change is aimed at reducing water use for activities that are considered non-essential.

We understand how these changes affect you. Please consider changing how you use the water that was passing through your sewer credit meter.

If you have any questions about the sewer credit meters, or would like information about our conservation rebates or Irrigation Only rates, please contact the Utility at (262) 521-5272.

Thank you,

Waukesha Water Utility

Copy of the Letter Sent to Customers Who Are No Longer Going to Receive a Sewer Credit

5. My Brown Lawn is Green Yard Sign Campaign

Furthermore, the Utility continued to encourage customers to let their lawns go dormant. Large colorful lawn signs, designed by a local artist, are available free of charge to customers who wish to demonstrate their commitment to water conservation. The signs serve to acknowledge those who are conserving and to encourage their neighbors to do the same. A sample of the lawn sign is below.



6. Rain Barrel Promotion Program

In addition to Waukesha Water Utility's new rain barrel rebate program, as mentioned previously in Section II under Incentives, the Utility also helps promote the Waukesha School District's and Waukesha County's rain barrel sales.

To help advertise the rain barrels, the Utility sends out bill inserts; and any time a customer calls and requests information about a rain barrel, we inform them about these two local programs. In addition, we promote rain barrels at all public outreach events.



7. Rain Garden Plant Sales & Free Workshops

In addition to promoting rain barrels, the Utility also helps promote Waukesha County's annual plant sales for rain gardens and their free workshops.

GOING ON NOW: RETZER NATURE CENTER'S ANNUAL SPRING SALES! (Waukesha, WI) Retzer Nature Center's annual Spring Workshop and Pre-Sale of compost bins, rain barrels and native plants is going on now through March 30. Order on line and view items at *www.waukeshacounty.gov/SpringSale.* Orders will be available for pick up at Retzer Nature Center on May 12 from 9 am to noon only.



Advertisement for Waukesha County's Rain Barrels, Rain Garden, & Workshops

8. Outdoor Conservation Tips

Waukesha Water Utility has outdoor conservation tips on its website. As seen below, the topics covered are the following: Rain Harvesting, Garden Hose, Plants/Trees/Shrubs/Vegetable Gardens, Pools/Spas, and Rain Gardens.

City of Waukesha Mayor's Office Common Co	ouncil Conta
	sea
Waukesha Water Utility	
Serving Waukesha Since 1886	
Great Unline Unity and Conservation Conservation	
Department Home Costomer Service Application Commission Conservation	
Outdoor Conservation Tips	
Rain Harvesting	
Use a bucket or a rain barrel to catch and store fresh rainwater from your rooftop. Then use this water for	r
washing your car or for watering your lawn, garden, trees, and plants. Rainwater is better for your plants	
because it is not chlorinated. If you put a screen over your bucket, this will keep the insects out and keep mosquitoes from laying their eggs in the rainwater.	
mosquitoes non naying their eggs in the fairwater.	
Garden Hose	
Use a spray nozzle on your hose. If this is an adjustable type, the water can be turned down to a fine spray. When finished using the hose, turn the water off at the faucet instead of the nozzle - this will help	
control leaks. Sweep off your driveway and sidewalk with a broom or use a blower - do NOT use the hose.	
Plants, Trees, Shrubs, Vegetable Gardens Water plants only when needed. Soaker hoses use less water than overhead sprinklers. Turn the soaker	
hose upside down (so that the holes are facing down). This will help to avoid evaporation. Remove weeds	
- they steal water from other plants. Use organic mulches (such as woodchips, shredded bark, grass	
clippings, straw, hay, leaves, or compost) - to retain moisture.	
Pools/Spas	
Cover the pool or spa to prevent evaporation and to keep the water cleaner. To avoid water going over the sides, do not over fill. Install a water-saving pool filter - traditional filters use 180-250 gallons of	
water. Do not drain pools/spas unless repair work is needed.	
Rain Gardens Rain gardens are a more natural landscape that uses wildflowers and other native plants. The native	
plants are low maintenance, use a lot less water, and do not require fertilizers. Due to their deep root	
system, native plants help the environment by increasing the soil's ability to store water, reducing runoff	
(flooding), and providing a habitat for birds and butterflies. The DNR provides a lot of information about	
Rain Gardens.	
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Last updated 06/04/2015

Outdoor Conservation Tips on Website

These 8 Tools Are Working

The information below indicates that Waukesha uses, on average, much less water in the summer now than it did before these eight tools, previously mentioned, were put into place. We have effectively reduced our peak demands, even during the extreme drought conditions of 2012.

Gallons Pumped, during the summer months of 2018, was at a fourteen year low.

	Summer Volumes as a Percent of Total Gallons Pumped											
Year	Year Waukesha Pumpage		Brook	field Pum	page	Oconomowoc Pumpage		Pewaukee Pumpage				
	Annual (000's)	Summer (000's)	Summer as a % of Total	Annual (000's)	Summer (000's)	Summer as a % of Total	Annual (000's)	Summer (000's)	Summer as a % of Total	Annual (000's)	Summer (000's)	Summer as a % of Total
2005	2,838,403	1,333,367	47.0%	1,496,931	737,230	49.2%	708,458	370,121	52.2%	500,991	279,850	55.9%
2006	2,623,418	1,175,795	44.8%	1,465,878	738,889	50.4%	673,143	337,035	50.1%	479,448	262,317	54.7%
2007	2,618,461	1,183,827	45.2%	1,368,726	669,849	48.9%	686,683	355,702	51.8%	445,630	232,840	52.2%
2008	2,531,108	1,128,313	44.6%	1,446,256	638,479	44.1%	677,227	337,653	49.9%	473,648	245,615	51.9%
2009	2,479,905	1,109,337	44.7%	1,295,283	653,848	50.5%	676,528	344,909	51.0%	442,530	247,172	55.9%
2010	2,441,221	1,074,691	44.0%	1,272,681	607,443	47.7%	719,994	342,468	47.6%	441,760	219,440	49.7%
2011	2,545,103	1,129,986	44.4%	1,436,548	683,145	47.6%	689,523	329,580	47.8%	480,001	250,294	52.1%
2012	2,527,370	1,187,305	47.0%	1,365,823	714,678	52.3%	751,326	404,770	53.9%	515,842	297,556	57.7%
2013	2,348,655	1,048,020	44.6%	1,376,089	661,420	48.1%	693,971	336,449	48.5%	454,881	237,323	52.2%
2014	2,413,582	1,015,137	42.1%	1,687,514	813,598	48.2%	696,960	337,605	48.4%	435,998	220,317	50.5%
2015	2,213,900	970,596	43.8%	1,373,750	729,687	53.1%	630,635	307,853	48.8%	477,185	248,273	52.0%
2016	2,166,893	962,749	44.4%	1,247,811	624,014	50.0%	589,534	291,165	49.4%	464,850	248,778	53.5%
2017	2,128,111	933,128	43.8%	1,254,510	606,530	48.3%	564,324	270,424	47.9%	464,290	237,116	51.1%
2018	2,068,522	914,652	44.2%	1,252,833	603,142	48.1%	553,523	271,499	49.0%	465,553	236,112	50.7%
Average			44.6%			49.0%			49.7%			52.9%

Further support for the efficacy of the Utility's program can be found by comparing its summer water use with its neighbors (who are affected by similar weather conditions). Waukesha uses a lower proportion of water in the summer than does its neighbors.

In addition to the Outdoor programs, the Utility has other conservation programs (for nonresidential customers as well as for all customer classes).



9. Pre-Rinsed Spray Valves

In November 2015, the Utility kicked off a new water conservation initiative for water efficient pre-rinsed spray valves. Pre-rinsed spray valves were offered to large water using customers for free. The spray valves are valued at approximately \$150 and maintain good pressure while using 60% less water. The spray valves are endorsed by The Green Restaurant Association, Alliance for Water Efficiency, The Green Building Council, and EPA WaterSense.

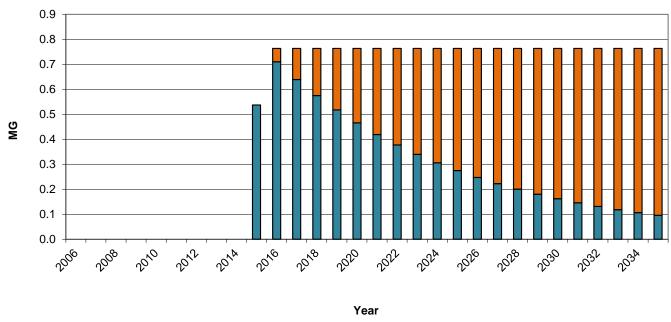
In 2016, the Utility changed out 25 pre-rinsed spray valves. The large customers that participated in this change out program consisted of the following:

- Schools
- County Expo Building
- Elks Lodge
- Salvation Army
- Restaurants

In 2018, the Utility did not change out any pre-rinsed spray valves but plans to continue the change out program in 2019.

The following page shows the annual cost effectiveness of the program, along with the projected water savings through 2035, for both commercial and public accounts.

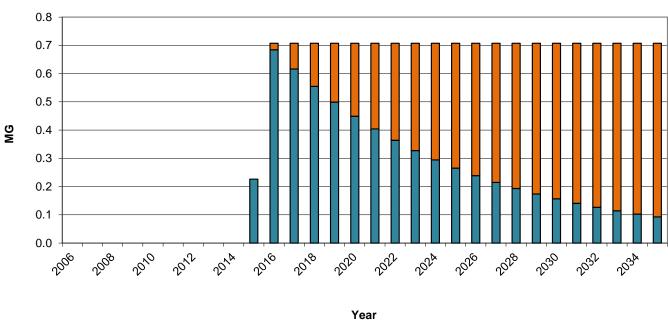
				Unit				
		Unit Cost	PV	Benefit	PV	Avoided	Avoided	B/C
Class	Activity Name	(\$/MG)	Cost	(\$/MG)	Benefit	Supply	Wastewater	Ratio
Commercial	CII Spray Rinse Valve Grant (Commercial)	229.76	4,537.00	1,190.52	23,508.94	12,987.75	10,521.19	5.18
Public	CII Spray Rinse Valve Grant	229.56	1,484.60	1,110.54	7,182.06	3,963.48	3,218.58	4.84





Active Water Savings

■ Passive Water Savings



CII Spray Rinse Valve Grant (Public) Annual Water Savings

■Active Water Savings

■ Passive Water Savings

10. Why It's Important to Conserve & Ways to Conserve

There is information on our website, for all customer classes, on "Why It's Important to Conserve" & "Ways to Conserve".

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	Waukesha Water Utility Serving Waukesha Since 1886		
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	taroné kultan (Dhiry anii		
	Exepartment Nome Costonia) Service Application Commissio	n Gonserwahlen	
	How Much Water You Use		
	Ways to Conserve	and the second second	
	Sprinkling Ordinance		
	Community Outreach		
	and Education		
	2012 Water Conservation Plan (4.8		
	MB) PSC Conservation		
	Report (4.5 MB) Conservation		
	News Room		
	Why Conservation is Important		
	Water is precious because it is essential for life and it is a limited resource. Of a	all the water on Earth, we	
	have only 1% to use. 97% of the planet's water is located in the ocean and due easily used for drinking. Another 2% is frozen at the poles in the form of iceber	rgs and glaciers.	
	But if this reason seems too big or global, consider what is happening locally.		
		However, that doop poulfer	
	In the past, our primary aquifer provided an abundance of high quality water. I is covered by a thick layer of shale rock that restricts recharge by rain or snow	melt. It is also shared by	
	many communities in southeastern Wisconsin and northeastern Illinois. Years of have severely reduced the level of groundwater in the aquifer, while increasing	of pumping in the region contaminants like radium.	
	And adding or switching to shallow aquifer wells instead would have permanent	t adverse effects on	
	thousands of acres of wetlands.		
	Our ratepayers know that continued reliance on groundwater is increasingly ex it is not environmentally sustainable. We are applying to use Lake Michigan wa	pensive. More importantly,	
	recycle it back to the lake after use and treatment. However, aggressive water	conservation will still be	
	required.		
	For all these reasons, the City of Waukesha developed a water conservation/pr	otection plan. Our goal is	52
	to reduce the water usage by 20% by the year 2020. Regardless of our future resource protection plan will help to protect the environment and ensure an ad		5
	future.		5
	Please join us and learn what you can do to help meet our conservation goals a	and to protect our water	{ .
	supply and our natural resources.		
updated 06	6/04/2015		
updated 06	6/04/2015 Why It's Important to Conserve on the Webp	bage	
updated 06		bage	

Under the "Ways to Conserve" heading, we talk about the toilet rebate, the incentives for businesses, the sprinkling ordinance, and outdoor conservation tips. All of these topics have been previously addressed. However, there is one more topic that hasn't been addressed and that is water-efficient Appliances, as shown on the next page.

f	¥	City of Waukesha Mayor's Office Common Council Great Water Alliance Con	itact Us
			search
	Waukesha Wa	g Waukesha Since 1886	
	Department Home Customer	Service , New Water Supply Utility and Conservation ,	
	Residential Toilet & Showerhead Rebate		
	Rain Barrel Rebate Form (PDF)		
	Incentives for Businesses	A A A A A A A A A A A A A A A A A A A	
	Water-efficient Appliances		31
	Outdoor Conservation Tips Wowe		*
	Find & Fix Leaks	to Conserve	
Las	t updated 06/28/2017		W

Ways to Conserve on Webpage

City of Waukesha | Mayor's Office | Common Council | Contact Us

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Department Home	Oustomer Service	Great Lakes Application	UHIIty and Commission	GunserWation	

Water-efficient Appliances

The US Environmental Protection Agency provides information on <u>Water Efficient Appliances</u> that can save you money.

	Gallons of Water Used per Year (Family of Four)				
	Efficient Appliances	Without Efficient Appliances			
Toilets	11,972	27,010			
Clothes Washers	14,600	21,900			
Showers	12,848	16,936			
Faucets	15,768	15,914			
Dishwashers	1,022	1,460			
Gallons Used	56,210	83,220			
At 2015 Rates	\$671.92	\$908.53			

You can save **27,010 gallons and \$236.61 per year by replacing your old appliances**. If you qualify, we will give you up to <u>\$100 to offset the cost of your new toilet</u>.



Last updated 06/05/2015

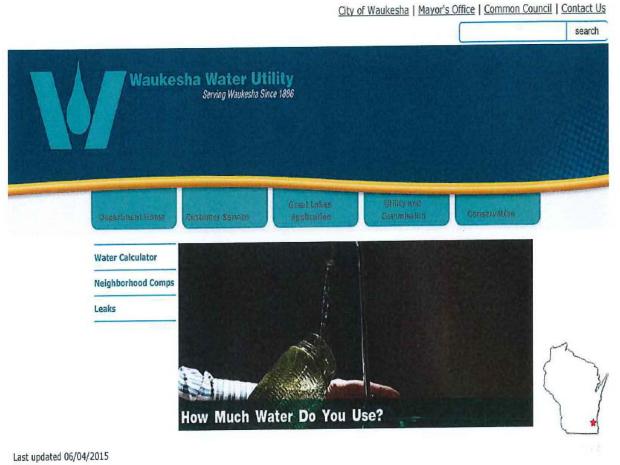
Water Efficient Appliances Webpage

11. How Much Water Do You Use & Things To Do To Lower Your Bill

Other information on our website includes "How Much Water Do You Use?" and "Things to do to Lower Your Bill".

The headings under the "How Much Water Do You Use" webpage are the following:

- Water Calculator (as shown on the next page)
- Leaks (please refer to section 12)
- How Your Water Consumption Compares to your Neighbors (please refer to section 13)



Information Regarding 'How Much Water Do You Use' on Webpage

The water calculator links to H₂OUSE Water Saver Water Use Calculator.

This tool calculates how much water is being used vs. how much water would be saved if fixtures, appliances, and landscaping were efficient. The link also compares the actual water bill to what a person could be saving with conservation.

Water Use	Calculate	ле [,]
Water Use Calculator to lean water budget tells you the righ	 Our Calculator will giv it amount of water you si could be saving. Then tr 	the easy steps below and fill in the information boxes on our e you a water budget for the inside and outside of your home. A hould be using. Compare the water budget to your actual water bill y the Water Use Calculator again with more water efficient \$\$ this can make.
	Site Informatio	n
	Name: Site Name:	(e.g., My House)
	Zip:	
	Home/Interior V	Nater Consumption Estimate
	Number of Residents:	
	Number of Showerhea	Number installed Number installed before 1994: in 1994 or after: ds:
	Number of Toilets:	
	Number of Faucets:	
c	Do you have a lothes washer?	ි _{Yes} ි _{No}
		If yes, please answer below.
		Energy Star? C Yes C No
	Landscape Wa	ter Consumption Estimate
	Grass/lawn Area:	sq.ft.
	Shrubs/Ground Cover	
	Water-Conserving Plants Area:	sq.ft.
	Or if you don't know ar of the above, enter the Total Landscape Area	y
	Actual Water Us	age
	Select water measure t values you enter below	for ^(*) CCFs or HCFs ^(*) Thousand Gallons (KGals)

The headings under the "Things to do to Lower Your Bill" webpage are the following:

- Repair Leaks (please refer to Section 12)
- Sprinkling Practice/Outdoor Conservation (which links to the Ordinance & Outdoor Tips as mentioned previously)
- Install Aerators/Low-Flow Showerheads/Toilet Displacement Devices/Low-Flush Toilets (as shown on the next page)
- Purchase High Efficiency Appliances That Use Less Water (as mentioned previously)
- Develop and Practice Daily Conservation Habits (as shown on two pages from this page)

	<u>City</u>	of Waukesha Mayor's	Office Common Cou	Incil Contact Us search
Waukesha Water Ut Serving Waukesha Si	ility nce 1986			
Department Home Customer Service	Great Lakes Application	Utility and Commission	Conservation	

Things To Do To Lower Your Bill

Repair Leaks

Leaks not only waste a lot of water, but they also waste a lot of money - especially leaks that occur in toilets. Click on leaks to learn how to locate a leak, calculate the amount of water being wasted, read customer experiences regarding leaks, and find easy and economical repair suggestions.

Sprinkling Practice / Outdoor Conservation

Learn about sprinkling and lawn care tips. Learn how much water your grass and vegetable gardens really need. Receive information about rain harvesting and rain gardens. In addition, find out what you can do to conserve water in regard to your pool/spa and vehicles.

Install Aerators/Low-Flow Showerheads/Toilet Displacement Devices/ Low-Flush Toilets

For approximately \$35, the average homeowner can install low-flow aerators on faucets, install two lowflow showerheads, and put a toilet displacement bottle in the toilet tank. This will help you conserve water and lower your water bill.

Purchase High Efficiency Appliances That Use Less Water

Whether you're in the process of remodeling, replacing old appliances, or buying appliances for the first time, remember high-efficiency appliances conserve water and, at the same time, save you money on both your water and energy bills.

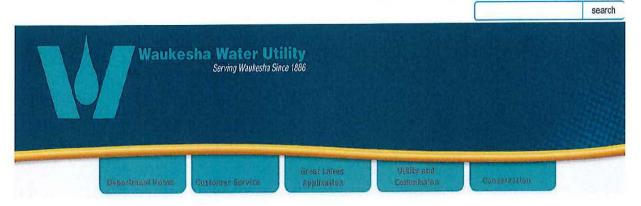
Develop And Practice Daily Conservation Habits

Here are some more great water-saving ideas that we all can implement into our daily lives. These ideas will help conserve water and lower water bills. Remember, every little bit helps.



Last updated 06/04/2015

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Install Water Saving Devices

Conserving water in your home could save you over \$115 annually in water charges and help protect your water resources.

Faucet Aerator

Household Sinks should be equipped with faucet aerators. Although it may not seem like much, a bathroom faucet can easily draw more than 2,500 gallons of water per year! Aerators conserve water by mixing air and water as the water leaves the spout. Aerators will not reduce the amount of water needed to fill a sink or pitcher, but will reduce the amount of water needed for rinsing. Aerators are easy to install and cost approximately \$2 each.

Water Efficient Showerhead

Install water saving showerheads. An average 5-minute shower with a typical non-conserving showerhead sends approximately 40 gallons of fresh water down the drain and into the sewer. Water efficient shower heads provide a water savings of at least 44% compared to non-conserving shower heads. Water efficient showerheads cost approximately \$12 and up.

Low Flow Toilet

Toilet flushing uses more water than any other household use! A typical non-conserving 5.5 gallon flush toilet (many of which are still in use) contaminates 13,000 gallons of fresh water per year to remove 165 gallons of body waste! An efficient low-flow toilet costs approximately \$100. It will save you 41.2 gallons of water per day. If you don't have a Water efficient toilet, displace water in the tank with two half-gallon plastic jugs filled with pebbles.

Source: Northwestern Indiana Regional Planning Commission and the Lake Michigan Federation (now the Alliance for the Great Lakes).



Last updated 06/05/2015

Information on Aerators, High-Efficiency Shower Heads and Toilets on Webpage

City of Waukesha | Mayor's Office | Common Council | Contact Us



Daily Conservation Tips

Kitchen Conservation Tips

Install a low-flow aerator on your kitchen faucet.

• Place a pitcher of water in the fridge, or warm the water in the microwave or on the stove instead of running the water from the tap and waiting for the temperature to change. Otherwise, while waiting, capture the running water for watering the plants.

Thaw frozen foods by putting them in the refrigerator overnight or use the microwave to defrost instead
 of using water to thaw them.

 Use only a little water in the bottom of the pan for cooking purposes. This is what most foods require and, at the same time, the foods will be more nutritious since the vitamins will stay more in the food instead of the water.

 Only run the dishwasher when you have a full load; and, if available, select the "light wash" option in order to use less water.

 Scrape dirty dishes instead of rinsing them off with water. Most dishwashers clean dishes very well and do not need to be rinsed.

When washing dishes by hand, place the stoppers in the sinks or use two containers, one with soapy water and one with rinsing water, instead of turning the faucet on each time a rinse is needed.
Begin a compost pile rather than running the water for a garbage disposal.

Use a pan of water to clean vegetables instead of running the water from the faucet. Then, reuse this water for watering plants.

Laundry Conservation Tips

Use the wash machine only when there is a full load. Adjust the water level based on the size of the load.

• When purchasing a new wash machine, buy a high-efficiency appliance. This will not only conserve water, but will also save money on water and energy bills.

Bathroom Conservation Tips

Install a low-flow faucet aerator on your bathroom sink.

. Turn the water off while brushing your teeth, washing, or shaving.

· Install a low-flow showerhead.

Take a shower instead of a bath. A fast shower, especially one with a low-flow showerhead, will use less water.

Place a bucket in the shower to catch excess water for watering plants.

• While in the shower, turn the water on to get wet, turn it off while soaping up, and turn it back on to rinse off. Do the same when washing your hair.

 Only flush the toilet when necessary. Use the trash for tissues, insects, and waste instead of flushing them down the toilet.

Check for toilet leaks twice a year. (See Leaks for more information.)

• If the handle of the toilet often stays in the flush position, after flushing, and allows the water to run, get it fixed.

• Put a plastic gallon jug filled with rocks, into the tollet tank. This will raise the water level in the tank so that less water will be used. Otherwise, you can purchase a toilet displacement device from a hardware store to do the same thing.

When remodeling or purchasing a new home, install a low-flow flushing tollet that uses only 1.6 gallons
of water per flush.

General Conservation Tips

. Do not pour water down the drain when it could be reused for watering plants, gardens, etc.

. Check your water meter to verify that your house is leak free.

 Repair toilet leaks or dripping faucets right away. These waste a lot of water and can significantly increase.

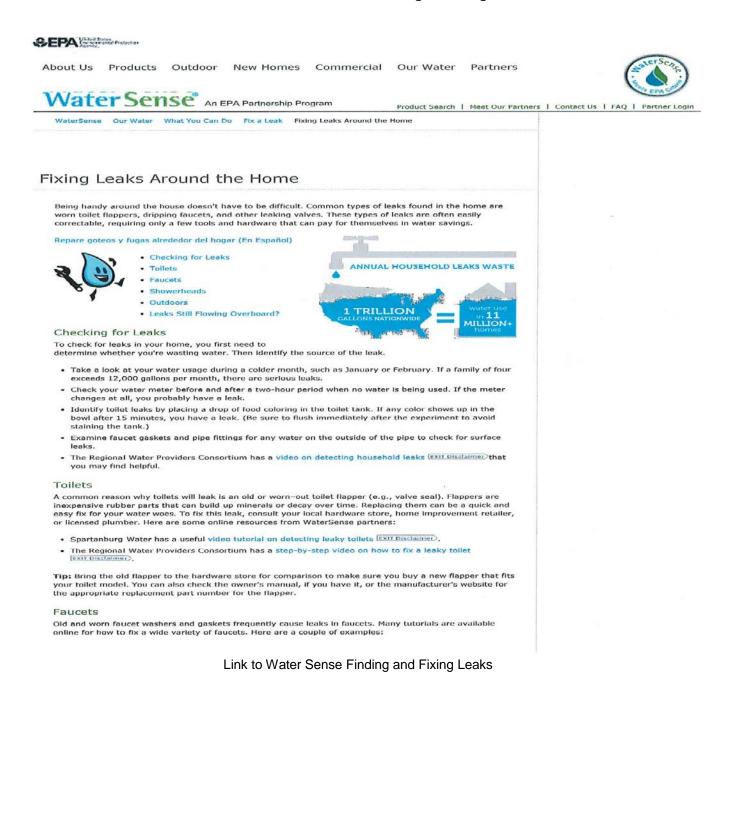
Information on Conservation Habits & Tips for Inside the Home on Webpage

12. Program on Finding & Fixing Leaks

The Utility has information on its website to help customers understand the importance of finding and fixing leaks quickly. The information below informs customers on how much water and money can be wasted when it comes to leaks.

	City of Waukesha Mayor's Office Common Cou	uncil Contact I
		search
Waukes	ha Water Utility Serving Waukesha Since 1886	
Department Homa	Gostomer Service Sesul Takes Office and Commission Convertiantion	J
What is a Water Audit?	Finding and Measuring Leaks	
AWE Audit (Tool)		2
AWWA Audit (Excel Tool)	but it's just a little leak • A customer reported that every few hours his toilet seemed to flush itself. This	
AWWA Drip Calculator (Tool)	 A customer reported that every rew hours his tone seried a number ball. Our was caused by the tank refilling after water leaked around the plunger ball. Our service people found the problem and the customer had it repaired quickly. 	
EPA WaterSense (Tool)	Fortunately, the water bill for the leak was only \$89, but the water wasted was over 26,000 gallons.	
Your Toilet	• The Public Service Commission was contacted about a high water bill. A family was away on extended vacation when a toilet leak developed. The toilet leaked continuously for about 60 days. A 3/8" diameter line was feeding the toilet. Approximately 85,000 gallons leaked through the overflow and the bill was almost \$195.	
	• While paying a water and sewer bill of \$115 for 90 days use, a customer mentioned that the house rule to "rattle the handle" after a flush was a costly mistake. In this case, the plunger ball wasn't seating properly and one family member didn't always follow the rule. The toilet ran continuously for up to 4 hours on almost all school days. This went on for about 45 days. The water wasted was over 20,000 gallons.	
	• A customer said "I know the toilet was leaking, but it can't cost \$231 for 3 months!" Approximately 92,000 gallons were wasted.	$\left\{ \right\}$
	How to Find & Fix Leaks	2 *
Inf	ormation on website for Finding and Fixing Leaks	

Also, the Utility has a link on its website to the Environmental Protection Agency's (EPA) WaterSense site for detailed information on Finding & Fixing Leaks.



In addition, the Utility's website has information pertaining specifically to toilet leaks (as to how much water is wasted & information on the toilet rebate).

	City of	Waukesha Mayor's	<u>s Office Common Cour</u>	search
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Waukesha Water Ut Serving Waukesha Sin	ility nce 1886			
Department Rome Customer Service	Great Lukes Application	Utility and Commission	Concervation	
Toilet Leaks				
Toilet leaks are one of the most common toilet leaks. Although they tend to be invi	and costly leaks. Hundre isible, you can often hea	eds of gallons a day r the sound of wate	can be wasted on running.	
It's best to check for leaks twice each yea worn out. Leaks usually occur in the over	ar. Check your toilet for flow pipe or the plunger	parts which are out ball.	of adjustment or	
After you have fixed the leak, use the lea	ak indicator on your wate	r meter to verify su	ccessful repair.	
Hov	w Much Water is Wast	ed?		
A leak of per minute	e, wast	es gall	ons per month.	
1 pint		5,475		
1 quart		10,950		
1/2 gallon		21,900		
1 gallon		43,800		
3 gallons		131,400		
High Efficiency Toilet Rebate Program If you have an old toilet, it's probably be				
Replace a Water Guzzling Toilet, Rec	eive \$100!			
Rebate Qualifications and Application.				
				r2



Information on website regarding Toilet Leaks

Along with a link to American Water Works Association's (AWWA) drip calculator – to calculate how much water is wasted on dripping and running faucets.

MEMBERSHIP	CONFERENCES & EDUCATION	RESOURCES & TOOLS	PUBLICATIONS	LEGISLATION & REGULATION	Search aw
Water Knowledge	Public Affairs	Career Center	Water and Wastewater	Utility Management	Resource Dev
PUBLIC INFORMATION DripCalculator	N		ffairs > Public Information > Dri	pCalculator	
PRESS ROOM	Drip Ca	lculator			
COMMUNICATIONS T	OOLS Use AWW	A's online tool to estin	nate water waste and learn	n how much water you co	uld be saving.
PUBLIC AFFAIRS EVEN	DRI:	PPING FAUC	CETS		
			aks - count the number of drips per second amounts	지수는 것 같은 것 같은 것 같은 것 같은 것 같은 것 같이 있는 것 같이 있는 것 같이 있다. 나는 것 같은 것 같은 것 같은 것 같은 것 같은 것 같이 있는 것 같이 있다. 것 같은 것 같이 있는 것 같이 있다. 것 같은 것 같이 있는 것 같이 있다. 것 같은 것 같이 있는 것 같이 있는 것 같이 있는 것 같이 있는 것 같이 있다. 것 같은 것 같이 있는 것 같이 않는 것 같이 있는 것 같이 않는 것 같이 없는 것 같이 않는 것 않는 것 같이 않는 것 같이 않는 것 같이 않는 것 같이 않는 것 않는 것 않는 않 않는 않는 것 않는	the
	Drips P	er Minute:			
	Unit of	Measurement: Gallo	ons		
	Calcu	late Waste			
	FAS	T RUNNING	FAUCETS		
	1		oid leaks - hold an 8 ounce seconds, how long it takes		
	Time in	seconds:			
	Unit of	Measurement: Gallo	ns	$\mathbf{\mathbf{\nabla}}$	
	Calaul	ate Waste			
	Unit of	fixture and time, in seconds:	seconds, how long it takes	to fill the cup.	

13. Web Based Consumption History and Comparisons (for all customers)

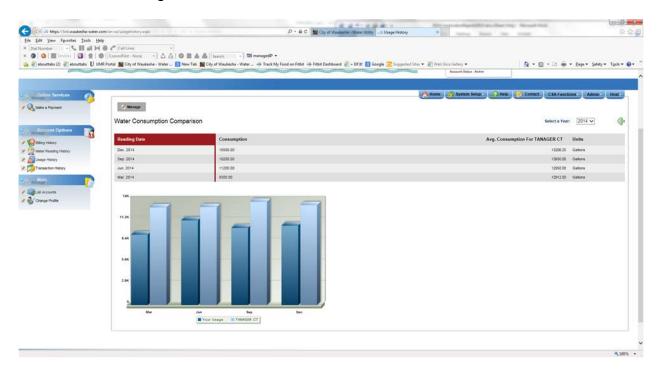
In 2014, the Utility installed Link, a system available to customers to pay their bills online. Integral to Link is the customer's ability to search transaction and consumption history. Now, a customer can compare their consumption across seasons.

Minute	(AH	ome 🔗 System Setup 🔗 Help 🥂 Con	tact CSR Functions Admin H
ar Consumption History for your account			100.01 (0.00) (0.00)
			Select a Year: 2014 🗸
	and the second se		
	A COLORED A		
200	bic it, 2014		
5 P 1 P 2 3 2 4	eding Date s 18.2014 s 20.2014 s 20.2014 s 20.2014 consumption Matery 5.0000 5.0000 5.000 5.0000 5.0000 5.0000 5.0000 5.00	r 10. 2014 1000 09 100. 001 100. 001 100. 00 1000 09 1000 09 1000 09 1000 09 1000 00 1000 00	r 10. 2014 1000 00 00 00 00 00 00 00 00 00 00 00 0

0 0 -8 P + B C HC City of Waskesha - Water Unity S Usage H a Q 20 Edit View Favorites Iools Help SallNumber · S II all M & Calling 🏠 • 🖾 • 🗁 👼 • Boge • Safety 0 - HO 2 Manage 0 Water Consumption Comparison Select a Year: 2014 V 3 nption For WAUKESHA Avg. Cons 500.00 3425.96 Sep. 2014 10200.00 27140.64 Gallone Jun 2014 11200.00 26623.57 Gallons Mar. 2014 300.00 25122.27 Gallons 122 123 Ant Exp 8,100% -

They can also compare themselves to the City as a whole,

as well as to the neighbors on their street.



The Utility hopes that if a customer sees they are consuming more than their neighbors, they will begin to ask why. While there may be legitimate reasons for higher consumption, for example family size, the consumer may also touch on other habits, and with change, could lead to conservation.

14. Leak Detection & Water Audit Program

Waukesha Water Utility has a leak detection program where our Billing Department runs a Pre-Exception Report. This Pre-Exception report shows the low and high consumptions for possible stopped meters and leaks. For stop meters, our Meter Technicians go to property to check and replace the meter, if needed. For high consumptions, the Utility sends a Courtesy Postcard to notify the customer that they might have a leak; and advises them to check the leak indicator on their meter. A copy of the Courtesy Postcard is shown below.

COURTESY CARD			
Service Address			
Account Number	Reading Date		
lt appe	ars you are using more water		
Water used this quarter			
Water used during the same quarter last year			
	The increase could be due to lawn sprinkling, additional residents, guests, new tenants, etc. or		
1 4599	you might have a leak.		
	Please locate your water meter and check for movement of the diamond shaped leak indicator.		
2 · 2	ny questions, please contact us at 262 521 5272 Thank you,		
WA	UKESHA WATER UTILITY		

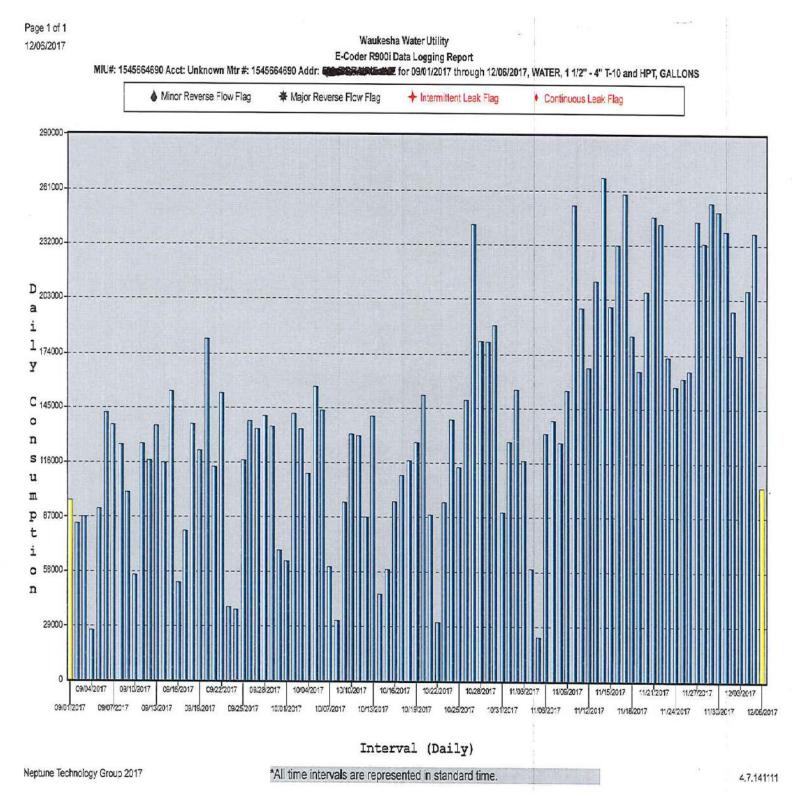
Courtesy Card Notify Customers of a Possible Leak

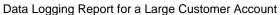
The Utility normally receives calls from customers after they receive the postcard. When customers call, we explain how to check their meter and toilets, etc. for leaks. Sometimes, customers will request additional help from the Utility to help find the problem.

The Utility will help customers find leaks by either conducting water audits or by running data logging reports. Water audits are conducted for single family homes, duplexes, and triplexes. Data logging reports, that show daily consumptions, are done for large multi-families, commercial, public, and industrial accounts.

In 2018, the Utility conducted 49 residential water audits and 15 data logging reports. The majority of the residential audits found that the high consumptions were related to toilet leaks.

A copy of a data logging report is shown on the following page.





In addition to the Courtesy Card, Audits, and Data Logging Reports, the Utility has an informational program on its website for customers to conduct their own water audits for residential and non-residential customers; along with links to AWE's Water Audit Process Introduction, and AWWA's Free Water Audit Reporting Tool Kit. (A copy of the information on our website is shown below.)

The Utility also educates its customers about the Audit/Leak Survey program through presentations. The Utility has given presentations to the Business Alliance, Rotary Club, Southside Business Council, Wisconsin Water Conservation Coalition, and the Utility's Conservation Stakeholders Committee. All of these groups have members from the commercial, public, and industrial sectors. The Utility also shares audit/leak information at all outreach events.

Finally, any time a customer calls the Utility asking for information or has a high consumption, Waukesha Water Utility is always willing to act as a resource to help its customers.

What is a Water Audit?

Businesses

Saving Water: It's just good business

Using water efficiently is not just good for Waukesha and the environment; it's a smart business strategy. Reducing your water use can save you money on your water wastewater and energy bills and cut on-site treatment costs. Every business is a little different, but a water audit is an easy way to start.

Water audits provide a way to inventory all water uses in your facility and identify ways to increase water use efficiency. The results can help you prioritize steps to implement costeffective water-saving measures.

- Step One Gather data such as maps showing locations and equipment where water is used, water bills and consumption data, equipment manuals and so on
- Step Two Walk through your facility and verify water uses, estimate hours and rate of use, look for leaks and ways to reduce water use Step Three – Compare estimated water use with consumption data from water bills
- Step Four Estimate costs of fixture change-outs, new equipment or new processes and compare with estimated savings for water, wastewater and energy to calculate potential payback period
 Step Five Prepare a summary of recommended actions and implementation schedule for those
- actions that make economic se

More information, see the tools on our website or call the Waukesha Water Utility at (262) 521-5272



A Link to AWE's Water Audit Process

Click to access definition Water Audit Report for:	-		
Reporting Year:			
Systematic data handling errors:		T	
Apparent Losses:	0.000		Enter a percentage les than 10% in the red ce (342), or select 'Value
Real Losses (Current Annual Real Losses or CARL) Real Losses = Water Losses - Apparent Losses:	0.000		option
WATER LOSSES:	0.000		
NCN-REVENUE WATER NON-REVENUE WATER: = Total Water Loss + Unbilled Matered + Unbilled Unmetered	0.000		
SYSTEM DATA			
Length of mains: Number of <u>active AND inactive</u> service connections: Connection density;			
Average length of customer service line:		(pipe length between customer meter or p	n curbstop and
Average operating pressure:			
COST DATA	 		
Total annual cost of operating water system:	S/Year	R.	_
Customer retail unit cost (applied to Apparent Losses): Variable production cost (applied to Real Losses):	\$1		

A Link to AWWA's Water Audit Reporting Toolkit

Information on the Utility's Website

VI. EDUCATION PROGRAMS, OUTREACH EVENTS, YOUTH GROUPS & PARTNERSHIPS

Waukesha Water Utility follows NR 852 Requirements. As a result, several educational programs have been adopted. Section A will highlight how we advertise our current water conservation programs; Section B will focus on community presentations and outreach events; and Section C will concentrate on youth education.



Tools:

The Education Programs use the following communication tools.

- [X] Website
- [X] Website (greatwateralliance.com an information hub for the Utility's future water supply project that includes information on water conservation.)
- [X] Bill Stuffers
- [X] Local Newspaper
- [X] Public Outreach & Community Meetings 58 hours
- [X] School Programs 62 hours
- [X] Other: Street Signs
- [X] Other: Yard Signs Brown Lawn Campaign
- [X] Other: Social Media (Twitter & Facebook)

- [X] Other: Public Giveaways: Toilet Leak Detection Tablets & Rain Gauges
- [X] Other: Brochures
- [X] Other: Bill Messages
- [X] Other: Non-Residential Giveaways: Pre-rinsed Spray Valves
- [X] Other: Customer Service in person and over the phone
- [X] Other: Neptune 12900 V4 radio/data logger
- [X] Other: City's Park and Rec Activity Guide
- [X] Other: Sink Tents
- [X] Other: City Interdepartmental Meetings
- [X] Other: Public Service Announcement (TV 25)
- [X] Other: Great Water Alliance's Newsletter (New in 2018)
- [X] Other: City of Waukesha's Electronic Newsletter (New in 2018)

A. Education Programs

In addition to the education that has already been discussed throughout this report, the Utility also implemented the following educational conservation program announcements in 2018:

- 1. Great Water Alliance Electronic Newsletters (New in July 2017)
- 2. Great Water Alliance Website Evolution (New in 2018)
- 3. What's Up in Waukesha City's Electronic Newletter (New in 2018)
- 4. Gardening Watering Strategies/Tools of the Trade Freeman Article (New in 2018)
- 5. Advertisement for the Toilet & Shower Head Rebate Program
- 6. Irrigation Ordinance Bill Insert (Updated in 2018)
- 7. EPA WaterSense's National Fix a Leak Week
- 8. National Drinking Water Week
- 9. Tips on How to Prevent Frozen Pipes



1. Great Water Alliance Electronic Newsletters

In 2017, the Great Water Alliance (GWA) was launched – a program/brand name given to an initiative by the Utility to educate and unite the citizens and communities who will be affected by Waukesha's Great Lakes water project. In order to open up the lines of communication and keep people fully informed, a dedicated website/clearinghouse was created. In addition to the website, an electronic newsletter was also created. The newletters are emailed out every other month; and anyone can sign up to receive a newsletter through GWA's website. By the end of 2018, there were approximately 490 people signed up to receive the newsletters.

The topic of water conservation has been a part of GWA from the very beginning. Information about water conservation has been included on the website, at open houses, talked about in presentations, and in the e-newsletters, etc.

In 2017, the e-newsletters, which are archived on the GWA's website, contained the following water conservation tips: how much water you can save by replacing old appliances, finding & measuring leaks, and outdoor conservation ideas.

In 2018, conservation articles for the e-newsletters had the following: benefits of rain barrels, a poll asking "What ways do you conserve water?", meet a team member article where the Utility's conservation programs were mentioned, information about the advantages of WaterSense certified high-efficiency toilets and showerheads, and tips on how to protect your pipes this winter (to avoid broken services).

Copies of the 2018 conservation articles are shown on the following pages.

Benefits to Rain Barrels

Spring is here and for many this means we head back out to our yards. Rain barrels are a perfect addition and provide many benefits. Check our list of the top five reasons to purchase a rain barrel.



Saves you money

The City of Waukesha offers residents a \$20 rebate per barrel on up to two rain barrels per address. Waukesha is no stranger to water conservation. In fact, in 2008 it became the first Wisconsin utility to issue low-flow toilet rebates.



Rainwater is better

Naturally soft, chlorine-free water is great for your plants and soil. It is also good for washing windows and cars.

Controls moisture levels

Collecting rainwater before it soaks into the soil will help prevent water from collecting around your home, preventing dampness which can contribute to mold.





Saves you money again

Most homeowners who use rain barrels reduce water use by roughly 1,300 gallons during the summer. This will lower your overall water bill.

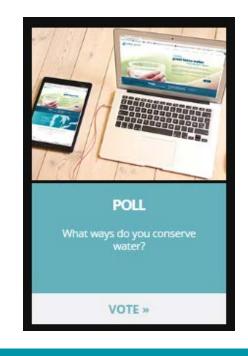


Feels great

By taking this step to assist the environment, it feels rewarding to do your part.

Water is a limited, crucial resource. Thus, we can all understand the importance of taking steps to limit our use of water. To see if you qualify for Waukesha Water Utility's rain barrel rebate go to:

GWA's E-Newsletter Article – The Benefits of Rain Barrels



WHAT WAYS DO YOU CONSERVE WATER?

What ways do you conserve water?

Water Conservatio	n
 What ways do you conserve w Purchased a rain barrel Keep my showers short Turn off tap while brushing my teeth 	ater? Don't water lawn during the day Installed high-efficiency toilets
0 of 1 answered	powered by SurveyMonke

Greate your own user feedback survey GWA's E-Newsletter Poll – What Ways Do You Conserve Water?

Meet Mary

Mary Adelmeyer, Customer Relations Coordinator

Briefly tell us about your role at Waukesha Water Utility? I have the privilege of working at the Waukesha Water Utility as the Customer Relations Coordinator. My three primary duties include:

- Responding to customers regarding billing information, utility services, and water quality.
- Updating and implementing the Utility's conservation program by administering the incentive programs, calculating the cost/benefit for conservation activities, serving as a liaison to external committees, and drafting external reports.



- And, my favorite, educating the public on water quality, utility operations, and on the importance of conserving this vital resource by giving presentations, writing press releases and articles, and updating the website.
- In addition to these duties, I also assist with the meter change out and lead & copper programs.

What is one of your favorite aspects to your job?

Actually, I have two favorite aspects of my job. My first favorite aspect is the people that work here. We truly have an amazing group of people, from the management team to the staff, who are professional, dedicated, and continually go above and beyond, the supportive team environment makes it a pleasure to work at the Waukesha Water Utility. My other favorite aspect is educating and helping people. I enjoy explaining where their water comes from, how it gets treated, the process of getting the water to their homes, and the reasons Waukesha needs a new water source.

I also enjoy helping people save money by finding ways to conserve water. For instance, I help customers lower their water consumption by giving them tips on how to find water leaks and informing them that they don't need to water established lawns — by not watering their grass, they not only save money, but they don't have to mow as often! In addition, I get to work with large multi-families, businesses, and industrial companies to help them save money and water with our conservation business incentive program, and I coordinate our conservation rebate programs for rain barrels, WaterSense toilets, and showerheads for residential customers. In the end, people understand that conserving this natural resource, that we often take for granted, not only saves them money but is also the right thing to do; and the Utility has conservation programs in place to help.

By GWA | 6/27 2018 | Newsletter Highlights |

GWA's E-Newsletter Article – Meet a Team Member – Mentions Utility's Conservation Programs



Advantages to High-Efficiency Toilets and Showerheads

Like most people, you probably never thought about the fact that the toilets in your house account for almost 30 percent of your home water consumption. If you are still using a toilet from 1993 or earlier, you can greatly reduce your water use by switching to a 1.28 gpf WaterSense, high-efficiency one. And, property owners who are customers of Waukesha Water Utility, *may be able to receive up to a \$100 rebate*.

High-efficiency toilets are designed to remove waste by water velocity, not by excess water volume so you can reduce water use to about 1.28 gallons per flush compared to as much as 5 to 7 gallons per flush. If you consider that individuals flush an average of 5 times



per day, a family of four could reduce water use by thousands of gallons each year!

Another leading water use, accounting for an average 17 percent of overall use, is the shower. By replacing a showerhead from 1992 or earlier to a WaterSense, high-efficiency showerhead, you can reduce water use by gallons and also *may qualify for a rebate up to \$25*, if you live in the city of Waukesha. Residential customers can save approximately 2,900 gallons of water and 300 kwh of electricity each year.

Waukesha Water Utility's cash incentive rebates only apply to WaterSense-labeled products because they are certified to use at least 20 percent less water, save energy, and perform as well as or better than regular models. When purchasing new toilets and showerheads, be sure to look for the WaterSense label as shown.

To see if you qualify for the rebates, go to http://waukesha-water.com/downloads/Toilet-and-Showerhead-Rebate-Form.pdf. Rebates are available on first-come, first-served basis until funds are exhausted.

Water is a limited, crucial resource and we all can take steps to limit our use.

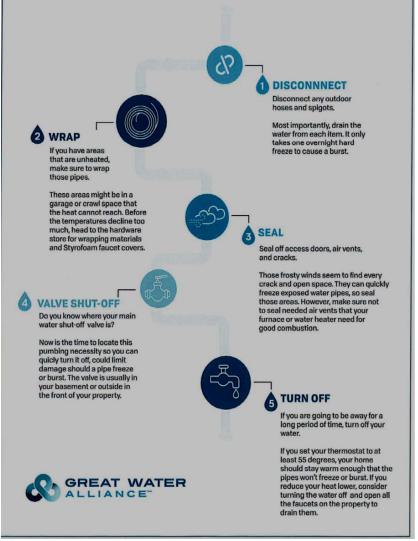
By GWA | 9/6 2018 | Newsletter Highlights |

GWA's E-Newsletter Article – Get Informed on the Advantages of High-Efficiency Toilets & Showerheads



TIPS TO PROTECT YOUR PIPES THIS WINTER

Each year winter seems to creep up on us before we are prepared. Since pipes run behind your walls and under your floors to faucets, toilets, showers, and many appliances, it is good to take a few extra steps to keep them running smoothly through the winter months. The following tips will help you get ready for the inevitable cold weather that is heading our way.



GWA's E-Newsletter Article - Tips to Protect Your Water Pipes This Winter



2. Great Water Alliance Website Evolution

In 2018, the Great Water Alliance Website Evolution began with the purpose of updating communication efforts for the Great Lakes Water Supply program, organizing the information to be more user-friendly, and updating/adding more water conservation information.

Included in the water conservation evolution is an update to the financial figures, using the current rates, for dollars **wasted** (when it comes to leaks) and the dollars **saved** (when changing out old appliances for water-efficient appliances).

In addition to the financial updates, a designated water conservation section will be included on GWA's website, which will include links to the Utility's conservation webpage. This website evolution is scheduled to be finalized in 2019.

Below is a copy of the updated financial figures for dollars wasted in regards to leaks.

Finding and Measuring Leaks

When it comes to leaks, we often hear the words "but it's just a little leak." Unfortunately, those little leaks can become very expensive. Please read the stories below. (The bill amounts have been updated using 2019 rates and assumes the average residential consumption is 12,000 gallons per quarter.)

- While paying a water and sewer bill of \$475 for 90 days use, a customer mentioned that the house rule to "rattle the handle" after a flush was a costly mistake. In this case, the plunger ball wasn't seating properly and one family member didn't always follow the rule. The toilet ran continuously for up to 4 hours on almost all school days for about 45 days. This wasted 20,000 gallons of water.
- A customer said, "I know the toilet was leaking, but it can't cost \$1,498 for 3 months!" This leak wasted approximately 92,000 gallons of water.
- The Public Service Commission was contacted about a high water bill. A
 family was away on extended vacation when a toilet leak developed. The
 toilet leaked continuously for about 60 days. A 3/8" diameter line was
 feeding the toilet. Approximately 85,000 gallons of water leaked through
 the overflow and the bill was \$1,398.
- A customer reported that every few hours his toilet seemed to flush itself. This was caused by the tank refilling after the water leaked around the plunger ball. Our service people found the problem and the customer had it repaired quickly. The amount of water wasted was 26,000 gallons and the water and sewer bill was \$561.

How to Find & Fix Leaks

3. <u>What's Up In Waukesha - City of Waukesha's Electronic Newsletter</u> (New in 2018)

The City's *What's Up in Waukesha* electronic newsletter goes out every week to anyone who signs up to receive it. When the Utility found out that the City had an electronic newsletter, the Utility contacted the City and began to add water conservation information.

In 2018, the Utility had an article for *National Drinking Water Week* and advertised the toilet, showerhead, and rain barrel rebate programs with a link to the Utility's conservation webpage as shown below.



What's Up In Waukesha E-Newsletter – Rebates Advertised & With a Link to Utility's Conservation Page

4. Garden Watering Strategies/Tools of the Trade

In 2018, a Waukesha Freeman reporter called the Utility and said that she was assigned to write an article on watering plants during the hot months and she was looking for some helpful tips. The Utility shared information that not only pertained to plants but also to the lawn; and shared information regarding water conservation tools.

In addition talking with the Utility, the reporter also talked with Waukesha County's horticulture educator and with an owner of Plant Land. When the article was written, not only did the reporter provide tips for watering plants, but she also provided the information the Utility shared which included information about irrigation controllers, rain barrels, and the rain barrel rebate program. She also reminded residents about Waukesha's annual sprinkling ordinance by publishing a separate ad.

A copy of the article and the sprinkling ordinance ad is shown below and continues on to the next page.

Garden watering strategies for the heat of the summer

Most plants need an inch a week — so don't overwater

By Catherine Jozwik Special to Waukesha County Home

Less is more when it comes to watering plants, according to experts. There are several key techniques and many tools people can employ to ensure their gardens get the water they need. "Most plants meder 1 inch of

"Most plants prefer 1 inch of water a week to thrive," said Ann Wied, consumer horticulture educator for the Waukesha County UW-Extension.

An empty tuna can or receptacle of comparable size can be used to measure the correct amount of water to use, said Wied.

Mark Jorgensen, who co-owns Plant Land in Milwaukee with his sister, Karen Matt, said people tend to overwater rather than underwater their plants.

"Overwatering can be just as

bad, as it saturates soil to the point where it doesn't get enough oxygen," Wied said, adding that native Wisconsin plants have deep root systems and can tolerate drier conditions.

"Once you overwater, you lessen the plant's chance of survival," Jorgensen said.

Where the plant meets the soil Wied recommends directly watering where the plant meets the soil rather than spraying over plants. This way, weeds aren't watered. Wet plant leaves can also lead to fungal diseases.

To make sure the plant absorbs water completely, moisten the soil a bit first, then go back and water. Putting down mulch — which soaks up water — in front of the

See WATERING/Page 2



Submitted photo

Water where the plant meets the soll. This avoids watering weeds and cuts down the chance of fungal disease due to wet leaves.

Thursday, 07/12/2018 Pag.C01

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An Article in the Waukesha Freeman Newspaper on Watering Plants & Rain Barrels p. 1

Watering: Rain barrels save on utility bill, provide effective water source

Continued from Page 1

plant also helps ensure plants get the moisture they need.

Jorgensen and Wied agree that an easy way to tell if a plant needs water is to put a finger about an inch and a half in the soil and see if it's dry. Generally, vegetable plants should be watered "at least a couple of times a week," Wied said.

Water potted plants about once every other day, said Jorgensen. Morning is the best time to water plants, as less water evaporates then. However, due to time constraints, many people can only water in the afternoon or evening. Wied said that's fine, as long as the plants get the moisture they need.

She cautions against giving droopy plants fertilizer treatment when watering should perk them up. Dry plants can be brought back to life, but over-watered plants sometimes cannot, Jorgensen added.

"Don't kill them with kindness," he said.

Tools of the trade

Many tools can be used to water your garden effectively, from irrigation controllers to common hoses.

Water Sense irrigation controllers, which can sense rain and soil moisture and be timed, are good watering tools, said Mary Adelmeyer, customer relations coordinator for the Waukesha Water Utility.

"They're pretty handy that way," she said.

Eco-friendly rain barrels — large barrels that collect rainwater from gutter downspouts

— help reduce runoff pollution from fertilizer, pesticides and other contaminants. Also, rain water is healthier for plants because it contains a considerable amount of oxygen and none of the salts and fluoride compounds found in tap water.

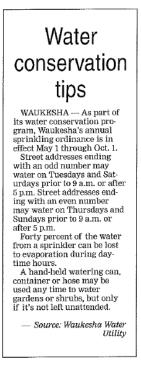
According to www.waukeshacounty.gov, "a single rain barrel will save most homeowners about 1,300 gallons of water during the peak summer months." Using less tap water typically means a lower water bill for homeowners.

Adelmeyer said that rain barrels can be purchased from hardware stores such as Home Depot, and the Retzer Nature Center in Waukesha. Prices range from about \$50 to \$125.

To ensure the safety of small children and to prevent animals and insects from getting inside, Adelmeyer recommends securing the barrel and putting a screen over the opening. Rain barrels should be disconnected in the wintertime, and water inside the barrels should not be drunk.

The Waukesha Water Utility offers city residents and customers a \$20 rain barrel rebate. To redeem this, a copy of the rain barrel receipt and a picture of the installation must be submitted. Two rebates per address can be claimed. To fill out an application, visit www.waukesha-water.com/downloads/Rain BarrelRebateForm.pdf or call the utility at 262-521-5272.

An Article in the Waukesha Freeman Newspaper on Watering Plants & Rain Barrels p. 2



Sprinkling Ordinance Ad

5. Advertisement of the Toilet & Shower Head Rebate Program

The Utility has publicized the toilet & shower head rebate program in the following ways: messages on bills, bill inserts, ads placed in the City Park & Recreation's Activity Guide, and rebate applications on display with Home Depot, local plumbers, and in the Utility's customer service area. Information is also posted on the Utility's website, mentioned on the Utility's social media accounts, in press releases (as shown in the Fix a Leak Week & National Drinking Water Week sections), and at all speaking and public outreach/educational events.

a. Messages on water bills for all customer classes

IMPORTANT INFORMATION:

"\$100 rebates are available for 1.28 gpf toilets and \$25 rebates are available for shower heads. For detailed information, please visit <u>www.waukesha-water.com</u>"

b. Bill Insert:

Bill inserts are sent out annually to all customer classes informing them of the 1.28 gpf toilet rebate. In addition, the bill inserts also inform customers where they can purchase rain barrels, that it is not necessary to water the lawn, toilets should be checked twice a year for leaks, and dripping faucets can usually be easily and inexpensively repaired.

Did you know			
If you replace your old water guzzling toilet (3.5 gallon or more) with a 1.28 gpf (gallons per flush) WaterSense toilet, you may be eligible to receive a rebate from the Water Utility.			
You can purchase rain barrels through the Waukesha School District's Environmental Education Department (262-970-4333) or Retzer Nature Center (262-896-8007). Capturing rain water not only saves you money but is better for your garden, lawn, and plants because the water is not chlorinated.			
It is not necessary to water the lawn. It is natural for lawns to turn brown in the hottest months. The lawn doesn't die, it just goes dormant. The green lawn will return with the au- tumn rain.			
Toilets should be checked for leaks at least twice a year because they are one of the most common places where leaks occur. Hundreds of gallons of water per day can be wasted. Free Leak Detection Dye Tablets are available at the Utility.			
Dripping faucets are usually easily and inexpensively repaired by replacing the washer inside the handle. Check both internal and external faucets for leaks. See our website for videos on how to fix leaks.			
For more detailed information, please visit our website at www.ci.waukesha.wi.us/waterhome			

c. City's Park & Recreation Activity Guide:

The toilet and shower head rebate program was advertised in the City's Activity Guide. This Guide is on the City's website and is mailed out to approximately 30,000 homes three times a year.

In 2018, the Utility updated its ad by making it larger and added information for the rain barrel rebate program, as shown below.



Fall Activity Guide

Toilet, Showerhead, & Rain Barrel Rebate Ad in the City's Activity Guide

6. Irrigation System Ordinance Bill Insert

Bill inserts (as shown below) are sent out on an annual basis to all customer classes informing them of the Irrigation System Ordinance.

In 2018, the Utility updated the first sentence of the postcard with the message that established lawns do not need to be watered. The Utility knows that some customers have sprinkler systems and are going to water their lawns; therefore, the Utility's Irrigation System Ordinance requires a WaterSense irrigation controller to help customers conserve water.

In addition to the bill insert, information regarding the Ordinance is also posted on the Utility's website.



Established lawns do not need to be watered. But if you're thinking about updating or installing a new sprinkling system, check out Waukesha's Irrigation System Ordinance.

Homeowners and businesses can save between 30-50% on their summer water bills by following the Ordinance and installing a WaterSense irrigation controller.

For more detailed information, please visit our website at: www.waukesha-water.com/ord_codes.html.

Irrigation System Ordinance Postcard

Water Sense[®]



7. EPA's WaterSense National Fix a Leak Week

Waukesha Water Utility promoted Environmental Protection Agency (EPA) WaterSense's annual Fix a Leak Week with the following activities:

• Messages were inserted on the Bills.

"March 19th – March 25th is Fix a Leak Week Check your winter water bill. If you use 12,000 gallons or more per month, you may have a serious leak! Learn how to fix leaks at www.waukesha-water/wtc.html."

- An Informational Sheet & Leak Detection Dye Tablets were available in the Utility's customer service reception area.
- A Press Release.
- Information on our website's home page
- A message was sent out on our Twitter account.
- Classroom Materials on our website that teach students to check for toilet leaks.

The last five items, mentioned above, are shown on the following pages.







Save Money and Help Conserve Water During Fix-a-Leak Week

According to the EPA, "did you know that an American home can waste, on average, more than 10,000 gallons of water every year due to running toilets, dripping faucets, and other household leaks?"

As an EPA WaterSense partner, we encourage you to check your plumbing fixtures and irrigation systems for leaks and to repair the leaks you find during this year's national <u>Fix a Leak Week</u>, March 19-25, 2018.

Identify Toilet Leaks

Toilet leaks are one of the most common leaks that tend to be invisible and waste hundreds of gallons of water a day. Identify toilet leaks by placing a few drops of food coloring in the toilet. Wait for at least 15 minutes before flushing. If any color appears in the toilet bowl, you have a leak. (Be sure to flush immediately, after the experiment, to avoid staining the tank.) If you don't have food coloring, you can pick up free leak detection dye tablets from Waukesha Water Utility, located at 115 Delafield Street in Waukesha.

Find & Fix Leaks

In most instances, leaks are easy and inexpensive to fix and you benefit by saving money! For your convenience, please visit our website at <u>www.waukesha-water.com/wtc.html</u> for videos and tips on how to find and fix leaks.

Replace the Fixture if Necessary

Look for the WaterSense label. WaterSense products are independently tested and certified to use 20 percent less water and perform as well as or better than standard models. In addition, if you purchase a 1.28 gallon per flush WaterSense toilet, you might be eligible for a rebate.

Free Leak Detection Tablets & Fix a Leak Week Informational Sheet in Customer Service Reception Area

PRESS RELEASE

WAUKESHA WATER UTILITY 115 DELAFIELD STREET WAUKESHA, WI 53188-3615 Contact: Mary Office: (262) 409-4423 Fax: (262) 521-5265 For Immediate Release

DATE: (March 19, 2018)

CONSUMER NOTICE

National Fix a Leak Week March 19th – 25th

Waukesha, WI – March 19, 2018, Waukesha Water Utility encourages customers to check for leaks during this year's national Fix a Leak Week. "Leaks can cost families a lot of money," said Mary Adelmeyer, Customer Service Coordinator. "Toilet Leaks tend to be invisible and are one of the most common leaks."

The focus is on toilets because they are the main source of water use in the home, accounting for nearly 30% of an average home's indoor water consumption. When toilets leak, hundreds of gallons of water a day can be wasted without the homeowner's knowledge. Toilet leaks are common, so the water utility recommends checking for leaks at least twice each year.

Whether you replace or repair your toilet depends on its age. Replacing toilets that were installed 1993 or earlier with a more water efficient model is one of the best ways to help reduce water usage. Purchasing a 1.28 gallon per flush, WaterSense-labeled toilet can save homeowners up to \$90 per year on water and wastewater bills. If you live in the city of Waukesha, you may also qualify for the \$100 toilet rebate and a \$25 shower head rebate.

For more information on how to find and fix leaks, or for toilet and shower head rebates, please visit the Waukesha Water Utility's website at <u>www.waukesha-water.com/wtc.html</u>.

Press Release for National Fix a Leak Week



The great news about Great Lakes water.

In June of 2016, the Great Lakes Compact unanimously approved Waukesha's application to borrow water through a pipeline from Lake Michigan, and then treat it and return it all to the lake via the Root River.

Serving Waukesna Since

We pledge to keep everyone who may be affected fully informed, every step of the way. To that end, we developed <u>greatwateralliance.com</u>, a website that will be the information hub for all things related to the project.

NEWS ROOM

OPERATIONS

National Fix a Leak Week March 19th - 25th

Police warn of men posing as utility workers

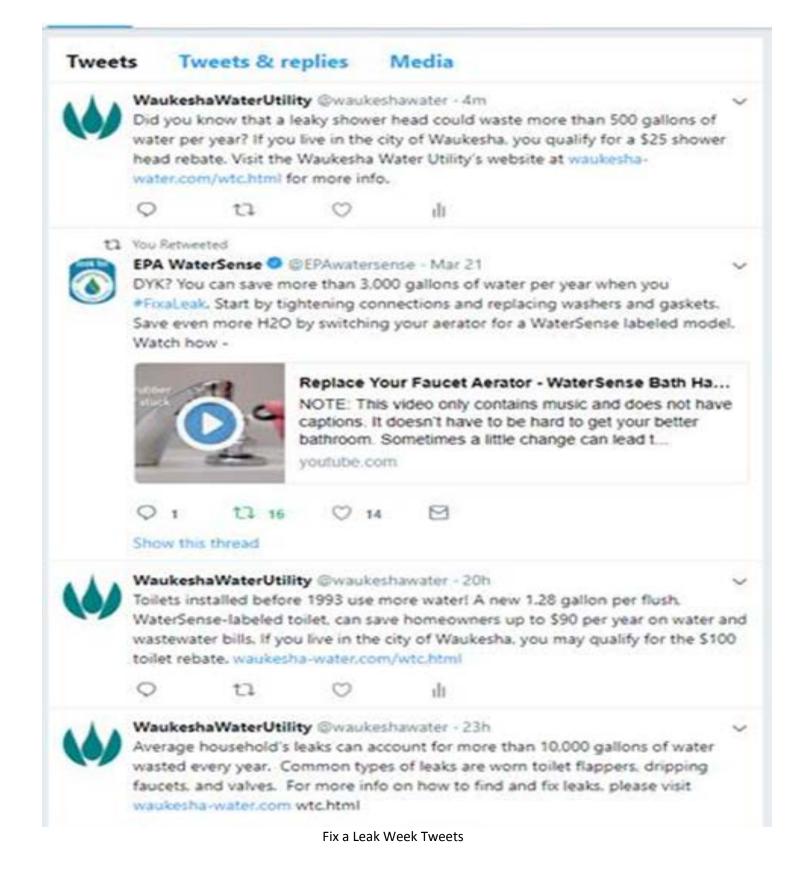
GREAT LAKES

Federal program could lower Lake Michigan pipeline costs

Information on our Website's Home Page

Pay Bill Online

Click Here





Name:

Save Water & Money

According to the Environmental Protection Agency (EPA) WaterSense partnership program, "an American home can waste on average, more than 10,000 gallons of water every year due to running toilets, dripping faucets, and other household leaks." That can cost your family a lot of money. That is why Waukesha Water Utility encourages you to use water wisely and check your home for leaks, during this year's national Fix a Leak Week. Try the activities and math problems on both sides of this sheet to see how fast water waste adds up.

Little Leaks Waste Big Amounts of Water

		-	
SIZE OF LEAK (Diameter)		WATER WASTED EACH QUARTER (Assuming 60 lbs of pressure)	
•	1/32" drip	18,500	gallons
۰	1/16" trickle	74,000	gallons
	1/8" stream	296,000	gallons
	1/4" stream	1,181,500	gallons

Toilet Leaks:

Toilet leaks are one of the most common leaks. Toilet leaks tend to be invisible. <u>Hundreds</u> of <u>gallons</u> of water <u>a day</u> can be wasted on toilet leaks. The sound of water running in a toilet tank signals costly leakage. For this reason, it is recommended that toilets be checked for leaks at least twice each year.

Activity #1: Test All Your Toilets for Leaks, with the help of your parent.

Checking a toilet for leaks is easy!

Take lid off the back of the toilet tank.

Put ONE of the attached leak detection tablets into the tank of the toilet.

Do NOT flush the toilet.

Wait for 20 minutes.

If you have another toilet, test that toilet for leaks too by repeating the directions above. If colored water from the dye tab appears in the bowl within 20 minutes, you have a leak.

Make sure to flush the colored water as soon as the 20 minutes is up, otherwise the coloring may stain.

(Please continue on to page $2 \rightarrow$)

P:\Conservation\Fix a Leak Week\Student Activity Worksheet

tivit	<u>y #2</u> : Record your Data & Calculate How Many Gallons of I	Water Your	Toilet Uses
1.	How many toilets do you have? Did you test all your t	oilets for le	aks?
2.	Does your toilet leak? (Did the dye color appear in the bowl?)		
	How old is your toilet? (The year of the toilet can be found on the underside of the tank lid. The date of the manufacture is often stamped	Toilet #1	Toilet #2
	into the porcelain.)		Year
4.	What is the size, make, and model of the toilet? (this information may be found in the toilet tank or under the tank lid.)		
	Toilet #1 Make Model	-	
	Toilet #2 Make Model	-	
	Using a ruler on the outside of the toilet tank, measure the wat (Be sure to <u>measure in feet</u> – answers maybe recorded with decimals o		
	Toilet #1 Tank Length Tank Width Side Water Depth		
	Toilet #2 Tank Length Tank Width Side Water Depth		
	Calculate how many cubic feet of water is in the tank. (Multiply Length x Width x Depth)	cu. ft. Toilet #1	cu. ft. Toilet #2
7.	Calculate how many gallons of water your toilet uses for every flush. (Multiply the cubic feet x 7.47 = Gallons per Flush) \$100 Toilet Rebate	gals. Toilet #1	gals. Toilet #2
8.	Is your toilet a pre-1994 toilet? (Look at your answer in #3)		
9.	Does your toilet use 3.5 gallons/flush or more?	Toilet #1	Toilet #2
	(Look at your answer in #7)	Toilet #1	Toilet #2
10.	Does your family get a water bill from Waukesha Water Utility (Ask your parents)	?	
11.	If you answered yes to #8, #9, and #10, your family could be eligible to get up to \$100 per toilet for replacing their old water guzzling toilet. Is your family eligible?	Toilet #1	Toilet #2
12.	Have you told your parents about this \$100 toilet rebate?		
pare	ur family is eligible, the old toilet needs to be replaced with a WaterSen nts can call the Waukesha Water Utility at (262) 521-5272 or visit our w ww.ci.waukesha.wi.us/waterhome.	se 1.28 gpf to vebsite for mo	vilet. Your are information
	Parent Signature		Date

Back Side of Student Activity Sheet - on Utility's website



8. National Drinking Water Week / Rain Barrel Rebate Announcement

May $6^{th} - 12^{th}$, 2018 was National Drinking Water Week. In honor of this week, the Utility had a press release that talked about the importance of protecting/conserving water and talked about the rain barrel rebate program.

In addition, the press release also mentioned the Mayoral Proclamation for National Drinking Water Week and reminded customers about the water conservation programs and incentives that are available through the Utility.

Information was posted on our website and twitter account. Copies of these items are shown on the following pages.





Telephone: (262) 521-5272 • Fax: (262) 521-5265 • E-mail: contactus@waukesha-water.com

For Immediate Release

Rain Barrel Rebate Program & National Drinking Water Week

Waukesha, WI – As Mayor Shawn Reilly commemorates National Drinking Water Week with a Mayoral Proclamation, the Water Utility reminds customers about the new Rain Barrel rebate program.

"Harvesting rain water is easy and a great way to conserve water," says Mary Adelmeyer of the Waukesha Water Utility. "A 50-60 gallon rain barrel, which connects to a downspout to capture rain water, can collect a surprising amount of water: 1/10th of an inch of rain falling on a 1,000 square foot rooftop can fill a 50-gallon barrel. That's 50 free gallons of naturally soft, chlorine-free water which is great for watering your flowers and plants, washing off your boots, washing the car or bike, or any other outdoor activities."

Rain barrels can be purchased from local hardware stores or Retzer Nature Center. Rain barrels cost approximately \$70-\$100. To qualify for the \$20 rain barrel rebate, Adelmeyer tells us that the rain barrels must be installed in the utility's service area, the original purchase receipt must be submitted within 90 days of purchase, and post-installation pictures must be included with the rebate application, which can be found on the utility's website. Adelmeyer also shared that rebates are available on a first-come, first-served basis and are subject to the availability of funds.

In addition to the rain barrel rebates, the utility is also reminding customers about the \$100 WaterSense toilet rebate and the \$25 WaterSense shower head rebate.

The Mayor tells us that "National Drinking Water Week is the perfect time to remind people of the importance of conserving water; and to inform city residents and businesses about the water conservation programs and incentives that are available through the Waukesha Water Utility to help us conserve."

For more detailed information, please visit the utility's website at www.waukesha-water.com.

Press Release for National Drinking Water Week



Office of the Mayor

201 DELAFIELD STREET WAUKESHA, WISCONSIN 53188-3633 TELEPHONE 262/524-3700 FAX 262/524-3899

PROCLAMATION

WHEREAS, water is one of our most important natural resources; and

WHEREAS, each citizen and business in our city has a responsibility to protect and conserve water; and

WHEREAS, Waukesha has programs in place to encourage water conservation; and

WHEREAS, the Waukesha Water Utility has encouraged and will continue to encourage businesses to conserve water, and

WHEREAS, the Water Utility offers grant money to businesses that replace equipment with new technology that saves water,

WHEREAS, the Waukesha Water Utility encourages and provides \$100.00 rebates to residents to replace all pre-1994 toilets with 1.28 gpf WaterSense toilets, as well as, \$25 WaterSense showerhead rebates, and \$20 rain barrel rebates, and

WHEREAS, all citizens and businesses are urged to comply with all sprinkling and irrigation system ordinances;

WHEREAS, we are all stewards of our water resources and infrastructure so that future generations will also have clean sustainable water;

NOW, THEREFORE, as Mayor of the City of Waukesha, I hereby proclaim May 6th to May 12th, 2018 as

DRINKING WATER WEEK

And ask that we recognize the essential role that drinking water plays in our daily lives.

Signed this 4th day of May, 2018.

Shawn Reilly, Mayor

City of Waukesha



www.waukesha-wi.gov

Mayoral Proclamation for National Drinking Water Week

9. Tips on How to Prevent Water Pipes from Freezing & Breaking

Broken water pipes waste a lot of water. To prevent pipes from freezing and breaking, the Utility puts the annual press release in the Waukesha Freeman, on the Utility's website, facebook page, and on the City's TV 25 local government and events channel.

In 2018, we had an unseasonably warm November and December. Therefore, we didn't advertise our annual *How to Prevent Freezing Pipes* information, in the the press release or on our website, until January 2019 when the outdoor temperatures got colder.

B. Community Presentations & Public Outreach Events

In 2018, there were many community presentations and public outreach events that took place, including the following:

- 1. Waukesha Janboree Pancake Breakfast
- 2. Wonderful World of Water Day
- 3. City of Waukesha's Brown Bag Conversations
- 4. Home Depot Toilet Workshop
- 5. Adaptive Community Approach Program
- 6. City Interdepartmental Meetings
- 7. What's Up In Waukesha YouTube Video
- 8. Construction Management Association of America (CMAA)
- 9. Association of Metropolitan Milwaukee Area (AMMA) Public Works Administrators & Engineers
- 10. American Chemical Socieity (ACS)
- 11. Metro Chapter Wisconsin Society of Professional Engineers
- 12. Tri-County Waterworks Association
- 13. American Water Works Association (AWWA) Water Management Seminar in Atlanta
- 14. American Water Works Association (AWWA) ACE18 Conference Dan's Presentation
- 15. American Water Works Association (AWWA) ACE18 Conference Kelly's Presentation
- 16. American Water Works Association Wisconsin Section (WI AWWA)
- 17. Great Water Alliance & Milwaukee Water Works Open House
- 18. A list of other presentations, meetings, and interviews that we don't have pictures for.

The detailed information pertaining to this year's presentations and outreach events follows.

1. Waukesha Janboree Pancake Breakfast – Water Conservation Booth

The City of Waukesha had its annual winter Janboree and Pancake Breakfast. Approximately 600 people attend this event. The Utility had a conservation educational booth and an informational sign regarding the 1.28 gpf WaterSense toilet rebate.



Waukesha Water Utility's Conservation Booth at Waukesha's Janboree Pancake Breakfast

2. Wonderful World of Water Day

Waukesha County Parks & Land Use invited the Utility to participate in their Wonderful World of Water event. The Utility gave a presentation titled *Water Saving Ideas for the Home: Learn Strategies to Save Water in your Home & Incentives to Help You Use Less Water and Save You Money.*

In addition to the presentation, the Utility also had a staffed conservation educational table outside the speaking rooms and an informational sign regarding the 1.28 gpf WaterSense toilet rebate. The Utility greeted vistors, promoted water conservation, and answered questions.

The Water Day event was a success. There were 40 people who signed up to participate in the event and over 200 visitors that morning between the planetarium shows, World of Water, and the County's spring pre-sale event for rain barrels, compost bins, and plants for rain gardens who also visited the educational tables and attended the presentations.

Pictures showing the Utility's presentation and the water conservation table are shown below; and the event announcement is shown on the next page.



Utility's Presentation - Learn Strategies to Save Water in Your Home & Water Saving Incentives - Picture #1



Utility's Presentation - Picture #2



Utility's Water Conservation Table

Win A Rain Barrel At World of Water Day

The Wonderful World of Water Day will be held at the Retzer Nature Center on Saturday, February 24.

By News Desk, News Partner | Feb 5, 2018 2:08 pm ET | Updated Feb 5, 2018 3:19 pm ET 0



From Waukesha County Parks & Land Use:Celebrate and learn about Earth's most important resource, water, at the Wonderful World of Water Dayl This event will be at Retzer Nature Center on Saturday, February 24 from 9:00 a.m. to noon. Participants will enjoy special exhibits and hands-on activities. A variety of speakers will present the following free workshops:

9 – 9:30 a.m. An Ounce of Prevention: Learn what creatures are creeping in to our environment as well as ways to prevent their spread. Invasive species can cause great environmental damage, so be prepared.

9:45 – 10:15 a.m. Water Saving Ideas for the Home: Learn strategies to save water in your home. The City of Waukesha has several water saving incentives to help you use less water and save you money.

10:30 – 11 a.m. Clean Water--What it Takes: What happens to the water that goes down the drain in your home? Learn how water is cleaned and prepared to be put back into the environment.

Subscribe

11:15 – 11:45 a.m. Our Daily Interactions with Water: Have you thought about water's hidden contributions to your daily life? Learn about society's invisible walk with water. You will leave with ideas about easy things you can do to help protect our life-giving resource.

All Wonderful World of Water Day attendees have the opportunity to win a free rain barrel with diverter kit! Admission and parking at Retzer are free.

For more information call 262-896-8300. For event updates, like Waukesha County Parks and Waukesha County Recycles on Facebook.

Waukesha County's Park & Land Use - Wonderful World of Water Presentations Agenda

3. City of Waukesha's Brown Bag Conversations

City of Waukesha's Park and Recreation department schedules monthly Brown Bag Conversations for people age 55 and over. The purpose of the meetings is for people to learn more about their community in a relaxed environment. Participants are encouraged to bring their lunch, thoughts, questions, and ideas.

In 2018, the Utility was contacted by a Park and Recreation representative and asked to give a presentation. The Utility gave a presentation about Waukesha's water – where it comes from, how it's treated/distributed, the declining water levels, water quality concerns, Waukesha's application for Great Lakes water, and the returning the same amount of water to the Root River.

In addition, the Utility also talked about the importance of water conservation, the City's water saving incentives, the benefits of using WaterSense certified products, and tips for maximum water conservation. All attendees received leak detection dye tablets, rebate applications (for toilets, showerheads, and rainbarrels), a sprinkling ordinance magnet, rain guage measuring cups, and a brochure on water conservation. There were approximately 20 people who attended.

The picture of this event is shown below and the advertisement, from the City's Activity Guide, is shown on the next page.



Presentation given to Waukesha's Brown Bag Conversation Group





Brown Bag Conversations

Don't miss the opportunity to learn more about your community! Join us for informal interactive discussions with local officials, business leaders and organization directors in a relaxed environment. Bring your lunch (coffee will be provided), your thoughts, questions and ideas.

If you have a suggestion for a future conversationalist please submit your written ideas to the Senior Advisory Board, 1900 Aviation Dr., Waukesha, WI 53188

AGE	DATE/DAY	TIME	R/NR FEE
55+	Third Wednesdays	Noon-1:00 pm	No Fee

January 17 – Community Development Director Jennifer Andrews will speak to the group on what's new in Waukesha. The mission of the department is to make sound decisins and provide services that maintain and foster sustainable neighborhoods, industrial and business development within the city.

February 21 – The Waukesha Civic Theatre is a non-profit corporation whose mission is to provide quality live theatre performances and educational opportunities that will enrich, challenge and entertain both participants and audience members. Members of the theatre (Waukesha Players) will speak to the group on what they do and how you can become involved!

March 21 – Bonnie Byrd, Waukesha County Museum Curator will give an overview, talk about building renovations and discuss volunteer opportunities and much more.

April 18 – Visit and presentation regarding Therapy Dogs. Molly Johnson is a certified trainer and has two Basset Hounds. She will be joined by Bill and Sue Graham. We will be discussing the difference between therapy dogs and service dogs. We will also have 4 Basset Hounds there. All are certified therapy dogs.

May 16- Mary Adelmeyer Customer Service Representative for the Waukesha Water Utility will talk about water quality, ongoing activities of the utility and the diversion of lake Michigan water to Waukesha.

Rotary Building NOTE: No fee or registration required.

WPRF Essential to "Comm

Utility's Presentation to the Brown Bag Conversation Group Advertised in the City's Activity Guide

4. Home Depot's (and Waukesha Water Utility's) Workshop - Regarding Toilets

In the summer of 2018, the Utility noticed that Waukesha's Home Depot scheduled a workshop on *How to Install Toilets*. The Utility reached out to Home Depot to see if we could partner with them on their workshop. Home Depot welcomed us.

The Utility's presentation focused on how to check your toilet for leaks, how to find the age of the toilet, the Utility's rebates for WaterSense toilets (and showerheads), information pertaining to what the WaterSense logo looks like, and the benefits of using WaterSense certified products. Home Depot's presentation focused on how to install new toilets.

In addition to the presentation, guests were given leak detection dye tablets and a brochure on water conservation tips. Also, because the presentation occurred in the summer, guests also received information about rain barrels, sprinkling ordinance magnets, a rain gauge measuring cup, and information on the water conservation rebates.





Waukesha Water Utility partnering with Home Depot on a Workshop Regarding Toilets



5. Adaptive Community Approach Program Presentation and Tour

In 2018, the Waukesha School District started collaborating with the Adaptive Community Approach Program (ACAP), a non-profit organization that provides programs and services to adults with disabilities. The ACAP group was looking to participate in a series of environmental education programs. Waukesha School District's Environmental Education department outlined some program possibilities and water came forward as a theme. The Environmental Education department contacted the Utility and requested a presentation and a tour of the pumping station.

The Utility gave 12 ACAP participants and 2 leaders a tour of the pumping station and a presentation regarding Waukesha's water – where it comes from, how its treated and distributed, information about the water cycle, information about the declining water levels in the aquifer, the importance of water conservation, and ideas on how to conserve water. In addition to the tour and the presentation, group members left with rain gauge cups and sprinkling ordinance magnets.

The School District's confirmation letter regarding this ACAP event is shown on the next page.

environmental EDUCATION

Summer Program Confirmation Form and Invoice

E.B. Shurts Environmental Education Center

Program Participant: ACAP, 121 Wisconsin Ave, Waukesha, WI 53186

Main Contact: Allison Surber, 262-818-4928

Number of participants: 10-12 adult participants, 2 adult leaders

Date Of Visit: Wednesday, August 1st, 9:30-11:30 am

Location: City of Waukesha Pumping Station, 2320 W Sunset Dr., Waukesha WI

Activities: Water Utility Tour

Special Requests:

Special Notes: There is not a bathroom at the pumping station. There is a bathroom at Sentry which is across the parking lot from the pumping station.

6. Interdepartmental "IN" Meetings

Every other month, the City holds interdepartmental meetings. Each department takes turn hosting the meeting. The purpose of the meetings are to get to know the other City departments, find out what each department does, and to get a department update.

In 2018, the Utility was not scheduled to host the "IN" meeting, but is scheduled to host in 2019. At each meeting, the Utility gave a department update, answered questions, and shared conservation ideas – especially for Fix a Leak Week and National Drinking Water Week. In addition, all attendees were given toilet leak detection tablets, a sprinkling ordinance magnet, and information pertaining to Waukesha's conservation incentives.

There wasn't an updated group picture taken in 2018, so were reusing the picture from 2017.



Interdepartment Group Meeting

Waukesha recognizes that an important element of water conservation is the sustainability of our water supplies. During the following presentations, the sustainability of our water sources was discussed as part of the presentation.

7. What's Up in Waukesha YouTube Video

For the purpose of keeping people informed, the Utility made a YouTube video titled *What's Up in Waukesha: Next Steps in the Water Project.* In the video, the Utility talks about how the city of Waukesha is going to be getting Lake Michigan water as its new source. The video explains the reason Waukesha needs a new water source – that our aquifer is not sustainable for the longterm and it contains contaminants. The video goes on to explain how the Utility received unanimous approval for Lake Michigan water and the steps involved with this transition, so that the residents of Waukesha can have a radium-free and sustainable water supply.



YouTube Video



8. Construction Management Association of America – Wisconsin Section (CMAA)

A presentation was given to the CMAA group regarding Waukesha's current and future water supply. The Utility talked about Waukesha's current source - that Waukesha needs a new water source because its current supply is not sustainable and it has contaminants.

The Utility explained how the recharge of the current deep aquifer is limited by a layer of shale rock, that the water in the aquifer is down more than 350 feet, pumping from shallow wells adversely impacts the area's wetlands and streams, and using reverse osmosis to treat radium would waste about 20% of water, which would increase demands and drawdown.

In addition to talking about the current source, the Utility also talked about the future source (the 15 year process the Utility went through with the DNR to obtain a new water source), the return flow process (how the amount borrowed will be returned to the Root River), and the benefits of the return flow (it will help restore groundwater flow towards the Great Lakes Basin, it will enhance habitat and fisheries, and reduce radium and salt released in the environment).

9. Assoc. of Metropolitan Milwaukee Area (AMMA) Public Works Administrators & Engineers

The Utility gave a presentation titled *Lake Michigan Water Supply Project: Where We Have Been & Where We Are Going* to the AMMA group. This presentation was also about Waukesha's current and future water supply.

The Utility shared with the audience that Waukesha currently relys on groundwater for its water source (from 3 active deep sandstone wells and 3 active shallow sand and gravel wells). Due to the Maquoketa shale confining layer, the recharge is limited, and over pumping from the regional area has made the water levels drop more than 350 feet. The water supply is unsustainable and has contaminants.

In addition to the sustainability and water quality issues, the Utility also talked about Waukesha's future water supply (how 14 other water sources were extensively analyzed, the Application and approval process for Great Lakes water, and the return flow process and benefits).

The Meeting Announcement for this event is shown below.

Bayside Brookfield Brown Deer	Asso	CIATION OF METROPOLITAN MILWAUKEE AREA Public Works Administrators & Engineers
Cudahy Elm Grove		
Fox Point Franklin	Monting	g Announcement
GERMANTOWN	meeting	Announcement
GRAFTON	Date:	January 12, 2018
GREENDALE	Date.	Noon
GREENFIELD		
HALES CORNERS	Location:	Club Paragon 3578 S. 108th Street
MEQUON		Milwaukee, WI
MILWAUKEE, CITY		(414) 541-9270
MILWAUKEE, COUNTY	Cuest Heat	t Village of Meet Milwaykee
MMSD	Guest Hos	t: Village of West Milwaukee Len Roecker, P.E., PLS, Village Engineer/raSmith
Muskego		
Oak Creek	Speaker:	Dan S. Duchniak, P.E., General Manager
RIVER HILLS		Waukesha Water Utility
ST. FRANCIS	Topic:	Lake Michigan Water Supply Project
Shorewood		"Where We Have Been, and Where We Are
SOUTH MILWAUKEE		Going"
Sussex	Subsequen	t Hosts: February 9, 2018 – Bayside
THIENSVILLE	Cubbequein	March 9, 2018 – Whitefish Bay
Waukesha		April 13, 2018 - Brookfield
Wauwatosa	Questions /	Comments:
WEST ALLIS		
WEST MILWAUKEE	Contact:	Mike Paulos, P.E., LEED AP, 414-266-9086
Whitefish Bay	"Associating	in common purpose for the betterment of public works and public service."

AMMA's Meeting Announcement - Speaker from Waukesha Water Utility



10. American Chemical Society (ACS)

Waukesha Water Utility gave a presentation to the American Chemical Society group. The presentation began with the history of Waukesha's water. The Utility shared with the audience that in early 2000, it became apparent that Waukesha could no longer rely on its deep aquifer source for drinking water. The speaker talked about Waukesha's water quality issues and spoke about the depleted groundwater levels.

The Utility also talked about the process of how Waukesha applied for a diversion of Lake Michigan water; and that the application encompassed the evaluation of 14 water supply alternatives for safety, sustainability, and economic viability. Waukesha Water shared its water challenges and the lessons learned.

11. Metro Chapter Wisconsin Society of Professional Engineers

The Utility was invited to give a presentation to the Wisconsin Society of Professional Engineers during their 2018 Annual Scholarship and Engineer's Week Banquet. Once again, the Utility talked about *Waukesha's Water Supply Project – Where We Have Been and Where We Are Going*.

The Utility talked about how Waukesha's groundwater source and how Waukesha needs a new water supply due to quality and quantity issues. Continuing to use groundwater is unsustainable; and continued use is not a reasonable or sensible alternative.

In addition to the quality and sustainability issues, the Utility talked about Waukesha's future water supply, the route study, the return flow process, and the benefits of the return flow.

The invitation to speaking event is shown below.



2018 Annual Scholarship and Engineer's Week Banquet

When: Wednesday February 21, 2018

Location: Thunder Bay Bar and Grill N14 W24130 Tower Place Pewaukee, WI 53072

Topic: "City of Waukesha's Lake Michigan Water Supply Project: Where We Have Been and Where We Are Going"

Speaker: Daniel Duchniak, General Manager Waukesha Water Utility.

Time: 5:30 Cocktails/Social Hour 6:15 Dinner 7:00 Scholarships/Awards Speaker Following Awards

Cost:\$30/personSpouses and Guests are encouraged to attend.Dinner will be served Buffet Style: Entrees, Salad, Side and Vegetable.Rolls andCoffee/tea/soda are included.

The events of the evening will include presentations of the annual scholarship awards to outstanding area high school seniors and the Metro Chapter Engineer and Young Engineer of the Year Awards.

Wisconsin Society of Professional Engineers - Speaker from Waukesha Water Utility

12. Tri-County Waterworks Association

Waukesha Water Utility was asked to give a presentation to the Tri-County Waterworks Association. Kelly Zylstra, the Utility's Operation Manager, and Catherine Richardson (Katie), the Deputy Program Manager for the Great Lakes project, gave a presentation titled, *Navigating New Waters: Designing and Permitting a New Drinking Water Supply System*.

Kelly & Katie began the presentation by talking about the program drivers for Waukesha's Great Lakes project. They shared the following information about Waukesha's water source: The deep aquifer replenishment is very slow due to the shale confining layer, the groundwater levels are declining and has contaminants, the groundwater supply is connected to the Great Lakes Basin water resources, and Waukesha's groundwater supply is not sustainable.

Once the foundation of the presentation was established, about Waukesha needing for a new water supply due to the water quality and sustainability issues, Kelly and Katie then gave an overview of Great Lakes project. They talked about the permitting schedule, the route study and pipeline design, and the evaluation criteria. They also talked about the return flow process and the transition plan that would help to minimize water quality impacts.



A picture showing Kelly's & Katie's powerpoint presentation is shown below.

Kelly's & Katie's Presentation to the Tri-County Group



13. American Water Works Association – Water Management Seminar in Atlanta

The Utility was asked to give a presentation at AWWA's Water Management Seminar. The title of the presentation was *Regional Cooperation: Key to a Sustainable Water Future*.

The Utility talked about our current water supply - how Waukesha relys on groundwater, the Utility was court ordered to comply with the radium standard, the recharge of the deep aquifer is limited due to the confining layer of rock, the deep aquifer water levels have declined more than 350 feet, Waukesha is located near environmentally sensitive areas so pumping shallow wells adversely impacts wetlands and streams, treatment with reverse osmosis for the radium would waste about 20% of water (which would increase demands and drawdown), and the current water supply is unsustainable.

Waukesha Water also talked about how the Utility evaluated 14 alternative water supply options. We talked about the Great Lakes Compact, the application/approval process, the program partnerships, the route study, and the benefits of a new water supply.



Dan Duchniak & Kelly Zylstra both gave presentations at AWWA's ACE18 Conference

14. American Water Works Association – ACE18 Conference (Dan's Presentation)

Dan Duchniak, Waukesha Water Utility's General Manager, and Kelly Zylstra, Waukesha's Operation Manager, were both asked to give separate presentations at the AWWA ACE18 conference.

Dan Duchniak gave a presentation titled *Delivering Total Water:* Borrowing and Returning Water to the Great Lakes Basin.

Dan began the presentation talking about Waukesha's current water supply. He talked about the condition of the aquifer – that the recharge is limited due to a confining layer of shale, the water levels have declined, and the quality has changed.

Dan also showed a series of slides that showed the simulated history of groundwater pumping and groundwater levels in southeast Wisconsin from the 1800's through the present. The Milwaukee/Chicago cone of depression is one of the largest areas of groundwater drawdown in North America. This information regarding the limited recharge, the declining water levels, and the regional drawdown illustrated that Waukesha's water source is unsustainable for the long term.

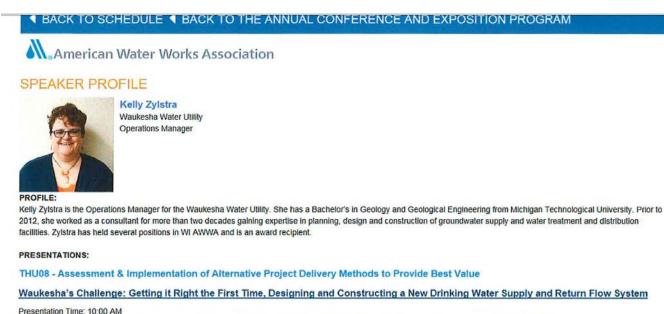
Once the water quality and sustainability issues of Waukesha's water supply was communicated, then Dan talked about Waukesha's Diversion Application, the approval process, and the timeline for the Great Lakes project going forward.

15. American Water Works Association – ACE18 Conference (Kelly's Presentation)

Kelly Zylstra & Katie Richardson, the Deputy Program Manager for Waukesha's Great Lakes project, gave also gave a presentation to the ACE18 conference titled *Waukesha's Challenge:* Designing & Constructing a New Drinking Water Supply & Return Flow System.

Kelly and Katie talked about Waukesha's new water supply program drivers. The main program drivers are related to Waukesha's current water source being contaminated and unsustainable.

The presentation also included an overview and an update to Waukesha's Great Lake project, including information about Waukesha returning all the water borrowed back to Lake Michigan via the Root River.



Session: THU08 - THU08 - Assessment & Implementation of Alternative Project Delivery Methods to Provide Best Value - 08:30 AM - 11:00 AM Day: Thursday, June 14, 2018

16. American Water Works Association – Wisconsin Section

Kelly Zylstra was also asked to give a presentation at the WI AWWA conference. Once again, she presented with Catherine Richardson (Katie) from Greeley and Hansen. The title of their presentation was Navigating New Waters: Designing and Permitting a New Drinking Water Supply System.

Kelly and Katie began the presentation by talking about the program drivers for Waukesha's Great Lakes project. They talked about Waukesha's water quality, the aquifer recharge being very slow due to the geological confining layer, the declining water levels, that Waukesha is part of the Great Lakes Basin, and Waukesha's groundwater is not sustainable.

After it was communicated that Waukesha has water quality and sustainability issues, Kelly and Katie then shared the details about the Great Lakes project which included strategies to minimize project costs and change orders, and their goal to obtain the maximum value for the construction investment.

A copy of WI AWWA's 2018 Techical Program, that shows Kelly's and Katie's presentation is shown below.

	Thursday, September 13, 2018										
Time	Track A Hall of Ideas Room E	Track B Hall of Ideas Room F	Track C Hall of Ideas Room G								
	Understanding the PSC Ratemaking Process Bridgot Gysbers, WI PSC	How to Identify and Integrate Energy Savings at Your Facility	Navigating New Waters: Designing and Permitting a New Drinking Water Supply System								
SESSION T5	Learn about the PSC's rate- making process from the Commission's water team auditors. Topics include: • How to avoid mistakes on your rate application • Information you'll need to provide • Typical rate case process and timeline • What can and cannot be included in the	Joe Kottwitz, Focus on Energy and Tony Mach, Neenah Water Utility Energy is one of the largest expenses for Wisconsin's water utilities - luckily, it is also one of the most manageable. In this presentation, attendees will hear	Catharine Richardson, Greeley and Hansen and Kelly Zylstra, Waukesha Water Utility The program will highlight risk and cost minimization strategies that reduce								
11:15 am to Noon	capital costs are recovered through rates • Two-step rate increases • Exceptions to the benchmark rate of return • Requesting the expense	firsthand from Neenah Water Utility on how they were able to incorporate energy efficiency into the culture at their plant. Learn the steps Neenah Water Utility made in under two years to reduce their electrical nical Program – Utility Presentatior	construction costs and project administrative burden, minimize change orders and provide stakeholders assurance that maximum value is realized for their construction investment.								

WI AWWA Technical Program – Utility Presentation

17. Great Water Alliance – Milwaukee Water Works Open House

The Great Water Alliance and Milwaukee Water Works held an open house at Hamilton High School in Milwaukee so that attendees could get information on the new water supply project. Nearly 100 people attended the open house and spoke with project representatives, received project details, and discussed the three pipeline route options and plans for the new pumping station.

In addition to the project information, Waukesha Water Utility also had a staffed conservation education table with two informational signs regarding Waukesha's 1.28 gpf WaterSense toilet rebate and Conservation tips. The water conservation person assisted with greeting vistors, promoting water conservation, and answering questions.

Pictures from the open house and Waukesha's conservation booth are shown below.



GWA's Open House – Nearly 100 People Attended



Waukesha Water Utility Promoting Water Conservation at GWA's Open House Dan Duckniak & Kelly Zylstra – Two Presentations at Michigan's AWWA Conference

18. Additional Public Outreach, Presentations, Interviews, & Meetings:

Additional public outreach, presentations, meetings, and interviews in 2018 are listed below. The topic of sustainability and water conservation was a part of the meetings and presentations.

- Keven Shafer at MMSD
- UW Whitewater Price Elasticity of Demand for Water
- Regional of Realtors Association Cost Impacts to Residents and Market in Waukesha
- Sara Wilke New Alderman Meeting Intro to GWA Program and Conservation Program

• C. <u>Water Education with the Youth – Tomorrow's Future</u>

Waukesha Water Utility plans for the future by educating our youth. In 2018, the Utility continued to provide water education classes to the following:

- 1. Waukesha School District's 5th graders (for the past 29 years)
- 2. Waukesha County's Boy Scouts (for the 7th year)
- 3. Oak Creek High School Environmental Class
- 4. Carroll University's Environmental Health Class (2nd year)
- 5. Carroll University's Soils and Hydrology Class (New in 2018)
- 6. Milwaukee School of Engineering (MSOE) Facilities Planning Class (New in 2018)



1. Waukesha School District's 5th Graders

For the past 29 years, Waukesha Water Utility has partnered with the Waukesha School District to provide water education to all 5th graders. As part of their Environmental & Science Curriculum, the students study the natural cycles of water and the human impact on our water resources. Thousands of students have toured the Utility's pumping station. At the station, they learn about the following:

- the water cycle
- where their water comes from
- how their water is treated and distributed
- the quality and quantity of the water they use
- conservation methods that use water resources in a sustainable manner
- the costs of municipal water, and its value compared to bottled water

The students also explore the natural cycles of water by spending a day in the Fox River Sanctuary investigating the chemical and biological components of the river and marsh.

In 2018, we spent approximately 57 hours educating approximately 870 students, along with approximately 45 teachers and chaperones from the Waukesha School District.



2018 Boy Scouts Water Ed Class & Tour

2. Waukesha County Boy Scouts

Waukesha Water Utility partnered with the Waukesha County Boy Scouts to help them to earn their Soil and Water Conservation Merit Badge. This is the seventh year that the boy scouts toured the water pumping facilities; and, as the picture above shows by the number of boys that signed up for this tour, there was a lot of interest in learning about water.

According to the Boy Scouts of America (BSA), in order to earn this badge, the boys need to learn "about the natural resources on which our lives depend, so that we can help make sure that these resources are used intelligently and cared for properly."

The water portion requirements of the badge program, as stated in their *Soil & Water Conservation Merit Badge Series* BSA No. 610016, are the following:

- Take a tour of a public drinking water treatment plant,
- Explain what a watershed is,
- Make a drawing to show the hydrologic cycle,
- Tell what is meant by water pollution and describe common sources, and
- Write a report of more than 500 words about the soil, water, and energy conservation practices.

The Utility's water education presentation & tour covered all the above required water topics.

🖗 Oak Creek High School

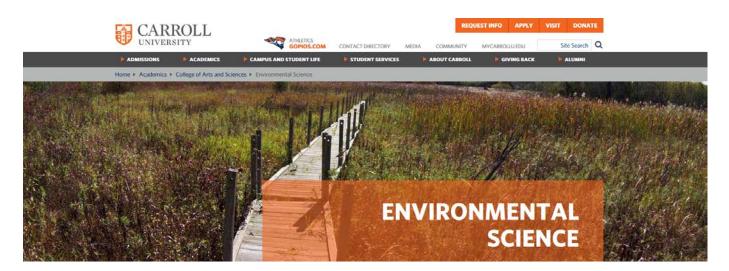
3. Oak Creek High School

Waukesha Water Utility was asked to give a Water talk to Oak Creek High School students. The presentation began with Water 101 and the Facts About Water – how there is a limited supply and it is exceptionally cheap relative to its value.

The Utility talked about Waukesha's current water supply, the quality and quantity issues – the radium contaminants, about how slowly it takes the aquifer to recharge and the reason for it, the declining water levels, and the sustainability issues.

Waukesha Water also talked about the importance of water conservation. The Utility shared ideas on what the students could do to save water. Talked about how to find and fix leaks, that established lawns do not need to be watered, to take shorter showers, and the benefits of replacing appliances.

The future water supply was also talked about – the application/approval process, the potential rates, the route study and pipeline design, the return flow process, and the transition plan to minimize water quality issues.



4. Carroll University's Environmental Health Class

This is the second year that the Utility was contacted by a Carroll Unversity professor, in the Public Health Department, to give a presentation for their Environmental Health students.

Some of objectives is for students to gain a fundamental knowledge of the development of environmental health problems, the interaction of individuals and communities have with the environment, and the regulatory policies/practices, treatment and prevention strategies associated with environmental issues.

Utility staff gave a presentation and a tour of one of the pumping stations. The presentation started with Water 101 – giving an introduction as to where Waukesha's water comes from, how its treated, quality and quantity issues, what Waukesha test for, costs, and different careers in the water industry.

One of the main themes of the presentation was talking about how we take water for granted and the importance of water conservation. We talked about how North America, including Waukesha, faces water supply and sustainability challenges. The Utility talked about how water is still exceptionally cheap relative to its value, but that everyone is going to pay more for drinking water in the future, and the reasons water rates will be increasing.

We also talked about Waukesha's future water supply – the process we went through to get a new water source and the path forward to implement the project and make the final transition.



5. Carroll University's Soils & Hydrology Class

Waukesha Water Utility was also asked to give a presentation to Carroll University's Soils & Hydrology class.

In this presentation, the Utility talked about Waukesha's geology and reason the aquifer recharges very slowly, that it's due to the shale rock confining layer. We also talked about Waukesha's groundwater – the quality, the declining water levels, and that its not sustainable.

We also talked about water overall, that there is a limited supply and the importance of water conservation.

The Utility talked about how the water is treated and distributed, how much it costs, and what the municipalities test for. We also talked about Waukesha's future water supply - the application and approval process, the potential rates, the benefits of the returning all the water borrowed to the Root River, and the final transition plan of getting Lake Michigan water to Waukesha in a way that minimizes water quality issues.



6. Milwaukee School of Engineering (MSOE) – Facilities Planning Class

Waukesha Water Utility was asked to give a presentation to the MSOE Facilities Planning Class.

Once again, the Utility's presentation began with an introduction about Waukesha's water -Where it comes from, the water quality and sustainability issues. The Utility also talked about the importance of water conservation and the future water supply project - including the plans for the new pumping station, the route study, the pipeline designs for the water and return flow, and the final transition plan.

D. Partnerships

Waukesha Water Utility has many partnerships. Below are some of the partnerships that, in some way, have already been mentioned throughout the report.













VII. WATER LOSSES AND ACCOUNTED FOR WATER

Per NR 852.04 and PSC 185 the Utility performs and documents water use audits on a monthly basis. A summary of 2018 is as follows. Data is entered into the format below.

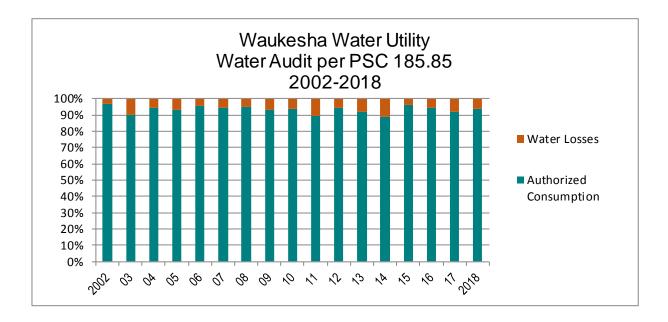
Data Input	
	2018 Total
Sales - Metered	1,898,692,100
Sales - Est. Consumption	-
Plant	1,286,300
Water Analyzer Water Flow (9)	793,920
Filter Back wash	-
# 3	4,580,000
# 8	3,640,000
# 10	6,928,000
Flushing	-
Mains	27,806,145
Services	-
Main Breaks	3,209,500
Morgan Ave	-
Service Breaks	3,023,000
Filling Mains / New Construction	702,900
Fire (524-3647)	202,450
Misc: Specify	
Hydrant Repairs	99,750
Hydrant Replacement	18,800
Hydrant Surveys	25,420
Valve replacements (2)	50,440
Fire Flow Test	13,875
Leakage & Overflows at Towers	54,719
Total Pumped	2,076,015,000

Then the raw data is converted into the Water Balance categories specified in PSC 185.

Water Ba	lance			
Trate: Ba		2018 Total		
	System Input Volume =	2,076,015,000		
		2,010,010,000		
	Authorized Consumption =	1,944,840,100		
	Water Losses =	131,174,900		
		2,076,015,000		
	Authorized - Billed =	1,898,692,100		
	Authorized - UnBilled =	46,148,000		
	Losses - Apparent =	124,887,681		
	Losses - Real =	6,287,219		
		2,076,015,000		
puo	Billed & Metered	1,898,692,100		
Authorized Consumption	Billed & UnMetered	-		
Autho onsu	UnBilled & Metered	45,034,365		
νΩ Υ	UnBilled & UnMetered	1,113,635		
(0	Unauthorized Consumption	124,887,681		
Water Losses	Meter Inaccuracies			
tter l	Data Handling Errors	(†		
Ma	Main Breaks	3,209,500		
	Leakage & Overflows at Towers	54,719		
	Service Breaks	3,023,000		
		2,076,015,000		
	Revenue Water =	1,898,692,100		
	Non Revenue Water =	177,322,900		
		2,076,015,000		

The summary, above, indicates that in 2018, 6.3% of the Utility's water was lost. This loss is far less than the 15% that has historically triggered a comprehensive survey and corrective action plan.

The stability of the statistics over the last sixteen years and the data itself is indicative of a diligently maintained distribution system. (The Utility reformatted its data from 2002 forward so that its display is consistent with the 2012 requirements.) Accounted for Water ranges between 88.8% and 96.5%.



The results are achieved because the Utility routinely repairs and replaces water services, hydrants and valves. In 2015, the Utility initiated Hydrant Leak Surveys as part of its semi-annual flushing program.

In 2018, 1,288 hydrants were surveyed. Sixteen leaks were detected and the related hydrants were repaired immediately.

In addition, the Utility replaced 10,390 feet of water main in 2018 as compared to 8,156 in 2017. AWWA's 1% replacement goal represents roughly 17,608 feet.

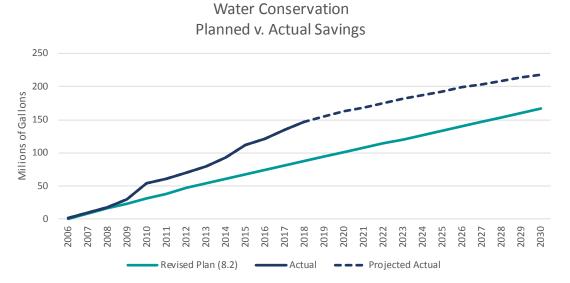
VIII. CONCLUSION

	MILLIONS OF GALLONS									_			
				7.8		9.0	10.0	11.0	12.0				
		Avg Day		to	8.8 to	to	to	to	to			Peak	
Year	Annual Pumpage	Pumpage	< 7.8	8.8	9.0	10.0	11.0	12.0	13.0	>7.8	>8.8	Day	Notes
	Number of Days												
2018	2,128,111	5,830	362	3	-	-	-	-	-	-	-	8.50	
2017	2,128,111	5,830	365	-	-	-	-	-	-	-	-	7.55	
2016	2,172,548	5,952	362	3	-	-	-	-	-	3	-	8.17	
2015	2,218,214	6,077	358	7	-	-	-	-	-	7	-	8.72	Mild summer temperatures
2014	2,314,582	6,341	340	21	2	1	1	-	-	25	4	10.14	Feb 6th Water Runs
2013	2,348,955	6,435	346	15	2	2	-	-	-	19	4	9.06	
2012	2,536,368	6,930	297	38	3	22	6	-	-	69	31	10.77	Drought Year
2011	2,545,099	6,973	318	44	1	2	-	-	-	47	3	9.22	
2010	2,441,221	6,688	342	23	-	-	-	-	-	23	-	8.65	Fairly Rainy Summer
2009	2,479,905	6,794	330	32	2	1	-	-	-	35	3	9.35	2nd set inclining rates blocks - June
2008	2,528,933	6,910	328	30	6	2	-	-	-	38	8	9.93	Spring Flooding
2007	2,618,641	7,174	292	51	8	14	-	-	-	73	22	9.79	Inclining rate blocks - June; Dry year except Aug
2006	2,622,418	7,185	294	61	1	8	1	-	-	71	10	10.23	Rainy Year; Sprinkling ordinance in effect
2005	2,838,403	7,776	225	78	6	28	18	7	3	140	62	12.87	Dry Year
2004	2,698,980	7,374	276	59	6	20	5	-	-	90	31	10.48	Rainy Year
2003	2,795,859	7,660	250	67	3	22	18	5	-	115	48	11.67	
2002	2,953,216	8,091	176	119	10	28	17	14	1	189	70	12.78	
2001	2,821,968	7,731	217	103	8	16	15	2	4	148	45	12.53	
2000	2,836,140	7,749	190	139	15	21	1	-	-	176	37	10.15	
1999	3,028,414	8,297	116	145	23	57	21	3	-	249	104	11.59	
1998	2,974,540	8,149	156	123	14	49	16	5	2	209	86	12.79	

The data, above, shows the combined effect of our conservation programs. Over time:

- a. Total water pumped has steadily declined
- b. Average day pumpage has steadily declined
- c. The number of days where >7.8 million gallons needed to be pumped has decreased from a high of 145 in 1999 to a low of 0 in 2017.

Ultimately, the Utility must compare it's savings to that of the 2012 Conservation Plan. The plan predicted savings of 203,300,000 by the year 2030. The actual and projected savings are below.



If it stays on track, the Utility will exceed its goal of saving 0.8 mgd by 2050.