

MEMORANDUM

Date: February 3, 2021

To: Steven Elmore, DNR Bureau Director
Shaili Pfeiffer, DNR Staff Specialist

From: Daniel S. Duchniak, General Manager
Joseph P. Ciarro, Administrative Service Manager

Re: Conservation Plan Update

The City of Waukesha has implemented and maintained its Water Conservation Plan (“the Plan”) since it was adopted in 2012.

The Plan implemented Conservation Efficiency Measures (CEMs) listed in NR 852.05 that are cost effective and environmentally sound and do not require retrofitting. The City estimated that implementing the Plan will result in a reduction in average day demand of 0.5 mgd by the year 2030 and 0.8 mgd by the year 2050.

Key elements of the Plan include:

- A goal to “[t]arget the highest potential savings;”
- A goal to “[p]ursue cost-effective” measures and to “leverage lessons learned from . . . its own experiences with implementation;” and
- The flexibility to “change which measures are implemented, the schedule and the balance between the measures from year to year.

The implementation plan contains six Program Elements. Each of the elements is addressed.

**Rebates and Incentives: Residential and Commercial
Conservation and Efficiency Measures (CEMs)**

As noted in the last update to the DNR, dated November 3, 2015, the initial plan contained two elements devoted to achieving water savings; rebates and incentives. Implementation first focused on specific devices, such as toilets, which affected a great number of customers, but was less effective at achieving water savings than a focus on specific customers with the potential of significant savings. From 2014 to 2017, the City changed its focus to Conservation and Efficiency Measures (CEMs) that – based on its implementation experience – would achieve greater conservation benefits for its budgeted resources.

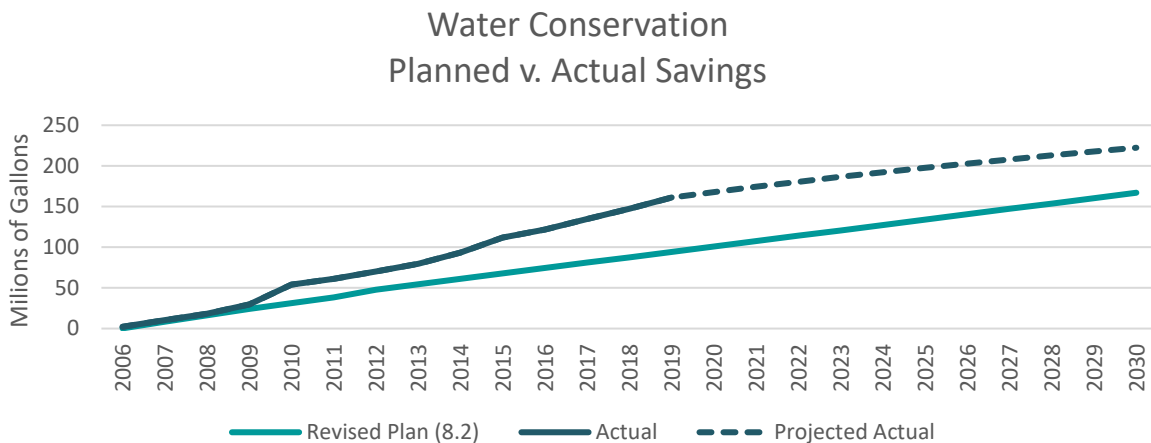
Since 2017, high-impact conservation opportunities have been limited, even with the City’s effort to educate its Commercial and Industrial customers about the program. As such, the City has refocused some of its efforts to specific devices such as toilets, showerheads, and rain barrels with a concentration on toilet replacements in large apartment buildings. Rebate and incentive activity is reported on Table 1.

Table 1

Rebate & Incentive Count —Water Conservation Program (2015 - 2019)							
Customer	Description	Annual Savings	2015	2016	2017	2018	2019
Residential	Residential HE Toilets, \$100 Rebate	9,263	97	118	101	92	72
Commercial	Commercial HE Toilet, Large MF \$100 Rebate	18,835	15	68	229	87	404
Commercial	CII Spray Rinse Valve Grant (Commercial)	28,285	19	8	-	-	6
Public	CII Spray Rinse Valve Grant (Public)	28,285	8	17	-	-	-
Industrial	Eaton Lincoln Ave Chiller Unit - 2015	3,400,000	1	-	-	-	-
Commercial	Waukesha Memorial Hospital Vacuum Pump Replacement - 2015	2,586,098	1	-	-	-	-
Industrial	Eaton Badger - 2nd Recirculating Pump - 2015	3,100,000	1	-	-	-	-
Residential	Waukesha Housing Authority Showerhead Grant	2,062	-	150	-	-	-
Residential	LF Showerhead	2,062	-	2	11	18	7
Industrial	Alloy Products - Wastewater Recycling Sys.	990,293	-	-	1	-	-
Industrial	CII Tank-Type HE Toilet, \$50 Rebate (Industrial)	11,485	-	-	12	-	-
Residential	Rain Barrel Rebate, \$20	1,300	-	-	8	7	2
Industrial	Eaton Lincoln Ave Chiller #2 & #3	4,599,000	-	-	-	1	-
	Active Water Savings (Gallons)		11,030,855	3,394,430	6,409,957	7,136,072	8,462,963

Ultimately, the City must compare the results of the implementation of the conservation program with its water savings goal of 0.8 million gallons per day by 2050. In order to achieve the 2050 goal, the City assumed that it would need to save 167,000,000 gallons per year by the year 2030. Chart 1 shows that the activities of the Plan are expected to exceed that goal by a significant margin.

Chart 1



In addition, the City has continued to improve the effectiveness of each dollar spent on the conservation program since the Plan was approved in 2012. From 2012 through 2014, the cost per 1-million gallons saved was \$23,633. As reported in Table 2, that cost drops to \$10,981 per 1-million gallons for the next five years (2015-2019).

Table 2

Costs—Water Conservation Program (2015 - 2019)						
Activity Name	2015	2016	2017	2018	2019	Total
Toilet rebates	\$ 11,225	\$ 17,652	\$ 32,824	\$ 17,589	\$ 46,382	\$ 125,672
Showerhead rebates	-	4,298	265	450	50	5,063
Indoor/Outdoor water use audits	-	1,000	-	-	-	1,000
Spray-rinse valve rebates	7,480	859	-	-	-	8,339
Leak detection, mains, and hydrants	10,290	9,206	15,221	11,450	-	46,167
Pilot project or tailored incentives	29,293	-	2,555	14,978	140	46,966
Subtotal	58,288	33,015	50,865	44,467	46,572	233,207
Public education and outreach	20,216	22,440	22,030	15,102	14,875	94,663
Program management, auditing, reporting, customer service, sprinkler ordinance	14,494	15,205	19,417	11,905	11,179	72,200
Estimated Program Cost Total	\$ 92,998	\$ 70,660	\$ 92,312	\$ 71,474	\$ 72,626	\$ 400,070
Gallons Saved (millions)	11.03	3.39	6.41	7.14	8.46	36.43
Cost per Million Gallons	\$ 8,431	\$ 20,816	\$ 14,401	\$ 10,016	\$ 8,582	\$ 10,981

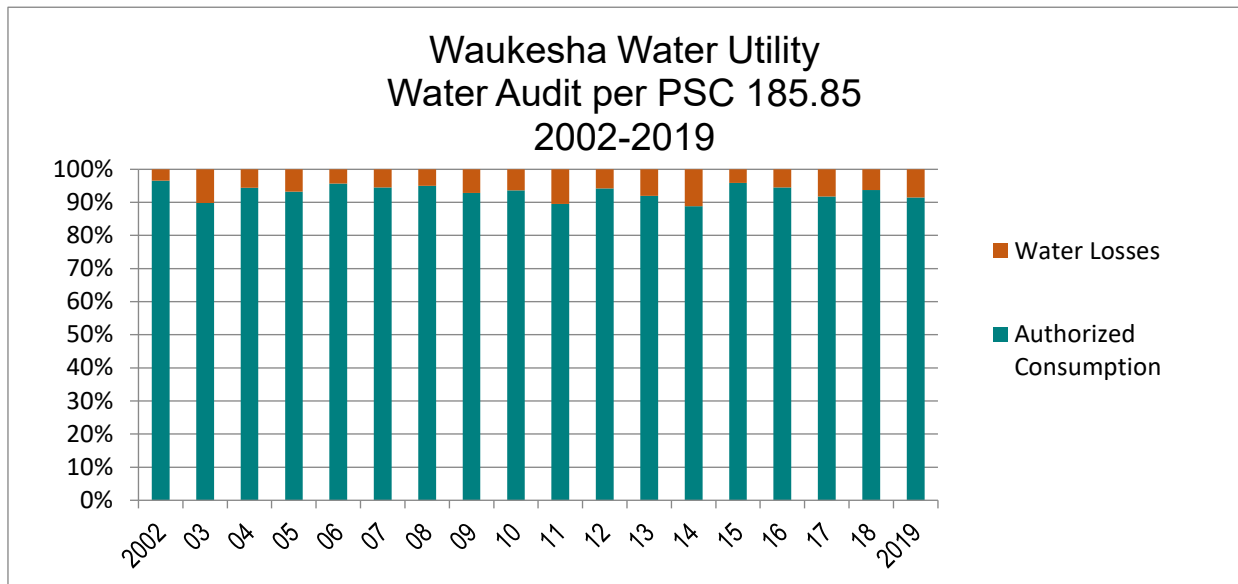
Additional Program Elements

It is important to note that the Plan includes four elements in addition to the CEMs listed above. Those additional Program Elements are addressed below.

Municipal Infrastructure

The City monitors its water loss statistics using information that is reported annually to the Wisconsin Public Service Commission. These statistics are consistently lower than the level that would require a state-imposed action plan to address system water loss.

Chart 2



That said, since the inception of the plan, the City engaged in additional activities designed to limit water losses. It has:

- conducted leak detection surveys of its hydrants;
- worked with a municipal pool to curtail water loss; and
- developed a system-wide unidirectional flushing; and
- performed water audits, as needed, for residential customers with an expected large water leak.

Public and School Education

Waukesha's water education program began in the 1990's. Because of that long-standing presence in the community, it was uniquely positioned to promote the City's conservation message. Since the adoption of the City's first conservation plan in 2006, the City has organized conservation challenges, annually taught 5th grade water education classes, presented at toilet replacement clinics, and distributed conservation materials and rebate applications at numerous conferences, community events, and farmer's markets, and initiated its "My Brown Lawn is Green" campaign to discourage lawn irrigation. A complete accounting of the City's activities can be found in its annual reports filed with the Wisconsin Public Service Commission since 2012.

Policies, Regulations, and Enforcement

The City was the first in the state to pass a **Sprinkling Ordinance**. It continues to actively publicize and enforce Ordinance, 13.1. It bans daytime sprinkling and requires owners who sprinkle at other times to limit it to two days per week. The program is described in detail in its annual reports filed with the Wisconsin Public Service Commission since 2012.

In 2007, the City was the first in Wisconsin to implement **inclining rate blocks**. Residential customers are incented to conserve water because they are charged higher prices if their consumption exceeds 10,000 gallons per quarter (single family). In addition, the City will be transitioning to monthly billing for all customers, effective February 9, 2021, which will provide more accurate and timely water use information to its customers.

Customers who are concerned about overuse can log on to the **City's website to compare their consumption** to the average in their neighborhood.

The City requires **agreements to follow Waukesha conservation ordinances and regulations for owners of property outside of the City**, that want new water service installed. The owners will generally be required to sign a recordable contract binding them and their successors to follow City conservation ordinances and regulations related to water service, including conservation.

Reporting, Monitoring, and Plan Updates

Per NR 852.04 and PSC 185, the Utility performs and documents water use audits on a monthly basis. The specified water balance was used to produce the data in Chart 2.

The City monitors conservation activities using the Alliance for Water Efficiency (AWE) Water Conservation Tracking Tool. The tool is updated annually and produces the reports on planned versus actual savings that are reported to the WPSC.

Conclusion

As stated previously, each of the six program elements has been addressed. The data presented overwhelmingly supports the assertion that the City of Waukesha has implemented its water conservation plan and has improved upon it as conditions have changed. The City is required to update the Plan every 10 years; as such, the City will begin planning that process in late 2021 and expects to budget funds necessary to complete an update during 2022.